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

FCC Sub6 REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
October 20, 2021

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

Report No.: HCT-RF-2110-FC015

FCC ID:	**A3LSMA136U**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-A136U
Additional Model(s):	SM-A136U1, SM-S136DL
EUT Type:	Mobile Phone
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2

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	8M60G7D	PI/2 BPSK	0.190	22.78
		8M60G7D	QPSK	0.186	22.70
		8M62W7D	16QAM	0.151	21.80
		8M53W7D	64QAM	0.103	20.13
		8M48W7D	256QAM	0.072	18.57
Sub6 n77 (15)	3457.50 – 3542.50	13M1G7D	PI/2 BPSK	0.184	22.64
		13M2G7D	QPSK	0.180	22.55
		13M1W7D	16QAM	0.148	21.69
		13M2W7D	64QAM	0.100	20.01
		13M2W7D	256QAM	0.069	18.36
Sub6 n77 (20)	3460.02 – 3540.00	18M1G7D	PI/2 BPSK	0.181	22.58
		18M2G7D	QPSK	0.179	22.54
		18M2W7D	16QAM	0.142	21.52
		18M2W7D	64QAM	0.098	19.91
		18M2W7D	256QAM	0.066	18.22
Sub6 n77 (40)	3470.01 – 3529.98	36M1G7D	PI/2 BPSK	0.160	22.04
		36M1G7D	QPSK	0.157	21.96
		36M1W7D	16QAM	0.126	21.02
		36M1W7D	64QAM	0.087	19.41
		35M9W7D	256QAM	0.062	17.90
Sub6 n77 (50)	3475.02 – 3525.00	46M0G7D	PI/2 BPSK	0.168	22.25
		46M2G7D	QPSK	0.167	22.22
		46M0W7D	16QAM	0.134	21.27
		46M3W7D	64QAM	0.092	19.65
		45M9W7D	256QAM	0.064	18.03
Sub6 n77 (60)	3480.00 – 3519.99	57M9G7D	PI/2 BPSK	0.164	22.14
		57M7G7D	QPSK	0.162	22.10
		57M9W7D	16QAM	0.123	20.89
		57M7W7D	64QAM	0.090	19.56
		57M6W7D	256QAM	0.059	17.71
Sub6 n77 (70)	3485.01 – 3514.98	64M6G7D	PI/2 BPSK	0.161	22.06
		64M7G7D	QPSK	0.156	21.93
		64M7W7D	16QAM	0.125	20.98
		64M9W7D	64QAM	0.087	19.39
		64M5W7D	256QAM	0.061	17.88
Sub6 n77 (80)	3490.02 – 3510.00	77M0G7D	PI/2 BPSK	0.147	21.68
		77M5G7D	QPSK	0.146	21.66
		77M3W7D	16QAM	0.116	20.63
		77M6W7D	64QAM	0.080	19.03
		77M0W7D	256QAM	0.058	17.61
Sub6 n77 (90)	3495.00 – 3504.99	86M8G7D	PI/2 BPSK	0.135	21.29
		86M9G7D	QPSK	0.133	21.25
		86M8W7D	16QAM	0.107	20.28
		87M0W7D	64QAM	0.074	18.70
		86M5W7D	256QAM	0.053	17.23
Sub6 n77 (100)	3500.01	96M4G7D	PI/2 BPSK	0.113	20.55
		96M2G7D	QPSK	0.110	20.42
		96M7W7D	16QAM	0.089	19.49
		96M9W7D	64QAM	0.062	17.90
		96M3W7D	256QAM	0.044	16.47

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	8M63G7D	PI/2 BPSK	0.190	22.79
		8M58G7D	QPSK	0.190	22.78
		8M55W7D	16QAM	0.148	21.69
		8M56W7D	64QAM	0.104	20.17
		8M49W7D	256QAM	0.067	18.29
Sub6 n77 (15)	3707.51 – 3972.48	13M1G7D	PI/2 BPSK	0.180	22.54
		13M2G7D	QPSK	0.178	22.49
		13M1W7D	16QAM	0.140	21.47
		13M3W7D	64QAM	0.096	19.83
		13M1W7D	256QAM	0.064	18.05
Sub6 n77 (20)	3710.01 – 3969.99	18M3G7D	PI/2 BPSK	0.165	22.16
		18M2G7D	QPSK	0.163	22.11
		18M2W7D	16QAM	0.127	21.05
		18M1W7D	64QAM	0.088	19.42
		18M2W7D	256QAM	0.058	17.66
Sub6 n77 (40)	3720.00 – 3960.00	35M9G7D	PI/2 BPSK	0.137	21.36
		36M1G7D	QPSK	0.136	21.34
		36M1W7D	16QAM	0.108	20.33
		36M3W7D	64QAM	0.075	18.74
		36M0W7D	256QAM	0.053	17.23
Sub6 n77 (50)	3725.10 – 3954.99	46M1G7D	PI/2 BPSK	0.146	21.65
		46M0G7D	QPSK	0.143	21.54
		45M8W7D	16QAM	0.113	20.53
		46M0W7D	64QAM	0.078	18.94
		45M9W7D	256QAM	0.054	17.35
Sub6 n77 (60)	3730.02 – 3949.98	57M9G7D	PI/2 BPSK	0.149	21.72
		57M8G7D	QPSK	0.146	21.65
		57M7W7D	16QAM	0.118	20.73
		57M7W7D	64QAM	0.081	19.10
		57M6W7D	256QAM	0.057	17.55
Sub6 n77 (70)	3735.00 – 3945.00	64M7G7D	PI/2 BPSK	0.150	21.77
		64M6G7D	QPSK	0.148	21.69
		64M3W7D	16QAM	0.119	20.77
		64M6W7D	64QAM	0.081	19.09
		64M7W7D	256QAM	0.058	17.64
Sub6 n77 (80)	3740.01 – 3939.99	77M4G7D	PI/2 BPSK	0.149	21.72
		77M5G7D	QPSK	0.147	21.66
		77M3W7D	16QAM	0.118	20.71
		77M4W7D	64QAM	0.081	19.09
		77M2W7D	256QAM	0.058	17.66
Sub6 n77 (90)	3745.02 – 3934.98	87M0G7D	PI/2 BPSK	0.144	21.57
		86M6G7D	QPSK	0.142	21.51
		86M5W7D	16QAM	0.114	20.56
		86M5W7D	64QAM	0.079	18.96
		86M4W7D	256QAM	0.057	17.54
Sub6 n77 (100)	3750.00 – 3930.00	96M4G7D	PI/2 BPSK	0.141	21.49
		96M3G7D	QPSK	0.139	21.44
		96M3W7D	16QAM	0.108	20.34
		96M4W7D	64QAM	0.077	18.84
		96M1W7D	256QAM	0.055	17.41

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)

REVIEWED BY

Report prepared by : Jae Ryang Do
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-2110-FC015	October 20, 2021	- 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:	A3LSMA136U
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-A136U
Additional Model(s):	SM-A136U1, SM-S136DL
SCS(kHz):	30
Bandwidth(MHz):	10, 15, 20, 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)) 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)) 3720.00 MHz – 3960.00 MHz (Sub6 n77(40 MHz)) 3725.10 MHz – 3954.99 MHz (Sub6 n77(50 MHz)) 3730.02 MHz – 3949.98 MHz (Sub6 n77(60 MHz)) 3735.00 MHz – 3945.00 MHz (Sub6 n77(70 MHz)) 3740.01 MHz – 3939.99 MHz (Sub6 n77(80 MHz)) 3745.02 MHz – 3934.98 MHz (Sub6 n77(90 MHz)) 3750.00 MHz – 3930.00 MHz (Sub6 n77(100 MHz))
Date(s) of Tests:	September 13, 2021 ~ October 19, 2021
Serial number:	Radiated: 420015e6dcbb8865 Conducted: R3CR807JGZN

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 (HT20/40/80), Bluetooth, BT LE, NFC.

2.2. MEASURING INSTRUMENT CALIBRATION

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

2.3. TEST FACILITY

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

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

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

3.2 RADIATED POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

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

Test Settings

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

Test Note

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

   The power is calculated by the following formula;

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

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

3.3 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

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

Test Settings

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

Test Note

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

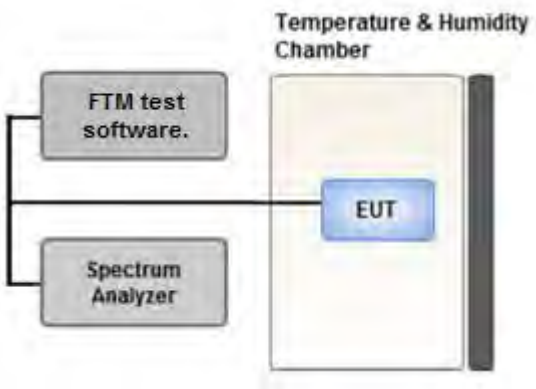
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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

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

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

3.4 PEAK- TO- AVERAGE RATIO



Test setup

① **CCDF Procedure for PAPR**

Test Settings

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Set the measurement interval as follows:
   .- for continuous transmissions, set to 1 ms,
   .- or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
4. Record the maximum PAPR level associated with a probability of 0.1 %.

② **Alternate Procedure for PAPR**

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

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

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

Test Settings(Peak Power)

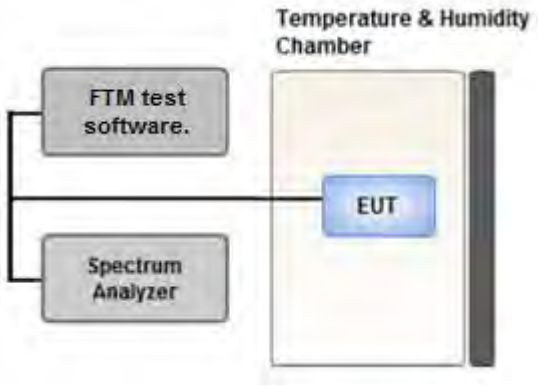
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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

Test Settings(Average Power)

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

3.5 OCCUPIED BANDWIDTH.



Test setup

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

The EUT makes a call to the communication simulator.

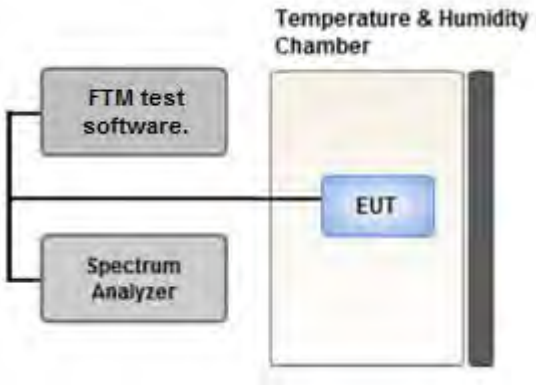
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

Test Settings

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

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

Test Overview

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

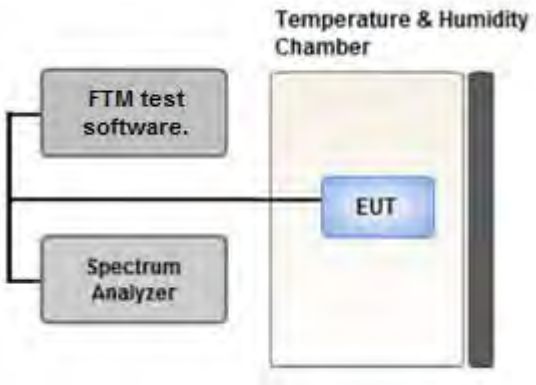
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

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

Test Settings

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

3.7 BAND EDGE



Test setup

Test Overview

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

Test Settings

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

Test Notes

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

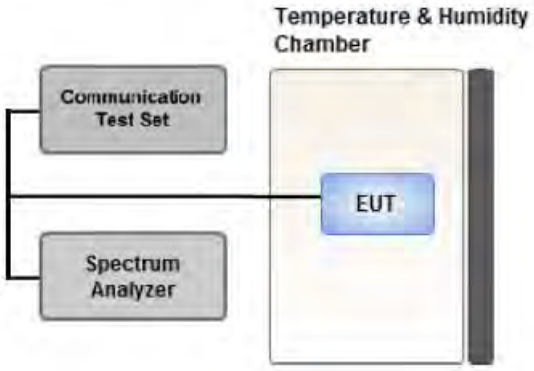
Compliance with this paragraph is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

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

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

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

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

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

The frequency stability of the transmitter is measured by:

1. Temperature:

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

2. Primary Supply Voltage:

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

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

Test Settings

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

3.9 WORST CASE(RADIATED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: Power Class 2(SA), Power Class 3(SA/ NSA)
  Worst case: Power Class 2(SA)
- All radiated spurious emissions were investigated and the worst case bandwidth results are reported.
- Radiated Spurious emissions are measured while operating in EN-DC mode with Sub 6 NR carrier as well as an LTE carrier (anchor).
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-A136U & additional models were tested and the worst case results are reported.
  (Worst case : SM-A136U)

[3450 MHz - 3550 MHz Worst case]

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

[3700 MHz - 3980 MHz Worst case]

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

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
  (Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: Power Class 2(SA), Power Class 3(SA/ NSA)
  Worst case: Power Class 2(SA)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-A136U & additional models were tested and the worst case results are reported.
  (Worst case : SM-A136U)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth,	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	10, 15, 20, 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, 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
		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, 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, 40, 50, 60, 70, 80, 90, 100	Low, Mid, High	1	1

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
Precision Dipole Antenna	UHAP	Schwarzbeck	01273	05/30/2022	Biennial
Precision Dipole Antenna	UHAP	Schwarzbeck	01274	05/30/2022	Biennial
Horn Antenna(1~18GHz)	BBHA 9120D	Schwarzbeck	02289	05/08/2022	Biennial
Horn Antenna(1~18GHz)	BBHA 9120D	Schwarzbeck	9120D-1299	05/04/2022	Biennial
Horn Antenna(15~40GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	10/13/2022	Biennial
Horn Antenna(15~40GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	02/11/2022	Biennial
Loop Antenna(9kHz~30 MHz)	FMZB1513	Rohde & Schwarz	1513-175	05/18/2022	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/03/2023	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/22/2023	Biennial
High Pass Filter	WHKX10-900-1000-15000-40SS	Wainwright Instruments	15	06/15/2022	Annual
High Pass Filter	WHKX10-2700-3000-18000-40SS	Wainwright Instruments	145	06/15/2022	Annual
High Pass Filter	WHNX6-4740-6000-26500-40CC	Wainwright Instruments	11	06/15/2022	Annual
LOW NOISE AMP (100 MHz ~ 18GHz)	CBLU1183540B-01	CERNEX	26822	06/15/2022	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/04/2021	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/23/2022	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	09/15/2022	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	04/07/2022	Annual
Chamber	SU-642	ESPEC	93008124	03/15/2022	Annual
Signal Analyzer(10Hz~26.5GHz)	N9020A	Agilent	MY51110063	04/22/2022	Annual
ATTENUATOR(20dB)	8493C	Hewlett Packard	17280	06/01/2022	Annual
Spectrum Analyzer(10Hz~40GHz)	FSV40	REOHDE & SCHWARZ	101436	03/02/2022	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2022	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262116770	07/12/2022	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	01/07/2022	Annual
SIGNAL GENERATOR (100kHz~40GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/05/2022	Annual
Signal Analyzer(5Hz~40.0GHz)	N9030B	KEYSIGHT	MY55480167	06/02/2022	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

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

5. MEASUREMENT UNCERTAINTY

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

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

6. SUMMARY OF TEST RESULTS

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§2.1051, §27.53(n)(2)	< -13 dBm	PASS
Conducted Output Power	§2.1046	N/A	**See Note1**
Peak- to- Average Ratio	§27.50(k)(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)	< 1 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§2.1051, §27.53(n)(2)	< -13 dBm	PASS

Note:

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

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

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

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

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

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

3) Record the field strength meter's level.

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

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

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

7.2 EIRP Sample Calculation

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

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

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

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

3) Record the field strength meter's level.

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

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

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

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

PSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

8. TEST DATA (3450 MHz - 3550 MHz)

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3455.01	Sub6 n77/ 10 MHz [30 kHz]	PI/2 BPSK	-25.09	12.91	11.32	3.05	V	< 1.00	0.131	21.19
		QPSK	-25.10	12.90	11.32	3.05	V		0.131	21.18
		16-QAM	-26.06	11.94	11.32	3.05	V		0.105	20.22
		64-QAM	-27.66	10.34	11.32	3.05	V		0.073	18.62
		256-QAM	-29.26	8.74	11.32	3.05	V		0.050	17.02
3500.01		PI/2 BPSK	-24.09	14.08	11.50	3.06	V		0.179	22.52
		QPSK	-24.18	13.99	11.50	3.06	V		0.175	22.43
		16-QAM	-25.21	12.96	11.50	3.06	V		0.138	21.40
		64-QAM	-26.71	11.46	11.50	3.06	V		0.098	19.90
		256-QAM	-28.47	9.70	11.50	3.06	V		0.065	18.14
3544.99		PI/2 BPSK	-23.99	14.18	11.68	3.08	V		0.190	22.78
		QPSK	-24.07	14.10	11.68	3.08	V		0.186	22.70
		16-QAM	-24.97	13.20	11.68	3.08	V		0.151	21.80
		64-QAM	-26.64	11.53	11.68	3.08	V		0.103	20.13
		256-QAM	-28.20	9.97	11.68	3.08	V		0.072	18.57

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3457.50	Sub6 n77/ 15 MHz [30 kHz]	PI/2 BPSK	-25.09	12.87	11.34	3.03	V	< 1.00	0.131	21.18
		QPSK	-25.11	12.85	11.34	3.03	V		0.131	21.16
		16-QAM	-26.16	11.80	11.34	3.03	V		0.103	20.11
		64-QAM	-27.76	10.20	11.34	3.03	V		0.071	18.51
		256-QAM	-29.29	8.67	11.34	3.03	V		0.050	16.98
3500.01		PI/2 BPSK	-24.23	13.94	11.50	3.06	V		0.173	22.38
		QPSK	-24.27	13.90	11.50	3.06	V		0.171	22.34
		16-QAM	-25.34	12.83	11.50	3.06	V		0.134	21.27
		64-QAM	-26.86	11.31	11.50	3.06	V		0.094	19.75
		256-QAM	-28.51	9.66	11.50	3.06	V		0.065	18.10
3542.50		PI/2 BPSK	-24.01	14.05	11.66	3.07	V		0.184	22.64
		QPSK	-24.10	13.96	11.66	3.07	V		0.180	22.55
		16-QAM	-24.96	13.10	11.66	3.07	V		0.148	21.69
		64-QAM	-26.64	11.42	11.66	3.07	V		0.100	20.01
		256-QAM	-28.29	9.77	11.66	3.07	V		0.069	18.36

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3460.02	Sub6 n77/ 20 MHz [30 kHz]	PI/2 BPSK	-25.11	12.85	11.34	3.03	V	< 1.00	0.131	21.16
		QPSK	-25.22	12.74	11.34	3.03	V		0.127	21.05
		16-QAM	-26.21	11.75	11.34	3.03	V		0.101	20.06
		64-QAM	-27.79	10.17	11.34	3.03	V		0.070	18.48
		256-QAM	-29.38	8.58	11.34	3.03	V		0.049	16.89
3500.01		PI/2 BPSK	-24.20	13.97	11.50	3.06	V		0.174	22.41
		QPSK	-24.33	13.84	11.50	3.06	V		0.169	22.28
		16-QAM	-25.21	12.96	11.50	3.06	V		0.138	21.40
		64-QAM	-26.81	11.36	11.50	3.06	V		0.095	19.80
		256-QAM	-28.43	9.74	11.50	3.06	V		0.066	18.18
3540.00		PI/2 BPSK	-24.07	13.99	11.66	3.07	V		0.181	22.58
		QPSK	-24.11	13.95	11.66	3.07	V		0.179	22.54
		16-QAM	-25.13	12.93	11.66	3.07	V		0.142	21.52
		64-QAM	-26.74	11.32	11.66	3.07	V		0.098	19.91
		256-QAM	-28.43	9.63	11.66	3.07	V		0.066	18.22

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3470.01	Sub6 n77/ 40 MHz [30 kHz]	PI/2 BPSK	-25.58	12.19	11.38	3.00	V	< 1.00	0.114	20.57
		QPSK	-25.61	12.16	11.38	3.00	V		0.113	20.54
		16-QAM	-26.71	11.06	11.38	3.00	V		0.088	19.44
		64-QAM	-28.30	9.47	11.38	3.00	V		0.061	17.85
		256-QAM	-29.78	7.99	11.38	3.00	V		0.043	16.37
3500.01		PI/2 BPSK	-24.67	13.50	11.50	3.06	V		0.156	21.94
		QPSK	-24.76	13.41	11.50	3.06	V		0.153	21.85
		16-QAM	-25.79	12.38	11.50	3.06	V		0.121	20.82
		64-QAM	-27.38	10.79	11.50	3.06	V		0.084	19.23
		256-QAM	-29.19	8.98	11.50	3.06	V		0.055	17.42
3529.98		PI/2 BPSK	-24.59	13.46	11.62	3.04	V		0.160	22.04
		QPSK	-24.67	13.38	11.62	3.04	V		0.157	21.96
		16-QAM	-25.61	12.44	11.62	3.04	V		0.126	21.02
		64-QAM	-27.22	10.83	11.62	3.04	V		0.087	19.41
		256-QAM	-28.73	9.32	11.62	3.04	V		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	
								W	W	dBm
3475.02	Sub6 n77/ 50 MHz [30 kHz]	PI/2 BPSK	-25.36	12.39	11.40	3.01	V	< 1.00	0.120	20.78
		QPSK	-25.38	12.37	11.40	3.01	V		0.119	20.76
		16-QAM	-26.41	11.34	11.40	3.01	V		0.094	19.73
		64-QAM	-28.01	9.74	11.40	3.01	V		0.065	18.13
		256-QAM	-29.53	8.21	11.40	3.01	V		0.046	16.61
3500.01		PI/2 BPSK	-24.67	13.50	11.50	3.06	V		0.156	21.94
		QPSK	-24.83	13.34	11.50	3.06	V		0.151	21.78
		16-QAM	-25.73	12.44	11.50	3.06	V		0.122	20.88
		64-QAM	-27.33	10.84	11.50	3.06	V		0.085	19.28
		256-QAM	-28.94	9.23	11.50	3.06	V		0.058	17.67
3525.00		PI/2 BPSK	-24.41	13.70	11.60	3.05	V		0.168	22.25
		QPSK	-24.44	13.67	11.60	3.05	V		0.167	22.22
		16-QAM	-25.39	12.72	11.60	3.05	V		0.134	21.27
		64-QAM	-27.01	11.10	11.60	3.05	V		0.092	19.65
		256-QAM	-28.63	9.48	11.60	3.05	V		0.064	18.03

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3480.00	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-25.48	12.24	11.42	3.02	V	< 1.00	0.116	20.64
		QPSK	-25.56	12.16	11.42	3.02	V		0.114	20.56
		16-QAM	-26.43	11.29	11.42	3.02	V		0.093	19.69
		64-QAM	-28.15	9.57	11.42	3.02	V		0.063	17.97
		256-QAM	-29.73	7.99	11.42	3.02	V		0.044	16.39
3500.01		PI/2 BPSK	-24.81	13.36	11.50	3.06	V		0.151	21.80
		QPSK	-24.90	13.27	11.50	3.06	V		0.148	21.71
		16-QAM	-25.85	12.32	11.50	3.06	V		0.119	20.76
		64-QAM	-27.45	10.72	11.50	3.06	V		0.082	19.16
		256-QAM	-29.06	9.11	11.50	3.06	V		0.057	17.55
3519.99		PI/2 BPSK	-24.56	13.61	11.58	3.05	V		0.164	22.14
		QPSK	-24.60	13.57	11.58	3.05	V		0.162	22.10
		16-QAM	-25.81	12.36	11.58	3.05	V		0.123	20.89
		64-QAM	-27.14	11.03	11.58	3.05	V		0.090	19.56
		256-QAM	-28.99	9.18	11.58	3.05	V		0.059	17.71

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3485.01	Sub6 n77/ 70 MHz [30 kHz]	PI/2 BPSK	-25.64	12.18	11.44	3.04	V	< 1.00	0.114	20.59
		QPSK	-25.69	12.13	11.44	3.04	V		0.113	20.54
		16-QAM	-26.66	11.16	11.44	3.04	V		0.090	19.57
		64-QAM	-28.26	9.56	11.44	3.04	V		0.063	17.97
		256-QAM	-29.76	8.06	11.44	3.04	V		0.044	16.47
3500.01		PI/2 BPSK	-24.95	13.22	11.50	3.06	V		0.146	21.66
		QPSK	-25.00	13.17	11.50	3.06	V		0.145	21.61
		16-QAM	-26.09	12.08	11.50	3.06	V		0.113	20.52
		64-QAM	-27.67	10.50	11.50	3.06	V		0.078	18.94
		256-QAM	-29.11	9.06	11.50	3.06	V		0.056	17.50
3514.98		PI/2 BPSK	-24.73	13.59	11.52	3.06	V		0.161	22.06
		QPSK	-24.86	13.46	11.52	3.06	V		0.156	21.93
		16-QAM	-25.81	12.51	11.52	3.06	V		0.125	20.98
		64-QAM	-27.40	10.92	11.52	3.06	V		0.087	19.39
		256-QAM	-28.91	9.41	11.52	3.06	V		0.061	17.88

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3490.02	Sub6 n77/ 80 MHz [30 kHz]	PI/2 BPSK	-25.78	12.14	11.46	3.05	V	< 1.00	0.114	20.55
		QPSK	-25.81	12.11	11.46	3.05	V		0.113	20.52
		16-QAM	-26.74	11.18	11.46	3.05	V		0.091	19.59
		64-QAM	-28.39	9.53	11.46	3.05	V		0.062	17.94
		256-QAM	-29.86	8.06	11.46	3.05	V		0.044	16.47
3500.01		PI/2 BPSK	-25.45	12.72	11.50	3.06	V		0.131	21.16
		QPSK	-25.58	12.59	11.50	3.06	V		0.127	21.03
		16-QAM	-26.45	11.72	11.50	3.06	V		0.104	20.16
		64-QAM	-28.04	10.13	11.50	3.06	V		0.072	18.57
		256-QAM	-29.46	8.71	11.50	3.06	V		0.052	17.15
3510.00		PI/2 BPSK	-25.19	13.20	11.54	3.06	V		0.147	21.68
		QPSK	-25.21	13.18	11.54	3.06	V		0.146	21.66
		16-QAM	-26.24	12.15	11.54	3.06	V		0.116	20.63
		64-QAM	-27.84	10.55	11.54	3.06	V		0.080	19.03
		256-QAM	-29.26	9.13	11.54	3.06	V		0.058	17.61

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3495.00	Sub6 n77/ 90 MHz [30 kHz]	PI/2 BPSK	-25.86	12.19	11.48	3.06	V	< 1.00	0.115	20.61
		QPSK	-25.92	12.13	11.48	3.06	V		0.114	20.55
		16-QAM	-27.04	11.01	11.48	3.06	V		0.088	19.43
		64-QAM	-28.56	9.49	11.48	3.06	V		0.062	17.91
		256-QAM	-30.21	7.84	11.48	3.06	V		0.042	16.26
3500.01		PI/2 BPSK	-25.64	12.53	11.50	3.06	V		0.125	20.97
		QPSK	-25.80	12.37	11.50	3.06	V		0.120	20.81
		16-QAM	-26.71	11.46	11.50	3.06	V		0.098	19.90
		64-QAM	-28.31	9.86	11.50	3.06	V		0.068	18.30
		256-QAM	-30.01	8.16	11.50	3.06	V		0.046	16.60
3504.99		PI/2 BPSK	-25.45	12.83	11.52	3.06	V		0.135	21.29
		QPSK	-25.49	12.79	11.52	3.06	V		0.133	21.25
		16-QAM	-26.46	11.82	11.52	3.06	V		0.107	20.28
		64-QAM	-28.04	10.24	11.52	3.06	V		0.074	18.70
		256-QAM	-29.51	8.77	11.52	3.06	V		0.053	17.23

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3500.01	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-26.06	12.11	11.50	3.06	V	< 1.00	0.113	20.55
		QPSK	-26.19	11.98	11.50	3.06	V		0.110	20.42
		16-QAM	-27.12	11.05	11.50	3.06	V		0.089	19.49
		64-QAM	-28.71	9.46	11.50	3.06	V		0.062	17.90
		256-QAM	-30.14	8.03	11.50	3.06	V		0.044	16.47

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77

▣ Bandwidth: 10 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 1 meters

▣ SCS: 30 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
630334 (3455.01)	6 910.02	-59.31	11.10	-51.97	4.34	V	-45.21	-13.00
	10 365.03	-52.81	11.80	-40.31	5.40	V	-33.90	-13.00
	13 820.04	-45.35	13.06	-32.04	6.44	H	-25.42	-13.00
633334 (3500.01)	7 000.02	-56.07	11.20	-47.45	4.38	V	-40.63	-13.00
	10 500.03	-49.83	11.80	-36.41	5.49	V	-30.10	-13.00
	14 000.04	-45.89	12.90	-33.45	6.48	H	-27.03	-13.00
636322 (3544.99)	7 089.98	-54.75	11.04	-45.88	4.46	V	-39.30	-13.00
	10 634.97	-47.64	11.70	-34.28	5.44	V	-28.02	-13.00
	14 179.96	-45.11	12.96	-33.58	6.50	V	-27.12	-13.00

ENDC-Mode: 2A-n77A

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
18900 (1880.0)	3760.00	-56.55	11.64	-56.78	3.16	V	-48.30	-13.00
	5640.00	-61.41	12.00	-55.23	3.93	H	-47.16	-13.00
	7520.00	-58.67	11.54	-44.22	4.51	H	-37.19	-13.00

Note : All EN-DC mode of operation were investigated and the worst case configuration results are reported.

(Worst case: 2A-n77A(BW 10 MHz))

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	24	0	4.96
			QPSK			5.68
			16-QAM			6.23
			64-QAM			6.49
			256-QAM			7.60
	15 MHz		BPSK	36		4.82
			QPSK			5.61
			16-QAM			6.13
			64-QAM			6.45
			256-QAM			7.40
	20 MHz		BPSK	50		4.79
			QPSK			5.65
			16-QAM			6.15
			64-QAM			6.36
			256-QAM			7.53
	40 MHz		BPSK	100		4.80
			QPSK			5.66
			16-QAM			6.16
			64-QAM			6.32
			256-QAM			7.52
	50 MHz		BPSK	128		4.86
			QPSK			5.53
			16-QAM			6.08
			64-QAM			6.32
			256-QAM			7.43
	60 MHz		BPSK	162		4.75
			QPSK			5.53
			16-QAM			6.09
			64-QAM			6.35
			256-QAM			7.47

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n77	70 MHz	3500.01	BPSK	180	0	4.85
			QPSK			5.62
			16-QAM			6.19
			64-QAM			6.40
			256-QAM			7.50
	80 MHz		BPSK	216		5.12
			QPSK			5.64
			16-QAM			6.17
			64-QAM			6.41
			256-QAM			7.64
	90 MHz		BPSK	243		4.89
			QPSK			5.67
			16-QAM			6.17
			64-QAM			6.37
			256-QAM			7.49
	100 MHz		BPSK	270		5.22
			QPSK			5.61
			16-QAM			6.20
			64-QAM			6.44
			256-QAM			7.69

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 134 ~ 183.

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	24	0	8.5966
			QPSK			8.6014
			16-QAM			8.6224
			64-QAM			8.5301
			256-QAM			8.4787
	15 MHz		BPSK	36		13.140
			QPSK			13.223
			16-QAM			13.110
			64-QAM			13.140
			256-QAM			13.233
	20 MHz		BPSK	50		18.060
			QPSK			18.218
			16-QAM			18.195
			64-QAM			18.205
			256-QAM			18.168
	40 MHz		BPSK	100		36.136
			QPSK			36.135
			16-QAM			36.140
			64-QAM			36.129
			256-QAM			35.930
	50 MHz		BPSK	128		46.014
			QPSK			46.159
			16-QAM			46.012
			64-QAM			46.265
			256-QAM			45.887
	60 MHz		BPSK	162		57.891
			QPSK			57.735
			16-QAM			57.905
			64-QAM			57.679
			256-QAM			57.557

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n77	70 MHz	3500.01	BPSK	180	0	64.638
			QPSK			64.672
			16-QAM			64.705
			64-QAM			64.863
			256-QAM			64.521
	80 MHz		BPSK	216		77.036
			QPSK			77.484
			16-QAM			77.342
			64-QAM			77.589
			256-QAM			76.970
	90 MHz		BPSK	243		86.828
			QPSK			86.895
			16-QAM			86.794
			64-QAM			87.022
			256-QAM			86.451
	100 MHz		BPSK	270		96.395
			QPSK			96.187
			16-QAM			96.674
			64-QAM			96.872
			256-QAM			96.288

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 84 ~ 133.

8.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n77	10	3455.01	8.8709	37.805	-69.575	-31.770	-13.00
		3500.01	5.2164	37.805	-70.731	-32.926	
		3544.99	8.0234	37.805	-70.676	-32.871	
	15	3457.50	4.9013	37.190	-70.988	-33.798	
		3500.01	9.6466	37.805	-70.625	-32.820	
		3542.50	9.9756	37.805	-70.407	-32.602	
	20	3460.02	6.0369	37.805	-70.038	-32.233	
		3500.01	9.6755	37.805	-70.981	-33.176	
		3540.00	8.0160	37.805	-69.936	-32.131	
	40	3470.01	9.1775	37.805	-70.489	-32.684	
		3500.01	4.9741	37.190	-69.639	-32.449	
		3529.98	4.9711	37.190	-69.940	-32.750	
	50	3475.02	8.5613	37.805	-70.253	-32.448	
		3500.01	5.2244	37.805	-70.798	-32.993	
		3525.00	4.5389	37.190	-69.774	-32.584	
	60	3480.00	8.8689	37.805	-70.936	-33.131	
		3500.01	9.9352	37.805	-70.185	-32.380	
		3519.99	5.1815	37.805	-70.401	-32.596	
	70	3485.01	7.1541	37.805	-70.320	-32.515	
		3500.01	9.7139	37.805	-70.334	-32.529	
		3514.98	5.4866	37.805	-69.829	-32.024	
	80	3490.02	8.0040	37.805	-70.356	-32.551	
		3500.01	4.8694	37.190	-70.591	-33.401	
		3510.00	5.2413	37.805	-70.341	-32.536	
	90	3495.00	6.0379	37.805	-70.545	-32.740	
		3500.01	7.9970	37.805	-70.311	-32.506	
		3504.99	9.9452	37.805	-70.710	-32.905	
	100	3500.01	7.2174	37.805	-69.960	-32.155	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 304 ~ 359.

2. Duty Cycle factor already applied on the factor.

- Duty Cycle Factor(dB) = 6.990

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

- Result(dBm) = Reading + Factor

3. Factor(dB)

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

8.6 BAND EDGE

1. Plots of the EUT's Band Edge are shown Page 184 ~ 303.
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 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3455.010	100 %	+20(Ref)	3455 010 003	0.0	0.000 000	0.000
	100 %	-30	3455 010 012	8.9	0.000 000	0.003
	100 %	-20	3455 010 011	7.4	0.000 000	0.002
	100 %	-10	3455 010 017	13.7	0.000 000	0.004
	100 %	0	3455 010 020	16.5	0.000 000	0.005
	100 %	+10	3455 010 012	8.7	0.000 000	0.003
	100 %	+30	3455 010 011	7.9	0.000 000	0.002
	100 %	+40	3455 010 020	16.8	0.000 000	0.005
	100 %	+50	3455 010 011	7.9	0.000 000	0.002
	Batt. Endpoint	+20	3455 010 019	16.4	0.000 000	0.005
3544.980	100 %	+20(Ref)	3544 980 009	0.0	0.000 000	0.000
	100 %	-30	3544 980 020	11.1	0.000 000	0.003
	100 %	-20	3544 980 024	15.1	0.000 000	0.004
	100 %	-10	3544 980 013	4.5	0.000 000	0.001
	100 %	0	3544 980 018	8.8	0.000 000	0.002
	100 %	+10	3544 980 023	14.3	0.000 000	0.004
	100 %	+30	3544 980 024	14.7	0.000 000	0.004
	100 %	+40	3544 980 014	5.5	0.000 000	0.002
	100 %	+50	3544 980 015	6.2	0.000 000	0.002
	Batt. Endpoint	+20	3544 980 016	7.0	0.000 000	0.002

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3457.500	100 %	+20(Ref)	3457 500 013	0.0	0.000 000	0.000
	100 %	-30	3457 500 023	9.9	0.000 000	0.003
	100 %	-20	3457 500 016	3.0	0.000 000	0.001
	100 %	-10	3457 500 021	8.0	0.000 000	0.002
	100 %	0	3457 500 024	11.4	0.000 000	0.003
	100 %	+10	3457 500 025	12.5	0.000 000	0.004
	100 %	+30	3457 500 019	6.6	0.000 000	0.002
	100 %	+40	3457 500 028	15.0	0.000 000	0.004
	100 %	+50	3457 500 020	7.2	0.000 000	0.002
	Batt. Endpoint	+20	3457 500 016	3.4	0.000 000	0.001
3542.490	100 %	+20(Ref)	3542 490 014	0.0	0.000 000	0.000
	100 %	-30	3542 490 028	14.7	0.000 000	0.004
	100 %	-20	3542 490 030	16.6	0.000 000	0.005
	100 %	-10	3542 490 024	10.6	0.000 000	0.003
	100 %	0	3542 490 024	10.1	0.000 000	0.003
	100 %	+10	3542 490 020	5.7	0.000 000	0.002
	100 %	+30	3542 490 019	5.0	0.000 000	0.001
	100 %	+40	3542 490 024	10.0	0.000 000	0.003
	100 %	+50	3542 490 025	11.3	0.000 000	0.003
	Batt. Endpoint	+20	3542 490 017	3.3	0.000 000	0.001

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3460.020	100 %	+20(Ref)	3460 020 006	0.0	0.000 000	0.000
	100 %	-30	3460 020 014	7.9	0.000 000	0.002
	100 %	-20	3460 020 018	12.4	0.000 000	0.004
	100 %	-10	3460 020 010	3.6	0.000 000	0.001
	100 %	0	3460 020 021	15.3	0.000 000	0.004
	100 %	+10	3460 020 010	3.8	0.000 000	0.001
	100 %	+30	3460 020 013	7.0	0.000 000	0.002
	100 %	+40	3460 020 014	7.8	0.000 000	0.002
	100 %	+50	3460 020 014	8.5	0.000 000	0.002
	Batt. Endpoint	+20	3460 020 019	13.1	0.000 000	0.004
3540.000	100 %	+20(Ref)	3540 000 009	0.0	0.000 000	0.000
	100 %	-30	3540 000 018	9.6	0.000 000	0.003
	100 %	-20	3540 000 025	16.4	0.000 000	0.005
	100 %	-10	3540 000 024	14.8	0.000 000	0.004
	100 %	0	3540 000 021	12.4	0.000 000	0.004
	100 %	+10	3540 000 020	11.7	0.000 000	0.003
	100 %	+30	3540 000 015	6.2	0.000 000	0.002
	100 %	+40	3540 000 015	6.0	0.000 000	0.002
	100 %	+50	3540 000 024	15.4	0.000 000	0.004
	Batt. Endpoint	+20	3540 000 016	7.1	0.000 000	0.002

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3470.010	100 %	+20(Ref)	3470 010 016	0.0	0.000 000	0.000
	100 %	-30	3470 010 032	15.3	0.000 000	0.004
	100 %	-20	3470 010 033	16.3	0.000 000	0.005
	100 %	-10	3470 010 020	3.4	0.000 000	0.001
	100 %	0	3470 010 022	5.1	0.000 000	0.001
	100 %	+10	3470 010 026	9.3	0.000 000	0.003
	100 %	+30	3470 010 031	14.5	0.000 000	0.004
	100 %	+40	3470 010 027	10.6	0.000 000	0.003
	100 %	+50	3470 010 026	9.4	0.000 000	0.003
	Batt. Endpoint	+20	3470 010 022	5.7	0.000 000	0.002
3529.980	100 %	+20(Ref)	3529 980 017	0.0	0.000 000	0.000
	100 %	-30	3529 980 030	12.8	0.000 000	0.004
	100 %	-20	3529 980 024	7.5	0.000 000	0.002
	100 %	-10	3529 980 027	9.8	0.000 000	0.003
	100 %	0	3529 980 029	12.3	0.000 000	0.003
	100 %	+10	3529 980 025	8.5	0.000 000	0.002
	100 %	+30	3529 980 021	4.3	0.000 000	0.001
	100 %	+40	3529 980 031	14.1	0.000 000	0.004
	100 %	+50	3529 980 026	9.4	0.000 000	0.003
	Batt. Endpoint	+20	3529 980 023	5.9	0.000 000	0.002

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3475.020	100 %	+20(Ref)	3475 020 005	0.0	0.000 000	0.000
	100 %	-30	3475 020 011	6.2	0.000 000	0.002
	100 %	-20	3475 020 009	4.1	0.000 000	0.001
	100 %	-10	3475 020 012	7.6	0.000 000	0.002
	100 %	0	3475 020 014	9.0	0.000 000	0.003
	100 %	+10	3475 020 012	7.2	0.000 000	0.002
	100 %	+30	3475 020 015	10.2	0.000 000	0.003
	100 %	+40	3475 020 019	14.4	0.000 000	0.004
	100 %	+50	3475 020 013	8.1	0.000 000	0.002
	Batt. Endpoint	+20	3475 020 009	4.8	0.000 000	0.001
3525.000	100 %	+20(Ref)	3525 000 013	0.0	0.000 000	0.000
	100 %	-30	3525 000 021	7.7	0.000 000	0.002
	100 %	-20	3525 000 025	11.5	0.000 000	0.003
	100 %	-10	3525 000 030	16.7	0.000 000	0.005
	100 %	0	3525 000 021	8.1	0.000 000	0.002
	100 %	+10	3525 000 017	3.5	0.000 000	0.001
	100 %	+30	3525 000 017	4.2	0.000 000	0.001
	100 %	+40	3525 000 024	10.8	0.000 000	0.003
	100 %	+50	3525 000 021	8.0	0.000 000	0.002
	Batt. Endpoint	+20	3525 000 023	10.1	0.000 000	0.003

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3480.000	100 %	+20(Ref)	3480 000 008	0.0	0.000 000	0.000
	100 %	-30	3480 000 022	13.8	0.000 000	0.004
	100 %	-20	3480 000 024	16.5	0.000 000	0.005
	100 %	-10	3480 000 019	11.1	0.000 000	0.003
	100 %	0	3480 000 019	11.0	0.000 000	0.003
	100 %	+10	3480 000 016	8.3	0.000 000	0.002
	100 %	+30	3480 000 013	5.5	0.000 000	0.002
	100 %	+40	3480 000 024	16.1	0.000 000	0.005
	100 %	+50	3480 000 013	5.7	0.000 000	0.002
	Batt. Endpoint	+20	3480 000 016	7.9	0.000 000	0.002
3519.990	100 %	+20(Ref)	3519 990 003	0.0	0.000 000	0.000
	100 %	-30	3519 990 009	5.4	0.000 000	0.002
	100 %	-20	3519 990 020	16.2	0.000 000	0.005
	100 %	-10	3519 990 011	7.5	0.000 000	0.002
	100 %	0	3519 990 015	11.5	0.000 000	0.003
	100 %	+10	3519 990 013	9.4	0.000 000	0.003
	100 %	+30	3519 990 012	8.5	0.000 000	0.002
	100 %	+40	3519 990 019	15.9	0.000 000	0.005
	100 %	+50	3519 990 013	10.1	0.000 000	0.003
	Batt. Endpoint	+20	3519 990 010	6.5	0.000 000	0.002

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3485.010	100 %	+20(Ref)	3485 010 004	0.0	0.000 000	0.000
	100 %	-30	3485 010 011	7.5	0.000 000	0.002
	100 %	-20	3485 010 012	8.4	0.000 000	0.002
	100 %	-10	3485 010 011	7.3	0.000 000	0.002
	100 %	0	3485 010 018	14.5	0.000 000	0.004
	100 %	+10	3485 010 020	16.5	0.000 000	0.005
	100 %	+30	3485 010 012	8.2	0.000 000	0.002
	100 %	+40	3485 010 014	10.4	0.000 000	0.003
	100 %	+50	3485 010 018	14.2	0.000 000	0.004
	Batt. Endpoint	+20	3485 010 016	11.9	0.000 000	0.003
3514.980	100 %	+20(Ref)	3514 980 004	0.0	0.000 000	0.000
	100 %	-30	3514 980 016	11.9	0.000 000	0.003
	100 %	-20	3514 980 015	10.7	0.000 000	0.003
	100 %	-10	3514 980 019	15.2	0.000 000	0.004
	100 %	0	3514 980 019	14.5	0.000 000	0.004
	100 %	+10	3514 980 014	9.8	0.000 000	0.003
	100 %	+30	3514 980 017	12.4	0.000 000	0.004
	100 %	+40	3514 980 020	16.3	0.000 000	0.005
	100 %	+50	3514 980 020	16.3	0.000 000	0.005
	Batt. Endpoint	+20	3514 980 019	15.2	0.000 000	0.004

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3490.020	100 %	+20(Ref)	3490 020 012	0.0	0.000 000	0.000
	100 %	-30	3490 020 020	8.4	0.000 000	0.002
	100 %	-20	3490 020 026	14.3	0.000 000	0.004
	100 %	-10	3490 020 024	11.9	0.000 000	0.003
	100 %	0	3490 020 027	15.6	0.000 000	0.004
	100 %	+10	3490 020 018	6.1	0.000 000	0.002
	100 %	+30	3490 020 018	5.8	0.000 000	0.002
	100 %	+40	3490 020 029	16.8	0.000 000	0.005
	100 %	+50	3490 020 020	7.8	0.000 000	0.002
	Batt. Endpoint	+20	3490 020 028	16.6	0.000 000	0.005
3510.000	100 %	+20(Ref)	3510 000 017	0.0	0.000 000	0.000
	100 %	-30	3510 000 031	13.8	0.000 000	0.004
	100 %	-20	3510 000 031	14.1	0.000 000	0.004
	100 %	-10	3510 000 028	10.7	0.000 000	0.003
	100 %	0	3510 000 028	11.3	0.000 000	0.003
	100 %	+10	3510 000 029	12.4	0.000 000	0.004
	100 %	+30	3510 000 031	13.9	0.000 000	0.004
	100 %	+40	3510 000 021	3.9	0.000 000	0.001
	100 %	+50	3510 000 021	3.7	0.000 000	0.001
	Batt. Endpoint	+20	3510 000 020	3.2	0.000 000	0.001

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3495.000	100 %	+20(Ref)	3495 000 010	0.0	0.000 000	0.000
	100 %	-30	3495 000 024	13.9	0.000 000	0.004
	100 %	-20	3495 000 019	9.4	0.000 000	0.003
	100 %	-10	3495 000 017	6.9	0.000 000	0.002
	100 %	0	3495 000 024	14.1	0.000 000	0.004
	100 %	+10	3495 000 015	4.9	0.000 000	0.001
	100 %	+30	3495 000 018	8.0	0.000 000	0.002
	100 %	+40	3495 000 024	14.0	0.000 000	0.004
	100 %	+50	3495 000 017	6.5	0.000 000	0.002
	Batt. Endpoint	+20	3495 000 014	4.2	0.000 000	0.001
3504.990	100 %	+20(Ref)	3504 990 003	0.0	0.000 000	0.000
	100 %	-30	3504 990 018	14.1	0.000 000	0.004
	100 %	-20	3504 990 011	8.1	0.000 000	0.002
	100 %	-10	3504 990 016	13.1	0.000 000	0.004
	100 %	0	3504 990 007	3.7	0.000 000	0.001
	100 %	+10	3504 990 015	11.2	0.000 000	0.003
	100 %	+30	3504 990 017	13.5	0.000 000	0.004
	100 %	+40	3504 990 012	8.2	0.000 000	0.002
	100 %	+50	3504 990 010	6.5	0.000 000	0.002
	Batt. Endpoint	+20	3504 990 014	10.2	0.000 000	0.003

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3500.010	100 %	+20(Ref)	3500 010 007	0.0	0.000 000	0.000
	100 %	-30	3500 010 013	6.2	0.000 000	0.002
	100 %	-20	3500 010 016	9.0	0.000 000	0.003
	100 %	-10	3500 010 020	13.4	0.000 000	0.004
	100 %	0	3500 010 013	5.9	0.000 000	0.002
	100 %	+10	3500 010 018	11.0	0.000 000	0.003
	100 %	+30	3500 010 021	14.6	0.000 000	0.004
	100 %	+40	3500 010 020	13.3	0.000 000	0.004
	100 %	+50	3500 010 013	6.5	0.000 000	0.002
	Batt. Endpoint	+20	3500 010 020	12.9	0.000 000	0.004

9. TEST DATA (3700 MHz - 3980 MHz)

9.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3705.00	Sub6 n77/ 10 MHz [30 kHz]	PI/2 BPSK	-26.18	12.16	11.70	3.14	H	< 1.00	0.118	20.73
		QPSK	-26.31	12.03	11.70	3.14	H		0.115	20.60
		16-QAM	-27.28	11.06	11.70	3.14	H		0.092	19.63
		64-QAM	-28.93	9.41	11.70	3.14	H		0.063	17.98
		256-QAM	-30.56	7.78	11.70	3.14	H		0.043	16.35
3840.00		PI/2 BPSK	-26.25	13.67	11.24	3.21	H		0.148	21.70
		QPSK	-26.32	13.60	11.24	3.21	H		0.146	21.63
		16-QAM	-27.25	12.67	11.24	3.21	H		0.117	20.70
		64-QAM	-28.89	11.03	11.24	3.21	H		0.081	19.06
		256-QAM	-30.52	9.40	11.24	3.21	H		0.055	17.43
3975.00		PI/2 BPSK	-24.81	14.82	11.20	3.23	H		0.190	22.79
		QPSK	-24.82	14.81	11.20	3.23	H		0.190	22.78
		16-QAM	-25.91	13.72	11.20	3.23	H		0.148	21.69
		64-QAM	-27.43	12.20	11.20	3.23	H		0.104	20.17
		256-QAM	-29.31	10.32	11.20	3.23	H		0.067	18.29

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3707.51	Sub6 n77/ 15 MHz [30 kHz]	PI/2 BPSK	-25.58	12.71	11.70	3.15	H	< 1.00	0.134	21.26
		QPSK	-25.58	12.71	11.70	3.15	H		0.134	21.26
		16-QAM	-26.54	11.75	11.70	3.15	H		0.107	20.30
		64-QAM	-28.20	10.09	11.70	3.15	H		0.073	18.64
		256-QAM	-29.80	8.49	11.70	3.15	H		0.051	17.04
3840.00		PI/2 BPSK	-26.37	13.55	11.24	3.21	H		0.144	21.58
		QPSK	-26.44	13.48	11.24	3.21	H		0.142	21.51
		16-QAM	-27.39	12.53	11.24	3.21	H		0.114	20.56
		64-QAM	-29.01	10.91	11.24	3.21	H		0.078	18.94
		256-QAM	-30.57	9.35	11.24	3.21	H		0.055	17.38
3972.48		PI/2 BPSK	-25.06	14.59	11.18	3.23	H		0.180	22.54
		QPSK	-25.11	14.54	11.18	3.23	H		0.178	22.49
		16-QAM	-26.13	13.52	11.18	3.23	H		0.140	21.47
		64-QAM	-27.77	11.88	11.18	3.23	H		0.096	19.83
		256-QAM	-29.55	10.10	11.18	3.23	H		0.064	18.05

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3710.01	Sub6 n77/ 20 MHz [30 kHz]	PI/2 BPSK	-25.65	12.64	11.70	3.15	H	< 1.00	0.132	21.19
		QPSK	-25.71	12.58	11.70	3.15	H		0.130	21.13
		16-QAM	-26.67	11.62	11.70	3.15	H		0.104	20.17
		64-QAM	-28.29	10.00	11.70	3.15	H		0.072	18.55
		256-QAM	-29.93	8.36	11.70	3.15	H		0.049	16.91
3840.00		PI/2 BPSK	-26.47	13.45	11.24	3.21	H		0.141	21.48
		QPSK	-26.51	13.41	11.24	3.21	H		0.139	21.44
		16-QAM	-27.46	12.46	11.24	3.21	H		0.112	20.49
		64-QAM	-29.11	10.81	11.24	3.21	H		0.077	18.84
		256-QAM	-30.69	9.23	11.24	3.21	H		0.053	17.26
3969.99		PI/2 BPSK	-25.44	14.21	11.18	3.23	H		0.165	22.16
		QPSK	-25.49	14.16	11.18	3.23	H		0.163	22.11
		16-QAM	-26.55	13.10	11.18	3.23	H		0.127	21.05
		64-QAM	-28.18	11.47	11.18	3.23	H		0.088	19.42
		256-QAM	-29.94	9.71	11.18	3.23	H		0.058	17.66

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3720.00	Sub6 n77/ 40 MHz [30 kHz]	PI/2 BPSK	-25.93	12.61	11.70	3.20	H	< 1.00	0.129	21.11
		QPSK	-26.03	12.51	11.70	3.20	H		0.126	21.01
		16-QAM	-26.99	11.55	11.70	3.20	H		0.101	20.05
		64-QAM	-28.59	9.95	11.70	3.20	H		0.070	18.45
		256-QAM	-30.20	8.34	11.70	3.20	H		0.048	16.84
3840.00		PI/2 BPSK	-26.66	13.26	11.24	3.21	H		0.135	21.29
		QPSK	-26.68	13.24	11.24	3.21	H		0.134	21.27
		16-QAM	-27.66	12.26	11.24	3.21	H		0.107	20.29
		64-QAM	-29.31	10.61	11.24	3.21	H		0.073	18.64
		256-QAM	-30.83	9.09	11.24	3.21	H		0.052	17.12
3960.00		PI/2 BPSK	-26.24	13.45	11.14	3.23	H		0.137	21.36
		QPSK	-26.26	13.43	11.14	3.23	H		0.136	21.34
		16-QAM	-27.27	12.42	11.14	3.23	H		0.108	20.33
		64-QAM	-28.86	10.83	11.14	3.23	H		0.075	18.74
		256-QAM	-30.37	9.32	11.14	3.23	H		0.053	17.23

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3725.10	Sub6 n77/ 50 MHz [30 kHz]	PI/2 BPSK	-25.59	13.03	11.70	3.22	H	< 1.00	0.142	21.51
		QPSK	-25.61	13.01	11.70	3.22	H		0.141	21.49
		16-QAM	-26.59	12.03	11.70	3.22	H		0.112	20.51
		64-QAM	-28.25	10.37	11.70	3.22	H		0.077	18.85
		256-QAM	-29.82	8.80	11.70	3.22	H		0.053	17.28
3840.00		PI/2 BPSK	-26.30	13.62	11.24	3.21	H		0.146	21.65
		QPSK	-26.41	13.51	11.24	3.21	H		0.143	21.54
		16-QAM	-27.43	12.49	11.24	3.21	H		0.113	20.52
		64-QAM	-29.01	10.91	11.24	3.21	H		0.078	18.94
		256-QAM	-30.80	9.12	11.24	3.21	H		0.052	17.15
3954.99		PI/2 BPSK	-26.08	13.63	11.12	3.23	H		0.142	21.52
		QPSK	-26.13	13.58	11.12	3.23	H		0.140	21.47
		16-QAM	-27.07	12.64	11.12	3.23	H		0.113	20.53
		64-QAM	-28.69	11.02	11.12	3.23	H		0.078	18.91
		256-QAM	-30.25	9.46	11.12	3.23	H		0.054	17.35

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3730.02	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-25.46	13.24	11.70	3.24	H	< 1.00	0.148	21.70
		QPSK	-25.57	13.13	11.70	3.24	H		0.144	21.59
		16-QAM	-26.66	12.04	11.70	3.24	H		0.112	20.50
		64-QAM	-28.23	10.47	11.70	3.24	H		0.078	18.93
		256-QAM	-29.82	8.88	11.70	3.24	H		0.054	17.34
3840.00		PI/2 BPSK	-26.23	13.69	11.24	3.21	H		0.149	21.72
		QPSK	-26.30	13.62	11.24	3.21	H		0.146	21.65
		16-QAM	-27.22	12.70	11.24	3.21	H		0.118	20.73
		64-QAM	-28.85	11.07	11.24	3.21	H		0.081	19.10
		256-QAM	-30.40	9.52	11.24	3.21	H		0.057	17.55
3949.98		PI/2 BPSK	-26.33	13.40	11.10	3.23	H		0.134	21.27
		QPSK	-26.37	13.36	11.10	3.23	H		0.133	21.23
		16-QAM	-27.29	12.44	11.10	3.23	H		0.107	20.31
		64-QAM	-28.89	10.84	11.10	3.23	H		0.074	18.71
		256-QAM	-30.42	9.31	11.10	3.23	H		0.052	17.18

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3735.00	Sub6 n77/ 70 MHz [30 kHz]	PI/2 BPSK	-25.76	13.00	11.70	3.24	H	< 1.00	0.140	21.46
		QPSK	-25.78	12.98	11.70	3.24	H		0.139	21.44
		16-QAM	-26.77	11.99	11.70	3.24	H		0.111	20.45
		64-QAM	-28.42	10.34	11.70	3.24	H		0.076	18.80
		256-QAM	-29.96	8.80	11.70	3.24	H		0.053	17.26
3840.00		PI/2 BPSK	-26.18	13.74	11.24	3.21	H		0.150	21.77
		QPSK	-26.26	13.66	11.24	3.21	H		0.148	21.69
		16-QAM	-27.18	12.74	11.24	3.21	H		0.119	20.77
		64-QAM	-28.86	11.06	11.24	3.21	H		0.081	19.09
		256-QAM	-30.31	9.61	11.24	3.21	H		0.058	17.64
3945.00		PI/2 BPSK	-26.64	13.10	11.09	3.23	H		0.125	20.96
		QPSK	-26.68	13.06	11.09	3.23	H		0.124	20.92
		16-QAM	-27.71	12.03	11.09	3.23	H		0.098	19.89
		64-QAM	-29.28	10.46	11.09	3.23	H		0.068	18.32
		256-QAM	-30.70	9.04	11.09	3.23	H		0.049	16.90

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3740.01	Sub6 n77/ 80 MHz [30 kHz]	PI/2 BPSK	-25.89	12.93	11.70	3.23	H	< 1.00	0.138	21.40
		QPSK	-25.93	12.89	11.70	3.23	H		0.137	21.36
		16-QAM	-27.04	11.78	11.70	3.23	H		0.106	20.25
		64-QAM	-28.61	10.21	11.70	3.23	H		0.074	18.68
		256-QAM	-30.31	8.51	11.70	3.23	H		0.050	16.98
3840.00		PI/2 BPSK	-26.23	13.69	11.24	3.21	H		0.149	21.72
		QPSK	-26.29	13.63	11.24	3.21	H		0.147	21.66
		16-QAM	-27.24	12.68	11.24	3.21	H		0.118	20.71
		64-QAM	-28.86	11.06	11.24	3.21	H		0.081	19.09
		256-QAM	-30.29	9.63	11.24	3.21	H		0.058	17.66
3939.99		PI/2 BPSK	-26.78	12.97	11.08	3.23	H		0.121	20.82
		QPSK	-26.84	12.91	11.08	3.23	H		0.119	20.76
		16-QAM	-27.92	11.83	11.08	3.23	H		0.093	19.68
		64-QAM	-29.55	10.20	11.08	3.23	H		0.064	18.05
		256-QAM	-30.93	8.82	11.08	3.23	H		0.046	16.67

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3745.02	Sub6 n77/ 90 MHz [30 kHz]	PI/2 BPSK	-26.03	12.81	11.70	3.22	H	< 1.00	0.135	21.29
		QPSK	-26.07	12.77	11.70	3.22	H		0.133	21.25
		16-QAM	-27.09	11.75	11.70	3.22	H		0.105	20.23
		64-QAM	-28.71	10.13	11.70	3.22	H		0.073	18.61
		256-QAM	-30.21	8.63	11.70	3.22	H		0.051	17.11
3840.00		PI/2 BPSK	-26.38	13.54	11.24	3.21	H		0.144	21.57
		QPSK	-26.44	13.48	11.24	3.21	H		0.142	21.51
		16-QAM	-27.39	12.53	11.24	3.21	H		0.114	20.56
		64-QAM	-28.99	10.93	11.24	3.21	H		0.079	18.96
		256-QAM	-30.41	9.51	11.24	3.21	H		0.057	17.54
3934.98		PI/2 BPSK	-26.97	12.79	11.07	3.23	H		0.116	20.63
		QPSK	-27.01	12.75	11.07	3.23	H		0.115	20.59
		16-QAM	-27.96	11.80	11.07	3.23	H		0.092	19.64
		64-QAM	-29.61	10.15	11.07	3.23	H		0.063	17.99
		256-QAM	-31.01	8.75	11.07	3.23	H		0.046	16.59

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3750.00	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-26.29	12.57	11.70	3.20	H	< 1.00	0.128	21.07
		QPSK	-26.36	12.50	11.70	3.20	H		0.126	21.00
		16-QAM	-27.38	11.48	11.70	3.20	H		0.100	19.98
		64-QAM	-28.96	9.90	11.70	3.20	H		0.069	18.40
		256-QAM	-30.47	8.39	11.70	3.20	H		0.049	16.89
3840.00		PI/2 BPSK	-26.46	13.46	11.24	3.21	H		0.141	21.49
		QPSK	-26.51	13.41	11.24	3.21	H		0.139	21.44
		16-QAM	-27.61	12.31	11.24	3.21	H		0.108	20.34
		64-QAM	-29.11	10.81	11.24	3.21	H		0.077	18.84
		256-QAM	-30.54	9.38	11.24	3.21	H		0.055	17.41
3930.00		PI/2 BPSK	-26.98	12.61	11.24	3.23	H		0.115	20.62
		QPSK	-27.10	12.49	11.24	3.23	H		0.112	20.50
		16-QAM	-28.11	11.48	11.24	3.23	H		0.089	19.49
		64-QAM	-29.60	9.99	11.24	3.23	H		0.063	18.00
		256-QAM	-31.07	8.52	11.24	3.23	H		0.045	16.53

9.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77(PC2)

▣ Bandwidth: 10 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 1 meters

▣ SCS: 30 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
647000 (3705.00)	7 410.00	-52.34	11.24	-42.56	4.41	H	-35.73	-13.00
	11 115.00	-52.31	12.30	-38.10	5.61	V	-31.40	-13.00
	14 820.00	-48.85	13.84	-40.41	6.68	V	-33.25	-13.00
656000 (3840.00)	7 680.00	-44.48	11.54	-34.71	4.60	H	-27.77	-13.00
	11 520.00	-59.64	12.44	-45.70	5.72	V	-38.98	-13.00
	15 360.00	-53.69	15.54	-45.56	6.81	V	-36.83	-13.00
665000 (3975.00)	7 950.00	-46.38	11.10	-35.58	4.74	H	-29.22	-13.00
	11 925.00	-61.40	12.75	-48.71	5.83	V	-41.79	-13.00
	15 900.00	-59.35	16.40	-49.29	6.95	V	-39.84	-13.00

ENDC-Mode: 2A-n77A(PC3)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
18900 (1880.0)	3760.00	-56.28	11.64	-56.51	3.16	H	-48.03	-13.00
	5640.00	-60.25	12.00	-54.07	3.93	H	-46.00	-13.00
	7520.00	-59.16	11.54	-44.71	4.51	V	-37.68	-13.00

Note : All EN-DC mode of operation were investigated and the worst case configuration results are reported.

(Worst case: 2A-n77A(BW 10 MHz))

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	24	0	4.70
			QPSK			5.43
			16-QAM			6.01
			64-QAM			6.22
			256-QAM			7.40
	15 MHz		BPSK	36		4.69
			QPSK			5.44
			16-QAM			5.92
			64-QAM			6.24
			256-QAM			7.30
	20 MHz		BPSK	50		4.78
			QPSK			5.55
			16-QAM			6.01
			64-QAM			6.19
			256-QAM			7.31
	40 MHz		BPSK	100		4.60
			QPSK			5.35
			16-QAM			5.92
			64-QAM			6.07
			256-QAM			7.24
	50 MHz		BPSK	128		4.77
			QPSK			5.40
			16-QAM			5.93
			64-QAM			6.17
			256-QAM			7.26
	60 MHz		BPSK	162		4.68
			QPSK			5.44
			16-QAM			5.95
			64-QAM			6.23
			256-QAM			7.27

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n77	70 MHz	3840.00	BPSK	180	0	4.77
			QPSK			5.51
			16-QAM			6.06
			64-QAM			6.28
			256-QAM			7.31
	80 MHz		BPSK	216		5.02
			QPSK			5.55
			16-QAM			6.05
			64-QAM			6.28
			256-QAM			7.47
	90 MHz		BPSK	243		4.77
			QPSK			5.55
			16-QAM			6.06
			64-QAM			6.23
			256-QAM			7.37
	100 MHz		BPSK	270		5.05
			QPSK			5.49
			16-QAM			6.04
			64-QAM			6.29
			256-QAM			7.53

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 411 ~ 460.

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	24	0	8.6344
			QPSK			8.5747
			16-QAM			8.5520
			64-QAM			8.5626
			256-QAM			8.4845
	15 MHz		BPSK	36		13.113
			QPSK			13.185
			16-QAM			13.136
			64-QAM			13.245
			256-QAM			13.141
	20 MHz		BPSK	50		18.252
			QPSK			18.184
			16-QAM			18.168
			64-QAM			18.094
			256-QAM			18.147
	40 MHz		BPSK	100		35.913
			QPSK			36.095
			16-QAM			36.081
			64-QAM			36.259
			256-QAM			36.018
	50 MHz		BPSK	128		46.066
			QPSK			46.006
			16-QAM			45.842
			64-QAM			46.021
			256-QAM			45.893
	60 MHz		BPSK	162		57.849
			QPSK			57.772
			16-QAM			57.720
			64-QAM			57.718
			256-QAM			57.612

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n77	70 MHz	3840.00	BPSK	180	0	64.735
			QPSK			64.578
			16-QAM			64.338
			64-QAM			64.603
			256-QAM			64.705
	80 MHz		BPSK	216		77.416
			QPSK			77.485
			16-QAM			77.279
			64-QAM			77.416
			256-QAM			77.223
	90 MHz		BPSK	243		87.027
			QPSK			86.627
			16-QAM			86.507
			64-QAM			86.530
			256-QAM			86.427
	100 MHz		BPSK	270		96.360
			QPSK			96.292
			16-QAM			96.295
			64-QAM			96.431
			256-QAM			96.070

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 361 ~ 410.

9.5 CONDUCTED SPURIOUS EMISSIONS

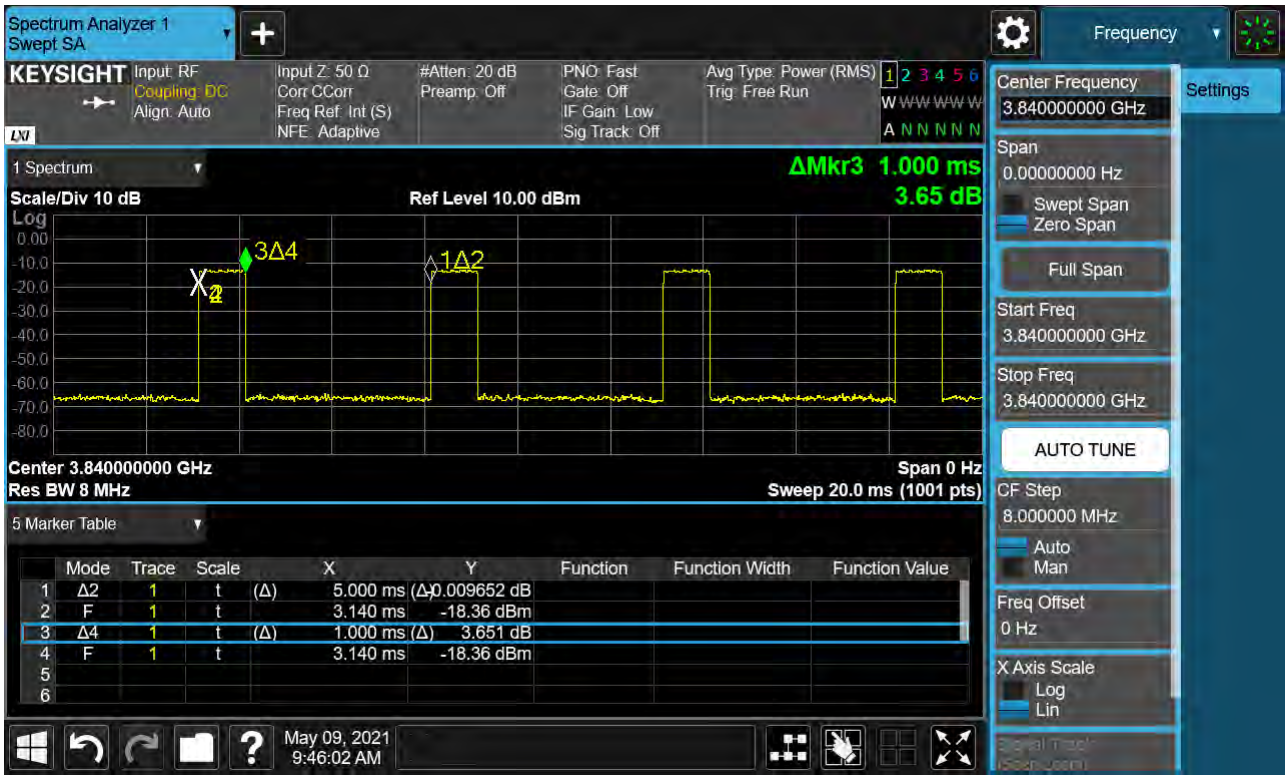
Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n77	10	3705.00	8.0429	37.805	-70.939	-33.134	-13.00
		3840.00	9.6840	37.805	-71.074	-33.269	
		3975.00	8.2652	37.805	-70.258	-32.453	
	15	3707.51	5.2099	37.805	-69.942	-32.137	
		3840.00	6.0673	37.805	-70.329	-32.524	
		3972.48	8.8928	37.805	-69.694	-31.889	
	20	3710.01	8.8554	37.805	-70.293	-32.488	
		3840.00	8.8998	37.805	-70.433	-32.628	
		3969.99	8.3624	37.805	-70.634	-32.829	
	40	3720.00	9.9791	37.805	-70.781	-32.976	
		3840.00	8.2782	37.805	-70.318	-32.513	
		3960.00	9.0678	37.805	-69.901	-32.096	
	50	3725.10	7.9995	37.805	-70.512	-32.707	
		3840.00	9.1132	37.805	-69.874	-32.069	
		3954.99	8.0374	37.805	-71.046	-33.241	
	60	3730.02	4.9113	37.190	-70.984	-33.794	
		3840.00	6.0215	37.805	-69.903	-32.098	
		3949.98	5.2393	37.805	-70.774	-32.969	
	70	3735.00	9.9407	37.805	-70.699	-32.894	
		3840.00	4.5898	37.190	-70.493	-33.303	
		3945.00	8.6192	37.805	-70.566	-32.761	
	80	3740.01	4.6177	37.190	-70.808	-33.618	
		3840.00	9.6964	37.805	-70.694	-32.889	
		3939.99	6.0065	37.805	-70.627	-32.822	
	90	3745.02	8.8684	37.805	-70.920	-33.115	
		3840.00	9.1690	37.805	-70.952	-33.147	
		3934.98	9.1226	37.805	-70.738	-32.933	
	100	3750.00	7.4681	37.805	-70.747	-32.942	
		3840.00	8.3081	37.805	-70.595	-32.790	
		3930.00	6.0374	37.805	-70.792	-32.987	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 581 ~ 640.

2. Duty Cycle factor already applied on the factor.

- Duty Cycle Factor(dB) = 6.990



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

- Result(dBm) = Reading + Factor

3. Factor(dB)

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

9.6 BAND EDGE

1. Plots of the EUT's Band Edge are shown Page 461 ~ 580.
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 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3705.000	100 %	+20(Ref)	3455 010 003	0.0	0.000 000	0.000
	100 %	-30	3455 010 012	8.9	0.000 000	0.003
	100 %	-20	3455 010 011	7.4	0.000 000	0.002
	100 %	-10	3455 010 017	13.7	0.000 000	0.004
	100 %	0	3455 010 020	16.5	0.000 000	0.005
	100 %	+10	3455 010 012	8.7	0.000 000	0.003
	100 %	+30	3455 010 011	7.9	0.000 000	0.002
	100 %	+40	3455 010 020	16.8	0.000 000	0.005
	100 %	+50	3455 010 011	7.9	0.000 000	0.002
	Batt. Endpoint	+20	3455 010 019	16.4	0.000 000	0.005
3975.000	100 %	+20(Ref)	3544 980 009	0.0	0.000 000	0.000
	100 %	-30	3544 980 020	11.1	0.000 000	0.003
	100 %	-20	3544 980 024	15.1	0.000 000	0.004
	100 %	-10	3544 980 013	4.5	0.000 000	0.001
	100 %	0	3544 980 018	8.8	0.000 000	0.002
	100 %	+10	3544 980 023	14.3	0.000 000	0.004
	100 %	+30	3544 980 024	14.7	0.000 000	0.004
	100 %	+40	3544 980 014	5.5	0.000 000	0.002
	100 %	+50	3544 980 015	6.2	0.000 000	0.002
	Batt. Endpoint	+20	3544 980 016	7.0	0.000 000	0.002

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3707.520	100 %	+20(Ref)	3457 500 013	0.0	0.000 000	0.000
	100 %	-30	3457 500 023	9.9	0.000 000	0.003
	100 %	-20	3457 500 016	3.0	0.000 000	0.001
	100 %	-10	3457 500 021	8.0	0.000 000	0.002
	100 %	0	3457 500 024	11.4	0.000 000	0.003
	100 %	+10	3457 500 025	12.5	0.000 000	0.004
	100 %	+30	3457 500 019	6.6	0.000 000	0.002
	100 %	+40	3457 500 028	15.0	0.000 000	0.004
	100 %	+50	3457 500 020	7.2	0.000 000	0.002
	Batt. Endpoint	+20	3457 500 016	3.4	0.000 000	0.001
3972.480	100 %	+20(Ref)	3542 490 014	0.0	0.000 000	0.000
	100 %	-30	3542 490 028	14.7	0.000 000	0.004
	100 %	-20	3542 490 030	16.6	0.000 000	0.005
	100 %	-10	3542 490 024	10.6	0.000 000	0.003
	100 %	0	3542 490 024	10.1	0.000 000	0.003
	100 %	+10	3542 490 020	5.7	0.000 000	0.002
	100 %	+30	3542 490 019	5.0	0.000 000	0.001
	100 %	+40	3542 490 024	10.0	0.000 000	0.003
	100 %	+50	3542 490 025	11.3	0.000 000	0.003
	Batt. Endpoint	+20	3542 490 017	3.3	0.000 000	0.001

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3710.010	100 %	+20(Ref)	3710 010 011	0.0	0.000 000	0.000
	100 %	-30	3710 010 016	5.9	0.000 000	0.002
	100 %	-20	3710 010 015	4.0	0.000 000	0.001
	100 %	-10	3710 010 025	14.4	0.000 000	0.004
	100 %	0	3710 010 018	7.5	0.000 000	0.002
	100 %	+10	3710 010 025	13.9	0.000 000	0.004
	100 %	+30	3710 010 019	8.6	0.000 000	0.002
	100 %	+40	3710 010 018	7.6	0.000 000	0.002
	100 %	+50	3710 010 019	8.6	0.000 000	0.002
	Batt. Endpoint	+20	3710 010 020	9.5	0.000 000	0.003
3969.990	100 %	+20(Ref)	3969 990 008	0.0	0.000 000	0.000
	100 %	-30	3969 990 014	6.3	0.000 000	0.002
	100 %	-20	3969 990 015	7.3	0.000 000	0.002
	100 %	-10	3969 990 017	9.7	0.000 000	0.002
	100 %	0	3969 990 016	8.0	0.000 000	0.002
	100 %	+10	3969 990 016	8.2	0.000 000	0.002
	100 %	+30	3969 990 016	8.2	0.000 000	0.002
	100 %	+40	3969 990 022	14.1	0.000 000	0.004
	100 %	+50	3969 990 012	3.9	0.000 000	0.001
	Batt. Endpoint	+20	3969 990 021	13.2	0.000 000	0.003

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3720.000	100 %	+20(Ref)	3720 000 004	0.0	0.000 000	0.000
	100 %	-30	3720 000 011	7.1	0.000 000	0.002
	100 %	-20	3720 000 018	14.5	0.000 000	0.004
	100 %	-10	3720 000 013	9.5	0.000 000	0.003
	100 %	0	3720 000 020	16.2	0.000 000	0.004
	100 %	+10	3720 000 014	10.4	0.000 000	0.003
	100 %	+30	3720 000 012	7.9	0.000 000	0.002
	100 %	+40	3720 000 017	13.1	0.000 000	0.004
	100 %	+50	3720 000 007	3.1	0.000 000	0.001
	Batt. Endpoint	+20	3720 000 017	13.2	0.000 000	0.004
3960.000	100 %	+20(Ref)	3960 000 015	0.0	0.000 000	0.000
	100 %	-30	3960 000 018	3.1	0.000 000	0.001
	100 %	-20	3960 000 022	7.3	0.000 000	0.002
	100 %	-10	3960 000 027	11.8	0.000 000	0.003
	100 %	0	3960 000 018	3.3	0.000 000	0.001
	100 %	+10	3960 000 020	5.0	0.000 000	0.001
	100 %	+30	3960 000 022	7.3	0.000 000	0.002
	100 %	+40	3960 000 025	10.3	0.000 000	0.003
	100 %	+50	3960 000 024	9.1	0.000 000	0.002
	Batt. Endpoint	+20	3960 000 024	9.2	0.000 000	0.002

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3725.010	100 %	+20(Ref)	3725 010 007	0.0	0.000 000	0.000
	100 %	-30	3725 010 016	8.6	0.000 000	0.002
	100 %	-20	3725 010 011	3.7	0.000 000	0.001
	100 %	-10	3725 010 021	14.0	0.000 000	0.004
	100 %	0	3725 010 023	16.3	0.000 000	0.004
	100 %	+10	3725 010 018	10.8	0.000 000	0.003
	100 %	+30	3725 010 013	6.4	0.000 000	0.002
	100 %	+40	3725 010 020	13.1	0.000 000	0.004
	100 %	+50	3725 010 011	3.8	0.000 000	0.001
	Batt. Endpoint	+20	3725 010 011	4.3	0.000 000	0.001
3954.990	100 %	+20(Ref)	3954 990 006	0.0	0.000 000	0.000
	100 %	-30	3954 990 019	13.6	0.000 000	0.003
	100 %	-20	3954 990 014	8.5	0.000 000	0.002
	100 %	-10	3954 990 013	7.0	0.000 000	0.002
	100 %	0	3954 990 018	12.1	0.000 000	0.003
	100 %	+10	3954 990 017	10.7	0.000 000	0.003
	100 %	+30	3954 990 023	16.9	0.000 000	0.004
	100 %	+40	3954 990 014	7.7	0.000 000	0.002
	100 %	+50	3954 990 016	9.9	0.000 000	0.002
	Batt. Endpoint	+20	3954 990 013	7.5	0.000 000	0.002

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3730.020	100 %	+20(Ref)	3730 020 016	0.0	0.000 000	0.000
	100 %	-30	3730 020 025	9.2	0.000 000	0.002
	100 %	-20	3730 020 026	10.4	0.000 000	0.003
	100 %	-10	3730 020 020	3.9	0.000 000	0.001
	100 %	0	3730 020 025	9.5	0.000 000	0.003
	100 %	+10	3730 020 027	11.2	0.000 000	0.003
	100 %	+30	3730 020 031	14.9	0.000 000	0.004
	100 %	+40	3730 020 031	14.8	0.000 000	0.004
	100 %	+50	3730 020 033	17.0	0.000 000	0.005
	Batt. Endpoint	+20	3730 020 022	5.6	0.000 000	0.002
3949.995	100 %	+20(Ref)	3949 995 015	0.0	0.000 000	0.000
	100 %	-30	3949 995 031	16.2	0.000 000	0.004
	100 %	-20	3949 995 026	11.3	0.000 000	0.003
	100 %	-10	3949 995 031	15.6	0.000 000	0.004
	100 %	0	3949 995 028	13.1	0.000 000	0.003
	100 %	+10	3949 995 018	3.1	0.000 000	0.001
	100 %	+30	3949 995 023	8.4	0.000 000	0.002
	100 %	+40	3949 995 027	11.6	0.000 000	0.003
	100 %	+50	3949 995 021	6.0	0.000 000	0.002
	Batt. Endpoint	+20	3949 995 030	15.4	0.000 000	0.004

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3735.000	100 %	+20(Ref)	3735 000 015	0.0	0.000 000	0.000
	100 %	-30	3735 000 020	5.2	0.000 000	0.001
	100 %	-20	3735 000 025	10.3	0.000 000	0.003
	100 %	-10	3735 000 025	10.4	0.000 000	0.003
	100 %	0	3735 000 021	5.9	0.000 000	0.002
	100 %	+10	3735 000 026	11.2	0.000 000	0.003
	100 %	+30	3735 000 021	6.1	0.000 000	0.002
	100 %	+40	3735 000 024	9.1	0.000 000	0.002
	100 %	+50	3735 000 026	11.4	0.000 000	0.003
	Batt. Endpoint	+20	3735 000 026	11.3	0.000 000	0.003
3945.000	100 %	+20(Ref)	3945 000 016	0.0	0.000 000	0.000
	100 %	-30	3945 000 021	4.9	0.000 000	0.001
	100 %	-20	3945 000 031	15.3	0.000 000	0.004
	100 %	-10	3945 000 019	3.0	0.000 000	0.001
	100 %	0	3945 000 030	13.5	0.000 000	0.003
	100 %	+10	3945 000 022	5.5	0.000 000	0.001
	100 %	+30	3945 000 023	7.4	0.000 000	0.002
	100 %	+40	3945 000 029	13.5	0.000 000	0.003
	100 %	+50	3945 000 021	4.6	0.000 000	0.001
	Batt. Endpoint	+20	3945 000 019	3.1	0.000 000	0.001

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3740.010	100 %	+20(Ref)	3740 010 015	0.0	0.000 000	0.000
	100 %	-30	3740 010 024	9.0	0.000 000	0.002
	100 %	-20	3740 010 020	4.2	0.000 000	0.001
	100 %	-10	3740 010 024	8.3	0.000 000	0.002
	100 %	0	3740 010 032	16.1	0.000 000	0.004
	100 %	+10	3740 010 029	13.7	0.000 000	0.004
	100 %	+30	3740 010 029	14.0	0.000 000	0.004
	100 %	+40	3740 010 026	10.4	0.000 000	0.003
	100 %	+50	3740 010 025	9.4	0.000 000	0.003
	Batt. Endpoint	+20	3740 010 019	4.1	0.000 000	0.001
3939.990	100 %	+20(Ref)	3939 990 016	0.0	0.000 000	0.000
	100 %	-30	3939 990 031	15.4	0.000 000	0.004
	100 %	-20	3939 990 032	16.2	0.000 000	0.004
	100 %	-10	3939 990 020	4.2	0.000 000	0.001
	100 %	0	3939 990 022	5.6	0.000 000	0.001
	100 %	+10	3939 990 025	9.1	0.000 000	0.002
	100 %	+30	3939 990 020	4.3	0.000 000	0.001
	100 %	+40	3939 990 022	5.5	0.000 000	0.001
	100 %	+50	3939 990 023	7.3	0.000 000	0.002
	Batt. Endpoint	+20	3939 990 027	10.4	0.000 000	0.003

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 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 020 007	0.0	0.000 000	0.000
	100 %	-30	3745 020 017	9.7	0.000 000	0.003
	100 %	-20	3745 020 022	14.9	0.000 000	0.004
	100 %	-10	3745 020 015	8.1	0.000 000	0.002
	100 %	0	3745 020 010	3.2	0.000 000	0.001
	100 %	+10	3745 020 020	13.3	0.000 000	0.004
	100 %	+30	3745 020 014	7.0	0.000 000	0.002
	100 %	+40	3745 020 021	14.2	0.000 000	0.004
	100 %	+50	3745 020 014	7.4	0.000 000	0.002
	Batt. Endpoint	+20	3745 020 017	10.3	0.000 000	0.003
3934.980	100 %	+20(Ref)	3934 980 008	0.0	0.000 000	0.000
	100 %	-30	3934 980 022	13.6	0.000 000	0.003
	100 %	-20	3934 980 017	8.9	0.000 000	0.002
	100 %	-10	3934 980 020	12.1	0.000 000	0.003
	100 %	0	3934 980 020	12.2	0.000 000	0.003
	100 %	+10	3934 980 024	16.2	0.000 000	0.004
	100 %	+30	3934 980 018	9.4	0.000 000	0.002
	100 %	+40	3934 980 016	8.2	0.000 000	0.002
	100 %	+50	3934 980 024	15.8	0.000 000	0.004
	Batt. Endpoint	+20	3934 980 013	4.4	0.000 000	0.001

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.850 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

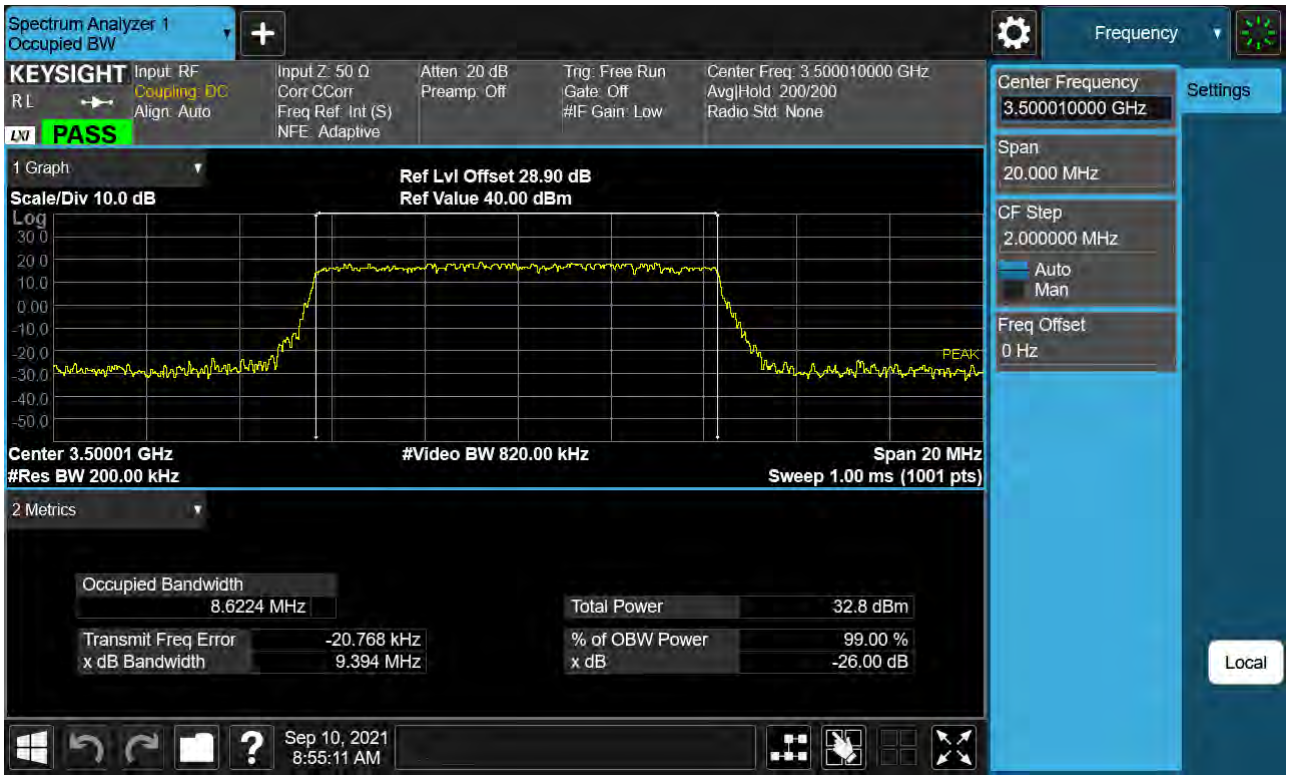
Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3750.000	100 %	+20(Ref)	3750 000 012	0.0	0.000 000	0.000
	100 %	-30	3750 000 018	5.7	0.000 000	0.002
	100 %	-20	3750 000 021	8.8	0.000 000	0.002
	100 %	-10	3750 000 022	9.2	0.000 000	0.002
	100 %	0	3750 000 027	14.9	0.000 000	0.004
	100 %	+10	3750 000 029	16.3	0.000 000	0.004
	100 %	+30	3750 000 026	13.1	0.000 000	0.004
	100 %	+40	3750 000 024	11.8	0.000 000	0.003
	100 %	+50	3750 000 021	8.2	0.000 000	0.002
	Batt. Endpoint	+20	3750 000 028	15.7	0.000 000	0.004
3930.000	100 %	+20(Ref)	3930 000 005	0.0	0.000 000	0.000
	100 %	-30	3930 000 020	14.7	0.000 000	0.004
	100 %	-20	3930 000 019	14.1	0.000 000	0.004
	100 %	-10	3930 000 016	10.5	0.000 000	0.003
	100 %	0	3930 000 014	8.6	0.000 000	0.002
	100 %	+10	3930 000 013	7.3	0.000 000	0.002
	100 %	+30	3930 000 011	5.6	0.000 000	0.001
	100 %	+40	3930 000 020	14.5	0.000 000	0.004
	100 %	+50	3930 000 014	8.4	0.000 000	0.002
	Batt. Endpoint	+20	3930 000 022	16.2	0.000 000	0.004

10. TEST PLOTS(3450 MHz - 3550 MHz)

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

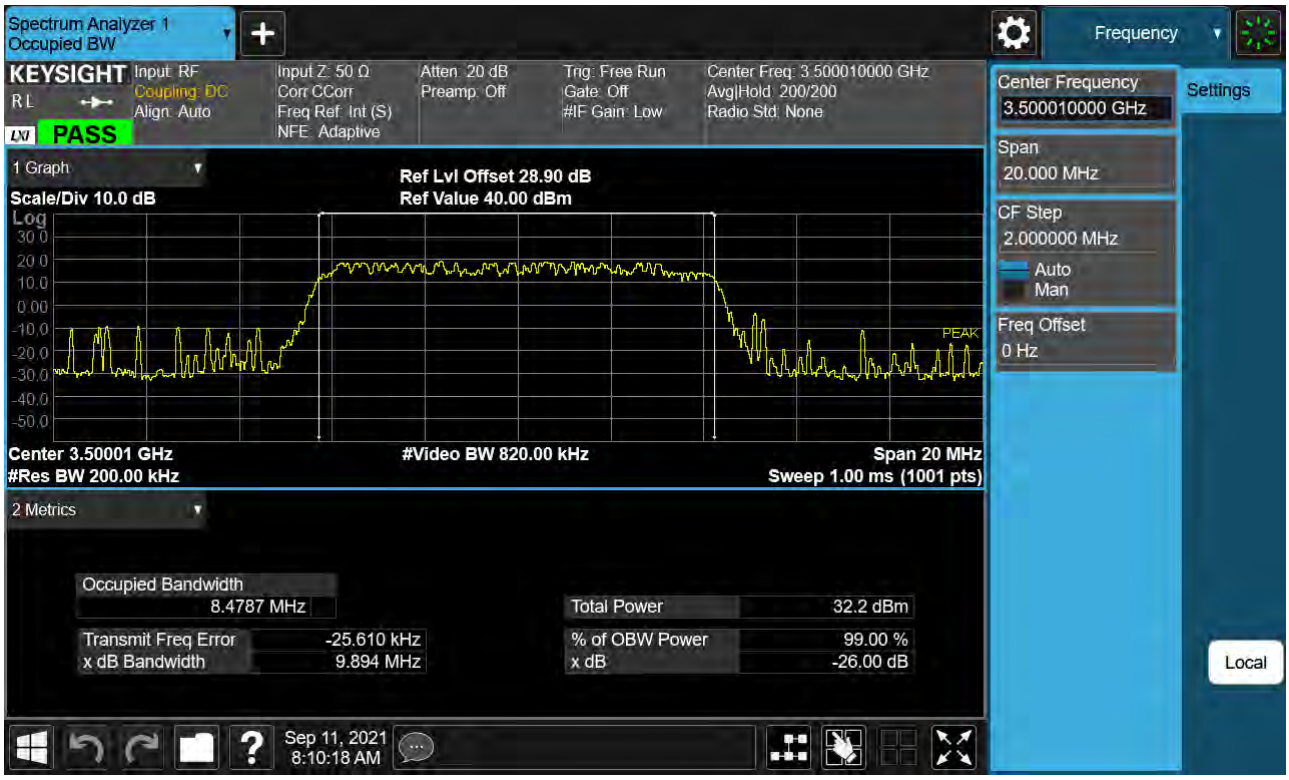
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 QPSK)

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



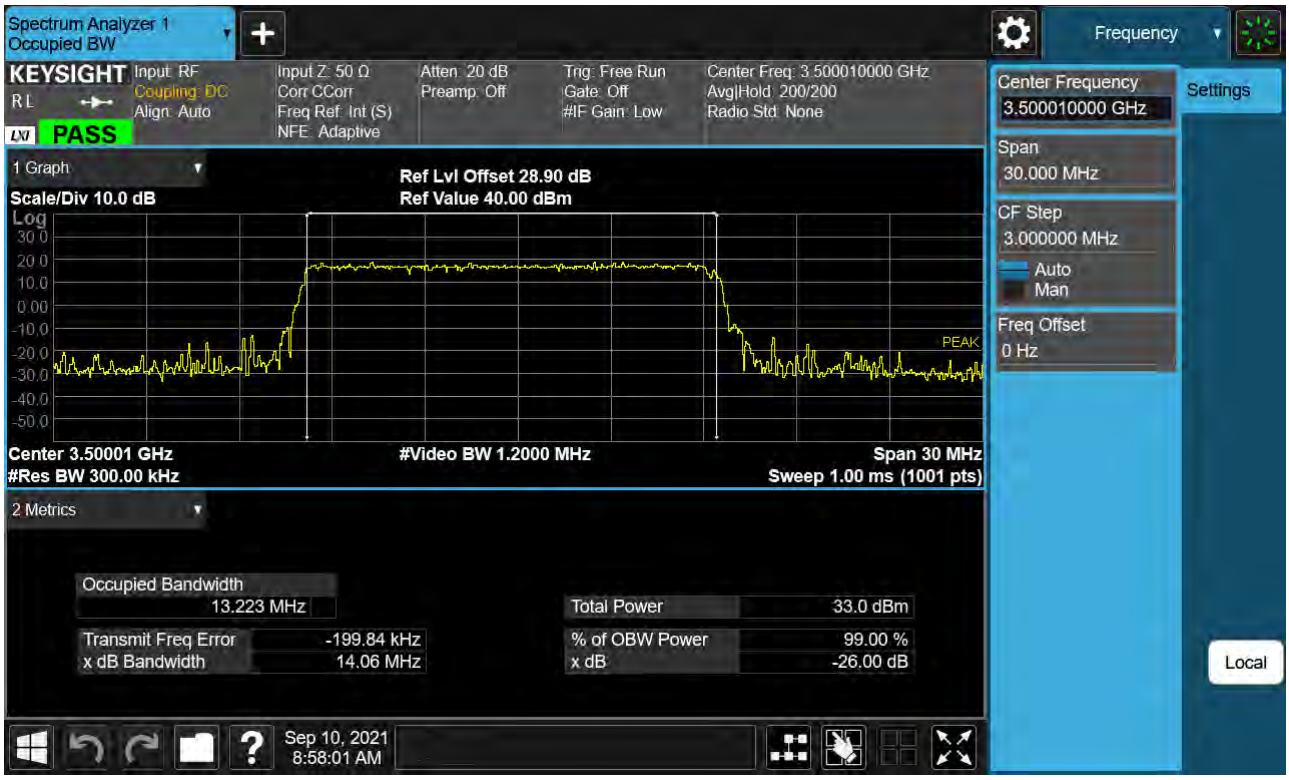
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 64QAM)

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

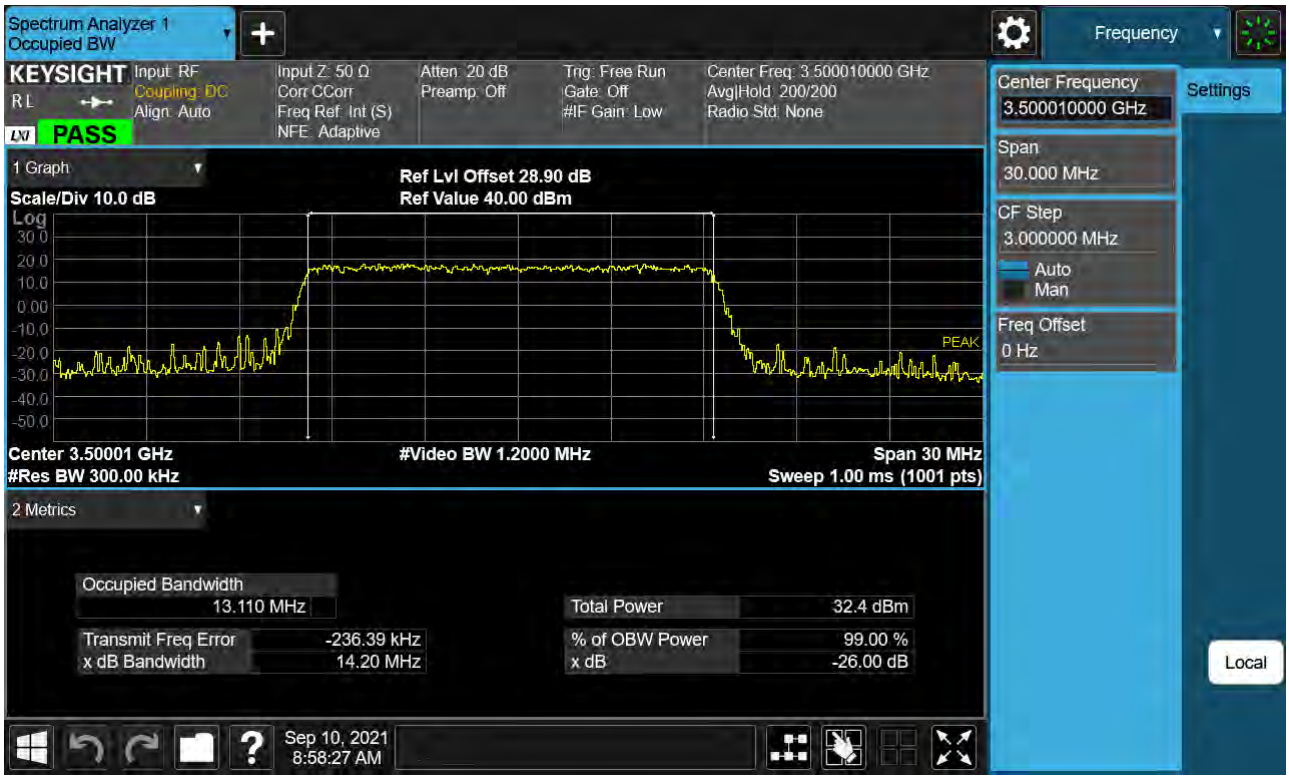


Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 BPSK)

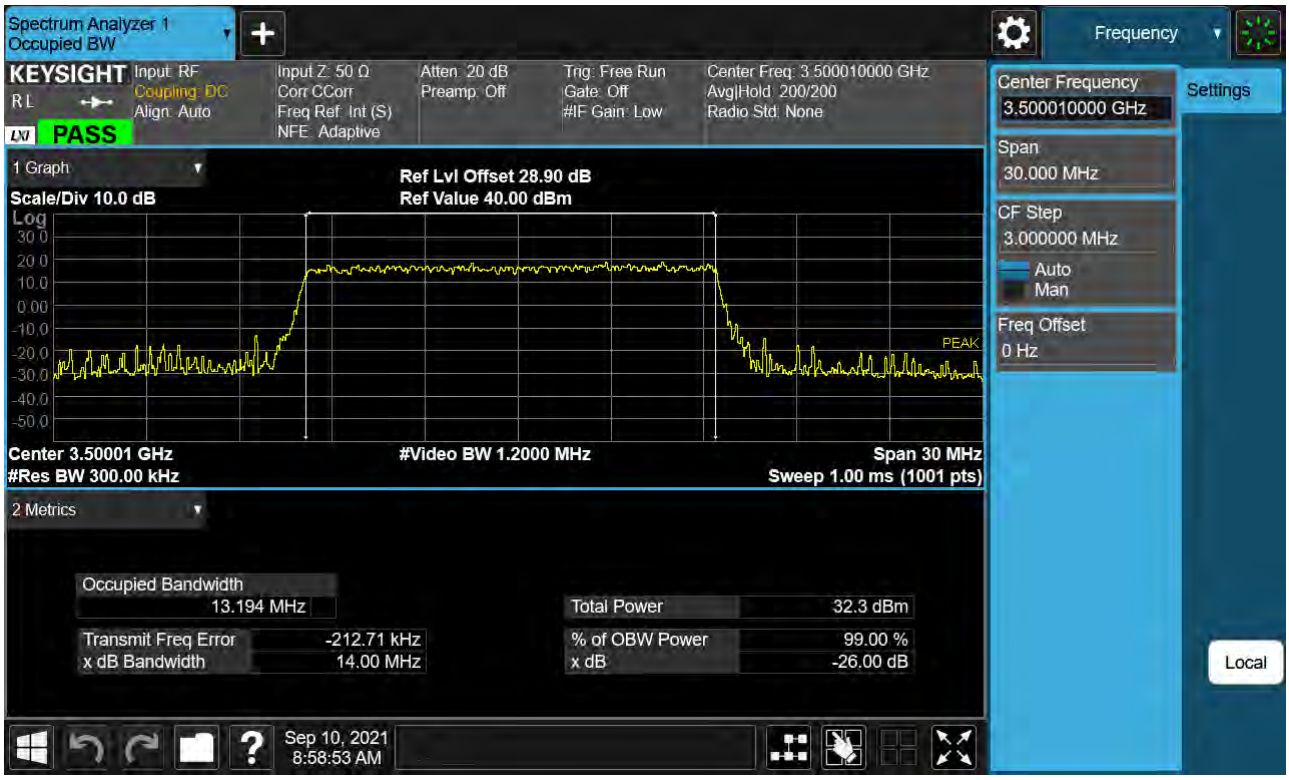
Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 QPSK)



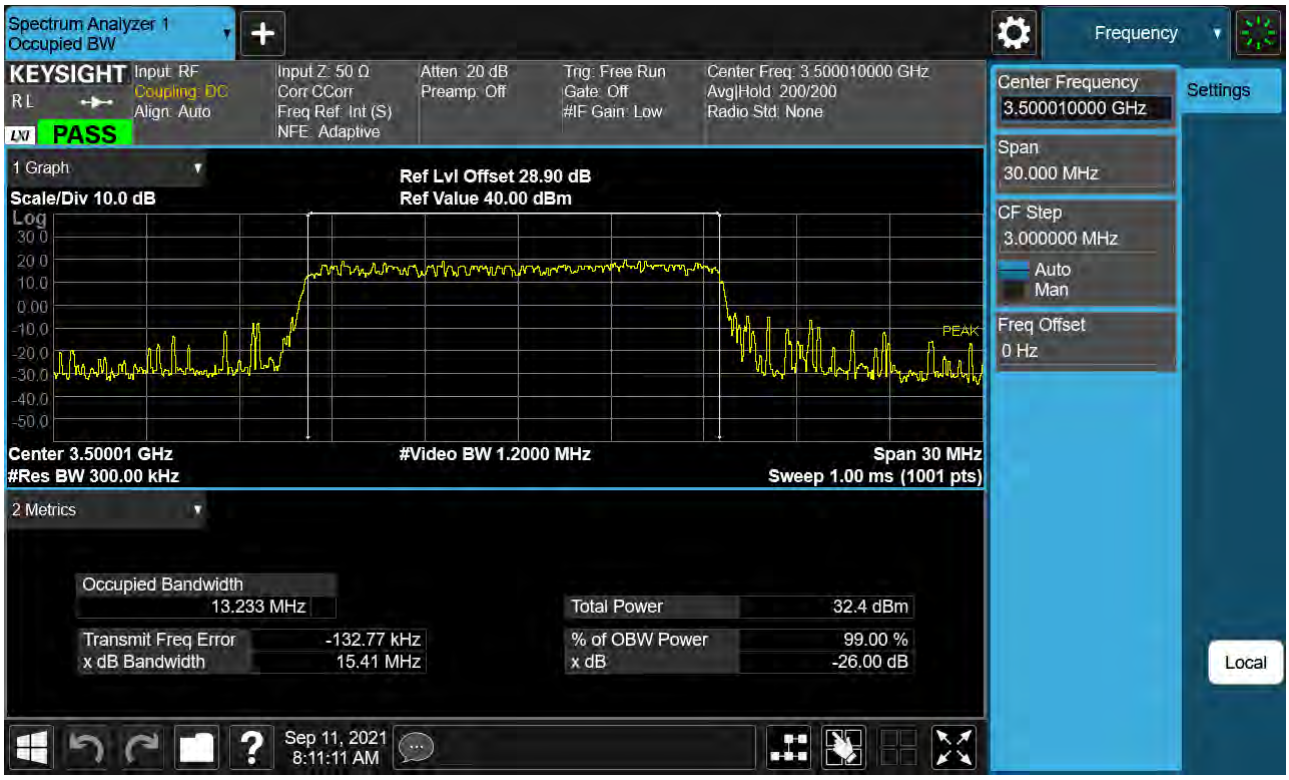
Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 16QAM)



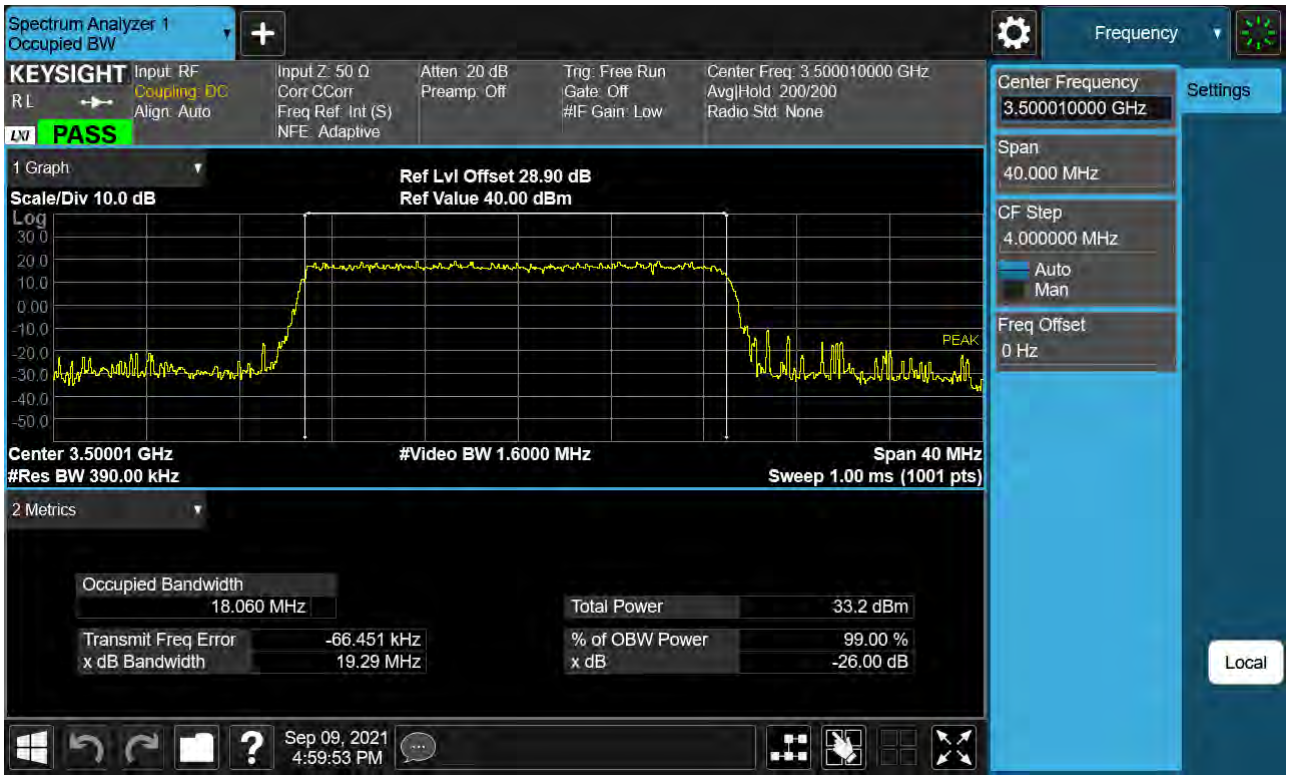
Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 64QAM)



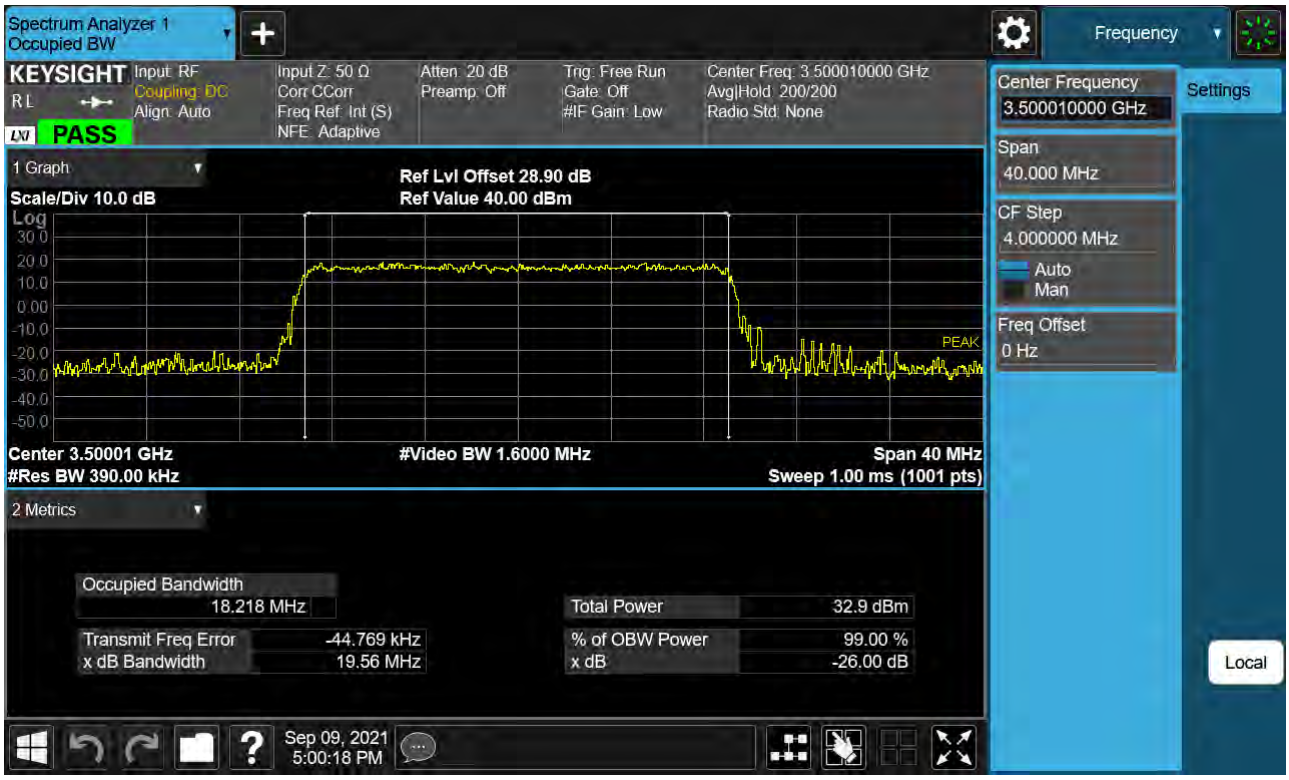
Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 256QAM)



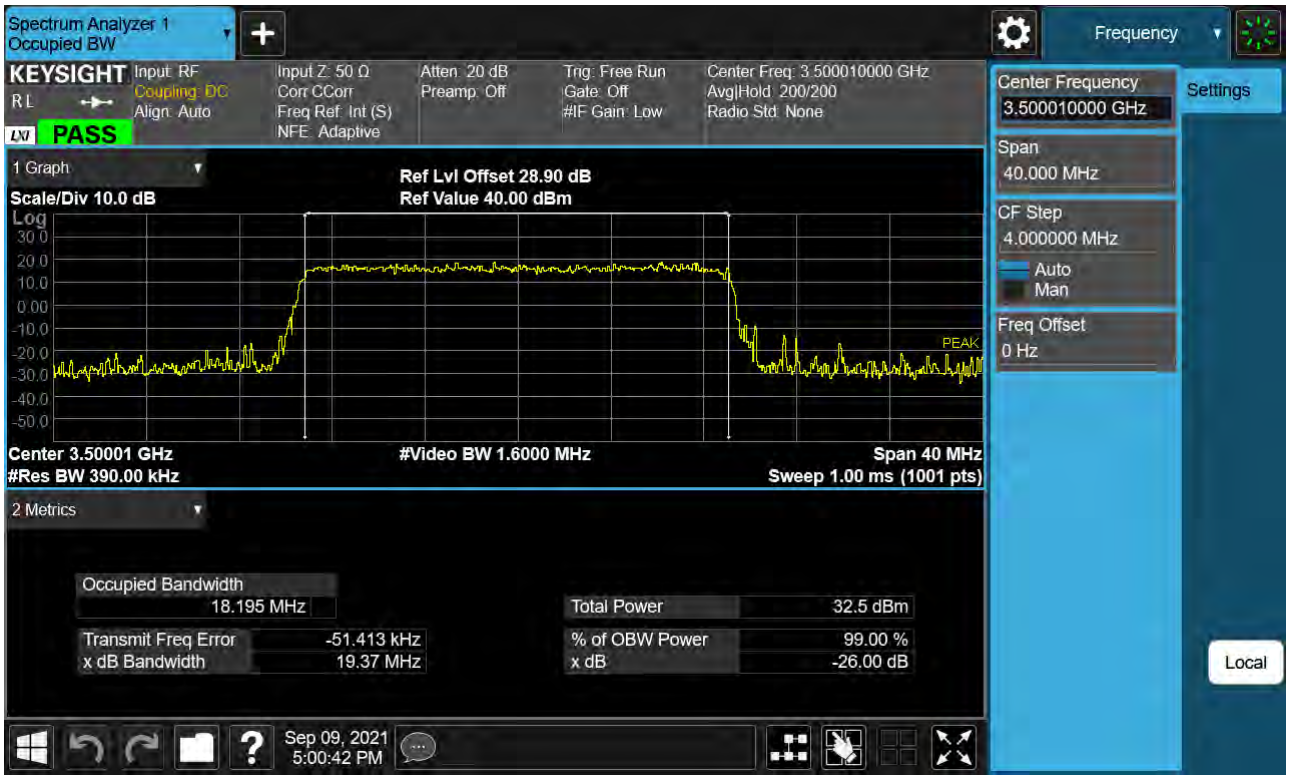
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 BPSK)



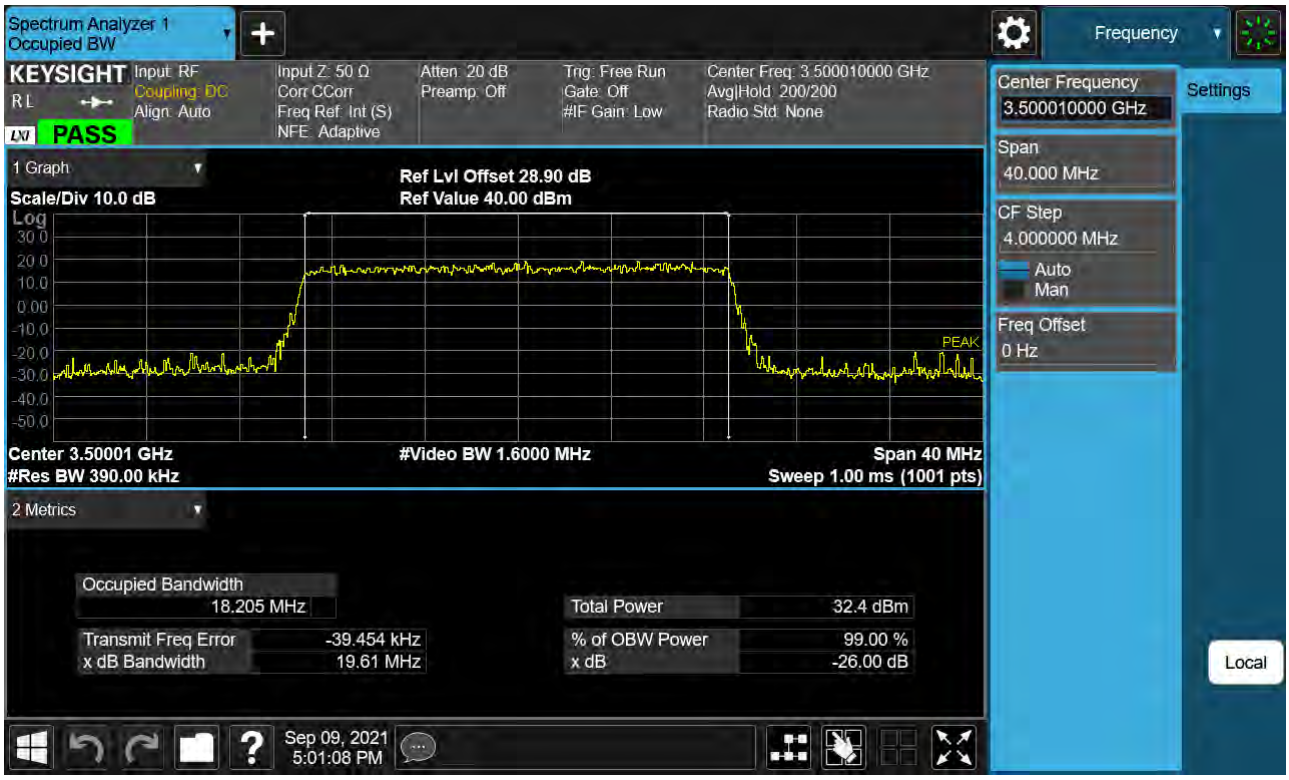
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 QPSK)



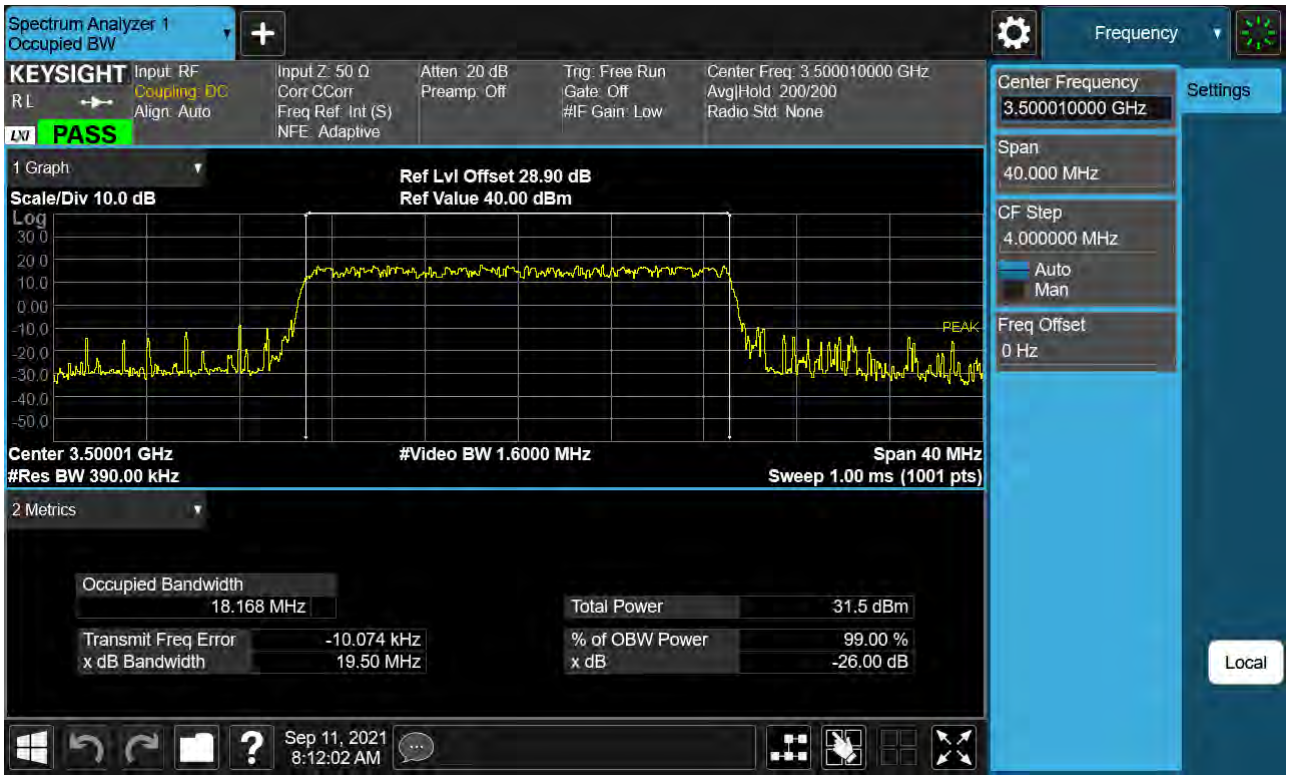
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 16QAM)



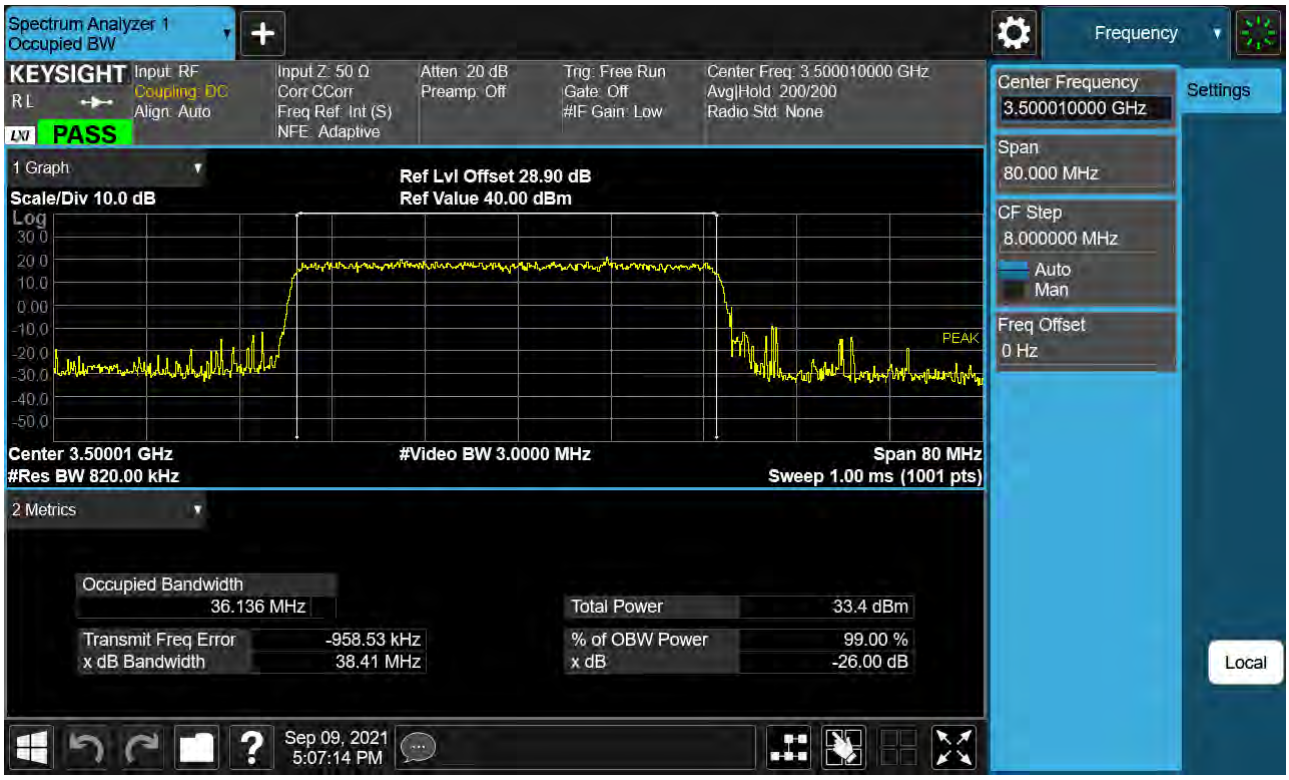
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 64QAM)



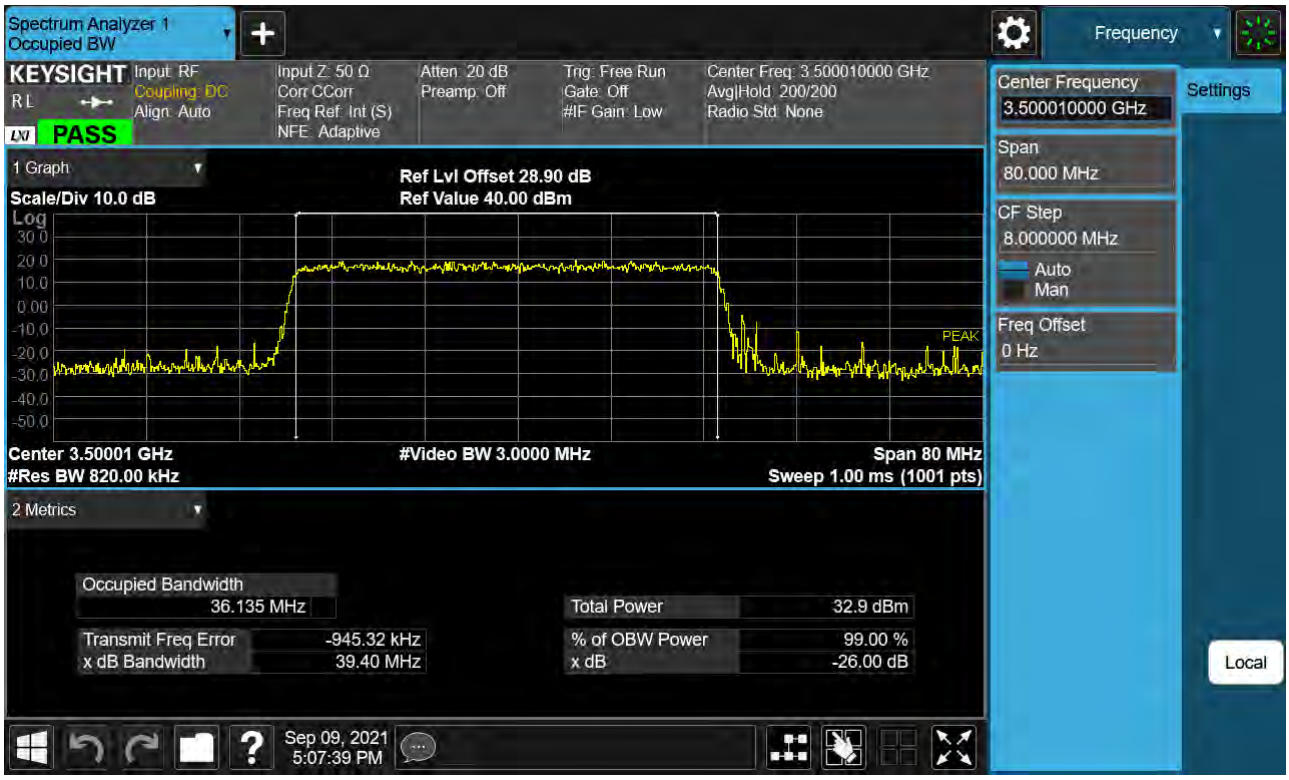
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 256QAM)



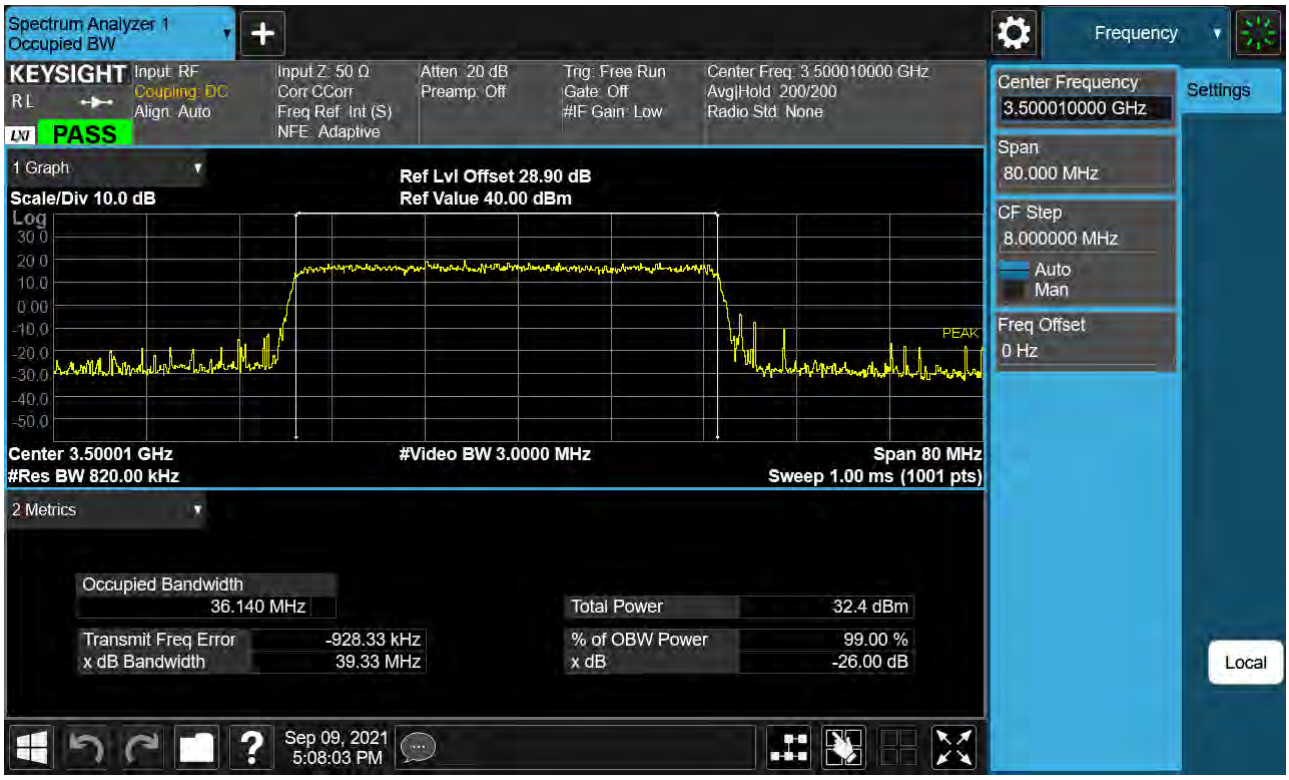
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 BPSK)



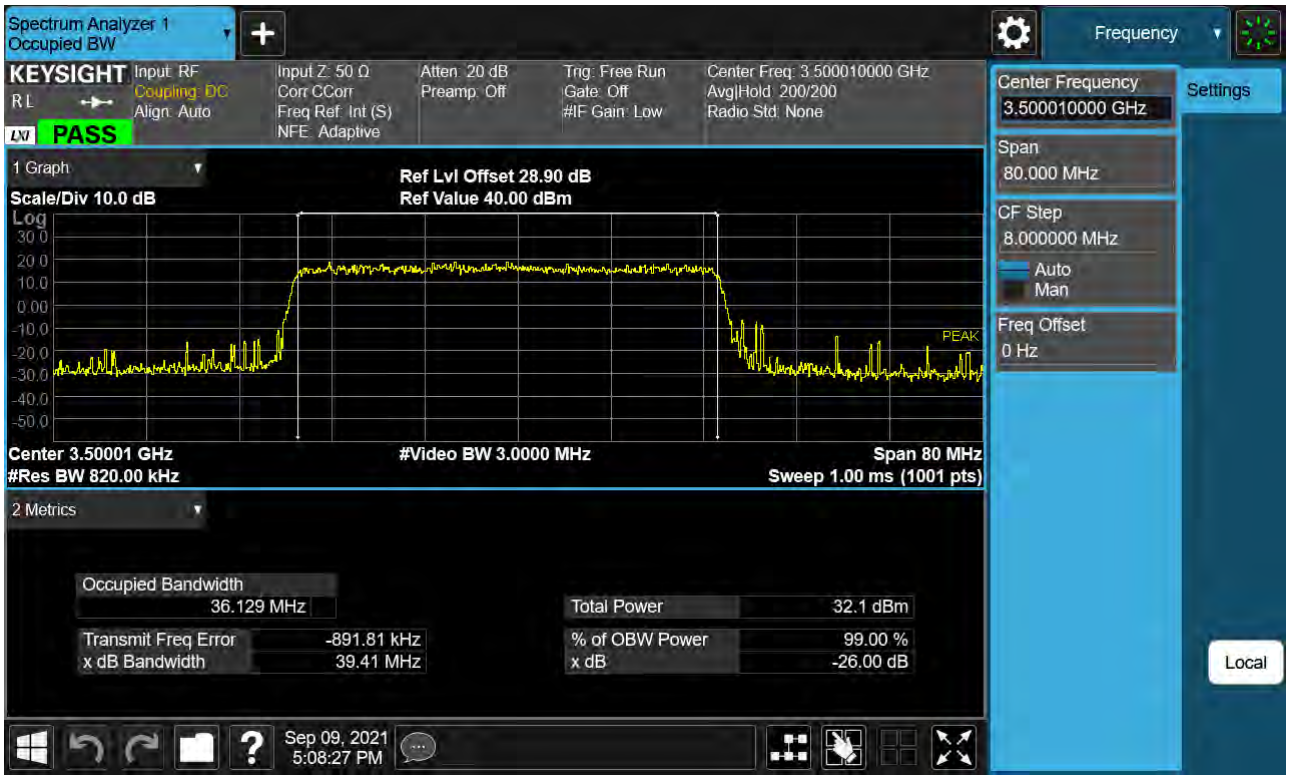
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 QPSK)



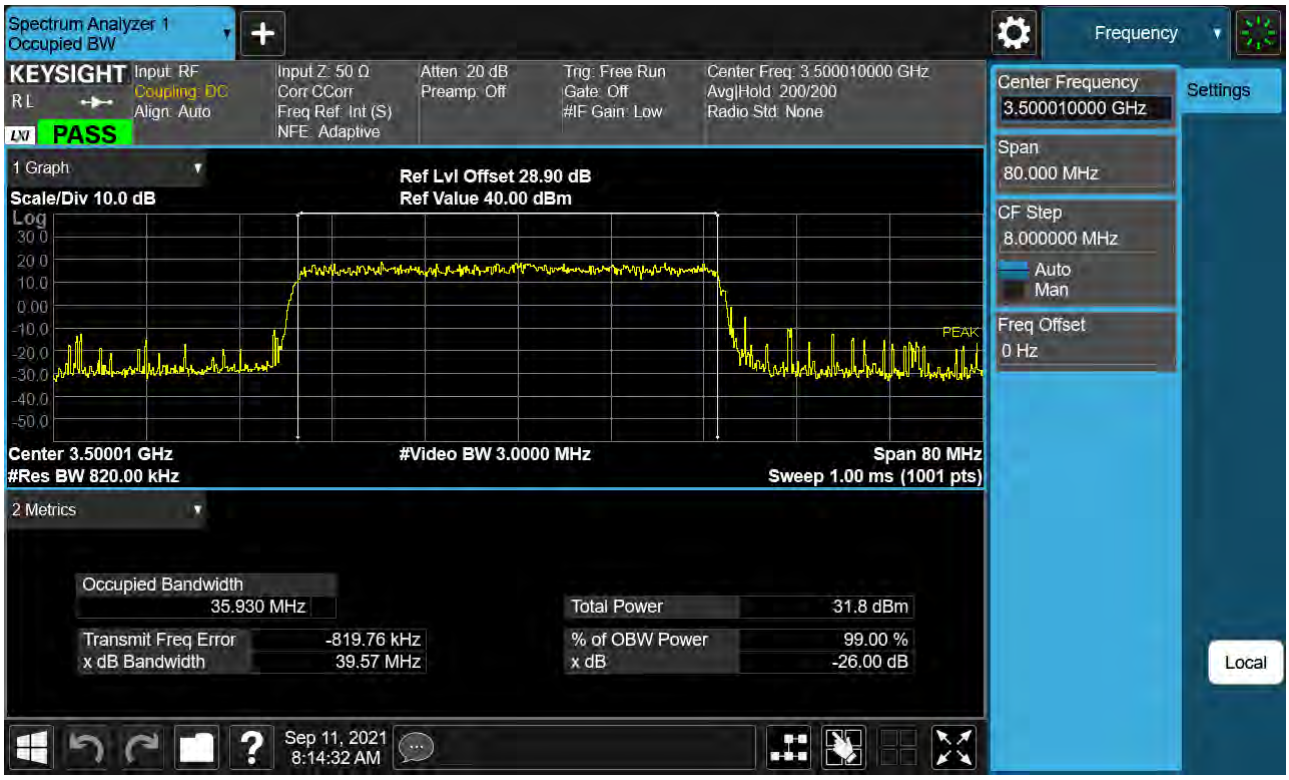
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 16QAM)



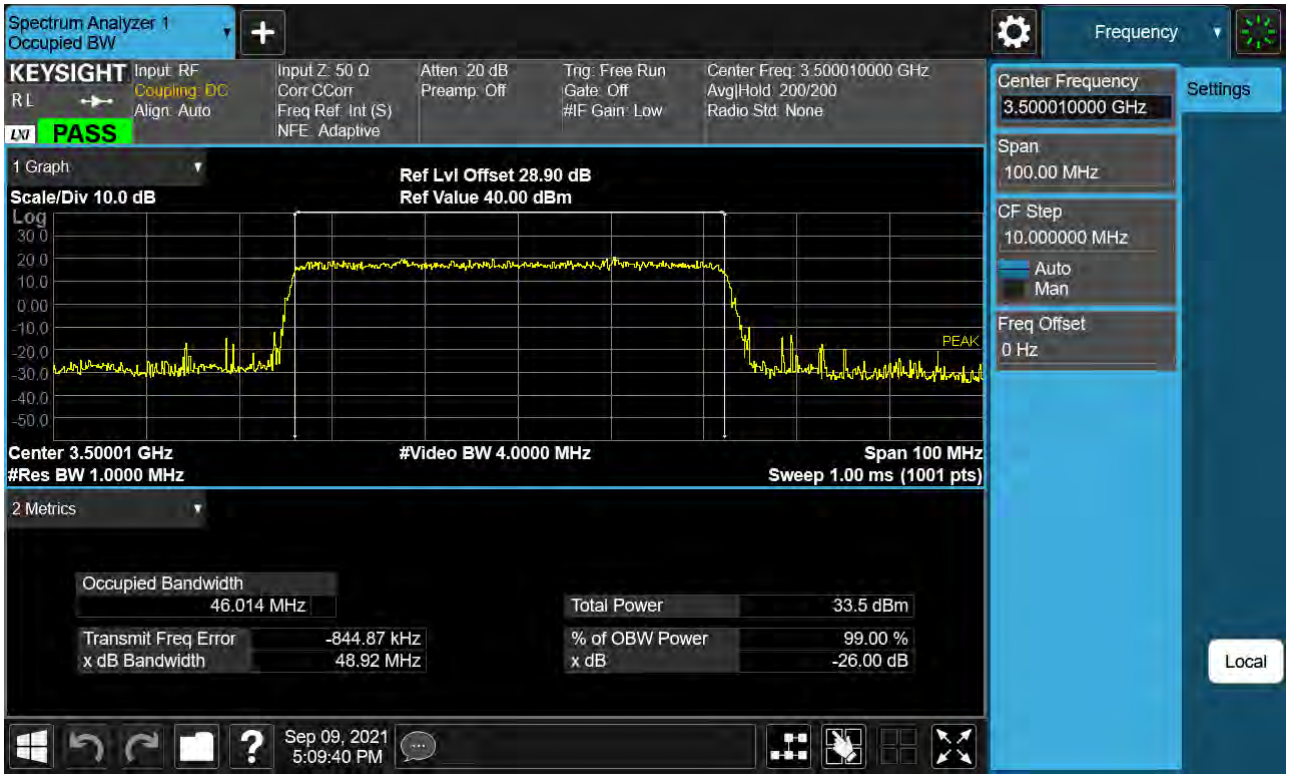
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 64QAM)



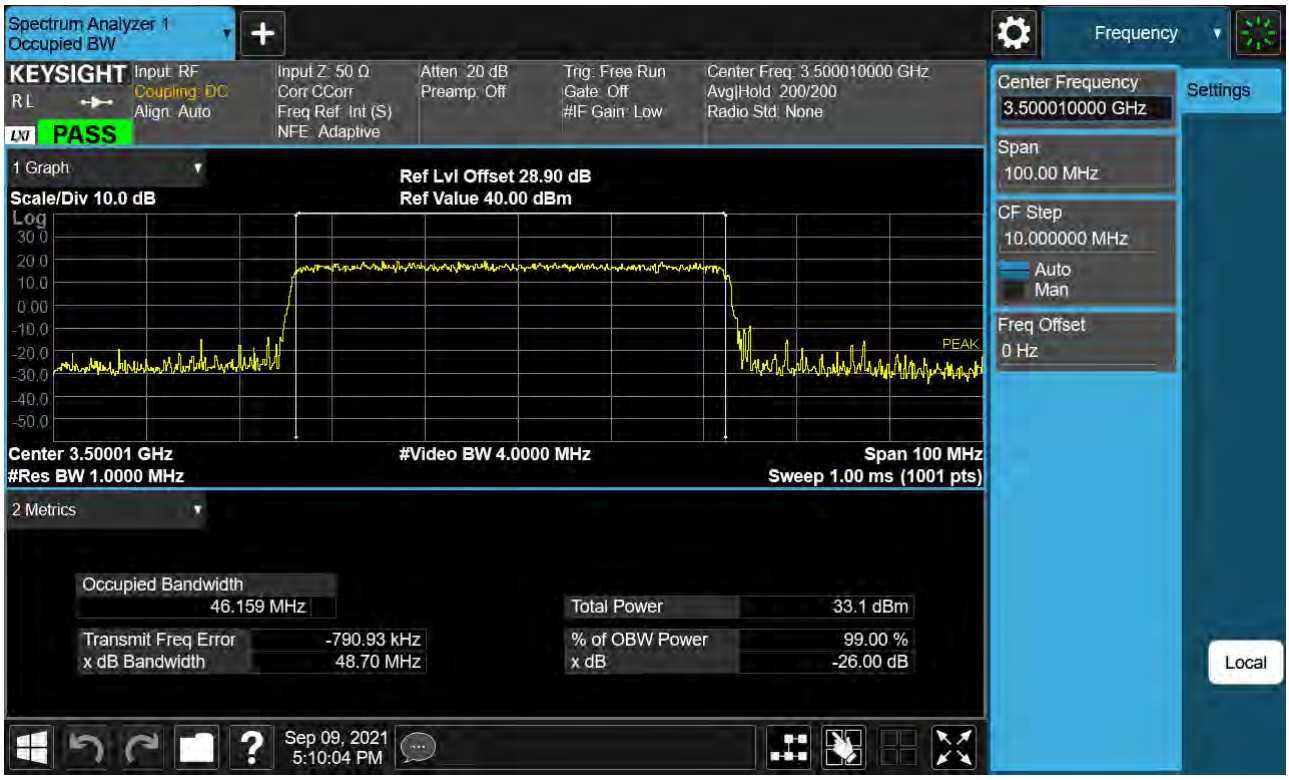
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 256QAM)



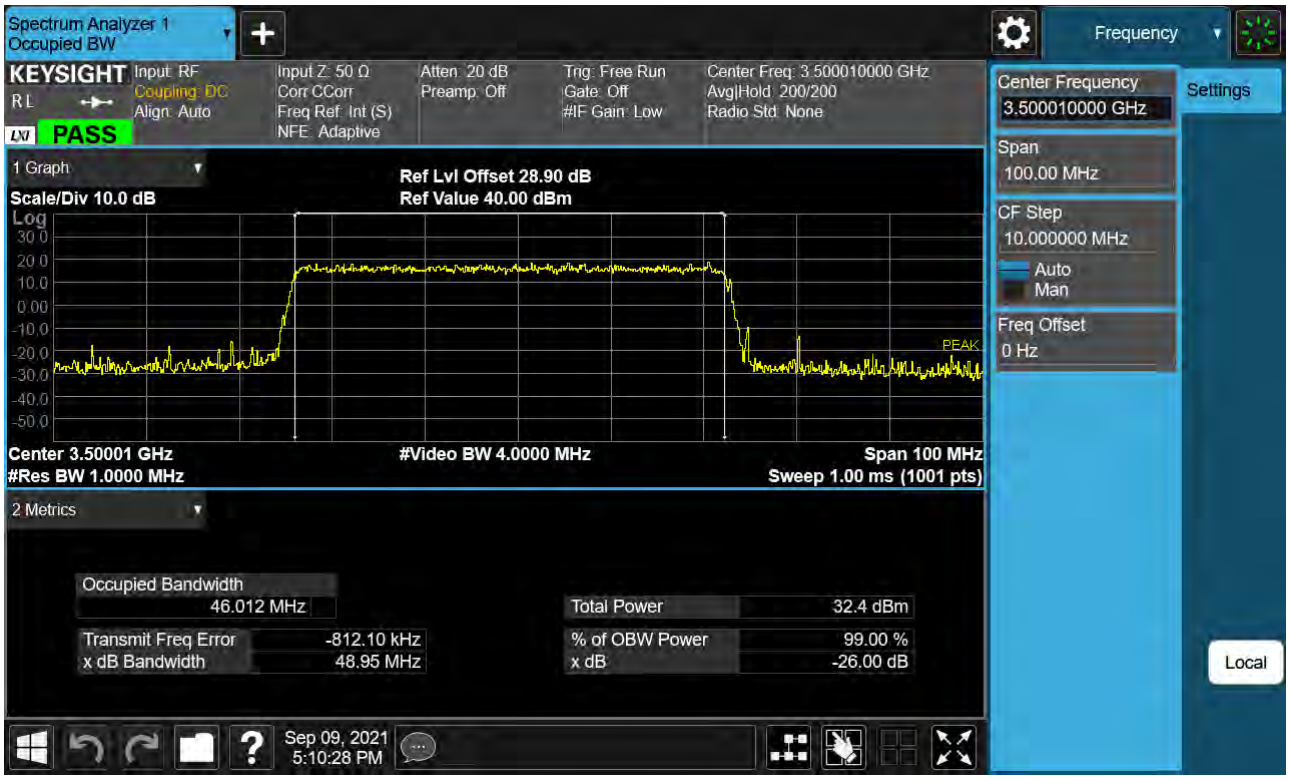
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 BPSK)



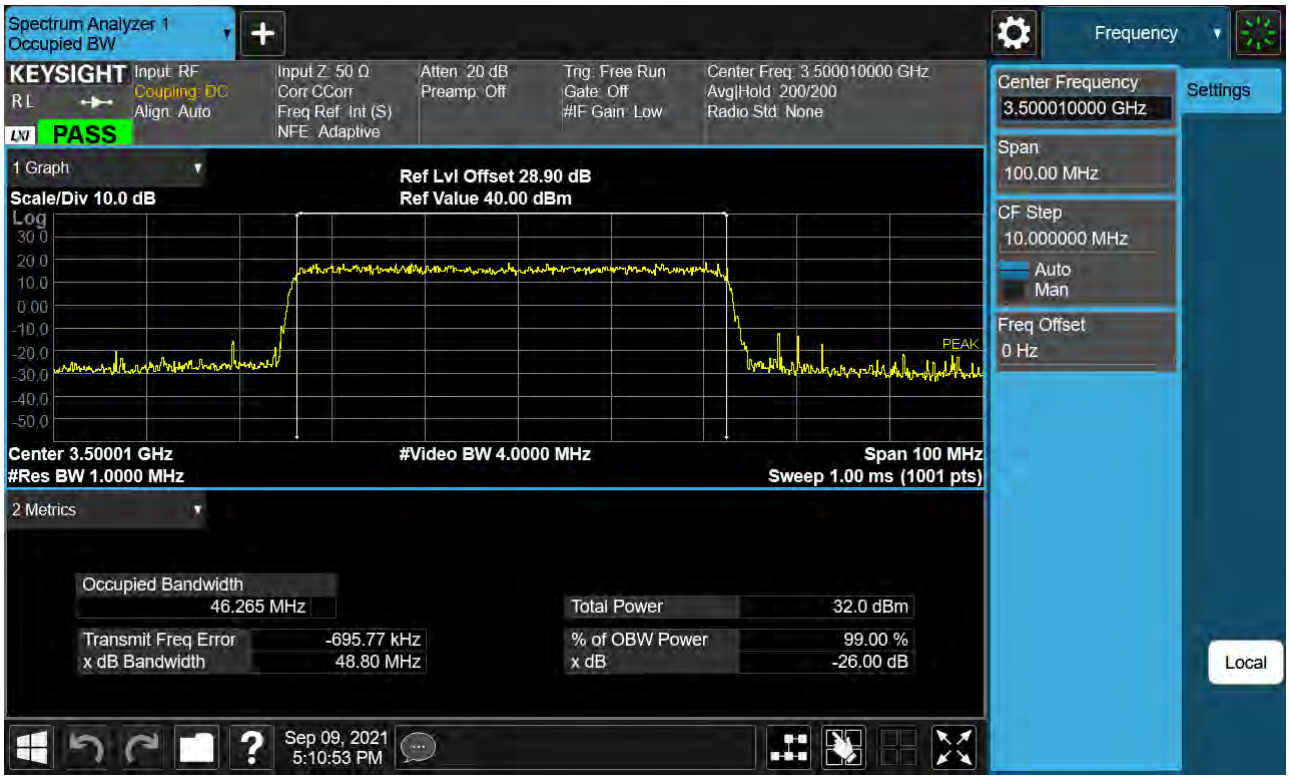
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 QPSK)



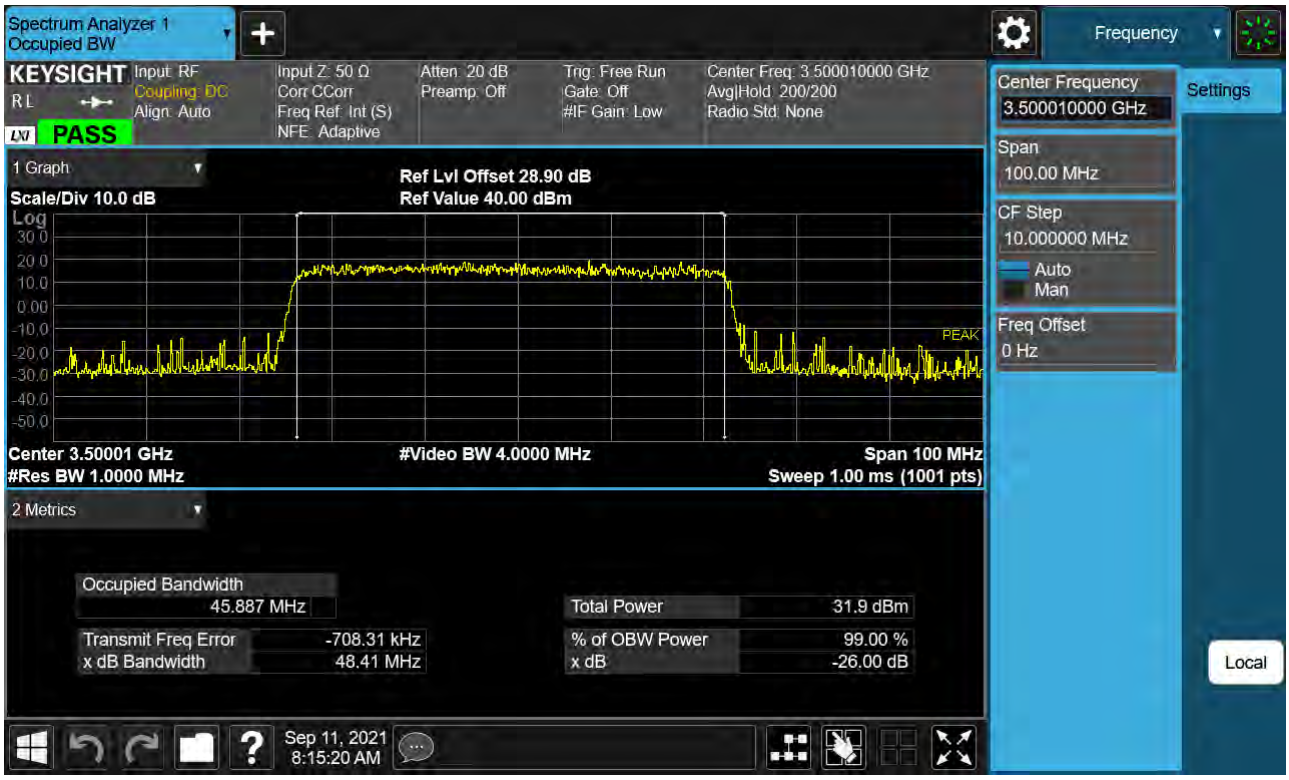
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 16QAM)



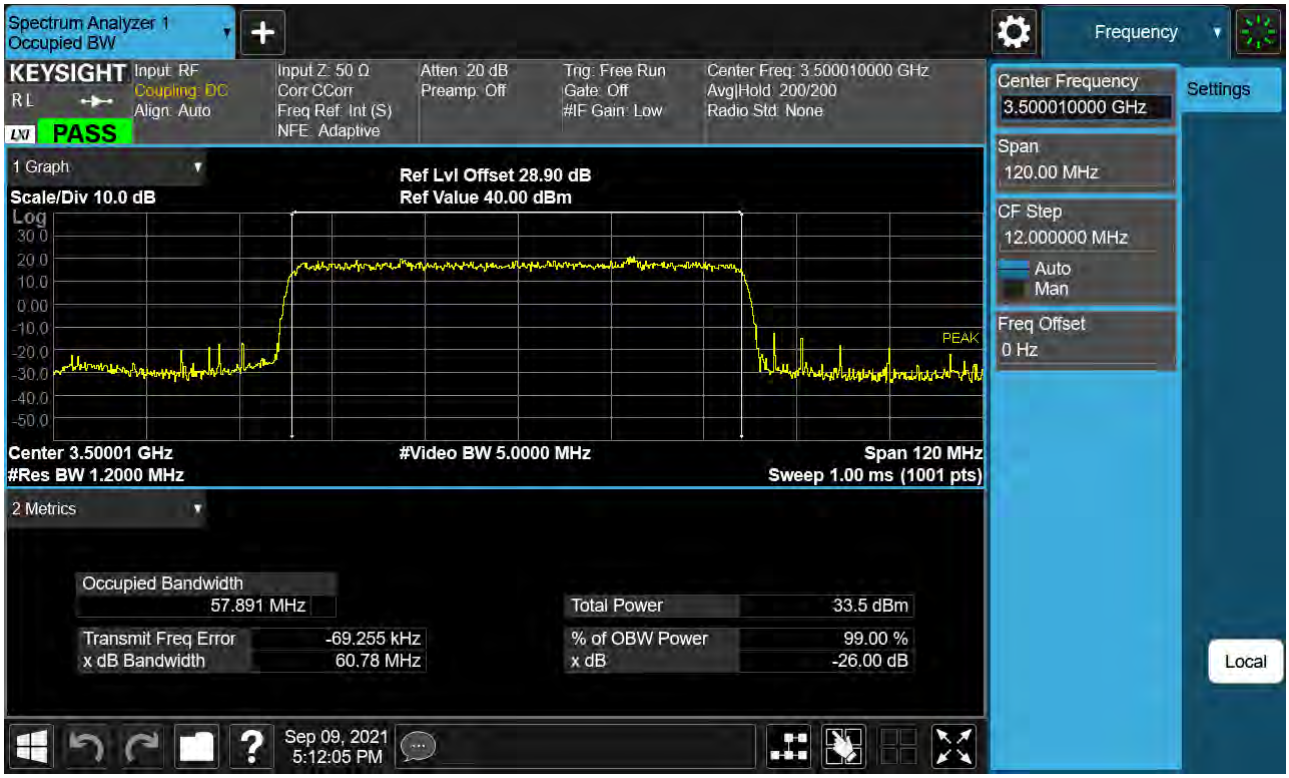
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 64QAM)



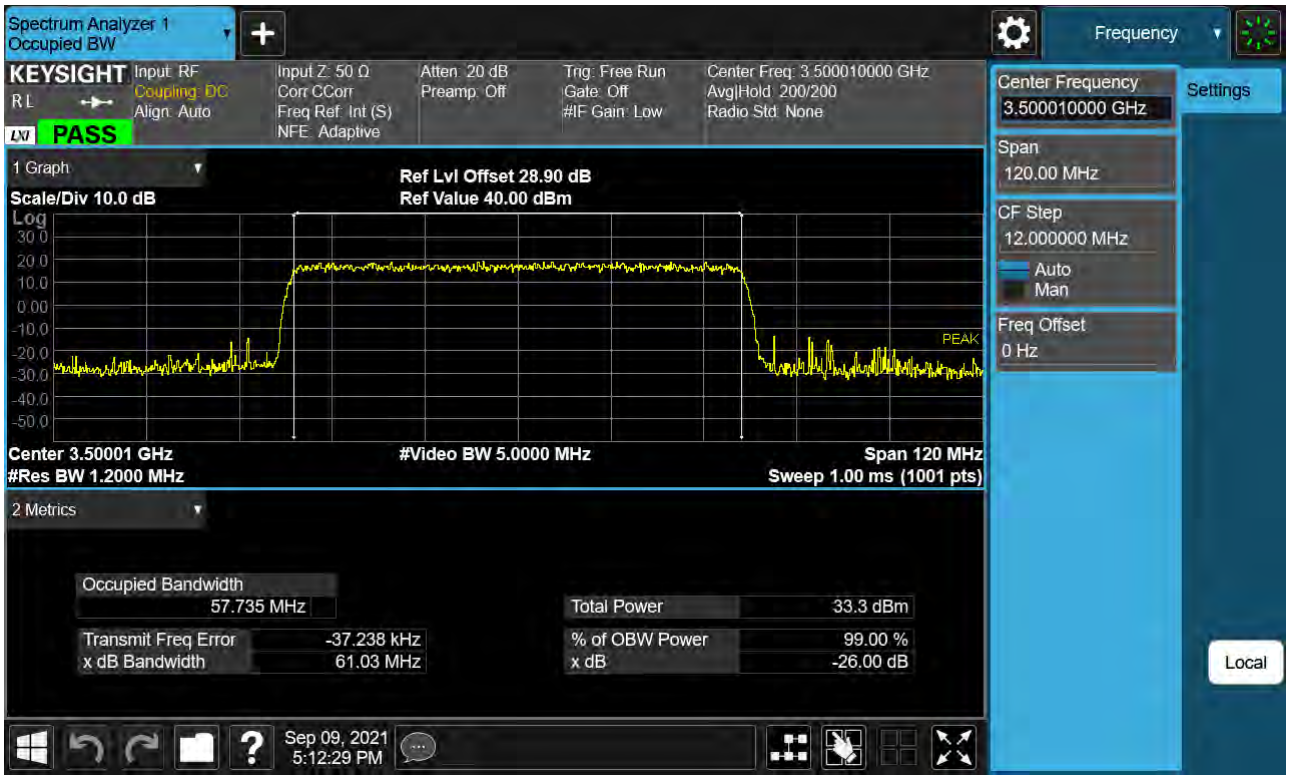
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 256QAM)



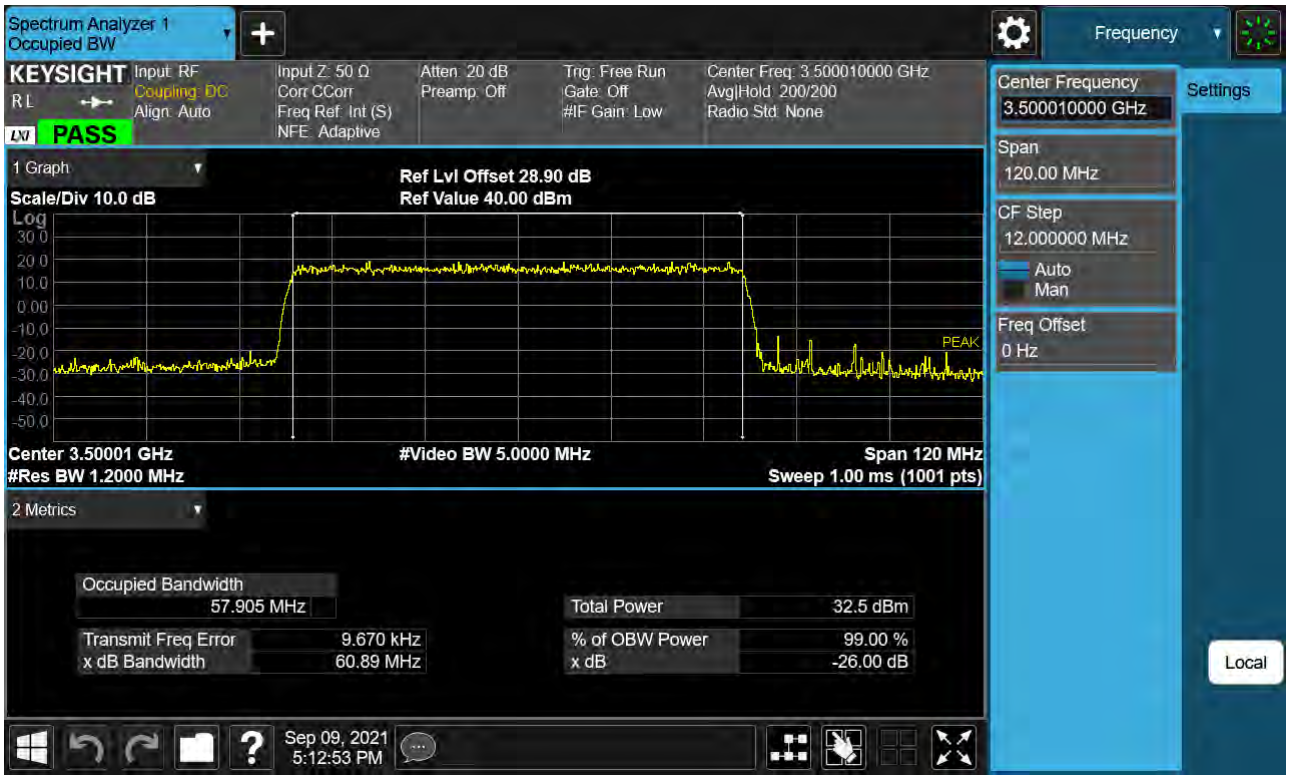
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 BPSK)



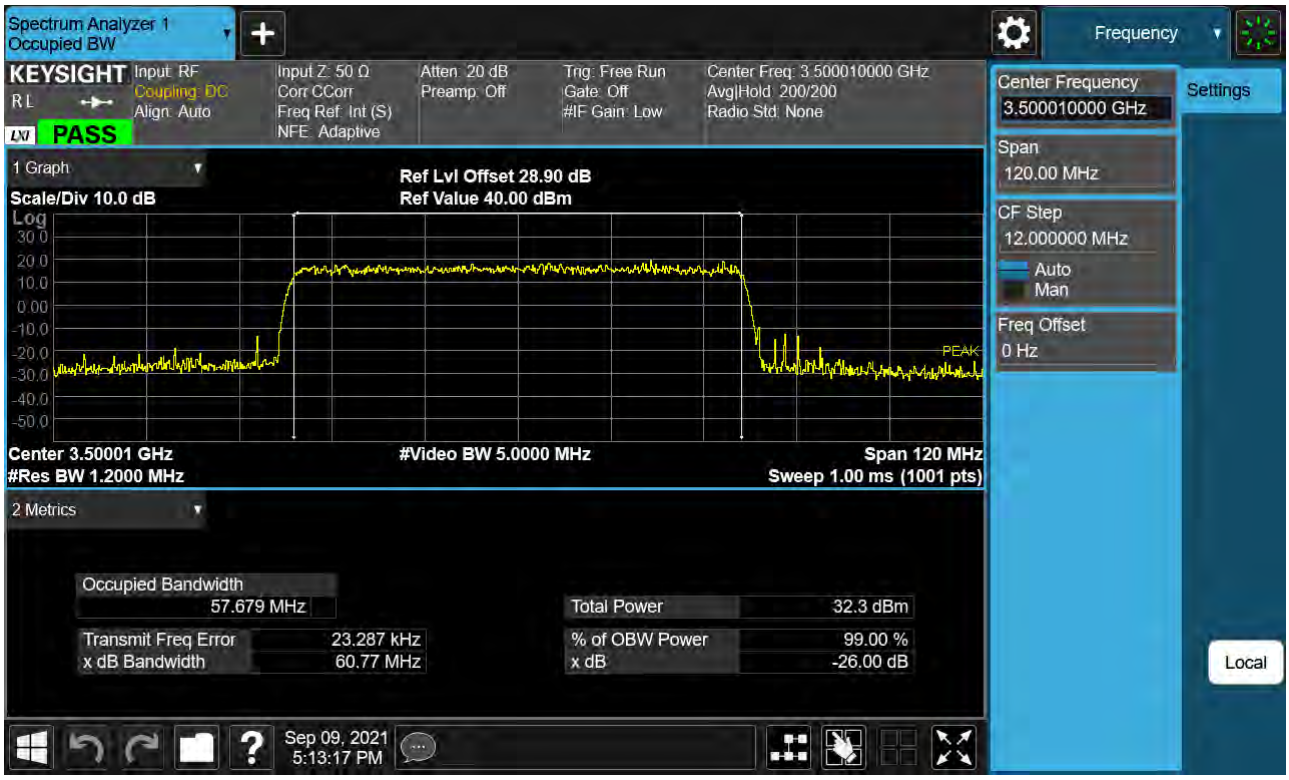
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 QPSK)



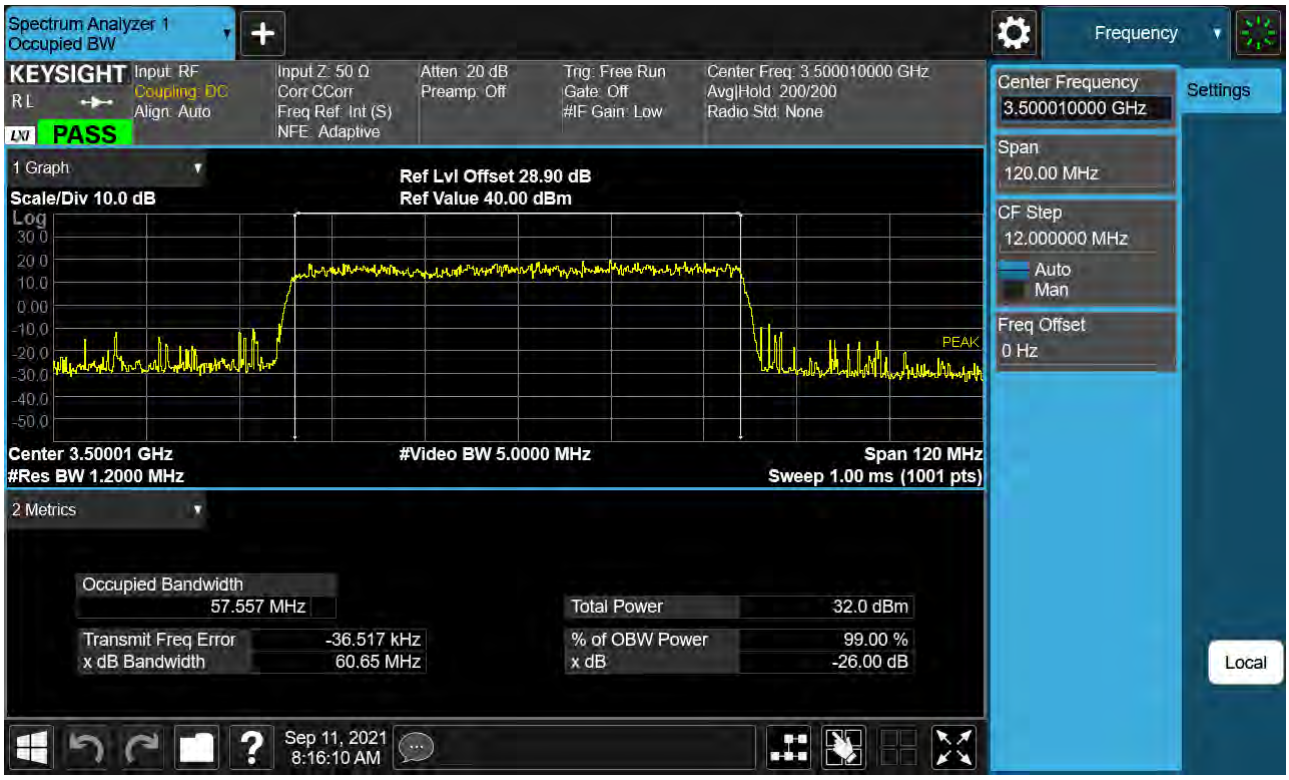
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 16QAM)



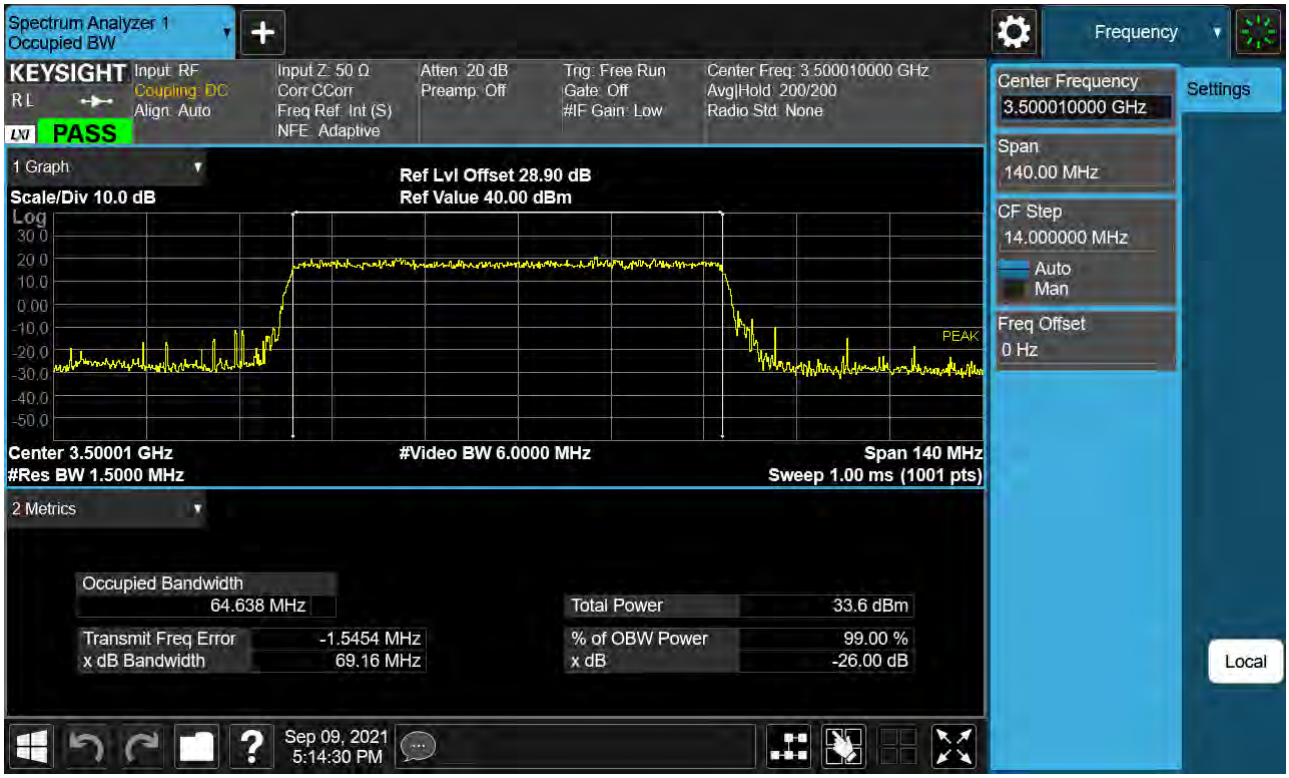
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 64QAM)



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

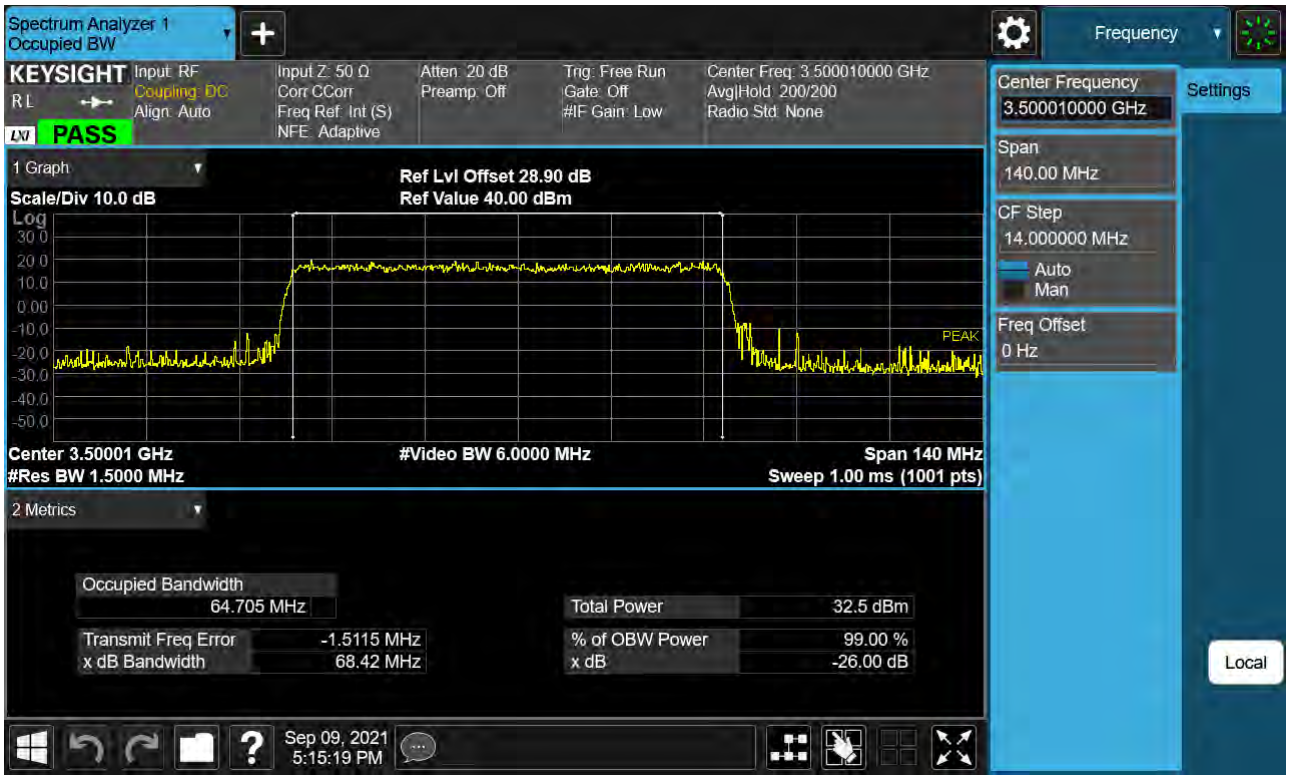


Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 BPSK)



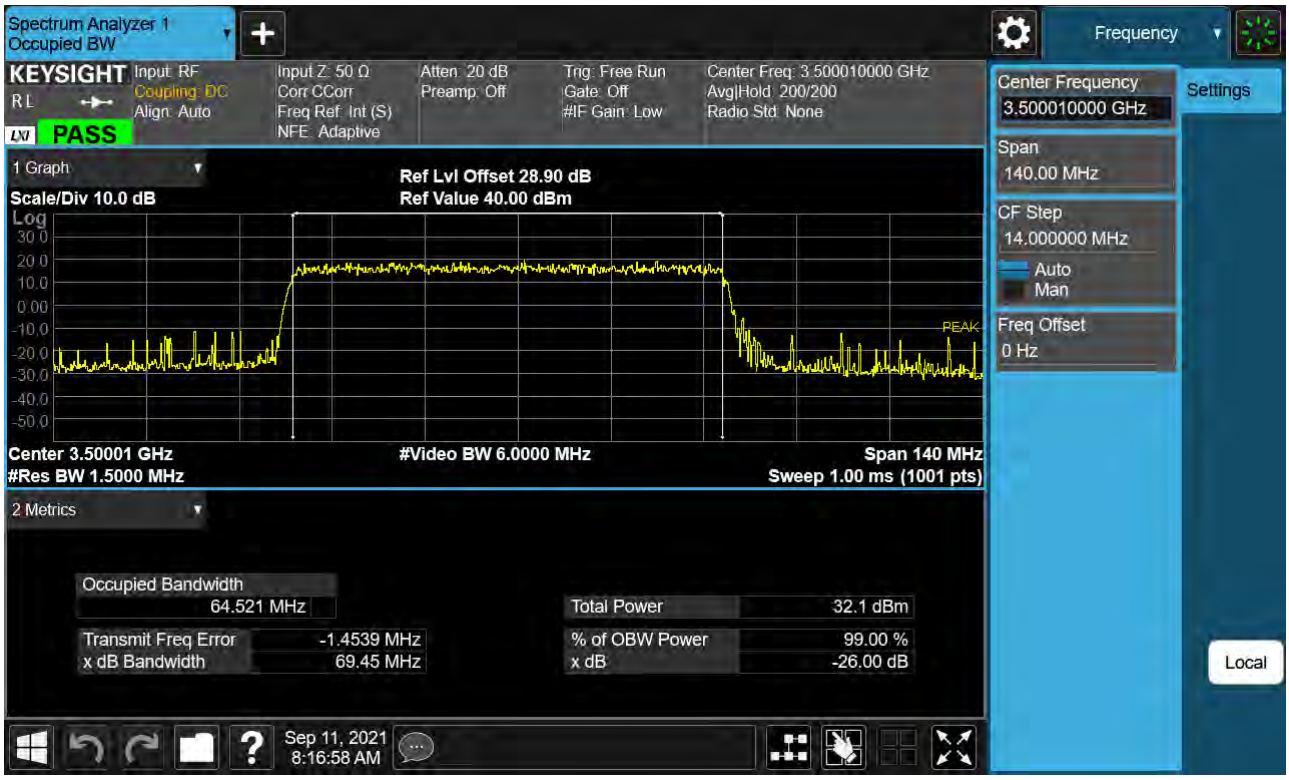
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 QPSK)

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

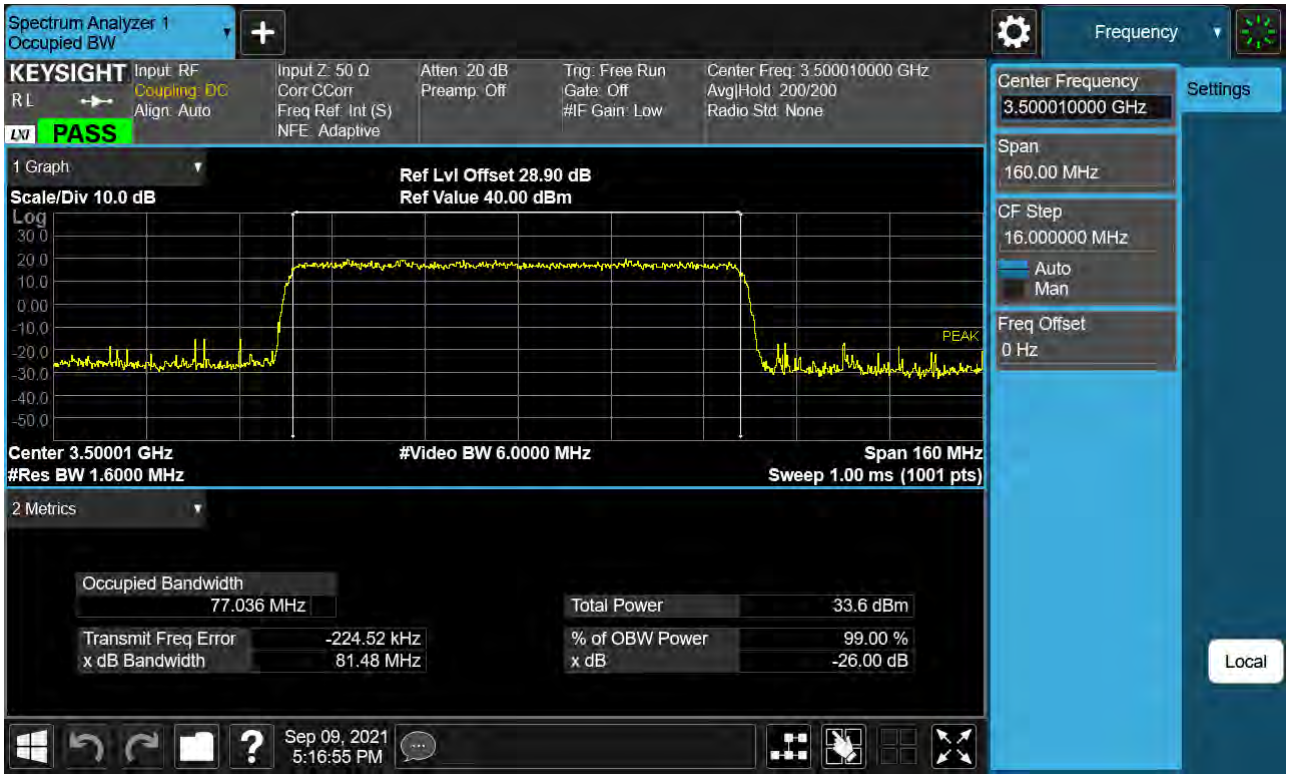


Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 64QAM)

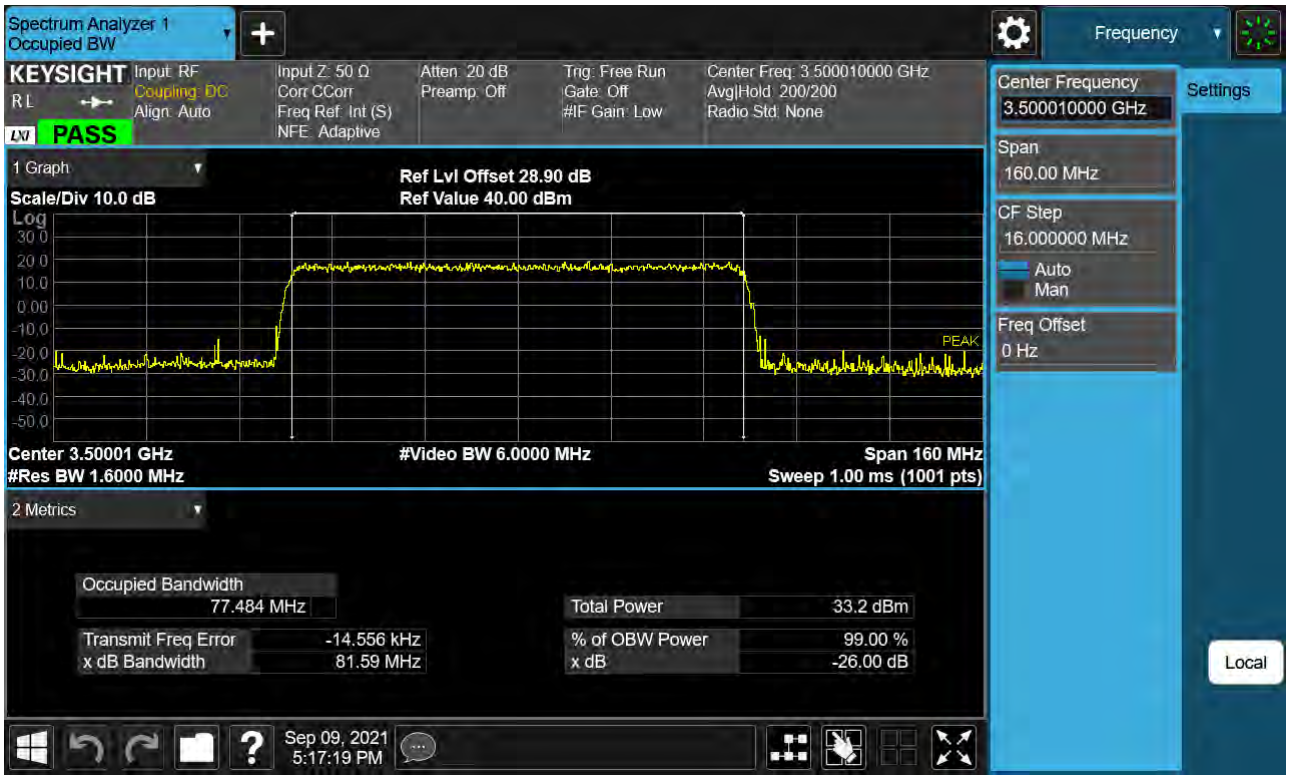
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 256QAM)



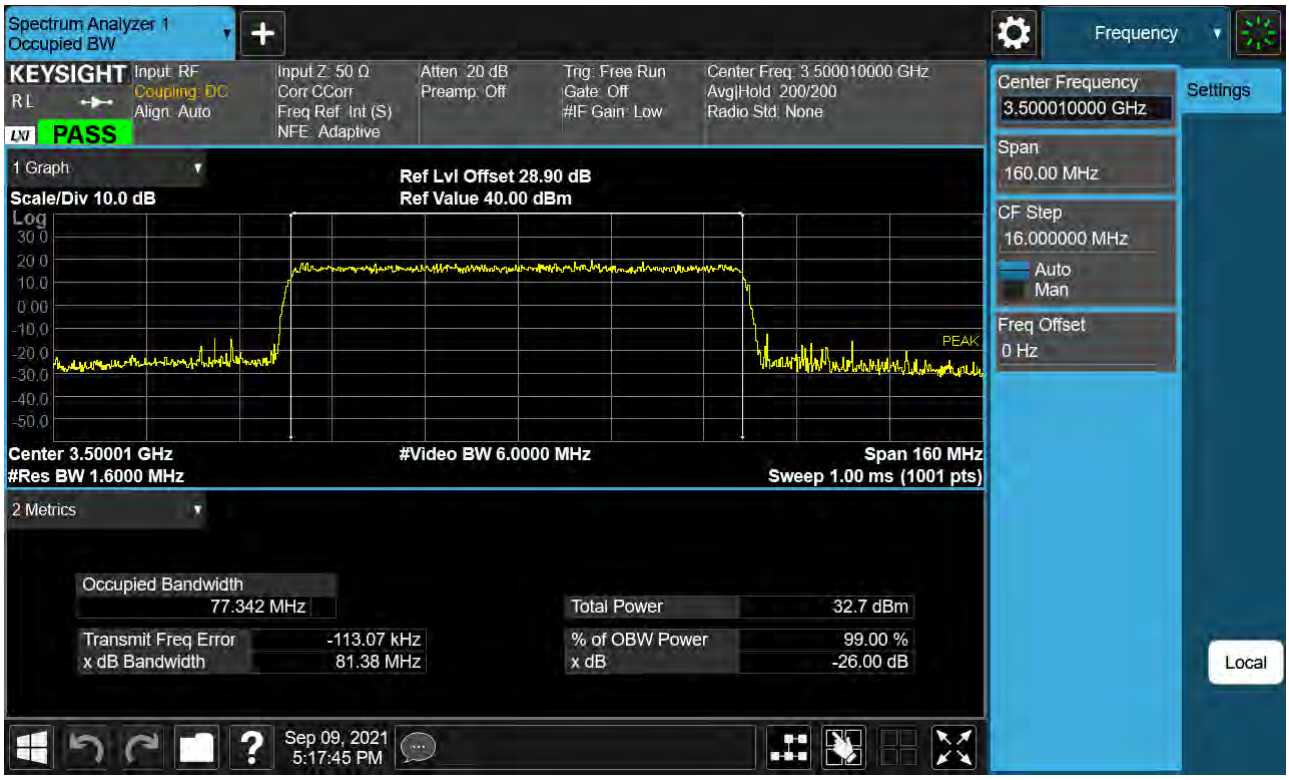
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 BPSK)



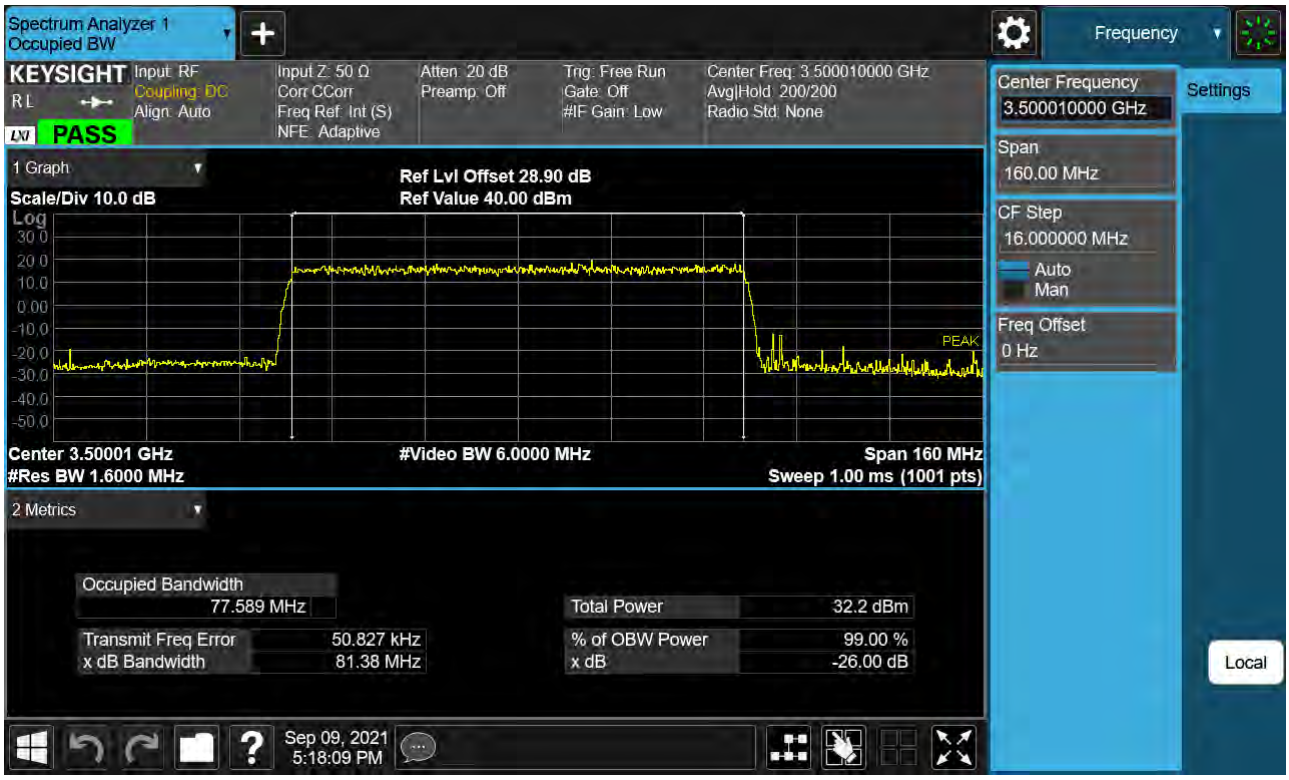
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 QPSK)



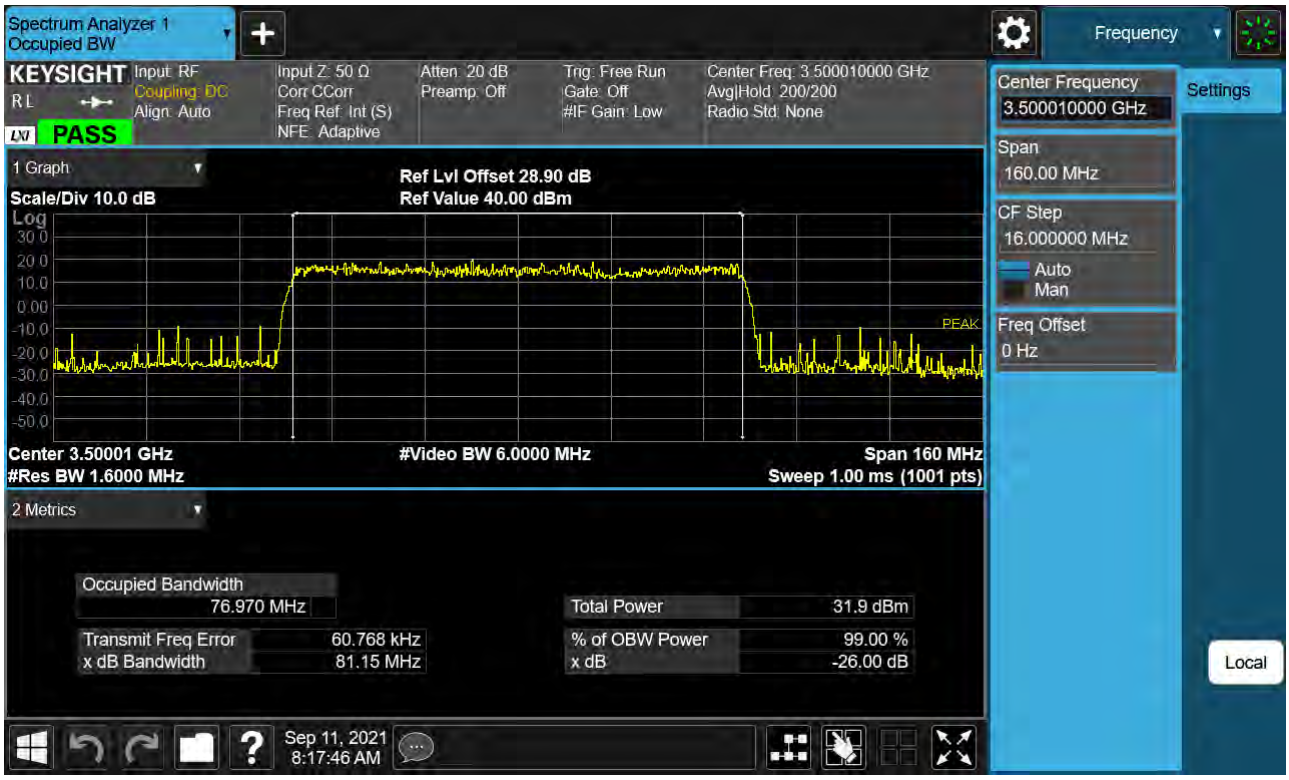
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 16QAM)



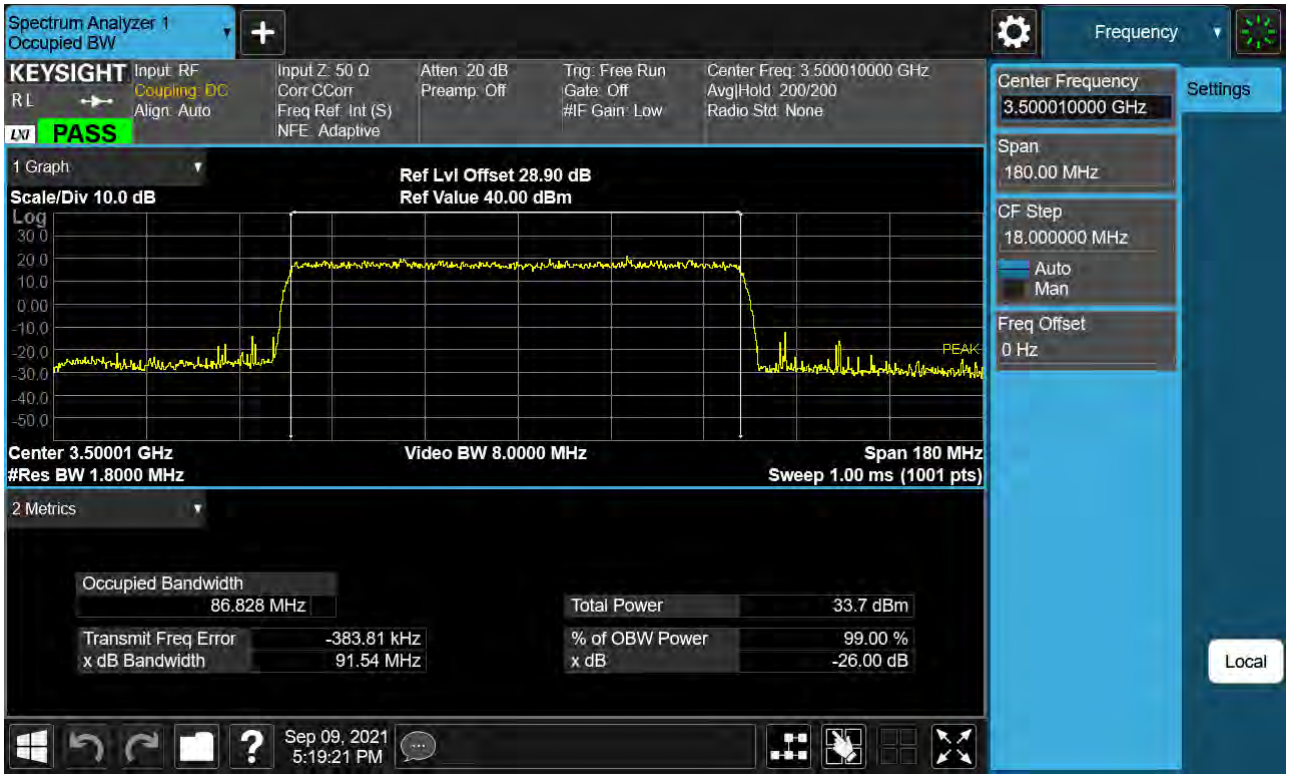
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 64QAM)



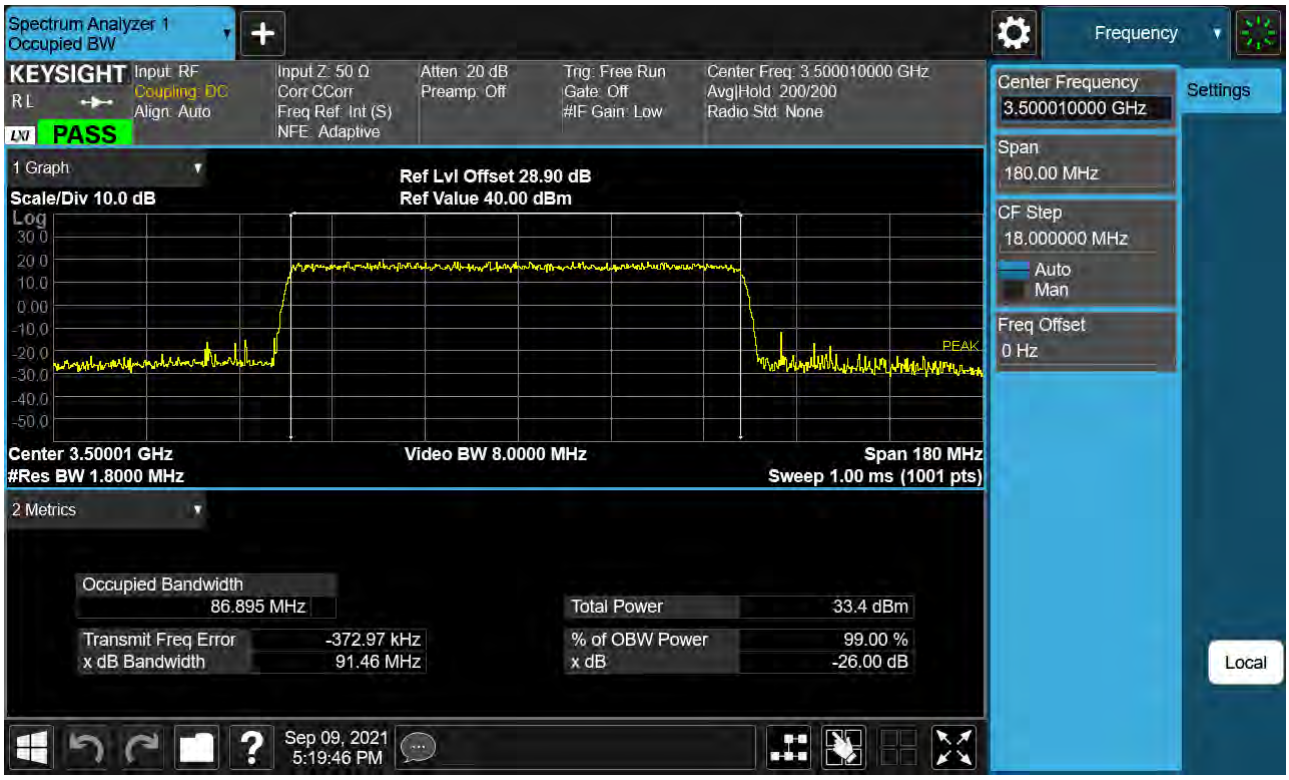
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 256QAM)



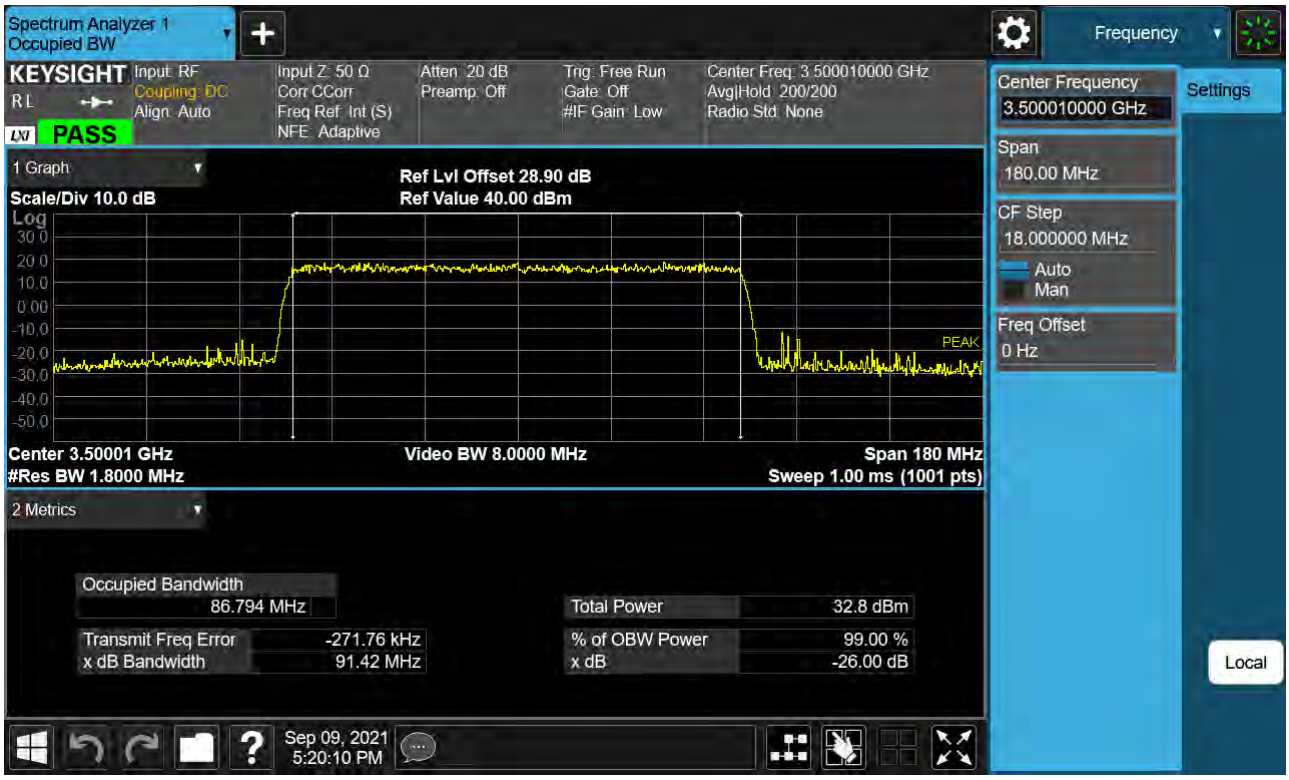
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 BPSK)



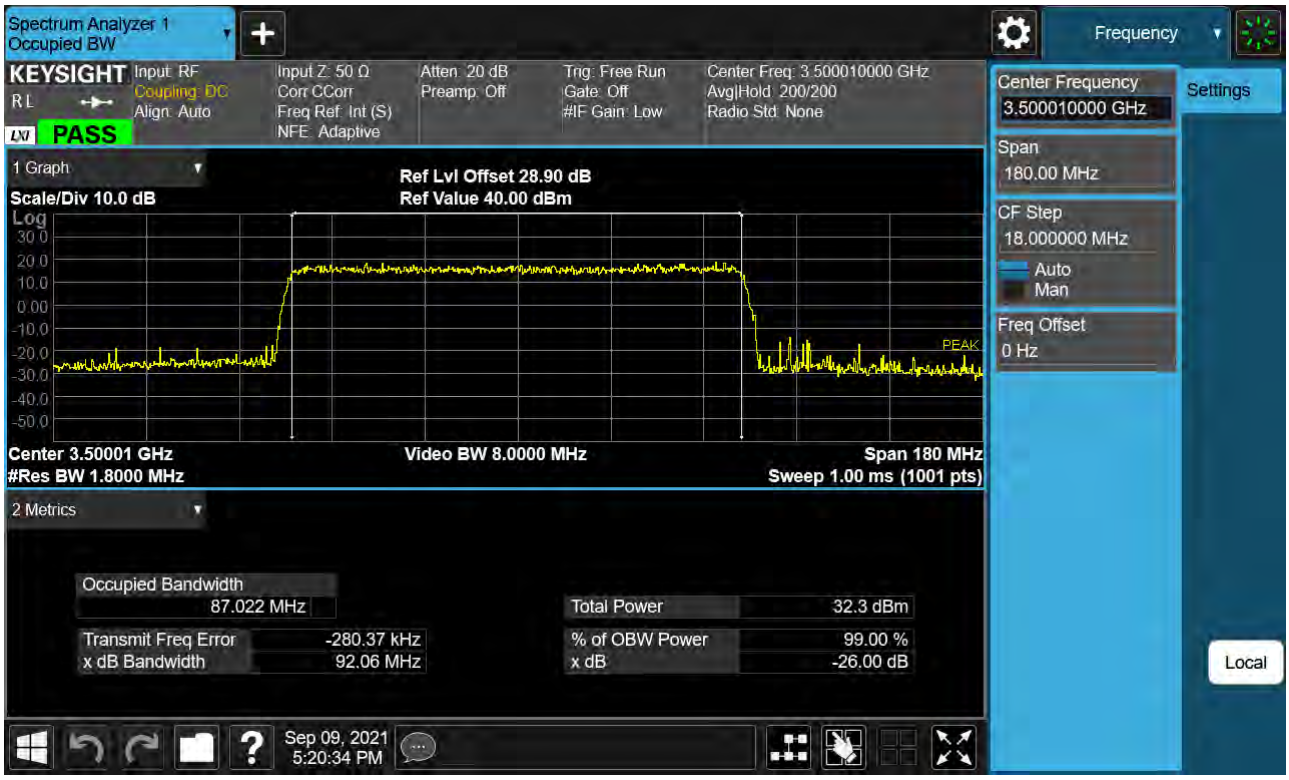
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 QPSK)



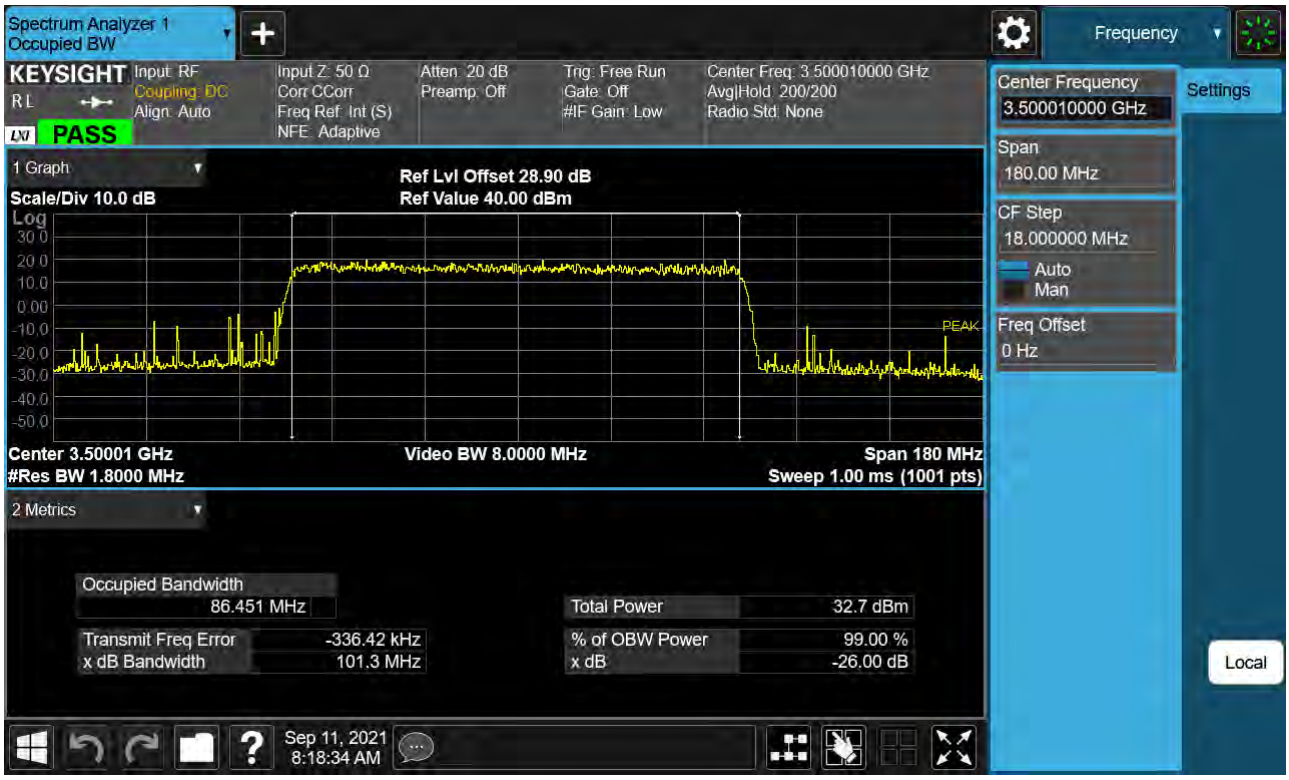
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 16QAM)



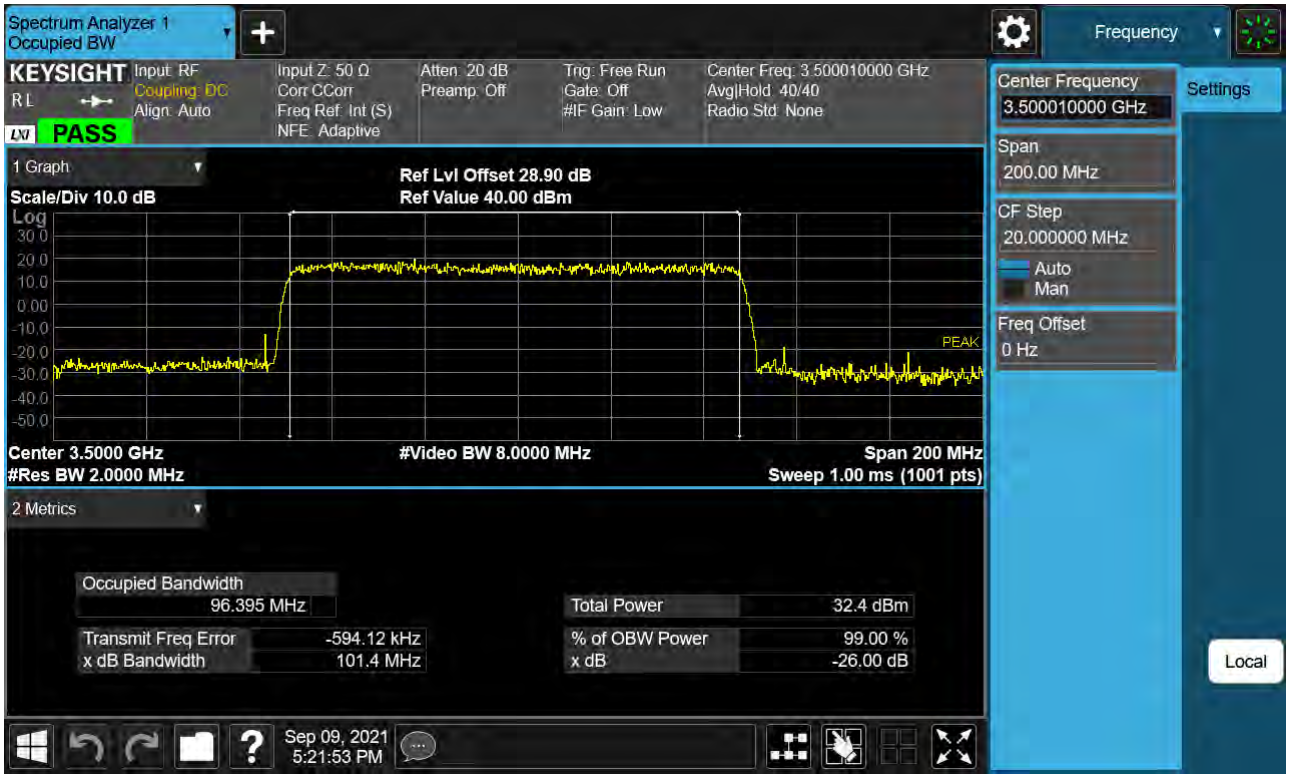
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 64QAM)



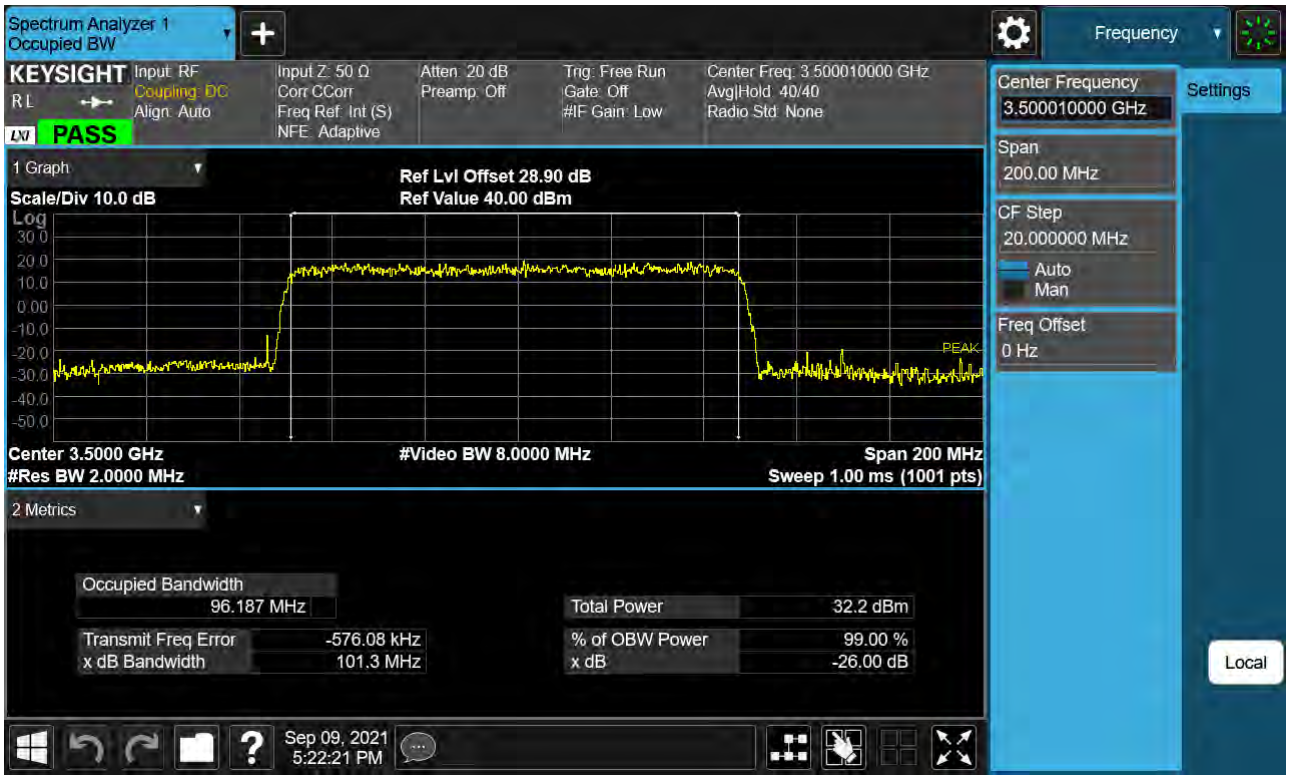
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 256QAM)



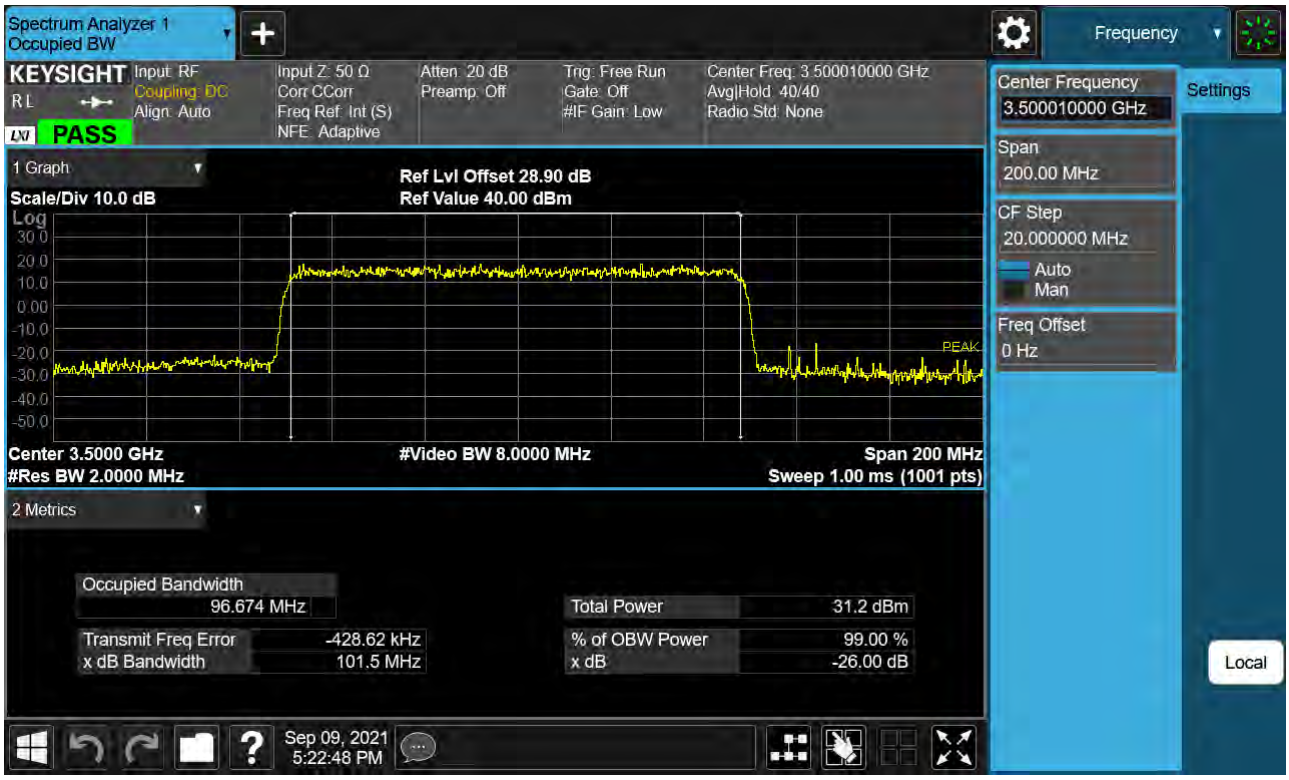
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 BPSK)



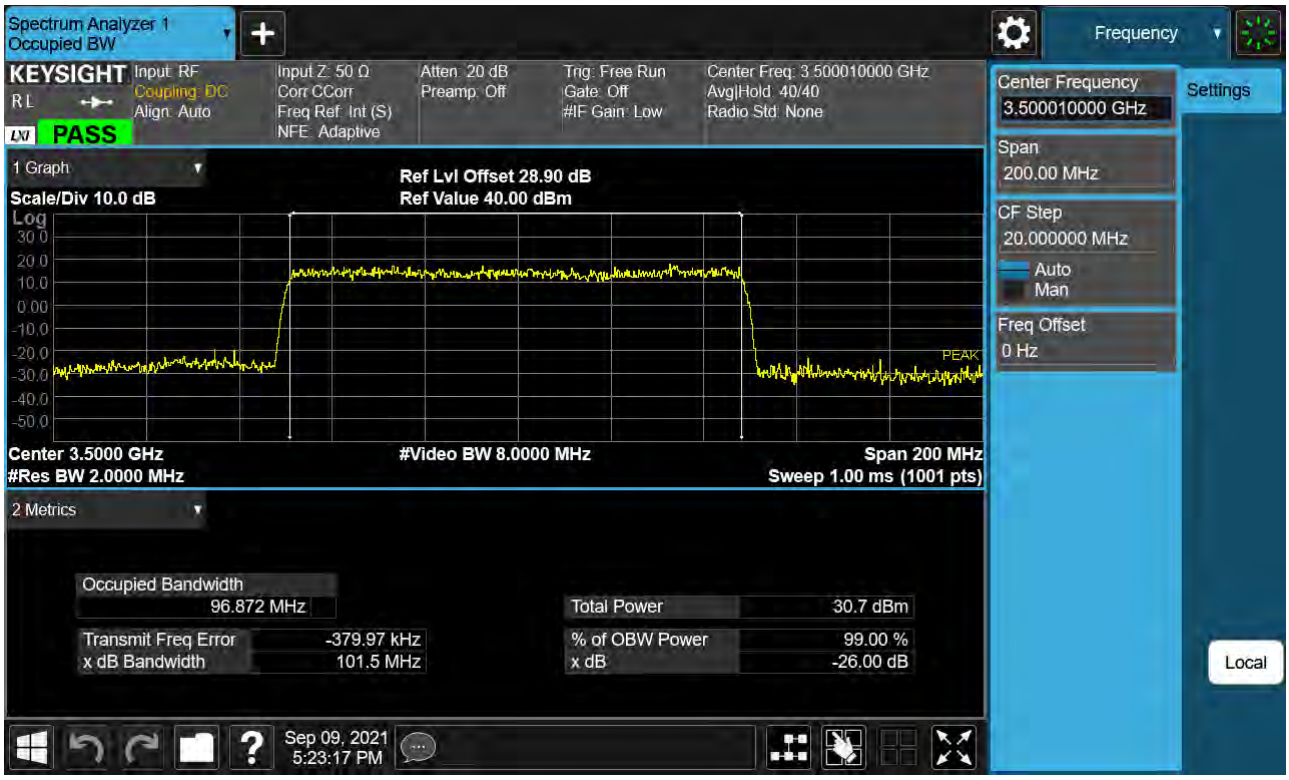
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 QPSK)



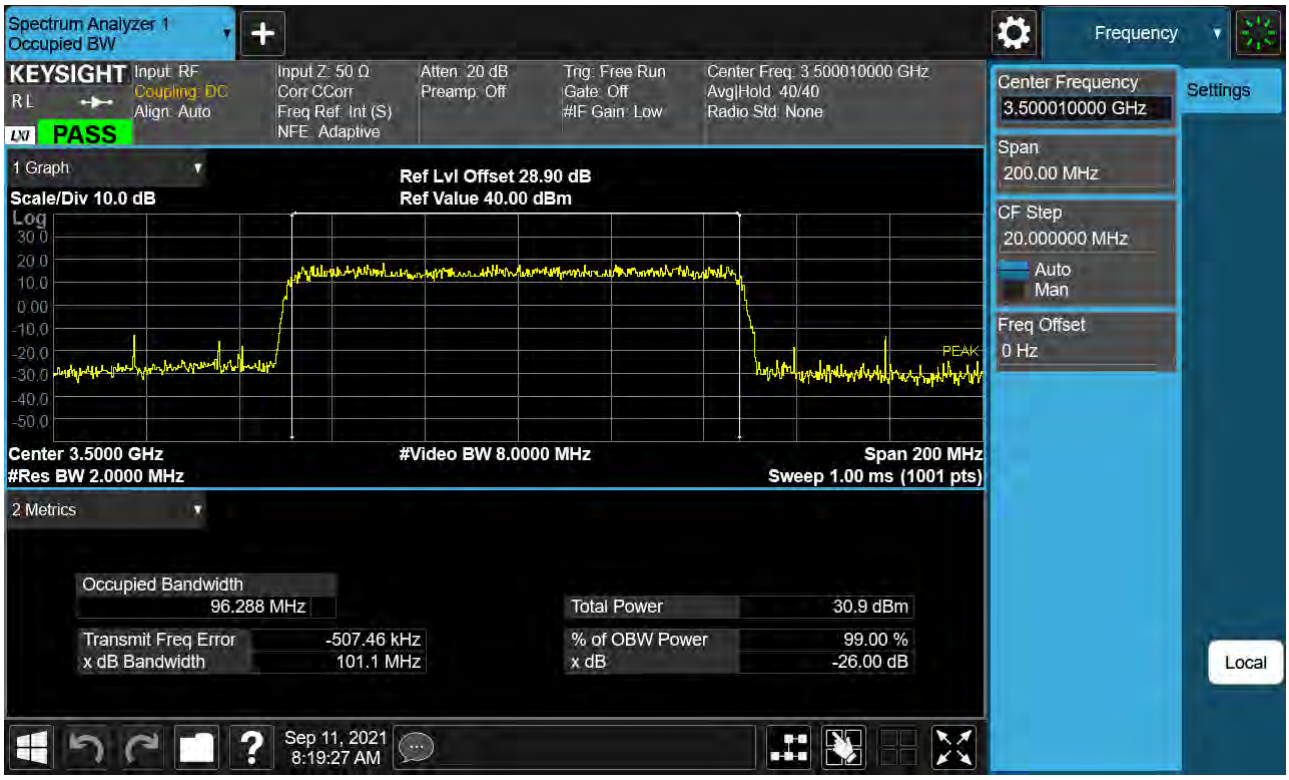
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 16QAM)



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)

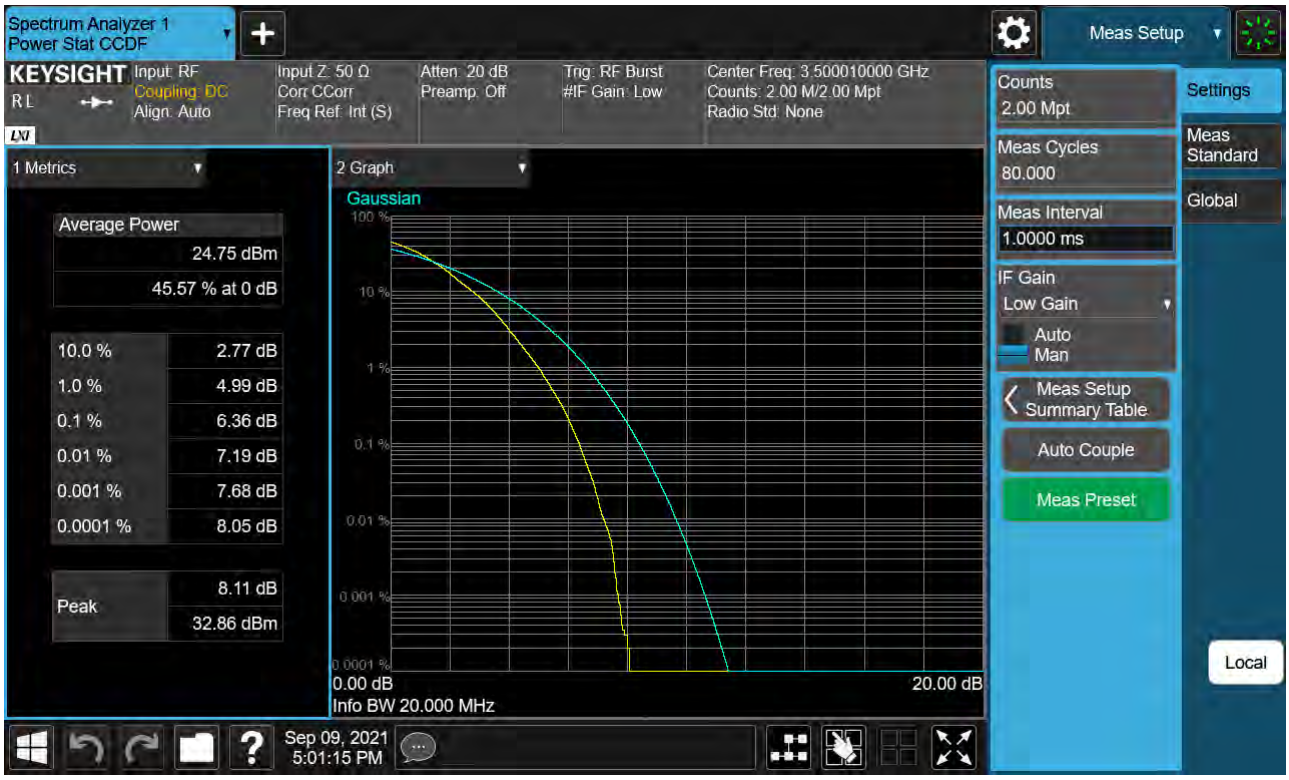
Sub6 n77. PAR Plot (15 M BW_Ch.633334_256QAM)

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

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

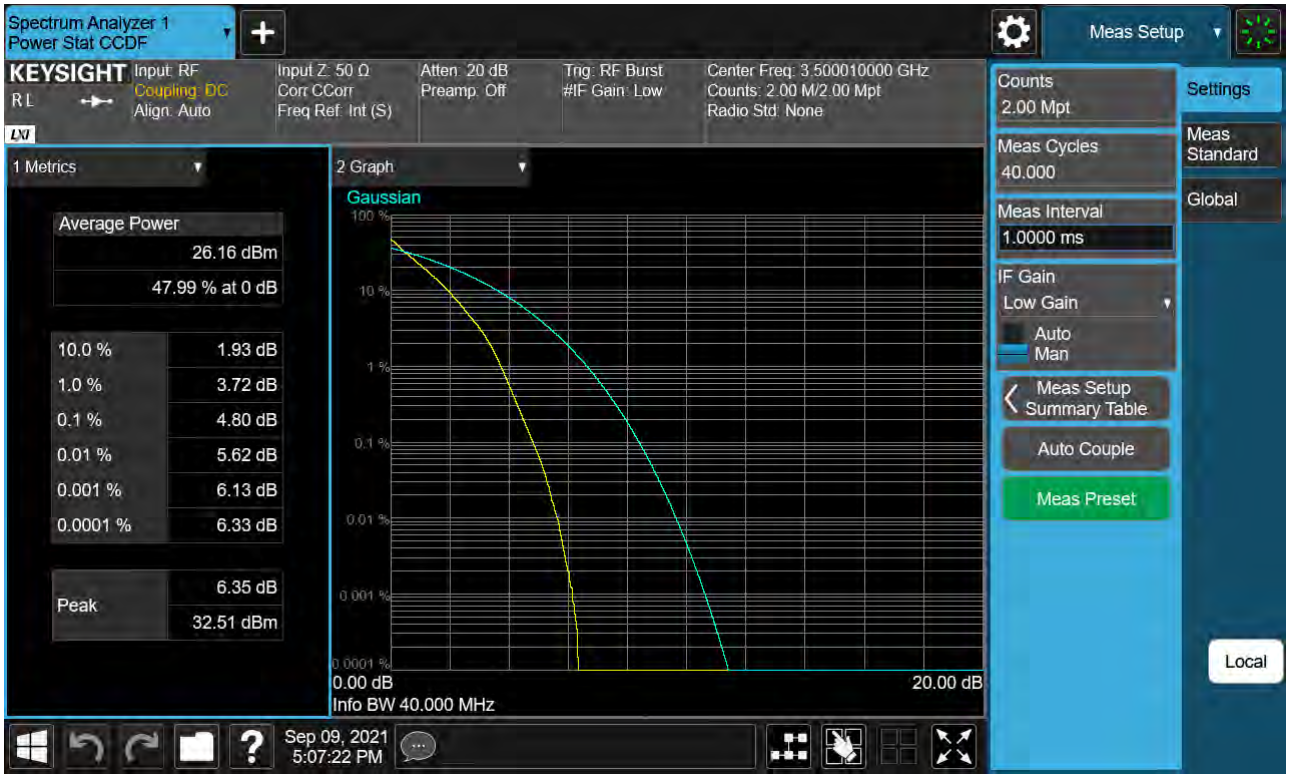
Sub6 n77. PAR Plot (20 M BW_Ch.633334_16QAM)

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

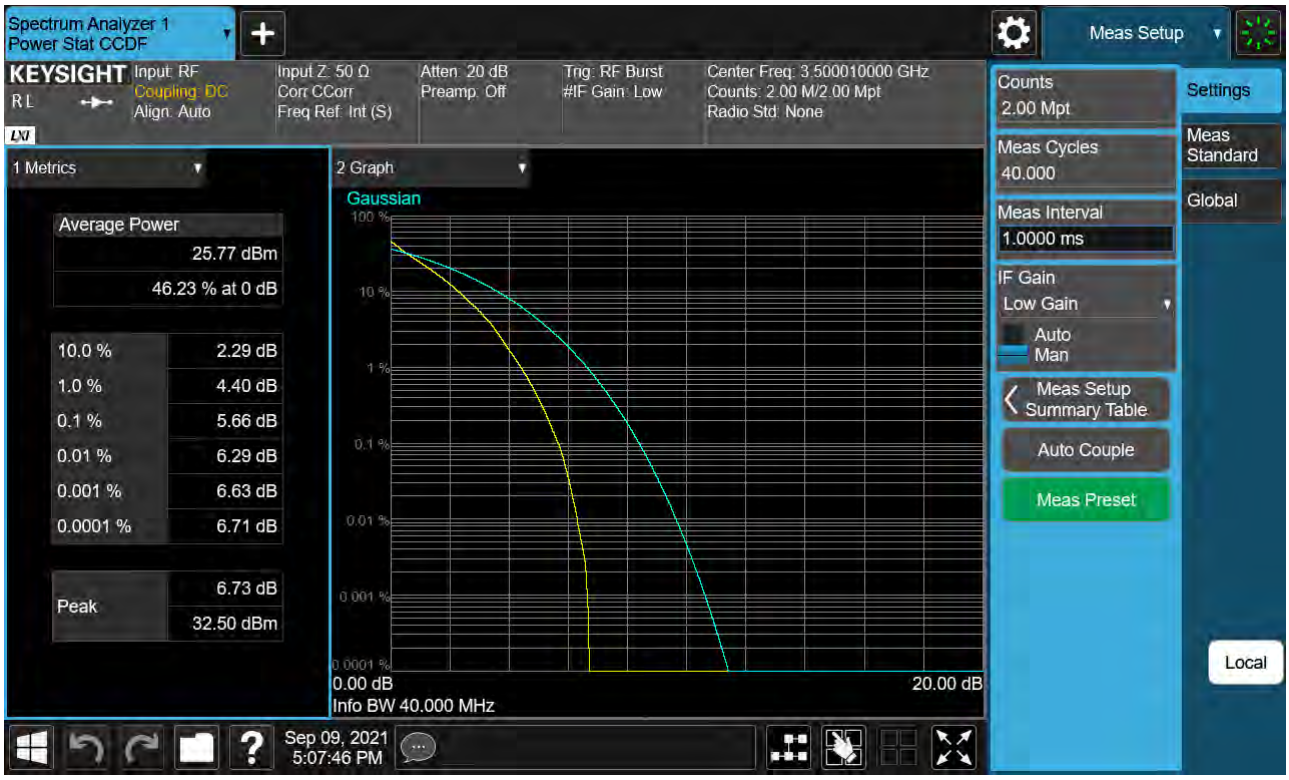


Sub6 n77. PAR Plot (20 M BW_Ch.633334_256QAM)

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



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

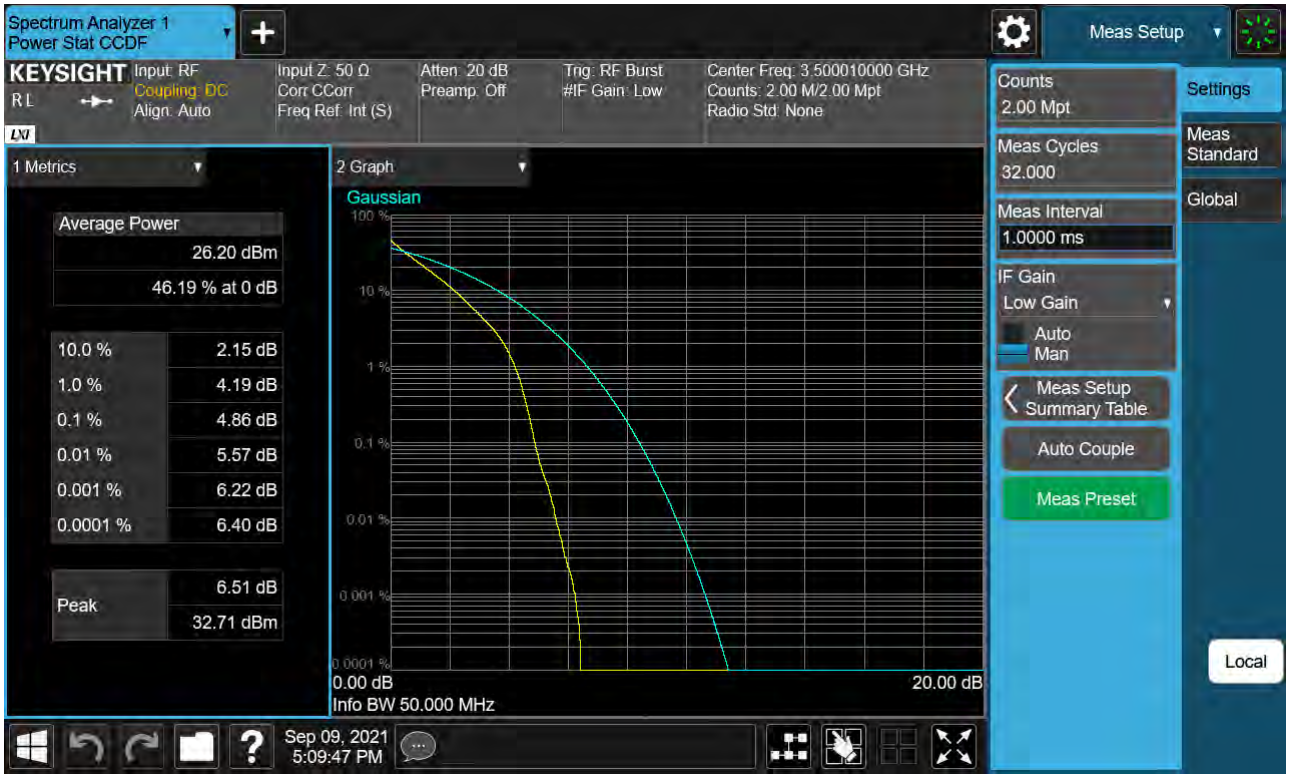


Sub6 n77. PAR Plot (40 M BW_Ch.633334_16QAM)

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

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

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

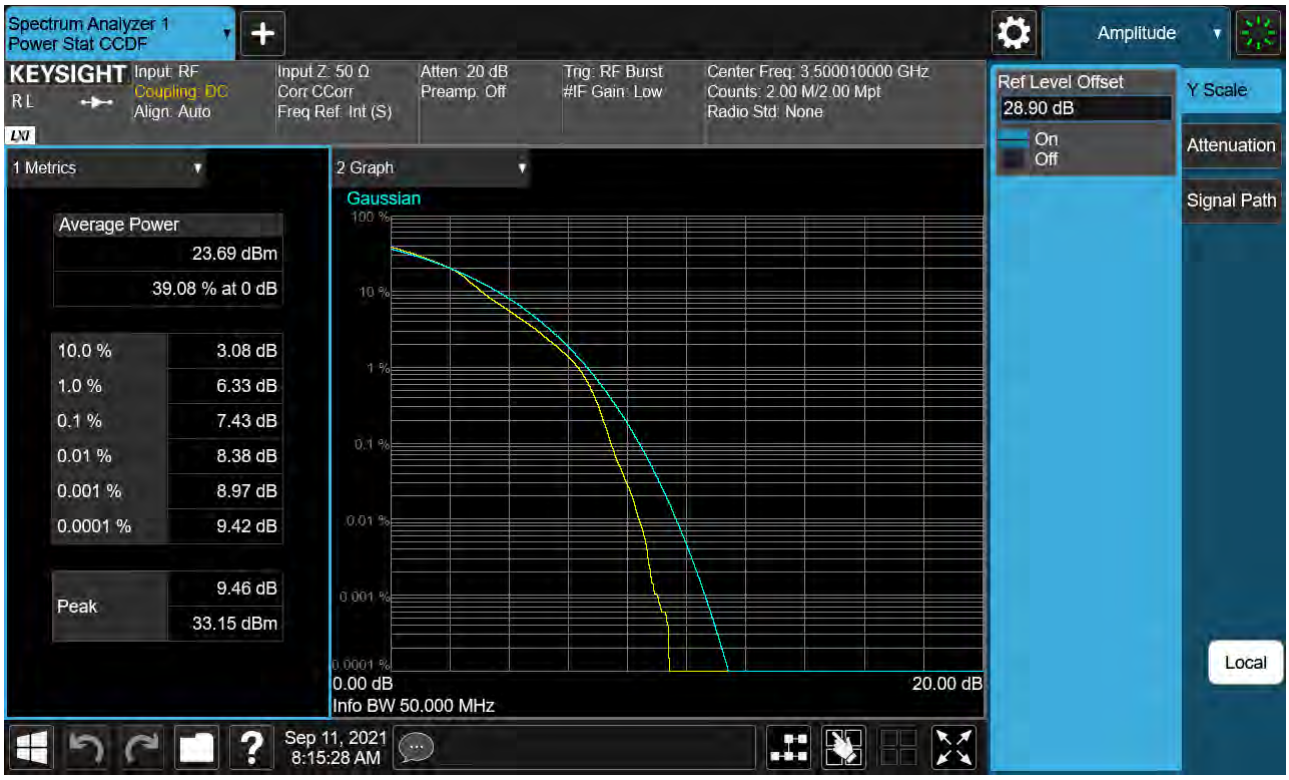


Sub6 n77. PAR Plot (50 M BW_Ch.633334_QPSK)

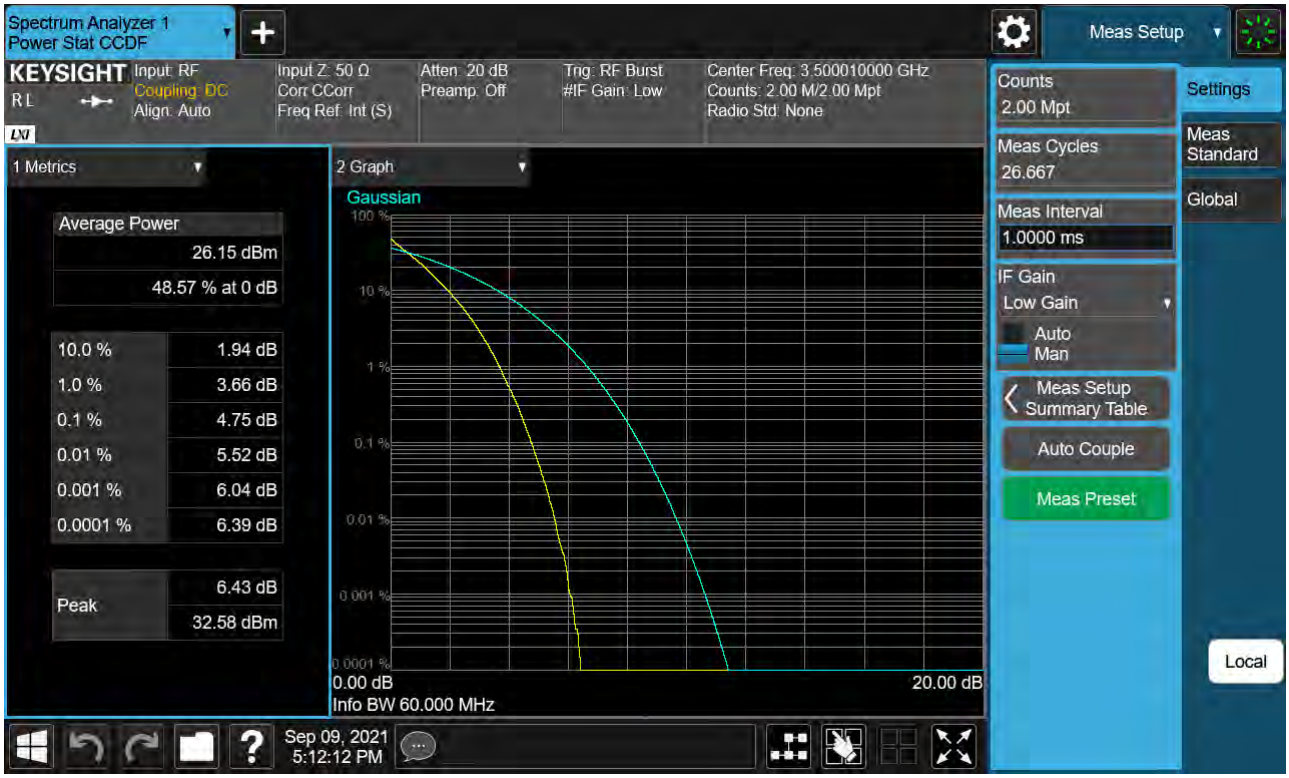
Sub6 n77. PAR Plot (50 M BW_Ch.633334_16QAM)

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

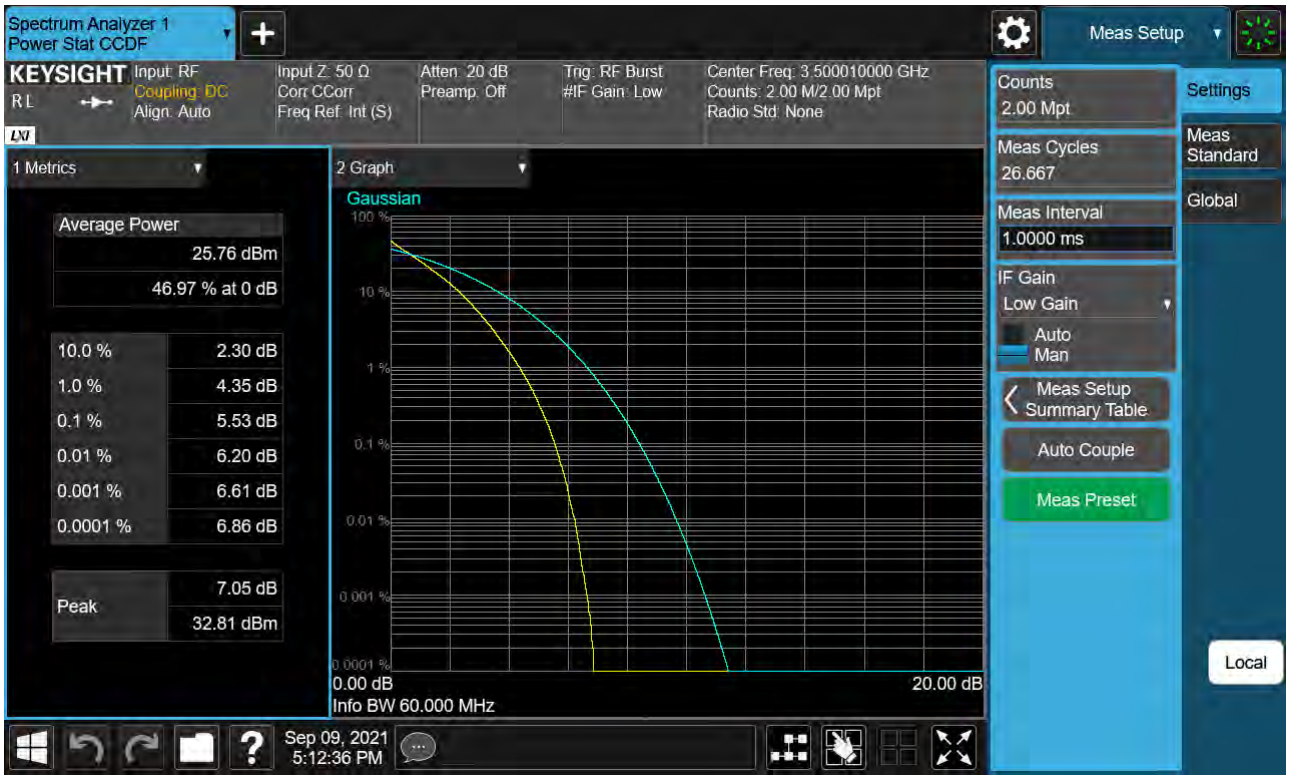
Sub6 n77. PAR Plot (50 M BW_Ch.633334_256QAM)



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



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

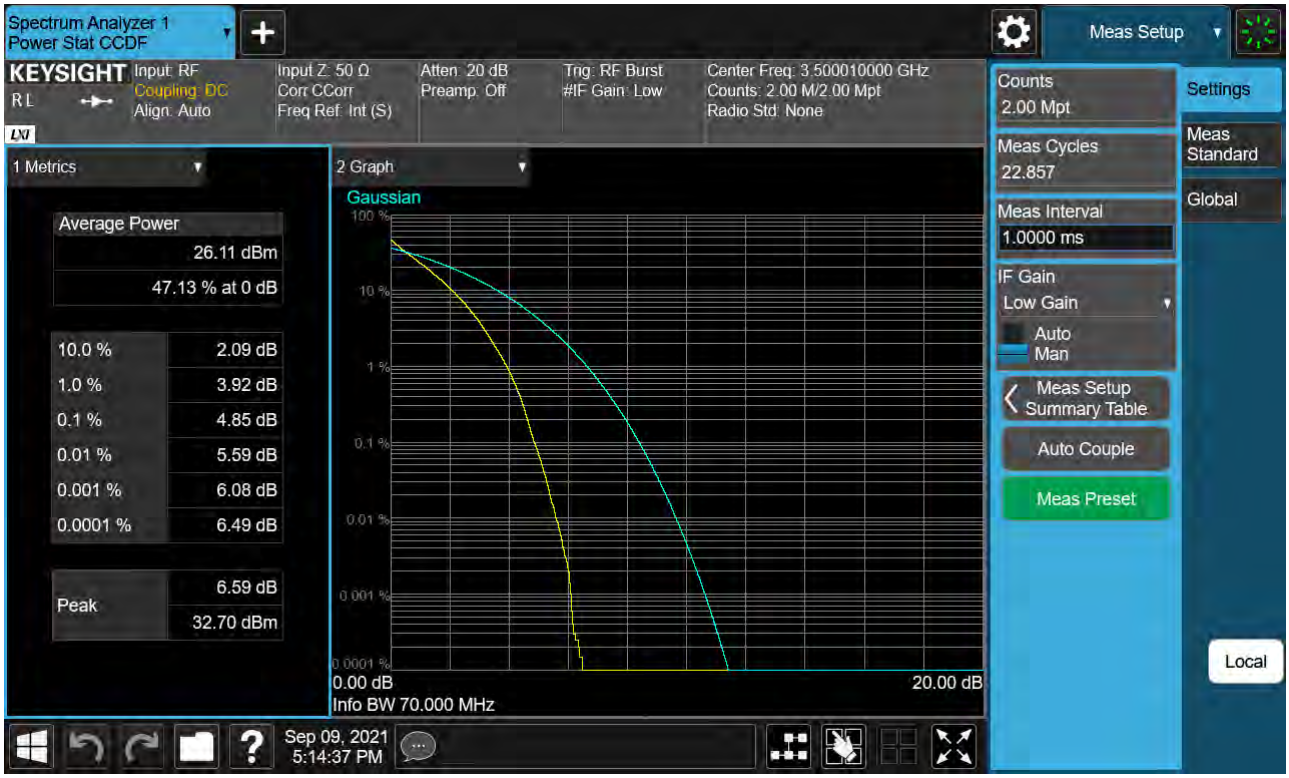


Sub6 n77. PAR Plot (60 M BW_Ch.633334_16QAM)

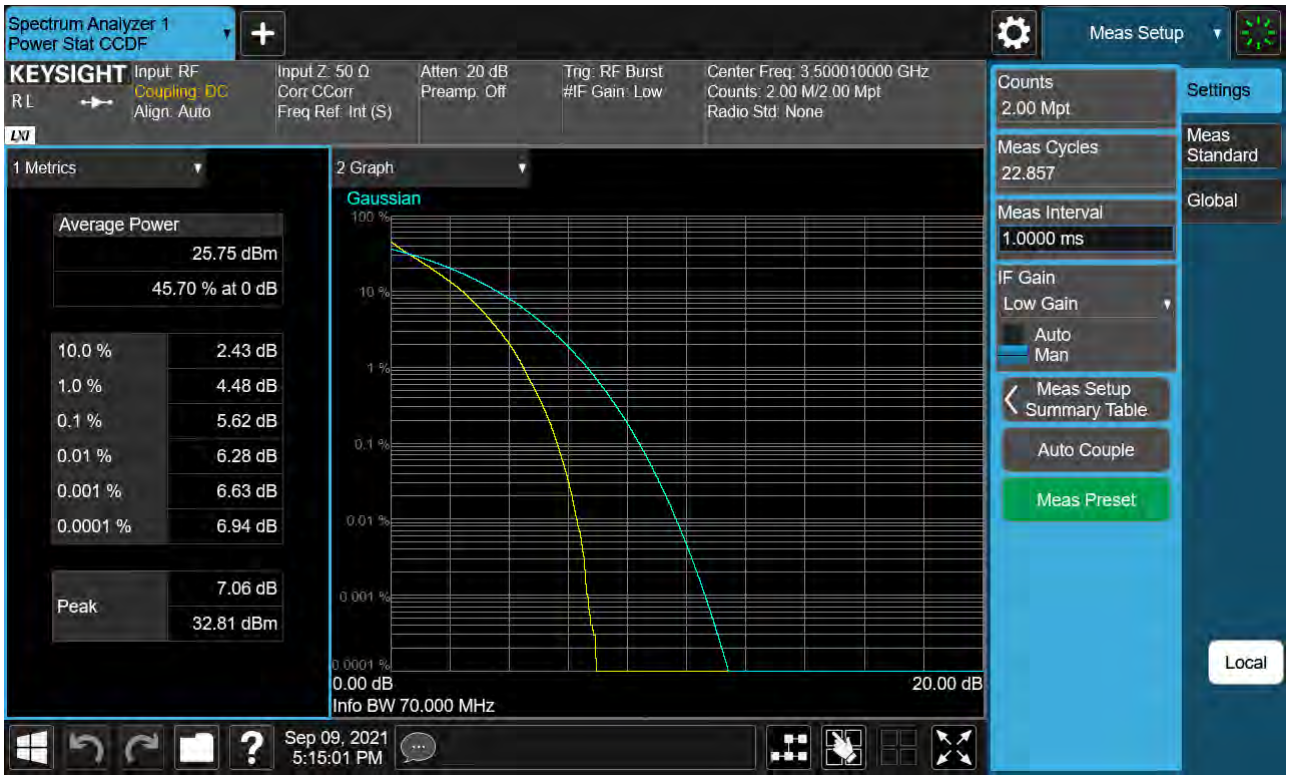
Sub6 n77. PAR Plot (60 M BW_Ch.633334_64QAM)

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

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



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

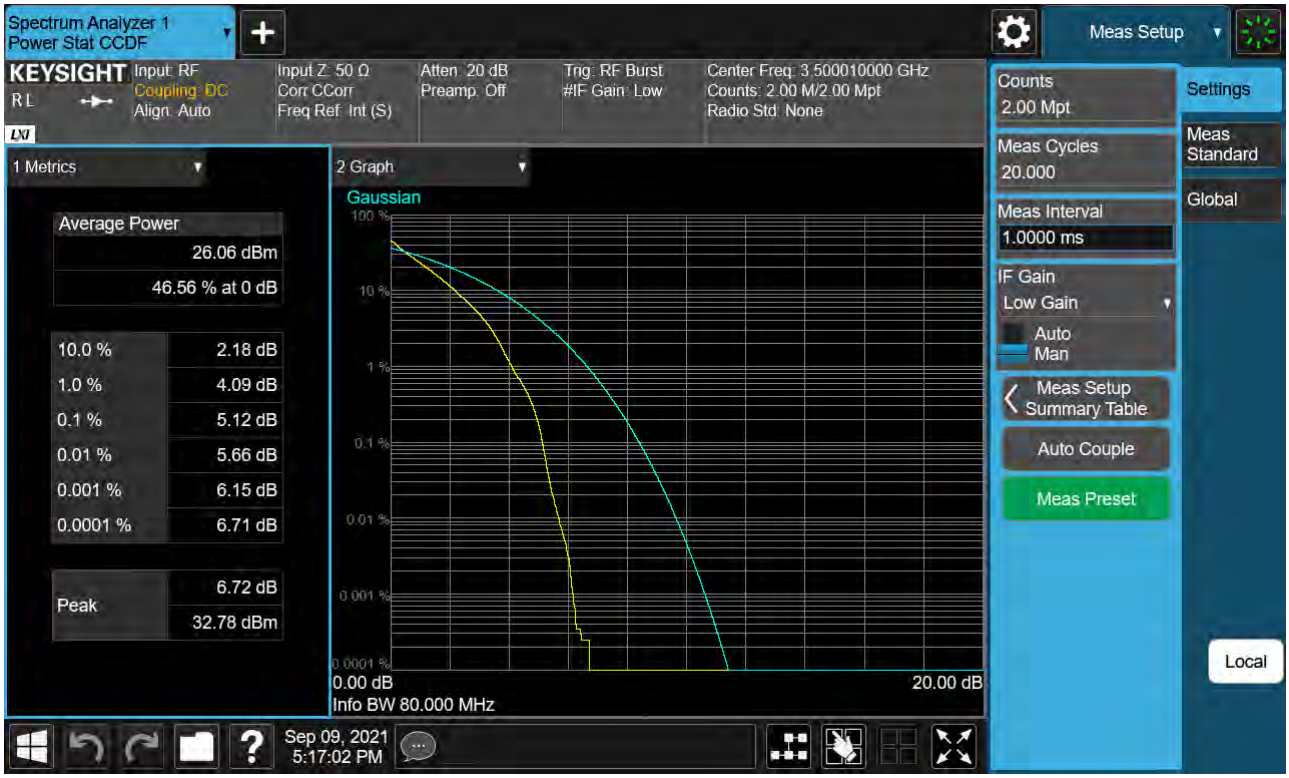


Sub6 n77. PAR Plot (70 M BW_Ch.633334_16QAM)

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

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

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



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