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

Class II Permissive Change

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
February 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-2202-FC031

FCC ID:	**A3LSMS901B**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-S901B/DS
EUT Type:	Mobile Phone
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2

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

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

1. 3450 MHz - 3550 MHz

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n77 (10)	3455.01 – 3544.99	8M62G7D	PI/2 BPSK	0.180	22.55
		8M70G7D	QPSK	0.179	22.54
		8M67W7D	16QAM	0.145	21.60
		8M67W7D	64QAM	0.100	20.00
		8M62W7D	256QAM	0.065	18.10
Sub6 n77 (15)	3457.50 – 3542.50	12M9G7D	PI/2 BPSK	0.177	22.49
		12M9G7D	QPSK	0.175	22.43
		13M0W7D	16QAM	0.138	21.39
		12M9W7D	64QAM	0.098	19.92
		13M0W7D	256QAM	0.062	17.95
Sub6 n77 (20)	3460.02 – 3540.00	18M0G7D	PI/2 BPSK	0.176	22.45
		18M0G7D	QPSK	0.175	22.42
		18M0W7D	16QAM	0.141	21.49
		18M0W7D	64QAM	0.095	19.77
		18M0W7D	256QAM	0.062	17.94
Sub6 n77 (30)	3465.00 – 3534.99	27M0G7D	PI/2 BPSK	0.180	22.55
		27M0G7D	QPSK	0.179	22.53
		27M1W7D	16QAM	0.137	21.37
		27M0W7D	64QAM	0.098	19.93
		27M0W7D	256QAM	0.064	18.05
Sub6 n77 (40)	3470.01 – 3529.98	36M0G7D	PI/2 BPSK	0.181	22.57
		35M9G7D	QPSK	0.178	22.51
		35M9W7D	16QAM	0.140	21.47
		35M9W7D	64QAM	0.098	19.91
		36M0W7D	256QAM	0.064	18.03
Sub6 n77 (50)	3475.02 – 3525.00	46M0G7D	PI/2 BPSK	0.169	22.29
		45M9G7D	QPSK	0.169	22.27
		45M8W7D	16QAM	0.133	21.23
		45M9W7D	64QAM	0.094	19.72
		45M8W7D	256QAM	0.060	17.77
Sub6 n77 (60)	3480.00 – 3519.99	58M0G7D	PI/2 BPSK	0.182	22.59
		58M1G7D	QPSK	0.179	22.54
		58M0W7D	16QAM	0.140	21.45
		58M0W7D	64QAM	0.097	19.89
		58M1W7D	256QAM	0.064	18.03
Sub6 n77 (70)	3485.01 – 3514.98	64M5G7D	PI/2 BPSK	0.181	22.58
		64M5G7D	QPSK	0.180	22.56
		64M4W7D	16QAM	0.139	21.42
		64M4W7D	64QAM	0.097	19.86
		64M7W7D	256QAM	0.064	18.07
Sub6 n77 (80)	3490.02 – 3510.00	77M2G7D	PI/2 BPSK	0.182	22.61
		77M1G7D	QPSK	0.182	22.60
		77M3W7D	16QAM	0.146	21.64
		77M5W7D	64QAM	0.102	20.07
		77M3W7D	256QAM	0.067	18.25
Sub6 n77 (90)	3495.00 – 3504.99	86M9G7D	PI/2 BPSK	0.166	22.21
		86M9G7D	QPSK	0.166	22.20
		86M9W7D	16QAM	0.129	21.12
		87M0W7D	64QAM	0.097	19.89
		86M9W7D	256QAM	0.064	18.04
Sub6 n77 (100)	3500.01	96M4G7D	PI/2 BPSK	0.158	21.98
		95M5G7D	QPSK	0.138	21.41
		96M3W7D	16QAM	0.109	20.39
		96M6W7D	64QAM	0.098	19.92
		96M2W7D	256QAM	0.064	18.04

2. 3700 MHz - 3980 MHz

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n77 (10)	3705.00 – 3975.00	8M59G7D	PI/2 BPSK	0.130	21.14
		8M64G7D	QPSK	0.129	21.09
		8M64W7D	16QAM	0.104	20.18
		8M67W7D	64QAM	0.071	18.54
		8M64W7D	256QAM	0.046	16.64
Sub6 n77 (15)	3707.51 – 3972.48	12M8G7D	PI/2 BPSK	0.129	21.11
		12M9G7D	QPSK	0.129	21.10
		12M9W7D	16QAM	0.104	20.16
		12M9W7D	64QAM	0.071	18.50
		13M0W7D	256QAM	0.046	16.66
Sub6 n77 (20)	3710.01 – 3969.99	18M0G7D	PI/2 BPSK	0.130	21.14
		17M9G7D	QPSK	0.130	21.13
		17M9W7D	16QAM	0.104	20.19
		18M0W7D	64QAM	0.071	18.50
		18M0W7D	256QAM	0.046	16.66
Sub6 n77 (30)	3715.02 – 3964.98	26M9G7D	PI/2 BPSK	0.129	21.11
		27M0G7D	QPSK	0.129	21.09
		26M9W7D	16QAM	0.104	20.19
		26M9W7D	64QAM	0.073	18.61
		27M0W7D	256QAM	0.046	16.59
Sub6 n77 (40)	3720.00 – 3960.00	35M9G7D	PI/2 BPSK	0.134	21.28
		36M0G7D	QPSK	0.134	21.27
		35M9W7D	16QAM	0.109	20.39
		36M0W7D	64QAM	0.074	18.72
		35M8W7D	256QAM	0.048	16.79
Sub6 n77 (50)	3725.10 – 3954.99	45M7G7D	PI/2 BPSK	0.129	21.11
		45M7G7D	QPSK	0.129	21.10
		45M9W7D	16QAM	0.104	20.18
		45M9W7D	64QAM	0.070	18.46
		45M9W7D	256QAM	0.046	16.62
Sub6 n77 (60)	3730.02 – 3949.98	58M0G7D	PI/2 BPSK	0.135	21.29
		58M1G7D	QPSK	0.134	21.26
		58M1W7D	16QAM	0.107	20.29
		58M1W7D	64QAM	0.074	18.68
		58M0W7D	256QAM	0.048	16.77
Sub6 n77 (70)	3735.00 – 3945.00	64M5G7D	PI/2 BPSK	0.140	21.45
		64M6G7D	QPSK	0.139	21.44
		64M6W7D	16QAM	0.116	20.63
		64M6W7D	64QAM	0.075	18.77
		64M3W7D	256QAM	0.049	16.91
Sub6 n77 (80)	3740.01 – 3939.99	76M9G7D	PI/2 BPSK	0.151	21.78
		77M3G7D	QPSK	0.148	21.71
		77M2W7D	16QAM	0.119	20.77
		77M3W7D	64QAM	0.083	19.17
		77M2W7D	256QAM	0.053	17.26
Sub6 n77 (90)	3745.02 – 3934.98	86M9G7D	PI/2 BPSK	0.160	22.05
		87M0G7D	QPSK	0.159	22.01
		86M8W7D	16QAM	0.126	20.99
		86M7W7D	64QAM	0.087	19.41
		86M7W7D	256QAM	0.056	17.49
Sub6 n77 (100)	3750.00 – 3930.00	96M6G7D	PI/2 BPSK	0.171	22.32
		96M2G7D	QPSK	0.169	22.28
		96M3W7D	16QAM	0.135	21.29
		96M4W7D	64QAM	0.094	19.74
		96M2W7D	256QAM	0.062	17.92

REVIEWED BY

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

Report approved by : Kwon Jeong
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-2202-FC031	February 24, 2022	- First Approval Report

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

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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:	A3LSMS901B
Application Type:	Class II Permissive Change
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2
EUT Type:	Mobile phone
Model(s):	SM-S901B/DS
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: **(3450 MHz - 3550 MHz)**	3455.01 MHz – 3544.99 MHz (Sub6 n77(10 MHz)) 3457.50 MHz – 3542.50 MHz (Sub6 n77(15 MHz)) 3460.02 MHz – 3540.00 MHz (Sub6 n77(20 MHz)) 3465.00 MHz – 3534.99 MHz (Sub6 n77(30 MHz)) 3470.01 MHz – 3529.98 MHz (Sub6 n77(40 MHz)) 3475.02 MHz – 3525.00 MHz (Sub6 n77(50 MHz)) 3480.00 MHz – 3519.99 MHz (Sub6 n77(60 MHz)) 3485.01 MHz – 3514.98 MHz (Sub6 n77(70 MHz)) 3490.02 MHz – 3510.00 MHz (Sub6 n77(80 MHz)) 3495.00 MHz – 3504.99 MHz (Sub6 n77(90 MHz)) 3500.01 MHz (Sub6 n77(100 MHz))
Tx Frequency: **(3700 MHz - 3980 MHz)**	3705.00 MHz – 3975.00 MHz (Sub6 n77(10 MHz)) 3707.51 MHz – 3972.48 MHz (Sub6 n77(15 MHz)) 3710.01 MHz – 3969.99 MHz (Sub6 n77(20 MHz)) 3715.02 MHz – 3964.98 MHz (Sub6 n77(30 MHz)) 3720.00 MHz – 3960.00 MHz (Sub6 n77(40 MHz)) 3725.10 MHz – 3954.99 MHz (Sub6 n77(50 MHz)) 3730.02 MHz – 3949.98 MHz (Sub6 n77(60 MHz)) 3735.00 MHz – 3945.00 MHz (Sub6 n77(70 MHz)) 3740.01 MHz – 3939.99 MHz (Sub6 n77(80 MHz)) 3745.02 MHz – 3934.98 MHz (Sub6 n77(90 MHz)) 3750.00 MHz – 3930.00 MHz (Sub6 n77(100 MHz))
Date(s) of Tests:	January 12, 2022 ~ February 03, 2022
Serial number:	Radiated: R3CR90F2QAK Conducted: R3CR90F24JD

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/ax (20/40/80), Bluetooth, BT LE, NFC, WPT.

2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.3. TEST FACILITY

The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the **74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA.**

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Band Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4 - ANSI C63.26-2015 – Section 5.2.6(only GSM)
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Effective Radiated Power/ Effective Isotropic Radiated Power	- KDB 971168 D01 v03r01 – Section 5.2 & 5.8 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12

3.2 RADIATED POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

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

Test Settings

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

Test Note

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

   The power is calculated by the following formula;

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

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

3.3 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

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

Test Settings

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

Test Note

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

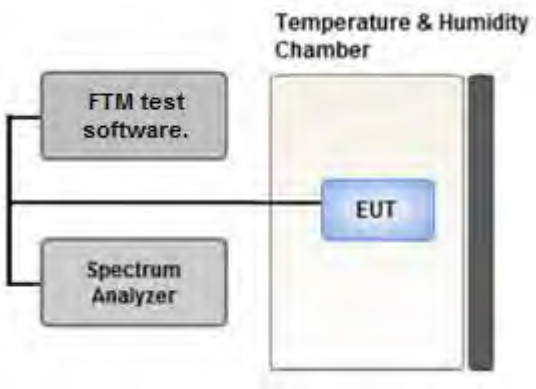
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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

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

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

3.4 PEAK- TO- AVERAGE RATIO



Test setup

① CCDF Procedure for PAPR

Test Settings

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Set the measurement interval as follows:

.- for continuous transmissions, set to 1 ms,

.- or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.

4. Record the maximum PAPR level associated with a probability of 0.1 %.

② **Alternate Procedure for PAPR**

Use one of the procedures presented in 5.2(ANSI C63.26-2015) to measure the total peak power and record as P_{Pk}.

Use one of the applicable procedures presented 5.2(ANSI C63.26-2015) to measure the total average power and record as P_{Avg}. Determine the P.A.R. from:

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

Test Settings(Peak Power)

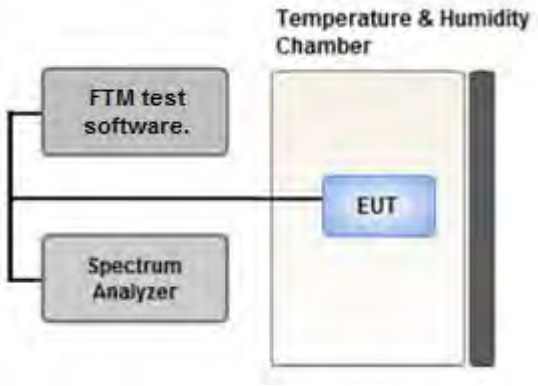
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

1. Set the RBW ≥ OBW.
2. Set VBW ≥ 3 × RBW.
3. Set span ≥ 2 × OBW.
4. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period).
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the peak amplitude level.

Test Settings(Average Power)

1. Set span to 2 × to 3 × the OBW.
2. Set RBW ≥ OBW.
3. Set VBW ≥ 3 × RBW.
4. Set number of measurement points in sweep ≥ 2 × span / RBW.
5. Sweep time:
   Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (automation-compatible) measurement. The transmission period is the (on + off) time.
6. Detector = power averaging (rms).
7. Set sweep trigger to “free run.”
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
9. Use the peak marker function to determine the maximum amplitude level.
10. Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission. For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is a constant 25 %.

3.5 OCCUPIED BANDWIDTH.



Test setup

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

The EUT makes a call to the communication simulator.

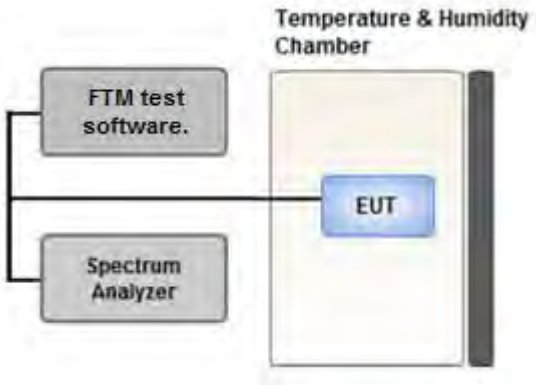
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5 % of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5 % of the 99 % occupied bandwidth observed in Step 7

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

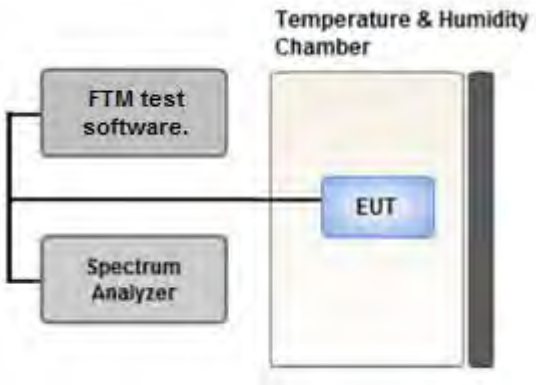
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Settings

1. RBW = 1 MHz
2. VBW ≥ 3 MHz
3. Detector = RMS
4. Trace Mode = trace average
5. Sweep time = auto
6. Number of points in sweep ≥ 2 x Span / RBW

3.7 BAND EDGE



Test setup

Test Overview

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

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Notes

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

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

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

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

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

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

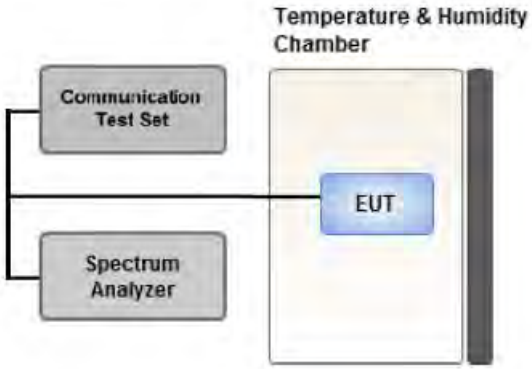
Measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

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

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

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

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

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

The frequency stability of the transmitter is measured by:

1. Temperature:

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

2. Primary Supply Voltage:

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

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

Test Settings

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

3.9 WORST CASE(RADIATED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
  Worst case : Stand alone
  Mode: SA, NSA, SRS
  Worst case: NSA(12A – n77A)
- We were performed the RSE test in condition of co-location. There has no significant emission raised.
- WWAN + WLAN (2.4 & 5 GHz) + BT (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(BW 10 MHz) - n77A
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.

-In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported.
(Worst case : 80 MHz(3450 MHz – 3550 MHz), 100 MHz(3700 MHz – 3980 MHz))

[3450 MHz - 3550 MHz Worst case]

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

[3700 MHz - 3980 MHz Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	See Section 9.1		X
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 9.2		Y

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
  (Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: Power SA, NSA, SRS
  Worst case: NSA (12A - n77A)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth,	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100	Mid	Full RB	0
Peak-To-Average Ratio	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100	Mid	Full RB	0
Band 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, 70, 80, 90, 100	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100	Low, Mid, High	1	1

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
Precision Dipole Antenna	UHAP	Schwarzbeck	01273	05/30/2022	Biennial
Precision Dipole Antenna	UHAP	Schwarzbeck	01274	05/30/2022	Biennial
Horn Antenna(1~18GHz)	BBHA 9120D	Schwarzbeck	02289	05/08/2022	Biennial
Horn Antenna(1~18GHz)	BBHA 9120D	Schwarzbeck	9120D-1299	05/04/2022	Biennial
Horn Antenna(15~40GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	10/13/2022	Biennial
Horn Antenna(15~40GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	04/12/2023	Biennial
Loop Antenna(9kHz~30 MHz)	FMZB1513	Rohde & Schwarz	1513-175	05/18/2022	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/03/2023	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/22/2023	Biennial
High Pass Filter	WHKX10-900-1000-15000-40SS	Wainwright Instruments	15	06/15/2022	Annual
High Pass Filter	WHKX10-2700-3000-18000-40SS	Wainwright Instruments	145	06/15/2022	Annual
High Pass Filter	WHNX6-4740-6000-26500-40CC	Wainwright Instruments	11	06/15/2022	Annual
LOW NOISE AMP (100 MHz ~ 18GHz)	CBLU1183540B-01	CERNEX	26822	06/15/2022	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/02/2022	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/23/2022	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	09/15/2022	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	04/07/2022	Annual
Chamber	SU-642	ESPEC	93008124	03/15/2022	Annual
Signal Analyzer(10Hz~26.5GHz)	N9020A	Agilent	MY51110063	04/22/2022	Annual
ATTENUATOR(20dB)	8493C	Hewlett Packard	17280	06/01/2022	Annual
Spectrum Analyzer(10Hz~40GHz)	FSV40	REOHDE & SCHWARZ	101436	03/02/2022	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2022	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287700	05/25/2022	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/26/2022	Annual
SIGNAL GENERATOR (100kHz~40GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/05/2022	Annual
Signal Analyzer(5Hz~40.0GHz)	N9030B	KEYSIGHT	MY55480167	06/02/2022	Annual
4-Way Divider	ZC4PD-K1844+	Mini-Circuits	942907	09/27/2022	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

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

5. MEASUREMENT UNCERTAINTY

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

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05 (Confidence level about 95 %, k=2)

6. SUMMARY OF TEST RESULTS

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§2.1051, §27.53(n)(2), §27.53(l)(2)	< -13 dBm	PASS
Conducted Output Power	§2.1046	N/A	**See Note1**
Peak- to- Average Ratio	§27.50(k)(4), §27.50(j)(4)	< 13 dB	PASS
Frequency stability / variation of ambient temperature	§2.1055, §27.54	Emission must remain in band	PASS

Note:

1. See SAR Report
2. All conducted tests were tested using 5G Wireless Tester.

6.2 Test Condition : Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§27.50(k)(3), §27.50(j)(3)	< 1 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§2.1051, §27.53(n)(2), §27.53(l)(2)	< -13 dBm	PASS

Note:

1. Radiated tests were tested using 5G Wireless Tester.

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

Ch./ Freq.		Measured Level(dBm)	Substitute Level(dBm)	Ant. Gain (dBd)	C.L	Pol.	ERP	
channel	Freq.(MHz)						W	dBm
128	824.20	-21.37	38.40	-10.61	0.95	H	0.483	26.84

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

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

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

3) Record the field strength meter's level.

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

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

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

7.2 EIRP Sample Calculation

Ch./ Freq.		Measured Level(dBm)	Substitute Level(dBm)	Ant. Gain (dBi)	C.L	Pol.	EIRP	
channel	Freq.(MHz)						W	dBm
349000	1,732.50	-15.75	18.45	9.90	1.76	H	0.456	26.59

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

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

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

3) Record the field strength meter's level.

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

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

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

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

PSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

8. TEST DATA (3450 MHz - 3550 MHz)

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3455.01	Sub6 n77/ 10 MHz [30 kHz]	PI/2 BPSK	-24.45	13.55	11.32	3.05	H	< 1.00	0.152	21.83	1	12
		QPSK	-24.46	13.54	11.32	3.05	H		0.152	21.82		
		16-QAM	-25.34	12.66	11.32	3.05	H		0.124	20.94		
		64-QAM	-27.05	10.95	11.32	3.05	H		0.084	19.23		
		256-QAM	-29.01	8.99	11.32	3.05	H		0.053	17.27		
3500.01		PI/2 BPSK	-24.63	13.54	11.50	3.06	H		0.158	21.98	1	12
		QPSK	-24.64	13.53	11.50	3.06	H		0.157	21.97		
		16-QAM	-25.69	12.48	11.50	3.06	H		0.124	20.92		
		64-QAM	-27.16	11.01	11.50	3.06	H		0.088	19.45		
		256-QAM	-29.07	9.10	11.50	3.06	H		0.057	17.54		
3544.99		PI/2 BPSK	-24.22	13.95	11.68	3.08	H		0.180	22.55	1	1
		QPSK	-24.23	13.94	11.68	3.08	H		0.179	22.54		
		16-QAM	-25.17	13.00	11.68	3.08	H		0.145	21.60		
		64-QAM	-26.77	11.40	11.68	3.08	H		0.100	20.00		
		256-QAM	-28.67	9.50	11.68	3.08	H		0.065	18.10		

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
3457.50	Sub6 n77/ 15 MHz [30 kHz]	PI/2 BPSK	-24.46	13.50	11.34	3.03	H	< 1.00	0.152	21.81	1	1
		QPSK	-24.49	13.47	11.34	3.03	H		0.151	21.78		
		16-QAM	-25.60	12.36	11.34	3.03	H		0.117	20.67		
		64-QAM	-27.08	10.88	11.34	3.03	H		0.083	19.19		
		256-QAM	-29.01	8.95	11.34	3.03	H		0.053	17.26		
3500.01		PI/2 BPSK	-24.70	13.47	11.50	3.06	H		0.155	21.91	1	19
		QPSK	-24.71	13.46	11.50	3.06	H		0.155	21.90		
		16-QAM	-25.75	12.42	11.50	3.06	H		0.122	20.86		
		64-QAM	-27.25	10.92	11.50	3.06	H		0.086	19.36		
		256-QAM	-29.14	9.03	11.50	3.06	H		0.056	17.47		
3542.50		PI/2 BPSK	-24.16	13.90	11.66	3.07	H		0.177	22.49	1	1
		QPSK	-24.22	13.84	11.66	3.07	H		0.175	22.43		
		16-QAM	-25.26	12.80	11.66	3.07	H		0.138	21.39		
		64-QAM	-26.73	11.33	11.66	3.07	H		0.098	19.92		
		256-QAM	-28.70	9.36	11.66	3.07	H		0.062	17.95		

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
3460.02	Sub6 n77/ 20 MHz [30 kHz]	PI/2 BPSK	-24.44	13.52	11.34	3.03	H	< 1.00	0.152	21.83	1	1
		QPSK	-24.45	13.51	11.34	3.03	H		0.152	21.82		
		16-QAM	-25.39	12.57	11.34	3.03	H		0.122	20.88		
		64-QAM	-27.13	10.83	11.34	3.03	H		0.082	19.14		
		256-QAM	-28.97	8.99	11.34	3.03	H		0.054	17.30		
3500.01		PI/2 BPSK	-24.70	13.47	11.50	3.06	H		0.155	21.91	1	25
		QPSK	-24.77	13.40	11.50	3.06	H		0.153	21.84		
		16-QAM	-25.87	12.30	11.50	3.06	H		0.119	20.74		
		64-QAM	-27.34	10.83	11.50	3.06	H		0.084	19.27		
		256-QAM	-29.22	8.95	11.50	3.06	H		0.055	17.39		
3540.00		PI/2 BPSK	-24.20	13.86	11.66	3.07	H		0.176	22.45	1	1
		QPSK	-24.23	13.83	11.66	3.07	H		0.175	22.42		
		16-QAM	-25.16	12.90	11.66	3.07	H		0.141	21.49		
		64-QAM	-26.88	11.18	11.66	3.07	H		0.095	19.77		
		256-QAM	-28.71	9.35	11.66	3.07	H		0.062	17.94		

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
3465.00	Sub6 n77/ 30 MHz [30 kHz]	PI/2 BPSK	-24.46	13.41	11.36	3.02	H	< 1.00	0.150	21.75	1	1
		QPSK	-24.49	13.38	11.36	3.02	H		0.149	21.72		
		16-QAM	-25.51	12.36	11.36	3.02	H		0.118	20.70		
		64-QAM	-26.96	10.91	11.36	3.02	H		0.084	19.25		
		256-QAM	-25.93	11.94	11.36	3.02	H		0.064	18.05		
3500.01		PI/2 BPSK	-24.69	13.48	11.50	3.06	H		0.156	21.92	1	77
		QPSK	-25.24	12.93	11.50	3.06	H		0.137	21.37		
		16-QAM	-26.18	11.99	11.50	3.06	H		0.110	20.43		
		64-QAM	-26.88	11.29	11.50	3.06	H		0.094	19.73		
		256-QAM	-28.70	9.47	11.50	3.06	H		0.062	17.91		
3534.99		PI/2 BPSK	-24.09	13.96	11.64	3.06	H		0.180	22.55	1	1
		QPSK	-24.11	13.94	11.64	3.06	H		0.179	22.53		
		16-QAM	-25.27	12.78	11.64	3.06	H		0.137	21.37		
		64-QAM	-26.71	11.34	11.64	3.06	H		0.098	19.93		
		256-QAM	-28.59	9.46	11.64	3.06	H		0.064	18.05		

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
3470.01	Sub6 n77/ 40 MHz [30 kHz]	PI/2 BPSK	-24.40	13.37	11.38	3.00	H	< 1.00	0.150	21.75	1	1
		QPSK	-24.43	13.34	11.38	3.00	H		0.149	21.72		
		16-QAM	-25.47	12.30	11.38	3.00	H		0.117	20.68		
		64-QAM	-27.00	10.77	11.38	3.00	H		0.082	19.15		
		256-QAM	-28.84	8.93	11.38	3.00	H		0.054	17.31		
3500.01		PI/2 BPSK	-24.65	13.52	11.50	3.06	H		0.157	21.96	1	53
		QPSK	-24.66	13.51	11.50	3.06	H		0.157	21.95		
		16-QAM	-25.69	12.48	11.50	3.06	H		0.124	20.92		
		64-QAM	-27.25	10.92	11.50	3.06	H		0.086	19.36		
		256-QAM	-29.10	9.07	11.50	3.06	H		0.056	17.51		
3529.98		PI/2 BPSK	-24.06	13.99	11.62	3.04	H		0.181	22.57	1	1
		QPSK	-24.12	13.93	11.62	3.04	H		0.178	22.51		
		16-QAM	-25.16	12.89	11.62	3.04	H		0.140	21.47		
		64-QAM	-26.72	11.33	11.62	3.04	H		0.098	19.91		
		256-QAM	-28.60	9.45	11.62	3.04	H		0.064	18.03		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3475.02	Sub6 n77/ 50 MHz [30 kHz]	PI/2 BPSK	-24.38	13.37	11.40	3.01	H	< 1.00	0.150	21.76	1	1
		QPSK	-24.41	13.34	11.40	3.01	H		0.149	21.73		
		16-QAM	-25.39	12.36	11.40	3.01	H		0.119	20.75		
		64-QAM	-27.03	10.72	11.40	3.01	H		0.081	19.11		
		256-QAM	-28.85	8.89	11.40	3.01	H		0.054	17.29		
3500.01		PI/2 BPSK	-24.69	13.48	11.50	3.06	H		0.156	21.92	1	66
		QPSK	-24.71	13.46	11.50	3.06	H		0.155	21.90		
		16-QAM	-25.74	12.43	11.50	3.06	H		0.122	20.87		
		64-QAM	-27.39	10.78	11.50	3.06	H		0.084	19.22		
		256-QAM	-29.20	8.97	11.50	3.06	H		0.055	17.41		
3525.00		PI/2 BPSK	-24.37	13.74	11.60	3.05	H		0.169	22.29	1	66
		QPSK	-24.39	13.72	11.60	3.05	H		0.169	22.27		
		16-QAM	-25.43	12.68	11.60	3.05	H		0.133	21.23		
		64-QAM	-26.94	11.17	11.60	3.05	H		0.094	19.72		
		256-QAM	-28.89	9.22	11.60	3.05	H		0.060	17.77		

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
3480.00	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-24.70	13.02	11.42	3.02	H	< 1.00	0.139	21.42	1	161
		QPSK	-25.16	12.56	11.42	3.02	H		0.125	20.96		
		16-QAM	-26.10	11.62	11.42	3.02	H		0.100	20.02		
		64-QAM	-26.71	11.01	11.42	3.02	H		0.087	19.41		
		256-QAM	-28.68	9.04	11.42	3.02	H		0.055	17.44		
3500.01		PI/2 BPSK	-24.62	13.55	11.50	3.06	H		0.158	21.99	1	161
		QPSK	-25.17	13.00	11.50	3.06	H		0.139	21.44		
		16-QAM	-26.10	12.07	11.50	3.06	H		0.112	20.51		
		64-QAM	-26.77	11.40	11.50	3.06	H		0.096	19.84		
		256-QAM	-28.62	9.55	11.50	3.06	H		0.063	17.99		
3519.99		PI/2 BPSK	-24.11	14.06	11.58	3.05	H		0.182	22.59	1	82
		QPSK	-24.16	14.01	11.58	3.05	H		0.179	22.54		
		16-QAM	-25.25	12.92	11.58	3.05	H		0.140	21.45		
		64-QAM	-26.81	11.36	11.58	3.05	H		0.097	19.89		
		256-QAM	-28.67	9.50	11.58	3.05	H		0.064	18.03		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3485.01	Sub6 n77/ 70 MHz [30 kHz]	PI/2 BPSK	-24.71	13.11	11.44	3.04	H	< 1.00	0.142	21.52	1	188
		QPSK	-25.22	12.60	11.44	3.04	H		0.126	21.01		
		16-QAM	-26.14	11.68	11.44	3.04	H		0.102	20.09		
		64-QAM	-26.81	11.01	11.44	3.04	H		0.087	19.42		
		256-QAM	-28.61	9.21	11.44	3.04	H		0.058	17.62		
3500.01		PI/2 BPSK	-24.70	13.47	11.50	3.06	H		0.155	21.91	1	188
		QPSK	-25.16	13.01	11.50	3.06	H		0.140	21.45		
		16-QAM	-26.14	12.03	11.50	3.06	H		0.111	20.47		
		64-QAM	-26.75	11.42	11.50	3.06	H		0.097	19.86		
		256-QAM	-28.56	9.61	11.50	3.06	H		0.064	18.05		
3514.98		PI/2 BPSK	-24.21	14.11	11.52	3.06	H		0.181	22.58	1	94
		QPSK	-24.23	14.09	11.52	3.06	H		0.180	22.56		
		16-QAM	-25.37	12.95	11.52	3.06	H		0.139	21.42		
		64-QAM	-26.97	11.35	11.52	3.06	H		0.096	19.82		
		256-QAM	-28.72	9.60	11.52	3.06	H		0.064	18.07		

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
3490.02	Sub6 n77/ 80 MHz [30 kHz]	PI/2 BPSK	-24.56	13.36	11.46	3.05	H	< 1.00	0.150	21.77	1	216
		QPSK	-25.07	12.85	11.46	3.05	H		0.134	21.26		
		16-QAM	-26.04	11.88	11.46	3.05	H		0.107	20.29		
		64-QAM	-26.67	11.25	11.46	3.05	H		0.093	19.66		
		256-QAM	-28.56	9.36	11.46	3.05	H		0.060	17.77		
3500.01		PI/2 BPSK	-24.60	13.57	11.50	3.06	H		0.159	22.01	1	216
		QPSK	-25.13	13.04	11.50	3.06	H		0.141	21.48		
		16-QAM	-26.10	12.07	11.50	3.06	H		0.112	20.51		
		64-QAM	-26.62	11.55	11.50	3.06	H		0.100	19.99		
		256-QAM	-28.57	9.60	11.50	3.06	H		0.064	18.04		
3510.00		PI/2 BPSK	-24.26	14.13	11.54	3.06	H		0.182	22.61	1	108
		QPSK	-24.27	14.12	11.54	3.06	H		0.182	22.60		
		16-QAM	-25.23	13.16	11.54	3.06	H		0.146	21.64		
		64-QAM	-26.80	11.59	11.54	3.06	H		0.102	20.07		
		256-QAM	-28.62	9.77	11.54	3.06	H		0.067	18.25		

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
3495.00	Sub6 n77/ 90 MHz [30 kHz]	PI/2 BPSK	-24.53	13.52	11.48	3.06	H	< 1.00	0.156	21.94	1	244
		QPSK	-25.06	12.99	11.48	3.06	H		0.138	21.41		
		16-QAM	-26.12	11.93	11.48	3.06	H		0.108	20.35		
		64-QAM	-26.60	11.45	11.48	3.06	H		0.097	19.87		
		256-QAM	-28.49	9.56	11.48	3.06	H		0.063	17.98		
3500.01		PI/2 BPSK	-24.61	13.56	11.50	3.06	H		0.158	22.00	1	244
		QPSK	-25.11	13.06	11.50	3.06	H		0.141	21.50		
		16-QAM	-26.12	12.05	11.50	3.06	H		0.112	20.49		
		64-QAM	-26.72	11.45	11.50	3.06	H		0.097	19.89		
		256-QAM	-28.57	9.60	11.50	3.06	H		0.064	18.04		
3504.99		PI/2 BPSK	-24.53	13.75	11.52	3.06	H		0.166	22.21	1	122
		QPSK	-24.54	13.74	11.52	3.06	H		0.166	22.20		
		16-QAM	-25.62	12.66	11.52	3.06	H		0.129	21.12		
		64-QAM	-27.22	11.06	11.52	3.06	H		0.089	19.52		
		256-QAM	-29.04	9.24	11.52	3.06	H		0.059	17.70		

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
3500.01	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-24.63	13.54	11.50	3.06	H	< 1.00	0.158	21.98	1	272
		QPSK	-25.20	12.97	11.50	3.06	H		0.138	21.41		
		16-QAM	-26.22	11.95	11.50	3.06	H		0.109	20.39		
		64-QAM	-26.69	11.48	11.50	3.06	H		0.098	19.92		
		256-QAM	-28.57	9.60	11.50	3.06	H		0.064	18.04		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77

▣ 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)
632668 (3490.02)	6 980.04	-52.93	11.16	-45.13	4.51	H	-38.48	-13.00
	10 470.06	-50.17	11.80	-37.71	5.45	V	-31.36	-13.00
	13 960.08	-56.92	12.98	-43.72	6.43	H	-37.17	-13.00
	17 450.10	-64.73	16.20	-43.77	7.41	H	-34.98	-13.00
633334 (3500.01)	7 000.02	-53.31	11.20	-44.69	4.38	H	-37.87	-13.00
	10 500.03	-50.10	11.80	-36.68	5.49	V	-30.37	-13.00
	14 000.04	-57.02	12.90	-44.58	6.48	H	-38.16	-13.00
	17 500.05	-66.43	16.10	-45.39	7.30	V	-36.59	-13.00
634000 (3510.0)	7 020.00	-52.12	11.20	-44.07	4.33	H	-37.20	-13.00
	10 530.00	-49.78	11.74	-36.79	5.44	V	-30.49	-13.00
	14 040.00	-57.17	12.82	-45.70	6.44	H	-39.32	-13.00
	17 550.00	-66.59	15.89	-43.76	7.38	V	-35.25	-13.00

▣ ENDC-Mode : 12A(10 MHz)-n77A(80 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
23095 (707.5)	1415.00	-60.98	7.61	-67.61	1.87	V	-61.86	-13.00
	2122.50	-61.66	8.98	-67.48	2.31	V	-60.81	-13.00
	2830.00	-62.35	10.52	-66.36	2.73	V	-58.57	-13.00

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n77	10 MHz	3500.01	BPSK	Full RB	0	4.33
			QPSK			5.53
			16-QAM			5.72
			64-QAM			5.70
			256-QAM			6.76
	15 MHz		BPSK			4.22
			QPSK			5.53
			16-QAM			5.65
			64-QAM			5.67
			256-QAM			6.52
	20 MHz		BPSK			4.41
			QPSK			5.58
			16-QAM			5.72
			64-QAM			5.77
			256-QAM			6.50
	30 MHz		BPSK			4.39
			QPSK			5.50
			16-QAM			5.77
			64-QAM			5.75
			256-QAM			6.68
	40 MHz		BPSK			4.47
			QPSK			5.59
			16-QAM			5.77
			64-QAM			5.73
			256-QAM			6.69
	50 MHz		BPSK			4.63
			QPSK			5.55
			16-QAM			5.81
			64-QAM			5.81
			256-QAM			6.61

	60 MHz		BPSK			4.51
			QPSK			5.49
			16-QAM			5.82
			64-QAM			5.80
			256-QAM			6.62
	70 MHz		BPSK			5.60
			QPSK			5.72
			16-QAM			5.79
			64-QAM			5.79
			256-QAM			6.58
	80 MHz		BPSK			4.17
			QPSK			5.48
			16-QAM			5.70
			64-QAM			5.70
			256-QAM			6.74
	90 MHz		BPSK			5.10
			QPSK			5.47
			16-QAM			5.72
			64-QAM			5.71
			256-QAM			6.67
	100 MHz		BPSK			5.66
			QPSK			5.72
			16-QAM			5.78
			64-QAM			5.76
			256-QAM			6.49

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 143 ~ 197.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n77	10 MHz	3500.01	BPSK	Full RB	0	8.6241
			QPSK			8.6949
			16-QAM			8.6679
			64-QAM			8.6690
			256-QAM			8.6161
	15 MHz		BPSK			12.928
			QPSK			12.924
			16-QAM			12.957
			64-QAM			12.932
			256-QAM			12.979
	20 MHz		BPSK			17.976
			QPSK			17.981
			16-QAM			17.992
			64-QAM			17.993
			256-QAM			17.951
	30 MHz		BPSK			26.952
			QPSK			27.010
			16-QAM			27.072
			64-QAM			27.042
			256-QAM			26.969
	40 MHz		BPSK			36.001
			QPSK			35.891
			16-QAM			35.942
			64-QAM			35.940
			256-QAM			36.013
	50 MHz		BPSK			45.980
			QPSK			45.869
			16-QAM			45.767
			64-QAM			45.928
			256-QAM			45.758

	60 MHz		BPSK			58.030
			QPSK			58.112
			16-QAM			58.032
			64-QAM			58.007
			256-QAM			58.097
	70 MHz		BPSK			64.542
			QPSK			64.523
			16-QAM			64.381
			64-QAM			64.426
			256-QAM			64.650
	80 MHz		BPSK			77.203
			QPSK			77.055
			16-QAM			77.299
			64-QAM			77.502
			256-QAM			77.327
	90 MHz		BPSK			86.869
			QPSK			86.881
			16-QAM			86.861
			64-QAM			86.950
			256-QAM			86.849
	100 MHz		BPSK			96.400
			QPSK			95.513
			16-QAM			96.247
			64-QAM			96.562
			256-QAM			96.180

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 88 ~ 142.

8.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n77	10	3455.01	8.3076	37.805	-70.269	-32.464	-13.00
		3500.01	6.0334	37.805	-69.764	-31.959	
		3544.99	8.8724	37.805	-69.799	-31.994	
	15	3457.50	6.0280	37.805	-70.467	-32.662	
		3500.01	8.3395	37.805	-70.440	-32.635	
		3542.50	6.0180	37.805	-69.988	-32.183	
	20	3460.02	8.3225	37.805	-70.180	-32.375	
		3500.01	5.2393	37.805	-70.273	-32.468	
		3540.00	9.3978	37.805	-70.398	-32.593	
	30	3465.00	8.9232	37.805	-69.615	-31.810	
		3500.01	9.4482	37.805	-70.076	-32.271	
		3534.99	8.5693	37.805	-70.544	-32.739	
	40	3470.01	8.0449	37.805	-70.231	-32.426	
		3500.01	9.7014	37.805	-69.931	-32.126	
		3529.98	9.7129	37.805	-71.093	-33.288	
	50	3475.02	9.6780	37.805	-70.655	-32.850	
		3500.01	8.2553	37.805	-70.478	-32.673	
		3525.00	9.0897	37.805	-70.410	-32.605	
	60	3480.00	8.2822	37.805	-70.380	-32.575	
		3500.01	9.0927	37.805	-70.082	-32.277	
		3519.99	8.2548	37.805	-70.737	-32.932	
	70	3485.01	8.8719	37.805	-69.899	-32.094	
		3500.01	9.7139	37.805	-70.365	-32.560	
		3514.98	4.9063	37.190	-70.650	-33.460	
	80	3490.02	8.2986	37.805	-70.120	-32.315	
		3500.01	9.6785	37.805	-70.463	-32.658	
		3510.00	5.2259	37.805	-69.349	-31.544	
	90	3495.00	6.0115	37.805	-70.008	-32.203	
		3500.01	9.9367	37.805	-69.888	-32.083	
		3504.99	8.0170	37.805	-70.313	-32.508	
	100	3500.01	5.1695	37.805	-70.634	-32.829	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 330 ~ 391.
2. Duty Cycle factor already applied on the factor.
   - Duty Cycle Factor(dB) = 6.990

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

3. Factor(dB)

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

8.6 BAND EDGE

1. Plots of the EUT's Band Edge are shown Page 198 ~ 329.
2. Duty Cycle factor already applied on the factor.
   - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Divider
   - Result(dBm) = Reading + Factor
   - Duty Cycle Factor(dB) = 6.990

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3455.010	100 %	+20(Ref)	3455 010 008	0.0	0.000 000	0.000
	100 %	-30	3455 010 013	4.4	0.000 000	0.001
	100 %	-20	3455 010 012	3.6	0.000 000	0.001
	100 %	-10	3455 010 020	11.7	0.000 000	0.003
	100 %	0	3455 010 015	6.8	0.000 000	0.002
	100 %	+10	3455 010 022	13.5	0.000 000	0.004
	100 %	+30	3455 010 021	13.0	0.000 000	0.004
	100 %	+40	3455 010 013	4.9	0.000 000	0.001
	100 %	+50	3455 010 024	15.7	0.000 000	0.005
	Batt. Endpoint	+20	3455 010 012	3.5	0.000 000	0.001
3544.980	100 %	+20(Ref)	3544 980 005	0.0	0.000 000	0.000
	100 %	-30	3544 980 013	7.4	0.000 000	0.002
	100 %	-20	3544 980 018	13.0	0.000 000	0.004
	100 %	-10	3544 980 009	3.7	0.000 000	0.001
	100 %	0	3544 980 016	10.3	0.000 000	0.003
	100 %	+10	3544 980 020	14.8	0.000 000	0.004
	100 %	+30	3544 980 019	13.3	0.000 000	0.004
	100 %	+40	3544 980 019	14.0	0.000 000	0.004
	100 %	+50	3544 980 022	16.8	0.000 000	0.005
	Batt. Endpoint	+20	3544 980 012	6.5	0.000 000	0.002

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3457.500	100 %	+20(Ref)	3457 500 012	0.0	0.000 000	0.000
	100 %	-30	3457 500 029	16.4	0.000 000	0.005
	100 %	-20	3457 500 024	11.4	0.000 000	0.003
	100 %	-10	3457 500 019	7.2	0.000 000	0.002
	100 %	0	3457 500 028	15.9	0.000 000	0.005
	100 %	+10	3457 500 022	10.1	0.000 000	0.003
	100 %	+30	3457 500 017	5.1	0.000 000	0.001
	100 %	+40	3457 500 019	7.2	0.000 000	0.002
	100 %	+50	3457 500 018	5.8	0.000 000	0.002
	Batt. Endpoint	+20	3457 500 017	4.8	0.000 000	0.001
3542.490	100 %	+20(Ref)	3542 490 017	0.0	0.000 000	0.000
	100 %	-30	3542 490 025	8.6	0.000 000	0.002
	100 %	-20	3542 490 032	15.5	0.000 000	0.004
	100 %	-10	3542 490 028	11.4	0.000 000	0.003
	100 %	0	3542 490 025	8.4	0.000 000	0.002
	100 %	+10	3542 490 026	9.4	0.000 000	0.003
	100 %	+30	3542 490 032	15.5	0.000 000	0.004
	100 %	+40	3542 490 024	7.4	0.000 000	0.002
	100 %	+50	3542 490 024	7.5	0.000 000	0.002
	Batt. Endpoint	+20	3542 490 028	10.8	0.000 000	0.003

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3460.020	100 %	+20(Ref)	3460 020 009	0.0	0.000 000	0.000
	100 %	-30	3460 020 024	14.9	0.000 000	0.004
	100 %	-20	3460 020 014	5.3	0.000 000	0.002
	100 %	-10	3460 020 023	14.5	0.000 000	0.004
	100 %	0	3460 020 024	15.1	0.000 000	0.004
	100 %	+10	3460 020 024	15.6	0.000 000	0.004
	100 %	+30	3460 020 015	6.4	0.000 000	0.002
	100 %	+40	3460 020 020	10.9	0.000 000	0.003
	100 %	+50	3460 020 024	15.5	0.000 000	0.004
	Batt. Endpoint	+20	3460 020 017	8.6	0.000 000	0.002
3540.000	100 %	+20(Ref)	3540 000 014	0.0	0.000 000	0.000
	100 %	-30	3540 000 023	8.7	0.000 000	0.002
	100 %	-20	3540 000 021	7.7	0.000 000	0.002
	100 %	-10	3540 000 021	7.0	0.000 000	0.002
	100 %	0	3540 000 018	4.6	0.000 000	0.001
	100 %	+10	3540 000 023	8.7	0.000 000	0.002
	100 %	+30	3540 000 019	5.5	0.000 000	0.002
	100 %	+40	3540 000 025	11.1	0.000 000	0.003
	100 %	+50	3540 000 028	13.7	0.000 000	0.004
	Batt. Endpoint	+20	3540 000 029	15.1	0.000 000	0.004

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3465.000	100 %	+20(Ref)	3465 000 011	0.0	0.000 000	0.000
	100 %	-30	3465 000 017	6.5	0.000 000	0.002
	100 %	-20	3465 000 016	5.5	0.000 000	0.002
	100 %	-10	3465 000 026	14.8	0.000 000	0.004
	100 %	0	3465 000 022	10.8	0.000 000	0.003
	100 %	+10	3465 000 023	12.5	0.000 000	0.004
	100 %	+30	3465 000 024	13.4	0.000 000	0.004
	100 %	+40	3465 000 014	3.3	0.000 000	0.001
	100 %	+50	3465 000 015	3.9	0.000 000	0.001
	Batt. Endpoint	+20	3465 000 015	3.8	0.000 000	0.001
3534.990	100 %	+20(Ref)	3534 990 003	0.0	0.000 000	0.000
	100 %	-30	3534 990 020	16.3	0.000 000	0.005
	100 %	-20	3534 990 010	7.0	0.000 000	0.002
	100 %	-10	3534 990 014	10.3	0.000 000	0.003
	100 %	0	3534 990 014	10.8	0.000 000	0.003
	100 %	+10	3534 990 011	8.0	0.000 000	0.002
	100 %	+30	3534 990 011	7.6	0.000 000	0.002
	100 %	+40	3534 990 013	10.1	0.000 000	0.003
	100 %	+50	3534 990 012	9.2	0.000 000	0.003
	Batt. Endpoint	+20	3534 990 013	10.2	0.000 000	0.003

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3470.010	100 %	+20(Ref)	3470 010 008	0.0	0.000 000	0.000
	100 %	-30	3470 010 025	16.4	0.000 000	0.005
	100 %	-20	3470 010 023	14.9	0.000 000	0.004
	100 %	-10	3470 010 016	7.7	0.000 000	0.002
	100 %	0	3470 010 023	14.3	0.000 000	0.004
	100 %	+10	3470 010 024	15.7	0.000 000	0.005
	100 %	+30	3470 010 022	13.4	0.000 000	0.004
	100 %	+40	3470 010 015	6.7	0.000 000	0.002
	100 %	+50	3470 010 024	15.3	0.000 000	0.004
	Batt. Endpoint	+20	3470 010 014	6.0	0.000 000	0.002
3529.980	100 %	+20(Ref)	3529 980 003	0.0	0.000 000	0.000
	100 %	-30	3529 980 014	10.8	0.000 000	0.003
	100 %	-20	3529 980 011	7.3	0.000 000	0.002
	100 %	-10	3529 980 017	14.0	0.000 000	0.004
	100 %	0	3529 980 010	7.1	0.000 000	0.002
	100 %	+10	3529 980 007	3.4	0.000 000	0.001
	100 %	+30	3529 980 012	8.4	0.000 000	0.002
	100 %	+40	3529 980 008	4.8	0.000 000	0.001
	100 %	+50	3529 980 013	10.0	0.000 000	0.003
	Batt. Endpoint	+20	3529 980 019	15.4	0.000 000	0.004

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3475.020	100 %	+20(Ref)	3475 020 014	0.0	0.000 000	0.000
	100 %	-30	3475 020 026	11.6	0.000 000	0.003
	100 %	-20	3475 020 025	10.9	0.000 000	0.003
	100 %	-10	3475 020 028	13.4	0.000 000	0.004
	100 %	0	3475 020 018	4.0	0.000 000	0.001
	100 %	+10	3475 020 021	6.6	0.000 000	0.002
	100 %	+30	3475 020 023	9.1	0.000 000	0.003
	100 %	+40	3475 020 022	8.2	0.000 000	0.002
	100 %	+50	3475 020 025	10.8	0.000 000	0.003
	Batt. Endpoint	+20	3475 020 022	7.9	0.000 000	0.002
3525.000	100 %	+20(Ref)	3525 000 010	0.0	0.000 000	0.000
	100 %	-30	3525 000 018	7.8	0.000 000	0.002
	100 %	-20	3525 000 027	17.0	0.000 000	0.005
	100 %	-10	3525 000 025	15.0	0.000 000	0.004
	100 %	0	3525 000 024	14.0	0.000 000	0.004
	100 %	+10	3525 000 014	4.2	0.000 000	0.001
	100 %	+30	3525 000 022	12.2	0.000 000	0.003
	100 %	+40	3525 000 024	14.5	0.000 000	0.004
	100 %	+50	3525 000 015	5.6	0.000 000	0.002
	Batt. Endpoint	+20	3525 000 020	10.2	0.000 000	0.003

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3480.000	100 %	+20(Ref)	3480 000 015	0.0	0.000 000	0.000
	100 %	-30	3480 000 028	13.1	0.000 000	0.004
	100 %	-20	3480 000 028	12.8	0.000 000	0.004
	100 %	-10	3480 000 029	14.2	0.000 000	0.004
	100 %	0	3480 000 031	16.2	0.000 000	0.005
	100 %	+10	3480 000 018	3.6	0.000 000	0.001
	100 %	+30	3480 000 019	4.8	0.000 000	0.001
	100 %	+40	3480 000 022	7.8	0.000 000	0.002
	100 %	+50	3480 000 031	16.2	0.000 000	0.005
	Batt. Endpoint	+20	3480 000 031	16.2	0.000 000	0.005
3519.990	100 %	+20(Ref)	3519 990 008	0.0	0.000 000	0.000
	100 %	-30	3519 990 020	11.3	0.000 000	0.003
	100 %	-20	3519 990 015	6.4	0.000 000	0.002
	100 %	-10	3519 990 017	8.4	0.000 000	0.002
	100 %	0	3519 990 020	11.4	0.000 000	0.003
	100 %	+10	3519 990 023	14.3	0.000 000	0.004
	100 %	+30	3519 990 024	15.1	0.000 000	0.004
	100 %	+40	3519 990 018	9.9	0.000 000	0.003
	100 %	+50	3519 990 015	6.6	0.000 000	0.002
	Batt. Endpoint	+20	3519 990 015	6.7	0.000 000	0.002

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3485.010	100 %	+20(Ref)	3485 010 004	0.0	0.000 000	0.000
	100 %	-30	3485 010 015	11.4	0.000 000	0.003
	100 %	-20	3485 010 015	11.1	0.000 000	0.003
	100 %	-10	3485 010 009	5.5	0.000 000	0.002
	100 %	0	3485 010 008	4.6	0.000 000	0.001
	100 %	+10	3485 010 017	12.9	0.000 000	0.004
	100 %	+30	3485 010 013	9.6	0.000 000	0.003
	100 %	+40	3485 010 016	12.7	0.000 000	0.004
	100 %	+50	3485 010 015	10.8	0.000 000	0.003
	Batt. Endpoint	+20	3485 010 018	13.8	0.000 000	0.004
3514.980	100 %	+20(Ref)	3514 980 017	0.0	0.000 000	0.000
	100 %	-30	3514 980 024	7.0	0.000 000	0.002
	100 %	-20	3514 980 026	9.3	0.000 000	0.003
	100 %	-10	3514 980 029	12.2	0.000 000	0.003
	100 %	0	3514 980 033	15.9	0.000 000	0.005
	100 %	+10	3514 980 034	17.0	0.000 000	0.005
	100 %	+30	3514 980 020	3.4	0.000 000	0.001
	100 %	+40	3514 980 021	4.0	0.000 000	0.001
	100 %	+50	3514 980 024	7.4	0.000 000	0.002
	Batt. Endpoint	+20	3514 980 029	12.1	0.000 000	0.003

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3490.020	100 %	+20(Ref)	3490 020 009	0.0	0.000 000	0.000
	100 %	-30	3490 020 017	8.0	0.000 000	0.002
	100 %	-20	3490 020 019	10.0	0.000 000	0.003
	100 %	-10	3490 020 021	12.2	0.000 000	0.003
	100 %	0	3490 020 020	11.5	0.000 000	0.003
	100 %	+10	3490 020 018	9.3	0.000 000	0.003
	100 %	+30	3490 020 020	11.2	0.000 000	0.003
	100 %	+40	3490 020 019	9.8	0.000 000	0.003
	100 %	+50	3490 020 017	8.1	0.000 000	0.002
	Batt. Endpoint	+20	3490 020 024	15.3	0.000 000	0.004
3510.000	100 %	+20(Ref)	3510 000 014	0.0	0.000 000	0.000
	100 %	-30	3510 000 023	8.9	0.000 000	0.003
	100 %	-20	3510 000 024	9.3	0.000 000	0.003
	100 %	-10	3510 000 020	5.3	0.000 000	0.002
	100 %	0	3510 000 028	14.0	0.000 000	0.004
	100 %	+10	3510 000 026	11.5	0.000 000	0.003
	100 %	+30	3510 000 027	12.9	0.000 000	0.004
	100 %	+40	3510 000 022	7.9	0.000 000	0.002
	100 %	+50	3510 000 020	5.4	0.000 000	0.002
	Batt. Endpoint	+20	3510 000 019	5.0	0.000 000	0.001

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3495.000	100 %	+20(Ref)	3495 000 007	0.0	0.000 000	0.000
	100 %	-30	3495 000 013	6.0	0.000 000	0.002
	100 %	-20	3495 000 017	10.7	0.000 000	0.003
	100 %	-10	3495 000 012	5.2	0.000 000	0.001
	100 %	0	3495 000 020	13.0	0.000 000	0.004
	100 %	+10	3495 000 021	13.9	0.000 000	0.004
	100 %	+30	3495 000 012	5.0	0.000 000	0.001
	100 %	+40	3495 000 017	10.1	0.000 000	0.003
	100 %	+50	3495 000 013	6.1	0.000 000	0.002
	Batt. Endpoint	+20	3495 000 019	11.8	0.000 000	0.003
3504.990	100 %	+20(Ref)	3504 990 007	0.0	0.000 000	0.000
	100 %	-30	3504 990 014	6.9	0.000 000	0.002
	100 %	-20	3504 990 019	11.1	0.000 000	0.003
	100 %	-10	3504 990 022	14.2	0.000 000	0.004
	100 %	0	3504 990 014	6.5	0.000 000	0.002
	100 %	+10	3504 990 018	10.8	0.000 000	0.003
	100 %	+30	3504 990 013	5.8	0.000 000	0.002
	100 %	+40	3504 990 019	11.7	0.000 000	0.003
	100 %	+50	3504 990 022	14.7	0.000 000	0.004
	Batt. Endpoint	+20	3504 990 019	11.6	0.000 000	0.003

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3500.010	100 %	+20(Ref)	3500 010 015	0.0	0.000 000	0.000
	100 %	-30	3500 010 022	7.1	0.000 000	0.002
	100 %	-20	3500 010 021	6.0	0.000 000	0.002
	100 %	-10	3500 010 020	5.5	0.000 000	0.002
	100 %	0	3500 010 024	9.3	0.000 000	0.003
	100 %	+10	3500 010 027	12.1	0.000 000	0.003
	100 %	+30	3500 010 032	16.8	0.000 000	0.005
	100 %	+40	3500 010 028	12.7	0.000 000	0.004
	100 %	+50	3500 010 023	7.7	0.000 000	0.002
	Batt. Endpoint	+20	3500 010 030	14.6	0.000 000	0.004

9. TEST DATA (3700 MHz - 3980 MHz)

9.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3705.00	Sub6 n77/ 10 MHz [30 kHz]	PI/2 BPSK	-26.08	12.26	11.70	3.14	H	< 1.00	0.121	20.83	1	12
		QPSK	-26.11	12.23	11.70	3.14	H		0.120	20.80		
		16-QAM	-27.18	11.16	11.70	3.14	H		0.094	19.73		
		64-QAM	-28.69	9.65	11.70	3.14	H		0.066	18.22		
		256-QAM	-30.63	7.71	11.70	3.14	H		0.042	16.28		
3840.00		PI/2 BPSK	-26.81	13.11	11.24	3.21	H		0.130	21.14	1	12
		QPSK	-26.86	13.06	11.24	3.21	H		0.129	21.09		
		16-QAM	-27.77	12.15	11.24	3.21	H		0.104	20.18		
		64-QAM	-29.41	10.51	11.24	3.21	H		0.071	18.54		
		256-QAM	-31.31	8.61	11.24	3.21	H		0.046	16.64		
3975.00		PI/2 BPSK	-27.43	12.20	11.20	3.23	H		0.104	20.17	1	1
		QPSK	-27.45	12.18	11.20	3.23	H		0.104	20.15		
		16-QAM	-28.31	11.32	11.20	3.23	H		0.085	19.29		
		64-QAM	-29.98	9.65	11.20	3.23	H		0.058	17.62		
		256-QAM	-31.93	7.70	11.20	3.23	H		0.037	15.67		

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
3707.51	Sub6 n77/ 15 MHz [30 kHz]	PI/2 BPSK	-26.01	12.28	11.70	3.15	H	< 1.00	0.121	20.83	1	19
		QPSK	-26.02	12.27	11.70	3.15	H		0.121	20.82		
		16-QAM	-27.08	11.21	11.70	3.15	H		0.095	19.76		
		64-QAM	-28.62	9.67	11.70	3.15	H		0.066	18.22		
		256-QAM	-30.56	7.73	11.70	3.15	H		0.043	16.28		
3840.00		PI/2 BPSK	-26.84	13.08	11.24	3.21	H		0.129	21.11	1	19
		QPSK	-26.85	13.07	11.24	3.21	H		0.129	21.10		
		16-QAM	-27.79	12.13	11.24	3.21	H		0.104	20.16		
		64-QAM	-29.45	10.47	11.24	3.21	H		0.071	18.50		
		256-QAM	-31.29	8.63	11.24	3.21	H		0.046	16.66		
3972.48		PI/2 BPSK	-27.45	12.20	11.18	3.23	H		0.104	20.15	1	1
		QPSK	-27.47	12.18	11.18	3.23	H		0.103	20.13		
		16-QAM	-28.34	11.31	11.18	3.23	H		0.084	19.26		
		64-QAM	-30.14	9.51	11.18	3.23	H		0.056	17.46		
		256-QAM	-31.97	7.68	11.18	3.23	H		0.037	15.63		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3710.01	Sub6 n77/ 20 MHz [30 kHz]	PI/2 BPSK	-26.01	12.28	11.70	3.15	H	< 1.00	0.121	20.83	1	25
		QPSK	-26.02	12.27	11.70	3.15	H		0.121	20.82		
		16-QAM	-26.99	11.30	11.70	3.15	H		0.097	19.85		
		64-QAM	-28.60	9.69	11.70	3.15	H		0.067	18.24		
		256-QAM	-30.49	7.80	11.70	3.15	H		0.043	16.35		
3840.00		PI/2 BPSK	-26.81	13.11	11.24	3.21	H		0.130	21.14	1	25
		QPSK	-26.82	13.10	11.24	3.21	H		0.130	21.13		
		16-QAM	-27.76	12.16	11.24	3.21	H		0.104	20.19		
		64-QAM	-29.45	10.47	11.24	3.21	H		0.071	18.50		
		256-QAM	-31.29	8.63	11.24	3.21	H		0.046	16.66		
3969.99		PI/2 BPSK	-27.31	12.34	11.18	3.23	H		0.107	20.29	1	1
		QPSK	-27.28	12.37	11.18	3.23	H		0.108	20.32		
		16-QAM	-28.29	11.36	11.18	3.23	H		0.085	19.31		
		64-QAM	-29.91	9.74	11.18	3.23	H		0.059	17.69		
		256-QAM	-31.73	7.92	11.18	3.23	H		0.039	15.87		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3715.02	Sub6 n77/ 30 MHz [30 kHz]	PI/2 BPSK	-25.88	12.54	11.70	3.18	H	< 1.00	0.128	21.06	1	39
		QPSK	-25.92	12.50	11.70	3.18	H		0.127	21.02		
		16-QAM	-26.88	11.54	11.70	3.18	H		0.101	20.06		
		64-QAM	-28.45	9.97	11.70	3.18	H		0.071	18.49		
		256-QAM	-30.36	8.06	11.70	3.18	H		0.046	16.58		
3840.00		PI/2 BPSK	-26.84	13.08	11.24	3.21	H		0.129	21.11	1	39
		QPSK	-26.86	13.06	11.24	3.21	H		0.129	21.09		
		16-QAM	-27.76	12.16	11.24	3.21	H		0.104	20.19		
		64-QAM	-29.34	10.58	11.24	3.21	H		0.073	18.61		
		256-QAM	-31.36	8.56	11.24	3.21	H		0.046	16.59		
3964.98		PI/2 BPSK	-27.14	12.53	11.16	3.23	H		0.111	20.46	1	1
		QPSK	-27.09	12.58	11.16	3.23	H		0.113	20.51		
		16-QAM	-28.25	11.42	11.16	3.23	H		0.086	19.35		
		64-QAM	-29.75	9.92	11.16	3.23	H		0.061	17.85		
		256-QAM	-31.57	8.10	11.16	3.23	H		0.040	16.03		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3720.00	Sub6 n77/ 40 MHz [30 kHz]	PI/2 BPSK	-25.76	12.78	11.70	3.20	H	< 1.00	0.134	21.28	1	53
		QPSK	-25.77	12.77	11.70	3.20	H		0.134	21.27		
		16-QAM	-26.65	11.89	11.70	3.20	H		0.109	20.39		
		64-QAM	-28.32	10.22	11.70	3.20	H		0.074	18.72		
		256-QAM	-30.25	8.29	11.70	3.20	H		0.048	16.79		
3840.00		PI/2 BPSK	-26.79	13.13	11.24	3.21	H		0.131	21.16	1	53
		QPSK	-26.80	13.12	11.24	3.21	H		0.130	21.15		
		16-QAM	-27.68	12.24	11.24	3.21	H		0.106	20.27		
		64-QAM	-29.33	10.59	11.24	3.21	H		0.073	18.62		
		256-QAM	-31.26	8.66	11.24	3.21	H		0.047	16.69		
3960.00		PI/2 BPSK	-27.27	12.42	11.14	3.23	H		0.108	20.33	1	1
		QPSK	-27.28	12.41	11.14	3.23	H		0.108	20.32		
		16-QAM	-28.13	11.56	11.14	3.23	H		0.089	19.47		
		64-QAM	-29.86	9.83	11.14	3.23	H		0.059	17.74		
		256-QAM	-31.76	7.93	11.14	3.23	H		0.038	15.84		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3725.10	Sub6 n77/ 50 MHz [30 kHz]	PI/2 BPSK	-26.19	12.43	11.70	3.22	H	< 1.00	0.123	20.91	1	66
		QPSK	-26.20	12.42	11.70	3.22	H		0.123	20.90		
		16-QAM	-27.15	11.47	11.70	3.22	H		0.099	19.95		
		64-QAM	-28.80	9.82	11.70	3.22	H		0.068	18.30		
		256-QAM	-30.59	8.03	11.70	3.22	H		0.045	16.51		
3840.00		PI/2 BPSK	-26.84	13.08	11.24	3.21	H		0.129	21.11	1	66
		QPSK	-26.85	13.07	11.24	3.21	H		0.129	21.10		
		16-QAM	-27.77	12.15	11.24	3.21	H		0.104	20.18		
		64-QAM	-29.49	10.43	11.24	3.21	H		0.070	18.46		
		256-QAM	-31.33	8.59	11.24	3.21	H		0.046	16.62		
3954.99		PI/2 BPSK	-26.93	12.78	11.12	3.23	H		0.117	20.67	1	1
		QPSK	-26.95	12.76	11.12	3.23	H		0.116	20.65		
		16-QAM	-27.90	11.81	11.12	3.23	H		0.093	19.70		
		64-QAM	-29.54	10.17	11.12	3.23	H		0.064	18.06		
		256-QAM	-31.42	8.29	11.12	3.23	H		0.042	16.18		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3730.02	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-25.91	12.79	11.70	3.24	H	< 1.00	0.135	21.29	1	1
		QPSK	-25.90	12.80	11.70	3.24	H		0.134	21.26		
		16-QAM	-26.92	11.78	11.70	3.24	H		0.106	20.24		
		64-QAM	-28.48	10.22	11.70	3.24	H		0.074	18.68		
		256-QAM	-30.39	8.31	11.70	3.24	H		0.048	16.77		
3840.00		PI/2 BPSK	-26.76	13.16	11.24	3.21	H		0.132	21.19	1	82
		QPSK	-26.77	13.15	11.24	3.21	H		0.131	21.18		
		16-QAM	-27.66	12.26	11.24	3.21	H		0.107	20.29		
		64-QAM	-29.30	10.62	11.24	3.21	H		0.073	18.65		
		256-QAM	-31.22	8.70	11.24	3.21	H		0.047	16.73		
3949.98		PI/2 BPSK	-27.16	12.57	11.10	3.23	H		0.111	20.44	1	82
		QPSK	-27.17	12.56	11.10	3.23	H		0.110	20.43		
		16-QAM	-28.05	11.68	11.10	3.23	H		0.090	19.55		
		64-QAM	-29.69	10.04	11.10	3.23	H		0.062	17.91		
		256-QAM	-31.70	8.03	11.10	3.23	H		0.039	15.90		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3735.00	Sub6 n77/ 70 MHz [30 kHz]	PI/2 BPSK	-25.77	12.99	11.70	3.24	H	< 1.00	0.140	21.45	1	1
		QPSK	-25.78	12.98	11.70	3.24	H		0.139	21.44		
		16-QAM	-26.59	12.17	11.70	3.24	H		0.116	20.63		
		64-QAM	-28.49	10.27	11.70	3.24	H		0.075	18.73		
		256-QAM	-30.31	8.45	11.70	3.24	H		0.049	16.91		
3840.00		PI/2 BPSK	-26.55	13.37	11.24	3.21	H		0.138	21.40	1	1
		QPSK	-26.56	13.36	11.24	3.21	H		0.138	21.39		
		16-QAM	-27.60	12.32	11.24	3.21	H		0.108	20.35		
		64-QAM	-29.18	10.74	11.24	3.21	H		0.075	18.77		
		256-QAM	-31.07	8.85	11.24	3.21	H		0.049	16.88		
3945.00		PI/2 BPSK	-26.98	12.76	11.09	3.23	H		0.115	20.62	1	1
		QPSK	-26.99	12.75	11.09	3.23	H		0.115	20.61		
		16-QAM	-28.18	11.56	11.09	3.23	H		0.088	19.42		
		64-QAM	-29.56	10.18	11.09	3.23	H		0.064	18.04		
		256-QAM	-31.44	8.30	11.09	3.23	H		0.041	16.16		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3740.01	Sub6 n77/ 80 MHz [30 kHz]	PI/2 BPSK	-25.71	13.11	11.70	3.23	H	< 1.00	0.144	21.58	1	1
		QPSK	-25.73	13.09	11.70	3.23	H		0.143	21.56		
		16-QAM	-26.71	12.11	11.70	3.23	H		0.114	20.58		
		64-QAM	-28.31	10.51	11.70	3.23	H		0.079	18.98		
		256-QAM	-30.13	8.69	11.70	3.23	H		0.052	17.16		
3840.00		PI/2 BPSK	-26.17	13.75	11.24	3.21	H		0.151	21.78	1	1
		QPSK	-26.24	13.68	11.24	3.21	H		0.148	21.71		
		16-QAM	-27.18	12.74	11.24	3.21	H		0.119	20.77		
		64-QAM	-28.78	11.14	11.24	3.21	H		0.083	19.17		
		256-QAM	-30.69	9.23	11.24	3.21	H		0.053	17.26		
3939.99		PI/2 BPSK	-27.18	12.57	11.08	3.23	H		0.110	20.42	1	1
		QPSK	-27.21	12.54	11.08	3.23	H		0.109	20.39		
		16-QAM	-28.20	11.55	11.08	3.23	H		0.087	19.40		
		64-QAM	-29.78	9.97	11.08	3.23	H		0.061	17.82		
		256-QAM	-31.69	8.06	11.08	3.23	H		0.039	15.91		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3745.02	Sub6 n77/ 90 MHz [30 kHz]	PI/2 BPSK	-25.57	13.27	11.70	3.22	H	< 1.00	0.150	21.75	1	1
		QPSK	-25.58	13.26	11.70	3.22	H		0.149	21.74		
		16-QAM	-26.55	12.29	11.70	3.22	H		0.119	20.77		
		64-QAM	-28.24	10.60	11.70	3.22	H		0.081	19.08		
		256-QAM	-30.08	8.76	11.70	3.22	H		0.053	17.24		
3840.00		PI/2 BPSK	-25.90	14.02	11.24	3.21	H		0.160	22.05	1	1
		QPSK	-25.94	13.98	11.24	3.21	H		0.159	22.01		
		16-QAM	-26.96	12.96	11.24	3.21	H		0.126	20.99		
		64-QAM	-28.54	11.38	11.24	3.21	H		0.087	19.41		
		256-QAM	-30.46	9.46	11.24	3.21	H		0.056	17.49		
3934.98		PI/2 BPSK	-27.21	12.55	11.07	3.23	H		0.109	20.39	1	1
		QPSK	-27.25	12.51	11.07	3.23	H		0.108	20.35		
		16-QAM	-28.30	11.46	11.07	3.23	H		0.085	19.30		
		64-QAM	-29.70	10.06	11.07	3.23	H		0.062	17.90		
		256-QAM	-31.65	8.11	11.07	3.23	H		0.039	15.95		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3750.00	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-25.51	13.35	11.70	3.20	H	< 1.00	0.153	21.85	1	1
		QPSK	-25.55	13.31	11.70	3.20	H		0.152	21.81		
		16-QAM	-26.50	12.36	11.70	3.20	H		0.122	20.86		
		64-QAM	-28.08	10.78	11.70	3.20	H		0.085	19.28		
		256-QAM	-30.01	8.85	11.70	3.20	H		0.054	17.35		
3840.00		PI/2 BPSK	-25.63	14.29	11.24	3.21	H		0.171	22.32	1	1
		QPSK	-25.67	14.25	11.24	3.21	H		0.169	22.28		
		16-QAM	-26.66	13.26	11.24	3.21	H		0.135	21.29		
		64-QAM	-28.21	11.71	11.24	3.21	H		0.094	19.74		
		256-QAM	-30.03	9.89	11.24	3.21	H		0.062	17.92		
3930.00		PI/2 BPSK	-27.06	12.53	11.24	3.23	H		0.113	20.54	1	1
		QPSK	-27.15	12.44	11.24	3.23	H		0.111	20.45		
		16-QAM	-28.21	11.38	11.24	3.23	H		0.087	19.39		
		64-QAM	-29.69	9.90	11.24	3.23	H		0.062	17.91		
		256-QAM	-31.61	7.98	11.24	3.23	H		0.040	15.99		

9.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77

▣ 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
650000 (3750.00)	7 500.00	-47.64	11.50	-38.13	4.54	H	-31.17	-13.00	1	1
	11 250.00	-60.12	12.20	-47.24	5.74	V	-40.78	-13.00		
	15 000.00	-54.18	14.40	-46.04	6.75	V	-38.39	-13.00		
656000 (3840.00)	7 680.00	-53.01	11.54	-43.24	4.60	H	-36.30	-13.00	1	1
	11 520.00	-60.98	12.44	-47.04	5.72	H	-40.32	-13.00		
	15 360.00	-58.15	15.54	-50.02	6.81	H	-41.29	-13.00		
662000 (3930.00)	7 860.00	-56.20	11.00	-46.54	4.71	H	-40.25	-13.00	1	1
	11 790.00	-58.20	12.90	-45.82	5.87	H	-38.79	-13.00		
	15 720.00	-59.12	16.40	-50.18	6.88	H	-40.66	-13.00		

▣ ENDC-Mode : 12A(10 MHz)-n77A(100 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
23095 (707.5)	1415.00	-61.17	7.61	-67.80	1.87	V	-62.05	-13.00
	2122.50	-61.85	8.98	-67.67	2.31	V	-61.00	-13.00
	2830.00	-62.05	10.52	-66.06	2.73	V	-58.27	-13.00

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n77	10 MHz	3840.00	BPSK	Full RB	0	4.33
			QPSK			5.45
			16-QAM			5.80
			64-QAM			5.81
			256-QAM			7.00
	15 MHz		BPSK			4.11
			QPSK			5.40
			16-QAM			5.72
			64-QAM			5.78
			256-QAM			6.74
	20 MHz		BPSK			4.33
			QPSK			5.46
			16-QAM			5.76
			64-QAM			5.85
			256-QAM			6.72
	30 MHz		BPSK			4.29
			QPSK			5.38
			16-QAM			5.79
			64-QAM			5.87
			256-QAM			6.86
	40 MHz		BPSK			4.41
			QPSK			5.35
			16-QAM			5.76
			64-QAM			5.89
			256-QAM			6.82
	50 MHz		BPSK			4.64
			QPSK			5.37
			16-QAM			5.65
			64-QAM			5.68
			256-QAM			6.80

	60 MHz		BPSK			4.33
			QPSK			5.32
			16-QAM			5.65
			64-QAM			5.69
			256-QAM			6.79
	70 MHz		BPSK			4.38
			QPSK			5.53
			16-QAM			5.91
			64-QAM			5.96
			256-QAM			6.76
	80 MHz		BPSK			4.86
			QPSK			5.55
			16-QAM			5.91
			64-QAM			5.95
			256-QAM			6.75
	90 MHz		BPSK			4.16
			QPSK			5.50
			16-QAM			5.89
			64-QAM			5.93
			256-QAM			6.74
	100 MHz		BPSK			4.92
			QPSK			5.45
			16-QAM			5.89
			64-QAM			5.93
			256-QAM			6.72

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 448 ~ 502.

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n77	10 MHz	3840.00	BPSK	Full RB	0	8.5848
			QPSK			8.6381
			16-QAM			8.6432
			64-QAM			8.6663
			256-QAM			8.6399
	15 MHz		BPSK			12.835
			QPSK			12.933
			16-QAM			12.901
			64-QAM			12.873
			256-QAM			13.014
	20 MHz		BPSK			17.959
			QPSK			17.919
			16-QAM			17.930
			64-QAM			17.978
			256-QAM			17.979
	30 MHz		BPSK			26.936
			QPSK			26.975
			16-QAM			26.851
			64-QAM			26.902
			256-QAM			26.999
	40 MHz		BPSK			35.911
			QPSK			35.981
			16-QAM			35.891
			64-QAM			36.014
			256-QAM			35.836
	50 MHz		BPSK			45.705
			QPSK			45.734
			16-QAM			45.911
			64-QAM			45.909
			256-QAM			45.848

	60 MHz		BPSK			58.037
			QPSK			58.108
			16-QAM			58.076
			64-QAM			58.129
			256-QAM			58.042
	70 MHz		BPSK			64.494
			QPSK			64.633
			16-QAM			64.626
			64-QAM			64.578
			256-QAM			64.326
	80 MHz		BPSK			76.904
			QPSK			77.299
			16-QAM			77.185
			64-QAM			77.312
			256-QAM			77.178
	90 MHz		BPSK			86.919
			QPSK			86.956
			16-QAM			86.757
			64-QAM			86.665
			256-QAM			86.711
	100 MHz		BPSK			96.567
			QPSK			96.244
			16-QAM			96.319
			64-QAM			96.373
			256-QAM			96.161

Note:

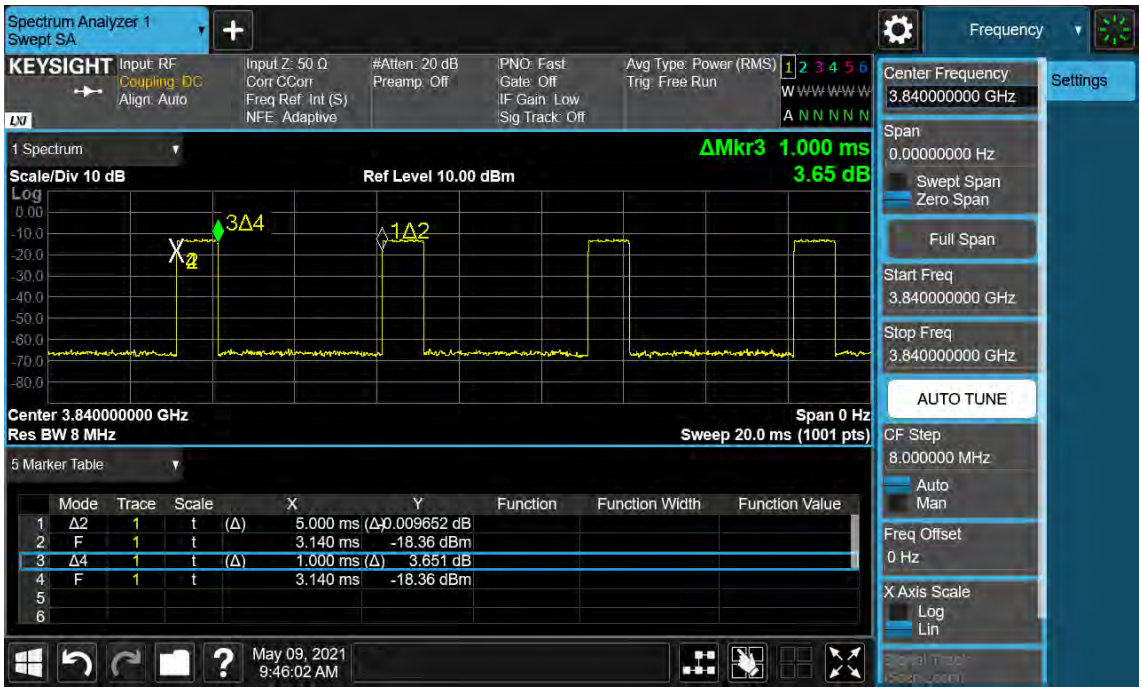
1. Plots of the EUT's Occupied Bandwidth are shown Page 393 ~ 447.

9.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n77	10	3705.00	9.4402	37.805	-71.424	-33.619	-13.00
		3840.00	7.9871	37.805	-70.030	-32.225	
		3975.00	8.8634	37.805	-71.075	-33.270	
	15	3707.51	8.8844	37.805	-70.142	-32.337	
		3840.00	8.3056	37.805	-70.475	-32.670	
		3972.48	9.6610	37.805	-70.260	-32.455	
	20	3710.01	9.9556	37.805	-70.409	-32.604	
		3840.00	8.2548	37.805	-70.535	-32.730	
		3969.99	5.1945	37.805	-70.375	-32.570	
	30	3715.02	9.4287	37.805	-70.447	-32.642	
		3840.00	8.0115	37.805	-70.971	-33.166	
		3964.98	9.9816	37.805	-69.870	-32.065	
	40	3720.00	6.0459	37.805	-70.053	-32.248	
		3840.00	4.9013	37.190	-69.060	-31.870	
		3960.00	8.2911	37.805	-70.558	-32.753	
	50	3725.10	4.9761	37.190	-70.737	-33.547	
		3840.00	8.2742	37.805	-70.457	-32.652	
		3954.99	8.2737	37.805	-70.987	-33.182	
	60	3730.02	9.3988	37.805	-69.842	-32.037	
		3840.00	4.9602	37.190	-70.027	-32.837	
		3949.98	9.1216	37.805	-70.461	-32.656	
	70	3735.00	5.2099	37.805	-70.635	-32.830	
		3840.00	7.9990	37.805	-69.719	-31.914	
		3945.00	8.8654	37.805	-70.522	-32.717	
	80	3740.01	8.2468	37.805	-70.074	-32.269	
		3840.00	8.3156	37.805	-70.566	-32.761	
		3939.99	4.9352	37.190	-70.620	-33.430	
	90	3745.02	9.7144	37.805	-70.754	-32.949	
		3840.00	8.8340	37.805	-70.592	-32.787	
		3934.98	9.7512	37.805	-70.188	-32.383	
	100	3750.00	8.0005	37.805	-70.590	-32.785	
		3840.00	9.1401	37.805	-70.338	-32.533	
		3930.00	5.9946	37.805	-70.351	-32.546	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 635 ~ 700.
2. Duty Cycle factor already applied on the factor.
   - Duty Cycle Factor(dB) = 6.990



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

3. Factor(dB)

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

9.6 BAND EDGE

1. Plots of the EUT's Band Edge are shown Page 503 ~ 634.
2. Duty Cycle factor already applied on the factor.
   - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Divider
   - Result(dBm) = Reading + Factor
   - Duty Cycle Factor(dB) = 6.990

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3705.000	100 %	+20(Ref)	3705 000 010	0.0	0.000 000	0.000
	100 %	-30	3705 000 018	8.7	0.000 000	0.002
	100 %	-20	3705 000 022	12.2	0.000 000	0.003
	100 %	-10	3705 000 017	7.4	0.000 000	0.002
	100 %	0	3705 000 014	4.2	0.000 000	0.001
	100 %	+10	3705 000 015	5.5	0.000 000	0.001
	100 %	+30	3705 000 016	6.2	0.000 000	0.002
	100 %	+40	3705 000 014	3.9	0.000 000	0.001
	100 %	+50	3705 000 015	5.4	0.000 000	0.001
	Batt. Endpoint	+20	3705 000 022	12.2	0.000 000	0.003
3975.000	100 %	+20(Ref)	3975 000 007	0.0	0.000 000	0.000
	100 %	-30	3975 000 013	5.6	0.000 000	0.001
	100 %	-20	3975 000 017	9.5	0.000 000	0.002
	100 %	-10	3975 000 010	3.3	0.000 000	0.001
	100 %	0	3975 000 021	14.0	0.000 000	0.004
	100 %	+10	3975 000 023	16.2	0.000 000	0.004
	100 %	+30	3975 000 016	8.8	0.000 000	0.002
	100 %	+40	3975 000 020	13.3	0.000 000	0.003
	100 %	+50	3975 000 016	8.9	0.000 000	0.002
	Batt. Endpoint	+20	3975 000 016	9.1	0.000 000	0.002

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3707.520	100 %	+20(Ref)	3707 520 010	0.0	0.000 000	0.000
	100 %	-30	3707 520 020	9.6	0.000 000	0.003
	100 %	-20	3707 520 016	6.4	0.000 000	0.002
	100 %	-10	3707 520 024	14.5	0.000 000	0.004
	100 %	0	3707 520 026	16.5	0.000 000	0.004
	100 %	+10	3707 520 025	14.9	0.000 000	0.004
	100 %	+30	3707 520 025	15.0	0.000 000	0.004
	100 %	+40	3707 520 018	8.5	0.000 000	0.002
	100 %	+50	3707 520 026	16.1	0.000 000	0.004
	Batt. Endpoint	+20	3707 520 026	16.5	0.000 000	0.004
3972.480	100 %	+20(Ref)	3972 480 005	0.0	0.000 000	0.000
	100 %	-30	3972 480 014	8.9	0.000 000	0.002
	100 %	-20	3972 480 013	7.6	0.000 000	0.002
	100 %	-10	3972 480 014	8.9	0.000 000	0.002
	100 %	0	3972 480 018	12.3	0.000 000	0.003
	100 %	+10	3972 480 022	16.6	0.000 000	0.004
	100 %	+30	3972 480 018	12.6	0.000 000	0.003
	100 %	+40	3972 480 021	15.2	0.000 000	0.004
	100 %	+50	3972 480 011	5.3	0.000 000	0.001
	Batt. Endpoint	+20	3972 480 018	13.1	0.000 000	0.003

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3710.010	100 %	+20(Ref)	3710 010 005	0.0	0.000 000	0.000
	100 %	-30	3710 010 019	13.4	0.000 000	0.004
	100 %	-20	3710 010 009	4.1	0.000 000	0.001
	100 %	-10	3710 010 022	16.3	0.000 000	0.004
	100 %	0	3710 010 021	15.9	0.000 000	0.004
	100 %	+10	3710 010 010	5.0	0.000 000	0.001
	100 %	+30	3710 010 022	16.9	0.000 000	0.005
	100 %	+40	3710 010 018	12.3	0.000 000	0.003
	100 %	+50	3710 010 010	4.3	0.000 000	0.001
	Batt. Endpoint	+20	3710 010 017	11.6	0.000 000	0.003
3969.990	100 %	+20(Ref)	3969 990 014	0.0	0.000 000	0.000
	100 %	-30	3969 990 019	5.0	0.000 000	0.001
	100 %	-20	3969 990 025	11.0	0.000 000	0.003
	100 %	-10	3969 990 029	14.5	0.000 000	0.004
	100 %	0	3969 990 031	16.9	0.000 000	0.004
	100 %	+10	3969 990 028	13.8	0.000 000	0.003
	100 %	+30	3969 990 029	15.3	0.000 000	0.004
	100 %	+40	3969 990 027	13.3	0.000 000	0.003
	100 %	+50	3969 990 025	11.0	0.000 000	0.003
	Batt. Endpoint	+20	3969 990 023	9.4	0.000 000	0.002

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3715.020	100 %	+20(Ref)	3715 020 006	0.0	0.000 000	0.000
	100 %	-30	3715 020 015	9.0	0.000 000	0.002
	100 %	-20	3715 020 022	16.3	0.000 000	0.004
	100 %	-10	3715 020 017	11.5	0.000 000	0.003
	100 %	0	3715 020 009	3.1	0.000 000	0.001
	100 %	+10	3715 020 010	4.0	0.000 000	0.001
	100 %	+30	3715 020 014	7.8	0.000 000	0.002
	100 %	+40	3715 020 020	14.1	0.000 000	0.004
	100 %	+50	3715 020 012	6.6	0.000 000	0.002
	Batt. Endpoint	+20	3715 020 012	6.3	0.000 000	0.002
3964.980	100 %	+20(Ref)	3964 980 007	0.0	0.000 000	0.000
	100 %	-30	3964 980 013	5.3	0.000 000	0.001
	100 %	-20	3964 980 019	11.5	0.000 000	0.003
	100 %	-10	3964 980 011	3.6	0.000 000	0.001
	100 %	0	3964 980 018	10.5	0.000 000	0.003
	100 %	+10	3964 980 022	14.6	0.000 000	0.004
	100 %	+30	3964 980 020	12.5	0.000 000	0.003
	100 %	+40	3964 980 016	8.2	0.000 000	0.002
	100 %	+50	3964 980 021	13.5	0.000 000	0.003
	Batt. Endpoint	+20	3964 980 011	3.8	0.000 000	0.001

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3720.000	100 %	+20(Ref)	3720 000 013	0.0	0.000 000	0.000
	100 %	-30	3720 000 024	11.0	0.000 000	0.003
	100 %	-20	3720 000 029	15.4	0.000 000	0.004
	100 %	-10	3720 000 026	13.1	0.000 000	0.004
	100 %	0	3720 000 029	15.6	0.000 000	0.004
	100 %	+10	3720 000 029	15.3	0.000 000	0.004
	100 %	+30	3720 000 019	5.5	0.000 000	0.001
	100 %	+40	3720 000 026	12.4	0.000 000	0.003
	100 %	+50	3720 000 018	4.7	0.000 000	0.001
	Batt. Endpoint	+20	3720 000 017	4.0	0.000 000	0.001
3960.000	100 %	+20(Ref)	3960 000 011	0.0	0.000 000	0.000
	100 %	-30	3960 000 023	11.7	0.000 000	0.003
	100 %	-20	3960 000 017	6.1	0.000 000	0.002
	100 %	-10	3960 000 022	10.6	0.000 000	0.003
	100 %	0	3960 000 015	3.5	0.000 000	0.001
	100 %	+10	3960 000 016	4.4	0.000 000	0.001
	100 %	+30	3960 000 016	5.0	0.000 000	0.001
	100 %	+40	3960 000 018	6.4	0.000 000	0.002
	100 %	+50	3960 000 026	14.7	0.000 000	0.004
	Batt. Endpoint	+20	3960 000 016	4.4	0.000 000	0.001

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3725.010	100 %	+20(Ref)	3725 010 011	0.0	0.000 000	0.000
	100 %	-30	3725 010 024	13.1	0.000 000	0.004
	100 %	-20	3725 010 014	3.3	0.000 000	0.001
	100 %	-10	3725 010 014	3.4	0.000 000	0.001
	100 %	0	3725 010 019	7.8	0.000 000	0.002
	100 %	+10	3725 010 025	14.0	0.000 000	0.004
	100 %	+30	3725 010 024	12.7	0.000 000	0.003
	100 %	+40	3725 010 020	9.3	0.000 000	0.003
	100 %	+50	3725 010 022	11.3	0.000 000	0.003
	Batt. Endpoint	+20	3725 010 027	15.9	0.000 000	0.004
3954.990	100 %	+20(Ref)	3954 990 006	0.0	0.000 000	0.000
	100 %	-30	3954 990 015	9.2	0.000 000	0.002
	100 %	-20	3954 990 011	5.3	0.000 000	0.001
	100 %	-10	3954 990 023	16.6	0.000 000	0.004
	100 %	0	3954 990 014	8.5	0.000 000	0.002
	100 %	+10	3954 990 021	14.8	0.000 000	0.004
	100 %	+30	3954 990 011	5.3	0.000 000	0.001
	100 %	+40	3954 990 014	7.7	0.000 000	0.002
	100 %	+50	3954 990 016	9.7	0.000 000	0.002
	Batt. Endpoint	+20	3954 990 013	6.8	0.000 000	0.002

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3730.020	100 %	+20(Ref)	3730 020 006	0.0	0.000 000	0.000
	100 %	-30	3730 020 010	4.3	0.000 000	0.001
	100 %	-20	3730 020 023	16.9	0.000 000	0.005
	100 %	-10	3730 020 014	8.1	0.000 000	0.002
	100 %	0	3730 020 013	6.8	0.000 000	0.002
	100 %	+10	3730 020 012	6.5	0.000 000	0.002
	100 %	+30	3730 020 014	8.1	0.000 000	0.002
	100 %	+40	3730 020 020	14.6	0.000 000	0.004
	100 %	+50	3730 020 019	12.9	0.000 000	0.003
	Batt. Endpoint	+20	3730 020 020	13.8	0.000 000	0.004
3949.995	100 %	+20(Ref)	3949 995 008	0.0	0.000 000	0.000
	100 %	-30	3949 995 025	16.3	0.000 000	0.004
	100 %	-20	3949 995 015	6.3	0.000 000	0.002
	100 %	-10	3949 995 015	6.7	0.000 000	0.002
	100 %	0	3949 995 015	6.9	0.000 000	0.002
	100 %	+10	3949 995 014	5.4	0.000 000	0.001
	100 %	+30	3949 995 019	10.6	0.000 000	0.003
	100 %	+40	3949 995 014	5.6	0.000 000	0.001
	100 %	+50	3949 995 021	12.7	0.000 000	0.003
	Batt. Endpoint	+20	3949 995 014	5.5	0.000 000	0.001

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3735.000	100 %	+20(Ref)	3735 000 008	0.0	0.000 000	0.000
	100 %	-30	3735 000 017	9.3	0.000 000	0.002
	100 %	-20	3735 000 013	4.5	0.000 000	0.001
	100 %	-10	3735 000 016	8.0	0.000 000	0.002
	100 %	0	3735 000 018	10.1	0.000 000	0.003
	100 %	+10	3735 000 013	4.9	0.000 000	0.001
	100 %	+30	3735 000 013	4.5	0.000 000	0.001
	100 %	+40	3735 000 024	15.9	0.000 000	0.004
	100 %	+50	3735 000 024	15.6	0.000 000	0.004
	Batt. Endpoint	+20	3735 000 016	8.2	0.000 000	0.002
3945.000	100 %	+20(Ref)	3945 000 005	0.0	0.000 000	0.000
	100 %	-30	3945 000 016	10.6	0.000 000	0.003
	100 %	-20	3945 000 022	16.7	0.000 000	0.004
	100 %	-10	3945 000 022	16.6	0.000 000	0.004
	100 %	0	3945 000 021	16.4	0.000 000	0.004
	100 %	+10	3945 000 021	15.6	0.000 000	0.004
	100 %	+30	3945 000 014	9.4	0.000 000	0.002
	100 %	+40	3945 000 021	16.4	0.000 000	0.004
	100 %	+50	3945 000 015	9.5	0.000 000	0.002
	Batt. Endpoint	+20	3945 000 021	16.0	0.000 000	0.004

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3740.010	100 %	+20(Ref)	3740 010 003	0.0	0.000 000	0.000
	100 %	-30	3740 010 012	9.4	0.000 000	0.003
	100 %	-20	3740 010 010	7.0	0.000 000	0.002
	100 %	-10	3740 010 008	4.5	0.000 000	0.001
	100 %	0	3740 010 016	12.8	0.000 000	0.003
	100 %	+10	3740 010 010	6.6	0.000 000	0.002
	100 %	+30	3740 010 015	11.8	0.000 000	0.003
	100 %	+40	3740 010 015	12.3	0.000 000	0.003
	100 %	+50	3740 010 017	13.5	0.000 000	0.004
	Batt. Endpoint	+20	3740 010 012	8.8	0.000 000	0.002
3939.990	100 %	+20(Ref)	3939 990 014	0.0	0.000 000	0.000
	100 %	-30	3939 990 018	4.1	0.000 000	0.001
	100 %	-20	3939 990 024	10.2	0.000 000	0.003
	100 %	-10	3939 990 018	4.5	0.000 000	0.001
	100 %	0	3939 990 027	13.7	0.000 000	0.003
	100 %	+10	3939 990 024	10.8	0.000 000	0.003
	100 %	+30	3939 990 020	6.5	0.000 000	0.002
	100 %	+40	3939 990 021	7.9	0.000 000	0.002
	100 %	+50	3939 990 029	15.4	0.000 000	0.004
	Batt. Endpoint	+20	3939 990 018	4.2	0.000 000	0.001

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3745.020	100 %	+20(Ref)	3745 020 010	0.0	0.000 000	0.000
	100 %	-30	3745 020 021	11.5	0.000 000	0.003
	100 %	-20	3745 020 013	3.4	0.000 000	0.001
	100 %	-10	3745 020 022	12.2	0.000 000	0.003
	100 %	0	3745 020 022	11.9	0.000 000	0.003
	100 %	+10	3745 020 025	15.4	0.000 000	0.004
	100 %	+30	3745 020 023	13.6	0.000 000	0.004
	100 %	+40	3745 020 015	5.3	0.000 000	0.001
	100 %	+50	3745 020 023	13.4	0.000 000	0.004
	Batt. Endpoint	+20	3745 020 020	10.3	0.000 000	0.003
3934.980	100 %	+20(Ref)	3934 980 010	0.0	0.000 000	0.000
	100 %	-30	3934 980 024	13.8	0.000 000	0.004
	100 %	-20	3934 980 023	12.9	0.000 000	0.003
	100 %	-10	3934 980 014	4.1	0.000 000	0.001
	100 %	0	3934 980 027	17.0	0.000 000	0.004
	100 %	+10	3934 980 013	3.7	0.000 000	0.001
	100 %	+30	3934 980 016	6.6	0.000 000	0.002
	100 %	+40	3934 980 021	10.9	0.000 000	0.003
	100 %	+50	3934 980 016	6.3	0.000 000	0.002
	Batt. Endpoint	+20	3934 980 024	14.4	0.000 000	0.004

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.880 VDC

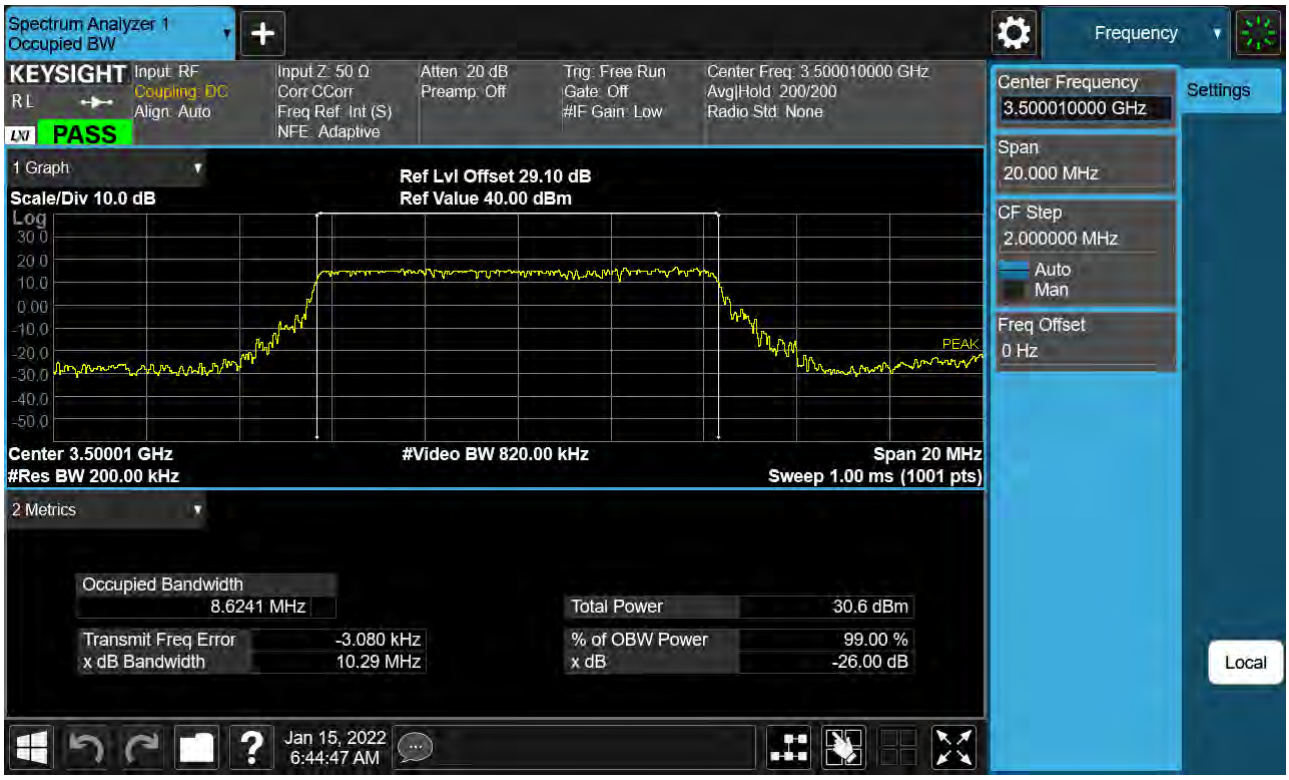
▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

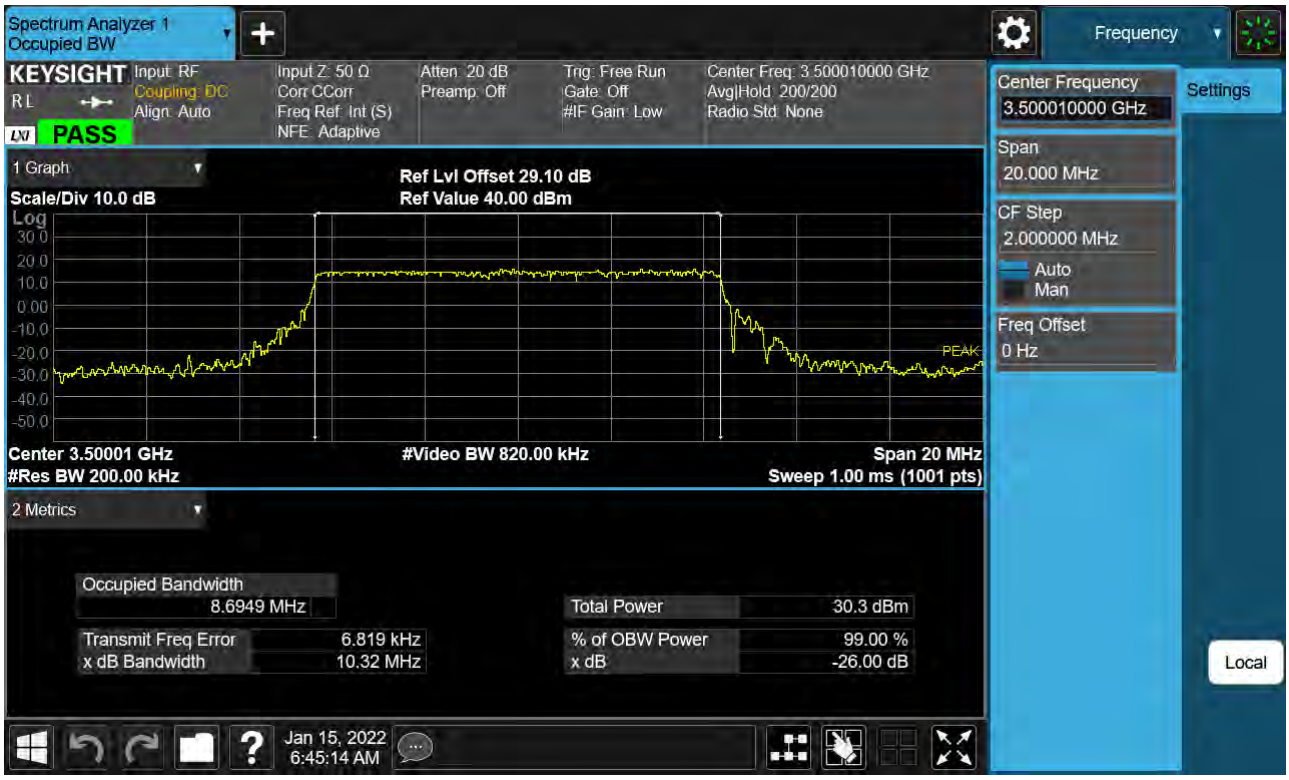
Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3750.000	100 %	+20(Ref)	3750 000 014	0.0	0.000 000	0.000
	100 %	-30	3750 000 026	11.5	0.000 000	0.003
	100 %	-20	3750 000 020	5.8	0.000 000	0.002
	100 %	-10	3750 000 031	16.1	0.000 000	0.004
	100 %	0	3750 000 024	9.2	0.000 000	0.002
	100 %	+10	3750 000 024	9.9	0.000 000	0.003
	100 %	+30	3750 000 019	4.6	0.000 000	0.001
	100 %	+40	3750 000 018	3.1	0.000 000	0.001
	100 %	+50	3750 000 020	6.0	0.000 000	0.002
	Batt. Endpoint	+20	3750 000 030	15.3	0.000 000	0.004
3930.000	100 %	+20(Ref)	3930 000 013	0.0	0.000 000	0.000
	100 %	-30	3930 000 018	5.5	0.000 000	0.001
	100 %	-20	3930 000 018	4.6	0.000 000	0.001
	100 %	-10	3930 000 018	4.9	0.000 000	0.001
	100 %	0	3930 000 024	11.3	0.000 000	0.003
	100 %	+10	3930 000 016	3.3	0.000 000	0.001
	100 %	+30	3930 000 026	13.2	0.000 000	0.003
	100 %	+40	3930 000 029	16.4	0.000 000	0.004
	100 %	+50	3930 000 027	13.7	0.000 000	0.003
	Batt. Endpoint	+20	3930 000 027	14.4	0.000 000	0.004

10. TEST PLOTS(3450 MHz - 3550 MHz)

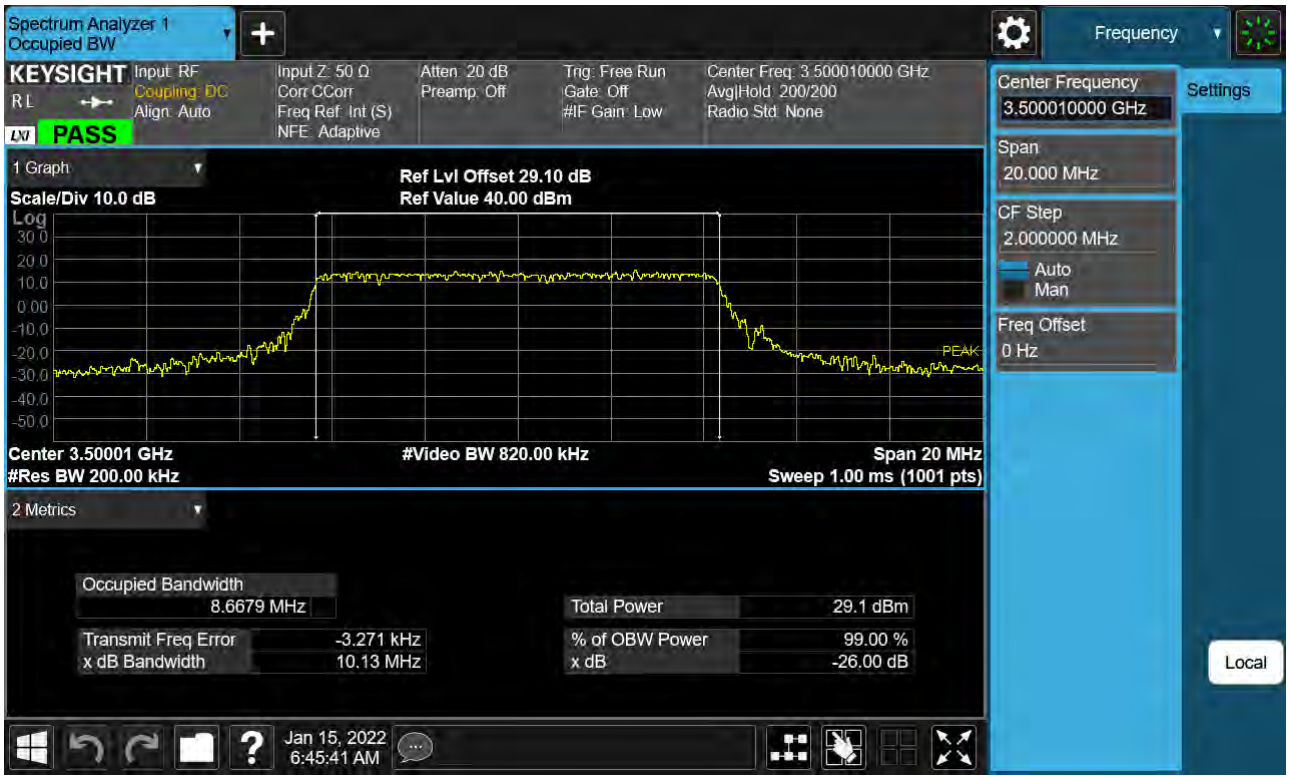
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 BPSK)



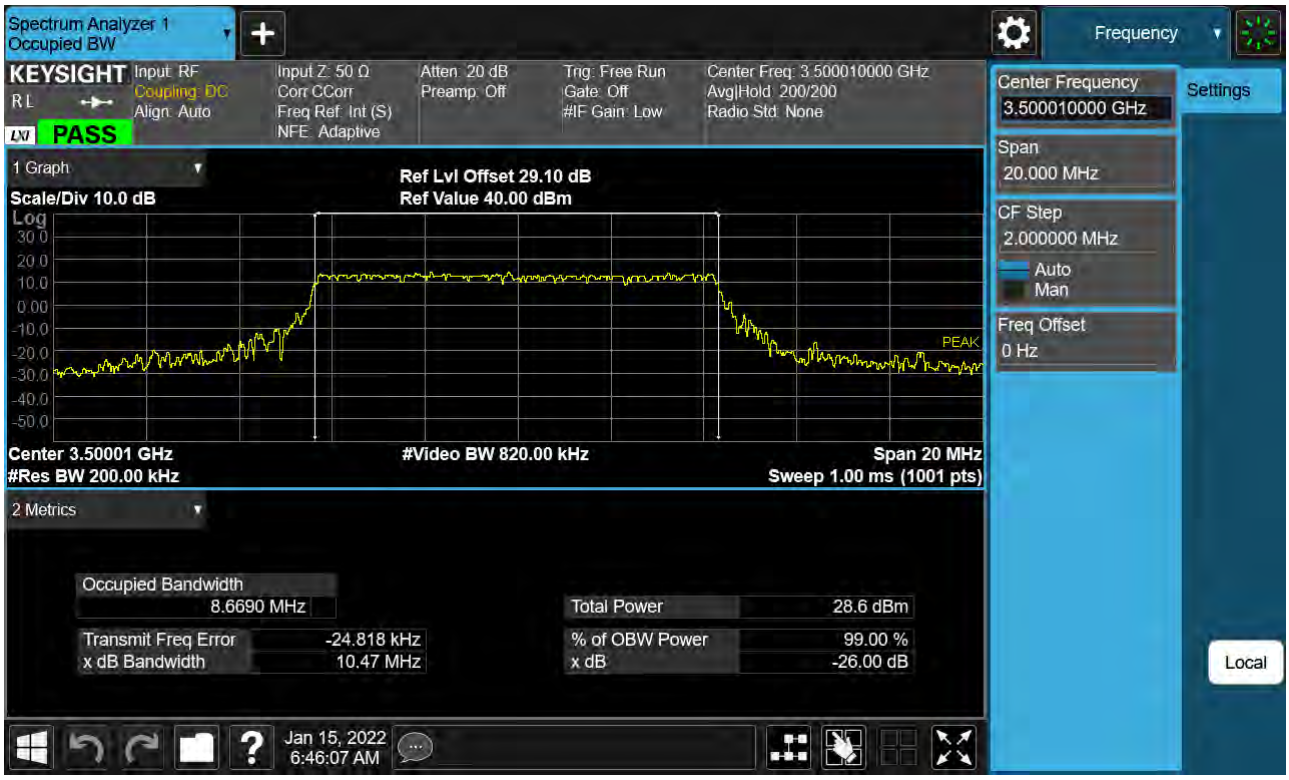
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 QPSK)



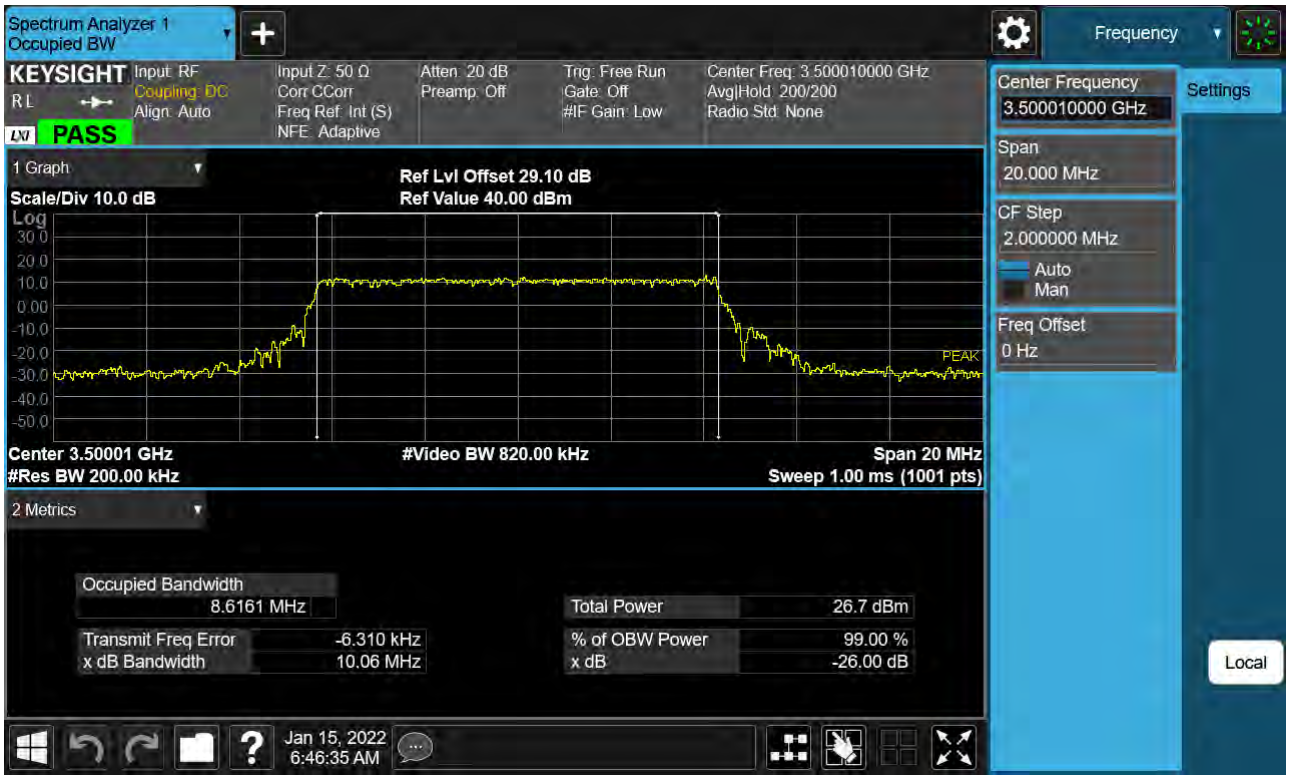
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 16QAM)



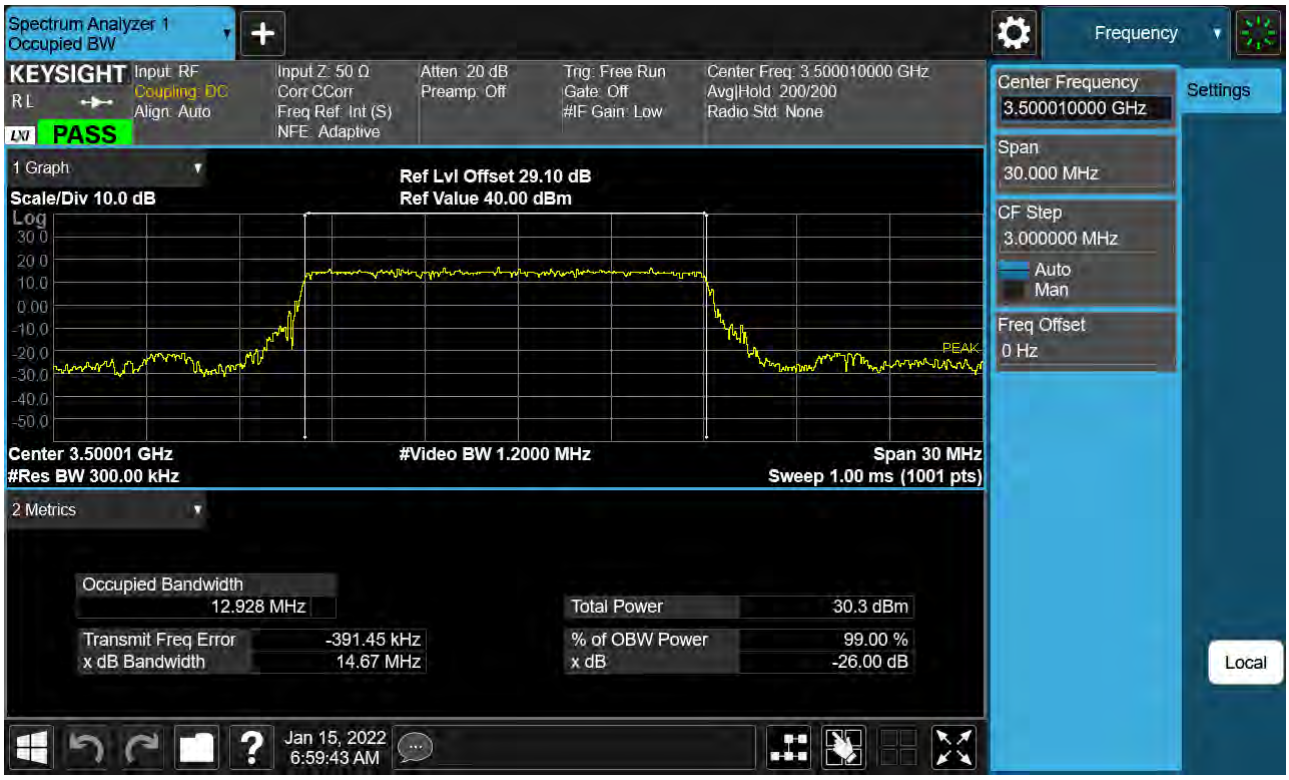
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 64QAM)



Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 256QAM)

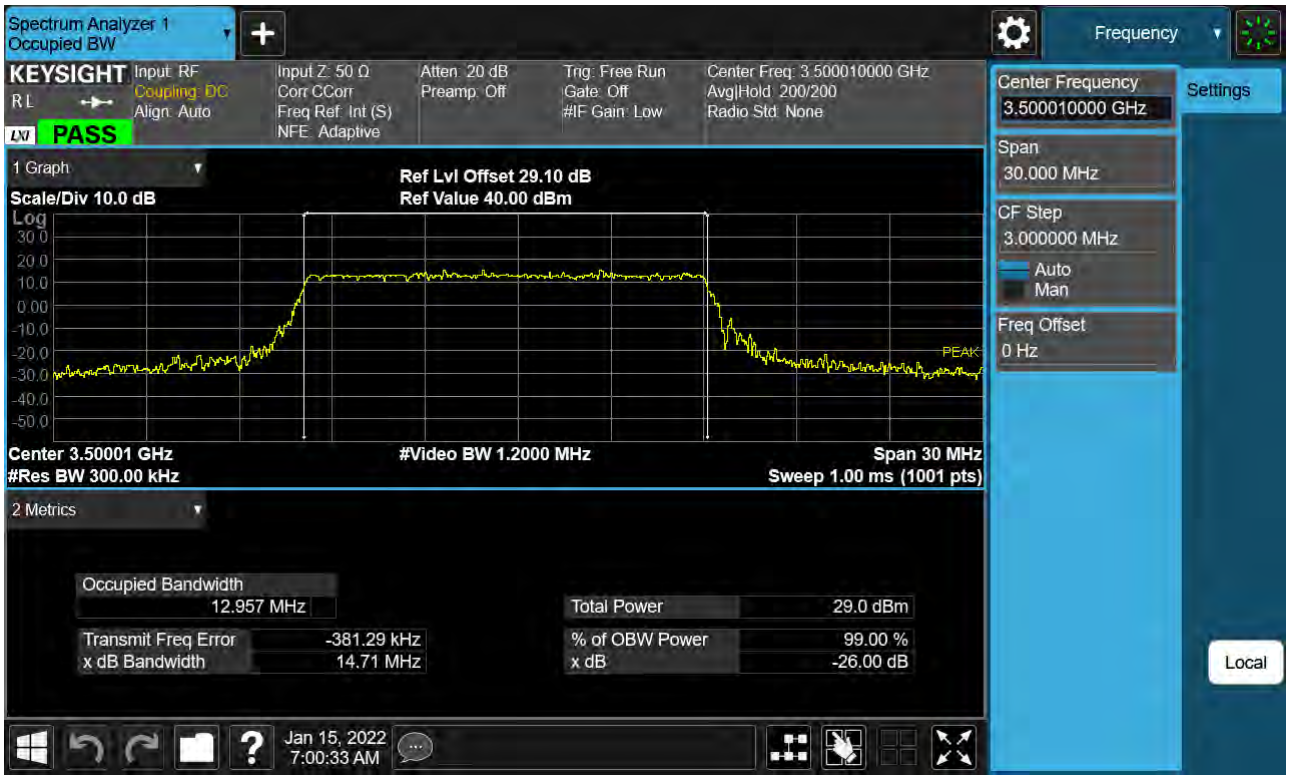


Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 BPSK)

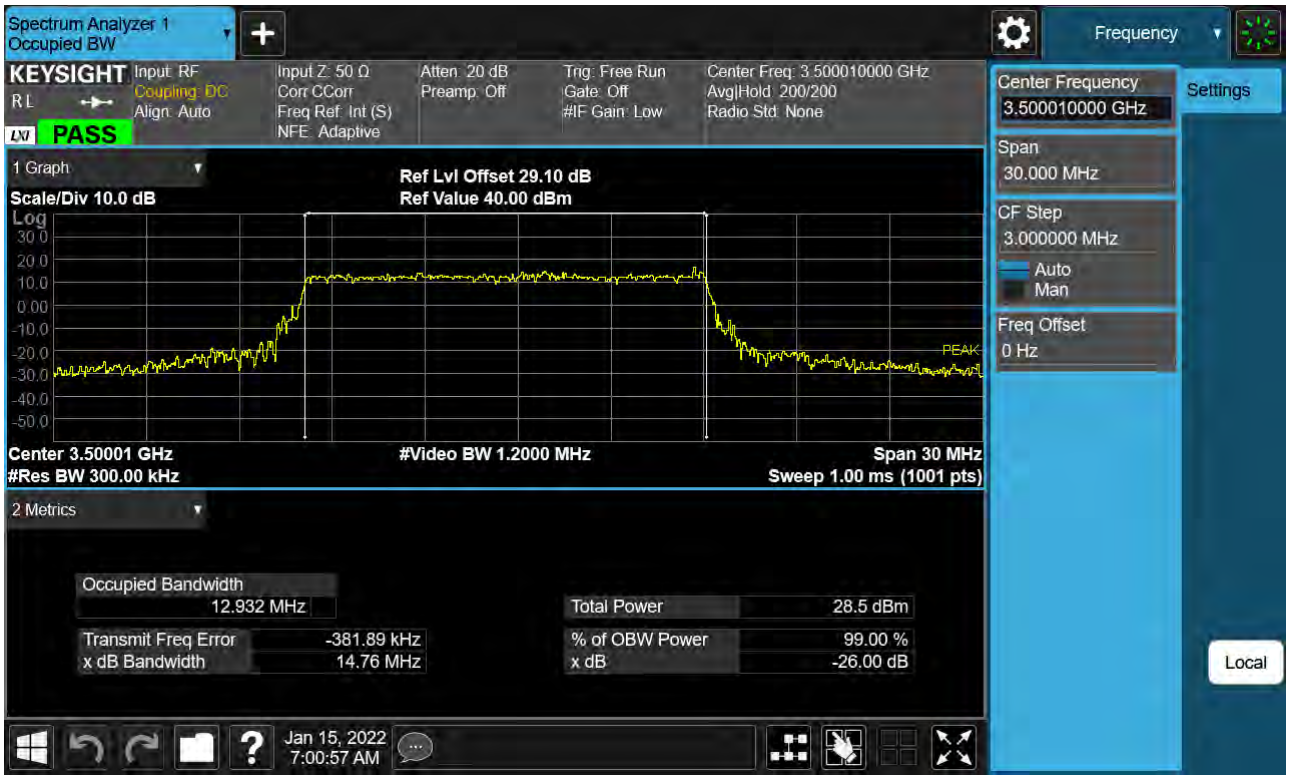


Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 QPSK)

Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 16QAM)

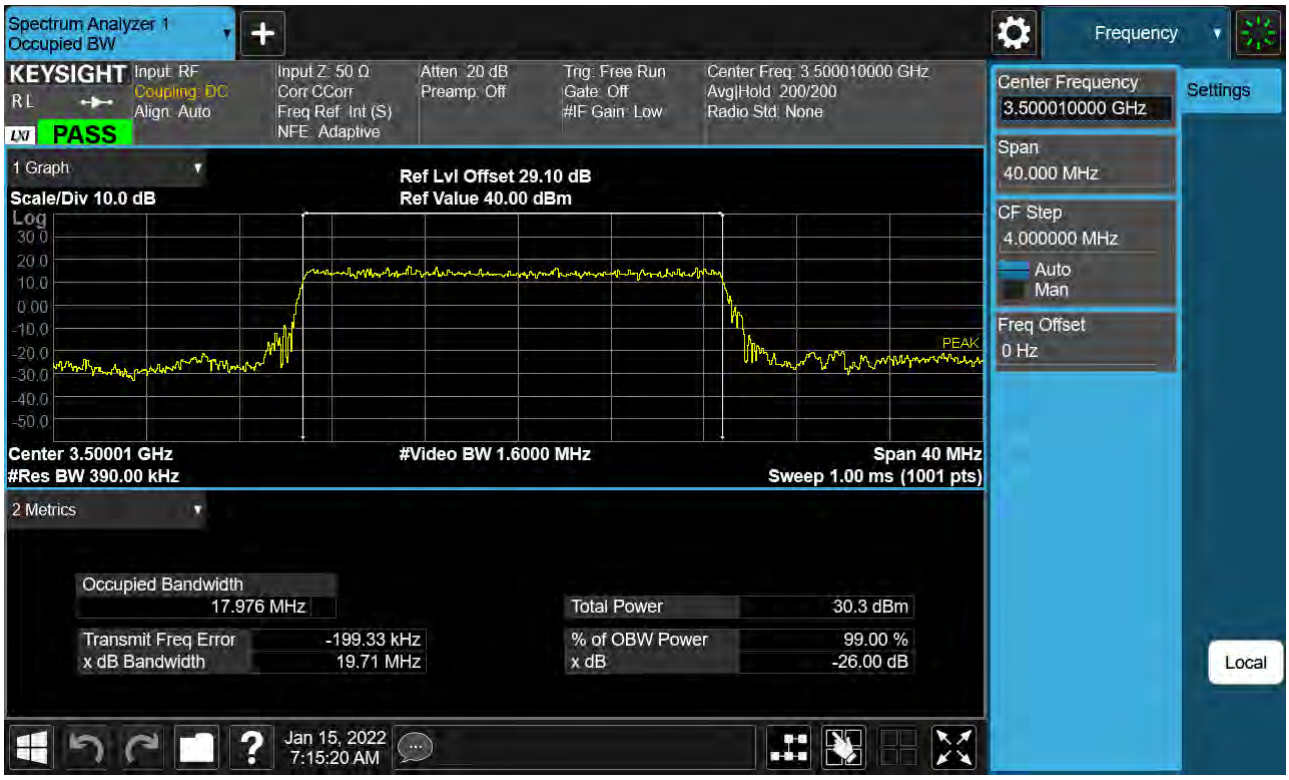


Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 64QAM)

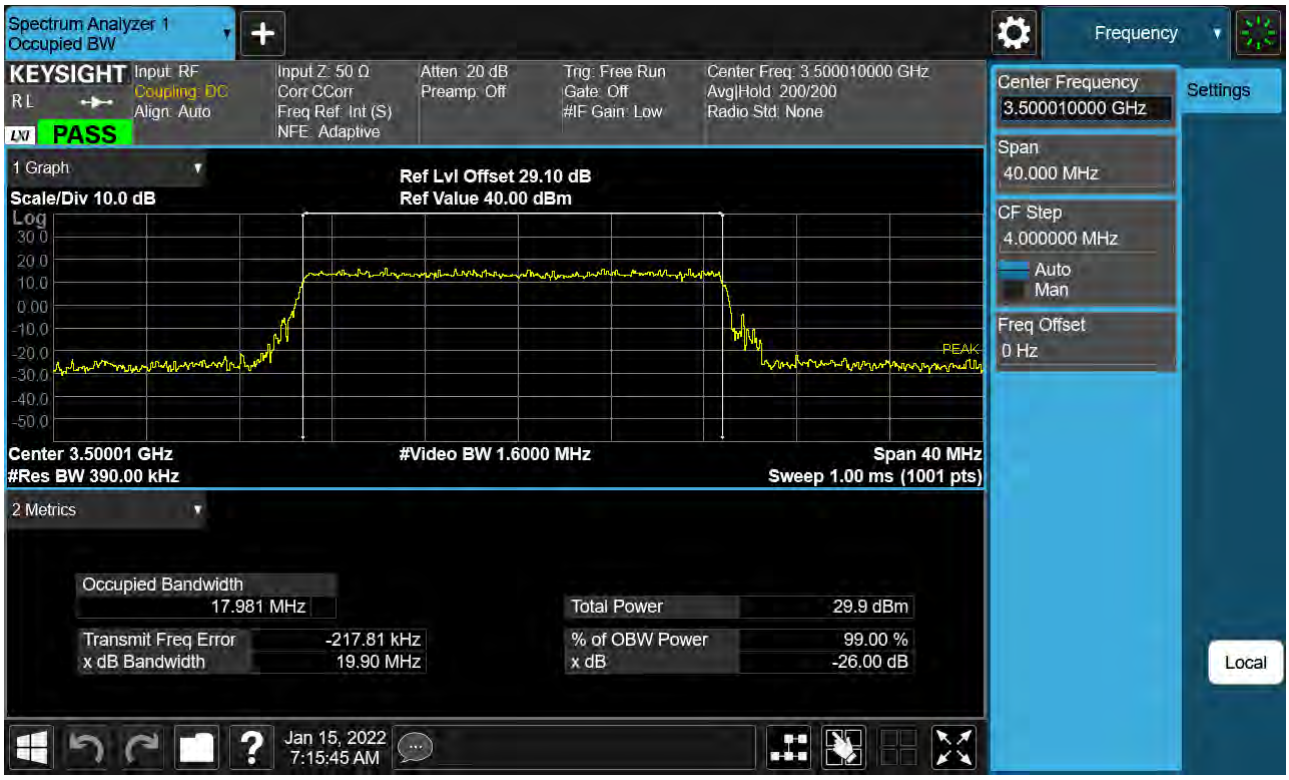


Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 256QAM)

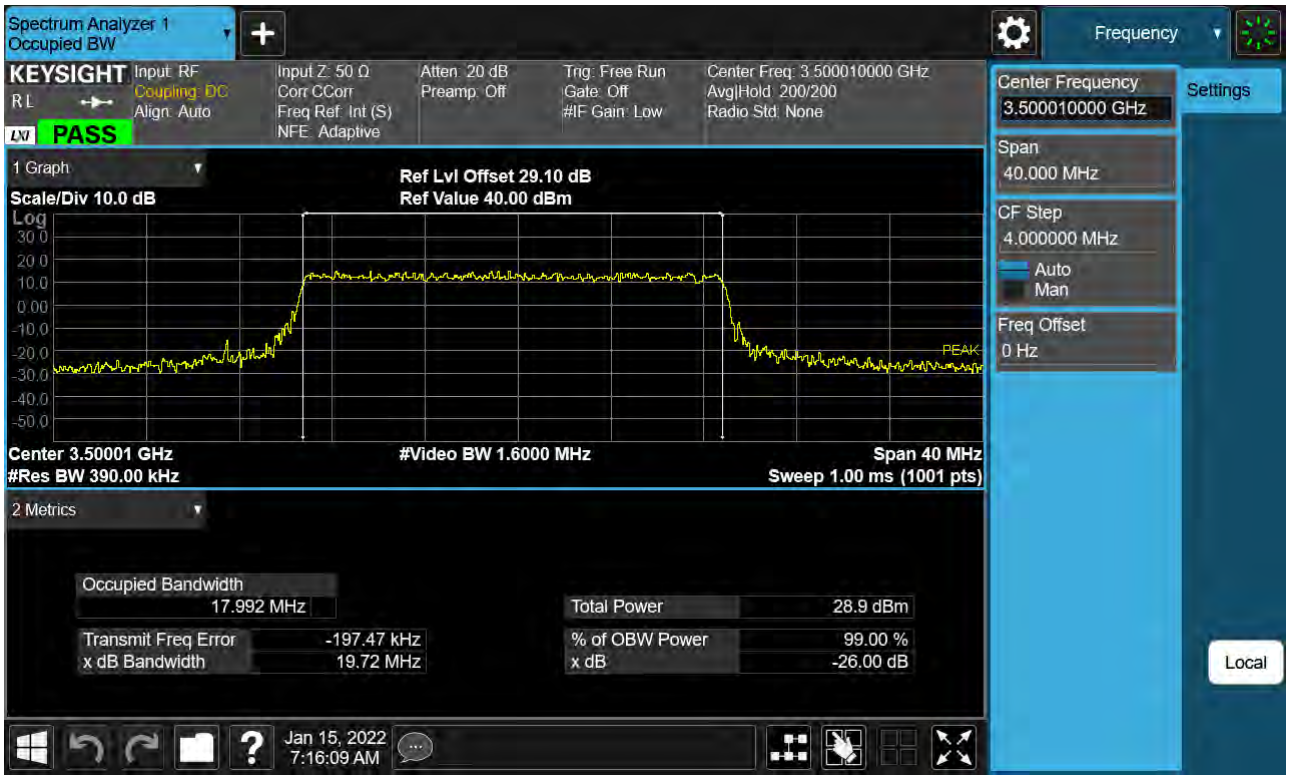
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 BPSK)



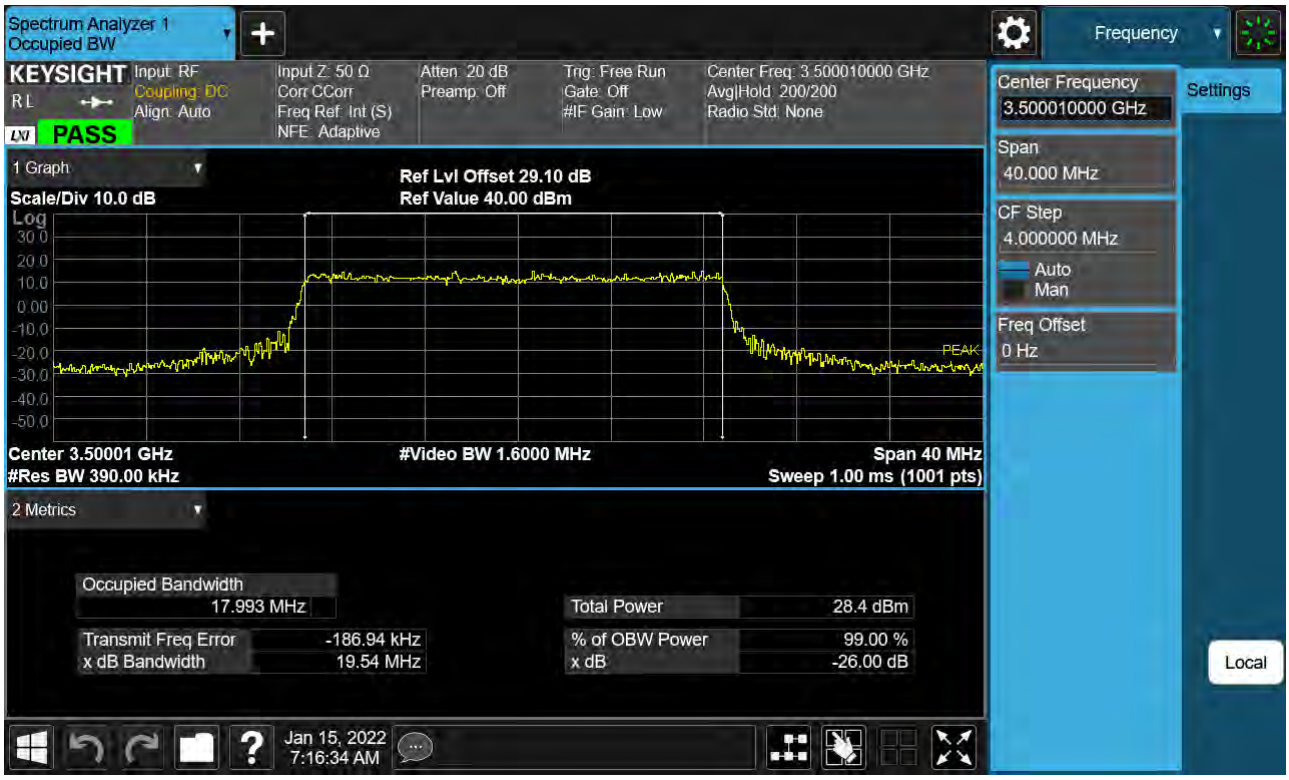
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 QPSK)



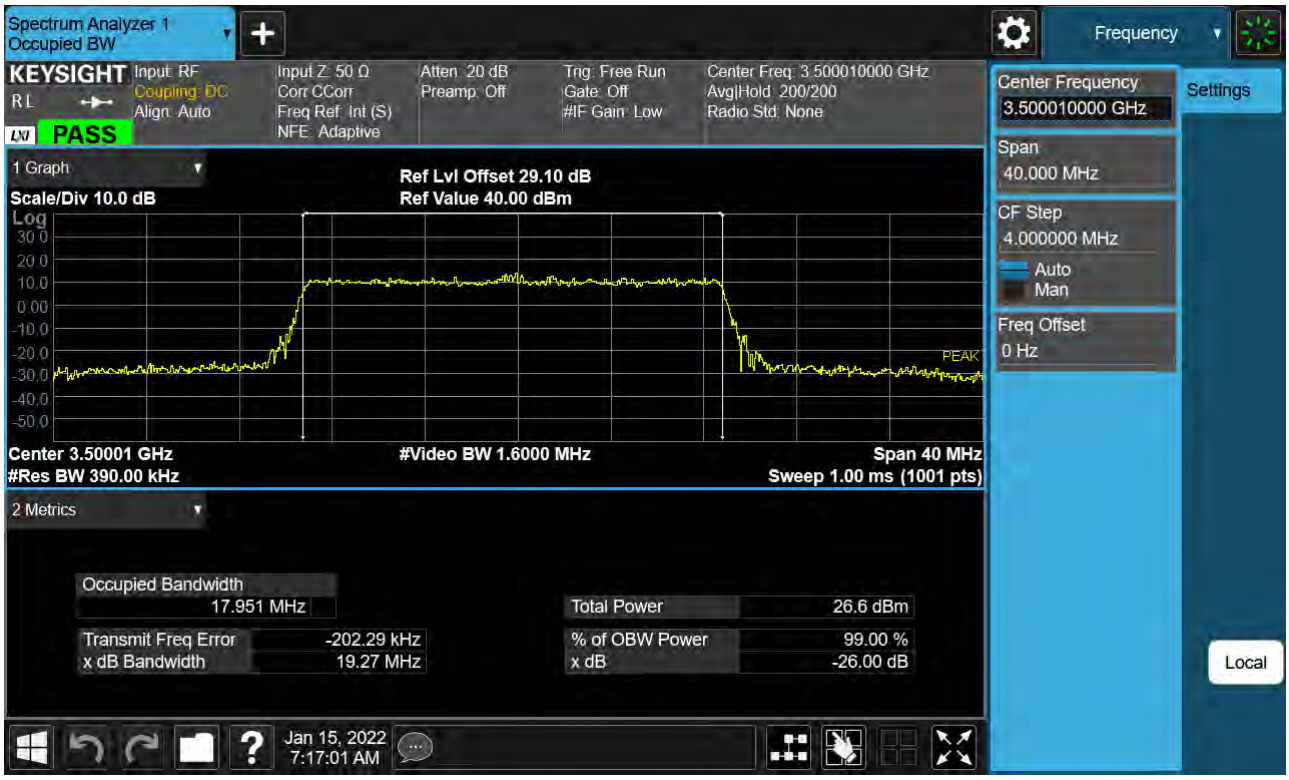
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 16QAM)



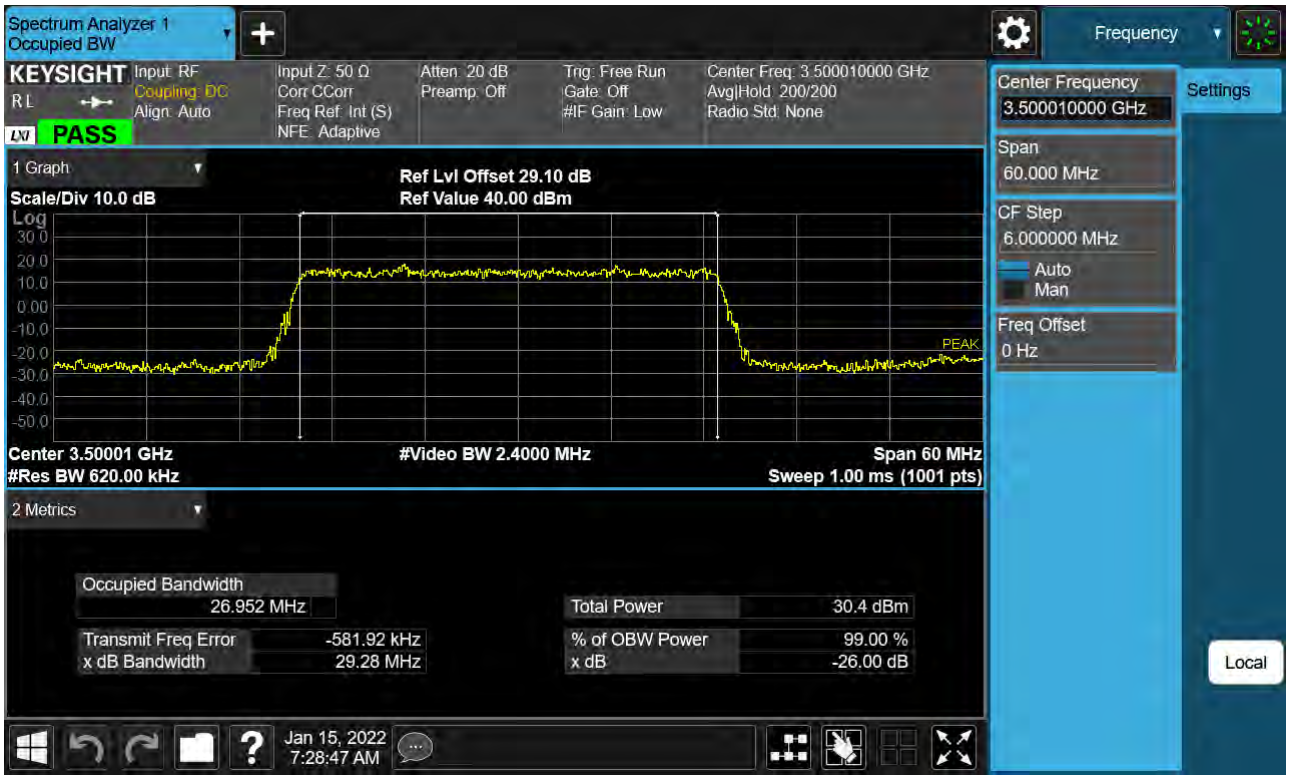
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 64QAM)



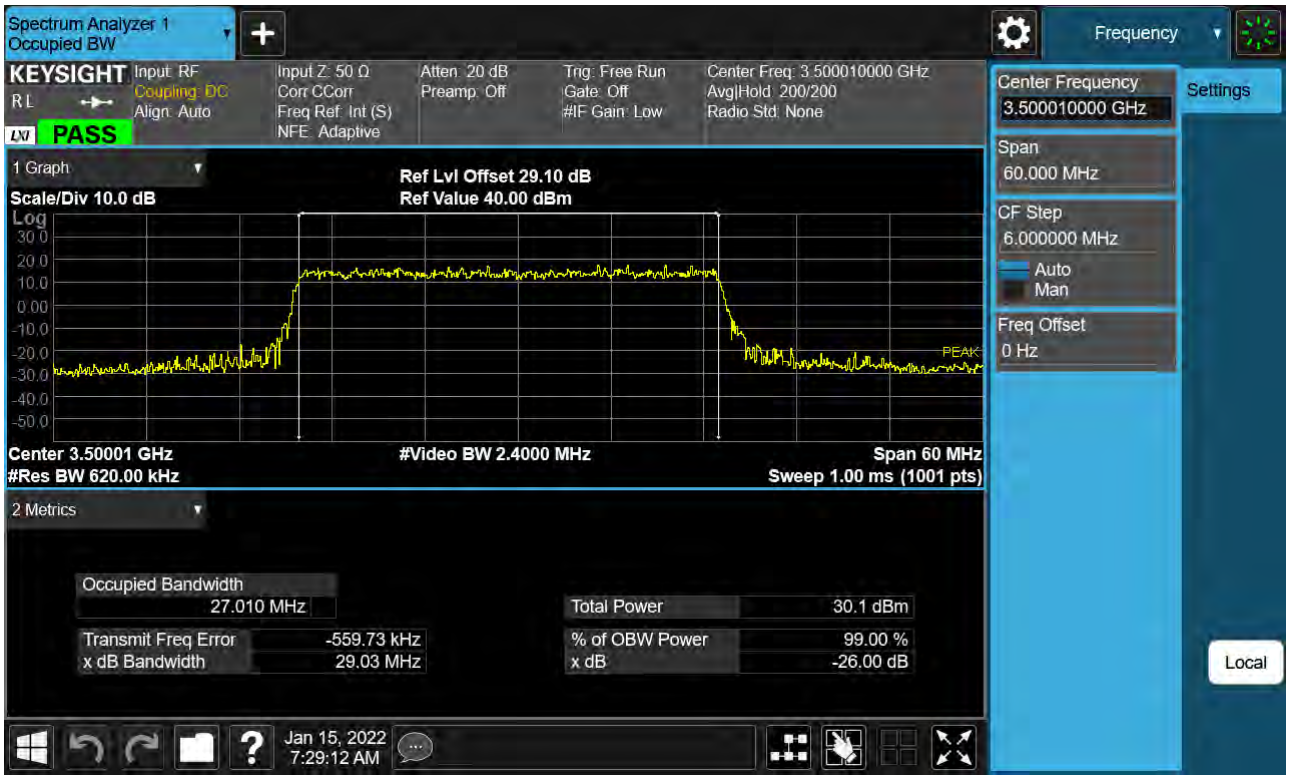
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 256QAM)



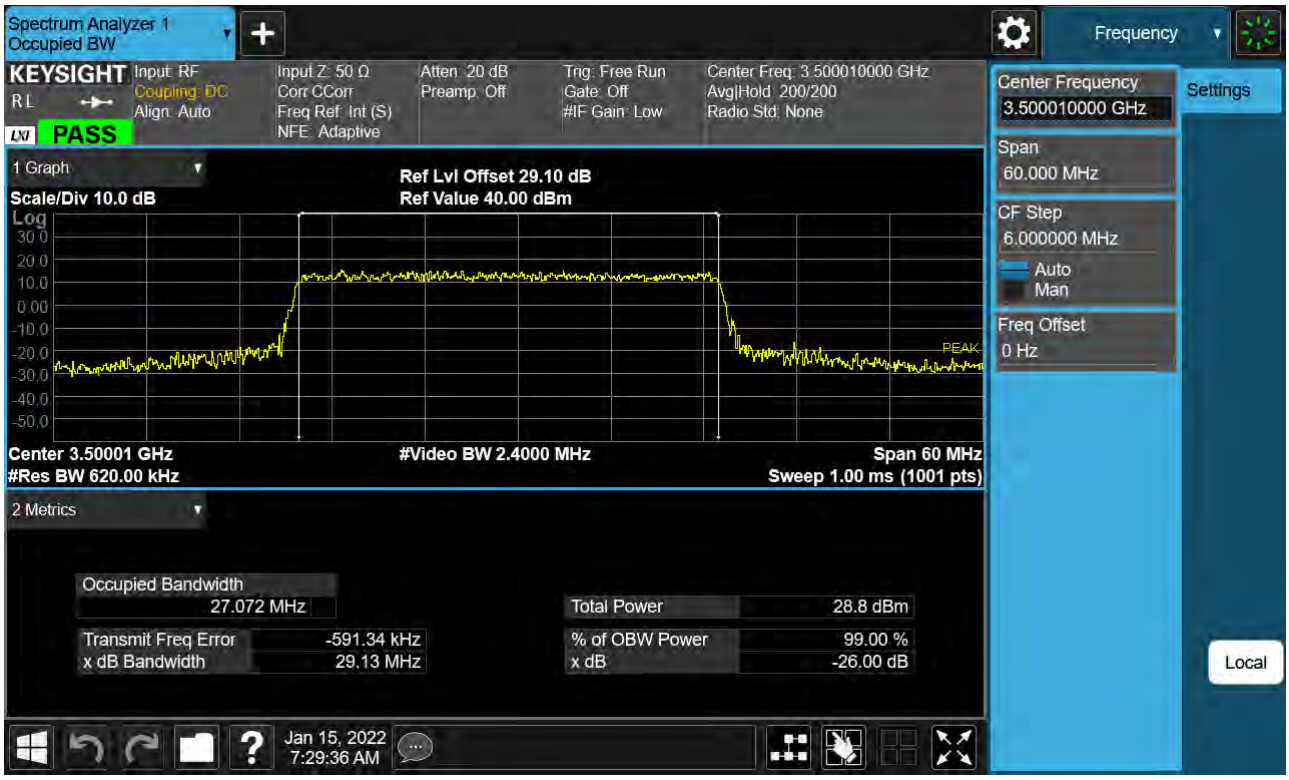
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 BPSK)



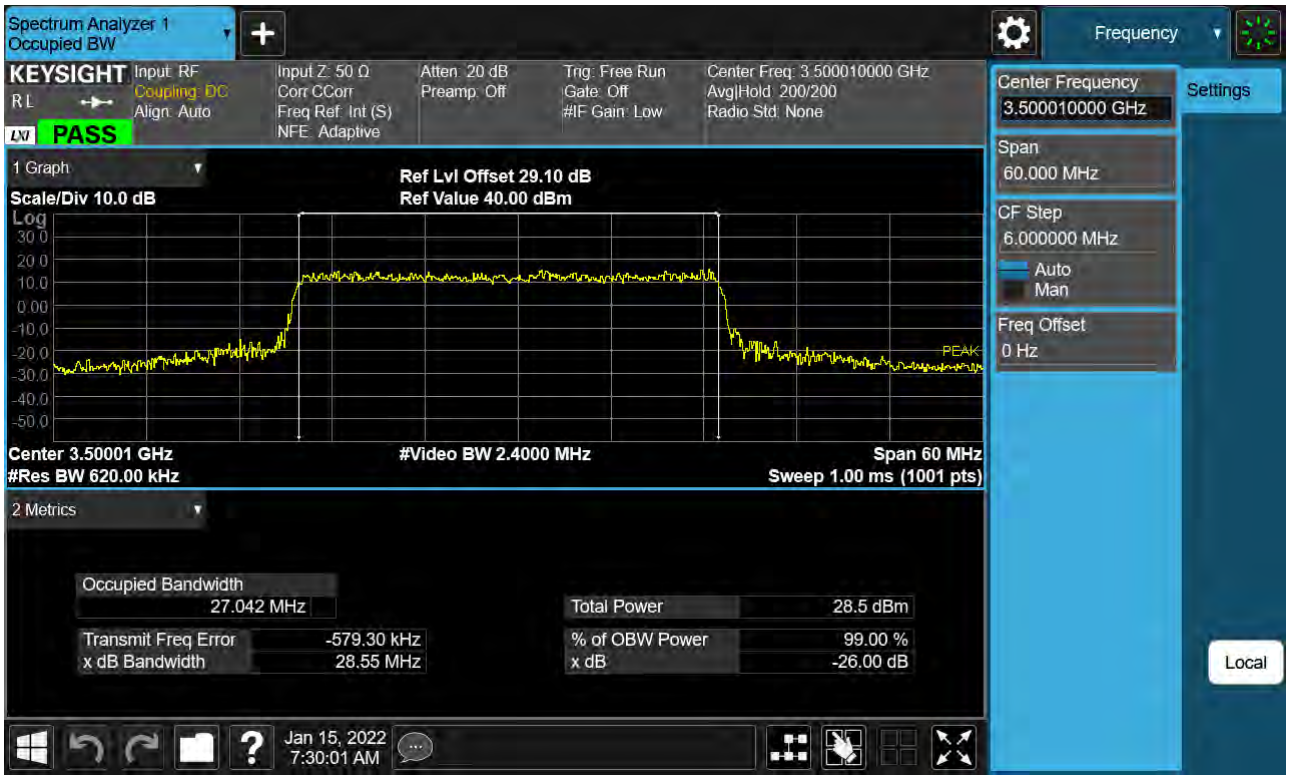
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 QPSK)



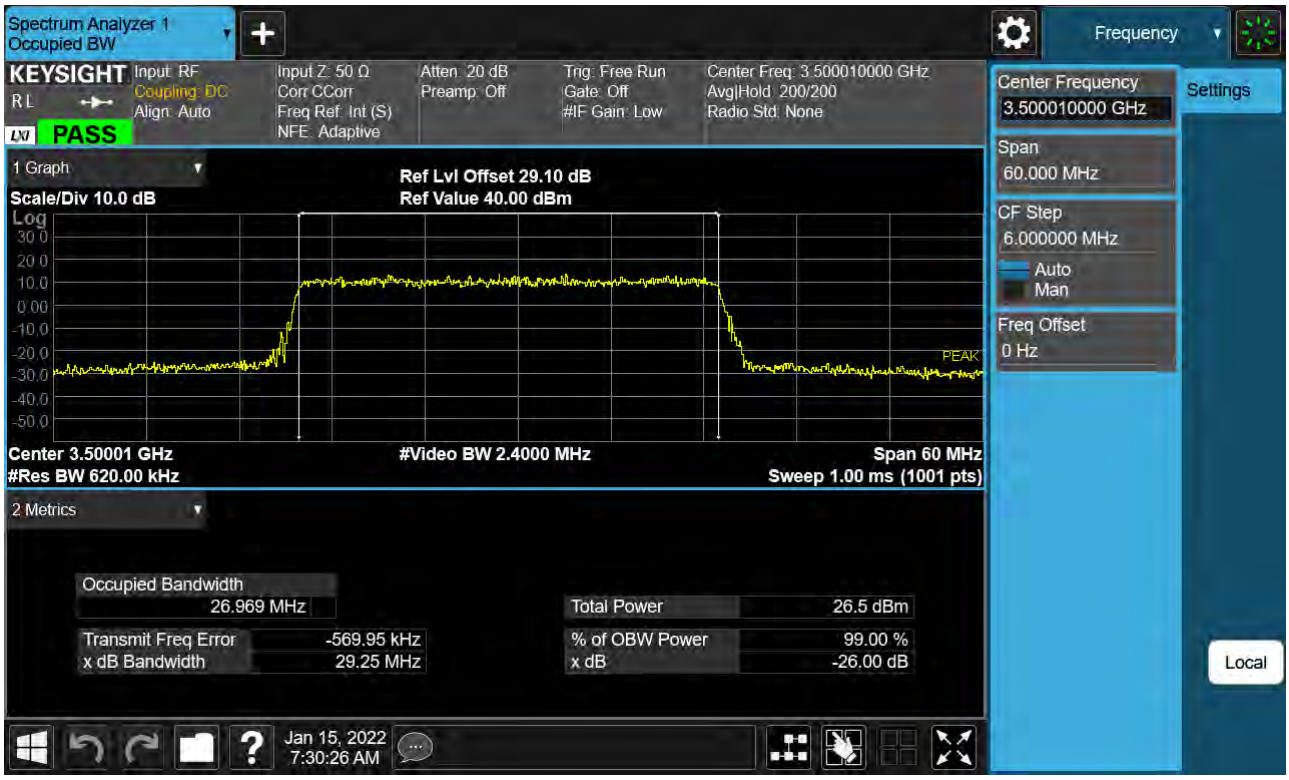
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 16QAM)



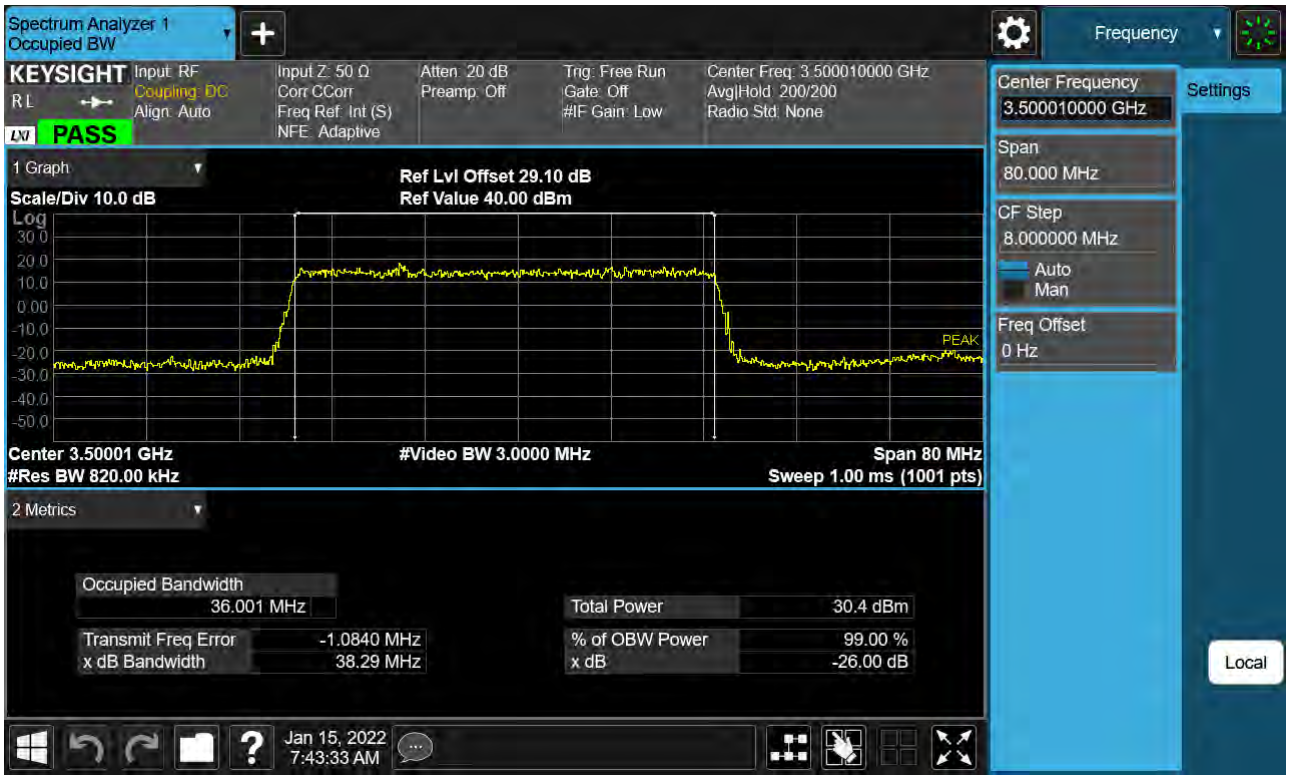
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 64QAM)



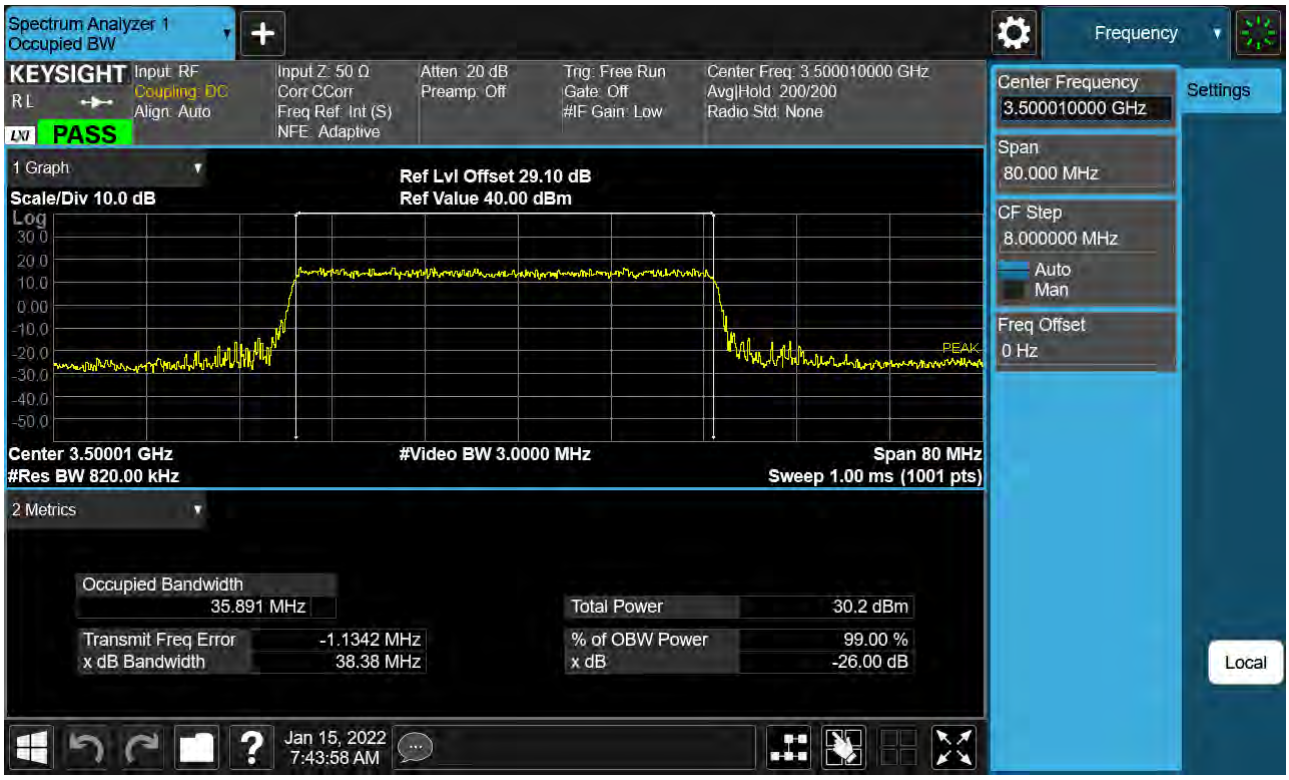
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 256QAM)



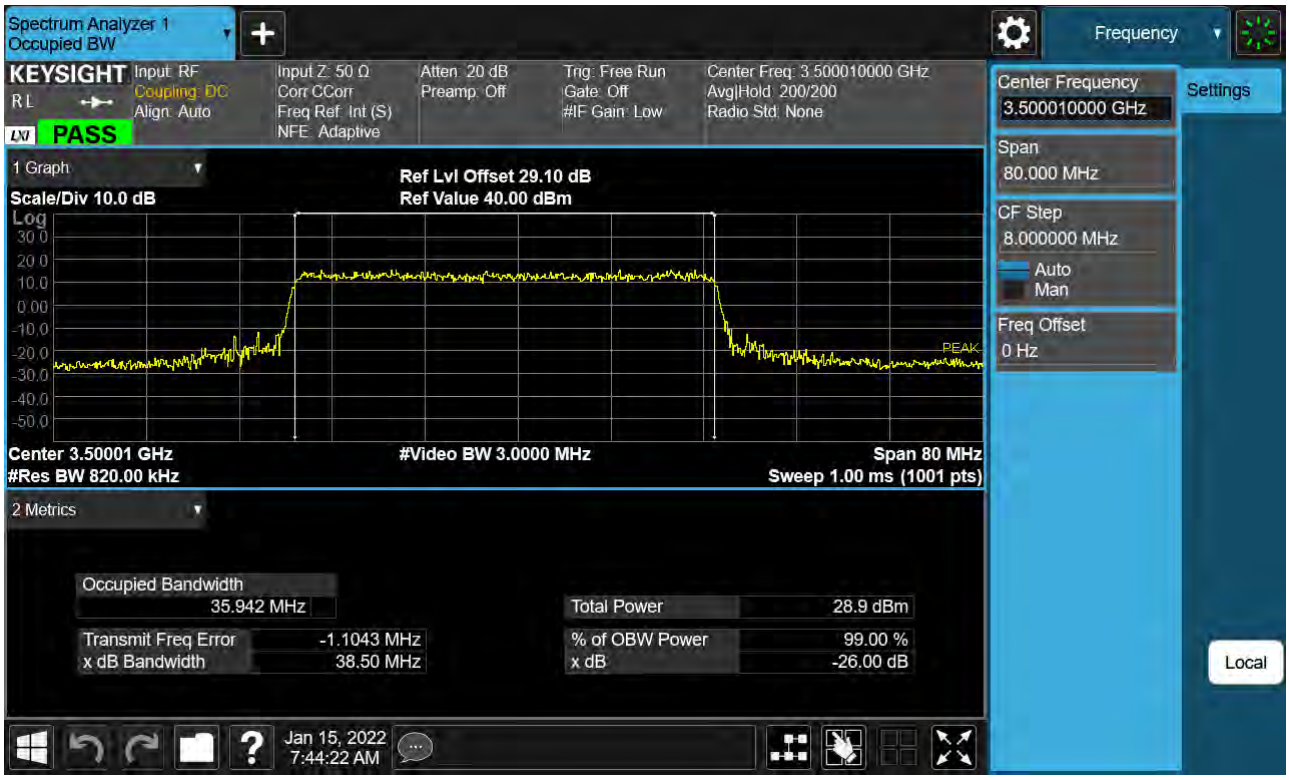
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 BPSK)



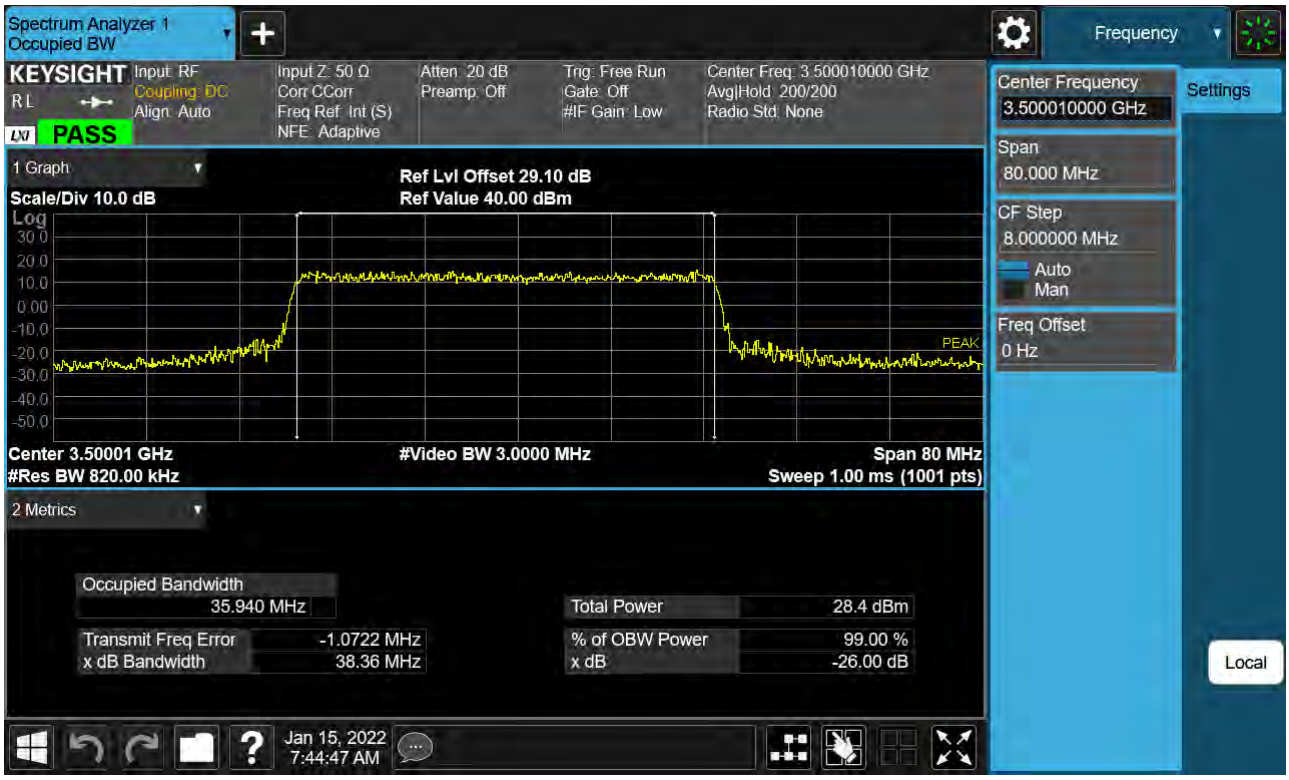
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 QPSK)



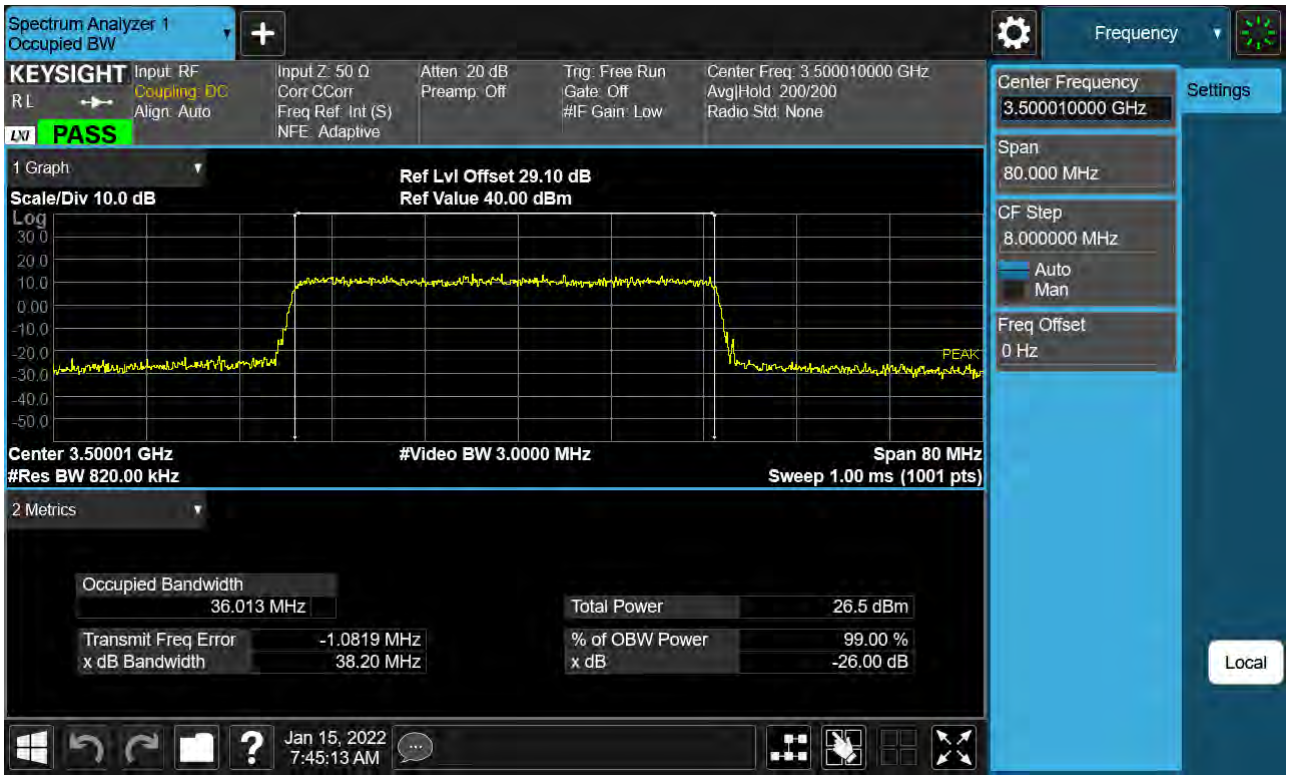
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 16QAM)



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



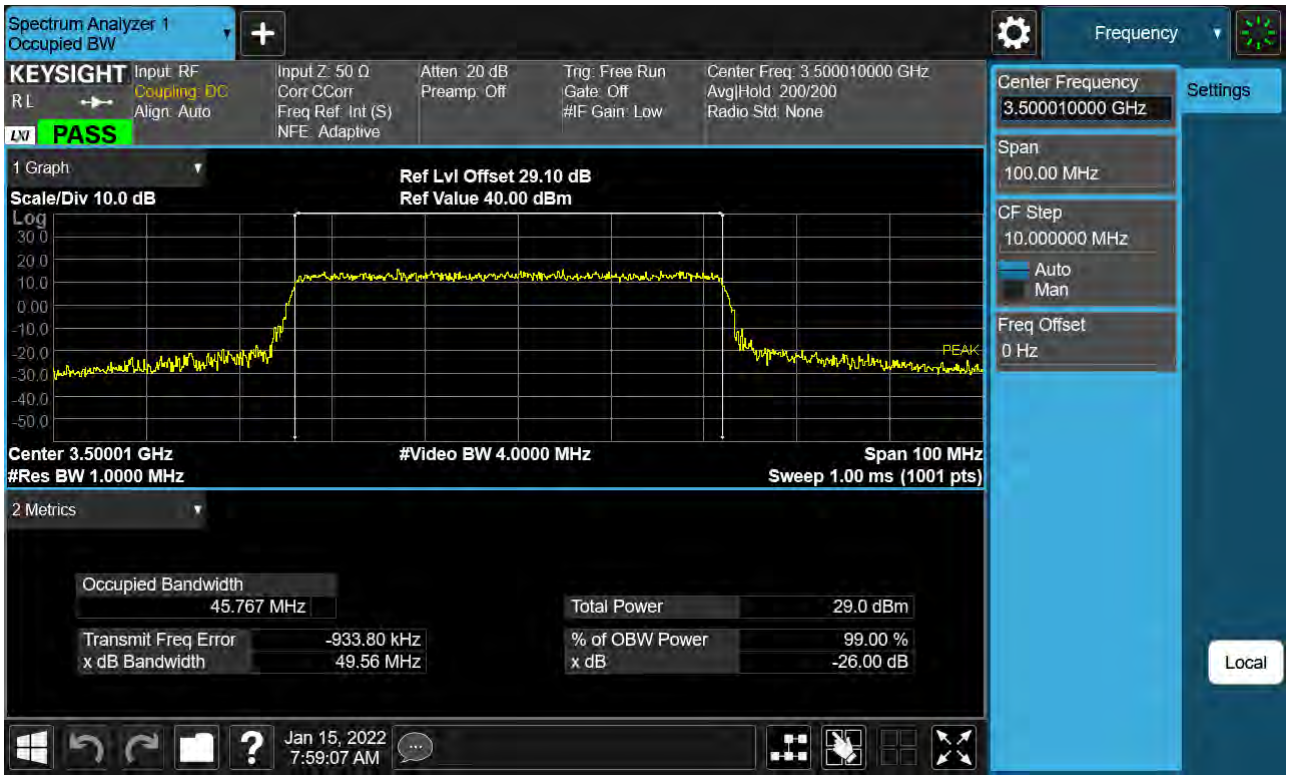
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 256QAM)



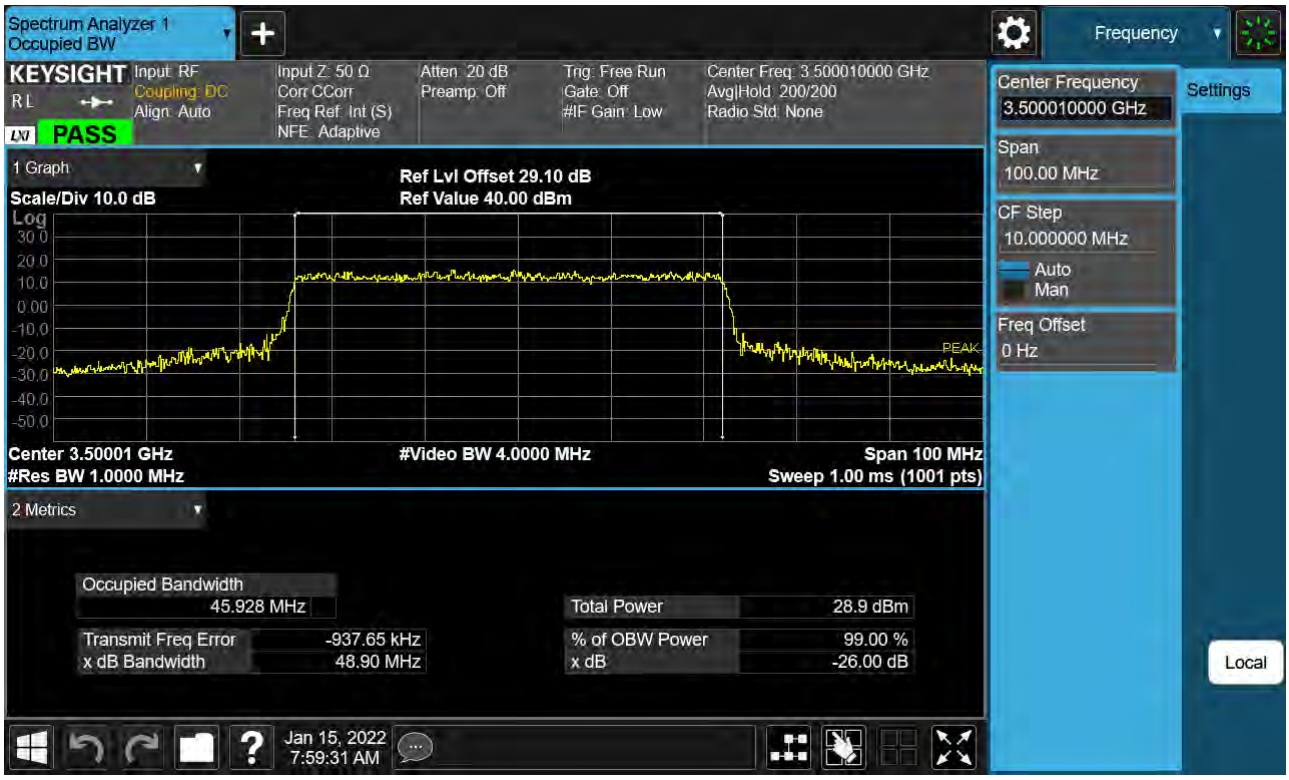
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 BPSK)

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

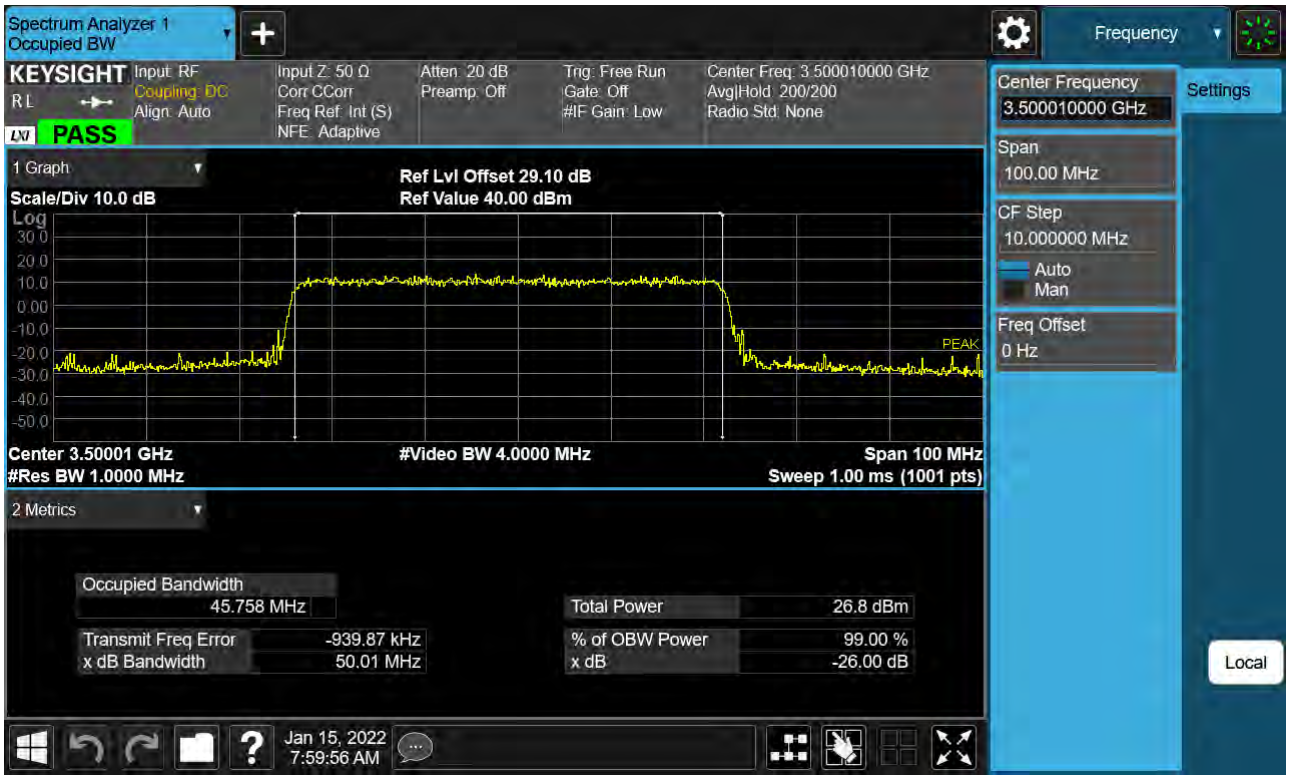
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 16QAM)



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

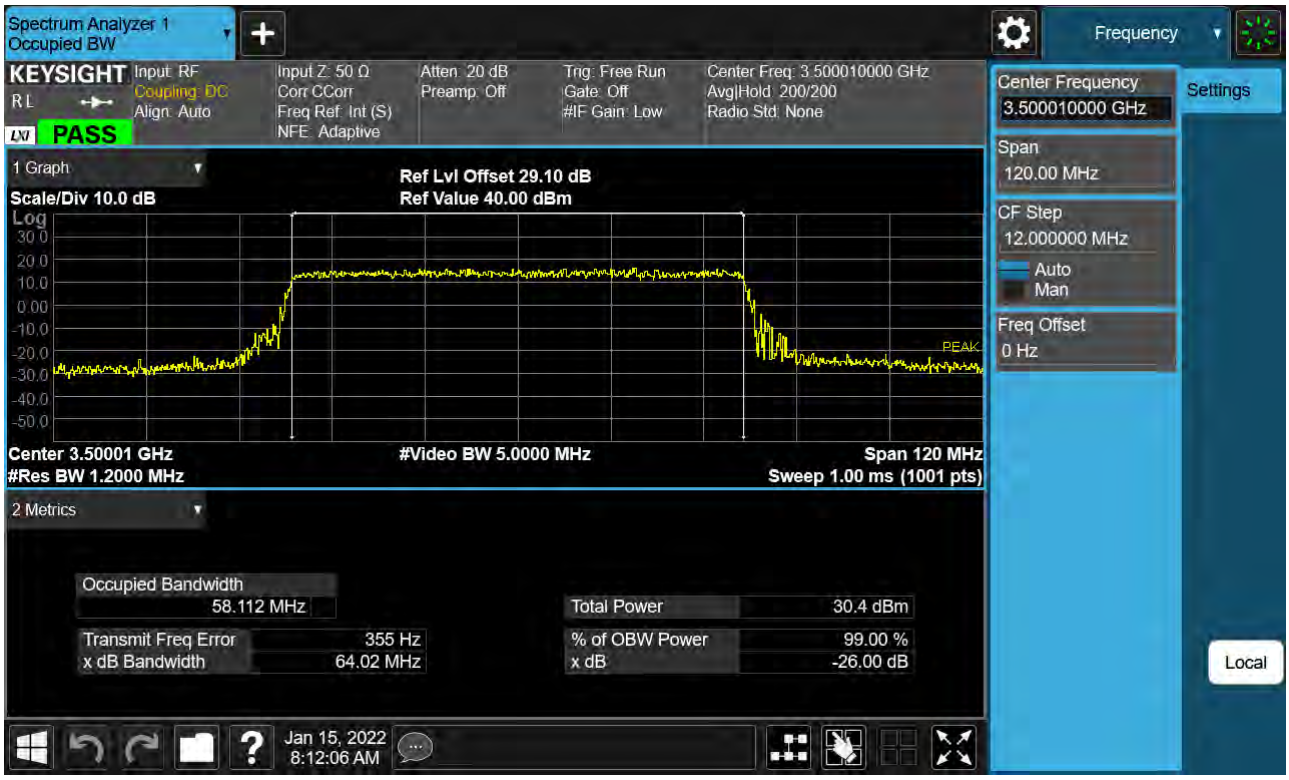


Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 256QAM)



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

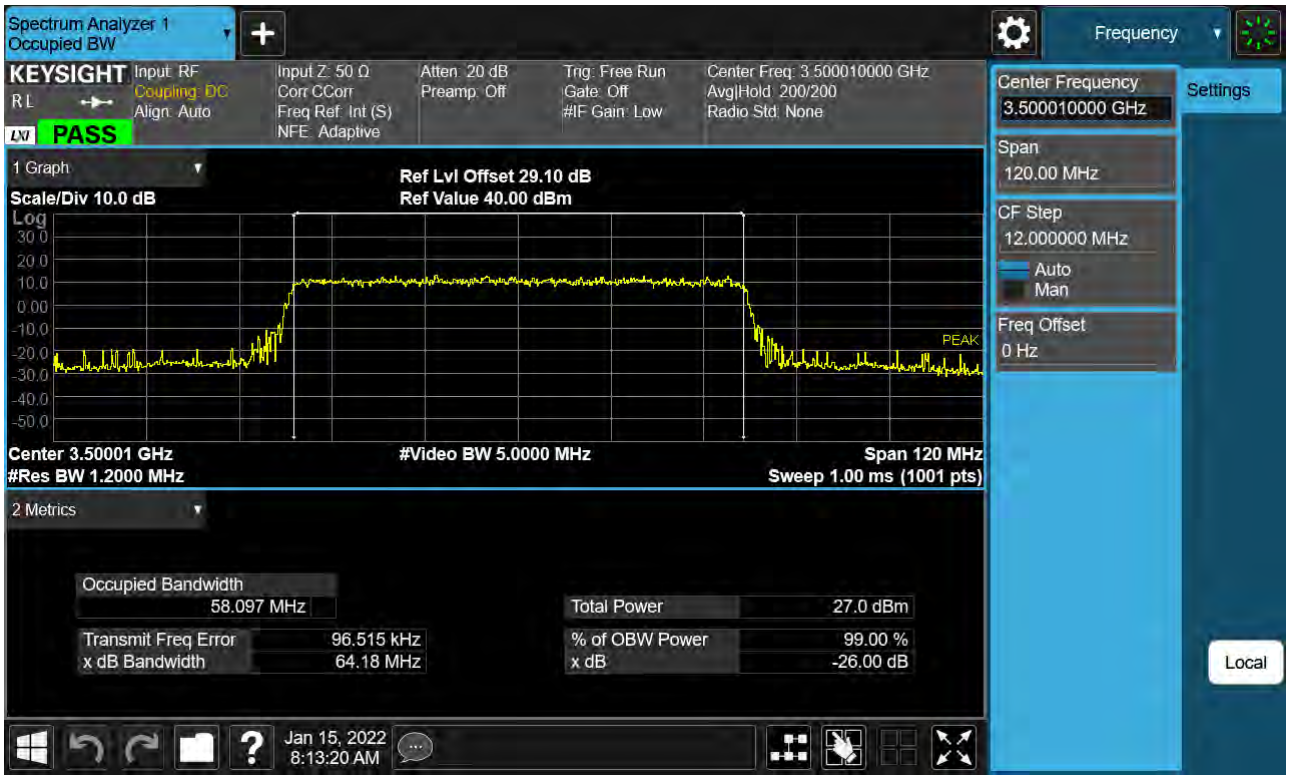
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 QPSK)



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

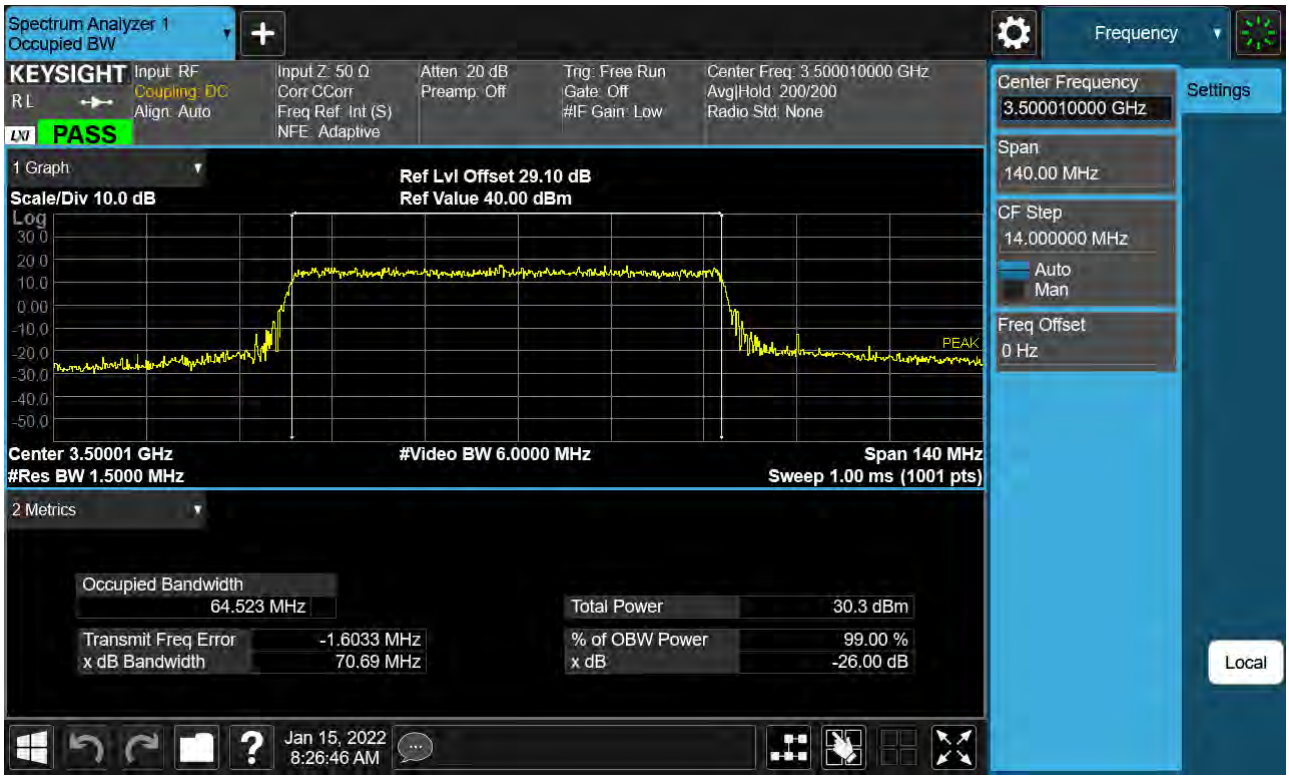
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 64QAM)

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

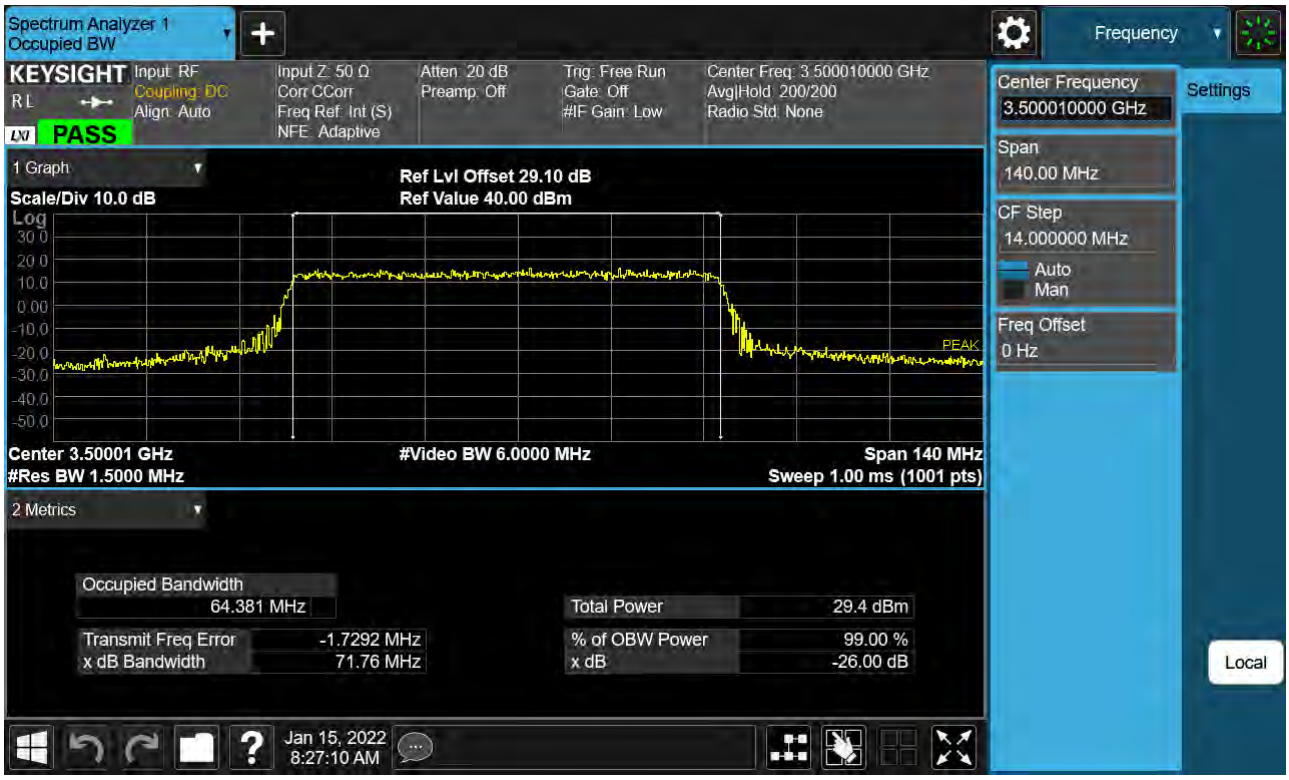


Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 BPSK)

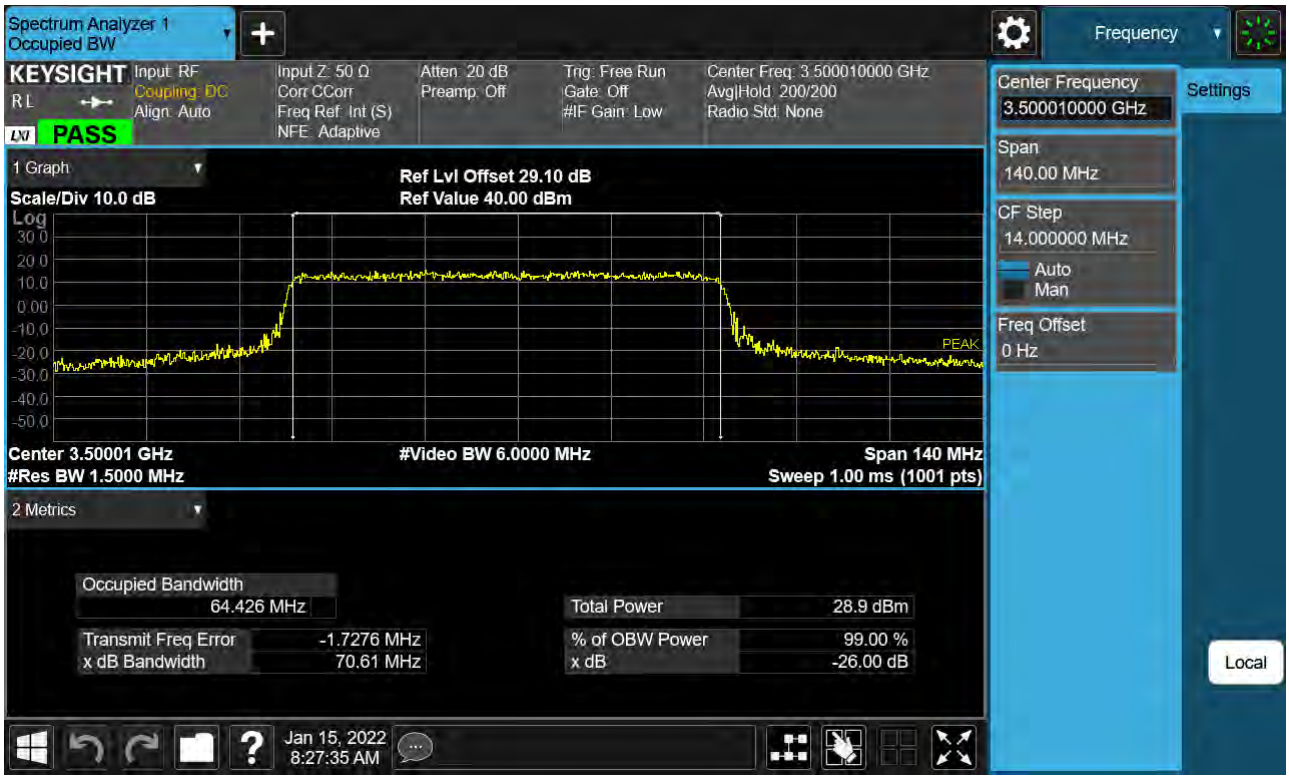
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 QPSK)



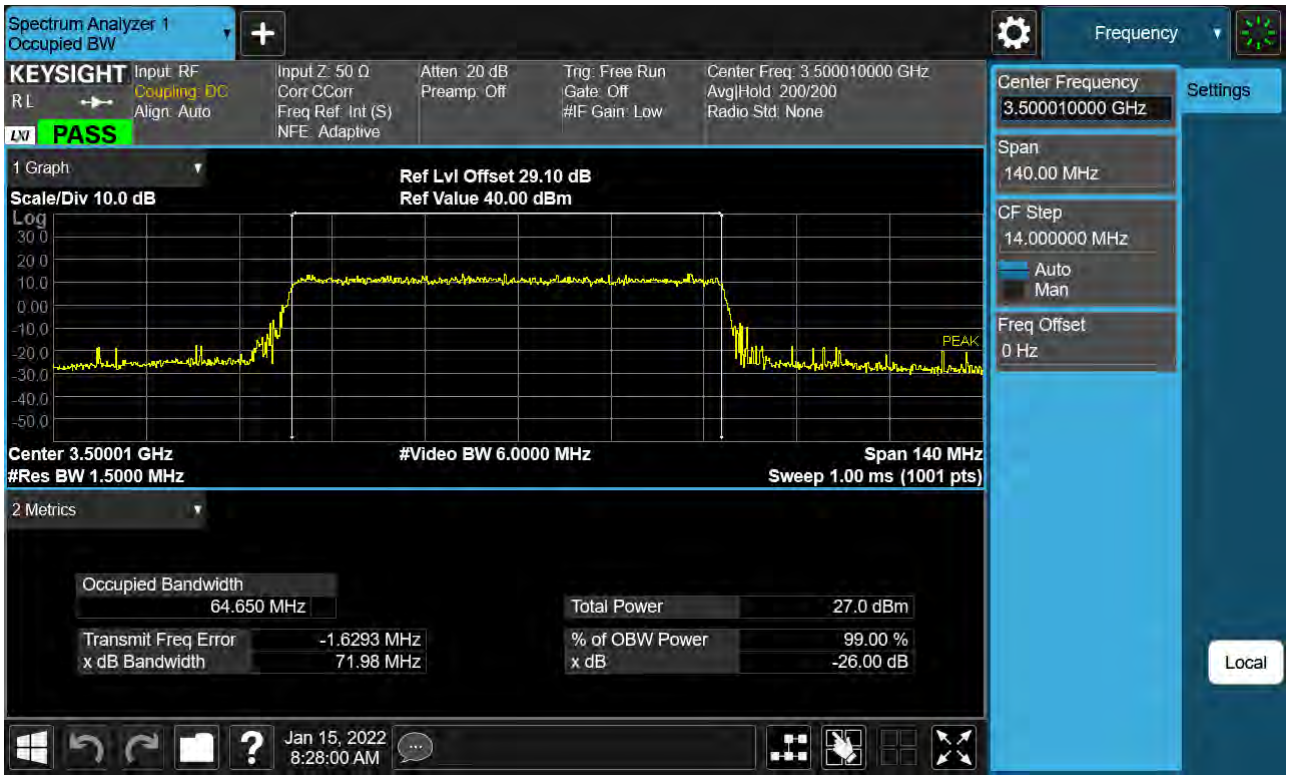
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 16QAM)



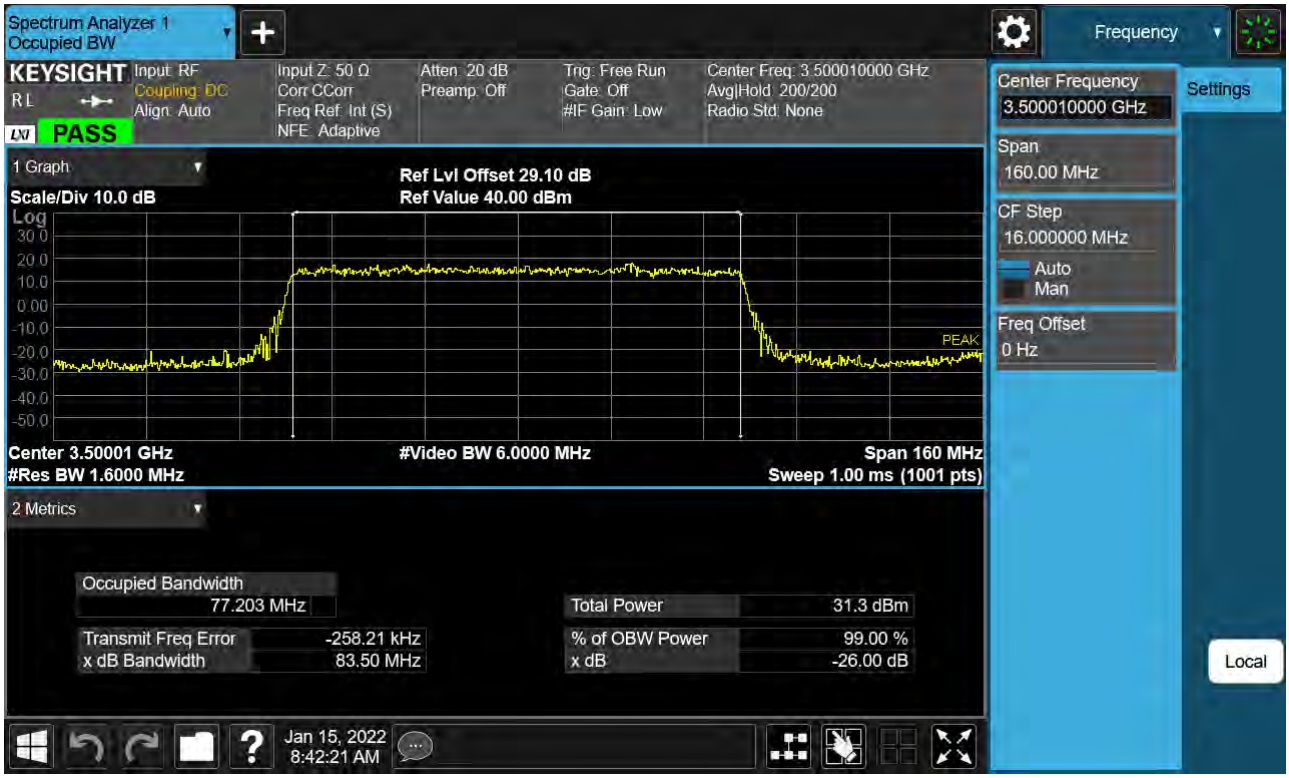
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 64QAM)



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

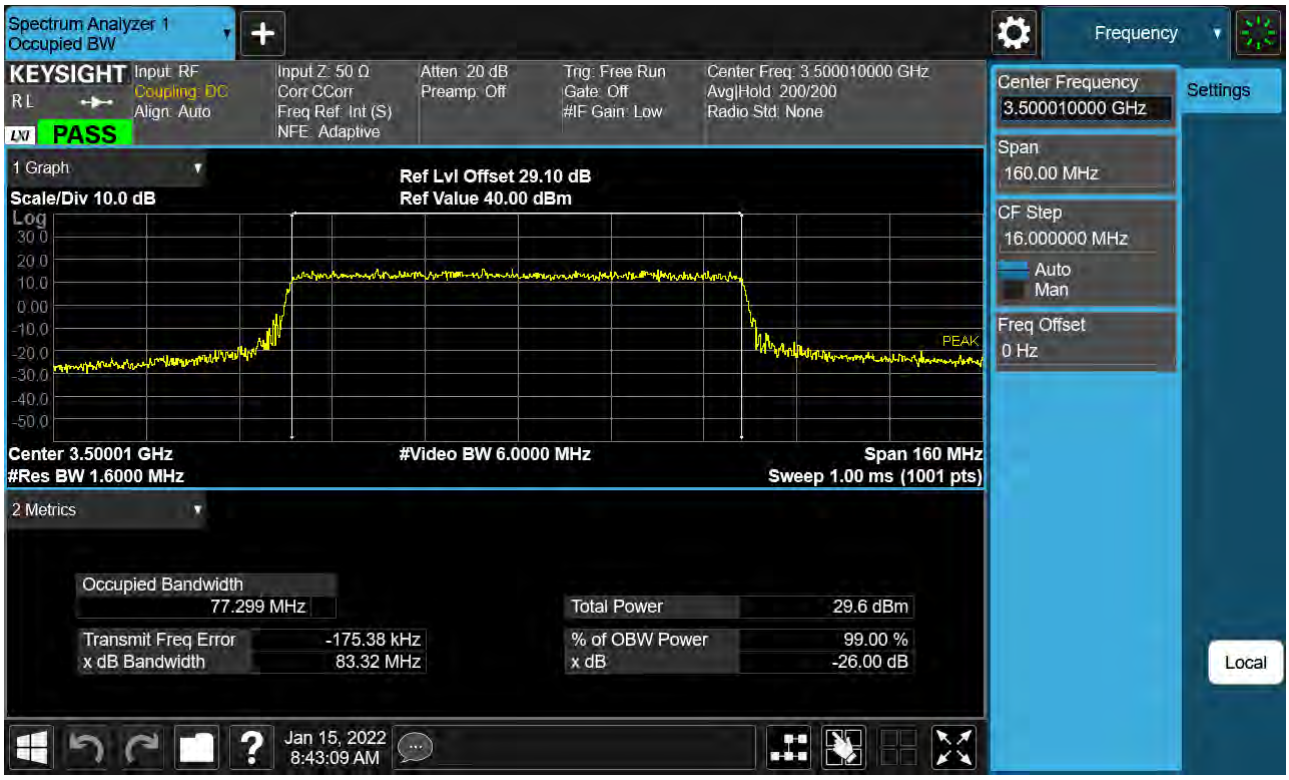


Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 BPSK)



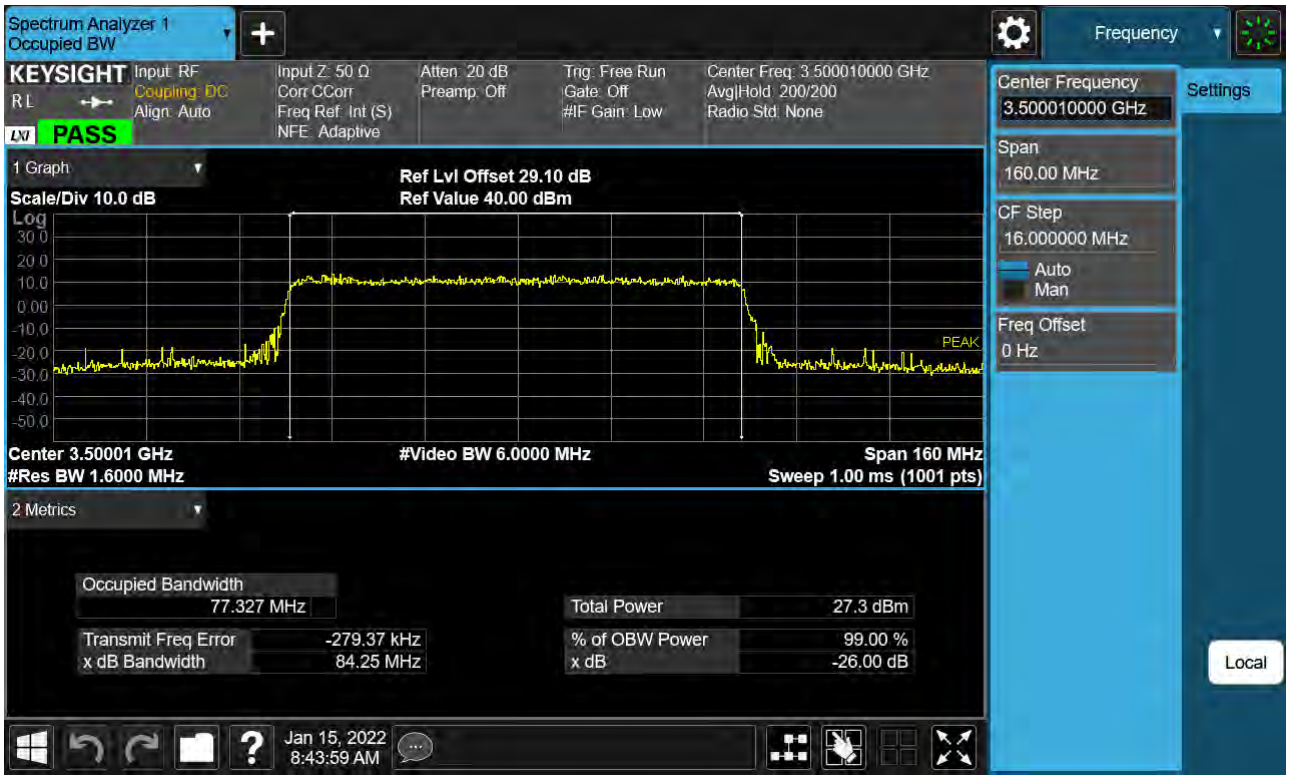
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 QPSK)

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

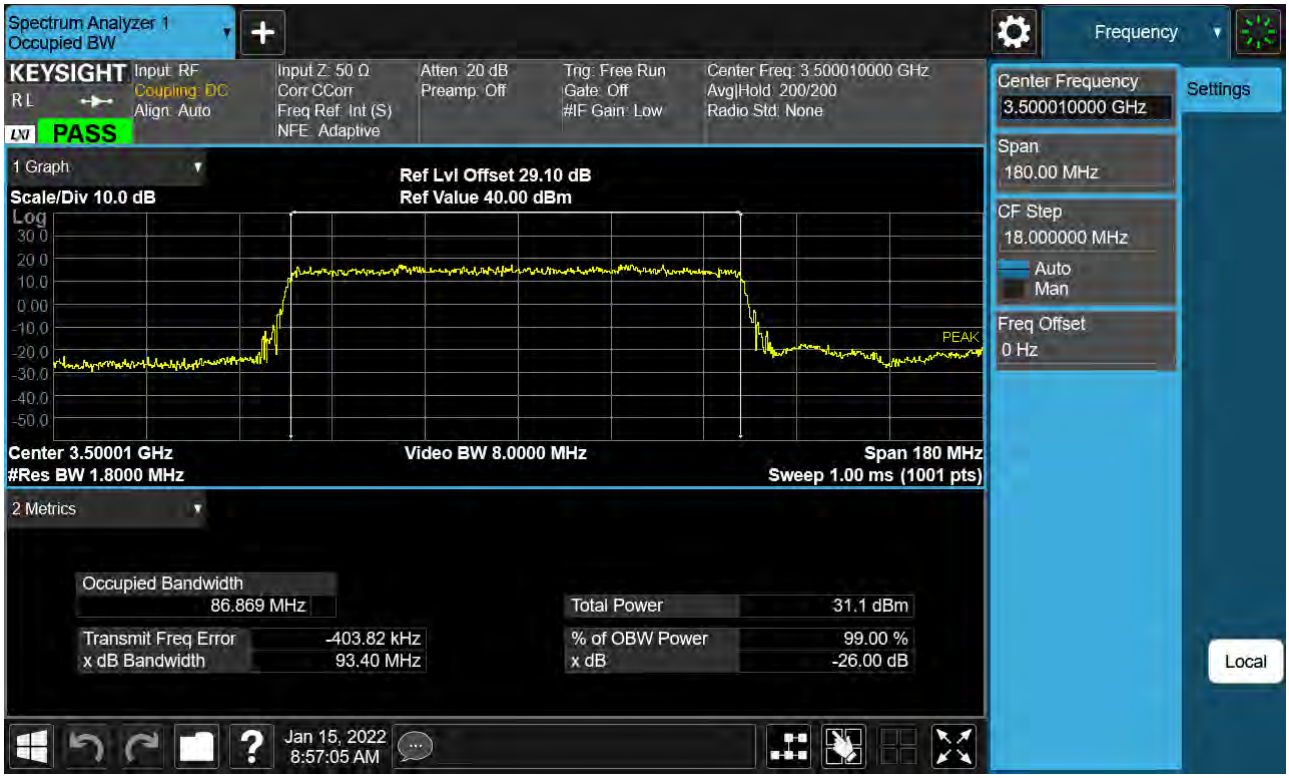


Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 64QAM)

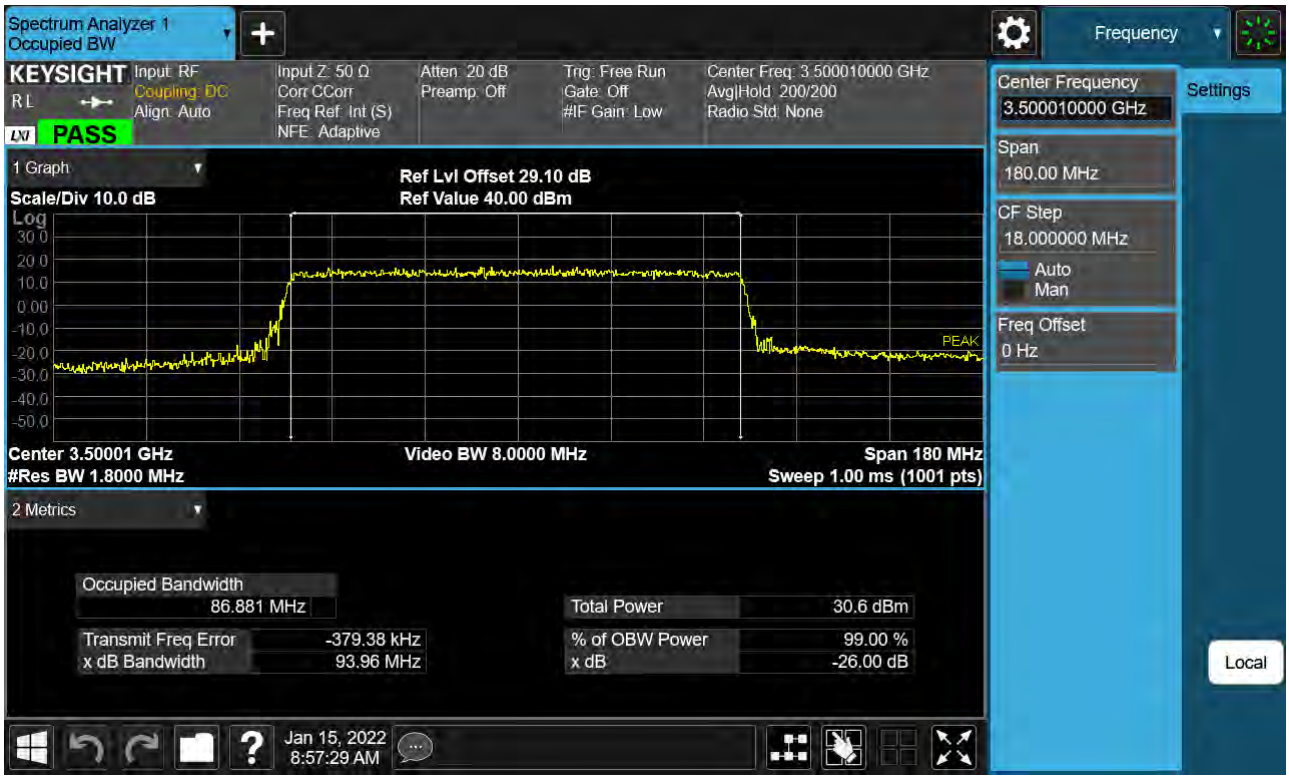
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 256QAM)



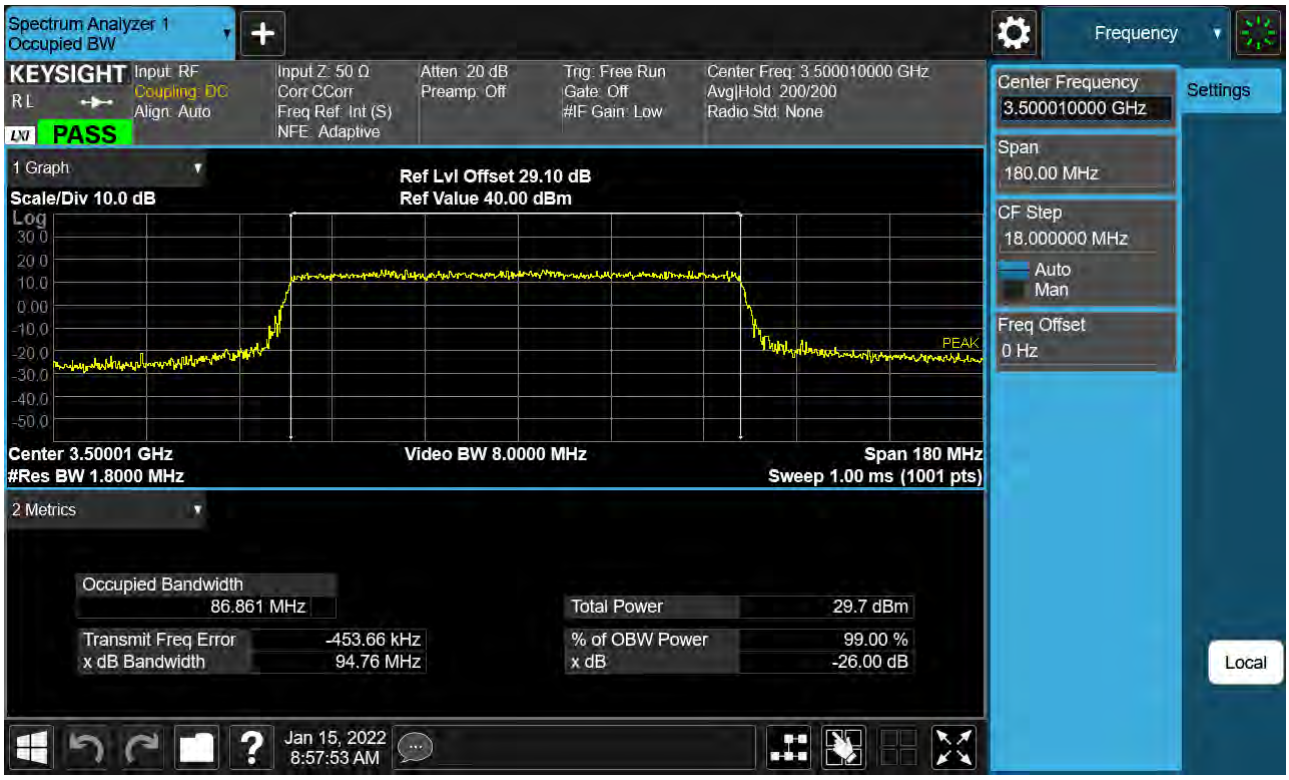
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 BPSK)



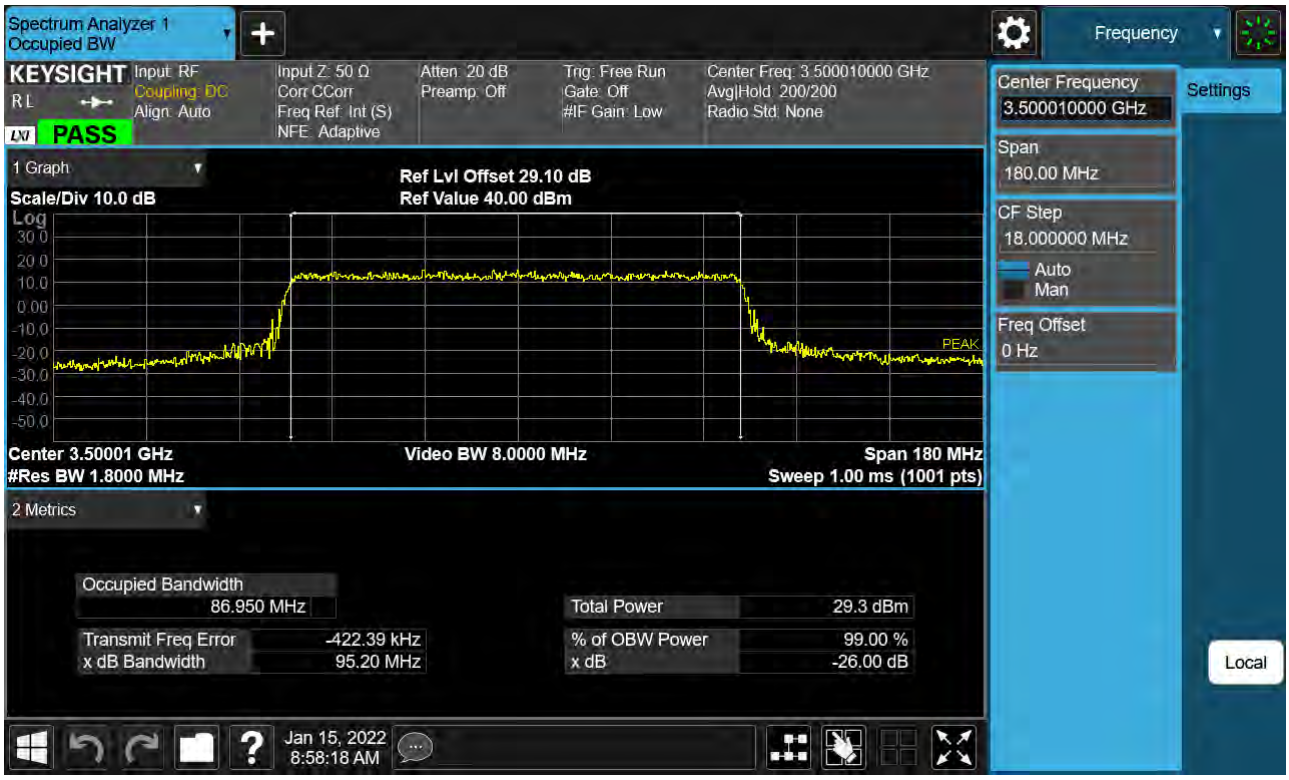
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 QPSK)



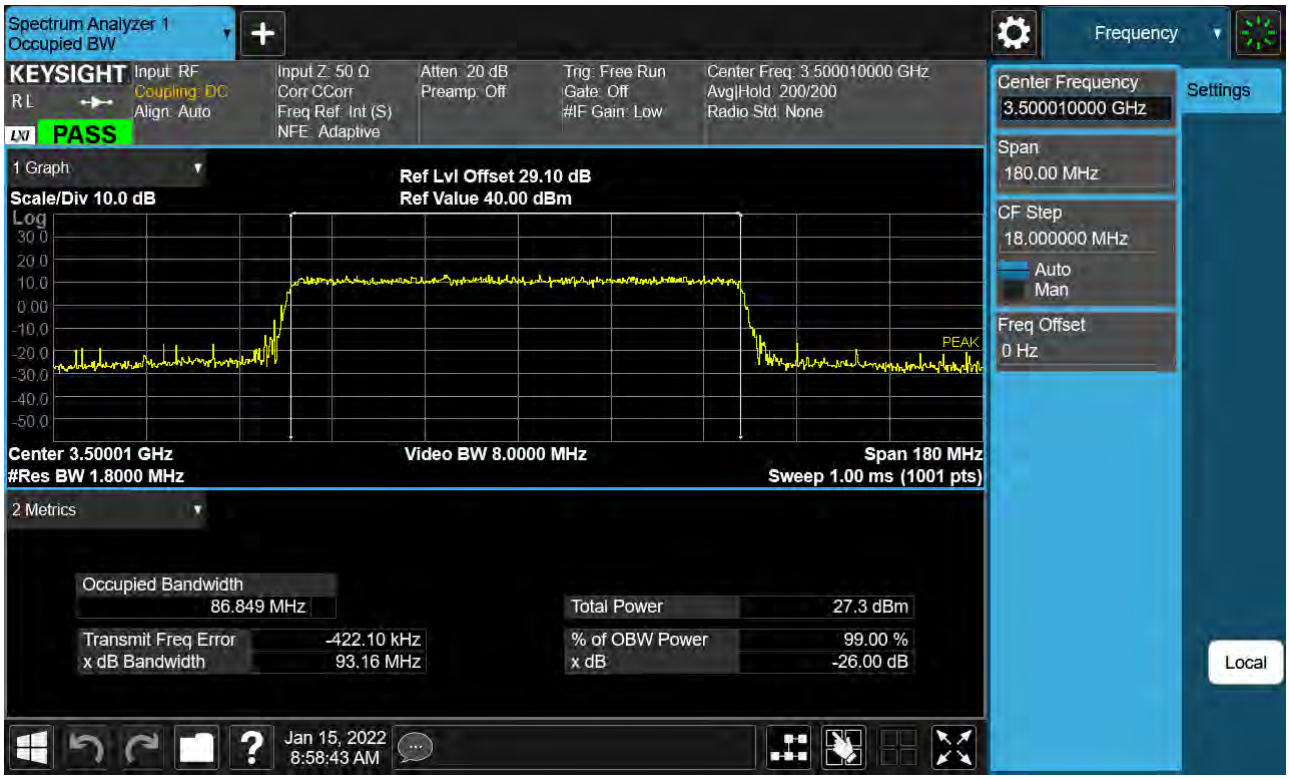
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 16QAM)



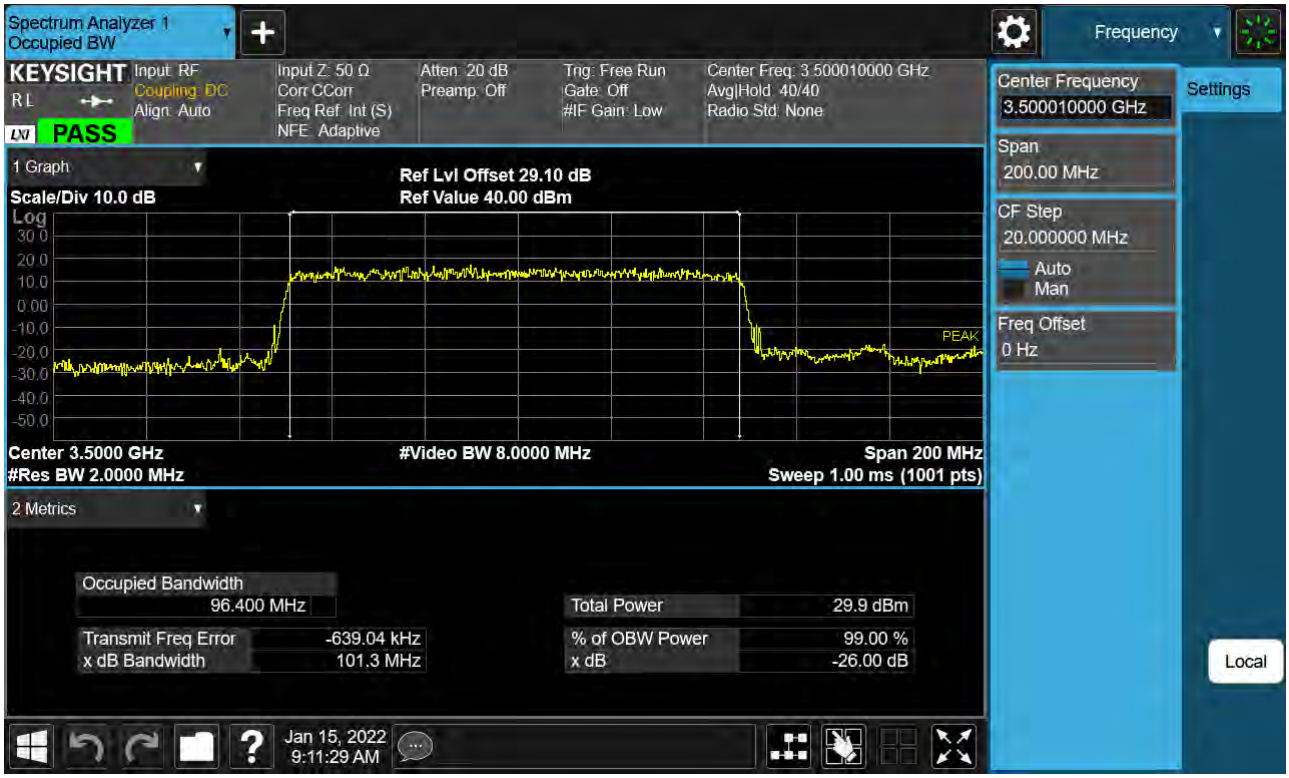
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 64QAM)



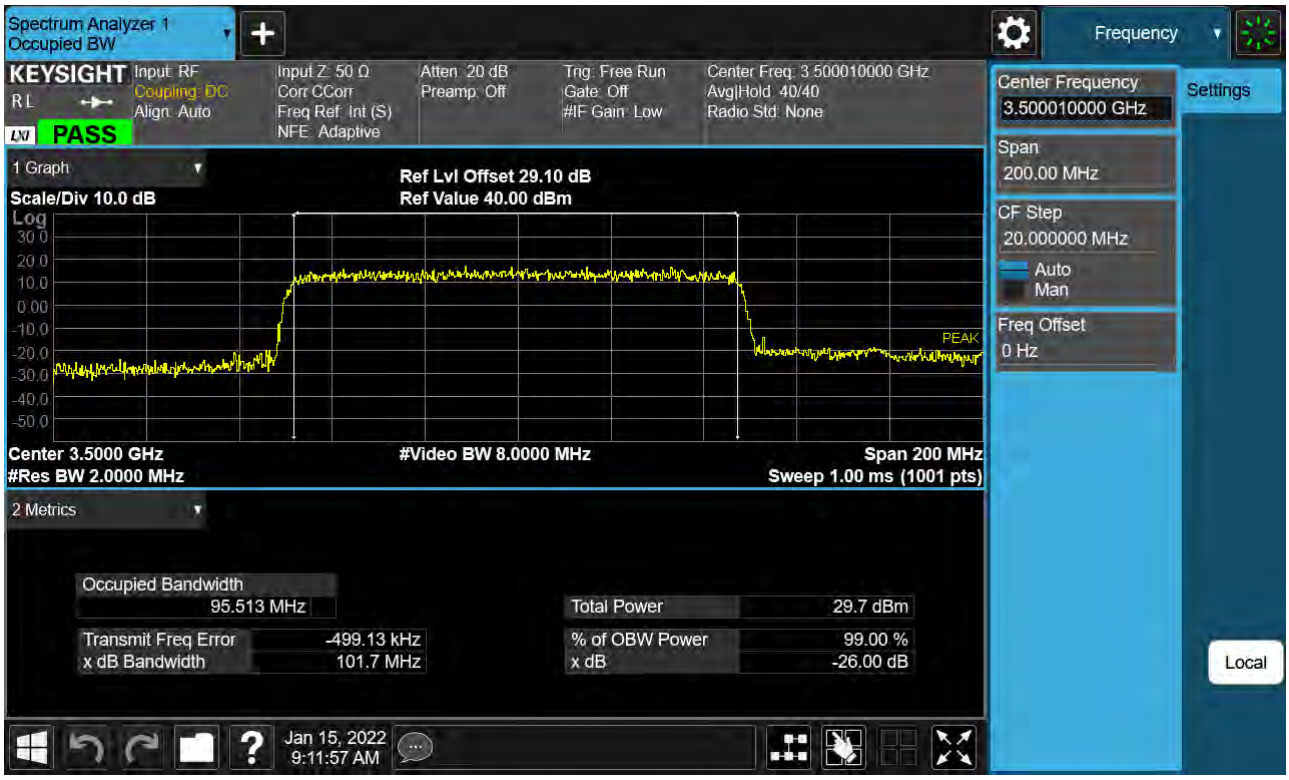
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 256QAM)



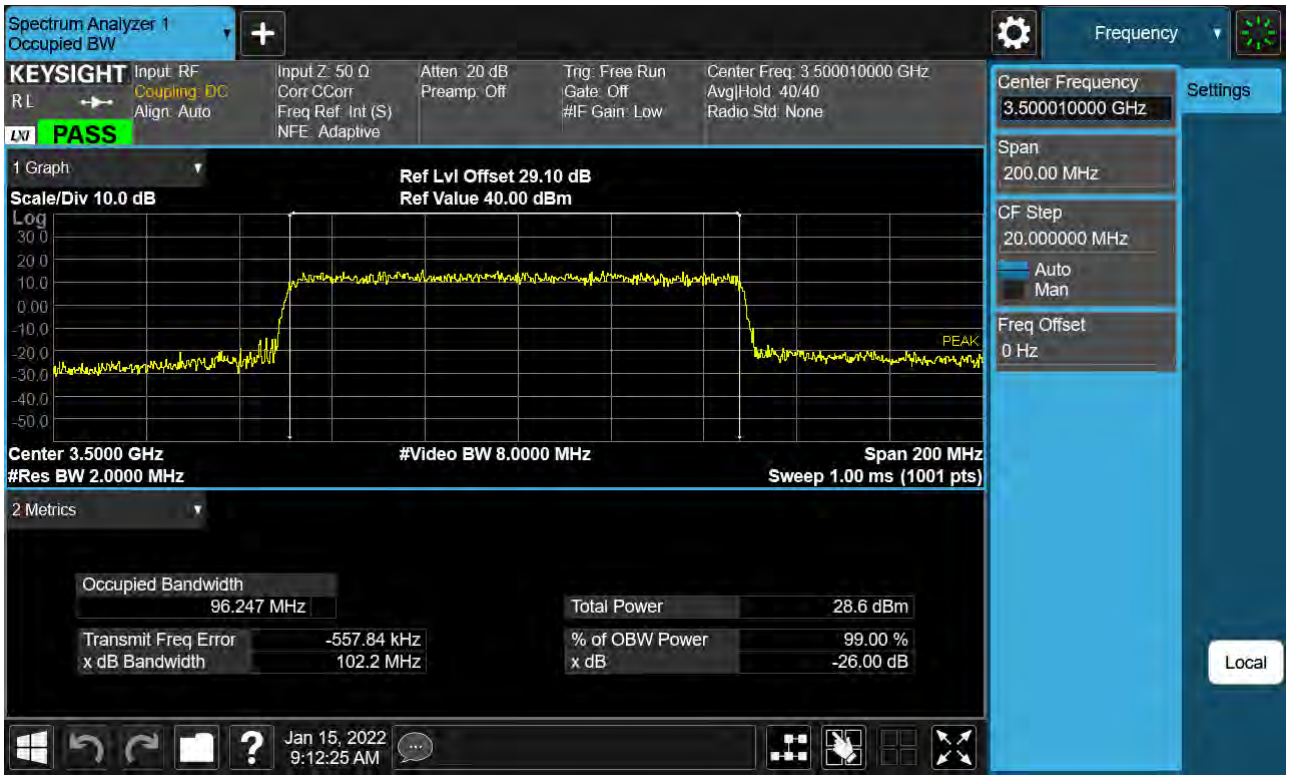
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 BPSK)



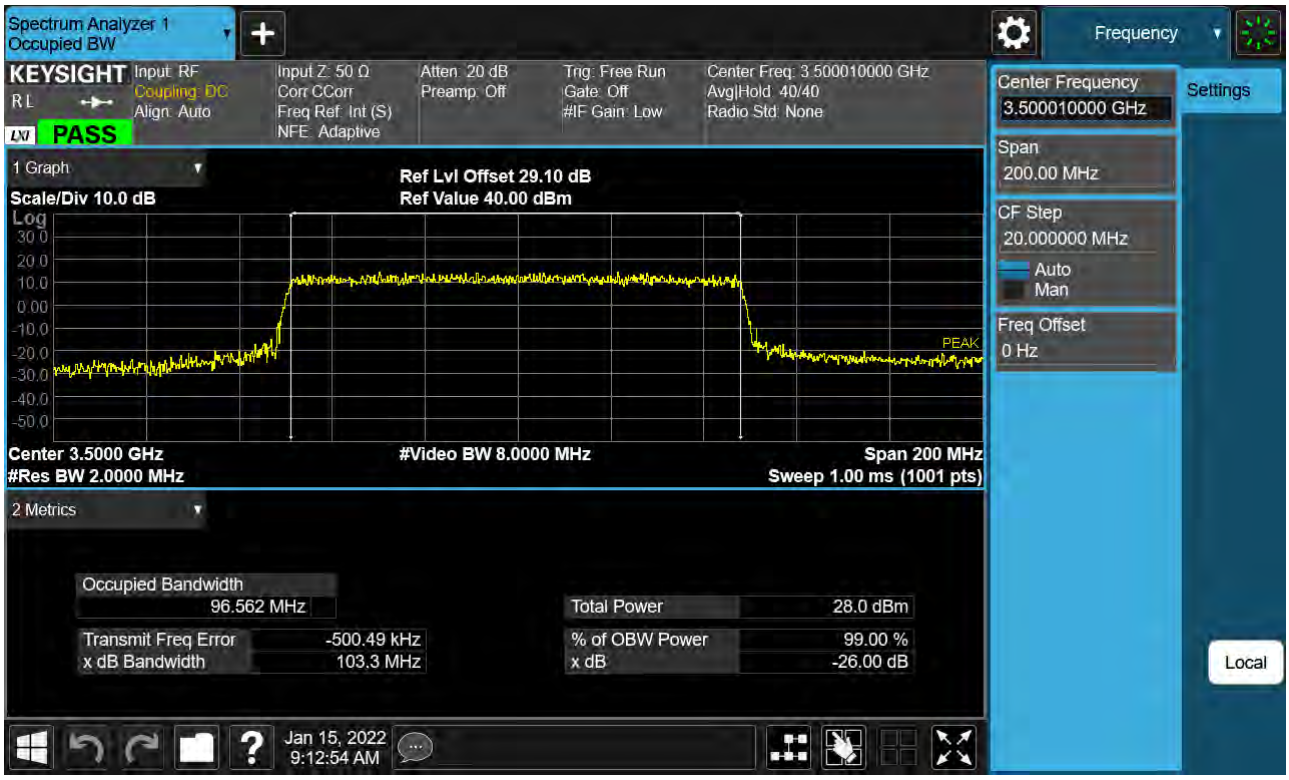
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 QPSK)



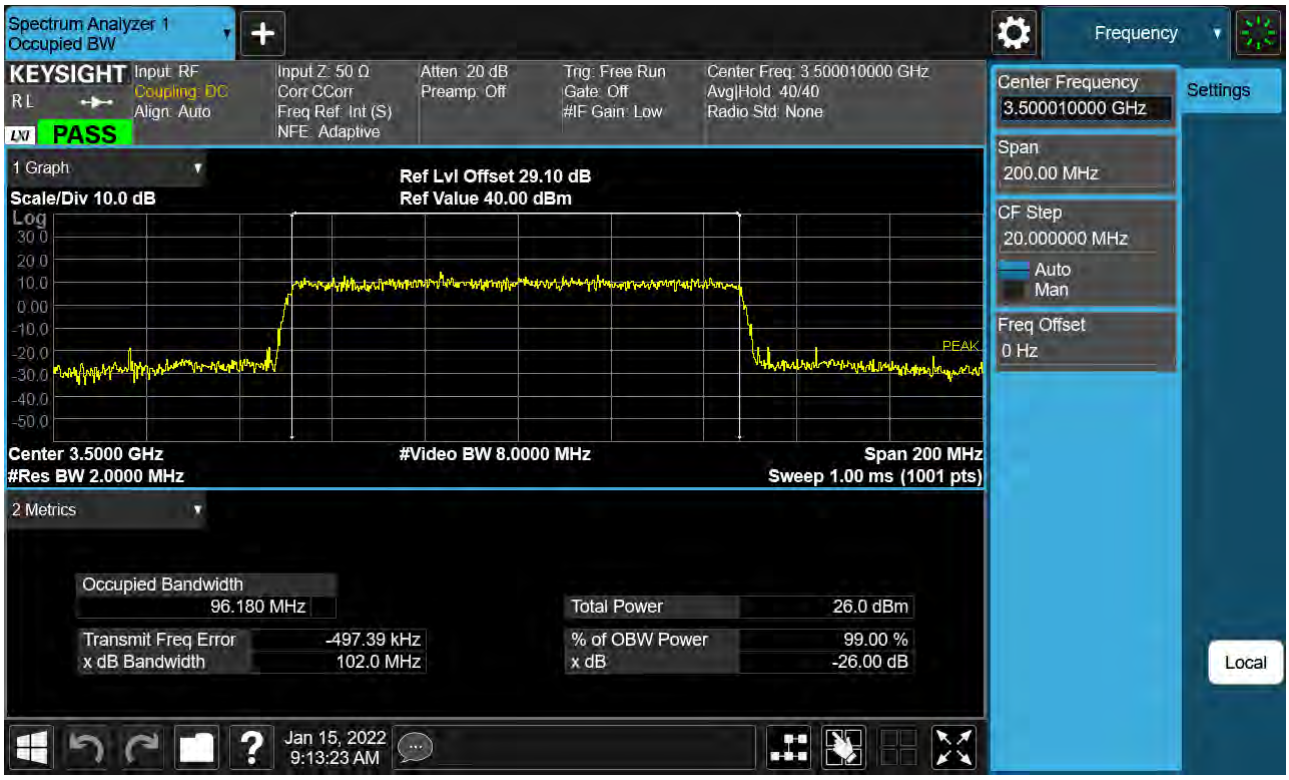
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 16QAM)



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



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



Sub6 n77. PAR Plot (10 M BW_Ch.633334_ BPSK)

Sub6 n77. PAR Plot (10 M BW_Ch.633334_QPSK)

Sub6 n77. PAR Plot (10 M BW_Ch.633334_16QAM)

Sub6 n77. PAR Plot (10 M BW_Ch.633334_64QAM)

Sub6 n77. PAR Plot (10 M BW_Ch.633334_256QAM)

Sub6 n77. PAR Plot (15 M BW_Ch.633334_ BPSK)

Sub6 n77. PAR Plot (15 M BW_Ch.633334_QPSK)

Sub6 n77. PAR Plot (15 M BW_Ch.633334_16QAM)

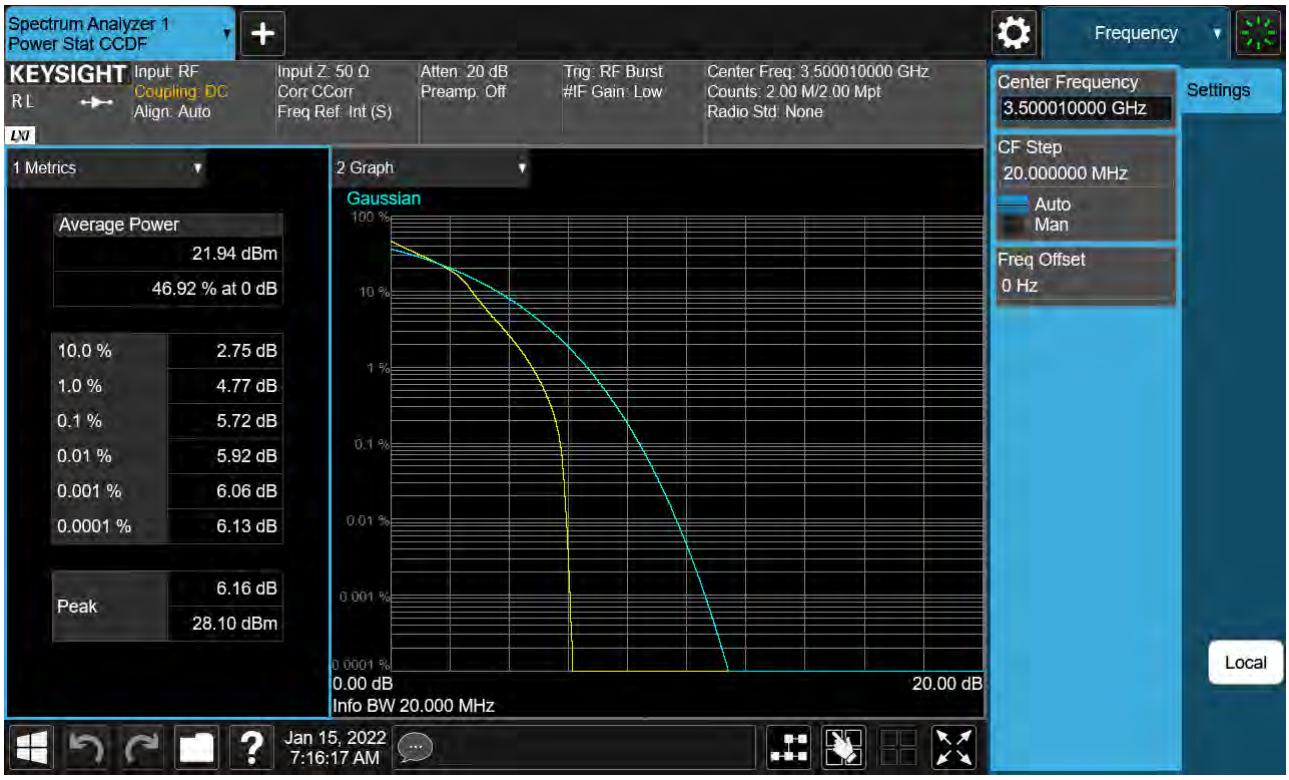
Sub6 n77. PAR Plot (15 M BW_Ch.633334_64QAM)

Sub6 n77. PAR Plot (15 M BW_Ch.633334_256QAM)

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

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

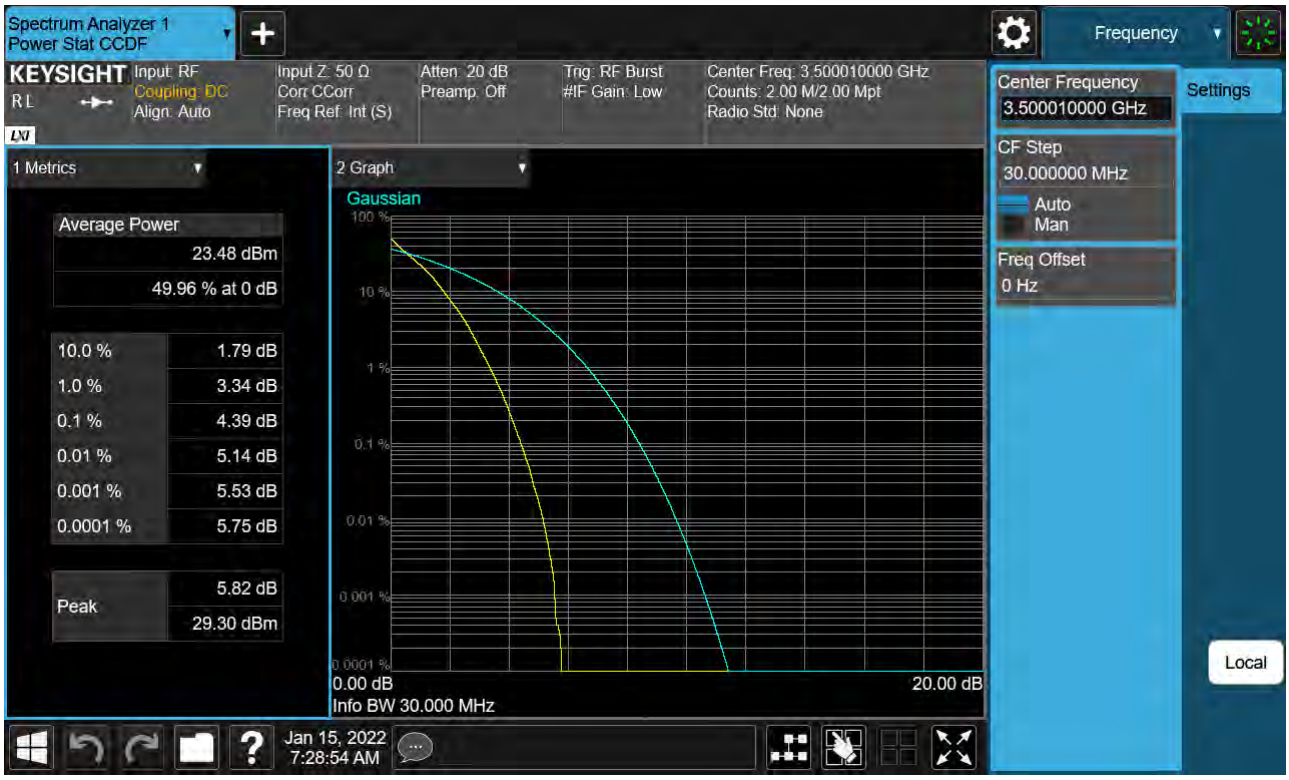
Sub6 n77. PAR Plot (20 M BW_Ch.633334_16QAM)



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

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

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



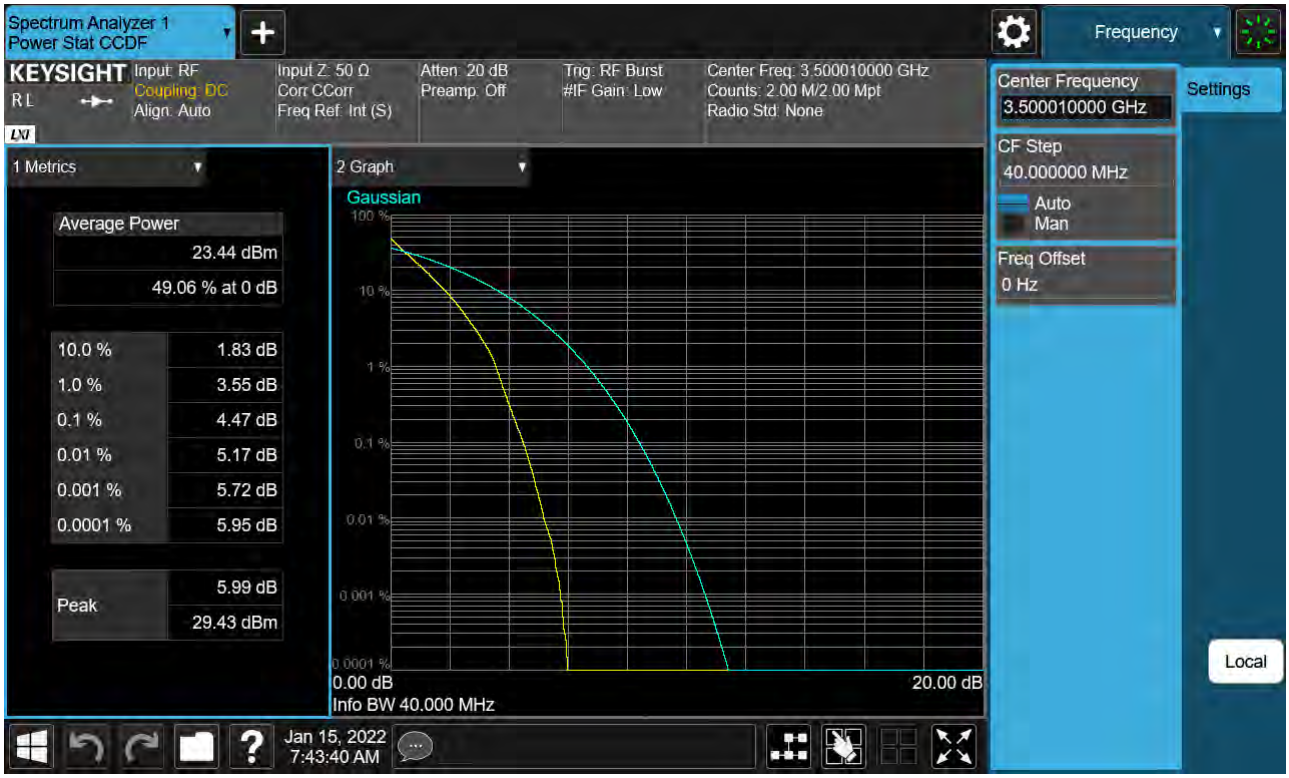
Sub6 n77. PAR Plot (30 M BW_Ch.633334_QPSK)

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

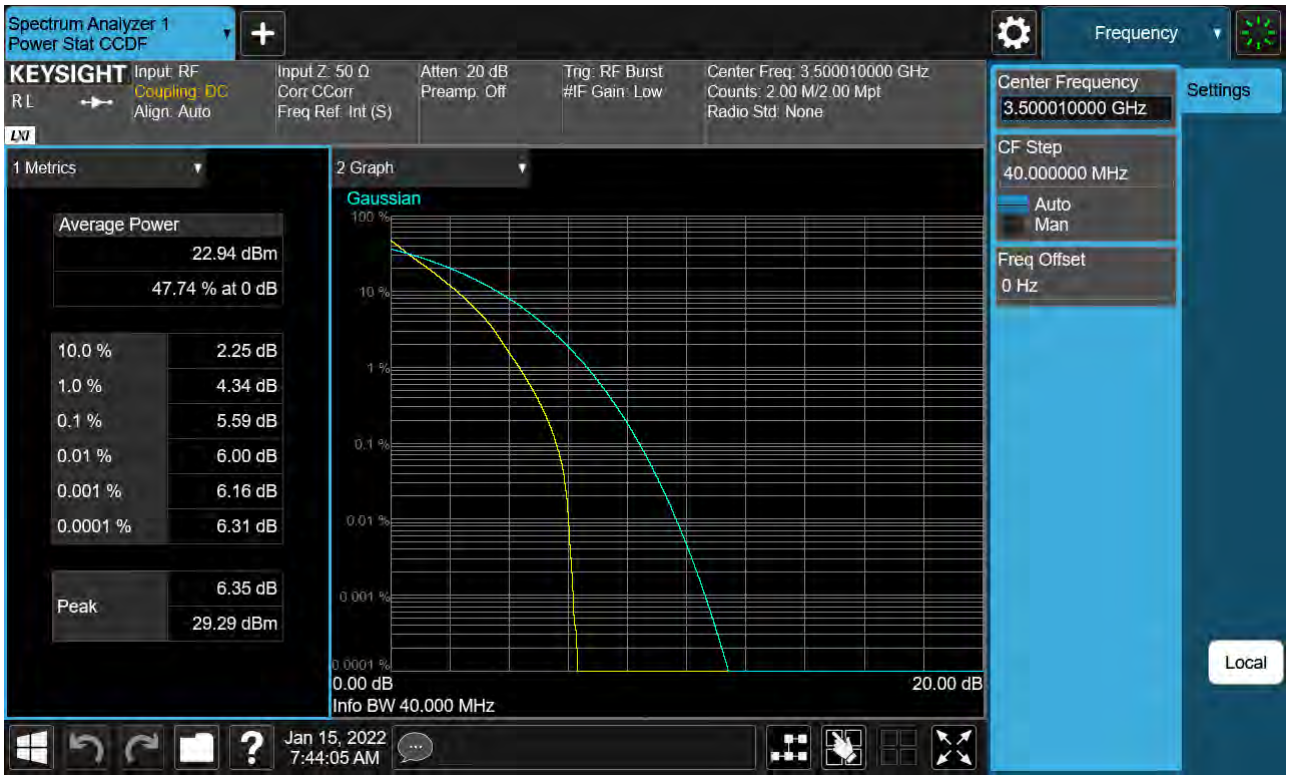
Sub6 n77. PAR Plot (30 M BW_Ch.633334_64QAM)

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

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



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

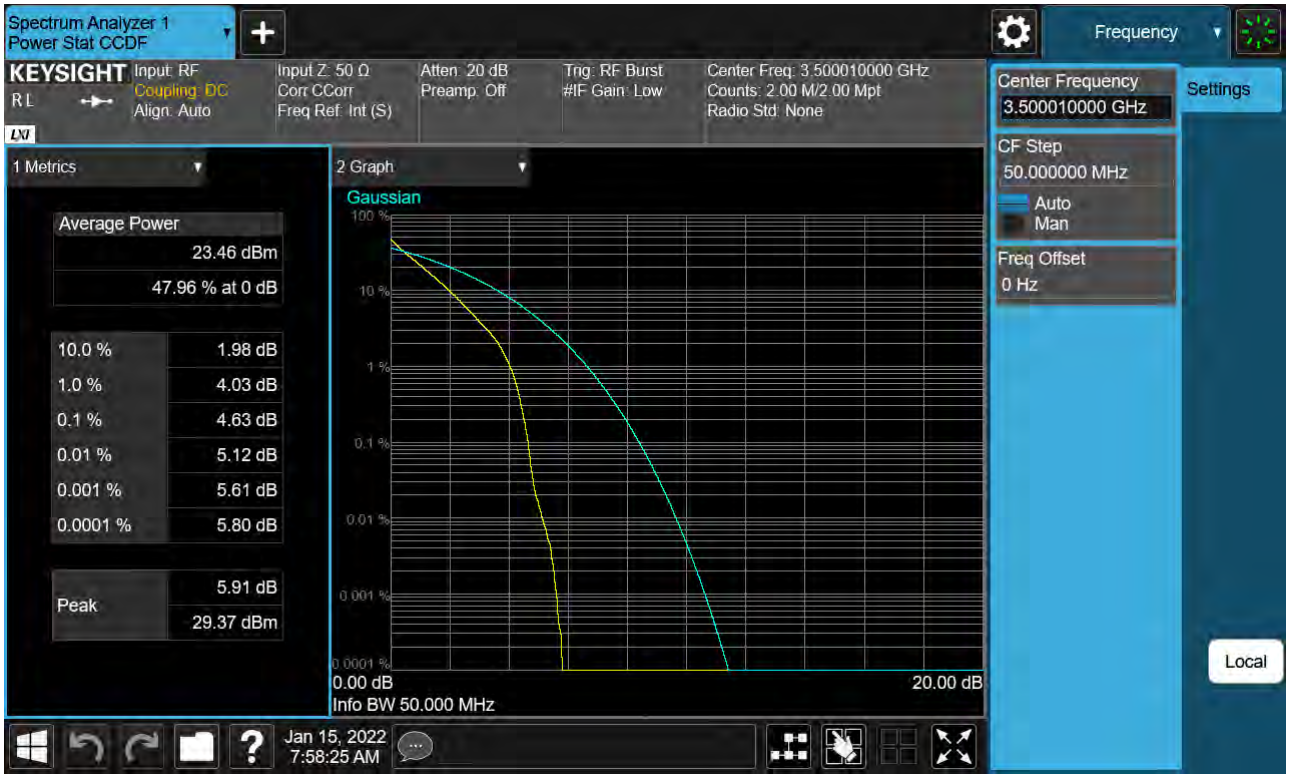


Sub6 n77. PAR Plot (40 M BW_Ch.633334_16QAM)

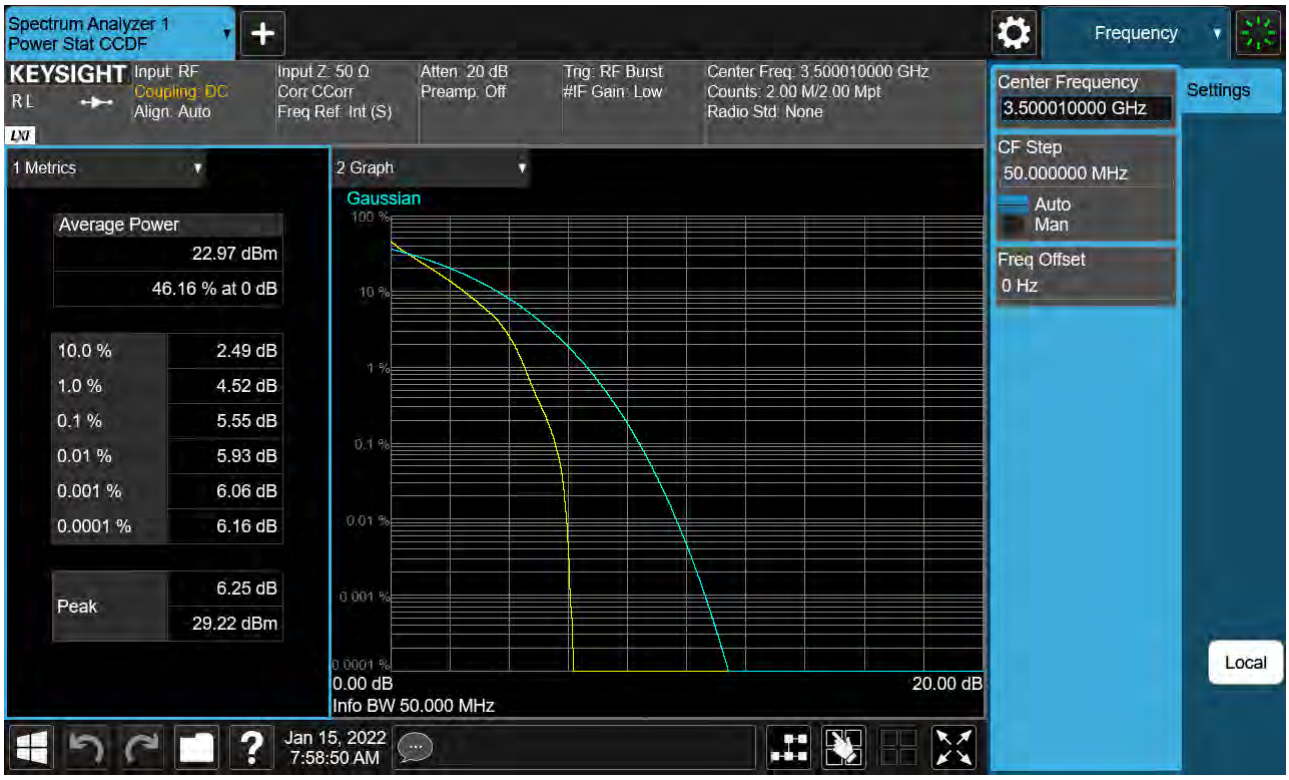
Sub6 n77. PAR Plot (40 M BW_Ch.633334_64QAM)

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

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



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

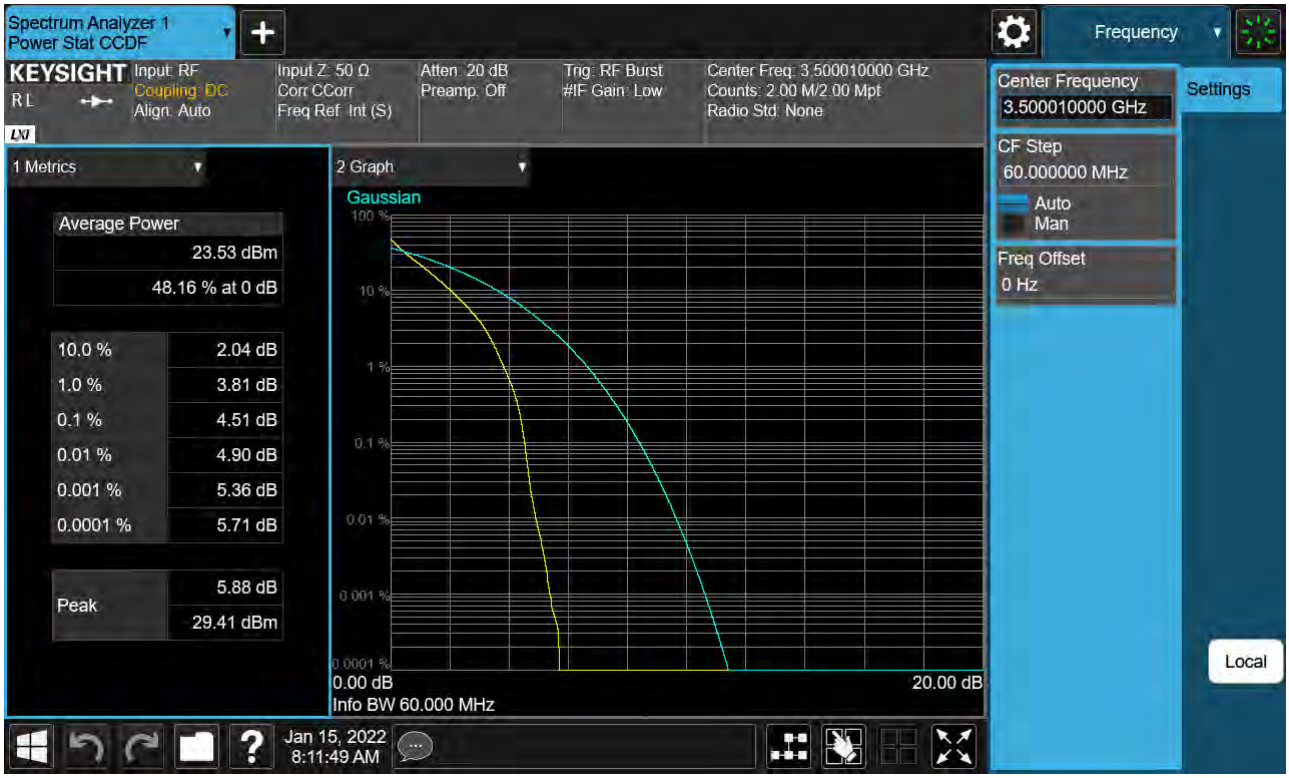


Sub6 n77. PAR Plot (50 M BW_Ch.633334_16QAM)

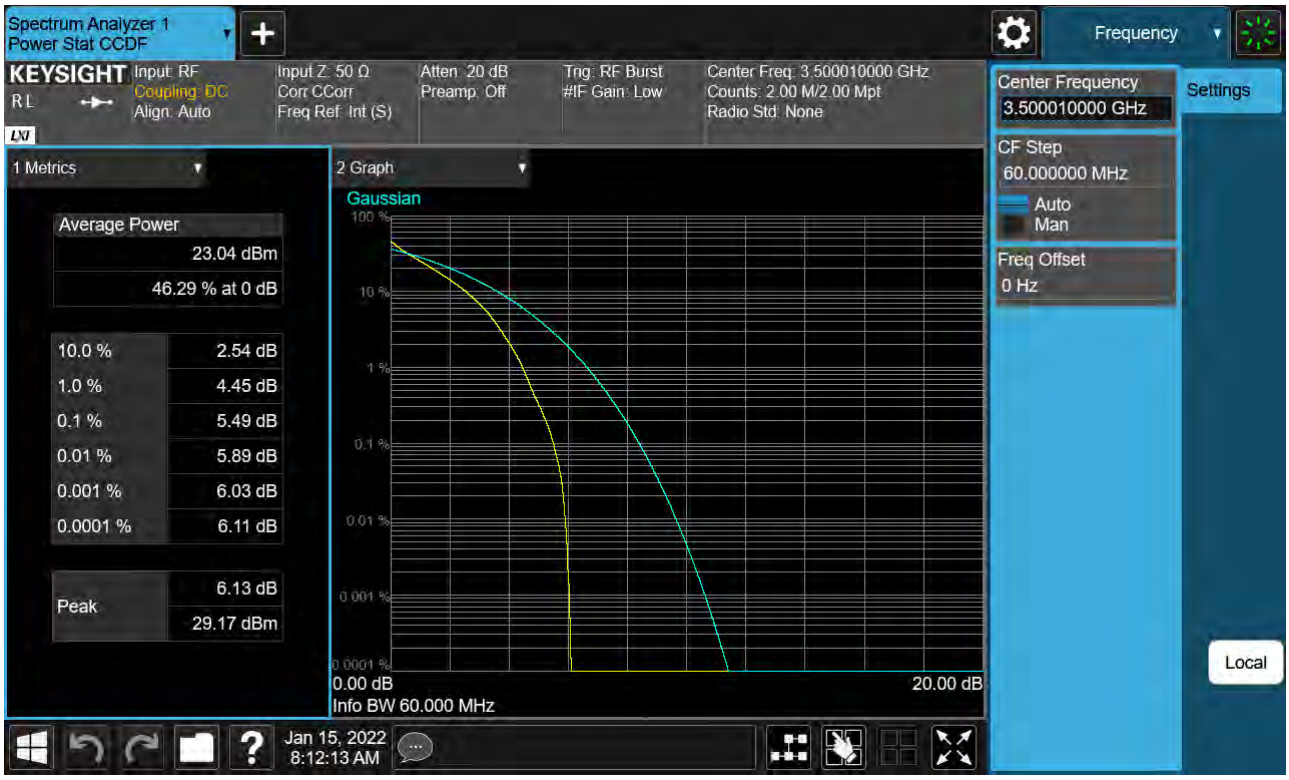
Sub6 n77. PAR Plot (50 M BW_Ch.633334_64QAM)

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

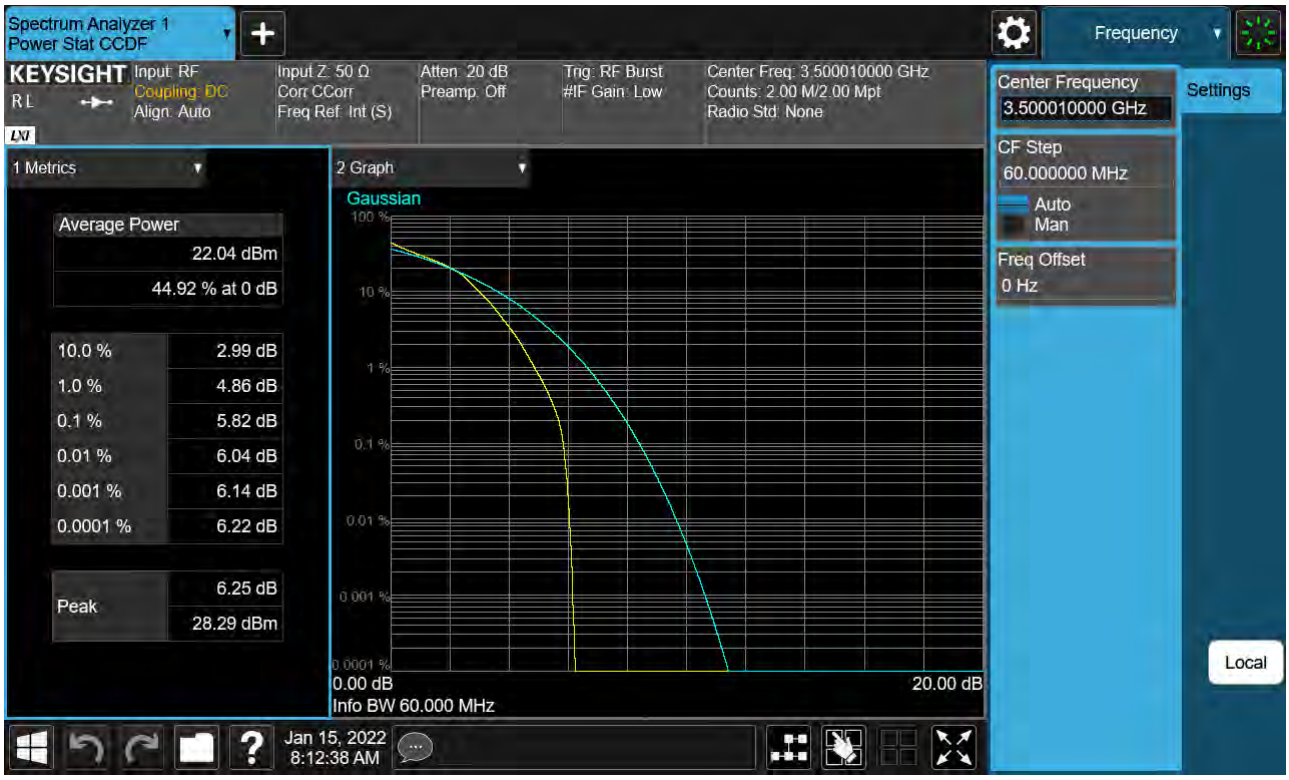
Sub6 n77. PAR Plot (60 M BW_Ch.633334_ BPSK)



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



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



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

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