HCT CO.,LTD.
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FCC Sub6 REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
October 28, 2022

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

Report No.: HCT-RF-2210-FC024

FCC ID:	**A3LSMS911B**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-S911B/DS
Additional Model(s):	SM-S911B
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	8M68G7D	PI/2 BPSK	0.237	23.74
		8M66G7D	QPSK	0.234	23.69
		8M62W7D	16QAM	0.185	22.67
		8M70W7D	64QAM	0.132	21.20
		8M65W7D	256QAM	0.079	18.95
Sub6 n77 (15)	3457.50 – 3542.50	13M0G7D	PI/2 BPSK	0.254	24.04
		12M9G7D	QPSK	0.248	23.94
		12M9W7D	16QAM	0.195	22.90
		12M9W7D	64QAM	0.139	21.43
		13M0W7D	256QAM	0.088	19.43
Sub6 n77 (20)	3460.02 – 3540.00	18M0G7D	PI/2 BPSK	0.255	24.06
		17M9G7D	QPSK	0.254	24.05
		17M9W7D	16QAM	0.206	23.14
		17M9W7D	64QAM	0.142	21.52
		18M0W7D	256QAM	0.088	19.44
Sub6 n77 (30)	3465.00 – 3534.99	26M8G7D	PI/2 BPSK	0.256	24.09
		26M9G7D	QPSK	0.251	24.00
		26M9W7D	16QAM	0.206	23.14
		26M9W7D	64QAM	0.139	21.42
		26M9W7D	256QAM	0.086	19.34
Sub6 n77 (40)	3470.01 – 3529.98	35M8G7D	PI/2 BPSK	0.262	24.19
		35M8G7D	QPSK	0.256	24.09
		35M9W7D	16QAM	0.198	22.96
		35M7W7D	64QAM	0.141	21.49
		35M7W7D	256QAM	0.087	19.39
Sub6 n77 (50)	3475.02 – 3525.00	45M7G7D	PI/2 BPSK	0.232	23.66
		45M9G7D	QPSK	0.226	23.55
		45M9W7D	16QAM	0.179	22.54
		45M8W7D	64QAM	0.127	21.04
		45M7W7D	256QAM	0.080	19.04
Sub6 n77 (60)	3480.00 – 3519.99	57M9G7D	PI/2 BPSK	0.237	23.74
		57M8G7D	QPSK	0.235	23.71
		57M9W7D	16QAM	0.197	22.95
		57M8W7D	64QAM	0.133	21.24
		57M9W7D	256QAM	0.083	19.19
Sub6 n77 (70)	3485.01 – 3514.98	64M3G7D	PI/2 BPSK	0.234	23.70
		64M4G7D	QPSK	0.231	23.64
		64M4W7D	16QAM	0.179	22.54
		64M5W7D	64QAM	0.130	21.14
		64M5W7D	256QAM	0.080	19.04
Sub6 n77 (80)	3490.02 – 3510.00	77M3G7D	PI/2 BPSK	0.232	23.66
		77M2G7D	QPSK	0.231	23.64
		77M2W7D	16QAM	0.182	22.60
		77M4W7D	64QAM	0.129	21.09
		77M1W7D	256QAM	0.077	18.86
Sub6 n77 (90)	3495.00 – 3504.99	87M2G7D	PI/2 BPSK	0.236	23.73
		87M0G7D	QPSK	0.231	23.63
		87M4W7D	16QAM	0.187	22.72
		87M2W7D	64QAM	0.133	21.24
		87M2W7D	256QAM	0.080	19.04
Sub6 n77 (100)	3500.01	96M5G7D	PI/2 BPSK	0.226	23.54
		96M4G7D	QPSK	0.225	23.53
		96M2W7D	16QAM	0.179	22.54
		96M4W7D	64QAM	0.127	21.04
		96M4W7D	256QAM	0.078	18.92

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	8M65G7D	PI/2 BPSK	0.188	22.74
		8M66G7D	QPSK	0.182	22.59
		8M65W7D	16QAM	0.149	21.74
		8M62W7D	64QAM	0.104	20.17
		8M63W7D	256QAM	0.062	17.90
Sub6 n77 (15)	3707.51 – 3972.48	13M0G7D	PI/2 BPSK	0.204	23.09
		13M0G7D	QPSK	0.201	23.04
		13M0W7D	16QAM	0.162	22.09
		12M9W7D	64QAM	0.109	20.38
		13M0W7D	256QAM	0.069	18.40
Sub6 n77 (20)	3710.01 – 3969.99	17M9G7D	PI/2 BPSK	0.202	23.05
		17M9G7D	QPSK	0.190	22.78
		17M9W7D	16QAM	0.154	21.88
		17M9W7D	64QAM	0.107	20.29
		18M0W7D	256QAM	0.069	18.39
Sub6 n77 (30)	3715.02 – 3964.98	26M9G7D	PI/2 BPSK	0.205	23.12
		26M9G7D	QPSK	0.200	23.02
		26M9W7D	16QAM	0.164	22.14
		26M9W7D	64QAM	0.109	20.39
		26M8W7D	256QAM	0.071	18.51
Sub6 n77 (40)	3720.00 – 3960.00	35M8G7D	PI/2 BPSK	0.233	23.68
		36M0G7D	QPSK	0.216	23.34
		35M8W7D	16QAM	0.171	22.33
		35M8W7D	64QAM	0.121	20.83
		35M8W7D	256QAM	0.073	18.65
Sub6 n77 (50)	3725.10 – 3954.99	45M8G7D	PI/2 BPSK	0.197	22.95
		45M8G7D	QPSK	0.194	22.88
		45M8W7D	16QAM	0.165	22.18
		45M8W7D	64QAM	0.112	20.48
		45M9W7D	256QAM	0.068	18.30
Sub6 n77 (60)	3730.02 – 3949.98	57M9G7D	PI/2 BPSK	0.206	23.13
		58M0G7D	QPSK	0.203	23.08
		57M9W7D	16QAM	0.160	22.05
		57M9W7D	64QAM	0.112	20.48
		57M9W7D	256QAM	0.068	18.34
Sub6 n77 (70)	3735.00 – 3945.00	64M5G7D	PI/2 BPSK	0.198	22.96
		64M5G7D	QPSK	0.195	22.91
		64M4W7D	16QAM	0.157	21.95
		64M5W7D	64QAM	0.110	20.41
		64M6W7D	256QAM	0.067	18.29
Sub6 n77 (80)	3740.01 – 3939.99	77M2G7D	PI/2 BPSK	0.201	23.04
		77M4G7D	QPSK	0.200	23.00
		77M3W7D	16QAM	0.162	22.09
		77M2W7D	64QAM	0.112	20.51
		77M3W7D	256QAM	0.068	18.30
Sub6 n77 (90)	3745.02 – 3934.98	87M1G7D	PI/2 BPSK	0.208	23.19
		87M0G7D	QPSK	0.205	23.11
		87M1W7D	16QAM	0.163	22.13
		87M0W7D	64QAM	0.115	20.61
		87M2W7D	256QAM	0.071	18.53
Sub6 n77 (100)	3750.00 – 3930.00	96M5G7D	PI/2 BPSK	0.205	23.12
		96M6G7D	QPSK	0.203	23.08
		96M4W7D	16QAM	0.160	22.05
		96M5W7D	64QAM	0.111	20.44
		96M5W7D	256QAM	0.071	18.53

REVIEWED BY

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

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

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

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

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2210-FC024	October 28, 2022	- First Approval Report

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

Table of Contents

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMS911B
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2
EUT Type:	Mobile phone
Model(s):	SM-S911B/DS
Additional Model(s):	SM-S911B
SCS(kHz):	30
Bandwidth(MHz):	20, 30, 40, 50, 60, 70, 80, 90, 100
Waveform:	CP-OFDM, DFT-S-OFDM
Modulation:	DFT-S-OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM
Tx Frequency: **(3450 MHz - 3550 MHz)**	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)) 3745.02 MHz – 3934.98 MHz (Sub6 n77(90 MHz)) 3750.00 MHz – 3930.00 MHz (Sub6 n77(100 MHz))
Date(s) of Tests:	September 02 2022 ~ October 28, 2022
Serial number:	Radiated: R3CTA0CFGTY Conducted: R3CT706PHYK

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 (20/40/80/160 MHz), Bluetooth, BT LE, NFC, AIT, 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 = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points > 2 x span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10^{th} harmonics from 9 kHz.

Test Note

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

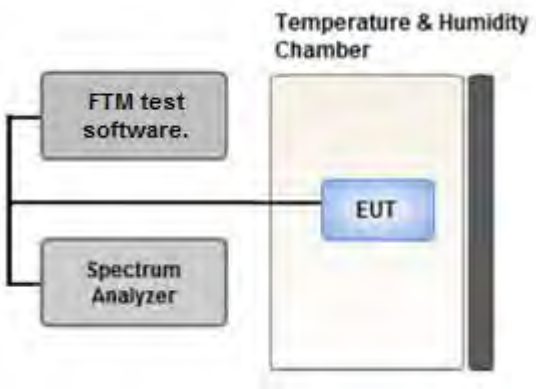
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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

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

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

3.4 PEAK- TO- AVERAGE RATIO



Test setup

① CCDF Procedure for PAPR

Test Settings

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

.- for continuous transmissions, set to 1 ms,

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

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

② **Alternate Procedure for PAPR**

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

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

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

Test Settings(Peak Power)

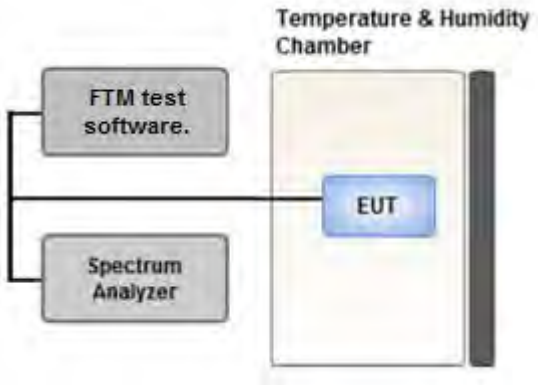
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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

Test Settings(Average Power)

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

3.5 OCCUPIED BANDWIDTH.



Test setup

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

The EUT makes a call to the communication simulator.

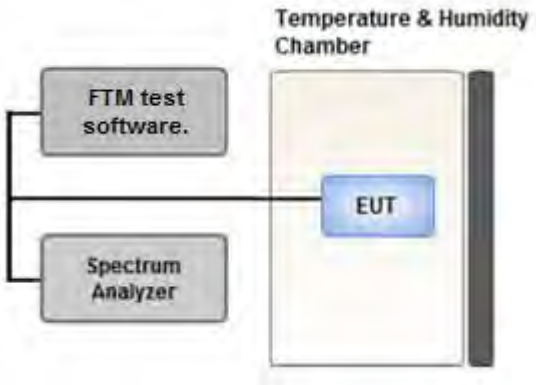
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

Test Settings

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

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

Test Overview

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

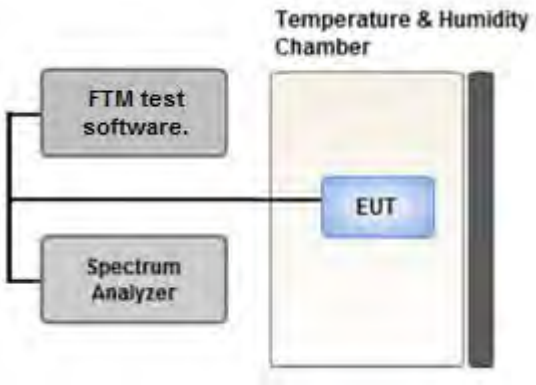
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

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

Test Settings

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

3.7 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

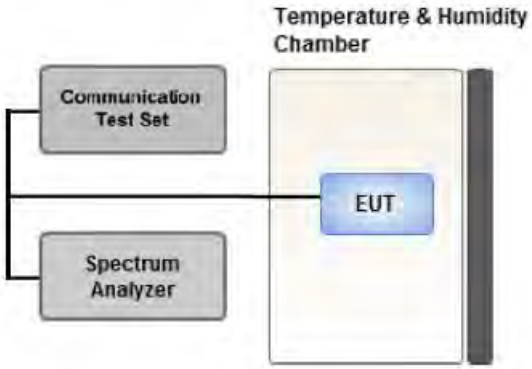
Test Notes

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. .

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

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

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

The frequency stability of the transmitter is measured by:

1. Temperature:

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

2. Primary Supply Voltage:

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

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

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 ℃. 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 - n77)
- We were performed the RSE test in condition of co-location.
  Mode : Stand alone, Simultaneous transmission scenarios
  Worst case : Stand alone
- Radiated Spurious emissions are measured while operating in EN-DC mode with Sub 6 NR carrier as well as an LTE carrier (anchor).
  (Worst case: 12A - n77A) (10 MHz))
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
-In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported.
(Worst case : 40 MHz(3450 MHz – 3550 MHz), 40 MHz(3700 MHz – 3980 MHz))
- SM-S911B/DS & additional models were tested and the worst case results are reported.
  (Worst case : SM-S911B/DS)

[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		Y
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 8.2		X

[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		Y
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 9.2		X

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
  (Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: SA, NSA, SRS
  Worst case: NSA (12A - n77)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-S911B/DS & additional models were tested and the worst case results are reported.
  (Worst case : SM-S911B/DS)

[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	03/27/2024	Biennial
Precision Dipole Antenna	UHAP	Schwarzbeck	01274	03/27/2024	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	02289	03/21/2024	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1299	05/04/2023	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	04/12/2023	Biennial
Loop Antenna(9 kHz~30 MHz)	FMZB1513	Rohde & Schwarz	1513-175	06/04/2023	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/03/2023	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/22/2023	Biennial
High Pass Filter	WHKX10-900-1000-15000-40SS	Wainwright Instruments	15	05/18/2023	Annual
High Pass Filter	WHKX10-2700-3000-18000-40SS	Wainwright Instruments	145	05/18/2023	Annual
High Pass Filter	WHNX6-4740-6000-26500-40CC	Wainwright Instruments	11	05/18/2023	Annual
LOW NOISE AMP (100 MHz ~ 18 GHz)	CBLU1183540B-01	CERNEX	26822	05/18/2023	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/02/2022	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/11/2023	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	09/05/2023	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	03/11/2023	Annual
Chamber	SU-642	ESPEC	93008124	03/04/2023	Annual
Signal Analyzer(10 Hz~26.5 GHz)	N9020A	Agilent	MY51110063	04/19/2023	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	05/18/2023	Annual
Spectrum Analyzer(10 Hz~40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/25/2023	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2023	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287700	05/19/2023	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/18/2023	Annual
SIGNAL GENERATOR (100 kHz~40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/05/2023	Annual
Signal Analyzer(5 Hz~40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/30/2023	Annual
4-Way Divider	ZC4PD-K1844+	Mini-Circuits	942907	09/27/2023	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

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

5. MEASUREMENT UNCERTAINTY

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

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	2.00 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.40 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.74 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.51 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.92 (Confidence level about 95 %, k=2)
Radiated Disturbance (Above 40 GHz)	5.48 (Confidence level about 95 %, k=2)

6. SUMMARY OF TEST RESULTS

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§2.1051, §27.53(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	-23.43	14.51	11.20	2.96	H	< 1.00	0.189	22.76	1	12
		QPSK	-23.50	14.44	11.20	2.96	H		0.186	22.69		
		16-QAM	-24.51	13.43	11.20	2.96	H		0.147	21.68		
		64-QAM	-26.06	11.88	11.20	2.96	H		0.103	20.13		
		256-QAM	-28.01	9.93	11.20	2.96	H		0.066	18.18		
3500.01		PI/2 BPSK	-22.81	15.44	11.30	3.00	H		0.237	23.74	1	1
		QPSK	-22.86	15.39	11.30	3.00	H		0.234	23.69		
		16-QAM	-23.88	14.37	11.30	3.00	H		0.185	22.67		
		64-QAM	-25.35	12.90	11.30	3.00	H		0.132	21.20		
		256-QAM	-27.60	10.65	11.30	3.00	H		0.079	18.95		
3544.99		PI/2 BPSK	-23.16	14.91	11.35	3.02	H		0.211	23.24	1	1
		QPSK	-23.21	14.86	11.35	3.02	H		0.208	23.19		
		16-QAM	-24.11	13.96	11.35	3.02	H		0.169	22.29		
		64-QAM	-25.71	12.36	11.35	3.02	H		0.117	20.69		
		256-QAM	-27.81	10.26	11.35	3.02	H		0.072	18.59		

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	-23.16	14.75	11.20	2.95	H	< 1.00	0.200	23.00	1	19
		QPSK	-23.19	14.72	11.20	2.95	H		0.198	22.97		
		16-QAM	-24.17	13.74	11.20	2.95	H		0.158	21.99		
		64-QAM	-25.61	12.30	11.20	2.95	H		0.114	20.55		
		256-QAM	-27.81	10.10	11.20	2.95	H		0.068	18.35		
3500.01		PI/2 BPSK	-22.51	15.74	11.30	3.00	H		0.254	24.04	1	1
		QPSK	-22.61	15.64	11.30	3.00	H		0.248	23.94		
		16-QAM	-23.65	14.60	11.30	3.00	H		0.195	22.90		
		64-QAM	-25.12	13.13	11.30	3.00	H		0.139	21.43		
		256-QAM	-27.12	11.13	11.30	3.00	H		0.088	19.43		
3542.50		PI/2 BPSK	-22.86	15.09	11.30	3.02	H		0.217	23.37	1	1
		QPSK	-22.87	15.08	11.30	3.02	H		0.217	23.36		
		16-QAM	-23.91	14.04	11.30	3.02	H		0.171	22.32		
		64-QAM	-25.31	12.64	11.30	3.02	H		0.124	20.92		
		256-QAM	-27.41	10.54	11.30	3.02	H		0.076	18.82		

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	-22.86	15.05	11.20	2.95	H	< 1.00	0.214	23.30	1	25
		QPSK	-23.09	14.82	11.20	2.95	H		0.203	23.07		
		16-QAM	-24.06	13.85	11.20	2.95	H		0.162	22.10		
		64-QAM	-25.76	12.15	11.20	2.95	H		0.110	20.40		
		256-QAM	-28.01	9.90	11.20	2.95	H		0.065	18.15		
3500.01		PI/2 BPSK	-22.49	15.76	11.30	3.00	H		0.255	24.06	1	1
		QPSK	-22.50	15.75	11.30	3.00	H		0.254	24.05		
		16-QAM	-23.41	14.84	11.30	3.00	H		0.206	23.14		
		64-QAM	-25.03	13.22	11.30	3.00	H		0.142	21.52		
		256-QAM	-27.11	11.14	11.30	3.00	H		0.088	19.44		
3540.00		PI/2 BPSK	-22.76	15.19	11.30	3.02	H		0.222	23.47	1	1
		QPSK	-22.83	15.12	11.30	3.02	H		0.219	23.40		
		16-QAM	-23.80	14.15	11.30	3.02	H		0.175	22.43		
		64-QAM	-25.19	12.76	11.30	3.02	H		0.127	21.04		
		256-QAM	-27.41	10.54	11.30	3.02	H		0.076	18.82		

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	-23.01	14.86	11.20	2.95	H	< 1.00	0.205	23.11	1	39
		QPSK	-23.06	14.81	11.20	2.95	H		0.202	23.06		
		16-QAM	-24.01	13.86	11.20	2.95	H		0.163	22.11		
		64-QAM	-25.50	12.37	11.20	2.95	H		0.115	20.62		
		256-QAM	-27.76	10.11	11.20	2.95	H		0.069	18.36		
3500.01		PI/2 BPSK	-22.46	15.79	11.30	3.00	H		0.256	24.09	1	1
		QPSK	-22.55	15.70	11.30	3.00	H		0.251	24.00		
		16-QAM	-23.41	14.84	11.30	3.00	H		0.206	23.14		
		64-QAM	-25.13	13.12	11.30	3.00	H		0.139	21.42		
		256-QAM	-27.21	11.04	11.30	3.00	H		0.086	19.34		
3534.99		PI/2 BPSK	-22.59	15.32	11.30	3.01	H		0.230	23.62	1	1
		QPSK	-22.61	15.30	11.30	3.01	H		0.229	23.60		
		16-QAM	-23.61	14.30	11.30	3.01	H		0.182	22.60		
		64-QAM	-25.24	12.67	11.30	3.01	H		0.125	20.97		
		256-QAM	-27.20	10.71	11.30	3.01	H		0.080	19.01		

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	-22.86	14.97	11.20	2.95	H	< 1.00	0.210	23.22	1	53
		QPSK	-22.89	14.94	11.20	2.95	H		0.208	23.19		
		16-QAM	-23.95	13.88	11.20	2.95	H		0.163	22.13		
		64-QAM	-25.42	12.41	11.20	2.95	H		0.116	20.66		
		256-QAM	-27.51	10.32	11.20	2.95	H		0.072	18.57		
3500.01		PI/2 BPSK	-22.36	15.89	11.30	3.00	H		0.262	24.19	1	1
		QPSK	-22.46	15.79	11.30	3.00	H		0.256	24.09		
		16-QAM	-23.59	14.66	11.30	3.00	H		0.198	22.96		
		64-QAM	-25.06	13.19	11.30	3.00	H		0.141	21.49		
		256-QAM	-27.16	11.09	11.30	3.00	H		0.087	19.39		
3529.98		PI/2 BPSK	-22.63	15.25	11.30	2.99	H		0.227	23.56	1	1
		QPSK	-22.65	15.23	11.30	2.99	H		0.226	23.54		
		16-QAM	-23.53	14.35	11.30	2.99	H		0.185	22.66		
		64-QAM	-25.16	12.72	11.30	2.99	H		0.127	21.03		
		256-QAM	-27.22	10.66	11.30	2.99	H		0.079	18.97		

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	-23.11	14.77	11.20	2.97	H	< 1.00	0.200	23.00	1	66
		QPSK	-23.13	14.75	11.20	2.97	H		0.199	22.98		
		16-QAM	-24.06	13.82	11.20	2.97	H		0.160	22.05		
		64-QAM	-25.59	12.29	11.20	2.97	H		0.113	20.52		
		256-QAM	-27.70	10.18	11.20	2.97	H		0.069	18.41		
3500.01		PI/2 BPSK	-22.89	15.36	11.30	3.00	H		0.232	23.66	1	1
		QPSK	-23.00	15.25	11.30	3.00	H		0.226	23.55		
		16-QAM	-24.01	14.24	11.30	3.00	H		0.179	22.54		
		64-QAM	-25.51	12.74	11.30	3.00	H		0.127	21.04		
		256-QAM	-27.51	10.74	11.30	3.00	H		0.080	19.04		
3525.00		PI/2 BPSK	-22.65	15.25	11.30	2.98	H		0.228	23.57	1	1
		QPSK	-22.72	15.18	11.30	2.98	H		0.224	23.50		
		16-QAM	-23.76	14.14	11.30	2.98	H		0.176	22.46		
		64-QAM	-25.34	12.56	11.30	2.98	H		0.122	20.88		
		256-QAM	-27.51	10.39	11.30	2.98	H		0.074	18.71		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3480.00	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-22.81	15.13	11.20	2.99	H	< 1.00	0.216	23.34	1	81
		QPSK	-22.87	15.07	11.20	2.99	H		0.213	23.28		
		16-QAM	-23.96	13.98	11.20	2.99	H		0.166	22.19		
		64-QAM	-25.50	12.44	11.20	2.99	H		0.116	20.65		
		256-QAM	-27.69	10.25	11.20	2.99	H		0.070	18.46		
3500.01		PI/2 BPSK	-22.81	15.44	11.30	3.00	H		0.237	23.74	1	81
		QPSK	-22.84	15.41	11.30	3.00	H		0.235	23.71		
		16-QAM	-23.60	14.65	11.30	3.00	H		0.197	22.95		
		64-QAM	-25.31	12.94	11.30	3.00	H		0.133	21.24		
		256-QAM	-27.36	10.89	11.30	3.00	H		0.083	19.19		
3519.99		PI/2 BPSK	-22.81	15.11	11.30	2.97	H		0.221	23.44	1	81
		QPSK	-22.82	15.10	11.30	2.97	H		0.220	23.43		
		16-QAM	-23.81	14.11	11.30	2.97	H		0.175	22.44		
		64-QAM	-25.40	12.52	11.30	2.97	H		0.122	20.85		
		256-QAM	-27.36	10.56	11.30	2.97	H		0.077	18.89		

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	-22.91	15.10	11.20	3.00	H	< 1.00	0.214	23.30	1	94
		QPSK	-23.01	15.00	11.20	3.00	H		0.209	23.20		
		16-QAM	-23.92	14.09	11.20	3.00	H		0.169	22.29		
		64-QAM	-25.50	12.51	11.20	3.00	H		0.118	20.71		
		256-QAM	-27.60	10.41	11.20	3.00	H		0.073	18.61		
3500.01		PI/2 BPSK	-22.85	15.40	11.30	3.00	H		0.234	23.70	1	94
		QPSK	-22.91	15.34	11.30	3.00	H		0.231	23.64		
		16-QAM	-24.01	14.24	11.30	3.00	H		0.179	22.54		
		64-QAM	-25.41	12.84	11.30	3.00	H		0.130	21.14		
		256-QAM	-27.51	10.74	11.30	3.00	H		0.080	19.04		
3514.98		PI/2 BPSK	-23.00	15.06	11.30	2.98	H		0.218	23.39	1	94
		QPSK	-23.06	15.00	11.30	2.98	H		0.215	23.33		
		16-QAM	-24.01	14.05	11.30	2.98	H		0.173	22.38		
		64-QAM	-25.66	12.40	11.30	2.98	H		0.118	20.73		
		256-QAM	-27.59	10.47	11.30	2.98	H		0.076	18.80		

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	-23.01	15.07	11.20	3.00	H	< 1.00	0.212	23.27	1	108
		QPSK	-23.06	15.02	11.20	3.00	H		0.210	23.22		
		16-QAM	-23.85	14.23	11.20	3.00	H		0.175	22.43		
		64-QAM	-25.44	12.64	11.20	3.00	H		0.121	20.84		
		256-QAM	-27.61	10.47	11.20	3.00	H		0.074	18.67		
3500.01		PI/2 BPSK	-22.89	15.36	11.30	3.00	H		0.232	23.66	1	108
		QPSK	-22.91	15.34	11.30	3.00	H		0.231	23.64		
		16-QAM	-23.95	14.30	11.30	3.00	H		0.182	22.60		
		64-QAM	-25.46	12.79	11.30	3.00	H		0.129	21.09		
		256-QAM	-27.70	10.55	11.30	3.00	H		0.077	18.85		
3510.00		PI/2 BPSK	-23.11	15.10	11.30	2.98	H		0.220	23.42	1	108
		QPSK	-23.13	15.08	11.30	2.98	H		0.219	23.40		
		16-QAM	-24.00	14.21	11.30	2.98	H		0.179	22.53		
		64-QAM	-25.71	12.50	11.30	2.98	H		0.121	20.82		
		256-QAM	-27.67	10.54	11.30	2.98	H		0.077	18.86		

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	-22.97	15.20	11.25	3.00	H	< 1.00	0.221	23.45	1	122
		QPSK	-23.16	15.01	11.25	3.00	H		0.212	23.26		
		16-QAM	-24.01	14.16	11.25	3.00	H		0.174	22.41		
		64-QAM	-25.59	12.58	11.25	3.00	H		0.121	20.83		
		256-QAM	-27.69	10.48	11.25	3.00	H		0.075	18.73		
3500.01		PI/2 BPSK	-22.99	15.26	11.30	3.00	H		0.227	23.56	1	122
		QPSK	-23.06	15.19	11.30	3.00	H		0.223	23.49		
		16-QAM	-23.91	14.34	11.30	3.00	H		0.184	22.64		
		64-QAM	-25.31	12.94	11.30	3.00	H		0.133	21.24		
		256-QAM	-27.51	10.74	11.30	3.00	H		0.080	19.04		
3504.99		PI/2 BPSK	-22.81	15.42	11.30	2.99	H		0.236	23.73	1	122
		QPSK	-22.91	15.32	11.30	2.99	H		0.231	23.63		
		16-QAM	-23.82	14.41	11.30	2.99	H		0.187	22.72		
		64-QAM	-25.49	12.74	11.30	2.99	H		0.127	21.05		
		256-QAM	-27.60	10.63	11.30	2.99	H		0.078	18.94		

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
3500.01	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-23.01	15.24	11.30	3.00	H	< 1.00	0.226	23.54	1	136
		QPSK	-23.02	15.23	11.30	3.00	H		0.225	23.53		
		16-QAM	-24.01	14.24	11.30	3.00	H		0.179	22.54		
		64-QAM	-25.51	12.74	11.30	3.00	H		0.127	21.04		
		256-QAM	-27.63	10.62	11.30	3.00	H		0.078	18.92		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77

▣ Anchor Band: B12

▣ Bandwidth: 40 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 1 meters

▣ SCS: 30 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
631334 (3470.01)	6 940.02	-62.89	10.90	-57.38	4.32	H	-50.80	-13.00	1	53
	10 410.03	-61.57	11.20	-51.71	5.38	H	-45.89	-13.00		
	13 880.04	-58.95	12.40	-48.33	6.33	H	-42.26	-13.00		
633334 (3500.01)	7 000.02	-61.88	10.90	-55.96	4.32	H	-49.38	-13.00	1	1
	10 500.03	-61.69	11.30	-51.09	5.41	H	-45.20	-13.00		
	14 000.04	-58.59	12.30	-49.24	6.35	V	-43.29	-13.00		
635332 (3529.98)	7 059.96	-61.84	10.70	-55.44	4.33	V	-49.07	-13.00	1	1
	10 589.94	-61.66	11.20	-50.23	5.44	H	-44.47	-13.00		
	14 119.92	-58.90	12.30	-49.85	6.38	H	-43.93	-13.00		

▣ ENDC-Mode : 12A(10 MHz)-n77A_DoD(40 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
23095 (708.0)	1415.00	-60.41	7.61	-67.04	1.87	V	-61.29	-13.00
	2122.50	-61.80	8.98	-67.62	2.31	H	-60.95	-13.00
	2830.00	-62.14	10.52	-66.15	2.73	H	-58.36	-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	4.70
			QPSK			5.56
			16-QAM			6.10
			64-QAM			6.42
			256-QAM			6.60
	15 MHz		BPSK			4.37
			QPSK			5.46
			16-QAM			6.20
			64-QAM			6.49
			256-QAM			6.67
	20 MHz		BPSK			4.45
			QPSK			5.41
			16-QAM			6.12
			64-QAM			6.41
			256-QAM			6.41
	30 MHz		BPSK			4.32
			QPSK			5.33
			16-QAM			6.15
			64-QAM			6.38
			256-QAM			6.63
	40 MHz		BPSK			4.35
			QPSK			5.51
			16-QAM			6.22
			64-QAM			6.38
			256-QAM			6.65
	50 MHz		BPSK			4.22
			QPSK			5.39
			16-QAM			6.13
			64-QAM			6.38
			256-QAM			6.70

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
	60 MHz		BPSK			4.31
			QPSK			5.40
			16-QAM			6.13
			64-QAM			6.36
			256-QAM			6.56
	70 MHz		BPSK			4.42
			QPSK			5.48
			16-QAM			6.20
			64-QAM			6.44
			256-QAM			6.60
	80 MHz		BPSK			4.39
			QPSK			5.43
			16-QAM			6.18
			64-QAM			6.46
			256-QAM			6.55
	90 MHz		BPSK			4.82
			QPSK			5.72
			16-QAM			6.30
			64-QAM			6.50
			256-QAM			6.69
	100 MHz		BPSK			4.30
			QPSK			5.46
			16-QAM			6.19
			64-QAM			6.34
			256-QAM			6.57

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	8.6748
			QPSK			8.6616
			16-QAM			8.6226
			64-QAM			8.6978
			256-QAM			8.6472
	15 MHz		BPSK			12.960
			QPSK			12.930
			16-QAM			12.913
			64-QAM			12.922
			256-QAM			12.981
	20 MHz		BPSK			17.955
			QPSK			17.919
			16-QAM			17.909
			64-QAM			17.894
			256-QAM			17.946
	30 MHz		BPSK			26.780
			QPSK			26.859
			16-QAM			26.882
			64-QAM			26.882
			256-QAM			26.890
	40 MHz		BPSK			35.831
			QPSK			35.773
			16-QAM			35.862
			64-QAM			35.736
			256-QAM			35.725
	50 MHz		BPSK			45.709
			QPSK			45.930
			16-QAM			45.863
			64-QAM			45.837
			256-QAM			45.660

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
	60 MHz		BPSK			57.885
			QPSK			57.782
			16-QAM			57.879
			64-QAM			57.777
			256-QAM			57.902
	70 MHz		BPSK			64.334
			QPSK			64.353
			16-QAM			64.347
			64-QAM			64.525
			256-QAM			64.448
	80 MHz		BPSK			77.290
			QPSK			77.163
			16-QAM			77.236
			64-QAM			77.374
			256-QAM			77.127
	90 MHz		BPSK			87.220
			QPSK			87.003
			16-QAM			87.347
			64-QAM			87.218
			256-QAM			87.154
	100 MHz		BPSK			96.487
			QPSK			96.360
			16-QAM			96.200
			64-QAM			96.423
			256-QAM			96.358

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	9.7423	37.805	-70.561	-32.756	-13.00
		3500.01	8.8275	37.805	-71.066	-33.261	
		3544.98	8.9352	37.805	-70.791	-32.986	
	15	3457.50	9.1840	37.805	-70.892	-33.087	
		3500.01	4.5619	37.190	-70.656	-33.466	
		3542.49	9.6820	37.805	-70.651	-32.846	
	20	3460.02	5.1845	37.805	-70.934	-33.129	
		3500.01	9.0897	37.805	-71.097	-33.292	
		3540.00	8.5548	37.805	-70.849	-33.044	
	30	3465.00	9.7144	37.805	-69.613	-31.808	
		3500.01	9.9641	37.805	-70.535	-32.730	
		3534.99	9.7228	37.805	-69.569	-31.764	
	40	3470.01	9.1201	37.805	-70.624	-32.819	
		3500.01	4.8884	37.190	-70.621	-33.431	
		3529.98	8.2647	37.805	-70.664	-32.859	
	50	3475.02	8.2627	37.805	-70.962	-33.157	
		3500.01	5.2209	37.805	-70.691	-32.886	
		3525.00	9.7104	37.805	-70.328	-32.523	
	60	3480.00	9.9387	37.805	-70.880	-33.075	
		3500.01	8.2842	37.805	-70.595	-32.790	
		3519.99	9.9875	37.805	-70.908	-33.103	
	70	3485.01	8.0145	37.805	-70.259	-32.454	
		3500.01	8.6167	37.805	-70.756	-32.951	
		3514.98	8.8943	37.805	-70.402	-32.597	
	80	3490.02	8.5992	37.805	-70.742	-32.937	
		3500.01	8.8470	37.805	-70.934	-33.129	
		3510.00	4.8984	37.190	-70.394	-33.204	
	90	3495.00	8.8694	37.805	-71.051	-33.246	
		3500.01	8.6027	37.805	-71.171	-33.366	
		3504.99	9.7039	37.805	-70.952	-33.147	
	100	3500.01	4.9243	37.190	-71.399	-34.209	

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	27.494
1 – 5	30.200
5 – 10	30.815
10 – 15	31.340
15 – 20	31.713
Above 20	32.355

8.6 BAND EDGE

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: 3.300 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 009 990	0.0	0.000 000	0.000
	100 %	-30	3455 009 979	-11.4	0.000 000	-0.003
	100 %	-20	3455 009 984	-6.6	0.000 000	-0.002
	100 %	-10	3455 009 986	-4.0	0.000 000	-0.001
	100 %	0	3455 009 985	-5.3	0.000 000	-0.002
	100 %	+10	3455 009 978	-11.8	0.000 000	-0.003
	100 %	+30	3455 009 986	-4.1	0.000 000	-0.001
	100 %	+40	3455 009 979	-10.8	0.000 000	-0.003
	100 %	+50	3455 009 987	-3.3	0.000 000	-0.001
	Batt. Endpoint	+20	3455 009 983	-7.2	0.000 000	-0.002
3544.980	100 %	+20(Ref)	3544 979 985	0.0	0.000 000	0.000
	100 %	-30	3544 979 983	-2.3	0.000 000	-0.001
	100 %	-20	3544 979 975	-10.0	0.000 000	-0.003
	100 %	-10	3544 979 969	-15.9	0.000 000	-0.004
	100 %	0	3544 979 975	-10.8	0.000 000	-0.003
	100 %	+10	3544 979 973	-12.7	0.000 000	-0.004
	100 %	+30	3544 979 976	-9.5	0.000 000	-0.003
	100 %	+40	3544 979 979	-6.3	0.000 000	-0.002
	100 %	+50	3544 979 967	-18.2	-0.000 001	-0.005
	Batt. Endpoint	+20	3544 979 974	-11.0	0.000 000	-0.003

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3457.500	100 %	+20(Ref)	3457 499 993	0.0	0.000 000	0.000
	100 %	-30	3457 499 990	-2.9	0.000 000	-0.001
	100 %	-20	3457 499 990	-3.5	0.000 000	-0.001
	100 %	-10	3457 499 984	-9.0	0.000 000	-0.003
	100 %	0	3457 499 980	-13.2	0.000 000	-0.004
	100 %	+10	3457 499 986	-7.1	0.000 000	-0.002
	100 %	+30	3457 499 993	-0.7	0.000 000	0.000
	100 %	+40	3457 499 977	-16.2	0.000 000	-0.005
	100 %	+50	3457 499 970	-23.9	-0.000 001	-0.007
	Batt. Endpoint	+20	3457 499 988	-5.2	0.000 000	-0.002
3542.490	100 %	+20(Ref)	3542 489 994	0.0	0.000 000	0.000
	100 %	-30	3542 489 986	-7.7	0.000 000	-0.002
	100 %	-20	3542 489 982	-11.6	0.000 000	-0.003
	100 %	-10	3542 489 982	-11.9	0.000 000	-0.003
	100 %	0	3542 489 989	-5.4	0.000 000	-0.002
	100 %	+10	3542 489 991	-3.1	0.000 000	-0.001
	100 %	+30	3542 489 971	-22.4	-0.000 001	-0.006
	100 %	+40	3542 489 988	-6.0	0.000 000	-0.002
	100 %	+50	3542 489 983	-11.2	0.000 000	-0.003
	Batt. Endpoint	+20	3542 489 987	-6.4	0.000 000	-0.002

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3460.020	100 %	+20(Ref)	3460 019 991	0.0	0.000 000	0.000
	100 %	-30	3460 019 979	-11.6	0.000 000	-0.003
	100 %	-20	3460 019 988	-3.3	0.000 000	-0.001
	100 %	-10	3460 019 984	-7.0	0.000 000	-0.002
	100 %	0	3460 019 985	-6.5	0.000 000	-0.002
	100 %	+10	3460 019 988	-2.6	0.000 000	-0.001
	100 %	+30	3460 019 984	-7.3	0.000 000	-0.002
	100 %	+40	3460 019 982	-9.1	0.000 000	-0.003
	100 %	+50	3460 019 979	-12.2	0.000 000	-0.004
	Batt. Endpoint	+20	3460 019 975	-15.7	0.000 000	-0.005
3540.000	100 %	+20(Ref)	3539 999 993	0.0	0.000 000	0.000
	100 %	-30	3539 999 977	-16.9	0.000 000	-0.005
	100 %	-20	3539 999 981	-12.6	0.000 000	-0.004
	100 %	-10	3539 999 986	-7.0	0.000 000	-0.002
	100 %	0	3539 999 986	-7.7	0.000 000	-0.002
	100 %	+10	3539 999 976	-17.0	0.000 000	-0.005
	100 %	+30	3539 999 978	-15.3	0.000 000	-0.004
	100 %	+40	3539 999 979	-14.9	0.000 000	-0.004
	100 %	+50	3539 999 987	-6.6	0.000 000	-0.002
	Batt. Endpoint	+20	3539 999 988	-5.5	0.000 000	-0.002

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3465.000	100 %	+20(Ref)	3464 999 995	0.0	0.000 000	0.000
	100 %	-30	3464 999 984	-10.5	0.000 000	-0.003
	100 %	-20	3464 999 982	-12.5	0.000 000	-0.004
	100 %	-10	3464 999 993	-1.5	0.000 000	0.000
	100 %	0	3464 999 978	-16.8	0.000 000	-0.005
	100 %	+10	3464 999 978	-16.8	0.000 000	-0.005
	100 %	+30	3464 999 984	-10.9	0.000 000	-0.003
	100 %	+40	3464 999 982	-12.5	0.000 000	-0.004
	100 %	+50	3464 999 982	-12.5	0.000 000	-0.004
	Batt. Endpoint	+20	3464 999 980	-15.1	0.000 000	-0.004
3534.990	100 %	+20(Ref)	3534 989 991	0.0	0.000 000	0.000
	100 %	-30	3534 989 980	-10.6	0.000 000	-0.003
	100 %	-20	3534 989 974	-17.2	0.000 000	-0.005
	100 %	-10	3534 989 975	-16.0	0.000 000	-0.005
	100 %	0	3534 989 974	-17.2	0.000 000	-0.005
	100 %	+10	3534 989 973	-18.0	-0.000 001	-0.005
	100 %	+30	3534 989 982	-8.8	0.000 000	-0.003
	100 %	+40	3534 989 983	-8.3	0.000 000	-0.002
	100 %	+50	3534 989 981	-9.5	0.000 000	-0.003
	Batt. Endpoint	+20	3534 989 980	-11.1	0.000 000	-0.003

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3470.010	100 %	+20(Ref)	3470 009 994	0.0	0.000 000	0.000
	100 %	-30	3470 009 985	-9.6	0.000 000	-0.003
	100 %	-20	3470 009 986	-8.8	0.000 000	-0.003
	100 %	-10	3470 009 986	-8.1	0.000 000	-0.002
	100 %	0	3470 009 977	-17.6	-0.000 001	-0.005
	100 %	+10	3470 009 986	-8.3	0.000 000	-0.002
	100 %	+30	3470 009 987	-7.7	0.000 000	-0.002
	100 %	+40	3470 009 987	-7.0	0.000 000	-0.002
	100 %	+50	3470 009 987	-7.9	0.000 000	-0.002
	Batt. Endpoint	+20	3470 009 978	-16.3	0.000 000	-0.005
3529.980	100 %	+20(Ref)	3529 979 989	0.0	0.000 000	0.000
	100 %	-30	3529 979 971	-17.7	-0.000 001	-0.005
	100 %	-20	3529 979 976	-13.2	0.000 000	-0.004
	100 %	-10	3529 979 983	-5.9	0.000 000	-0.002
	100 %	0	3529 979 981	-8.3	0.000 000	-0.002
	100 %	+10	3529 979 970	-19.0	-0.000 001	-0.005
	100 %	+30	3529 979 972	-17.2	0.000 000	-0.005
	100 %	+40	3529 979 972	-16.9	0.000 000	-0.005
	100 %	+50	3529 979 981	-8.3	0.000 000	-0.002
	Batt. Endpoint	+20	3529 979 977	-12.3	0.000 000	-0.003

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3475.020	100 %	+20(Ref)	3475 019 988	0.0	0.000 000	0.000
	100 %	-30	3475 019 980	-8.3	0.000 000	-0.002
	100 %	-20	3475 019 978	-10.5	0.000 000	-0.003
	100 %	-10	3475 019 976	-12.2	0.000 000	-0.004
	100 %	0	3475 019 982	-5.8	0.000 000	-0.002
	100 %	+10	3475 019 975	-13.1	0.000 000	-0.004
	100 %	+30	3475 019 982	-6.0	0.000 000	-0.002
	100 %	+40	3475 019 982	-6.2	0.000 000	-0.002
	100 %	+50	3475 019 982	-6.3	0.000 000	-0.002
	Batt. Endpoint	+20	3475 019 972	-16.2	0.000 000	-0.005
3525.000	100 %	+20(Ref)	3524 999 990	0.0	0.000 000	0.000
	100 %	-30	3524 999 982	-7.1	0.000 000	-0.002
	100 %	-20	3524 999 980	-9.3	0.000 000	-0.003
	100 %	-10	3524 999 980	-9.2	0.000 000	-0.003
	100 %	0	3524 999 983	-6.3	0.000 000	-0.002
	100 %	+10	3524 999 981	-8.4	0.000 000	-0.002
	100 %	+30	3524 999 985	-4.8	0.000 000	-0.001
	100 %	+40	3524 999 982	-7.2	0.000 000	-0.002
	100 %	+50	3524 999 976	-13.9	0.000 000	-0.004
	Batt. Endpoint	+20	3524 999 983	-6.6	0.000 000	-0.002

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3480.000	100 %	+20(Ref)	3479 999 992	0.0	0.000 000	0.000
	100 %	-30	3479 999 981	-11.2	0.000 000	-0.003
	100 %	-20	3479 999 979	-13.1	0.000 000	-0.004
	100 %	-10	3479 999 979	-13.1	0.000 000	-0.004
	100 %	0	3479 999 984	-7.9	0.000 000	-0.002
	100 %	+10	3479 999 989	-3.0	0.000 000	-0.001
	100 %	+30	3479 999 989	-3.0	0.000 000	-0.001
	100 %	+40	3479 999 978	-14.4	0.000 000	-0.004
	100 %	+50	3479 999 979	-13.7	0.000 000	-0.004
	Batt. Endpoint	+20	3479 999 978	-14.3	0.000 000	-0.004
3519.990	100 %	+20(Ref)	3519 989 989	0.0	0.000 000	0.000
	100 %	-30	3519 989 978	-11.0	0.000 000	-0.003
	100 %	-20	3519 989 979	-10.3	0.000 000	-0.003
	100 %	-10	3519 989 984	-4.7	0.000 000	-0.001
	100 %	0	3519 989 970	-19.0	-0.000 001	-0.005
	100 %	+10	3519 989 970	-19.0	-0.000 001	-0.005
	100 %	+30	3519 989 980	-9.2	0.000 000	-0.003
	100 %	+40	3519 989 979	-10.1	0.000 000	-0.003
	100 %	+50	3519 989 978	-11.0	0.000 000	-0.003
	Batt. Endpoint	+20	3519 989 978	-11.0	0.000 000	-0.003

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3485.010	100 %	+20(Ref)	3485 009 994	0.0	0.000 000	0.000
	100 %	-30	3485 009 990	-4.3	0.000 000	-0.001
	100 %	-20	3485 009 980	-14.0	0.000 000	-0.004
	100 %	-10	3485 009 983	-10.9	0.000 000	-0.003
	100 %	0	3485 009 983	-10.9	0.000 000	-0.003
	100 %	+10	3485 009 974	-20.5	-0.000 001	-0.006
	100 %	+30	3485 009 977	-16.9	0.000 000	-0.005
	100 %	+40	3485 009 985	-9.0	0.000 000	-0.003
	100 %	+50	3485 009 985	-9.0	0.000 000	-0.003
	Batt. Endpoint	+20	3485 009 985	-9.0	0.000 000	-0.003
3514.980	100 %	+20(Ref)	3514 979 990	0.0	0.000 000	0.000
	100 %	-30	3514 979 975	-14.4	0.000 000	-0.004
	100 %	-20	3514 979 976	-13.2	0.000 000	-0.004
	100 %	-10	3514 979 972	-17.7	-0.000 001	-0.005
	100 %	0	3514 979 972	-17.7	-0.000 001	-0.005
	100 %	+10	3514 979 972	-17.4	0.000 000	-0.005
	100 %	+30	3514 979 967	-23.0	-0.000 001	-0.007
	100 %	+40	3514 979 978	-11.6	0.000 000	-0.003
	100 %	+50	3514 979 978	-11.6	0.000 000	-0.003
	Batt. Endpoint	+20	3514 979 980	-9.6	0.000 000	-0.003

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3490.020	100 %	+20(Ref)	3490 019 992	0.0	0.000 000	0.000
	100 %	-30	3490 019 981	-11.3	0.000 000	-0.003
	100 %	-20	3490 019 993	1.2	0.000 000	0.000
	100 %	-10	3490 019 993	1.2	0.000 000	0.000
	100 %	0	3490 019 993	1.2	0.000 000	0.000
	100 %	+10	3490 019 993	1.2	0.000 000	0.000
	100 %	+30	3490 019 990	-2.5	0.000 000	-0.001
	100 %	+40	3490 019 990	-2.5	0.000 000	-0.001
	100 %	+50	3490 019 977	-15.0	0.000 000	-0.004
	Batt. Endpoint	+20	3490 019 987	-5.5	0.000 000	-0.002
3510.000	100 %	+20(Ref)	3509 999 991	0.0	0.000 000	0.000
	100 %	-30	3509 999 981	-9.4	0.000 000	-0.003
	100 %	-20	3509 999 983	-7.7	0.000 000	-0.002
	100 %	-10	3509 999 983	-7.7	0.000 000	-0.002
	100 %	0	3509 999 984	-6.5	0.000 000	-0.002
	100 %	+10	3509 999 985	-5.9	0.000 000	-0.002
	100 %	+30	3509 999 985	-5.9	0.000 000	-0.002
	100 %	+40	3509 999 979	-11.2	0.000 000	-0.003
	100 %	+50	3509 999 981	-9.1	0.000 000	-0.003
	Batt. Endpoint	+20	3509 999 983	-7.3	0.000 000	-0.002

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3495.000	100 %	+20(Ref)	3494 999 987	0.0	0.000 000	0.000
	100 %	-30	3494 999 978	-8.9	0.000 000	-0.003
	100 %	-20	3494 999 979	-8.3	0.000 000	-0.002
	100 %	-10	3494 999 977	-10.1	0.000 000	-0.003
	100 %	0	3494 999 978	-9.1	0.000 000	-0.003
	100 %	+10	3494 999 973	-14.3	0.000 000	-0.004
	100 %	+30	3494 999 973	-14.3	0.000 000	-0.004
	100 %	+40	3494 999 982	-5.6	0.000 000	-0.002
	100 %	+50	3494 999 975	-12.3	0.000 000	-0.004
	Batt. Endpoint	+20	3494 999 982	-5.5	0.000 000	-0.002
3504.990	100 %	+20(Ref)	3504 989 991	0.0	0.000 000	0.000
	100 %	-30	3504 989 992	1.1	0.000 000	0.000
	100 %	-20	3504 989 992	1.8	0.000 000	0.001
	100 %	-10	3504 989 993	2.5	0.000 000	0.001
	100 %	0	3504 989 993	2.1	0.000 000	0.001
	100 %	+10	3504 989 997	6.2	0.000 000	0.002
	100 %	+30	3504 989 994	3.2	0.000 000	0.001
	100 %	+40	3504 989 996	5.5	0.000 000	0.002
	100 %	+50	3504 989 995	4.8	0.000 000	0.001
	Batt. Endpoint	+20	3504 989 994	3.9	0.000 000	0.001

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3500.010	100 %	+20(Ref)	3500 009 991	0.0	0.000 000	0.000
	100 %	-30	3500 009 985	-5.9	0.000 000	-0.002
	100 %	-20	3500 009 985	-5.9	0.000 000	-0.002
	100 %	-10	3500 009 984	-7.0	0.000 000	-0.002
	100 %	0	3500 009 983	-7.1	0.000 000	-0.002
	100 %	+10	3500 009 983	-7.1	0.000 000	-0.002
	100 %	+30	3500 009 974	-16.1	0.000 000	-0.005
	100 %	+40	3500 009 985	-5.1	0.000 000	-0.001
	100 %	+50	3500 009 987	-4.0	0.000 000	-0.001
	Batt. Endpoint	+20	3500 009 987	-4.0	0.000 000	-0.001

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	-24.61	13.88	11.40	3.09	H	< 1.00	0.166	22.19	1	12
		QPSK	-24.66	13.83	11.40	3.09	H		0.164	22.14		
		16-QAM	-25.78	12.71	11.40	3.09	H		0.126	21.02		
		64-QAM	-27.26	11.23	11.40	3.09	H		0.090	19.54		
		256-QAM	-29.31	9.18	11.40	3.09	H		0.056	17.49		
3840.00		PI/2 BPSK	-24.95	14.73	11.10	3.14	H		0.186	22.69	1	12
		QPSK	-25.21	14.47	11.10	3.14	H		0.175	22.43		
		16-QAM	-26.56	13.12	11.10	3.14	H		0.128	21.08		
		64-QAM	-27.81	11.87	11.10	3.14	H		0.096	19.83		
		256-QAM	-29.91	9.77	11.10	3.14	H		0.059	17.73		
3975.00		PI/2 BPSK	-24.61	15.04	10.90	3.20	H		0.188	22.74	1	1
		QPSK	-24.76	14.89	10.90	3.20	H		0.182	22.59		
		16-QAM	-25.61	14.04	10.90	3.20	H		0.149	21.74		
		64-QAM	-27.18	12.47	10.90	3.20	H		0.104	20.17		
		256-QAM	-29.45	10.20	10.90	3.20	H		0.062	17.90		

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
3707.51	Sub6 n77/ 15 MHz [30 kHz]	PI/2 BPSK	-24.71	13.78	11.40	3.09	H	< 1.00	0.162	22.09	1	19
		QPSK	-24.78	13.71	11.40	3.09	H		0.159	22.02		
		16-QAM	-25.84	12.65	11.40	3.09	H		0.125	20.96		
		64-QAM	-27.11	11.38	11.40	3.09	H		0.093	19.69		
		256-QAM	-29.41	9.08	11.40	3.09	H		0.055	17.39		
3840.00		PI/2 BPSK	-24.81	14.87	11.10	3.14	H		0.192	22.83	1	1
		QPSK	-24.89	14.79	11.10	3.14	H		0.188	22.75		
		16-QAM	-25.88	13.80	11.10	3.14	H		0.150	21.76		
		64-QAM	-27.57	12.11	11.10	3.14	H		0.102	20.07		
		256-QAM	-29.51	10.17	11.10	3.14	H		0.065	18.13		
3972.48		PI/2 BPSK	-24.26	15.39	10.90	3.20	H		0.204	23.09	1	1
		QPSK	-24.31	15.34	10.90	3.20	H		0.201	23.04		
		16-QAM	-25.26	14.39	10.90	3.20	H		0.162	22.09		
		64-QAM	-26.97	12.68	10.90	3.20	H		0.109	20.38		
		256-QAM	-28.95	10.70	10.90	3.20	H		0.069	18.40		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3710.01	Sub6 n77/ 20 MHz [30 kHz]	PI/2 BPSK	-24.76	13.76	11.40	3.11	H	< 1.00	0.160	22.05	1	25
		QPSK	-24.81	13.71	11.40	3.11	H		0.158	22.00		
		16-QAM	-25.91	12.61	11.40	3.11	H		0.123	20.90		
		64-QAM	-27.44	11.08	11.40	3.11	H		0.086	19.37		
		256-QAM	-29.58	8.94	11.40	3.11	H		0.053	17.23		
3840.00		PI/2 BPSK	-24.82	14.86	11.10	3.14	H		0.191	22.82	1	1
		QPSK	-24.93	14.75	11.10	3.14	H		0.187	22.71		
		16-QAM	-25.89	13.79	11.10	3.14	H		0.150	21.75		
		64-QAM	-27.50	12.18	11.10	3.14	H		0.103	20.14		
		256-QAM	-29.52	10.16	11.10	3.14	H		0.065	18.12		
3969.99		PI/2 BPSK	-24.24	15.35	10.90	3.20	H		0.202	23.05	1	1
		QPSK	-24.51	15.08	10.90	3.20	H		0.190	22.78		
		16-QAM	-25.41	14.18	10.90	3.20	H		0.154	21.88		
		64-QAM	-27.00	12.59	10.90	3.20	H		0.107	20.29		
		256-QAM	-28.90	10.69	10.90	3.20	H		0.069	18.39		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3715.02	Sub6 n77/ 30 MHz [30 kHz]	PI/2 BPSK	-24.51	14.16	11.40	3.12	H	< 1.00	0.175	22.44	1	39
		QPSK	-24.59	14.08	11.40	3.12	H		0.172	22.36		
		16-QAM	-25.34	13.33	11.40	3.12	H		0.145	21.61		
		64-QAM	-27.03	11.64	11.40	3.12	H		0.098	19.92		
		256-QAM	-29.18	9.49	11.40	3.12	H		0.060	17.77		
3840.00		PI/2 BPSK	-24.52	15.16	11.10	3.14	H		0.205	23.12	1	1
		QPSK	-24.62	15.06	11.10	3.14	H		0.200	23.02		
		16-QAM	-25.70	13.98	11.10	3.14	H		0.156	21.94		
		64-QAM	-27.28	12.40	11.10	3.14	H		0.109	20.36		
		256-QAM	-29.39	10.29	11.10	3.14	H		0.067	18.25		
3964.98		PI/2 BPSK	-24.31	15.38	10.90	3.21	H		0.203	23.07	1	39
		QPSK	-24.36	15.33	10.90	3.21	H		0.200	23.02		
		16-QAM	-25.24	14.45	10.90	3.21	H		0.164	22.14		
		64-QAM	-26.99	12.70	10.90	3.21	H		0.109	20.39		
		256-QAM	-28.87	10.82	10.90	3.21	H		0.071	18.51		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3720.00	Sub6 n77/ 40 MHz [30 kHz]	PI/2 BPSK	-24.46	14.23	11.40	3.14	H	< 1.00	0.177	22.49	1	53
		QPSK	-24.51	14.18	11.40	3.14	H		0.175	22.44		
		16-QAM	-25.71	12.98	11.40	3.14	H		0.133	21.24		
		64-QAM	-27.16	11.53	11.40	3.14	H		0.095	19.79		
		256-QAM	-29.21	9.48	11.40	3.14	H		0.059	17.74		
3840.00		PI/2 BPSK	-23.96	15.72	11.10	3.14	H		0.233	23.68	1	1
		QPSK	-24.30	15.38	11.10	3.14	H		0.216	23.34		
		16-QAM	-25.31	14.37	11.10	3.14	H		0.171	22.33		
		64-QAM	-26.81	12.87	11.10	3.14	H		0.121	20.83		
		256-QAM	-28.99	10.69	11.10	3.14	H		0.073	18.65		
3960.00		PI/2 BPSK	-24.06	15.72	10.90	3.21	H		0.219	23.41	1	53
		QPSK	-24.16	15.62	10.90	3.21	H		0.214	23.31		
		16-QAM	-25.16	14.62	10.90	3.21	H		0.170	22.31		
		64-QAM	-26.79	12.99	10.90	3.21	H		0.117	20.68		
		256-QAM	-28.91	10.87	10.90	3.21	H		0.072	18.56		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3725.10	Sub6 n77/ 50 MHz [30 kHz]	PI/2 BPSK	-24.71	14.13	11.40	3.14	H	< 1.00	0.173	22.39	1	66
		QPSK	-24.76	14.08	11.40	3.14	H		0.171	22.34		
		16-QAM	-25.65	13.19	11.40	3.14	H		0.140	21.45		
		64-QAM	-27.38	11.46	11.40	3.14	H		0.094	19.72		
		256-QAM	-29.45	9.39	11.40	3.14	H		0.058	17.65		
3840.00		PI/2 BPSK	-24.79	14.89	11.10	3.14	H		0.197	22.95	1	1
		QPSK	-24.76	14.92	11.10	3.14	H		0.194	22.88		
		16-QAM	-25.71	13.97	11.10	3.14	H		0.156	21.93		
		64-QAM	-27.30	12.38	11.10	3.14	H		0.108	20.34		
		256-QAM	-29.34	10.34	11.10	3.14	H		0.068	18.30		
3954.99		PI/2 BPSK	-24.56	15.23	10.90	3.21	H		0.196	22.92	1	66
		QPSK	-24.60	15.19	10.90	3.21	H		0.194	22.88		
		16-QAM	-25.30	14.49	10.90	3.21	H		0.165	22.18		
		64-QAM	-27.00	12.79	10.90	3.21	H		0.112	20.48		
		256-QAM	-29.29	10.50	10.90	3.21	H		0.066	18.19		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3730.02	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-24.73	14.13	11.40	3.14	H	< 1.00	0.173	22.39	1	81
		QPSK	-24.84	14.02	11.40	3.14	H		0.169	22.28		
		16-QAM	-25.80	13.06	11.40	3.14	H		0.136	21.32		
		64-QAM	-27.29	11.57	11.40	3.14	H		0.096	19.83		
		256-QAM	-29.36	9.50	11.40	3.14	H		0.060	17.76		
3840.00		PI/2 BPSK	-24.51	15.17	11.10	3.14	H		0.206	23.13	1	1
		QPSK	-24.56	15.12	11.10	3.14	H		0.203	23.08		
		16-QAM	-25.59	14.09	11.10	3.14	H		0.160	22.05		
		64-QAM	-27.16	12.52	11.10	3.14	H		0.112	20.48		
		256-QAM	-29.30	10.38	11.10	3.14	H		0.068	18.34		
3949.98		PI/2 BPSK	-24.69	15.09	10.90	3.20	H		0.190	22.79	1	81
		QPSK	-24.73	15.05	10.90	3.20	H		0.188	22.75		
		16-QAM	-25.75	14.03	10.90	3.20	H		0.149	21.73		
		64-QAM	-27.34	12.44	10.90	3.20	H		0.103	20.14		
		256-QAM	-29.49	10.29	10.90	3.20	H		0.063	17.99		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3735.00	Sub6 n77/ 70 MHz [30 kHz]	PI/2 BPSK	-24.72	14.14	11.40	3.12	H	< 1.00	0.175	22.42	1	94
		QPSK	-24.87	13.99	11.40	3.12	H		0.169	22.27		
		16-QAM	-25.69	13.17	11.40	3.12	H		0.140	21.45		
		64-QAM	-27.15	11.71	11.40	3.12	H		0.100	19.99		
		256-QAM	-29.34	9.52	11.40	3.12	H		0.060	17.80		
3840.00		PI/2 BPSK	-24.68	15.00	11.10	3.14	H		0.198	22.96	1	1
		QPSK	-24.73	14.95	11.10	3.14	H		0.195	22.91		
		16-QAM	-25.69	13.99	11.10	3.14	H		0.157	21.95		
		64-QAM	-27.23	12.45	11.10	3.14	H		0.110	20.41		
		256-QAM	-29.35	10.33	11.10	3.14	H		0.067	18.29		
3945.00		PI/2 BPSK	-24.95	14.89	10.85	3.18	H		0.180	22.56	1	94
		QPSK	-25.01	14.83	10.85	3.18	H		0.178	22.50		
		16-QAM	-26.11	13.73	10.85	3.18	H		0.138	21.40		
		64-QAM	-27.62	12.22	10.85	3.18	H		0.097	19.89		
		256-QAM	-29.59	10.25	10.85	3.18	H		0.062	17.92		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3740.01	Sub6 n77/ 80 MHz [30 kHz]	PI/2 BPSK	-24.53	14.33	11.40	3.10	H	< 1.00	0.183	22.63	1	108
		QPSK	-24.59	14.27	11.40	3.10	H		0.181	22.57		
		16-QAM	-25.52	13.34	11.40	3.10	H		0.146	21.64		
		64-QAM	-27.13	11.73	11.40	3.10	H		0.101	20.03		
		256-QAM	-29.19	9.67	11.40	3.10	H		0.063	17.97		
3840.00		PI/2 BPSK	-24.60	15.08	11.10	3.14	H		0.201	23.04	1	1
		QPSK	-24.64	15.04	11.10	3.14	H		0.200	23.00		
		16-QAM	-25.55	14.13	11.10	3.14	H		0.162	22.09		
		64-QAM	-27.13	12.55	11.10	3.14	H		0.112	20.51		
		256-QAM	-29.34	10.34	11.10	3.14	H		0.068	18.30		
3939.99		PI/2 BPSK	-25.19	13.67	11.40	3.10	H		0.157	21.97	1	108
		QPSK	-25.24	13.62	11.40	3.10	H		0.156	21.92		
		16-QAM	-26.21	12.65	11.40	3.10	H		0.124	20.95		
		64-QAM	-27.79	11.07	11.40	3.10	H		0.086	19.37		
		256-QAM	-29.91	8.95	11.40	3.10	H		0.053	17.25		

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
3745.02	Sub6 n77/ 90 MHz [30 kHz]	PI/2 BPSK	-24.45	14.29	11.35	3.09	H	< 1.00	0.180	22.55	1	122
		QPSK	-24.51	14.23	11.35	3.09	H		0.177	22.49		
		16-QAM	-25.51	13.23	11.35	3.09	H		0.141	21.49		
		64-QAM	-27.24	11.50	11.35	3.09	H		0.095	19.76		
		256-QAM	-29.23	9.51	11.35	3.09	H		0.060	17.77		
3840.00		PI/2 BPSK	-24.45	15.23	11.10	3.14	H		0.208	23.19	1	1
		QPSK	-24.53	15.15	11.10	3.14	H		0.205	23.11		
		16-QAM	-25.51	14.17	11.10	3.14	H		0.163	22.13		
		64-QAM	-27.03	12.65	11.10	3.14	H		0.115	20.61		
		256-QAM	-29.11	10.57	11.10	3.14	H		0.071	18.53		
3934.98		PI/2 BPSK	-25.34	14.58	10.80	3.16	H		0.167	22.22	1	122
		QPSK	-25.41	14.51	10.80	3.16	H		0.164	22.15		
		16-QAM	-26.49	13.43	10.80	3.16	H		0.128	21.07		
		64-QAM	-27.97	11.95	10.80	3.16	H		0.091	19.59		
		256-QAM	-30.23	9.69	10.80	3.16	H		0.054	17.33		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3750.00	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-24.34	14.29	11.30	3.08	H	< 1.00	0.178	22.51	1	136
		QPSK	-24.40	14.23	11.30	3.08	H		0.176	22.45		
		16-QAM	-25.51	13.12	11.30	3.08	H		0.136	21.34		
		64-QAM	-27.03	11.60	11.30	3.08	H		0.096	19.82		
		256-QAM	-29.01	9.62	11.30	3.08	H		0.061	17.84		
3840.00		PI/2 BPSK	-24.52	15.16	11.10	3.14	H		0.205	23.12	1	1
		QPSK	-24.56	15.12	11.10	3.14	H		0.203	23.08		
		16-QAM	-25.59	14.09	11.10	3.14	H		0.160	22.05		
		64-QAM	-27.20	12.48	11.10	3.14	H		0.111	20.44		
		256-QAM	-29.11	10.57	11.10	3.14	H		0.071	18.53		
3930.00		PI/2 BPSK	-25.40	14.55	10.80	3.16	H		0.166	22.19	1	272
		QPSK	-25.81	14.14	10.80	3.16	H		0.151	21.78		
		16-QAM	-26.81	13.14	10.80	3.16	H		0.120	20.78		
		64-QAM	-27.46	12.49	10.80	3.16	H		0.103	20.13		
		256-QAM	-29.45	10.50	10.80	3.16	H		0.065	18.14		

9.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77

▣ Anchor Band: B12

▣ Bandwidth: 40 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 1 meters

▣ SCS: 30 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
68000 (3720.00)	7 440.00	-63.46	10.80	-55.59	4.46	V	-49.25	-13.00	1	53
	11 160.00	-62.64	11.50	-50.23	5.61	V	-44.34	-13.00		
	14 880.00	-58.17	13.30	-52.56	6.60	V	-45.86	-13.00		
656000 (3840.00)	7 680.00	-63.25	11.10	-56.39	4.55	H	-49.84	-13.00	1	1
	11 520.00	-64.14	11.50	-53.00	5.70	V	-47.20	-13.00		
	15 360.00	-57.81	15.10	-52.02	6.72	V	-43.64	-13.00		
664000 (3960.00)	7 920.00	-62.46	10.70	-55.02	4.63	H	-48.95	-13.00	1	53
	11 880.00	-61.01	12.20	-50.97	5.81	V	-44.58	-13.00		
	15 840.00	-62.97	14.90	-55.89	6.84	H	-47.83	-13.00		

▣ ENDC-Mode : 12A(10 MHz)-n77A(40 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
23095 (708.0)	1415.00	-60.35	7.61	-66.98	1.87	V	-61.23	-13.00
	2122.50	-61.77	8.98	-67.59	2.31	H	-60.92	-13.00
	2830.00	-62.20	10.52	-66.21	2.73	V	-58.42	-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	4.24
			QPSK			5.51
			16-QAM			6.42
			64-QAM			6.74
			256-QAM			6.59
	15 MHz		BPSK			4.17
			QPSK			5.53
			16-QAM			6.32
			64-QAM			6.58
			256-QAM			6.72
	20 MHz		BPSK			4.16
			QPSK			5.34
			16-QAM			6.24
			64-QAM			6.40
			256-QAM			6.69
	30 MHz		BPSK			4.78
			QPSK			5.52
			16-QAM			6.40
			64-QAM			6.50
			256-QAM			6.65
	40 MHz		BPSK			4.73
			QPSK			5.75
			16-QAM			6.33
			64-QAM			6.50
			256-QAM			6.64
	50 MHz		BPSK			3.90
			QPSK			5.61
			16-QAM			6.36
			64-QAM			6.57
			256-QAM			6.64

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
	60 MHz		BPSK			4.40
			QPSK			5.57
			16-QAM			6.35
			64-QAM			6.54
			256-QAM			6.62
	70 MHz		BPSK			4.56
			QPSK			5.65
			16-QAM			6.34
			64-QAM			6.62
			256-QAM			6.69
	80 MHz		BPSK			4.25
			QPSK			5.47
			16-QAM			6.21
			64-QAM			6.57
			256-QAM			6.70
	90 MHz		BPSK			4.79
			QPSK			5.71
			16-QAM			6.47
			64-QAM			6.66
			256-QAM			6.82
	100 MHz		BPSK			4.06
			QPSK			5.34
			16-QAM			6.38
			64-QAM			6.56
			256-QAM			6.69

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	8.6518
			QPSK			8.6593
			16-QAM			8.6528
			64-QAM			8.6193
			256-QAM			8.6262
	15 MHz		BPSK			12.957
			QPSK			12.959
			16-QAM			12.959
			64-QAM			12.908
			256-QAM			13.007
	20 MHz		BPSK			17.927
			QPSK			17.925
			16-QAM			17.923
			64-QAM			17.909
			256-QAM			17.956
	30 MHz		BPSK			26.917
			QPSK			26.906
			16-QAM			26.890
			64-QAM			26.882
			256-QAM			26.838
	40 MHz		BPSK			35.844
			QPSK			35.996
			16-QAM			35.816
			64-QAM			35.789
			256-QAM			35.816
	50 MHz		BPSK			45.833
			QPSK			45.841
			16-QAM			45.836
			64-QAM			45.840
			256-QAM			45.848

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
	60 MHz		BPSK			57.923
			QPSK			57.985
			16-QAM			57.900
			64-QAM			57.932
			256-QAM			57.925
	70 MHz		BPSK			64.481
			QPSK			64.494
			16-QAM			64.413
			64-QAM			64.452
			256-QAM			64.547
	80 MHz		BPSK			77.164
			QPSK			77.408
			16-QAM			77.275
			64-QAM			77.230
			256-QAM			77.260
	90 MHz		BPSK			87.078
			QPSK			87.024
			16-QAM			87.141
			64-QAM			86.969
			256-QAM			87.199
	100 MHz		BPSK			96.513
			QPSK			96.558
			16-QAM			96.444
			64-QAM			96.539
			256-QAM			96.495

Note:

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

9.5 CONDUCTED SPURIOUS EMISSIONS

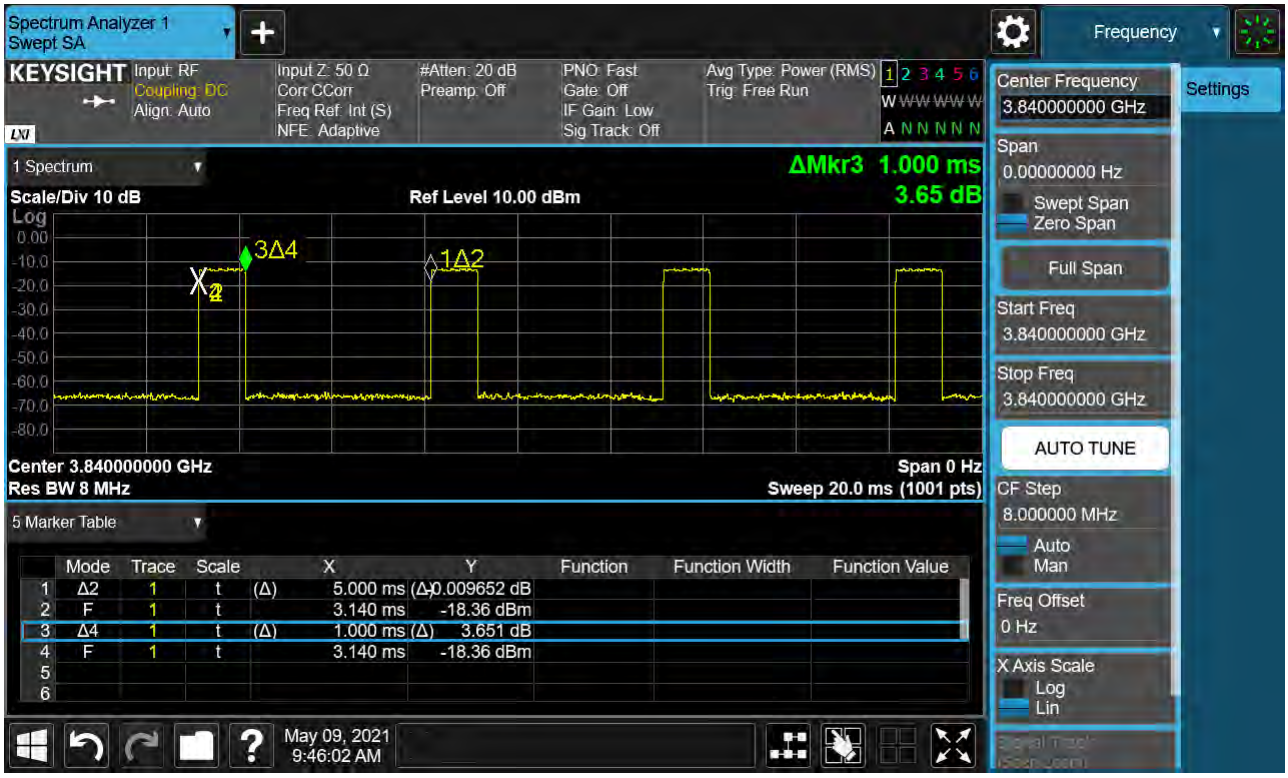
Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n77	10	3705.00	8.8485	37.805	-70.584	-32.779	-13.00
		3840.00	9.1052	37.805	-70.289	-32.484	
		3975.00	6.0075	37.805	-70.738	-32.933	
	15	3707.52	9.4791	37.805	-70.960	-33.155	
		3840.00	5.4711	37.805	-71.139	-33.334	
		3972.48	9.4292	37.805	-71.057	-33.252	
	20	3710.01	3.1631	37.190	-71.442	-34.252	
		3840.00	5.4821	37.805	-70.769	-32.964	
		3969.99	8.8864	37.805	-71.073	-33.268	
	30	3715.02	9.7627	37.805	-70.940	-33.135	
		3840.00	8.8599	37.805	-70.816	-33.011	
		3964.98	9.4447	37.805	-70.160	-32.355	
	40	3720.00	9.1162	37.805	-70.673	-32.868	
		3840.00	8.2647	37.805	-70.661	-32.856	
		3960.00	8.0110	37.805	-70.015	-32.210	
	50	3725.10	9.6825	37.805	-71.140	-33.335	
		3840.00	8.3031	37.805	-70.208	-32.403	
		3954.99	9.6964	37.805	-71.403	-33.598	
	60	3730.02	9.7109	37.805	-71.314	-33.509	
		3840.00	8.0384	37.805	-71.365	-33.560	
		3949.98	4.9123	37.190	-70.134	-32.944	
	70	3735.00	8.2727	37.805	-70.956	-33.151	
		3840.00	8.8465	37.805	-71.172	-33.367	
		3945.00	6.0155	37.805	-71.127	-33.322	
	80	3740.01	8.8654	37.805	-70.715	-32.910	
		3840.00	4.9013	37.190	-70.750	-33.560	
		3939.99	9.1187	37.805	-70.266	-32.461	
	90	3745.02	8.8495	37.805	-71.042	-33.237	
		3840.00	8.9053	37.805	-70.359	-32.554	
		3934.98	9.7084	37.805	-71.055	-33.250	
	100	3750.00	4.8679	37.190	-70.625	-33.435	
		3840.00	8.2707	37.805	-70.583	-32.778	
		3930.00	9.6745	37.805	-71.192	-33.387	

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	27.494
1 – 5	30.200
5 – 10	30.815
10 – 15	31.340
15 – 20	31.713
Above 20	32.355

9.6 BAND EDGE

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: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3705.000	100 %	+20(Ref)	3704 999 993	0.0	0.000 000	0.000
	100 %	-30	3704 999 988	-4.8	0.000 000	-0.001
	100 %	-20	3704 999 983	-9.4	0.000 000	-0.003
	100 %	-10	3704 999 976	-16.6	0.000 000	-0.004
	100 %	0	3704 999 974	-18.9	-0.000 001	-0.005
	100 %	+10	3704 999 983	-9.2	0.000 000	-0.002
	100 %	+30	3704 999 979	-13.6	0.000 000	-0.004
	100 %	+40	3704 999 983	-9.4	0.000 000	-0.003
	100 %	+50	3704 999 984	-8.8	0.000 000	-0.002
	Batt. Endpoint	+20	3704 999 986	-7.2	0.000 000	-0.002
3975.000	100 %	+20(Ref)	3974 999 977	0.0	0.000 000	0.000
	100 %	-30	3974 999 959	-17.6	0.000 000	-0.004
	100 %	-20	3974 999 973	-3.9	0.000 000	-0.001
	100 %	-10	3974 999 961	-15.7	0.000 000	-0.004
	100 %	0	3974 999 969	-7.6	0.000 000	-0.002
	100 %	+10	3974 999 969	-8.0	0.000 000	-0.002
	100 %	+30	3974 999 960	-16.9	0.000 000	-0.004
	100 %	+40	3974 999 970	-7.1	0.000 000	-0.002
	100 %	+50	3974 999 959	-18.2	0.000 000	-0.005
	Batt. Endpoint	+20	3974 999 966	-11.5	0.000 000	-0.003

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3707.520	100 %	+20(Ref)	3707 519 997	0.0	0.000 000	0.000
	100 %	-30	3707 519 999	1.8	0.000 000	0.000
	100 %	-20	3707 519 982	-15.4	0.000 000	-0.004
	100 %	-10	3707 519 999	1.9	0.000 000	0.001
	100 %	0	3707 519 994	-2.5	0.000 000	-0.001
	100 %	+10	3707 519 987	-9.7	0.000 000	-0.003
	100 %	+30	3707 519 998	0.9	0.000 000	0.000
	100 %	+40	3707 519 990	-7.1	0.000 000	-0.002
	100 %	+50	3707 519 985	-11.8	0.000 000	-0.003
	Batt. Endpoint	+20	3707 519 993	-3.5	0.000 000	-0.001
3972.480	100 %	+20(Ref)	3972 479 984	0.0	0.000 000	0.000
	100 %	-30	3972 479 972	-12.5	0.000 000	-0.003
	100 %	-20	3972 479 975	-8.6	0.000 000	-0.002
	100 %	-10	3972 479 969	-15.0	0.000 000	-0.004
	100 %	0	3972 479 972	-12.3	0.000 000	-0.003
	100 %	+10	3972 479 971	-12.7	0.000 000	-0.003
	100 %	+30	3972 479 981	-3.1	0.000 000	-0.001
	100 %	+40	3972 479 977	-6.7	0.000 000	-0.002
	100 %	+50	3972 479 971	-13.1	0.000 000	-0.003
	Batt. Endpoint	+20	3972 479 969	-14.8	0.000 000	-0.004

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3710.010	100 %	+20(Ref)	3710 009 992	0.0	0.000 000	0.000
	100 %	-30	3710 009 983	-8.7	0.000 000	-0.002
	100 %	-20	3710 009 976	-16.4	0.000 000	-0.004
	100 %	-10	3710 009 979	-12.9	0.000 000	-0.003
	100 %	0	3710 009 976	-16.0	0.000 000	-0.004
	100 %	+10	3710 009 982	-10.1	0.000 000	-0.003
	100 %	+30	3710 009 977	-15.1	0.000 000	-0.004
	100 %	+40	3710 009 987	-4.6	0.000 000	-0.001
	100 %	+50	3710 009 977	-14.8	0.000 000	-0.004
	Batt. Endpoint	+20	3710 009 987	-4.9	0.000 000	-0.001
3969.990	100 %	+20(Ref)	3969 989 984	0.0	0.000 000	0.000
	100 %	-30	3969 989 970	-14.6	0.000 000	-0.004
	100 %	-20	3969 989 971	-13.4	0.000 000	-0.003
	100 %	-10	3969 989 974	-10.6	0.000 000	-0.003
	100 %	0	3969 989 972	-11.7	0.000 000	-0.003
	100 %	+10	3969 989 974	-10.1	0.000 000	-0.003
	100 %	+30	3969 989 972	-12.0	0.000 000	-0.003
	100 %	+40	3969 989 970	-13.9	0.000 000	-0.004
	100 %	+50	3969 989 978	-6.1	0.000 000	-0.002
	Batt. Endpoint	+20	3969 989 967	-16.8	0.000 000	-0.004

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3715.020	100 %	+20(Ref)	3715 019 996	0.0	0.000 000	0.000
	100 %	-30	3715 019 989	-6.6	0.000 000	-0.002
	100 %	-20	3715 019 985	-10.4	0.000 000	-0.003
	100 %	-10	3715 019 987	-9.2	0.000 000	-0.002
	100 %	0	3715 019 985	-10.9	0.000 000	-0.003
	100 %	+10	3715 019 991	-4.8	0.000 000	-0.001
	100 %	+30	3715 019 984	-11.8	0.000 000	-0.003
	100 %	+40	3715 019 986	-9.8	0.000 000	-0.003
	100 %	+50	3715 019 983	-12.5	0.000 000	-0.003
	Batt. Endpoint	+20	3715 019 991	-4.9	0.000 000	-0.001
3964.980	100 %	+20(Ref)	3964 979 987	0.0	0.000 000	0.000
	100 %	-30	3964 979 983	-4.1	0.000 000	-0.001
	100 %	-20	3964 979 981	-6.2	0.000 000	-0.002
	100 %	-10	3964 979 988	1.3	0.000 000	0.000
	100 %	0	3964 979 970	-16.8	0.000 000	-0.004
	100 %	+10	3964 979 967	-19.8	-0.000 001	-0.005
	100 %	+30	3964 979 974	-13.0	0.000 000	-0.003
	100 %	+40	3964 979 975	-12.3	0.000 000	-0.003
	100 %	+50	3964 979 982	-4.8	0.000 000	-0.001
	Batt. Endpoint	+20	3964 979 973	-14.1	0.000 000	-0.004

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3720.000	100 %	+20(Ref)	3719 999 991	0.0	0.000 000	0.000
	100 %	-30	3719 999 989	-2.1	0.000 000	-0.001
	100 %	-20	3719 999 991	0.0	0.000 000	0.000
	100 %	-10	3719 999 991	0.0	0.000 000	0.000
	100 %	0	3719 999 988	-3.3	0.000 000	-0.001
	100 %	+10	3719 999 979	-11.4	0.000 000	-0.003
	100 %	+30	3719 999 978	-13.0	0.000 000	-0.003
	100 %	+40	3719 999 994	3.5	0.000 000	0.001
	100 %	+50	3719 999 981	-10.1	0.000 000	-0.003
	Batt. Endpoint	+20	3719 999 978	-12.6	0.000 000	-0.003
3960.000	100 %	+20(Ref)	3959 999 991	0.0	0.000 000	0.000
	100 %	-30	3959 999 977	-13.3	0.000 000	-0.003
	100 %	-20	3959 999 981	-9.4	0.000 000	-0.002
	100 %	-10	3959 999 982	-8.6	0.000 000	-0.002
	100 %	0	3959 999 983	-7.9	0.000 000	-0.002
	100 %	+10	3959 999 984	-6.4	0.000 000	-0.002
	100 %	+30	3959 999 978	-12.5	0.000 000	-0.003
	100 %	+40	3959 999 984	-7.1	0.000 000	-0.002
	100 %	+50	3959 999 984	-6.8	0.000 000	-0.002
	Batt. Endpoint	+20	3959 999 973	-17.2	0.000 000	-0.004

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3725.010	100 %	+20(Ref)	3725 009 995	0.0	0.000 000	0.000
	100 %	-30	3725 009 983	-11.8	0.000 000	-0.003
	100 %	-20	3725 009 986	-8.6	0.000 000	-0.002
	100 %	-10	3725 009 995	-0.1	0.000 000	0.000
	100 %	0	3725 009 995	-0.3	0.000 000	0.000
	100 %	+10	3725 009 991	-3.9	0.000 000	-0.001
	100 %	+30	3725 009 981	-13.7	0.000 000	-0.004
	100 %	+40	3725 009 995	0.0	0.000 000	0.000
	100 %	+50	3725 009 987	-7.9	0.000 000	-0.002
	Batt. Endpoint	+20	3725 009 988	-7.4	0.000 000	-0.002
3954.990	100 %	+20(Ref)	3954 989 982	0.0	0.000 000	0.000
	100 %	-30	3954 989 965	-16.6	0.000 000	-0.004
	100 %	-20	3954 989 965	-16.8	0.000 000	-0.004
	100 %	-10	3954 989 971	-10.7	0.000 000	-0.003
	100 %	0	3954 989 972	-9.9	0.000 000	-0.003
	100 %	+10	3954 989 972	-9.1	0.000 000	-0.002
	100 %	+30	3954 989 967	-15.0	0.000 000	-0.004
	100 %	+40	3954 989 976	-6.0	0.000 000	-0.002
	100 %	+50	3954 989 977	-4.5	0.000 000	-0.001
	Batt. Endpoint	+20	3954 989 970	-11.1	0.000 000	-0.003

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3730.020	100 %	+20(Ref)	3730 019 997	0.0	0.000 000	0.000
	100 %	-30	3730 019 994	-2.8	0.000 000	-0.001
	100 %	-20	3730 019 994	-3.2	0.000 000	-0.001
	100 %	-10	3730 019 986	-10.9	0.000 000	-0.003
	100 %	0	3730 019 986	-10.9	0.000 000	-0.003
	100 %	+10	3730 019 988	-9.6	0.000 000	-0.003
	100 %	+30	3730 019 983	-13.9	0.000 000	-0.004
	100 %	+40	3730 019 989	-8.5	0.000 000	-0.002
	100 %	+50	3730 019 989	-8.5	0.000 000	-0.002
	Batt. Endpoint	+20	3730 019 993	-4.6	0.000 000	-0.001
3949.980	100 %	+20(Ref)	3949 979 990	0.0	0.000 000	0.000
	100 %	-30	3949 979 971	-19.8	-0.000 001	-0.005
	100 %	-20	3949 979 986	-4.0	0.000 000	-0.001
	100 %	-10	3949 979 986	-4.0	0.000 000	-0.001
	100 %	0	3949 979 967	-23.4	-0.000 001	-0.006
	100 %	+10	3949 979 995	4.4	0.000 000	0.001
	100 %	+30	3949 979 983	-7.7	0.000 000	-0.002
	100 %	+40	3949 979 983	-7.7	0.000 000	-0.002
	100 %	+50	3949 979 982	-8.0	0.000 000	-0.002
	Batt. Endpoint	+20	3949 979 984	-6.7	0.000 000	-0.002

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3735.000	100 %	+20(Ref)	3734 999 993	0.0	0.000 000	0.000
	100 %	-30	3734 999 983	-10.2	0.000 000	-0.003
	100 %	-20	3734 999 983	-10.2	0.000 000	-0.003
	100 %	-10	3734 999 991	-2.2	0.000 000	-0.001
	100 %	0	3734 999 978	-15.3	0.000 000	-0.004
	100 %	+10	3734 999 981	-12.7	0.000 000	-0.003
	100 %	+30	3734 999 981	-12.7	0.000 000	-0.003
	100 %	+40	3734 999 987	-6.4	0.000 000	-0.002
	100 %	+50	3734 999 987	-6.7	0.000 000	-0.002
	Batt. Endpoint	+20	3734 999 984	-9.3	0.000 000	-0.002
3945.000	100 %	+20(Ref)	3944 999 998	0.0	0.000 000	0.000
	100 %	-30	3944 999 997	-1.5	0.000 000	0.000
	100 %	-20	3944 999 992	-6.5	0.000 000	-0.002
	100 %	-10	3944 999 992	-6.5	0.000 000	-0.002
	100 %	0	3944 999 997	-1.8	0.000 000	0.000
	100 %	+10	3944 999 997	-1.8	0.000 000	0.000
	100 %	+30	3944 999 991	-7.6	0.000 000	-0.002
	100 %	+40	3944 999 997	-1.8	0.000 000	0.000
	100 %	+50	3944 999 997	-1.8	0.000 000	0.000
	Batt. Endpoint	+20	3944 999 984	-14.8	0.000 000	-0.004

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3740.010	100 %	+20(Ref)	3740 009 985	0.0	0.000 000	0.000
	100 %	-30	3740 009 970	-15.3	0.000 000	-0.004
	100 %	-20	3740 009 979	-5.6	0.000 000	-0.002
	100 %	-10	3740 009 972	-12.3	0.000 000	-0.003
	100 %	0	3740 009 972	-12.3	0.000 000	-0.003
	100 %	+10	3740 009 971	-13.3	0.000 000	-0.004
	100 %	+30	3740 009 974	-11.2	0.000 000	-0.003
	100 %	+40	3740 009 968	-16.7	0.000 000	-0.004
	100 %	+50	3740 009 968	-16.7	0.000 000	-0.004
	Batt. Endpoint	+20	3740 009 962	-23.1	-0.000 001	-0.006
3939.990	100 %	+20(Ref)	3939 989 988	0.0	0.000 000	0.000
	100 %	-30	3939 989 974	-14.0	0.000 000	-0.004
	100 %	-20	3939 989 974	-14.0	0.000 000	-0.004
	100 %	-10	3939 989 978	-10.3	0.000 000	-0.003
	100 %	0	3939 989 979	-8.8	0.000 000	-0.002
	100 %	+10	3939 989 979	-8.8	0.000 000	-0.002
	100 %	+30	3939 989 978	-9.6	0.000 000	-0.002
	100 %	+40	3939 989 972	-15.8	0.000 000	-0.004
	100 %	+50	3939 989 976	-12.2	0.000 000	-0.003
	Batt. Endpoint	+20	3939 989 976	-12.2	0.000 000	-0.003

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3745.020	100 %	+20(Ref)	3745 020 001	0.0	0.000 000	0.000
	100 %	-30	3745 019 984	-17.7	0.000 000	-0.005
	100 %	-20	3745 019 994	-7.6	0.000 000	-0.002
	100 %	-10	3745 019 994	-7.6	0.000 000	-0.002
	100 %	0	3745 020 004	2.3	0.000 000	0.001
	100 %	+10	3745 019 988	-13.7	0.000 000	-0.004
	100 %	+30	3745 020 003	1.9	0.000 000	0.000
	100 %	+40	3745 019 998	-3.2	0.000 000	-0.001
	100 %	+50	3745 019 999	-2.8	0.000 000	-0.001
	Batt. Endpoint	+20	3745 019 999	-2.8	0.000 000	-0.001
3934.980	100 %	+20(Ref)	3934 979 991	0.0	0.000 000	0.000
	100 %	-30	3934 979 982	-9.0	0.000 000	-0.002
	100 %	-20	3934 979 977	-13.6	0.000 000	-0.003
	100 %	-10	3934 979 974	-17.2	0.000 000	-0.004
	100 %	0	3934 979 968	-23.4	-0.000 001	-0.006
	100 %	+10	3934 979 986	-4.7	0.000 000	-0.001
	100 %	+30	3934 979 976	-15.2	0.000 000	-0.004
	100 %	+40	3934 979 979	-11.7	0.000 000	-0.003
	100 %	+50	3934 979 980	-10.9	0.000 000	-0.003
	Batt. Endpoint	+20	3934 979 980	-10.9	0.000 000	-0.003

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.880 VDC

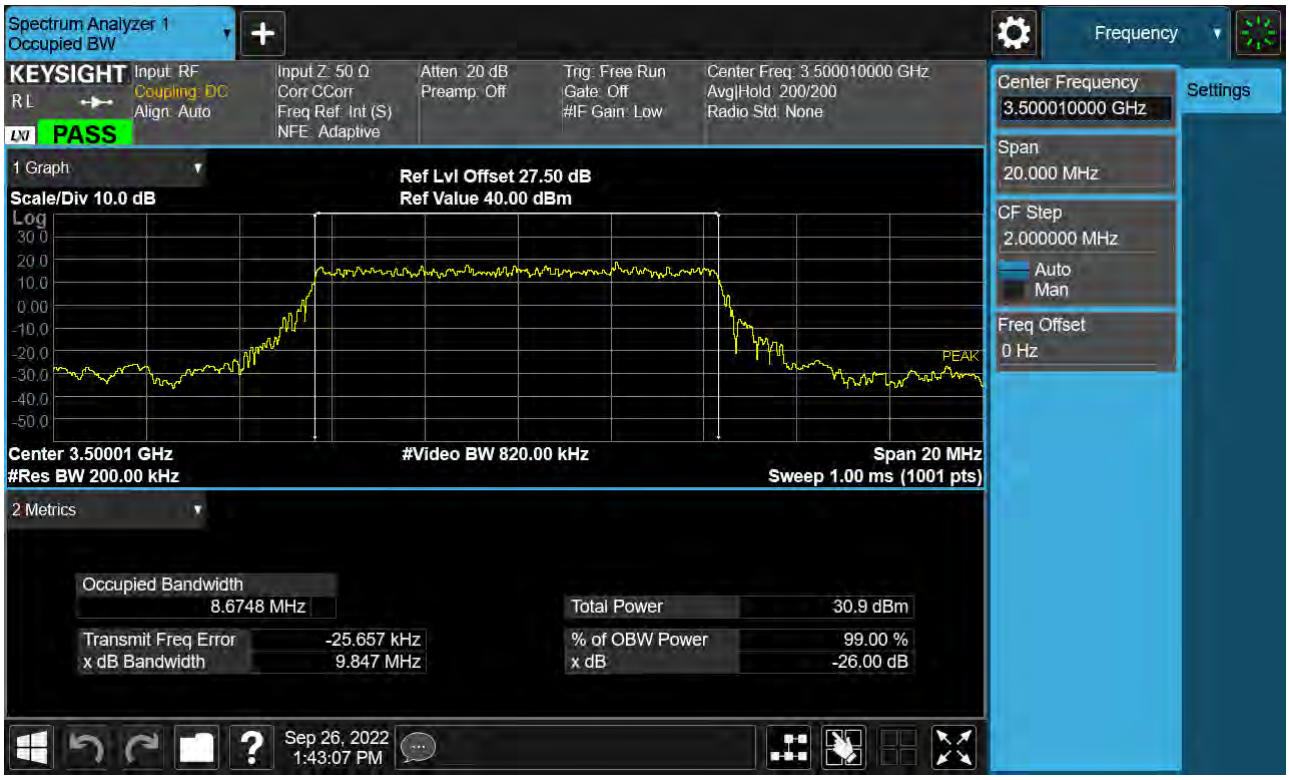
▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

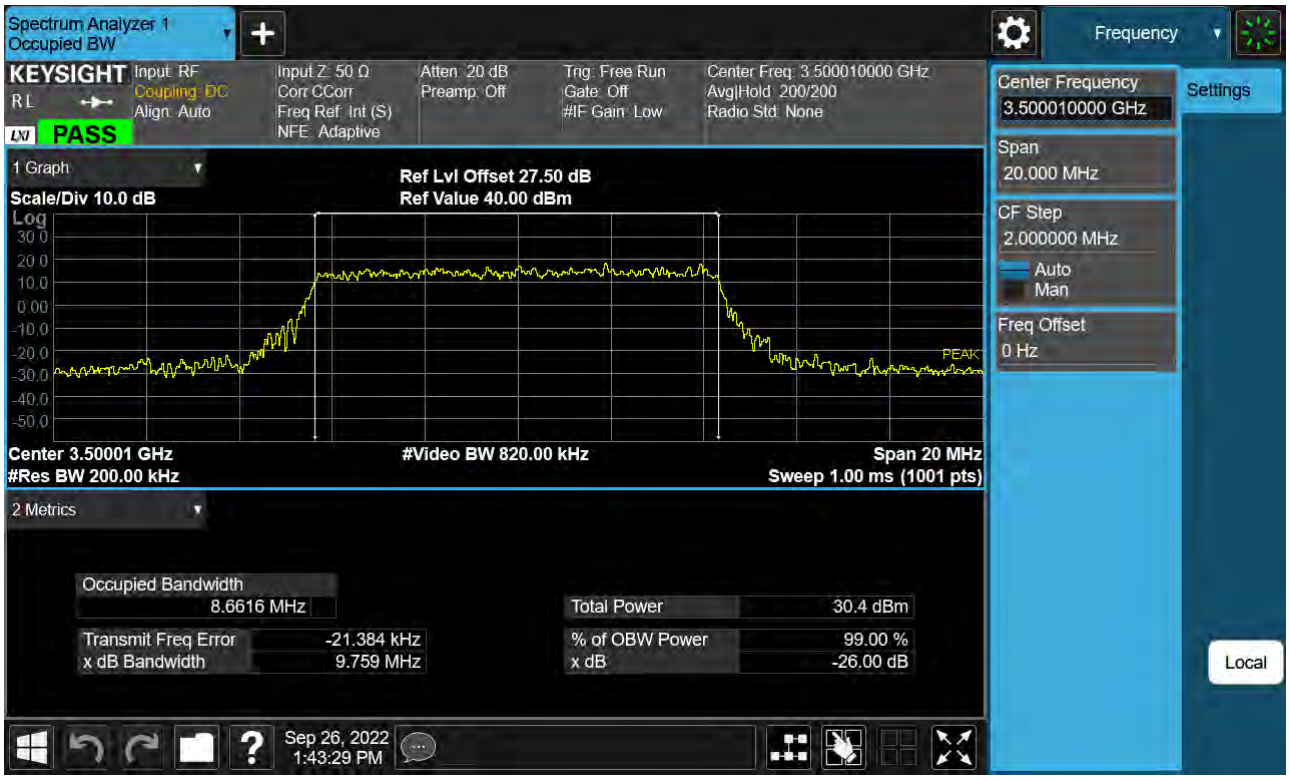
Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3750.000	100 %	+20(Ref)	3749 999 994	0.0	0.000 000	0.000
	100 %	-30	3749 999 994	0.1	0.000 000	0.000
	100 %	-20	3749 999 994	0.1	0.000 000	0.000
	100 %	-10	3749 999 982	-12.1	0.000 000	-0.003
	100 %	0	3749 999 984	-9.7	0.000 000	-0.003
	100 %	+10	3749 999 992	-2.4	0.000 000	-0.001
	100 %	+30	3749 999 992	-2.4	0.000 000	-0.001
	100 %	+40	3749 999 993	-0.8	0.000 000	0.000
	100 %	+50	3749 999 986	-7.9	0.000 000	-0.002
	Batt. Endpoint	+20	3749 999 986	-7.9	0.000 000	-0.002
3930.000	100 %	+20(Ref)	3929 999 985	0.0	0.000 000	0.000
	100 %	-30	3929 999 976	-9.3	0.000 000	-0.002
	100 %	-20	3929 999 976	-9.3	0.000 000	-0.002
	100 %	-10	3929 999 981	-3.6	0.000 000	-0.001
	100 %	0	3929 999 971	-13.9	0.000 000	-0.004
	100 %	+10	3929 999 970	-15.3	0.000 000	-0.004
	100 %	+30	3929 999 970	-15.3	0.000 000	-0.004
	100 %	+40	3929 999 975	-10.5	0.000 000	-0.003
	100 %	+50	3929 999 972	-13.2	0.000 000	-0.003
	Batt. Endpoint	+20	3929 999 972	-13.2	0.000 000	-0.003

10. TEST PLOTS(3450 MHz - 3550 MHz)

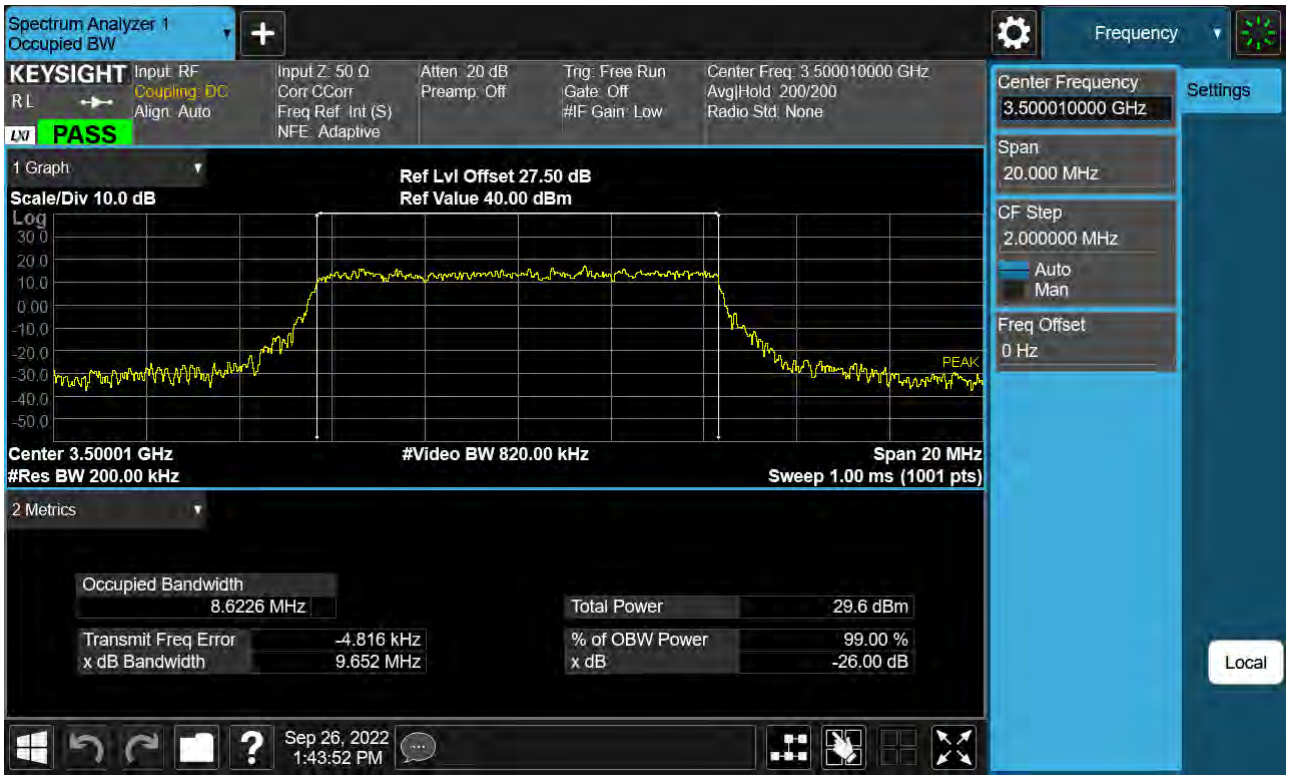
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 BPSK)



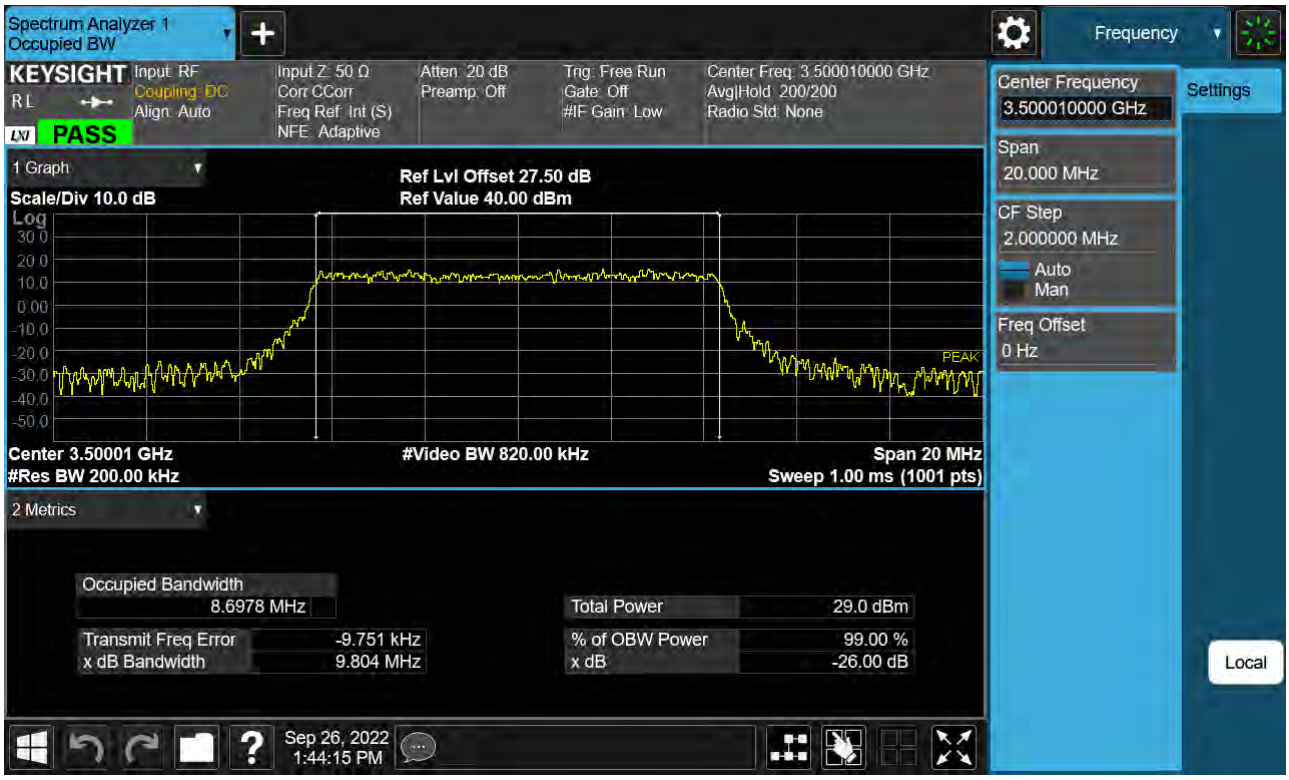
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 QPSK)



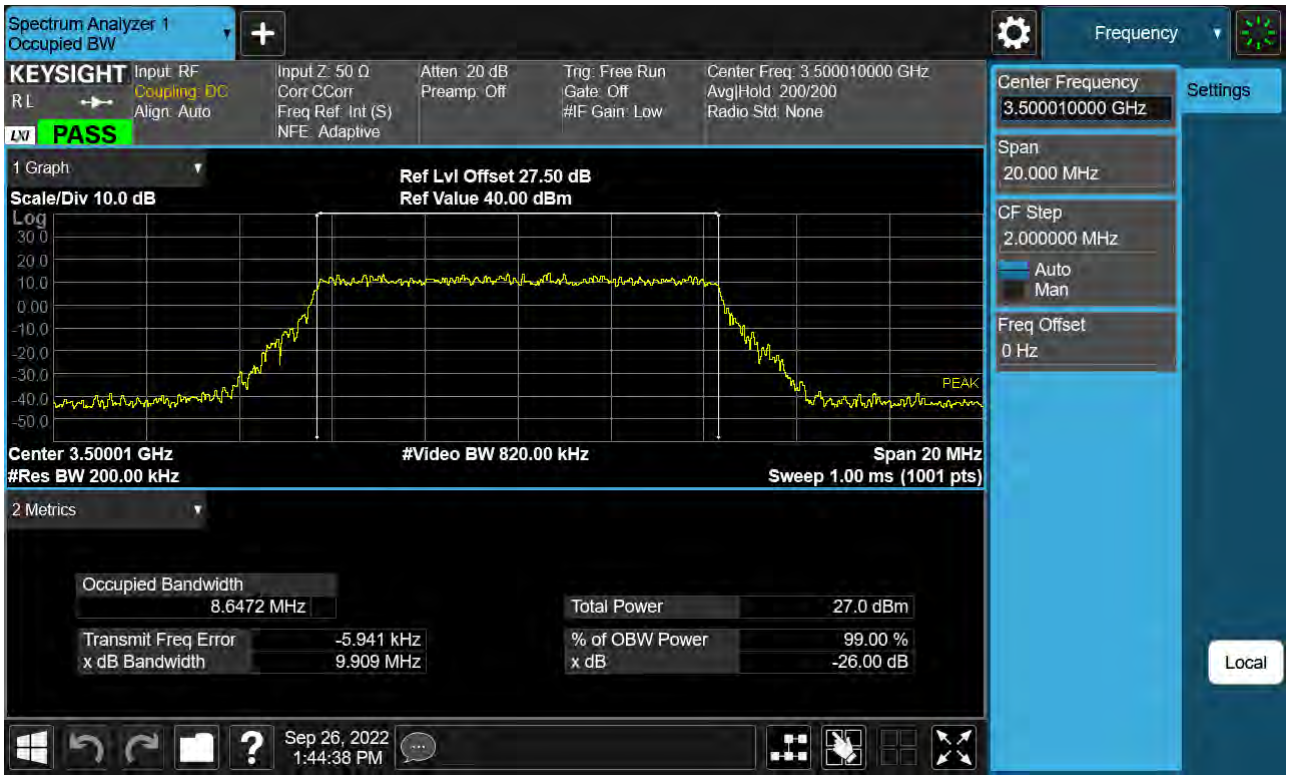
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 16QAM)



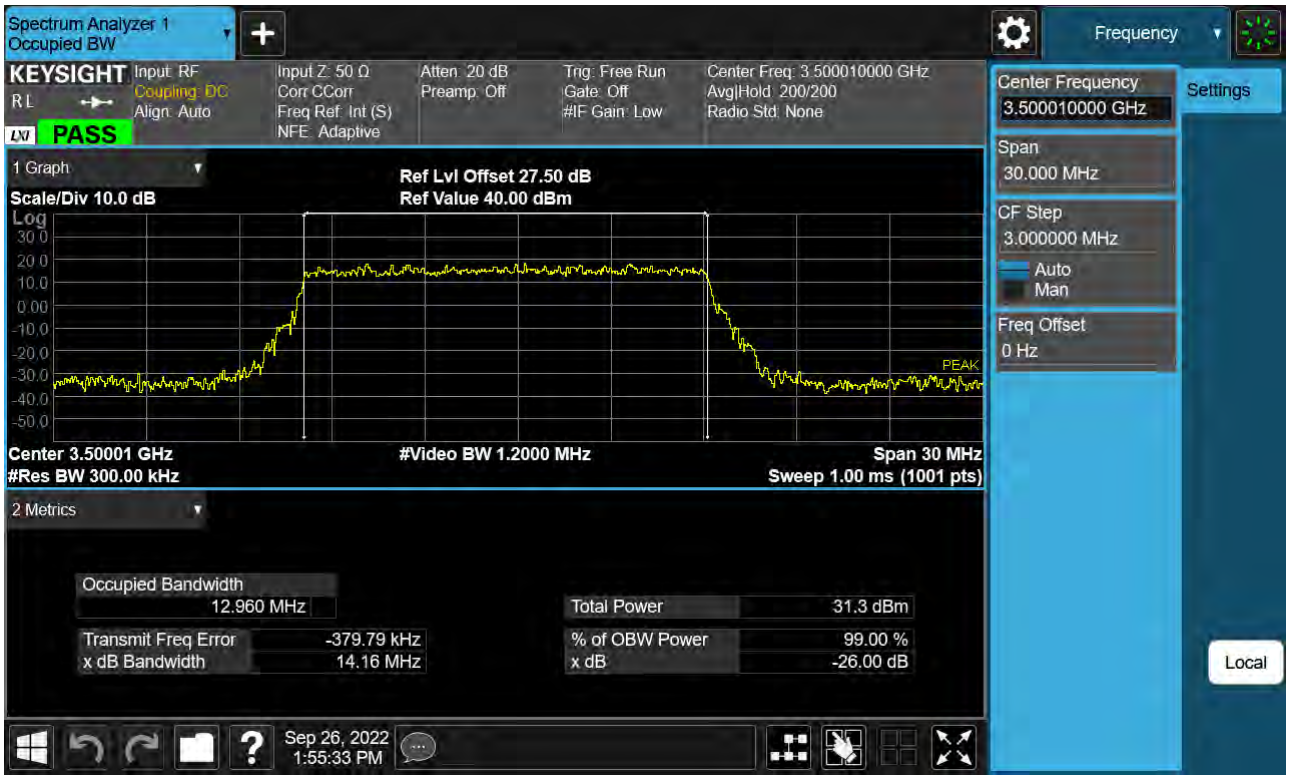
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 64QAM)



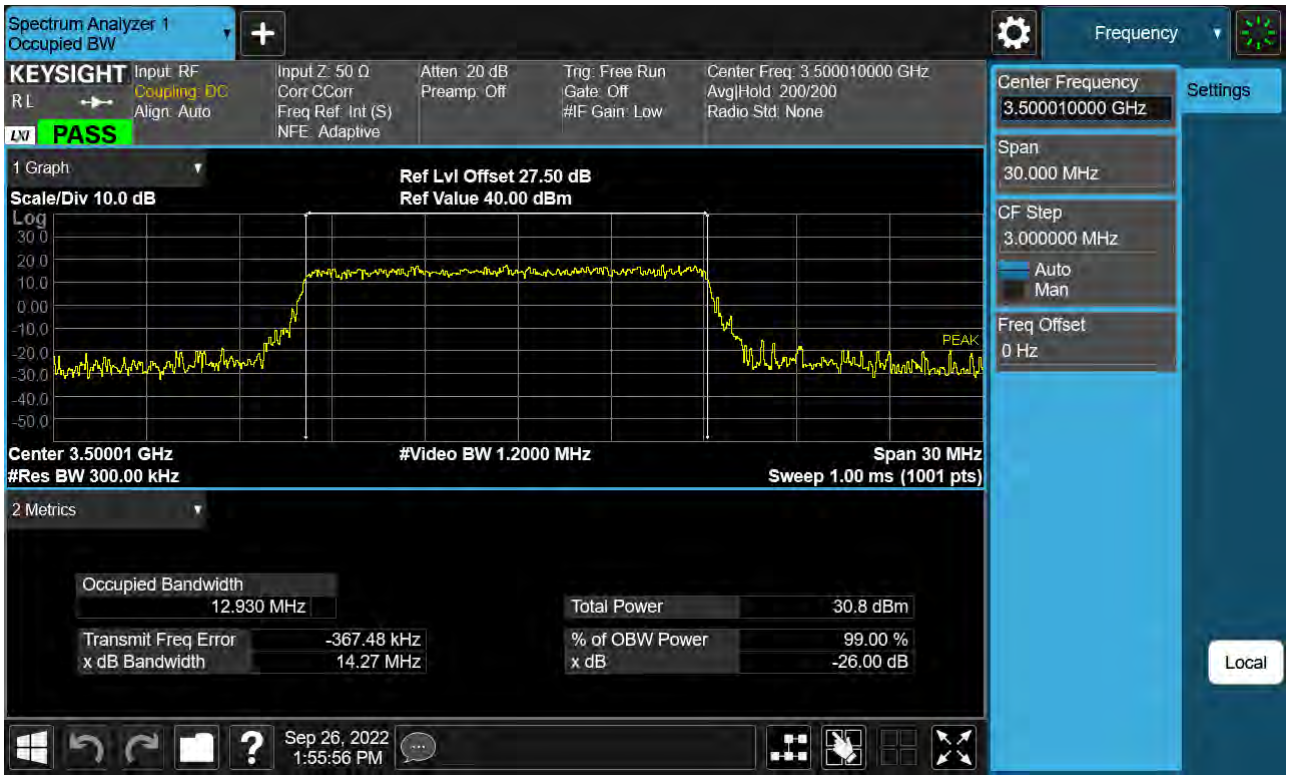
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 256QAM)



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

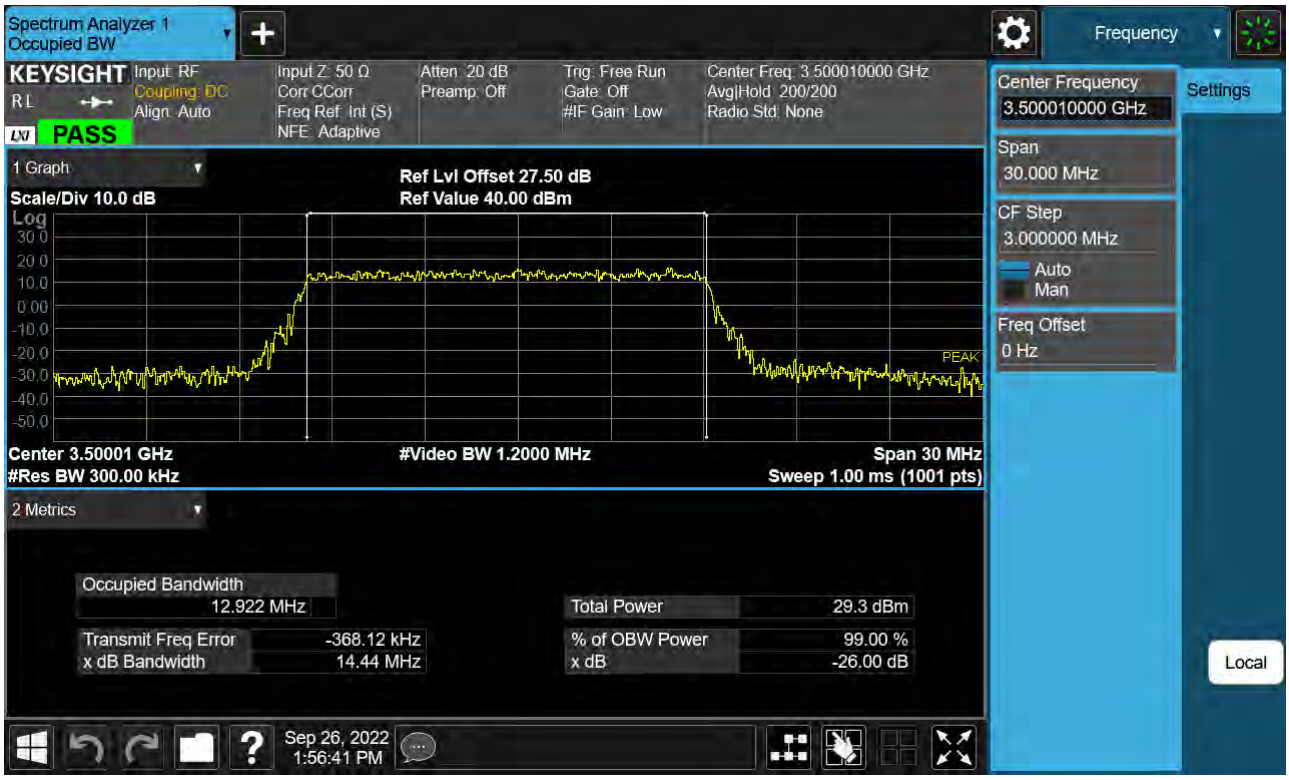


Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 QPSK)

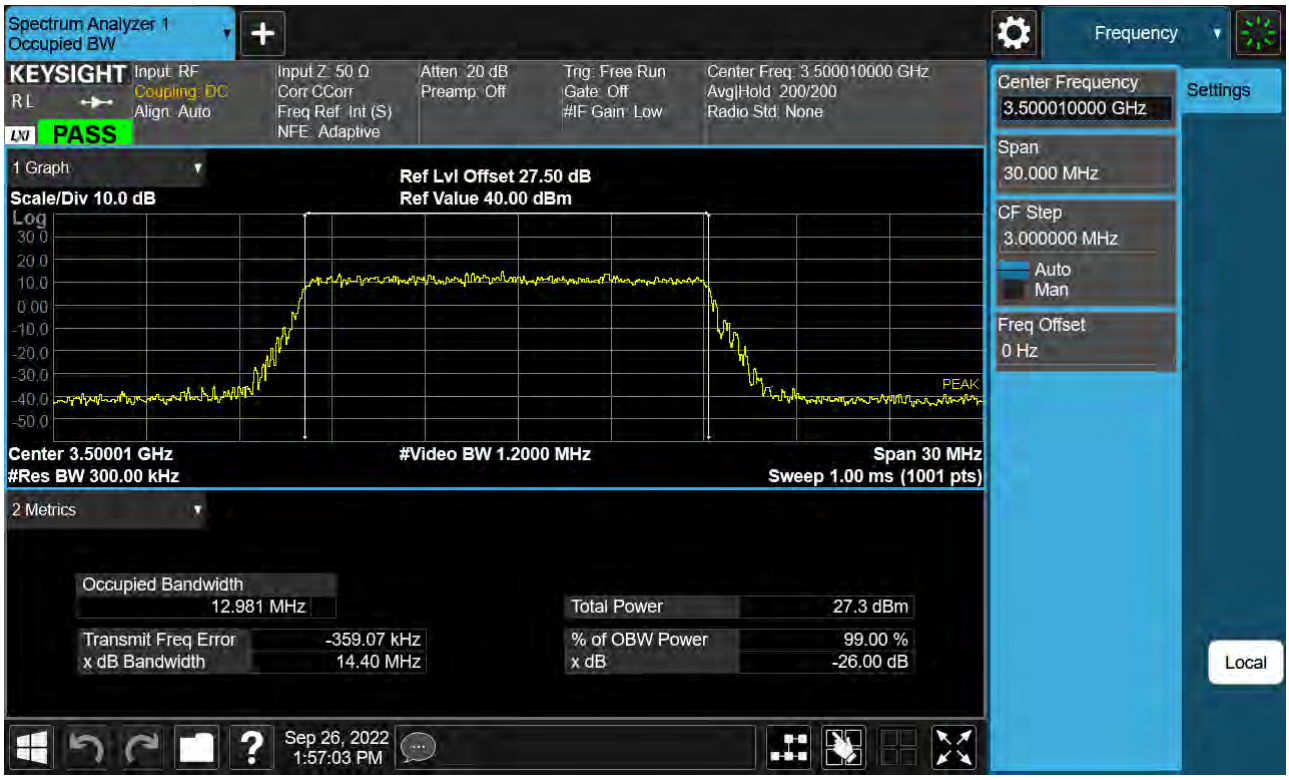


Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 16QAM)

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

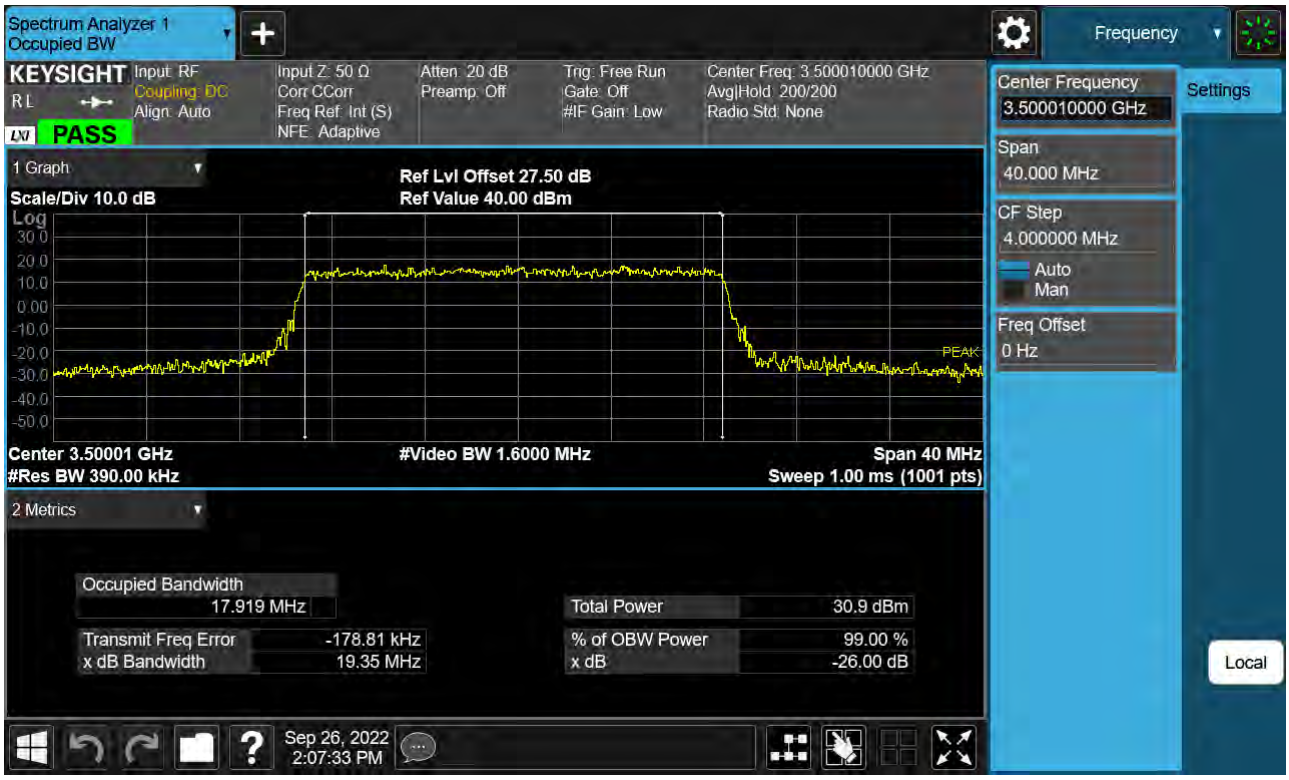


Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 256QAM)

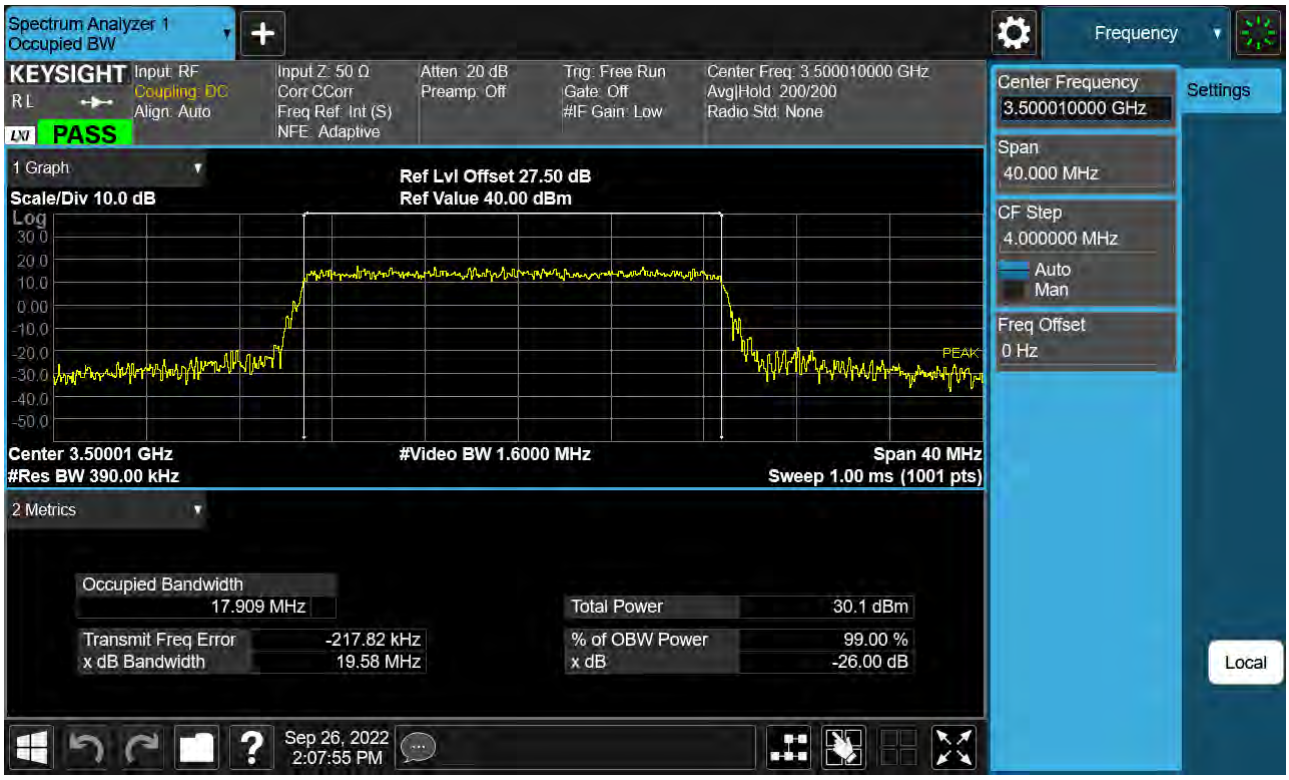


Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 BPSK)

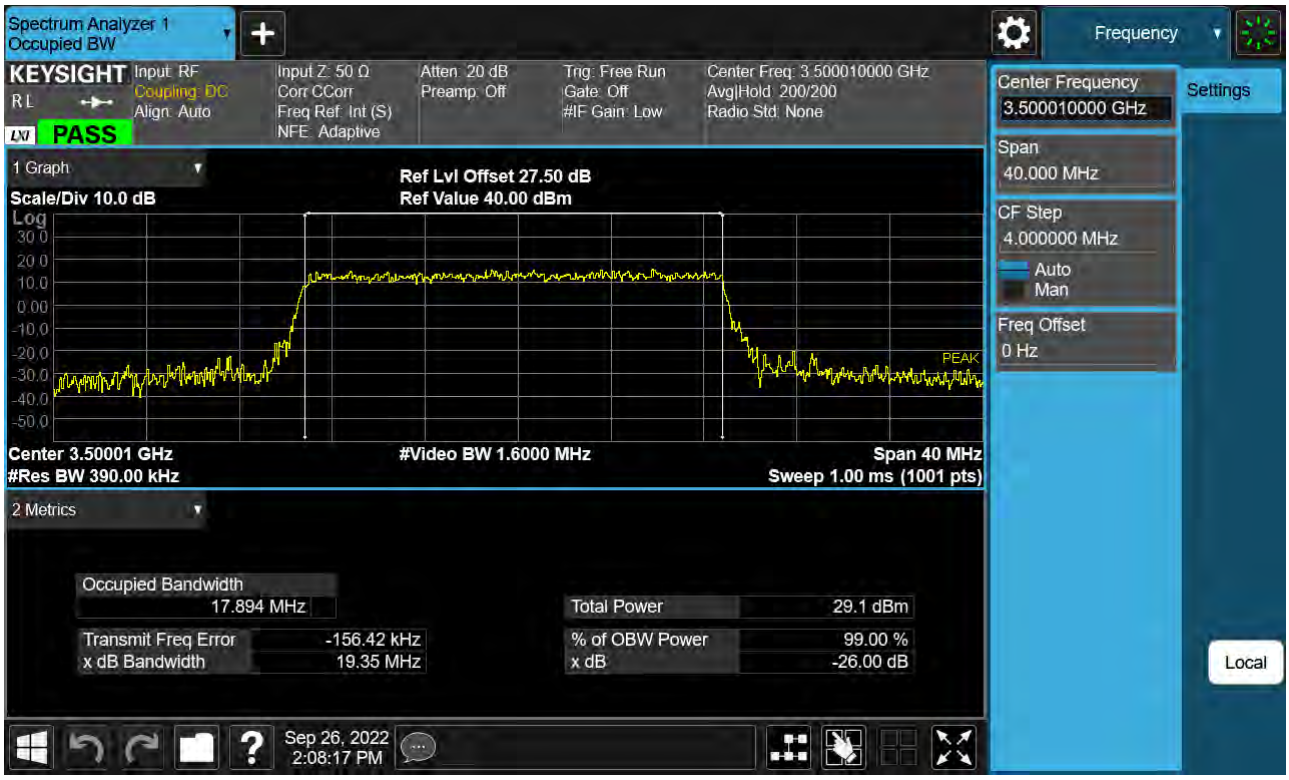
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 QPSK)



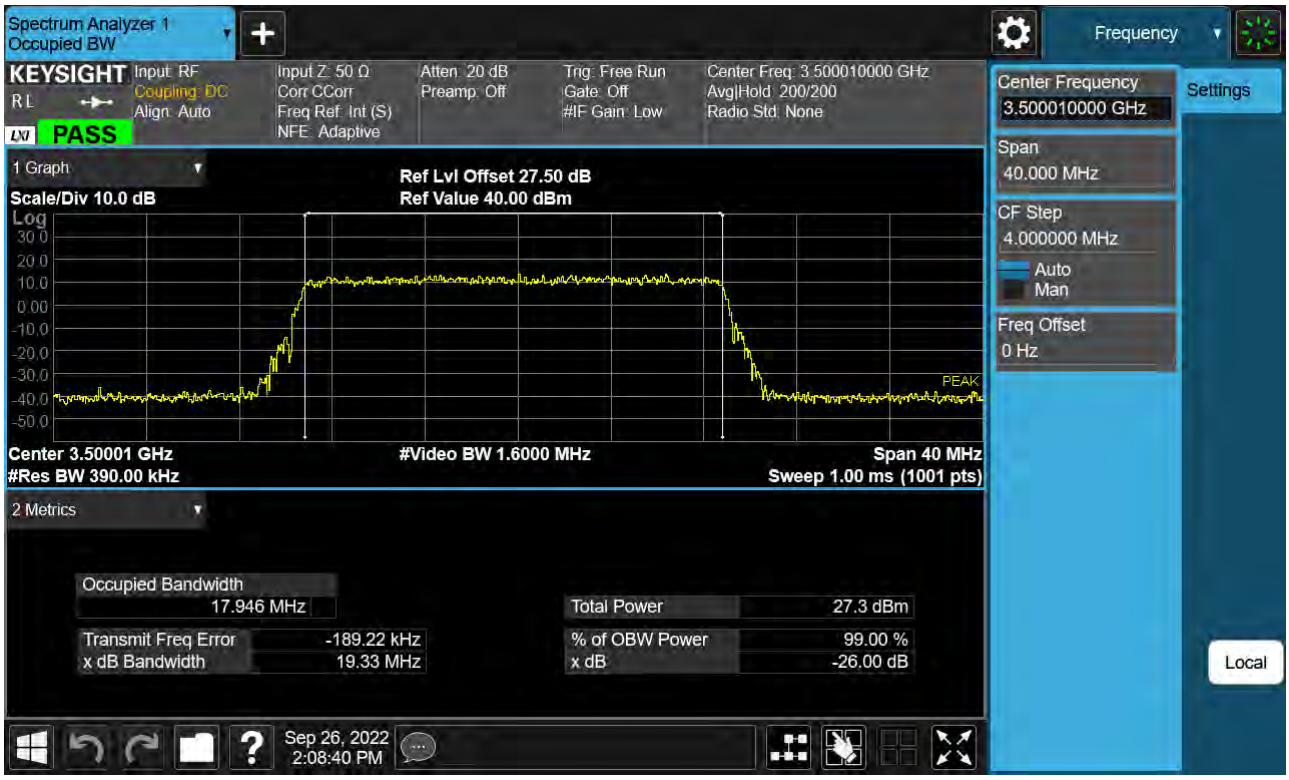
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 16QAM)



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

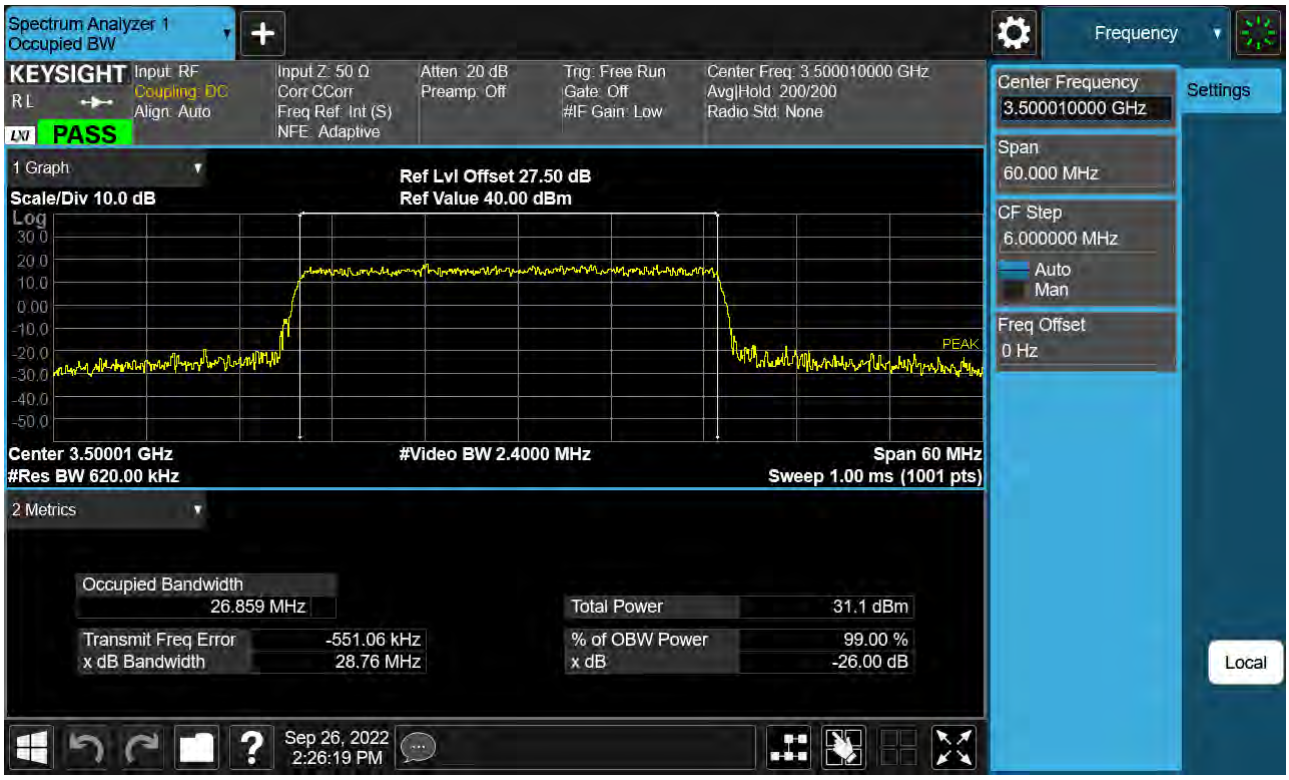


Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 256QAM)

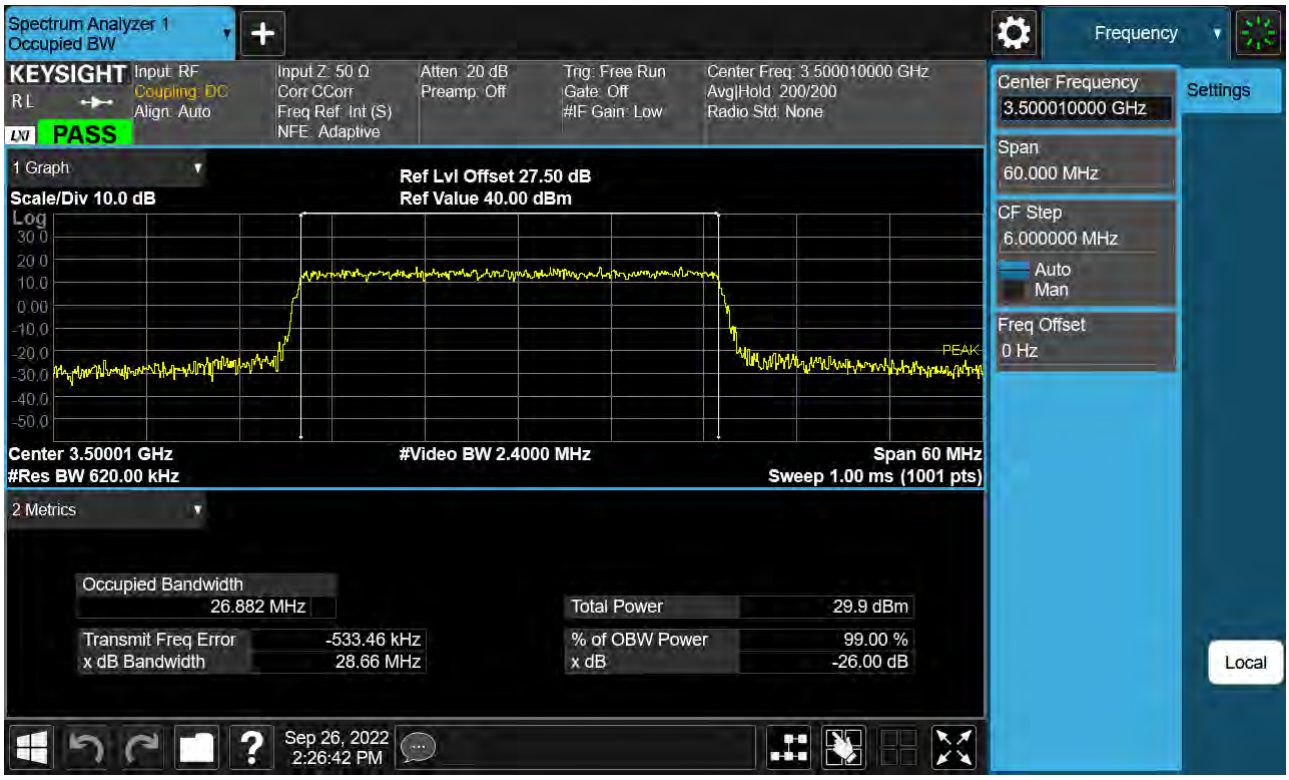


Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 BPSK)

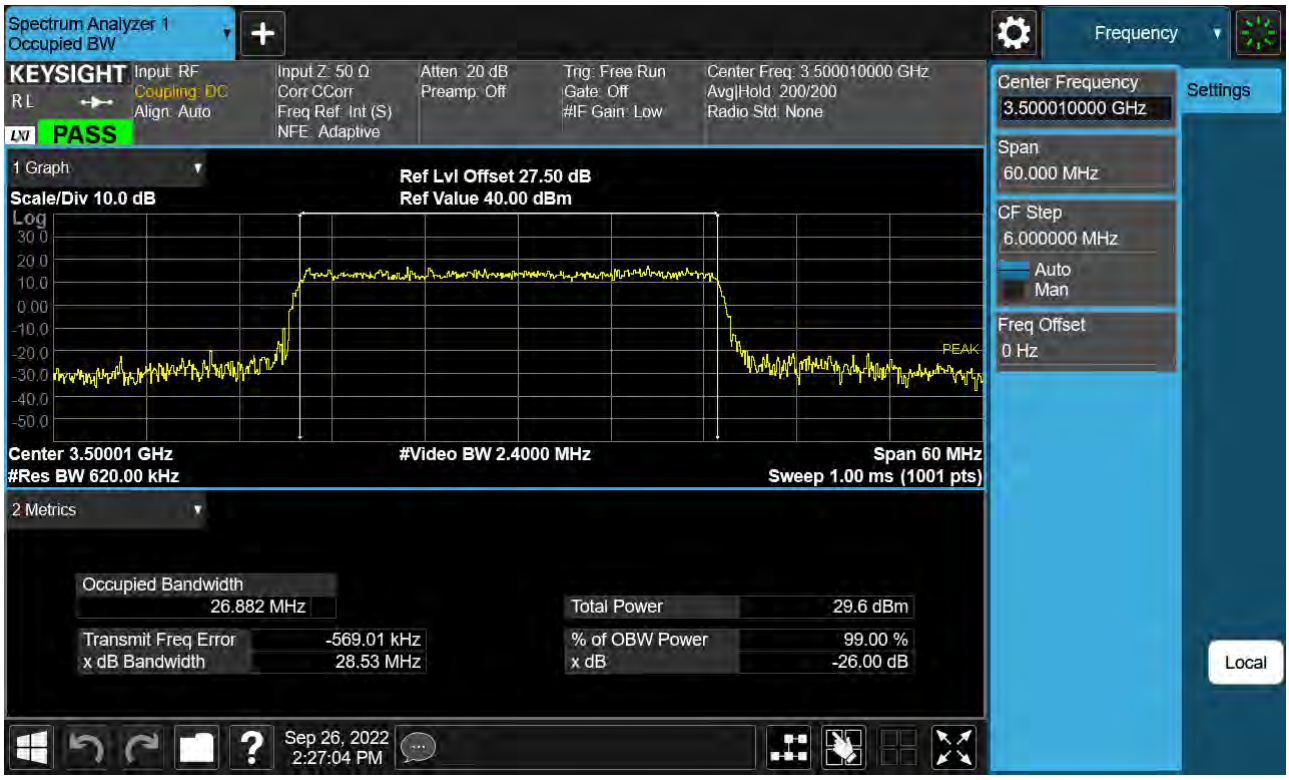
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 QPSK)



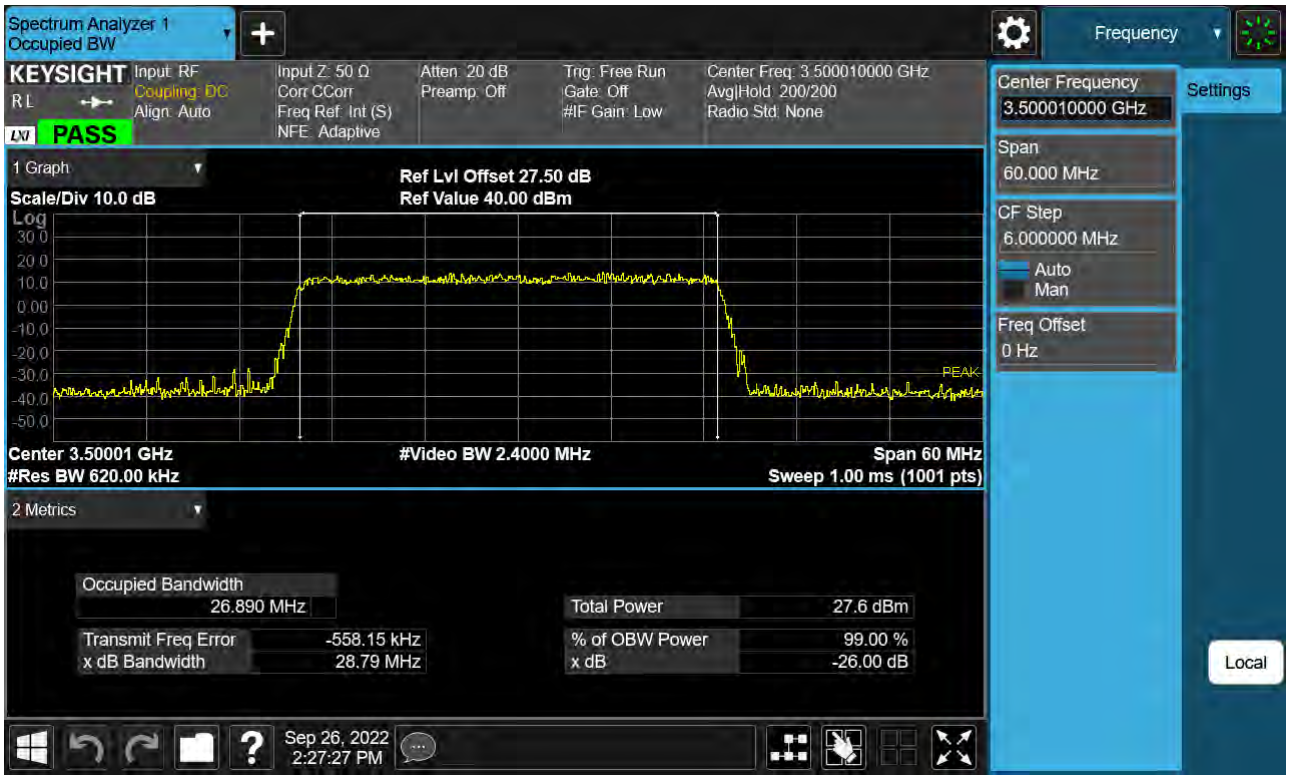
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 16QAM)



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



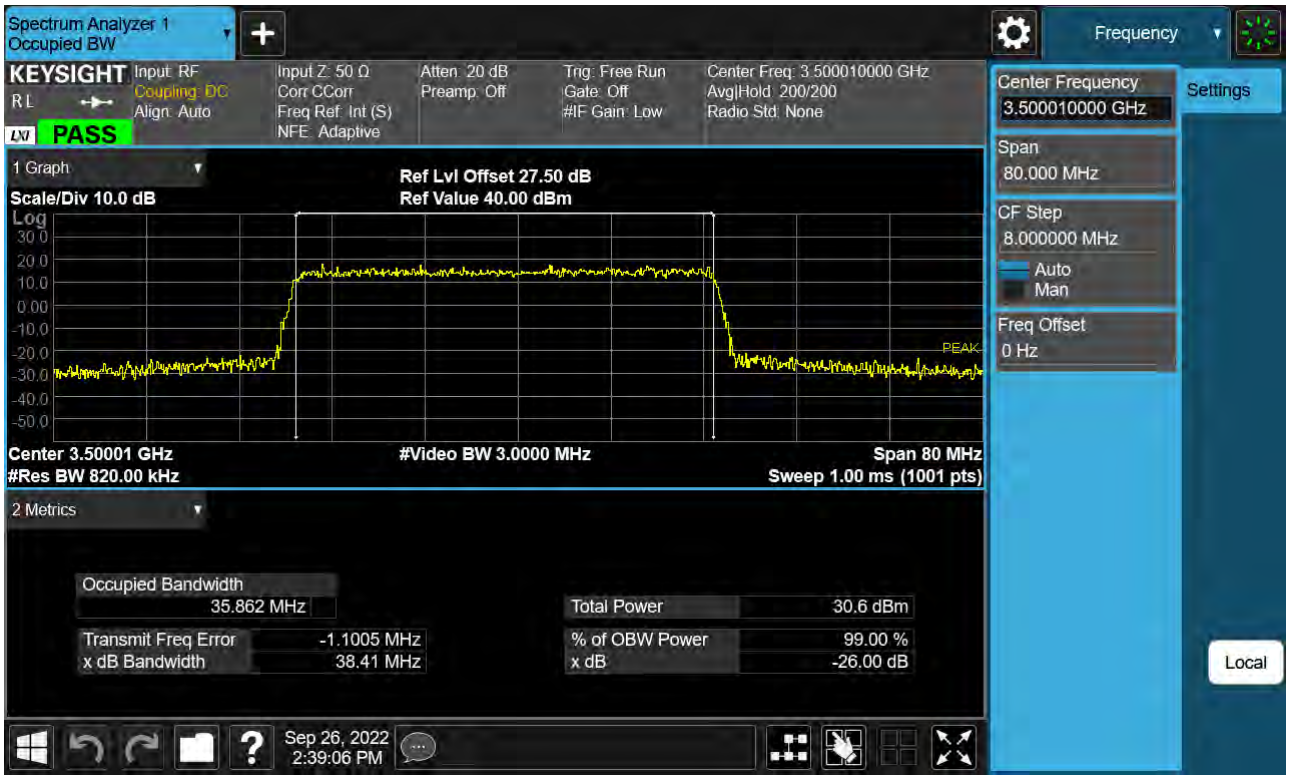
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 256QAM)



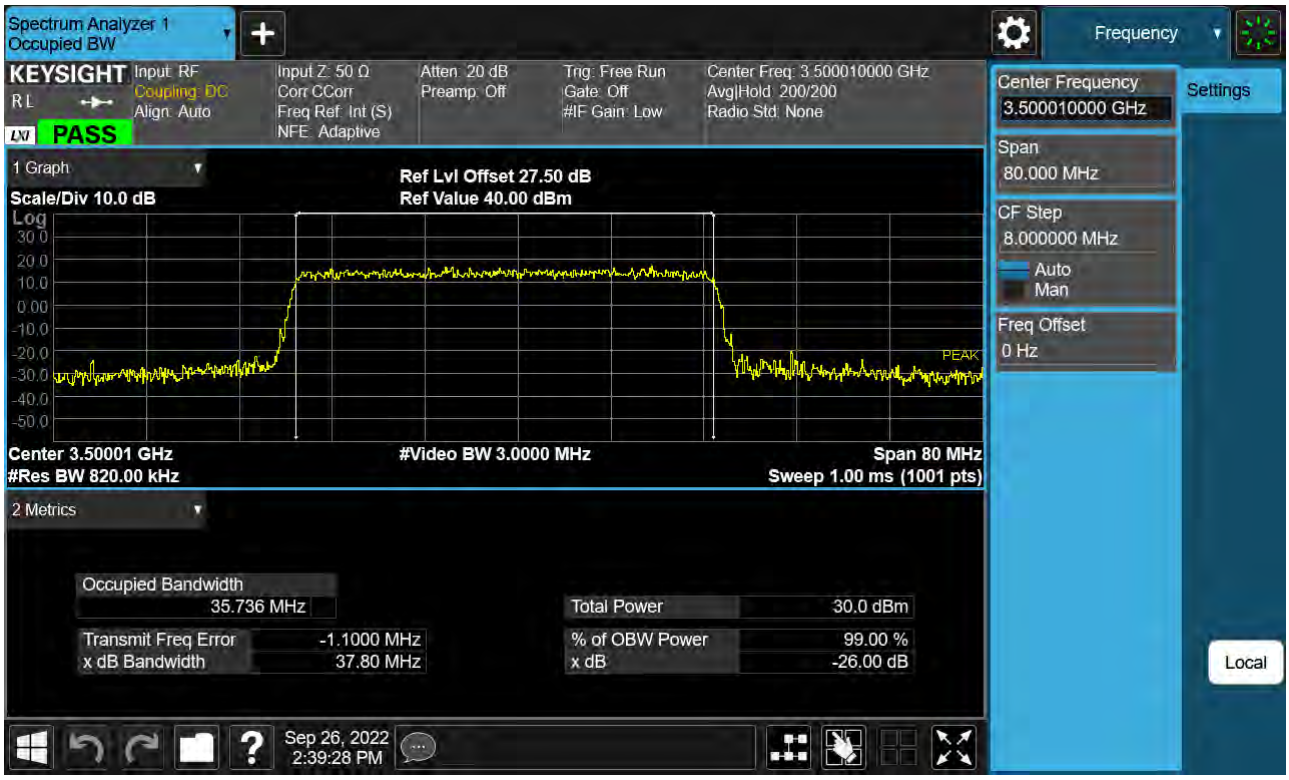
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 BPSK)

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

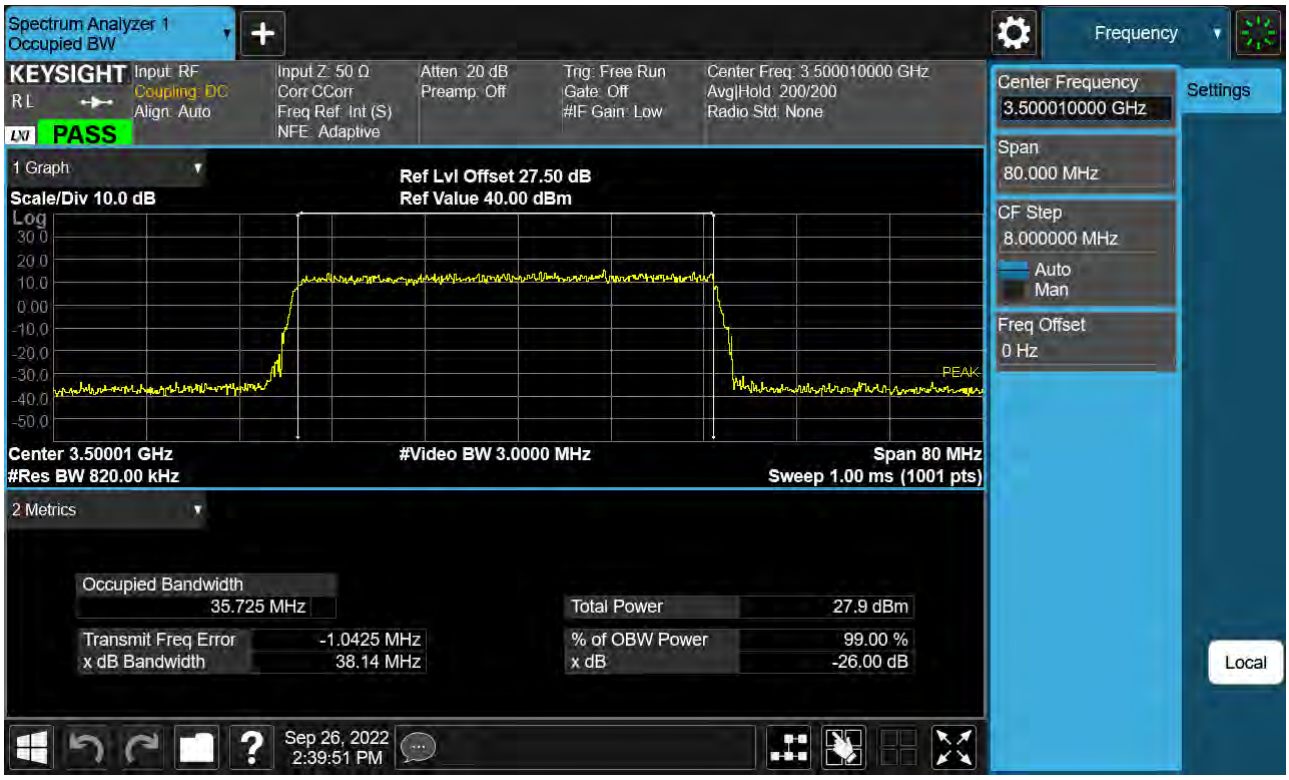
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 16QAM)



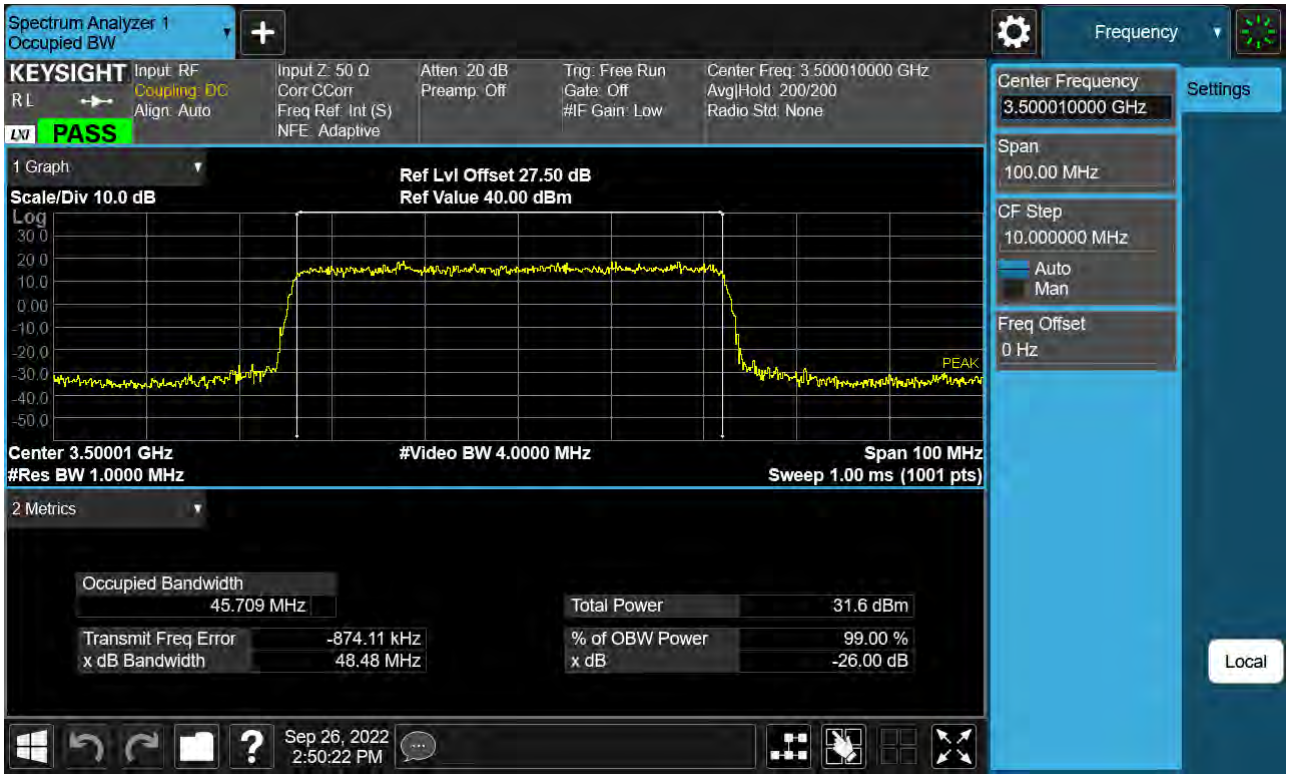
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 64QAM)



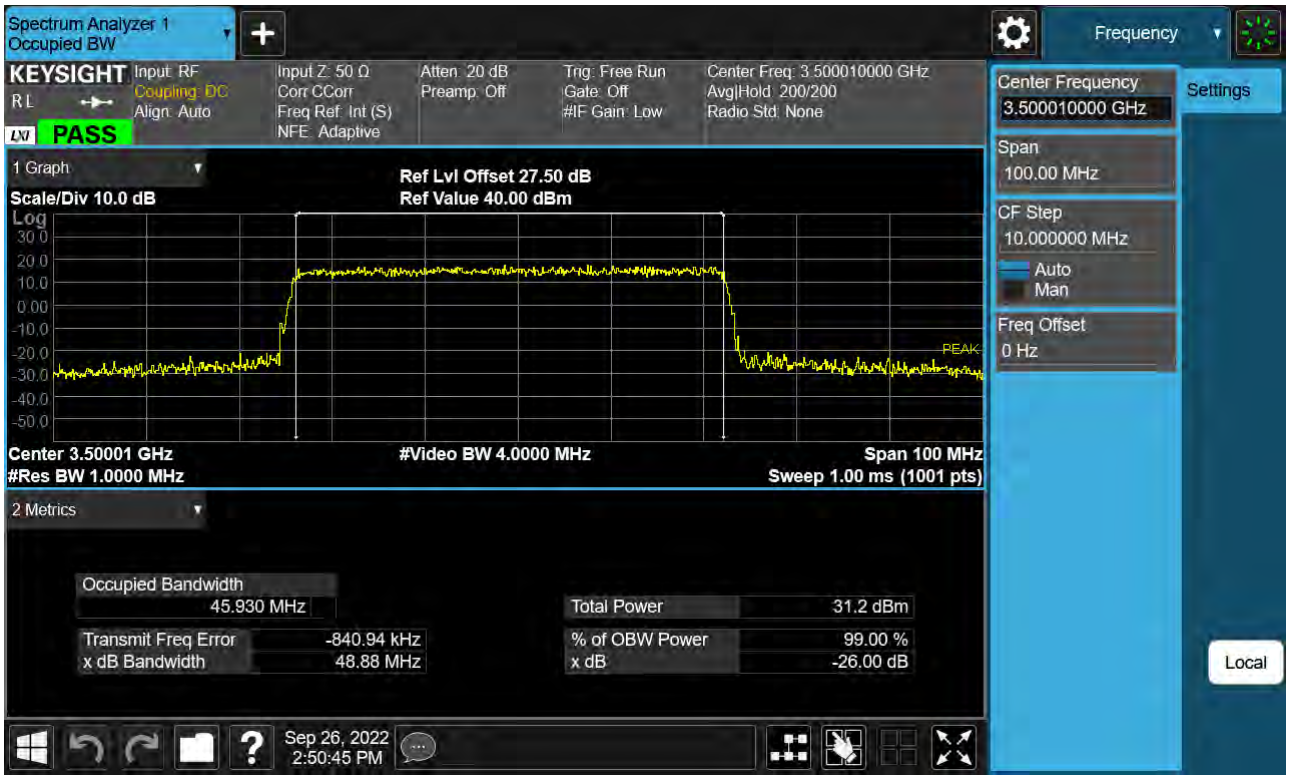
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 256QAM)



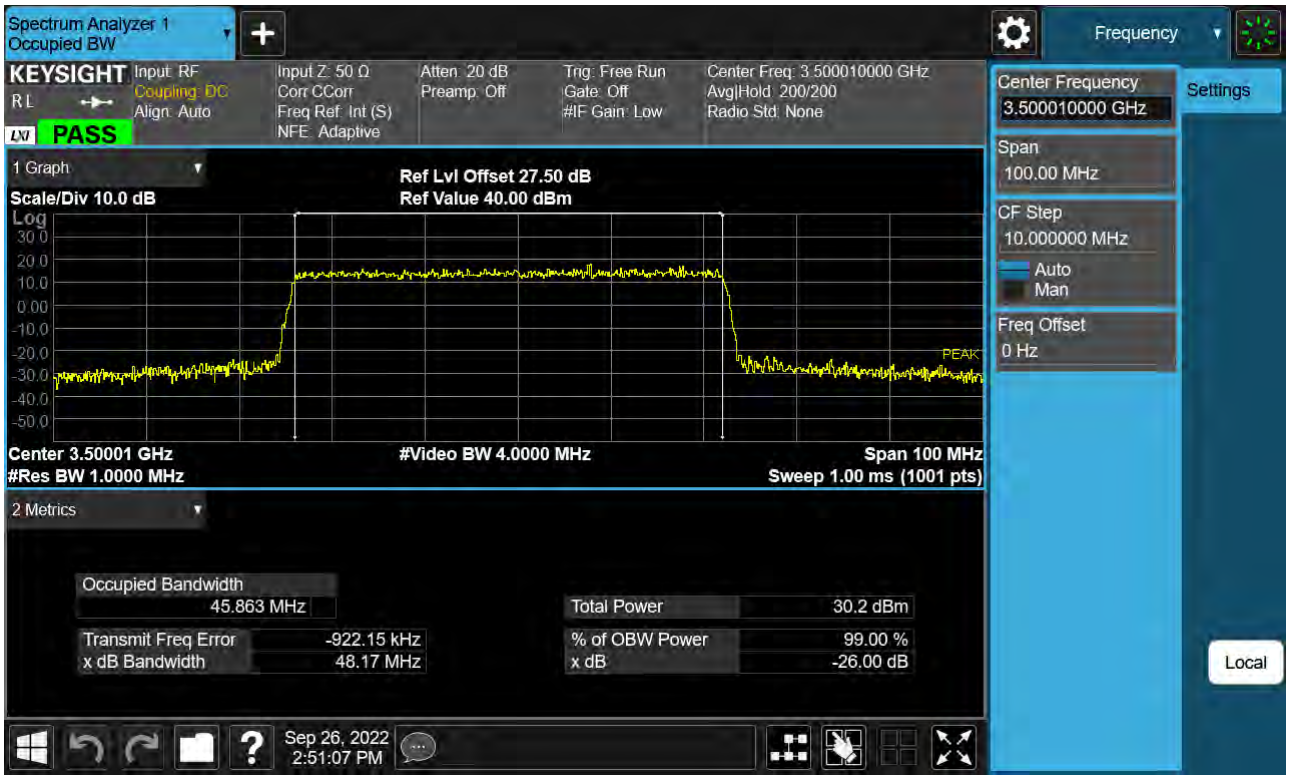
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 BPSK)



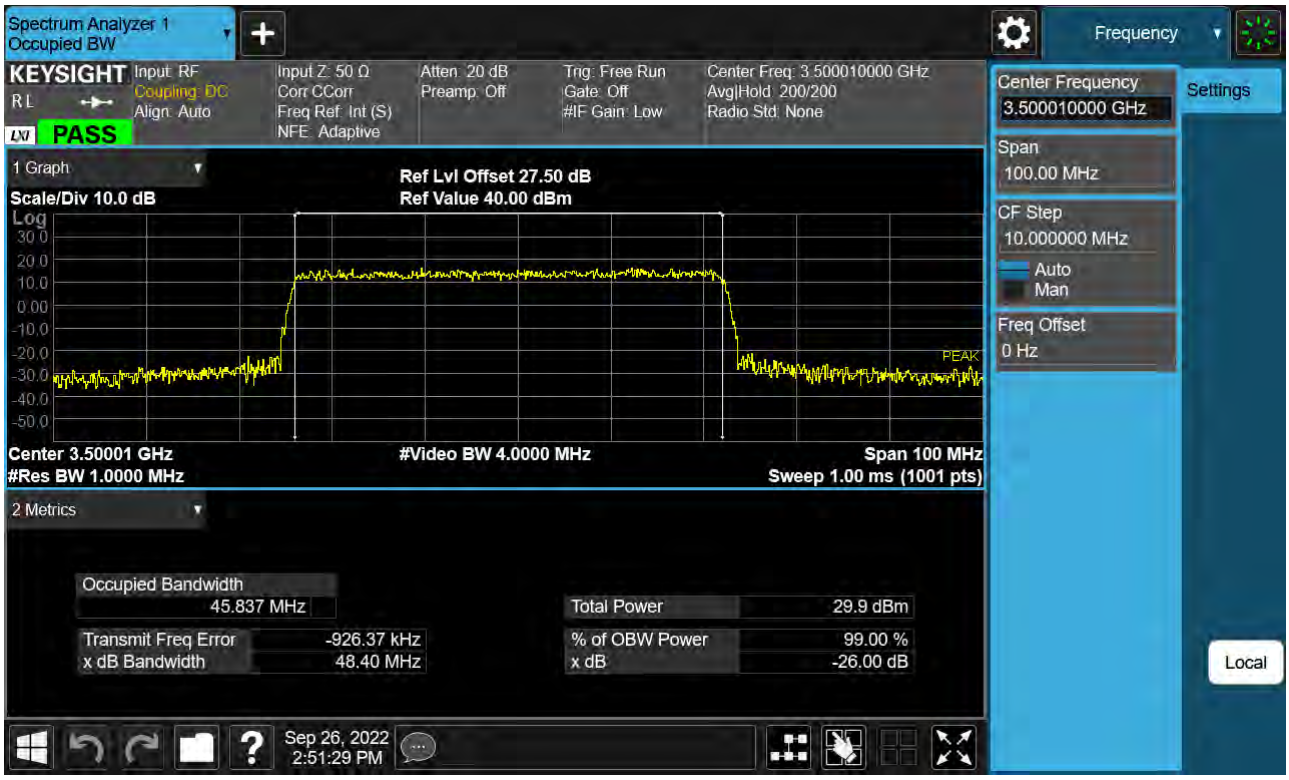
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 QPSK)



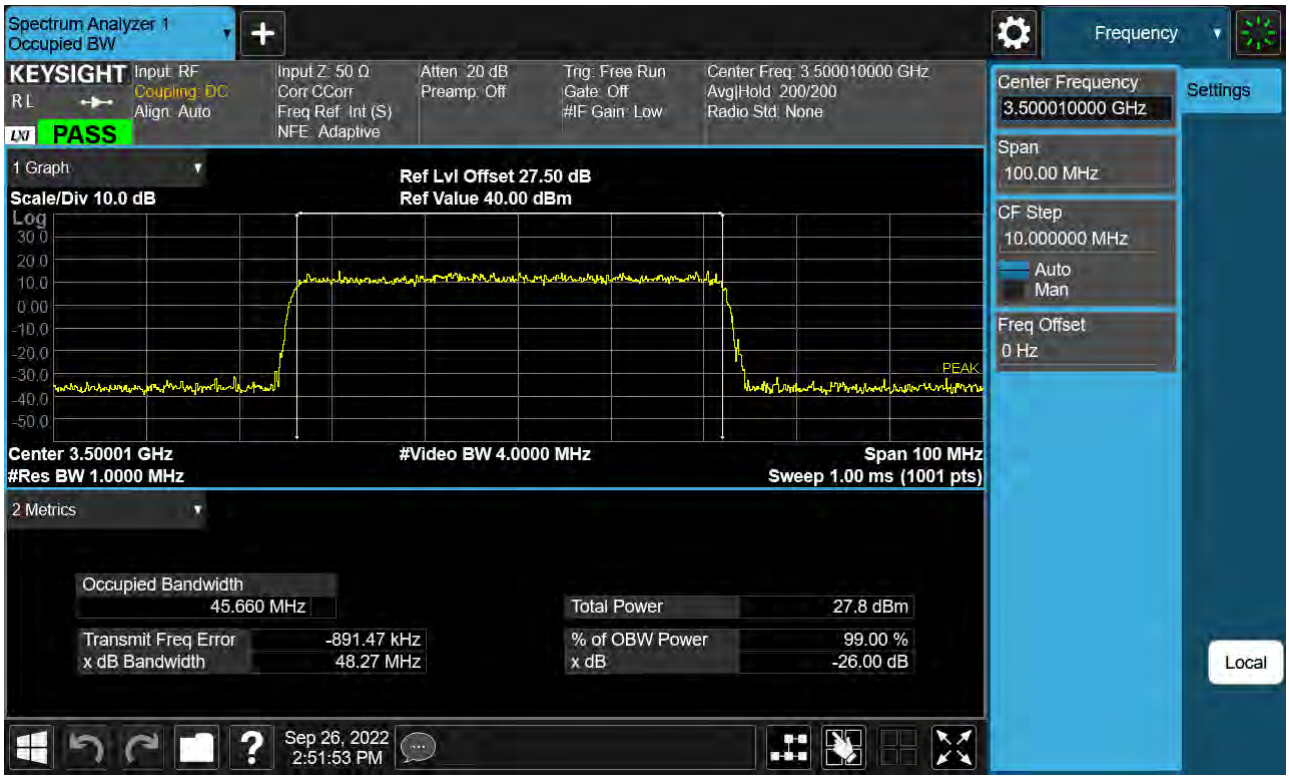
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 16QAM)



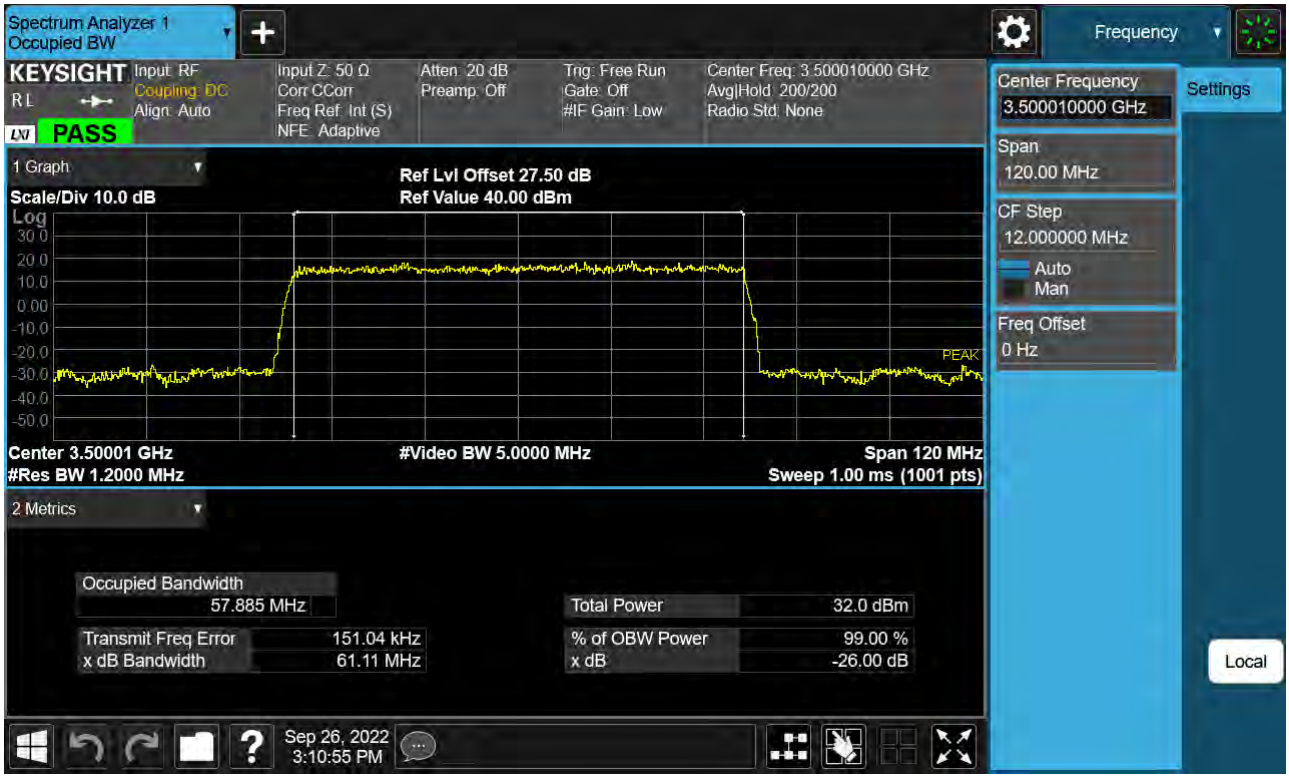
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 64QAM)



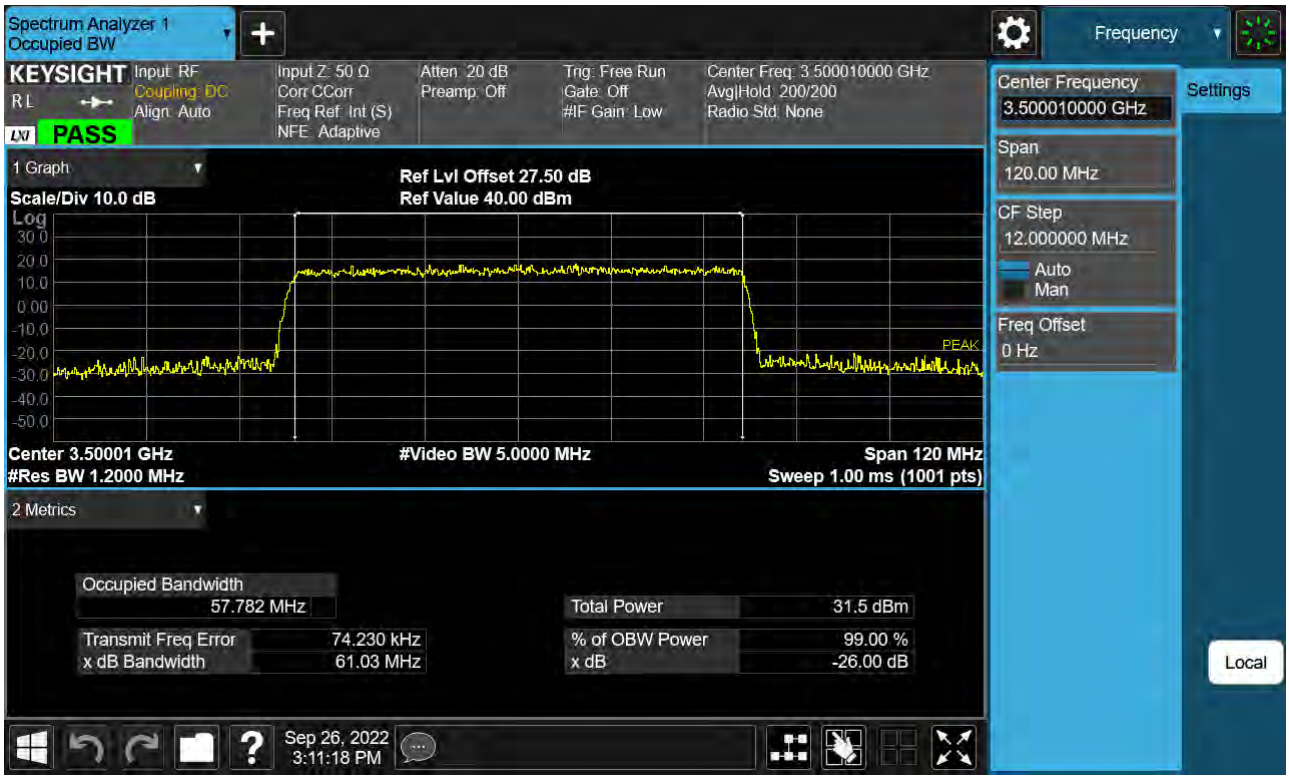
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 256QAM)



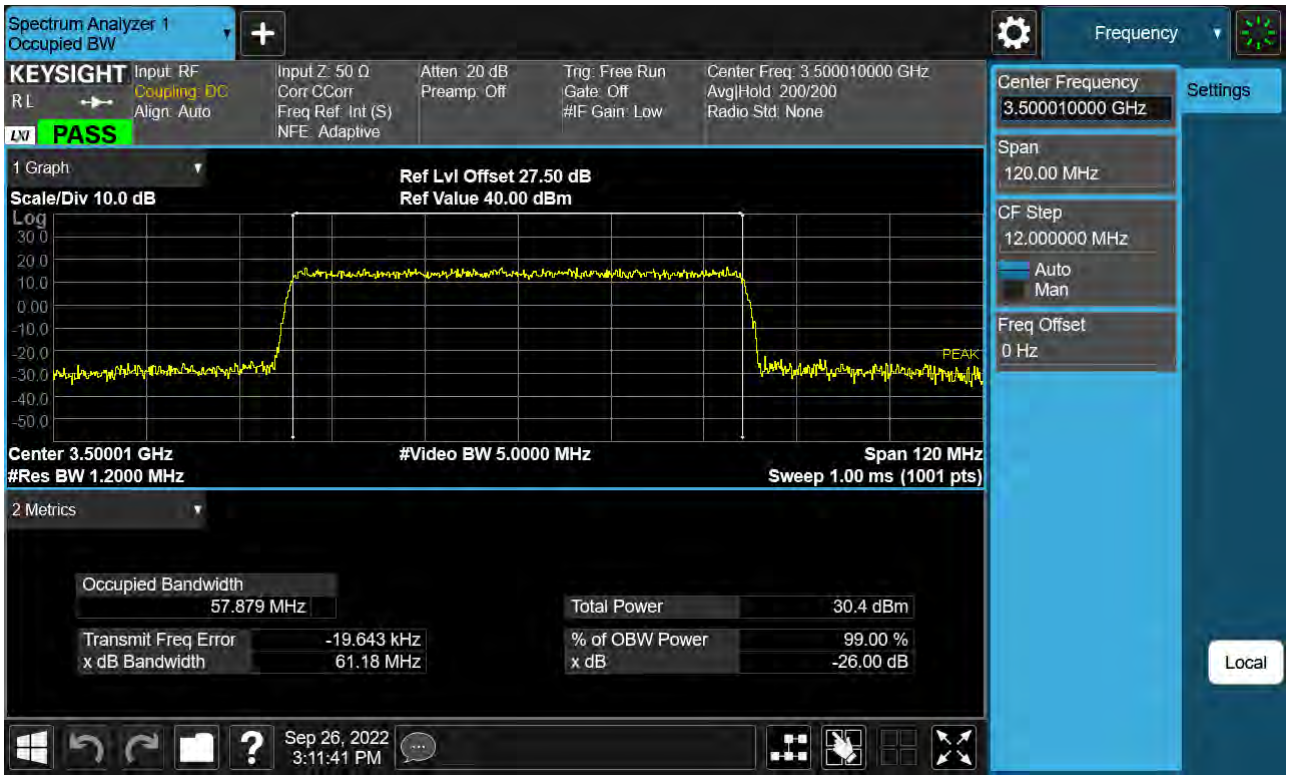
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 BPSK)



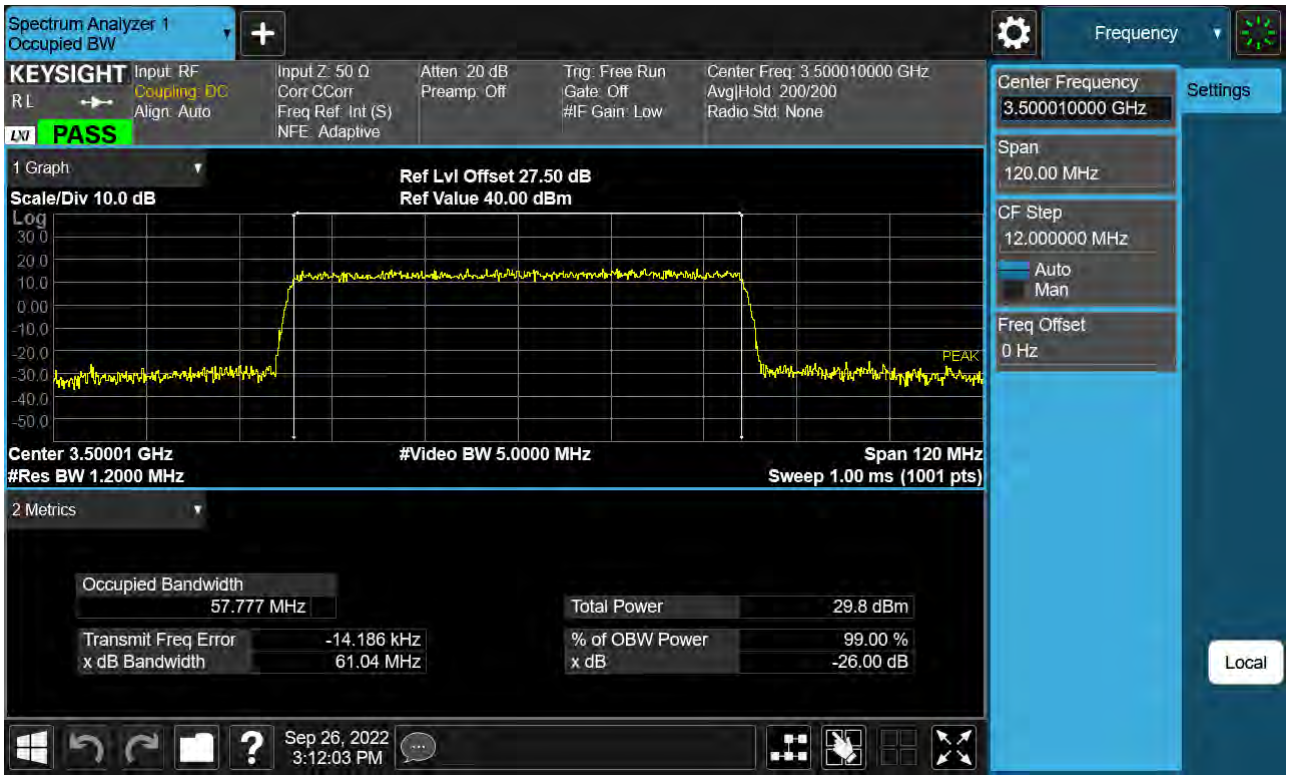
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 QPSK)



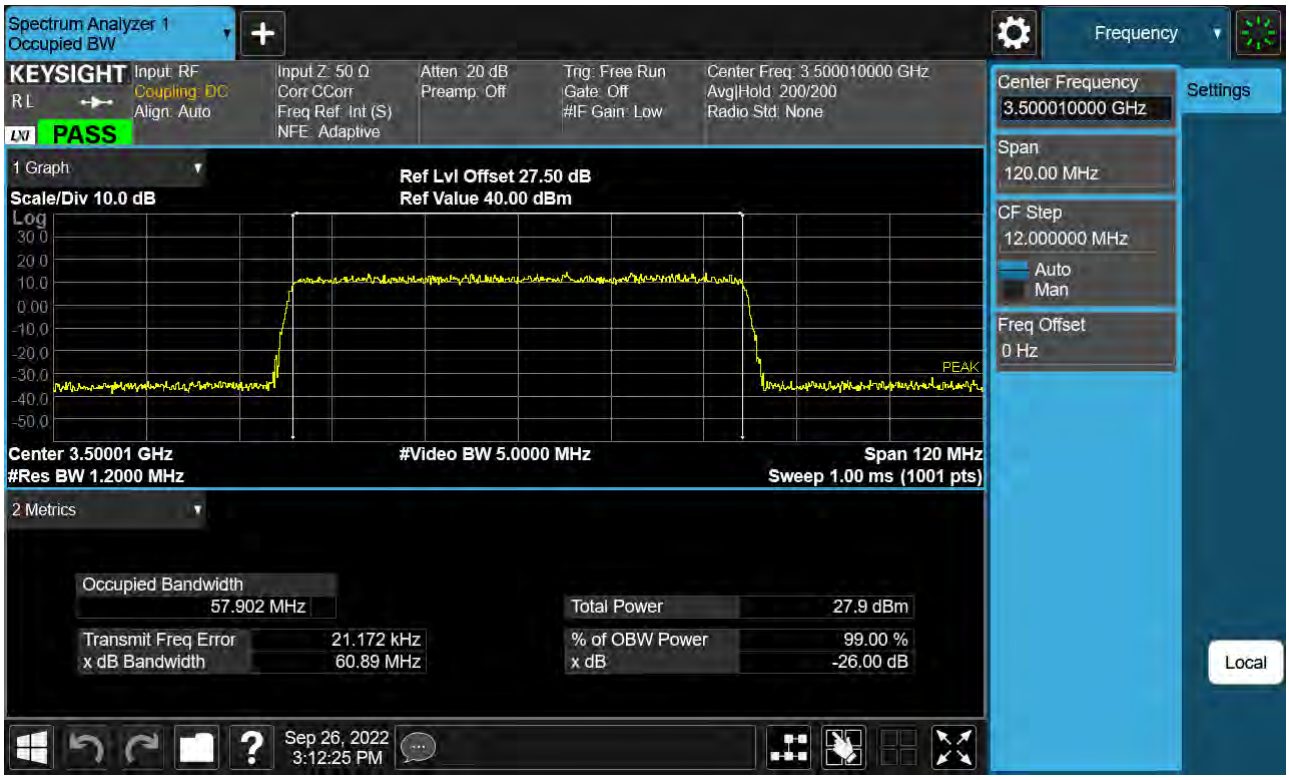
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 16QAM)



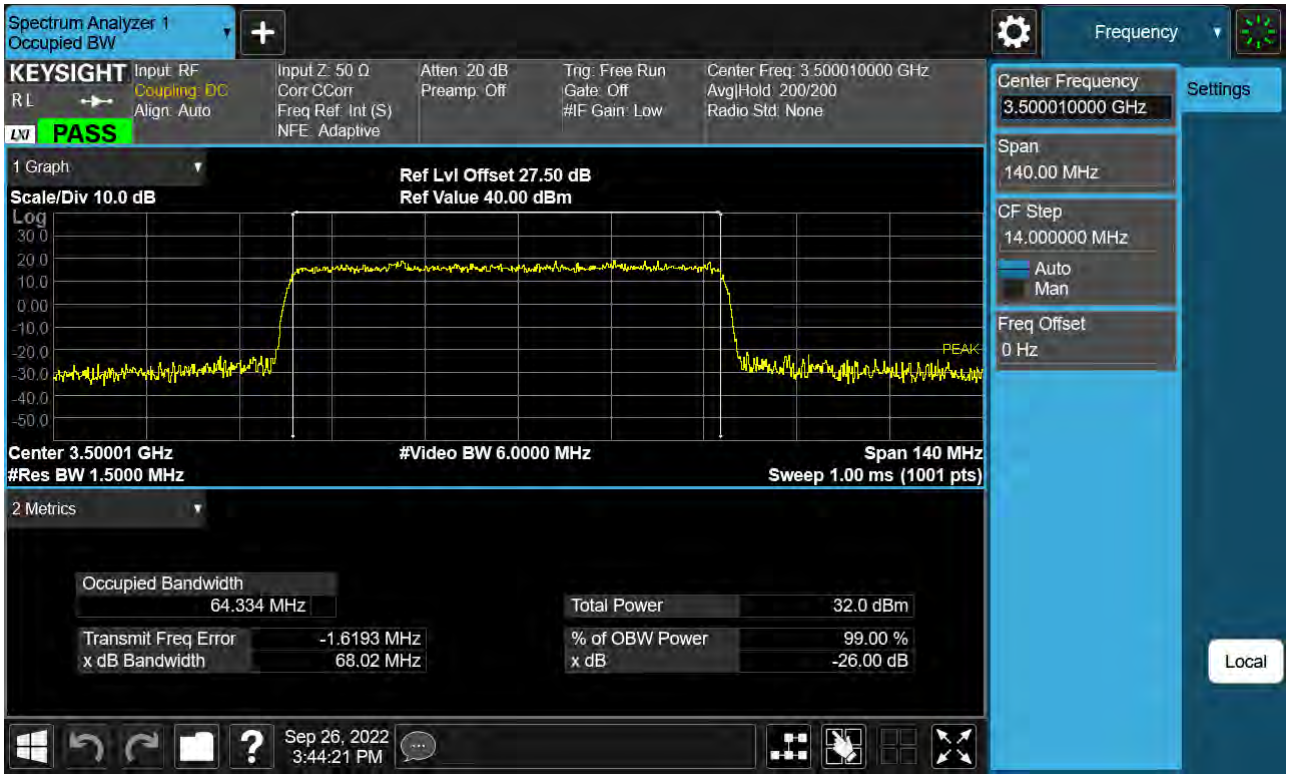
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 64QAM)



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

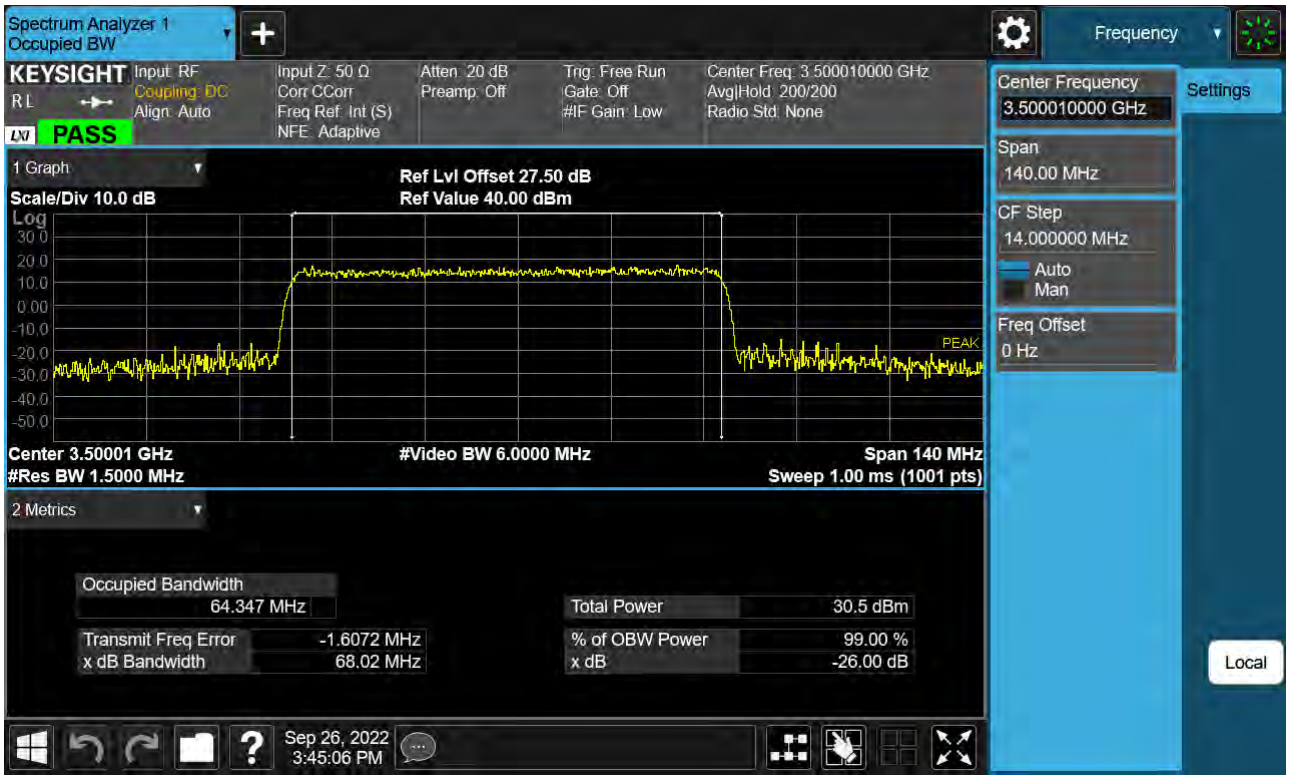


Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 BPSK)

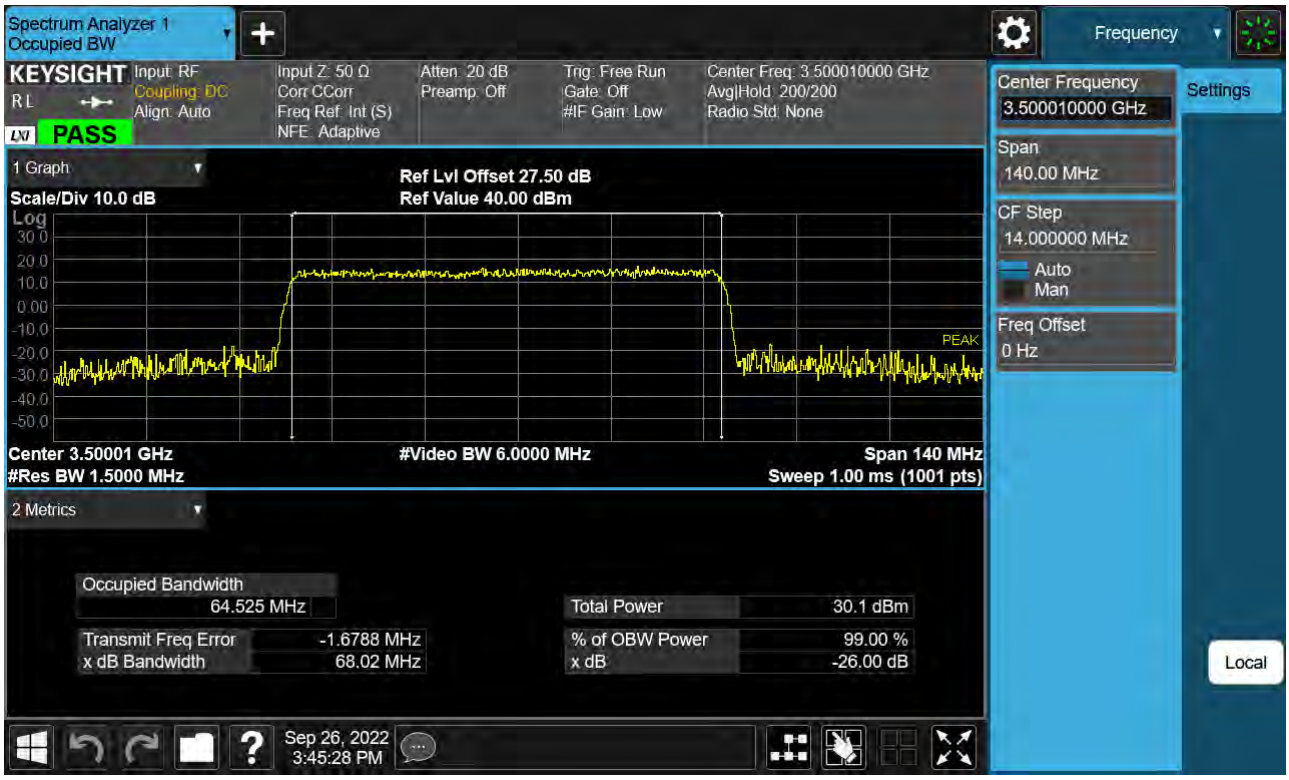


Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 QPSK)

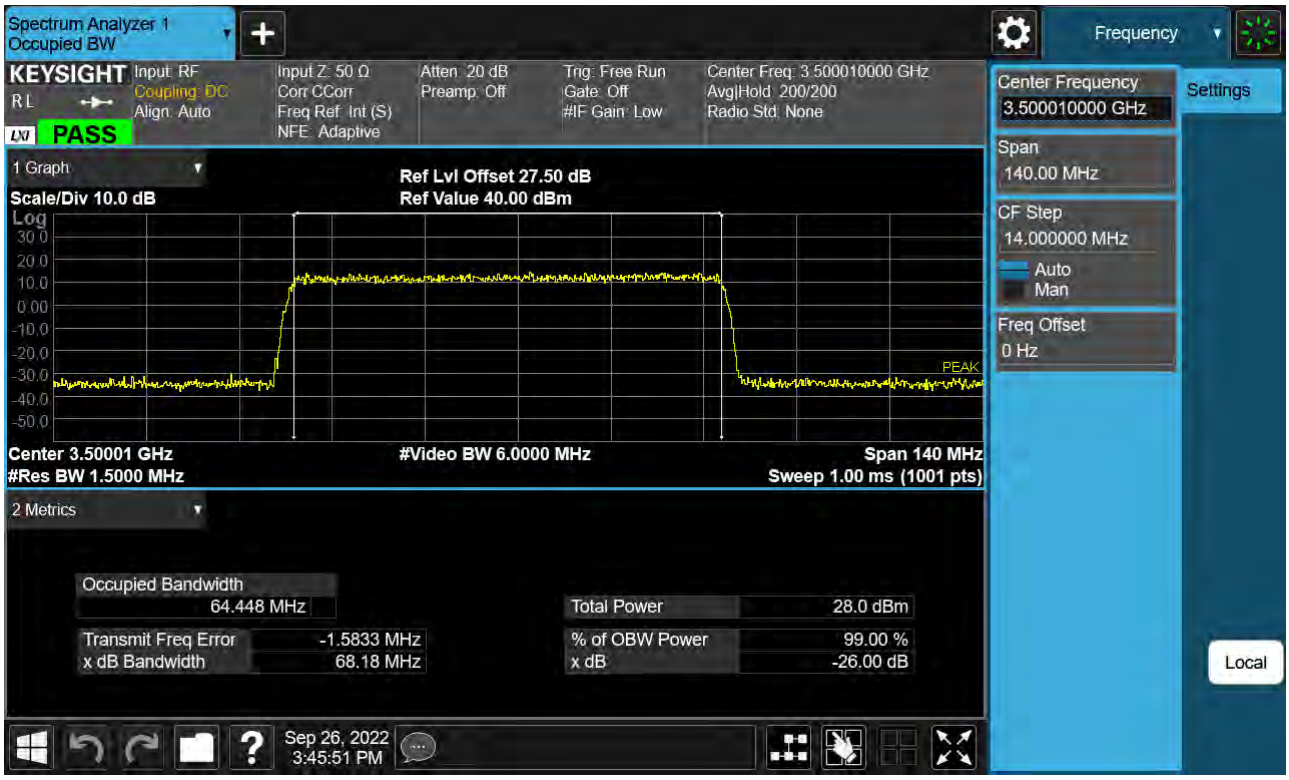
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 16QAM)



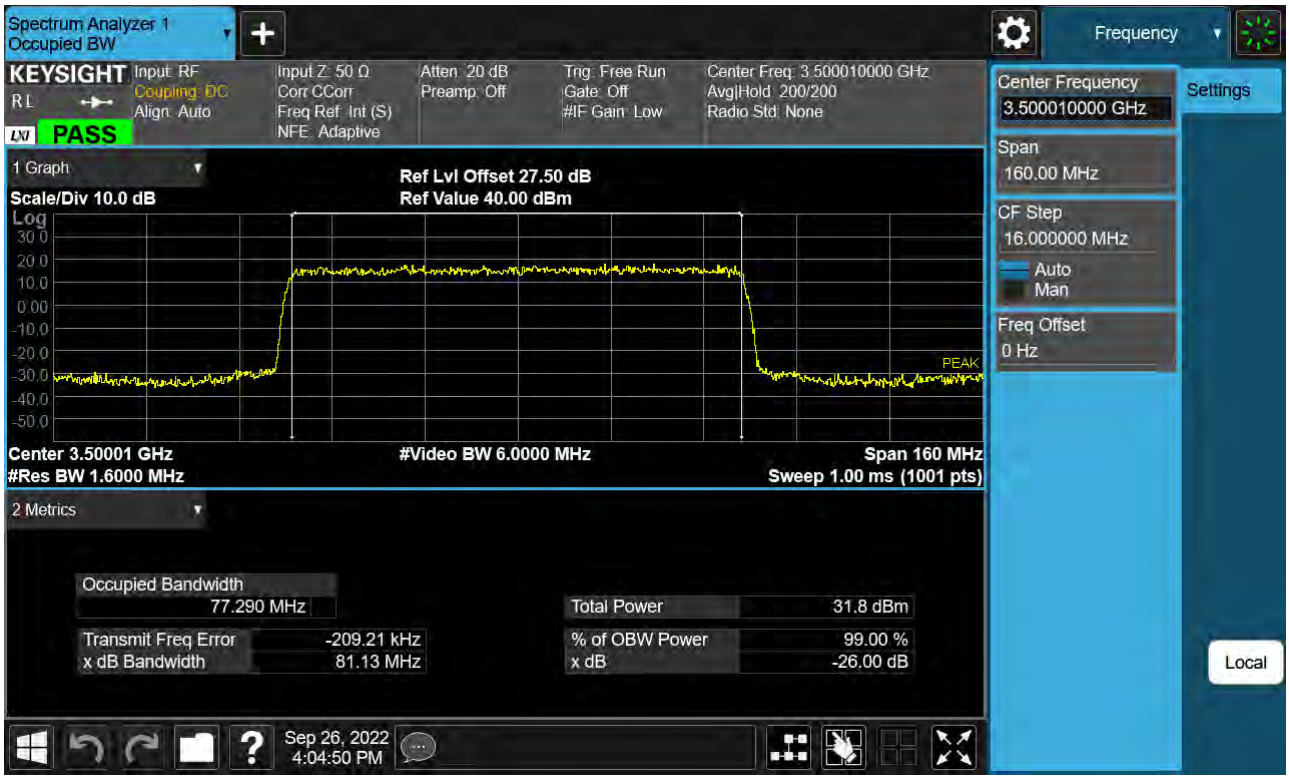
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 64QAM)



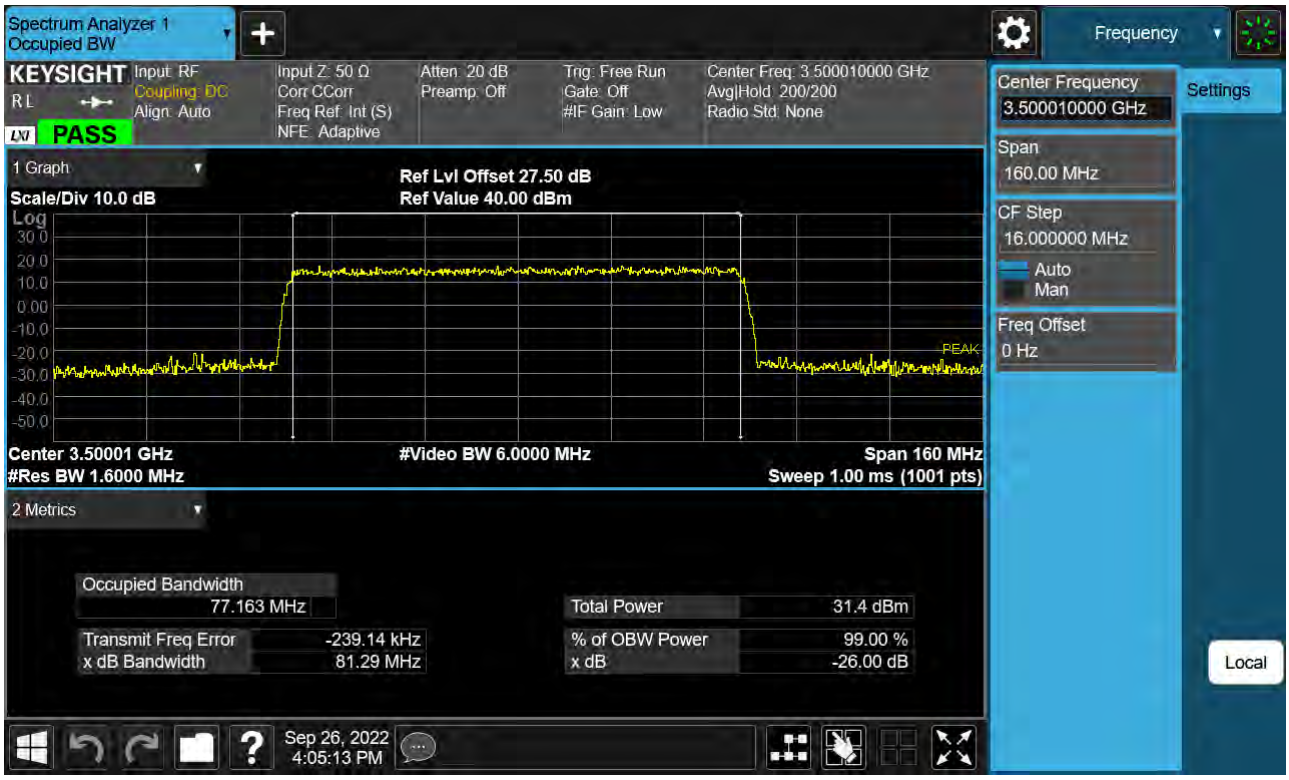
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 256QAM)



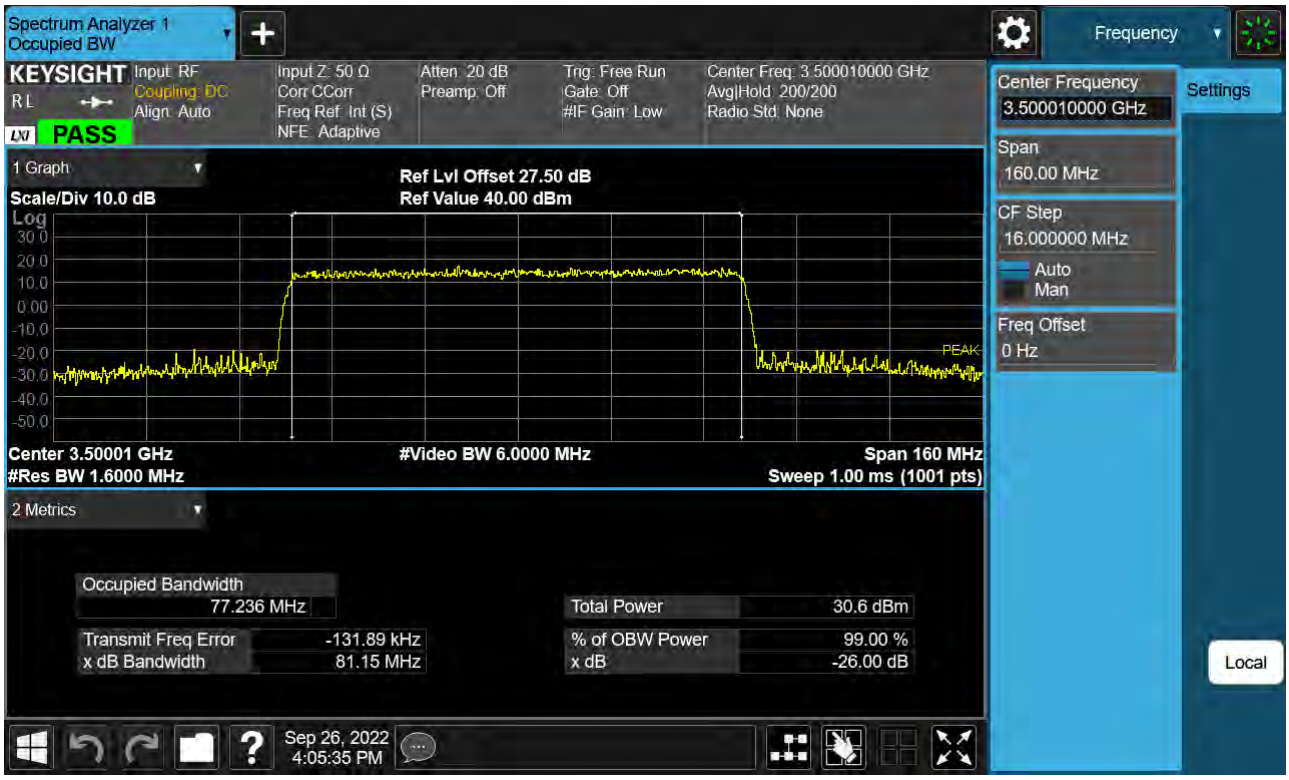
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 BPSK)



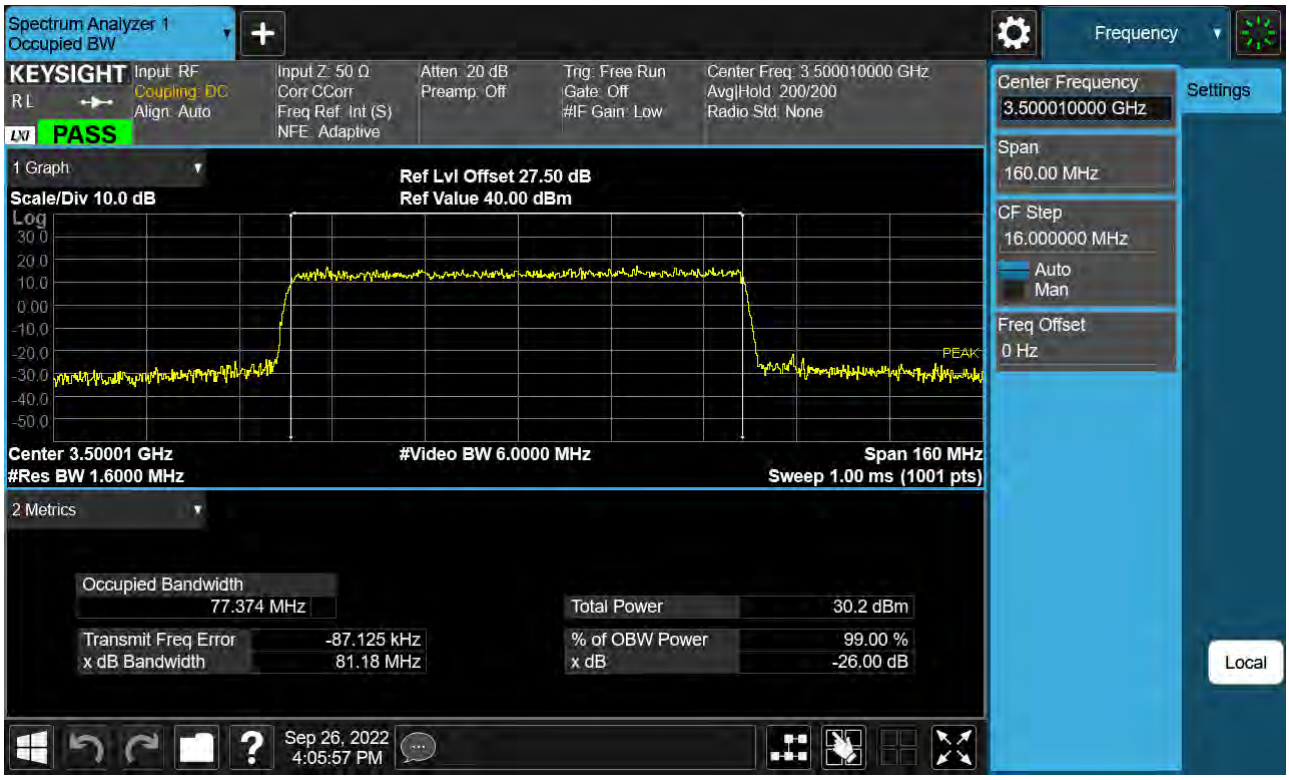
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 QPSK)



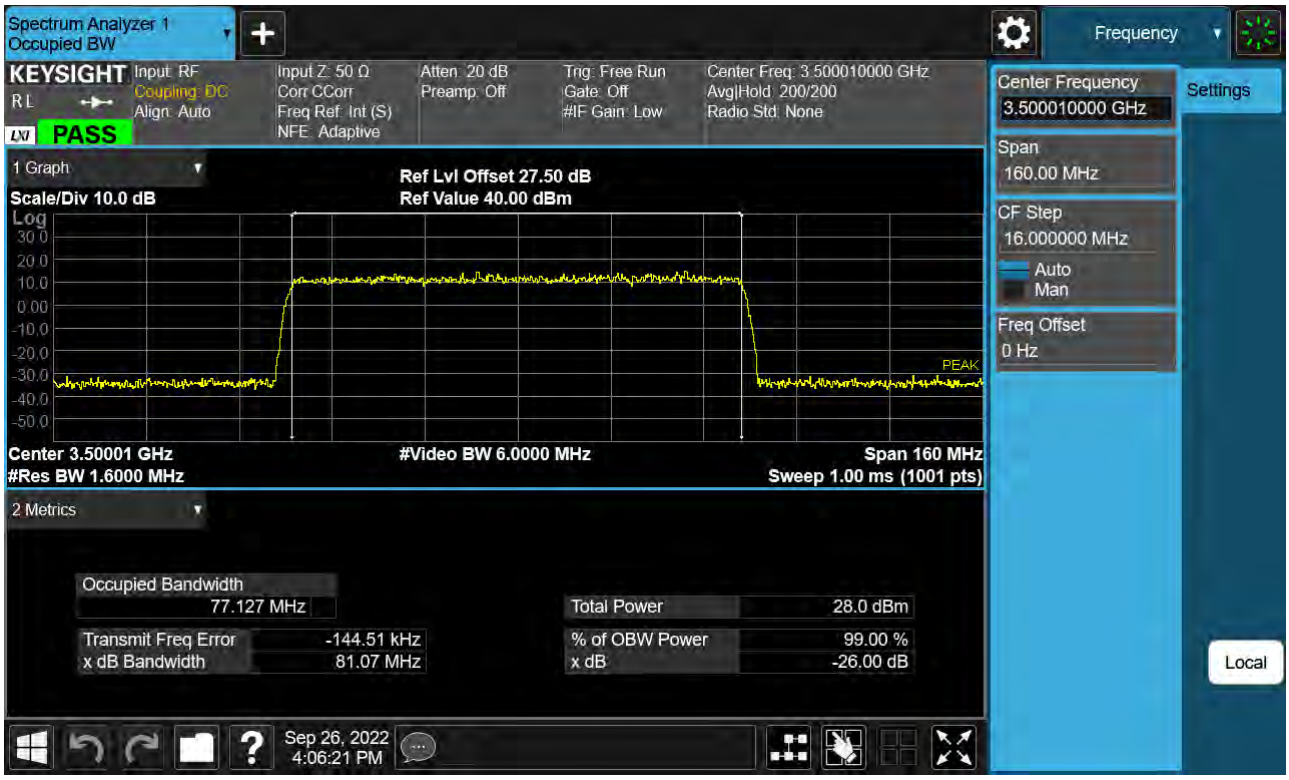
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 16QAM)



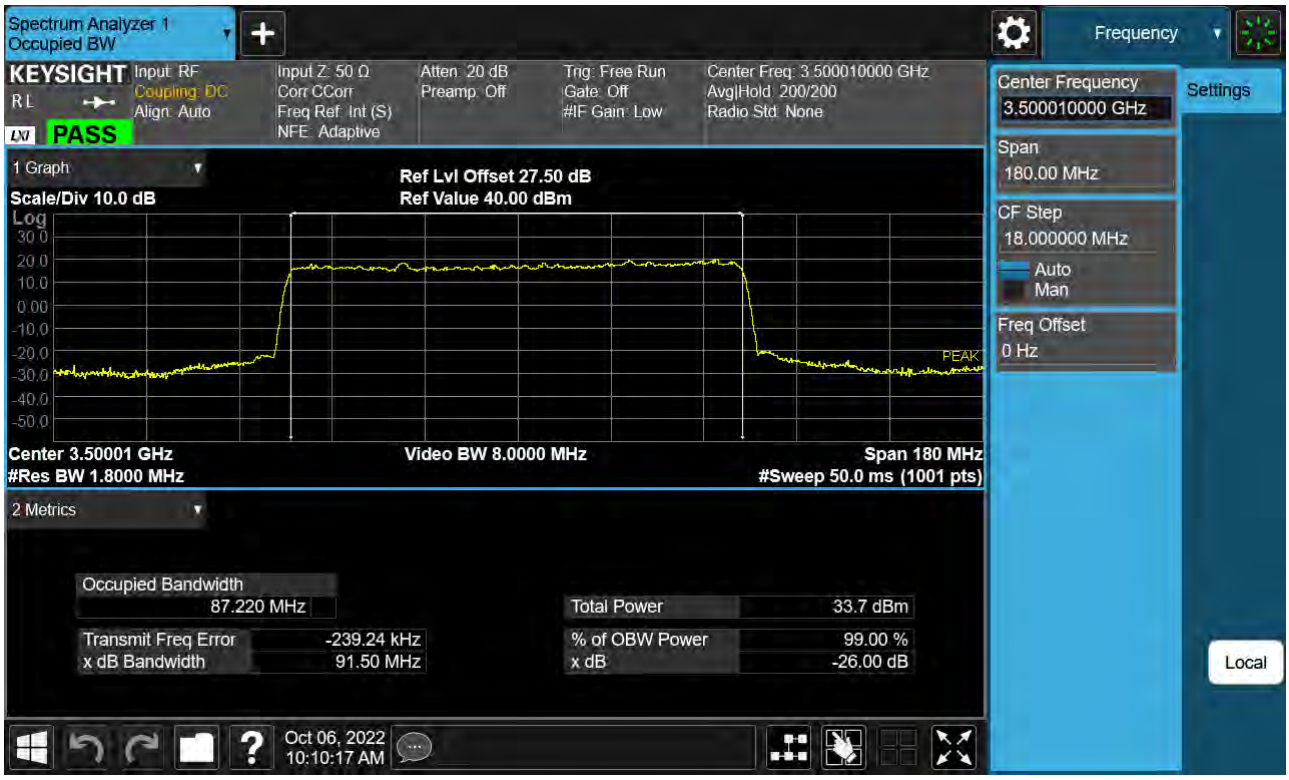
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 64QAM)



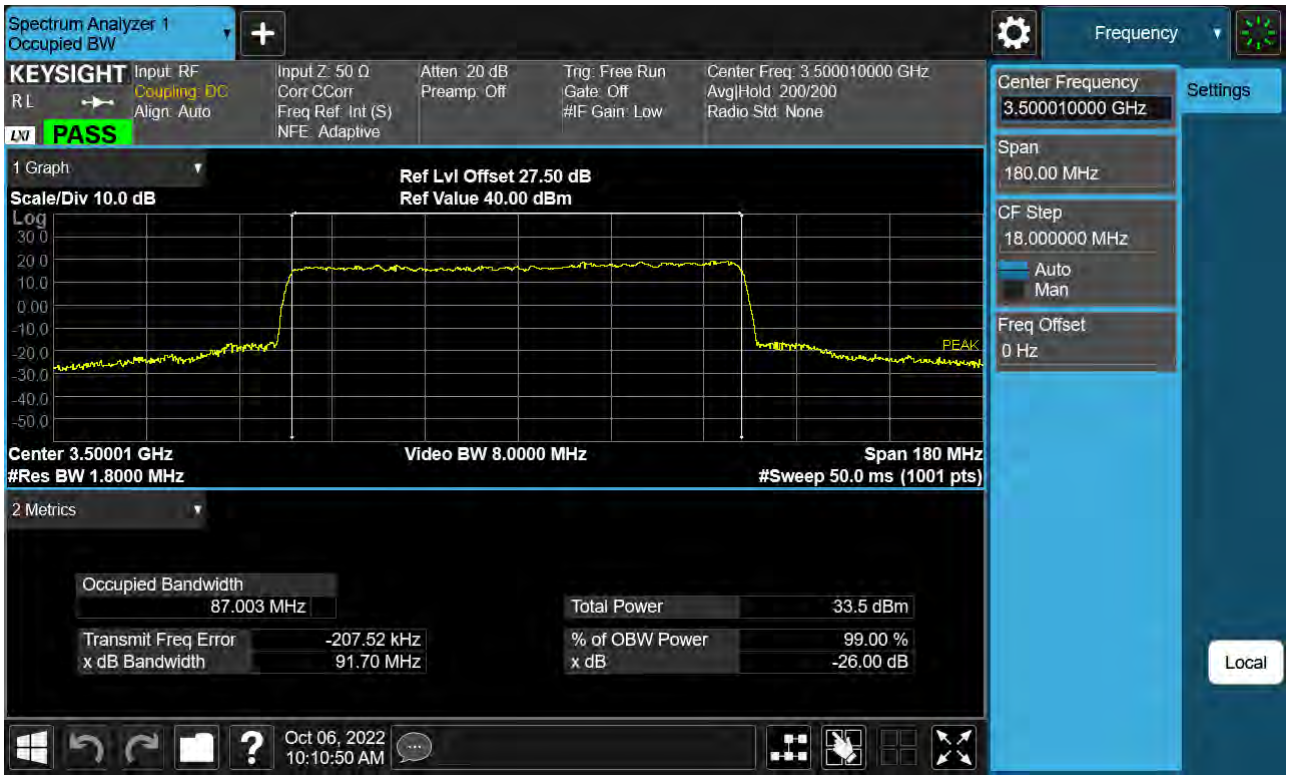
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 256QAM)



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



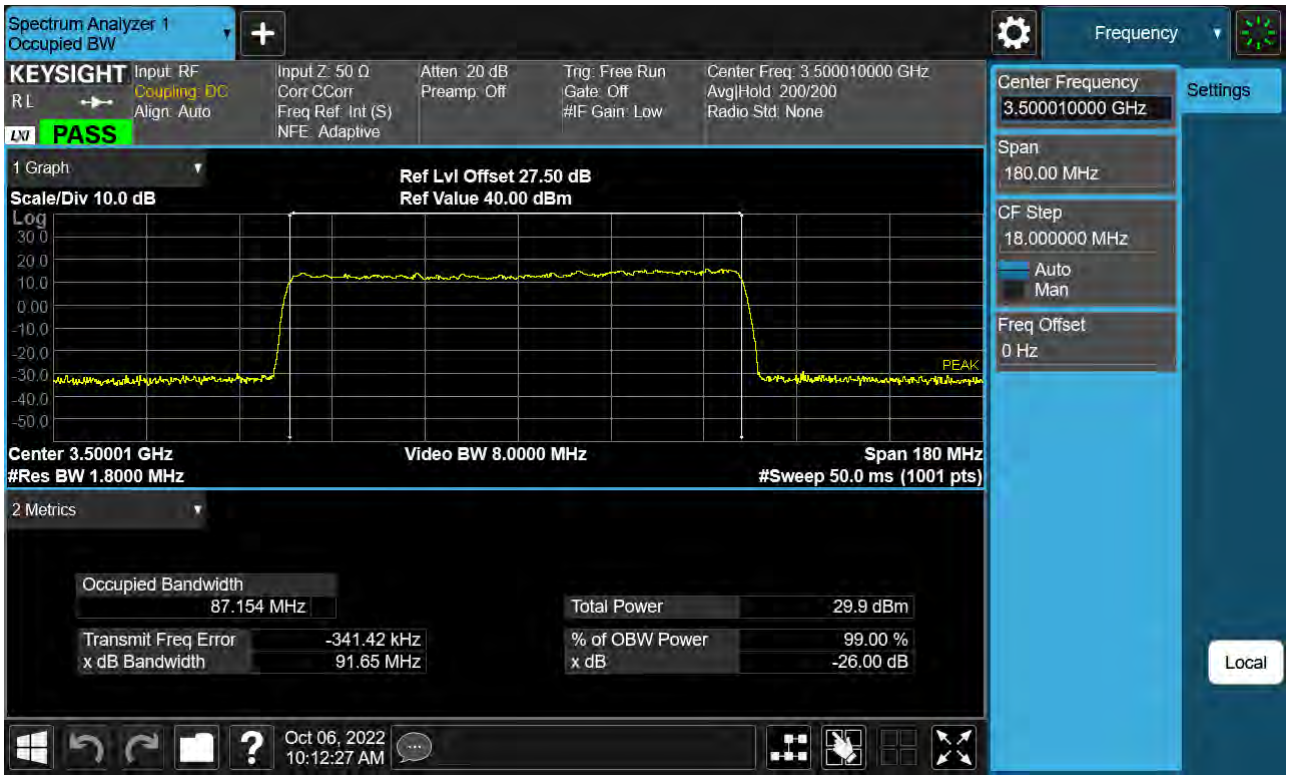
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 QPSK)



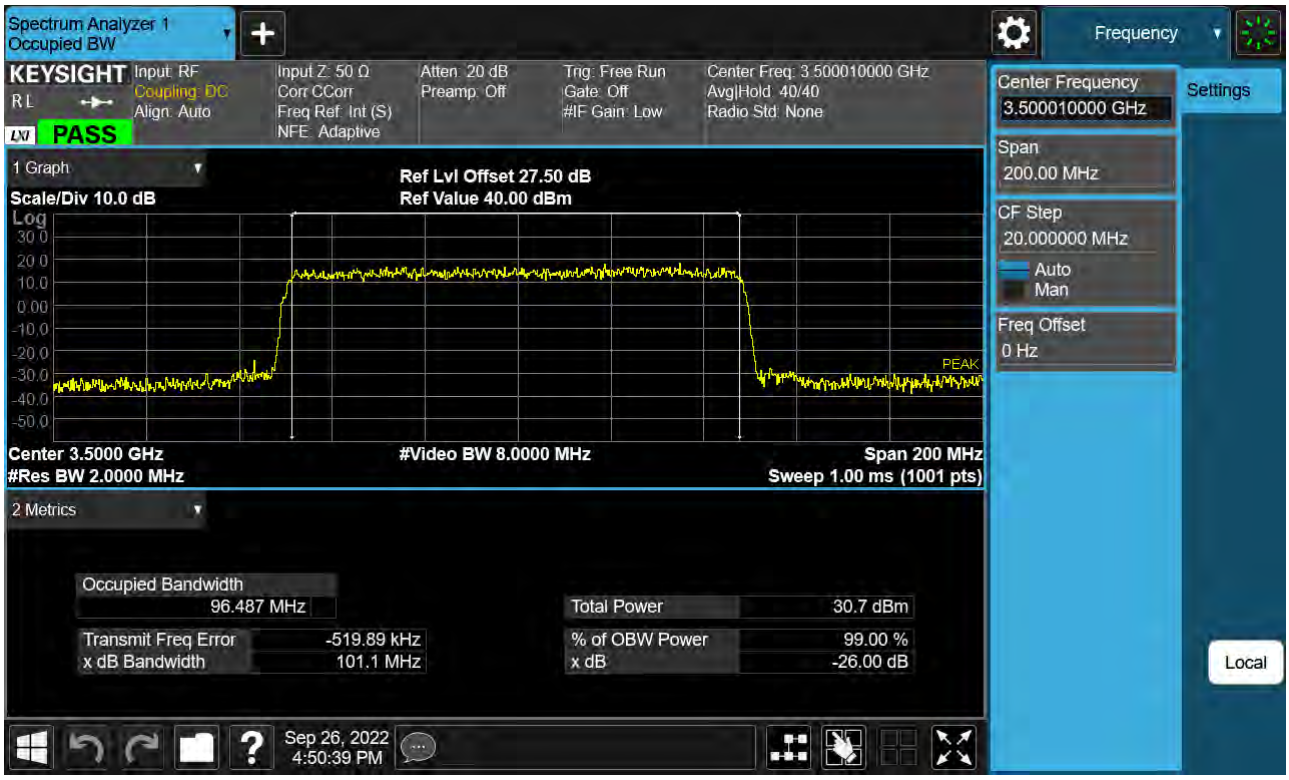
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 16QAM)

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

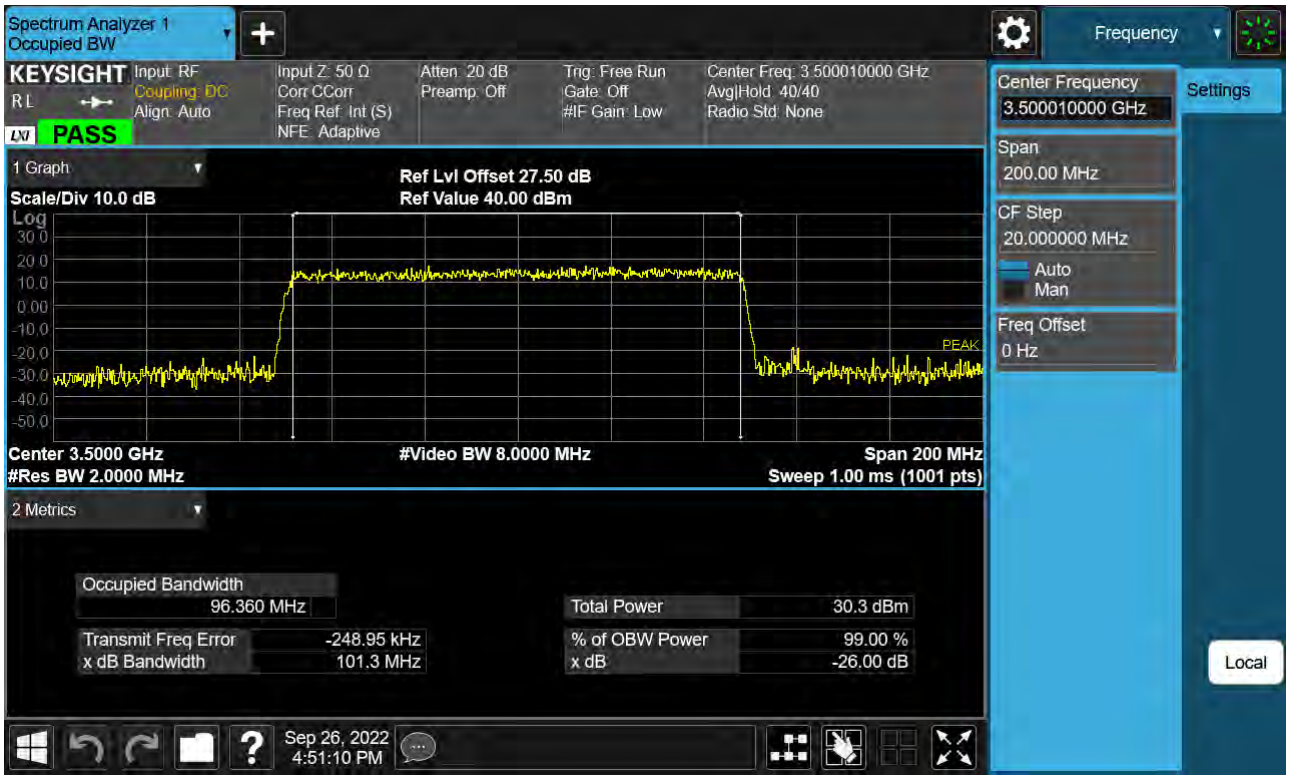
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 256QAM)



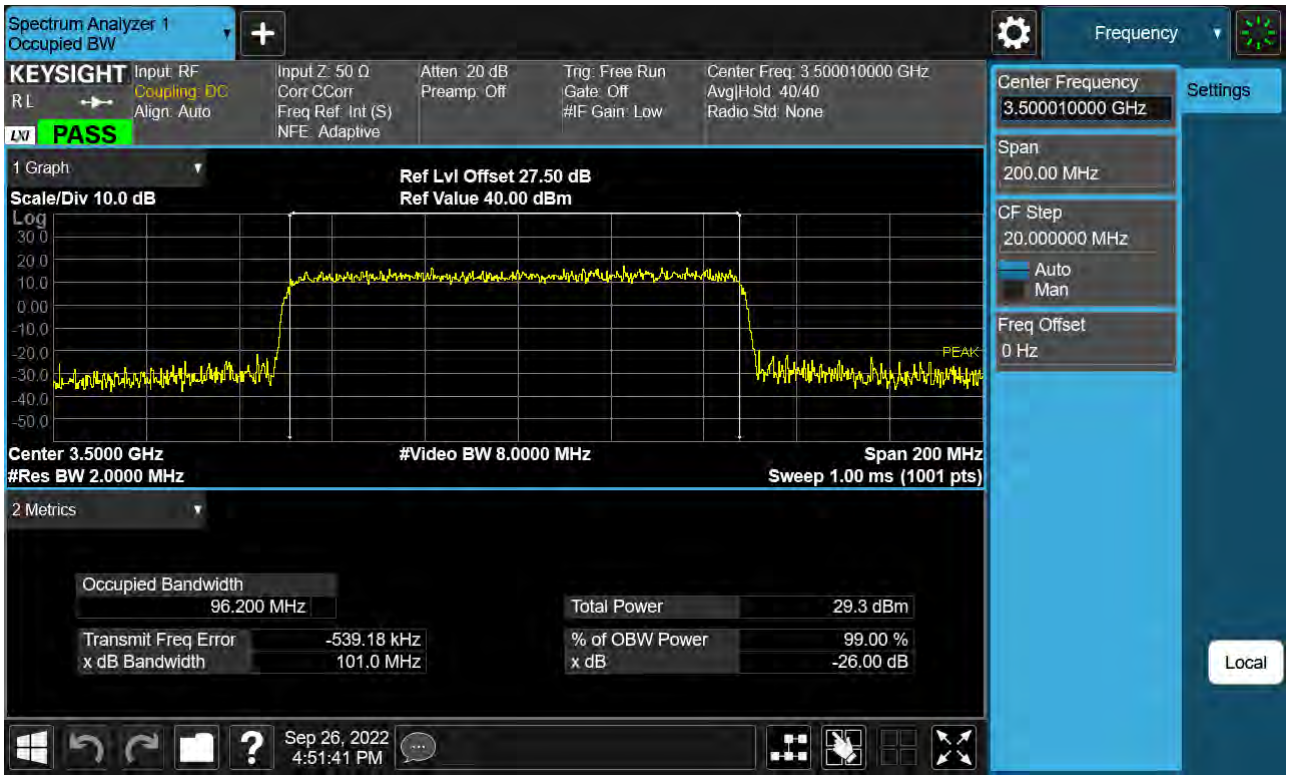
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 BPSK)



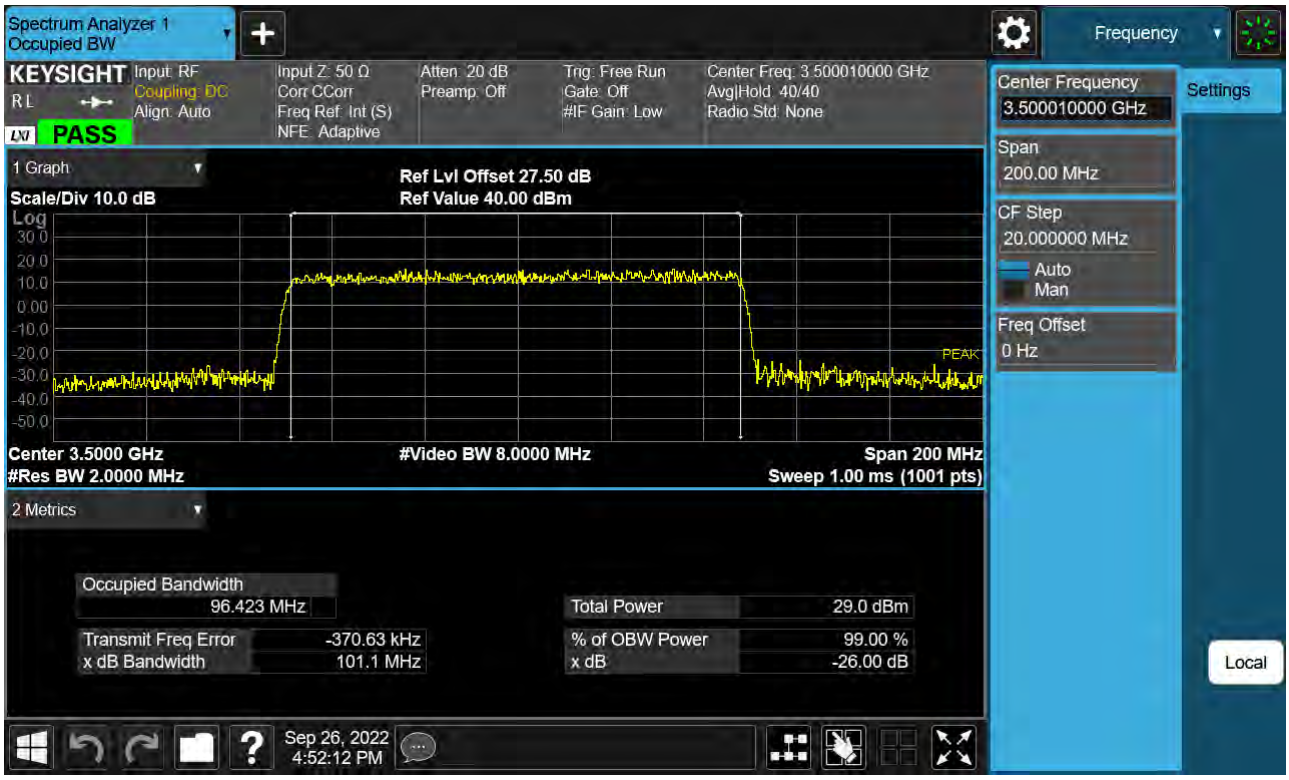
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 QPSK)



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)

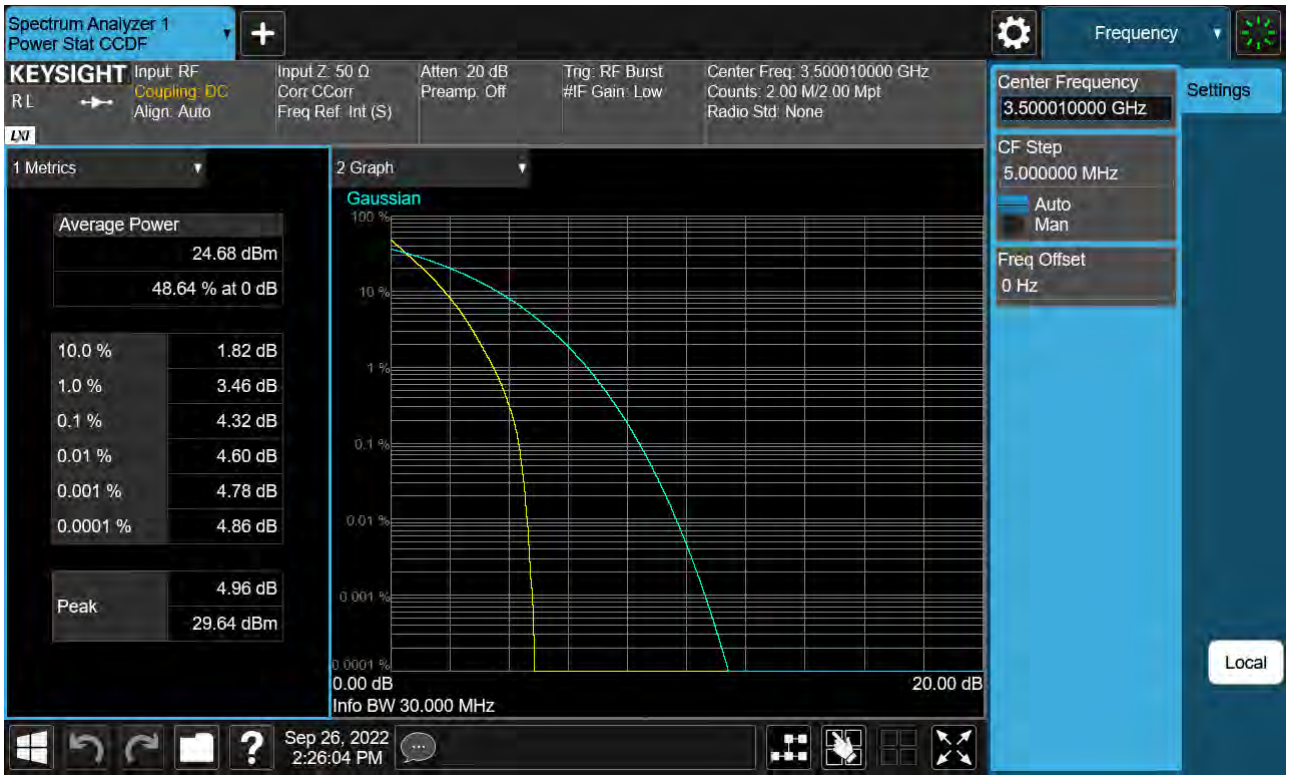
Sub6 n77. PAR Plot (20 M BW_Ch.633334_QPSK)

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

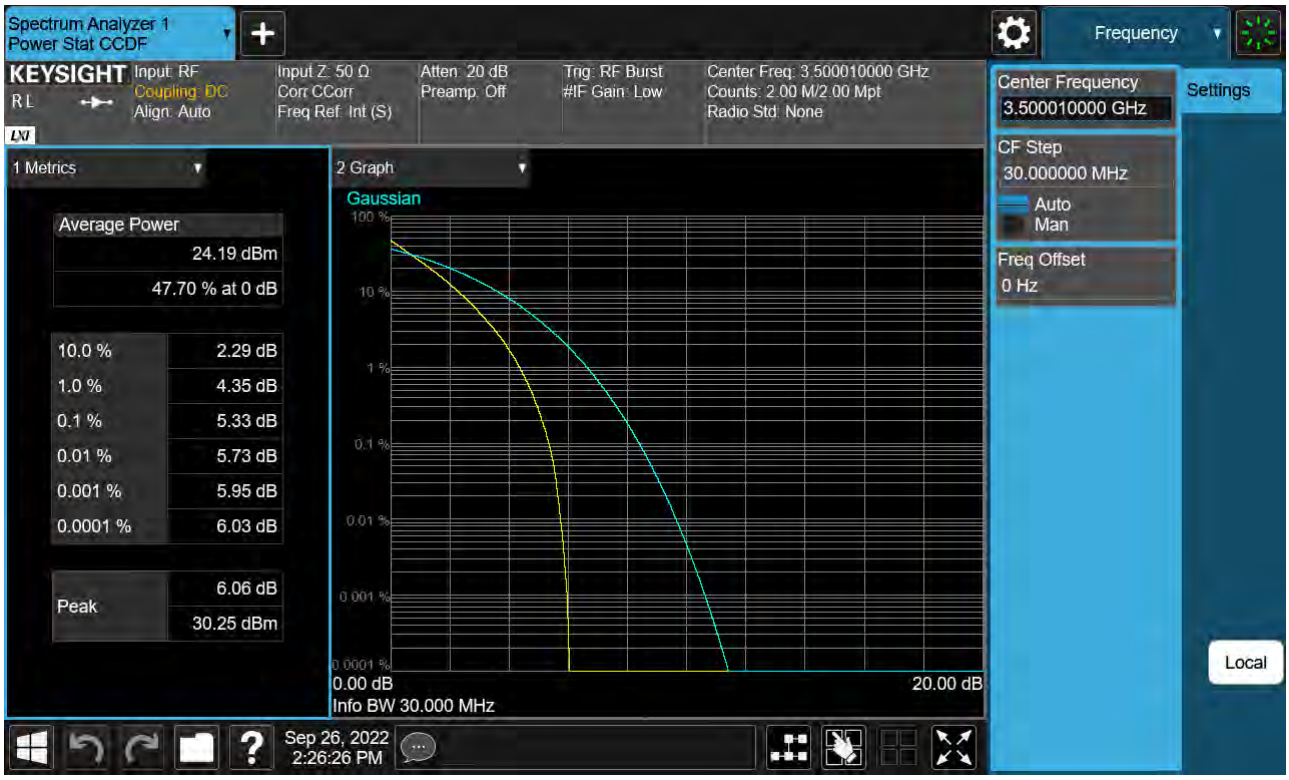
Sub6 n77. PAR Plot (20 M BW_Ch.633334_64QAM)

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

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

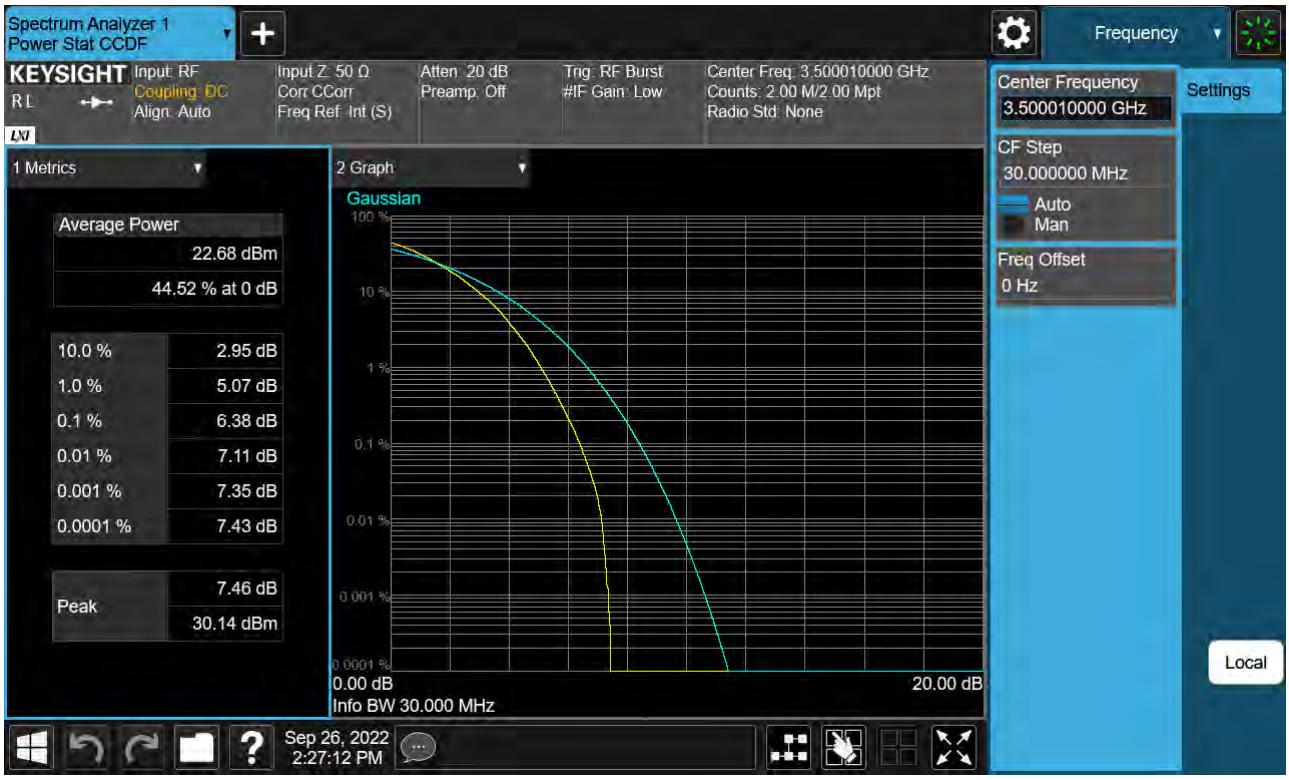


Sub6 n77. PAR Plot (30 M BW_Ch.633334_QPSK)



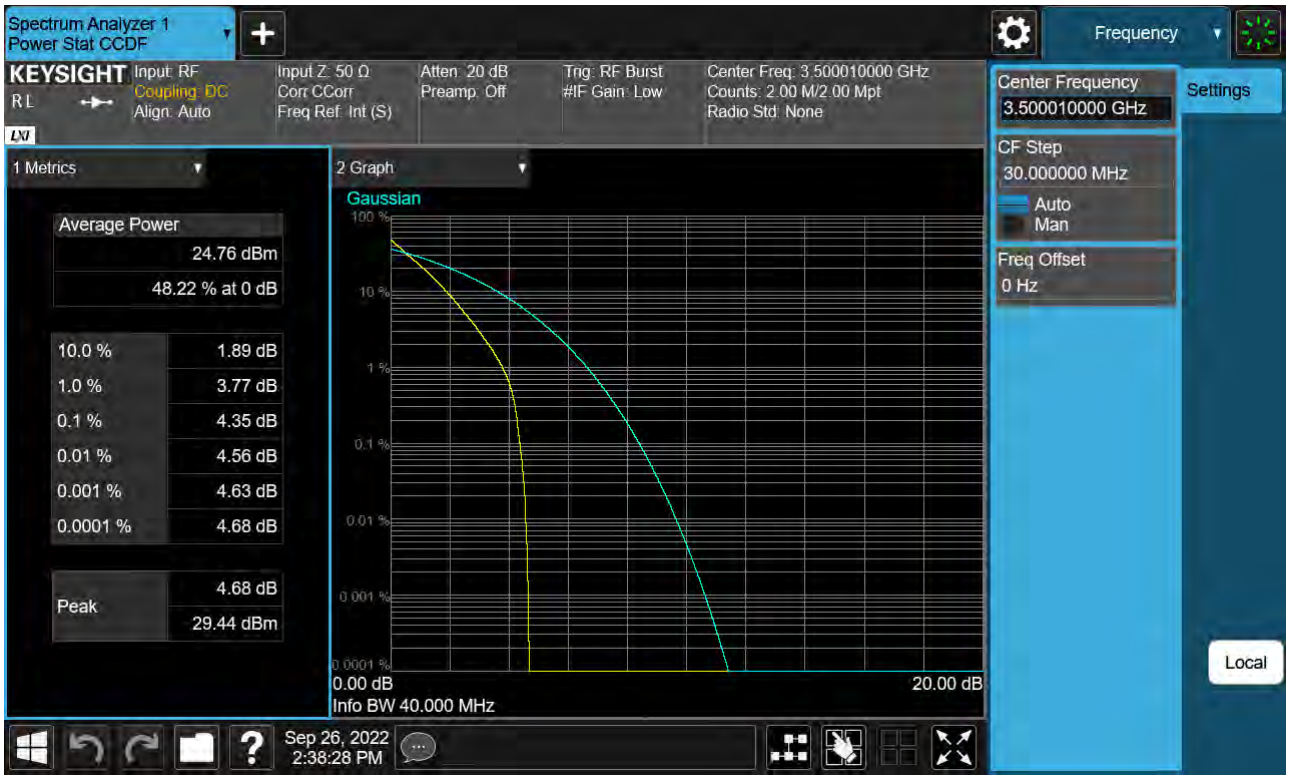
Sub6 n77. PAR Plot (30 M BW_Ch.633334_16QAM)

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

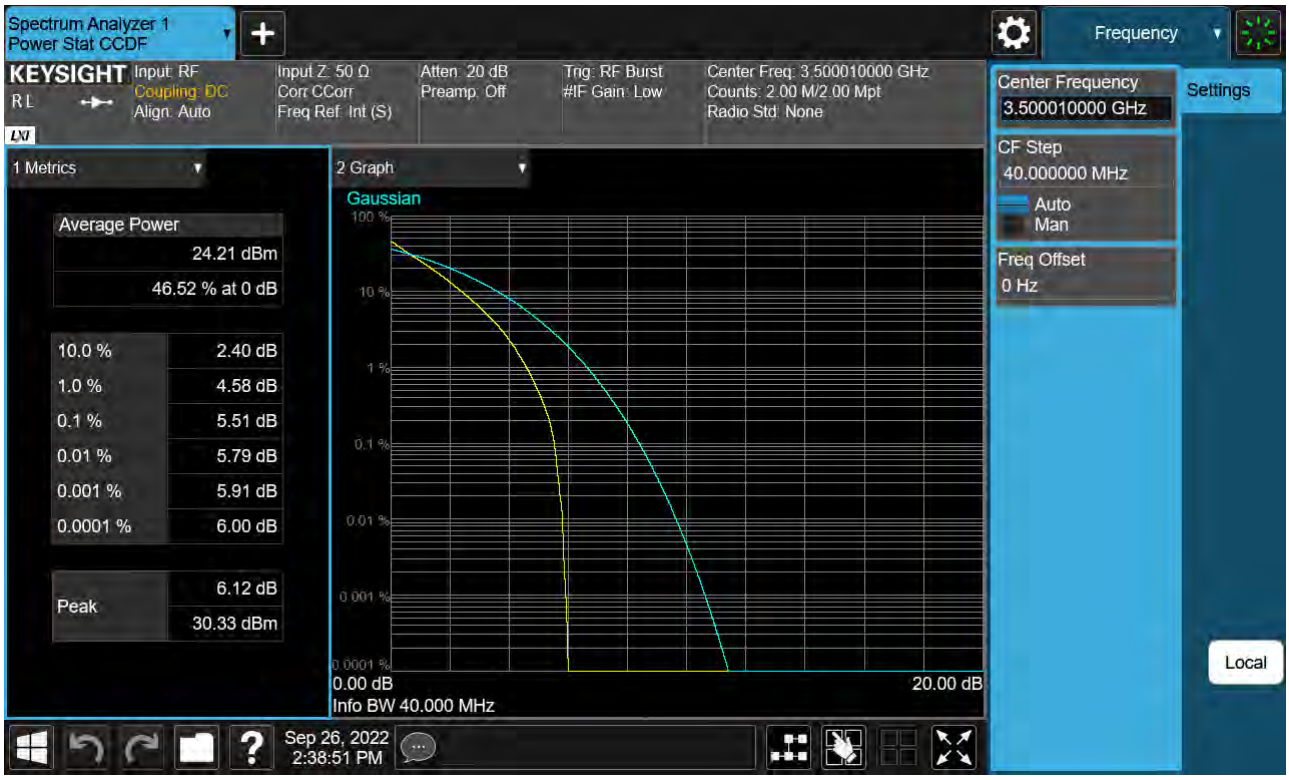


Sub6 n77. PAR Plot (30 M BW_Ch.633334_256QAM)

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



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

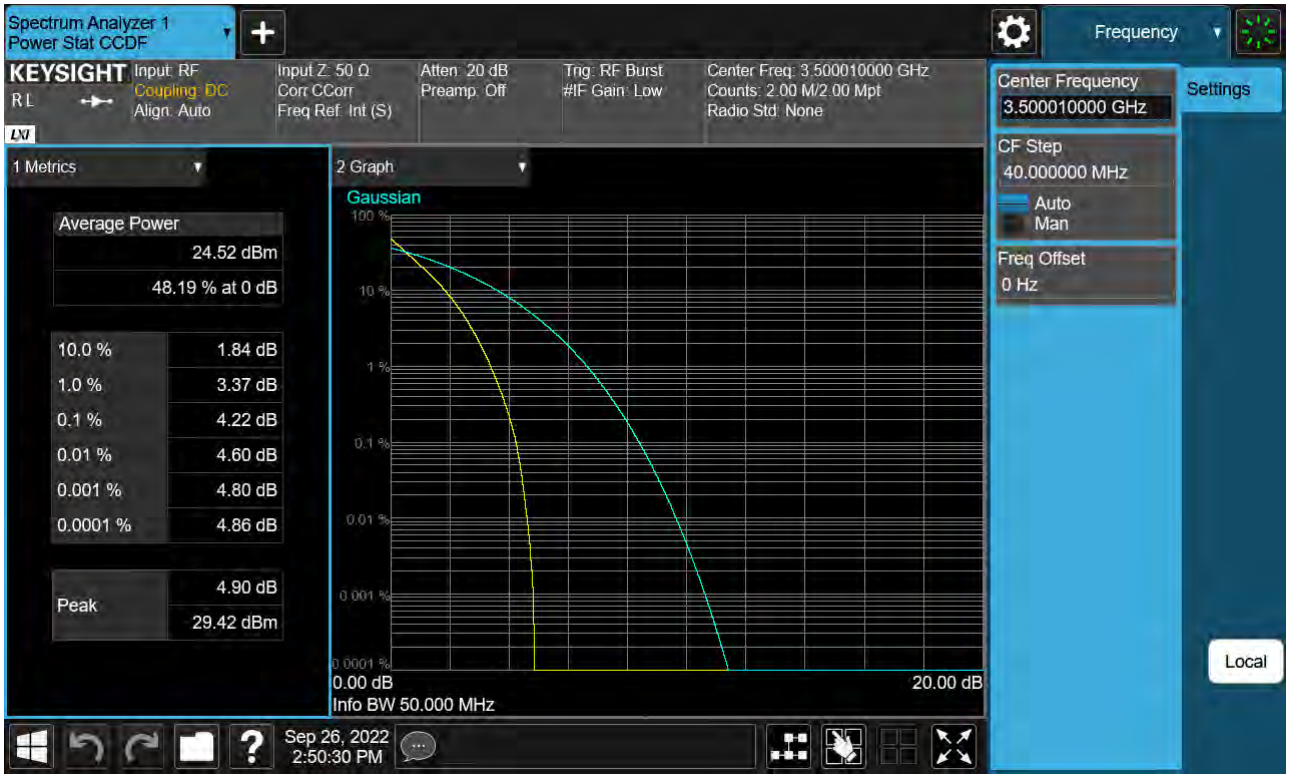


Sub6 n77. PAR Plot (40 M BW_Ch.633334_16QAM)

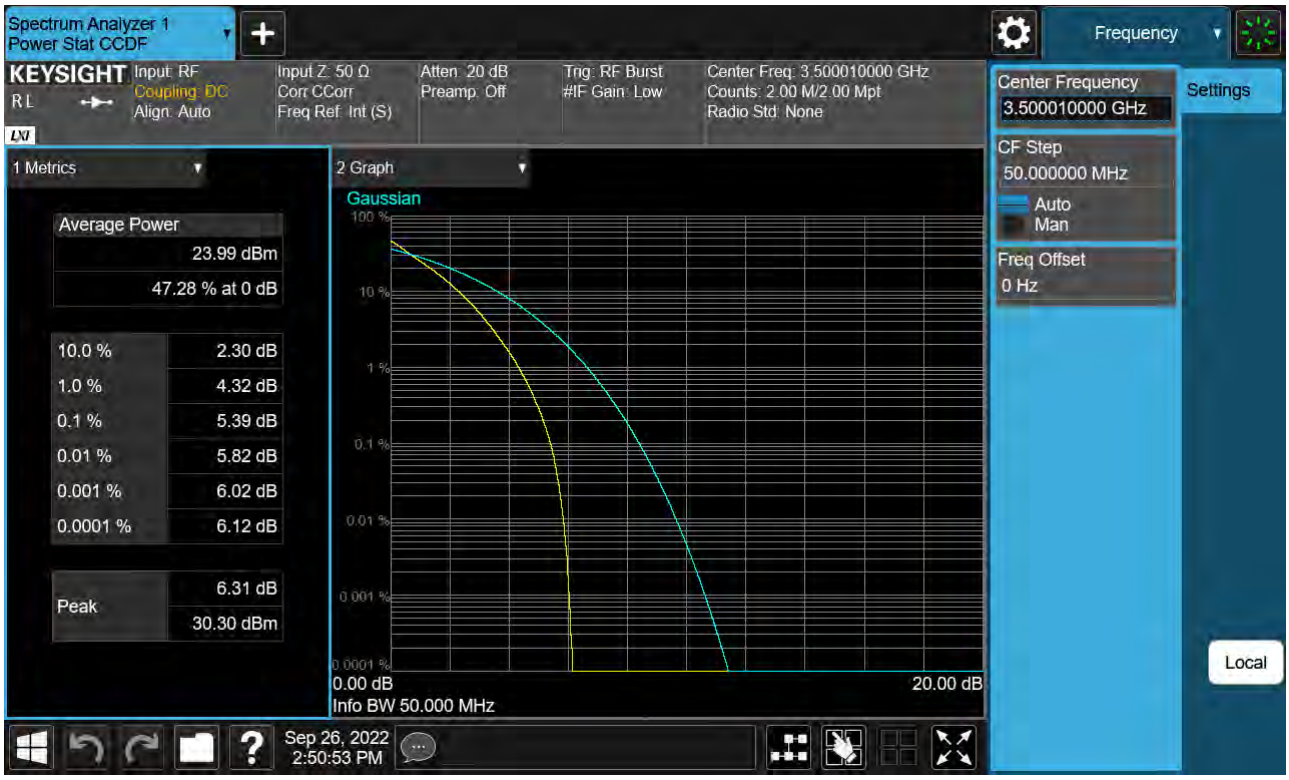
Sub6 n77. PAR Plot (40 M BW_Ch.633334_64QAM)

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

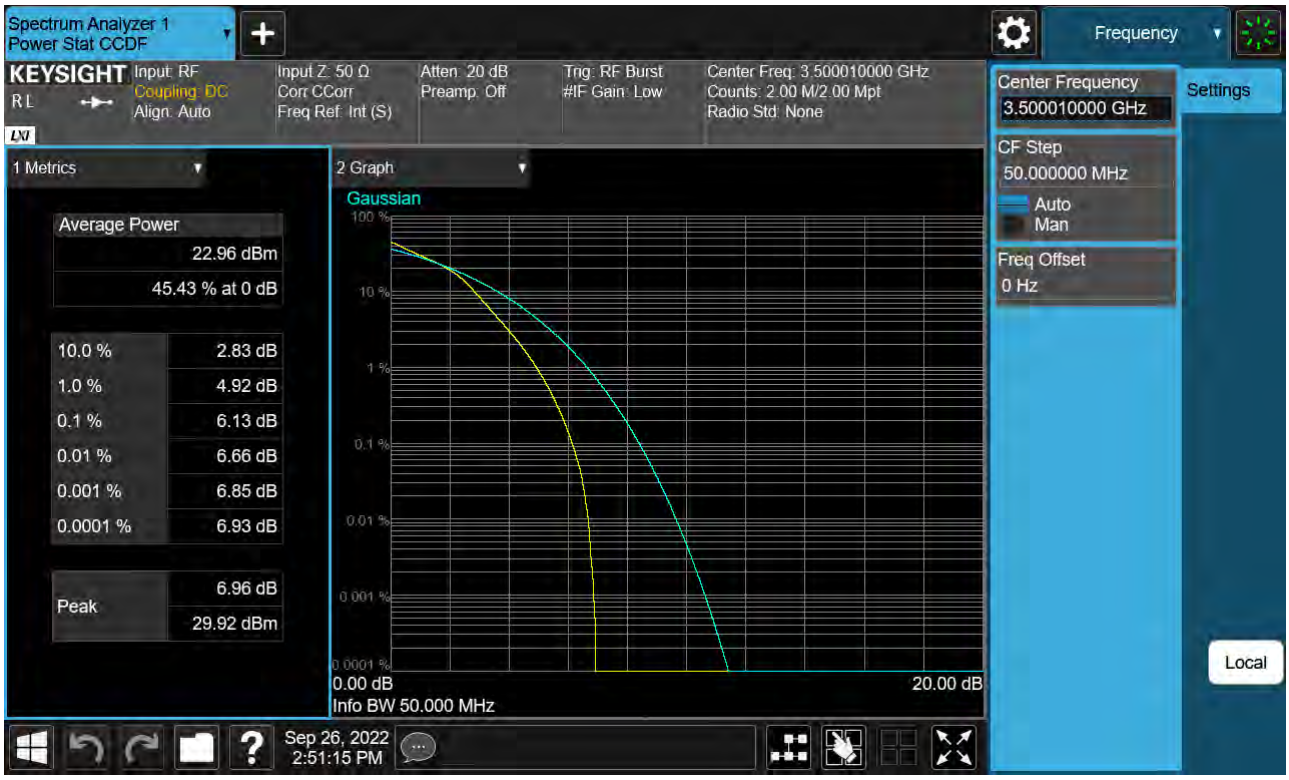
Sub6 n77. PAR Plot (50 M BW_Ch.633334_ BPSK)



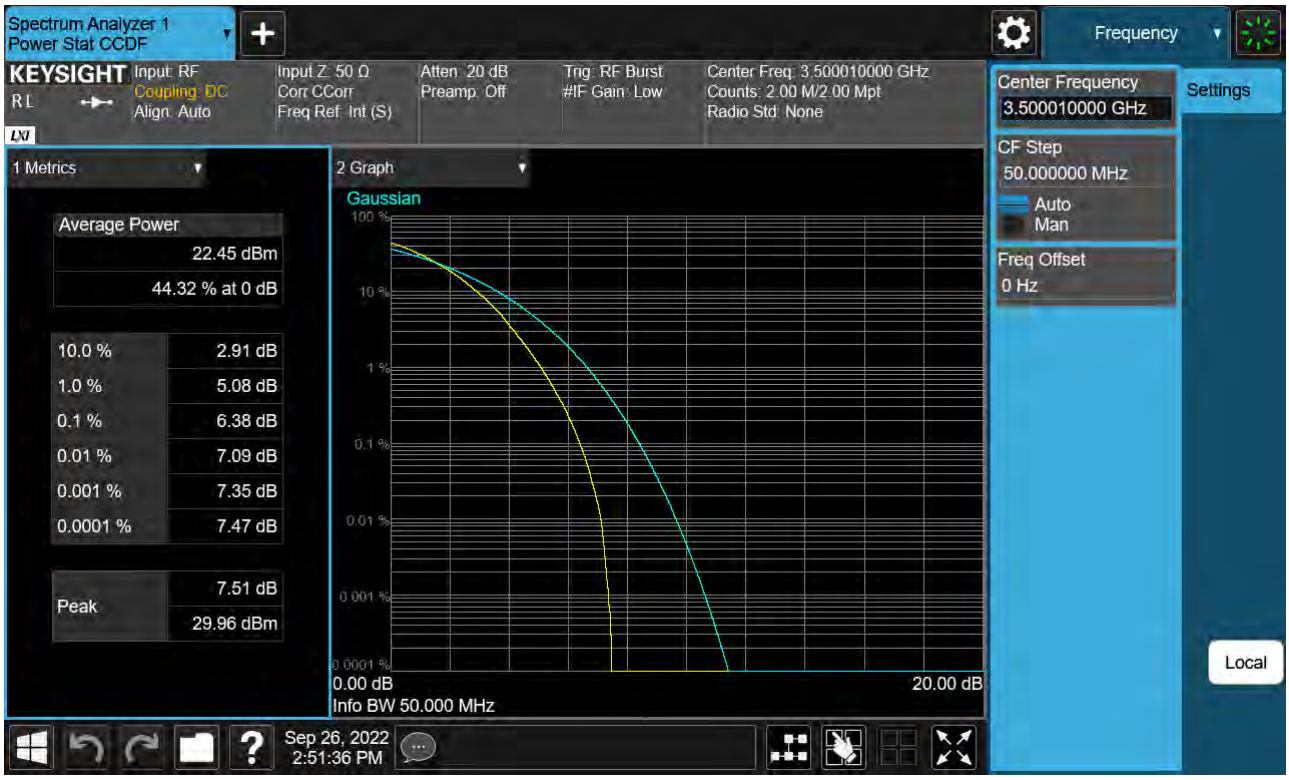
Sub6 n77. PAR Plot (50 M BW_Ch.633334_QPSK)



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

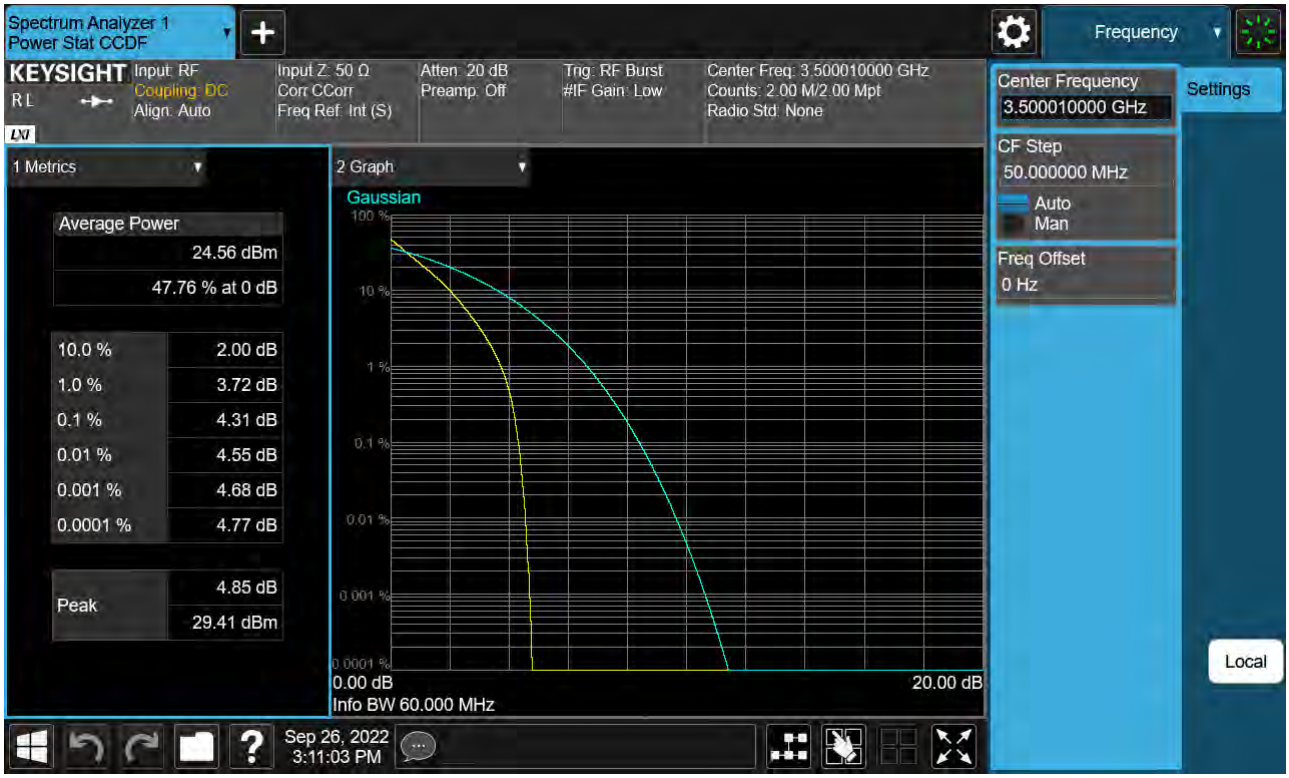


Sub6 n77. PAR Plot (50 M BW_Ch.633334_64QAM)



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)