

TEST REPORT

FCC LTE B42 Test for TM15FNEUJL1
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2502-FC101-R1

DATE OF ISSUE
April 8, 2025

Tested by
Beom Jin Cho



Technical Manager
Jong Seok Lee



Accredited by KOLAS, Republic of KOREA

HCT CO., LTD.
BongJai Huh
BongJai Huh / CEO

**HCT CO.,LTD.**

2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea
Tel. +82 31 645 6300 Fax. +82 31 645 6401

TEST REPORT

REPORT NO.

HCT-RF-2502-FC101-R1

DATE OF ISSUE

April 08, 2025

Applicant

LG Electronics Inc.

128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea

Product Name

Telematics

Model Name

TM15FNEUJL1

Date of Test

December 9, 2024 ~ February 24, 2025

Location of Test

☒ Permanent Testing Lab ☐ On Site Testing

(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

FCC ID

BEJTM15FNEUJL1

FCC Classification:

PCS Licensed Transmitter (PCB)

Test Standard Used

FCC Rule Part(s) : § 27

Test Results

PASS

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	February 24, 2025	Initial Release
1	April 08, 2025	Revised the Product Name.

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

This test report provides test result(s) under the scope accredited by the Korea Laboratory Accreditation Scheme (KOLAS), which signed the ILAC-MRA.

(KOLAS (KS Q ISO/IEC 17025) Accreditation No. KT197)

CONTENTS

1. GENERAL INFORMATION	5
1.1 MAXIMUM OUTPUT POWER.....	6
2. INTRODUCTION	7
2.1 DESCRIPTION OF EUT	7
2.2 MEASURING INSTRUMENT CALIBRATION.....	7
2.3 TEST FACILITY	7
3. DESCRIPTION OF TESTS.....	8
3.1 TEST PROCEDURE.....	8
3.2 RADIATED POWER	9
3.3 RADIATED SPURIOUS EMISSIONS	11
3.4 PEAK- TO- AVERAGE RATIO.....	12
3.5 OCCUPIED BANDWIDTH.	14
3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL	15
3.7 BAND EDGE	16
3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE	18
3.9 WORST CASE(RADIATED TEST).....	19
3.10 WORST CASE(CONDUCTED TEST)	20
4. LIST OF TEST EQUIPMENT	21
5. MEASUREMENT UNCERTAINTY.....	23
6. SUMMARY OF TEST RESULTS.....	24
7. SAMPLE CALCULATION.....	25
8. TEST DATA.....	27
8.1 EQUIVALENT ISOTROPIC RADIATED POWER	27
8.2 RADIATED SPURIOUS EMISSIONS	29
8.3 PEAK-TO-AVERAGE RATIO.....	30
8.4 OCCUPIED BANDWIDTH	31
8.5 CONDUCTED SPURIOUS EMISSIONS.....	32
8.6 BAND EDGE	32
8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE	33
9. TEST PLOTS	37
10. ANNEX A_ TEST SETUP PHOTO	142

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	LG Electronics Inc.
Address:	128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea
FCC ID:	BEJTM15FNEUJL1
Application Type:	Certification
FCC Classification	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§ 27
EUT Type:	Telematics
Model(s):	TM15FNEUJL1
Tx Frequency:	3452.5 MHz – 3547.5 MHz (LTE – Band42 (5 MHz)) 3455.0 MHz – 3545.0 MHz (LTE – Band42 (10 MHz)) 3457.5 MHz – 3542.5 MHz (LTE – Band42 (15 MHz)) 3460.0 MHz – 3540.0 MHz (LTE – Band42 (20 MHz))
Date(s) of Tests:	December 9, 2024 ~ February 24, 2025
Serial number:	Radiated : 501VIXV900165(NAD) Conducted : 410VIXV000305(NAD)
Antenna Information	Please refer to the Antenna Specification document.

1.1 MAXIMUM OUTPUT POWER

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted output power	
				Max. Power (W)	Max. Power (dBm)
LTE – Band42 (5)	3452.5 – 3547.5	4M50G7D	QPSK	0.219	23.41
		4M49W7D	16QAM	0.183	22.62
		4M49W7D	64QAM	0.132	21.22
		4M50W7D	256QAM	0.074	18.71
LTE – Band42 (10)	3455.0 – 3545.0	8M98G7D	QPSK	0.220	23.43
		8M95W7D	16QAM	0.187	22.71
		8M97W7D	64QAM	0.134	21.28
		8M96W7D	256QAM	0.074	18.67
LTE – Band42 (15)	3457.5 – 3542.5	13M5G7D	QPSK	0.219	23.40
		13M5W7D	16QAM	0.189	22.77
		13M5W7D	64QAM	0.136	21.34
		13M5W7D	256QAM	0.075	18.76
LTE – Band42 (20)	3460.0 – 3540.0	18M0G7D	QPSK	0.222	23.46
		17M9W7D	16QAM	0.189	22.76
		17M9W7D	64QAM	0.136	21.32
		17M9W7D	256QAM	0.077	18.84

2. INTRODUCTION

2.1 DESCRIPTION OF EUT

Please refer to the [2G3G] Test Report.

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, Republic 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
Radiated Power	- ANSI C63.26-2015 – Section 5.2.4.4 - KDB 971168 D01 v03r01 – Section 5.8
Radiated Spurious and Harmonic Emissions	- ANSI C63.26-2015 – Section 5.5.3 - KDB 971168 D01 v03r01 – Section 5.8

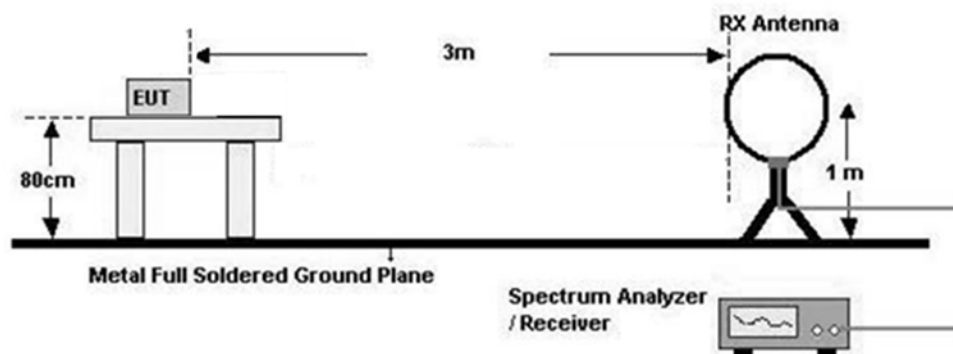
3.2 RADIATED POWER

Test Overview

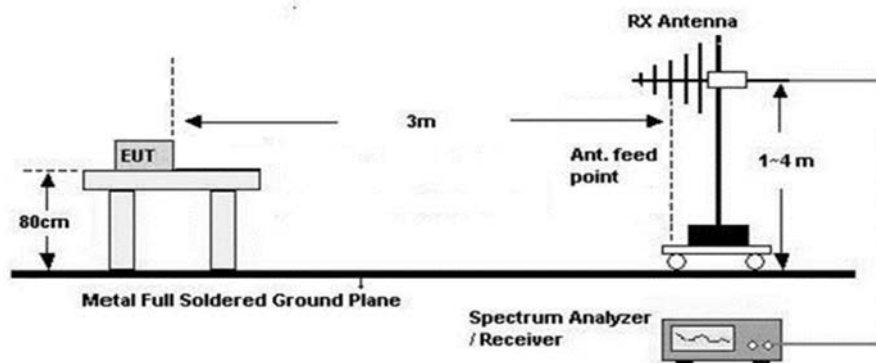
Radiated tests are performed in the semi-anechoic chamber. The equipment under test is placed on a non-conductive table on semi-anechoic chamber.

Test Configuration

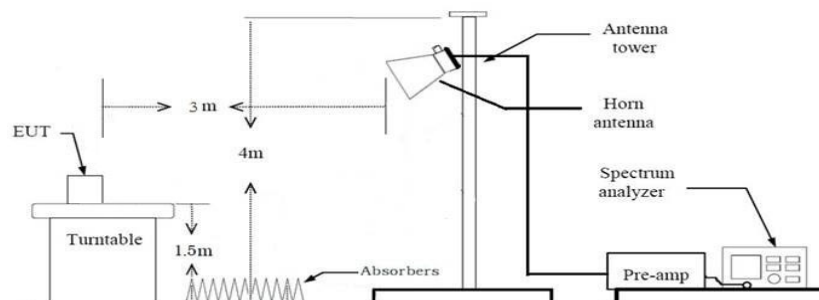
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



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 $\geq 3 \times$ RBW
4. Span = 1.5 times the OBW
5. No. of sweep points $> 2 \times$ 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 EUT is placed on a turntable, which is 0.8 m above ground plane. (Below 1 GHz)
2. The EUT is placed on a turntable, which is 1.5 m above ground plane. (Above 1 GHz)
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
6. 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.
7.
$$\text{Total(dB}\mu\text{V/m)} = \text{Measured Value(dB}\mu\text{V)} + \text{Cable Loss(dB)} + \text{Antenna Factor(dB/m)} + \text{Distance Factor(D.F)}$$
8.
$$\text{EIRP (dBm)} = \text{Total (dB}\mu\text{V/m)} + 20 \log D - 104.8 \text{ (where D is the measurement distance in meters. D=3)}$$
$$= \text{Total (dB}\mu\text{V/m)} - 95.2(\text{dB})$$
9.
$$\text{ERP(dBm)} = \text{EIRP(dBm)} - 2.15(\text{dB})$$

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.

Test Settings

1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $> 2 \times$ 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;

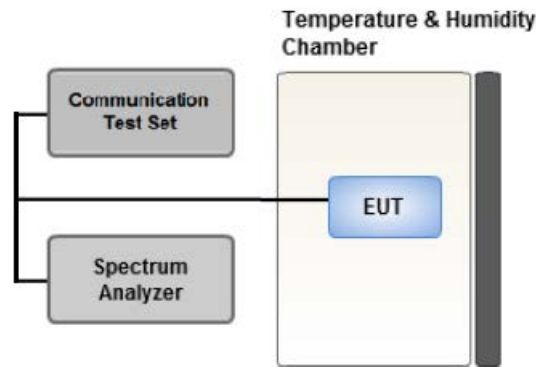
$$\text{Result}_{(\text{dBm})} = P_{\text{g}}_{(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

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.

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

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)

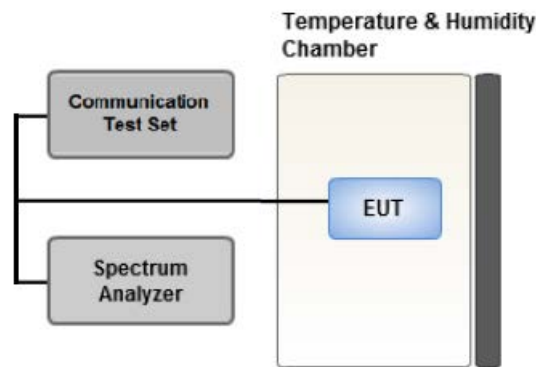
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW $\geq 3 \times$ RBW.

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 $\geq [10 \times (\text{number of points in sweep}) \times (\text{transmission period})]$ 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 $[10 \log (1/0.25)] = 6 \text{ dB}$ 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.

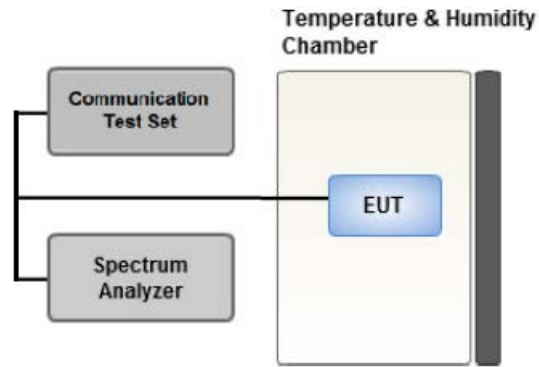
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

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 $\geq 3 \times$ 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

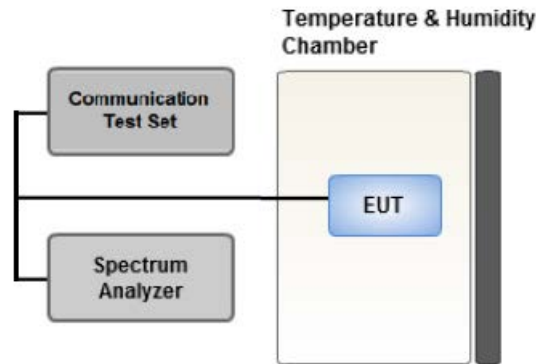
Test Overview

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 = Peak
4. Trace Mode = Max Hold
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 $\geq 2 \times \text{Span/RBW}$
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

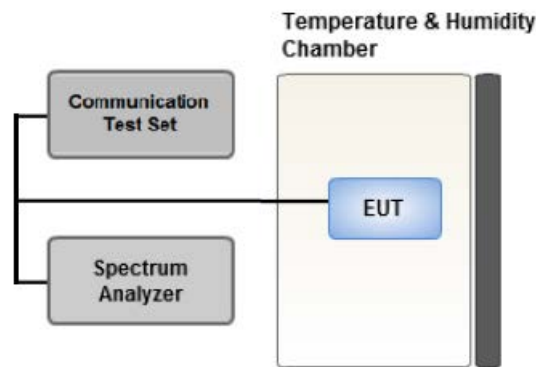
the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

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)

- 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.
 - 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.
- 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)
 - The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data
 - Please refer to the table below.
 - JIG was used to test the EUT. (EUT + JIG)

[Worst case]

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

3.10 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.
- JIG was used to test the EUT. (EUT + JIG)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20	Mid	Full RB	0
Peak-To-Average Ratio	QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20	Mid	Full RB	0
Band Edge	QPSK	5	Low	1	0
			High	1	24
		10	Low	1	0
			High	1	49
		15	Low	1	0
			High	1	74
		20	Low	1	0
			High	1	99
Spurious and Harmonic Emissions at Antenna Terminal	QPSK	5, 10, 15, 20	Low, Mid, High	Full RB	0
			Low, Mid, High	1	0

4. LIST OF TEST EQUIPMENT

[Fully-anechoic chamber]

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	Switch box(1 G HPF+LNA)	HCT CO., LTD.,	F2L2	12/12/2025	Annual
RF Switching System	Switch box(3 G HPF+LNA)	HCT CO., LTD.,	F2L3	12/12/2025	Annual
RF Switching System	Switch box(LNA)	HCT CO., LTD.,	F2L5	12/12/2025	Annual
RF Switching System	Switch box(6 G HPF+LNA)	HCT CO., LTD.,	F2L14	12/12/2025	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/07/2025	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/26/2025	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/17/2025	Annual
DC Power Supply	E3632A	Agilent	MY40010147	08/06/2025	Annual
Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Dipole Antenna	UHAP	Schwarzbeck	01288	08/07/2026	Biennial
Chamber	SU-642	ESPEC	93022487	06/27/2025	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03197	11/28/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03201	11/28/2025	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/19/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	ROHDE & SCHWARZ	101733	09/19/2025	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/05/2025	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/28/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	08/19/2026	Biennial
Radio Communication Test Station	MT8000A	Anritsu Corp.	6272613402	08/28/2025	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/26/2025	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/17/2025	Annual
Signal & Spectrum Analyzer (2 Hz~67 GHz)	FSW67	REOHDE & SCHWARZ	101736	05/23/2025	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

[Semi-anechoic chamber]

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Antenna Position Tower	MA4640	Innco systems	S4AM	08/07/2025	Annual
Turn Table	DS2000-S	Innco systems	N/A	N/A	-
Turn Table	Turn Table	Ets	N/A	N/A	-
Controller (Antenna mast & Turn Table)	CO3000	Innco systems	CO3000/1251/48920320/P	N/A	-
Amp & Filter Bank Switch Controller	FBSM-01B	TNM system	TM20090002	N/A	-
RF Switch System	FBSR-04C(3G HPF+LNA)	TNM System	S4L1	04/11/2025	Annual
RF Switch System	FBSR-04C(7G HPF+LNA)	TNM System	S4L5	04/11/2025	Annual
RF Switch System	FBSR-04C(LNA)	TNM System	S4L4	04/11/2025	Annual
RF Switch System	FBSR-04C(Thru)	TNM System	S4L6	04/11/2025	Annual
HIGHPASS FILTER	WHKX10-900-1000-15000-40SS	WAINWRIGHT INSTRUMENTS	16	07/24/2025	Annual
LOW NOISE AMPLIFIER	310N	SONOMA Instrument	186169	02/05/2026	Annual
LOW NOISE AMPLIFIER	TK-PA1840H	TESTEK	170011-L	10/11/2025	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120	Schwarzbeck	937	02/07/2027	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Trilog Broadband Antenna	VULB 9168	Schwarzbeck	9168-0895	08/28/2026	Biennial
DC Power Supply	E3632A	Agilent	MY40010147	08/06/2025	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/04/2026	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/05/2025	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287701	05/16/2025	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6272613402	08/28/2025	Annual
Signal Analyzer(3 Hz ~ 50 GHz)	N9030A	Agilent	MY49430478	02/12/2026	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	

Note:

- Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
- 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 ($\pm$ kHz)
Occupied Bandwidth	95 (Confidence level about 95 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

Parameter	Expanded Uncertainty ($\pm$ dB)
Block Edge	0.70 (Confidence level about 95 %, $k=2$)
Conducted Spurious Emissions	1.18 (Confidence level about 95 %, $k=2$)
Peak- to- Average Ratio	0.68 (Confidence level about 95 %, $k=2$)
Radiated Power	4.74 (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

Note. The decision rule applies 'simple acceptance'

6.1 Test Condition : Conducted Test

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

Note:

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

6.2 Test Condition : Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§ 27.50(k)(3)	< 1 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§ 2.1053, § 27.50(n)(2)	< -13 dBm	PASS

6.3. Data Referencing

Rule Part	Test item	Data Referencing	Comments
§ 2.1049	Occupied Bandwidth	Y	-
§2.1051, §27.53(n)(2)	Band Edge / Spurious and Harmonic Emissions at Antenna Terminal..	Y	-
§ 27.50(k)(4)	Peak- to- Average Ratio	Y	-
§ 2.1055, § 27.54	Frequency stability	Y	-
§ 27.50(k)(3)	Equivalent Isotropic Radiated Power	Y	Spot-check
§ 2.1053, § 27.50(n)(2)	Radiated Spurious Emissions	Y	Spot-check
§ 2.1046	Conducted Output Power	Y	-

Spot-Check Result

1. Data was leveraged from model TM15FNEUJL0 for the certification of TM15FNEUJL1.
2. Please refer to the [FCC Evaluation] Report.

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

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Bandwidth	Modulation	Measured (dBμV/m)	Ant. Factor + Distance Factor (dB)	C.L (dB)	Total (dBμV/m)	Pol.	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3452.5	LTE B42 (5 MHz)	QPSK	80.54	31.54	4.06	116.14	H	<1.00	0.310	24.92	1	12
		16-QAM	80.45	31.54	4.06	116.05	H		0.304	24.83		
		64-QAM	80.47	31.54	4.06	116.07	H		0.305	24.85		
		256-QAM	79.50	31.54	4.06	115.10	H		0.244	23.88		
3500.0		QPSK	80.02	31.54	4.13	115.69	H		0.280	24.47	1	0
		16-QAM	79.97	31.54	4.13	115.64	H		0.277	24.42		
		64-QAM	79.89	31.54	4.13	115.56	H		0.272	24.34		
		256-QAM	79.09	31.54	4.13	114.76	H		0.226	23.54		
3547.5		QPSK	79.03	31.44	4.11	114.58	H		0.217	23.36	1	0
		16-QAM	78.99	31.44	4.11	114.54	H		0.215	23.32		
		64-QAM	78.91	31.44	4.11	114.46	H		0.211	23.24		
		256-QAM	78.17	31.44	4.11	113.72	H		0.178	22.50		

Freq (MHz)	Bandwidth	Modulation	Measured (dBμV/m)	Ant. Factor + Distance Factor (dB)	C.L (dB)	Total (dBμV/m)	Pol.	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3455.0	LTE B42 (10 MHz)	QPSK	80.56	31.54	4.06	116.16	H	< 1.00	0.312	24.94	1	49
		16-QAM	80.44	31.54	4.06	116.04	H		0.303	24.82		
		64-QAM	80.46	31.54	4.06	116.06	H		0.305	24.84		
		256-QAM	79.61	31.54	4.06	115.21	H		0.251	23.99		
3500.0		QPSK	80.02	31.54	4.13	115.69	H		0.280	24.47	1	0
		16-QAM	79.99	31.54	4.13	115.66	H		0.278	24.44		
		64-QAM	79.92	31.54	4.13	115.59	H		0.273	24.37		
		256-QAM	79.03	31.54	4.13	114.70	H		0.223	23.48		
3545.0		QPSK	79.15	31.44	4.11	114.70	H		0.223	23.48	1	0
		16-QAM	79.11	31.44	4.11	114.66	H		0.221	23.44		
		64-QAM	79.05	31.44	4.11	114.60	H		0.218	23.38		
		256-QAM	78.28	31.44	4.11	113.83	H		0.182	22.61		

Freq (MHz)	Bandwidth	Modulation	Measured (dBμV/m)	Ant. Factor + Distance Factor (dB)	C.L (dB)	Total (dBμV/m)	Pol.	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3457.5	LTE B42 (15 MHz)	QPSK	80.69	31.54	4.06	116.29	H	< 1.00	0.321	25.07	1	74
		16-QAM	80.47	31.54	4.06	116.07	H		0.305	24.85		
		64-QAM	80.52	31.54	4.06	116.12	H		0.309	24.90		
		256-QAM	79.52	31.54	4.06	115.12	H		0.245	23.90		
3500.0		QPSK	80.11	31.54	4.13	115.78	H		0.286	24.56	1	0
		16-QAM	80.00	31.54	4.13	115.67	H		0.279	24.45		
		64-QAM	80.03	31.54	4.13	115.70	H		0.280	24.48		
		256-QAM	79.24	31.54	4.13	114.91	H		0.234	23.69		
3542.5		QPSK	79.30	31.44	4.11	114.85	H		0.231	23.63	1	0
		16-QAM	79.21	31.44	4.11	114.76	H		0.226	23.54		
		64-QAM	79.19	31.44	4.11	114.74	H		0.225	23.52		
		256-QAM	78.45	31.44	4.11	114.00	H		0.190	22.78		

Freq (MHz)	Bandwidth	Modulation	Measured (dBμV/m)	Ant. Factor + Distance Factor (dB)	C.L (dB)	Total (dBμV/m)	Pol.	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3460.0	LTE B42 (20 MHz)	QPSK	80.70	31.54	4.06	116.30	H	< 1.00	0.322	25.08	1	99
		16-QAM	80.56	31.54	4.06	116.16	H		0.312	24.94		
		64-QAM	80.61	31.54	4.06	116.21	H		0.315	24.99		
		256-QAM	79.88	31.54	4.06	115.48	H		0.267	24.26		
3500.0		QPSK	80.15	31.54	4.13	115.82	H		0.288	24.60	1	0
		16-QAM	80.06	31.54	4.13	115.73	H		0.282	24.51		
		64-QAM	80.09	31.54	4.13	115.76	H		0.284	24.54		
		256-QAM	79.25	31.54	4.13	114.92	H		0.234	23.70		
3540.0		QPSK	79.23	31.44	4.11	114.78	H		0.227	23.56	1	0
		16-QAM	79.17	31.44	4.11	114.72	H		0.224	23.50		
		64-QAM	79.09	31.44	4.11	114.64	H		0.220	23.42		
		256-QAM	78.41	31.44	4.11	113.96	H		0.188	22.74		

8.2 RADIATED SPURIOUS EMISSIONS

MODE: LTE B42
 MODULATION SIGNAL: 20 MHz QPSK
 DISTANCE: 1 meters

Freq (MHz)	Measured Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
42115 (3460)	6,920.00	-56.84	11.19	-59.34	4.39	H	-52.55	-13.00	1	99
	10,380.00	-56.51	11.68	-56.03	5.56	H	-49.91	-13.00		
	13,840.00	-63.02	13.35	-51.66	6.53	H	-44.84	-13.00		
	17,300.00	-71.69	17.76	-50.87	7.42	H	-40.53	-13.00		
42590 (3500)	7,000.00	-56.37	10.70	-58.66	4.32	H	-52.28	-13.00	1	0
	10,500.00	-54.92	11.71	-55.33	5.64	H	-49.26	-13.00		
	14,000.00	-64.16	13.09	-52.23	6.55	H	-45.70	-13.00		
	17,500.00	-71.96	17.36	-46.91	7.42	H	-36.97	-13.00		
43065 (3540)	7,080.00	-56.21	10.90	-58.39	4.49	H	-51.97	-13.00	1	0
	10,620.00	-56.30	11.62	-56.97	5.65	H	-50.99	-13.00		
	14,160.00	-65.77	13.01	-52.16	6.51	H	-45.66	-13.00		
	17,700.00	-73.02	16.62	-45.06	7.49	H	-35.92	-13.00		

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
42	5MHz	3500.0	QPSK	Full RB	0	4.68
			16-QAM			5.53
			64-QAM			6.68
			256-QAM			6.39
	10MHz		QPSK			5.41
			16-QAM			5.54
			64-QAM			6.53
			256-QAM			6.56
	15MHz		QPSK			5.21
			16-QAM			5.47
			64-QAM			6.51
			256-QAM			6.51
	20MHz		QPSK			5.23
			16-QAM			5.82
			64-QAM			6.58
			256-QAM			6.61

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 38 ~ 53.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
42	5MHz	3500.0	QPSK	Full RB	0	4.4947
			16-QAM			4.4898
			64-QAM			4.4929
			256-QAM			4.4962
	10MHz		QPSK			8.9749
			16-QAM			8.9518
			64-QAM			8.9715
			256-QAM			8.9635
	15MHz		QPSK			13.487
			16-QAM			13.486
			64-QAM			13.478
			256-QAM			13.470
	20MHz		QPSK			17.969
			16-QAM			17.904
			64-QAM			17.939
			256-QAM			17.910

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 54 ~ 69.

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)
42	5	3452.500	7.5175	31.499	-66.752	-35.253	-13.00
		3500.000	4.9751	30.579	-65.561	-34.982	
		3547.500	6.0120	31.499	-65.019	-33.520	
	10	3455.000	3.7388	30.579	-67.154	-36.575	
		3500.000	5.2244	31.499	-65.338	-33.839	
		3545.000	6.0220	31.499	-66.399	-34.900	
	15	3457.500	3.8186	30.579	-66.167	-35.588	
		3500.000	8.0957	31.499	-64.831	-33.332	
		3542.500	5.2842	31.499	-67.427	-35.928	
	20	3460.000	4.0679	30.579	-66.867	-36.288	
		3500.000	4.9153	30.579	-66.171	-35.592	
		3540.000	4.0280	30.579	-66.897	-36.318	

Note:

- Plots of the EUT's Conducted Spurious Emissions are shown Page 70 ~ 93.
- Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
- Duty Cycle factor already applied on the factor.
 - Duty Cycle factor(dB) = 3.979
 - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Splitter
 - Result(dBm) = Reading + Factor

Frequency Range (GHz)	Factor [dB]
0.03 – 1	30.059
1 – 5	30.579
5 – 10	31.499
10 – 15	33.099
15 – 20	35.689
Above 20	36.329

8.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 94 ~ 141.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

- ☐ BandWidth: 5 MHz
☐ Voltage(100 %): 12.000 VDC
☐ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
3452.500	100 %	+20(Ref)	3452 499 992	0.0	0.000 000	0.000
	100 %	-30	3452 499 986	-5.3	0.000 000	-0.002
	100 %	-20	3452 499 970	-21.4	-0.000 001	-0.006
	100 %	-10	3452 499 976	-15.8	0.000 000	-0.005
	100 %	0	3452 499 978	-14.0	0.000 000	-0.004
	100 %	+10	3452 499 982	-9.5	0.000 000	-0.003
	100 %	+30	3452 499 973	-18.5	-0.000 001	-0.005
	100 %	+40	3452 499 971	-20.3	-0.000 001	-0.006
	100 %	+50	3452 499 982	-9.4	0.000 000	-0.003
	115 %	+20	3452 499 979	-7.1	0.000 000	-0.002
	85 %	+20	3452 499 949	-21.1	-0.000 001	-0.006
3547.500	100 %	+20(Ref)	3547 499 989	0.0	0.000 000	0.000
	100 %	-30	3547 499 976	-13.4	0.000 000	-0.004
	100 %	-20	3547 499 972	-17.2	0.000 000	-0.005
	100 %	-10	3547 499 968	-21.5	-0.000 001	-0.006
	100 %	0	3547 499 983	-6.6	0.000 000	-0.002
	100 %	+10	3547 499 980	-9.6	0.000 000	-0.003
	100 %	+30	3547 499 977	-12.6	0.000 000	-0.004
	100 %	+40	3547 499 974	-15.8	0.000 000	-0.004
	100 %	+50	3547 499 969	-20.2	-0.000 001	-0.006
	115 %	+20	3547 499 966	-10.4	0.000 000	-0.003
	85 %	+20	3547 499 957	-15.1	0.000 000	-0.004

- ☐ BandWidth: 10 MHz
☐ Voltage(100 %): 12.000 VDC
☐ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
3452.500	100 %	+20(Ref)	3454 999 979	0.0	0.000 000	0.000
	100 %	-30	3454 999 961	-18.0	-0.000 001	-0.005
	100 %	-20	3454 999 944	-35.2	-0.000 001	-0.010
	100 %	-10	3454 999 947	-32.0	-0.000 001	-0.009
	100 %	0	3454 999 947	-32.2	-0.000 001	-0.009
	100 %	+10	3454 999 953	-26.3	-0.000 001	-0.008
	100 %	+30	3454 999 950	-28.9	-0.000 001	-0.008
	100 %	+40	3454 999 954	-25.3	-0.000 001	-0.007
	100 %	+50	3454 999 943	-36.2	-0.000 001	-0.010
	115 %	+20	3454 999 950	-11.1	0.000 000	-0.003
	85 %	+20	3454 999 922	-21.4	-0.000 001	-0.006
3547.500	100 %	+20(Ref)	3544 999 983	0.0	0.000 000	0.000
	100 %	-30	3544 999 971	-12.0	0.000 000	-0.003
	100 %	-20	3544 999 976	-6.5	0.000 000	-0.002
	100 %	-10	3544 999 964	-19.0	-0.000 001	-0.005
	100 %	0	3544 999 970	-12.1	0.000 000	-0.003
	100 %	+10	3544 999 961	-21.2	-0.000 001	-0.006
	100 %	+30	3544 999 969	-13.9	0.000 000	-0.004
	100 %	+40	3544 999 974	-8.5	0.000 000	-0.002
	100 %	+50	3544 999 973	-9.5	0.000 000	-0.003
	115 %	+20	3544 999 961	-9.9	0.000 000	-0.003
	85 %	+20	3544 999 965	-11.4	0.000 000	-0.003

- ☐ BandWidth: 15 MHz
☐ Voltage(100 %): 12.000 VDC
☐ LIMIT: Emission must remain in band

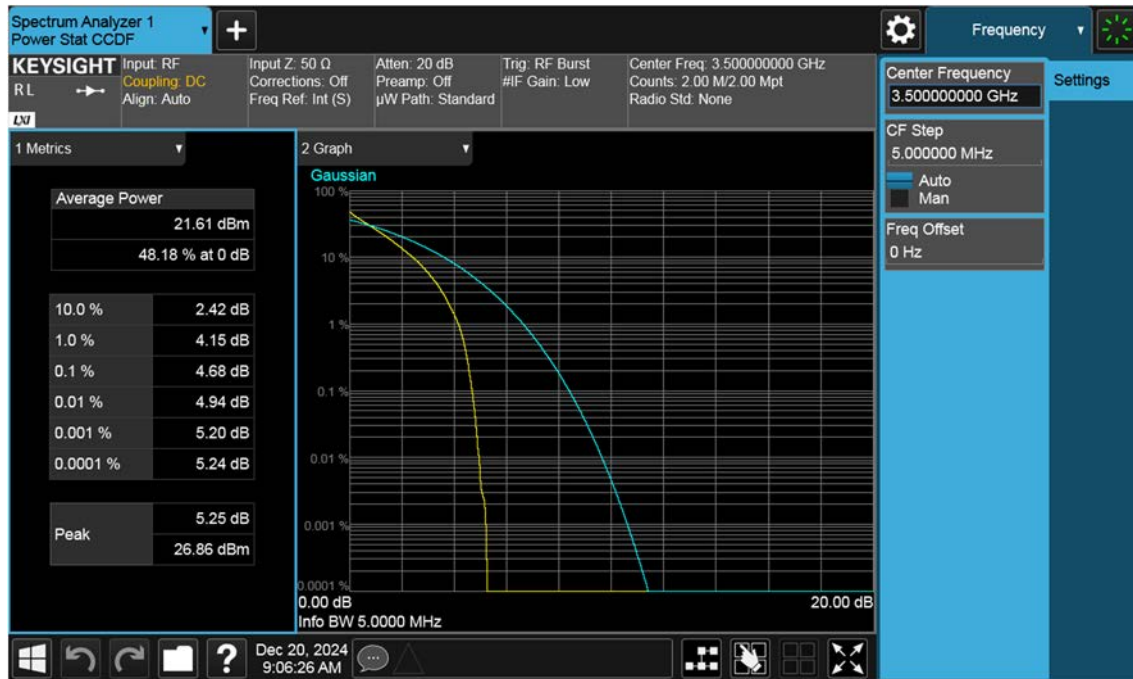
Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
3452.500	100 %	+20(Ref)	3457 499 980	0.0	0.000 000	0.000
	100 %	-30	3457 499 972	-8.2	0.000 000	-0.002
	100 %	-20	3457 499 961	-18.6	-0.000 001	-0.005
	100 %	-10	3457 499 973	-7.2	0.000 000	-0.002
	100 %	0	3457 499 966	-14.3	0.000 000	-0.004
	100 %	+10	3457 499 973	-6.9	0.000 000	-0.002
	100 %	+30	3457 499 972	-8.2	0.000 000	-0.002
	100 %	+40	3457 499 963	-17.3	-0.000 001	-0.005
	100 %	+50	3457 499 972	-7.8	0.000 000	-0.002
	115 %	+20	3457 499 963	-8.6	0.000 000	-0.002
	85 %	+20	3457 499 954	-7.1	0.000 000	-0.002
3547.500	100 %	+20(Ref)	3542 499 993	0.0	0.000 000	0.000
	100 %	-30	3542 499 978	-15.1	0.000 000	-0.004
	100 %	-20	3542 499 987	-6.3	0.000 000	-0.002
	100 %	-10	3542 499 978	-14.4	0.000 000	-0.004
	100 %	0	3542 499 977	-15.7	0.000 000	-0.004
	100 %	+10	3542 499 981	-12.0	0.000 000	-0.003
	100 %	+30	3542 499 973	-19.5	-0.000 001	-0.006
	100 %	+40	3542 499 985	-7.4	0.000 000	-0.002
	100 %	+50	3542 499 977	-15.8	0.000 000	-0.004
	115 %	+20	3542 499 969	-8.7	0.000 000	-0.002
	85 %	+20	3542 499 977	-9.4	0.000 000	-0.003

- ☐ BandWidth: 20 MHz
☐ Voltage(100 %): 12.000 VDC
☐ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	Error (Hz)	(%)	
3452.500	100 %	+20(Ref)	3459 999 983	0.0	0.000 000	0.000
	100 %	-30	3459 999 978	-4.9	0.000 000	-0.001
	100 %	-20	3459 999 973	-9.8	0.000 000	-0.003
	100 %	-10	3459 999 966	-17.0	0.000 000	-0.005
	100 %	0	3459 999 977	-5.8	0.000 000	-0.002
	100 %	+10	3459 999 973	-10.2	0.000 000	-0.003
	100 %	+30	3459 999 967	-15.6	0.000 000	-0.005
	100 %	+40	3459 999 978	-4.5	0.000 000	-0.001
	100 %	+50	3459 999 973	-9.4	0.000 000	-0.003
	115 %	+20	3459 999 971	-6.9	0.000 000	-0.002
	85 %	+20	3459 999 966	-7.1	0.000 000	-0.002
3547.500	100 %	+20(Ref)	3539 999 980	0.0	0.000 000	0.000
	100 %	-30	3539 999 971	-8.7	0.000 000	-0.002
	100 %	-20	3539 999 965	-15.1	0.000 000	-0.004
	100 %	-10	3539 999 960	-19.9	-0.000 001	-0.006
	100 %	0	3539 999 970	-9.7	0.000 000	-0.003
	100 %	+10	3539 999 963	-17.2	0.000 000	-0.005
	100 %	+30	3539 999 974	-5.9	0.000 000	-0.002
	100 %	+40	3539 999 968	-12.3	0.000 000	-0.003
	100 %	+50	3539 999 970	-9.5	0.000 000	-0.003
	115 %	+20	3539 999 964	-6.8	0.000 000	-0.002
	85 %	+20	3539 999 957	-7.7	0.000 000	-0.002

9. TEST PLOTS

LTE B42_5 M_PAR_Mid_QPSK_FullRB



LTE B42_5 M_PAR_Mid_16QAM_FullRB



LTE B42_5 M_PAR_Mid_64QAM_FullRB



LTE B42_5 M_PAR_Mid_256QAM_FullRB



LTE B42_10 M_PAR_Mid_QPSK_FullRB



LTE B42_10 M_PAR_Mid_16QAM_FullRB



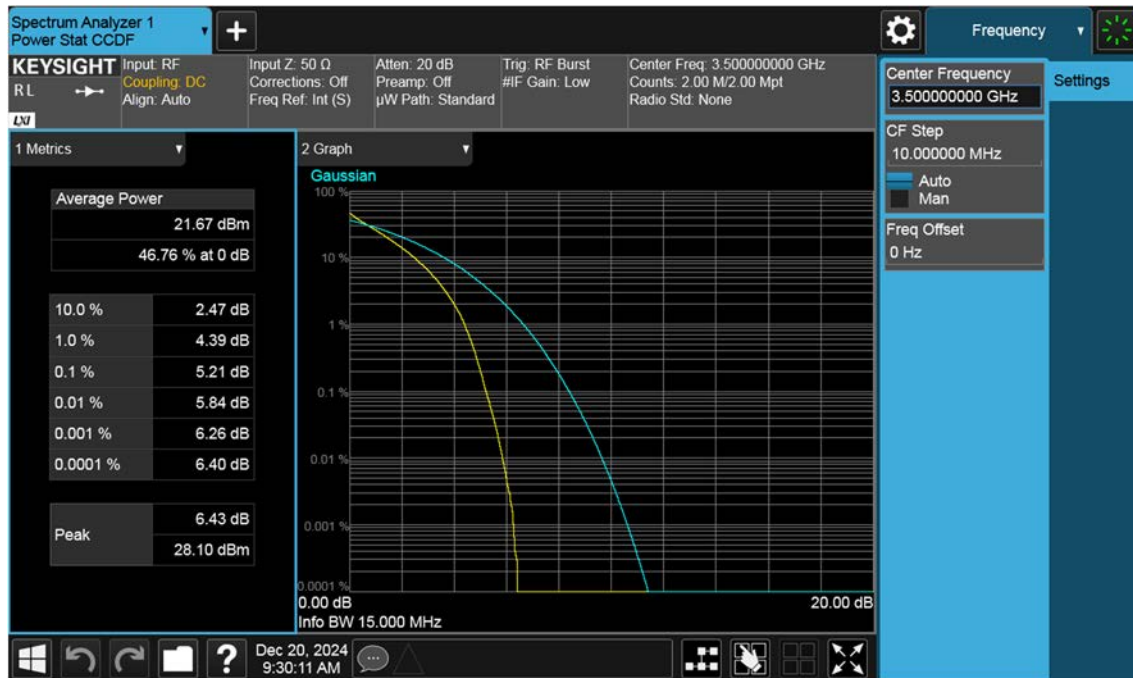
LTE B42_10 M_PAR_Mid_64QAM_FullRB



LTE B42_10 M_PAR_Mid_256QAM_FullRB



LTE B42_15 M_PAR_Mid_QPSK_FullRB



LTE B42_15 M_PAR_Mid_16QAM_FullRB



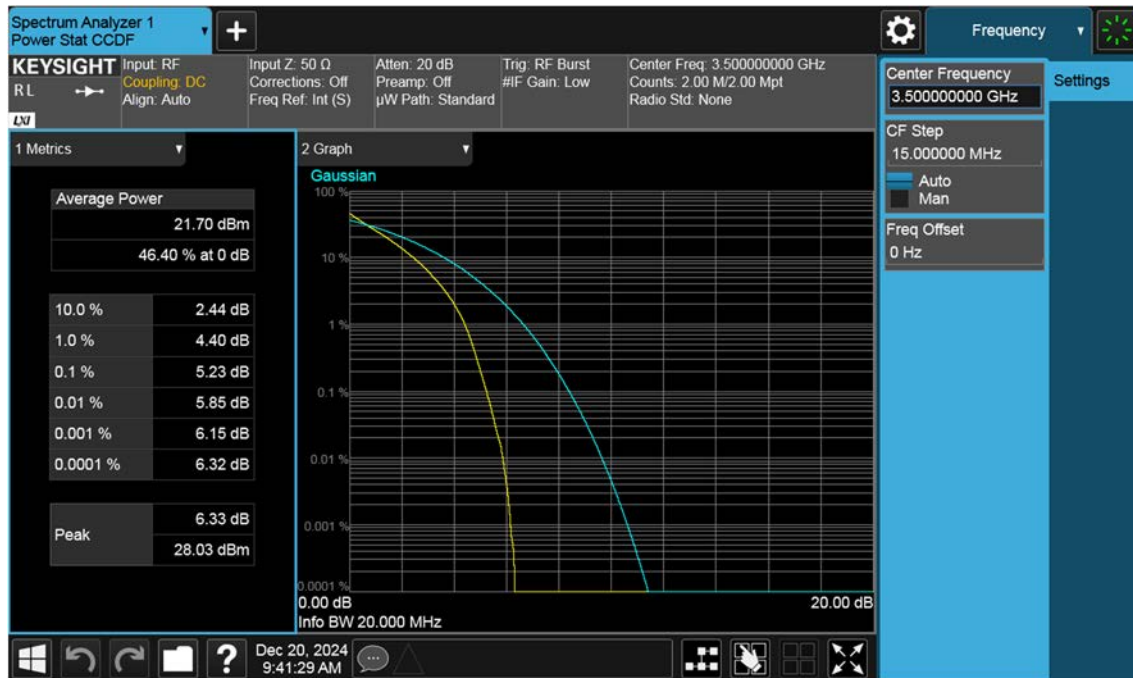
LTE B42_15 M_PAR_Mid_64QAM_FullRB



LTE B42_15 M_PAR_Mid_256QAM_FullRB



LTE B42_20 M_PAR_Mid_QPSK_FullRB



LTE B42_20 M_PAR_Mid_16QAM_FullRB



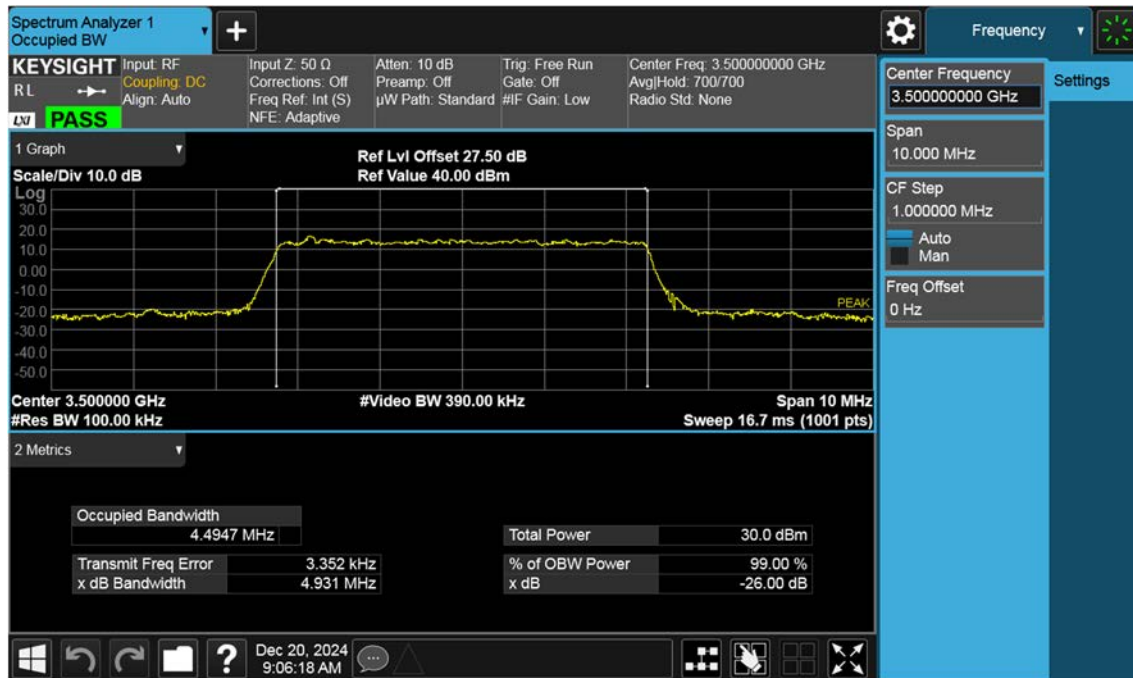
LTE B42_20 M_PAR_Mid_64QAM_FullRB



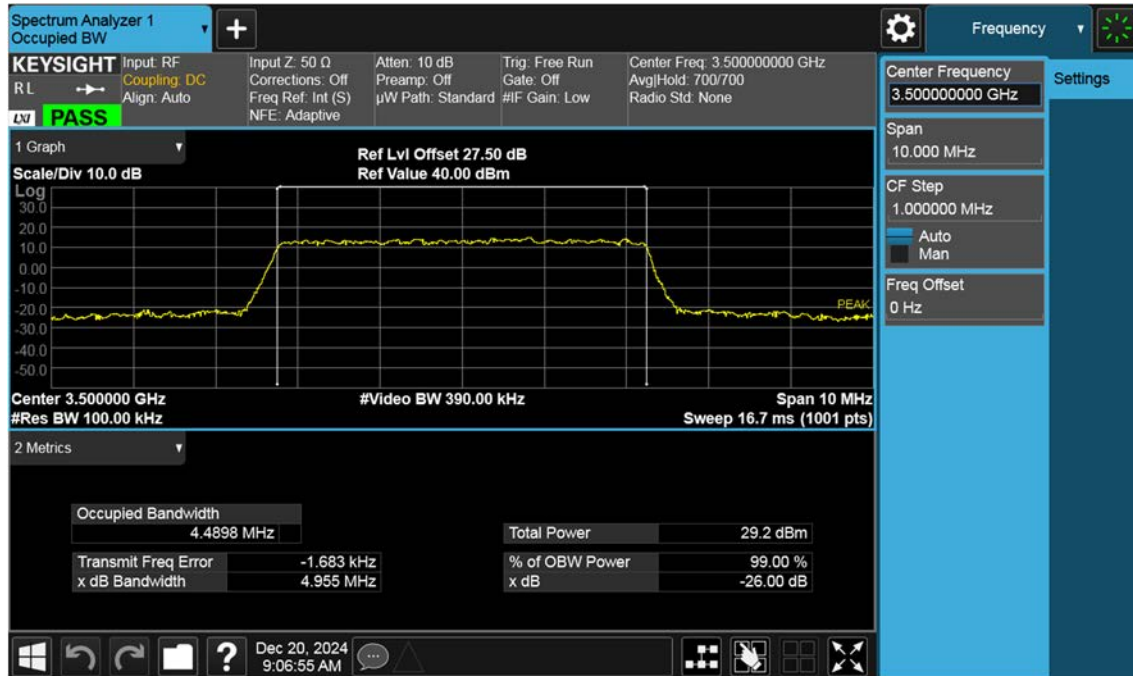
LTE B42_20 M_PAR_Mid_256QAM_FullRB



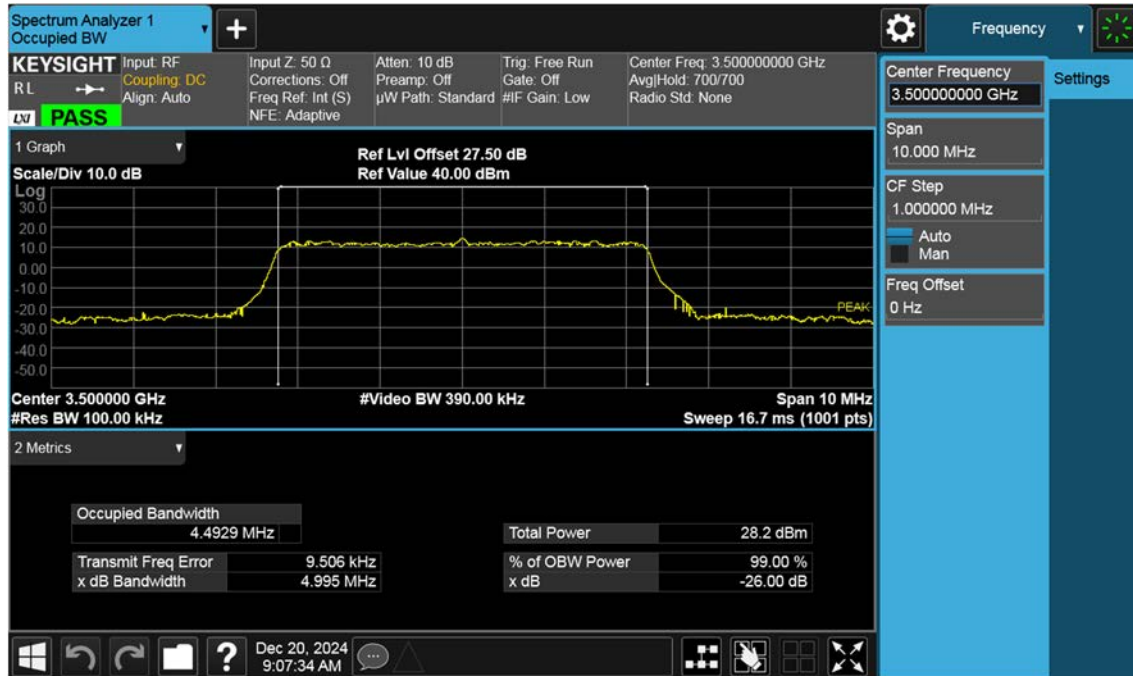
LTE B42_5 M_OBW_Mid_QPSK_FullRB



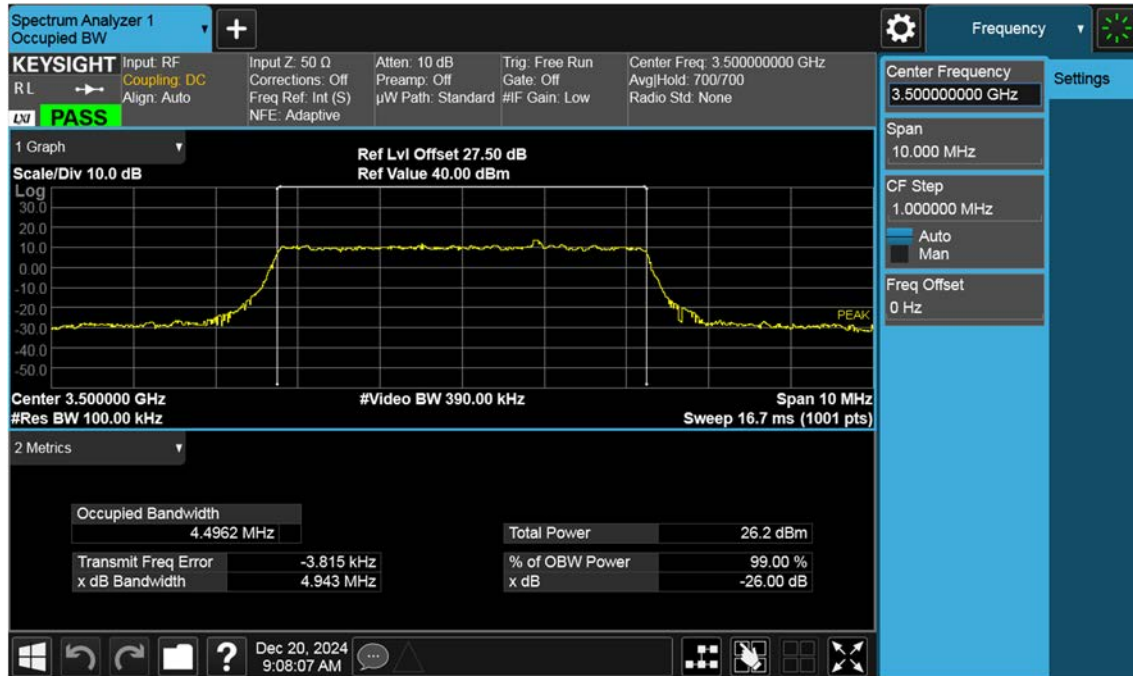
LTE B42_5 M_OBW_Mid_16QAM_FullRB



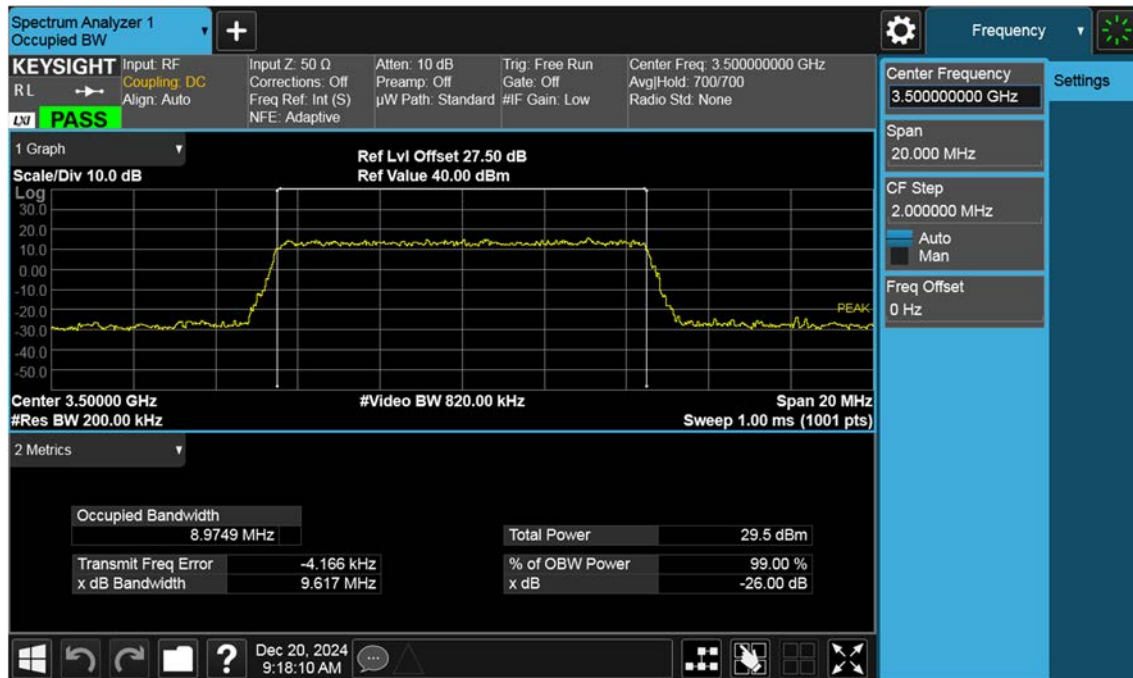
LTE B42_5 M_OBW_Mid_64QAM_FullRB



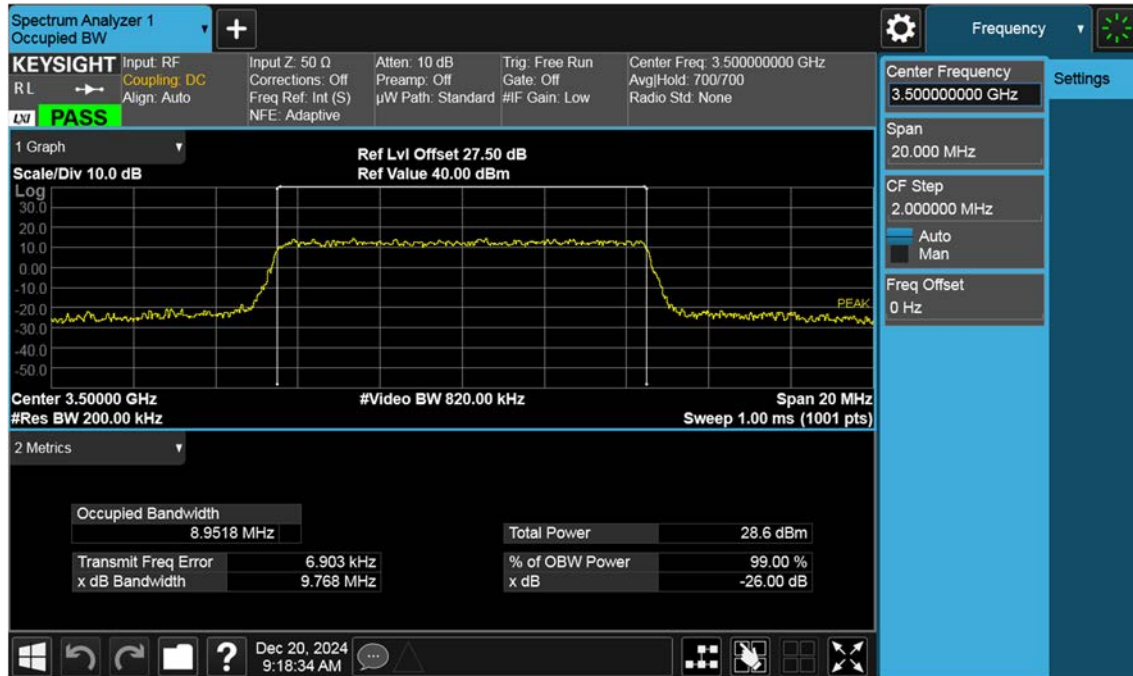
LTE B42_5 M_OBW_Mid_256QAM_FullRB



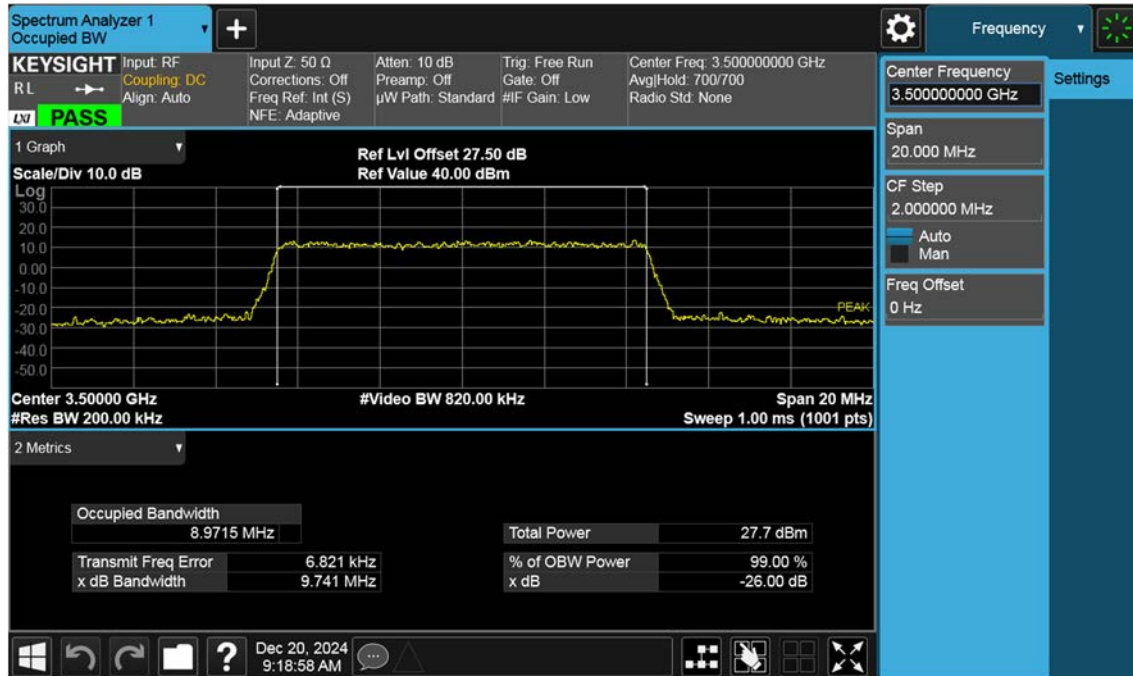
LTE B42_10 M_OBW_Mid_QPSK_FullRB



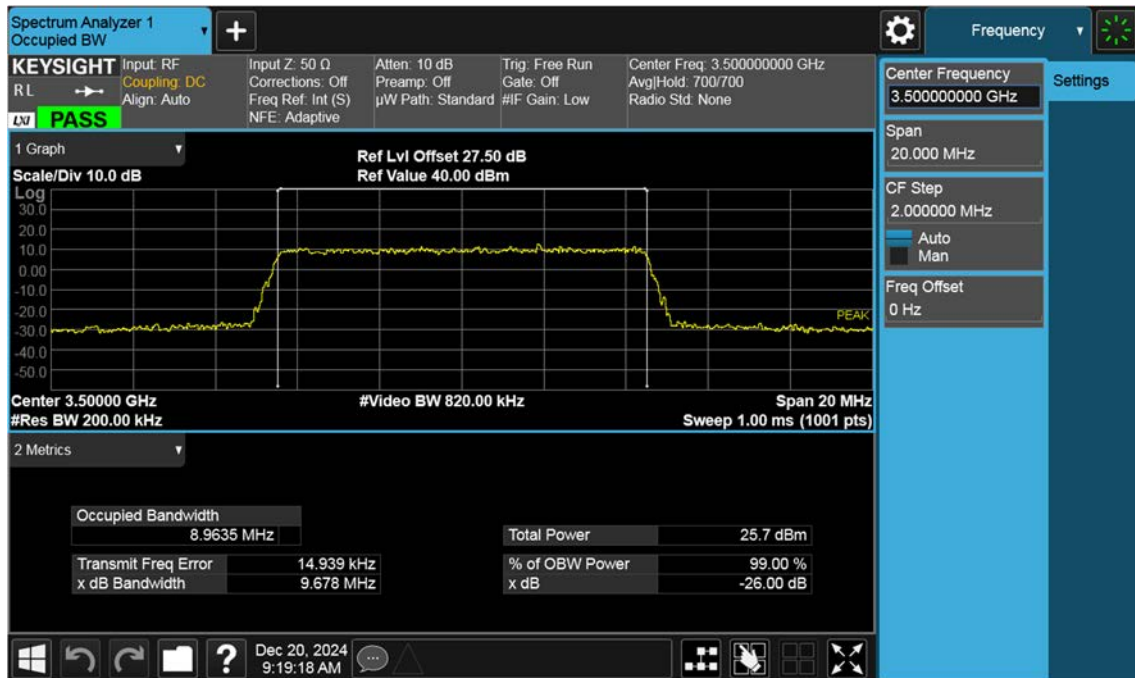
LTE B42_10 M_OBW_Mid_16QAM_FullRB



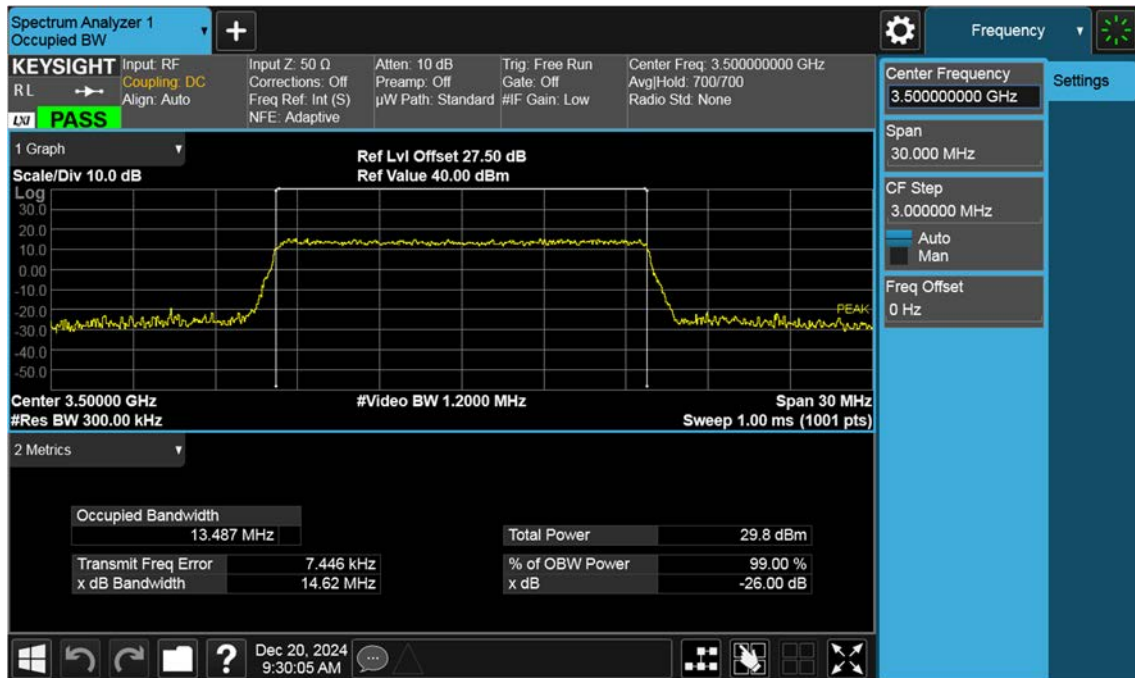
LTE B42_10 M_OBW_Mid_64QAM_FullRB



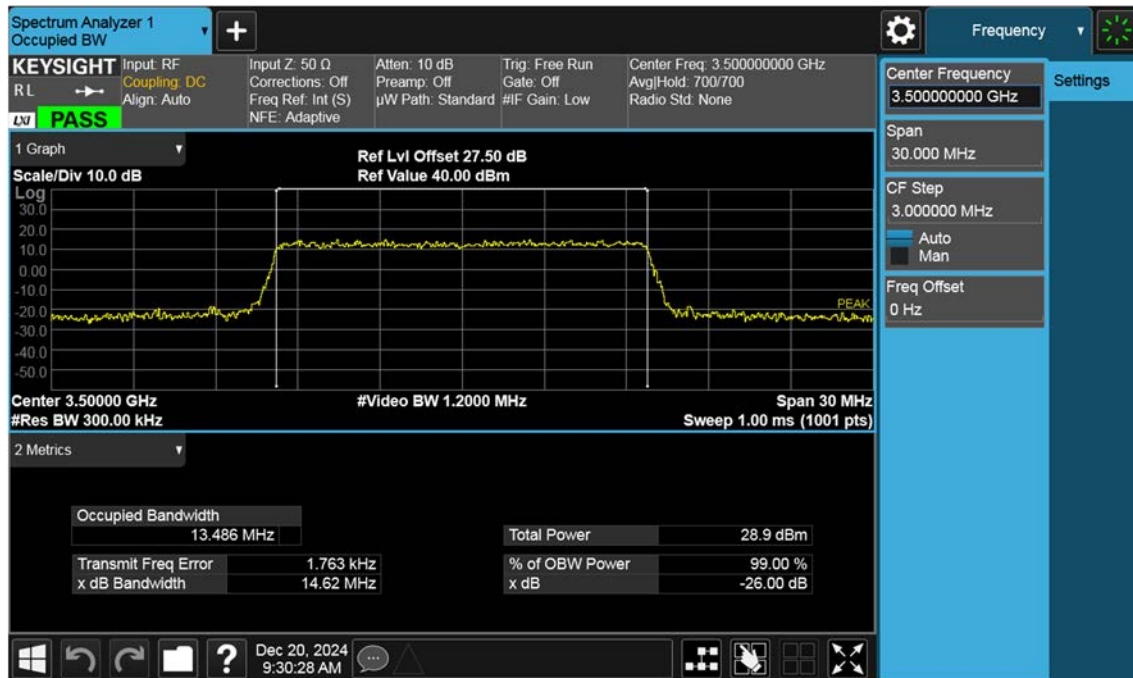
LTE B42_10 M_OBW_Mid_256QAM_FullRB



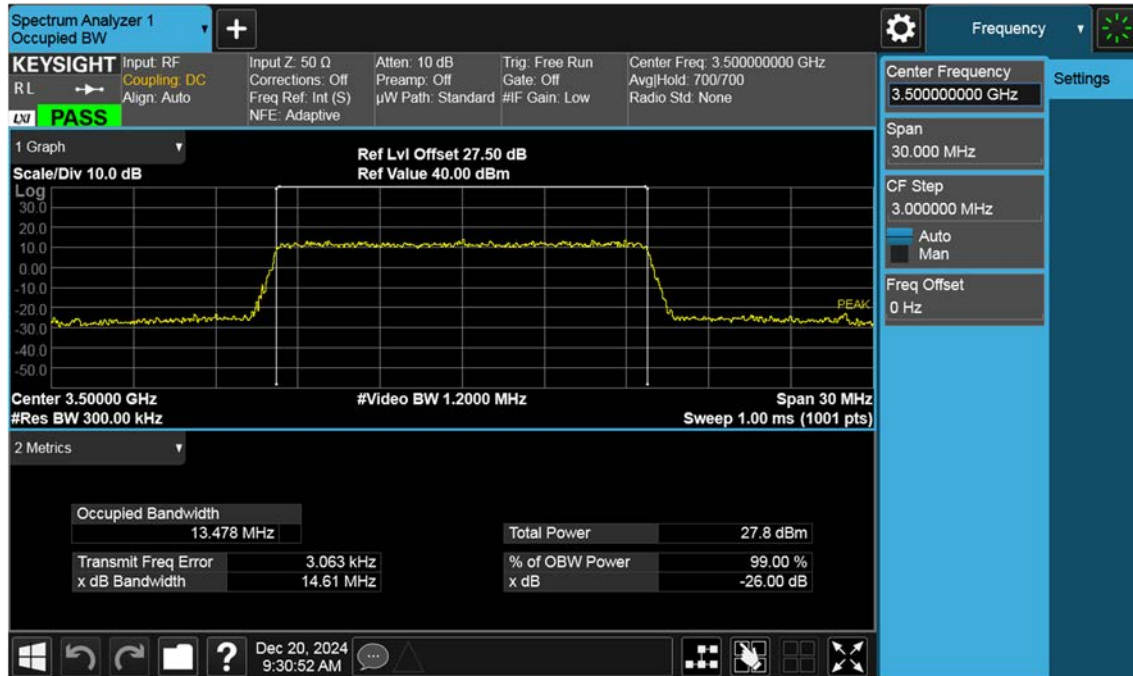
LTE B42_15 M_OBW_Mid_QPSK_FullRB



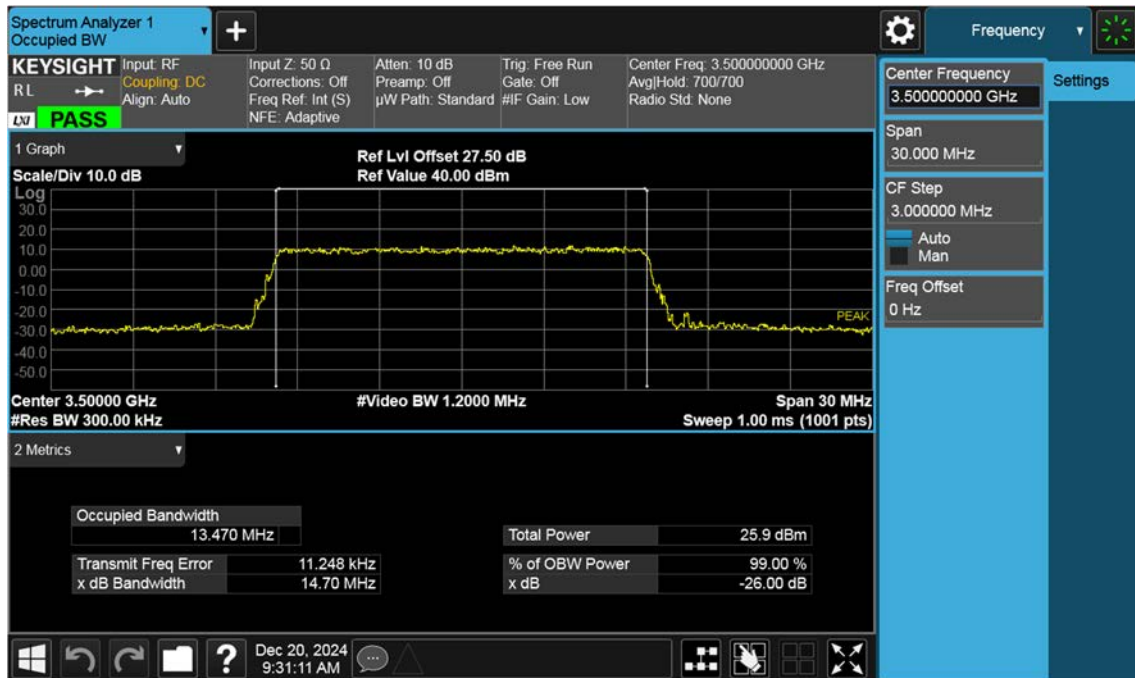
LTE B42_15 M_OBW_Mid_16QAM_FullRB



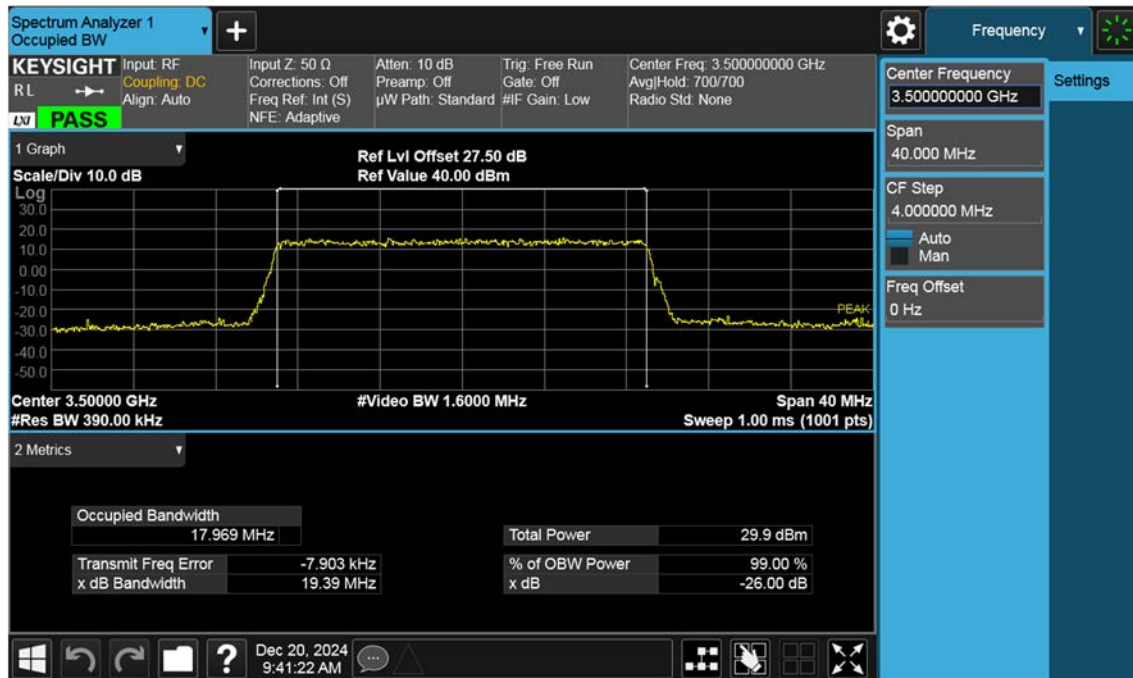
LTE B42_15 M_OBW_Mid_64QAM_FullRB



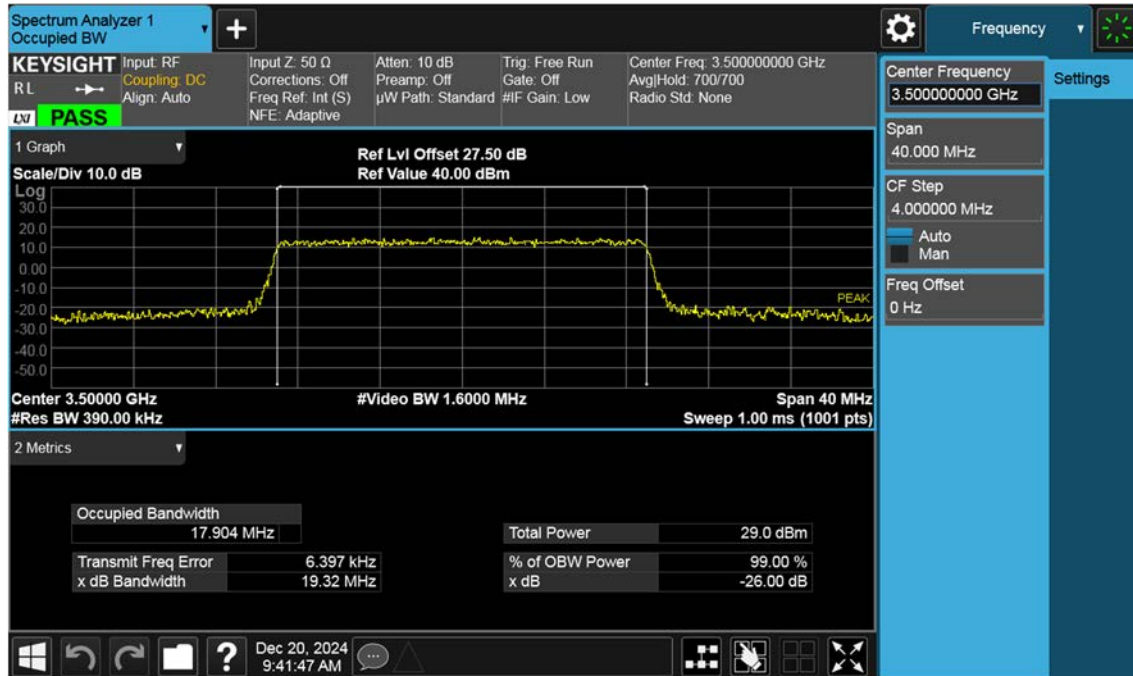
LTE B42_15 M_OBW_Mid_256QAM_FullRB



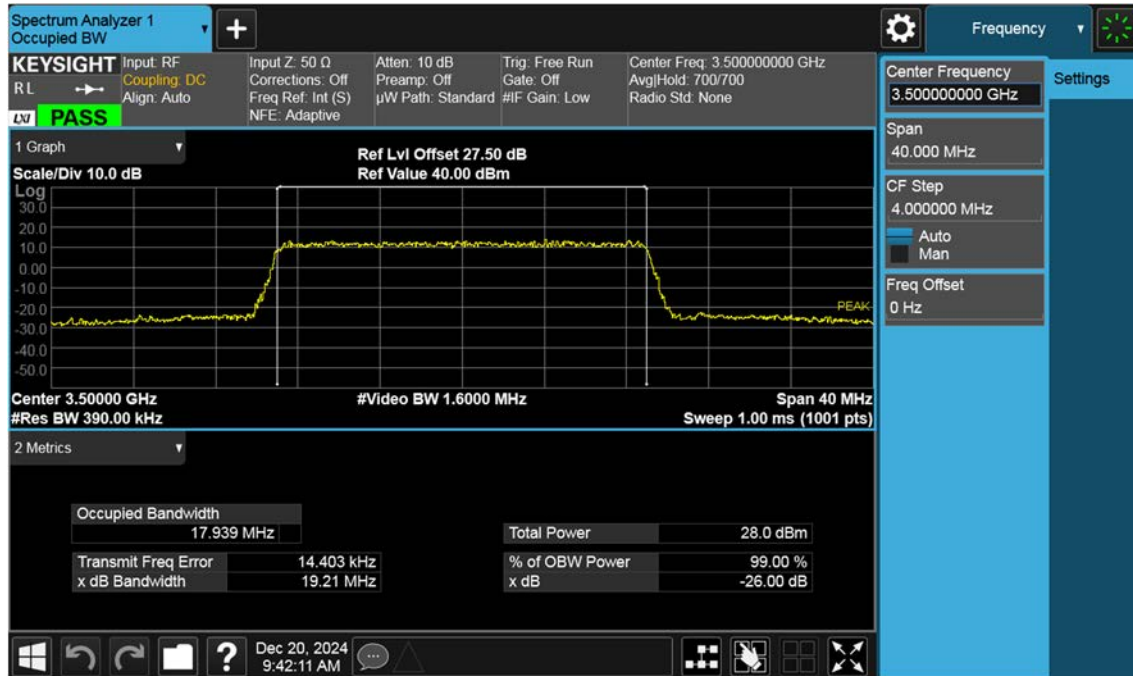
LTE B42_20 M_OBW_Mid_QPSK_FullRB



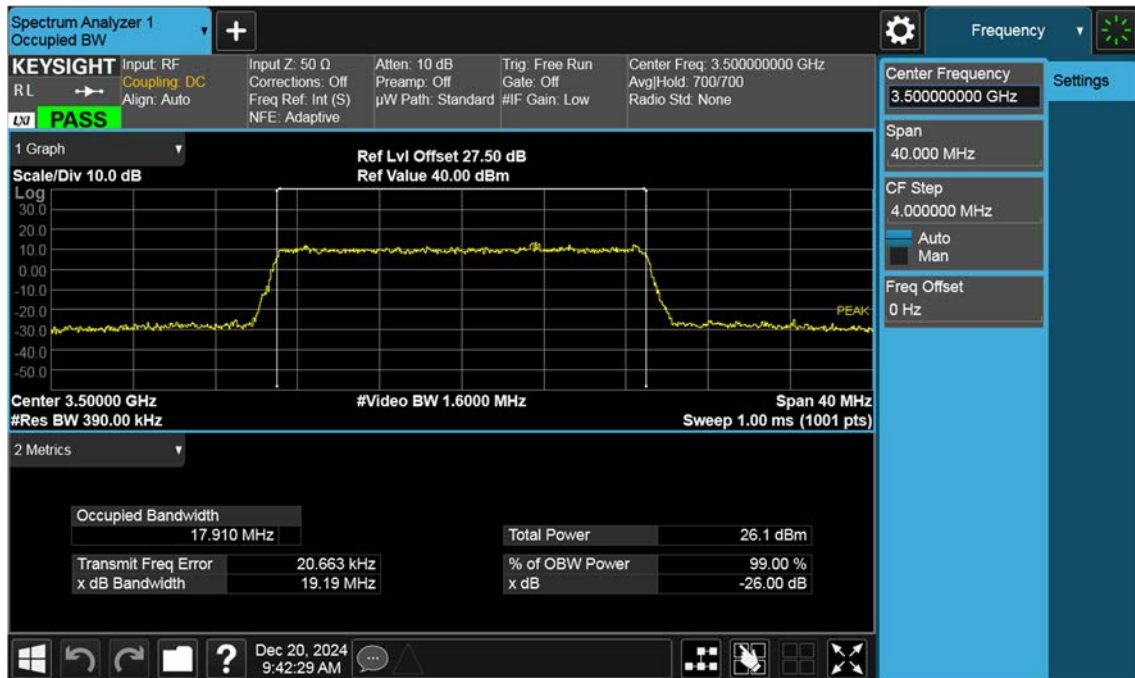
LTE B42_20 M_OBW_Mid_16QAM_FullRB



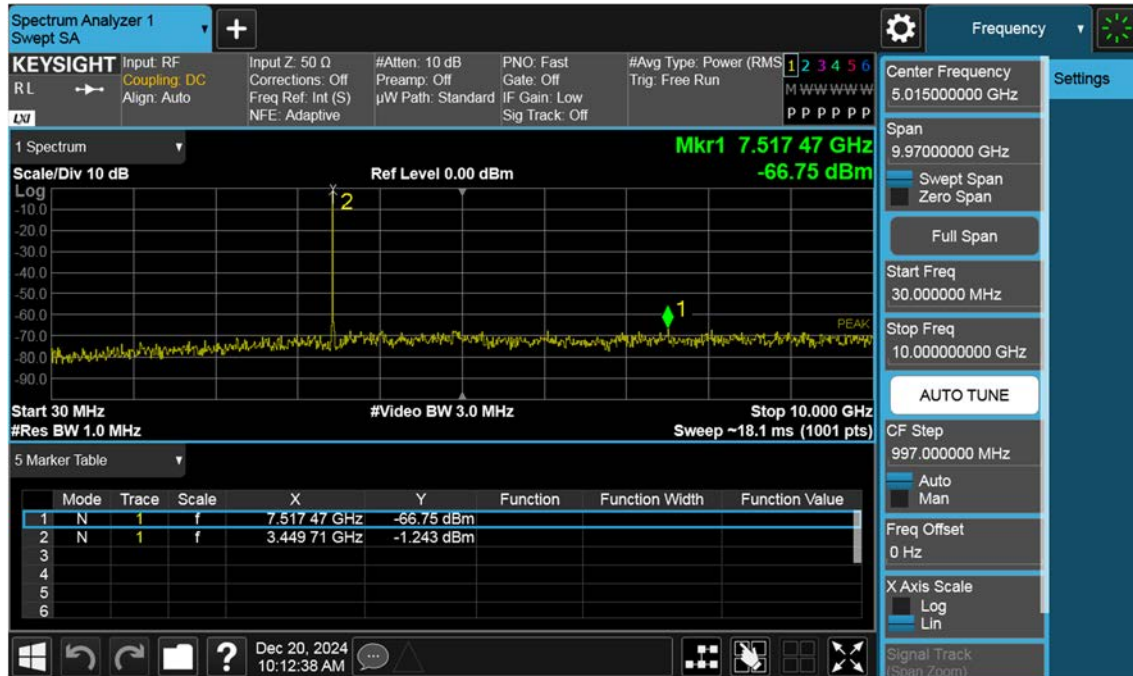
LTE B42_20 M_OBW_Mid_64QAM_FullRB



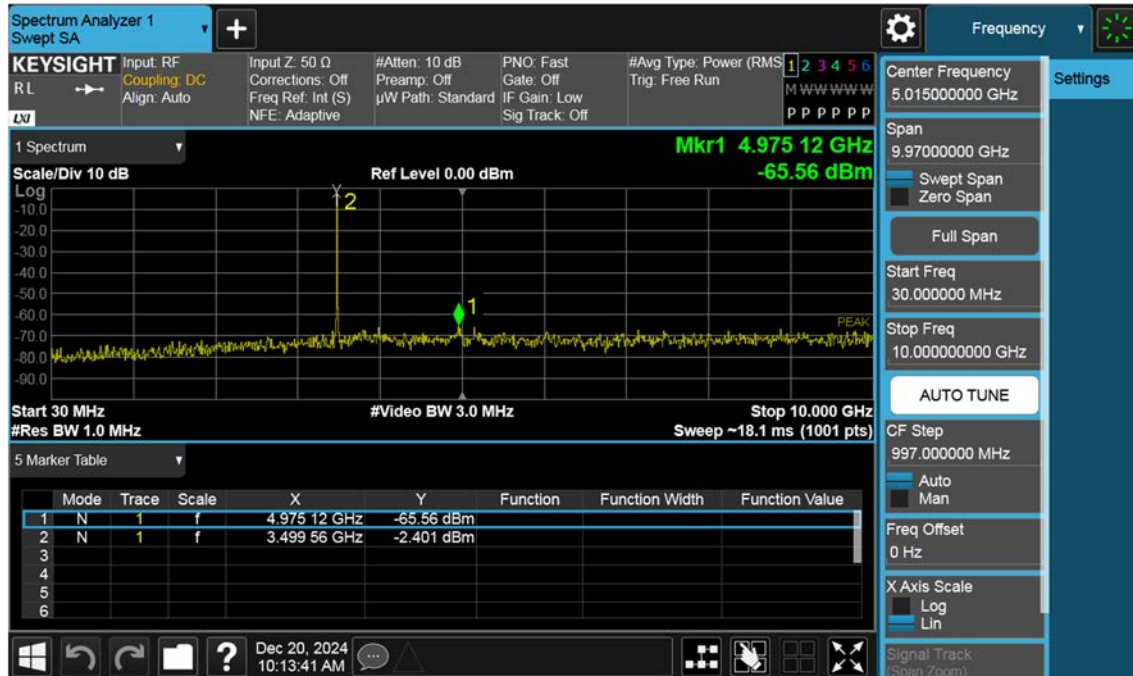
LTE B42_20 M_OBW_Mid_256QAM_FullRB



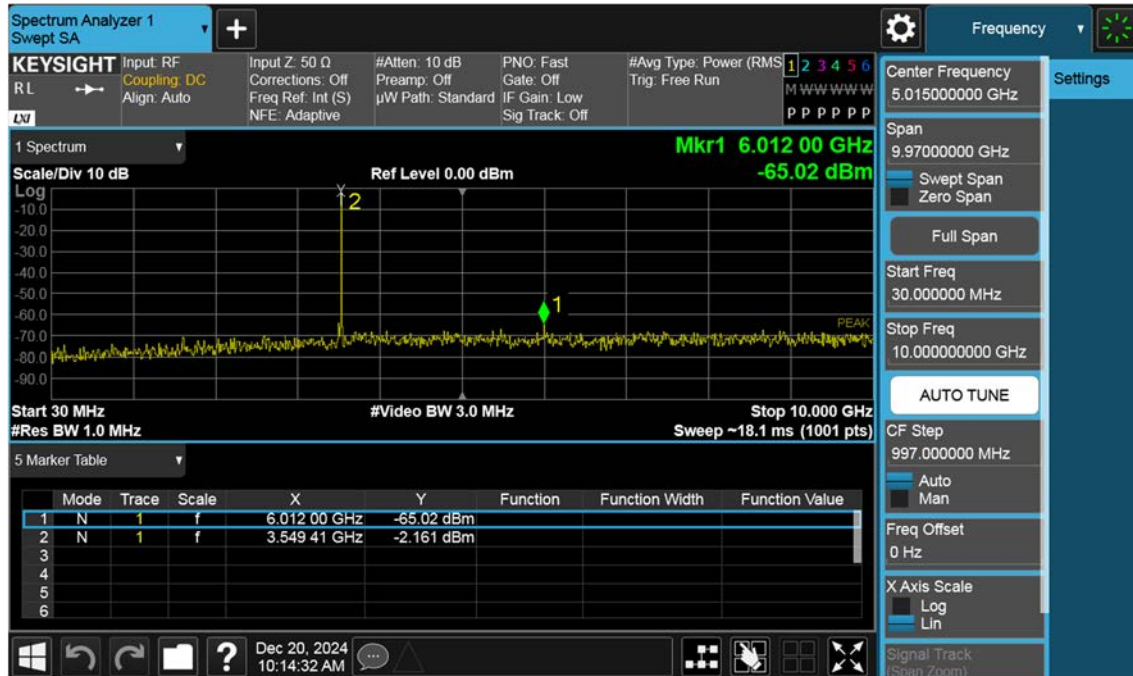
LTE B42_5 M_Conducted Spurious(30 M-10 G)_Low_QPSK_1RB



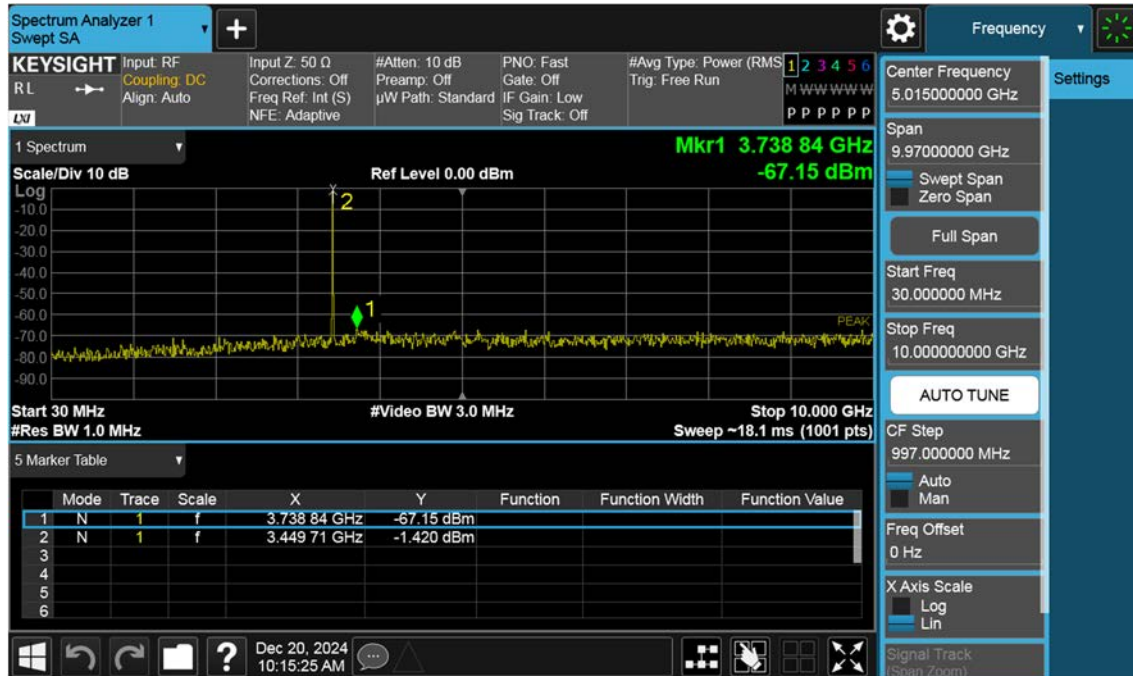
LTE B42_5 M_Conducted Spurious(30 M-10 G)_Mid_QPSK_1RB



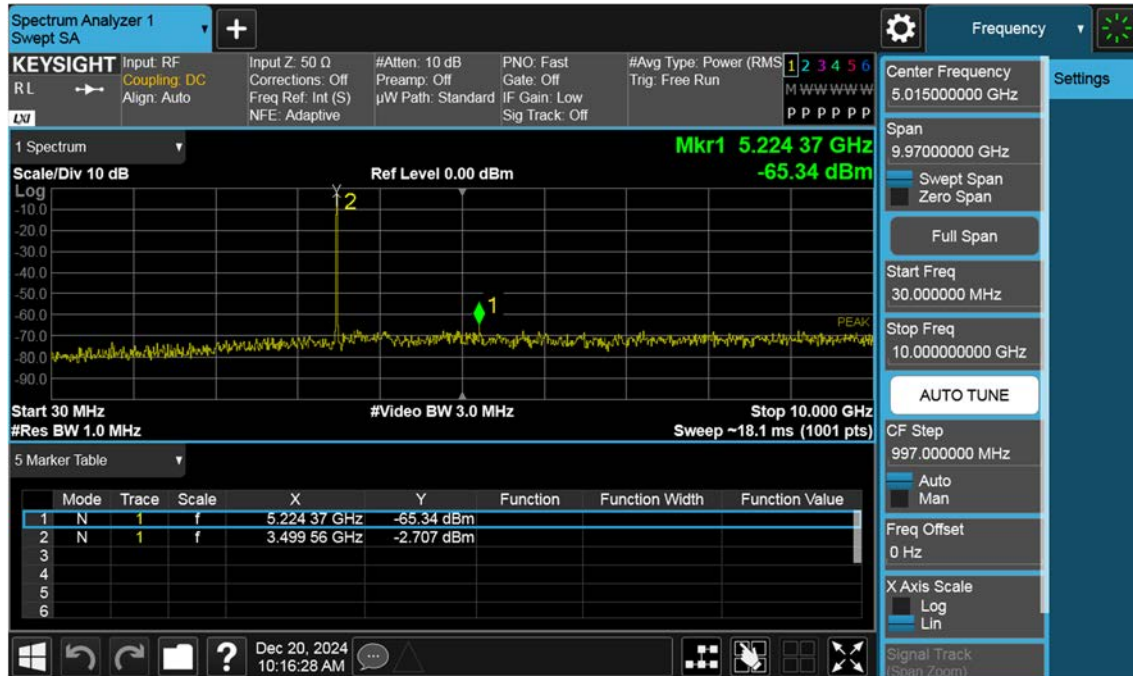
LTE B42_5 M_Conducted Spurious(30 M-10 G)_High_QPSK_1RB



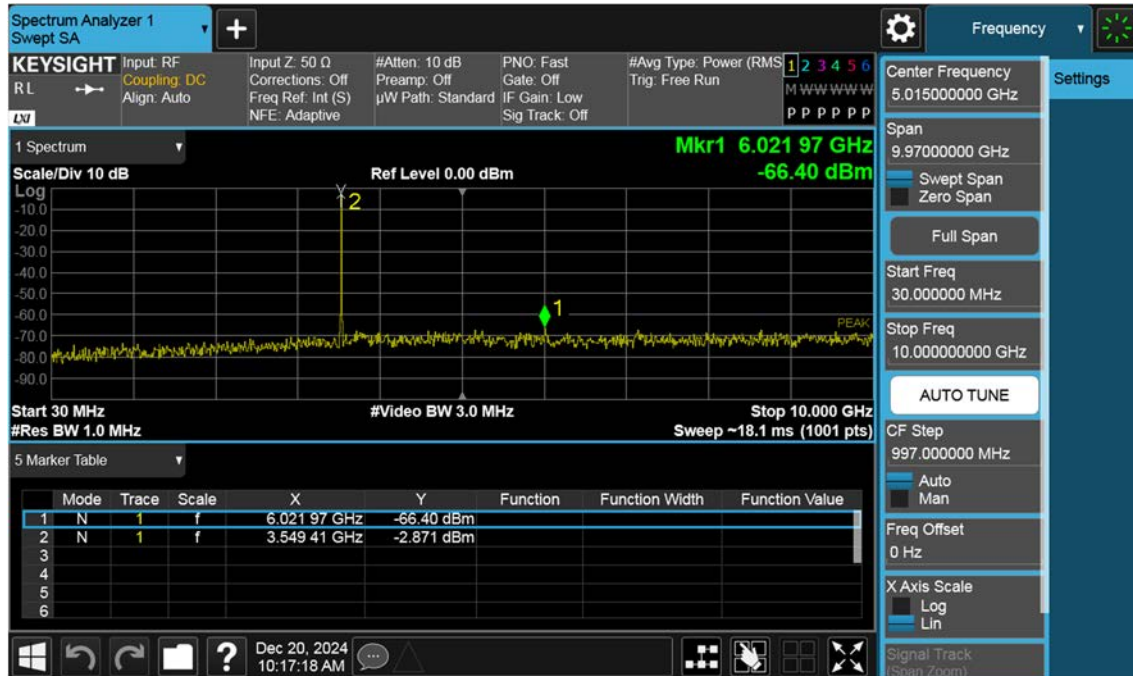
LTE B42_10 M_Conducted Spurious(30 M-10 G)_Low_QPSK_1RB



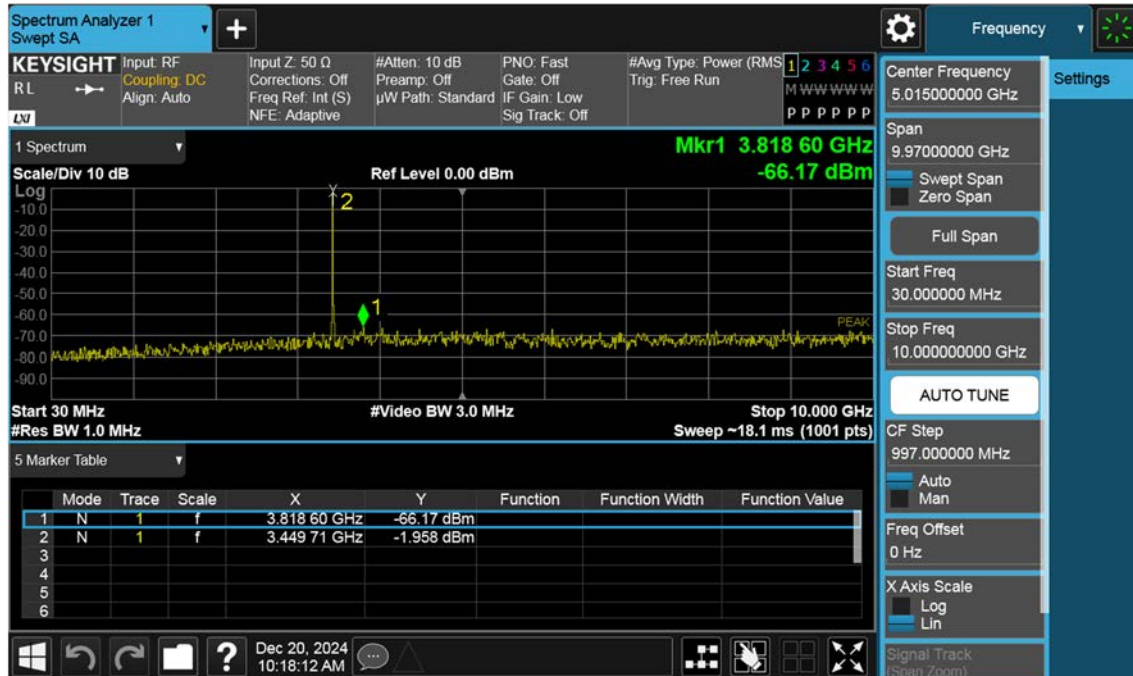
LTE B42_10 M_Conducted Spurious(30 M-10 G)_Mid_QPSK_1RB



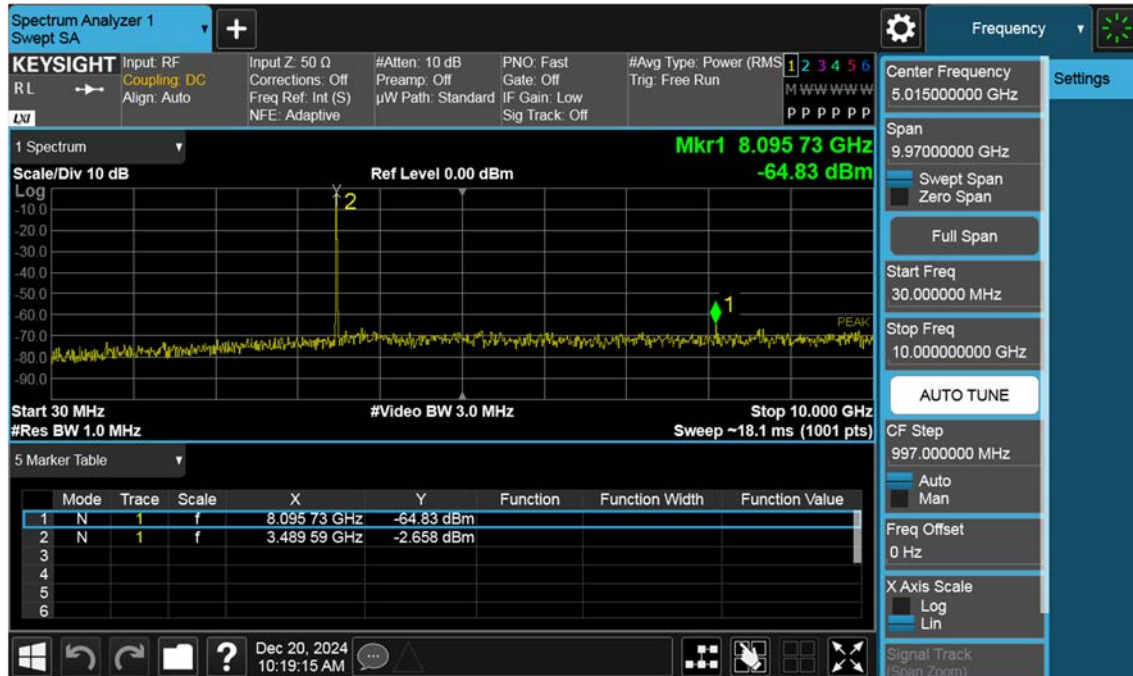
LTE B42_10 M_Conducted Spurious(30 M-10 G)_High_QPSK_1RB



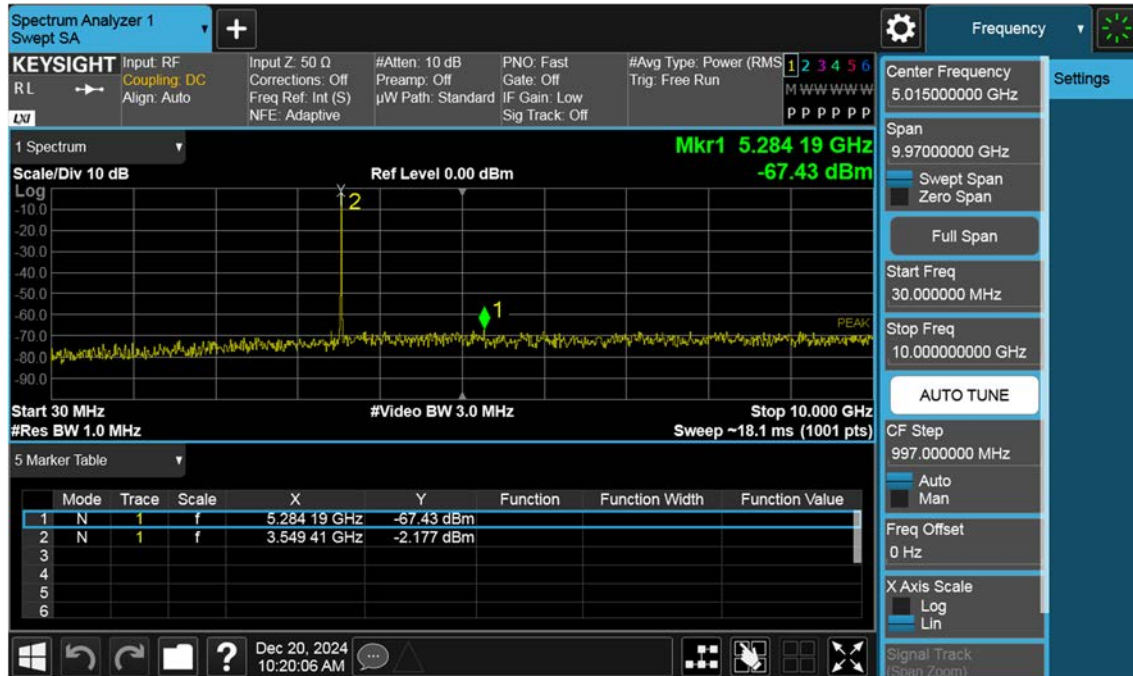
LTE B42_15 M_Conducted Spurious(30 M-10 G)_Low_QPSK_1RB



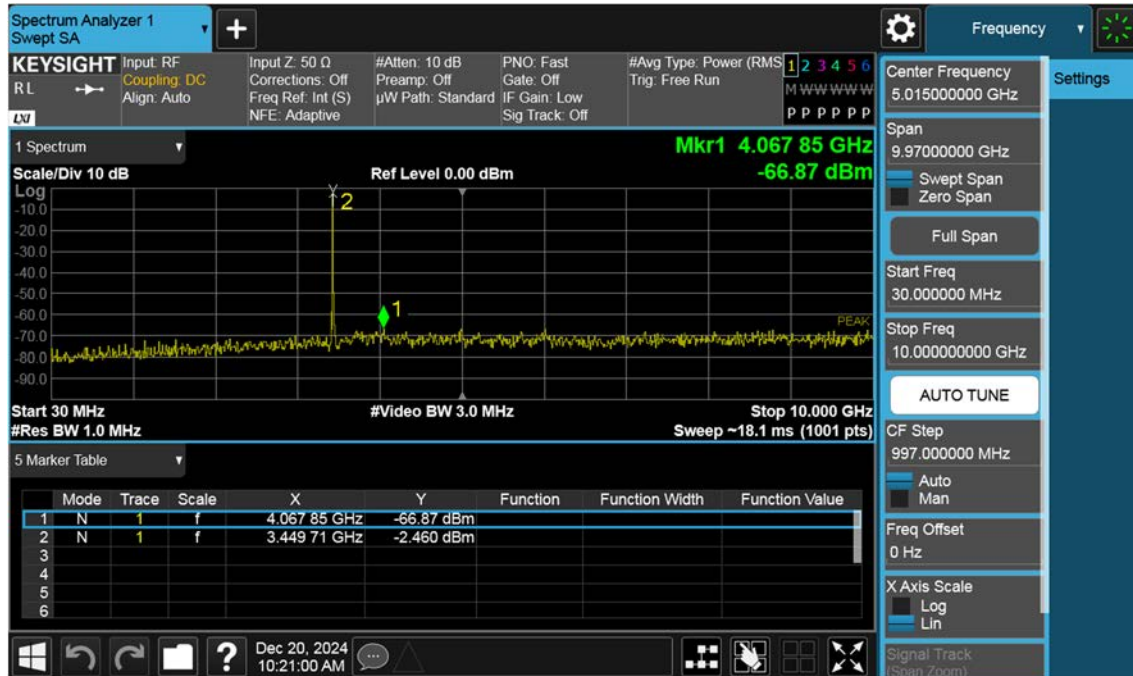
LTE B42_15 M_Conducted Spurious(30 M-10 G)_Mid_QPSK_1RB



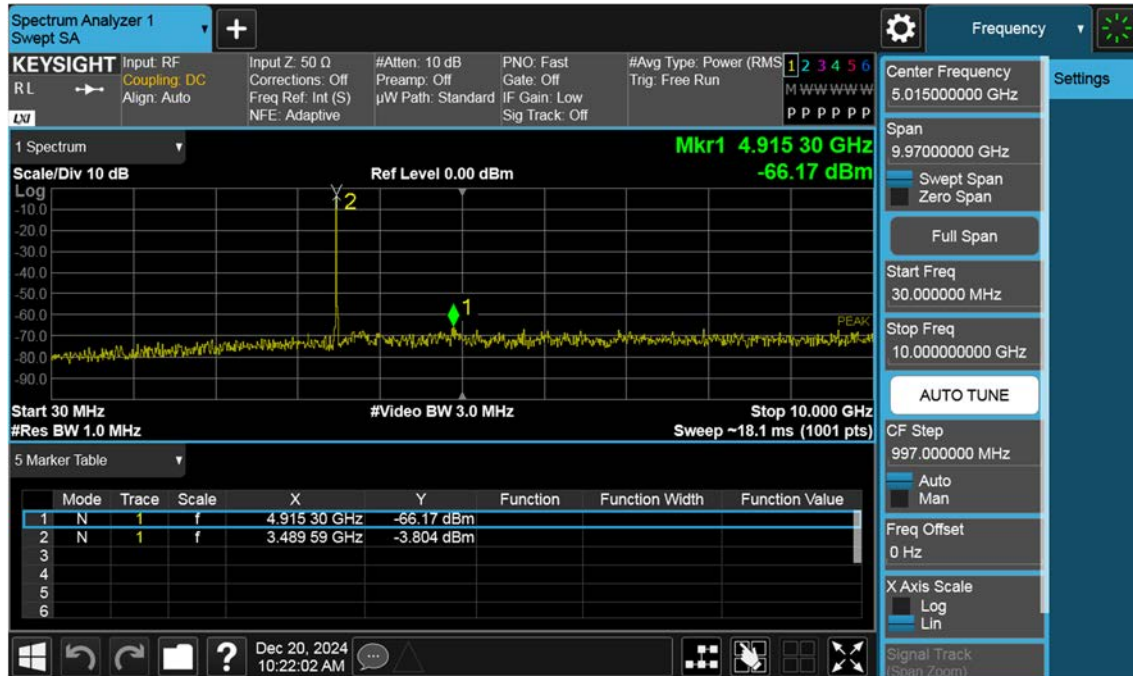
LTE B42_15 M_Conducted Spurious(30 M-10 G)_High_QPSK_1RB



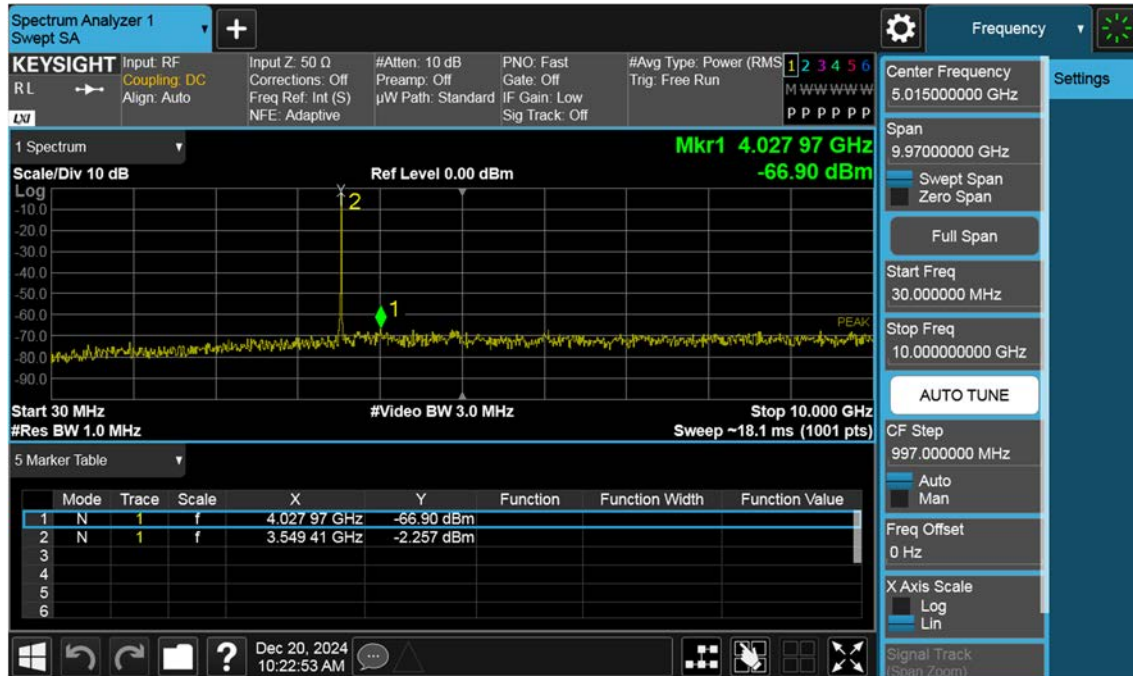
LTE B42_20 M_Conducted Spurious(30 M-10 G)_Low_QPSK_1RB



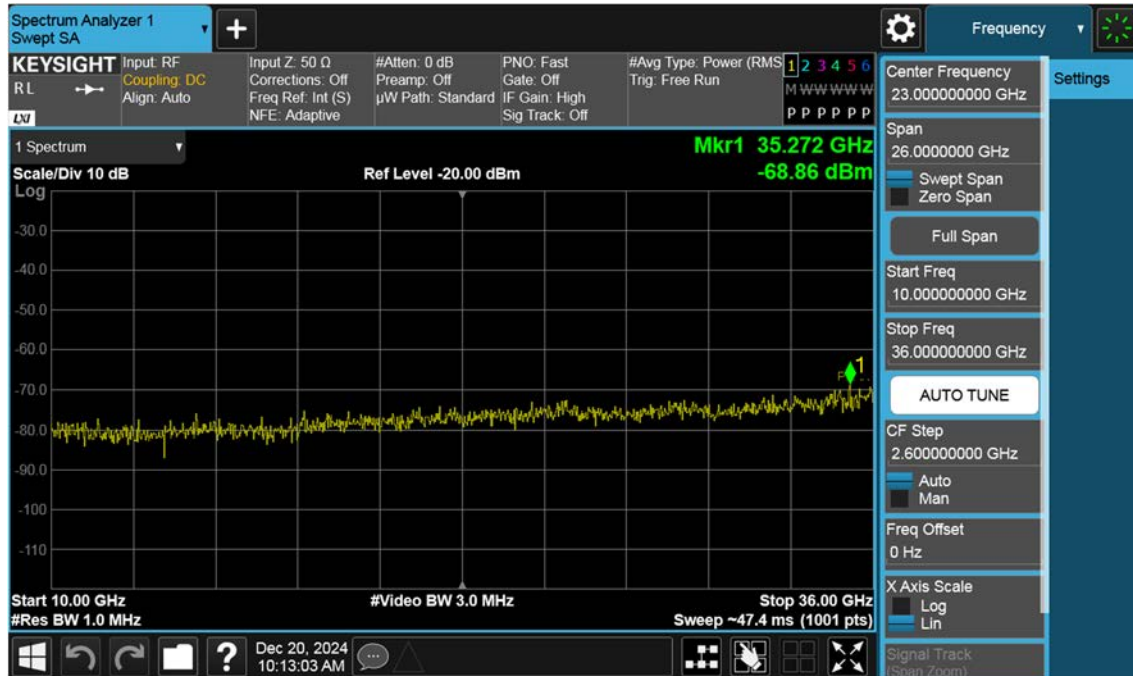
LTE B42_20 M_Conducted Spurious(30 M-10 G)_Mid_QPSK_1RB



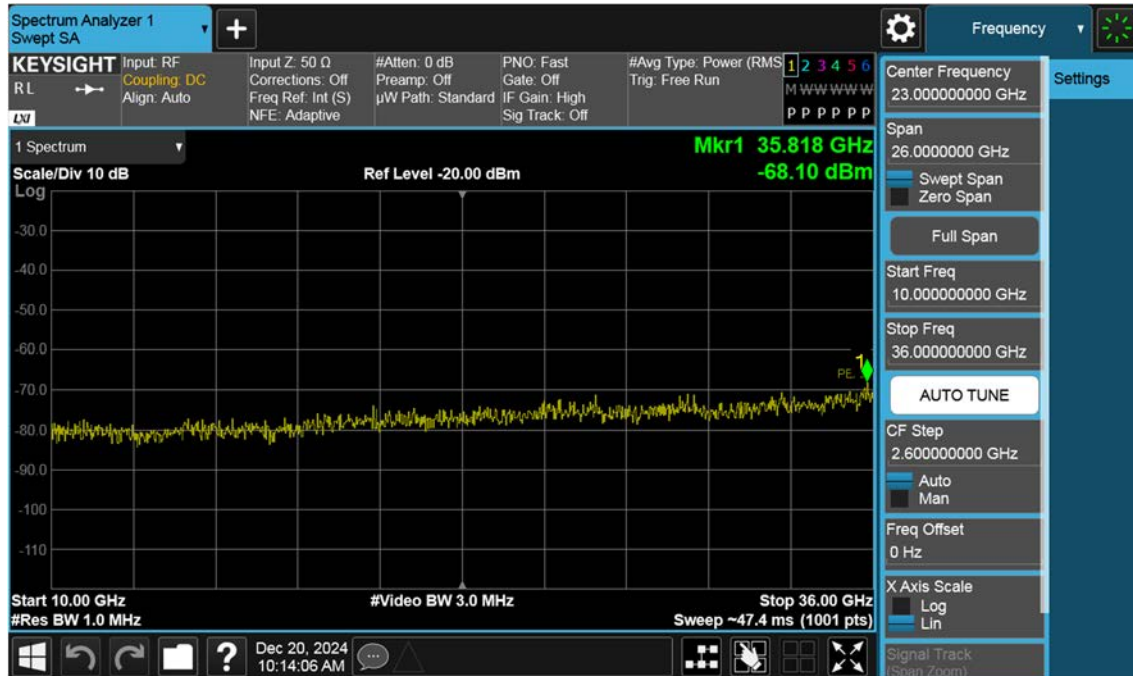
LTE B42_20 M_Conducted Spurious(30 M-10 G)_High_QPSK_1RB



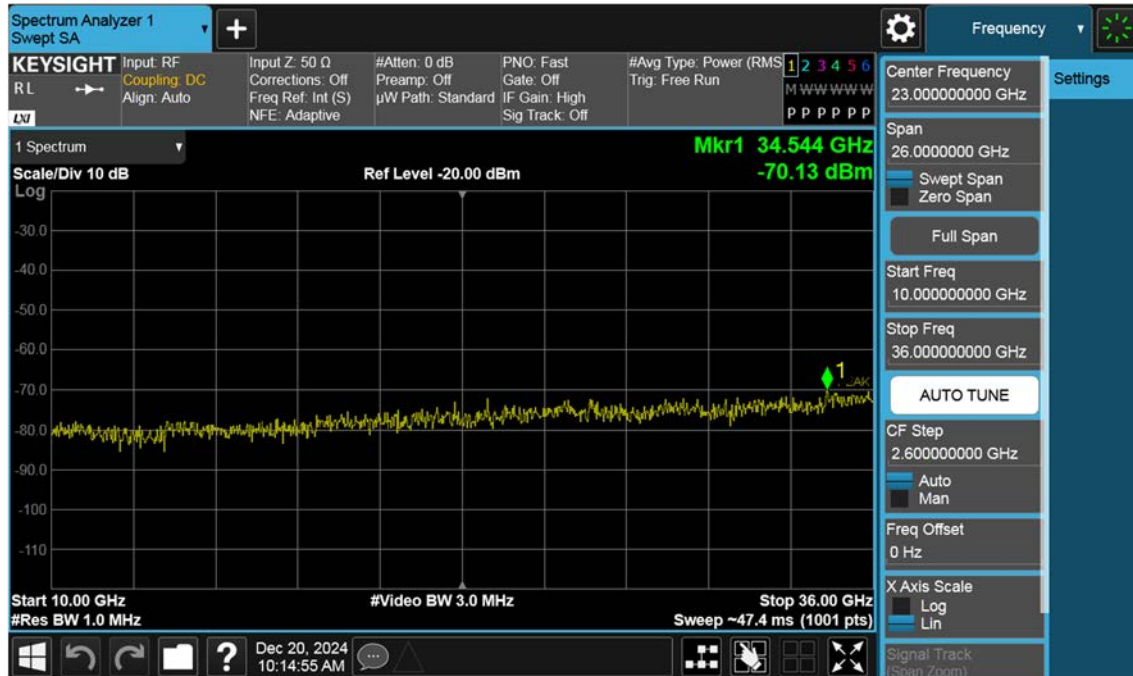
LTE B42_5 M_Conducted Spurious(Above10 G)_Low_QPSK_1RB



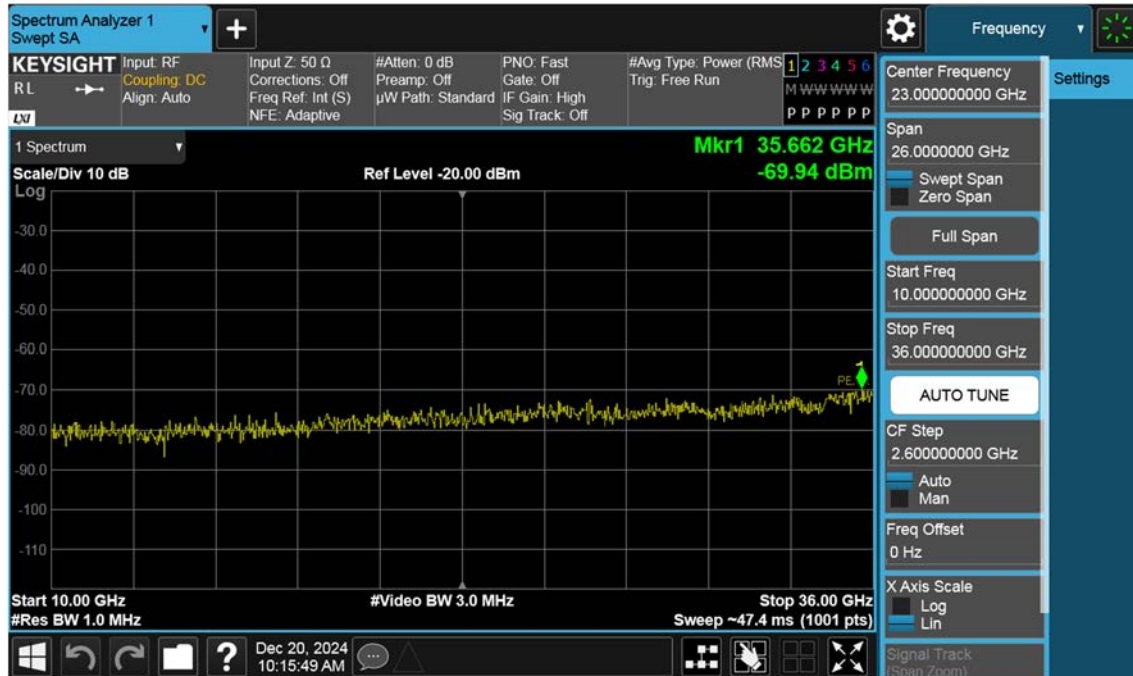
LTE B42_5 M_Conducted Spurious(Above10 G)_Mid_QPSK_1RB



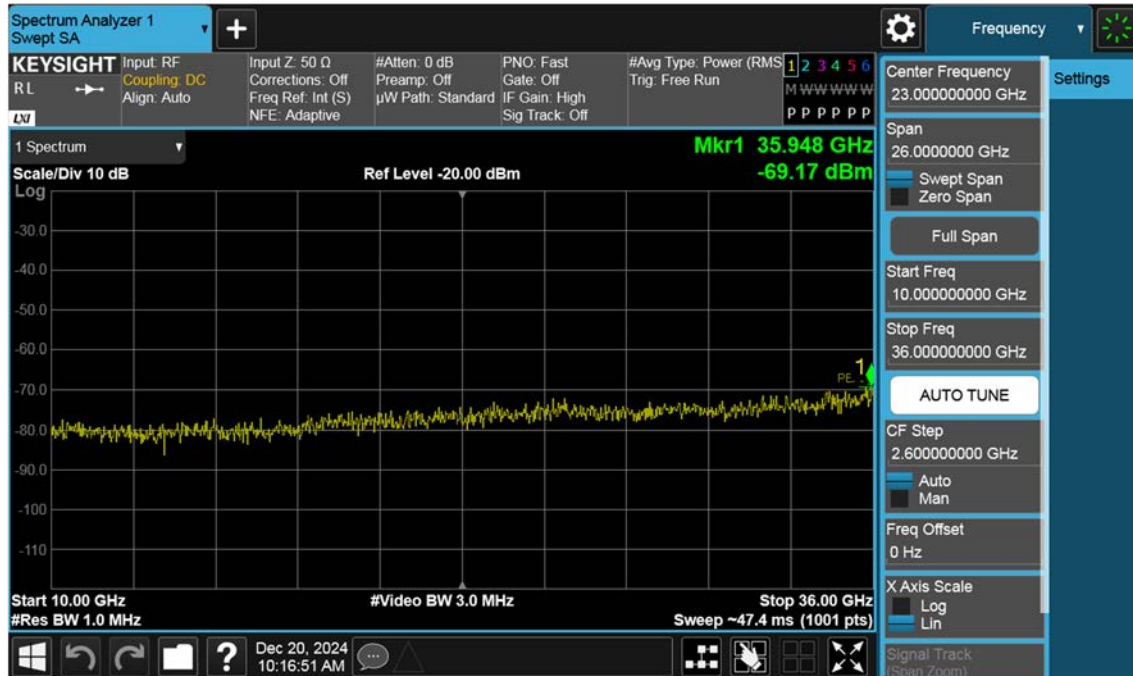
LTE B42_5 M_Conducted Spurious(Above10 G)_High_QPSK_1RB



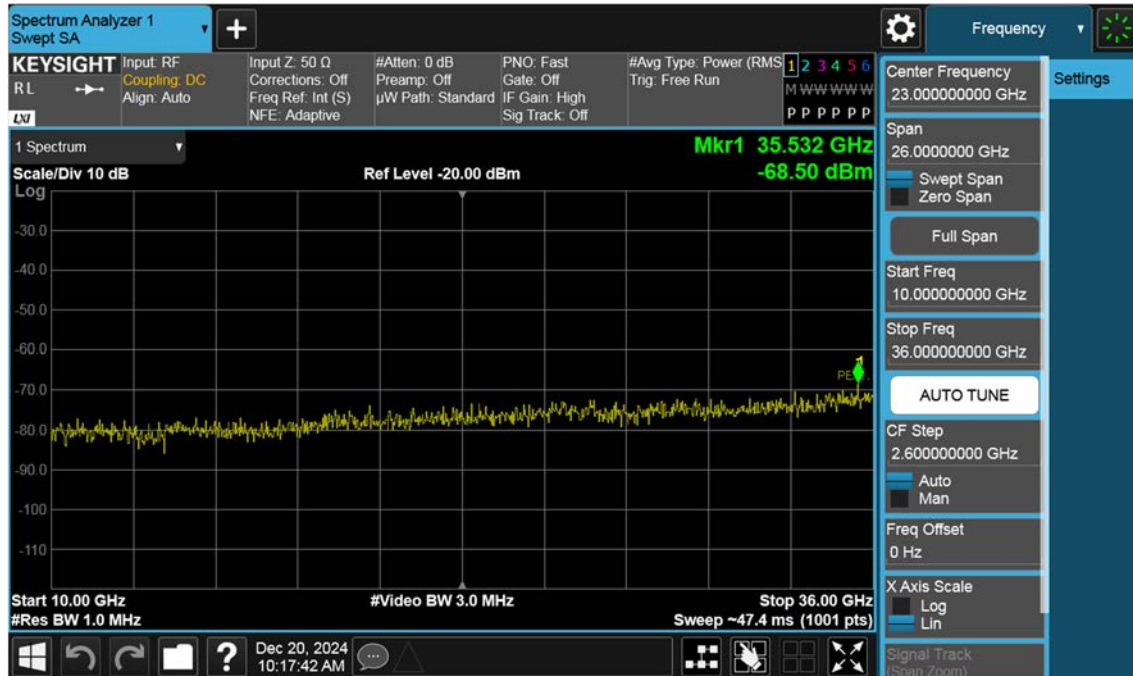
LTE B42_10 M_Conducted Spurious(Above10 G)_Low_QPSK_1RB



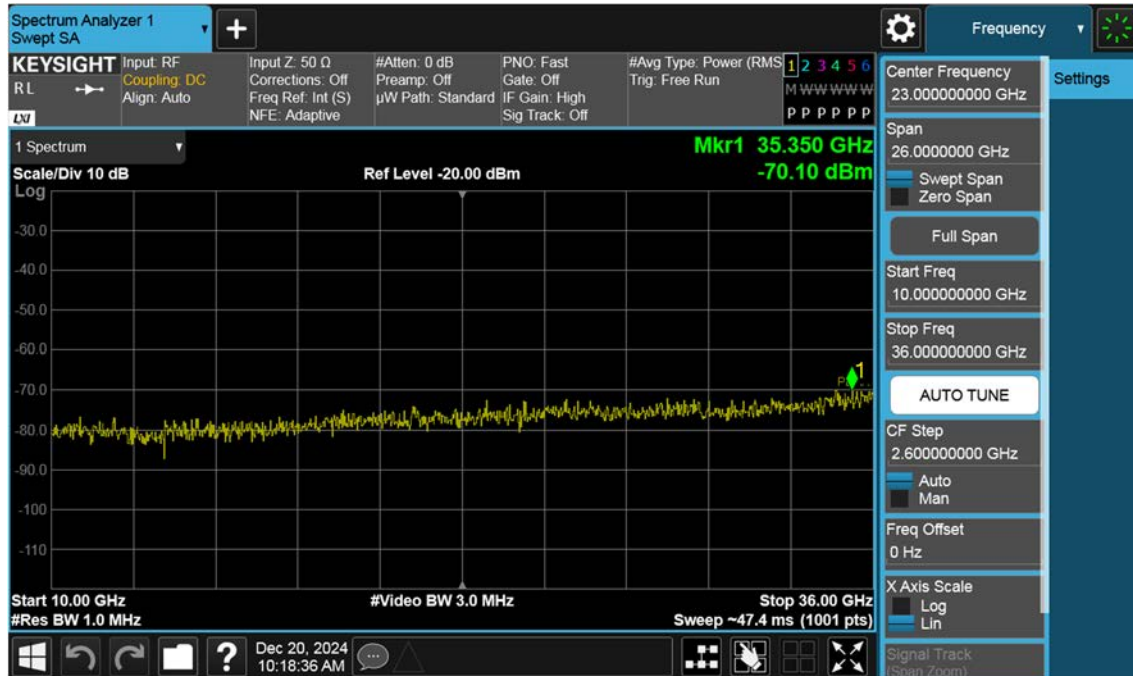
LTE B42_10 M_Conducted Spurious(Above10 G)_Mid_QPSK_1RB



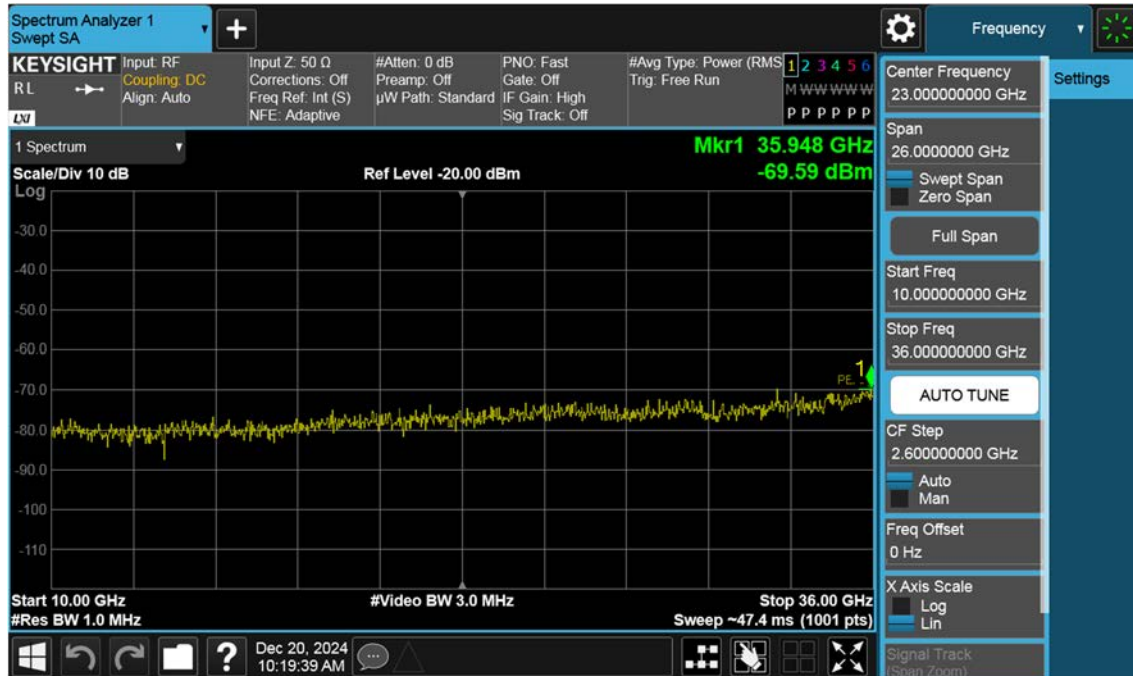
LTE B42_10 M_Conducted Spurious(Above10 G)_High_QPSK_1RB



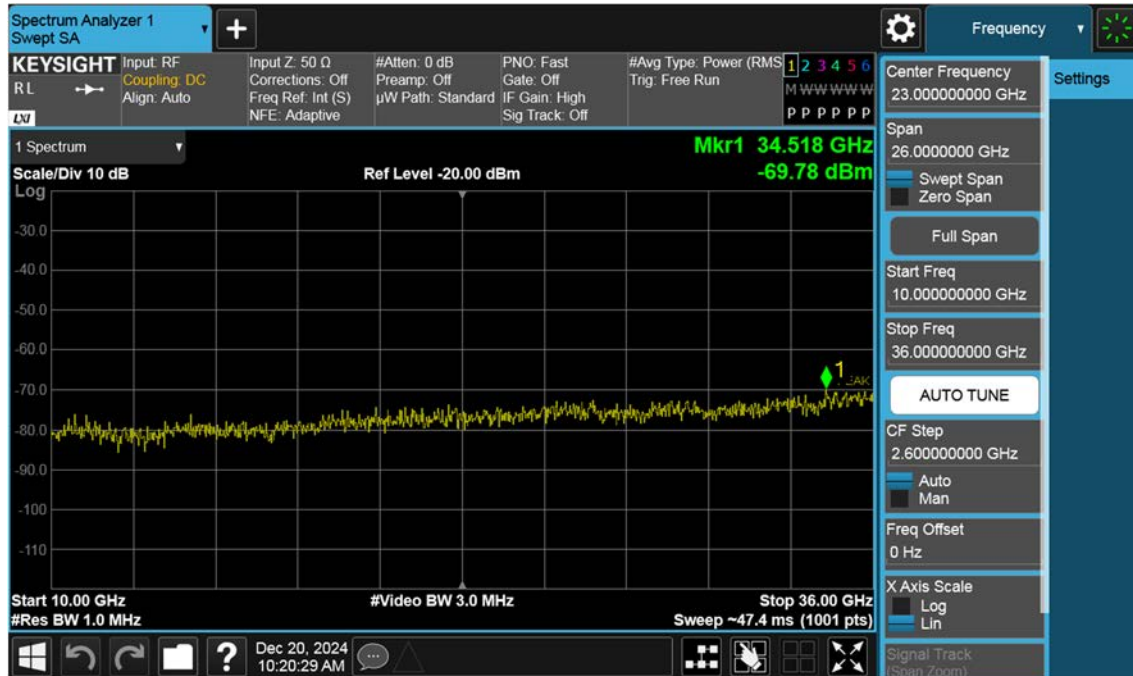
LTE B42_15 M_Conducted Spurious(Above10 G)_Low_QPSK_1RB



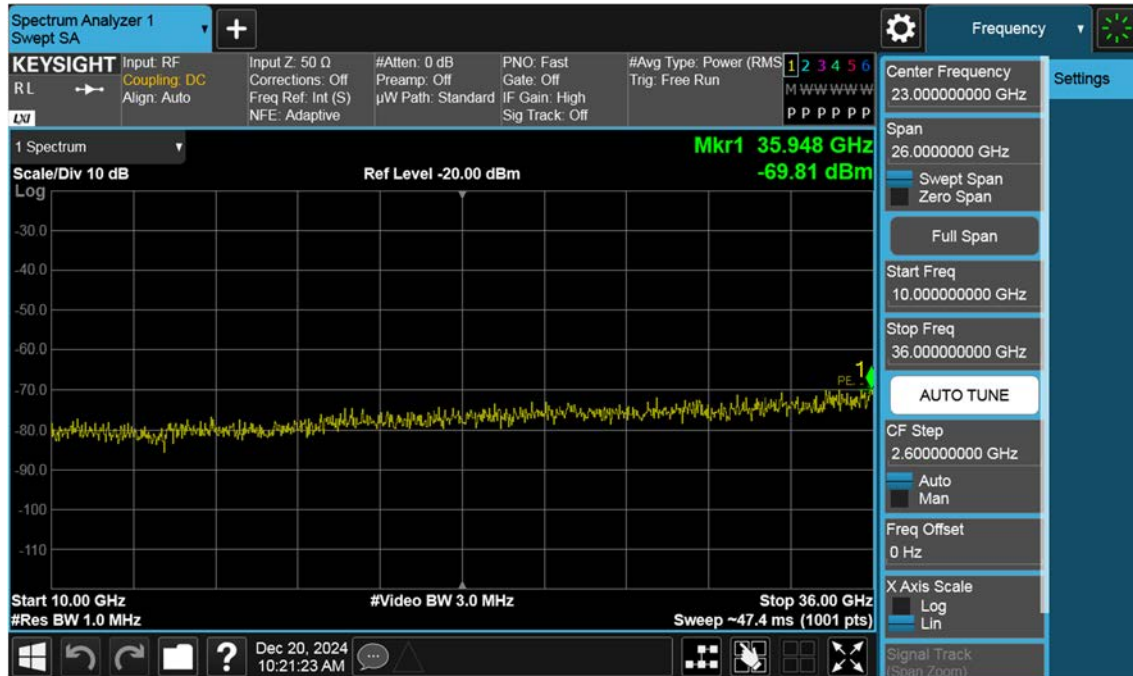
LTE B42_15 M_Conducted Spurious(Above10 G)_Mid_QPSK_1RB



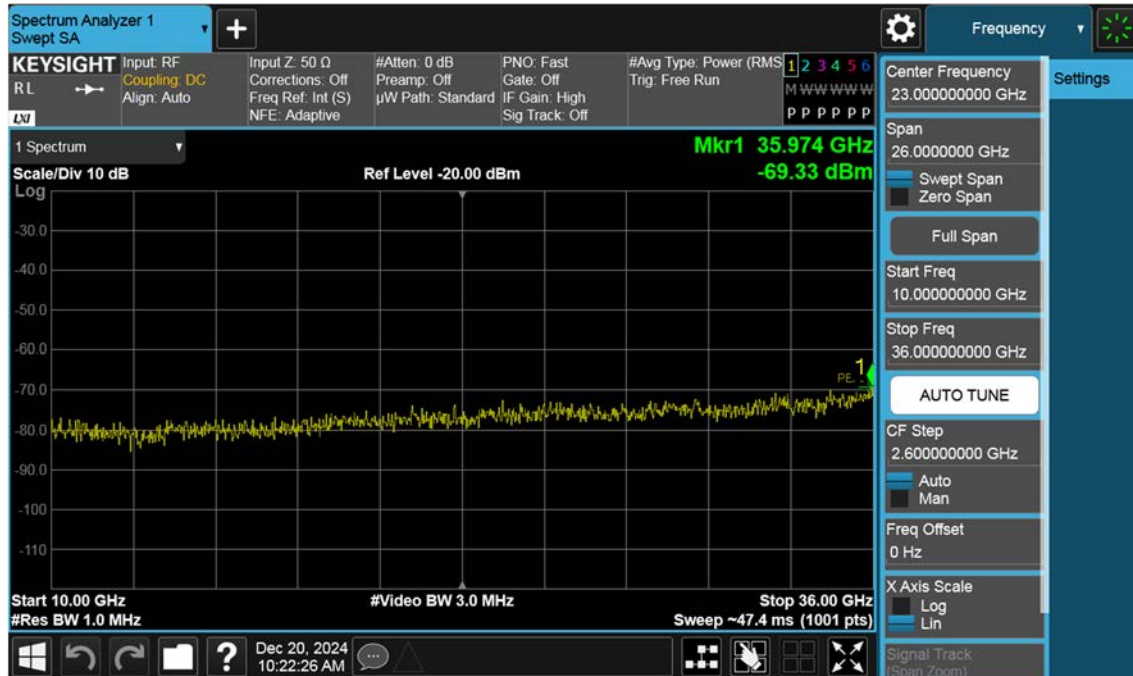
LTE B42_15 M_Conducted Spurious(Above10 G)_High_QPSK_1RB



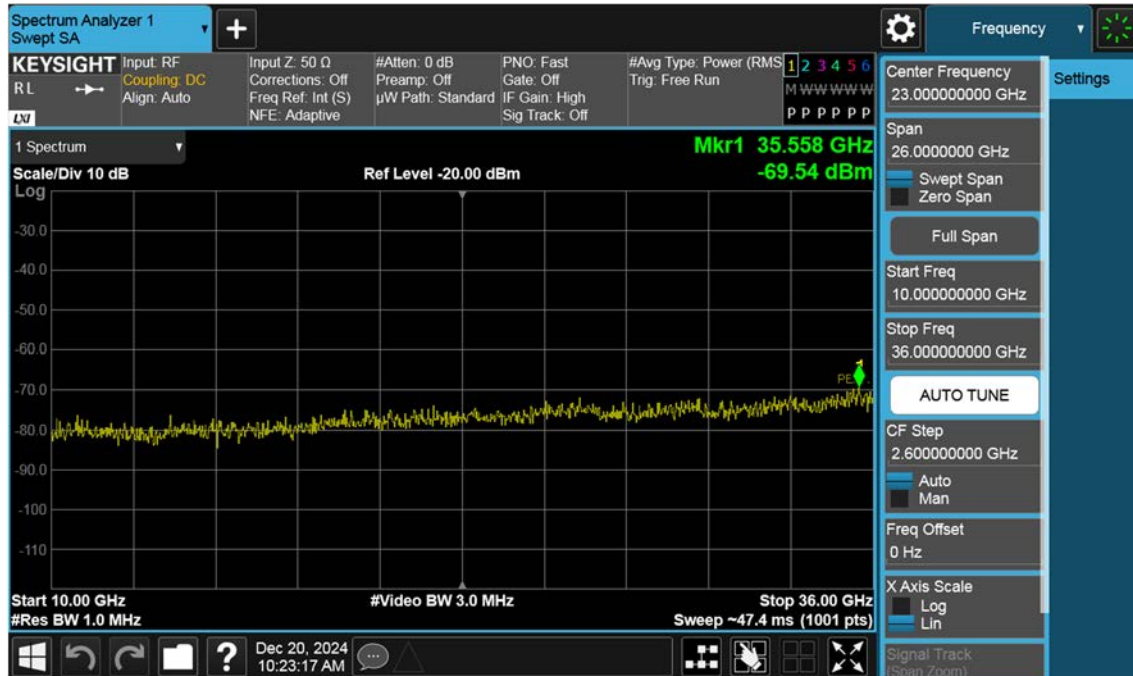
LTE B42_20 M_Conducted Spurious(Above10 G)_Low_QPSK_1RB



LTE B42_20 M_Conducted Spurious(Above10 G)_Mid_QPSK_1RB



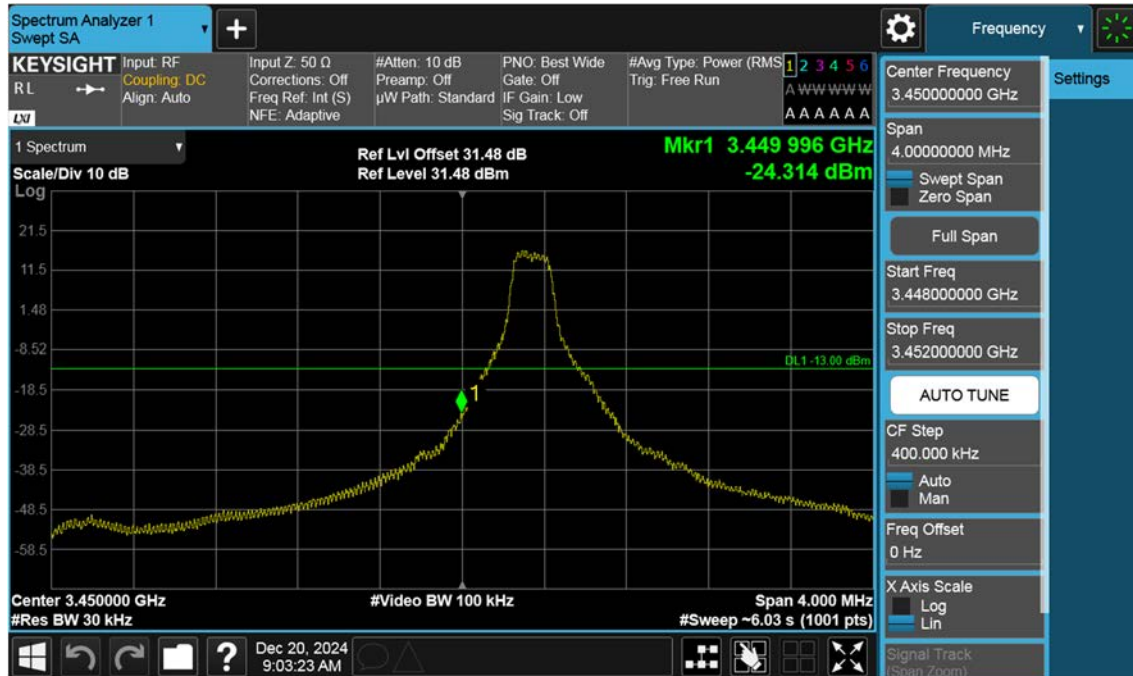
LTE B42_20 M_Conducted Spurious(Above10 G)_High_QPSK_1RB



LTE B42_5 M_Band Edge_Low_QPSK_Full RB (1)



LTE B42_5 M_Band Edge_Low_QPSK_1RB (1)



LTE B42_5 M_Band Edge_Low_QPSK_Full RB (2)



LTE B42_5 M_Band Edge_Low_QPSK_1RB (2)



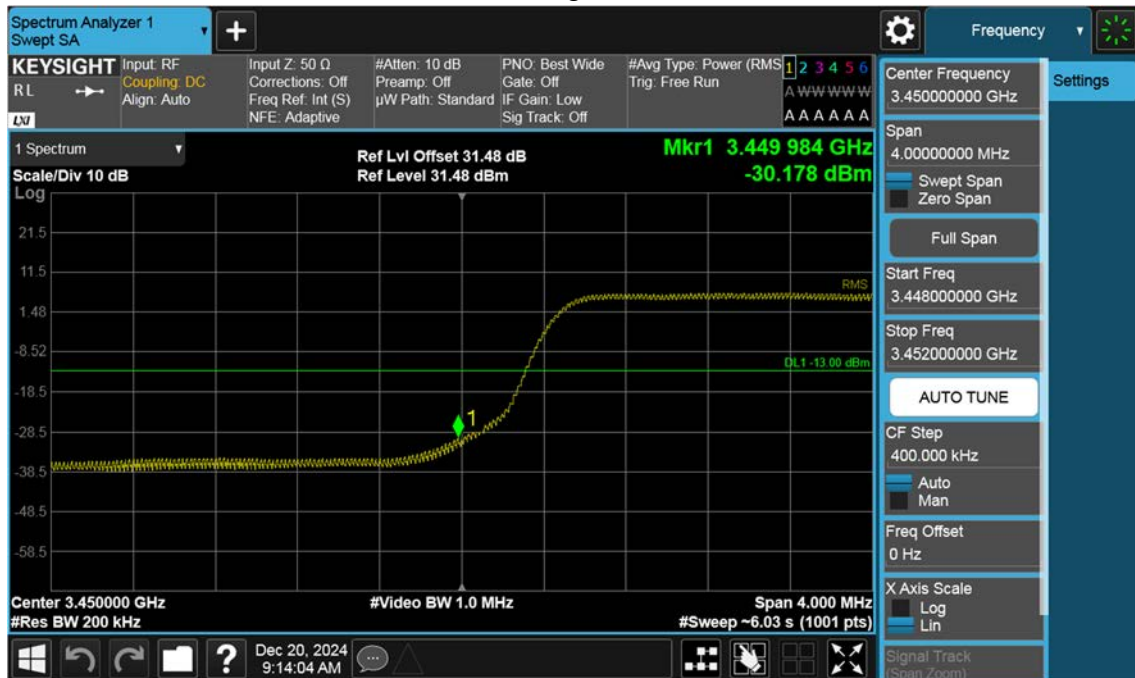
LTE B42_5 M_Band Edge_Low_QPSK_Full RB (3)



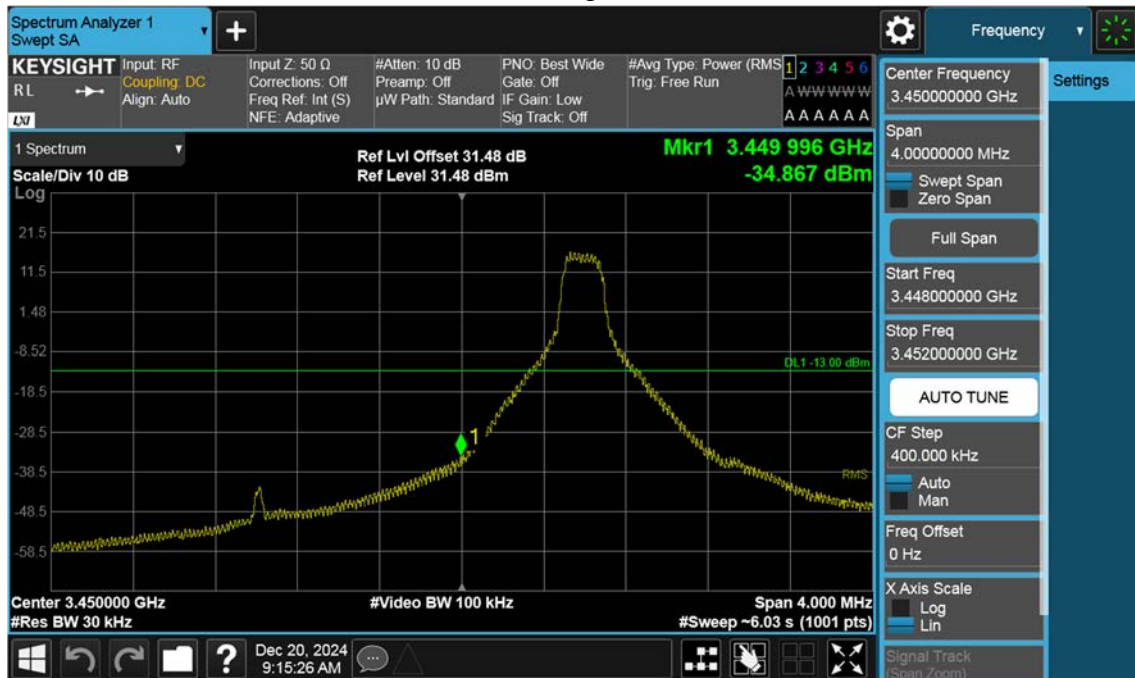
LTE B42_5 M_Band Edge_Low_QPSK_1RB (3)



LTE B42_10 M_Band Edge_Low_QPSK_Full RB (1)



LTE B42_10 M_Band Edge_Low_QPSK_1RB (1)



LTE B42_10 M_Band Edge_Low_QPSK_Full RB (2)



LTE B42_10 M_Band Edge_Low_QPSK_1RB (2)

