HCT CO.,LTD.
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FCC Sub6 REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
May 23, 2023

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

Report No.: HCT-RF-2305-FC081-R1

FCC ID:	**A3LSMF946B**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-F946B/DS
Additional Model(s):	SM-F946B
EUT Type:	Mobile phone
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2

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

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

1. 3450 MHz - 3550 MHz

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n77 (10)	3455.01 – 3544.99	8M67G7D	PI/2 BPSK	0.130	21.15
		8M72G7D	QPSK	0.129	21.12
		8M68W7D	16QAM	0.100	20.02
		8M65W7D	64QAM	0.072	18.58
		8M64W7D	256QAM	0.044	16.46
Sub6 n77 (15)	3457.50 – 3542.50	12M9G7D	PI/2 BPSK	0.135	21.31
		12M9G7D	QPSK	0.134	21.27
		13M0W7D	16QAM	0.106	20.27
		13M0W7D	64QAM	0.077	18.84
		13M0W7D	256QAM	0.046	16.61
Sub6 n77 (20)	3460.02 – 3540.00	18M0G7D	PI/2 BPSK	0.138	21.39
		18M0G7D	QPSK	0.137	21.36
		18M0W7D	16QAM	0.107	20.29
		18M0W7D	64QAM	0.077	18.88
		17M9W7D	256QAM	0.047	16.72
Sub6 n77 (30)	3465.00 – 3534.99	27M0G7D	PI/2 BPSK	0.136	21.32
		26M9G7D	QPSK	0.135	21.31
		26M9W7D	16QAM	0.106	20.27
		26M9W7D	64QAM	0.076	18.79
		26M9W7D	256QAM	0.046	16.64
Sub6 n77 (40)	3470.01 – 3529.98	35M9G7D	PI/2 BPSK	0.135	21.31
		36M0G7D	QPSK	0.134	21.28
		35M8W7D	16QAM	0.104	20.19
		35M8W7D	64QAM	0.075	18.75
		35M8W7D	256QAM	0.046	16.64
Sub6 n77 (50)	3475.02 – 3525.00	45M8G7D	PI/2 BPSK	0.133	21.24
		46M1G7D	QPSK	0.132	21.21
		45M8W7D	16QAM	0.104	20.15
		45M9W7D	64QAM	0.075	18.73
		45M8W7D	256QAM	0.045	16.54
Sub6 n77 (60)	3480.00 – 3519.99	58M0G7D	PI/2 BPSK	0.136	21.33
		58M0G7D	QPSK	0.133	21.25
		57M9W7D	16QAM	0.104	20.15
		57M9W7D	64QAM	0.073	18.66
		57M9W7D	256QAM	0.045	16.53
Sub6 n77 (70)	3485.01 – 3514.98	64M5G7D	PI/2 BPSK	0.136	21.32
		64M5G7D	QPSK	0.132	21.22
		64M5W7D	16QAM	0.105	20.23
		64M5W7D	64QAM	0.075	18.77
		64M5W7D	256QAM	0.046	16.59
Sub6 n77 (80)	3490.02 – 3510.00	77M2G7D	PI/2 BPSK	0.134	21.26
		77M3G7D	QPSK	0.132	21.19
		77M2W7D	16QAM	0.105	20.21
		77M2W7D	64QAM	0.075	18.76
		77M3W7D	256QAM	0.045	16.57
Sub6 n77 (90)	3495.00 – 3504.99	87M0G7D	PI/2 BPSK	0.133	21.24
		87M1G7D	QPSK	0.131	21.18
		87M0W7D	16QAM	0.104	20.17
		87M2W7D	64QAM	0.075	18.73
		86M9W7D	256QAM	0.045	16.57
Sub6 n77 (100)	3500.01	96M6G7D	PI/2 BPSK	0.130	21.14
		96M6G7D	QPSK	0.129	21.09
		96M5W7D	16QAM	0.102	20.09
		96M5W7D	64QAM	0.073	18.63
		96M4W7D	256QAM	0.045	16.53

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	8M64G7D	PI/2 BPSK	0.203	23.08
		8M67G7D	QPSK	0.200	23.01
		8M68W7D	16QAM	0.160	22.04
		8M66W7D	64QAM	0.115	20.60
		8M66W7D	256QAM	0.070	18.42
Sub6 n77 (15)	3707.51 – 3972.48	13M0G7D	PI/2 BPSK	0.217	23.36
		13M0G7D	QPSK	0.215	23.33
		12M9W7D	16QAM	0.171	22.32
		13M0W7D	64QAM	0.122	20.85
		13M0W7D	256QAM	0.073	18.64
Sub6 n77 (20)	3710.01 – 3969.99	17M9G7D	PI/2 BPSK	0.216	23.35
		18M0G7D	QPSK	0.214	23.31
		17M9W7D	16QAM	0.169	22.29
		17M9W7D	64QAM	0.122	20.86
		17M9W7D	256QAM	0.074	18.69
Sub6 n77 (30)	3715.02 – 3964.98	26M9G7D	PI/2 BPSK	0.244	23.87
		26M9G7D	QPSK	0.243	23.85
		27M0W7D	16QAM	0.189	22.76
		26M9W7D	64QAM	0.137	21.38
		26M9W7D	256QAM	0.084	19.22
Sub6 n77 (40)	3720.00 – 3960.00	35M8G7D	PI/2 BPSK	0.252	24.02
		35M9G7D	QPSK	0.249	23.96
		35M8W7D	16QAM	0.200	23.01
		35M8W7D	64QAM	0.143	21.56
		35M7W7D	256QAM	0.086	19.36
Sub6 n77 (50)	3725.10 – 3954.99	45M8G7D	PI/2 BPSK	0.234	23.70
		45M8G7D	QPSK	0.234	23.69
		45M9W7D	16QAM	0.184	22.64
		45M9W7D	64QAM	0.132	21.21
		45M8W7D	256QAM	0.080	19.02
Sub6 n77 (60)	3730.02 – 3949.98	57M9G7D	PI/2 BPSK	0.227	23.56
		58M0G7D	QPSK	0.226	23.54
		58M0W7D	16QAM	0.178	22.50
		58M0W7D	64QAM	0.128	21.08
		58M0W7D	256QAM	0.077	18.88
Sub6 n77 (70)	3735.00 – 3945.00	64M4G7D	PI/2 BPSK	0.231	23.63
		64M6G7D	QPSK	0.230	23.61
		64M6W7D	16QAM	0.180	22.56
		64M6W7D	64QAM	0.131	21.16
		64M6W7D	256QAM	0.080	19.03
Sub6 n77 (80)	3740.01 – 3939.99	77M3G7D	PI/2 BPSK	0.218	23.39
		77M4G7D	QPSK	0.217	23.36
		77M4W7D	16QAM	0.171	22.33
		77M4W7D	64QAM	0.124	20.92
		77M4W7D	256QAM	0.075	18.76
Sub6 n77 (90)	3745.02 – 3934.98	87M0G7D	PI/2 BPSK	0.230	23.62
		87M1G7D	QPSK	0.229	23.60
		86M8W7D	16QAM	0.180	22.56
		86M8W7D	64QAM	0.129	21.09
		86M8W7D	256QAM	0.077	18.87
Sub6 n77 (100)	3750.00 – 3930.00	96M5G7D	PI/2 BPSK	0.235	23.71
		96M7G7D	QPSK	0.233	23.68
		96M5W7D	16QAM	0.183	22.62
		96M5W7D	64QAM	0.132	21.20
		96M8W7D	256QAM	0.080	19.04

REVIEWED BY

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

Report approved by : Kwon Jeong
Manager of Telecommunication Testing Center

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

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

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2305-FC081	May 19, 2023	- First Approval Report
HCT-RF-2305-FC081-R1	May 23, 2023	- Added information about the test mode (Page 19,20)

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:	A3LSMF946B
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-F946B/DS
Additional Model(s):	SM-F946B
SCS(kHz):	30
Bandwidth(MHz):	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
Waveform:	CP-OFDM, DFT-S-OFDM
Modulation:	DFT-S-OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM
Tx Frequency: **(3450 MHz - 3550 MHz)**	3455.01 MHz – 3544.99 MHz (Sub6 n77(10 MHz)) 3457.50 MHz – 3542.50 MHz (Sub6 n77(15 MHz)) 3460.02 MHz – 3540.00 MHz (Sub6 n77(20 MHz)) 3465.00 MHz – 3534.99 MHz (Sub6 n77(30 MHz)) 3470.01 MHz – 3529.98 MHz (Sub6 n77(40 MHz)) 3475.02 MHz – 3525.00 MHz (Sub6 n77(50 MHz)) 3480.00 MHz – 3519.99 MHz (Sub6 n77(60 MHz)) 3485.01 MHz – 3514.98 MHz (Sub6 n77(70 MHz)) 3490.02 MHz – 3510.00 MHz (Sub6 n77(80 MHz)) 3495.00 MHz – 3504.99 MHz (Sub6 n77(90 MHz)) 3500.01 MHz (Sub6 n77(100 MHz))
Tx Frequency: **(3700 MHz - 3980 MHz)**	3705.00 MHz – 3975.00 MHz (Sub6 n77(10 MHz)) 3707.51 MHz – 3972.48 MHz (Sub6 n77(15 MHz)) 3710.01 MHz – 3969.99 MHz (Sub6 n77(20 MHz)) 3715.02 MHz – 3964.98 MHz (Sub6 n77(30 MHz)) 3720.00 MHz – 3960.00 MHz (Sub6 n77(40 MHz)) 3725.10 MHz – 3954.99 MHz (Sub6 n77(50 MHz)) 3730.02 MHz – 3949.98 MHz (Sub6 n77(60 MHz)) 3735.00 MHz – 3945.00 MHz (Sub6 n77(70 MHz)) 3740.01 MHz – 3939.99 MHz (Sub6 n77(80 MHz)) 3745.02 MHz – 3934.98 MHz (Sub6 n77(90 MHz)) 3745.02 MHz – 3934.98 MHz (Sub6 n77(90 MHz)) 3750.00 MHz – 3930.00 MHz (Sub6 n77(100 MHz))
Date(s) of Tests:	March 24, 2023 ~ May 10, 2023
Serial number:	Radiated: R3CW30A39XN Conducted: R3CW30A39DD

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

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

It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80/160 MHz), WIFI 6E, WPT, AIT, 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 = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points > 2 x span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10^{th} harmonics from 9 kHz.

Test Note

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

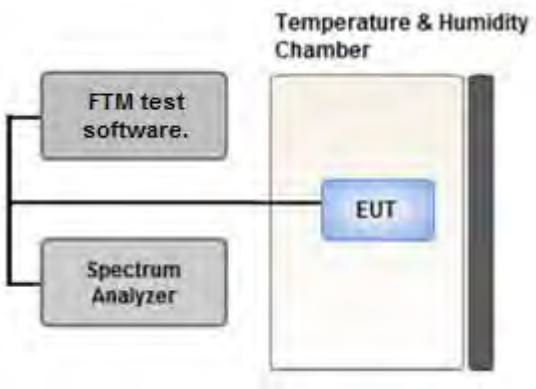
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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

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

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

3.4 PEAK- TO- AVERAGE RATIO



Test setup

① CCDF Procedure for PAPR

Test Settings

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

.- for continuous transmissions, set to 1 ms,

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

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

② **Alternate Procedure for PAPR**

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

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

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

Test Settings(Peak Power)

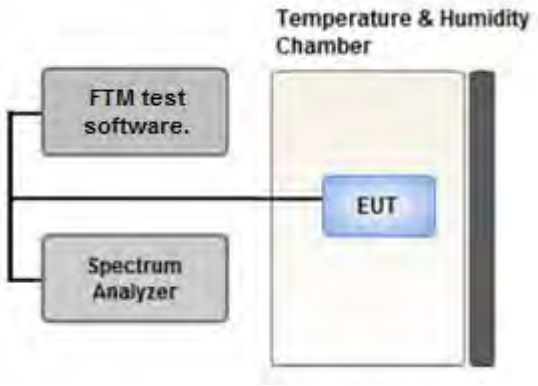
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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

Test Settings(Average Power)

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

3.5 OCCUPIED BANDWIDTH.



Test setup

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

The EUT makes a call to the communication simulator.

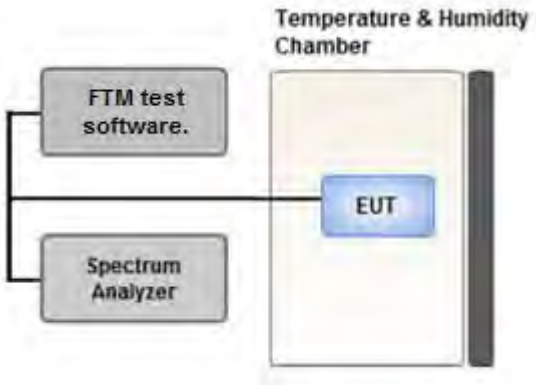
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

Test Settings

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

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

Test Overview

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

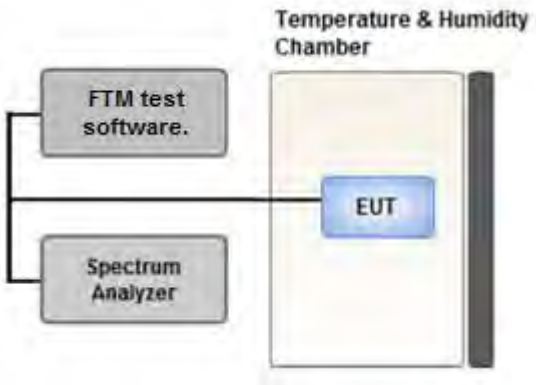
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

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

Test Settings

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

3.7 BAND EDGE



Test setup

Test Overview

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

Test Settings

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

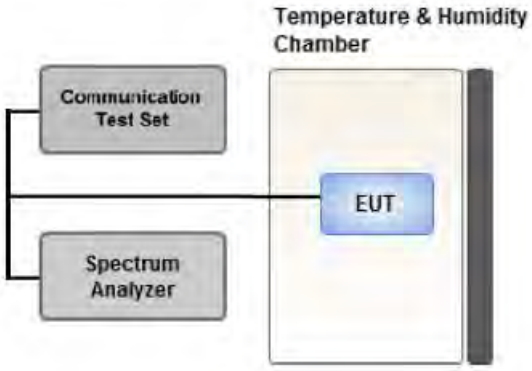
Test Notes

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.
Compliance with this paragraph is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.
However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz.
In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.
Measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.
However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz.
In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. .

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

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

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

The frequency stability of the transmitter is measured by:

1. Temperature:

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

2. Primary Supply Voltage:

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

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

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °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.
- The EUT was tested in three modes(Open, Half-open, Closed), the worst case configuration results are reported.
  Worst case: Open mode.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
  Worst case : Stand alone
  Mode: SA, NSA, SRS
  Worst case: SA
- We were performed the RSE test in condition of co-location.
  Mode : Stand alone, Simultaneous transmission scenarios
  Worst case : Stand alone
- Radiated Spurious emissions are measured while operating in EN-DC mode with Sub 6 NR carrier as well as an LTE carrier (anchor).
  (Worst case: 2A - n77A (10 MHz)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
-In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported.
(Worst case : 20 MHz(3450 MHz – 3550 MHz), 40 MHz(3700 MHz – 3980 MHz))
- SM-F946B/DS & additional models were tested and the worst case results are reported.
  (Worst case : SM-F946B/DS)

[3450 MHz - 3550 MHz Worst case]

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

[3700 MHz - 3980 MHz Worst case]

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

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
  (Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: SA, NSA, SRS
  Worst case: SA
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-F946B/DS & additional models were tested and the worst case results are reported.
  (Worst case : SM-F946B/DS)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth,	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100	Mid	Full RB	0
Peak-To-Average Ratio	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100	Mid	Full RB	0
Band Edge	PI/2 BPSK	10	Low	1	0
			High	1	23
		15	Low	1	0
			High	1	37
		20	Low	1	0
			High	1	50
		30	Low	1	0
			High	1	77
		40	Low	1	0
			High	1	105
		50	Low	1	0
			High	1	132
		60	Low	1	0
			High	1	161
		70	Low	1	0
			High	1	188
		80	Low	1	0
			High	1	216
		90	Low	1	0
			High	1	244
		100	Low	1	0
			High	1	272
		10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100	Low, Mid, High	1	1

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
Precision Dipole Antenna	UHAP	Schwarzbeck	01273	03/27/2024	Biennial
Precision Dipole Antenna	UHAP	Schwarzbeck	01274	03/27/2024	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	02289	03/21/2024	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1299	04/27/2025	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Loop Antenna(9 kHz~30 MHz)	FMZB1513	Rohde & Schwarz	1513-175	06/04/2023	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/09/2025	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/24/2025	Biennial
High Pass Filter	WHKX10-900-1000-15000-40SS	Wainwright Instruments	15	05/18/2023	Annual
High Pass Filter	WHKX10-2700-3000-18000-40SS	Wainwright Instruments	145	05/18/2023	Annual
High Pass Filter	WHNX6-4740-6000-26500-40CC	Wainwright Instruments	11	05/18/2023	Annual
LOW NOISE AMP (100 MHz ~ 18 GHz)	CBLU1183540B-01	CERNEX	26822	05/18/2023	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/01/2023	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/02/2024	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	09/05/2023	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	03/02/2024	Annual
Chamber	SU-642	ESPEC	93008124	02/22/2024	Annual
Signal Analyzer(10 Hz~26.5 GHz)	N9020A	Agilent	MY51110063	04/11/2024	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/19/2024	Annual
Spectrum Analyzer(10 Hz~40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/22/2024	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2023	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287700	05/19/2023	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/18/2023	Annual
SIGNAL GENERATOR (100 kHz~40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/05/2023	Annual
Signal Analyzer(5 Hz~40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/30/2023	Annual
4-Way Divider	ZC4PD-K1844+	Mini-Circuits	942907	09/27/2023	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

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

5. MEASUREMENT UNCERTAINTY

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

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

6. SUMMARY OF TEST RESULTS

6.1 Test Condition : Conducted Test

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

Note:

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

6.2 Test Condition : Radiated Test

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

Note:

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

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

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

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

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

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

3) Record the field strength meter's level.

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

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

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

7.2 EIRP Sample Calculation

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

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

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

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

3) Record the field strength meter's level.

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

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

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

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

PSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

8. TEST DATA (3450 MHz - 3550 MHz)

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3455.01	Sub6 n77/ 10 MHz [30 kHz]	PI/2 BPSK	-25.04	12.90	11.20	2.96	H	< 1.00	0.130	21.15	1	22
		QPSK	-25.07	12.87	11.20	2.96	H		0.129	21.12		
		16-QAM	-26.17	11.77	11.20	2.96	H		0.100	20.02		
		64-QAM	-27.61	10.33	11.20	2.96	H		0.072	18.58		
		256-QAM	-29.73	8.21	11.20	2.96	H		0.044	16.46		
3500.01		PI/2 BPSK	-26.09	12.16	11.30	3.00	H		0.111	20.46	1	1
		QPSK	-26.16	12.09	11.30	3.00	H		0.109	20.39		
		16-QAM	-27.22	11.03	11.30	3.00	H		0.086	19.33		
		64-QAM	-28.60	9.65	11.30	3.00	H		0.062	17.95		
		256-QAM	-30.75	7.50	11.30	3.00	H		0.038	15.80		
3544.99		PI/2 BPSK	-26.26	11.81	11.35	3.02	H		0.103	20.14	1	1
		QPSK	-26.31	11.76	11.35	3.02	H		0.102	20.09		
		16-QAM	-27.36	10.71	11.35	3.02	H		0.080	19.04		
		64-QAM	-28.77	9.30	11.35	3.02	H		0.058	17.63		
		256-QAM	-30.94	7.13	11.35	3.02	H		0.035	15.46		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3457.50	Sub6 n77/ 15 MHz [30 kHz]	PI/2 BPSK	-24.85	13.06	11.20	2.95	H	< 1.00	0.135	21.31	1	1
		QPSK	-24.89	13.02	11.20	2.95	H		0.134	21.27		
		16-QAM	-25.89	12.02	11.20	2.95	H		0.106	20.27		
		64-QAM	-27.32	10.59	11.20	2.95	H		0.077	18.84		
		256-QAM	-29.55	8.36	11.20	2.95	H		0.046	16.61		
3500.01		PI/2 BPSK	-25.84	12.41	11.30	3.00	H		0.118	20.71	1	1
		QPSK	-25.87	12.38	11.30	3.00	H		0.117	20.68		
		16-QAM	-26.96	11.29	11.30	3.00	H		0.091	19.59		
		64-QAM	-28.37	9.88	11.30	3.00	H		0.066	18.18		
		256-QAM	-30.53	7.72	11.30	3.00	H		0.040	16.02		
3542.50		PI/2 BPSK	-26.10	11.85	11.30	3.02	H		0.103	20.13	1	1
		QPSK	-26.13	11.82	11.30	3.02	H		0.102	20.10		
		16-QAM	-27.19	10.76	11.30	3.02	H		0.080	19.04		
		64-QAM	-28.57	9.38	11.30	3.02	H		0.058	17.66		
		256-QAM	-30.75	7.20	11.30	3.02	H		0.035	15.48		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3460.02	Sub6 n77/ 20 MHz [30 kHz]	PI/2 BPSK	-24.77	13.14	11.20	2.95	H	< 1.00	0.138	21.39	1	1
		QPSK	-24.80	13.11	11.20	2.95	H		0.137	21.36		
		16-QAM	-25.87	12.04	11.20	2.95	H		0.107	20.29		
		64-QAM	-27.28	10.63	11.20	2.95	H		0.077	18.88		
		256-QAM	-29.44	8.47	11.20	2.95	H		0.047	16.72		
3500.01		PI/2 BPSK	-25.64	12.61	11.30	3.00	H		0.123	20.91	1	1
		QPSK	-25.75	12.50	11.30	3.00	H		0.120	20.80		
		16-QAM	-26.74	11.51	11.30	3.00	H		0.096	19.81		
		64-QAM	-28.16	10.09	11.30	3.00	H		0.069	18.39		
		256-QAM	-30.35	7.90	11.30	3.00	H		0.042	16.20		
3540.00		PI/2 BPSK	-26.02	11.93	11.30	3.02	H		0.105	20.21	1	1
		QPSK	-26.05	11.90	11.30	3.02	H		0.104	20.18		
		16-QAM	-27.10	10.85	11.30	3.02	H		0.082	19.13		
		64-QAM	-28.56	9.39	11.30	3.02	H		0.058	17.67		
		256-QAM	-30.74	7.21	11.30	3.02	H		0.035	15.49		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3465.00	Sub6 n77/ 30 MHz [30 kHz]	PI/2 BPSK	-24.80	13.07	11.20	2.95	H	< 1.00	0.136	21.32	1	1
		QPSK	-24.81	13.06	11.20	2.95	H		0.135	21.31		
		16-QAM	-25.85	12.02	11.20	2.95	H		0.106	20.27		
		64-QAM	-27.33	10.54	11.20	2.95	H		0.076	18.79		
		256-QAM	-29.48	8.39	11.20	2.95	H		0.046	16.64		
3500.01		PI/2 BPSK	-25.64	12.61	11.30	3.00	H		0.123	20.91	1	1
		QPSK	-25.65	12.60	11.30	3.00	H		0.123	20.90		
		16-QAM	-26.74	11.51	11.30	3.00	H		0.096	19.81		
		64-QAM	-28.16	10.09	11.30	3.00	H		0.069	18.39		
		256-QAM	-30.37	7.88	11.30	3.00	H		0.041	16.18		
3534.99		PI/2 BPSK	-26.12	11.79	11.30	3.01	H		0.102	20.09	1	1
		QPSK	-26.15	11.76	11.30	3.01	H		0.101	20.06		
		16-QAM	-27.21	10.70	11.30	3.01	H		0.079	19.00		
		64-QAM	-28.65	9.26	11.30	3.01	H		0.057	17.56		
		256-QAM	-30.83	7.08	11.30	3.01	H		0.035	15.38		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3470.01	Sub6 n77/ 40 MHz [30 kHz]	PI/2 BPSK	-24.77	13.06	11.20	2.95	H	< 1.00	0.135	21.31	1	1
		QPSK	-24.80	13.03	11.20	2.95	H		0.134	21.28		
		16-QAM	-25.89	11.94	11.20	2.95	H		0.104	20.19		
		64-QAM	-27.33	10.50	11.20	2.95	H		0.075	18.75		
		256-QAM	-29.44	8.39	11.20	2.95	H		0.046	16.64		
3500.01		PI/2 BPSK	-25.31	12.94	11.30	3.00	H		0.133	21.24	1	1
		QPSK	-25.38	12.87	11.30	3.00	H		0.131	21.17		
		16-QAM	-26.38	11.87	11.30	3.00	H		0.104	20.17		
		64-QAM	-27.85	10.40	11.30	3.00	H		0.074	18.70		
		256-QAM	-30.02	8.23	11.30	3.00	H		0.045	16.53		
3529.98		PI/2 BPSK	-26.14	11.74	11.30	2.99	H		0.101	20.05	1	1
		QPSK	-26.22	11.66	11.30	2.99	H		0.099	19.97		
		16-QAM	-27.16	10.72	11.30	2.99	H		0.080	19.03		
		64-QAM	-28.64	9.24	11.30	2.99	H		0.057	17.55		
		256-QAM	-30.80	7.08	11.30	2.99	H		0.035	15.39		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3475.02	Sub6 n77/ 50 MHz [30 kHz]	PI/2 BPSK	-24.87	13.01	11.20	2.97	H	< 1.00	0.133	21.24	1	1
		QPSK	-24.90	12.98	11.20	2.97	H		0.132	21.21		
		16-QAM	-25.96	11.92	11.20	2.97	H		0.104	20.15		
		64-QAM	-27.38	10.50	11.20	2.97	H		0.075	18.73		
		256-QAM	-29.57	8.31	11.20	2.97	H		0.045	16.54		
3500.01		PI/2 BPSK	-25.42	12.83	11.30	3.00	H		0.130	21.13	1	1
		QPSK	-25.48	12.77	11.30	3.00	H		0.128	21.07		
		16-QAM	-26.45	11.80	11.30	3.00	H		0.102	20.10		
		64-QAM	-28.03	10.22	11.30	3.00	H		0.071	18.52		
		256-QAM	-30.07	8.18	11.30	3.00	H		0.044	16.48		
3525.00		PI/2 BPSK	-26.21	11.69	11.30	2.98	H		0.100	20.01	1	1
		QPSK	-26.25	11.65	11.30	2.98	H		0.099	19.97		
		16-QAM	-27.31	10.59	11.30	2.98	H		0.078	18.91		
		64-QAM	-28.70	9.20	11.30	2.98	H		0.056	17.52		
		256-QAM	-30.89	7.01	11.30	2.98	H		0.034	15.33		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3480.00	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-24.93	12.97	11.20	2.99	H	< 1.00	0.132	21.22	1	1
		QPSK	-24.95	12.99	11.20	2.99	H		0.132	21.20		
		16-QAM	-26.07	11.87	11.20	2.99	H		0.102	20.08		
		64-QAM	-27.49	10.45	11.20	2.99	H		0.073	18.66		
		256-QAM	-29.62	8.32	11.20	2.99	H		0.045	16.53		
3500.01		PI/2 BPSK	-25.22	13.03	11.30	3.00	H		0.136	21.33	1	1
		QPSK	-25.30	12.95	11.30	3.00	H		0.133	21.25		
		16-QAM	-26.40	11.85	11.30	3.00	H		0.104	20.15		
		64-QAM	-27.89	10.36	11.30	3.00	H		0.073	18.66		
		256-QAM	-30.03	8.22	11.30	3.00	H		0.045	16.52		
3519.99		PI/2 BPSK	-25.89	12.03	11.30	2.97	H		0.109	20.36	1	1
		QPSK	-25.95	11.97	11.30	2.97	H		0.107	20.30		
		16-QAM	-27.02	10.90	11.30	2.97	H		0.084	19.23		
		64-QAM	-28.39	9.53	11.30	2.97	H		0.061	17.86		
		256-QAM	-30.57	7.35	11.30	2.97	H		0.037	15.68		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3485.01	Sub6 n77/ 70 MHz [30 kHz]	PI/2 BPSK	-25.23	12.78	11.20	3.00	H	< 1.00	0.125	20.98	1	1
		QPSK	-25.24	12.77	11.20	3.00	H		0.125	20.97		
		16-QAM	-26.36	11.65	11.20	3.00	H		0.097	19.85		
		64-QAM	-27.72	10.29	11.20	3.00	H		0.071	18.49		
		256-QAM	-29.94	8.07	11.20	3.00	H		0.042	16.27		
3500.01		PI/2 BPSK	-25.23	13.02	11.30	3.00	H		0.136	21.32	1	1
		QPSK	-25.33	12.92	11.30	3.00	H		0.132	21.22		
		16-QAM	-26.32	11.93	11.30	3.00	H		0.105	20.23		
		64-QAM	-27.78	10.47	11.30	3.00	H		0.075	18.77		
		256-QAM	-29.96	8.29	11.30	3.00	H		0.046	16.59		
3514.98		PI/2 BPSK	-25.81	12.25	11.30	2.98	H		0.114	20.58	1	1
		QPSK	-25.86	12.20	11.30	2.98	H		0.113	20.53		
		16-QAM	-26.86	11.20	11.30	2.98	H		0.090	19.53		
		64-QAM	-28.37	9.69	11.30	2.98	H		0.063	18.02		
		256-QAM	-30.52	7.54	11.30	2.98	H		0.039	15.87		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3490.02	Sub6 n77/ 80 MHz [30 kHz]	PI/2 BPSK	-25.33	12.75	11.20	3.00	H	< 1.00	0.124	20.95	1	1
		QPSK	-25.39	12.69	11.20	3.00	H		0.123	20.89		
		16-QAM	-26.38	11.70	11.20	3.00	H		0.098	19.90		
		64-QAM	-27.88	10.20	11.20	3.00	H		0.069	18.40		
		256-QAM	-30.01	8.07	11.20	3.00	H		0.042	16.27		
3500.01		PI/2 BPSK	-25.29	12.96	11.30	3.00	H		0.134	21.26	1	1
		QPSK	-25.36	12.89	11.30	3.00	H		0.132	21.19		
		16-QAM	-26.34	11.91	11.30	3.00	H		0.105	20.21		
		64-QAM	-27.79	10.46	11.30	3.00	H		0.075	18.76		
		256-QAM	-29.98	8.27	11.30	3.00	H		0.045	16.57		
3510.00		PI/2 BPSK	-25.67	12.54	11.30	2.98	H		0.122	20.86	1	1
		QPSK	-25.71	12.50	11.30	2.98	H		0.121	20.82		
		16-QAM	-26.73	11.48	11.30	2.98	H		0.095	19.80		
		64-QAM	-28.19	10.02	11.30	2.98	H		0.068	18.34		
		256-QAM	-30.29	7.92	11.30	2.98	H		0.042	16.24		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3495.00	Sub6 n77/ 90 MHz [30 kHz]	PI/2 BPSK	-25.40	12.77	11.25	3.00	H	< 1.00	0.126	21.02	1	1
		QPSK	-25.44	12.73	11.25	3.00	H		0.125	20.98		
		16-QAM	-26.44	11.73	11.25	3.00	H		0.100	19.98		
		64-QAM	-27.88	10.29	11.25	3.00	H		0.071	18.54		
		256-QAM	-30.04	8.13	11.25	3.00	H		0.043	16.38		
3500.01		PI/2 BPSK	-25.31	12.94	11.30	3.00	H		0.133	21.24	1	1
		QPSK	-25.37	12.88	11.30	3.00	H		0.131	21.18		
		16-QAM	-26.38	11.87	11.30	3.00	H		0.104	20.17		
		64-QAM	-27.82	10.43	11.30	3.00	H		0.075	18.73		
		256-QAM	-29.98	8.27	11.30	3.00	H		0.045	16.57		
3504.99		PI/2 BPSK	-25.35	12.88	11.30	2.99	H		0.132	21.19	1	1
		QPSK	-25.36	12.87	11.30	2.99	H		0.131	21.18		
		16-QAM	-26.37	11.86	11.30	2.99	H		0.104	20.17		
		64-QAM	-27.82	10.41	11.30	2.99	H		0.074	18.72		
		256-QAM	-30.04	8.19	11.30	2.99	H		0.045	16.50		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3500.01	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-25.41	12.84	11.30	3.00	H	< 1.00	0.130	21.14	1	1
		QPSK	-25.46	12.79	11.30	3.00	H		0.129	21.09		
		16-QAM	-26.46	11.79	11.30	3.00	H		0.102	20.09		
		64-QAM	-27.92	10.33	11.30	3.00	H		0.073	18.63		
		256-QAM	-30.02	8.23	11.30	3.00	H		0.045	16.53		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77

▣ Bandwidth: 20 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 1 meters

▣ SCS: 30 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
630668 (3460.02)	6 920.04	-65.01	10.90	-59.22	4.33	H	-52.65	-13.00	1	1
	10 380.06	-64.84	11.20	-53.99	5.40	H	-48.19	-13.00		
	13 840.08	-60.35	12.40	-49.37	6.35	H	-43.32	-13.00		
	17 300.10	-65.26	16.00	-47.27	7.18	H	-38.45	-13.00		
633334 (3500.01)	7 000.02	-64.90	10.90	-58.98	4.32	V	-52.40	-13.00	1	1
	10 500.03	-64.29	11.30	-53.69	5.41	V	-47.80	-13.00		
	14 000.04	-60.40	12.30	-51.05	6.35	V	-45.10	-13.00		
	17 500.05	-67.13	15.70	-47.04	7.23	V	-38.57	-13.00		
636000 (3540.00)	7 080.00	-61.74	10.70	-54.98	4.34	V	-48.62	-13.00	1	1
	10 620.00	-65.00	11.20	-54.18	5.41	V	-48.39	-13.00		
	14 160.00	-59.58	12.30	-51.20	6.42	V	-45.32	-13.00		
	17 700.00	-66.67	14.60	-42.73	7.29	V	-35.42	-13.00		

▣ ENDC-Mode : 2A(10 MHz)-n77A_DoD(20 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
18900 (1880.0)	3760.00	-61.91	11.64	-62.14	3.16	V	-53.66	-13.00
	5640.00	-61.80	12.00	-55.62	3.93	V	-47.55	-13.00
	7520.00	-62.16	11.54	-47.71	4.51	V	-40.68	-13.00

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n77	10 MHz	3500.01	BPSK	Full RB	0	4.75
			QPSK			5.76
			16-QAM			5.68
			64-QAM			6.18
			256-QAM			6.77
	15 MHz		BPSK			4.57
			QPSK			5.16
			16-QAM			5.93
			64-QAM			6.39
			256-QAM			6.70
	20 MHz		BPSK			4.83
			QPSK			5.52
			16-QAM			5.86
			64-QAM			6.18
			256-QAM			6.52
	30 MHz		BPSK			4.08
			QPSK			5.31
			16-QAM			5.87
			64-QAM			6.17
			256-QAM			6.60
	40 MHz		BPSK			4.64
			QPSK			5.00
			16-QAM			5.88
			64-QAM			6.22
			256-QAM			6.53
	50 MHz		BPSK			4.43
			QPSK			4.92
			16-QAM			5.90
			64-QAM			6.22
			256-QAM			6.57

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
	60 MHz		BPSK			4.41
			QPSK			5.25
			16-QAM			6.02
			64-QAM			6.27
			256-QAM			6.45
	70 MHz		BPSK			4.45
			QPSK			5.39
			16-QAM			6.05
			64-QAM			6.40
			256-QAM			6.51
	80 MHz		BPSK			4.50
			QPSK			5.38
			16-QAM			6.09
			64-QAM			6.40
			256-QAM			6.47
	90 MHz		BPSK			4.53
			QPSK			5.36
			16-QAM			6.09
			64-QAM			6.37
			256-QAM			6.49
	100 MHz		BPSK			4.75
			QPSK			5.18
			16-QAM			6.00
			64-QAM			6.34
			256-QAM			6.50

Note:

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

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n77	10 MHz	3500.01	BPSK	Full RB	0	8.6709
			QPSK			8.7239
			16-QAM			8.6839
			64-QAM			8.6468
			256-QAM			8.6397
	15 MHz		BPSK			12.919
			QPSK			12.938
			16-QAM			12.946
			64-QAM			12.970
			256-QAM			12.980
	20 MHz		BPSK			18.013
			QPSK			17.966
			16-QAM			17.958
			64-QAM			17.963
			256-QAM			17.904
	30 MHz		BPSK			26.965
			QPSK			26.935
			16-QAM			26.929
			64-QAM			26.894
			256-QAM			26.941
	40 MHz		BPSK			35.855
			QPSK			36.014
			16-QAM			35.788
			64-QAM			35.782
			256-QAM			35.818
	50 MHz		BPSK			45.827
			QPSK			46.064
			16-QAM			45.801
			64-QAM			45.858
			256-QAM			45.758

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
	60 MHz		BPSK			57.953
			QPSK			58.011
			16-QAM			57.906
			64-QAM			57.907
			256-QAM			57.913
	70 MHz		BPSK			64.456
			QPSK			64.524
			16-QAM			64.486
			64-QAM			64.541
			256-QAM			64.542
	80 MHz		BPSK			77.236
			QPSK			77.318
			16-QAM			77.239
			64-QAM			77.231
			256-QAM			77.329
	90 MHz		BPSK			86.945
			QPSK			87.075
			16-QAM			86.951
			64-QAM			87.170
			256-QAM			86.871
	100 MHz		BPSK			96.549
			QPSK			96.585
			16-QAM			96.482
			64-QAM			96.480
			256-QAM			96.390

Note:

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

8.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n77	10	3455.01	8.2762	37.805	-71.214	-33.409	-13.00
		3500.01	9.4227	37.805	-70.736	-32.931	
		3544.98	8.8839	37.805	-70.352	-32.547	
	15	3457.50	8.2767	37.805	-70.458	-32.653	
		3500.01	9.7124	37.805	-70.834	-33.029	
		3542.49	9.1840	37.805	-70.153	-32.348	
	20	3460.02	9.9347	37.805	-70.972	-33.167	
		3500.01	8.2852	37.805	-70.495	-32.690	
		3540.00	8.8345	37.805	-70.797	-32.992	
	30	3465.00	8.8624	37.805	-70.099	-32.294	
		3500.01	8.2921	37.805	-70.627	-32.822	
		3534.99	8.2991	37.805	-70.620	-32.815	
	40	3470.01	9.9437	37.805	-69.385	-31.580	
		3500.01	8.2956	37.805	-70.641	-32.836	
		3529.98	9.6989	37.805	-70.217	-32.412	
	50	3475.02	7.9756	37.805	-71.575	-33.770	
		3500.01	8.8579	37.805	-70.802	-32.997	
		3525.00	9.3849	37.805	-71.542	-33.737	
	60	3480.00	9.7134	37.805	-71.767	-33.962	
		3500.01	9.7263	37.805	-71.058	-33.253	
		3519.99	4.3410	37.190	-69.993	-32.803	
	70	3485.01	9.1521	37.805	-70.426	-32.621	
		3500.01	8.2637	37.805	-71.187	-33.382	
		3514.98	8.2687	37.805	-70.334	-32.529	
	80	3490.02	8.8709	37.805	-70.683	-32.878	
		3500.01	9.1107	37.805	-70.356	-32.551	
		3510.00	9.9417	37.805	-71.682	-33.877	
	90	3495.00	9.3764	37.805	-71.275	-33.470	
		3500.01	8.2518	37.805	-71.141	-33.336	
		3504.99	9.4487	37.805	-70.957	-33.152	
	100	3500.01	9.9751	37.805	-71.666	-33.861	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 330 ~ 391.

2. Duty Cycle factor already applied on the factor.

- Duty Cycle Factor(dB) = 6.990

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

- Result(dBm) = Reading + Factor

3. Factor(dB)

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

8.6 BAND EDGE

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

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3455.010	100 %	+20(Ref)	3455 009 984	0.0	0.000 000	0.000
	100 %	-30	3455 009 979	-5.0	0.000 000	-0.001
	100 %	-20	3455 009 973	-11.4	0.000 000	-0.003
	100 %	-10	3455 009 975	-9.3	0.000 000	-0.003
	100 %	0	3455 009 978	-6.5	0.000 000	-0.002
	100 %	+10	3455 009 971	-13.2	0.000 000	-0.004
	100 %	+30	3455 009 972	-12.0	0.000 000	-0.003
	100 %	+40	3455 009 978	-6.7	0.000 000	-0.002
	100 %	+50	3455 009 980	-3.9	0.000 000	-0.001
	Batt. Endpoint	+20	3455 009 976	-8.4	0.000 000	-0.002
3544.980	100 %	+20(Ref)	3544 979 986	0.0	0.000 000	0.000
	100 %	-30	3544 979 971	-14.7	0.000 000	-0.004
	100 %	-20	3544 979 980	-5.8	0.000 000	-0.002
	100 %	-10	3544 979 979	-6.1	0.000 000	-0.002
	100 %	0	3544 979 976	-9.7	0.000 000	-0.003
	100 %	+10	3544 979 980	-5.9	0.000 000	-0.002
	100 %	+30	3544 979 965	-20.9	-0.000 001	-0.006
	100 %	+40	3544 979 987	1.2	0.000 000	0.000
	100 %	+50	3544 979 983	-2.5	0.000 000	-0.001
	Batt. Endpoint	+20	3544 979 974	-11.3	0.000 000	-0.003

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3457.500	100 %	+20(Ref)	3457 499 999	0.0	0.000 000	0.000
	100 %	-30	3457 499 992	-7.0	0.000 000	-0.002
	100 %	-20	3457 499 993	-5.9	0.000 000	-0.002
	100 %	-10	3457 499 992	-6.4	0.000 000	-0.002
	100 %	0	3457 499 994	-4.9	0.000 000	-0.001
	100 %	+10	3457 499 986	-12.8	0.000 000	-0.004
	100 %	+30	3457 499 990	-8.8	0.000 000	-0.003
	100 %	+40	3457 499 987	-11.8	0.000 000	-0.003
	100 %	+50	3457 499 990	-8.5	0.000 000	-0.002
	Batt. Endpoint	+20	3457 499 986	-12.4	0.000 000	-0.004
3542.490	100 %	+20(Ref)	3542 489 991	0.0	0.000 000	0.000
	100 %	-30	3542 489 978	-13.5	0.000 000	-0.004
	100 %	-20	3542 489 986	-5.3	0.000 000	-0.002
	100 %	-10	3542 489 987	-4.2	0.000 000	-0.001
	100 %	0	3542 489 983	-8.1	0.000 000	-0.002
	100 %	+10	3542 489 986	-4.9	0.000 000	-0.001
	100 %	+30	3542 489 978	-13.8	0.000 000	-0.004
	100 %	+40	3542 489 992	0.2	0.000 000	0.000
	100 %	+50	3542 489 988	-3.5	0.000 000	-0.001
	Batt. Endpoint	+20	3542 489 982	-9.2	0.000 000	-0.003

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3460.020	100 %	+20(Ref)	3460 019 992	0.0	0.000 000	0.000
	100 %	-30	3460 019 986	-6.1	0.000 000	-0.002
	100 %	-20	3460 019 989	-3.4	0.000 000	-0.001
	100 %	-10	3460 019 978	-13.9	0.000 000	-0.004
	100 %	0	3460 019 991	-1.2	0.000 000	0.000
	100 %	+10	3460 019 982	-9.7	0.000 000	-0.003
	100 %	+30	3460 019 977	-14.5	0.000 000	-0.004
	100 %	+40	3460 019 986	-5.5	0.000 000	-0.002
	100 %	+50	3460 019 985	-6.6	0.000 000	-0.002
	Batt. Endpoint	+20	3460 019 984	-7.9	0.000 000	-0.002
3540.000	100 %	+20(Ref)	3539 999 986	0.0	0.000 000	0.000
	100 %	-30	3539 999 972	-13.6	0.000 000	-0.004
	100 %	-20	3539 999 981	-4.5	0.000 000	-0.001
	100 %	-10	3539 999 985	-0.7	0.000 000	0.000
	100 %	0	3539 999 978	-7.5	0.000 000	-0.002
	100 %	+10	3539 999 974	-11.6	0.000 000	-0.003
	100 %	+30	3539 999 972	-14.1	0.000 000	-0.004
	100 %	+40	3539 999 970	-15.7	0.000 000	-0.004
	100 %	+50	3539 999 976	-10.1	0.000 000	-0.003
	Batt. Endpoint	+20	3539 999 980	-5.9	0.000 000	-0.002

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3465.000	100 %	+20(Ref)	3464 999 989	0.0	0.000 000	0.000
	100 %	-30	3464 999 973	-16.3	0.000 000	-0.005
	100 %	-20	3464 999 983	-6.8	0.000 000	-0.002
	100 %	-10	3464 999 978	-11.4	0.000 000	-0.003
	100 %	0	3464 999 985	-4.4	0.000 000	-0.001
	100 %	+10	3464 999 979	-10.1	0.000 000	-0.003
	100 %	+30	3464 999 981	-8.7	0.000 000	-0.003
	100 %	+40	3464 999 982	-7.9	0.000 000	-0.002
	100 %	+50	3464 999 985	-4.5	0.000 000	-0.001
	Batt. Endpoint	+20	3464 999 981	-8.9	0.000 000	-0.003
3534.990	100 %	+20(Ref)	3534 989 995	0.0	0.000 000	0.000
	100 %	-30	3534 989 986	-8.8	0.000 000	-0.002
	100 %	-20	3534 989 987	-8.2	0.000 000	-0.002
	100 %	-10	3534 989 988	-7.4	0.000 000	-0.002
	100 %	0	3534 989 990	-5.3	0.000 000	-0.001
	100 %	+10	3534 989 988	-7.4	0.000 000	-0.002
	100 %	+30	3534 989 994	-1.5	0.000 000	0.000
	100 %	+40	3534 989 981	-14.1	0.000 000	-0.004
	100 %	+50	3534 989 988	-7.5	0.000 000	-0.002
	Batt. Endpoint	+20	3534 989 990	-4.8	0.000 000	-0.001

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3470.010	100 %	+20(Ref)	3470 009 998	0.0	0.000 000	0.000
	100 %	-30	3470 009 993	-4.9	0.000 000	-0.001
	100 %	-20	3470 009 991	-7.1	0.000 000	-0.002
	100 %	-10	3470 009 995	-3.1	0.000 000	-0.001
	100 %	0	3470 009 994	-4.2	0.000 000	-0.001
	100 %	+10	3470 009 993	-4.6	0.000 000	-0.001
	100 %	+30	3470 009 988	-10.4	0.000 000	-0.003
	100 %	+40	3470 009 990	-8.4	0.000 000	-0.002
	100 %	+50	3470 009 987	-11.1	0.000 000	-0.003
	Batt. Endpoint	+20	3470 009 994	-4.4	0.000 000	-0.001
3529.980	100 %	+20(Ref)	3529 979 986	0.0	0.000 000	0.000
	100 %	-30	3529 979 975	-10.9	0.000 000	-0.003
	100 %	-20	3529 979 978	-7.9	0.000 000	-0.002
	100 %	-10	3529 979 981	-5.4	0.000 000	-0.002
	100 %	0	3529 979 968	-18.3	-0.000 001	-0.005
	100 %	+10	3529 979 982	-3.8	0.000 000	-0.001
	100 %	+30	3529 979 972	-14.1	0.000 000	-0.004
	100 %	+40	3529 979 972	-14.0	0.000 000	-0.004
	100 %	+50	3529 979 977	-9.3	0.000 000	-0.003
	Batt. Endpoint	+20	3529 979 975	-11.4	0.000 000	-0.003

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3475.020	100 %	+20(Ref)	3475 019 997	0.0	0.000 000	0.000
	100 %	-30	3475 019 994	-2.4	0.000 000	-0.001
	100 %	-20	3475 019 986	-10.7	0.000 000	-0.003
	100 %	-10	3475 019 988	-8.8	0.000 000	-0.003
	100 %	0	3475 019 989	-7.5	0.000 000	-0.002
	100 %	+10	3475 019 988	-8.5	0.000 000	-0.002
	100 %	+30	3475 019 994	-2.7	0.000 000	-0.001
	100 %	+40	3475 019 996	-1.1	0.000 000	0.000
	100 %	+50	3475 019 996	-1.1	0.000 000	0.000
	Batt. Endpoint	+20	3475 019 993	-3.8	0.000 000	-0.001
3525.000	100 %	+20(Ref)	3524 999 992	0.0	0.000 000	0.000
	100 %	-30	3524 999 995	3.1	0.000 000	0.001
	100 %	-20	3524 999 974	-18.0	-0.000 001	-0.005
	100 %	-10	3524 999 981	-10.9	0.000 000	-0.003
	100 %	0	3524 999 978	-14.1	0.000 000	-0.004
	100 %	+10	3524 999 985	-7.3	0.000 000	-0.002
	100 %	+30	3524 999 983	-8.9	0.000 000	-0.003
	100 %	+40	3524 999 986	-6.4	0.000 000	-0.002
	100 %	+50	3524 999 977	-15.2	0.000 000	-0.004
	Batt. Endpoint	+20	3524 999 985	-7.3	0.000 000	-0.002

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3480.000	100 %	+20(Ref)	3479 999 990	0.0	0.000 000	0.000
	100 %	-30	3479 999 981	-9.0	0.000 000	-0.003
	100 %	-20	3479 999 977	-13.1	0.000 000	-0.004
	100 %	-10	3479 999 982	-8.5	0.000 000	-0.002
	100 %	0	3479 999 982	-8.5	0.000 000	-0.002
	100 %	+10	3479 999 984	-6.2	0.000 000	-0.002
	100 %	+30	3479 999 987	-2.9	0.000 000	-0.001
	100 %	+40	3479 999 975	-14.8	0.000 000	-0.004
	100 %	+50	3479 999 975	-14.8	0.000 000	-0.004
	Batt. Endpoint	+20	3479 999 980	-10.6	0.000 000	-0.003
3519.990	100 %	+20(Ref)	3519 990 000	0.0	0.000 000	0.000
	100 %	-30	3519 989 989	-10.4	0.000 000	-0.003
	100 %	-20	3519 989 990	-9.7	0.000 000	-0.003
	100 %	-10	3519 989 990	-9.7	0.000 000	-0.003
	100 %	0	3519 989 987	-12.9	0.000 000	-0.004
	100 %	+10	3519 989 995	-4.9	0.000 000	-0.001
	100 %	+30	3519 989 991	-8.5	0.000 000	-0.002
	100 %	+40	3519 989 991	-8.5	0.000 000	-0.002
	100 %	+50	3519 989 997	-2.5	0.000 000	-0.001
	Batt. Endpoint	+20	3519 989 993	-6.8	0.000 000	-0.002

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3485.010	100 %	+20(Ref)	3485 009 995	0.0	0.000 000	0.000
	100 %	-30	3485 009 989	-6.1	0.000 000	-0.002
	100 %	-20	3485 009 984	-11.5	0.000 000	-0.003
	100 %	-10	3485 009 984	-11.5	0.000 000	-0.003
	100 %	0	3485 009 995	-0.3	0.000 000	0.000
	100 %	+10	3485 009 990	-5.0	0.000 000	-0.001
	100 %	+30	3485 009 993	-2.5	0.000 000	-0.001
	100 %	+40	3485 009 993	-2.5	0.000 000	-0.001
	100 %	+50	3485 009 985	-10.3	0.000 000	-0.003
	Batt. Endpoint	+20	3485 009 986	-9.1	0.000 000	-0.003
3514.980	100 %	+20(Ref)	3514 979 990	0.0	0.000 000	0.000
	100 %	-30	3514 979 974	-15.6	0.000 000	-0.004
	100 %	-20	3514 979 980	-10.0	0.000 000	-0.003
	100 %	-10	3514 979 980	-10.0	0.000 000	-0.003
	100 %	0	3514 979 979	-10.9	0.000 000	-0.003
	100 %	+10	3514 979 984	-5.9	0.000 000	-0.002
	100 %	+30	3514 979 979	-10.5	0.000 000	-0.003
	100 %	+40	3514 979 979	-10.5	0.000 000	-0.003
	100 %	+50	3514 979 973	-16.9	0.000 000	-0.005
	Batt. Endpoint	+20	3514 979 983	-6.5	0.000 000	-0.002

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3490.020	100 %	+20(Ref)	3490 019 997	0.0	0.000 000	0.000
	100 %	-30	3490 019 989	-8.1	0.000 000	-0.002
	100 %	-20	3490 019 989	-8.1	0.000 000	-0.002
	100 %	-10	3490 019 996	-1.6	0.000 000	0.000
	100 %	0	3490 019 990	-7.1	0.000 000	-0.002
	100 %	+10	3490 019 990	-7.1	0.000 000	-0.002
	100 %	+30	3490 019 991	-6.4	0.000 000	-0.002
	100 %	+40	3490 019 986	-11.0	0.000 000	-0.003
	100 %	+50	3490 019 999	1.5	0.000 000	0.000
	Batt. Endpoint	+20	3490 019 999	1.5	0.000 000	0.000
3510.000	100 %	+20(Ref)	3510 000 002	0.0	0.000 000	0.000
	100 %	-30	3510 000 004	1.7	0.000 000	0.000
	100 %	-20	3510 000 000	-1.6	0.000 000	0.000
	100 %	-10	3509 999 996	-5.8	0.000 000	-0.002
	100 %	0	3509 999 996	-5.8	0.000 000	-0.002
	100 %	+10	3509 999 996	-5.6	0.000 000	-0.002
	100 %	+30	3509 999 993	-9.3	0.000 000	-0.003
	100 %	+40	3509 999 993	-9.3	0.000 000	-0.003
	100 %	+50	3509 999 993	-8.7	0.000 000	-0.002
	Batt. Endpoint	+20	3509 999 991	-10.9	0.000 000	-0.003

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3495.000	100 %	+20(Ref)	3494 999 992	0.0	0.000 000	0.000
	100 %	-30	3494 999 983	-9.3	0.000 000	-0.003
	100 %	-20	3494 999 992	0.5	0.000 000	0.000
	100 %	-10	3494 999 992	0.5	0.000 000	0.000
	100 %	0	3494 999 985	-6.5	0.000 000	-0.002
	100 %	+10	3494 999 994	2.5	0.000 000	0.001
	100 %	+30	3494 999 985	-7.3	0.000 000	-0.002
	100 %	+40	3494 999 985	-7.3	0.000 000	-0.002
	100 %	+50	3494 999 983	-9.1	0.000 000	-0.003
	Batt. Endpoint	+20	3494 999 985	-7.4	0.000 000	-0.002
3504.990	100 %	+20(Ref)	3504 989 990	0.0	0.000 000	0.000
	100 %	-30	3504 989 984	-5.6	0.000 000	-0.002
	100 %	-20	3504 989 975	-14.9	0.000 000	-0.004
	100 %	-10	3504 989 975	-14.9	0.000 000	-0.004
	100 %	0	3504 989 989	-0.4	0.000 000	0.000
	100 %	+10	3504 989 977	-12.9	0.000 000	-0.004
	100 %	+30	3504 989 977	-12.9	0.000 000	-0.004
	100 %	+40	3504 989 981	-9.1	0.000 000	-0.003
	100 %	+50	3504 989 976	-13.4	0.000 000	-0.004
	Batt. Endpoint	+20	3504 989 976	-13.4	0.000 000	-0.004

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3500.010	100 %	+20(Ref)	3500 009 994	0.0	0.000 000	0.000
	100 %	-30	3500 009 987	-6.1	0.000 000	-0.002
	100 %	-20	3500 009 987	-6.1	0.000 000	-0.002
	100 %	-10	3500 009 988	-5.5	0.000 000	-0.002
	100 %	0	3500 009 987	-6.3	0.000 000	-0.002
	100 %	+10	3500 009 992	-1.7	0.000 000	0.000
	100 %	+30	3500 009 992	-1.7	0.000 000	0.000
	100 %	+40	3500 009 988	-5.0	0.000 000	-0.001
	100 %	+50	3500 009 986	-7.8	0.000 000	-0.002
	Batt. Endpoint	+20	3500 009 986	-7.8	0.000 000	-0.002

9. TEST DATA (3700 MHz - 3980 MHz)

9.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3705.00	Sub6 n77/ 10 MHz [30 kHz]	PI/2 BPSK	-24.83	13.66	11.40	3.09	H	< 1.00	0.157	21.97	1	12
		QPSK	-24.86	13.63	11.40	3.09	H		0.156	21.94		
		16-QAM	-26.84	11.65	11.40	3.09	H		0.099	19.96		
		64-QAM	-27.35	11.14	11.40	3.09	H		0.088	19.45		
		256-QAM	-29.42	9.07	11.40	3.09	H		0.055	17.38		
3840.00		PI/2 BPSK	-24.56	15.12	11.10	3.14	H		0.203	23.08	1	22
		QPSK	-24.63	15.05	11.10	3.14	H		0.200	23.01		
		16-QAM	-25.60	14.08	11.10	3.14	H		0.160	22.04		
		64-QAM	-27.04	12.64	11.10	3.14	H		0.115	20.60		
		256-QAM	-29.22	10.46	11.10	3.14	H		0.070	18.42		
3975.00		PI/2 BPSK	-24.40	15.25	10.90	3.20	H		0.197	22.95	1	1
		QPSK	-24.42	15.23	10.90	3.20	H		0.196	22.93		
		16-QAM	-25.46	14.19	10.90	3.20	H		0.155	21.89		
		64-QAM	-26.90	12.75	10.90	3.20	H		0.111	20.45		
		256-QAM	-29.07	10.58	10.90	3.20	H		0.067	18.28		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3707.51	Sub6 n77/ 15 MHz [30 kHz]	PI/2 BPSK	-24.89	13.60	11.40	3.09	H	< 1.00	0.155	21.91	1	36
		QPSK	-24.91	13.58	11.40	3.09	H		0.155	21.89		
		16-QAM	-25.97	12.52	11.40	3.09	H		0.121	20.83		
		64-QAM	-27.42	11.07	11.40	3.09	H		0.087	19.38		
		256-QAM	-29.56	8.93	11.40	3.09	H		0.053	17.24		
3840.00		PI/2 BPSK	-24.33	15.35	11.10	3.14	H		0.214	23.31	1	36
		QPSK	-24.38	15.30	11.10	3.14	H		0.212	23.26		
		16-QAM	-25.38	14.30	11.10	3.14	H		0.168	22.26		
		64-QAM	-26.82	12.86	11.10	3.14	H		0.121	20.82		
		256-QAM	-29.03	10.65	11.10	3.14	H		0.073	18.61		
3972.48		PI/2 BPSK	-23.99	15.66	10.90	3.20	H		0.217	23.36	1	1
		QPSK	-24.02	15.63	10.90	3.20	H		0.215	23.33		
		16-QAM	-25.03	14.62	10.90	3.20	H		0.171	22.32		
		64-QAM	-26.50	13.15	10.90	3.20	H		0.122	20.85		
		256-QAM	-28.71	10.94	10.90	3.20	H		0.073	18.64		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3710.01	Sub6 n77/ 20 MHz [30 kHz]	PI/2 BPSK	-24.85	13.67	11.40	3.11	H	< 1.00	0.157	21.96	1	49
		QPSK	-24.86	13.66	11.40	3.11	H		0.157	21.95		
		16-QAM	-25.98	12.54	11.40	3.11	H		0.121	20.83		
		64-QAM	-27.29	11.23	11.40	3.11	H		0.090	19.52		
		256-QAM	-29.54	8.98	11.40	3.11	H		0.053	17.27		
3840.00		PI/2 BPSK	-24.35	15.33	11.10	3.14	H		0.213	23.29	1	49
		QPSK	-24.37	15.31	11.10	3.14	H		0.212	23.27		
		16-QAM	-25.38	14.30	11.10	3.14	H		0.168	22.26		
		64-QAM	-26.81	12.87	11.10	3.14	H		0.121	20.83		
		256-QAM	-28.96	10.72	11.10	3.14	H		0.074	18.68		
3969.99		PI/2 BPSK	-23.94	15.65	10.90	3.20	H		0.216	23.35	1	1
		QPSK	-23.98	15.61	10.90	3.20	H		0.214	23.31		
		16-QAM	-25.00	14.59	10.90	3.20	H		0.169	22.29		
		64-QAM	-26.43	13.16	10.90	3.20	H		0.122	20.86		
		256-QAM	-28.60	10.99	10.90	3.20	H		0.074	18.69		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3715.02	Sub6 n77/ 30 MHz [30 kHz]	PI/2 BPSK	-24.80	13.87	11.40	3.12	H	< 1.00	0.164	22.15	1	39
		QPSK	-24.82	13.85	11.40	3.12	H		0.163	22.13		
		16-QAM	-25.87	12.80	11.40	3.12	H		0.128	21.08		
		64-QAM	-27.32	11.35	11.40	3.12	H		0.092	19.63		
		256-QAM	-29.53	9.14	11.40	3.12	H		0.055	17.42		
3840.00		PI/2 BPSK	-24.02	15.66	11.10	3.14	H		0.230	23.62	1	76
		QPSK	-24.09	15.59	11.10	3.14	H		0.226	23.55		
		16-QAM	-25.06	14.62	11.10	3.14	H		0.181	22.58		
		64-QAM	-26.54	13.14	11.10	3.14	H		0.129	21.10		
		256-QAM	-28.72	10.96	11.10	3.14	H		0.078	18.92		
3964.98		PI/2 BPSK	-23.51	16.18	10.90	3.21	H		0.244	23.87	1	1
		QPSK	-23.53	16.16	10.90	3.21	H		0.243	23.85		
		16-QAM	-24.62	15.07	10.90	3.21	H		0.189	22.76		
		64-QAM	-26.00	13.69	10.90	3.21	H		0.137	21.38		
		256-QAM	-28.16	11.53	10.90	3.21	H		0.084	19.22		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3720.00	Sub6 n77/ 40 MHz [30 kHz]	PI/2 BPSK	-24.67	14.02	11.40	3.14	H	< 1.00	0.169	22.28	1	1
		QPSK	-24.70	13.99	11.40	3.14	H		0.168	22.25		
		16-QAM	-25.78	12.91	11.40	3.14	H		0.131	21.17		
		64-QAM	-27.14	11.55	11.40	3.14	H		0.096	19.81		
		256-QAM	-29.28	9.41	11.40	3.14	H		0.058	17.67		
3840.00		PI/2 BPSK	-23.97	15.71	11.10	3.14	H		0.233	23.67	1	104
		QPSK	-23.98	15.70	11.10	3.14	H		0.232	23.66		
		16-QAM	-25.07	14.61	11.10	3.14	H		0.181	22.57		
		64-QAM	-26.46	13.22	11.10	3.14	H		0.131	21.18		
		256-QAM	-28.63	11.05	11.10	3.14	H		0.080	19.01		
3960.00		PI/2 BPSK	-23.45	16.33	10.90	3.21	H		0.252	24.02	1	1
		QPSK	-23.51	16.27	10.90	3.21	H		0.249	23.96		
		16-QAM	-24.46	15.32	10.90	3.21	H		0.200	23.01		
		64-QAM	-25.91	13.87	10.90	3.21	H		0.143	21.56		
		256-QAM	-28.11	11.67	10.90	3.21	H		0.086	19.36		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3725.10	Sub6 n77/ 50 MHz [30 kHz]	PI/2 BPSK	-24.92	13.92	11.40	3.14	H	< 1.00	0.165	22.18	1	66
		QPSK	-24.95	13.89	11.40	3.14	H		0.164	22.15		
		16-QAM	-26.06	12.78	11.40	3.14	H		0.127	21.04		
		64-QAM	-27.39	11.45	11.40	3.14	H		0.094	19.71		
		256-QAM	-29.67	9.17	11.40	3.14	H		0.055	17.43		
3840.00		PI/2 BPSK	-24.13	15.55	11.10	3.14	H		0.224	23.51	1	131
		QPSK	-24.18	15.50	11.10	3.14	H		0.222	23.46		
		16-QAM	-25.17	14.51	11.10	3.14	H		0.177	22.47		
		64-QAM	-26.61	13.07	11.10	3.14	H		0.127	21.03		
		256-QAM	-28.79	10.89	11.10	3.14	H		0.077	18.85		
3954.99		PI/2 BPSK	-23.78	16.01	10.90	3.21	H		0.234	23.70	1	1
		QPSK	-23.78	16.01	10.90	3.21	H		0.234	23.69		
		16-QAM	-24.84	14.95	10.90	3.21	H		0.184	22.64		
		64-QAM	-26.27	13.52	10.90	3.21	H		0.132	21.21		
		256-QAM	-28.46	11.33	10.90	3.21	H		0.080	19.02		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3730.02	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-25.01	13.85	11.40	3.14	H	< 1.00	0.163	22.11	1	81
		QPSK	-25.04	13.82	11.40	3.14	H		0.161	22.08		
		16-QAM	-26.10	12.76	11.40	3.14	H		0.126	21.02		
		64-QAM	-27.58	11.28	11.40	3.14	H		0.090	19.54		
		256-QAM	-30.39	8.47	11.40	3.14	H		0.047	16.73		
3840.00		PI/2 BPSK	-24.12	15.56	11.10	3.14	H		0.225	23.52	1	160
		QPSK	-24.15	15.53	11.10	3.14	H		0.223	23.49		
		16-QAM	-25.19	14.49	11.10	3.14	H		0.176	22.45		
		64-QAM	-26.59	13.09	11.10	3.14	H		0.127	21.05		
		256-QAM	-28.76	10.92	11.10	3.14	H		0.077	18.88		
3949.98		PI/2 BPSK	-23.92	15.86	10.90	3.20	H		0.227	23.56	1	1
		QPSK	-23.94	15.84	10.90	3.20	H		0.226	23.54		
		16-QAM	-24.98	14.80	10.90	3.20	H		0.178	22.50		
		64-QAM	-26.40	13.38	10.90	3.20	H		0.128	21.08		
		256-QAM	-28.63	11.15	10.90	3.20	H		0.077	18.85		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3735.00	Sub6 n77/ 70 MHz [30 kHz]	PI/2 BPSK	-25.11	13.75	11.40	3.12	H	< 1.00	0.160	22.03	1	1
		QPSK	-25.14	13.72	11.40	3.12	H		0.158	22.00		
		16-QAM	-26.20	12.66	11.40	3.12	H		0.124	20.94		
		64-QAM	-27.62	11.24	11.40	3.12	H		0.090	19.52		
		256-QAM	-29.99	8.87	11.40	3.12	H		0.052	17.15		
3840.00		PI/2 BPSK	-24.23	15.45	11.10	3.14	H		0.219	23.41	1	187
		QPSK	-24.25	15.43	11.10	3.14	H		0.218	23.39		
		16-QAM	-25.36	14.32	11.10	3.14	H		0.169	22.28		
		64-QAM	-26.73	12.95	11.10	3.14	H		0.123	20.91		
		256-QAM	-28.93	10.75	11.10	3.14	H		0.074	18.71		
3945.00		PI/2 BPSK	-23.88	15.96	10.85	3.18	H		0.231	23.63	1	94
		QPSK	-23.90	15.94	10.85	3.18	H		0.230	23.61		
		16-QAM	-24.95	14.89	10.85	3.18	H		0.180	22.56		
		64-QAM	-26.35	13.49	10.85	3.18	H		0.131	21.16		
		256-QAM	-28.48	11.36	10.85	3.18	H		0.080	19.03		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3740.01	Sub6 n77/ 80 MHz [30 kHz]	PI/2 BPSK	-25.14	13.72	11.40	3.10	H	< 1.00	0.159	22.02	1	1
		QPSK	-25.16	13.70	11.40	3.10	H		0.158	22.00		
		16-QAM	-26.30	12.56	11.40	3.10	H		0.122	20.86		
		64-QAM	-27.65	11.21	11.40	3.10	H		0.089	19.51		
		256-QAM	-29.80	9.06	11.40	3.10	H		0.054	17.36		
3840.00		PI/2 BPSK	-24.25	15.43	11.10	3.14	H		0.218	23.39	1	215
		QPSK	-24.28	15.40	11.10	3.14	H		0.217	23.36		
		16-QAM	-25.31	14.37	11.10	3.14	H		0.171	22.33		
		64-QAM	-26.72	12.96	11.10	3.14	H		0.124	20.92		
		256-QAM	-28.88	10.80	11.10	3.14	H		0.075	18.76		
3939.99		PI/2 BPSK	-23.87	14.99	11.40	3.10	H		0.213	23.29	1	108
		QPSK	-23.91	14.95	11.40	3.10	H		0.211	23.25		
		16-QAM	-24.99	13.87	11.40	3.10	H		0.165	22.17		
		64-QAM	-26.37	12.49	11.40	3.10	H		0.120	20.79		
		256-QAM	-28.53	10.33	11.40	3.10	H		0.073	18.63		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3745.02	Sub6 n77/ 90 MHz [30 kHz]	PI/2 BPSK	-25.14	13.60	11.35	3.09	H	< 1.00	0.153	21.86	1	1
		QPSK	-25.20	13.54	11.35	3.09	H		0.151	21.80		
		16-QAM	-26.25	12.49	11.35	3.09	H		0.119	20.75		
		64-QAM	-27.65	11.09	11.35	3.09	H		0.086	19.35		
		256-QAM	-30.18	8.56	11.35	3.09	H		0.048	16.82		
3840.00		PI/2 BPSK	-24.13	15.55	11.10	3.14	H		0.224	23.51	1	243
		QPSK	-24.15	15.53	11.10	3.14	H		0.223	23.49		
		16-QAM	-25.19	14.49	11.10	3.14	H		0.176	22.45		
		64-QAM	-26.56	13.12	11.10	3.14	H		0.128	21.08		
		256-QAM	-28.90	10.78	11.10	3.14	H		0.075	18.74		
3934.98		PI/2 BPSK	-23.94	15.98	10.80	3.16	H		0.230	23.62	1	122
		QPSK	-23.96	15.96	10.80	3.16	H		0.229	23.60		
		16-QAM	-25.00	14.92	10.80	3.16	H		0.180	22.56		
		64-QAM	-26.47	13.45	10.80	3.16	H		0.129	21.09		
		256-QAM	-28.69	11.23	10.80	3.16	H		0.077	18.87		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3750.00	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-25.19	13.44	11.30	3.08	H	< 1.00	0.147	21.66	1	1
		QPSK	-25.21	13.42	11.30	3.08	H		0.146	21.64		
		16-QAM	-26.27	12.36	11.30	3.08	H		0.114	20.58		
		64-QAM	-27.68	10.95	11.30	3.08	H		0.083	19.17		
		256-QAM	-29.80	8.83	11.30	3.08	H		0.051	17.05		
3840.00		PI/2 BPSK	-24.13	15.55	11.10	3.14	H		0.224	23.51	1	271
		QPSK	-24.23	15.45	11.10	3.14	H		0.219	23.41		
		16-QAM	-25.22	14.46	11.10	3.14	H		0.175	22.42		
		64-QAM	-26.63	13.05	11.10	3.14	H		0.126	21.01		
		256-QAM	-28.82	10.86	11.10	3.14	H		0.076	18.82		
3930.00		PI/2 BPSK	-23.88	16.07	10.80	3.16	H		0.235	23.71	1	136
		QPSK	-23.91	16.04	10.80	3.16	H		0.233	23.68		
		16-QAM	-24.97	14.98	10.80	3.16	H		0.183	22.62		
		64-QAM	-26.39	13.56	10.80	3.16	H		0.132	21.20		
		256-QAM	-28.55	11.40	10.80	3.16	H		0.080	19.04		

9.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77

▣ Bandwidth: 40 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 1 meters

▣ SCS: 30 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
648000 (3720.00)	7 440.00	-65.46	10.80	-57.59	4.46	V	-51.25	-13.00	1	1
	11 160.00	-66.10	11.50	-53.69	5.61	V	-47.80	-13.00		
	14 880.00	-56.65	13.30	-53.87	6.60	V	-44.34	-13.00		
656000 (3840.00)	7 680.00	-64.57	11.10	-57.71	4.55	H	-51.16	-13.00	1	104
	11 520.00	-66.53	11.50	-55.39	5.70	H	-49.59	-13.00		
	15 360.00	-61.77	15.10	-55.98	6.72	H	-47.60	-13.00		
664000 (3960.00)	7 920.00	-63.48	10.70	-56.04	4.63	H	-49.97	-13.00	1	1
	11 880.00	-64.02	12.20	-53.98	5.81	H	-47.59	-13.00		
	15 840.00	-63.36	14.90	-56.28	6.84	H	-48.22	-13.00		

▣ ENDC-Mode : 2A(10 MHz)-n77A(40 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
18900 (1880.0)	3760.00	-62.08	11.64	-62.31	3.16	V	-53.83	-13.00
	5640.00	-61.89	12.00	-55.71	3.93	H	-47.64	-13.00
	7520.00	-62.37	11.54	-47.92	4.51	V	-40.89	-13.00

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n77	10 MHz	3840.00	BPSK	Full RB	0	4.59
			QPSK			5.99
			16-QAM			6.58
			64-QAM			6.60
			256-QAM			6.86
	15 MHz		BPSK			4.92
			QPSK			5.83
			16-QAM			6.46
			64-QAM			6.85
			256-QAM			7.02
	20 MHz		BPSK			4.57
			QPSK			5.70
			16-QAM			6.50
			64-QAM			6.50
			256-QAM			6.72
	30 MHz		BPSK			4.70
			QPSK			5.53
			16-QAM			6.37
			64-QAM			6.45
			256-QAM			6.53
	40 MHz		BPSK			4.19
			QPSK			5.46
			16-QAM			6.28
			64-QAM			6.32
			256-QAM			6.41
	50 MHz		BPSK			4.86
			QPSK			5.62
			16-QAM			6.40
			64-QAM			6.50
			256-QAM			6.53

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
	60 MHz		BPSK			5.81
			QPSK			5.99
			16-QAM			6.43
			64-QAM			6.52
			256-QAM			6.55
	70 MHz		BPSK			4.32
			QPSK			5.65
			16-QAM			6.36
			64-QAM			6.47
			256-QAM			6.56
	80 MHz		BPSK			4.45
			QPSK			6.36
			16-QAM			6.31
			64-QAM			6.47
			256-QAM			6.49
	90 MHz		BPSK			4.32
			QPSK			5.60
			16-QAM			6.44
			64-QAM			6.50
			256-QAM			6.52
	100 MHz		BPSK			5.12
			QPSK			5.58
			16-QAM			6.30
			64-QAM			6.52
			256-QAM			6.57

Note:

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

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n77	10 MHz	3840.00	BPSK	Full RB	0	8.6402
			QPSK			8.6723
			16-QAM			8.6770
			64-QAM			8.6629
			256-QAM			8.6556
	15 MHz		BPSK			12.976
			QPSK			12.947
			16-QAM			12.930
			64-QAM			12.970
			256-QAM			12.986
	20 MHz		BPSK			17.933
			QPSK			18.001
			16-QAM			17.943
			64-QAM			17.920
			256-QAM			17.919
	30 MHz		BPSK			26.925
			QPSK			26.929
			16-QAM			26.952
			64-QAM			26.891
			256-QAM			26.857
	40 MHz		BPSK			35.808
			QPSK			35.852
			16-QAM			35.789
			64-QAM			35.826
			256-QAM			35.734
	50 MHz		BPSK			45.800
			QPSK			45.763
			16-QAM			45.880
			64-QAM			45.908
			256-QAM			45.821

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
	60 MHz		BPSK			57.926
			QPSK			57.986
			16-QAM			58.010
			64-QAM			58.024
			256-QAM			57.950
	70 MHz		BPSK			64.376
			QPSK			64.570
			16-QAM			64.545
			64-QAM			64.564
			256-QAM			64.632
	80 MHz		BPSK			77.326
			QPSK			77.371
			16-QAM			77.383
			64-QAM			77.371
			256-QAM			77.372
	90 MHz		BPSK			87.013
			QPSK			87.047
			16-QAM			86.762
			64-QAM			86.779
			256-QAM			86.749
	100 MHz		BPSK			96.515
			QPSK			96.719
			16-QAM			96.461
			64-QAM			96.460
			256-QAM			96.783

Note:

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

9.5 CONDUCTED SPURIOUS EMISSIONS

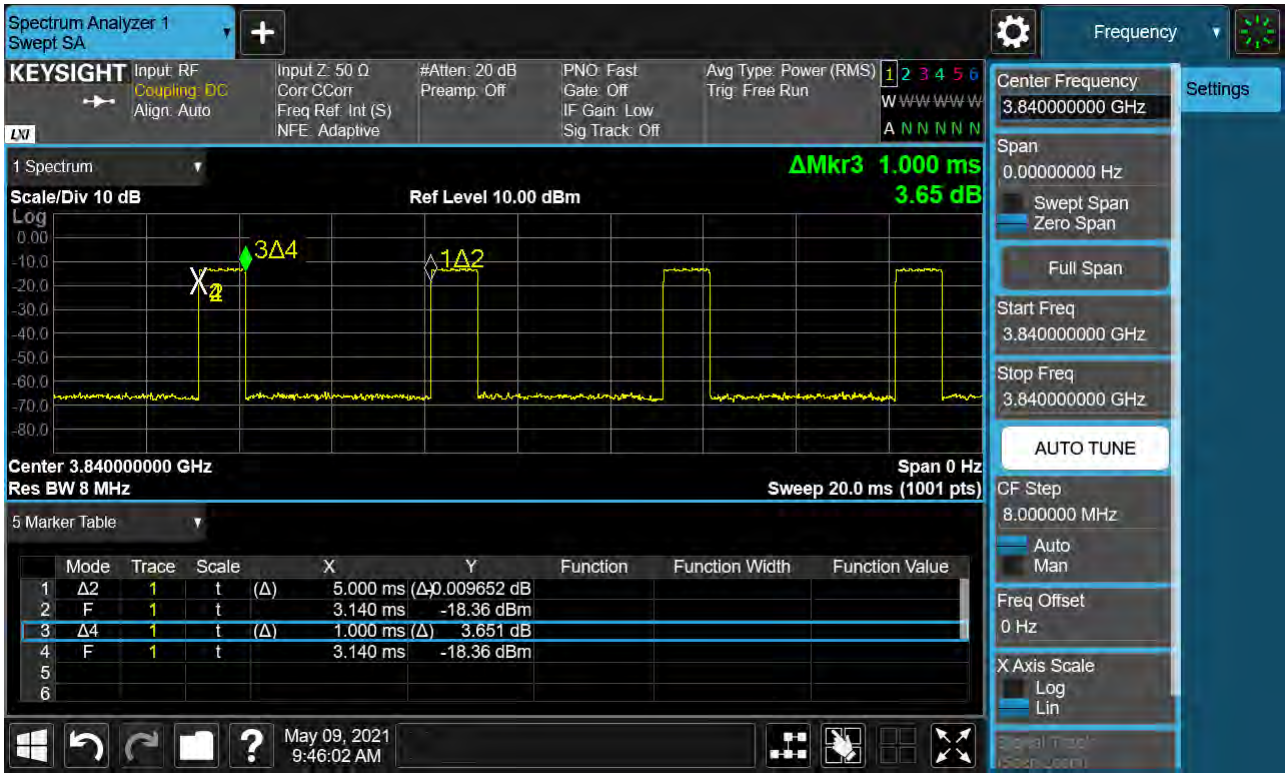
Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n77	10	3705.00	7.7872	37.805	-70.792	-32.987	-13.00
		3840.00	4.9642	37.190	-70.467	-33.277	
		3975.00	8.8639	37.805	-70.411	-32.606	
	15	3707.52	4.9681	37.190	-70.736	-33.546	
		3840.00	9.6790	37.805	-69.928	-32.123	
		3972.48	8.2458	37.805	-70.912	-33.107	
	20	3710.01	9.9656	37.805	-71.007	-33.202	
		3840.00	8.2802	37.805	-70.866	-33.061	
		3969.99	6.0359	37.805	-70.928	-33.123	
	30	3715.02	4.9088	37.190	-70.455	-33.265	
		3840.00	9.8475	37.805	-71.156	-33.351	
		3964.98	8.8245	37.805	-70.400	-32.595	
	40	3720.00	9.7084	37.805	-70.720	-32.915	
		3840.00	9.9766	37.805	-70.470	-32.665	
		3960.00	8.6117	37.805	-70.591	-32.786	
	50	3725.10	5.4781	37.805	-70.302	-32.497	
		3840.00	8.6251	37.805	-70.719	-32.914	
		3954.99	9.4531	37.805	-71.158	-33.353	
	60	3730.02	9.9601	37.805	-71.408	-33.603	
		3840.00	8.8410	37.805	-70.674	-32.869	
		3949.98	9.6959	37.805	-71.379	-33.574	
	70	3735.00	8.2717	37.805	-70.729	-32.924	
		3840.00	9.1281	37.805	-71.296	-33.491	
		3945.00	6.0265	37.805	-71.047	-33.242	
	80	3740.01	9.1610	37.805	-70.203	-32.398	
		3840.00	8.8400	37.805	-70.730	-32.925	
		3939.99	9.3724	37.805	-70.788	-32.983	
	90	3745.02	5.1989	37.805	-69.940	-32.135	
		3840.00	9.1311	37.805	-71.240	-33.435	
		3934.98	8.8724	37.805	-70.863	-33.058	
	100	3750.00	4.9726	37.190	-70.652	-33.462	
		3840.00	8.0479	37.805	-71.149	-33.344	
		3930.00	9.1954	37.805	-70.532	-32.727	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 635 ~ 700.

2. Duty Cycle factor already applied on the factor.

- Duty Cycle Factor(dB) = 6.990



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

- Result(dBm) = Reading + Factor

3. Factor(dB)

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

9.6 BAND EDGE

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

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3705.000	100 %	+20(Ref)	3704 999 991	0.0	0.000 000	0.000
	100 %	-30	3704 999 979	-12.3	0.000 000	-0.003
	100 %	-20	3704 999 982	-9.4	0.000 000	-0.003
	100 %	-10	3704 999 980	-10.9	0.000 000	-0.003
	100 %	0	3704 999 976	-15.5	0.000 000	-0.004
	100 %	+10	3704 999 987	-4.4	0.000 000	-0.001
	100 %	+30	3704 999 990	-1.5	0.000 000	0.000
	100 %	+40	3704 999 986	-4.9	0.000 000	-0.001
	100 %	+50	3704 999 981	-10.1	0.000 000	-0.003
	Batt. Endpoint	+20	3704 999 977	-14.2	0.000 000	-0.004
3975.000	100 %	+20(Ref)	3974 999 994	0.0	0.000 000	0.000
	100 %	-30	3974 999 987	-6.6	0.000 000	-0.002
	100 %	-20	3974 999 983	-10.3	0.000 000	-0.003
	100 %	-10	3974 999 984	-9.7	0.000 000	-0.002
	100 %	0	3974 999 983	-10.5	0.000 000	-0.003
	100 %	+10	3974 999 989	-4.8	0.000 000	-0.001
	100 %	+30	3974 999 986	-7.9	0.000 000	-0.002
	100 %	+40	3974 999 987	-6.8	0.000 000	-0.002
	100 %	+50	3974 999 976	-18.0	0.000 000	-0.005
	Batt. Endpoint	+20	3974 999 983	-10.6	0.000 000	-0.003

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3707.520	100 %	+20(Ref)	3707 519 995	0.0	0.000 000	0.000
	100 %	-30	3707 519 988	-6.8	0.000 000	-0.002
	100 %	-20	3707 519 982	-12.2	0.000 000	-0.003
	100 %	-10	3707 519 988	-7.1	0.000 000	-0.002
	100 %	0	3707 519 995	0.8	0.000 000	0.000
	100 %	+10	3707 519 987	-7.5	0.000 000	-0.002
	100 %	+30	3707 519 985	-9.6	0.000 000	-0.003
	100 %	+40	3707 519 982	-12.8	0.000 000	-0.003
	100 %	+50	3707 519 981	-13.4	0.000 000	-0.004
	Batt. Endpoint	+20	3707 519 979	-15.6	0.000 000	-0.004
3972.480	100 %	+20(Ref)	3972 479 993	0.0	0.000 000	0.000
	100 %	-30	3972 479 978	-14.5	0.000 000	-0.004
	100 %	-20	3972 479 980	-12.5	0.000 000	-0.003
	100 %	-10	3972 479 979	-13.5	0.000 000	-0.003
	100 %	0	3972 479 985	-7.7	0.000 000	-0.002
	100 %	+10	3972 479 980	-12.3	0.000 000	-0.003
	100 %	+30	3972 479 990	-3.0	0.000 000	-0.001
	100 %	+40	3972 479 981	-11.6	0.000 000	-0.003
	100 %	+50	3972 479 983	-9.5	0.000 000	-0.002
	Batt. Endpoint	+20	3972 479 985	-7.2	0.000 000	-0.002

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3710.010	100 %	+20(Ref)	3710 009 988	0.0	0.000 000	0.000
	100 %	-30	3710 009 976	-12.5	0.000 000	-0.003
	100 %	-20	3710 009 980	-8.6	0.000 000	-0.002
	100 %	-10	3710 009 979	-9.3	0.000 000	-0.003
	100 %	0	3710 009 986	-2.7	0.000 000	-0.001
	100 %	+10	3710 009 979	-9.6	0.000 000	-0.003
	100 %	+30	3710 009 975	-13.3	0.000 000	-0.004
	100 %	+40	3710 009 971	-17.5	0.000 000	-0.005
	100 %	+50	3710 009 976	-12.7	0.000 000	-0.003
	Batt. Endpoint	+20	3710 009 976	-12.4	0.000 000	-0.003
3969.990	100 %	+20(Ref)	3969 989 986	0.0	0.000 000	0.000
	100 %	-30	3969 989 974	-11.8	0.000 000	-0.003
	100 %	-20	3969 989 978	-7.9	0.000 000	-0.002
	100 %	-10	3969 989 976	-10.2	0.000 000	-0.003
	100 %	0	3969 989 982	-3.8	0.000 000	-0.001
	100 %	+10	3969 989 974	-11.7	0.000 000	-0.003
	100 %	+30	3969 989 984	-1.7	0.000 000	0.000
	100 %	+40	3969 989 978	-7.6	0.000 000	-0.002
	100 %	+50	3969 989 979	-6.9	0.000 000	-0.002
	Batt. Endpoint	+20	3969 989 977	-9.0	0.000 000	-0.002

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3715.020	100 %	+20(Ref)	3715 019 989	0.0	0.000 000	0.000
	100 %	-30	3715 019 983	-5.9	0.000 000	-0.002
	100 %	-20	3715 019 983	-5.7	0.000 000	-0.002
	100 %	-10	3715 019 978	-10.9	0.000 000	-0.003
	100 %	0	3715 019 987	-1.4	0.000 000	0.000
	100 %	+10	3715 019 981	-8.0	0.000 000	-0.002
	100 %	+30	3715 019 973	-16.1	0.000 000	-0.004
	100 %	+40	3715 019 983	-6.3	0.000 000	-0.002
	100 %	+50	3715 019 979	-9.8	0.000 000	-0.003
	Batt. Endpoint	+20	3715 019 984	-5.2	0.000 000	-0.001
3964.980	100 %	+20(Ref)	3964 979 986	0.0	0.000 000	0.000
	100 %	-30	3964 979 984	-2.4	0.000 000	-0.001
	100 %	-20	3964 979 979	-7.5	0.000 000	-0.002
	100 %	-10	3964 979 978	-8.3	0.000 000	-0.002
	100 %	0	3964 979 977	-8.8	0.000 000	-0.002
	100 %	+10	3964 979 979	-7.1	0.000 000	-0.002
	100 %	+30	3964 979 982	-4.5	0.000 000	-0.001
	100 %	+40	3964 979 976	-9.5	0.000 000	-0.002
	100 %	+50	3964 979 980	-5.9	0.000 000	-0.001
	Batt. Endpoint	+20	3964 979 970	-15.6	0.000 000	-0.004

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3720.000	100 %	+20(Ref)	3719 999 993	0.0	0.000 000	0.000
	100 %	-30	3719 999 988	-5.8	0.000 000	-0.002
	100 %	-20	3719 999 992	-1.2	0.000 000	0.000
	100 %	-10	3719 999 985	-8.0	0.000 000	-0.002
	100 %	0	3719 999 984	-9.4	0.000 000	-0.003
	100 %	+10	3719 999 990	-3.1	0.000 000	-0.001
	100 %	+30	3719 999 984	-9.9	0.000 000	-0.003
	100 %	+40	3719 999 979	-14.2	0.000 000	-0.004
	100 %	+50	3719 999 993	-0.3	0.000 000	0.000
	Batt. Endpoint	+20	3719 999 995	1.7	0.000 000	0.000
3960.000	100 %	+20(Ref)	3959 999 998	0.0	0.000 000	0.000
	100 %	-30	3959 999 990	-7.5	0.000 000	-0.002
	100 %	-20	3959 999 988	-9.2	0.000 000	-0.002
	100 %	-10	3959 999 996	-1.3	0.000 000	0.000
	100 %	0	3959 999 988	-9.9	0.000 000	-0.003
	100 %	+10	3959 999 991	-6.7	0.000 000	-0.002
	100 %	+30	3959 999 991	-6.8	0.000 000	-0.002
	100 %	+40	3959 999 989	-8.2	0.000 000	-0.002
	100 %	+50	3959 999 988	-9.7	0.000 000	-0.002
	Batt. Endpoint	+20	3959 999 991	-7.0	0.000 000	-0.002

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3725.010	100 %	+20(Ref)	3725 010 003	0.0	0.000 000	0.000
	100 %	-30	3725 009 988	-15.2	0.000 000	-0.004
	100 %	-20	3725 009 990	-13.1	0.000 000	-0.004
	100 %	-10	3725 009 998	-4.5	0.000 000	-0.001
	100 %	0	3725 010 001	-1.5	0.000 000	0.000
	100 %	+10	3725 009 994	-9.1	0.000 000	-0.002
	100 %	+30	3725 009 992	-10.6	0.000 000	-0.003
	100 %	+40	3725 010 002	-1.0	0.000 000	0.000
	100 %	+50	3725 009 992	-11.2	0.000 000	-0.003
	Batt. Endpoint	+20	3725 010 004	1.4	0.000 000	0.000
3954.990	100 %	+20(Ref)	3954 989 997	0.0	0.000 000	0.000
	100 %	-30	3954 989 987	-9.5	0.000 000	-0.002
	100 %	-20	3954 989 985	-12.1	0.000 000	-0.003
	100 %	-10	3954 989 994	-3.4	0.000 000	-0.001
	100 %	0	3954 989 985	-12.1	0.000 000	-0.003
	100 %	+10	3954 989 992	-5.2	0.000 000	-0.001
	100 %	+30	3954 989 990	-7.3	0.000 000	-0.002
	100 %	+40	3954 989 976	-20.5	-0.000 001	-0.005
	100 %	+50	3954 989 989	-7.5	0.000 000	-0.002
	Batt. Endpoint	+20	3954 989 988	-8.7	0.000 000	-0.002

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3730.020	100 %	+20(Ref)	3730 019 996	0.0	0.000 000	0.000
	100 %	-30	3730 019 992	-3.4	0.000 000	-0.001
	100 %	-20	3730 019 995	-0.9	0.000 000	0.000
	100 %	-10	3730 019 995	-0.9	0.000 000	0.000
	100 %	0	3730 019 985	-10.7	0.000 000	-0.003
	100 %	+10	3730 019 997	1.4	0.000 000	0.000
	100 %	+30	3730 019 995	-0.7	0.000 000	0.000
	100 %	+40	3730 019 995	-0.7	0.000 000	0.000
	100 %	+50	3730 019 987	-8.7	0.000 000	-0.002
	Batt. Endpoint	+20	3730 019 991	-5.0	0.000 000	-0.001
3949.980	100 %	+20(Ref)	3949 979 985	0.0	0.000 000	0.000
	100 %	-30	3949 979 976	-9.8	0.000 000	-0.002
	100 %	-20	3949 979 973	-12.7	0.000 000	-0.003
	100 %	-10	3949 979 982	-3.8	0.000 000	-0.001
	100 %	0	3949 979 982	-3.8	0.000 000	-0.001
	100 %	+10	3949 979 976	-9.0	0.000 000	-0.002
	100 %	+30	3949 979 973	-12.6	0.000 000	-0.003
	100 %	+40	3949 979 977	-8.8	0.000 000	-0.002
	100 %	+50	3949 979 977	-8.8	0.000 000	-0.002
	Batt. Endpoint	+20	3949 979 988	2.3	0.000 000	0.001

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3735.000	100 %	+20(Ref)	3735 000 002	0.0	0.000 000	0.000
	100 %	-30	3734 999 994	-8.1	0.000 000	-0.002
	100 %	-20	3734 999 994	-8.1	0.000 000	-0.002
	100 %	-10	3734 999 993	-8.8	0.000 000	-0.002
	100 %	0	3734 999 992	-9.6	0.000 000	-0.003
	100 %	+10	3734 999 997	-4.8	0.000 000	-0.001
	100 %	+30	3734 999 997	-4.8	0.000 000	-0.001
	100 %	+40	3735 000 006	3.9	0.000 000	0.001
	100 %	+50	3735 000 001	-0.6	0.000 000	0.000
	Batt. Endpoint	+20	3734 999 997	-5.1	0.000 000	-0.001
3945.000	100 %	+20(Ref)	3945 000 000	0.0	0.000 000	0.000
	100 %	-30	3944 999 997	-2.5	0.000 000	-0.001
	100 %	-20	3944 999 993	-7.1	0.000 000	-0.002
	100 %	-10	3944 999 994	-6.1	0.000 000	-0.002
	100 %	0	3944 999 994	-6.1	0.000 000	-0.002
	100 %	+10	3944 999 996	-3.5	0.000 000	-0.001
	100 %	+30	3944 999 992	-8.2	0.000 000	-0.002
	100 %	+40	3944 999 992	-8.2	0.000 000	-0.002
	100 %	+50	3944 999 996	-3.4	0.000 000	-0.001
	Batt. Endpoint	+20	3944 999 997	-3.1	0.000 000	-0.001

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3740.010	100 %	+20(Ref)	3740 009 998	0.0	0.000 000	0.000
	100 %	-30	3740 009 997	-1.6	0.000 000	0.000
	100 %	-20	3740 009 993	-5.7	0.000 000	-0.002
	100 %	-10	3740 010 001	2.9	0.000 000	0.001
	100 %	0	3740 009 986	-12.3	0.000 000	-0.003
	100 %	+10	3740 009 986	-12.3	0.000 000	-0.003
	100 %	+30	3740 009 985	-13.0	0.000 000	-0.003
	100 %	+40	3740 009 992	-6.2	0.000 000	-0.002
	100 %	+50	3740 009 992	-6.2	0.000 000	-0.002
	Batt. Endpoint	+20	3740 009 990	-8.6	0.000 000	-0.002
3939.990	100 %	+20(Ref)	3939 989 986	0.0	0.000 000	0.000
	100 %	-30	3939 989 973	-12.8	0.000 000	-0.003
	100 %	-20	3939 989 978	-8.0	0.000 000	-0.002
	100 %	-10	3939 989 976	-10.3	0.000 000	-0.003
	100 %	0	3939 989 976	-10.3	0.000 000	-0.003
	100 %	+10	3939 989 970	-16.2	0.000 000	-0.004
	100 %	+30	3939 989 973	-12.5	0.000 000	-0.003
	100 %	+40	3939 989 981	-4.8	0.000 000	-0.001
	100 %	+50	3939 989 981	-4.8	0.000 000	-0.001
	Batt. Endpoint	+20	3939 989 970	-15.8	0.000 000	-0.004

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3745.020	100 %	+20(Ref)	3745 020 001	0.0	0.000 000	0.000
	100 %	-30	3745 020 002	0.8	0.000 000	0.000
	100 %	-20	3745 020 012	11.2	0.000 000	0.003
	100 %	-10	3745 020 012	11.2	0.000 000	0.003
	100 %	0	3745 020 006	4.8	0.000 000	0.001
	100 %	+10	3745 020 004	3.7	0.000 000	0.001
	100 %	+30	3745 019 994	-6.9	0.000 000	-0.002
	100 %	+40	3745 019 994	-6.9	0.000 000	-0.002
	100 %	+50	3745 019 994	-6.6	0.000 000	-0.002
	Batt. Endpoint	+20	3745 020 001	-0.2	0.000 000	0.000
3934.980	100 %	+20(Ref)	3934 979 993	0.0	0.000 000	0.000
	100 %	-30	3934 979 983	-10.6	0.000 000	-0.003
	100 %	-20	3934 979 983	-10.6	0.000 000	-0.003
	100 %	-10	3934 979 984	-9.1	0.000 000	-0.002
	100 %	0	3934 979 984	-9.2	0.000 000	-0.002
	100 %	+10	3934 979 984	-9.7	0.000 000	-0.002
	100 %	+30	3934 979 984	-9.7	0.000 000	-0.002
	100 %	+40	3934 979 989	-4.6	0.000 000	-0.001
	100 %	+50	3934 979 983	-10.1	0.000 000	-0.003
	Batt. Endpoint	+20	3934 979 983	-10.1	0.000 000	-0.003

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3750.000	100 %	+20(Ref)	3749 999 997	0.0	0.000 000	0.000
	100 %	-30	3749 999 992	-5.2	0.000 000	-0.001
	100 %	-20	3749 999 992	-5.2	0.000 000	-0.001
	100 %	-10	3749 999 995	-1.7	0.000 000	0.000
	100 %	0	3749 999 994	-3.5	0.000 000	-0.001
	100 %	+10	3749 999 994	-3.5	0.000 000	-0.001
	100 %	+30	3749 999 992	-5.0	0.000 000	-0.001
	100 %	+40	3749 999 995	-2.6	0.000 000	-0.001
	100 %	+50	3749 999 993	-4.3	0.000 000	-0.001
	Batt. Endpoint	+20	3749 999 993	-4.3	0.000 000	-0.001
3930.000	100 %	+20(Ref)	3929 999 997	0.0	0.000 000	0.000
	100 %	-30	3929 999 993	-4.2	0.000 000	-0.001
	100 %	-20	3929 999 993	-4.2	0.000 000	-0.001
	100 %	-10	3929 999 991	-6.2	0.000 000	-0.002
	100 %	0	3929 999 995	-1.5	0.000 000	0.000
	100 %	+10	3929 999 995	-1.5	0.000 000	0.000
	100 %	+30	3929 999 984	-12.9	0.000 000	-0.003
	100 %	+40	3929 999 985	-12.2	0.000 000	-0.003
	100 %	+50	3929 999 985	-12.2	0.000 000	-0.003
	Batt. Endpoint	+20	3929 999 984	-12.3	0.000 000	-0.003

10. TEST PLOTS(3450 MHz - 3550 MHz)

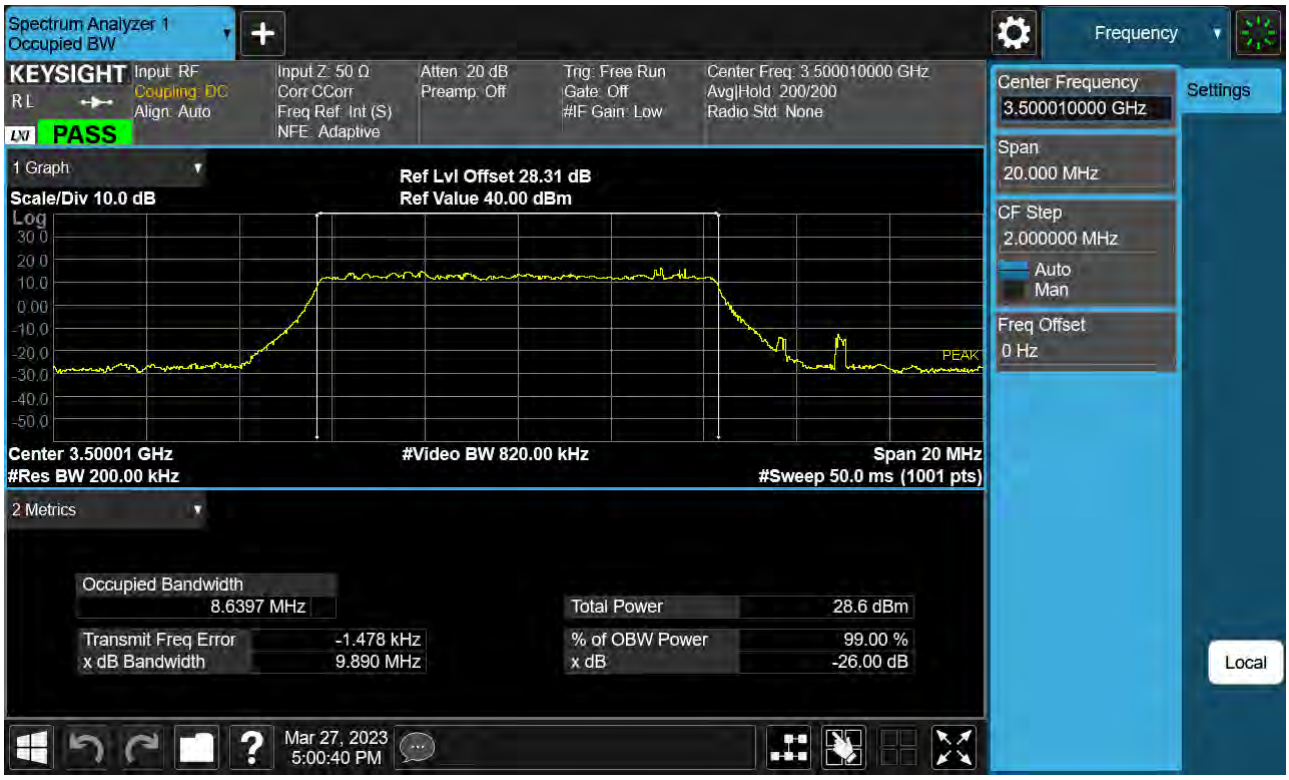
Sub6 n77. Occupied Bandwidth Plot (10 M BW Ch.633334 BPSK)

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

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

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

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



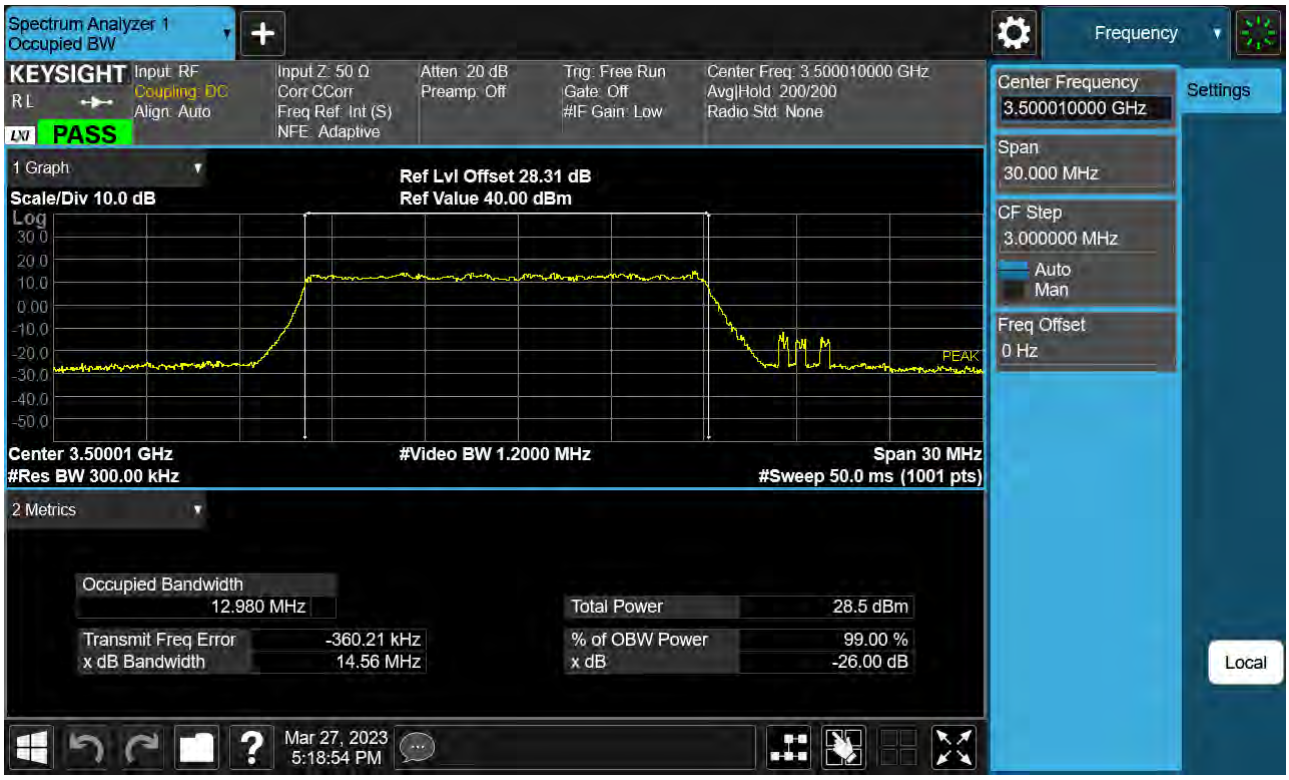
Sub6 n77. Occupied Bandwidth Plot (15 M BW Ch.633334 BPSK)

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

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

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

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



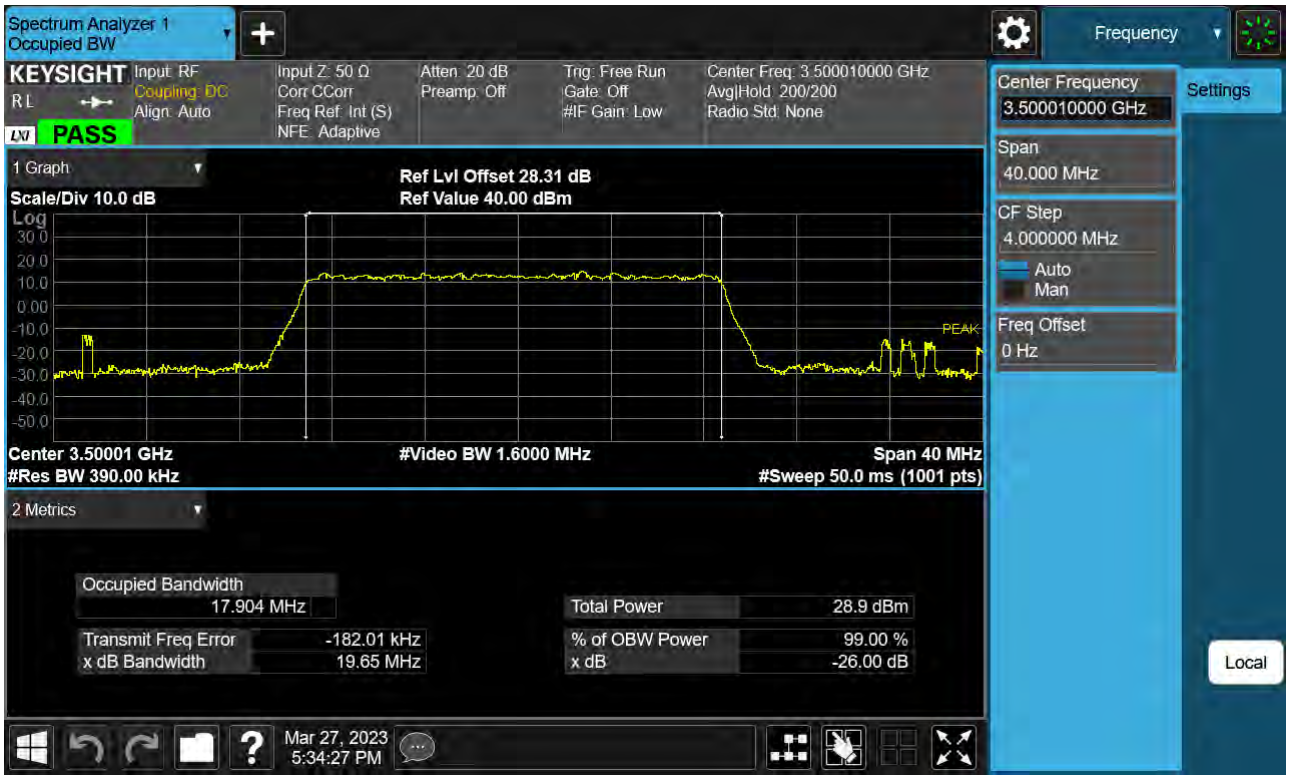
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 BPSK)

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

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

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

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



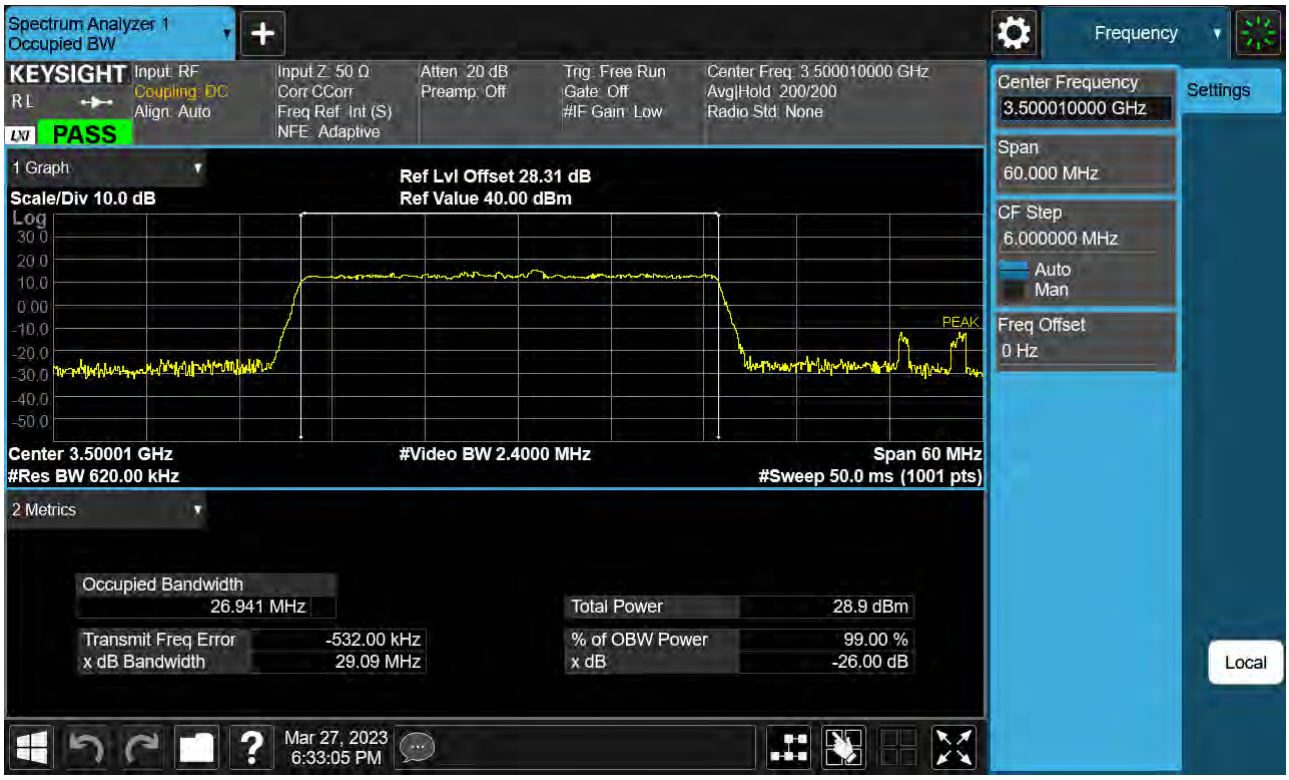
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 BPSK)

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

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

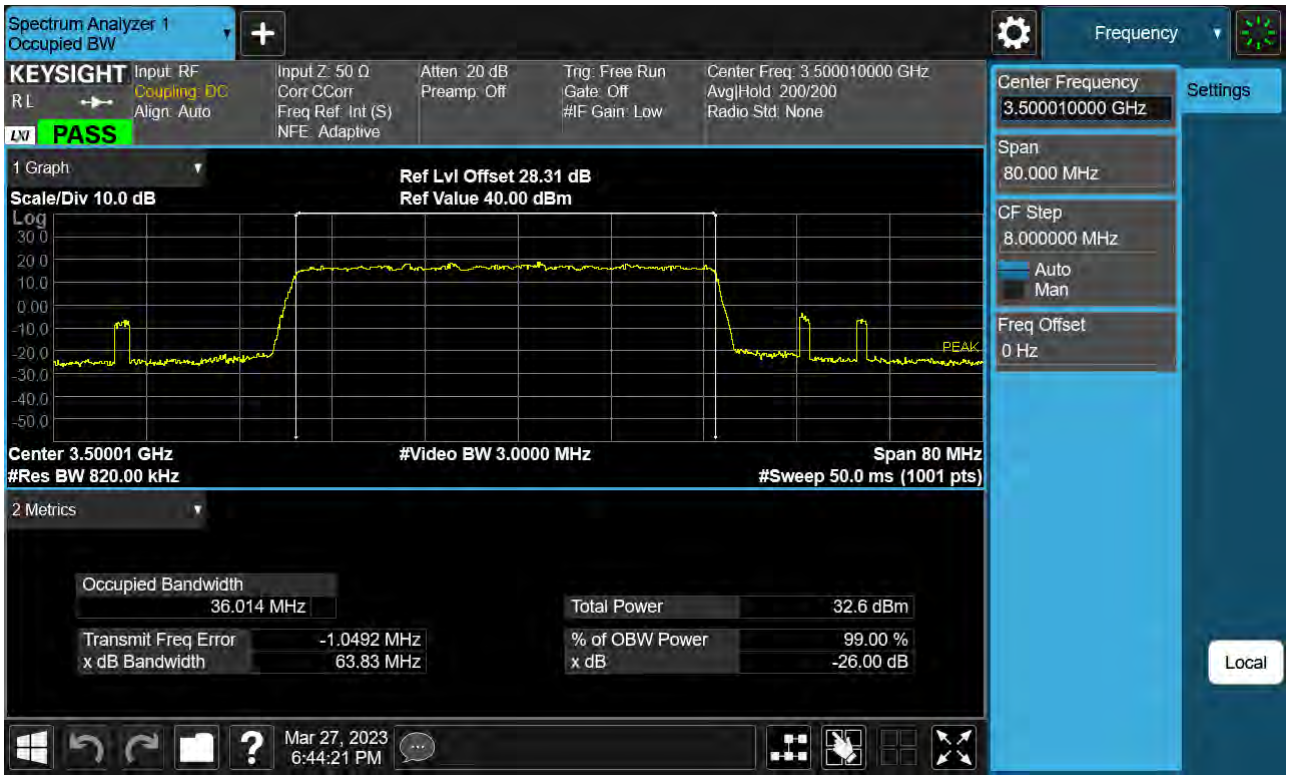
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 64QAM)

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

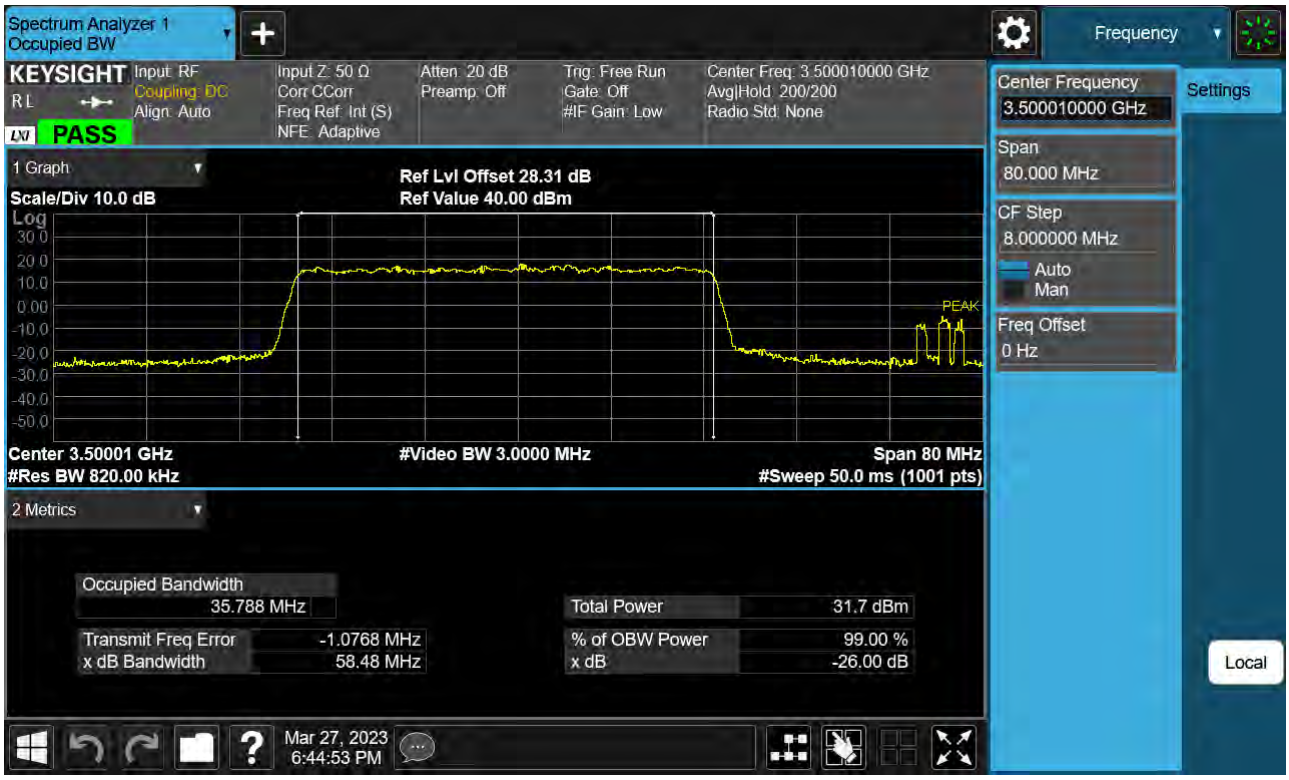


Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 BPSK)

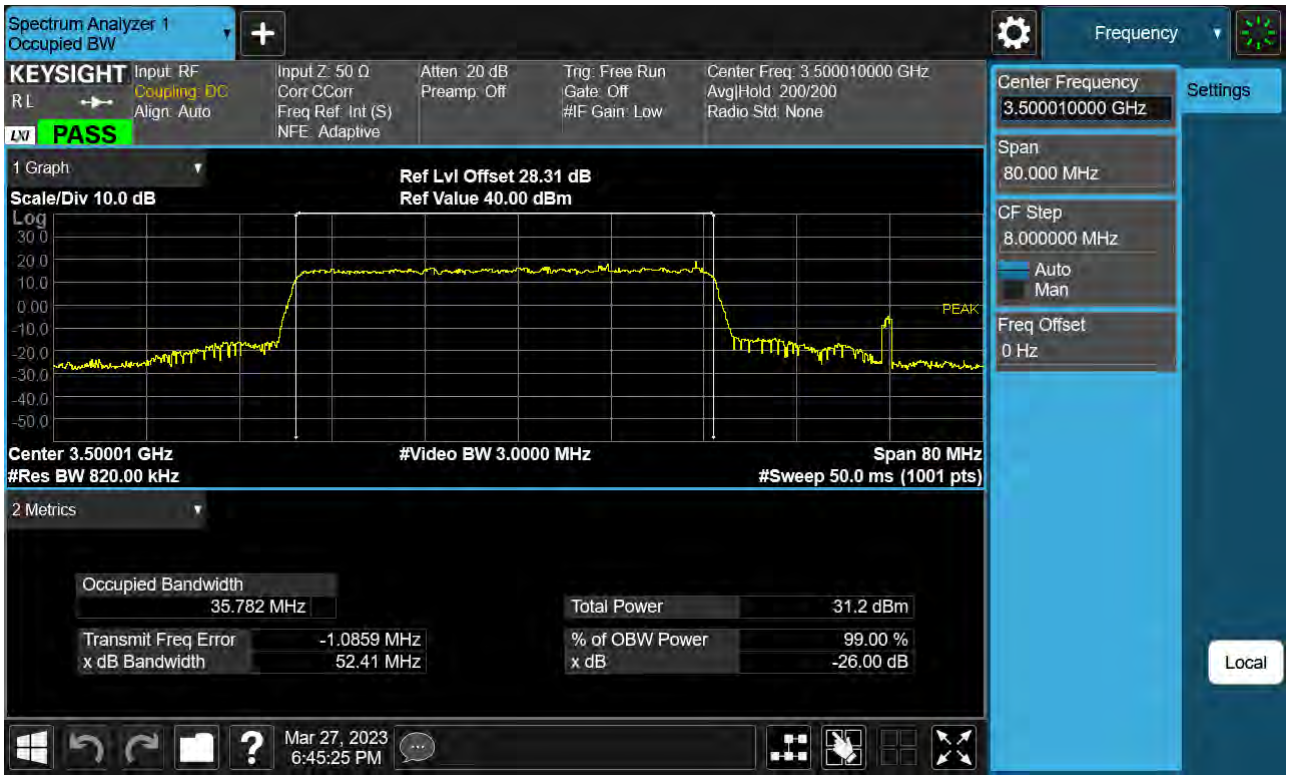
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 QPSK)



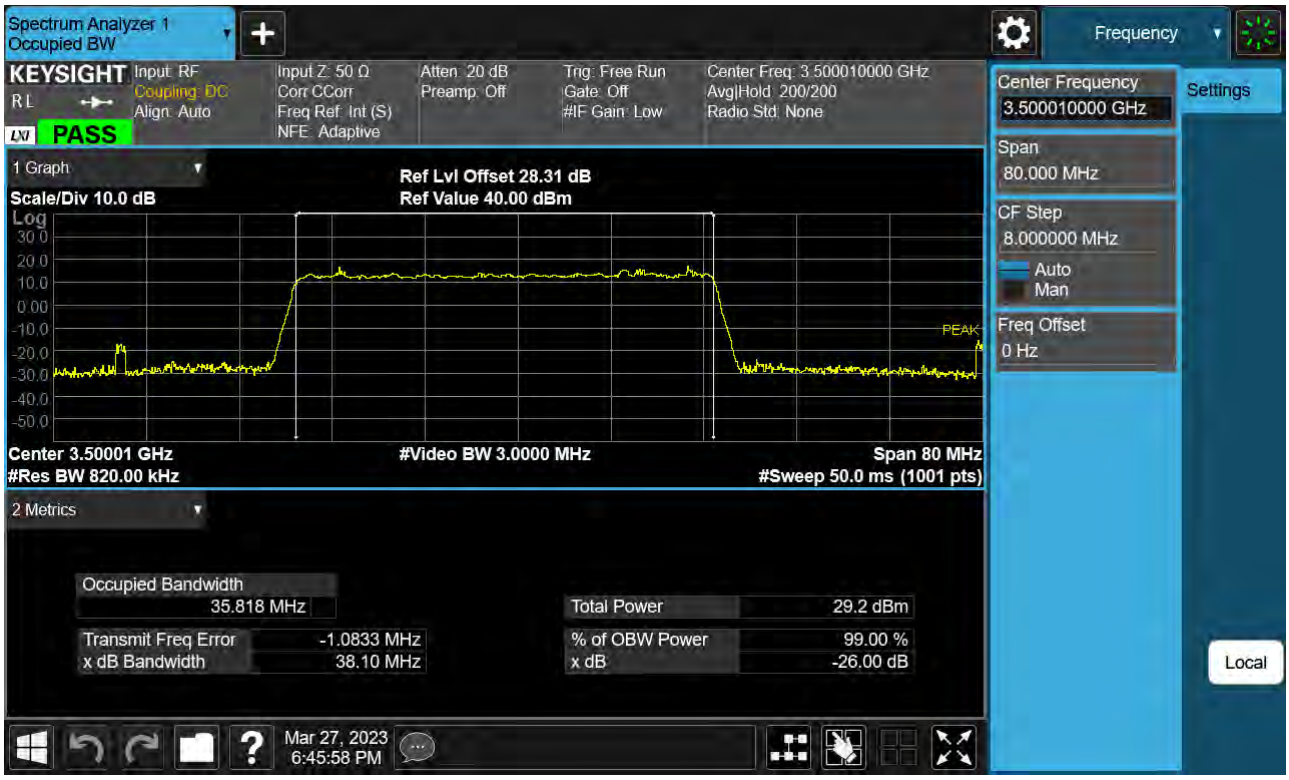
Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 16QAM)



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



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



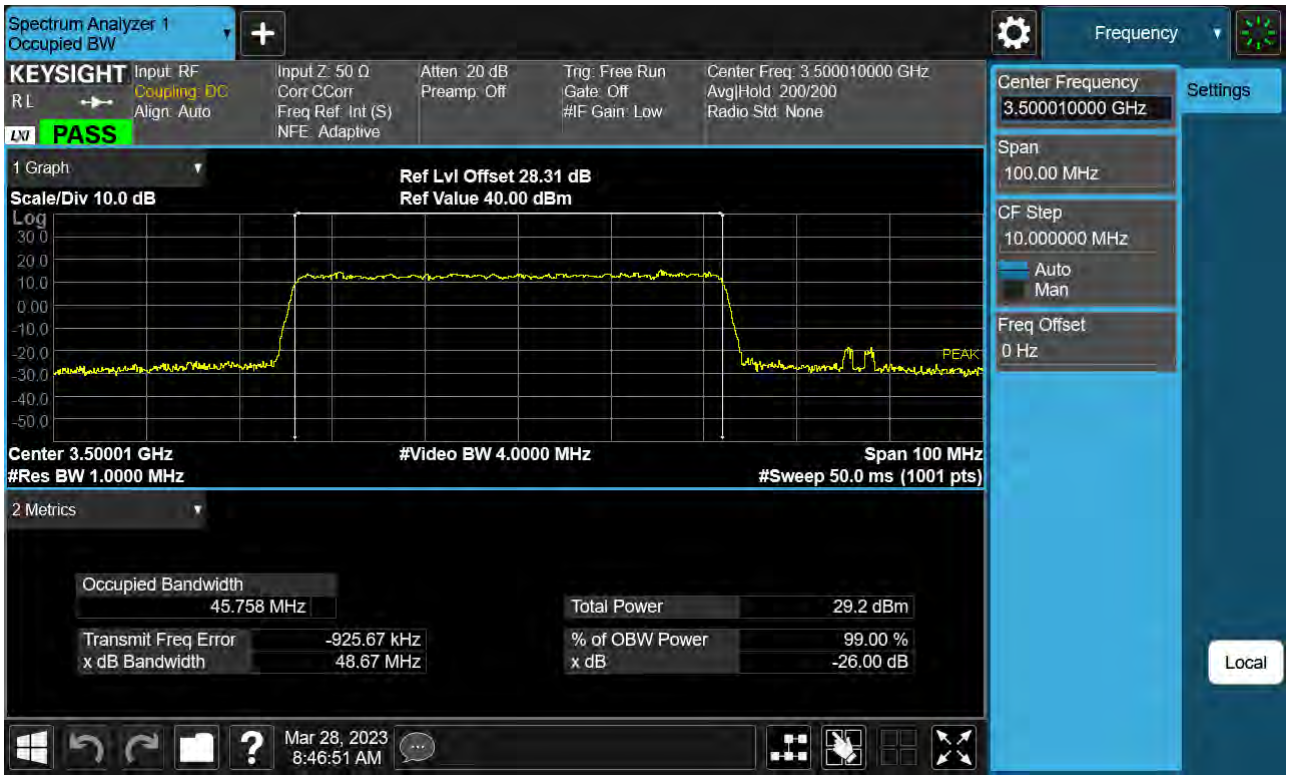
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 BPSK)

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

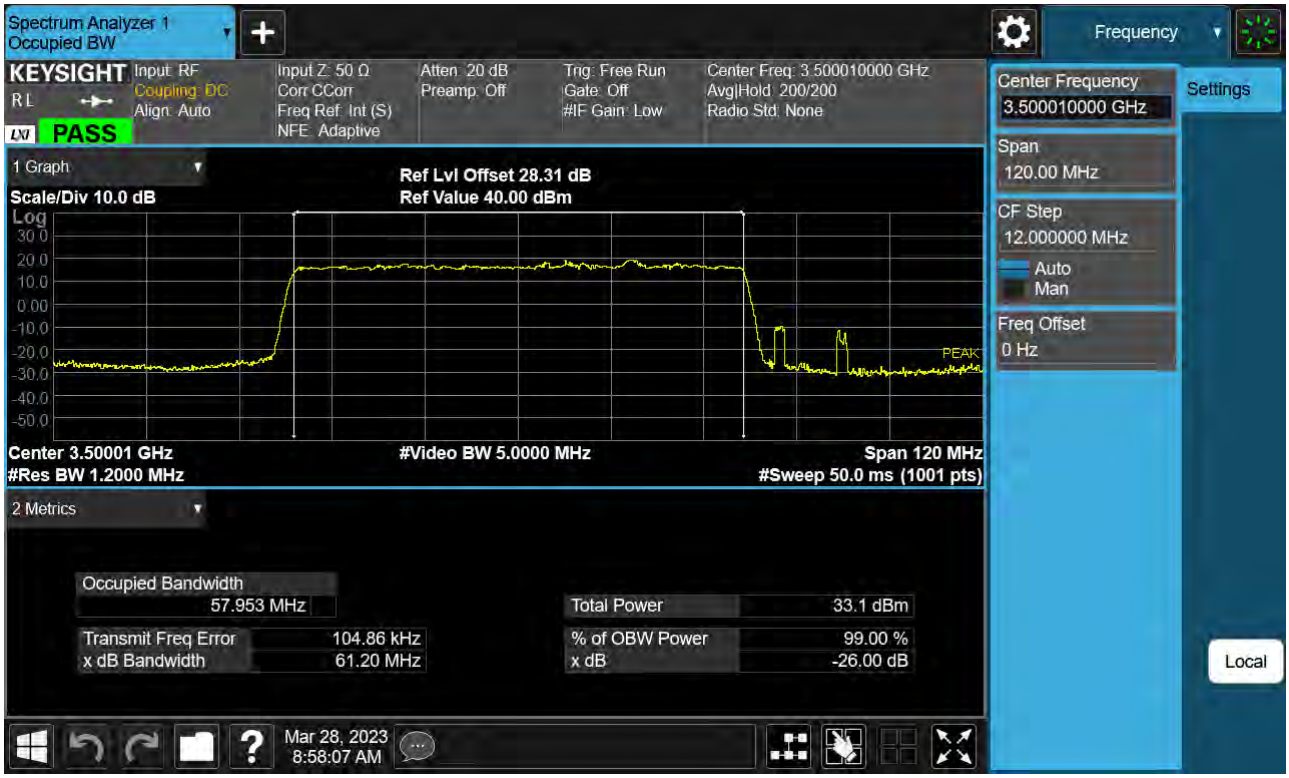
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 16QAM)

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

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

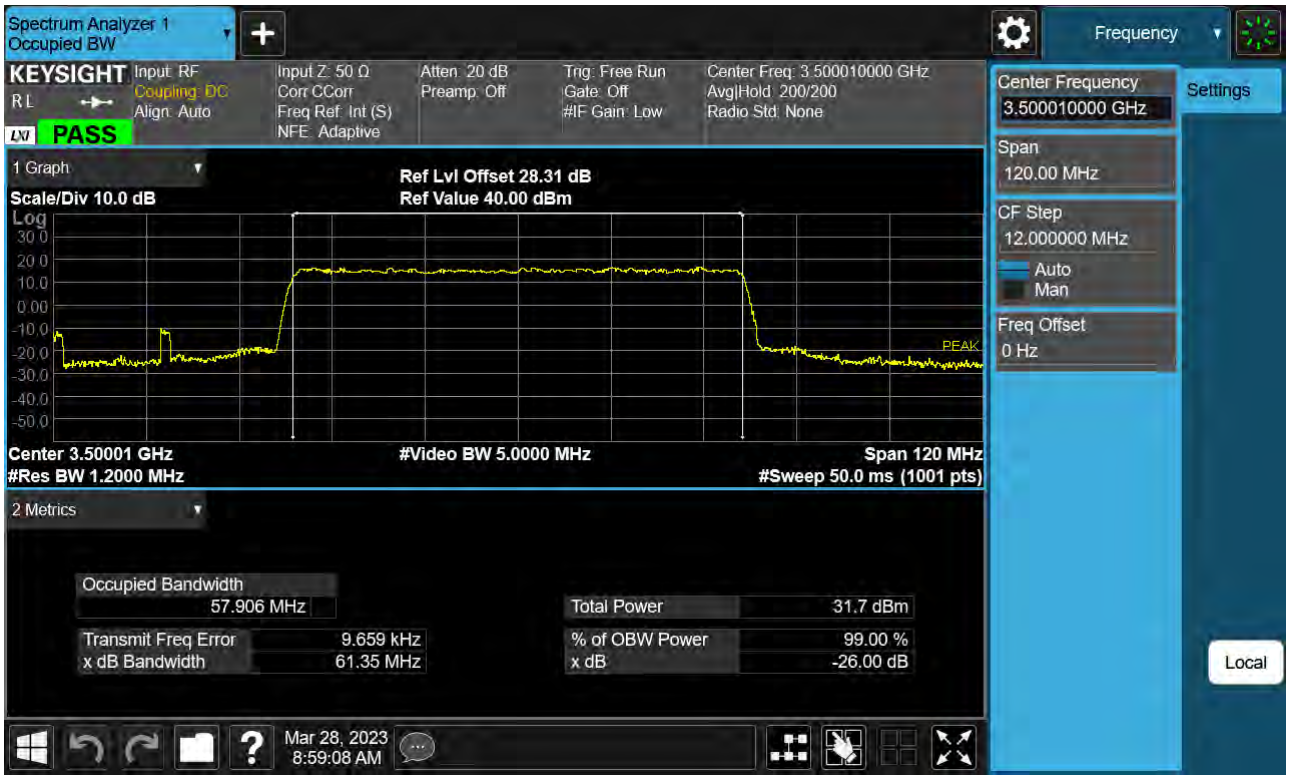


Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 BPSK)



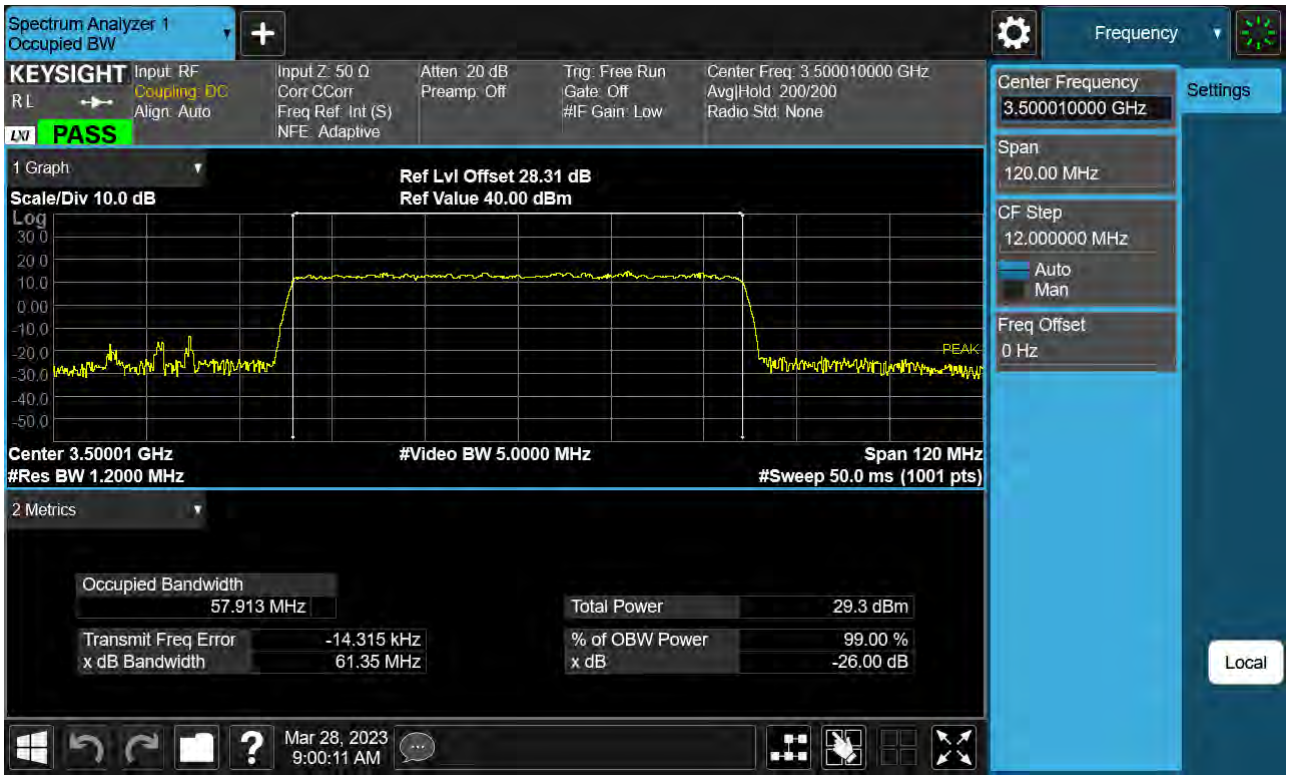
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 QPSK)

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



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

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



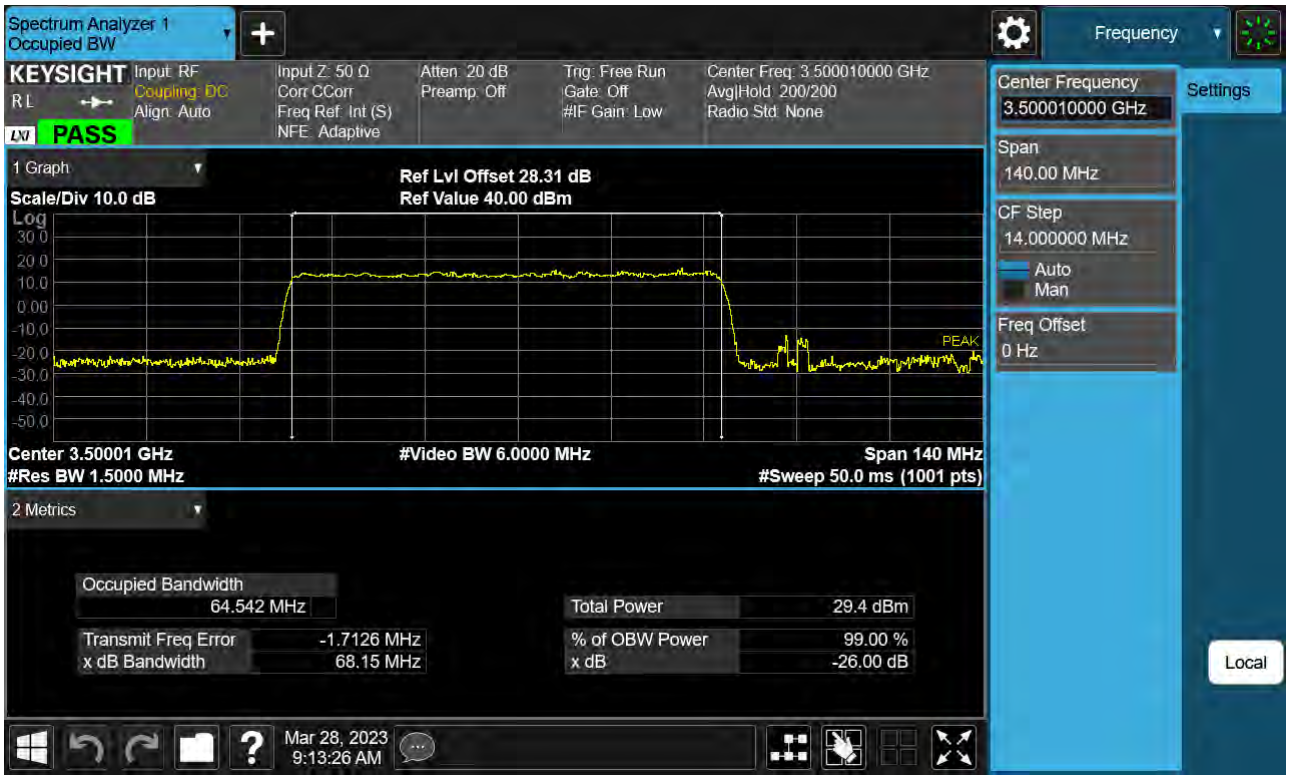
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 BPSK)

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

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

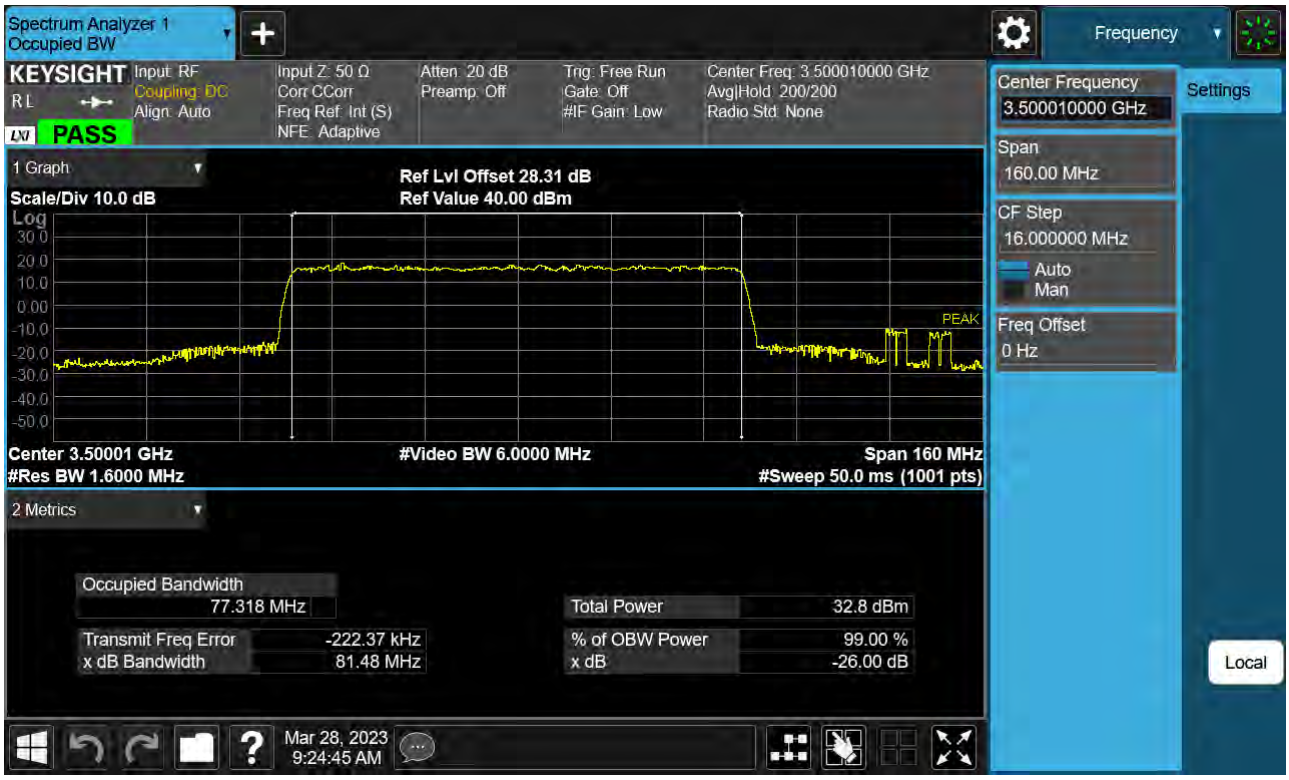
Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 64QAM)

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



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

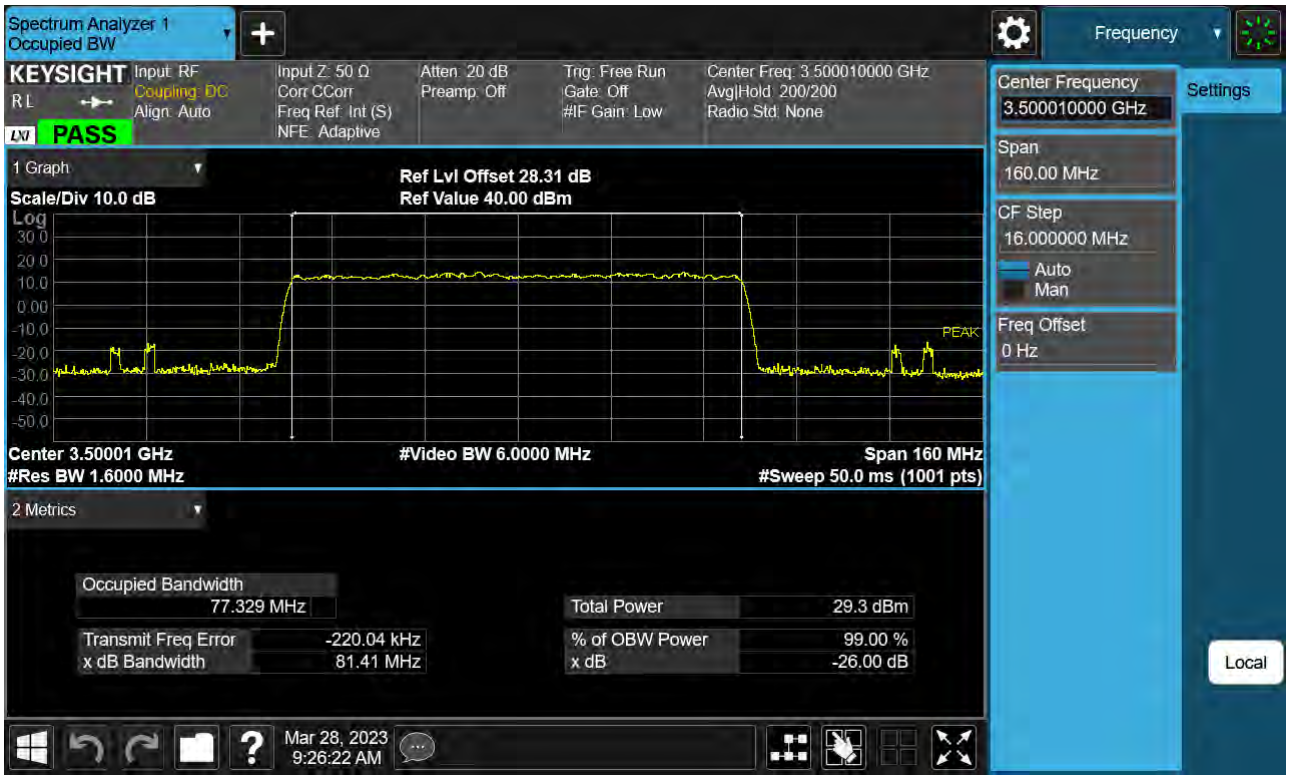
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 QPSK)



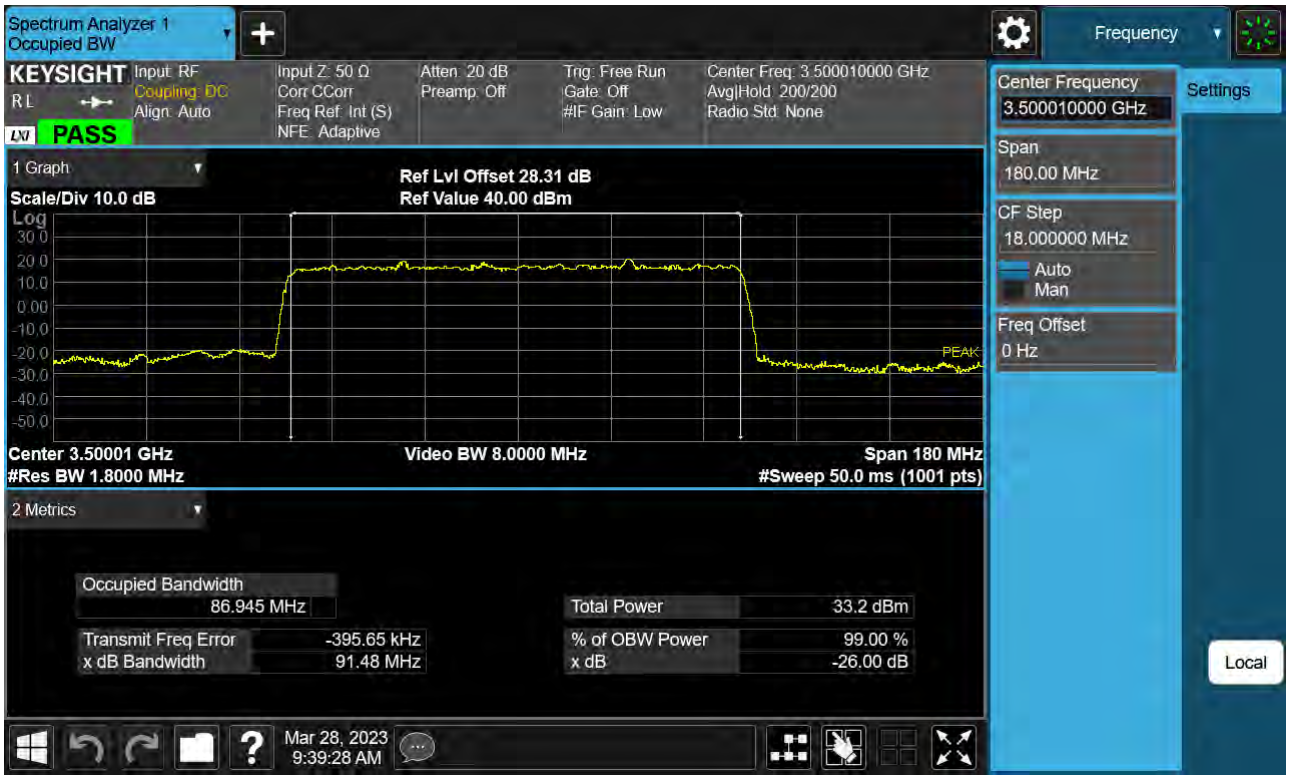
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 16QAM)

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

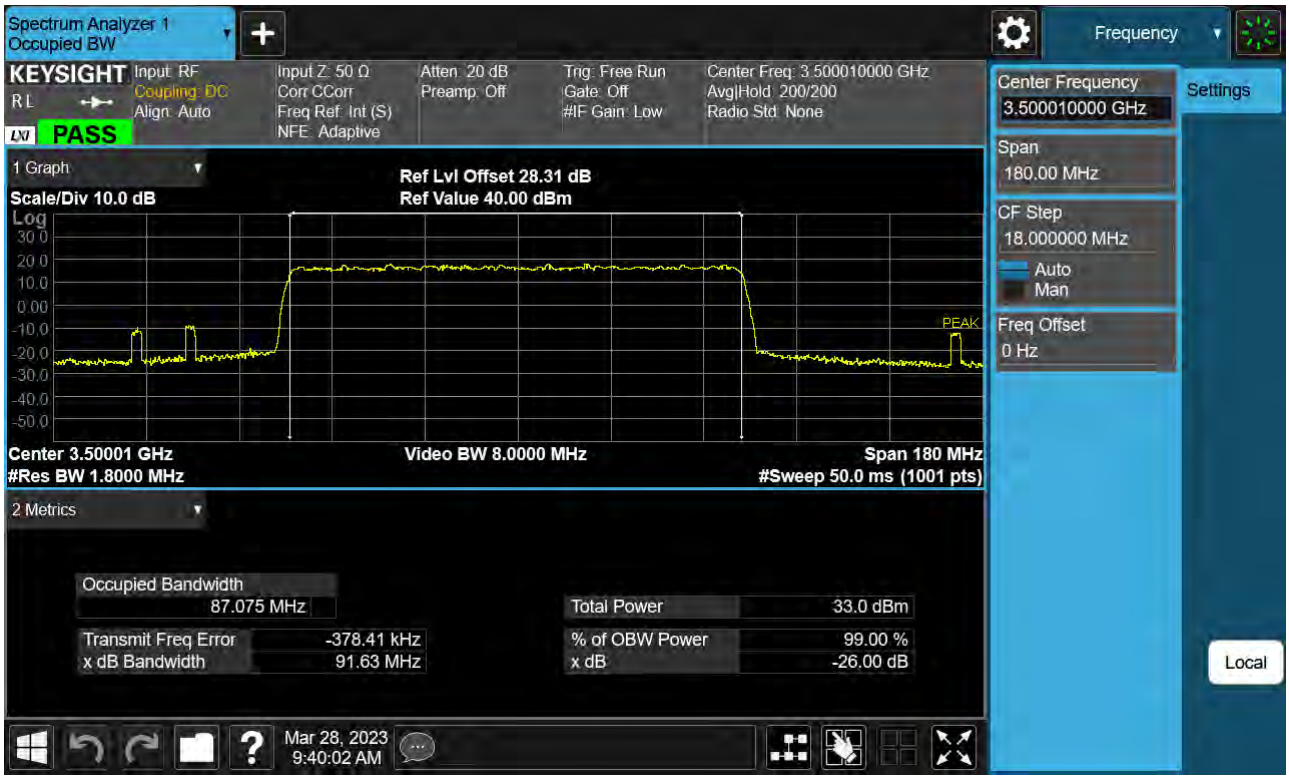
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 256QAM)



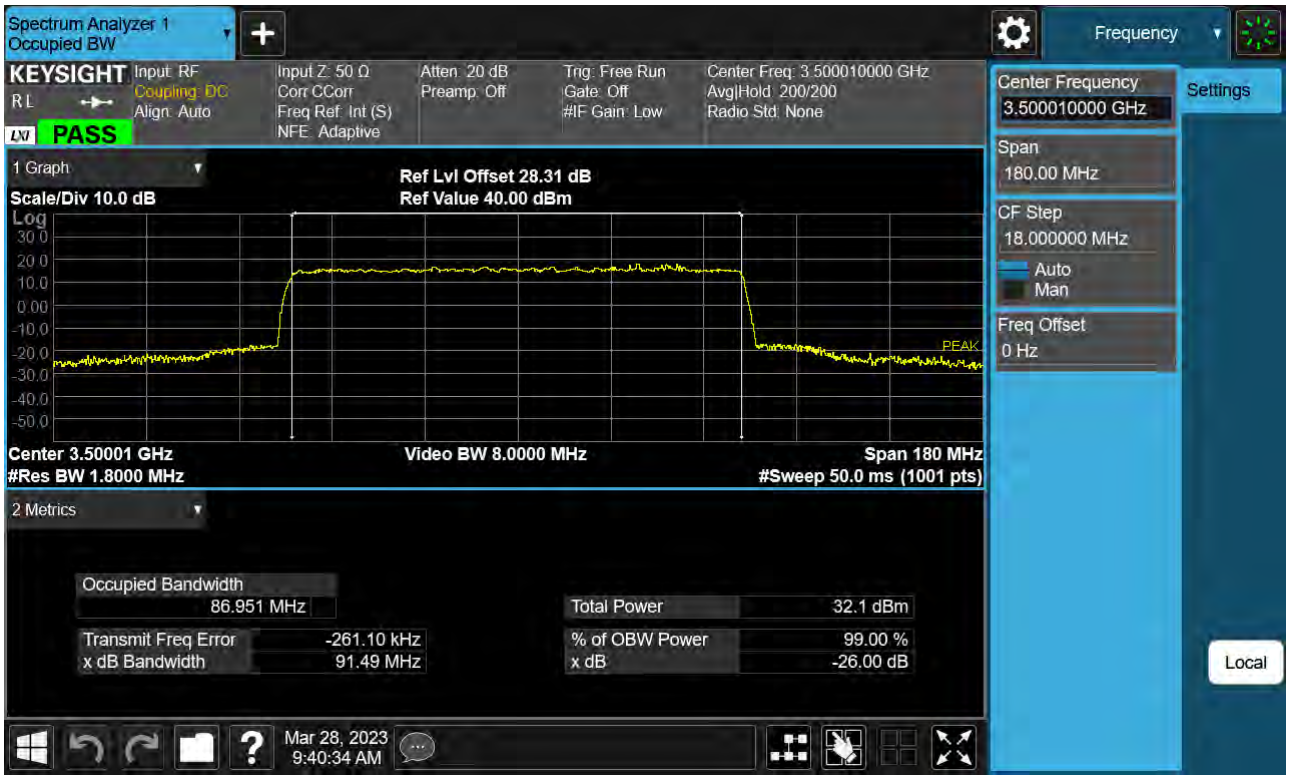
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 BPSK)



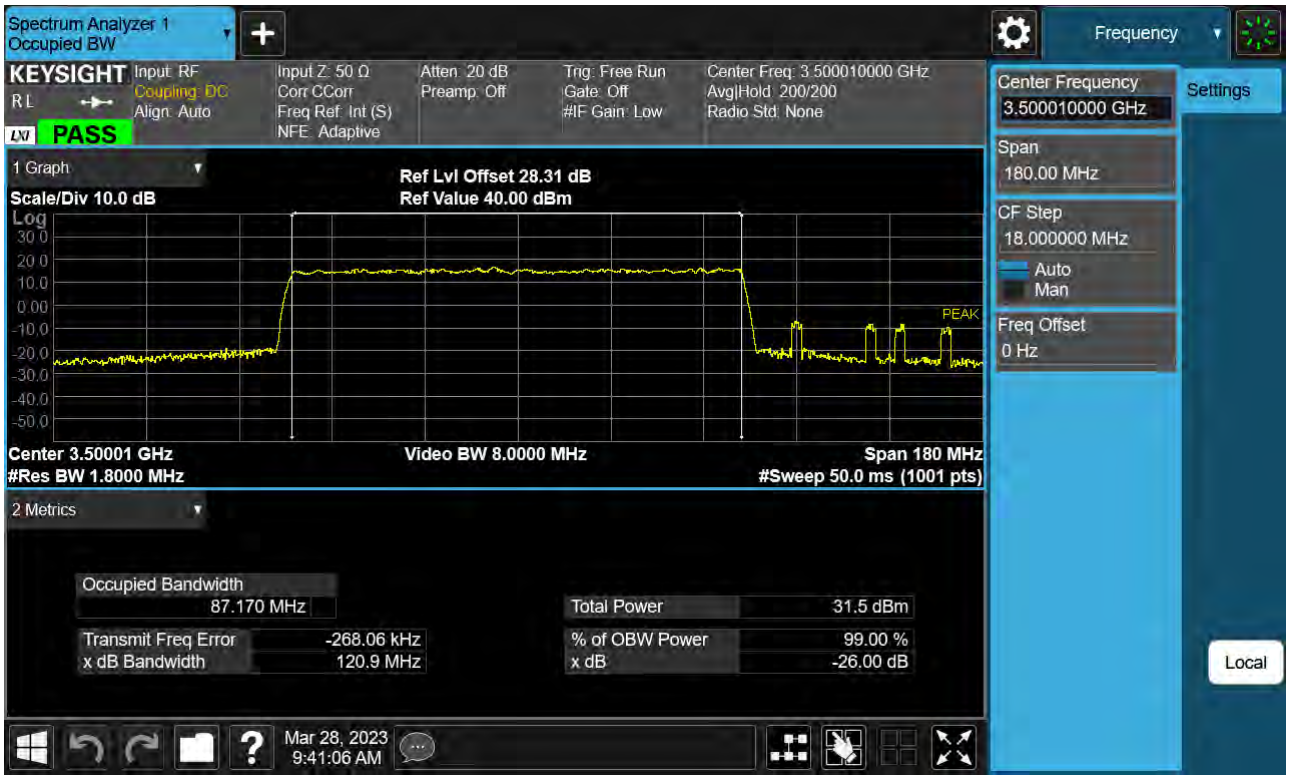
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 QPSK)



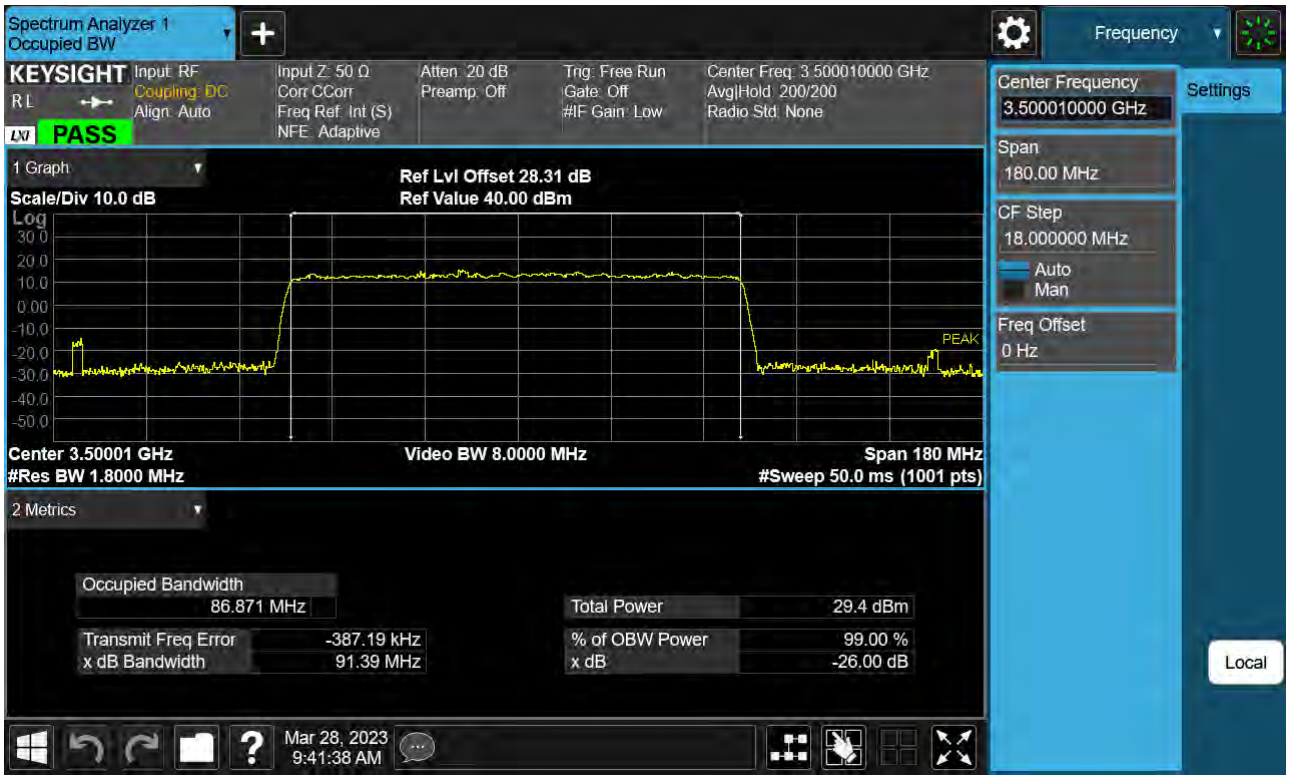
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 16QAM)



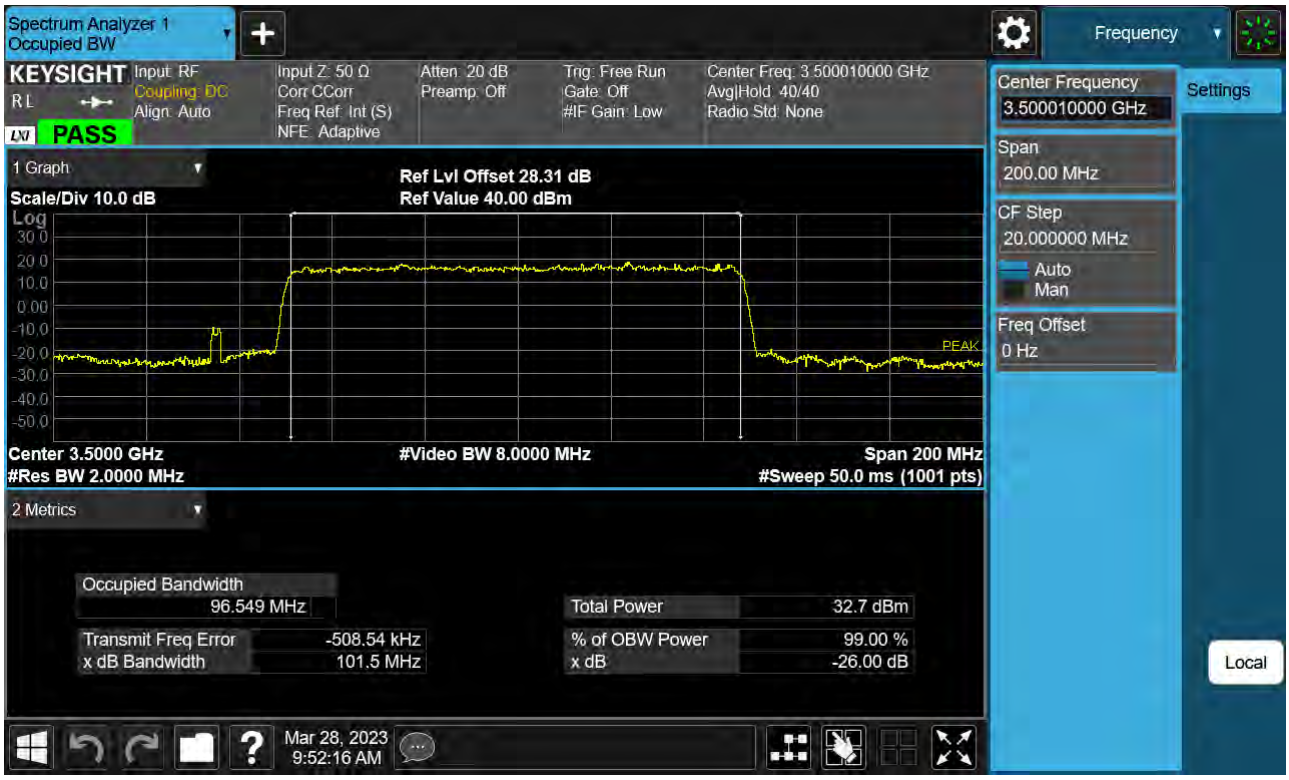
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 64QAM)



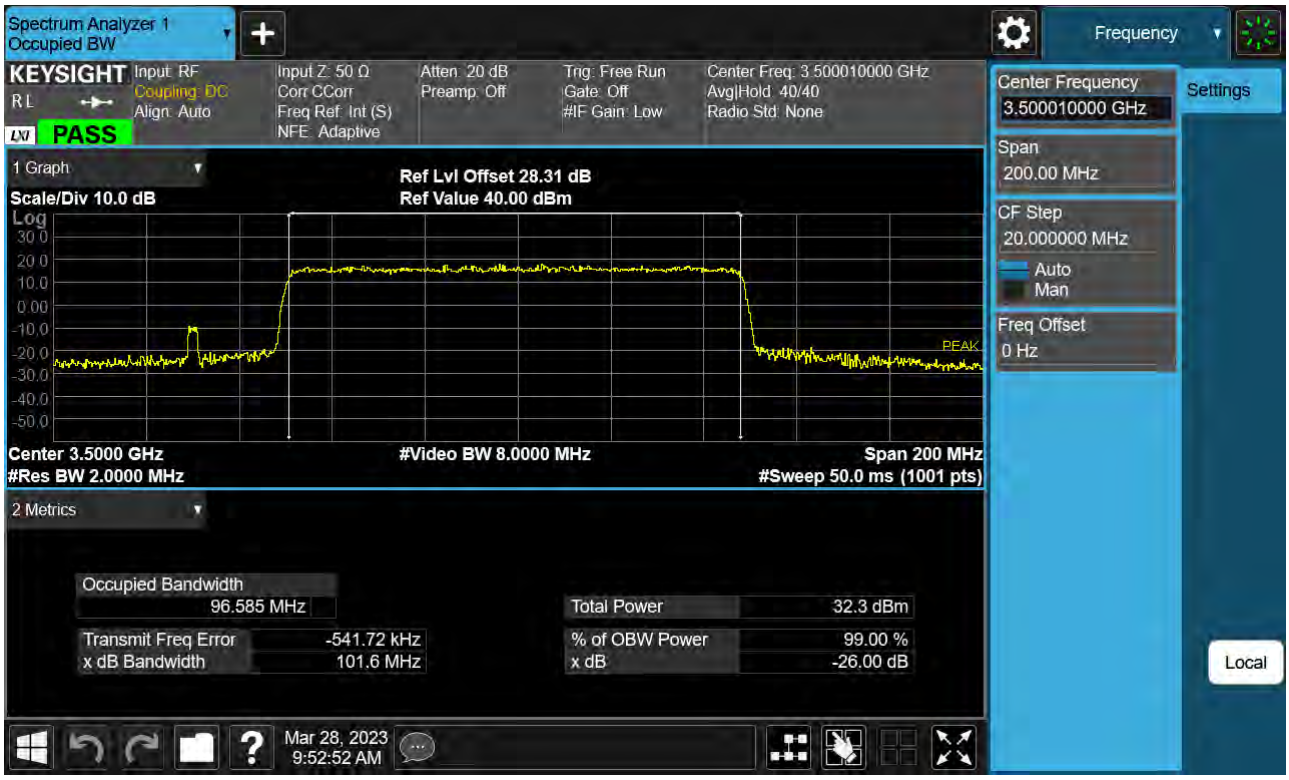
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 256QAM)



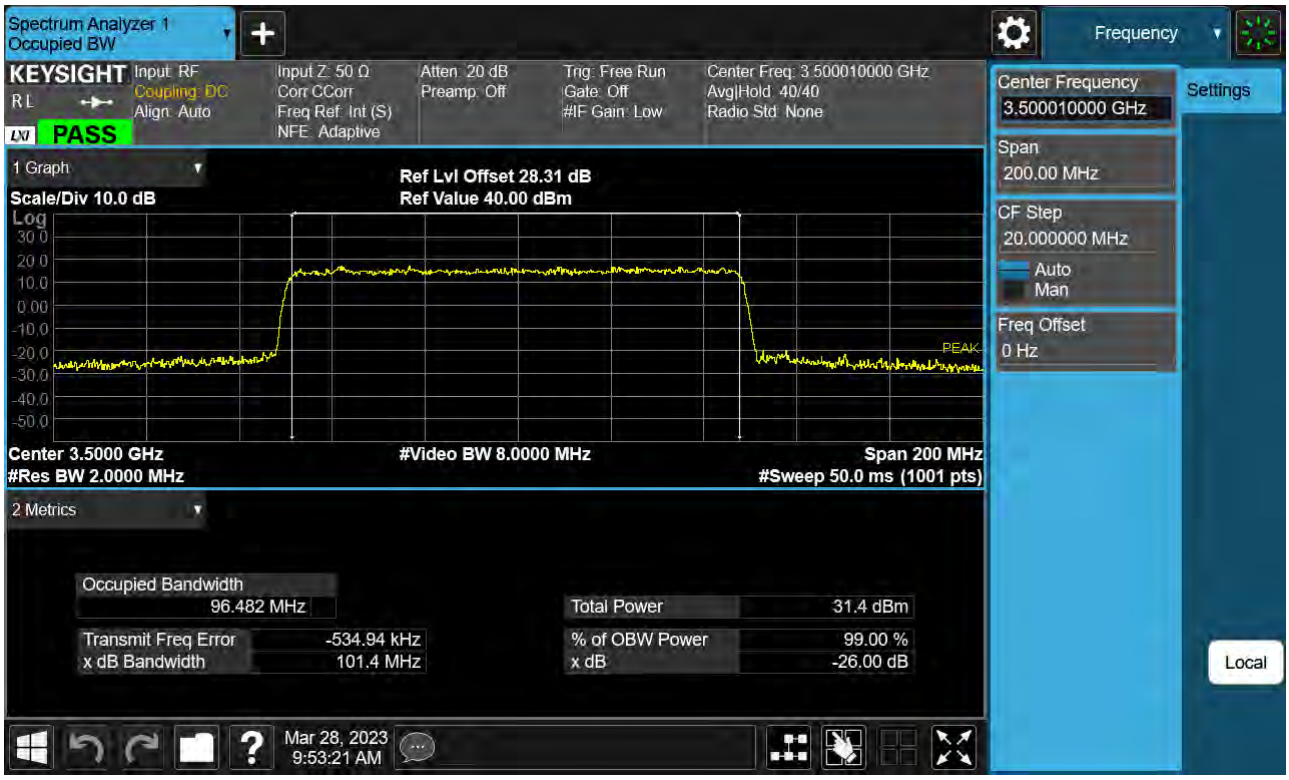
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 BPSK)



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

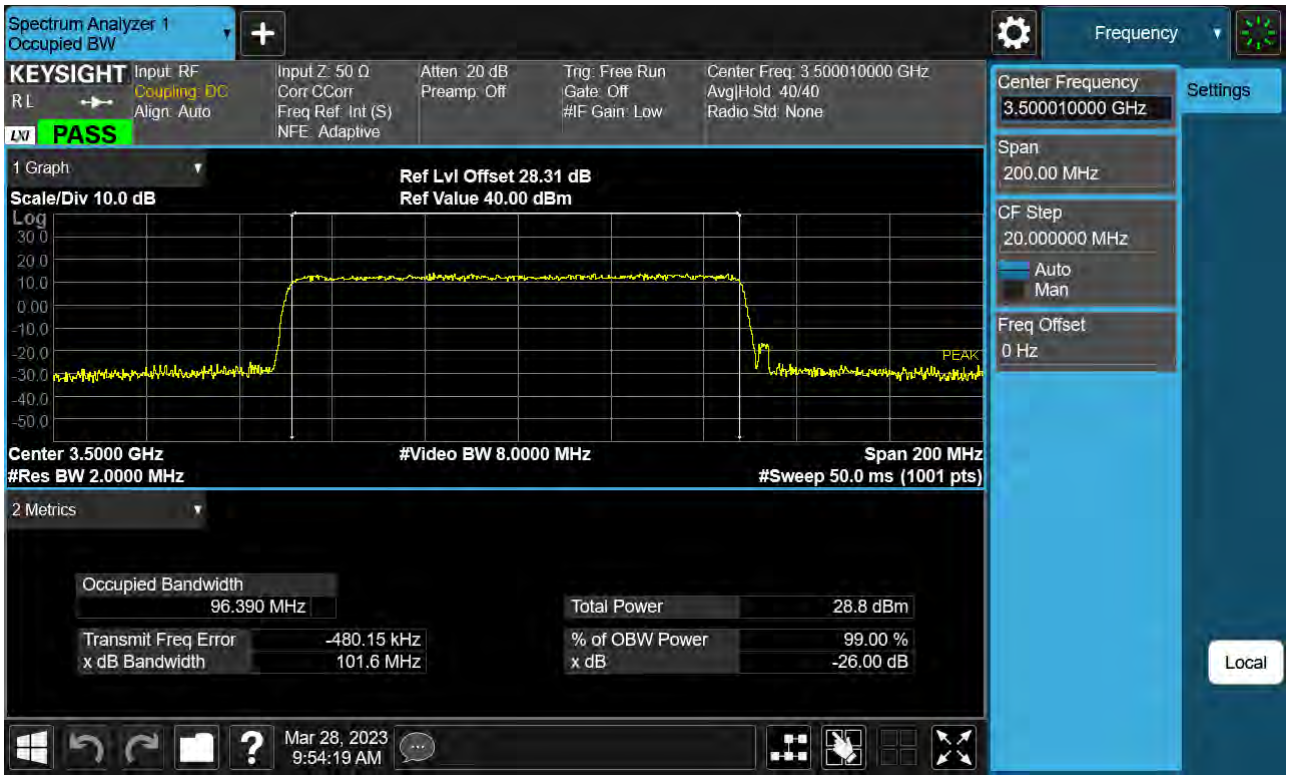


Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 16QAM)

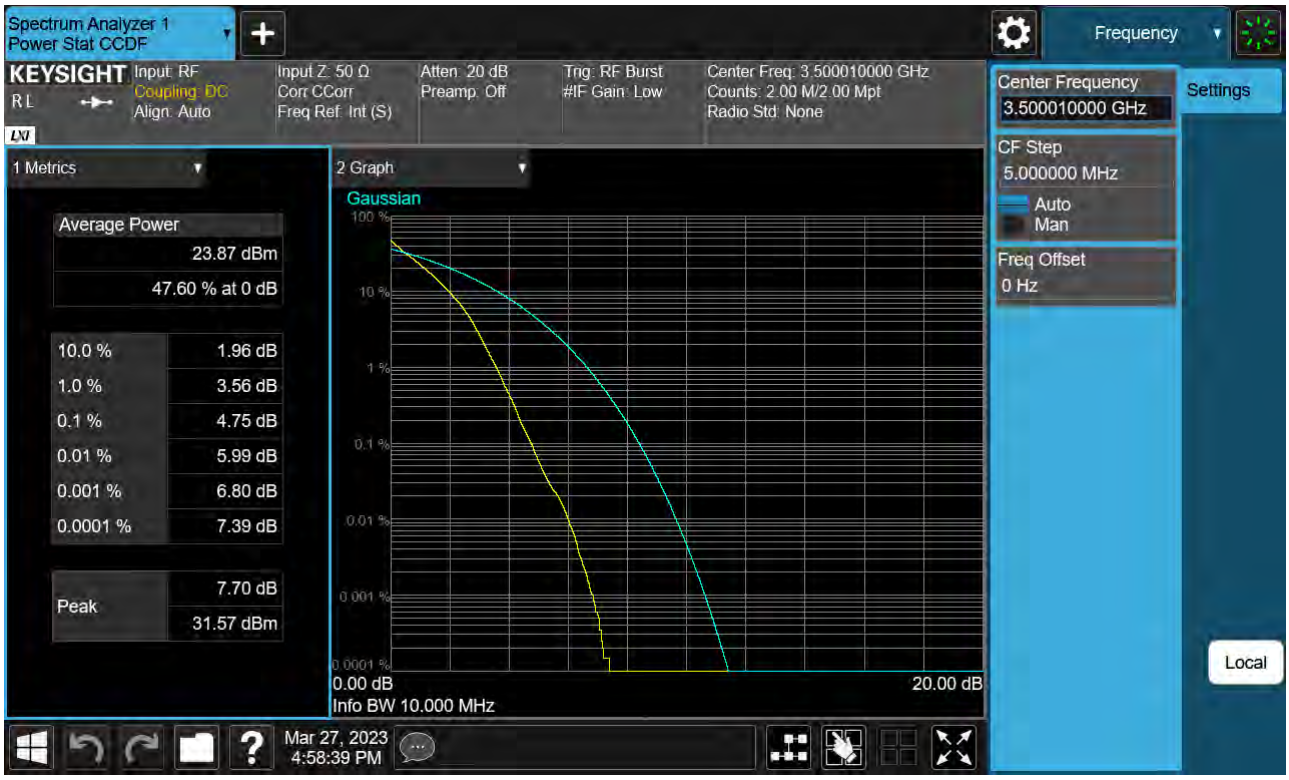


Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 64QAM)

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



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



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

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

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

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

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

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

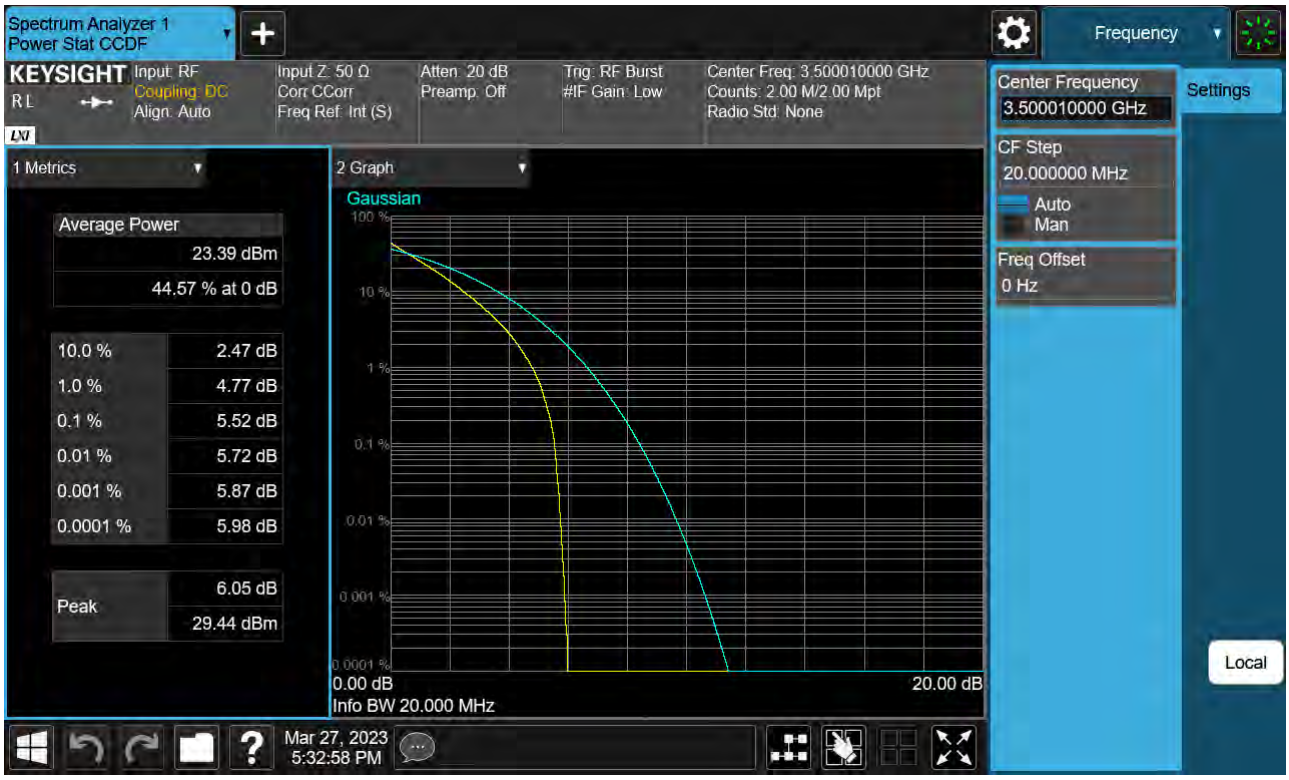
Sub6 n77. PAR Plot (15 M BW_Ch.633334_16QAM)

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

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

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

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

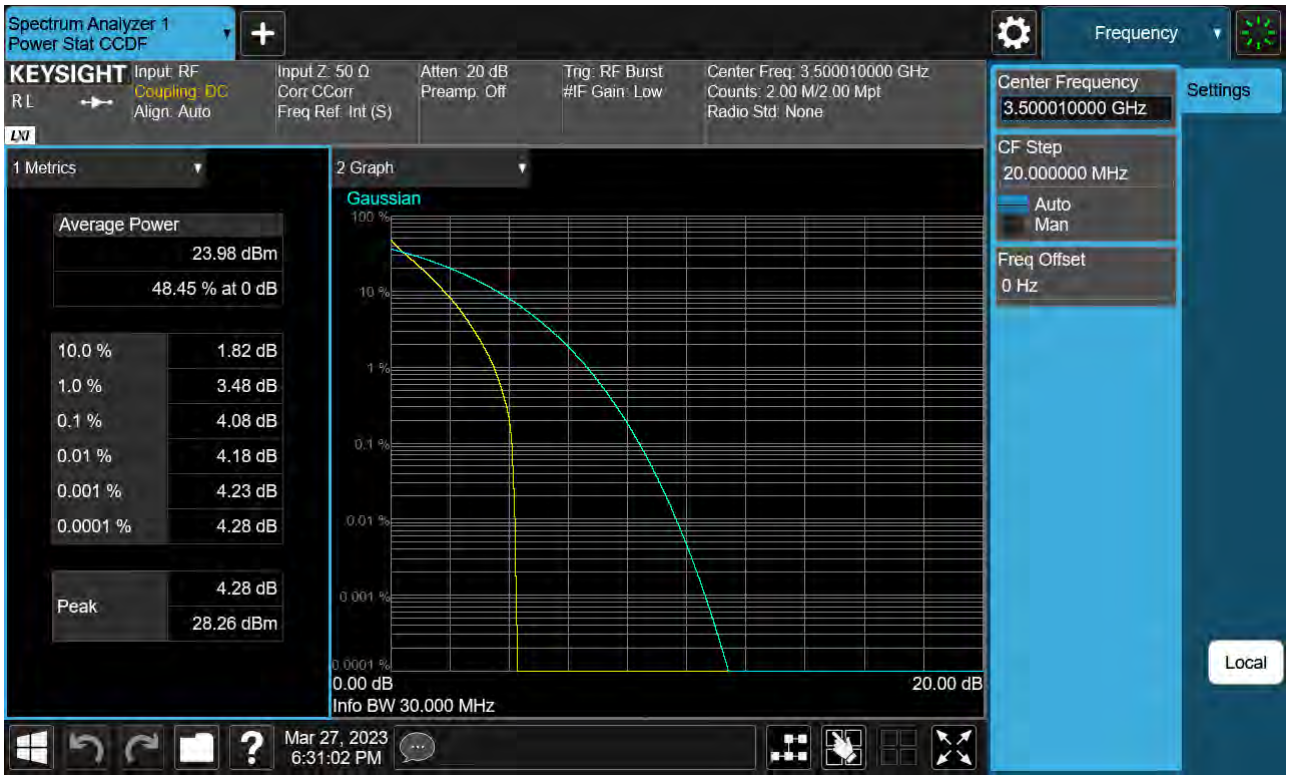


Sub6 n77. PAR Plot (20 M BW_Ch.633334_16QAM)

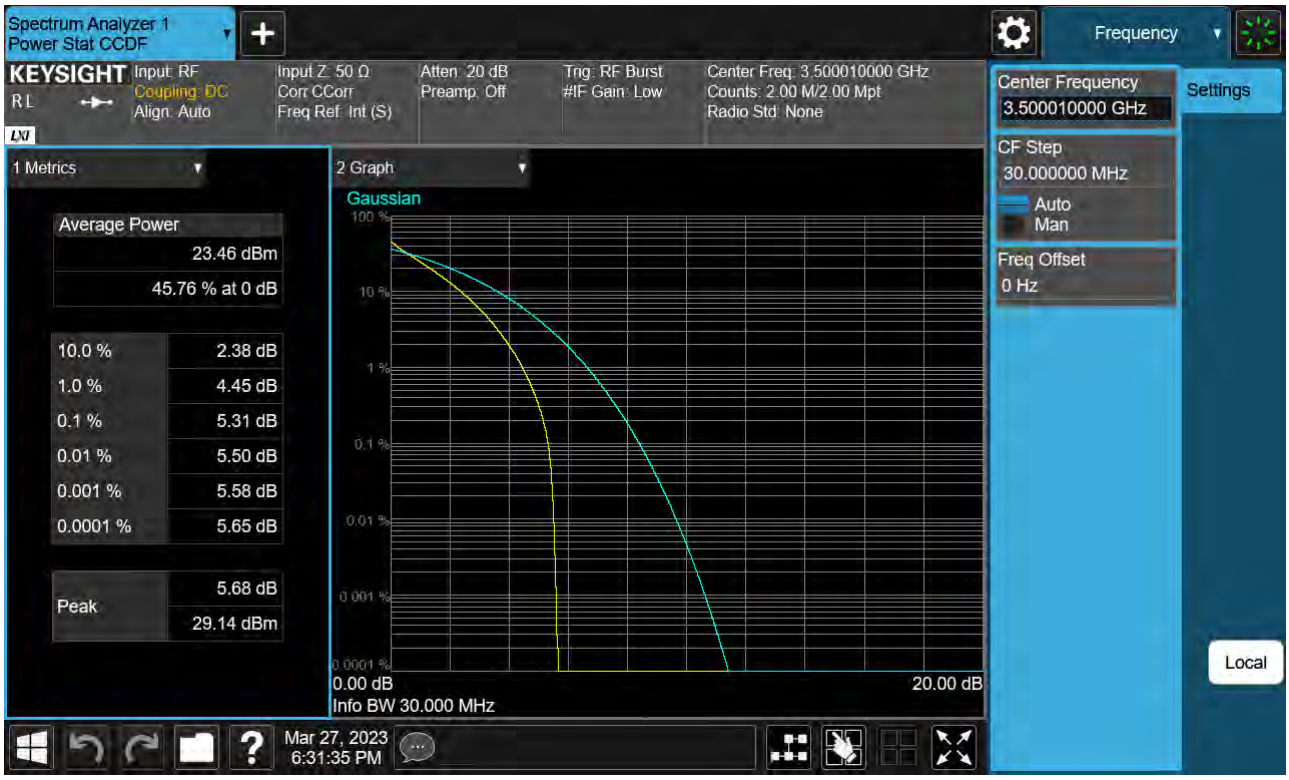
Sub6 n77. PAR Plot (20 M BW_Ch.633334_64QAM)

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

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



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



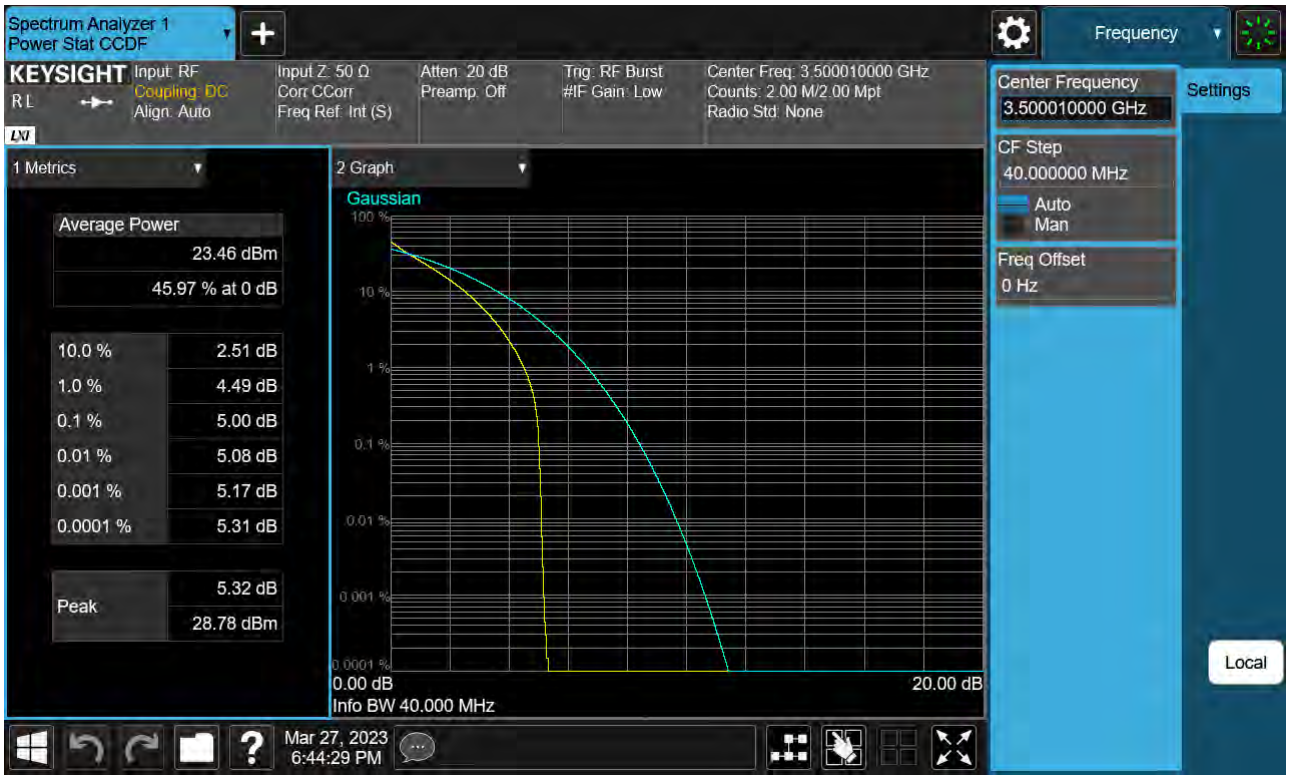
Sub6 n77. PAR Plot (30 M BW_Ch.633334_16QAM)

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

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

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

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

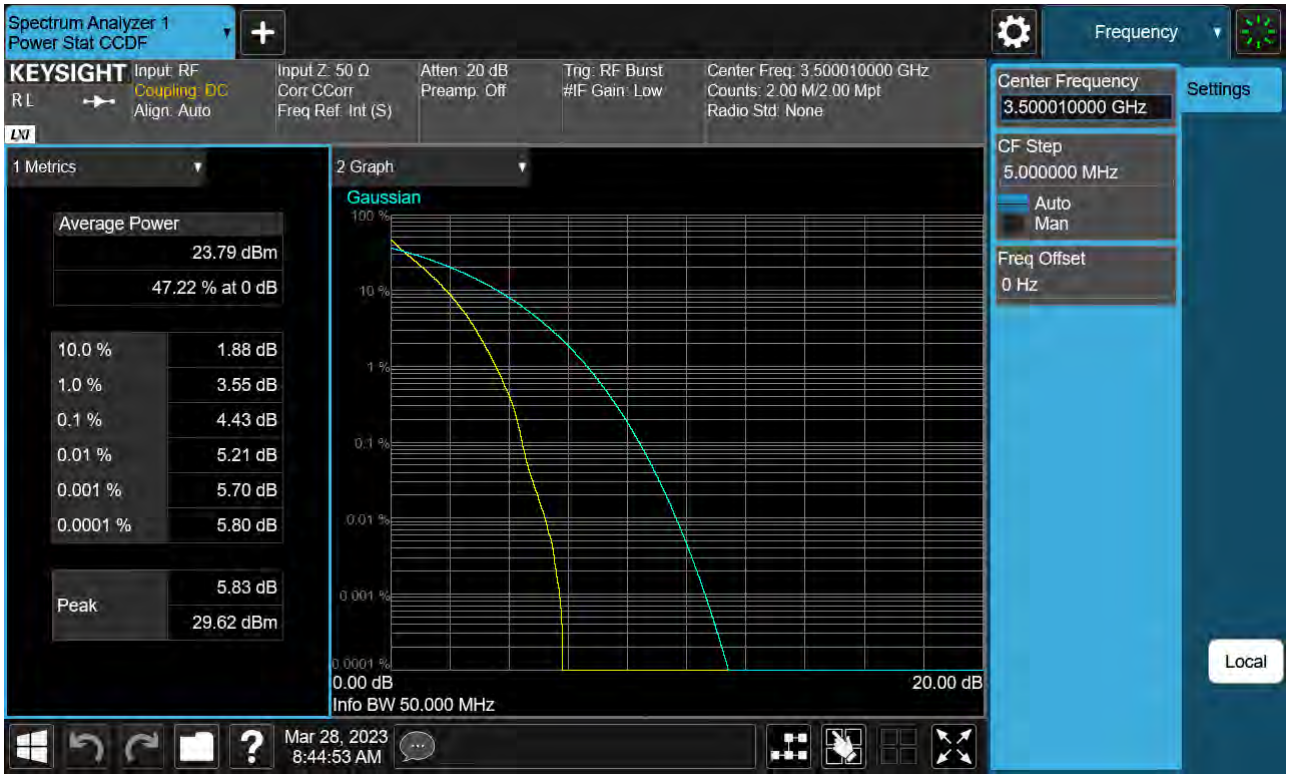


Sub6 n77. PAR Plot (40 M BW_Ch.633334_16QAM)

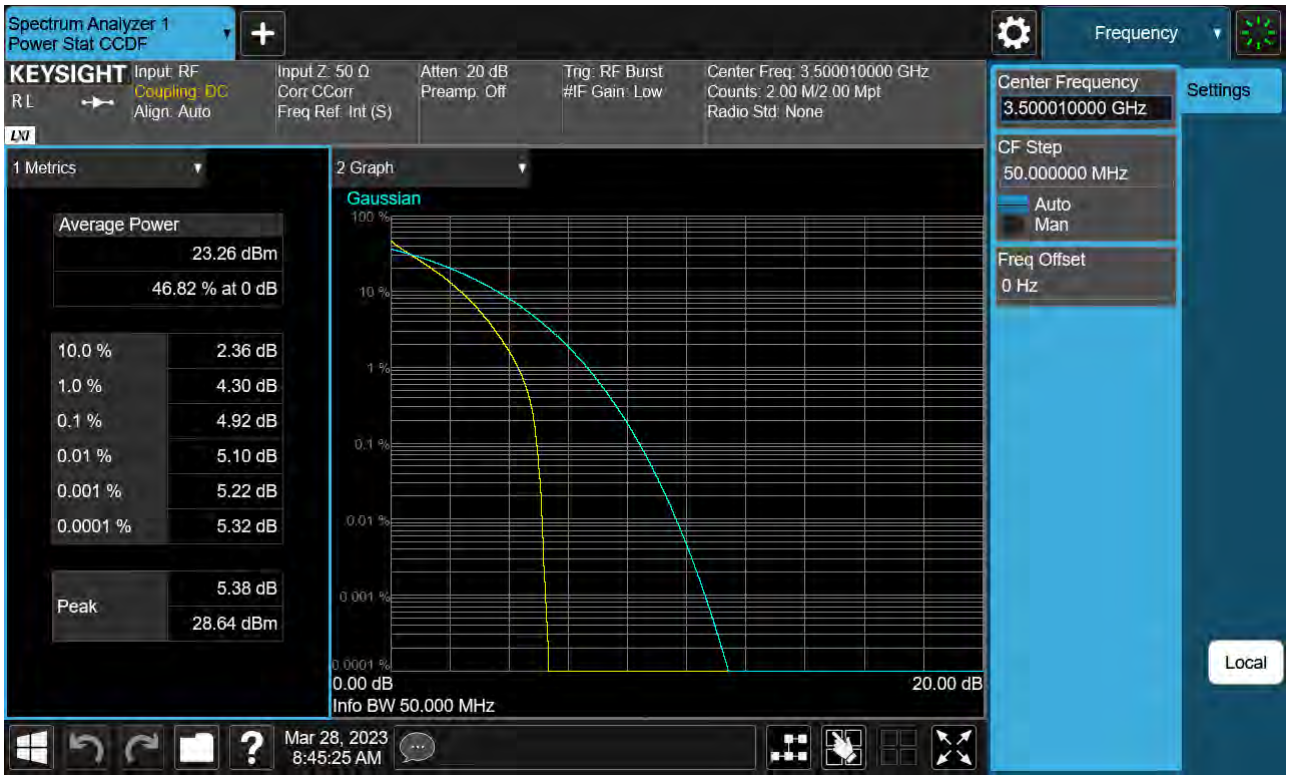
Sub6 n77. PAR Plot (40 M BW_Ch.633334_64QAM)

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

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



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

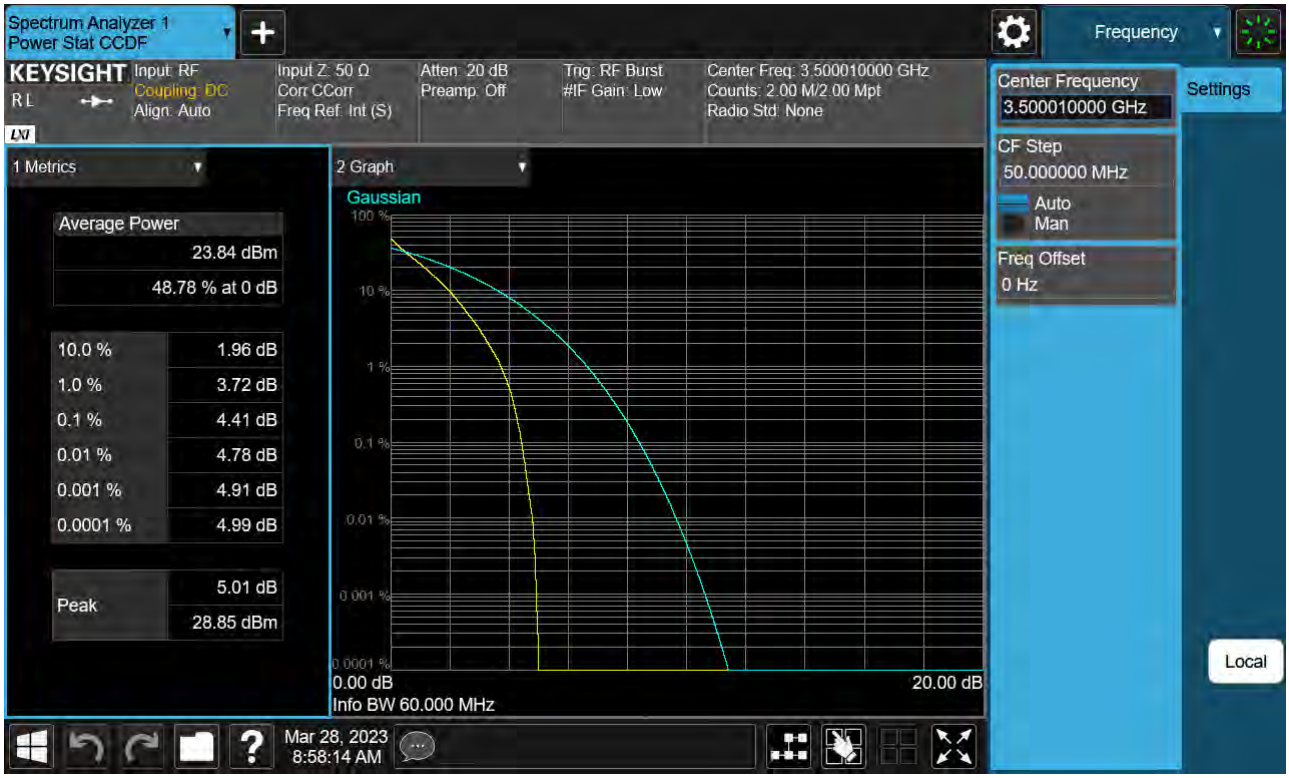


Sub6 n77. PAR Plot (50 M BW_Ch.633334_16QAM)

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

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

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



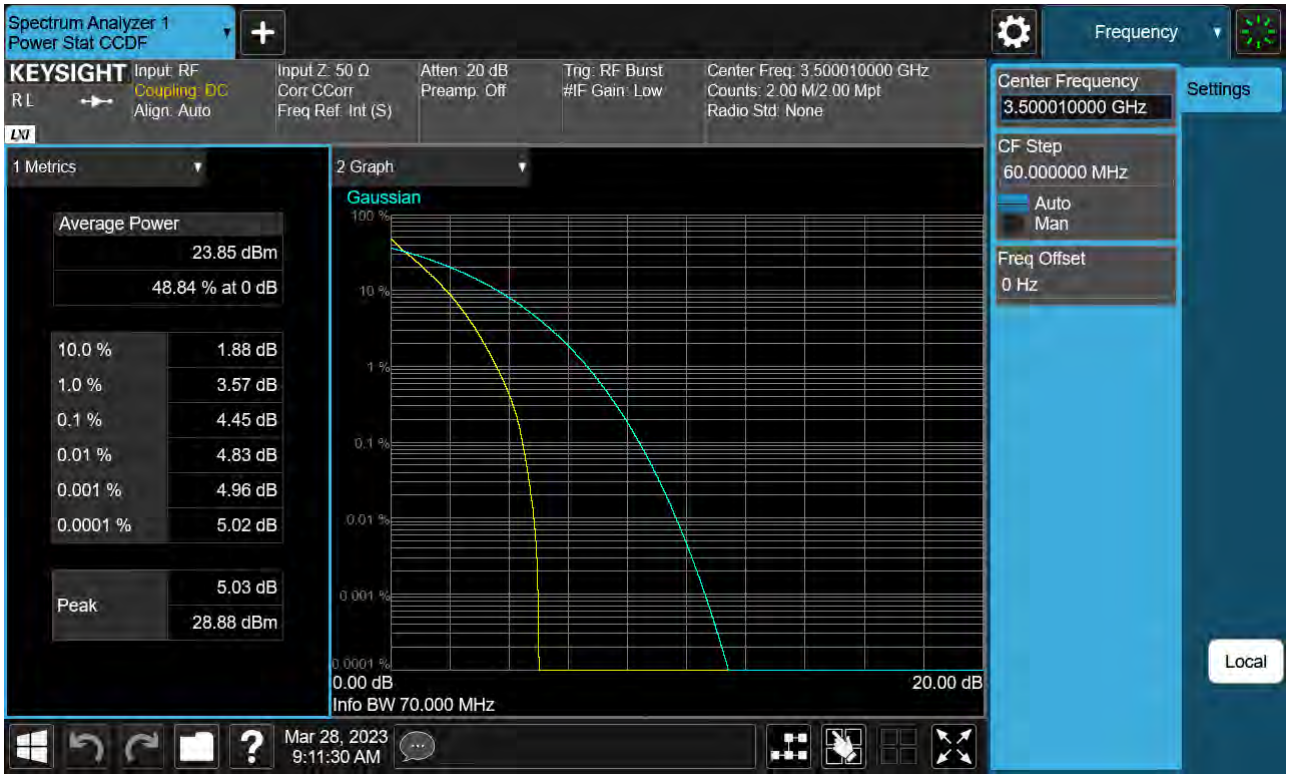
Sub6 n77. PAR Plot (60 M BW_Ch.633334_QPSK)

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)