

TEST REPORT

FCC Sub6 n66 Test for SM-S721U
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2407-FC036

DATE OF ISSUE
July 23, 2024

Tested by
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**TEST
REPORT**

REPORT NO.
HCT-RF-2407-FC036

DATE OF ISSUE
July 23, 2024

Additional Model
SM-S721U1

Applicant **SAMSUNG Electronics Co., Ltd.**
129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Product Name Mobile Phone
Model Name SM-S721U

Date of Test May 20, 2024 ~ July 22, 2024

FCC ID A3LSMS721U

Location of Test Permanent Testing Lab On Site Testing
(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 Republic of Korea)

FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)

Test Standard Used FCC Rule Part: § 27

Test Results PASS

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	July 23, 2024	Initial Release

Notice

Content

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)

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked *.

Information provided by the applicant is marked **.

Test results provided by external providers are marked ***.

When confirmation of authenticity of this test report is required, please contact www.hct.co.kr

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

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MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMS721U
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§ 27
EUT Type:	Mobile phone
Model(s):	SM-S721U
Additional Model(s)	SM-S721U1
SCS(kHz):	15
Bandwidth(MHz):	5, 10, 15, 20, 25, 30, 35, 40
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:	1712.5 MHz – 1777.5 MHz (Sub6 n66(5 MHz)) 1715.0 MHz – 1775.0 MHz (Sub6 n66(10 MHz)) 1717.5 MHz – 1772.5 MHz (Sub6 n66(15 MHz)) 1720.0 MHz – 1770.0 MHz (Sub6 n66(20 MHz)) 1722.5 MHz – 1767.5 MHz (Sub6 n66(25 MHz)) 1725.0 MHz – 1765.0 MHz (Sub6 n66(30 MHz)) 1727.5 MHz – 1762.5 MHz (Sub6 n66(35 MHz)) 1730.0 MHz – 1760.0 MHz (Sub6 n66(40 MHz))
Date(s) of Tests:	May 20, 2024 ~ July 22, 2024
Serial number:	Radiated : 67d50ecc63197ece Conducted : R3CX40SV7PD

1.1. MAXIMUM OUTPUT POWER
ANT A

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n66 (5)	1712.5 - 1777.5	4M66G7D	PI/2 BPSK	0.112	20.51
		4M60G7D	QPSK	0.109	20.39
		4M63W7D	16QAM	0.087	19.38
		4M65W7D	64QAM	0.061	17.88
		4M71W7D	256QAM	0.040	16.02
Sub6 n66 (10)	1715.0 - 1775.0	9M00G7D	PI/2 BPSK	0.111	20.46
		8M99G7D	QPSK	0.109	20.36
		8M99W7D	16QAM	0.087	19.38
		9M02W7D	64QAM	0.062	17.93
		8M99W7D	256QAM	0.040	16.02
Sub6 n66 (15)	1717.5 - 1772.5	13M5G7D	PI/2 BPSK	0.110	20.43
		13M4G7D	QPSK	0.110	20.42
		13M5W7D	16QAM	0.086	19.34
		13M5W7D	64QAM	0.062	17.94
		13M4W7D	256QAM	0.040	16.07
Sub6 n66 (20)	1720.0 - 1770.0	17M9G7D	PI/2 BPSK	0.112	20.51
		17M9G7D	QPSK	0.112	20.50
		17M9W7D	16QAM	0.087	19.41
		17M9W7D	64QAM	0.062	17.90
		17M8W7D	256QAM	0.040	16.06
Sub6 n66 (25)	1722.5 - 1767.5	23M0G7D	PI/2 BPSK	0.109	20.37
		23M0G7D	QPSK	0.109	20.36
		23M0W7D	16QAM	0.087	19.39
		23M0W7D	64QAM	0.060	17.80
		23M1W7D	256QAM	0.039	15.88
Sub6 n66 (30)	1725.0 - 1765.0	28M7G7D	PI/2 BPSK	0.109	20.39
		28M7G7D	QPSK	0.109	20.36
		28M7W7D	16QAM	0.087	19.38
		28M8W7D	64QAM	0.062	17.92
		28M7W7D	256QAM	0.040	16.07
Sub6 n66 (35)	1727.5 - 1762.5	32M4G7D	PI/2 BPSK	0.107	20.30
		32M4G7D	QPSK	0.106	20.24
		32M3W7D	16QAM	0.084	19.25
		32M2W7D	64QAM	0.060	17.81
		32M3W7D	256QAM	0.038	15.78
Sub6 n66 (40)	1730.0 - 1760.0	38M7G7D	PI/2 BPSK	0.110	20.41
		38M8G7D	QPSK	0.108	20.34
		38M8W7D	16QAM	0.086	19.33
		38M9W7D	64QAM	0.061	17.86
		38M8W7D	256QAM	0.039	15.91

ANT F

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n66 (5)	1712.5 - 1777.5	4M55G7D	PI/2 BPSK	0.107	20.30
		4M53G7D	QPSK	0.106	20.26
		4M53W7D	16QAM	0.083	19.19
		4M52W7D	64QAM	0.058	17.67
		4M54W7D	256QAM	0.038	15.77
Sub6 n66 (10)	1715.0 - 1775.0	9M05G7D	PI/2 BPSK	0.098	19.91
		9M01G7D	QPSK	0.097	19.86
		8M96W7D	16QAM	0.079	18.98
		9M01W7D	64QAM	0.055	17.44
		9M00W7D	256QAM	0.035	15.45
Sub6 n66 (15)	1717.5 - 1772.5	13M5G7D	PI/2 BPSK	0.098	19.91
		13M5G7D	QPSK	0.098	19.90
		13M5W7D	16QAM	0.077	18.88
		13M5W7D	64QAM	0.055	17.40
		13M5W7D	256QAM	0.035	15.40
Sub6 n66 (20)	1720.0 - 1770.0	18M0G7D	PI/2 BPSK	0.101	20.04
		18M0G7D	QPSK	0.100	20.00
		17M9W7D	16QAM	0.081	19.06
		18M0W7D	64QAM	0.057	17.54
		17M9W7D	256QAM	0.036	15.51
Sub6 n66 (25)	1722.5 - 1767.5	23M0G7D	PI/2 BPSK	0.101	20.06
		23M1G7D	QPSK	0.101	20.04
		23M1W7D	16QAM	0.081	19.07
		23M1W7D	64QAM	0.056	17.51
		23M0W7D	256QAM	0.036	15.56
Sub6 n66 (30)	1725.0 - 1765.0	28M9G7D	PI/2 BPSK	0.100	19.99
		28M9G7D	QPSK	0.098	19.90
		28M8W7D	16QAM	0.078	18.92
		28M9W7D	64QAM	0.056	17.47
		28M9W7D	256QAM	0.034	15.37
Sub6 n66 (35)	1727.5 - 1762.5	32M4G7D	PI/2 BPSK	0.100	20.00
		32M4G7D	QPSK	0.098	19.93
		32M4W7D	16QAM	0.077	18.86
		32M4W7D	64QAM	0.055	17.37
		32M5W7D	256QAM	0.035	15.42
Sub6 n66 (40)	1730.0 - 1760.0	38M9G7D	PI/2 BPSK	0.101	20.03
		38M8G7D	QPSK	0.098	19.93
		38M9W7D	16QAM	0.078	18.94
		38M9W7D	64QAM	0.056	17.47
		39M0W7D	256QAM	0.035	15.47

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS and LTE, Sub 6, mmWave. It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80/160 MHz), Bluetooth(iPA, ePA), BT LE(iPA, ePA), NFC, WPT, WIFI 6E.

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
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 \geq 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;

$$P_d \text{ (dBm)} = P_g \text{ (dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

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 \geq 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 10th 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;

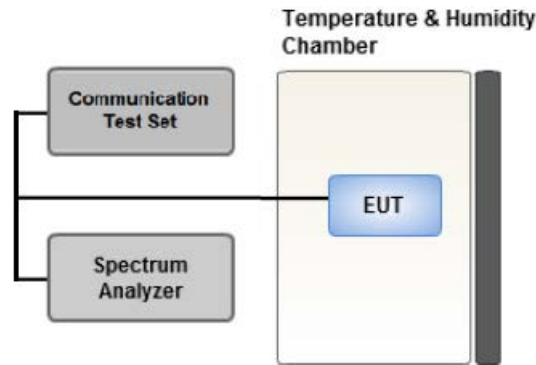
$$\text{Result}_{(dBm)} = P_g_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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 \geq 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:

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

Test Settings(Peak Power)

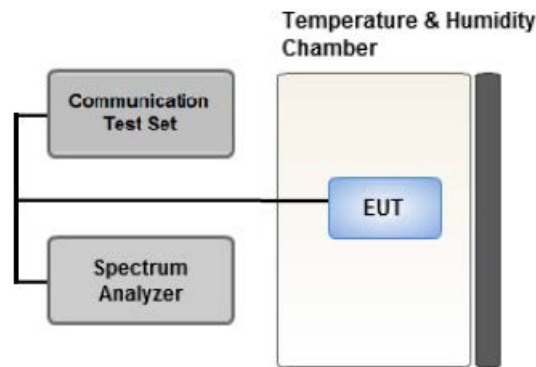
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW $\geq 3 \times$ RBW.

1. Set the RBW \geq OBW.
2. Set VBW $\geq 3 \times$ RBW.
3. Set span $\geq 2 \times$ OBW.
4. Sweep time $\geq 10 \times$ (number of points in sweep) \times (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 $2 \times$ to $3 \times$ the OBW.
2. Set RBW \geq OBW.
3. Set VBW $\geq 3 \times$ RBW.
4. Set number of measurement points in sweep $\geq 2 \times$ span / RBW.
5. Sweep time:
Set $\geq [10 \times$ (number of points in sweep) \times (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 $[10 \log (1/\text{duty cycle})]$ 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.

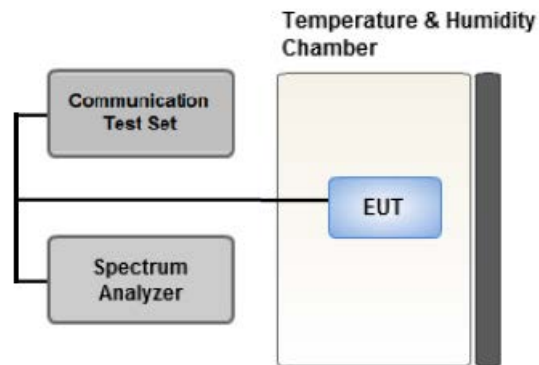
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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 \geq 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

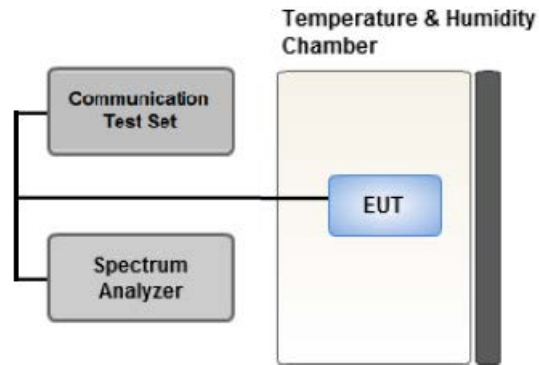
Test Overview

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 \geq 3 MHz
3. Detector = RMS
4. Trace Mode = trace average
5. Sweep time = auto
6. Number of points in sweep \geq 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 $\geq 2 \times \text{Span}/\text{RBW}$
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Notes

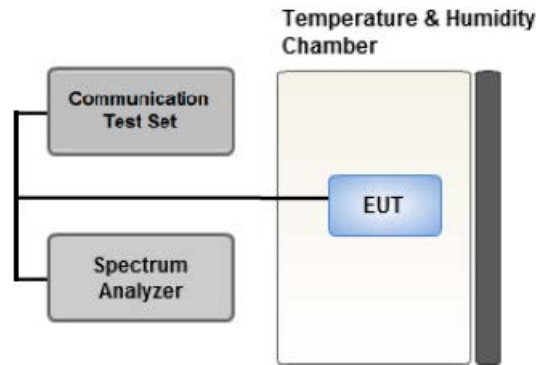
According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

All measurements were done at 2 channels (low and high operational frequency range.)

The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

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

The frequency stability of the transmitter is measured by:

1. Temperature:

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

2. Primary Supply Voltage:

- .- Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.
- .- For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

Test Settings

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

3.9 WORST CASE(RADIATED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
(Worst case: DFT-S-OFDM)
- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
Mode: NSA, SA
Worst case: SA (ANT A), NSA (5A-n66A, ANT F)
Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
Worst case : Stand alone
- All simultaneous transmission scenarios of operation were investigated, and the test results showed no additional significant emissions relative to the least restrictive limit were observed.
Therefore, only the worst case(stand-alone) results were reported.
- Radiated Spurious emissions are measured while operating in EN-DC mode with Sub 6 NR carrier as well as an LTE carrier (anchor).
All EN-DC mode of operation (=anchor) were investigated and the test results were measured No Peak Found.
The test results which are attenuated more than 20 dB below the permissible value, so it was not reported.
- 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 was investigated and the worst case bandwidth results are reported. (Worst case : 5 MHz(Ant A), 5 MHz(Ant F))
- SM-S721U & additional models were tested and the worst case results are reported.
(Worst case : SM-S721U)

[ANT A 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		Y

[ANT F Worst case]

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

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
(Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
(Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.
Mode: NSA, SA
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-S721U & additional models were tested and the worst case results are reported.
(Worst case : SM-S721U)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth, Peak-To-Average Ratio	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20, 25, 30, 35, 40	Mid	Full RB	0
Band Edge	PI/2 BPSK	5	Low	1	0
			High	1	24
		10	Low	1	0
			High	1	51
		15	Low	1	0
			High	1	78
		20	Low	1	0
			High	1	105
		25	Low	1	0
			High	1	132
		30	Low	1	0
			High	1	159
		35	Low	1	0
			High	1	187
40	Low	1	0		
	High	1	215		
		5, 10, 15, 20, 25, 30, 35, 40	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	5, 10, 15, 20, 25, 30, 35, 40	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	03/10/2026	Biennial
Precision Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	02289	02/14/2026	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	01/16/2025	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/09/2025	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/24/2025	Biennial
RF Switching System	FBSR-06B (1G HPF + LNA)	T&M SYSTEM	F3L1	05/14/2025	Annual
RF Switching System	FBSR-06B (3G HPF + LNA)	T&M SYSTEM	F3L2	05/14/2025	Annual
RF Switching System	FBSR-06B (6G HPF + LNA)	T&M SYSTEM	F3L3	05/14/2025	Annual
RF Switching System	FBSR-06B (LNA)	T&M SYSTEM	F3L4	05/14/2025	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/17/2024	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/26/2025	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	08/25/2024	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	02/29/2025	Annual
Chamber	SU-642	ESPEC	93008124	02/19/2025	Annual
Signal Analyzer(10 Hz~26.5 GHz)	N9020A	Agilent	MY51110063	04/04/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz~40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/13/2025	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/10/2024	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287701	05/16/2025	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/14/2025	Annual
Signal Analyzer(5 Hz~40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/17/2025	Annual
4-Way Divider	ZC4PD-K1844+	Mini-Circuits	942907	09/19/2024	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 (\pm dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.98 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.70 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.52 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.66 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.58 (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(h)	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions	PASS
Conducted Output Power	§ 2.1046	N/A	<u>See Note1</u>
Peak- to- Average Ratio	§ 27.50(d)(5)	< 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(d)(4)	< 1 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§ 2.1053, § 27.53(h)	< 43 + 10log10 (P[Watts]) for all out-of band emissions	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

$$\text{ERP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 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
20175	1,732.50	-15.75	18.45	9.90	1.76	H	0.456	26.59

$$\text{EIRP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of equivalent isotropic radiated power.

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW
GSM BW = 249 kHz
G = Phase Modulation
X = Cases not otherwise covered
W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W
GSM BW = 249 kHz
G = Phase Modulation
7 = Quantized/Digital Info
W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W
WCDMA BW = 4.17 MHz
F = Frequency Modulation
9 = Composite Digital Info
W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D
LTE BW = 4.48 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D
LTE BW = 4.48 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data transmission; telemetry; telecommand

8. TEST DATA (ANT A)

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
1712.5		PI/2 BPSK	-22.20	11.16	9.60	2.00	H		0.075	18.76	1	23
		QPSK	-22.21	11.15	9.60	2.00	H		0.075	18.75		
		16-QAM	-23.16	10.20	9.60	2.00	H		0.060	17.80		
		64-QAM	-24.63	8.73	9.60	2.00	H		0.043	16.33		
		256-QAM	-26.57	6.79	9.60	2.00	H		0.028	14.39		
1745.0	Sub6 n66/ 5 MHz [15 kHz]	PI/2 BPSK	-21.54	12.06	9.75	2.04	H	< 1.00	0.095	19.77	1	1
		QPSK	-21.56	12.04	9.75	2.04	H		0.094	19.75		
		16-QAM	-22.57	11.03	9.75	2.04	H		0.075	18.74		
		64-QAM	-24.02	9.58	9.75	2.04	H		0.054	17.29		
		256-QAM	-25.99	7.61	9.75	2.04	H		0.034	15.32		
1777.5		PI/2 BPSK	-20.85	12.69	9.90	2.08	H		0.112	20.51	1	12
		QPSK	-20.97	12.57	9.90	2.08	H		0.109	20.39		
		16-QAM	-21.98	11.56	9.90	2.08	H		0.087	19.38		
		64-QAM	-23.48	10.06	9.90	2.08	H		0.061	17.88		
		256-QAM	-25.34	8.20	9.90	2.08	H		0.040	16.02		

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
1715.0		PI/2 BPSK	-21.76	11.60	9.60	2.00	H		0.083	19.20	1	50
		QPSK	-21.80	11.56	9.60	2.00	H		0.082	19.16		
		16-QAM	-22.82	10.54	9.60	2.00	H		0.065	18.14		
		64-QAM	-24.34	9.02	9.60	2.00	H		0.046	16.62		
		256-QAM	-26.18	7.18	9.60	2.00	H		0.030	14.78		
1745.0	Sub6 n66/ 10 MHz [15 kHz]	PI/2 BPSK	-21.50	12.10	9.75	2.04	H	< 1.00	0.096	19.81	1	50
		QPSK	-21.55	12.05	9.75	2.04	H		0.095	19.76		
		16-QAM	-22.55	11.05	9.75	2.04	H		0.075	18.76		
		64-QAM	-24.09	9.51	9.75	2.04	H		0.053	17.22		
		256-QAM	-25.98	7.62	9.75	2.04	H		0.034	15.33		
1775.0		PI/2 BPSK	-20.90	12.64	9.90	2.08	H		0.111	20.46	1	50
		QPSK	-21.00	12.54	9.90	2.08	H		0.109	20.36		
		16-QAM	-21.98	11.56	9.90	2.08	H		0.087	19.38		
		64-QAM	-23.43	10.11	9.90	2.08	H		0.062	17.93		
		256-QAM	-25.34	8.20	9.90	2.08	H		0.040	16.02		

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	
1717.5		PI/2 BPSK	-21.55	11.81	9.60	2.00	H	< 1.00	0.087	19.41	1	77	
		QPSK	-21.61	11.75	9.60	2.00	H		0.086	19.35			
		16-QAM	-22.58	10.78	9.60	2.00	H		0.069	18.38			
		64-QAM	-24.02	9.34	9.60	2.00	H		0.049	16.94			
		256-QAM	-26.02	7.34	9.60	2.00	H		0.031	14.94			
1745.0	Sub6 n66/ 15 MHz [15 kHz]	PI/2 BPSK	-21.50	12.10	9.75	2.04	H	0.096	19.81	1	1		
		QPSK	-21.57	12.03	9.75	2.04	H	0.094	19.74				
		16-QAM	-22.48	11.12	9.75	2.04	H	0.076	18.83				
		64-QAM	-23.98	9.62	9.75	2.04	H	0.054	17.33				
		256-QAM	-25.97	7.63	9.75	2.04	H	0.034	15.34				
1772.5		PI/2 BPSK	-20.93	12.61	9.90	2.08	H	0.110	20.43	1	39		
		QPSK	-20.94	12.60	9.90	2.08	H	0.110	20.42				
		16-QAM	-22.02	11.52	9.90	2.08	H	0.086	19.34				
		64-QAM	-23.42	10.12	9.90	2.08	H	0.062	17.94				
		256-QAM	-25.29	8.25	9.90	2.08	H	0.040	16.07				

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit		EIRP		RB	
								W	W	dBm	Size	Offset	
1720.0		PI/2 BPSK	-21.45	12.05	9.60	2.00	H	< 1.00	0.092	19.65	1	104	
		QPSK	-21.51	11.99	9.60	2.00	H		0.091	19.59			
		16-QAM	-22.44	11.06	9.60	2.00	H		0.074	18.66			
		64-QAM	-23.94	9.56	9.60	2.00	H		0.052	17.16			
		256-QAM	-25.89	7.61	9.60	2.00	H		0.033	15.21			
1745.0	Sub6 n66/ 20 MHz [15 kHz]	PI/2 BPSK	-21.39	12.21	9.75	2.04	H	0.098	19.92	1	1		
		QPSK	-21.40	12.20	9.75	2.04	H	0.098	19.91				
		16-QAM	-22.46	11.14	9.75	2.04	H	0.077	18.85				
		64-QAM	-23.91	9.69	9.75	2.04	H	0.055	17.40				
		256-QAM	-25.82	7.78	9.75	2.04	H	0.035	15.49				
1770.0		PI/2 BPSK	-20.94	12.70	9.90	2.09	H	0.112	20.51	1	104		
		QPSK	-20.95	12.69	9.90	2.09	H	0.112	20.50				
		16-QAM	-22.04	11.60	9.90	2.09	H	0.087	19.41				
		64-QAM	-23.55	10.09	9.90	2.09	H	0.062	17.90				
		256-QAM	-25.39	8.25	9.90	2.09	H	0.040	16.06				

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	
1722.5		PI/2 BPSK	-21.35	12.21	9.60	2.01	H	< 1.00	0.096	19.80	1	131	
		QPSK	-21.36	12.20	9.60	2.01	H		0.095	19.79			
		16-QAM	-22.38	11.18	9.60	2.01	H		0.075	18.77			
		64-QAM	-23.74	9.82	9.60	2.01	H		0.055	17.41			
		256-QAM	-25.80	7.76	9.60	2.01	H		0.034	15.35			
1745.0	Sub6 n66/ 25 MHz [15 kHz]	PI/2 BPSK	-21.30	12.30	9.75	2.04	H	0.100	20.01	1	131		
		QPSK	-21.36	12.24	9.75	2.04	H	0.099	19.95				
		16-QAM	-22.36	11.24	9.75	2.04	H	0.079	18.95				
		64-QAM	-23.82	9.78	9.75	2.04	H	0.056	17.49				
		256-QAM	-25.85	7.75	9.75	2.04	H	0.035	15.46				
1767.5		PI/2 BPSK	-20.92	12.56	9.90	2.09	H	0.109	20.37	1	131		
		QPSK	-20.93	12.55	9.90	2.09	H	0.109	20.36				
		16-QAM	-21.90	11.58	9.90	2.09	H	0.087	19.39				
		64-QAM	-23.49	9.99	9.90	2.09	H	0.060	17.80				
		256-QAM	-25.41	8.07	9.90	2.09	H	0.039	15.88				

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	
1725.0		PI/2 BPSK	-21.47	12.09	9.60	2.01	H	< 1.00	0.093	19.68	1	158	
		QPSK	-21.48	12.08	9.60	2.01	H		0.093	19.67			
		16-QAM	-22.46	11.10	9.60	2.01	H		0.074	18.69			
		64-QAM	-24.02	9.54	9.60	2.01	H		0.052	17.13			
		256-QAM	-25.84	7.72	9.60	2.01	H		0.034	15.31			
1745.0	Sub6 n66/ 30 MHz [15 kHz]	PI/2 BPSK	-21.42	12.18	9.75	2.04	H	0.098	19.89	1	1		
		QPSK	-21.50	12.10	9.75	2.04	H	0.096	19.81				
		16-QAM	-22.49	11.11	9.75	2.04	H	0.076	18.82				
		64-QAM	-23.95	9.65	9.75	2.04	H	0.055	17.36				
		256-QAM	-25.82	7.78	9.75	2.04	H	0.035	15.49				
1765.0		PI/2 BPSK	-20.90	12.58	9.90	2.09	H	0.109	20.39	1	158		
		QPSK	-20.93	12.55	9.90	2.09	H	0.109	20.36				
		16-QAM	-21.91	11.57	9.90	2.09	H	0.087	19.38				
		64-QAM	-23.37	10.11	9.90	2.09	H	0.062	17.92				
		256-QAM	-25.22	8.26	9.90	2.09	H	0.040	16.07				

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit		EIRP		RB	
								W	W	dBm	Size	Offset	
1727.5		PI/2 BPSK	-21.21	12.35	9.60	2.01	H	< 1.00	0.099	19.94	1	94	
		QPSK	-21.23	12.33	9.60	2.01	H		0.098	19.92			
		16-QAM	-22.27	11.29	9.60	2.01	H		0.077	18.88			
		64-QAM	-23.82	9.74	9.60	2.01	H		0.054	17.33			
		256-QAM	-25.87	7.69	9.60	2.01	H		0.034	15.28			
1745.0	Sub6 n66/ 35 MHz [15 kHz]	PI/2 BPSK	-21.25	12.35	9.75	2.04	H	0.101	20.06	1	186		
		QPSK	-21.26	12.34	9.75	2.04	H	0.101	20.05				
		16-QAM	-22.31	11.29	9.75	2.04	H	0.079	19.00				
		64-QAM	-23.77	9.83	9.75	2.04	H	0.057	17.54				
		256-QAM	-25.73	7.87	9.75	2.04	H	0.036	15.58				
1762.5		PI/2 BPSK	-20.83	12.49	9.90	2.09	H	0.107	20.30	1	186		
		QPSK	-20.89	12.43	9.90	2.09	H	0.106	20.24				
		16-QAM	-21.88	11.44	9.90	2.09	H	0.084	19.25				
		64-QAM	-23.32	10.00	9.90	2.09	H	0.060	17.81				
		256-QAM	-25.35	7.97	9.90	2.09	H	0.038	15.78				

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	
1730.0		PI/2 BPSK	-21.27	12.34	9.60	2.01	H	< 1.00	0.098	19.93	1	108	
		QPSK	-21.30	12.31	9.60	2.01	H		0.098	19.90			
		16-QAM	-22.29	11.32	9.60	2.01	H		0.078	18.91			
		64-QAM	-23.77	9.84	9.60	2.01	H		0.055	17.43			
		256-QAM	-25.66	7.95	9.60	2.01	H		0.036	15.54			
1745.0	Sub6 n66/ 40 MHz [15 kHz]	PI/2 BPSK	-20.90	12.70	9.75	2.04	H	0.110	20.41	1	214		
		QPSK	-20.97	12.63	9.75	2.04	H	0.108	20.34				
		16-QAM	-21.98	11.62	9.75	2.04	H	0.086	19.33				
		64-QAM	-23.45	10.15	9.75	2.04	H	0.061	17.86				
		256-QAM	-25.40	8.20	9.75	2.04	H	0.039	15.91				
1760.0		PI/2 BPSK	-20.82	12.50	9.90	2.09	H	0.107	20.31	1	214		
		QPSK	-20.87	12.45	9.90	2.09	H	0.106	20.26				
		16-QAM	-21.84	11.48	9.90	2.09	H	0.085	19.29				
		64-QAM	-23.33	9.99	9.90	2.09	H	0.060	17.80				
		256-QAM	-25.30	8.02	9.90	2.09	H	0.038	15.83				

8.2 RADIATED SPURIOUS EMISSIONS

- ▣ NR Band: N66
- ▣ Bandwidth: 5 MHz
- ▣ Modulation: PI/2 BPSK
- ▣ Distance: 3 meters
- ▣ SCS: 15 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
342500 (1725.0)	3 425.00	-54.44	11.10	-55.39	2.96	H	-47.25	-13.00	1	23
	5 137.50	-61.86	10.80	-56.59	3.62	H	-49.41	-13.00		
	6 850.00	-64.41	10.80	-53.46	4.32	H	-46.98	-13.00		
349000 (1745.0)	3 490.00	-44.58	11.20	-46.02	3.00	H	-37.82	-13.00	1	1
	5 235.00	-53.39	11.10	-48.46	3.70	V	-41.06	-13.00		
	6 980.00	-63.88	10.90	-51.17	4.30	H	-44.57	-13.00		
355500 (1777.5)	3 555.00	-34.10	11.40	-36.07	3.02	H	-27.69	-13.00	1	12
	5 332.50	-48.46	11.40	-43.41	3.73	V	-35.74	-13.00		
	7 110.00	-63.40	10.50	-49.46	4.36	V	-43.32	-13.00		

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n66	5 MHz	1745.0	BPSK	25	0	4.65
			QPSK			5.44
			16-QAM			6.03
			64-QAM			6.25
			256-QAM			6.46
	10 MHz		BPSK	50		4.75
			QPSK			5.49
			16-QAM			6.09
			64-QAM			6.31
			256-QAM			6.63
	15 MHz		BPSK	75		4.88
			QPSK			5.40
			16-QAM			6.08
			64-QAM			6.38
			256-QAM			6.48
	20 MHz		BPSK	100		4.20
			QPSK			5.42
			16-QAM			6.08
			64-QAM			6.24
			256-QAM			6.55
	25 MHz		BPSK	128		4.28
			QPSK			5.49
			16-QAM			6.18
			64-QAM			6.32
			256-QAM			6.52
	30 MHz		BPSK	160		4.30
			QPSK			5.44
			16-QAM			6.14
			64-QAM			6.39
			256-QAM			6.55
	35 MHz		BPSK	187		4.32
			QPSK			5.47
16-QAM		6.11				
64-QAM		6.31				
256-QAM		6.55				
40 MHz	BPSK	216	4.31			
	QPSK		5.44			
	16-QAM		6.16			
	64-QAM		6.34			
	256-QAM		6.60			

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 67 ~ 106.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n66	5 MHz	1745.0	BPSK	25	0	4.6632
			QPSK			4.5969
			16-QAM			4.6257
			64-QAM			4.6508
			256-QAM			4.7103
	10 MHz		BPSK	50		9.0002
			QPSK			8.9917
			16-QAM			8.9886
			64-QAM			9.0224
			256-QAM			8.9912
	15 MHz		BPSK	75		13.449
			QPSK			13.438
			16-QAM			13.467
			64-QAM			13.525
			256-QAM			13.430
	20 MHz		BPSK	100		17.921
			QPSK			17.927
			16-QAM			17.866
			64-QAM			17.908
			256-QAM			17.844
	25 MHz		BPSK	128		22.993
			QPSK			22.962
			16-QAM			23.018
			64-QAM			22.963
			256-QAM			23.093
	30 MHz		BPSK	160		28.733
			QPSK			28.710
			16-QAM			28.739
			64-QAM			28.748
			256-QAM			28.715
	35 MHz		BPSK	187		32.368
			QPSK			32.376
16-QAM		32.316				
64-QAM		32.213				
256-QAM		32.309				
40 MHz	BPSK	216	38.736			
	QPSK		38.784			
	16-QAM		38.808			
	64-QAM		38.896			
	256-QAM		38.801			

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 107 ~ 146.

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 n66	5	1712.5	9.4312	30.015	-70.303	-40.288	-13.00
		1745.0	8.2642	30.015	-70.610	-40.595	
		1777.5	3.9891	29.400	-71.002	-41.602	
	10	1715.0	8.0578	30.015	-70.922	-40.907	
		1745.0	8.2797	30.015	-70.981	-40.966	
		1775.0	8.3026	30.015	-71.149	-41.134	
	15	1717.5	8.3315	30.015	-70.666	-40.651	
		1745.0	9.1256	30.015	-71.067	-41.052	
		1772.5	4.0145	29.400	-70.990	-41.590	
	20	1720.0	9.7418	30.015	-70.462	-40.447	
		1745.0	4.0364	29.400	-70.803	-41.403	
		1770.0	9.1052	30.015	-70.351	-40.336	
	25	1722.5	8.0025	30.015	-70.397	-40.382	
		1745.0	9.1152	30.015	-70.371	-40.356	
		1767.5	3.7917	29.400	-70.814	-41.414	
	30	1725.0	4.0330	29.400	-70.578	-41.178	
		1745.0	8.2622	30.015	-70.964	-40.949	
		1765.0	8.8569	30.015	-70.266	-40.251	
	35	1727.5	4.0190	29.400	-70.701	-41.301	
		1745.0	4.0499	29.400	-70.622	-41.222	
		1762.5	8.5563	30.015	-70.513	-40.498	
	40	1730.0	8.2757	29.400	-69.979	-40.579	
		1745.0	7.9935	30.015	-70.731	-40.716	
		1760.0	8.3245	30.015	-70.481	-40.466	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 147 ~ 194.
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Ext. Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	26.694
1 – 5	29.400
5 – 10	30.015
10 – 15	30.540
15 – 20	30.913
Above 20	31.555

8.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 195 ~ 242.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

- ▣ BandWidth: 5 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1712.5	100 %	+20(Ref)	1712 500 001	0.0	0.000 000	0.000
	100 %	-30	1712 500 001	0.4	0.000 000	0.000
	100 %	-20	1712 500 001	0.2	0.000 000	0.000
	100 %	-10	1712 500 001	0.7	0.000 000	0.000
	100 %	0	1712 500 001	0.5	0.000 000	0.000
	100 %	+10	1712 500 001	0.1	0.000 000	0.000
	100 %	+30	1712 500 001	0.7	0.000 000	0.000
	100 %	+40	1712 500 001	0.1	0.000 000	0.000
	100 %	+50	1712 500 001	0.6	0.000 000	0.000
	Batt. Endpoint	+20	1712 500 001	0.6	0.000 000	0.000
1777.5	100 %	+20(Ref)	1777 500 000	0.0	0.000 000	0.000
	100 %	-30	1777 500 000	0.0	0.000 000	0.000
	100 %	-20	1777 500 000	-0.1	0.000 000	0.000
	100 %	-10	1777 500 001	0.3	0.000 000	0.000
	100 %	0	1777 500 001	0.6	0.000 000	0.000
	100 %	+10	1777 500 000	-0.3	0.000 000	0.000
	100 %	+30	1777 500 000	-0.4	0.000 000	0.000
	100 %	+40	1777 500 000	0.0	0.000 000	0.000
	100 %	+50	1777 500 000	-0.1	0.000 000	0.000
	Batt. Endpoint	+20	1777 500 000	-0.1	0.000 000	0.000

- ▣ BandWidth: 10 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1715.0	100 %	+20(Ref)	1715 000 000	0.0	0.000 000	0.000
	100 %	-30	1715 000 000	-0.2	0.000 000	0.000
	100 %	-20	1715 000 000	-0.3	0.000 000	0.000
	100 %	-10	1715 000 000	0.1	0.000 000	0.000
	100 %	0	1715 000 001	0.4	0.000 000	0.000
	100 %	+10	1715 000 000	0.4	0.000 000	0.000
	100 %	+30	1715 000 000	0.1	0.000 000	0.000
	100 %	+40	1715 000 001	0.9	0.000 000	0.001
	100 %	+50	1715 000 000	0.1	0.000 000	0.000
	Batt. Endpoint	+20	1715 000 000	-0.5	0.000 000	0.000
1775.0	100 %	+20(Ref)	1775 000 000	0.0	0.000 000	0.000
	100 %	-30	1775 000 001	0.9	0.000 000	0.001
	100 %	-20	1775 000 000	0.6	0.000 000	0.000
	100 %	-10	1774 999 999	-0.3	0.000 000	0.000
	100 %	0	1775 000 001	0.8	0.000 000	0.000
	100 %	+10	1775 000 000	0.4	0.000 000	0.000
	100 %	+30	1774 999 999	-0.4	0.000 000	0.000
	100 %	+40	1774 999 999	-0.5	0.000 000	0.000
	100 %	+50	1775 000 000	0.3	0.000 000	0.000
	Batt. Endpoint	+20	1775 000 000	0.4	0.000 000	0.000

- ▣ BandWidth: 15 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1717.5	100 %	+20(Ref)	1717 500 000	0.0	0.000 000	0.000
	100 %	-30	1717 500 000	0.2	0.000 000	0.000
	100 %	-20	1717 500 000	-0.1	0.000 000	0.000
	100 %	-10	1717 500 000	0.1	0.000 000	0.000
	100 %	0	1717 500 000	0.3	0.000 000	0.000
	100 %	+10	1717 499 999	-0.4	0.000 000	0.000
	100 %	+30	1717 500 000	0.4	0.000 000	0.000
	100 %	+40	1717 500 000	-0.1	0.000 000	0.000
	100 %	+50	1717 500 000	0.6	0.000 000	0.000
	Batt. Endpoint	+20	1717 500 000	0.1	0.000 000	0.000
1772.5	100 %	+20(Ref)	1772 500 001	0.0	0.000 000	0.000
	100 %	-30	1772 500 001	0.3	0.000 000	0.000
	100 %	-20	1772 500 002	1.5	0.000 000	0.001
	100 %	-10	1772 500 002	0.9	0.000 000	0.000
	100 %	0	1772 500 001	0.6	0.000 000	0.000
	100 %	+10	1772 500 001	0.2	0.000 000	0.000
	100 %	+30	1772 500 002	0.9	0.000 000	0.000
	100 %	+40	1772 500 001	0.4	0.000 000	0.000
	100 %	+50	1772 500 001	0.2	0.000 000	0.000
	Batt. Endpoint	+20	1772 500 001	0.2	0.000 000	0.000

- ▣ BandWidth: 20 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1720.0	100 %	+20(Ref)	1720 000 001	0.0	0.000 000	0.000
	100 %	-30	1720 000 001	0.0	0.000 000	0.000
	100 %	-20	1720 000 000	-0.1	0.000 000	0.000
	100 %	-10	1720 000 000	-0.3	0.000 000	0.000
	100 %	0	1720 000 001	0.6	0.000 000	0.000
	100 %	+10	1720 000 001	0.6	0.000 000	0.000
	100 %	+30	1720 000 002	1.2	0.000 000	0.001
	100 %	+40	1720 000 001	0.7	0.000 000	0.000
	100 %	+50	1720 000 000	-0.4	0.000 000	0.000
	Batt. Endpoint	+20	1720 000 000	-0.1	0.000 000	0.000
1770.0	100 %	+20(Ref)	1770 000 001	0.0	0.000 000	0.000
	100 %	-30	1770 000 000	-0.4	0.000 000	0.000
	100 %	-20	1770 000 000	-0.5	0.000 000	0.000
	100 %	-10	1770 000 001	0.3	0.000 000	0.000
	100 %	0	1770 000 001	0.4	0.000 000	0.000
	100 %	+10	1770 000 002	1.0	0.000 000	0.001
	100 %	+30	1770 000 000	-0.3	0.000 000	0.000
	100 %	+40	1770 000 001	0.2	0.000 000	0.000
	100 %	+50	1770 000 001	0.0	0.000 000	0.000
	Batt. Endpoint	+20	1770 000 001	0.2	0.000 000	0.000

- ▣ BandWidth: 25 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1722.5	100%	+20(Ref)	1722 500 001	0.0	0.000 000	0.000
	100%	-30	1722 500 000	-0.2	0.000 000	0.000
	100%	-20	1722 500 000	-0.8	0.000 000	0.000
	100%	-10	1722 500 001	0.1	0.000 000	0.000
	100%	0	1722 500 001	-0.1	0.000 000	0.000
	100%	+10	1722 499 999	-1.2	0.000 000	-0.001
	100%	+30	1722 500 000	-0.6	0.000 000	0.000
	100%	+40	1722 500 000	-0.7	0.000 000	0.000
	100%	+50	1722 500 000	-0.4	0.000 000	0.000
	Batt. Endpoint	+20	1722 500 001	-0.1	0.000 000	0.000
1767.5	100 %	+20(Ref)	1767 500 000	0.0	0.000 000	0.000
	100 %	-30	1767 500 001	1.1	0.000 000	0.001
	100 %	-20	1767 500 000	0.1	0.000 000	0.000
	100 %	-10	1767 500 000	0.5	0.000 000	0.000
	100 %	0	1767 500 000	0.2	0.000 000	0.000
	100 %	+10	1767 500 000	0.0	0.000 000	0.000
	100 %	+30	1767 500 000	0.4	0.000 000	0.000
	100 %	+40	1767 500 000	0.4	0.000 000	0.000
	100 %	+50	1767 500 000	0.7	0.000 000	0.000
	Batt. Endpoint	+20	1767 500 000	0.2	0.000 000	0.000

- ▣ BandWidth: 30 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1725.0	100 %	+20(Ref)	1724 999 999	0.0	0.000 000	0.000
	100 %	-30	1725 000 000	0.1	0.000 000	0.000
	100 %	-20	1725 000 000	0.2	0.000 000	0.000
	100 %	-10	1725 000 001	1.2	0.000 000	0.001
	100 %	0	1724 999 998	-1.1	0.000 000	-0.001
	100 %	+10	1725 000 000	1.0	0.000 000	0.001
	100 %	+30	1724 999 999	-0.4	0.000 000	0.000
	100 %	+40	1724 999 999	-0.8	0.000 000	0.000
	100 %	+50	1724 999 999	-0.6	0.000 000	0.000
	Batt. Endpoint	+20	1725 000 001	1.2	0.000 000	0.001
1765.0	100 %	+20(Ref)	1765 000 000	0.0	0.000 000	0.000
	100 %	-30	1765 000 000	-0.2	0.000 000	0.000
	100 %	-20	1764 999 999	-0.5	0.000 000	0.000
	100 %	-10	1765 000 000	0.0	0.000 000	0.000
	100 %	0	1764 999 999	-0.6	0.000 000	0.000
	100 %	+10	1765 000 000	0.3	0.000 000	0.000
	100 %	+30	1765 000 000	-0.1	0.000 000	0.000
	100 %	+40	1764 999 998	-1.6	0.000 000	-0.001
	100 %	+50	1765 000 000	-0.1	0.000 000	0.000
	Batt. Endpoint	+20	1765 000 000	0.5	0.000 000	0.000

- ▣ BandWidth: 35 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1727.5	100 %	+20(Ref)	1727 500 000	0.0	0.000 000	0.000
	100 %	-30	1727 500 001	0.5	0.000 000	0.000
	100 %	-20	1727 500 001	0.6	0.000 000	0.000
	100 %	-10	1727 500 001	0.3	0.000 000	0.000
	100 %	0	1727 500 001	0.2	0.000 000	0.000
	100 %	+10	1727 500 001	0.7	0.000 000	0.000
	100 %	+30	1727 500 000	-0.1	0.000 000	0.000
	100 %	+40	1727 500 000	0.1	0.000 000	0.000
	100 %	+50	1727 500 001	0.4	0.000 000	0.000
	Batt. Endpoint	+20	1727 500 000	0.0	0.000 000	0.000
1762.5	100 %	+20(Ref)	1762 500 000	0.0	0.000 000	0.000
	100 %	-30	1762 500 000	-0.5	0.000 000	0.000
	100 %	-20	1762 500 000	-0.4	0.000 000	0.000
	100 %	-10	1762 500 000	0.0	0.000 000	0.000
	100 %	0	1762 500 001	0.7	0.000 000	0.000
	100 %	+10	1762 500 000	-0.4	0.000 000	0.000
	100 %	+30	1762 500 001	0.2	0.000 000	0.000
	100 %	+40	1762 500 001	0.1	0.000 000	0.000
	100 %	+50	1762 500 000	-0.4	0.000 000	0.000
	Batt. Endpoint	+20	1762 500 000	-0.2	0.000 000	0.000

- ▣ BandWidth: 40 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1730.0	100 %	+20(Ref)	1730 000 000	0.0	0.000 000	0.000
	100 %	-30	1729 999 998	-1.9	0.000 000	-0.001
	100 %	-20	1729 999 999	-0.6	0.000 000	0.000
	100 %	-10	1729 999 999	-0.4	0.000 000	0.000
	100 %	0	1730 000 000	-0.1	0.000 000	0.000
	100 %	+10	1729 999 999	-0.4	0.000 000	0.000
	100 %	+30	1729 999 999	-0.9	0.000 000	-0.001
	100 %	+40	1729 999 998	-2.1	0.000 000	-0.001
	100 %	+50	1730 000 000	0.2	0.000 000	0.000
	Batt. Endpoint	+20	1729 999 999	-0.9	0.000 000	-0.001
1760.0	100 %	+20(Ref)	1760 000 001	0.0	0.000 000	0.000
	100 %	-30	1760 000 001	0.3	0.000 000	0.000
	100 %	-20	1760 000 001	-0.1	0.000 000	0.000
	100 %	-10	1760 000 001	0.4	0.000 000	0.000
	100 %	0	1760 000 001	0.6	0.000 000	0.000
	100 %	+10	1760 000 002	1.1	0.000 000	0.001
	100 %	+30	1760 000 001	0.7	0.000 000	0.000
	100 %	+40	1760 000 001	0.1	0.000 000	0.000
	100 %	+50	1760 000 001	0.3	0.000 000	0.000
	Batt. Endpoint	+20	1760 000 001	0.1	0.000 000	0.000

9. TEST DATA (ANT F)

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
1712.5		PI/2 BPSK	-21.90	11.46	9.60	2.00	H		0.081	19.06	1	12
		QPSK	-21.98	11.38	9.60	2.00	H		0.079	18.98		
		16-QAM	-23.00	10.36	9.60	2.00	H		0.063	17.96		
		64-QAM	-24.43	8.93	9.60	2.00	H		0.045	16.53		
		256-QAM	-26.25	7.11	9.60	2.00	H		0.030	14.71		
1745.0	Sub6 n66/ 5 MHz [15 kHz]	PI/2 BPSK	-21.01	12.59	9.75	2.04	H	< 1.00	0.107	20.30	1	12
		QPSK	-21.05	12.55	9.75	2.04	H		0.106	20.26		
		16-QAM	-22.12	11.48	9.75	2.04	H		0.083	19.19		
		64-QAM	-23.64	9.96	9.75	2.04	H		0.058	17.67		
		256-QAM	-25.54	8.06	9.75	2.04	H		0.038	15.77		
1777.5		PI/2 BPSK	-21.57	11.97	9.90	2.08	H		0.095	19.79	1	12
		QPSK	-21.65	11.89	9.90	2.08	H		0.094	19.71		
		16-QAM	-22.57	10.97	9.90	2.08	H		0.076	18.79		
		64-QAM	-24.08	9.46	9.90	2.08	H		0.054	17.28		
		256-QAM	-26.00	7.54	9.90	2.08	H		0.034	15.36		

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
1715.0		PI/2 BPSK	-21.91	11.45	9.60	2.00	H		0.080	19.05	1	50
		QPSK	-21.92	11.44	9.60	2.00	H		0.080	19.04		
		16-QAM	-22.89	10.47	9.60	2.00	H		0.064	18.07		
		64-QAM	-24.39	8.97	9.60	2.00	H		0.045	16.57		
		256-QAM	-26.23	7.13	9.60	2.00	H		0.030	14.73		
1745.0	Sub6 n66/ 10 MHz [15 kHz]	PI/2 BPSK	-21.40	12.20	9.75	2.04	H	< 1.00	0.098	19.91	1	1
		QPSK	-21.45	12.15	9.75	2.04	H		0.097	19.86		
		16-QAM	-22.33	11.27	9.75	2.04	H		0.079	18.98		
		64-QAM	-23.87	9.73	9.75	2.04	H		0.055	17.44		
		256-QAM	-25.86	7.74	9.75	2.04	H		0.035	15.45		
1775.0		PI/2 BPSK	-21.77	11.77	9.90	2.08	H		0.091	19.59	1	50
		QPSK	-21.83	11.71	9.90	2.08	H		0.090	19.53		
		16-QAM	-22.77	10.77	9.90	2.08	H		0.072	18.59		
		64-QAM	-24.24	9.30	9.90	2.08	H		0.052	17.12		
		256-QAM	-26.17	7.37	9.90	2.08	H		0.033	15.19		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit		EIRP		RB	
								W	W	dBm	Size	Offset	
1717.5		PI/2 BPSK	-21.55	11.81	9.60	2.00	H	< 1.00	0.087	19.41	1	77	
		QPSK	-21.56	11.80	9.60	2.00	H		0.087	19.40			
		16-QAM	-22.45	10.91	9.60	2.00	H		0.071	18.51			
		64-QAM	-24.08	9.28	9.60	2.00	H		0.049	16.88			
		256-QAM	-26.09	7.27	9.60	2.00	H		0.031	14.87			
1745.0	Sub6 n66/ 15 MHz [15 kHz]	PI/2 BPSK	-21.40	12.20	9.75	2.04	H	0.098	19.91	1	1		
		QPSK	-21.41	12.19	9.75	2.04	H	0.098	19.90				
		16-QAM	-22.43	11.17	9.75	2.04	H	0.077	18.88				
		64-QAM	-23.91	9.69	9.75	2.04	H	0.055	17.40				
		256-QAM	-25.91	7.69	9.75	2.04	H	0.035	15.40				
1772.5		PI/2 BPSK	-21.62	11.92	9.90	2.08	H	0.094	19.74	1	39		
		QPSK	-21.67	11.87	9.90	2.08	H	0.093	19.69				
		16-QAM	-22.71	10.83	9.90	2.08	H	0.073	18.65				
		64-QAM	-24.10	9.44	9.90	2.08	H	0.053	17.26				
		256-QAM	-26.13	7.41	9.90	2.08	H	0.033	15.23				

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	
1720.0		PI/2 BPSK	-21.44	12.06	9.60	2.00	H	< 1.00	0.093	19.66	1	104	
		QPSK	-21.45	12.05	9.60	2.00	H		0.092	19.65			
		16-QAM	-22.40	11.10	9.60	2.00	H		0.074	18.70			
		64-QAM	-23.82	9.68	9.60	2.00	H		0.054	17.28			
		256-QAM	-25.84	7.66	9.60	2.00	H		0.034	15.26			
1745.0	Sub6 n66/ 20 MHz [15 kHz]	PI/2 BPSK	-21.27	12.33	9.75	2.04	H	0.101	20.04	1	1		
		QPSK	-21.31	12.29	9.75	2.04	H	0.100	20.00				
		16-QAM	-22.25	11.35	9.75	2.04	H	0.081	19.06				
		64-QAM	-23.77	9.83	9.75	2.04	H	0.057	17.54				
		256-QAM	-25.80	7.80	9.75	2.04	H	0.036	15.51				
1770.0		PI/2 BPSK	-21.58	12.06	9.90	2.09	H	0.097	19.87	1	53		
		QPSK	-21.73	11.91	9.90	2.09	H	0.094	19.72				
		16-QAM	-22.75	10.89	9.90	2.09	H	0.074	18.70				
		64-QAM	-24.18	9.46	9.90	2.09	H	0.053	17.27				
		256-QAM	-26.11	7.53	9.90	2.09	H	0.034	15.34				

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	
1722.5		PI/2 BPSK	-21.31	12.25	9.60	2.01	H	< 1.00	0.096	19.84	1	131	
		QPSK	-21.37	12.19	9.60	2.01	H		0.095	19.78			
		16-QAM	-22.25	11.31	9.60	2.01	H		0.078	18.90			
		64-QAM	-23.71	9.85	9.60	2.01	H		0.055	17.44			
		256-QAM	-25.63	7.93	9.60	2.01	H		0.036	15.52			
1745.0	Sub6 n66/ 25 MHz [15 kHz]	PI/2 BPSK	-21.25	12.35	9.75	2.04	H	0.101	20.06	1	1		
		QPSK	-21.27	12.33	9.75	2.04	H	0.101	20.04				
		16-QAM	-22.24	11.36	9.75	2.04	H	0.081	19.07				
		64-QAM	-23.80	9.80	9.75	2.04	H	0.056	17.51				
		256-QAM	-25.75	7.85	9.75	2.04	H	0.036	15.56				
1767.5		PI/2 BPSK	-21.67	11.81	9.90	2.09	H	0.092	19.62	1	131		
		QPSK	-21.68	11.80	9.90	2.09	H	0.091	19.61				
		16-QAM	-22.63	10.85	9.90	2.09	H	0.074	18.66				
		64-QAM	-24.09	9.39	9.90	2.09	H	0.053	17.20				
		256-QAM	-26.03	7.45	9.90	2.09	H	0.034	15.26				

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	
1725.0		PI/2 BPSK	-21.37	12.19	9.60	2.01	H	< 1.00	0.095	19.78	1	158	
		QPSK	-21.41	12.15	9.60	2.01	H		0.094	19.74			
		16-QAM	-22.43	11.13	9.60	2.01	H		0.075	18.72			
		64-QAM	-23.87	9.69	9.60	2.01	H		0.054	17.28			
		256-QAM	-25.78	7.78	9.60	2.01	H		0.034	15.37			
1745.0	Sub6 n66/ 30 MHz [15 kHz]	PI/2 BPSK	-21.32	12.28	9.75	2.04	H	0.100	19.99	1	80		
		QPSK	-21.41	12.19	9.75	2.04	H	0.098	19.90				
		16-QAM	-22.39	11.21	9.75	2.04	H	0.078	18.92				
		64-QAM	-23.84	9.76	9.75	2.04	H	0.056	17.47				
		256-QAM	-25.99	7.61	9.75	2.04	H	0.034	15.32				
1765.0		PI/2 BPSK	-21.63	11.85	9.90	2.09	H	0.093	19.66	1	158		
		QPSK	-21.68	11.80	9.90	2.09	H	0.091	19.61				
		16-QAM	-22.66	10.82	9.90	2.09	H	0.073	18.63				
		64-QAM	-24.06	9.42	9.90	2.09	H	0.053	17.23				
		256-QAM	-25.97	7.51	9.90	2.09	H	0.034	15.32				

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	
1727.5		PI/2 BPSK	-21.34	12.22	9.60	2.01	H	< 1.00	0.096	19.81	1	94	
		QPSK	-21.41	12.15	9.60	2.01	H		0.094	19.74			
		16-QAM	-22.32	11.24	9.60	2.01	H		0.076	18.83			
		64-QAM	-23.78	9.78	9.60	2.01	H		0.055	17.37			
		256-QAM	-25.73	7.83	9.60	2.01	H		0.035	15.42			
1745.0	Sub6 n66/ 35 MHz [15 kHz]	PI/2 BPSK	-21.31	12.29	9.75	2.04	H	0.100	20.00	1	94		
		QPSK	-21.38	12.22	9.75	2.04	H	0.098	19.93				
		16-QAM	-22.45	11.15	9.75	2.04	H	0.077	18.86				
		64-QAM	-24.02	9.58	9.75	2.04	H	0.054	17.29				
		256-QAM	-25.98	7.62	9.75	2.04	H	0.034	15.33				
1762.5		PI/2 BPSK	-21.46	11.86	9.90	2.09	H	0.093	19.67	1	1		
		QPSK	-21.49	11.83	9.90	2.09	H	0.092	19.64				
		16-QAM	-22.47	10.85	9.90	2.09	H	0.073	18.66				
		64-QAM	-23.89	9.43	9.90	2.09	H	0.053	17.24				
		256-QAM	-25.85	7.47	9.90	2.09	H	0.034	15.28				

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	
1730.0		PI/2 BPSK	-21.34	12.27	9.60	2.01	H	< 1.00	0.097	19.86	1	108	
		QPSK	-21.35	12.26	9.60	2.01	H		0.097	19.85			
		16-QAM	-22.37	11.24	9.60	2.01	H		0.076	18.83			
		64-QAM	-23.98	9.63	9.60	2.01	H		0.053	17.22			
		256-QAM	-25.83	7.78	9.60	2.01	H		0.034	15.37			
1745.0	Sub6 n66/ 40 MHz [15 kHz]	PI/2 BPSK	-21.28	12.32	9.75	2.04	H	0.101	20.03	1	108		
		QPSK	-21.38	12.22	9.75	2.04	H	0.098	19.93				
		16-QAM	-22.37	11.23	9.75	2.04	H	0.078	18.94				
		64-QAM	-23.84	9.76	9.75	2.04	H	0.056	17.47				
		256-QAM	-25.92	7.68	9.75	2.04	H	0.035	15.39				
1760.0		PI/2 BPSK	-21.21	12.11	9.90	2.09	H	0.098	19.92	1	1		
		QPSK	-21.27	12.05	9.90	2.09	H	0.097	19.86				
		16-QAM	-22.35	10.97	9.90	2.09	H	0.076	18.78				
		64-QAM	-23.68	9.64	9.90	2.09	H	0.056	17.45				
		256-QAM	-25.66	7.66	9.90	2.09	H	0.035	15.47				

9.2 RADIATED SPURIOUS EMISSIONS

- ▣ NR Band: N66
- ▣ Bandwidth: 5 MHz
- ▣ Modulation: PI/2 BPSK
- ▣ Distance: 3 meters
- ▣ SCS: 15 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
342500 (1712.5)	3 425.00	-59.00	11.10	-59.95	2.96	V	-51.81	-13.00	1	12
	5 137.50	-61.41	10.80	-56.14	3.62	V	-48.96	-13.00		
	6 850.00	-64.59	10.80	-53.64	4.32	V	-47.16	-13.00		
349000 (1745.0)	3 490.00	-61.58	11.20	-63.02	3.00	V	-54.82	-13.00	1	12
	5 235.00	-61.36	11.10	-56.43	3.70	V	-49.03	-13.00		
	6 980.00	-64.83	10.90	-52.12	4.30	V	-45.52	-13.00		
355500 (1777.5)	3 555.00	-59.43	11.40	-61.40	3.02	V	-53.02	-13.00	1	12
	5 332.50	-62.04	11.40	-56.99	3.73	V	-49.32	-13.00		
	7 110.00	-64.29	10.50	-50.35	4.36	V	-44.21	-13.00		

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n66	5 MHz	1745.0	BPSK	25	0	5.11
			QPSK			5.40
			16-QAM			5.72
			64-QAM			5.92
			256-QAM			6.02
	10 MHz		BPSK	50		4.70
			QPSK			5.15
			16-QAM			5.59
			64-QAM			5.81
			256-QAM			5.96
	15 MHz		BPSK	75		4.12
			QPSK			5.03
			16-QAM			5.59
			64-QAM			5.69
			256-QAM			5.97
	20 MHz		BPSK	100		5.00
			QPSK			5.36
			16-QAM			5.73
			64-QAM			5.88
			256-QAM			6.07
	25 MHz		BPSK	128		4.12
			QPSK			5.12
			16-QAM			5.70
			64-QAM			5.83
			256-QAM			5.99
	30 MHz		BPSK	160		4.20
			QPSK			5.19
			16-QAM			5.75
			64-QAM			5.91
			256-QAM			6.05
	35 MHz		BPSK	187		4.30
			QPSK			5.06
16-QAM		5.63				
64-QAM		5.77				
256-QAM		6.01				
40 MHz	BPSK	216	4.11			
	QPSK		5.13			
	16-QAM		5.67			
	64-QAM		5.82			
	256-QAM		6.00			

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 244 ~ 283.

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n66	5 MHz	1745.0	BPSK	25	0	4.5514
			QPSK			4.5259
			16-QAM			4.5315
			64-QAM			4.5233
			256-QAM			4.5425
	10 MHz		BPSK	50		9.0451
			QPSK			9.0118
			16-QAM			8.9633
			64-QAM			9.0097
			256-QAM			8.9978
	15 MHz		BPSK	75		13.476
			QPSK			13.452
			16-QAM			13.502
			64-QAM			13.470
			256-QAM			13.486
	20 MHz		BPSK	100		17.949
			QPSK			17.976
			16-QAM			17.919
			64-QAM			17.962
			256-QAM			17.934
	25 MHz		BPSK	128		23.014
			QPSK			23.061
			16-QAM			23.125
			64-QAM			23.112
			256-QAM			23.007
	30 MHz		BPSK	160		28.894
			QPSK			28.854
			16-QAM			28.775
			64-QAM			28.904
			256-QAM			28.900
	35 MHz		BPSK	187		32.408
			QPSK			32.415
16-QAM		32.417				
64-QAM		32.423				
256-QAM		32.448				
40 MHz	BPSK	216	38.898			
	QPSK		38.839			
	16-QAM		38.874			
	64-QAM		38.892			
	256-QAM		38.962			

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 284 ~ 323.

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 n66	5	1712.5	3.7653	29.400	-69.480	-40.080	-13.00
		1745.0	7.9985	30.015	-70.688	-40.673	
		1777.5	4.0015	29.400	-70.634	-41.234	
	10	1715.0	3.9821	29.400	-70.896	-41.496	
		1745.0	8.2727	30.015	-69.977	-39.962	
		1775.0	3.8076	29.400	-69.866	-40.466	
	15	1717.5	9.6924	30.015	-70.931	-40.916	
		1745.0	8.8435	30.015	-70.575	-40.560	
		1772.5	4.0683	29.400	-71.123	-41.723	
	20	1720.0	3.7558	29.400	-71.073	-41.673	
		1745.0	5.2219	30.015	-71.071	-41.056	
		1770.0	4.5459	29.400	-70.648	-41.248	
	25	1722.5	8.3166	30.015	-71.017	-41.002	
		1745.0	5.1925	30.015	-70.634	-40.619	
		1767.5	5.2378	30.015	-70.322	-40.307	
	30	1725.0	8.2607	30.015	-70.967	-40.952	
		1745.0	9.6934	30.015	-70.304	-40.289	
		1765.0	4.8934	29.400	-70.337	-40.937	
	35	1727.5	3.7443	29.400	-70.586	-41.186	
		1745.0	82642	30.015	-70.995	-40.980	
		1762.5	6.0200	30.015	-70.587	-40.572	
	40	1730.0	4.0265	30.015	-71.088	-41.073	
		1745.0	7.9796	30.015	-70.628	-40.613	
		1760.0	4.0130	29.400	-70.983	-41.583	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 324 ~ 371.
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Ext. Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	26.694
1 – 5	29.400
5 – 10	30.015
10 – 15	30.540
15 – 20	30.913
Above 20	31.555

8.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 372 ~ 419.

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

- ▣ BandWidth: 5 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1712.5	100 %	+20(Ref)	1712 500 000	0.0	0.000 000	0.000
	100 %	-30	1712 500 000	-0.1	0.000 000	0.000
	100 %	-20	1712 500 001	0.6	0.000 000	0.000
	100 %	-10	1712 500 000	0.1	0.000 000	0.000
	100 %	0	1712 499 999	-0.5	0.000 000	0.000
	100 %	+10	1712 500 000	0.0	0.000 000	0.000
	100 %	+30	1712 500 000	-0.3	0.000 000	0.000
	100 %	+40	1712 500 000	0.0	0.000 000	0.000
	100 %	+50	1712 500 000	-0.1	0.000 000	0.000
	Batt. Endpoint	+20	1712 500 000	0.3	0.000 000	0.000
1777.5	100 %	+20(Ref)	1777 500 001	0.0	0.000 000	0.000
	100 %	-30	1777 500 000	-0.8	0.000 000	0.000
	100 %	-20	1777 500 000	-0.8	0.000 000	0.000
	100 %	-10	1777 500 001	0.5	0.000 000	0.000
	100 %	0	1777 500 000	-0.5	0.000 000	0.000
	100 %	+10	1777 500 000	-0.6	0.000 000	0.000
	100 %	+30	1777 500 001	-0.1	0.000 000	0.000
	100 %	+40	1777 500 001	0.4	0.000 000	0.000
	100 %	+50	1777 500 000	-0.7	0.000 000	0.000
	Batt. Endpoint	+20	1777 500 001	0.1	0.000 000	0.000

- ▣ BandWidth: 10 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1715.0	100 %	+20(Ref)	1715 000 000	0.0	0.000 000	0.000
	100 %	-30	1714 999 999	-0.4	0.000 000	0.000
	100 %	-20	1715 000 000	0.1	0.000 000	0.000
	100 %	-10	1715 000 000	-0.1	0.000 000	0.000
	100 %	0	1715 000 000	0.1	0.000 000	0.000
	100 %	+10	1715 000 000	0.7	0.000 000	0.000
	100 %	+30	1715 000 000	-0.2	0.000 000	0.000
	100 %	+40	1714 999 999	-0.8	0.000 000	0.000
	100 %	+50	1715 000 000	0.2	0.000 000	0.000
	Batt. Endpoint	+20	1715 000 000	-0.1	0.000 000	0.000
1775.0	100 %	+20(Ref)	1775 000 000	0.0	0.000 000	0.000
	100 %	-30	1775 000 001	0.6	0.000 000	0.000
	100 %	-20	1775 000 001	0.7	0.000 000	0.000
	100 %	-10	1775 000 000	0.0	0.000 000	0.000
	100 %	0	1775 000 002	1.5	0.000 000	0.001
	100 %	+10	1775 000 001	0.4	0.000 000	0.000
	100 %	+30	1775 000 001	1.0	0.000 000	0.001
	100 %	+40	1775 000 001	0.4	0.000 000	0.000
	100 %	+50	1775 000 001	0.6	0.000 000	0.000
	Batt. Endpoint	+20	1775 000 001	1.0	0.000 000	0.001

- ▣ BandWidth: 15 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1717.5	100 %	+20(Ref)	1717 500 000	0.0	0.000 000	0.000
	100 %	-30	1717 500 000	0.0	0.000 000	0.000
	100 %	-20	1717 500 000	0.4	0.000 000	0.000
	100 %	-10	1717 499 999	-0.4	0.000 000	0.000
	100 %	0	1717 500 000	-0.2	0.000 000	0.000
	100 %	+10	1717 500 000	-0.1	0.000 000	0.000
	100 %	+30	1717 499 999	-0.8	0.000 000	0.000
	100 %	+40	1717 500 000	-0.2	0.000 000	0.000
	100 %	+50	1717 499 999	-0.6	0.000 000	0.000
	Batt. Endpoint	+20	1717 500 000	-0.2	0.000 000	0.000
1772.5	100 %	+20(Ref)	1772 500 000	0.0	0.000 000	0.000
	100 %	-30	1772 500 001	0.5	0.000 000	0.000
	100 %	-20	1772 500 001	0.5	0.000 000	0.000
	100 %	-10	1772 500 001	0.5	0.000 000	0.000
	100 %	0	1772 500 000	0.1	0.000 000	0.000
	100 %	+10	1772 500 001	0.7	0.000 000	0.000
	100 %	+30	1772 500 001	0.7	0.000 000	0.000
	100 %	+40	1772 500 000	0.1	0.000 000	0.000
	100 %	+50	1772 500 001	0.6	0.000 000	0.000
	Batt. Endpoint	+20	1772 500 000	-0.5	0.000 000	0.000

- ▣ BandWidth: 20 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1720.0	100 %	+20(Ref)	1720 000 001	0.0	0.000 000	0.000
	100 %	-30	1720 000 002	0.8	0.000 000	0.000
	100 %	-20	1720 000 001	0.3	0.000 000	0.000
	100 %	-10	1720 000 000	-0.4	0.000 000	0.000
	100 %	0	1720 000 001	0.0	0.000 000	0.000
	100 %	+10	1720 000 001	0.2	0.000 000	0.000
	100 %	+30	1720 000 001	0.2	0.000 000	0.000
	100 %	+40	1720 000 001	0.6	0.000 000	0.000
	100 %	+50	1720 000 001	-0.1	0.000 000	0.000
	Batt. Endpoint	+20	1720 000 001	0.7	0.000 000	0.000
1770.0	100 %	+20(Ref)	1769 999 999	0.0	0.000 000	0.000
	100 %	-30	1769 999 999	-0.5	0.000 000	0.000
	100 %	-20	1769 999 999	-0.8	0.000 000	0.000
	100 %	-10	1769 999 999	0.1	0.000 000	0.000
	100 %	0	1769 999 999	-0.2	0.000 000	0.000
	100 %	+10	1769 999 998	-0.9	0.000 000	0.000
	100 %	+30	1769 999 998	-1.4	0.000 000	-0.001
	100 %	+40	1769 999 998	-0.9	0.000 000	0.000
	100 %	+50	1769 999 998	-1.1	0.000 000	-0.001
	Batt. Endpoint	+20	1769 999 999	-0.4	0.000 000	0.000

- ▣ BandWidth: 25 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1722.5	100 %	+20(Ref)	1722 000 000	0.0	0.000 000	0.000
	100 %	-30	1722 000 000	0.3	0.000 000	0.000
	100 %	-20	1721 999 999	-0.2	0.000 000	0.000
	100 %	-10	1721 999 999	-0.7	0.000 000	0.000
	100 %	0	1721 999 999	-0.8	0.000 000	0.000
	100 %	+10	1721 999 999	-1.0	0.000 000	-0.001
	100 %	+30	1722 000 000	0.0	0.000 000	0.000
	100 %	+40	1722 000 000	0.1	0.000 000	0.000
	100 %	+50	1721 999 999	-0.8	0.000 000	0.000
	Batt. Endpoint	+20	1722 000 000	0.3	0.000 000	0.000
1767.5	100 %	+20(Ref)	1767 500 000	0.0	0.000 000	0.000
	100 %	-30	1767 500 001	0.9	0.000 000	0.000
	100 %	-20	1767 499 999	-0.3	0.000 000	0.000
	100 %	-10	1767 500 000	0.3	0.000 000	0.000
	100 %	0	1767 499 999	-0.9	0.000 000	-0.001
	100 %	+10	1767 499 999	-0.7	0.000 000	0.000
	100 %	+30	1767 499 999	-0.4	0.000 000	0.000
	100 %	+40	1767 499 999	-0.5	0.000 000	0.000
	100 %	+50	1767 499 999	-0.7	0.000 000	0.000
	Batt. Endpoint	+20	1767 499 999	-1.2	0.000 000	-0.001

- ▣ BandWidth: 30 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.330 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1725.0	100 %	+20(Ref)	1725 000 000	0.0	0.000 000	0.000
	100 %	-30	1725 000 000	0.1	0.000 000	0.000
	100 %	-20	1725 000 001	0.4	0.000 000	0.000
	100 %	-10	1725 000 001	0.6	0.000 000	0.000
	100 %	0	1725 000 000	0.0	0.000 000	0.000
	100 %	+10	1725 000 000	-0.2	0.000 000	0.000
	100 %	+30	1725 000 000	-0.1	0.000 000	0.000
	100 %	+40	1725 000 001	0.6	0.000 000	0.000
	100 %	+50	1725 000 000	-0.4	0.000 000	0.000
	Batt. Endpoint	+20	1725 000 000	-0.5	0.000 000	0.000
1765.0	100 %	+20(Ref)	1765 000 000	0.0	0.000 000	0.000
	100 %	-30	1765 000 001	0.8	0.000 000	0.000
	100 %	-20	1765 000 000	0.0	0.000 000	0.000
	100 %	-10	1765 000 001	0.5	0.000 000	0.000
	100 %	0	1765 000 000	0.1	0.000 000	0.000
	100 %	+10	1765 000 001	0.4	0.000 000	0.000
	100 %	+30	1765 000 000	0.2	0.000 000	0.000
	100 %	+40	1765 000 001	0.7	0.000 000	0.000
	100 %	+50	1765 000 000	0.1	0.000 000	0.000
	Batt. Endpoint	+20	1765 000 001	0.6	0.000 000	0.000

- ▣ BandWidth: 35 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

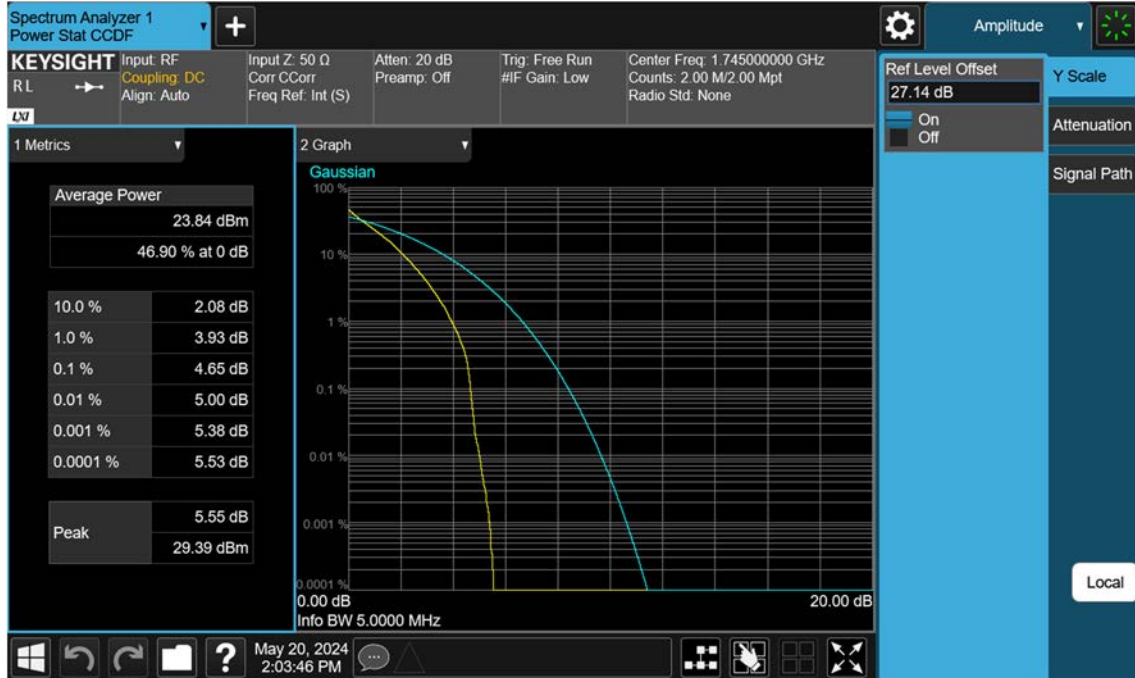
Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1727.5	100 %	+20(Ref)	1727 499 999	0.0	0.000 000	0.000
	100 %	-30	1727 499 999	-0.8	0.000 000	0.000
	100 %	-20	1727 499 999	-0.4	0.000 000	0.000
	100 %	-10	1727 499 999	0.0	0.000 000	0.000
	100 %	0	1727 499 999	-0.7	0.000 000	0.000
	100 %	+10	1727 500 000	0.3	0.000 000	0.000
	100 %	+30	1727 500 000	0.2	0.000 000	0.000
	100 %	+40	1727 499 999	-0.5	0.000 000	0.000
	100 %	+50	1727 499 999	0.0	0.000 000	0.000
	Batt. Endpoint	+20	1727 499 999	-0.6	0.000 000	0.000
1762.5	100 %	+20(Ref)	1762 499 999	0.0	0.000 000	0.000
	100 %	-30	1762 499 998	-1.6	0.000 000	-0.001
	100 %	-20	1762 499 998	-0.8	0.000 000	0.000
	100 %	-10	1762 499 999	0.0	0.000 000	0.000
	100 %	0	1762 499 998	-1.0	0.000 000	-0.001
	100 %	+10	1762 499 998	-0.9	0.000 000	-0.001
	100 %	+30	1762 499 998	-1.4	0.000 000	-0.001
	100 %	+40	1762 499 999	-0.6	0.000 000	0.000
	100 %	+50	1762 499 999	-0.4	0.000 000	0.000
	Batt. Endpoint	+20	1762 499 998	-0.8	0.000 000	0.000

- ▣ BandWidth: 40 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

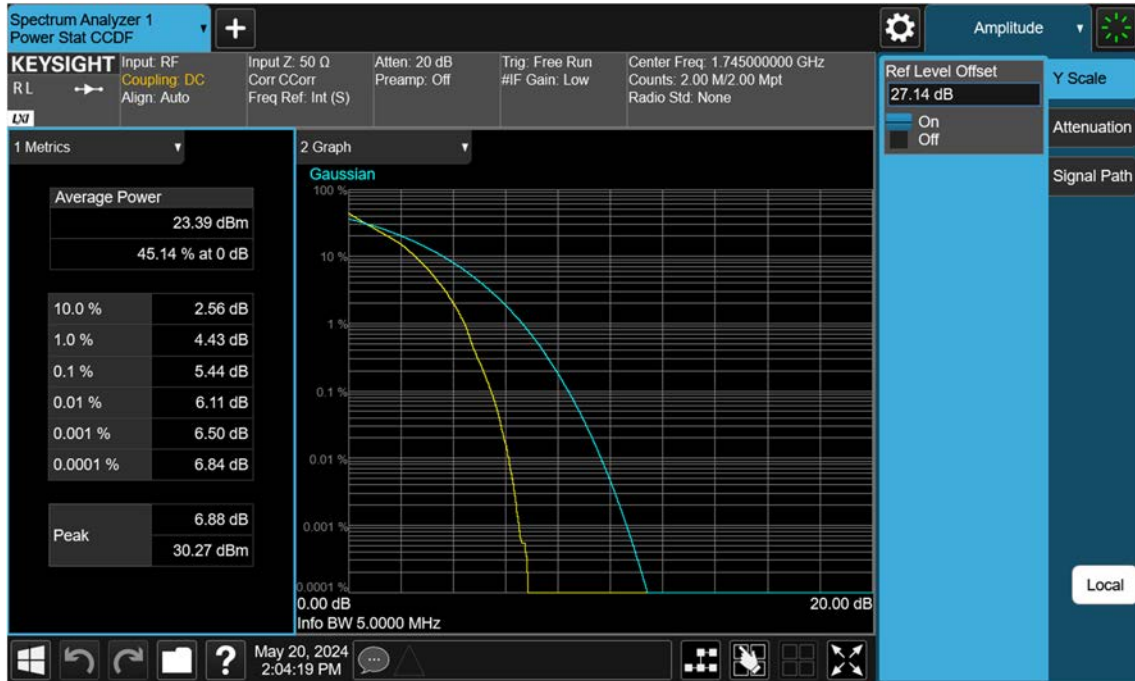
Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
1730.0	100 %	+20(Ref)	1730 000 000	0.0	0.000 000	0.000
	100 %	-30	1730 000 001	0.6	0.000 000	0.000
	100 %	-20	1730 000 000	0.1	0.000 000	0.000
	100 %	-10	1730 000 000	-0.4	0.000 000	0.000
	100 %	0	1729 999 999	-0.6	0.000 000	0.000
	100 %	+10	1730 000 000	0.4	0.000 000	0.000
	100 %	+30	1729 999 998	-1.6	0.000 000	-0.001
	100 %	+40	1730 000 000	-0.3	0.000 000	0.000
	100 %	+50	1730 000 000	-0.1	0.000 000	0.000
	Batt. Endpoint	+20	1730 000 000	-0.1	0.000 000	0.000
1760.0	100 %	+20(Ref)	1760 000 000	0.0	0.000 000	0.000
	100 %	-30	1759 999 999	-0.2	0.000 000	0.000
	100 %	-20	1760 000 000	0.4	0.000 000	0.000
	100 %	-10	1760 000 000	0.8	0.000 000	0.000
	100 %	0	1759 999 999	-0.5	0.000 000	0.000
	100 %	+10	1760 000 000	0.0	0.000 000	0.000
	100 %	+30	1759 999 999	-0.4	0.000 000	0.000
	100 %	+40	1760 000 000	0.3	0.000 000	0.000
	100 %	+50	1760 000 000	0.2	0.000 000	0.000
	Batt. Endpoint	+20	1759 999 999	-0.5	0.000 000	0.000

10. TEST PLOTS (ANT A)

5 M_PAR_Mid_BPSK_FullRB



5 M_PAR_Mid_QPSK_FullRB



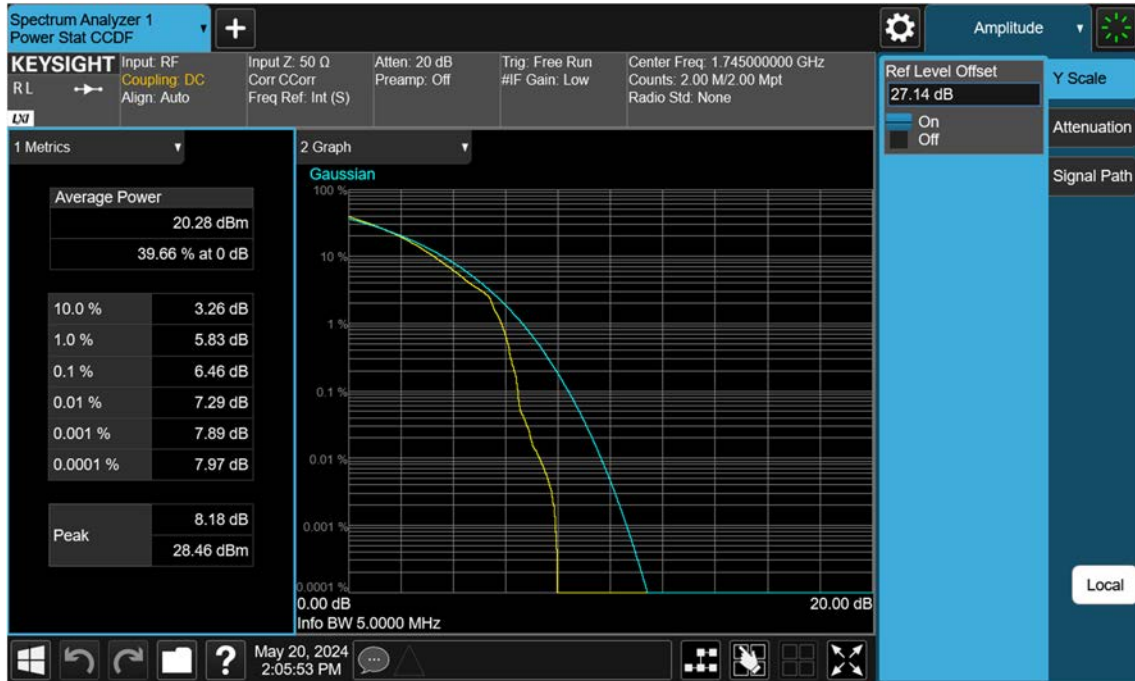
5 M_PAR_Mid_16QAM_FullRB



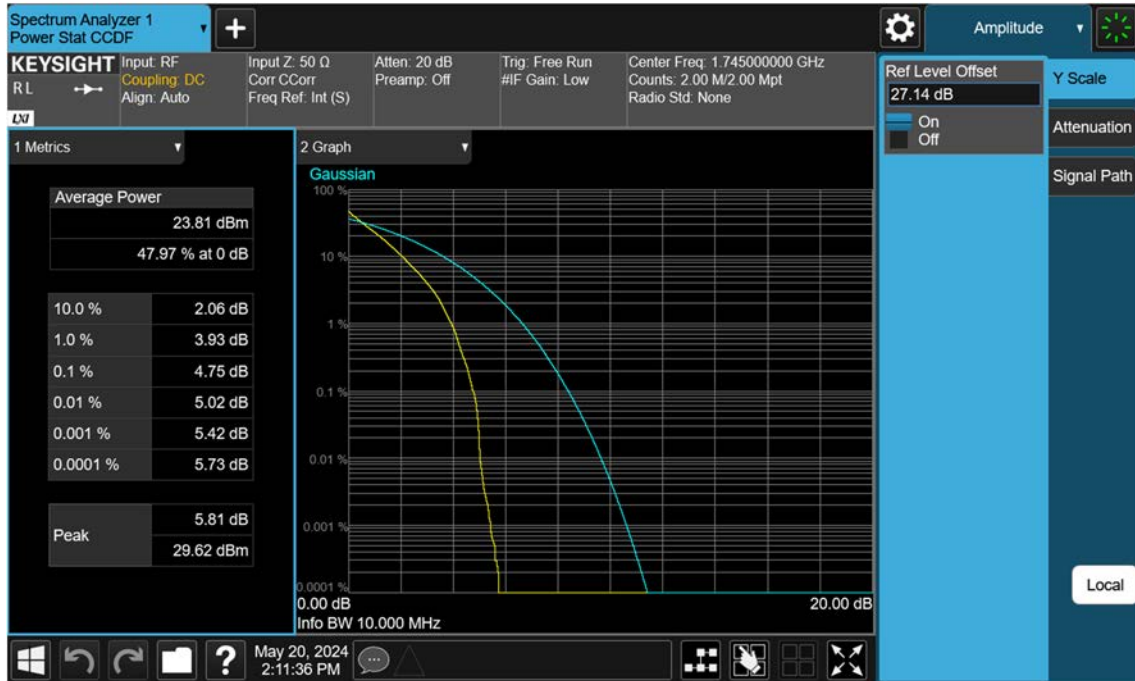
5 M_PAR_Mid_64QAM_FullRB



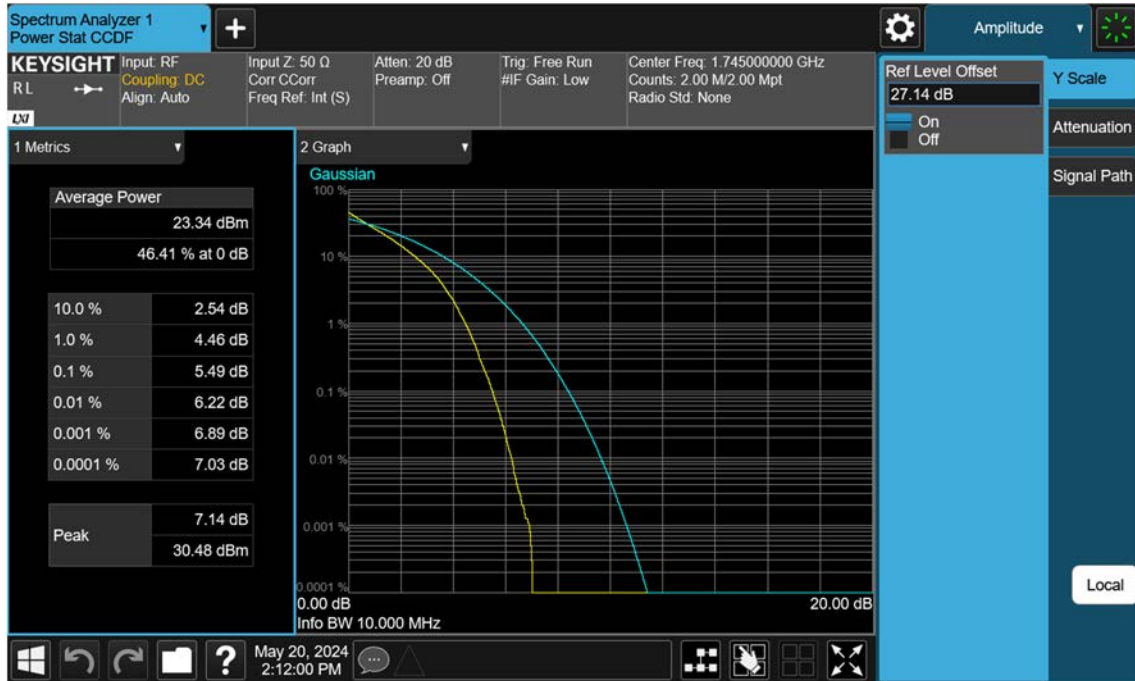
5 M_PAR_Mid_256QAM_FullRB



10 M_PAR_Mid_BPSK_FullRB



10 M_PAR_Mid_QPSK_FullRB



10 M_PAR_Mid_16QAM_FullRB



10 M_PAR_Mid_64QAM_FullRB



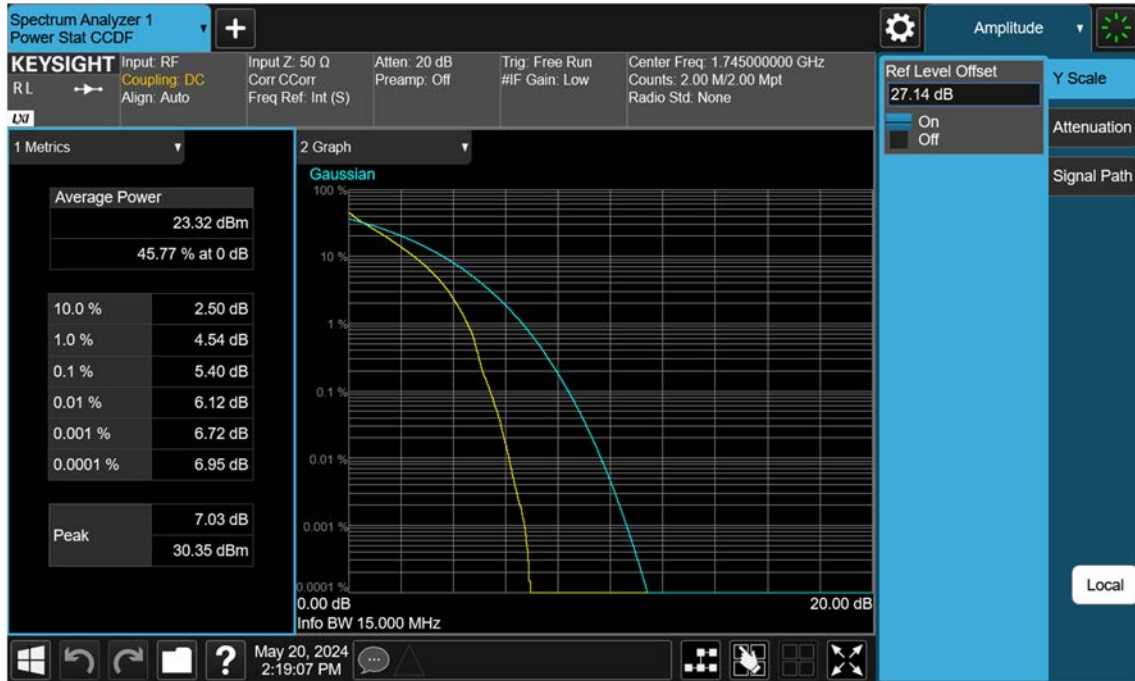
10 M_PAR_Mid_256QAM_FullRB



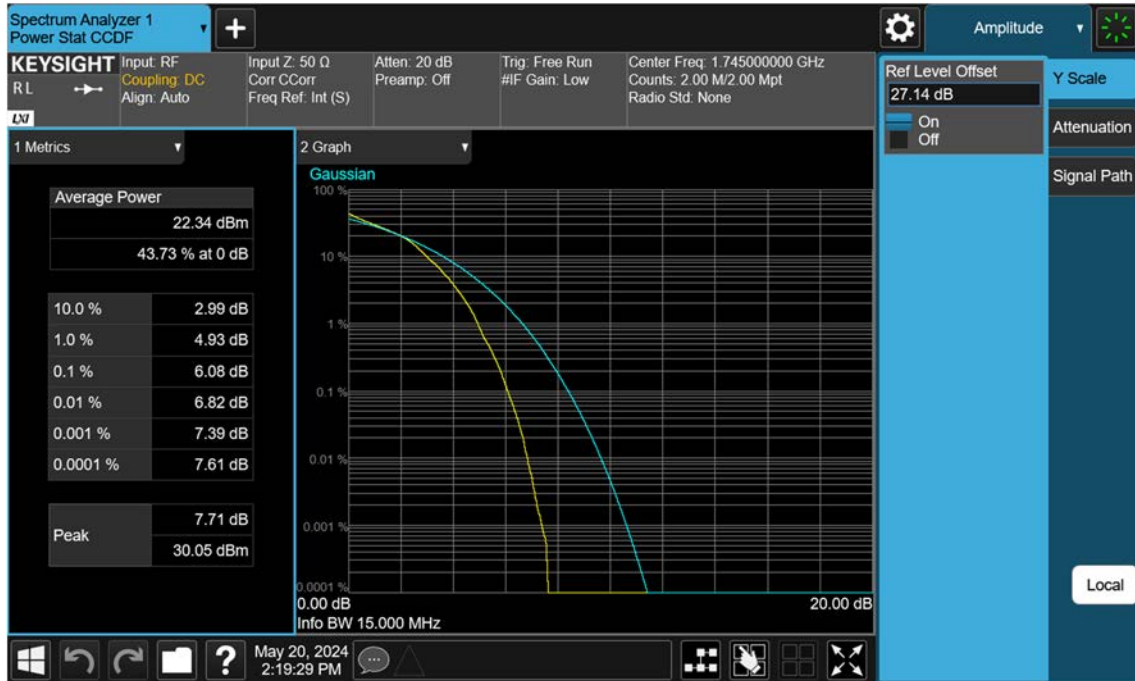
15 M_PAR_Mid_BPSK_FullRB



15 M_PAR_Mid_QPSK_FullRB



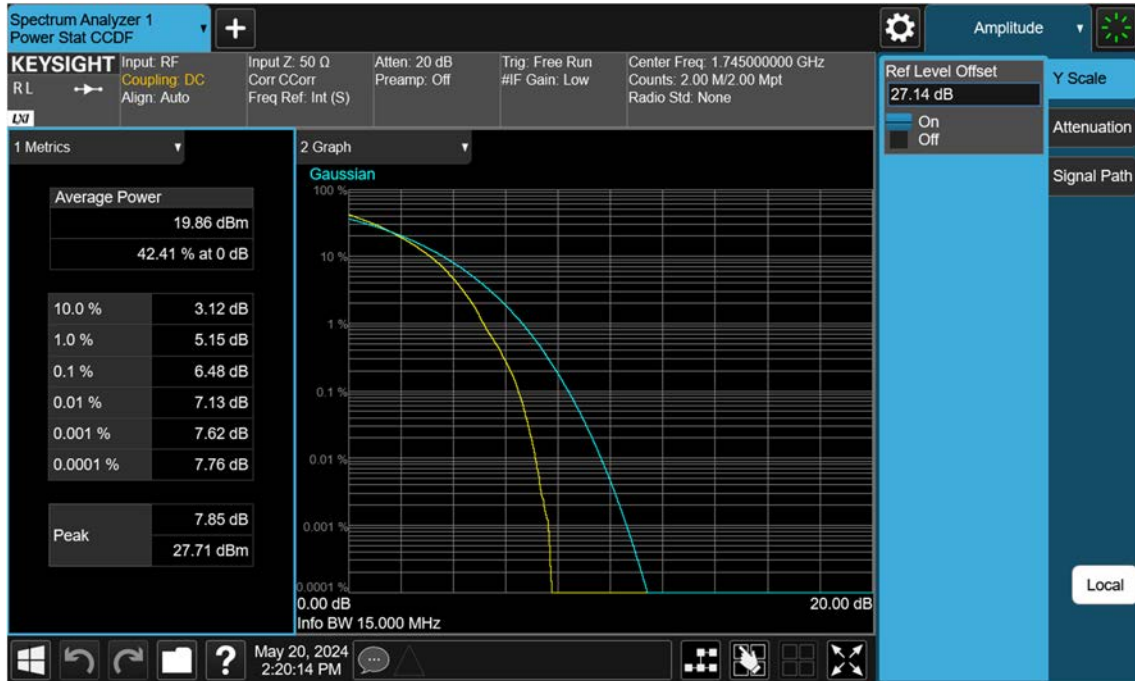
15 M_PAR_Mid_16QAM_FullRB



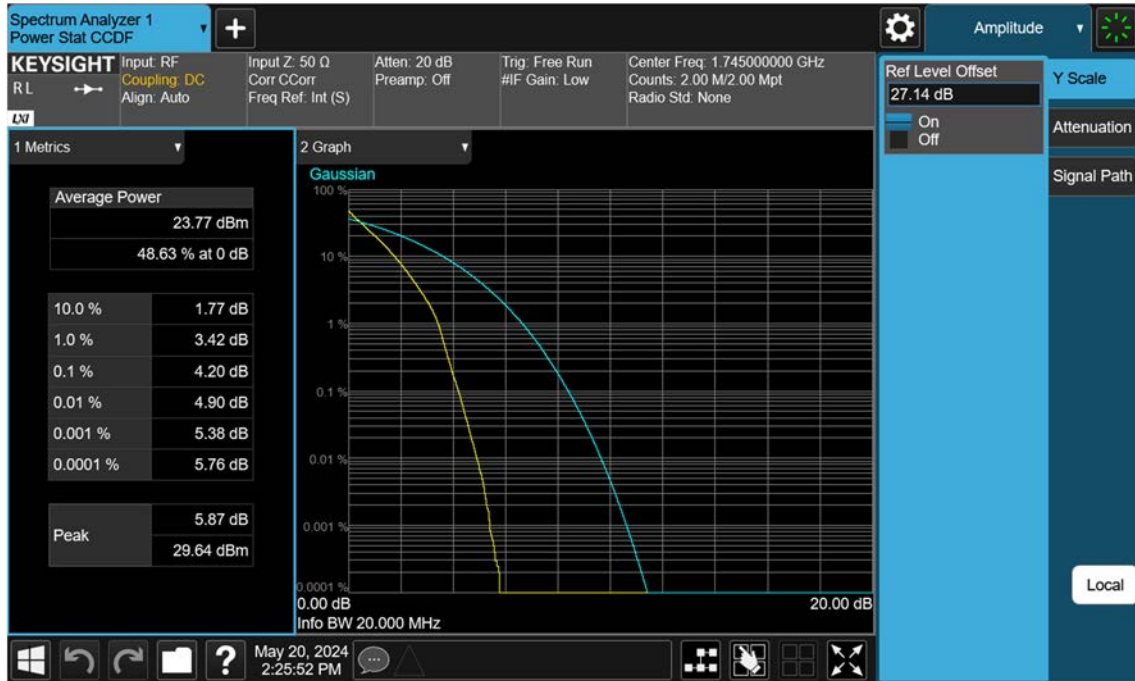
15 M_PAR_Mid_64QAM_FullRB



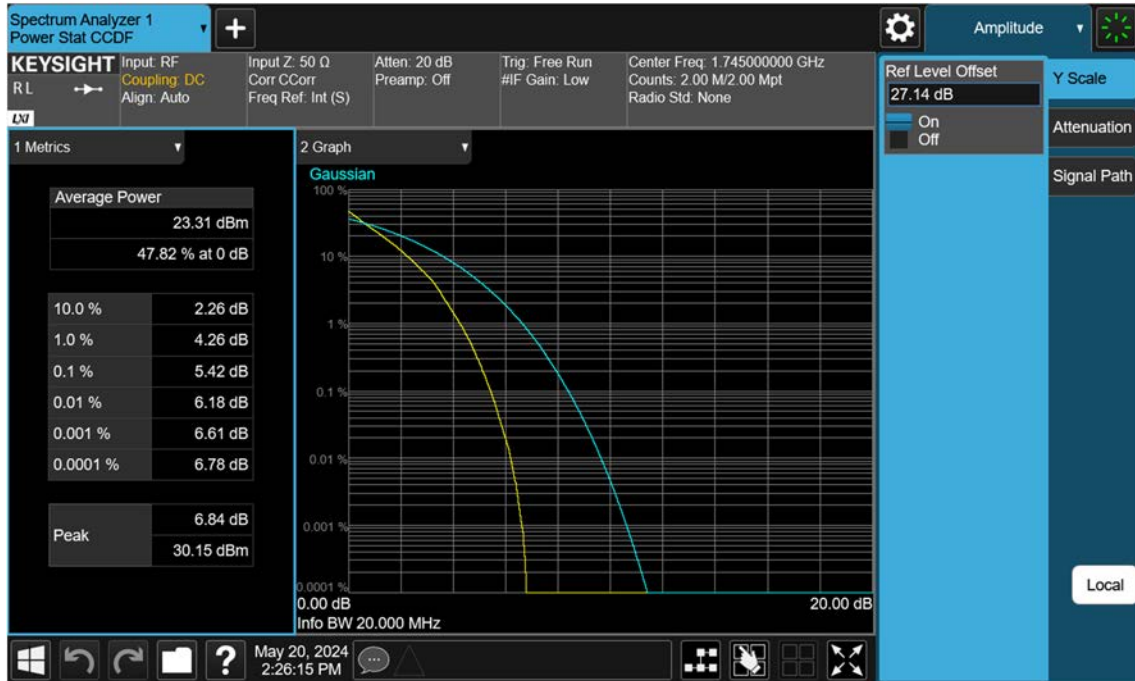
15 M_PAR_Mid_256QAM_FullRB



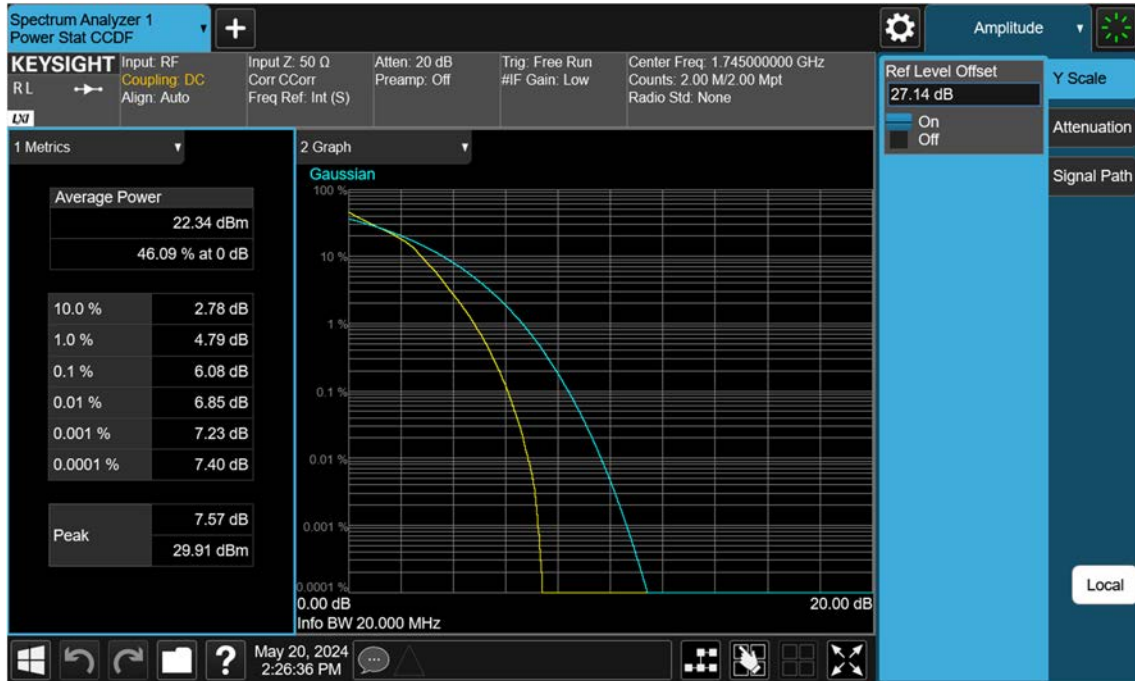
20 M_PAR_Mid_BPSK_FullRB



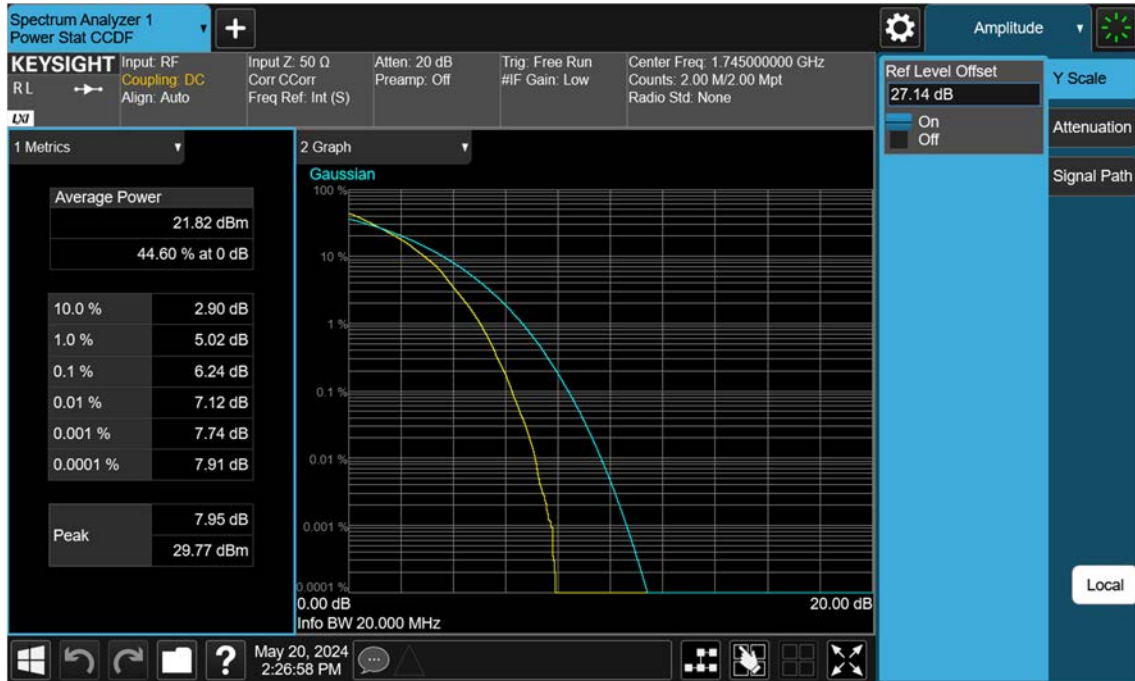
20 M_PAR_Mid_QPSK_FullRB



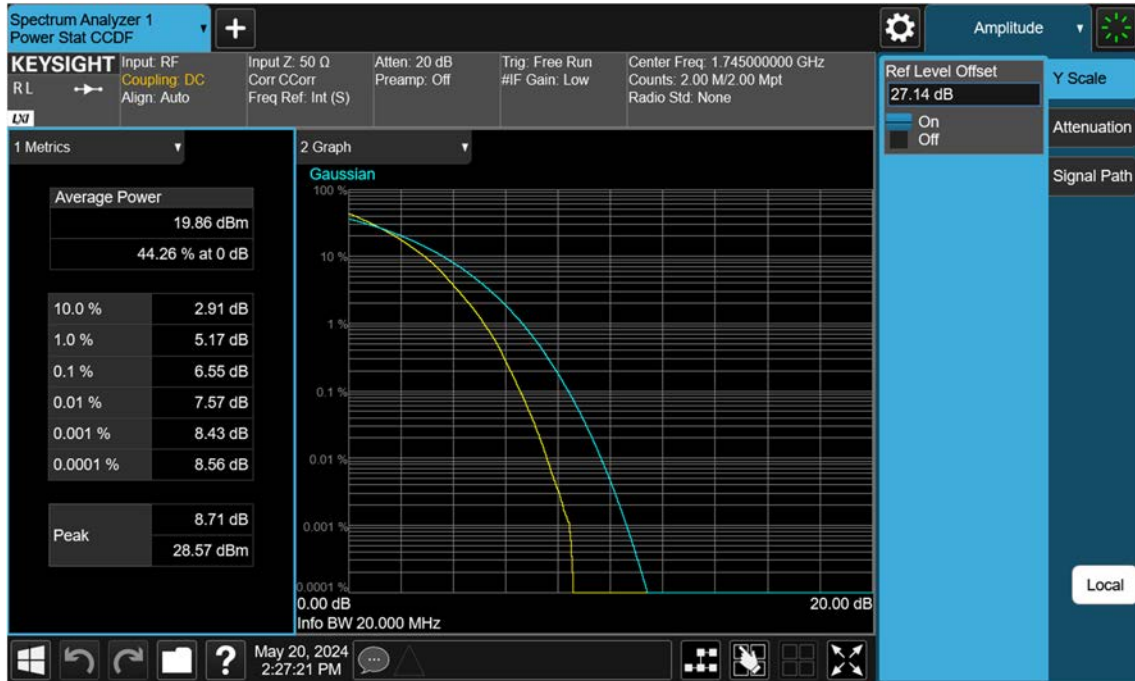
20 M_PAR_Mid_16QAM_FullRB



20 M_PAR_Mid_64QAM_FullRB



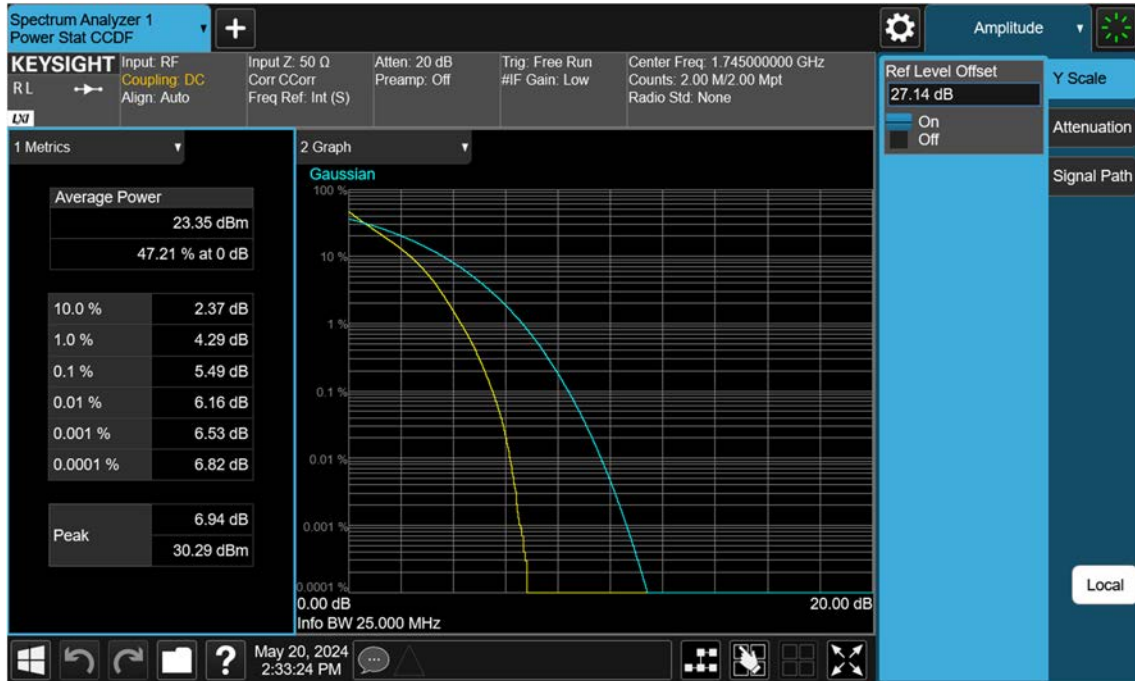
20 M_PAR_Mid_256QAM_FullRB



25 M_PAR_Mid_BPSK_FullRB



25 M_PAR_Mid_QPSK_FullRB



25 M_PAR_Mid_16QAM_FullRB



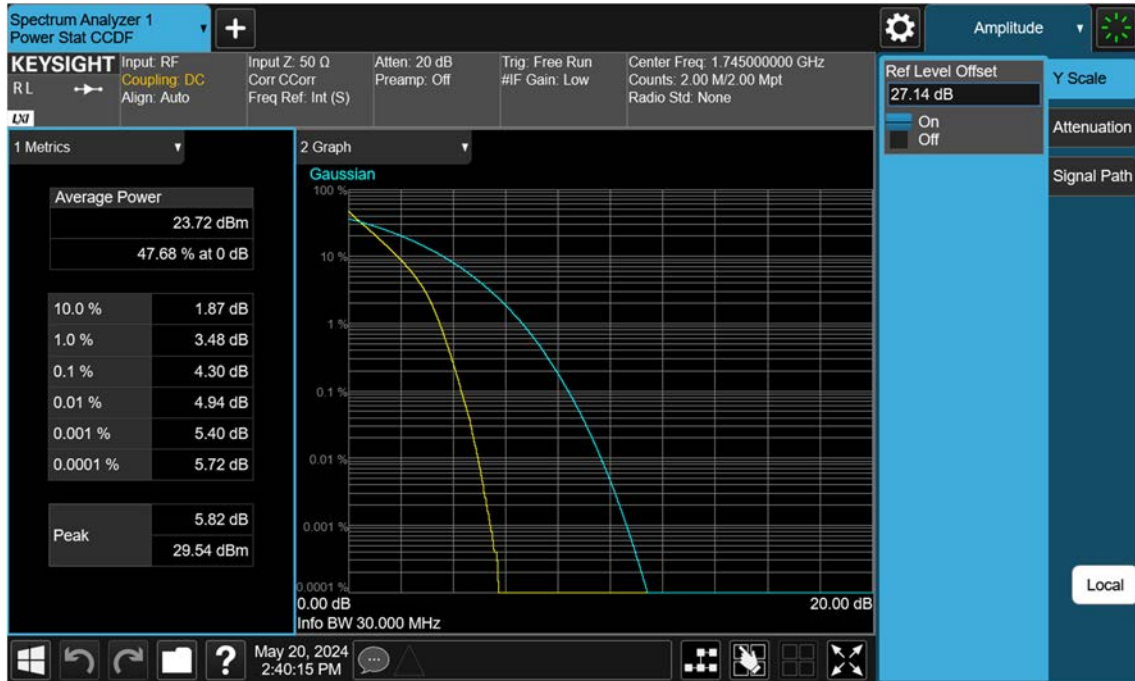
25 M_PAR_Mid_64QAM_FullRB



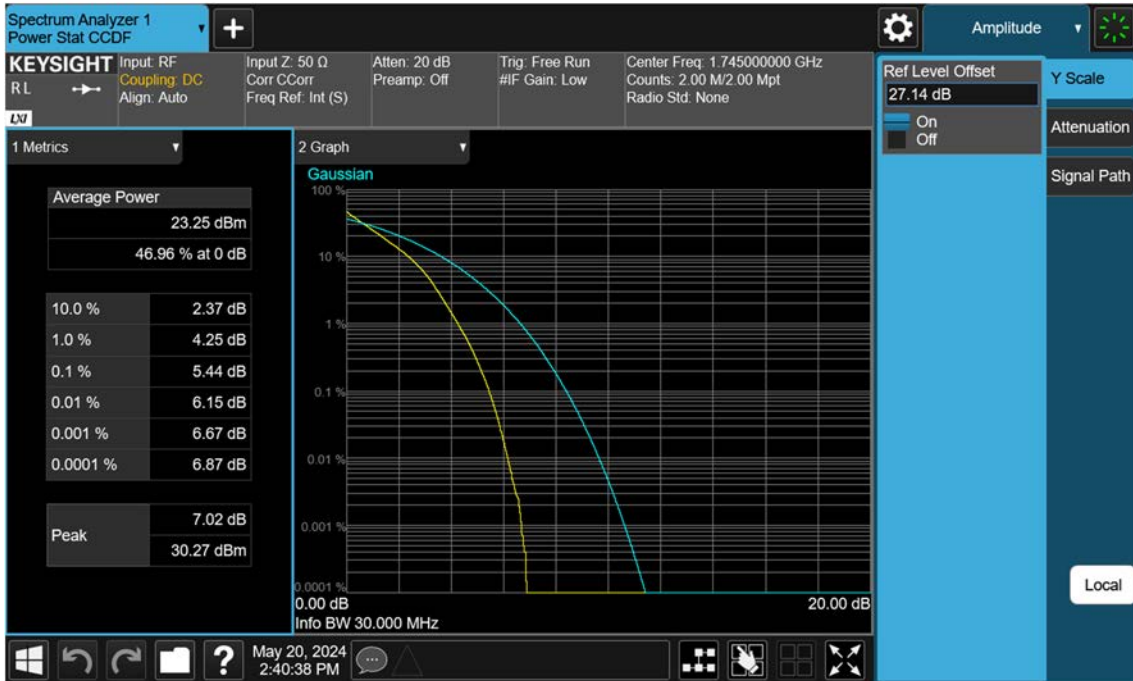
25 M_PAR_Mid_256QAM_FullRB



30 M_PAR_Mid_BPSK_FullRB



30 M_PAR_Mid_QPSK_FullRB



30 M_PAR_Mid_16QAM_FullRB



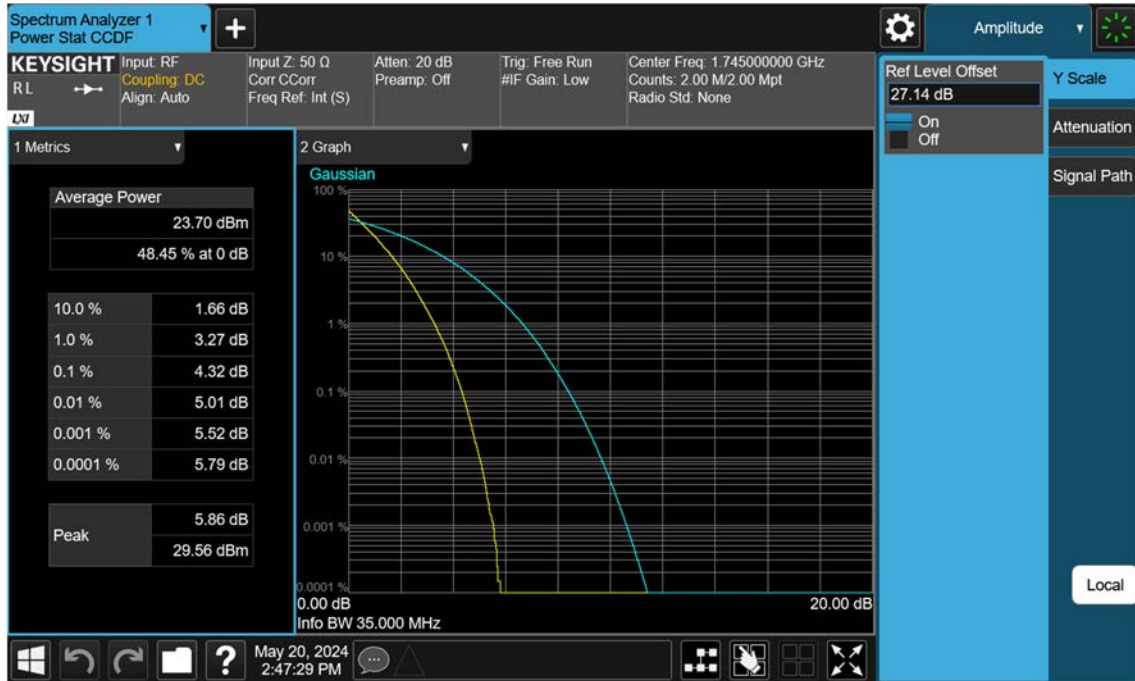
30 M_PAR_Mid_64QAM_FullRB



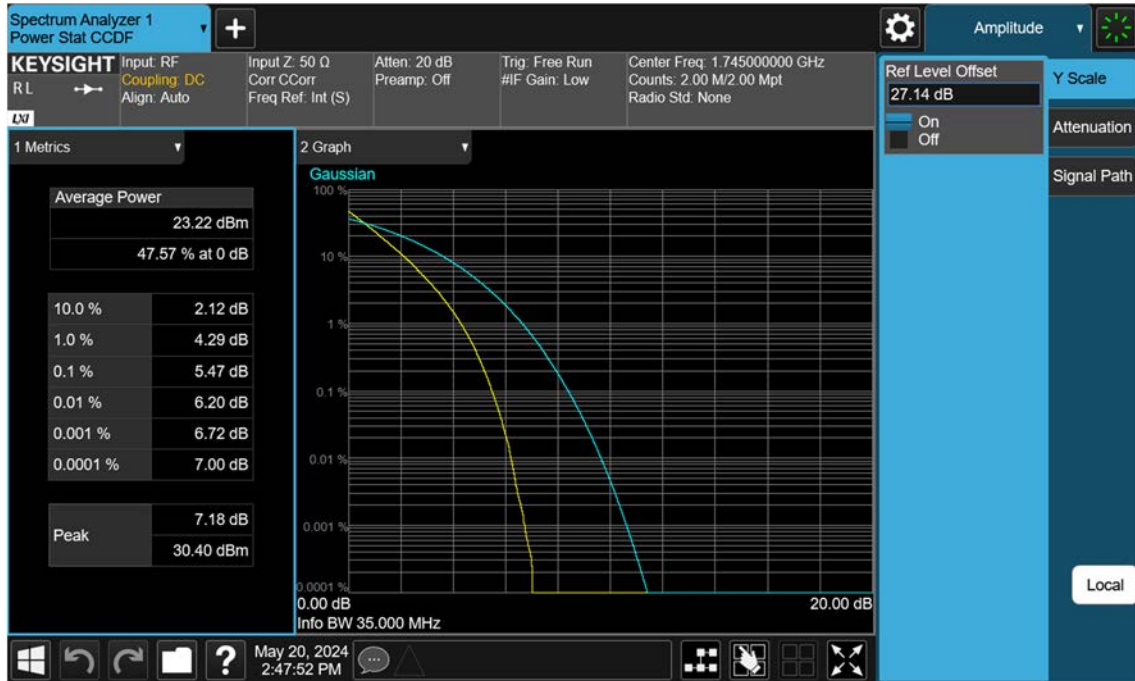
30 M_PAR_Mid_256QAM_FullRB



35 M_PAR_Mid_BPSK_FullRB



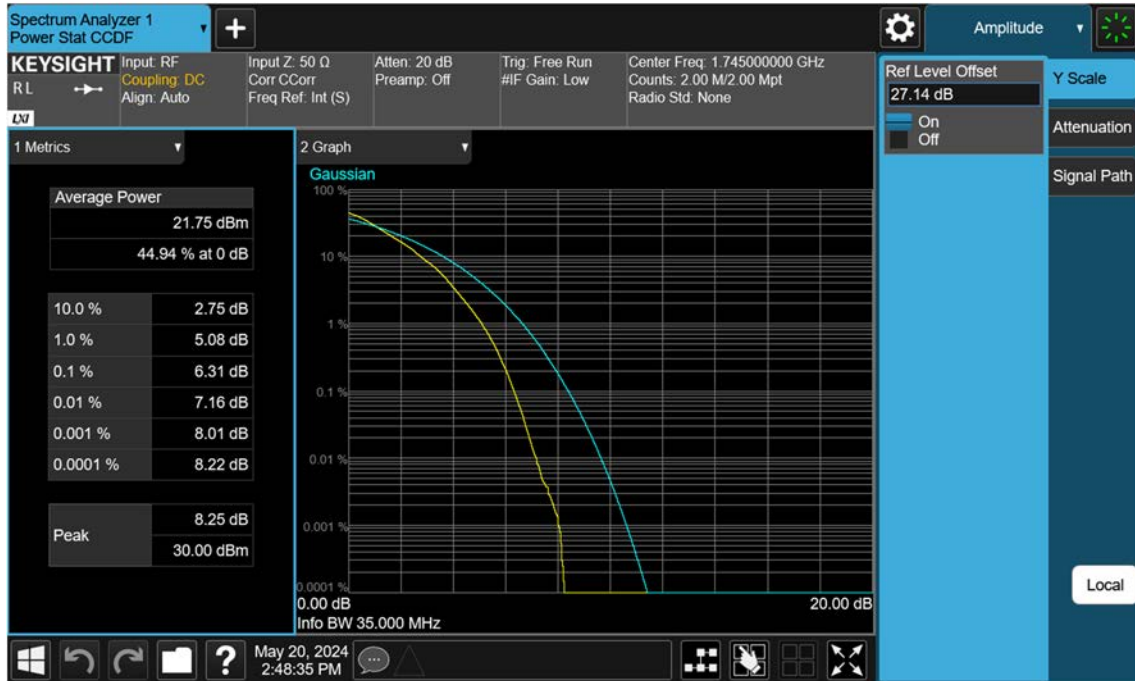
35 M_PAR_Mid_QPSK_FullRB



35 M_PAR_Mid_16QAM_FullRB



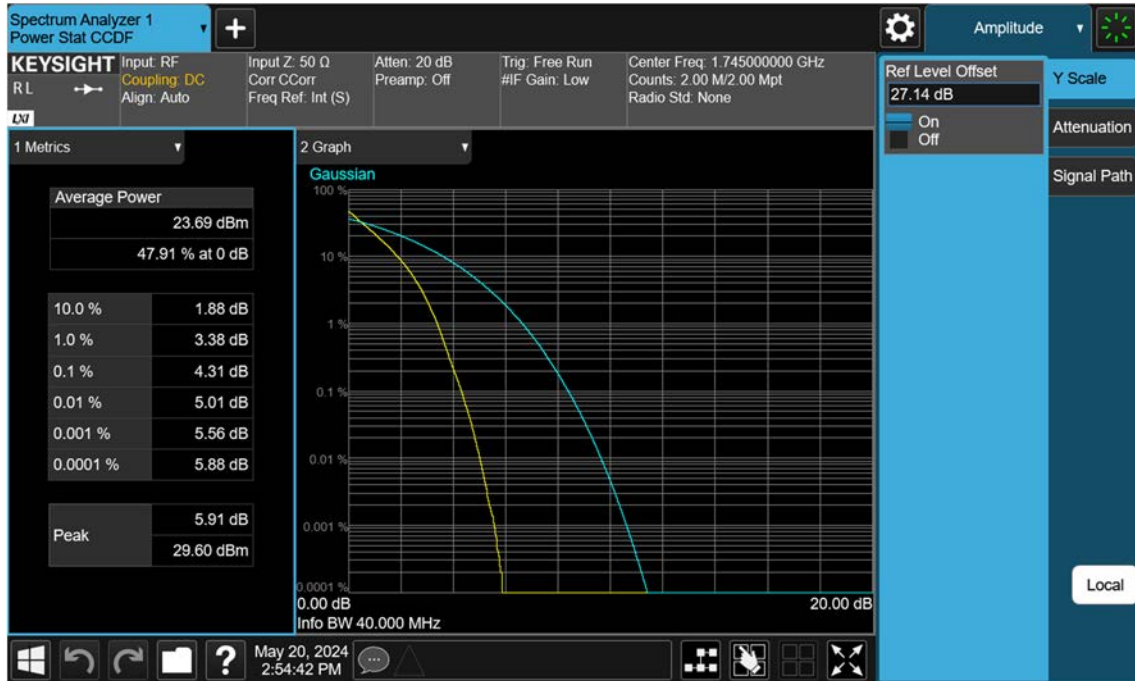
35 M_PAR_Mid_64QAM_FullRB



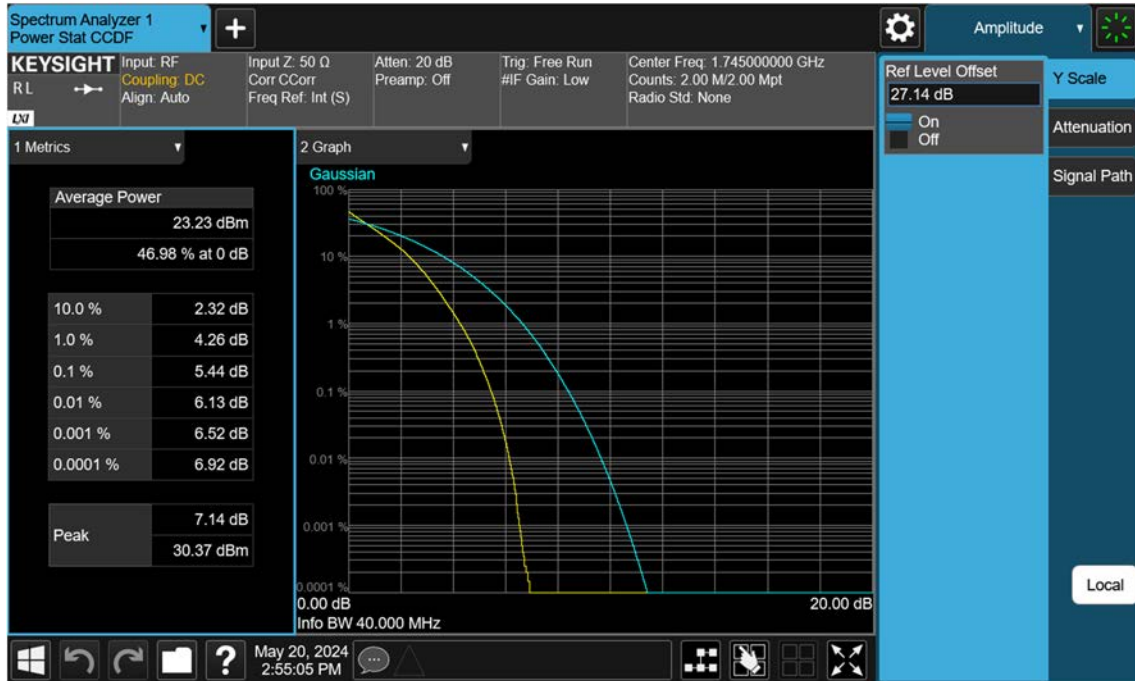
35 M_PAR_Mid_256QAM_FullRB



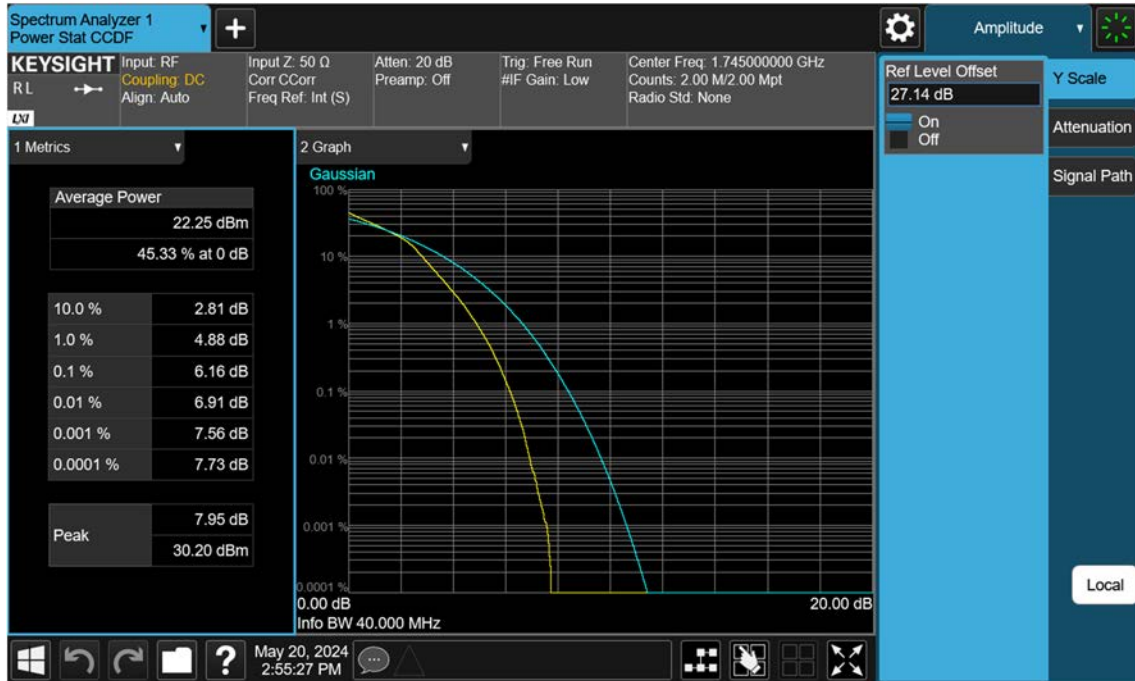
40 M_PAR_Mid_BPSK_FullRB



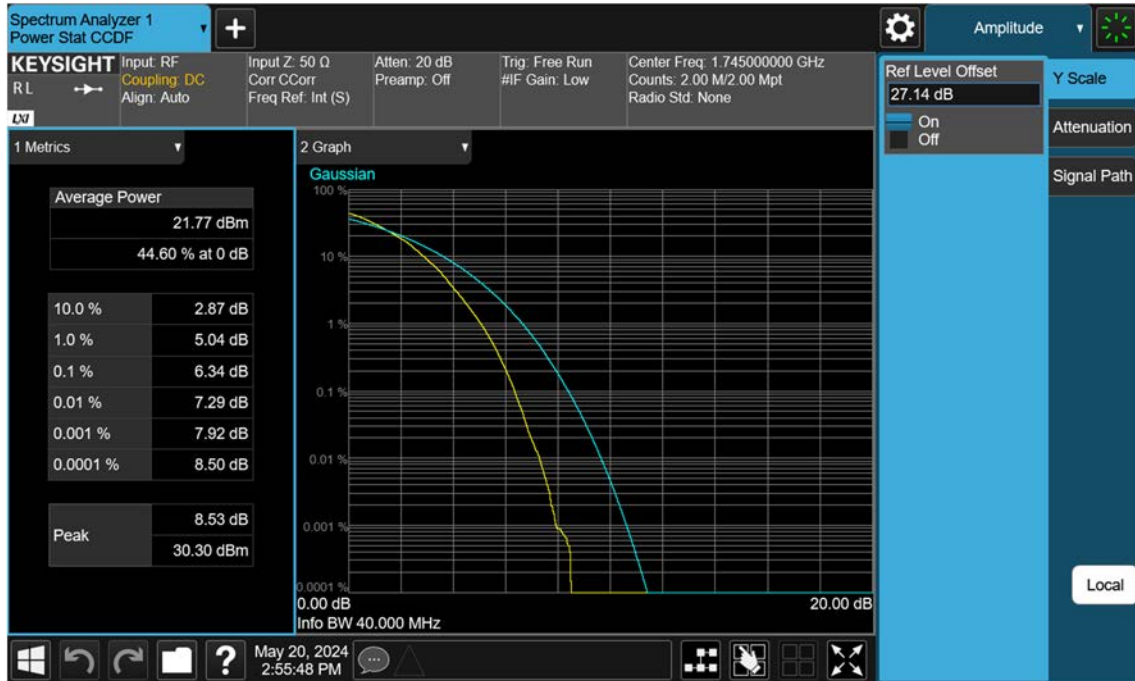
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40 M_PAR_Mid_16QAM_FullRB



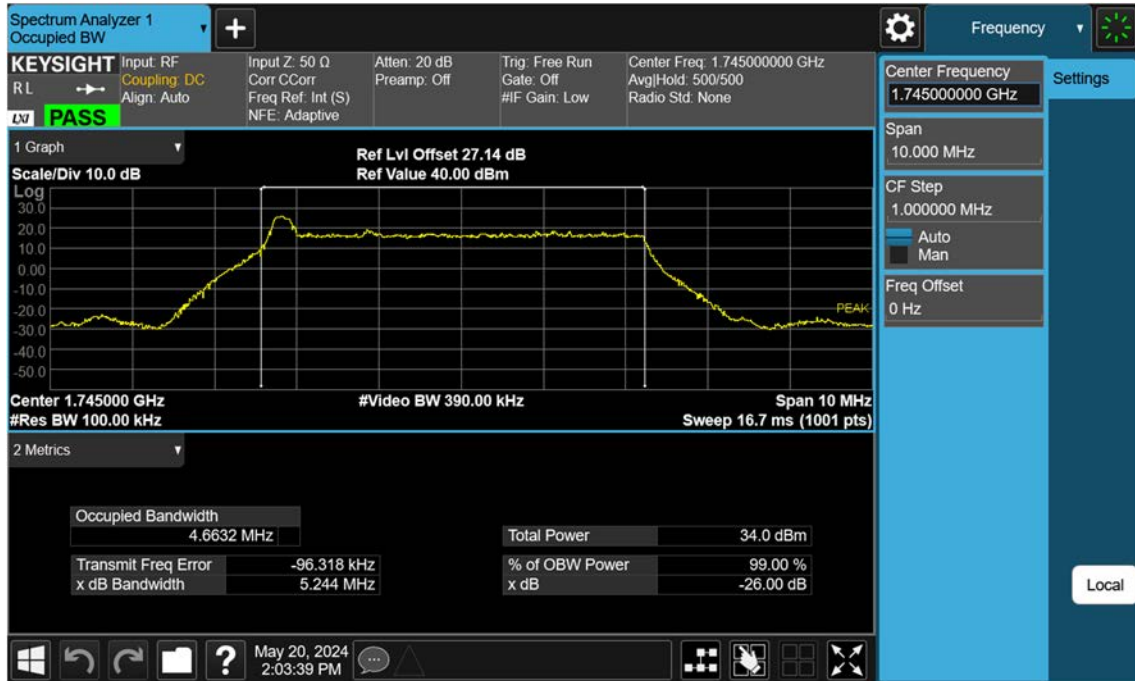
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40 M_PAR_Mid_256QAM_FullRB



5 M_OBW_Mid_BPSK_FullRB



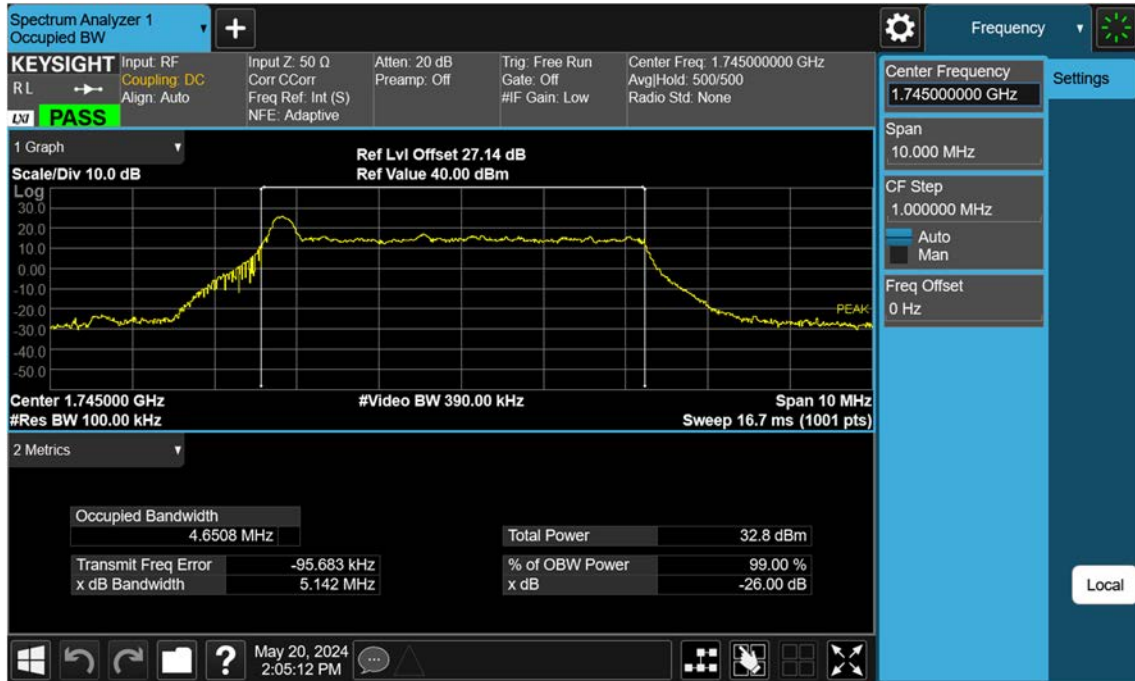
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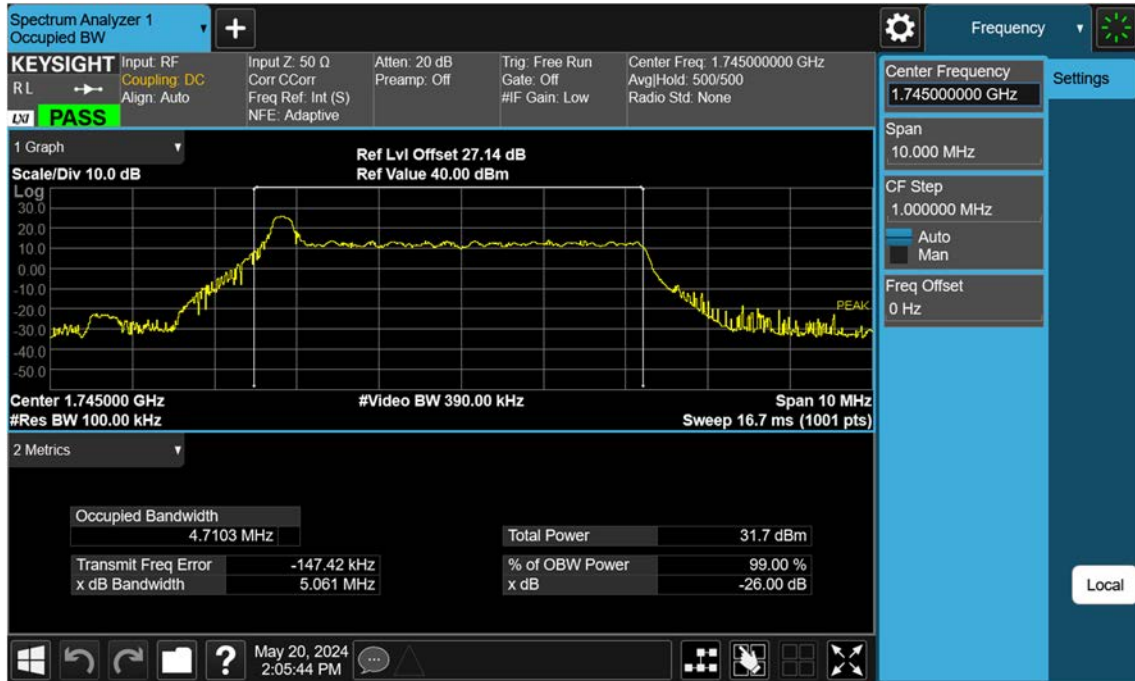
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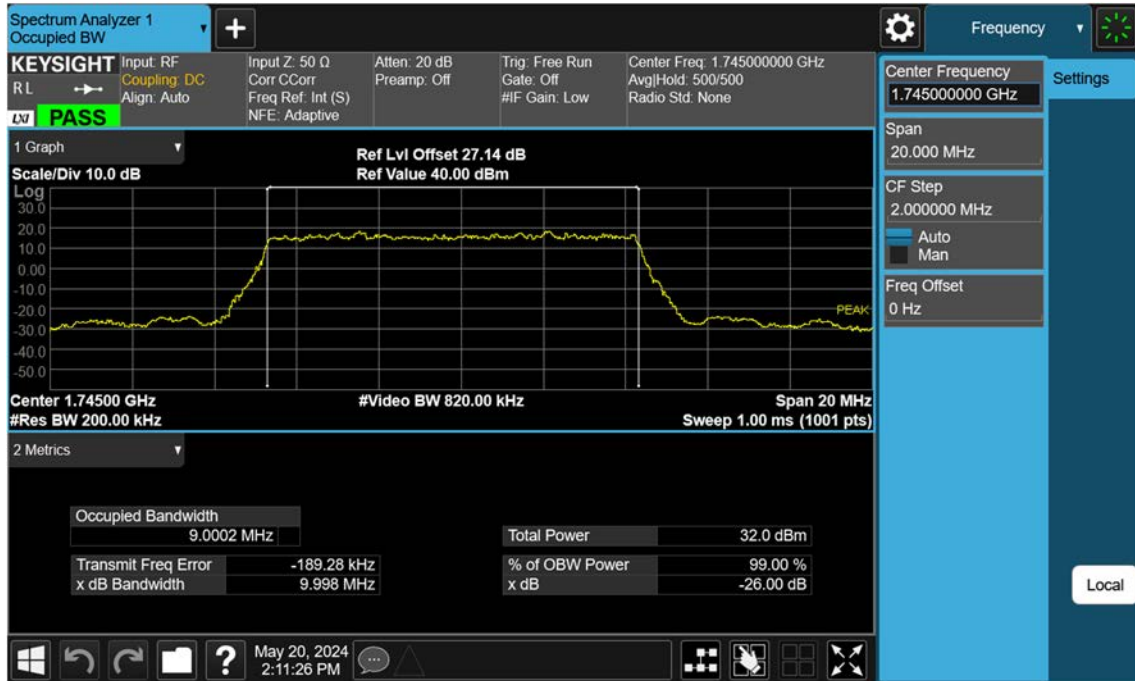
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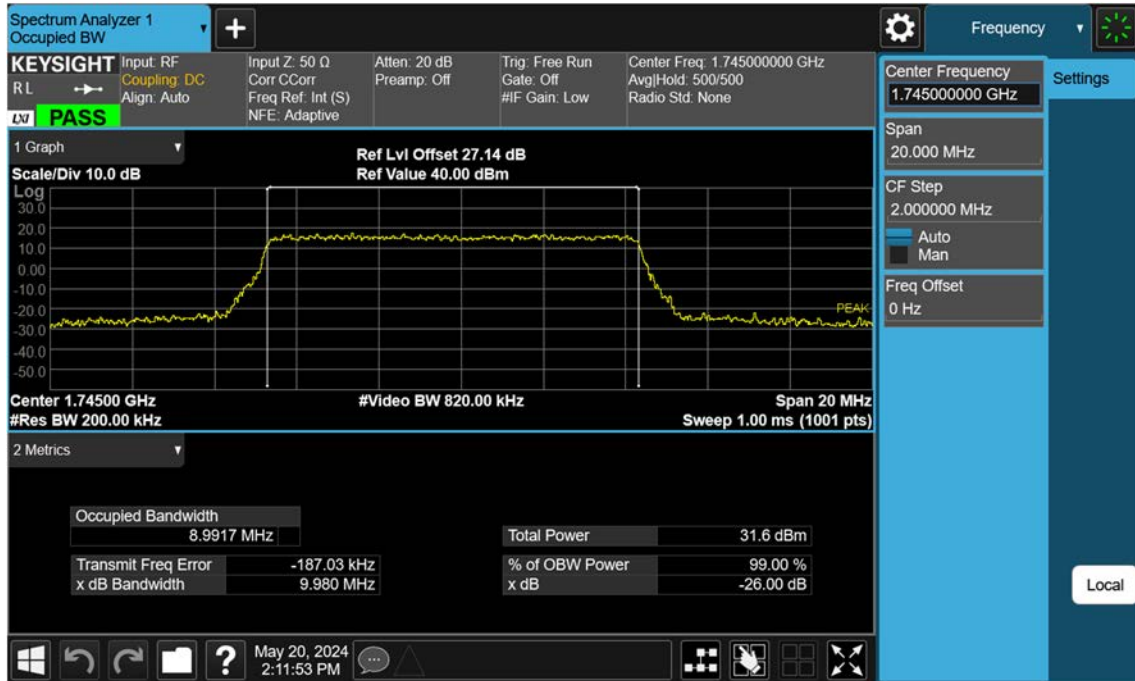
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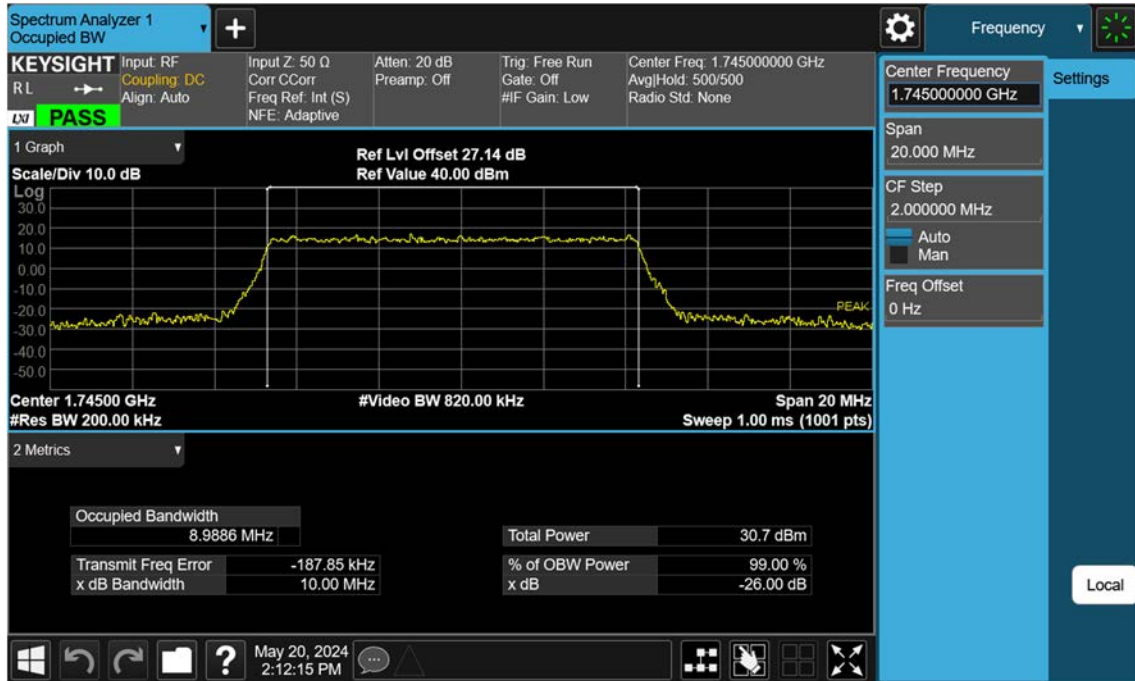
10 M_OBW_Mid_BPSK_FullRB



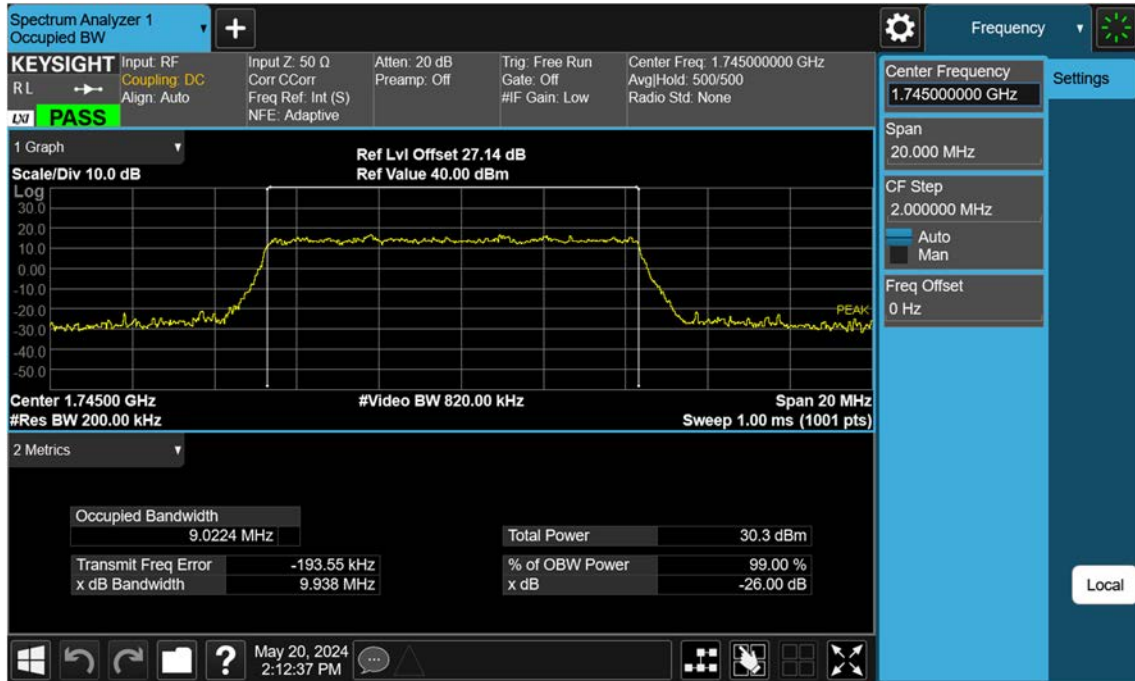
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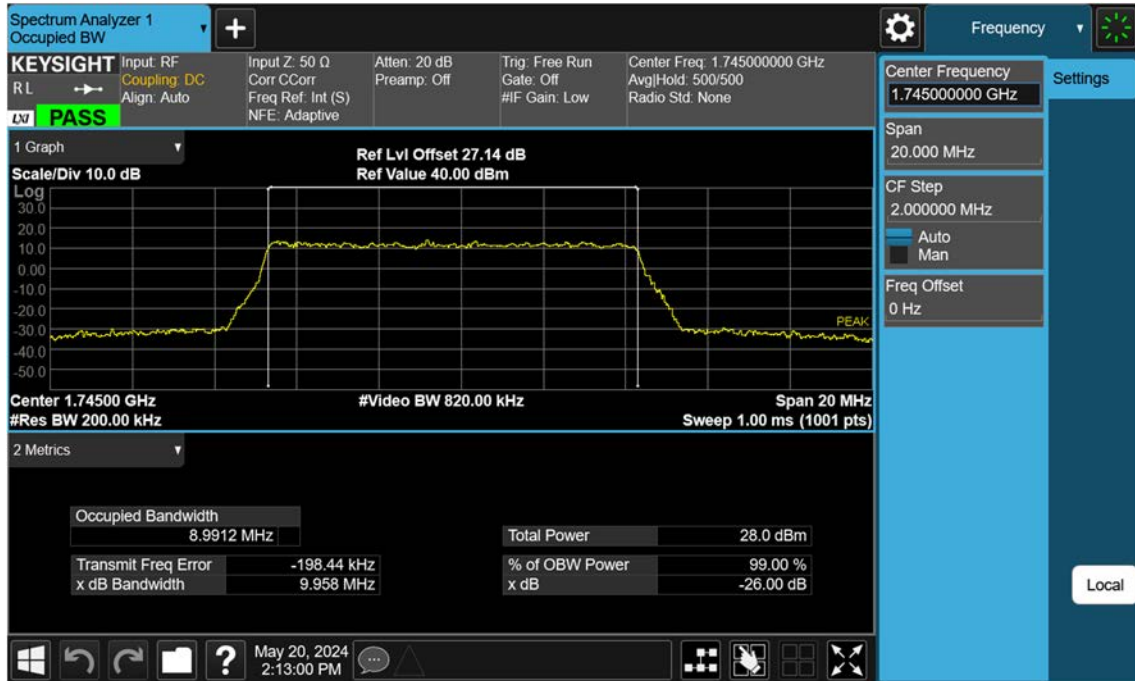
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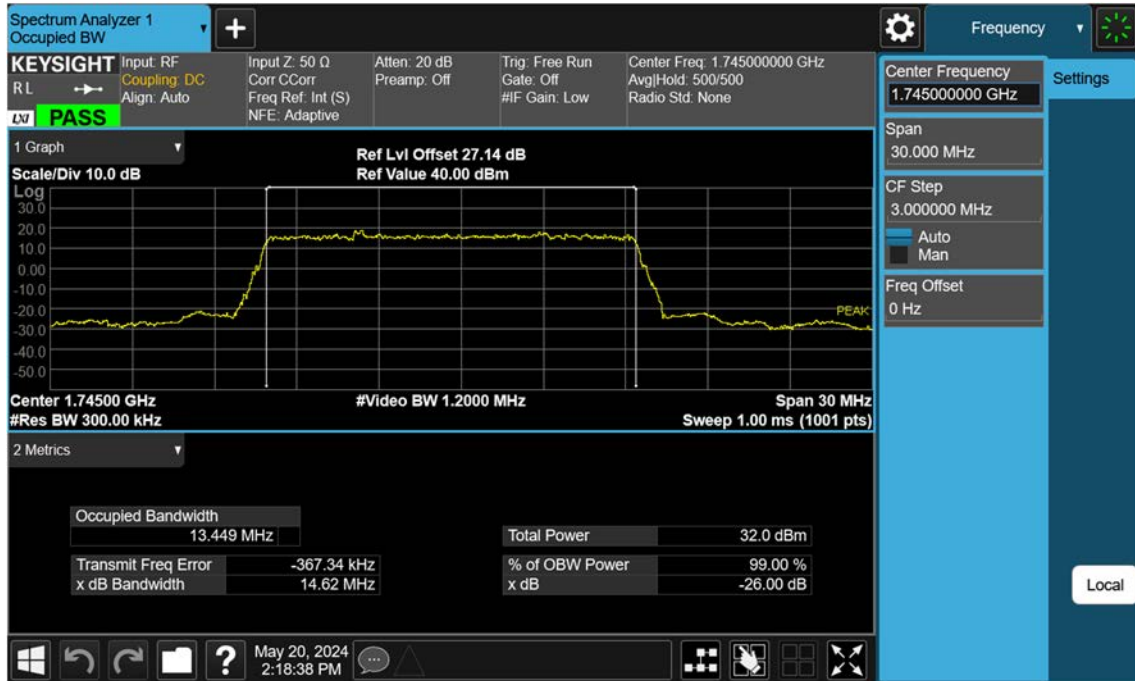
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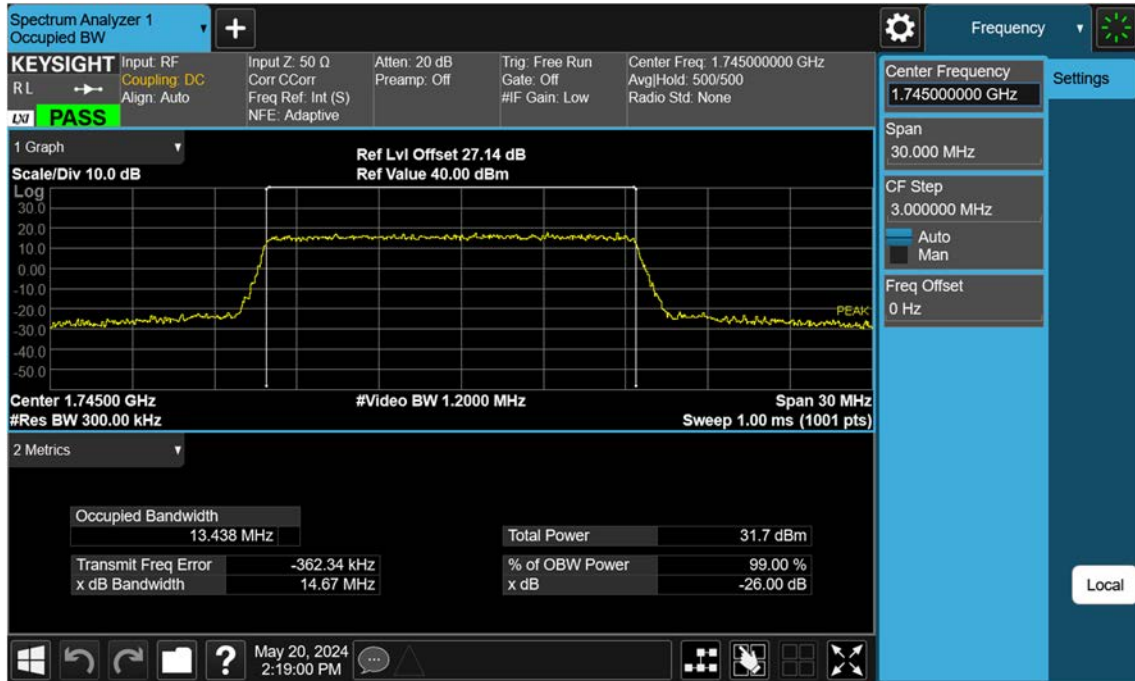
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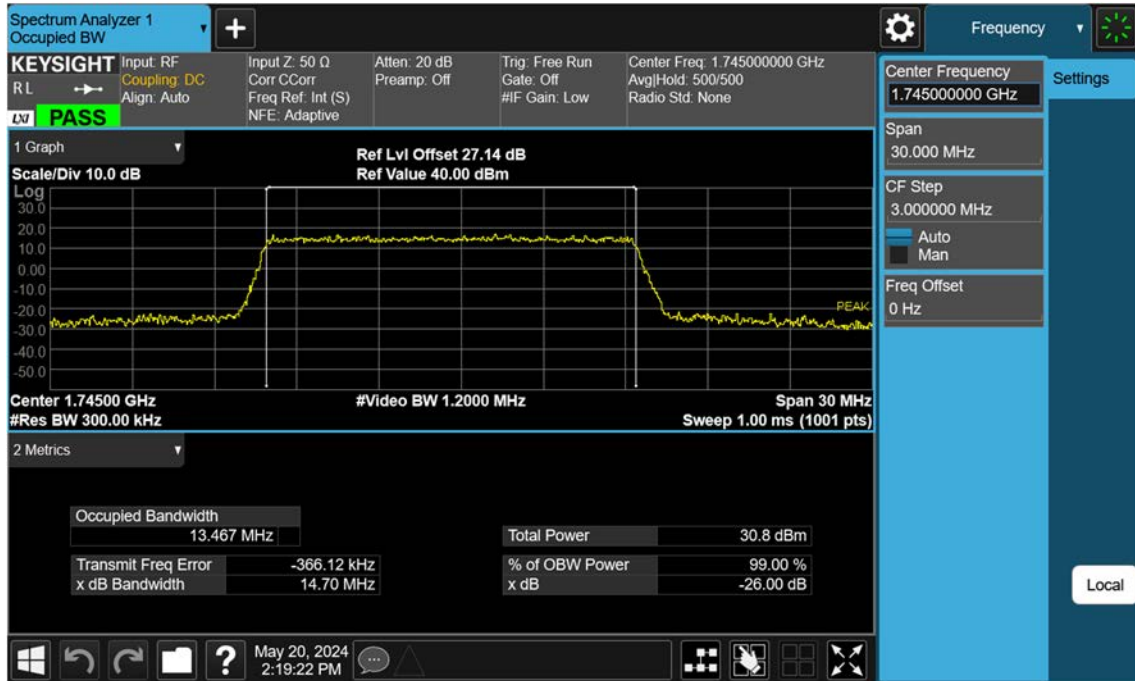
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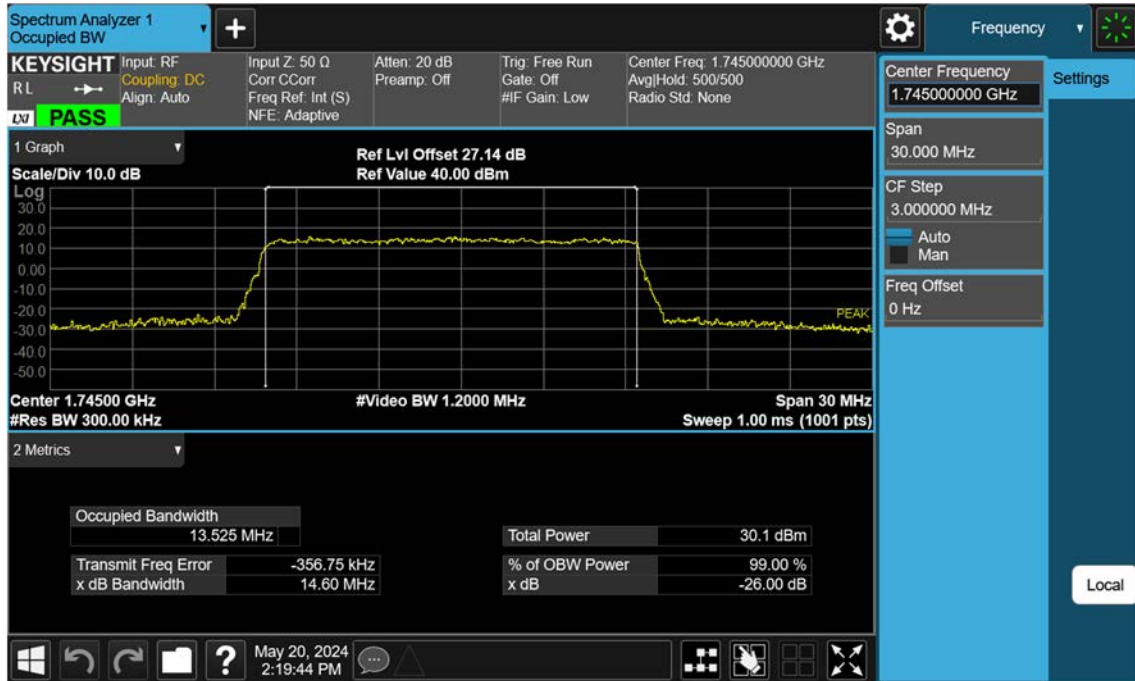
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15 M_OBW_Mid_16QAM_FullRB



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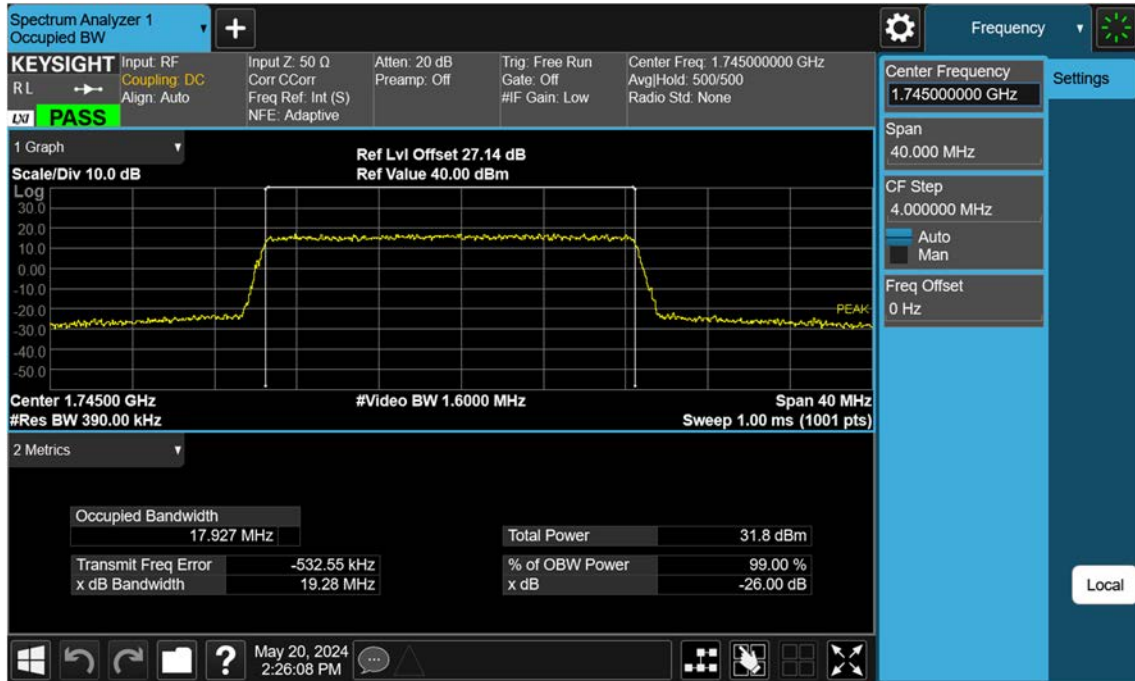
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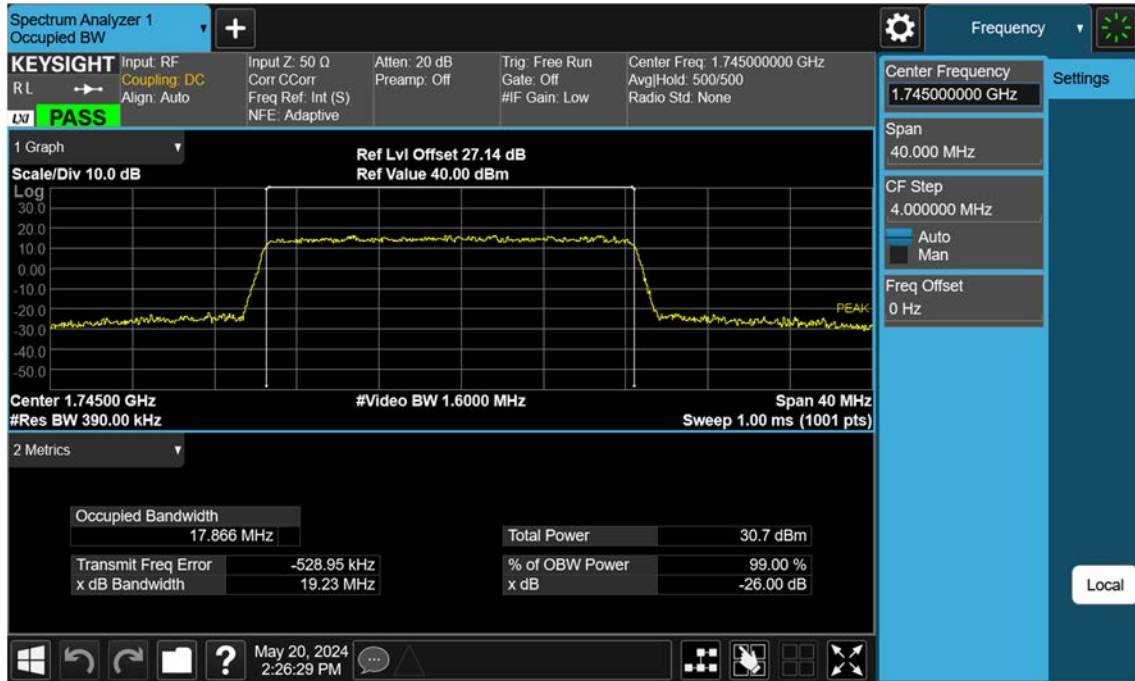
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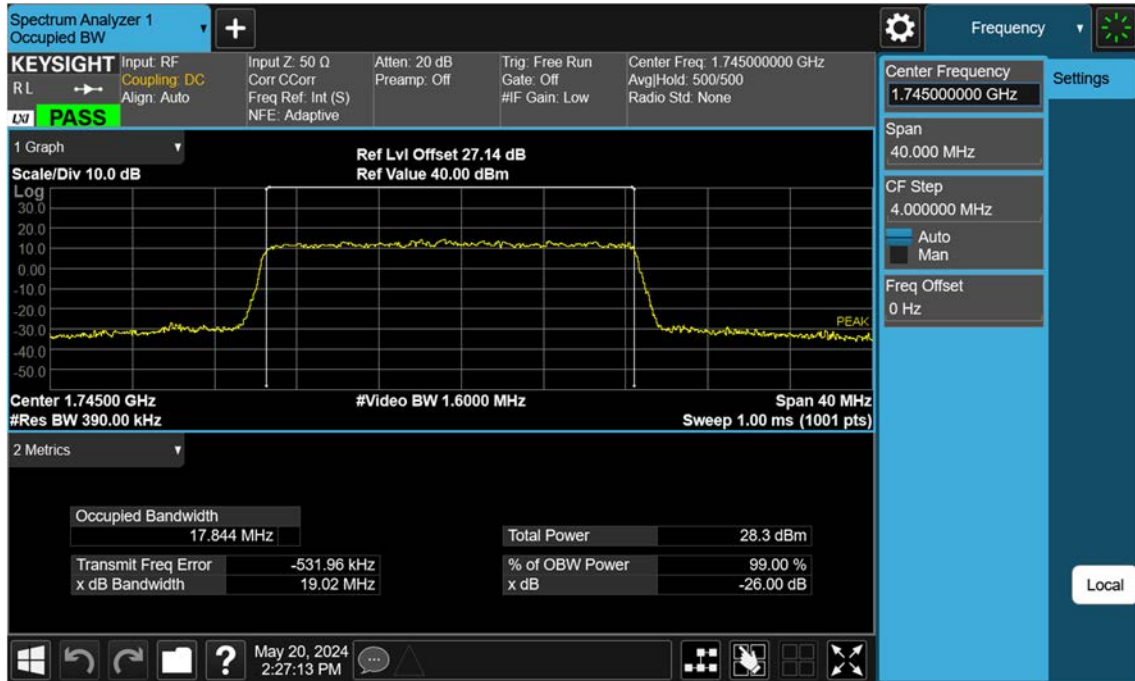
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20 M_OBW_Mid_64QAM_FullRB



20 M_OBW_Mid_256QAM_FullRB



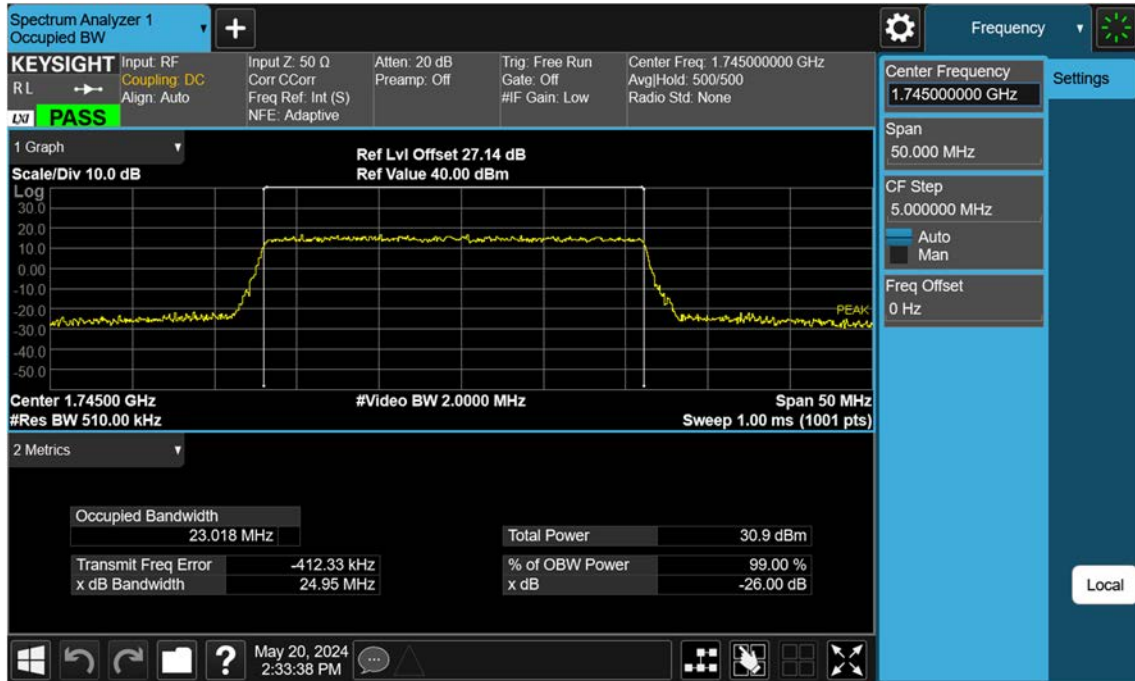
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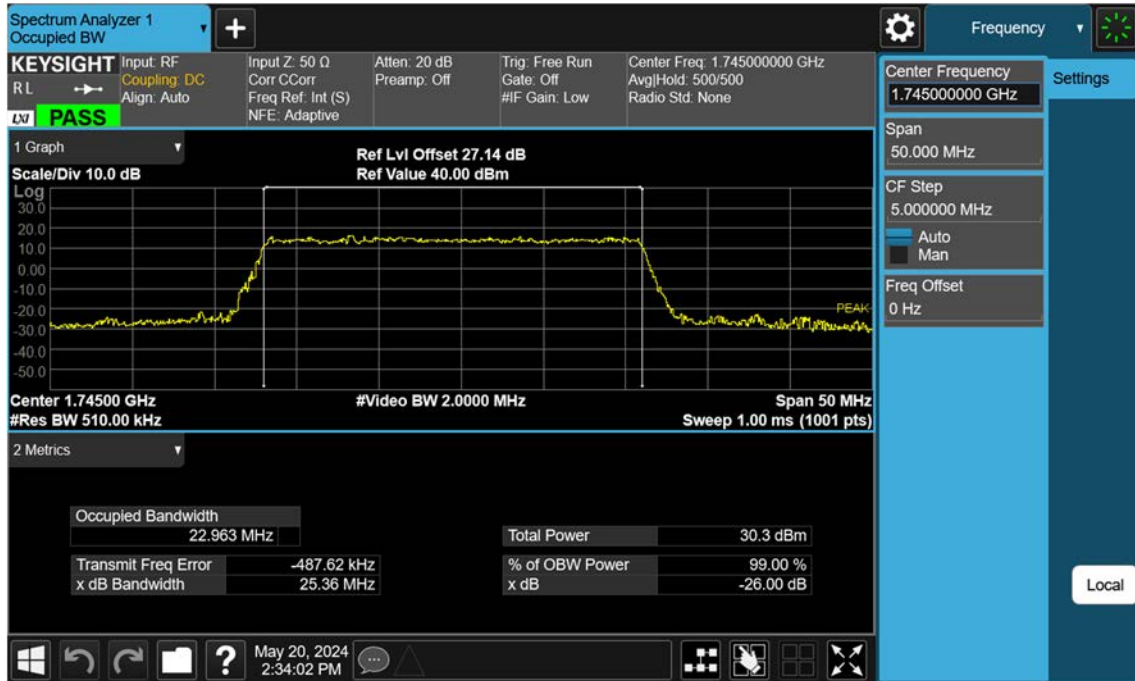
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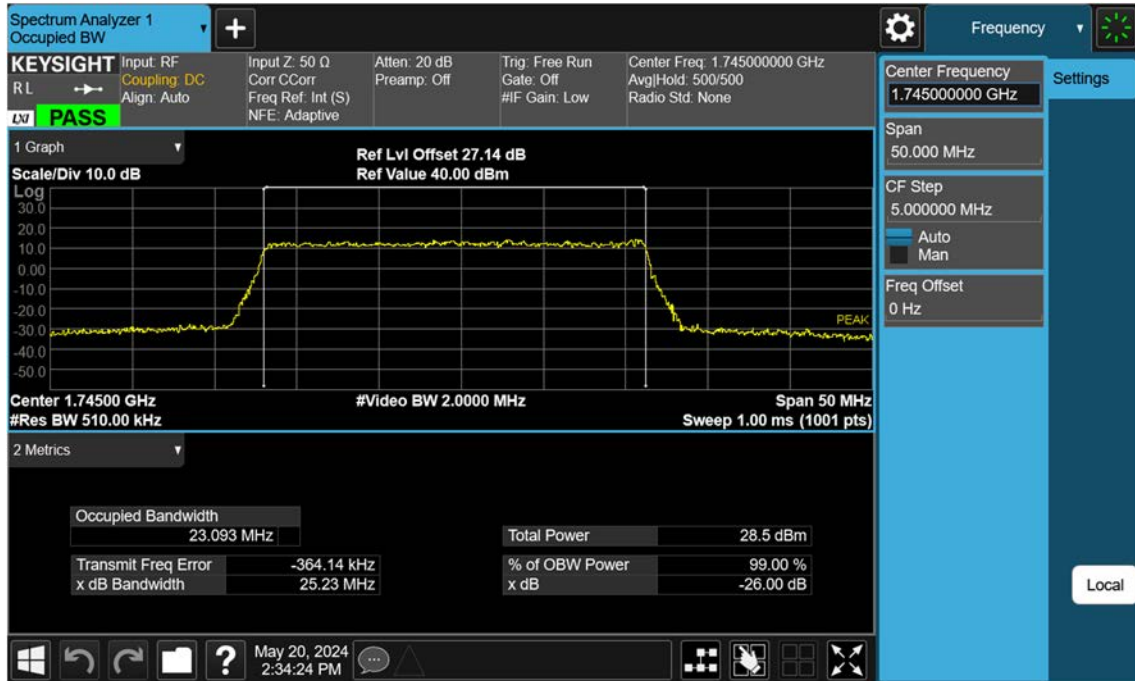
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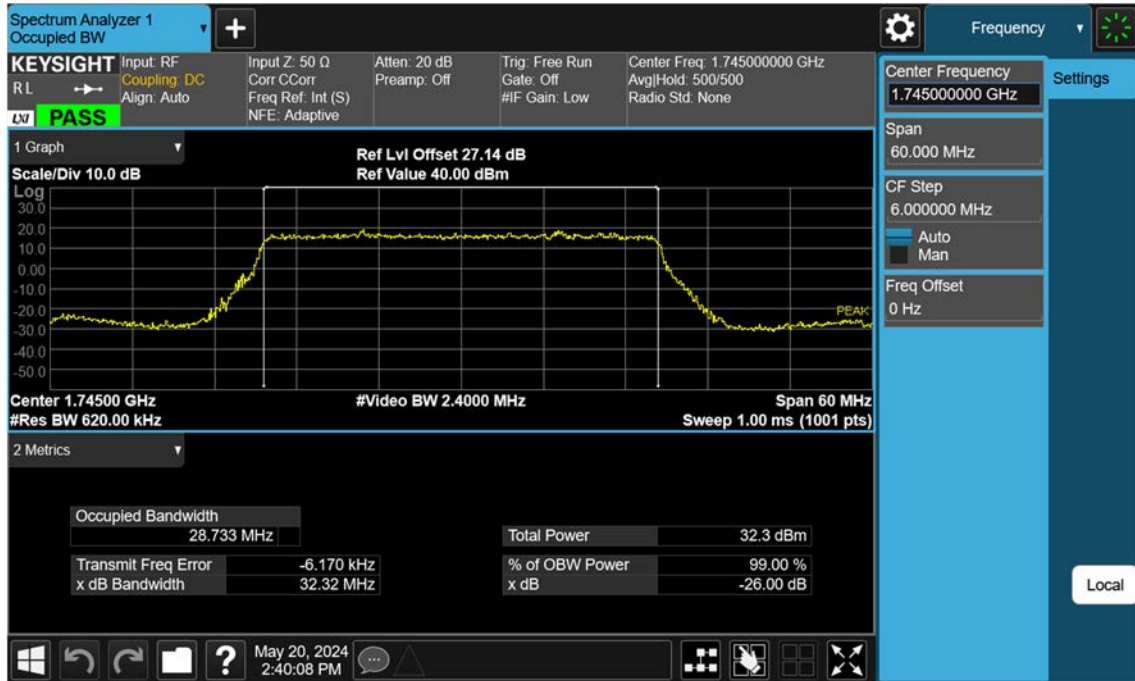
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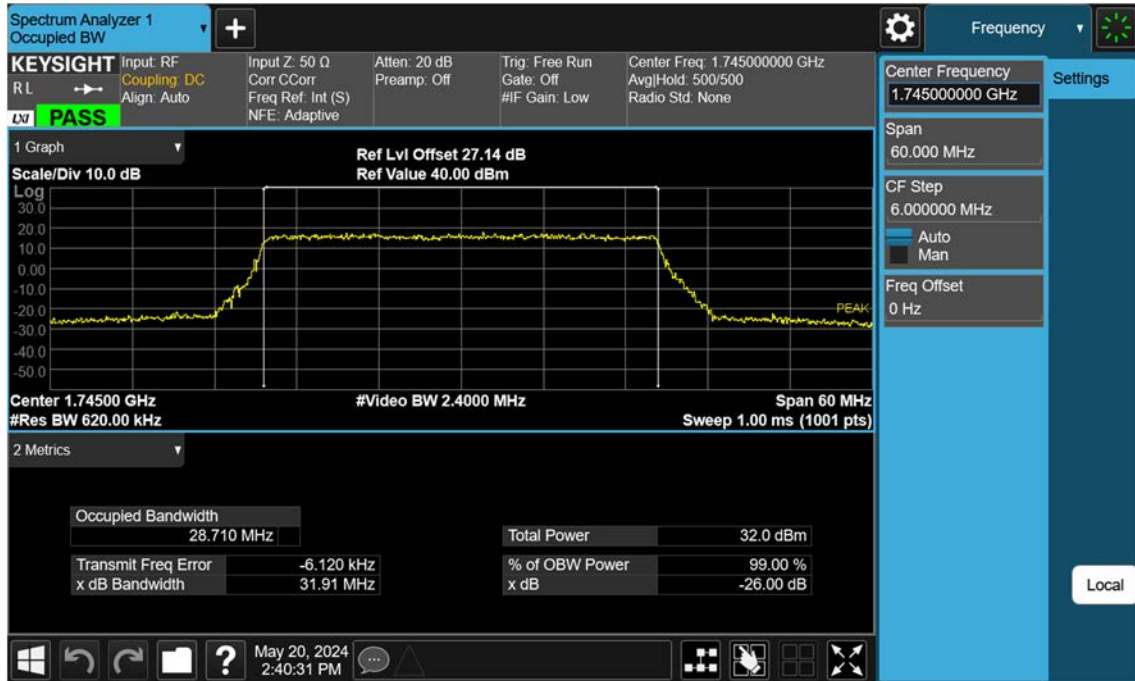
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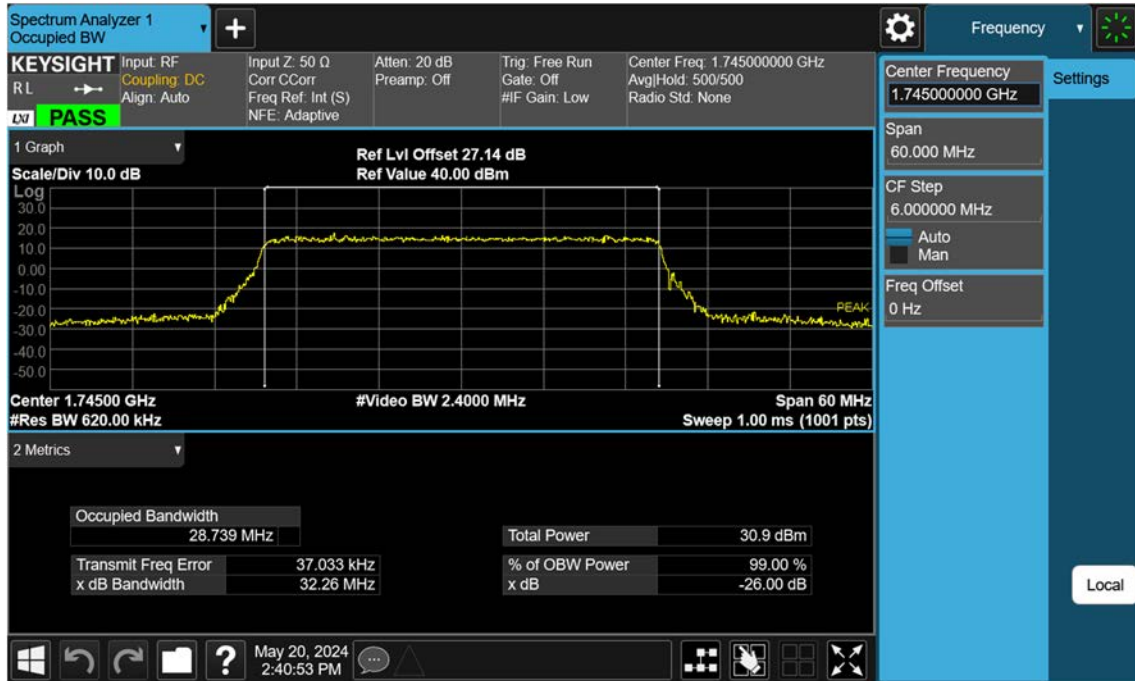
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30 M_OBW_Mid_QPSK_FullRB



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