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:
November 24, 2022

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

Report No.: HCT-RF-2211-FC040

FCC ID:	**A3LSMA146M**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-A146M/DS
Additional Model(s):	SM-A146M
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	8M70G7D	PI/2 BPSK	0.198	22.96
		8M69G7D	QPSK	0.196	22.93
		8M68W7D	16QAM	0.154	21.88
		8M68W7D	64QAM	0.109	20.39
		8M73W7D	256QAM	0.067	18.26
Sub6 n41 (15)	2503.500 – 2682.480	13M0G7D	PI/2 BPSK	0.197	22.94
		13M0G7D	QPSK	0.188	22.74
		13M0W7D	16QAM	0.154	21.87
		12M0W7D	64QAM	0.107	20.31
		12M9W7D	256QAM	0.067	18.25
Sub6 n41 (20)	2506.020 – 2679.990	18M1G7D	PI/2 BPSK	0.201	23.04
		18M0G7D	QPSK	0.200	23.00
		18M0W7D	16QAM	0.155	21.89
		18M0W7D	64QAM	0.108	20.34
		18M0W7D	256QAM	0.069	18.37
Sub6 n41 (30)	2511.000 – 2674.980	26M9G7D	PI/2 BPSK	0.195	22.89
		27M0G7D	QPSK	0.193	22.85
		26M9W7D	16QAM	0.151	21.80
		27M1W7D	64QAM	0.103	20.14
		26M9W7D	256QAM	0.065	18.16
Sub6 n41 (40)	2516.010 – 2670.000	36M0G7D	PI/2 BPSK	0.187	22.72
		35M9G7D	QPSK	0.186	22.69
		36M9W7D	16QAM	0.150	21.77
		35M0W7D	64QAM	0.105	20.23
		35M8W7D	256QAM	0.067	18.29
Sub6 n41 (50)	2521.020 – 2664.990	45M9G7D	PI/2 BPSK	0.190	22.79
		46M0G7D	QPSK	0.189	22.77
		46M0W7D	16QAM	0.148	21.71
		45M9W7D	64QAM	0.100	19.99
		46M4W7D	256QAM	0.065	18.16
Sub6 n41 (60)	2526.000 – 2659.980	58M1G7D	PI/2 BPSK	0.206	23.13
		58M2G7D	QPSK	0.204	23.09
		58M0W7D	16QAM	0.160	22.05
		58M0W7D	64QAM	0.113	20.54
		58M1W7D	256QAM	0.072	18.58
Sub6 n41 (80)	2536.020 – 2649.990	77M5G7D	PI/2 BPSK	0.176	22.45
		77M4G7D	QPSK	0.173	22.37
		77M4W7D	16QAM	0.141	21.48
		77M5W7D	64QAM	0.099	19.96
		77M5W7D	256QAM	0.061	17.86
Sub6 n41 (90)	2541.000 – 2644.980	87M1G7D	PI/2 BPSK	0.185	22.68
		87M1G7D	QPSK	0.183	22.63
		87M3W7D	16QAM	0.148	21.69
		87M2W7D	64QAM	0.103	20.12
		87M1W7D	256QAM	0.066	18.19
Sub6 n41 (100)	2546.010 – 2640.000	96M9G7D	PI/2 BPSK	0.182	22.61
		96M6G7D	QPSK	0.181	22.57
		96M5W7D	16QAM	0.145	21.62
		96M6W7D	64QAM	0.103	20.12
		96M8W7D	256QAM	0.065	18.13

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-2211-FC040	November 24, 2022	- 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:	A3LSMA146M
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-A146M/DS
Additional Model(s):	SM-A146M
SCS(kHz):	30
Bandwidth(MHz):	10, 15, 20, 30, 40, 50, 60, 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 2536.020 – 2649.990 : 80 MHz 2541.000 – 2644.980 : 90 MHz 2546.010 – 2640.000 : 100 MHz
Date(s) of Tests:	September 26, 2022~ November 14, 2022
Serial number:	Radiated: R93T9002TNA Conducted: R93T8000BCB

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.

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;

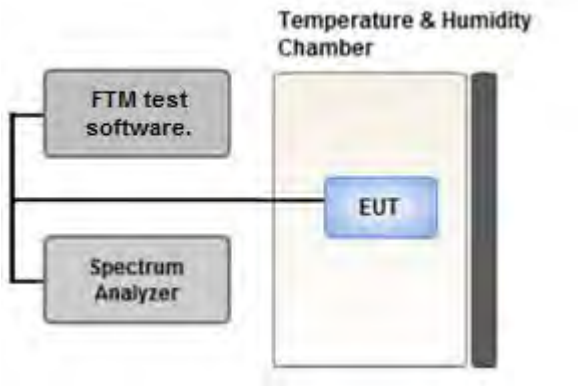
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

   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:

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

Test Settings(Peak Power)

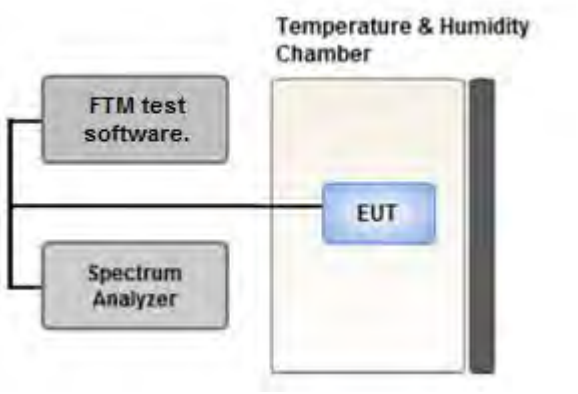
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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.

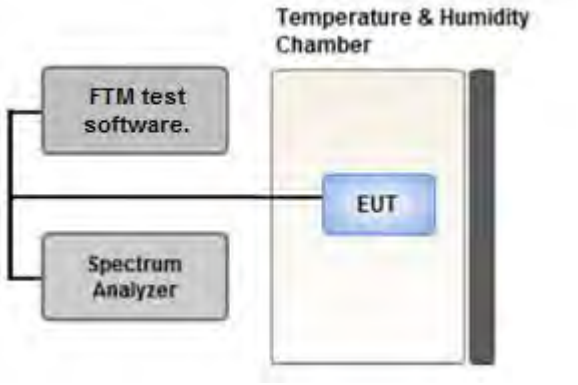
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

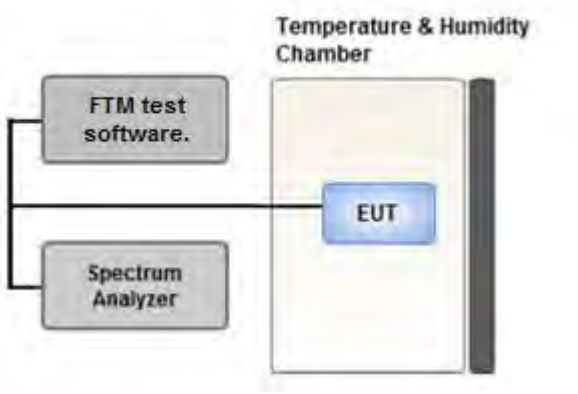
Test Overview

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

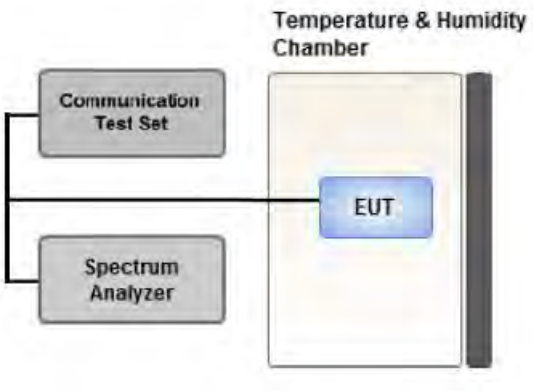
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. Within 1 MHz of the channel edge the RBW should be 2 % of EBW, then 1 MHz after that.
4. VBW > 3 x RBW
5. 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, NSA, SRS
  Worst case: NSA(66A-n41A)
  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: 66A-n41A (10 MHz))
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-A146M/DS & additional models were tested and the worst case results are reported.
  (Worst case : SM-A146M/DS)

[Worst case]

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

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
  (Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: SA, NSA, SRS
  Worst case: NSA
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-A146M/DS & additional models were tested and the worst case results are reported.
  (Worst case : SM-A146M/DS)

[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
		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	05/04/2023	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	04/12/2023	Biennial
Loop Antenna(9 kHz~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	05/18/2023	Annual
High Pass Filter	WHKX10-2700-3000-18000-40SS	Wainwright Instruments	145	05/18/2023	Annual
High Pass Filter	WHNX6-4740-6000-26500-40CC	Wainwright Instruments	11	05/18/2023	Annual
LOW NOISE AMP (100 MHz ~ 18 GHz)	CBLU1183540B-01	CERNEX	26822	05/18/2023	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	09/05/2023	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(10 Hz~26.5 GHz)	N9020A	Agilent	MY51110063	04/19/2023	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	05/18/2023	Annual
Spectrum Analyzer(10 Hz~40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/25/2023	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2023	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287700	05/19/2023	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/18/2023	Annual
SIGNAL GENERATOR (100 kHz~40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/05/2023	Annual
Signal Analyzer(5 Hz~40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/30/2023	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)	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(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	-21.51	15.13	10.30	2.47	H	< 2.00	0.198	22.96	1	12
		QPSK	-21.54	15.10	10.30	2.47	H		0.196	22.93		
		16-QAM	-22.59	14.05	10.30	2.47	H		0.154	21.88		
		64-QAM	-24.08	12.56	10.30	2.47	H		0.109	20.39		
		256-QAM	-26.21	10.43	10.30	2.47	H		0.067	18.26		
2592.990		PI/2 BPSK	-21.21	15.09	10.05	2.50	H		0.184	22.64	1	1
		QPSK	-21.24	15.06	10.05	2.50	H		0.182	22.61		
		16-QAM	-22.21	14.09	10.05	2.50	H		0.146	21.64		
		64-QAM	-23.76	12.54	10.05	2.50	H		0.102	20.09		
		256-QAM	-25.80	10.50	10.05	2.50	H		0.064	18.05		
2685.000		PI/2 BPSK	-24.66	12.80	10.10	2.58	H		0.108	20.32	1	12
		QPSK	-24.68	12.78	10.10	2.58	H		0.107	20.30		
		16-QAM	-25.58	11.88	10.10	2.58	H		0.087	19.40		
		64-QAM	-27.26	10.20	10.10	2.58	H		0.059	17.72		
		256-QAM	-29.27	8.19	10.10	2.58	H		0.037	15.71		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
2503.500	Sub6 41/ 15 MHz [30 kHz]	PI/2 BPSK	-21.51	15.12	10.30	2.48	H	< 2.00	0.197	22.94	1	19
		QPSK	-21.71	14.92	10.30	2.48	H		0.188	22.74		
		16-QAM	-22.72	13.91	10.30	2.48	H		0.149	21.73		
		64-QAM	-24.14	12.49	10.30	2.48	H		0.107	20.31		
		256-QAM	-26.20	10.43	10.30	2.48	H		0.067	18.25		
2592.990		PI/2 BPSK	-21.06	15.24	10.05	2.50	H		0.190	22.79	1	1
		QPSK	-21.12	15.18	10.05	2.50	H		0.188	22.73		
		16-QAM	-21.98	14.32	10.05	2.50	H		0.154	21.87		
		64-QAM	-23.81	12.49	10.05	2.50	H		0.101	20.04		
		256-QAM	-25.69	10.61	10.05	2.50	H		0.065	18.16		
2682.480		PI/2 BPSK	-24.71	13.00	10.10	2.58	H		0.113	20.52	1	19
		QPSK	-24.74	12.97	10.10	2.58	H		0.112	20.49		
		16-QAM	-25.69	12.02	10.10	2.58	H		0.090	19.54		
		64-QAM	-27.51	10.20	10.10	2.58	H		0.059	17.72		
		256-QAM	-29.46	8.25	10.10	2.58	H		0.038	15.77		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
2506.020	Sub6 41/ 20 MHz [30 kHz]	PI/2 BPSK	-21.41	15.22	10.30	2.48	H	< 2.00	0.201	23.04	1	25
		QPSK	-21.45	15.18	10.30	2.48	H		0.200	23.00		
		16-QAM	-22.56	14.07	10.30	2.48	H		0.155	21.89		
		64-QAM	-24.11	12.52	10.30	2.48	H		0.108	20.34		
		256-QAM	-26.08	10.55	10.30	2.48	H		0.069	18.37		
2592.990		PI/2 BPSK	-21.24	15.06	10.05	2.50	H		0.182	22.61	1	1
		QPSK	-21.33	14.97	10.05	2.50	H		0.179	22.52		
		16-QAM	-22.21	14.09	10.05	2.50	H		0.146	21.64		
		64-QAM	-23.92	12.38	10.05	2.50	H		0.098	19.93		
		256-QAM	-25.97	10.33	10.05	2.50	H		0.061	17.88		
2679.990		PI/2 BPSK	-24.85	12.86	10.10	2.58	H		0.109	20.38	1	25
		QPSK	-24.89	12.82	10.10	2.58	H		0.108	20.34		
		16-QAM	-25.94	11.77	10.10	2.58	H		0.085	19.29		
		64-QAM	-27.46	10.25	10.10	2.58	H		0.060	17.77		
		256-QAM	-29.54	8.17	10.10	2.58	H		0.037	15.69		

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	-21.66	14.96	10.30	2.50	H	< 2.00	0.189	22.76	1	39
		QPSK	-21.76	14.86	10.30	2.50	H		0.185	22.66		
		16-QAM	-22.84	13.78	10.30	2.50	H		0.144	21.58		
		64-QAM	-24.36	12.26	10.30	2.50	H		0.101	20.06		
		256-QAM	-26.31	10.31	10.30	2.50	H		0.065	18.11		
2592.990		PI/2 BPSK	-20.96	15.34	10.05	2.50	H		0.195	22.89	1	1
		QPSK	-21.00	15.30	10.05	2.50	H		0.193	22.85		
		16-QAM	-22.05	14.25	10.05	2.50	H		0.151	21.80		
		64-QAM	-23.71	12.59	10.05	2.50	H		0.103	20.14		
		256-QAM	-25.69	10.61	10.05	2.50	H		0.065	18.16		
2674.980		PI/2 BPSK	-24.81	12.60	10.10	2.58	H		0.103	20.12	1	1
		QPSK	-24.89	12.52	10.10	2.58	H		0.101	20.04		
		16-QAM	-25.91	11.50	10.10	2.58	H		0.080	19.02		
		64-QAM	-27.56	9.85	10.10	2.58	H		0.055	17.37		
		256-QAM	-29.62	7.79	10.10	2.58	H		0.034	15.31		

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
2516.010	Sub6 41/ 40 MHz [30 kHz]	PI/2 BPSK	-21.56	14.93	10.30	2.51	H	< 2.00	0.187	22.72	1	53
		QPSK	-21.59	14.90	10.30	2.51	H		0.186	22.69		
		16-QAM	-22.51	13.98	10.30	2.51	H		0.150	21.77		
		64-QAM	-24.05	12.44	10.30	2.51	H		0.105	20.23		
		256-QAM	-25.99	10.50	10.30	2.51	H		0.067	18.29		
2592.990		PI/2 BPSK	-21.15	15.15	10.05	2.50	H		0.186	22.70	1	1
		QPSK	-21.17	15.13	10.05	2.50	H		0.185	22.68		
		16-QAM	-22.13	14.17	10.05	2.50	H		0.149	21.72		
		64-QAM	-23.63	12.67	10.05	2.50	H		0.105	20.22		
		256-QAM	-25.84	10.46	10.05	2.50	H		0.063	18.01		
2670.000		PI/2 BPSK	-24.50	12.62	10.10	2.58	H		0.103	20.14	1	1
		QPSK	-24.56	12.56	10.10	2.58	H		0.102	20.08		
		16-QAM	-25.59	11.53	10.10	2.58	H		0.080	19.05		
		64-QAM	-27.13	9.99	10.10	2.58	H		0.056	17.51		
		256-QAM	-29.15	7.97	10.10	2.58	H		0.035	15.49		

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
2521.020	Sub6 41/ 50 MHz [30 kHz]	PI/2 BPSK	-21.68	14.99	10.00	2.53	H	< 2.00	0.176	22.46	1	66
		QPSK	-21.71	14.96	10.00	2.53	H		0.175	22.43		
		16-QAM	-22.71	13.96	10.00	2.53	H		0.139	21.43		
		64-QAM	-24.29	12.38	10.00	2.53	H		0.097	19.85		
		256-QAM	-26.32	10.35	10.00	2.53	H		0.061	17.82		
2592.990		PI/2 BPSK	-21.06	15.24	10.05	2.50	H		0.190	22.79	1	1
		QPSK	-21.08	15.22	10.05	2.50	H		0.189	22.77		
		16-QAM	-22.14	14.16	10.05	2.50	H		0.148	21.71		
		64-QAM	-23.86	12.44	10.05	2.50	H		0.100	19.99		
		256-QAM	-25.69	10.61	10.05	2.50	H		0.065	18.16		
2664.990		PI/2 BPSK	-24.51	12.58	10.10	2.60	H		0.102	20.08	1	1
		QPSK	-24.55	12.54	10.10	2.60	H		0.101	20.04		
		16-QAM	-25.61	11.48	10.10	2.60	H		0.079	18.98		
		64-QAM	-27.12	9.97	10.10	2.60	H		0.056	17.47		
		256-QAM	-29.09	8.00	10.10	2.60	H		0.036	15.50		

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	-21.71	14.55	10.30	2.53	H	< 2.00	0.171	22.32	1	81
		QPSK	-21.72	14.54	10.30	2.53	H		0.170	22.31		
		16-QAM	-22.81	13.45	10.30	2.53	H		0.132	21.22		
		64-QAM	-24.41	11.85	10.30	2.53	H		0.092	19.62		
		256-QAM	-26.24	10.02	10.30	2.53	H		0.060	17.79		
2592.990		PI/2 BPSK	-20.72	15.58	10.05	2.50	H		0.206	23.13	1	1
		QPSK	-20.76	15.54	10.05	2.50	H		0.204	23.09		
		16-QAM	-21.80	14.50	10.05	2.50	H		0.160	22.05		
		64-QAM	-23.31	12.99	10.05	2.50	H		0.113	20.54		
		256-QAM	-25.27	11.03	10.05	2.50	H		0.072	18.58		
2659.980		PI/2 BPSK	-23.91	12.94	10.10	2.61	H		0.110	20.43	1	1
		QPSK	-23.95	12.90	10.10	2.61	H		0.109	20.39		
		16-QAM	-24.89	11.96	10.10	2.61	H		0.088	19.45		
		64-QAM	-26.47	10.38	10.10	2.61	H		0.061	17.87		
		256-QAM	-28.49	8.36	10.10	2.61	H		0.039	15.85		

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	-21.73	14.51	10.30	2.52	H	< 2.00	0.169	22.29	1	108
		QPSK	-21.71	14.53	10.30	2.52	H		0.170	22.31		
		16-QAM	-22.83	13.41	10.30	2.52	H		0.132	21.19		
		64-QAM	-24.06	12.18	10.30	2.52	H		0.099	19.96		
		256-QAM	-26.16	10.08	10.30	2.52	H		0.061	17.86		
2592.990		PI/2 BPSK	-21.40	14.90	10.05	2.50	H		0.176	22.45	1	1
		QPSK	-21.48	14.82	10.05	2.50	H		0.173	22.37		
		16-QAM	-22.37	13.93	10.05	2.50	H		0.141	21.48		
		64-QAM	-23.98	12.32	10.05	2.50	H		0.097	19.87		
		256-QAM	-26.01	10.29	10.05	2.50	H		0.061	17.84		
2649.990		PI/2 BPSK	-22.46	14.21	10.10	2.65	H		0.147	21.66	1	1
		QPSK	-22.55	14.12	10.10	2.65	H		0.144	21.57		
		16-QAM	-23.41	13.26	10.10	2.65	H		0.118	20.71		
		64-QAM	-25.06	11.61	10.10	2.65	H		0.081	19.06		
		256-QAM	-27.01	9.66	10.10	2.65	H		0.051	17.11		

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	-21.46	14.90	10.30	2.52	H	< 2.00	0.185	22.68	1	122
		QPSK	-21.51	14.85	10.30	2.52	H		0.183	22.63		
		16-QAM	-22.49	13.87	10.30	2.52	H		0.146	21.65		
		64-QAM	-24.11	12.25	10.30	2.52	H		0.101	20.03		
		256-QAM	-25.95	10.41	10.30	2.52	H		0.066	18.19		
2592.990		PI/2 BPSK	-21.24	15.06	10.05	2.50	H		0.182	22.61	1	1
		QPSK	-21.27	15.03	10.05	2.50	H		0.181	22.58		
		16-QAM	-22.16	14.14	10.05	2.50	H		0.148	21.69		
		64-QAM	-23.73	12.57	10.05	2.50	H		0.103	20.12		
		256-QAM	-25.75	10.55	10.05	2.50	H		0.065	18.10		
2644.980		PI/2 BPSK	-21.94	14.87	10.00	2.66	H		0.166	22.21	1	1
		QPSK	-21.96	14.85	10.00	2.66	H		0.166	22.19		
		16-QAM	-23.01	13.80	10.00	2.66	H		0.130	21.14		
		64-QAM	-24.26	12.55	10.00	2.66	H		0.098	19.89		
		256-QAM	-26.39	10.42	10.00	2.66	H		0.060	17.76		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
2546.010	Sub6 41/ 100 MHz [30 kHz]	PI/2 BPSK	-21.49	14.88	10.25	2.54	H	< 2.00	0.182	22.59	1	136
		QPSK	-21.51	14.86	10.25	2.54	H		0.181	22.57		
		16-QAM	-22.46	13.91	10.25	2.54	H		0.145	21.62		
		64-QAM	-23.96	12.41	10.25	2.54	H		0.103	20.12		
		256-QAM	-25.95	10.42	10.25	2.54	H		0.065	18.13		
2592.990		PI/2 BPSK	-21.37	14.93	10.05	2.50	H		0.177	22.48	1	136
		QPSK	-21.39	14.91	10.05	2.50	H		0.176	22.46		
		16-QAM	-22.45	13.85	10.05	2.50	H		0.138	21.40		
		64-QAM	-23.94	12.36	10.05	2.50	H		0.098	19.91		
		256-QAM	-25.91	10.39	10.05	2.50	H		0.062	17.94		
2640.000		PI/2 BPSK	-21.57	15.38	9.90	2.67	H		0.182	22.61	1	1
		QPSK	-21.64	15.31	9.90	2.67	H		0.180	22.54		
		16-QAM	-22.62	14.33	9.90	2.67	H		0.143	21.56		
		64-QAM	-24.20	12.75	9.90	2.67	H		0.100	19.98		
		256-QAM	-26.11	10.84	9.90	2.67	H		0.064	18.07		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
500202 (2501.010)	5 002.02	-53.58	10.70	-54.93	3.63	H	-47.86	-25.00	Peak	1	12
	7 503.03	-52.78	11.10	-45.77	4.50	H	-39.17	-25.00	Peak		
	10 004.04	-53.96	11.20	-45.50	5.26	V	-39.56	-25.00	Peak		
	12 505.05	-54.17	12.10	-44.83	6.04	H	-38.77	-25.00	Peak		
	15 006.06	-56.09	13.80	-49.49	6.65	V	-42.34	-25.00	Peak		
518598 (2592.990)	5 185.98	-57.17	11.00	-58.67	3.70	V	-51.37	-25.00	Peak	1	1
	7 778.97	-57.44	10.90	-50.06	4.61	V	-43.77	-25.00	Peak		
	10 371.96	-50.16	11.20	-39.46	5.41	V	-33.67	-25.00	Average		
	12 964.95	-55.32	12.00	-45.39	6.11	H	-39.50	-25.00	Peak		
	15 557.94	-59.44	15.40	-54.11	6.77	H	-45.48	-25.00	Peak		
537000 (2685.000)	5 370.00	-60.36	11.50	-62.88	3.74	V	-55.12	-25.00	Peak	1	12
	8 055.00	-57.34	10.90	-50.13	4.71	H	-43.94	-25.00	Peak		
	10 740.00	-48.36	11.10	-37.76	5.50	V	-32.16	-25.00	Peak		
	13 425.00	-57.54	11.80	-46.69	6.22	H	-41.11	-25.00	Peak		
	16 110.00	-64.07	15.70	-54.93	6.91	V	-46.14	-25.00	Peak		

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
500700 (2503.500)	5 007.00	-56.80	10.70	-58.08	3.61	V	-50.99	-25.00	Peak	1	19
	7 510.50	-54.26	11.10	-47.19	4.50	H	-40.59	-25.00	Peak		
	10 014.00	-56.39	11.20	-47.78	5.27	V	-41.85	-25.00	Peak		
	12 517.50	-55.24	12.10	-45.61	6.04	H	-39.55	-25.00	Peak		
	15 021.00	-57.94	13.80	-51.46	6.65	V	-44.31	-25.00	Peak		
518598 (2592.990)	5 185.98	-56.89	11.00	-58.39	3.70	H	-51.09	-25.00	Peak	1	1
	7 778.97	-58.95	10.90	-51.57	4.61	V	-45.28	-25.00	Peak		
	10 371.96	-44.75	11.20	-34.05	5.41	V	-28.26	-25.00	Peak		
	12 964.95	-55.21	12.00	-45.28	6.11	H	-39.39	-25.00	Peak		
	15 557.94	-60.23	15.40	-54.90	6.77	V	-46.27	-25.00	Peak		
536496 (2682.480)	5 364.96	-60.64	11.50	-62.93	3.75	V	-55.18	-25.00	Peak	1	19
	8 047.44	-55.42	10.85	-48.24	4.69	H	-42.08	-25.00	Peak		
	10 729.92	-48.64	11.10	-37.41	5.47	V	-31.78	-25.00	Peak		
	13 412.40	-58.60	11.80	-47.93	6.21	H	-42.34	-25.00	Peak		
	16 094.88	-63.48	15.60	-54.02	6.91	V	-45.33	-25.00	Peak		

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
501204 (2506.020)	5 012.04	-55.42	10.70	-56.63	3.59	V	-49.52	-25.00	Peak	1	25
	7 518.06	-56.40	11.10	-49.29	4.51	V	-42.70	-25.00	Peak		
	10 024.08	-54.28	11.20	-45.46	5.27	V	-39.53	-25.00	Peak		
	12 530.10	-55.96	12.10	-46.14	6.01	H	-40.05	-25.00	Peak		
	15 036.12	-57.71	13.80	-51.47	6.65	H	-44.32	-25.00	Peak		
518598 (2592.990)	5 185.98	-57.88	11.00	-59.38	3.70	V	-52.08	-25.00	Peak	1	1
	7 778.97	-59.69	10.90	-52.31	4.61	V	-46.02	-25.00	Peak		
	10 371.96	-50.00	11.20	-39.30	5.41	V	-33.51	-25.00	Average		
	12 964.95	-57.34	12.00	-47.41	6.11	H	-41.52	-25.00	Peak		
	15 557.94	-61.05	15.40	-55.72	6.77	H	-47.09	-25.00	Peak		
535998 (2679.990)	5 359.98	-59.28	11.50	-61.34	3.76	V	-53.60	-25.00	Peak	1	25
	8 039.97	-55.62	10.80	-48.45	4.68	H	-42.33	-25.00	Peak		
	10 719.96	-49.16	11.10	-37.53	5.46	H	-31.89	-25.00	Peak		
	13 399.95	-57.08	11.80	-46.73	6.22	H	-41.15	-25.00	Peak		
	16 079.94	-63.56	15.50	-54.28	6.90	V	-45.68	-25.00	Peak		

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
502200 (2511.000)	5 022.00	-56.00	10.70	-57.53	3.55	V	-50.38	-25.00	Peak	1	39
	7 533.00	-57.46	11.10	-49.98	4.50	H	-43.38	-25.00	Peak		
	10 044.00	-52.73	11.15	-43.88	5.27	V	-38.00	-25.00	Peak		
	12 555.00	-55.61	12.10	-46.30	6.00	H	-40.20	-25.00	Peak		
	15 066.00	-56.28	14.00	-50.67	6.65	V	-43.32	-25.00	Peak		
518598 (2592.990)	5 185.98	-58.01	11.00	-59.51	3.70	H	-52.21	-25.00	Peak	1	1
	7 778.97	-60.65	10.90	-53.27	4.61	H	-46.98	-25.00	Peak		
	10 371.96	-49.01	11.20	-38.31	5.41	V	-32.52	-25.00	Average		
	12 964.95	-52.95	12.00	-43.02	6.11	H	-37.13	-25.00	Peak		
	15 557.94	-62.21	15.40	-56.88	6.77	V	-48.25	-25.00	Peak		
534996 (2674.980)	5 349.96	-59.17	11.50	-60.82	3.75	H	-53.07	-25.00	Peak	1	1
	8 024.94	-58.47	10.80	-51.76	4.62	H	-45.58	-25.00	Peak		
	10 699.92	-47.62	11.10	-35.94	5.48	V	-30.32	-25.00	Peak		
	13 374.90	-56.83	11.90	-46.77	6.23	H	-41.10	-25.00	Peak		
	16 049.88	-63.40	15.50	-54.55	6.90	H	-45.95	-25.00	Peak		

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
503202 (2516.010)	5 032.02	-57.64	10.70	-59.74	3.56	V	-52.60	-25.00	Peak	1	53
	7 548.03	-59.17	11.10	-51.83	4.50	H	-45.23	-25.00	Peak		
	10 064.04	-50.26	11.10	-41.45	5.28	V	-35.63	-25.00	Peak		
	12 580.05	-54.74	12.10	-45.11	6.06	H	-39.07	-25.00	Peak		
	15 096.06	-58.46	14.05	-53.13	6.67	H	-45.75	-25.00	Peak		
518598 (2592.990)	5 185.98	-58.21	11.00	-59.71	3.70	V	-52.41	-25.00	Peak	1	1
	7 778.97	-63.43	10.90	-56.05	4.61	V	-49.76	-25.00	Peak		
	10 371.96	-48.58	11.20	-37.88	5.41	V	-32.09	-25.00	Average		
	12 964.95	-54.61	12.00	-44.68	6.11	H	-38.79	-25.00	Peak		
	15 557.94	-61.43	15.40	-56.10	6.77	H	-47.47	-25.00	Peak		
534000 (2670.000)	5 340.00	-58.49	11.40	-60.19	3.75	V	-52.54	-25.00	Peak	1	1
	8 010.00	-58.00	10.80	-50.93	4.62	H	-44.75	-25.00	Peak		
	10 680.00	-47.72	11.10	-36.26	5.46	H	-30.62	-25.00	Peak		
	13 350.00	-58.29	11.90	-48.24	6.21	H	-42.55	-25.00	Peak		
	16 020.00	-63.19	15.20	-54.84	6.68	V	-46.32	-25.00	Peak		

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
504204 (2521.020)	5 042.04	-57.25	10.70	-59.22	3.60	H	-52.12	-25.00	Peak	1	66
	7 563.06	-58.07	11.10	-51.25	4.52	H	-44.67	-25.00	Peak		
	10 084.08	-50.07	11.10	-40.85	5.30	V	-35.05	-25.00	Peak		
	12 605.10	-58.01	12.00	-48.51	6.05	H	-42.56	-25.00	Peak		
	15 126.12	-58.78	14.10	-52.82	6.67	V	-45.39	-25.00	Peak		
518598 (2592.990)	5 185.98	-57.23	11.00	-58.73	3.70	V	-51.43	-25.00	Peak	1	1
	7 778.97	-62.89	10.90	-55.51	4.61	H	-49.22	-25.00	Peak		
	10 371.96	-48.01	11.20	-37.31	5.41	V	-31.52	-25.00	Average		
	12 964.95	-56.65	12.00	-46.72	6.11	H	-40.83	-25.00	Peak		
	15 557.94	-60.48	15.40	-55.15	6.77	H	-46.52	-25.00	Peak		
532998 (2664.990)	5 329.98	-60.24	11.40	-62.21	3.71	V	-54.52	-25.00	Peak	1	1
	7 994.97	-56.80	10.75	-49.39	4.66	H	-43.30	-25.00	Peak		
	10 659.96	-48.39	11.10	-36.23	5.49	H	-30.62	-25.00	Peak		
	13 324.95	-58.80	12.00	-48.09	6.19	H	-42.28	-25.00	Peak		
	15 989.94	-62.99	15.10	-55.17	6.88	V	-46.95	-25.00	Peak		

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
505200 (2526.000)	5 052.00	-56.55	10.70	-58.20	3.63	H	-51.13	-25.00	Peak	1	81
	7 578.00	-53.21	11.10	-46.42	4.54	H	-39.86	-25.00	Peak		
	10 104.00	-48.54	11.10	-39.70	5.29	V	-33.89	-25.00	Peak		
	12 630.00	-56.43	12.00	-47.20	6.02	H	-41.22	-25.00	Peak		
	15 156.00	-59.16	14.20	-53.67	6.67	H	-46.14	-25.00	Peak		
518598 (2592.990)	5 185.98	-56.87	11.00	-58.37	3.70	V	-51.07	-25.00	Peak	1	1
	7 778.97	-59.53	10.90	-52.15	4.61	H	-45.86	-25.00	Peak		
	10 371.96	-48.37	11.20	-37.67	5.41	V	-31.88	-25.00	Average		
	12 964.95	-56.80	12.00	-46.87	6.11	H	-40.98	-25.00	Peak		
	15 557.94	-61.20	15.40	-55.87	6.77	V	-47.24	-25.00	Peak		
531996 (2659.980)	5 319.96	-59.33	11.40	-62.07	3.66	H	-54.33	-25.00	Peak	1	1
	7 979.94	-58.16	10.70	-50.91	4.67	H	-44.88	-25.00	Peak		
	10 639.92	-46.35	11.20	-34.92	5.49	H	-29.21	-25.00	Peak		
	13 299.90	-58.53	12.00	-48.38	6.19	H	-42.57	-25.00	Peak		
	15 959.88	-62.55	15.10	-53.89	6.87	H	-45.66	-25.00	Peak		

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
507204 (2536.020)	5 072.04	-56.47	10.70	-57.75	3.62	V	-50.67	-25.00	Peak	1	108
	7 608.06	-55.77	11.20	-48.76	4.52	H	-42.08	-25.00	Peak		
	10 144.08	-47.66	11.05	-38.19	5.32	V	-32.46	-25.00	Peak		
	12 680.10	-59.05	11.90	-48.84	6.06	H	-43.00	-25.00	Peak		
	15 216.12	-60.08	14.40	-55.12	6.69	V	-47.41	-25.00	Peak		
518598 (2592.990)	5 185.98	-56.58	11.00	-58.08	3.70	H	-50.78	-25.00	Peak	1	1
	7 778.97	-58.45	10.90	-51.07	4.61	V	-44.78	-25.00	Peak		
	10 371.96	-45.29	11.20	-34.59	5.41	V	-28.80	-25.00	Peak		
	12 964.95	-58.16	12.00	-48.23	6.11	H	-42.34	-25.00	Peak		
	15 557.94	-61.72	15.40	-56.39	6.77	V	-47.76	-25.00	Peak		
529998 (2649.990)	5 299.98	-58.74	11.40	-60.85	3.69	V	-53.14	-25.00	Peak	1	1
	7 949.97	-59.75	10.70	-52.44	4.64	V	-46.38	-25.00	Peak		
	10 599.96	-47.43	11.20	-36.24	5.41	V	-30.45	-25.00	Peak		
	13 249.95	-57.06	12.10	-47.00	6.18	H	-41.08	-25.00	Peak		
	15 899.94	-63.58	15.00	-55.75	6.87	V	-47.62	-25.00	Peak		

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
508200 (2541.000)	5 082.00	-56.67	10.70	-58.31	3.61	V	-51.22	-25.00	Peak	1	122
	7 623.00	-55.69	11.20	-49.29	4.52	H	-42.61	-25.00	Peak		
	10 164.00	-46.56	11.00	-37.48	5.33	V	-31.81	-25.00	Peak		
	12 705.00	-57.97	11.90	-47.45	6.06	H	-41.61	-25.00	Peak		
	15 246.00	-59.26	14.50	-53.38	6.73	H	-45.61	-25.00	Peak		
518598 (2592.990)	5 185.98	-57.42	11.00	-58.92	3.70	V	-51.62	-25.00	Peak	1	1
	7 778.97	-61.69	10.90	-54.31	4.61	V	-48.02	-25.00	Peak		
	10 371.96	-46.05	11.20	-35.35	5.41	V	-29.56	-25.00	Peak		
	12 964.95	-58.47	12.00	-48.54	6.11	H	-42.65	-25.00	Peak		
	15 557.94	-60.93	15.40	-55.60	6.77	V	-46.97	-25.00	Peak		
528996 (2644.980)	5 289.96	-57.97	11.30	-59.44	3.73	H	-51.87	-25.00	Peak	1	1
	7 934.94	-62.50	10.70	-55.15	4.64	H	-49.09	-25.00	Peak		
	10 579.92	-48.09	11.20	-37.64	5.46	V	-31.90	-25.00	Peak		
	13 224.90	-57.93	12.10	-47.90	6.16	H	-41.96	-25.00	Peak		
	15 869.88	-62.96	14.90	-56.21	6.85	H	-48.16	-25.00	Peak		

▣ NR Band: N41

▣ Anchor Band: B66

▣ 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)	Detector	RB	
										Size	Offset
509202 (2546.010)	5 092.02	-58.32	10.70	-60.47	3.64	V	-53.41	-25.00	Peak	1	1
	7 638.03	-58.52	11.20	-52.13	4.53	H	-45.46	-25.00	Peak		
	10 184.04	-46.70	11.00	-37.24	5.33	H	-31.57	-25.00	Peak		
	12 730.05	-59.01	11.90	-48.56	6.02	H	-42.68	-25.00	Peak		
	15 276.06	-59.26	14.60	-53.39	6.71	H	-45.50	-25.00	Peak		
518598 (2592.990)	5 185.98	-57.62	11.00	-59.12	3.70	H	-51.82	-25.00	Peak	1	1
	7 778.97	-59.76	10.90	-52.38	4.61	V	-46.09	-25.00	Peak		
	10 371.96	-45.83	11.20	-35.13	5.41	V	-29.34	-25.00	Peak		
	12 964.95	-55.72	12.00	-45.79	6.11	H	-39.90	-25.00	Peak		
	15 557.94	-61.41	15.40	-56.08	6.77	H	-47.45	-25.00	Peak		
528000 (2640.000)	5 280.00	-56.48	11.30	-58.39	3.75	H	-50.84	-25.00	Peak	1	136
	7 920.00	-58.31	10.70	-51.13	4.63	V	-45.06	-25.00	Peak		
	10 560.00	-46.55	11.20	-36.64	5.45	V	-30.89	-25.00	Peak		
	13 200.00	-57.64	12.10	-47.20	6.19	H	-41.29	-25.00	Peak		
	15 840.00	-62.72	14.90	-55.61	6.84	H	-47.55	-25.00	Peak		

▣ ENDC-Mode : 66A(10 MHz)-n41A(15 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
132322 1745.0	3,490.00	-60.58	11.46	-61.89	3.05	V	-53.48	-13.00
	5,235.00	-61.11	11.57	-55.80	3.79	H	-48.02	-13.00
	6,980.00	-61.57	11.16	-49.34	4.51	V	-42.69	-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	4.49
			QPSK			5.77
			16-QAM			6.53
			64-QAM			6.84
			256-QAM			6.70
	15 MHz		BPSK	36		4.44
			QPSK			5.69
			16-QAM			6.52
			64-QAM			6.83
			256-QAM			6.80
	20 MHz		BPSK	50		4.79
			QPSK			5.76
			16-QAM			6.47
			64-QAM			6.72
			256-QAM			6.81
	30 MHz		BPSK	75		5.05
			QPSK			5.75
			16-QAM			6.54
			64-QAM			6.79
			256-QAM			6.72
	40 MHz		BPSK	100		4.55
			QPSK			5.80
			16-QAM			6.57
			64-QAM			6.68
			256-QAM			6.81
	50 MHz		BPSK	128		4.37
			QPSK			5.66
			16-QAM			6.53
			64-QAM			6.65
			256-QAM			6.70
	60 MHz		BPSK	162		5.41
			QPSK			5.78
			16-QAM			6.47
			64-QAM			6.73
			256-QAM			6.69
	80 MHz		BPSK	216		4.27
			QPSK			5.56
			16-QAM			6.39
			64-QAM			6.56
			256-QAM			6.72
	90 MHz		BPSK	243		4.33
			QPSK			5.53
			16-QAM			6.39
			64-QAM			6.60
			256-QAM			6.73
	100 MHz		BPSK	270		4.22
			QPSK			5.51
			16-QAM			6.49
			64-QAM			6.60
			256-QAM			6.73

Note:
1. Plots of the EUT's Peak- to- Average Ratio are shown Page 114 ~ 163.

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	8.7030
			QPSK			8.6887
			16-QAM			8.6757
			64-QAM			8.6805
			256-QAM			8.7298
	15 MHz		BPSK	36		13.000
			QPSK			12.989
			16-QAM			13.014
			64-QAM			12.981
			256-QAM			12.930
	20 MHz		BPSK	50		18.093
			QPSK			17.949
			16-QAM			17.969
			64-QAM			18.030
			256-QAM			17.964
	30 MHz		BPSK	75		26.902
			QPSK			26.986
			16-QAM			26.938
			64-QAM			27.060
			256-QAM			26.913
	40 MHz		BPSK	100		35.955
			QPSK			35.928
			16-QAM			35.897
			64-QAM			36.002
			256-QAM			35.820
	50 MHz		BPSK	128		45.875
			QPSK			45.952
			16-QAM			46.022
			64-QAM			45.901
			256-QAM			46.426
	60 MHz		BPSK	162		58.141
			QPSK			58.219
			16-QAM			58.037
			64-QAM			57.976
			256-QAM			58.045
	80 MHz		BPSK	216		77.521
			QPSK			77.439
			16-QAM			77.353
			64-QAM			77.535
			256-QAM			77.502
	90 MHz		BPSK	243		87.140
			QPSK			87.126
			16-QAM			87.303
			64-QAM			87.223
			256-QAM			87.057
	100 MHz		BPSK	270		96.940
			QPSK			96.615
			16-QAM			96.522
			64-QAM			96.639
			256-QAM			96.759

Note:
1. Plots of the EUT's Occupied Bandwidth are shown Page 64 ~ 113.

8.5 CONDUCTED SPURIOUS EMISSIONS

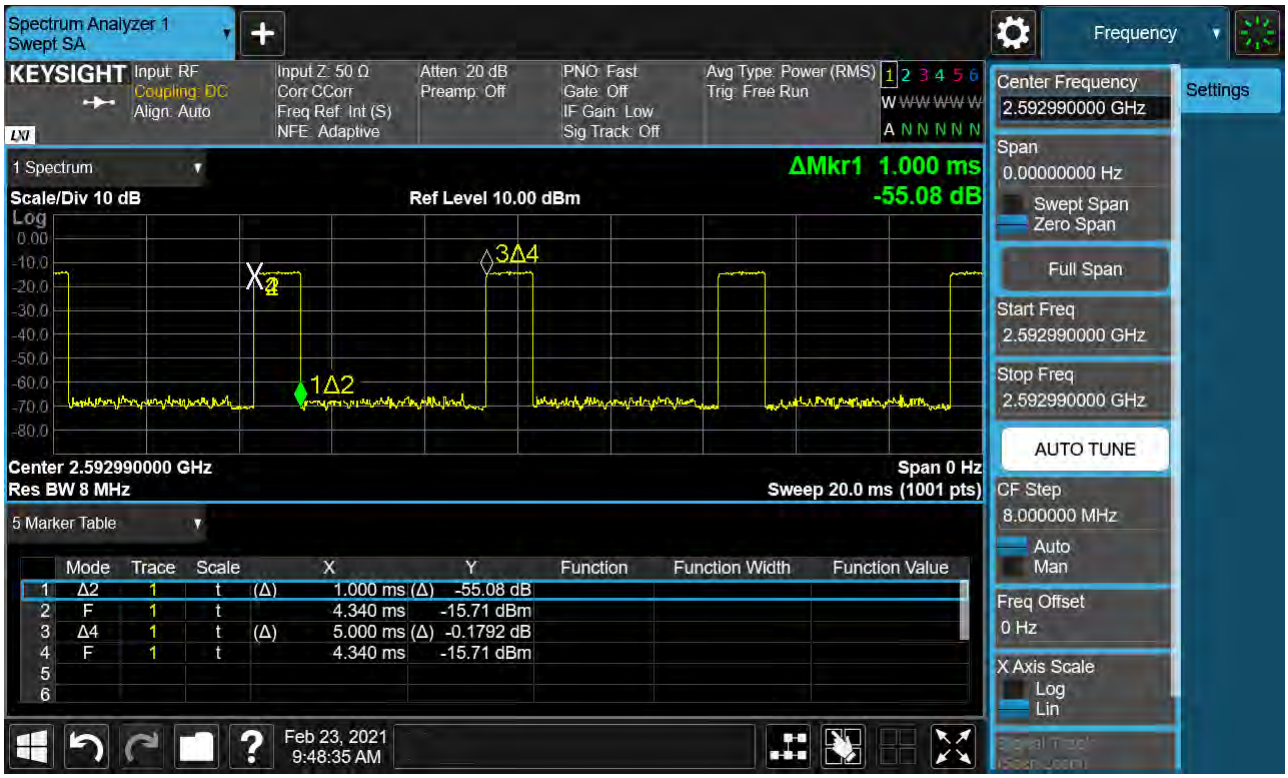
Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n41	10	2501.010	9.1231	37.805	-71.345	-33.540	-25.00
		2592.990	9.1521	37.805	-70.261	-32.456	
		2685.000	8.8350	37.805	-69.348	-31.543	
	15	2503.500	8.0175	37.805	-70.382	-32.577	
		2592.990	8.2802	37.805	-70.113	-32.308	
		2682.480	9.3903	37.805	-70.612	-32.807	
	20	2506.020	3.8216	37.190	-69.492	-32.302	
		2592.990	8.2906	37.805	-70.430	-32.625	
		2679.990	3.7254	37.190	-70.784	-33.594	
	30	2511.000	8.6441	37.805	-70.531	-32.726	
		2592.990	9.4641	37.805	-70.871	-33.066	
		2674.980	9.1894	37.805	-70.949	-33.144	
	40	2516.010	9.7273	37.805	-70.346	-32.541	
		2592.990	3.9996	37.190	-70.043	-32.853	
		2670.000	9.1526	37.805	-70.913	-33.108	
	50	2521.020	9.1685	37.805	-71.125	-33.320	
		2592.990	7.4472	37.805	-71.028	-33.223	
		2664.990	8.2926	37.805	-70.117	-32.312	
	60	2526.000	3.7568	37.190	-70.211	-33.021	
		2592.990	5.4946	37.805	-70.088	-32.283	
		2659.980	9.1446	37.805	-69.978	-32.173	
	80	2536.020	9.9826	37.805	-69.970	-32.165	
		2592.990	9.9731	37.805	-70.047	-32.242	
		2649.990	3.7787	37.190	-69.877	-32.687	
	90	2541.000	8.2956	37.805	-70.933	-33.128	
		2592.990	9.1032	37.805	-70.989	-33.184	
		2644.980	8.2702	37.805	-70.547	-32.742	
	100	2546.010	9.4322	37.805	-70.925	-33.120	
		2592.990	3.7817	37.190	-71.022	-33.832	
		2640.000	4.9133	37.190	-70.266	-33.076	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 234 ~ 293.

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	-23.75	-22.26	-23.59	-23.25	-27.16	-26.06	-33.41
15	2503.500	BPSK	Full RB	-22.54	-28.53	-25.46	-26.48	-26.09	-25.91	-38.00
20	2506.020	BPSK	Full RB	-24.19	-26.67	-26.46	-26.87	-26.36	-26.45	-35.98
30	2511.000	BPSK	Full RB	-23.96	-29.65	-27.36	-30.60	-28.95	-28.52	-39.71
40	2520.000	BPSK	Full RB	-23.36	-31.33	-26.76	-30.66	-26.29	-28.00	-40.48
50	2525.010	BPSK	Full RB	-20.86	-29.82	-25.80	-31.03	-30.69	-31.12	-40.51
60	2530.020	BPSK	Full RB	-17.42	-19.21	-24.44	-26.82	-27.88	-31.05	-41.34
80	2540.010	BPSK	Full RB	-21.30	-21.09	-25.61	-26.78	-29.25	-31.37	-41.99
90	2545.020	BPSK	Full RB	-20.53	-26.15	-25.38	-29.30	-28.47	-32.53	-40.72
100	2550.000	BPSK	Full RB	-20.00	-27.18	-26.17	-30.47	-29.53	-33.18	-44.51
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	-22.35	-21.61	-22.86	-23.30
	2685.000	BPSK	Full RB	0	-21.94	-22.08	-20.96	-21.89
15 MHz	2592.990	BPSK	Full RB	0	-22.30	-27.71	-24.21	-24.68
	2682.480	BPSK	Full RB	0	-21.02	-25.71	-22.81	-23.95
20 MHz	2592.990	BPSK	Full RB	0	-22.85	-26.38	-24.52	-26.18
	2679.990	BPSK	Full RB	0	-22.23	-24.03	-22.99	-24.76
30 MHz	2592.990	BPSK	Full RB	0	-23.55	-28.53	-25.64	-27.81
	2679.990	BPSK	Full RB	0	-21.01	-26.75	-23.39	-27.80
40 MHz	2592.990	BPSK	Full RB	0	-22.91	-30.33	-26.24	-30.46
	2670.000	BPSK	Full RB	0	-21.59	-27.16	-23.89	-27.97
50 MHz	2592.990	BPSK	Full RB	0	-21.58	-29.07	-26.10	-31.42
	2664.990	BPSK	Full RB	0	-19.99	-26.49	-23.24	-28.41
60 MHz	2592.990	BPSK	Full RB	0	-18.00	-19.06	-25.33	-26.18
	2659.980	BPSK	Full RB	0	-16.70	-18.24	-22.25	-24.11
80 MHz	2592.990	BPSK	Full RB	0	-21.43	-25.94	-26.06	-29.83
	2649.990	BPSK	Full RB	0	-19.78	-25.24	-23.42	-28.43
90 MHz	2592.990	BPSK	Full RB	0	-21.23	-27.42	-25.16	-30.87
	2644.980	BPSK	Full RB	0	-19.47	-26.77	-23.63	-29.52
100 MHz	2592.990	BPSK	Full RB	0	-21.59	-27.74	-27.03	-29.26
	2640.000	BPSK	Full RB	0	-18.72	-26.84	-24.57	-30.22
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	-25.80	-26.92	-34.32	-36.17
	2685.000	BPSK	Full RB	0	-23.29	-23.94	-33.94	-35.21
15 MHz	2592.990	BPSK	Full RB	0	-23.27	-24.54	-37.19	-38.01
	2682.480	BPSK	Full RB	0	-21.95	-24.32	-37.17	-36.80
20 MHz	2592.990	BPSK	Full RB	0	-24.27	-25.26	-38.75	-38.08
	2679.990	BPSK	Full RB	0	-22.95	-24.79	-35.82	-39.63
30 MHz	2592.990	BPSK	Full RB	0	-26.38	-28.06	-38.02	-38.68
	2679.990	BPSK	Full RB	0	-23.91	-27.80	-38.86	-43.10
40 MHz	2592.990	BPSK	Full RB	0	-27.65	-29.45	-41.13	-42.92
	2670.000	BPSK	Full RB	0	-24.14	-28.86	-36.74	-44.06
50 MHz	2592.990	BPSK	Full RB	0	-28.34	-31.34	-39.78	-41.94
	2664.990	BPSK	Full RB	0	-24.25	-31.67	-38.83	-47.26
60 MHz	2592.990	BPSK	Full RB	0	-26.21	-32.20	-36.48	-39.01
	2659.980	BPSK	Full RB	0	-20.68	-27.90	-39.96	-47.77
80 MHz	2592.990	BPSK	Full RB	0	-26.45	-31.13	-47.68	-44.15
	2649.990	BPSK	Full RB	0	-23.61	-29.72	-42.06	-47.80
90 MHz	2592.990	BPSK	Full RB	0	-27.49	-34.55	-47.90	-46.00
	2644.980	BPSK	Full RB	0	-25.03	-31.35	-41.59	-47.83
100 MHz	2592.990	BPSK	Full RB	0	-27.63	-34.16	-48.25	-47.97
	2640.000	BPSK	Full RB	0	-27.01	-33.45	-41.12	-48.02
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 164 ~ 233. (1RB & Full RB)

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2501.010	100 %	+20(Ref)	2501 009 987	0.0	0.000 000	0.000
	100 %	-30	2501 009 972	-15.9	-0.000 001	-0.006
	100 %	-20	2501 009 972	-15.0	-0.000 001	-0.006
	100 %	-10	2501 009 972	-15.2	-0.000 001	-0.006
	100 %	0	2501 009 972	-15.9	-0.000 001	-0.006
	100 %	+10	2501 009 970	-17.5	-0.000 001	-0.007
	100 %	+30	2501 009 971	-16.6	-0.000 001	-0.007
	100 %	+40	2501 009 969	-18.3	-0.000 001	-0.007
	100 %	+50	2501 009 970	-17.6	-0.000 001	-0.007
	Batt. Endpoint	+20	2501 009 972	-15.2	-0.000 001	-0.006
2685.000	100 %	+20(Ref)	2684 999 981	0.0	0.000 000	0.000
	100 %	-30	2684 999 963	-18.3	-0.000 001	-0.007
	100 %	-20	2684 999 960	-20.8	-0.000 001	-0.008
	100 %	-10	2684 999 962	-19.1	-0.000 001	-0.007
	100 %	0	2684 999 964	-17.7	-0.000 001	-0.007
	100 %	+10	2684 999 965	-16.4	-0.000 001	-0.006
	100 %	+30	2684 999 960	-20.9	-0.000 001	-0.008
	100 %	+40	2684 999 962	-19.3	-0.000 001	-0.007
	100 %	+50	2684 999 964	-17.2	-0.000 001	-0.006
	Batt. Endpoint	+20	2684 999 962	-19.3	-0.000 001	-0.007

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2503.500	100 %	+20(Ref)	2503 499 985	0.0	0.000 000	0.000
	100 %	-30	2503 499 970	-15.6	-0.000 001	-0.006
	100 %	-20	2503 499 969	-16.5	-0.000 001	-0.007
	100 %	-10	2503 499 969	-16.4	-0.000 001	-0.007
	100 %	0	2503 499 970	-15.6	-0.000 001	-0.006
	100 %	+10	2503 499 969	-16.1	-0.000 001	-0.006
	100 %	+30	2503 499 968	-17.2	-0.000 001	-0.007
	100 %	+40	2503 499 971	-14.7	-0.000 001	-0.006
	100 %	+50	2503 499 968	-17.9	-0.000 001	-0.007
	Batt. Endpoint	+20	2503 499 970	-15.0	-0.000 001	-0.006
2682.480	100 %	+20(Ref)	2682 479 982	0.0	0.000 000	0.000
	100 %	-30	2682 479 963	-19.1	-0.000 001	-0.007
	100 %	-20	2682 479 963	-18.1	-0.000 001	-0.007
	100 %	-10	2682 479 962	-19.9	-0.000 001	-0.007
	100 %	0	2682 479 960	-21.3	-0.000 001	-0.008
	100 %	+10	2682 479 960	-21.8	-0.000 001	-0.008
	100 %	+30	2682 479 962	-19.7	-0.000 001	-0.007
	100 %	+40	2682 479 962	-19.7	-0.000 001	-0.007
	100 %	+50	2682 479 962	-19.9	-0.000 001	-0.007
	Batt. Endpoint	+20	2682 479 961	-20.3	-0.000 001	-0.008

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2506.020	100 %	+20(Ref)	2506 019 984	0.0	0.000 000	0.000
	100 %	-30	2506 019 969	-15.0	-0.000 001	-0.006
	100 %	-20	2506 019 968	-15.9	-0.000 001	-0.006
	100 %	-10	2506 019 967	-17.1	-0.000 001	-0.007
	100 %	0	2506 019 969	-14.7	-0.000 001	-0.006
	100 %	+10	2506 019 968	-16.2	-0.000 001	-0.006
	100 %	+30	2506 019 967	-17.1	-0.000 001	-0.007
	100 %	+40	2506 019 968	-16.5	-0.000 001	-0.007
	100 %	+50	2506 019 967	-17.0	-0.000 001	-0.007
	Batt. Endpoint	+20	2506 019 971	-13.5	-0.000 001	-0.005
2679.990	100 %	+20(Ref)	2679 989 981	0.0	0.000 000	0.000
	100 %	-30	2679 989 961	-19.8	-0.000 001	-0.007
	100 %	-20	2679 989 962	-19.2	-0.000 001	-0.007
	100 %	-10	2679 989 960	-21.2	-0.000 001	-0.008
	100 %	0	2679 989 960	-20.8	-0.000 001	-0.008
	100 %	+10	2679 989 961	-19.9	-0.000 001	-0.007
	100 %	+30	2679 989 962	-18.9	-0.000 001	-0.007
	100 %	+40	2679 989 961	-20.6	-0.000 001	-0.008
	100 %	+50	2679 989 962	-19.6	-0.000 001	-0.007
	Batt. Endpoint	+20	2679 989 965	-16.6	-0.000 001	-0.006

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2511.000	100 %	+20(Ref)	2510 999 984	0.0	0.000 000	0.000
	100 %	-30	2510 999 967	-17.8	-0.000 001	-0.007
	100 %	-20	2510 999 969	-15.7	-0.000 001	-0.006
	100 %	-10	2510 999 968	-16.7	-0.000 001	-0.007
	100 %	0	2510 999 967	-17.2	-0.000 001	-0.007
	100 %	+10	2510 999 968	-16.0	-0.000 001	-0.006
	100 %	+30	2510 999 966	-18.2	-0.000 001	-0.007
	100 %	+40	2510 999 969	-15.9	-0.000 001	-0.006
	100 %	+50	2510 999 970	-14.9	-0.000 001	-0.006
	Batt. Endpoint	+20	2510 999 969	-15.1	-0.000 001	-0.006
2674.980	100 %	+20(Ref)	2674 979 982	0.0	0.000 000	0.000
	100 %	-30	2674 979 963	-18.6	-0.000 001	-0.007
	100 %	-20	2674 979 964	-17.3	-0.000 001	-0.006
	100 %	-10	2674 979 964	-17.6	-0.000 001	-0.007
	100 %	0	2674 979 962	-19.1	-0.000 001	-0.007
	100 %	+10	2674 979 965	-17.0	-0.000 001	-0.006
	100 %	+30	2674 979 962	-19.4	-0.000 001	-0.007
	100 %	+40	2674 979 962	-19.1	-0.000 001	-0.007
	100 %	+50	2674 979 963	-18.3	-0.000 001	-0.007
	Batt. Endpoint	+20	2674 979 962	-19.5	-0.000 001	-0.007

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2516.010	100 %	+20(Ref)	2516 009 983	0.0	0.000 000	0.000
	100 %	-30	2516 009 966	-16.9	-0.000 001	-0.007
	100 %	-20	2516 009 966	-17.5	-0.000 001	-0.007
	100 %	-10	2516 009 969	-14.8	-0.000 001	-0.006
	100 %	0	2516 009 965	-18.7	-0.000 001	-0.007
	100 %	+10	2516 009 967	-15.9	-0.000 001	-0.006
	100 %	+30	2516 009 965	-17.9	-0.000 001	-0.007
	100 %	+40	2516 009 969	-14.0	-0.000 001	-0.006
	100 %	+50	2516 009 966	-17.0	-0.000 001	-0.007
	Batt. Endpoint	+20	2516 009 966	-17.2	-0.000 001	-0.007
2670.000	100 %	+20(Ref)	2669 999 984	0.0	0.000 000	0.000
	100 %	-30	2669 999 965	-18.8	-0.000 001	-0.007
	100 %	-20	2669 999 966	-17.5	-0.000 001	-0.007
	100 %	-10	2669 999 965	-18.1	-0.000 001	-0.007
	100 %	0	2669 999 965	-18.0	-0.000 001	-0.007
	100 %	+10	2669 999 966	-17.7	-0.000 001	-0.007
	100 %	+30	2669 999 965	-18.9	-0.000 001	-0.007
	100 %	+40	2669 999 964	-19.1	-0.000 001	-0.007
	100 %	+50	2669 999 967	-16.7	-0.000 001	-0.006
	Batt. Endpoint	+20	2669 999 967	-16.2	-0.000 001	-0.006

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2521.020	100 %	+20(Ref)	2521 019 983	0.0	0.000 000	0.000
	100 %	-30	2521 019 966	-17.0	-0.000 001	-0.007
	100 %	-20	2521 019 968	-15.0	-0.000 001	-0.006
	100 %	-10	2521 019 966	-17.4	-0.000 001	-0.007
	100 %	0	2521 019 968	-15.5	-0.000 001	-0.006
	100 %	+10	2521 019 968	-15.5	-0.000 001	-0.006
	100 %	+30	2521 019 968	-15.4	-0.000 001	-0.006
	100 %	+40	2521 019 965	-18.3	-0.000 001	-0.007
	100 %	+50	2521 019 967	-16.9	-0.000 001	-0.007
	Batt. Endpoint	+20	2521 019 968	-15.5	-0.000 001	-0.006
2664.990	100 %	+20(Ref)	2664 989 982	0.0	0.000 000	0.000
	100 %	-30	2664 989 963	-19.1	-0.000 001	-0.007
	100 %	-20	2664 989 964	-17.6	-0.000 001	-0.007
	100 %	-10	2664 989 964	-18.2	-0.000 001	-0.007
	100 %	0	2664 989 962	-19.6	-0.000 001	-0.007
	100 %	+10	2664 989 963	-18.4	-0.000 001	-0.007
	100 %	+30	2664 989 963	-19.2	-0.000 001	-0.007
	100 %	+40	2664 989 963	-19.1	-0.000 001	-0.007
	100 %	+50	2664 989 963	-19.0	-0.000 001	-0.007
	Batt. Endpoint	+20	2664 989 962	-19.3	-0.000 001	-0.007

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2526.000	100 %	+20(Ref)	2525 999 983	0.0	0.000 000	0.000
	100 %	-30	2525 999 967	-15.8	-0.000 001	-0.006
	100 %	-20	2525 999 968	-15.0	-0.000 001	-0.006
	100 %	-10	2525 999 967	-15.9	-0.000 001	-0.006
	100 %	0	2525 999 967	-15.3	-0.000 001	-0.006
	100 %	+10	2525 999 966	-16.9	-0.000 001	-0.007
	100 %	+30	2525 999 965	-17.3	-0.000 001	-0.007
	100 %	+40	2525 999 964	-18.2	-0.000 001	-0.007
	100 %	+50	2525 999 964	-18.2	-0.000 001	-0.007
	Batt. Endpoint	+20	2525 999 966	-17.0	-0.000 001	-0.007
2659.980	100 %	+20(Ref)	2659 979 984	0.0	0.000 000	0.000
	100 %	-30	2659 979 967	-17.1	-0.000 001	-0.006
	100 %	-20	2659 979 967	-17.1	-0.000 001	-0.006
	100 %	-10	2659 979 968	-15.3	-0.000 001	-0.006
	100 %	0	2659 979 968	-15.8	-0.000 001	-0.006
	100 %	+10	2659 979 968	-15.8	-0.000 001	-0.006
	100 %	+30	2659 979 969	-14.6	-0.000 001	-0.005
	100 %	+40	2659 979 967	-16.3	-0.000 001	-0.006
	100 %	+50	2659 979 965	-18.4	-0.000 001	-0.007
	Batt. Endpoint	+20	2659 979 967	-16.7	-0.000 001	-0.006

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2536.020	100 %	+20(Ref)	2536 019 985	0.0	0.000 000	0.000
	100 %	-30	2536 019 969	-16.2	-0.000 001	-0.006
	100 %	-20	2536 019 970	-15.0	-0.000 001	-0.006
	100 %	-10	2536 019 970	-15.3	-0.000 001	-0.006
	100 %	0	2536 019 971	-14.1	-0.000 001	-0.006
	100 %	+10	2536 019 968	-16.9	-0.000 001	-0.007
	100 %	+30	2536 019 971	-13.6	-0.000 001	-0.005
	100 %	+40	2536 019 970	-15.1	-0.000 001	-0.006
	100 %	+50	2536 019 970	-14.6	-0.000 001	-0.006
	Batt. Endpoint	+20	2536 019 970	-14.6	-0.000 001	-0.006
2649.990	100 %	+20(Ref)	2649 989 986	0.0	0.000 000	0.000
	100 %	-30	2649 989 972	-14.6	-0.000 001	-0.005
	100 %	-20	2649 989 971	-15.6	-0.000 001	-0.006
	100 %	-10	2649 989 971	-15.8	-0.000 001	-0.006
	100 %	0	2649 989 970	-16.5	-0.000 001	-0.006
	100 %	+10	2649 989 970	-16.5	-0.000 001	-0.006
	100 %	+30	2649 989 970	-16.2	-0.000 001	-0.006
	100 %	+40	2649 989 971	-15.0	-0.000 001	-0.006
	100 %	+50	2649 989 970	-16.0	-0.000 001	-0.006
	Batt. Endpoint	+20	2649 989 971	-15.9	-0.000 001	-0.006

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2541.000	100 %	+20(Ref)	2540 999 982	0.0	0.000 000	0.000
	100 %	-30	2540 999 963	-18.5	-0.000 001	-0.007
	100 %	-20	2540 999 965	-16.1	-0.000 001	-0.006
	100 %	-10	2540 999 964	-17.6	-0.000 001	-0.007
	100 %	0	2540 999 965	-16.6	-0.000 001	-0.007
	100 %	+10	2540 999 964	-17.1	-0.000 001	-0.007
	100 %	+30	2540 999 966	-16.0	-0.000 001	-0.006
	100 %	+40	2540 999 963	-18.6	-0.000 001	-0.007
	100 %	+50	2540 999 963	-18.6	-0.000 001	-0.007
	Batt. Endpoint	+20	2540 999 963	-18.6	-0.000 001	-0.007
2644.980	100 %	+20(Ref)	2644 979 985	0.0	0.000 000	0.000
	100 %	-30	2644 979 969	-16.6	-0.000 001	-0.006
	100 %	-20	2644 979 969	-16.0	-0.000 001	-0.006
	100 %	-10	2644 979 972	-13.6	-0.000 001	-0.005
	100 %	0	2644 979 969	-16.3	-0.000 001	-0.006
	100 %	+10	2644 979 969	-16.2	-0.000 001	-0.006
	100 %	+30	2644 979 969	-16.2	-0.000 001	-0.006
	100 %	+40	2644 979 969	-16.4	-0.000 001	-0.006
	100 %	+50	2644 979 971	-14.0	-0.000 001	-0.005
	Batt. Endpoint	+20	2644 979 971	-14.5	-0.000 001	-0.005

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2546.010	100 %	+20(Ref)	2546 009 983	0.0	0.000 000	0.000
	100 %	-30	2546 009 965	-17.5	-0.000 001	-0.007
	100 %	-20	2546 009 969	-14.3	-0.000 001	-0.006
	100 %	-10	2546 009 967	-16.0	-0.000 001	-0.006
	100 %	0	2546 009 967	-16.0	-0.000 001	-0.006
	100 %	+10	2546 009 966	-16.6	-0.000 001	-0.007
	100 %	+30	2546 009 967	-16.2	-0.000 001	-0.006
	100 %	+40	2546 009 966	-17.3	-0.000 001	-0.007
	100 %	+50	2546 009 966	-17.1	-0.000 001	-0.007
	Batt. Endpoint	+20	2546 009 965	-17.8	-0.000 001	-0.007
2640.000	100 %	+20(Ref)	2639 999 985	0.0	0.000 000	0.000
	100 %	-30	2639 999 968	-16.6	-0.000 001	-0.006
	100 %	-20	2639 999 967	-17.8	-0.000 001	-0.007
	100 %	-10	2639 999 970	-15.5	-0.000 001	-0.006
	100 %	0	2639 999 967	-17.9	-0.000 001	-0.007
	100 %	+10	2639 999 967	-17.6	-0.000 001	-0.007
	100 %	+30	2639 999 967	-17.8	-0.000 001	-0.007
	100 %	+40	2639 999 967	-17.8	-0.000 001	-0.007
	100 %	+50	2639 999 969	-15.9	-0.000 001	-0.006
	Batt. Endpoint	+20	2639 999 968	-16.9	-0.000 001	-0.006

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 (80 MHz Ch.518598 BPSK)

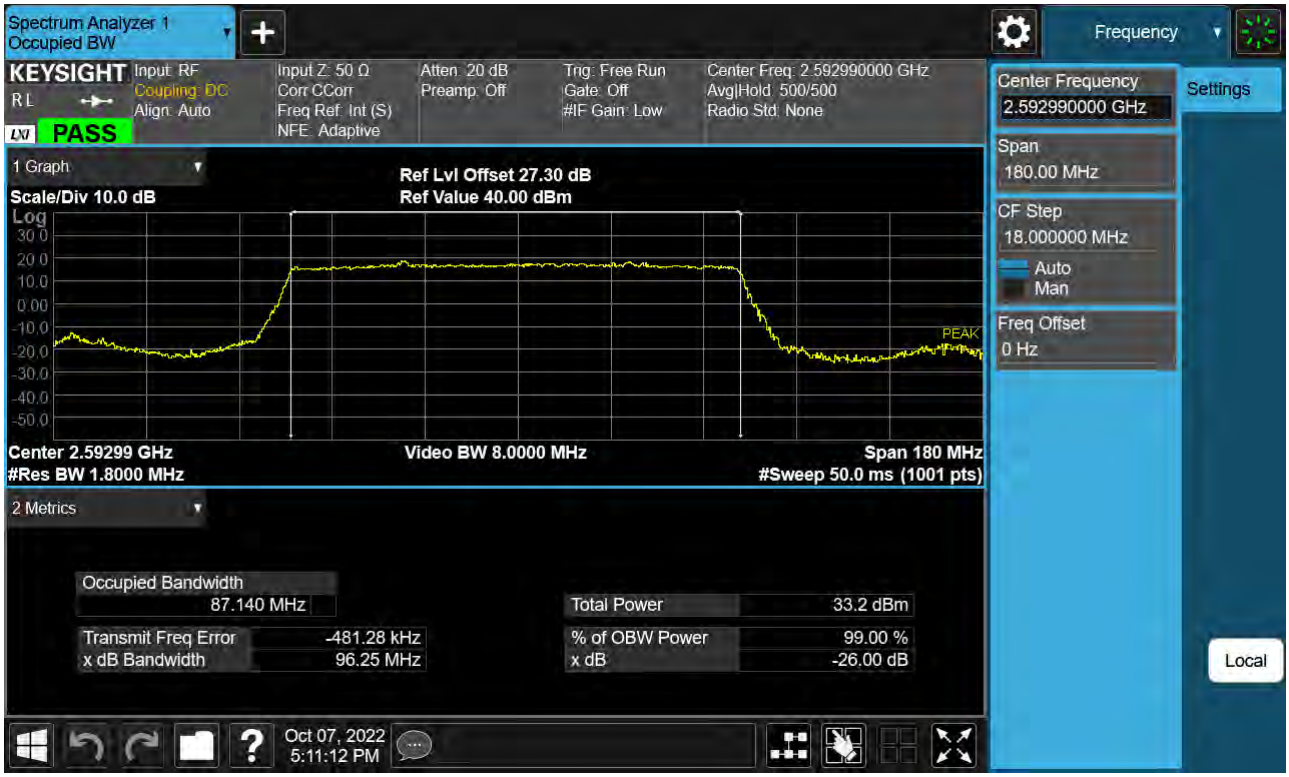
Sub6 n41. Occupied Bandwidth Plot (80 MHz Ch.518598 QPSK)

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)

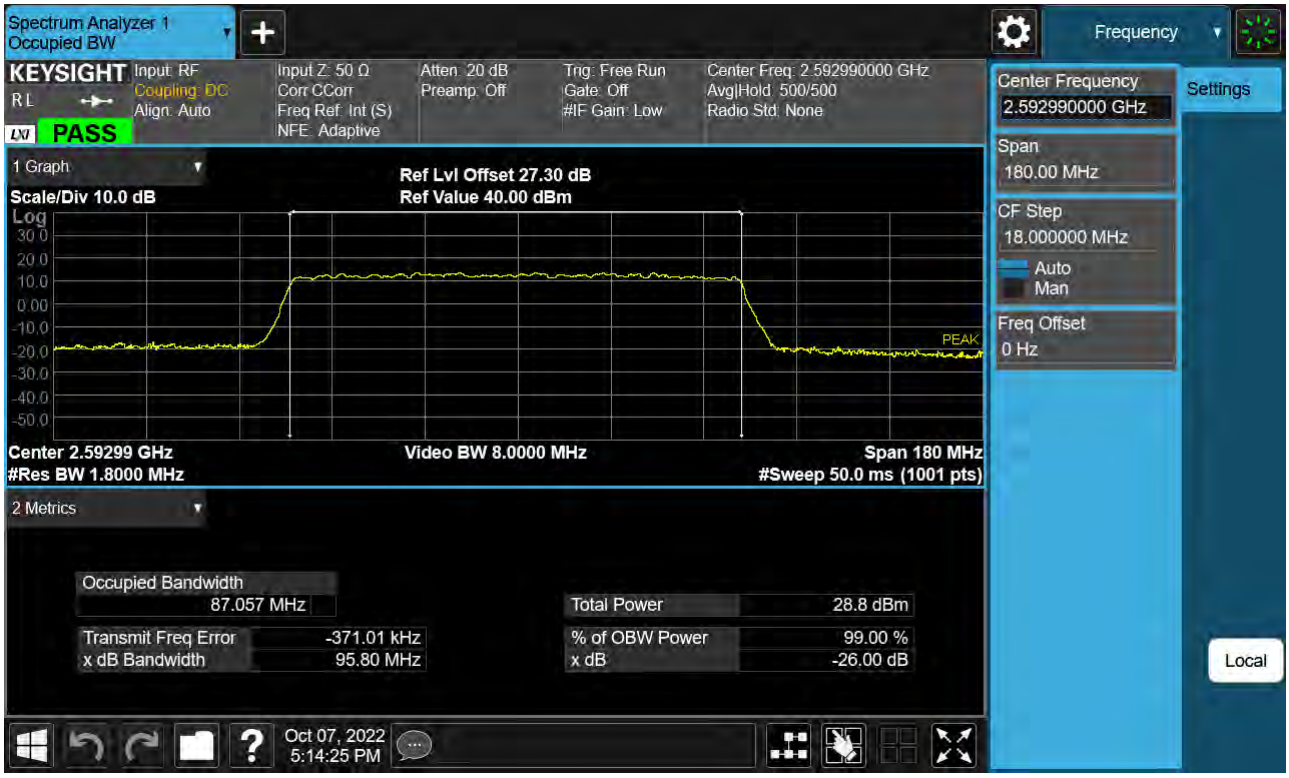


Sub6 n41. Occupied Bandwidth Plot (90 MHz Ch.518598 QPSK)

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)

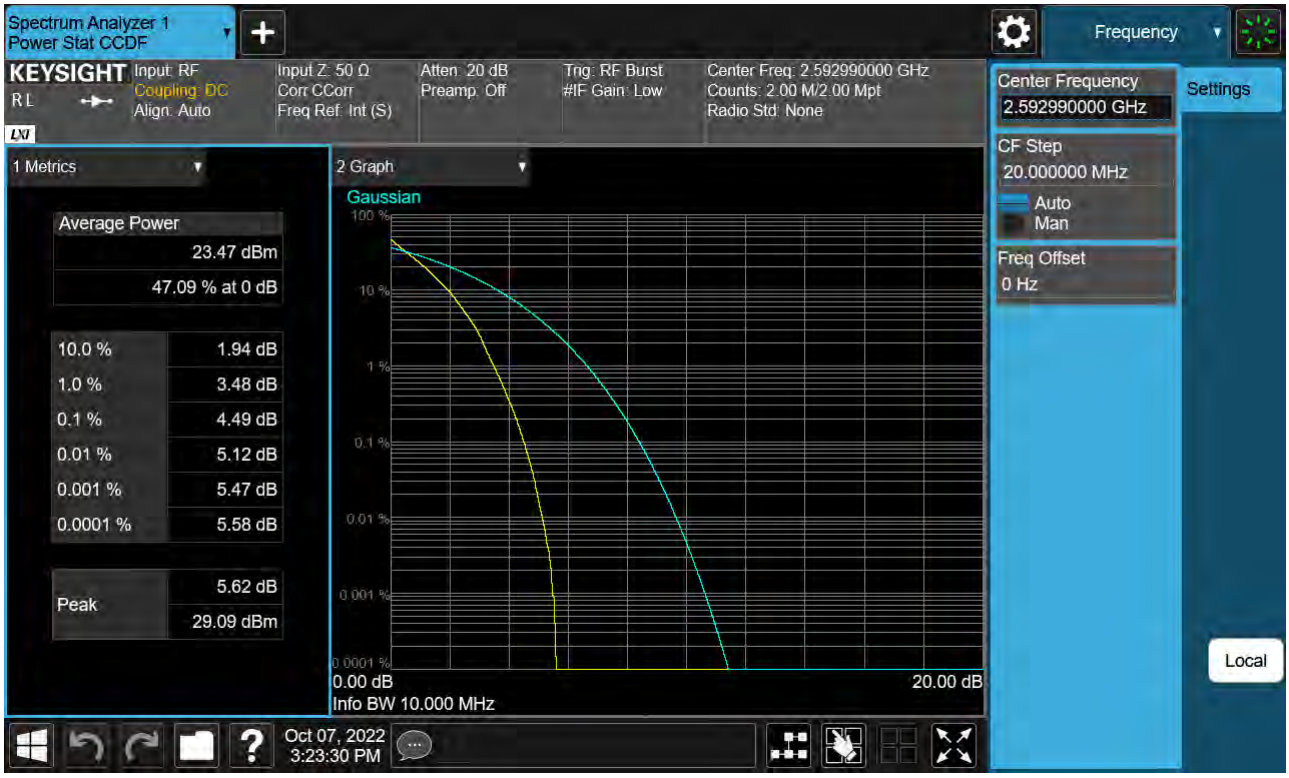
Sub6 n41. Occupied Bandwidth Plot (100 MHz Ch.518598 QPSK)

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

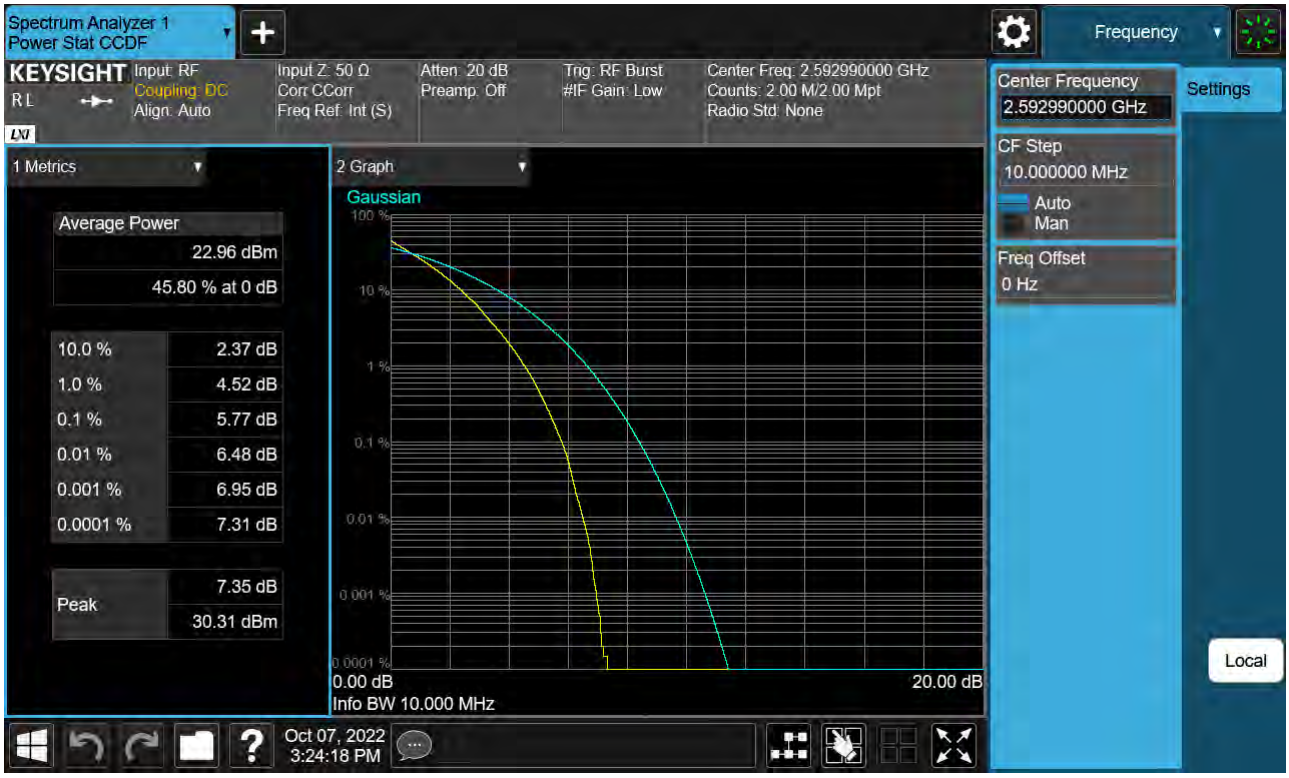
Sub6 n41. Occupied Bandwidth Plot (100 MHz Ch.518598 64-QAM)

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)

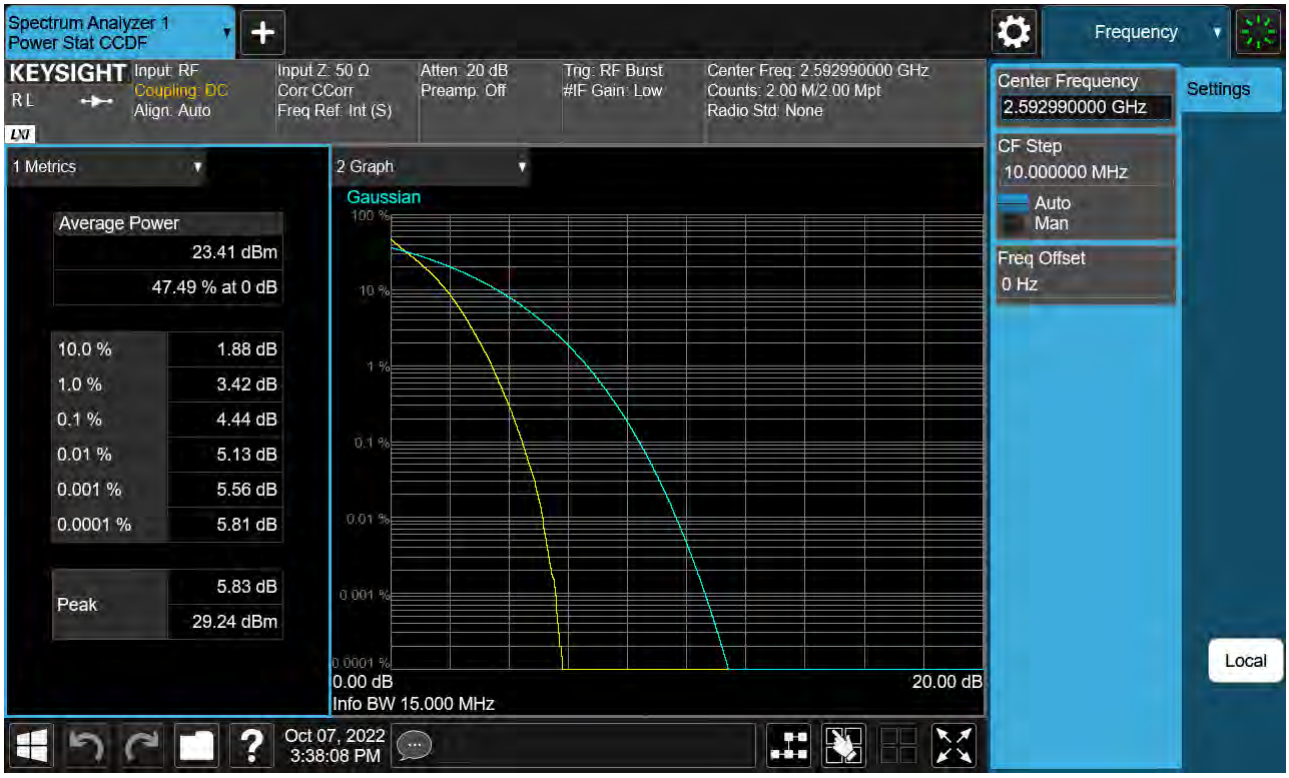


Sub6 n41. PAR Plot (10 M BW_Ch.518598_16QAM)

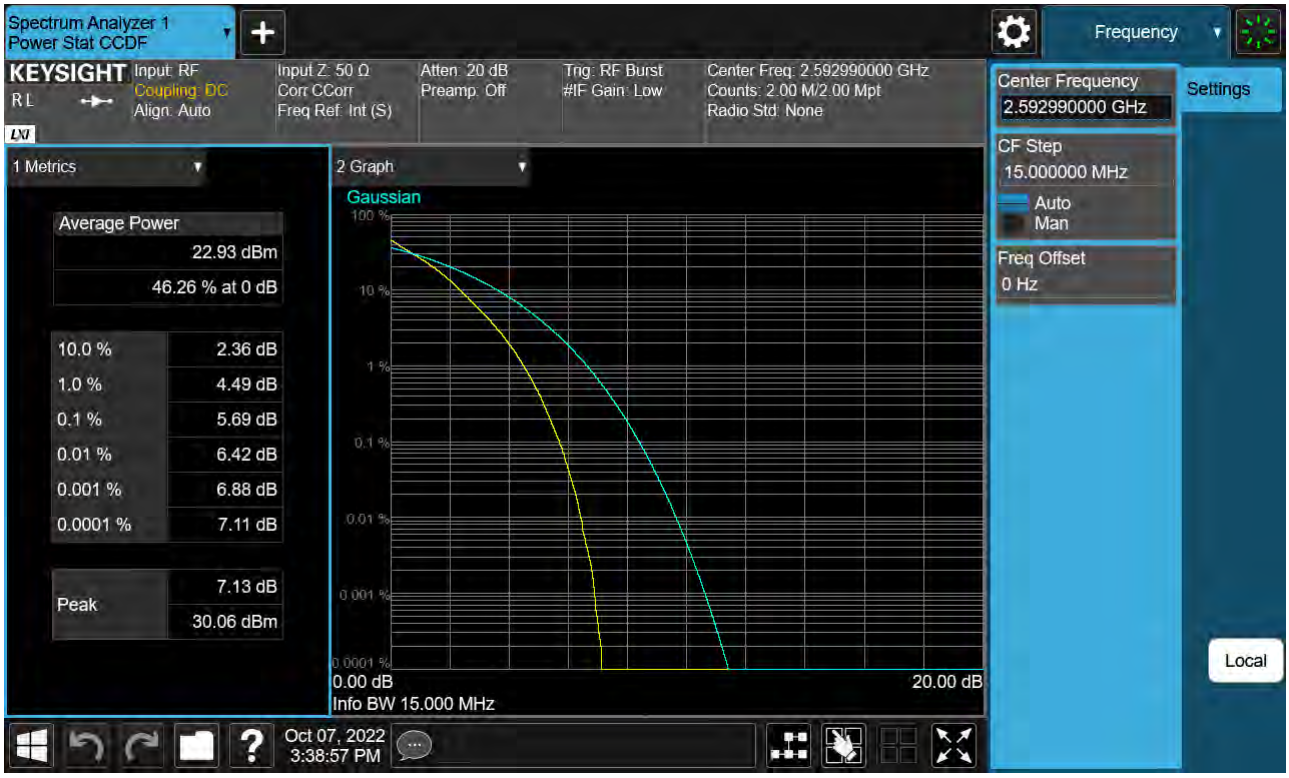
Sub6 n41. PAR Plot (10 M BW_Ch.518598_64QAM)

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)

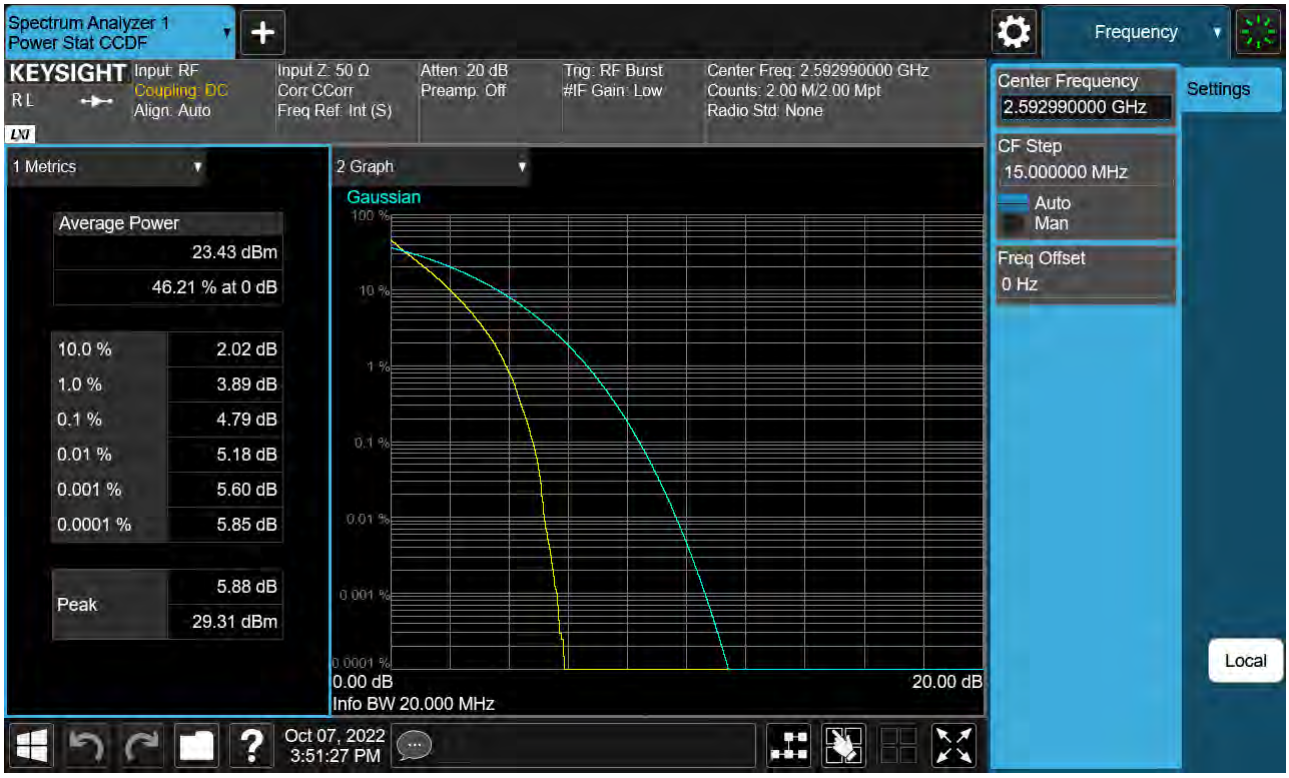


Sub6 n41. PAR Plot (15 M BW_Ch.518598_16QAM)

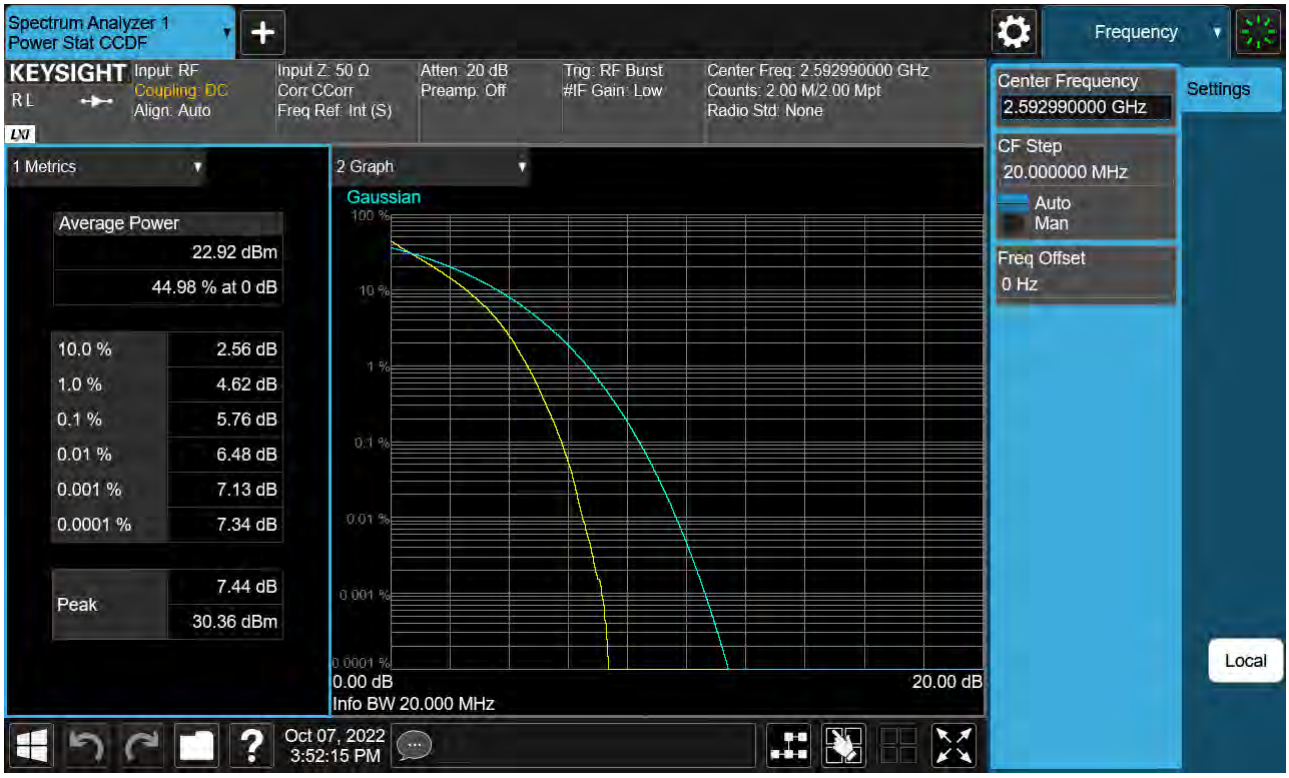
Sub6 n41. PAR Plot (15 M BW_Ch.518598_64QAM)

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)

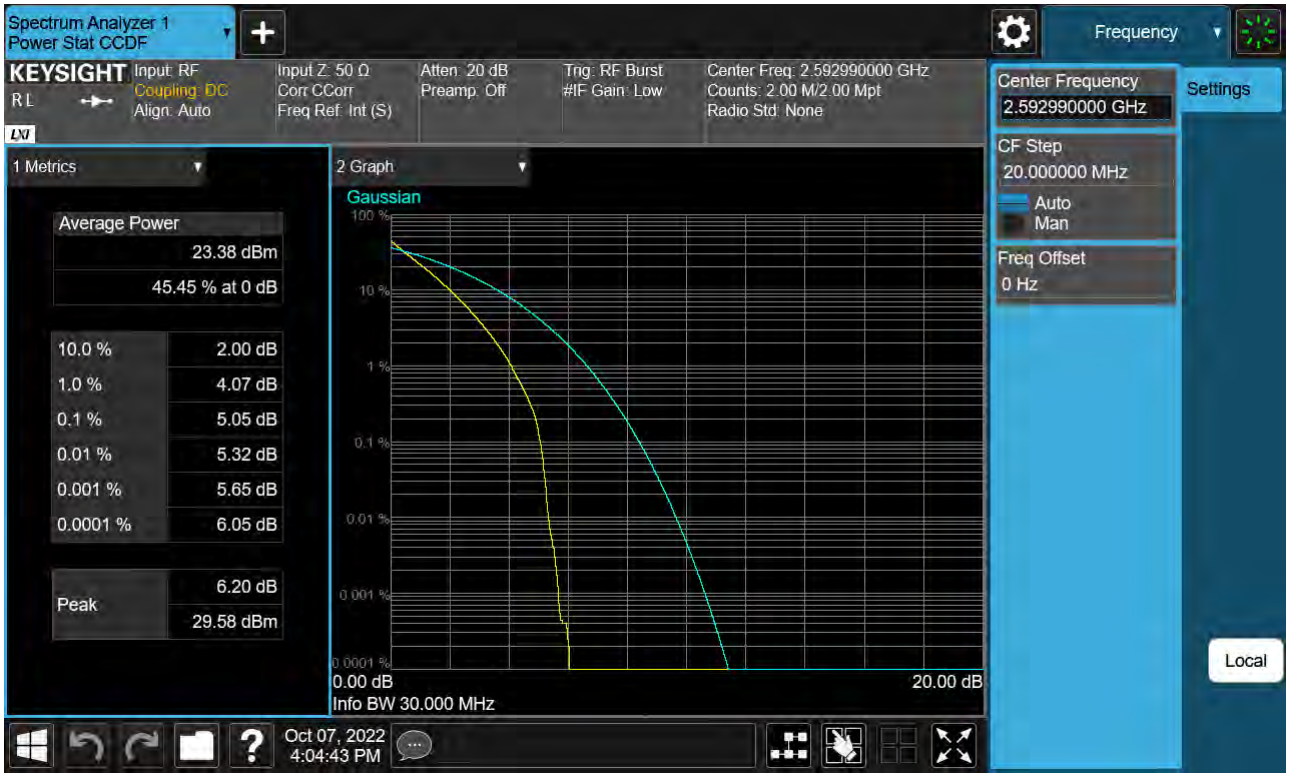


Sub6 n41. PAR Plot (20 M BW_Ch.518598_16QAM)

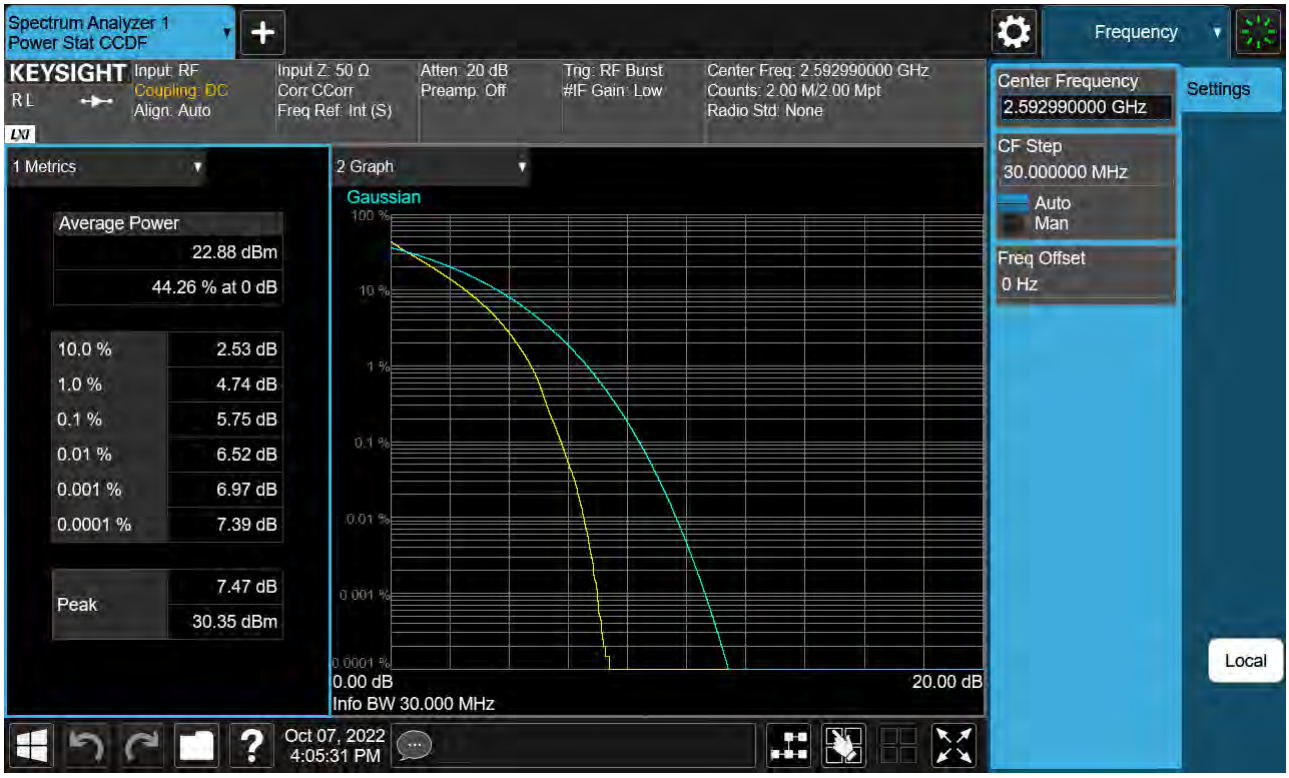
Sub6 n41. PAR Plot (20 M BW_Ch.518598_64QAM)

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)

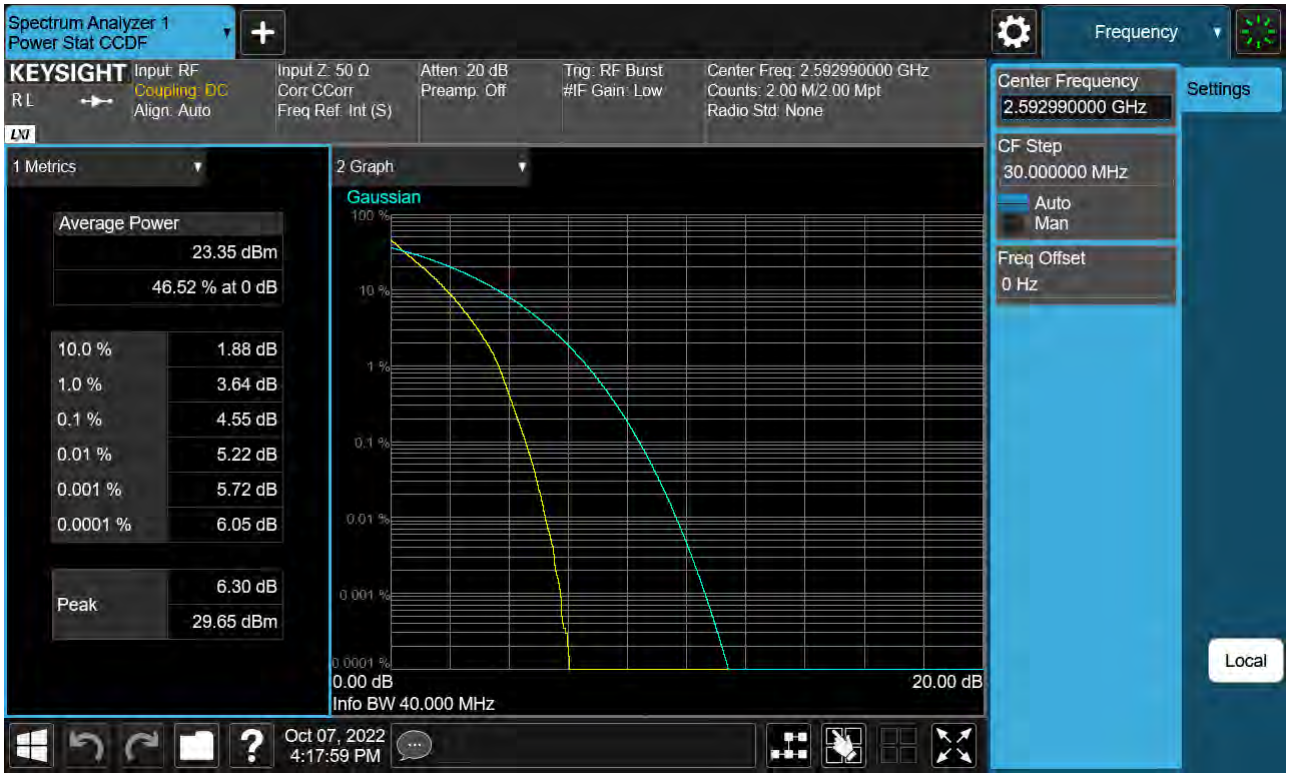


Sub6 n41. PAR Plot (30 M BW_Ch.518598_16QAM)

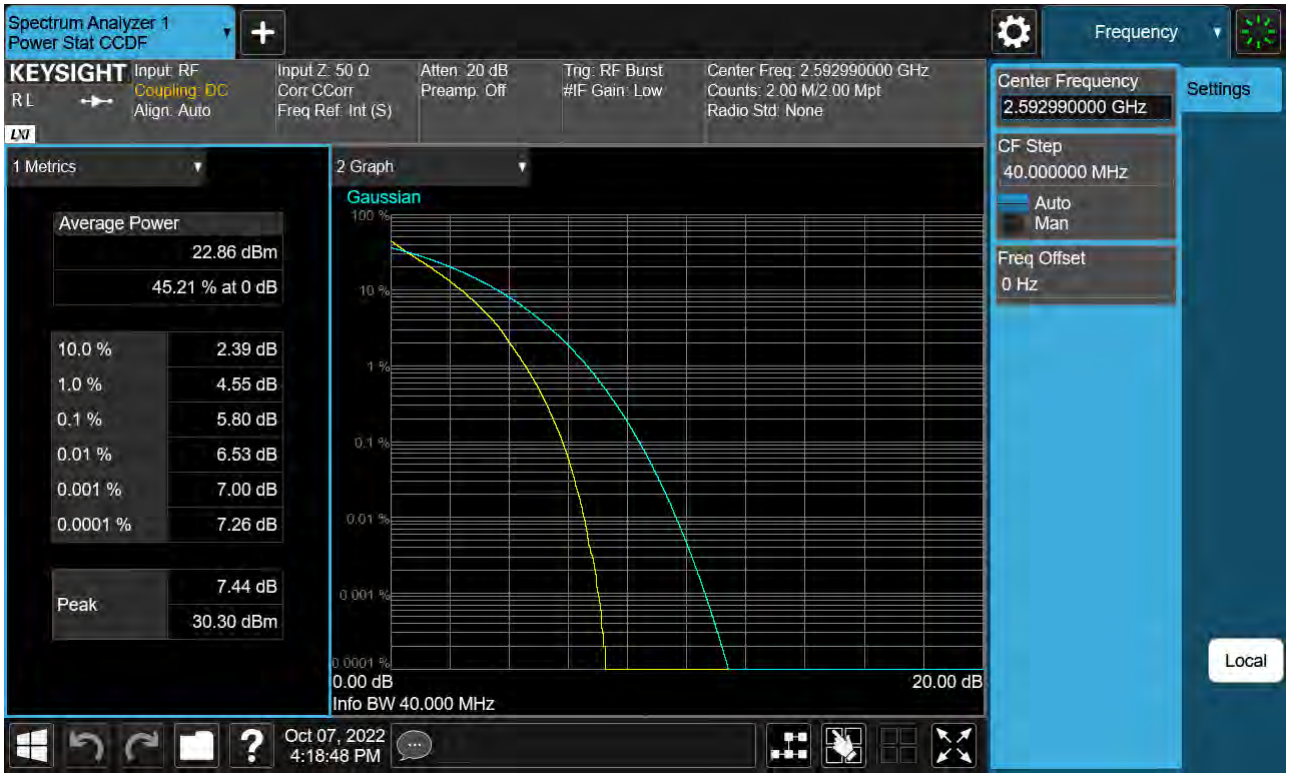
Sub6 n41. PAR Plot (30 M BW_Ch.518598_64QAM)

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)

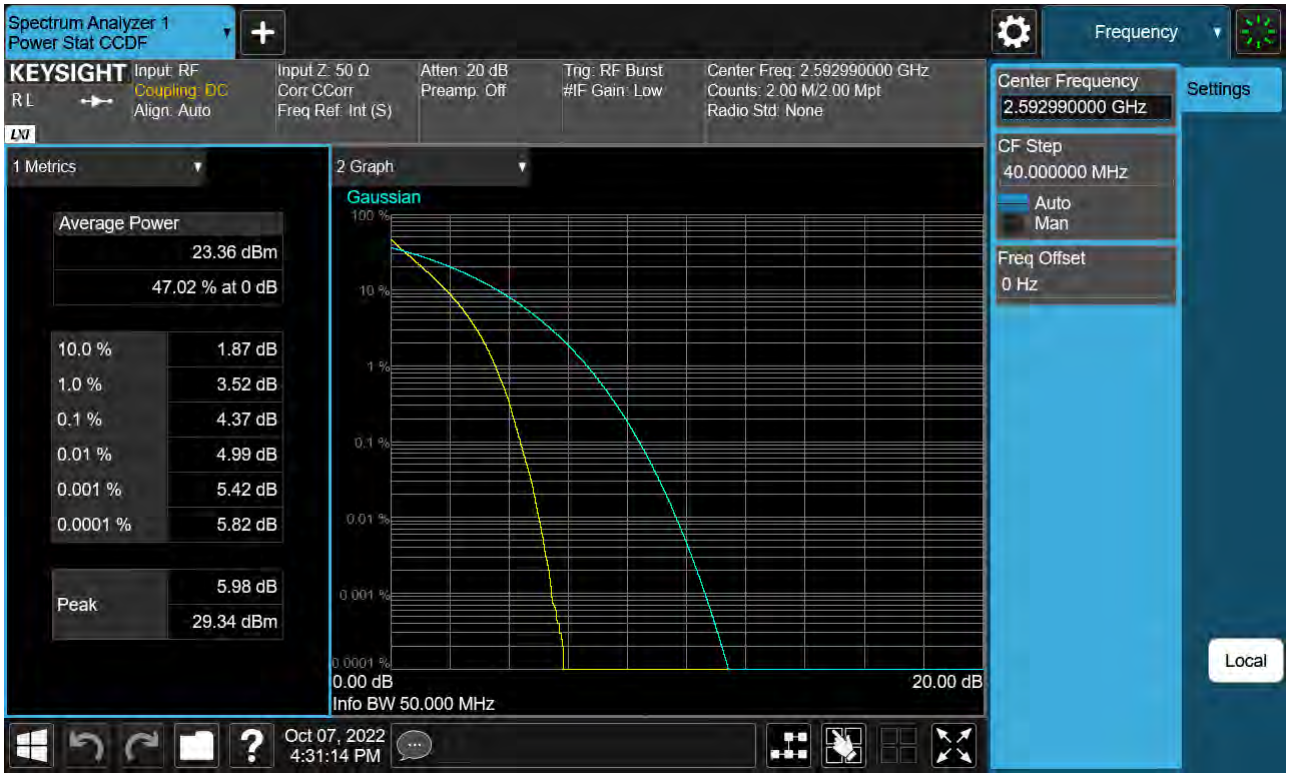


Sub6 n41. PAR Plot (40 M BW_Ch.518598_16QAM)

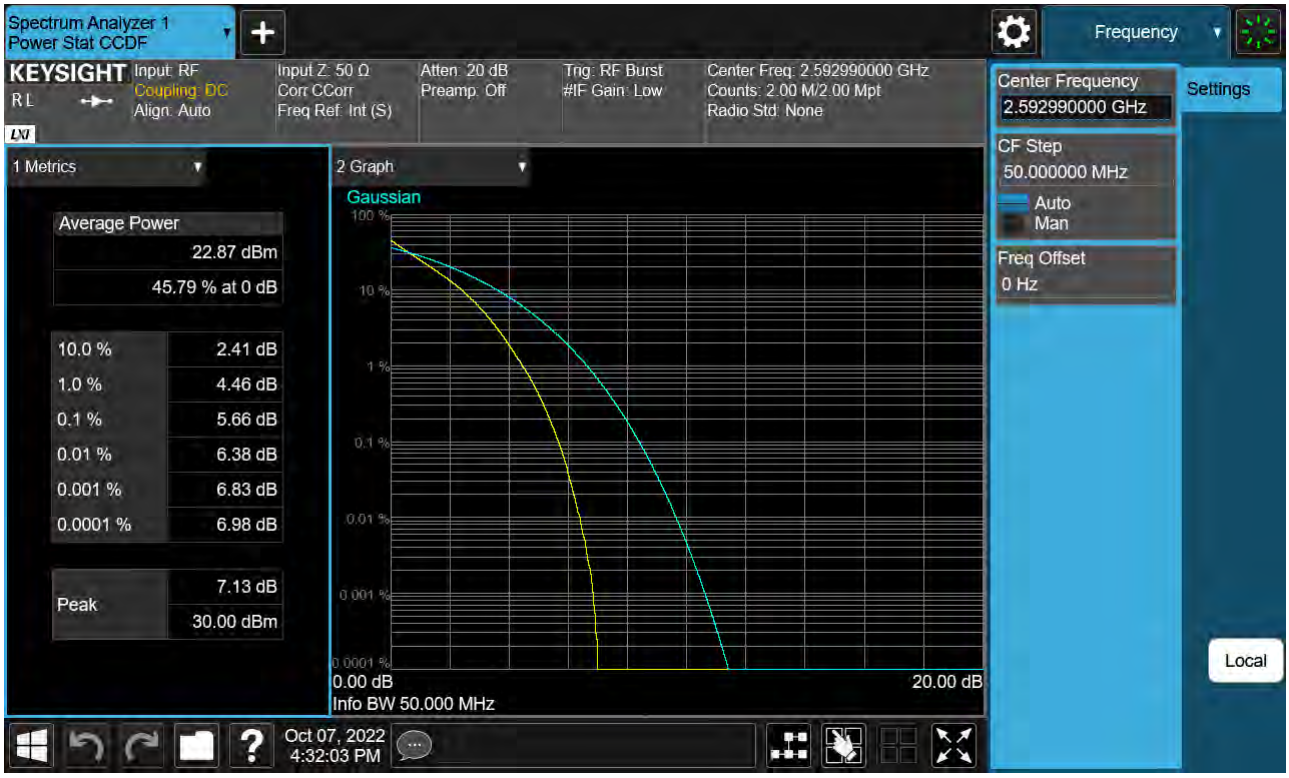
Sub6 n41. PAR Plot (40 M BW_Ch.518598_64QAM)

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)



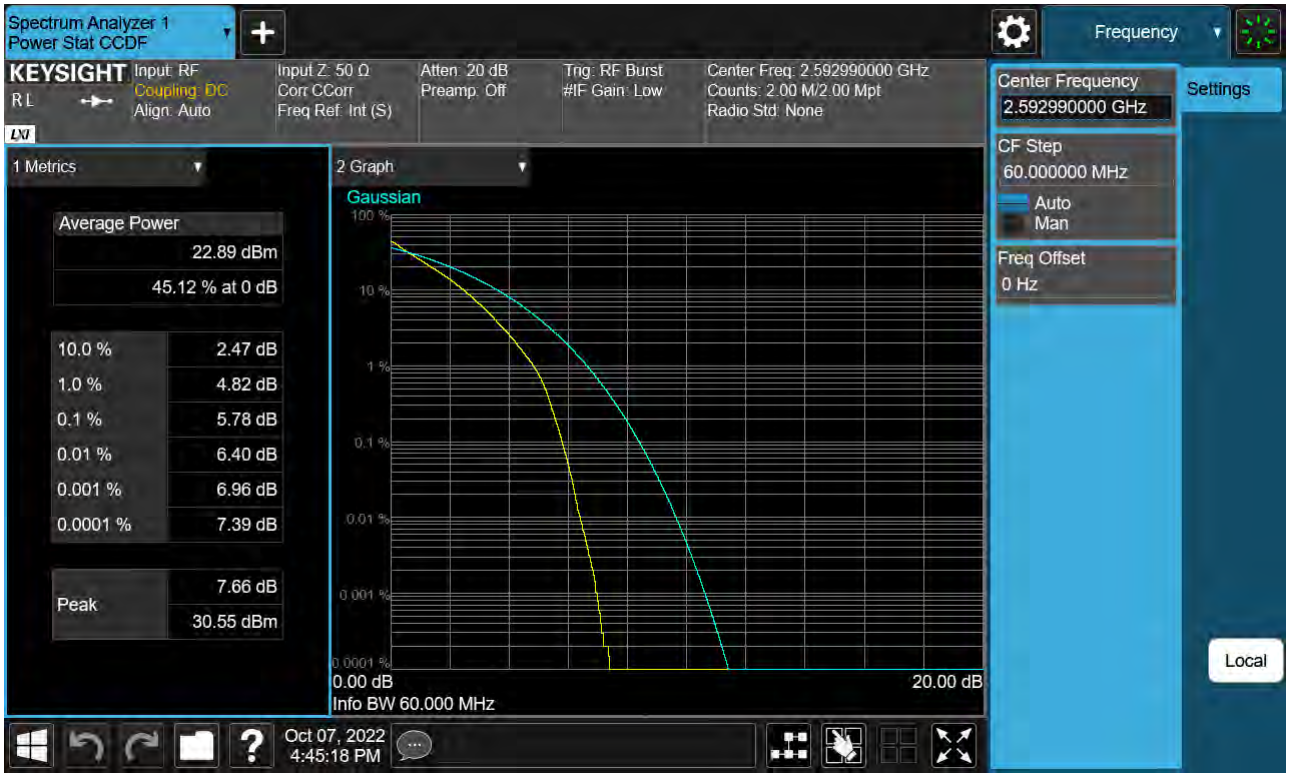
Sub6 n41. PAR Plot (50 M BW_Ch.518598_16QAM)

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)

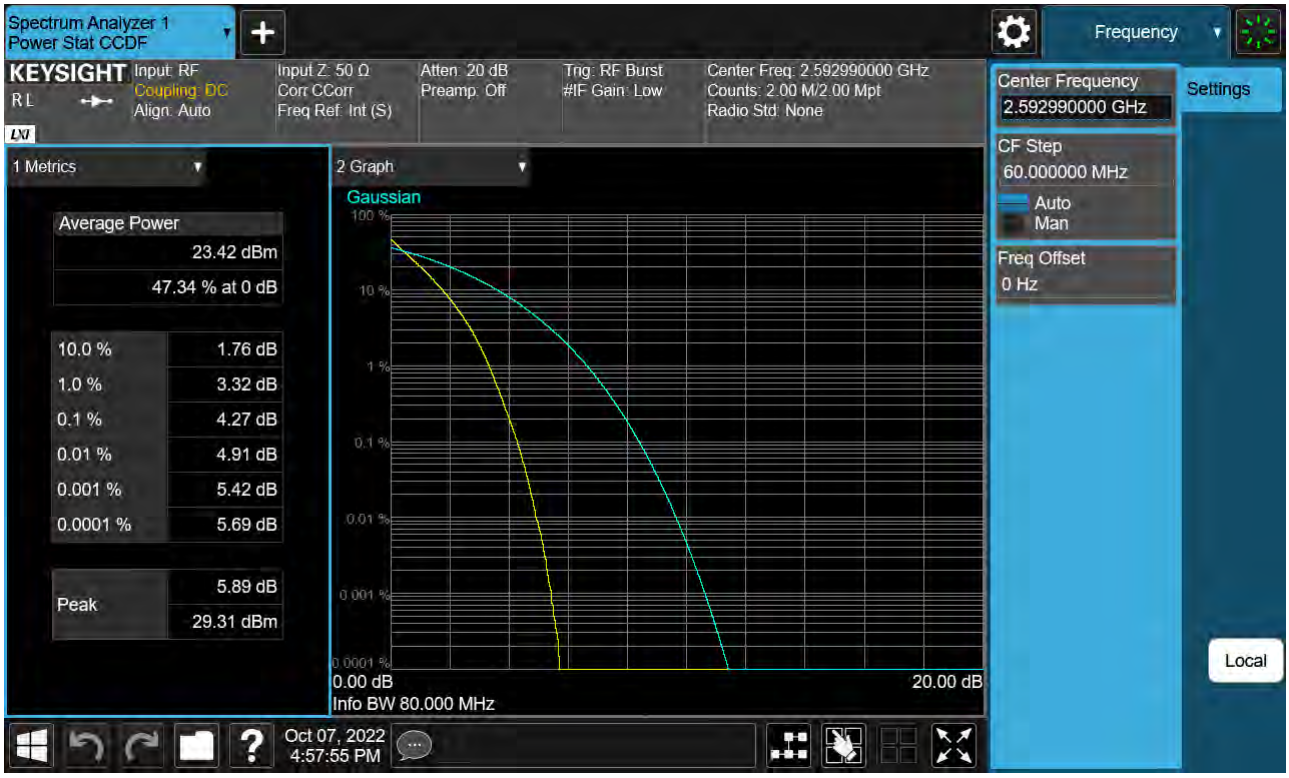


Sub6 n41. PAR Plot (60 M BW_Ch.518598_16QAM)

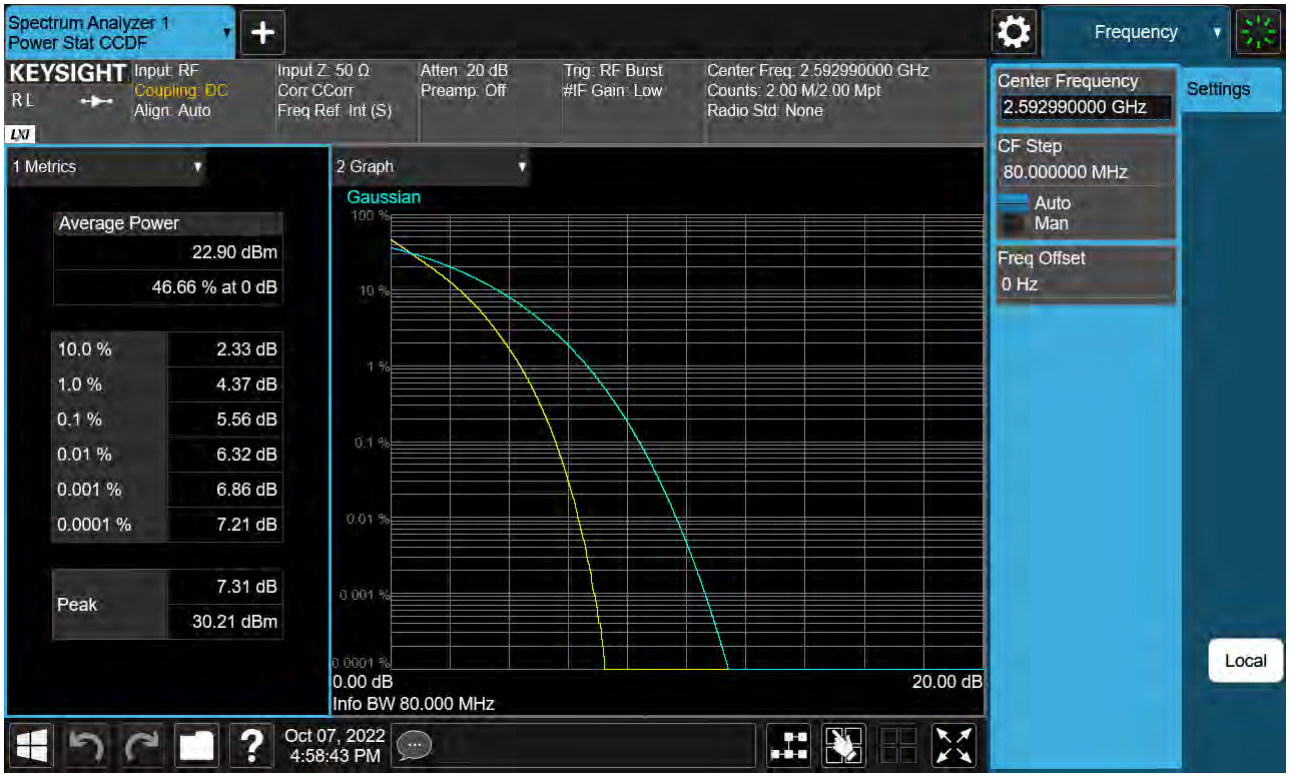
Sub6 n41. PAR Plot (60 M BW_Ch.518598_64QAM)

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

Sub6 n41. PAR Plot (80 M BW_Ch.518598_BPSK)



Sub6 n41. PAR Plot (80 M BW_Ch.518598_QPSK)

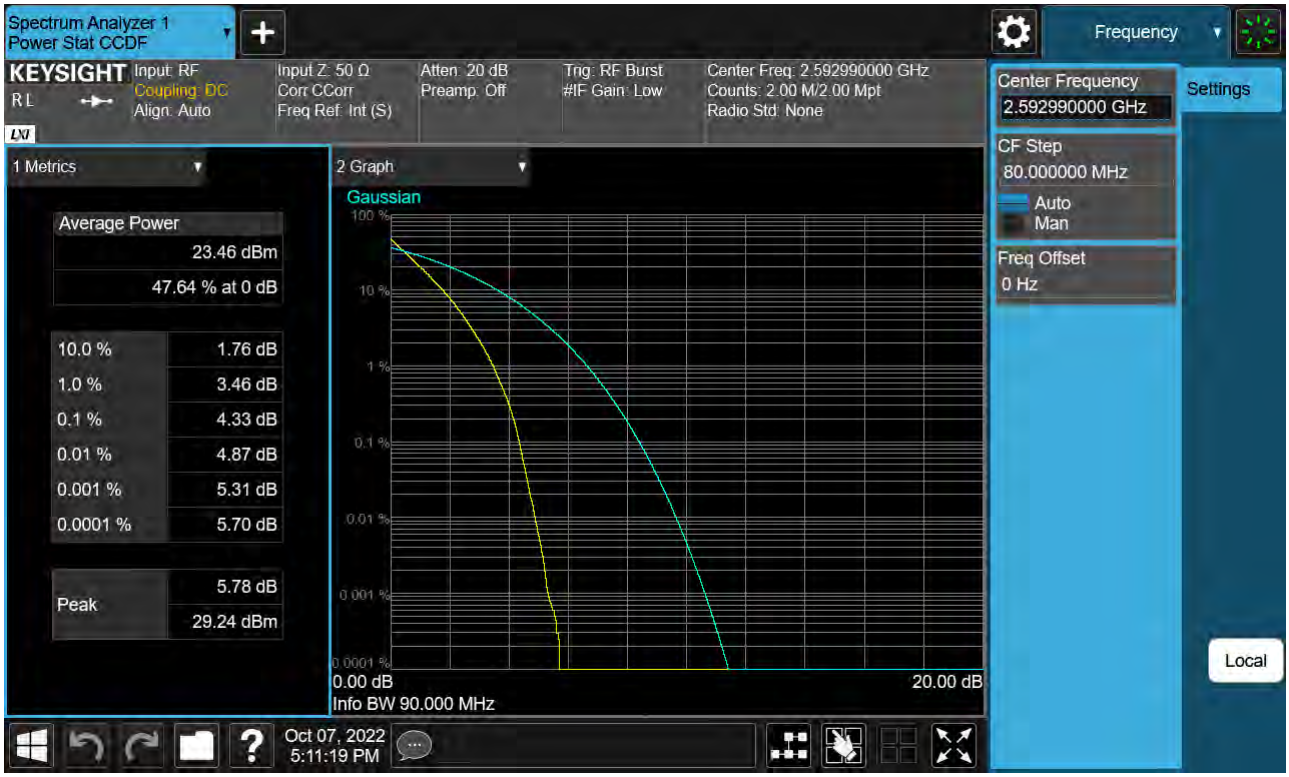


Sub6 n41. PAR Plot (80 M BW_Ch.518598_16QAM)

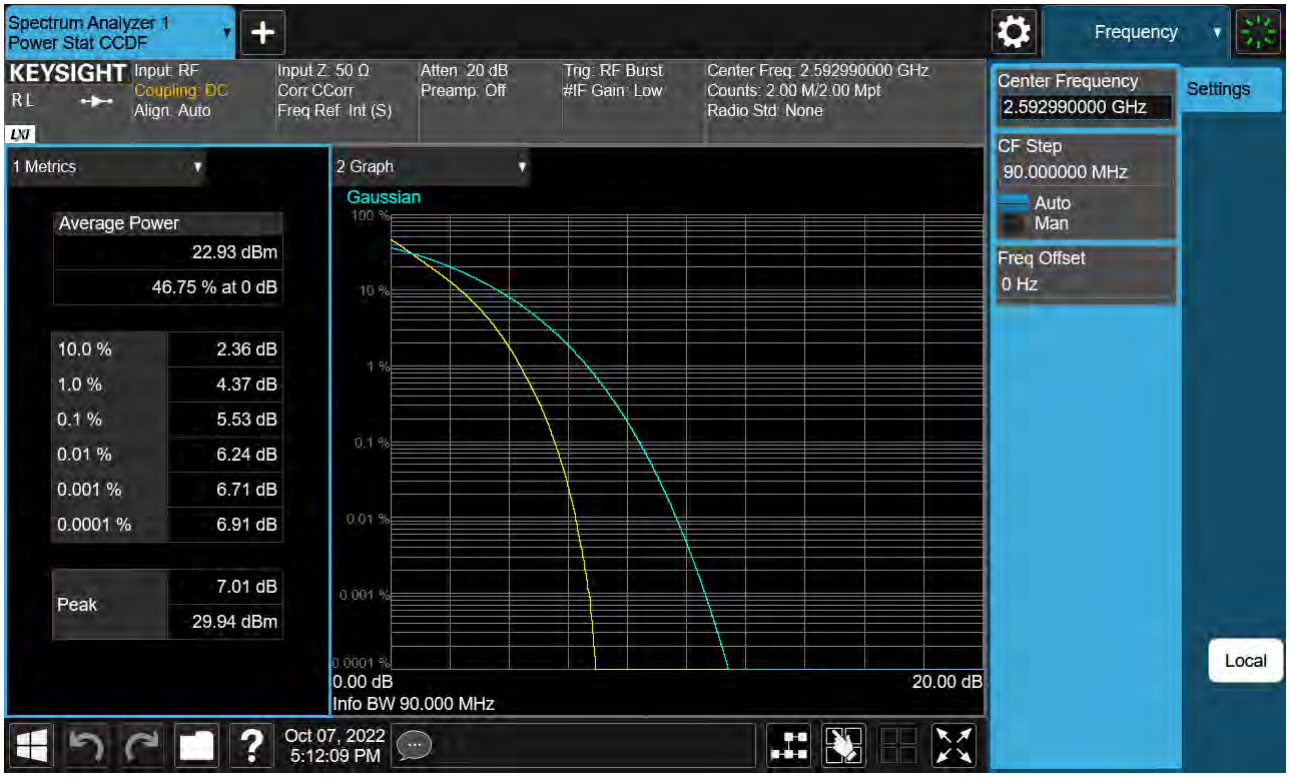
Sub6 n41. PAR Plot (80 M BW_Ch.518598_64QAM)

Sub6 n41. PAR Plot (80 M BW_Ch.518598_256QAM)

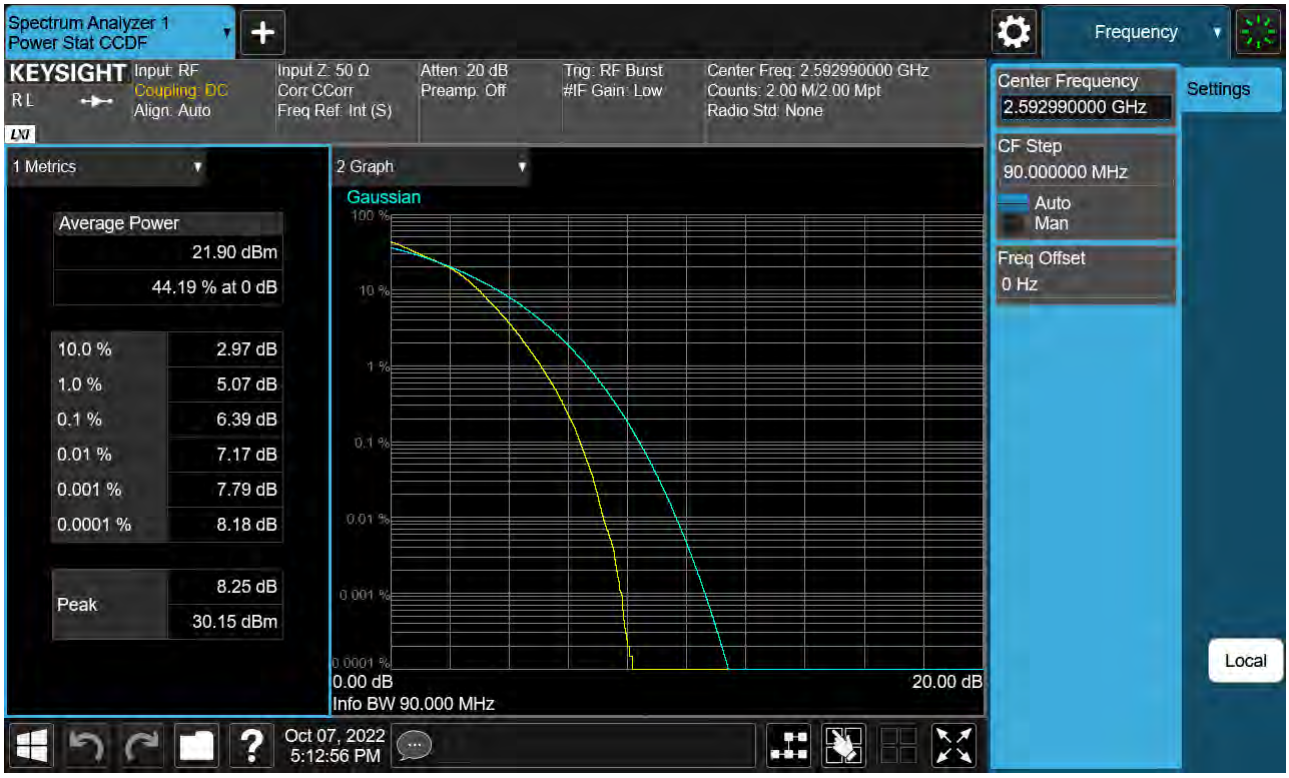
Sub6 n41. PAR Plot (90 M BW_Ch.518598_BPSK)



Sub6 n41. PAR Plot (90 M BW_Ch.518598_QPSK)



Sub6 n41. PAR Plot (90 M BW_Ch.518598_16QAM)



Sub6 n41. PAR Plot (90 M BW_Ch.518598_64QAM)