

FCC LTE REPORT

Certification

Applicant Name:
 SAMSUNG Electronics Co., Ltd.

Date of Issue:
 October 16, 2023

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

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

Report No.: HCT-RF-2310-FC019

FCC ID:	A3LSMS926U
APPLICANT:	SAMSUNG Electronics Co., Ltd.

Model(s): SM-S926U
 Additional Model(s): SM-S926U1
 EUT Type: Mobile phone
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
 FCC Rule Part(s): §27

Main 2 Ant

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band 7 (5)	2502.5 – 2567.5	4M52G7D	QPSK	0.095	19.78
		4M51W7D	16QAM	0.078	18.90
		4M50W7D	64QAM	0.061	17.88
		4M51W7D	256QAM	0.030	14.80
LTE – Band 7 (10)	2505.0 – 2565.0	9M02G7D	QPSK	0.093	19.68
		8M98W7D	16QAM	0.077	18.84
		9M00W7D	64QAM	0.060	17.81
		9M01W7D	256QAM	0.030	14.73
LTE – Band 7 (15)	2507.5 – 2562.5	13M5G7D	QPSK	0.093	19.68
		13M5W7D	16QAM	0.078	18.94
		13M5W7D	64QAM	0.062	17.90
		13M5W7D	256QAM	0.031	14.91
LTE – Band 7 (20)	2510.0 – 2560.0	18M0G7D	QPSK	0.096	19.81
		18M0W7D	16QAM	0.081	19.09
		18M0W7D	64QAM	0.063	18.01
		18M0W7D	256QAM	0.031	14.92

Sub 2 Ant

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band 7 (5)	2502.5 – 2567.5	4M52G7D	QPSK	0.127	21.03
		4M53W7D	16QAM	0.106	20.26
		4M49W7D	64QAM	0.076	18.80
		4M51W7D	256QAM	0.042	16.20
LTE – Band 7 (10)	2505.0 – 2565.0	9M02G7D	QPSK	0.132	21.20
		9M00W7D	16QAM	0.110	20.43
		9M01W7D	64QAM	0.081	19.11
		9M02W7D	256QAM	0.043	16.29
LTE – Band 7 (15)	2507.5 – 2562.5	13M5G7D	QPSK	0.132	21.19
		13M5W7D	16QAM	0.111	20.43
		13M5W7D	64QAM	0.085	19.27
		13M5W7D	256QAM	0.044	16.39
LTE – Band 7 (20)	2510.0 – 2560.0	18M0G7D	QPSK	0.133	21.24
		18M0W7D	16QAM	0.109	20.37
		18M0W7D	64QAM	0.082	19.12
		18M0W7D	256QAM	0.043	16.33

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)

Report No.: HCT-RF-2310-FC019

REVIEWED BY



Report prepared by : Jae Mun Do
Engineer of Telecommunication Testing Center

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

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test results were applied only to the test methods required by the standard.

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

The report shall not be reproduced except in full(only partly) without approval of the laboratory.

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2310-FC019	October 16, 2023	- First Approval Report

Table of Contents

REVIEWED BY	3
1. GENERAL INFORMATION	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	10
3.4 PEAK- TO- AVERAGE RATIO.....	11
3.5 OCCUPIED BANDWIDTH.	13
3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL	14
3.7 CHANNEL EDGE	15
3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE	17
3.9 WORST CASE(RADIATED TEST)	18
3.10 WORST CASE(CONDUCTED TEST)	20
4. LIST OF TEST EQUIPMENT	21
5. MEASUREMENT UNCERTAINTY	22
6. SUMMARY OF TEST RESULTS	23
7. SAMPLE CALCULATION	24
8. TEST DATA (Main 2 Ant).....	26
8.1 EQUIVALENT ISOTROPIC RADIATED POWER.....	26
8.2 RADIATED SPURIOUS EMISSIONS	28
8.3 PEAK-TO-AVERAGE RATIO.....	32
8.4 OCCUPIED BANDWIDTH	33
8.5 CONDUCTED SPURIOUS EMISSIONS	34
8.6 CHANNEL EDGE	35
8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE	36
9. TEST DATA (Sub 2 Ant)	48
9.1 EQUIVALENT ISOTROPIC RADIATED POWER.....	48
9.2 RADIATED SPURIOUS EMISSIONS	50
9.3 PEAK-TO-AVERAGE RATIO.....	54
9.4 OCCUPIED BANDWIDTH	55
9.5 CONDUCTED SPURIOUS EMISSIONS	56
9.6 CHANNEL EDGE	57
9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE\	58
10. TEST PLOTS (Main 2 Ant)	70
11. TEST PLOTS (Sub 2 Ant).....	150
12. APPENDIX A_ TEST SETUP PHOTO	230

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:	A3LSMS926U
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2
EUT Type:	Mobile phone
Model(s):	SM-S926U
Additional Model(s):	SM-S926U1
Tx Frequency:	2502.5 – 2567.5 : 5 MHz 2505.0 – 2565.0 : 10 MHz 2507.5 – 2562.5 : 15 MHz 2510.0 – 2560.0 : 20 MHz
Date(s) of Tests:	September 05, 2023 ~ October 11, 2023
Serial number:	Radiated: R3CW90B4EEV Conducted: R3CW808LYGJ(Main2 Ant), 741c314dee0f7ece(Sub2 Ant)

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

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

It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80/160 MHz), WIFI 6E, Bluetooth, BT LE, NFC, UWB, WPT.

2.2. MEASURING INSTRUMENT CALIBRATION

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

2.3. TEST FACILITY

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

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Band Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4
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 $\geq 3 \times$ 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;

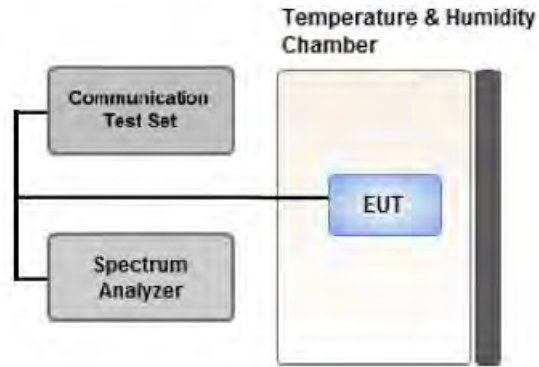
$$\text{Result}_{(dBm)} = P_g_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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.

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

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)

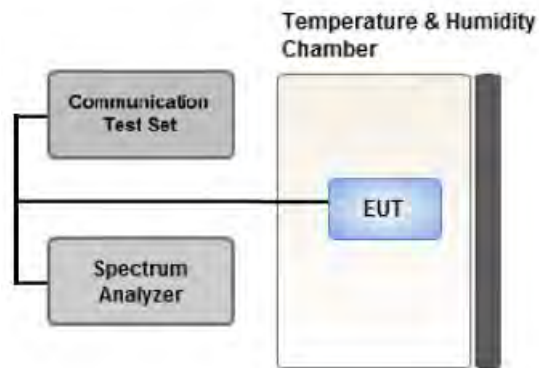
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW $\geq 3 \times$ RBW.

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 $[10 \log (1/0.25)] = 6$ 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.

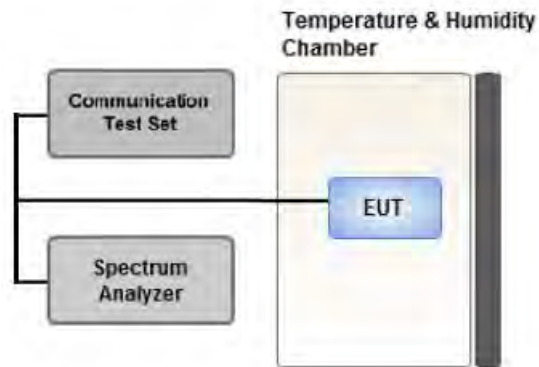
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

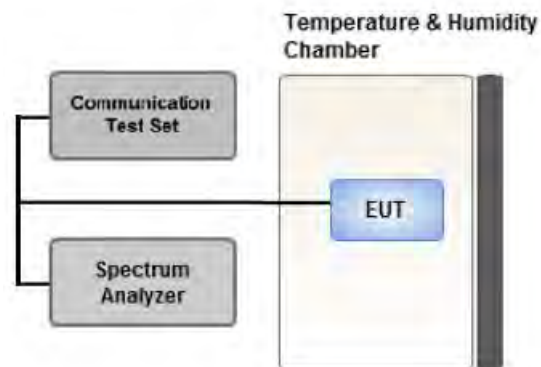
Test Overview

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 = Average
5. Sweep time = auto
6. Number of points in sweep \geq 2 x Span / RBW

3.7 CHANNEL 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 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

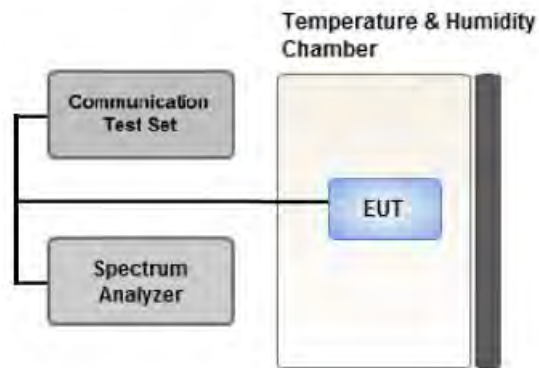
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. Within 1MHz of the channel edge the RBW should be 2% of EBW, then 1 MHz after that.
4. VBW > 3 x RBW
5. 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

1. The attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge,
2. $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge.
3. $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge.
4. The attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz.
5. $55 + 10 \log (P)$ dB at or below 2490.5 MHz.
6. X is the greater of 6MHz or the actual emission bandwidth
7. 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 $10 \log(1 \text{ MHz/ RB})$ 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.
 Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
 Worst case : Stand alone
- We were performed the RSE test in condition of co-location.
 Mode : Stand alone, Simultaneous transmission scenarios
 Worst case : Stand alone
- 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.
- SM-S926U & additional models were tested and the worst case results are reported.
 (Worst case : SM-S926U)

[Main 2 Ant Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset	Axis
Effective Isotropic Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	5	Low, Mid	1	24	X
			High	1	0	
		10	Low, Mid	1	49	
			High	1	0	
		15	Low, Mid	1	74	
			High	1	0	
		20	Low, Mid	1	99	
			High	1	0	
Radiated Spurious and Harmonic Emissions	QPSK	5	Low, Mid	1	24	Y
			High	1	0	
		10	Low, Mid	1	49	
			High	1	0	
		15	Low, Mid	1	74	
			High	1	0	
		20	Low, Mid	1	99	
			High	1	0	

[Sub 2 Ant Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	1	0	Z
Radiated Spurious and Harmonic Emissions	QPSK	1	0	Y

3.10 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.

- SM-S926U & additional models were tested and the worst case results are reported.

(Worst case: SM-S926U)

[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
		5, 10, 15, 20	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	QPSK	5, 10, 15, 20	Low, Mid, High	1	0

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	FBSR-02B(1.2G HPF+LNA)	T&M SYSTEM	F1L1	01/19/2024	Annual
RF Switching System	FBSR-02B(3.3G HPF+LNA)	T&M SYSTEM	F1L2	01/19/2024	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/19/2024	Annual
DC Power Supply	E3632A	Agilent	MY40010147	06/23/2024	Annual
Dipole Antenna	UHAP	Schwarzbeck	557	03/09/2025	Biennial
Dipole Antenna	UHAP	Schwarzbeck	558	03/09/2025	Biennial
Chamber	SU-642	ESPEC	93008124	02/22/2024	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	147	08/17/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/11/2025	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
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/20/2024	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/19/2024	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	08/17/2024	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/10/2024	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/17/2024	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/16/2024	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	03/21/2024	Biennial
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262094331	12/01/2023	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	01/05/2024	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	06/22/2024	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/24/2024	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)	1.90 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.14 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.16 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.57 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.76 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.52 (Confidence level about 95 %, $k=2$)

6. SUMMARY OF TEST RESULTS

6.1 Test Condition: Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§2.1051, §27.53(m)(4)	<ul style="list-style-type: none"> ■ $< 40 + 10\log_{10} (P[\text{Watts}])$ at Channel edges ■ $< 43 + 10\log_{10} (P[\text{Watts}])$ between 5 and X MHz from Channel edges ■ $< 55 + 10\log_{10} (P[\text{Watts}])$ beyond X MHz beyond from Channel edges ■ $< 43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz 	PASS
Conducted Output Power	§2.1046	N/A	<u>See Note1</u>
Frequency stability / variation of ambient temperature	§2.1055, §27.54	Emission must remain in band	PASS

Note:

1. See SAR Report

6.2 Test Condition: Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§27.50(h)(2)	< 2 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§2.1053, §27.53(m)(4)	$< 55 + 10\log_{10} (P[\text{Watts}])$	PASS

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

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

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

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

7.2 EIRP Sample Calculation

Ch./ Freq.		Measured Level(dBm)	Substitute Level(dBm)	Ant. Gain (dBi)	C.L	Pol.	EIRP	
channel	Freq.(MHz)						W	dBm
20175	1,732.50	-15.75	18.45	9.90	1.76	H	0.456	26.59

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

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

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

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 (Main 2 Ant)

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2502.5	LTE B7/ 5 MHz	QPSK	-26.05	10.77	10.51	2.57	H	< 2.00	0.074	18.71
		16-QAM	-26.85	9.97	10.51	2.57	H		0.062	17.91
		64-QAM	-27.85	8.97	10.51	2.57	H		0.049	16.91
		256-QAM	-30.94	5.88	10.51	2.57	H		0.024	13.82
2535.0		QPSK	-25.20	11.74	10.67	2.63	H		0.095	19.78
		16-QAM	-26.08	10.86	10.67	2.63	H		0.078	18.90
		64-QAM	-27.10	9.84	10.67	2.63	H		0.061	17.88
		256-QAM	-30.18	6.76	10.67	2.63	H		0.030	14.80
2567.5		QPSK	-25.20	11.49	10.65	2.72	H		0.087	19.42
		16-QAM	-25.98	10.71	10.65	2.72	H		0.073	18.64
		64-QAM	-27.07	9.62	10.65	2.72	H		0.057	17.55
		256-QAM	-30.15	6.54	10.65	2.72	H		0.028	14.47

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2505.0	LTE B7/ 10 MHz	QPSK	-26.05	10.81	10.55	2.57	H	< 2.00	0.076	18.79
		16-QAM	-26.84	10.02	10.55	2.57	H		0.063	18.00
		64-QAM	-27.87	8.99	10.55	2.57	H		0.050	16.97
		256-QAM	-30.98	5.88	10.55	2.57	H		0.024	13.86
2535.0		QPSK	-25.30	11.64	10.67	2.63	H		0.093	19.68
		16-QAM	-26.18	10.76	10.67	2.63	H		0.076	18.80
		64-QAM	-27.17	9.77	10.67	2.63	H		0.060	17.81
		256-QAM	-30.26	6.68	10.67	2.63	H		0.030	14.72
2565.0		QPSK	-25.21	11.72	10.66	2.70	H		0.093	19.67
		16-QAM	-26.04	10.89	10.66	2.70	H		0.077	18.84
		64-QAM	-27.08	9.85	10.66	2.70	H		0.060	17.80
		256-QAM	-30.15	6.78	10.66	2.70	H		0.030	14.73

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit		EIRP	
								W	W	dBm	dBm
2507.5	LTE B7/ 15 MHz	QPSK	-25.97	10.92	10.59	2.57	H	< 2.00	0.078	18.94	
		16-QAM	-26.73	10.16	10.59	2.57	H		0.066	18.18	
		64-QAM	-27.71	9.18	10.59	2.57	H		0.053	17.20	
		256-QAM	-30.72	6.17	10.59	2.57	H		0.026	14.19	
2535.0		QPSK	-25.41	11.53	10.67	2.63	H		0.091	19.57	
		16-QAM	-26.15	10.79	10.67	2.63	H		0.076	18.83	
		64-QAM	-27.19	9.75	10.67	2.63	H		0.060	17.79	
		256-QAM	-30.18	6.76	10.67	2.63	H		0.030	14.80	
2562.5		QPSK	-25.47	11.70	10.66	2.68	H		0.093	19.68	
		16-QAM	-26.21	10.96	10.66	2.68	H		0.078	18.94	
		64-QAM	-27.25	9.92	10.66	2.68	H		0.062	17.90	
		256-QAM	-30.24	6.93	10.66	2.68	H		0.031	14.91	

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit		EIRP	
								W	W	dBm	dBm
2510.0	LTE B7/ 20 MHz	QPSK	-25.94	10.95	10.59	2.57	H	< 2.00	0.079	18.97	
		16-QAM	-26.61	10.28	10.59	2.57	H		0.068	18.30	
		64-QAM	-27.64	9.25	10.59	2.57	H		0.053	17.27	
		256-QAM	-30.70	6.19	10.59	2.57	H		0.026	14.21	
2535.0		QPSK	-25.53	11.41	10.67	2.63	H		0.088	19.45	
		16-QAM	-26.30	10.64	10.67	2.63	H		0.074	18.68	
		64-QAM	-27.32	9.62	10.67	2.63	H		0.058	17.66	
		256-QAM	-30.41	6.53	10.67	2.63	H		0.029	14.57	
2560.0		QPSK	-25.34	11.83	10.66	2.68	H		0.096	19.81	
		16-QAM	-26.06	11.11	10.66	2.68	H		0.081	19.09	
		64-QAM	-27.14	10.03	10.66	2.68	H		0.063	18.01	
		256-QAM	-30.23	6.94	10.66	2.68	H		0.031	14.92	

8.2 RADIATED SPURIOUS EMISSIONS

- ▣ OPERATING FREQUENCY : 2535.0 MHz
- ▣ MEASURED OUTPUT POWER: 19.78 dBm = 0.095 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 5 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 44.78 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
20775 (2502.5)	5 005.00	-56.44	12.56	-66.36	3.85	V	-57.65	77.43
	7 507.50	-58.07	10.78	-58.48	4.71	V	-52.41	72.20
	10 010.00	-60.15	11.23	-55.97	5.52	H	-50.26	70.05
21100 (2535.0)	5 070.00	-56.66	12.31	-64.28	3.73	H	-55.70	75.48
	7 605.00	-57.51	11.10	-58.36	4.78	H	-52.04	71.82
	10 140.00	-57.99	11.59	-54.20	5.55	V	-48.16	67.94
21425 (2567.5)	5 135.00	-57.41	12.33	-65.28	3.94	H	-56.89	76.67
	7 702.50	-57.39	11.35	-58.49	4.77	V	-51.91	71.69
	10 270.00	-59.54	11.57	-54.01	5.55	V	-47.99	67.77

- ▣ OPERATING FREQUENCY : 2535.0 MHz
- ▣ MEASURED OUTPUT POWER: 19.68 dBm = 0.093 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 10 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 44.68 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
20800 (2505.0)	5 010.00	-56.85	12.55	-66.87	3.88	H	-58.20	77.88
	7 515.00	-57.23	10.80	-57.79	4.71	H	-51.70	71.38
	10 020.00	-59.54	11.27	-55.25	5.54	H	-49.52	69.20
21100 (2535.0)	5 070.00	-57.06	12.31	-64.68	3.73	V	-56.10	75.78
	7 605.00	-58.32	11.10	-59.17	4.78	V	-52.85	72.53
	10 140.00	-59.67	11.59	-55.88	5.55	H	-49.84	69.52
21400 (2565.0)	5 130.00	-56.05	12.31	-63.87	3.96	V	-55.52	75.20
	7 695.00	-58.16	11.35	-59.20	4.76	V	-52.62	72.30
	10 260.00	-59.46	11.58	-53.85	5.54	V	-47.81	67.50

- ▣ OPERATING FREQUENCY : 2562.5 MHz
- ▣ MEASURED OUTPUT POWER: 19.68 dBm = 0.093 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 15 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 44.68 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
20825 (2507.5)	5 015.00	-56.70	12.54	-66.83	3.90	V	-58.19	77.86
	7 522.50	-56.80	10.82	-57.50	4.71	V	-51.39	71.07
	10 030.00	-58.89	11.31	-54.74	5.53	V	-48.96	68.64
21100 (2535.0)	5 070.00	-56.44	12.31	-64.06	3.73	V	-55.48	75.15
	7 605.00	-56.75	11.10	-57.60	4.78	H	-51.28	70.96
	10 140.00	-57.66	11.59	-53.87	5.55	V	-47.83	67.51
21375 (2562.5)	5 125.00	-57.19	12.29	-65.14	3.97	V	-56.82	76.50
	7 687.50	-57.27	11.34	-58.25	4.75	H	-51.66	71.34
	10 250.00	-59.21	11.59	-53.78	5.54	H	-47.73	67.41

- ▣ OPERATING FREQUENCY : 2560.0 MHz
- ▣ MEASURED OUTPUT POWER: 19.81 dBm = 0.096 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 20 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 44.81 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
20850 (2510.0)	5 020.00	-56.33	12.52	-66.56	3.91	H	-57.95	77.76
	7 530.00	-58.00	10.85	-58.58	4.72	H	-52.45	72.26
	10 040.00	-59.67	11.34	-56.01	5.51	V	-50.18	69.99
21100 (2535.0)	5 070.00	-57.03	12.31	-64.65	3.73	H	-56.07	75.87
	7 605.00	-57.82	11.10	-58.67	4.78	H	-52.35	72.16
	10 140.00	-59.24	11.59	-55.45	5.55	H	-49.41	69.22
21350 (2560.0)	5 120.00	-56.80	12.26	-64.88	3.97	H	-56.59	76.40
	7 680.00	-57.77	11.33	-58.36	4.75	V	-51.78	71.59
	10 240.00	-59.54	11.59	-54.63	5.53	H	-48.57	68.38

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
7	5 MHz	2535.0	QPSK	25	0	4.59
			16-QAM	25	0	5.61
			64-QAM	25	0	6.54
			256-QAM	25	0	6.80
	10 MHz		QPSK	50	0	4.66
			16-QAM	50	0	5.66
			64-QAM	50	0	6.59
			256-QAM	50	0	6.78
	15 MHz		QPSK	75	0	4.62
			16-QAM	75	0	5.62
			64-QAM	75	0	6.52
			256-QAM	75	0	6.79
	20 MHz		QPSK	100	0	4.69
			16-QAM	100	0	5.70
			64-QAM	100	0	6.59
			256-QAM	100	0	6.79

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 111 ~ 126.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
7	5 MHz	2535.0	QPSK	25	0	4.5227
			16-QAM	25		4.5092
			64-QAM	25		4.5043
			256-QAM	25		4.5140
	10 MHz		QPSK	50		9.0177
			16-QAM	50		8.9798
			64-QAM	50		9.0037
			256-QAM	50		9.0095
	15 MHz		QPSK	75		13.481
			16-QAM	75		13.482
			64-QAM	75		13.503
			256-QAM	75		13.475
	20 MHz		QPSK	100		17.966
			16-QAM	100		17.977
			64-QAM	100		17.978
			256-QAM	100		17.988

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 95 ~ 110.

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)
7	5	2502.5	26.1453	30.131	-76.645	-46.514	-25.00
		2535.0	26.1547	30.131	-76.780	-46.649	
		2567.5	26.0884	30.131	-76.826	-46.695	
	10	2505.0	25.8219	30.131	-76.810	-46.679	
		2535.0	26.1479	30.131	-76.607	-46.476	
		2565.0	26.1657	30.131	-76.745	-46.614	
	15	2507.5	26.1610	30.131	-76.549	-46.418	
		2535.0	26.1381	30.131	-76.649	-46.518	
		2562.5	26.0926	30.131	-76.616	-46.485	
	20	2510.0	26.1117	30.131	-76.769	-46.638	
		2535.0	25.8406	30.131	-76.715	-46.584	
		2560.0	26.1819	30.131	-76.817	-46.686	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 127 ~ 150.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor(dB) = Cable Loss + Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	25.270
1 – 5	27.976
5 – 10	28.591
10 – 15	29.116
15 – 20	29.489
Above 20(26.5)	30.131

8.6 CHANNEL EDGE

Band Width (Modulation)	Frequency (MHz)	RB Size / Offset	C.E ~ (C.E ± 1 MHz)		2 496 MHz ~ 2 499 MHz	(C.E + 1 MHz) ~ (C.E + 5 MHz)	2 490.5 MHz ~ 2 496 MHz	(C.E + 5 MHz) ~ (C.E + X MHz)	Below 2 490.5 MHz	Above (C.E + X MHz)
			Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
5 MHz	2502.5	25 / 0	-23.25	-22.84	-23.78	-21.89	-29.20	-30.86	-48.00	-31.65
10 MHz	2505.0	50 / 0	-26.27	-24.86	-23.72	-21.82	-31.60	-29.35	-38.68	-33.83
15 MHz	2507.5	75 / 0	-27.20	-26.33	-25.45	-24.09	-31.67	-30.44	-33.99	-37.83
20 MHz	2510.0	100 / 0	-27.82	-26.76	-26.82	-25.34	-30.34	-29.55	-35.62	-38.36
Limit(dBm)			-10.0		-10.0		-13.0		-25.0	

Band Width (Modulation)	Frequency (MHz)	RB Size / Offset	C.E ~ (C.E ± 1 MHz)		(C.E ± 1 MHz) ~ (C.E ± 5 MHz)	
			Lower	Upper	Lower	Upper
5 MHz (QPSK)	2535.0	25 / 0	-23.37	-22.75	-22.58	-22.71
	2567.5	25 / 0	-23.17	-23.66	-22.61	-25.52
10 MHz (QPSK)	2535.0	50 / 0	-26.20	-25.37	-23.34	-23.26
	2565.0	50 / 0	-25.19	-26.16	-22.03	-24.42
15 MHz (QPSK)	2535.0	75 / 0	-26.81	-26.44	-24.93	-24.68
	2562.5	75 / 0	-25.85	-27.67	-23.16	-25.68
20 MHz (QPSK)	2535.0	100 / 0	-27.90	-27.21	-26.55	-26.17
	2560.0	100 / 0	-26.74	-28.46	-24.59	-27.22
Limit(dBm)			-10.0		-10.0	

Band Width (Modulation)	Frequency (MHz)	Resource Block Size	(C.E ± 5 MHz) ~ (C.E ± X MHz)		Above (C.E ± X MHz)	
			Lower	Upper	Lower	Upper
5 MHz (QPSK)	2535.0	25 / 0	-34.59	-33.38	-35.82	-34.11
	2567.5	25 / 0	-34.08	-34.59	-35.55	-35.24
10 MHz (QPSK)	2535.0	50 / 0	-32.10	-31.60	-37.96	-36.68
	2565.0	50 / 0	-29.24	-33.55	-36.48	-41.26
15 MHz (QPSK)	2535.0	75 / 0	-32.59	-32.12	-39.71	-39.38
	2562.5	75 / 0	-28.09	-33.54	-37.78	-48.57
20 MHz (QPSK)	2535.0	100 / 0	-31.09	-30.57	-39.41	-39.63
	2560.0	100 / 0	-28.26	-32.31	-38.11	-51.14
Limit(dBm)			-13.0		-25.0	

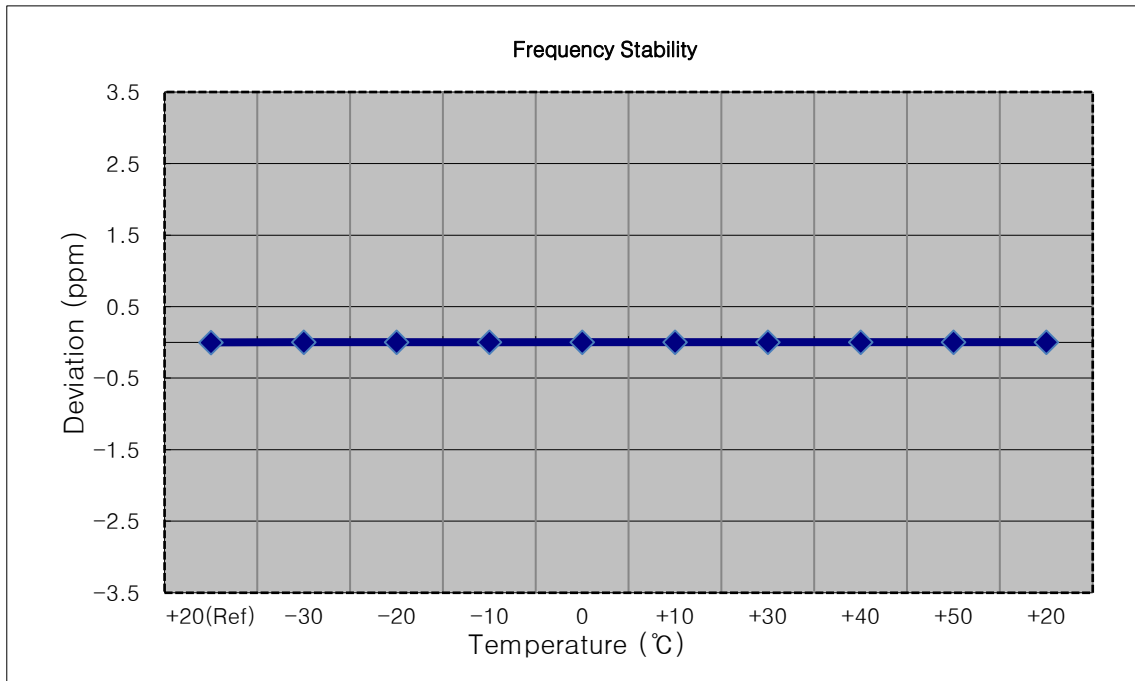
Note:

1. C.E = Channel Edge
2. X = X is the greater of 6 MHz or the actual emission bandwidth.
3. X = 6 MHz(5 MHz Bandwidth), 10 MHz(10 MHz Bandwidth), 15 MHz(15 MHz Bandwidth), 20 MHz(20 MHz Bandwidth)
4. Plots of the EUT's Channel Edge are shown Page 71 ~ 94.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

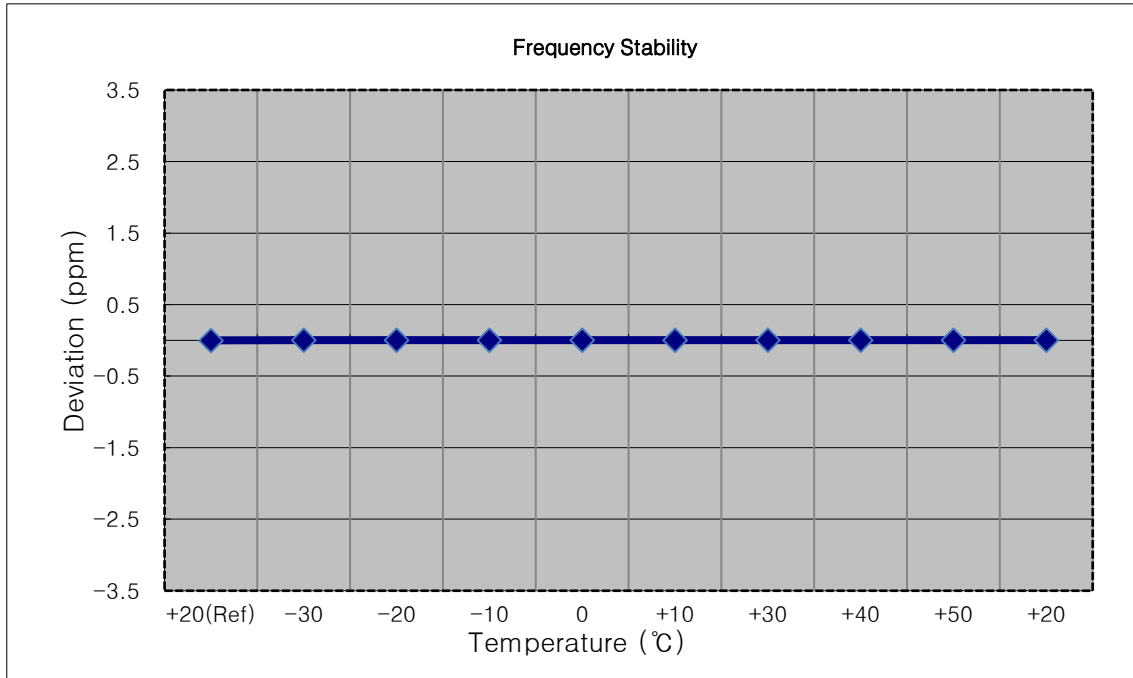
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,502,500,000 Hz
- ▣ CHANNEL: 20775 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2502 500 003	0.0	0.000 000	0.000
100 %		-30	2502 500 007	4.5	0.000 000	0.002
100 %		-20	2502 500 007	3.9	0.000 000	0.002
100 %		-10	2502 500 008	5.4	0.000 000	0.002
100 %		0	2502 500 008	5.1	0.000 000	0.002
100 %		+10	2502 500 007	3.7	0.000 000	0.001
100 %		+30	2502 500 007	3.7	0.000 000	0.001
100 %		+40	2502 500 006	3.4	0.000 000	0.001
100 %		+50	2502 500 007	3.8	0.000 000	0.002
Batt. Endpoint		3.300	+20	2502 500 007	3.7	0.000 000



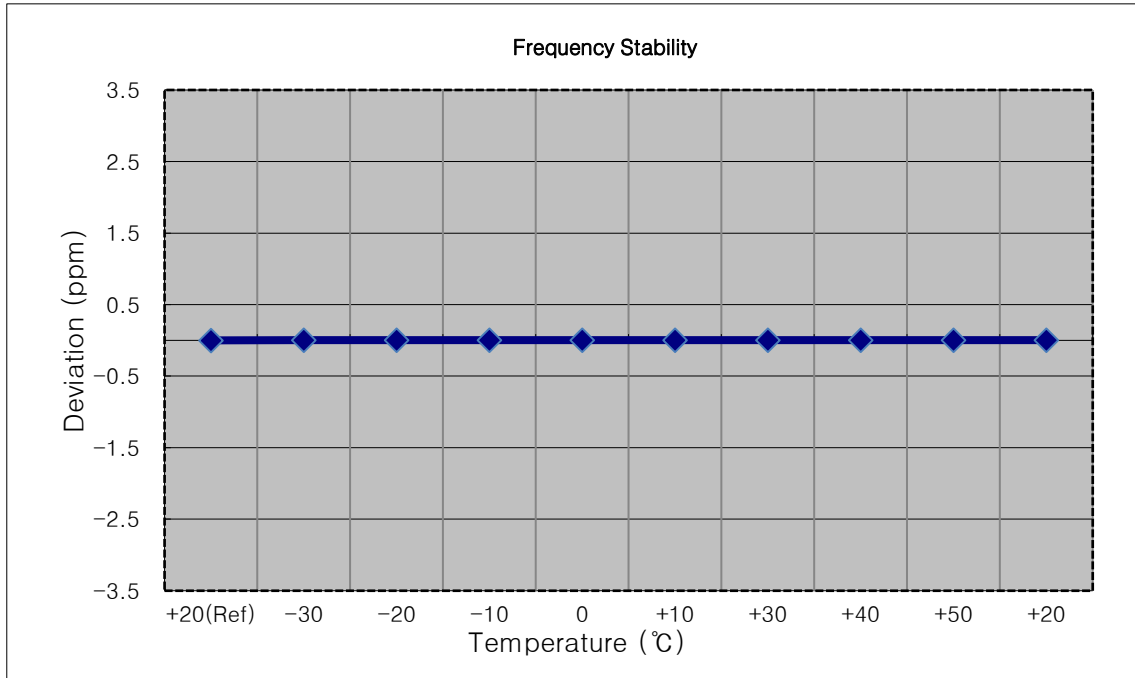
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,505,000,000 Hz
- ▣ CHANNEL: 20800 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2505 000 002	0.0	0.000 000	0.000
100 %		-30	2505 000 007	4.7	0.000 000	0.002
100 %		-20	2505 000 007	5.4	0.000 000	0.002
100 %		-10	2505 000 006	4.4	0.000 000	0.002
100 %		0	2505 000 008	6.5	0.000 000	0.003
100 %		+10	2505 000 008	6.3	0.000 000	0.003
100 %		+30	2505 000 007	5.3	0.000 000	0.002
100 %		+40	2505 000 007	4.7	0.000 000	0.002
100 %		+50	2505 000 010	7.6	0.000 000	0.003
Batt. Endpoint	3.300	+20	2505 000 006	4.5	0.000 000	0.002



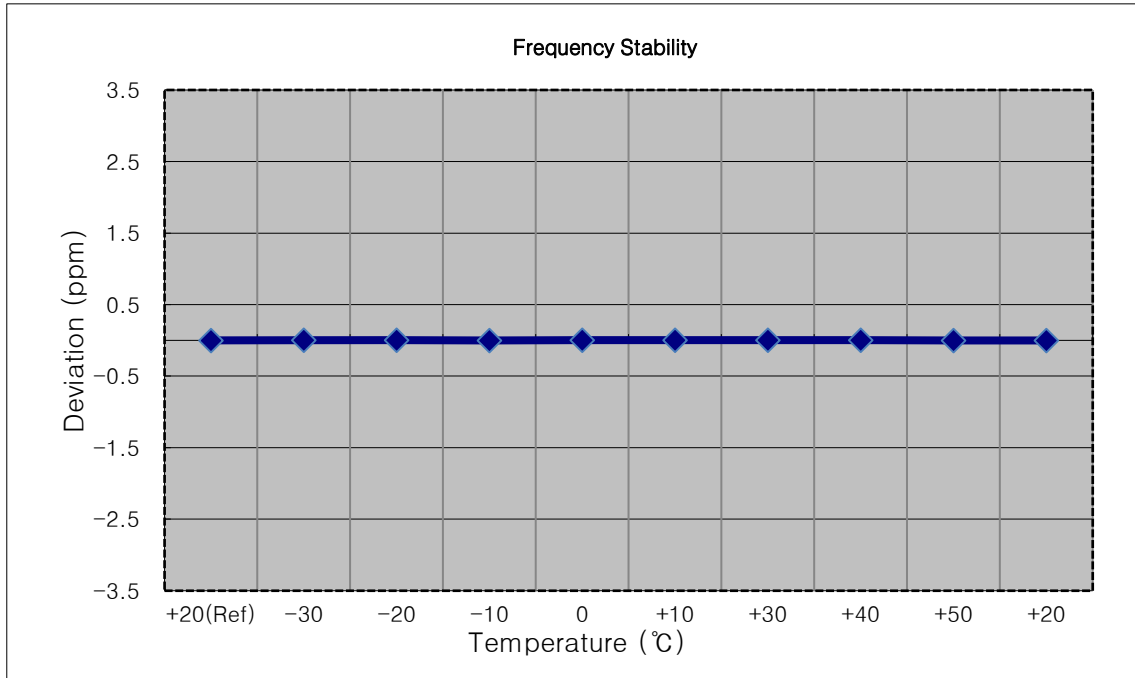
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,507,500,000 Hz
- ▣ CHANNEL: 20825 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2507 500 008	0.0	0.000 000	0.000
100 %		-30	2507 500 015	6.7	0.000 000	0.003
100 %		-20	2507 500 015	7.0	0.000 000	0.003
100 %		-10	2507 500 016	7.1	0.000 000	0.003
100 %		0	2507 500 017	8.7	0.000 000	0.003
100 %		+10	2507 500 013	4.6	0.000 000	0.002
100 %		+30	2507 500 014	5.7	0.000 000	0.002
100 %		+40	2507 500 015	6.3	0.000 000	0.003
100 %		+50	2507 500 013	4.6	0.000 000	0.002
Batt. Endpoint	3.300	+20	2507 500 015	6.1	0.000 000	0.002



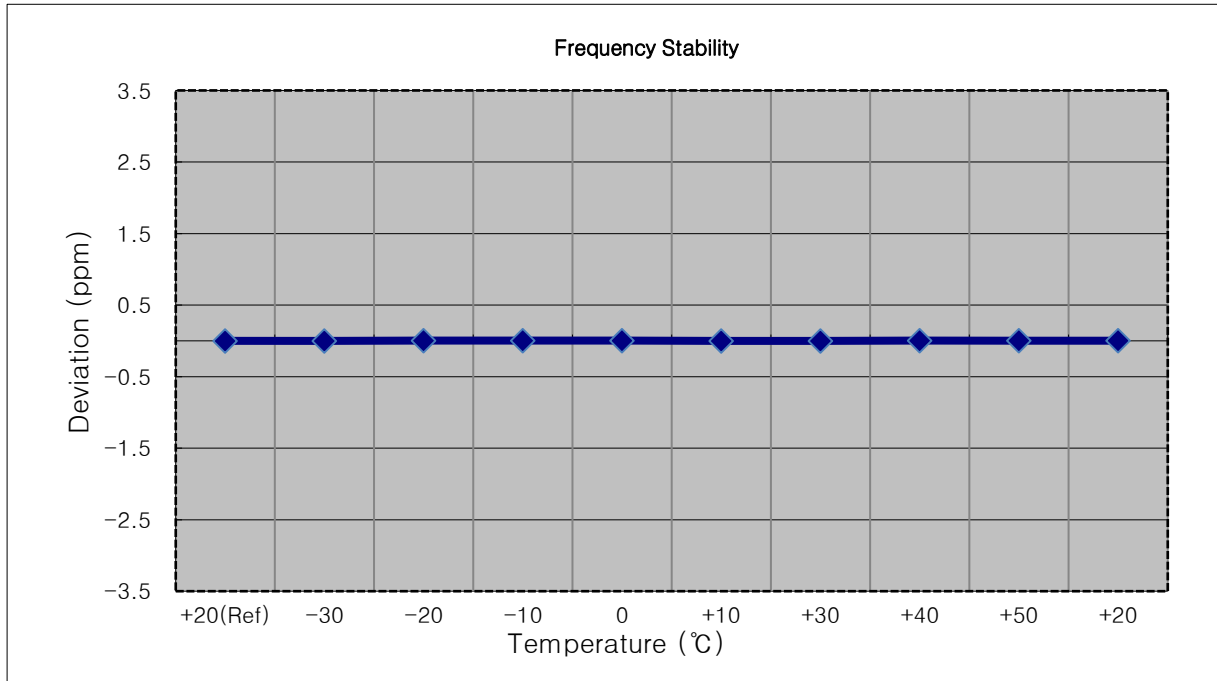
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,510,000,000 Hz
- ▣ CHANNEL: 20850 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2510 000 004	0.0	0.000 000	0.000
100 %		-30	2510 000 010	5.5	0.000 000	0.002
100 %		-20	2510 000 007	3.3	0.000 000	0.001
100 %		-10	2510 000 006	2.4	0.000 000	0.001
100 %		0	2510 000 007	2.8	0.000 000	0.001
100 %		+10	2510 000 009	4.7	0.000 000	0.002
100 %		+30	2510 000 009	4.9	0.000 000	0.002
100 %		+40	2510 000 007	3.4	0.000 000	0.001
100 %		+50	2510 000 007	2.7	0.000 000	0.001
Batt. Endpoint	3.300	+20	2510 000 007	2.5	0.000 000	0.001



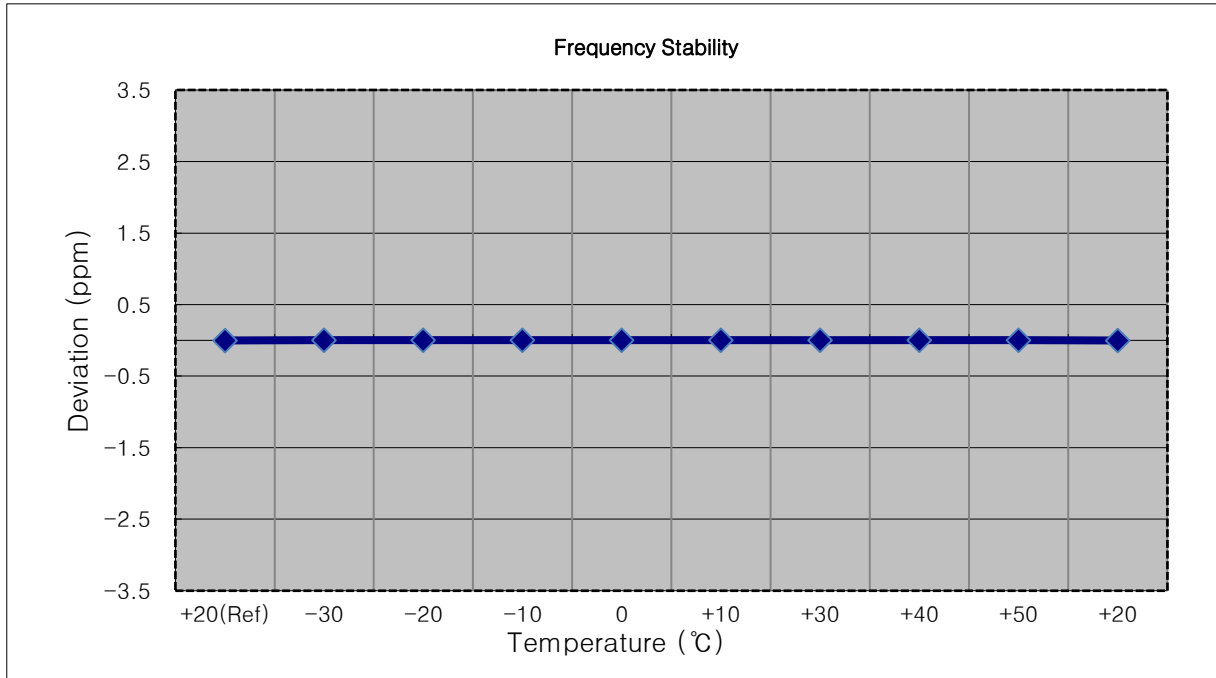
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 004	0.0	0.000 000	0.000
100 %		-30	2535 000 007	3.1	0.000 000	0.001
100 %		-20	2535 000 008	3.9	0.000 000	0.002
100 %		-10	2535 000 008	3.5	0.000 000	0.001
100 %		0	2535 000 008	3.6	0.000 000	0.001
100 %		+10	2535 000 007	2.2	0.000 000	0.001
100 %		+30	2535 000 008	3.2	0.000 000	0.001
100 %		+40	2535 000 008	3.8	0.000 000	0.001
100 %		+50	2535 000 009	4.5	0.000 000	0.002
Batt. Endpoint	3.300	+20	2535 000 009	4.5	0.000 000	0.002



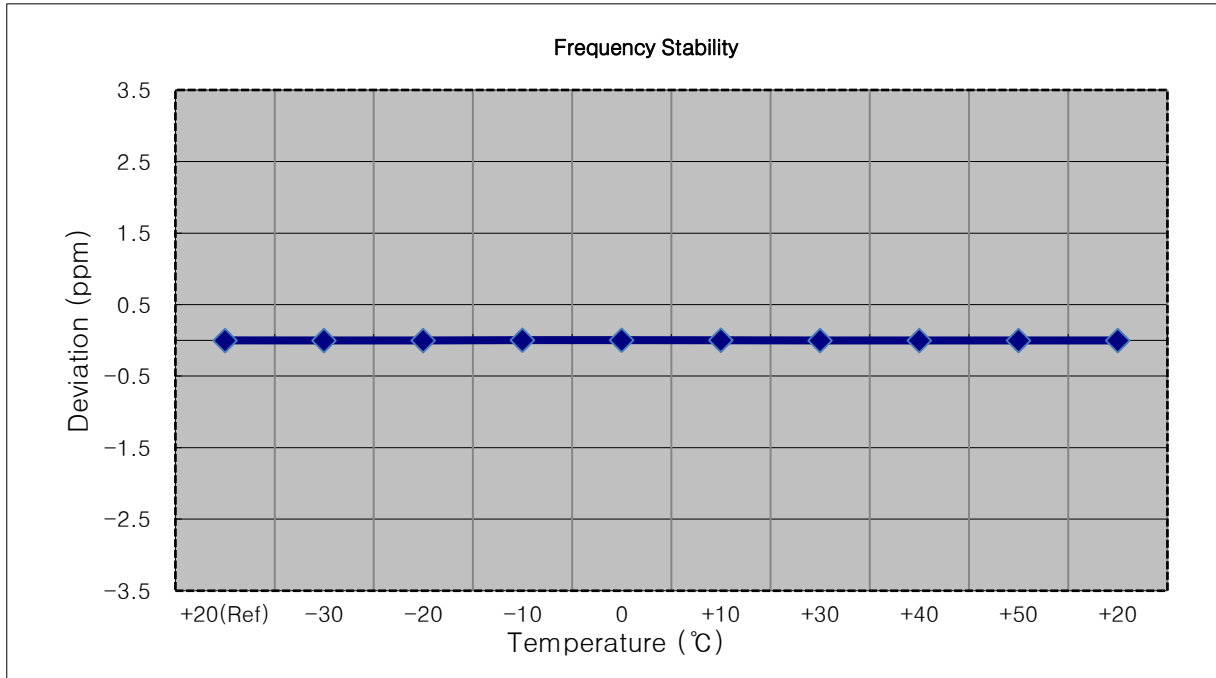
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 003	0.0	0.000 000	0.000
100 %		-30	2535 000 007	4.4	0.000 000	0.002
100 %		-20	2535 000 007	4.1	0.000 000	0.002
100 %		-10	2535 000 008	5.4	0.000 000	0.002
100 %		0	2535 000 008	4.5	0.000 000	0.002
100 %		+10	2535 000 009	5.6	0.000 000	0.002
100 %		+30	2535 000 009	6.1	0.000 000	0.002
100 %		+40	2535 000 007	4.2	0.000 000	0.002
100 %		+50	2535 000 009	5.8	0.000 000	0.002
Batt. Endpoint	3.300	+20	2534 999 999	-3.6	0.000 000	-0.001



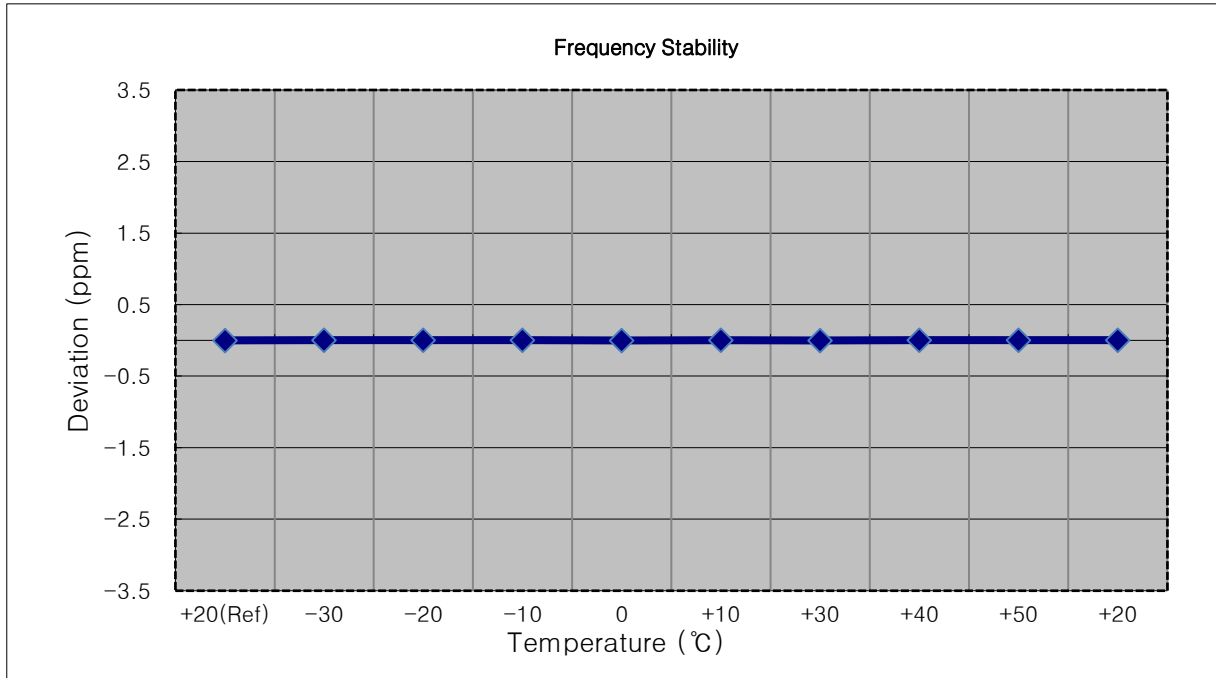
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 003	0.0	0.000 000	0.000
100 %		-30	2535 000 004	1.6	0.000 000	0.001
100 %		-20	2535 000 006	2.7	0.000 000	0.001
100 %		-10	2535 000 006	3.4	0.000 000	0.001
100 %		0	2535 000 006	3.5	0.000 000	0.001
100 %		+10	2535 000 007	3.9	0.000 000	0.002
100 %		+30	2535 000 005	1.9	0.000 000	0.001
100 %		+40	2535 000 005	2.5	0.000 000	0.001
100 %		+50	2535 000 005	2.1	0.000 000	0.001
Batt. Endpoint		3.300	+20	2535 000 005	2.4	0.000 000



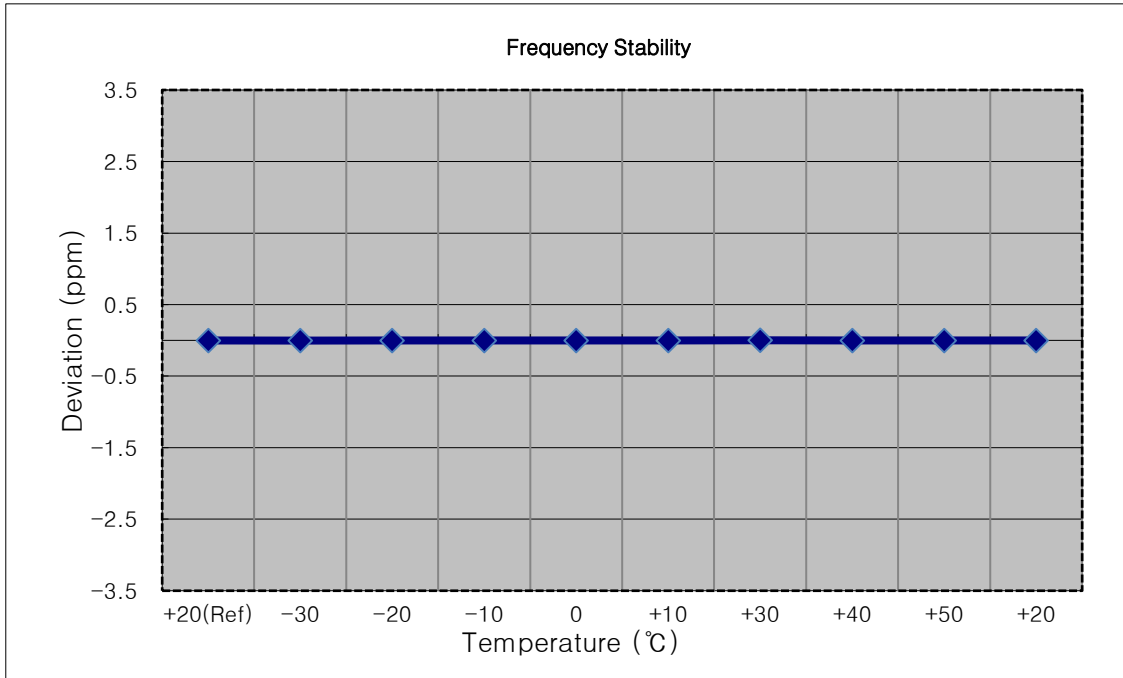
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 003	0.0	0.000 000	0.000
100 %		-30	2535 000 007	4.0	0.000 000	0.002
100 %		-20	2535 000 008	4.7	0.000 000	0.002
100 %		-10	2535 000 009	5.7	0.000 000	0.002
100 %		0	2535 000 006	2.7	0.000 000	0.001
100 %		+10	2535 000 009	5.8	0.000 000	0.002
100 %		+30	2535 000 005	2.0	0.000 000	0.001
100 %		+40	2535 000 008	5.4	0.000 000	0.002
100 %		+50	2535 000 008	5.2	0.000 000	0.002
Batt. Endpoint	3.300	+20	2535 000 007	4.2	0.000 000	0.002



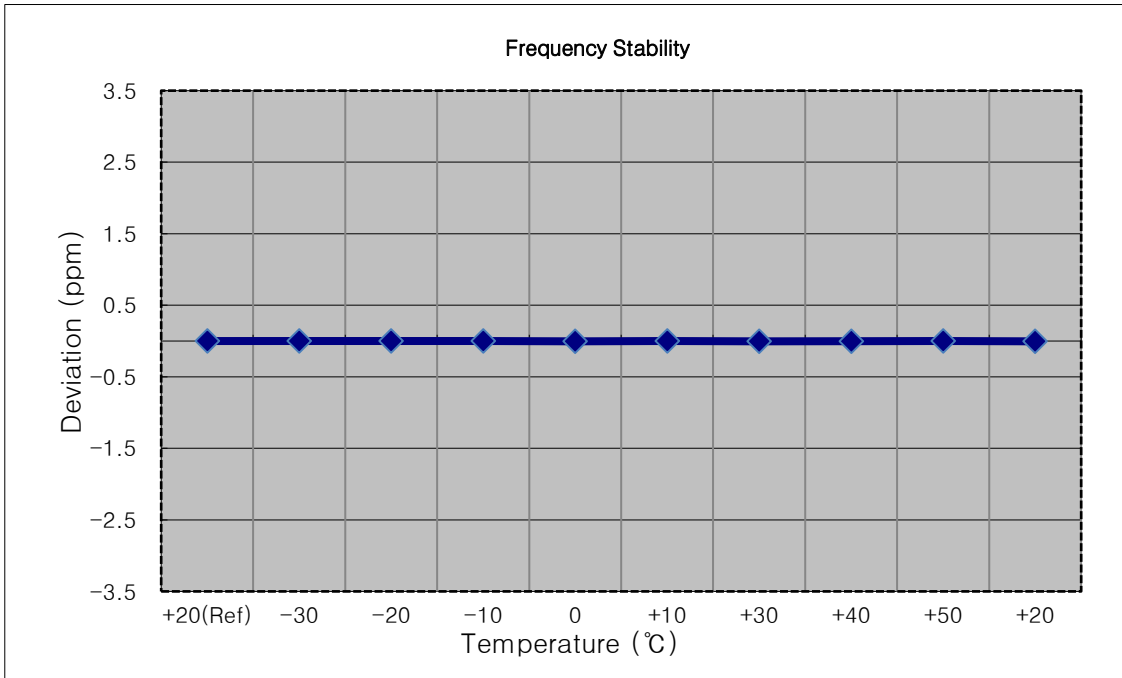
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,567,500,000 Hz
- ▣ CHANNEL: 21425 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2567 499 993	0.0	0.000 000	0.000
100 %		-30	2567 499 986	-7.7	0.000 000	-0.003
100 %		-20	2567 499 990	-3.6	0.000 000	-0.001
100 %		-10	2567 499 990	-3.4	0.000 000	-0.001
100 %		0	2567 499 988	-5.0	0.000 000	-0.002
100 %		+10	2567 499 990	-3.9	0.000 000	-0.002
100 %		+30	2567 499 997	3.1	0.000 000	0.001
100 %		+40	2567 499 996	2.6	0.000 000	0.001
100 %		+50	2567 499 991	-2.6	0.000 000	-0.001
Batt. Endpoint	3.300	+20	2567 499 989	-4.5	0.000 000	-0.002



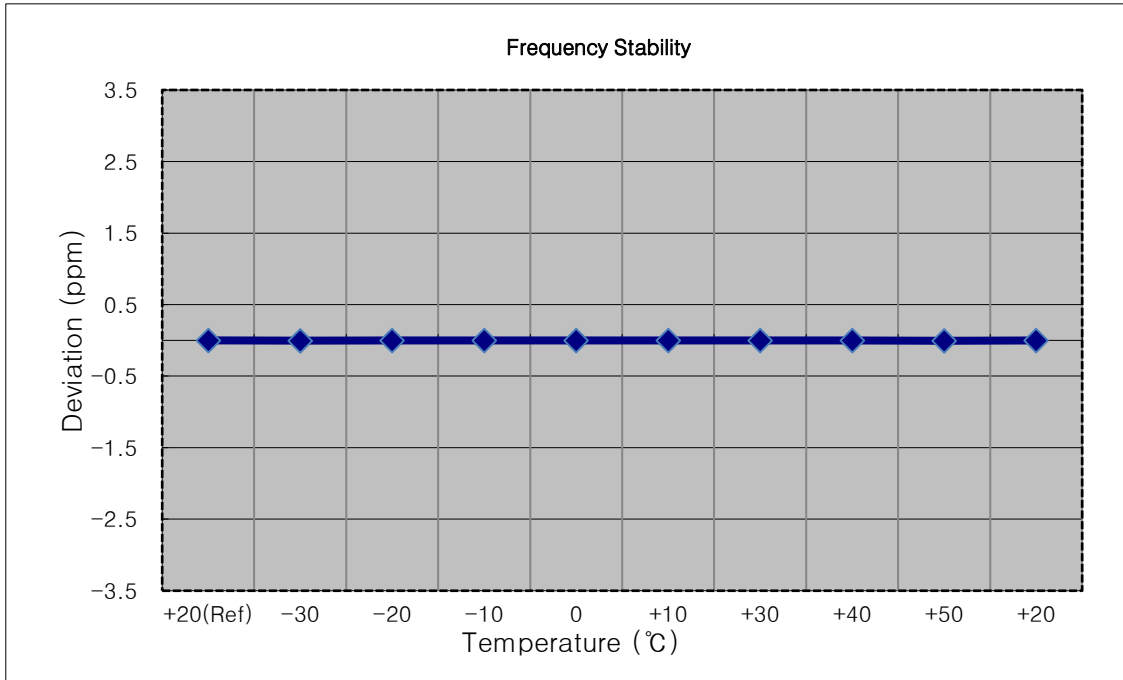
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,565,000,000 Hz
- ▣ CHANNEL: 21400 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2564 999 996	0.0	0.000 000	0.000
100 %		-30	2564 999 992	-4.5	0.000 000	-0.002
100 %		-20	2564 999 992	-4.1	0.000 000	-0.002
100 %		-10	2564 999 992	-4.7	0.000 000	-0.002
100 %		0	2564 999 991	-5.6	0.000 000	-0.002
100 %		+10	2564 999 993	-3.1	0.000 000	-0.001
100 %		+30	2564 999 990	-5.8	0.000 000	-0.002
100 %		+40	2564 999 990	-6.0	0.000 000	-0.002
100 %		+50	2564 999 995	-1.6	0.000 000	-0.001
Batt. Endpoint	3.300	+20	2564 999 991	-5.7	0.000 000	-0.002



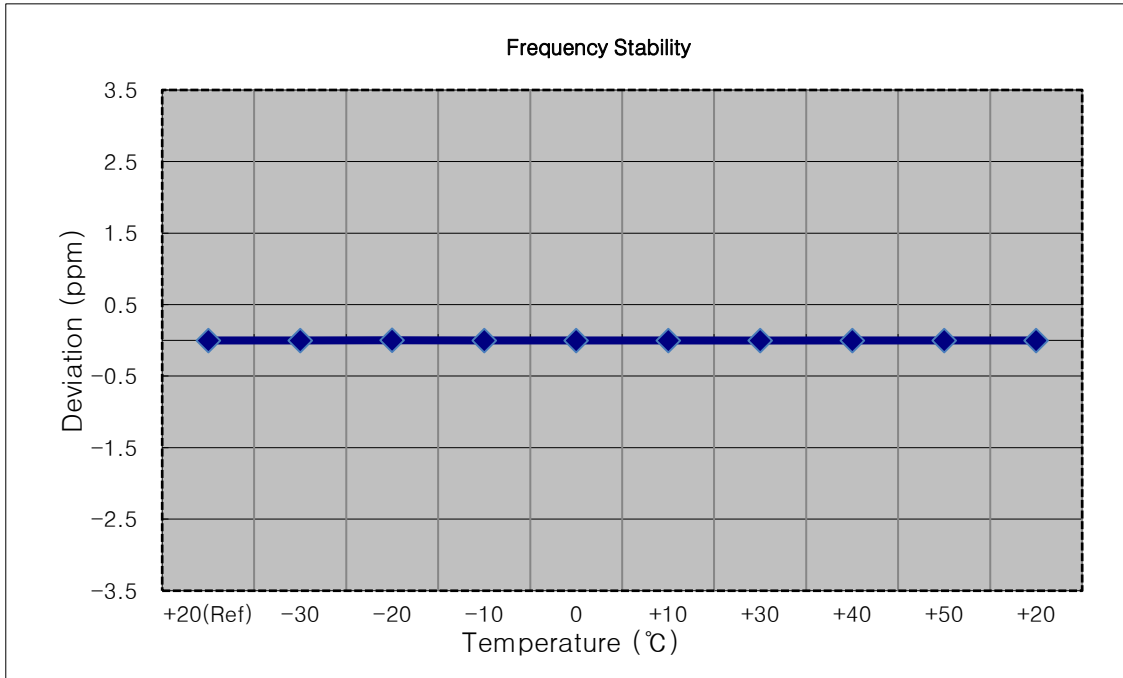
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,562,500,000 Hz
- ▣ CHANNEL: 21375 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2562 499 992	0.0	0.000 000	0.000
100 %		-30	2562 499 983	-9.2	0.000 000	-0.004
100 %		-20	2562 499 987	-5.4	0.000 000	-0.002
100 %		-10	2562 499 987	-5.0	0.000 000	-0.002
100 %		0	2562 499 985	-7.1	0.000 000	-0.003
100 %		+10	2562 499 985	-7.5	0.000 000	-0.003
100 %		+30	2562 499 987	-5.2	0.000 000	-0.002
100 %		+40	2562 499 987	-5.4	0.000 000	-0.002
100 %		+50	2562 499 983	-9.0	0.000 000	-0.004
Batt. Endpoint	3.300	+20	2562 499 988	-4.6	0.000 000	-0.002



- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,560,000,000 Hz
- ▣ CHANNEL: 21350 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2559 999 994	0.0	0.000 000	0.000
100 %		-30	2559 999 992	-2.5	0.000 000	-0.001
100 %		-20	2559 999 998	3.5	0.000 000	0.001
100 %		-10	2559 999 993	-1.7	0.000 000	-0.001
100 %		0	2559 999 990	-4.6	0.000 000	-0.002
100 %		+10	2559 999 990	-4.4	0.000 000	-0.002
100 %		+30	2559 999 989	-5.4	0.000 000	-0.002
100 %		+40	2559 999 991	-3.7	0.000 000	-0.001
100 %		+50	2559 999 991	-3.0	0.000 000	-0.001
Batt. Endpoint	3.300	+20	2559 999 990	-4.2	0.000 000	-0.002



9. TEST DATA (Sub 2 Ant)

9.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
									W	W
2502.5	LTE B7/ 5 MHz	QPSK	-23.73	13.09	10.51	2.57	V	< 2.00	0.127	21.03
		16-QAM	-24.50	12.32	10.51	2.57	V		0.106	20.26
		64-QAM	-25.96	10.86	10.51	2.57	V		0.076	18.80
		256-QAM	-28.56	8.26	10.51	2.57	V		0.042	16.20
2535.0		QPSK	-24.58	12.36	10.67	2.63	V		0.110	20.40
		16-QAM	-25.38	11.56	10.67	2.63	V		0.091	19.60
		64-QAM	-26.42	10.52	10.67	2.63	V		0.072	18.56
		256-QAM	-29.50	7.44	10.67	2.63	V		0.035	15.48
2567.5		QPSK	-24.63	12.06	10.65	2.72	V		0.100	19.99
		16-QAM	-25.49	11.20	10.65	2.72	V		0.082	19.13
		64-QAM	-26.52	10.17	10.65	2.72	V		0.065	18.10
		256-QAM	-29.63	7.06	10.65	2.72	V		0.032	14.99

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
									W	W
2505.0	LTE B7/ 10 MHz	QPSK	-23.64	13.22	10.55	2.57	V	< 2.00	0.132	21.20
		16-QAM	-24.41	12.45	10.55	2.57	V		0.110	20.43
		64-QAM	-25.73	11.13	10.55	2.57	V		0.081	19.11
		256-QAM	-28.55	8.31	10.55	2.57	V		0.043	16.29
2535.0		QPSK	-24.31	12.63	10.67	2.63	V		0.117	20.67
		16-QAM	-25.11	11.83	10.67	2.63	V		0.097	19.87
		64-QAM	-26.15	10.79	10.67	2.63	V		0.076	18.83
		256-QAM	-29.22	7.72	10.67	2.63	V		0.038	15.76
2565.0		QPSK	-24.75	12.18	10.66	2.70	V		0.103	20.13
		16-QAM	-25.52	11.41	10.66	2.70	V		0.086	19.36
		64-QAM	-26.60	10.33	10.66	2.70	V		0.067	18.28
		256-QAM	-29.70	7.23	10.66	2.70	V		0.033	15.18

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2507.5	LTE B7/ 15 MHz	QPSK	-23.72	13.17	10.59	2.57	V	< 2.00	0.132	21.19
		16-QAM	-24.48	12.41	10.59	2.57	V		0.111	20.43
		64-QAM	-25.64	11.25	10.59	2.57	V		0.085	19.27
		256-QAM	-28.52	8.37	10.59	2.57	V		0.044	16.39
2535.0		QPSK	-24.21	12.73	10.67	2.63	V		0.120	20.77
		16-QAM	-25.02	11.92	10.67	2.63	V		0.099	19.96
		64-QAM	-26.06	10.88	10.67	2.63	V		0.078	18.92
		256-QAM	-29.06	7.88	10.67	2.63	V		0.039	15.92
2562.5		QPSK	-24.87	12.30	10.66	2.68	V		0.107	20.28
		16-QAM	-25.62	11.55	10.66	2.68	V		0.090	19.53
		64-QAM	-26.73	10.44	10.66	2.68	V		0.070	18.42
		256-QAM	-29.75	7.42	10.66	2.68	V		0.035	15.40

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2510.0	LTE B7/ 20 MHz	QPSK	-23.67	13.22	10.59	2.57	V	< 2.00	0.133	21.24
		16-QAM	-24.54	12.35	10.59	2.57	V		0.109	20.37
		64-QAM	-25.79	11.10	10.59	2.57	V		0.082	19.12
		256-QAM	-28.58	8.31	10.59	2.57	V		0.043	16.33
2535.0		QPSK	-24.29	12.65	10.67	2.63	V		0.117	20.69
		16-QAM	-25.05	11.89	10.67	2.63	V		0.099	19.93
		64-QAM	-26.11	10.83	10.67	2.63	V		0.077	18.87
		256-QAM	-29.23	7.71	10.67	2.63	V		0.038	15.75
2560.0		QPSK	-24.70	12.47	10.66	2.68	V		0.111	20.45
		16-QAM	-25.53	11.64	10.66	2.68	V		0.092	19.62
		64-QAM	-26.60	10.57	10.66	2.68	V		0.072	18.55
		256-QAM	-29.70	7.47	10.66	2.68	V		0.035	15.45

9.2 RADIATED SPURIOUS EMISSIONS

- ▣ OPERATING FREQUENCY : 2502.5 MHz
- ▣ MEASURED OUTPUT POWER: 21.03 dBm = 0.127 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 5 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 46.03 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
20775 (2502.5)	5 005.00	-58.26	12.56	-68.18	3.85	H	-59.47	80.50
	7 507.50	-59.37	10.78	-59.78	4.71	V	-53.71	74.74
	10 010.00	-61.75	11.23	-57.57	5.52	H	-51.86	72.89
21100 (2535.0)	5 070.00	-59.11	12.31	-66.73	3.73	V	-58.15	79.18
	7 605.00	-61.17	11.10	-62.02	4.78	V	-55.70	76.73
	10 140.00	-62.05	11.59	-58.26	5.55	V	-52.22	73.25
21425 (2567.5)	5 135.00	-60.25	12.33	-68.12	3.94	H	-59.73	80.76
	7 702.50	-60.20	11.35	-61.30	4.77	H	-54.72	75.75
	10 270.00	-63.07	11.57	-57.54	5.55	V	-51.52	72.55

- ▣ OPERATING FREQUENCY : 2505.0 MHz
- ▣ MEASURED OUTPUT POWER: 21.20 dBm = 0.132 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 10 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 46.20 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
20800 (2505.0)	5 010.00	-57.78	12.55	-67.80	3.88	H	-59.13	80.33
	7 515.00	-58.80	10.80	-59.36	4.71	H	-53.27	74.47
	10 020.00	-60.27	11.27	-55.98	5.54	H	-50.25	71.44
21100 (2535.0)	5 070.00	-58.13	12.31	-65.75	3.73	V	-57.17	78.36
	7 605.00	-60.14	11.10	-60.99	4.78	V	-54.67	75.87
	10 140.00	-61.40	11.59	-57.61	5.55	H	-51.57	72.76
21400 (2565.0)	5 130.00	-58.15	12.31	-65.97	3.96	H	-57.62	78.82
	7 695.00	-58.97	11.35	-60.01	4.76	H	-53.43	74.62
	10 260.00	-59.08	11.58	-53.47	5.54	H	-47.43	68.63

- ▣ OPERATING FREQUENCY : 2507.5 MHz
- ▣ MEASURED OUTPUT POWER: 21.19 dBm = 0.132 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 15 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 46.19 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
20825 (2507.5)	5 015.00	-59.07	12.54	-69.20	3.90	H	-60.56	81.75
	7 522.50	-59.80	10.82	-60.50	4.71	H	-54.39	75.59
	10 030.00	-62.04	11.31	-57.89	5.53	V	-52.11	73.31
21100 (2535.0)	5 070.00	-59.56	12.31	-67.18	3.73	H	-58.60	79.79
	7 605.00	-60.33	11.10	-61.18	4.78	H	-54.86	76.05
	10 140.00	-62.60	11.59	-58.81	5.55	H	-52.77	73.96
21375 (2562.5)	5 125.00	-60.26	12.29	-68.21	3.97	H	-59.89	81.09
	7 687.50	-59.48	11.34	-60.46	4.75	V	-53.87	75.07
	10 250.00	-63.00	11.59	-57.57	5.54	V	-51.52	72.71

- ▣ OPERATING FREQUENCY : 2510.0 MHz
- ▣ MEASURED OUTPUT POWER: 21.24 dBm = 0.133 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 20 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 46.24 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
20850 (2510.0)	5 020.00	-57.30	12.52	-67.53	3.91	H	-58.92	80.16
	7 530.00	-57.19	10.85	-57.77	4.72	H	-51.64	72.88
	10 040.00	-59.46	11.34	-55.80	5.51	H	-49.97	71.21
21100 (2535.0)	5 070.00	-56.11	12.31	-63.73	3.73	V	-55.15	76.39
	7 605.00	-57.66	11.10	-58.51	4.78	V	-52.19	73.43
	10 140.00	-59.97	11.59	-56.18	5.55	H	-50.14	71.38
21350 (2560.0)	5 120.00	-57.11	12.26	-65.19	3.97	V	-56.90	78.15
	7 680.00	-57.89	11.33	-58.48	4.75	V	-51.90	73.14
	10 240.00	-59.03	11.59	-54.12	5.53	V	-48.06	69.31

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
7	5 MHz	2535.0	QPSK	25	0	4.56
			16-QAM	25	0	5.66
			64-QAM	25	0	6.64
			256-QAM	25	0	6.94
	10 MHz		QPSK	50	0	4.60
			16-QAM	50	0	5.68
			64-QAM	50	0	6.61
			256-QAM	50	0	6.92
	15 MHz		QPSK	75	0	4.57
			16-QAM	75	0	5.63
			64-QAM	75	0	6.60
			256-QAM	75	0	6.87
	20 MHz		QPSK	100	0	4.66
			16-QAM	100	0	5.71
			64-QAM	100	0	6.57
			256-QAM	100	0	6.86

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 192 ~ 207.

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
7	5 MHz	2535.0	QPSK	25	0	4.5209
			16-QAM	25		4.5269
			64-QAM	25		4.4925
			256-QAM	25		4.5060
	10 MHz		QPSK	50		9.0176
			16-QAM	50		8.9986
			64-QAM	50		9.0061
			256-QAM	50		9.0160
	15 MHz		QPSK	75		13.495
			16-QAM	75		13.530
			64-QAM	75		13.480
			256-QAM	75		13.491
	20 MHz		QPSK	100		17.975
			16-QAM	100		17.972
			64-QAM	100		17.990
			256-QAM	100		17.977

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 176 ~ 191.

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)
7	5	2502.5	26.1572	30.131	-77.081	-46.950	-25.00
		2535.0	26.1551	30.131	-76.777	-46.646	
		2567.5	26.1406	30.131	-77.043	-46.912	
	10	2505.0	26.1207	30.131	-76.926	-46.795	
		2535.0	26.1462	30.131	-76.632	-46.501	
		2565.0	26.1819	30.131	-76.875	-46.744	
	15	2507.5	26.1202	30.131	-76.687	-46.556	
		2535.0	3.6995	27.976	-76.836	-48.860	
		2562.5	26.1619	30.131	-76.918	-46.787	
	20	2510.0	26.1525	30.131	-76.544	-46.413	
		2535.0	25.8321	30.131	-77.054	-46.923	
		2560.0	26.1232	30.131	-76.757	-46.626	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 208 ~ 231.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor(dB) = Cable Loss + Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	25.270
1 – 5	27.976
5 – 10	28.591
10 – 15	29.116
15 – 20	29.489
Above 20(26.5)	30.131

9.6 CHANNEL EDGE

Band Width (Modulation)	Frequency (MHz)	RB Size / Offset	C.E ~ (C.E ± 1 MHz)		2 496 MHz ~ 2 499 MHz	(C.E + 1 MHz) ~ (C.E + 5 MHz)	2 490.5 MHz ~ 2 496 MHz	(C.E + 5 MHz) ~ (C.E + X MHz)	Below 2 490.5 MHz	Above (C.E + X MHz)
			Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
5 MHz	2502.5	25 / 0	-23.45	-22.50	-22.76	-20.86	-26.76	-30.10	-48.46	-31.23
10 MHz	2505.0	50 / 0	-26.59	-24.95	-23.48	-21.67	-30.16	-29.69	-36.61	-33.15
15 MHz	2507.5	75 / 0	-27.94	-26.66	-25.76	-24.79	-30.34	-32.17	-32.20	-35.68
20 MHz	2510.0	100 / 0	-28.35	-27.33	-27.02	-26.03	-30.56	-30.65	-33.89	-36.61
Limit(dBm)			-10.0		-10.0		-13.0		-25.0	

Band Width (Modulation)	Frequency (MHz)	RB Size / Offset	C.E ~ (C.E ± 1 MHz)		(C.E ± 1 MHz) ~ (C.E ± 5 MHz)	
			Lower	Upper	Lower	Upper
5 MHz (QPSK)	2535.0	25 / 0	-23.46	-23.26	-22.08	-22.02
	2567.5	25 / 0	-23.76	-23.33	-25.18	-23.80
10 MHz (QPSK)	2535.0	50 / 0	-25.47	-25.05	-22.14	-21.91
	2565.0	50 / 0	-26.31	-26.37	-23.69	-24.11
15 MHz (QPSK)	2535.0	75 / 0	-26.46	-26.34	-23.79	-23.43
	2562.5	75 / 0	-26.63	-27.79	-24.14	-25.79
20 MHz (QPSK)	2535.0	100 / 0	-26.99	-26.29	-25.06	-24.65
	2560.0	100 / 0	-27.17	-28.74	-25.38	-27.30
Limit(dBm)			-10.0		-10.0	

Band Width (Modulation)	Frequency (MHz)	Resource Block Size	(C.E ± 5 MHz) ~ (C.E ± X MHz)		Above (C.E ± X MHz)	
			Lower	Upper	Lower	Upper
5 MHz (QPSK)	2535.0	25 / 0	-32.75	-31.76	-35.64	-33.96
	2567.5	25 / 0	-32.03	-33.34	-33.14	-34.57
10 MHz (QPSK)	2535.0	50 / 0	-27.91	-26.90	-36.57	-35.18
	2565.0	50 / 0	-29.79	-31.29	-34.35	-41.50
15 MHz (QPSK)	2535.0	75 / 0	-29.41	-28.83	-38.29	-37.46
	2562.5	75 / 0	-28.94	-31.71	-35.65	-48.09
20 MHz (QPSK)	2535.0	100 / 0	-28.80	-28.30	-38.84	-38.59
	2560.0	100 / 0	-28.65	-32.10	-35.92	-51.22
Limit(dBm)			-13.0		-25.0	

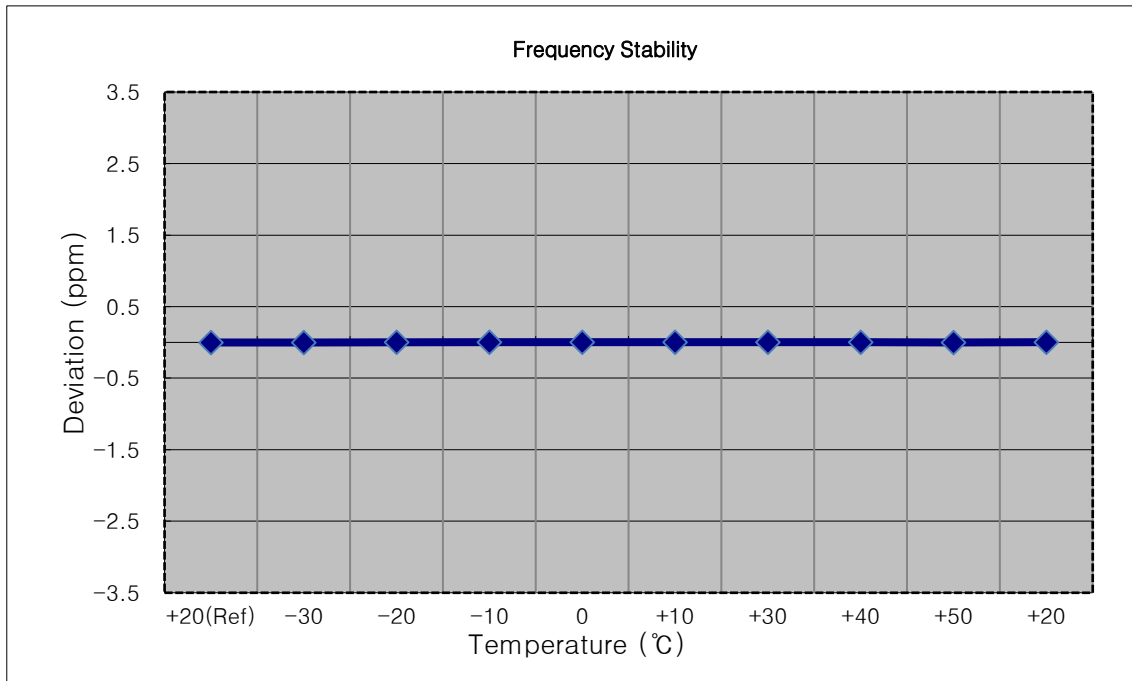
Note:

1. C.E = Channel Edge
2. X = X is the greater of 6 MHz or the actual emission bandwidth.
3. X = 6 MHz(5 MHz Bandwidth), 10 MHz(10 MHz Bandwidth), 15 MHz(15 MHz Bandwidth), 20 MHz(20 MHz Bandwidth)
4. Plots of the EUT's Channel Edge are shown Page 152 ~ 175.

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

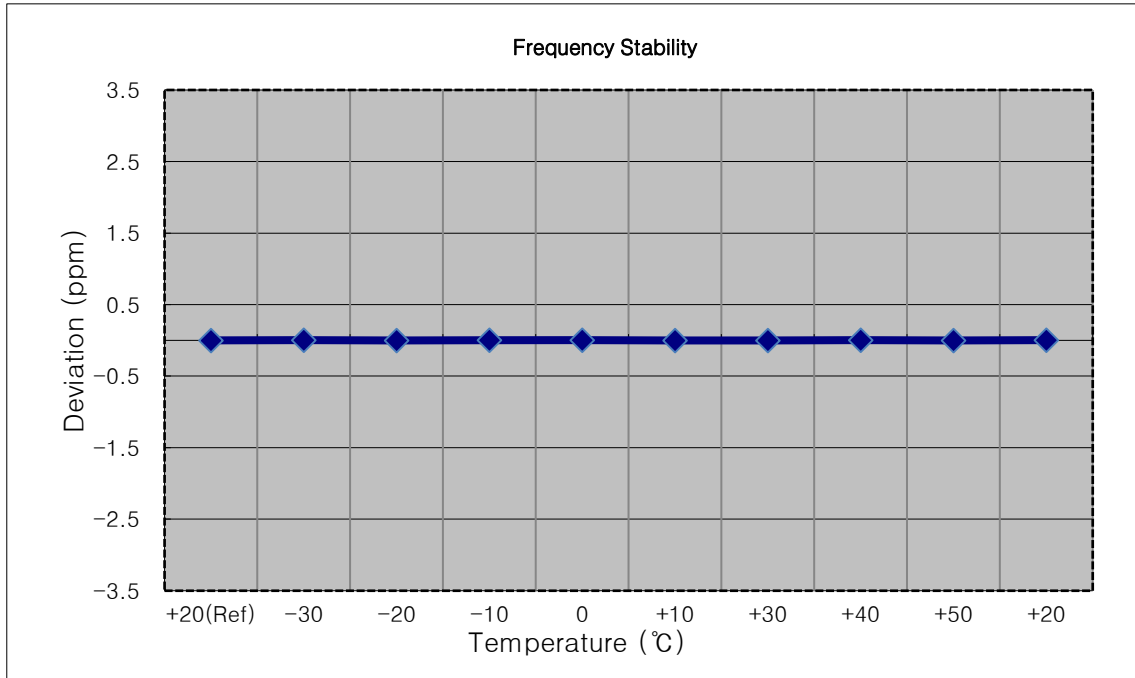
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,502,500,000 Hz
- ▣ CHANNEL: 20775 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2502 500 006	0.0	0.000 000	0.000
100 %		-30	2502 500 002	-4.0	0.000 000	-0.002
100 %		-20	2502 500 009	3.8	0.000 000	0.002
100 %		-10	2502 500 008	2.8	0.000 000	0.001
100 %		0	2502 500 009	2.9	0.000 000	0.001
100 %		+10	2502 500 009	3.2	0.000 000	0.001
100 %		+30	2502 500 009	3.3	0.000 000	0.001
100 %		+40	2502 500 009	3.1	0.000 000	0.001
100 %		+50	2502 500 003	-2.4	0.000 000	-0.001
Batt. Endpoint		3.300	+20	2502 500 009	3.4	0.000 000



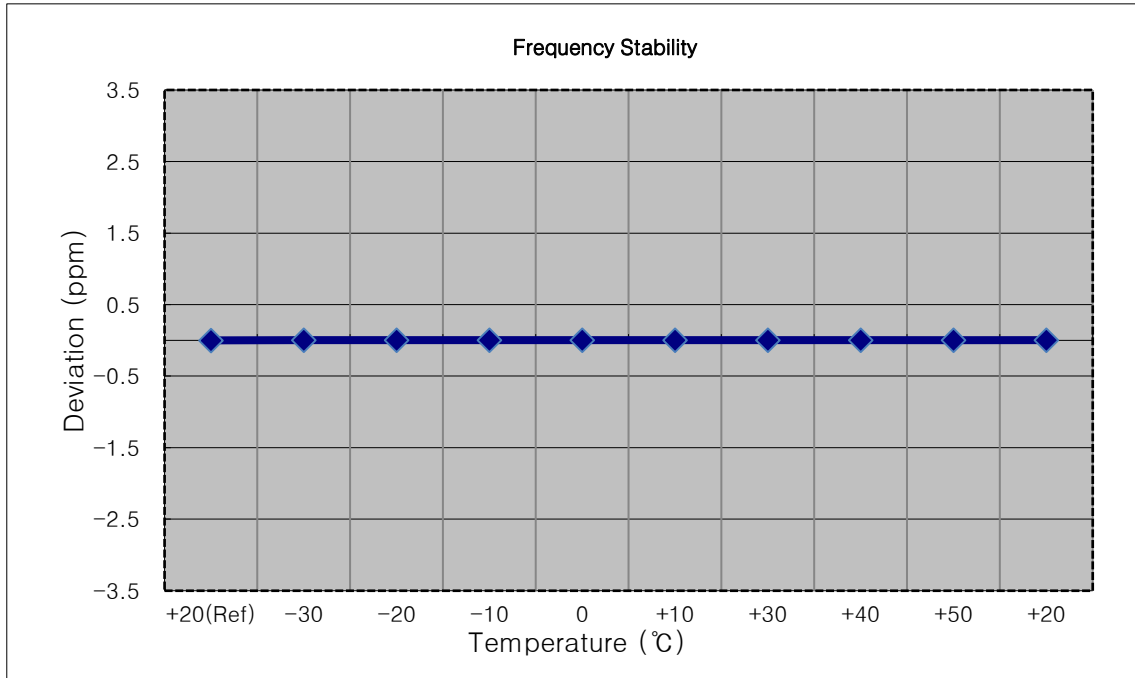
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,505,000,000 Hz
- ▣ CHANNEL: 20800 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2505 000 004	0.0	0.000 000	0.000
100 %		-30	2505 000 008	3.9	0.000 000	0.002
100 %		-20	2505 000 007	2.6	0.000 000	0.001
100 %		-10	2505 000 010	5.6	0.000 000	0.002
100 %		0	2505 000 008	4.1	0.000 000	0.002
100 %		+10	2505 000 007	2.6	0.000 000	0.001
100 %		+30	2505 000 007	2.6	0.000 000	0.001
100 %		+40	2505 000 009	4.3	0.000 000	0.002
100 %		+50	2505 000 006	2.1	0.000 000	0.001
Batt. Endpoint	3.300	+20	2505 000 009	5.0	0.000 000	0.002



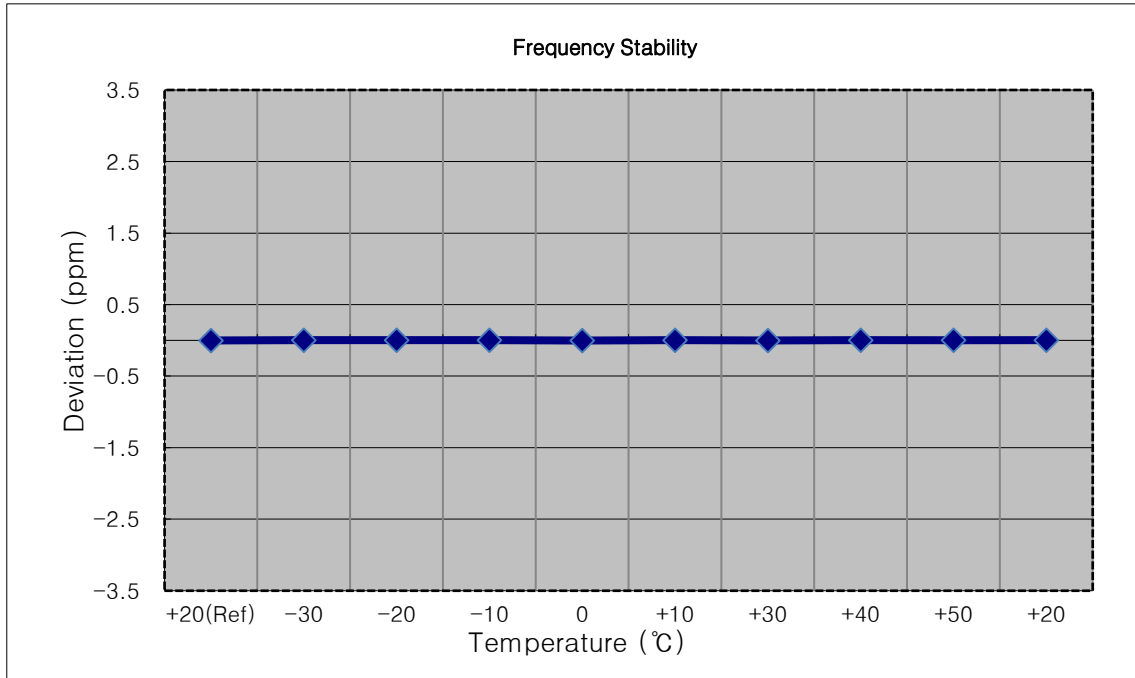
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,507,500,000 Hz
- ▣ CHANNEL: 20825 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2507 500 007	0.0	0.000 000	0.000
100 %		-30	2507 500 014	6.4	0.000 000	0.003
100 %		-20	2507 500 012	4.6	0.000 000	0.002
100 %		-10	2507 500 013	6.1	0.000 000	0.002
100 %		0	2507 500 013	6.0	0.000 000	0.002
100 %		+10	2507 500 013	5.7	0.000 000	0.002
100 %		+30	2507 500 013	5.9	0.000 000	0.002
100 %		+40	2507 500 014	6.6	0.000 000	0.003
100 %		+50	2507 500 014	6.8	0.000 000	0.003
Batt. Endpoint	3.300	+20	2507 500 013	5.6	0.000 000	0.002



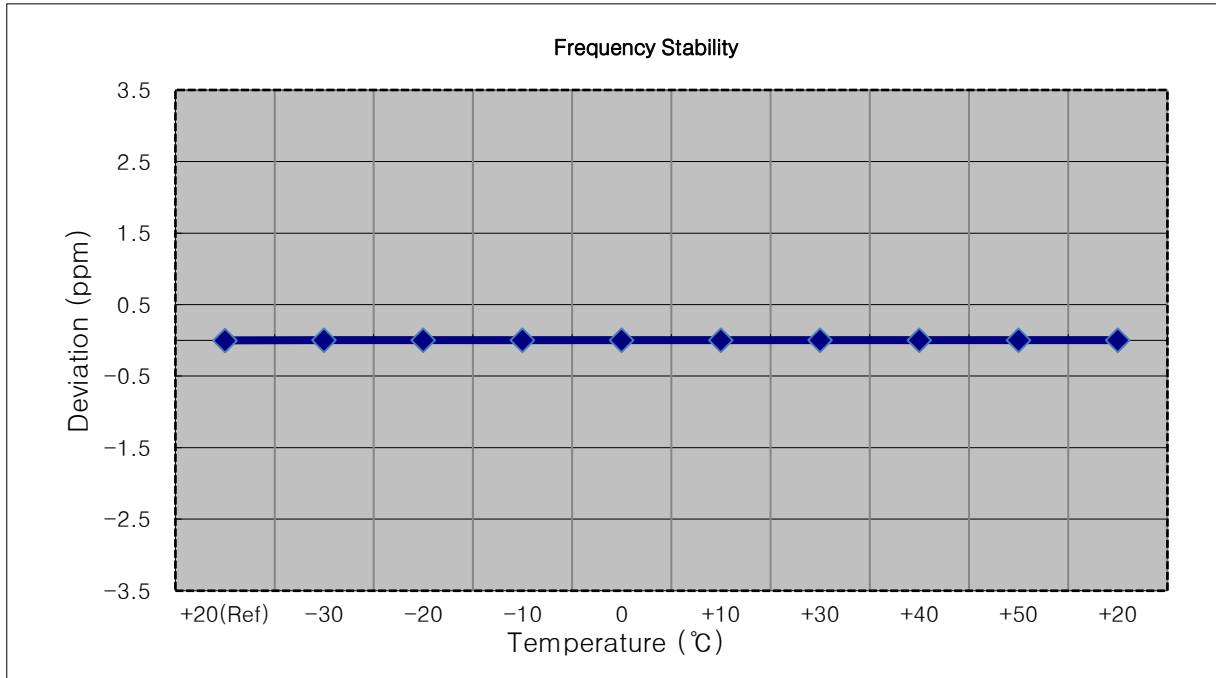
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,510,000,000 Hz
- ▣ CHANNEL: 20850 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2510 000 007	0.0	0.000 000	0.000
100 %		-30	2510 000 010	3.8	0.000 000	0.002
100 %		-20	2510 000 011	4.1	0.000 000	0.002
100 %		-10	2510 000 010	3.6	0.000 000	0.001
100 %		0	2510 000 001	-5.3	0.000 000	-0.002
100 %		+10	2510 000 010	3.5	0.000 000	0.001
100 %		+30	2510 000 009	2.5	0.000 000	0.001
100 %		+40	2510 000 010	3.1	0.000 000	0.001
100 %		+50	2510 000 011	4.6	0.000 000	0.002
Batt. Endpoint	3.300	+20	2510 000 011	4.5	0.000 000	0.002



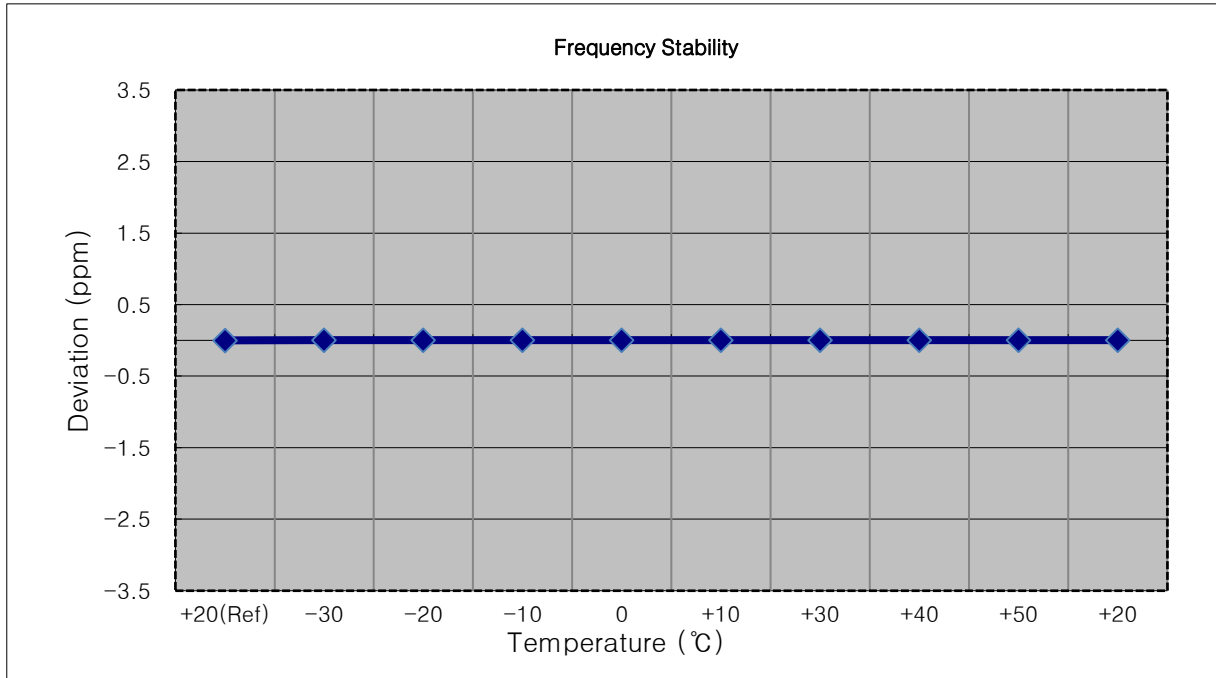
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 003	0.0	0.000 000	0.000
100 %		-30	2535 000 007	3.5	0.000 000	0.001
100 %		-20	2535 000 009	5.7	0.000 000	0.002
100 %		-10	2535 000 010	7.4	0.000 000	0.003
100 %		0	2535 000 010	6.5	0.000 000	0.003
100 %		+10	2535 000 009	6.1	0.000 000	0.002
100 %		+30	2535 000 010	7.0	0.000 000	0.003
100 %		+40	2535 000 009	5.9	0.000 000	0.002
100 %		+50	2535 000 009	5.9	0.000 000	0.002
Batt. Endpoint	3.300	+20	2535 000 009	6.4	0.000 000	0.003



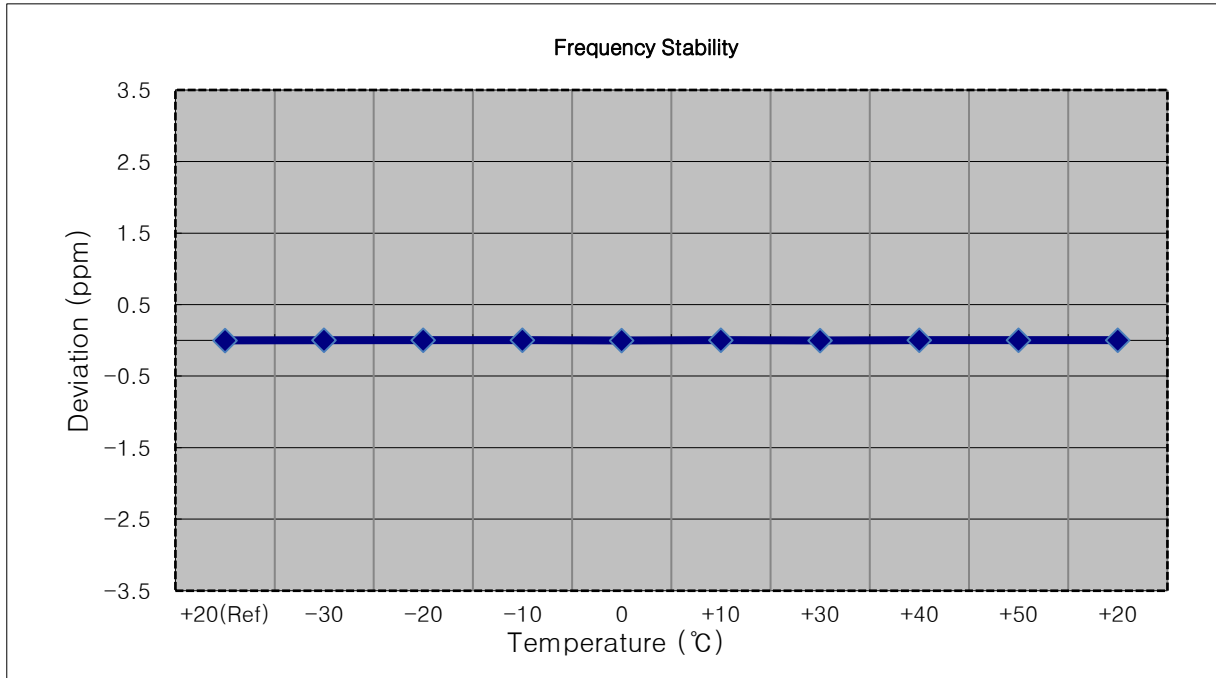
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 007	0.0	0.000 000	0.000
100 %		-30	2535 000 011	3.9	0.000 000	0.002
100 %		-20	2535 000 011	3.8	0.000 000	0.001
100 %		-10	2535 000 013	5.8	0.000 000	0.002
100 %		0	2535 000 012	4.6	0.000 000	0.002
100 %		+10	2535 000 012	5.0	0.000 000	0.002
100 %		+30	2535 000 010	2.9	0.000 000	0.001
100 %		+40	2535 000 013	6.0	0.000 000	0.002
100 %		+50	2535 000 015	7.3	0.000 000	0.003
Batt. Endpoint	3.300	+20	2535 000 011	3.8	0.000 000	0.001



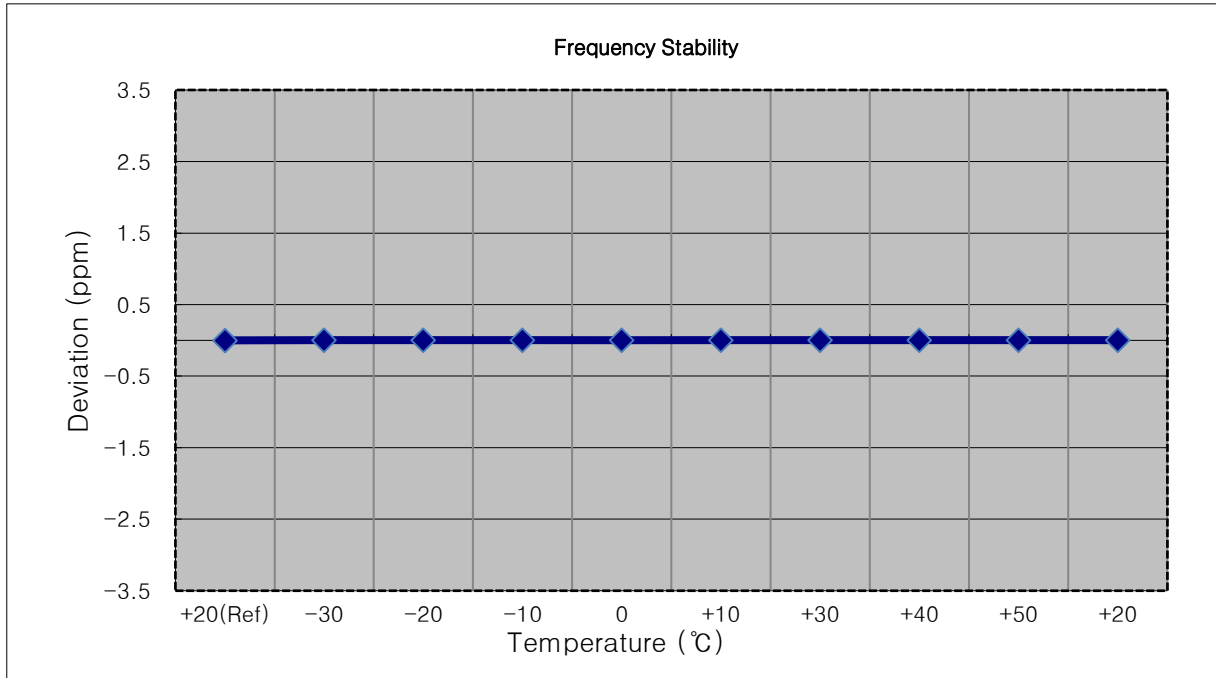
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 004	0.0	0.000 000	0.000
100 %		-30	2535 000 009	5.5	0.000 000	0.002
100 %		-20	2535 000 007	2.9	0.000 000	0.001
100 %		-10	2535 000 007	3.0	0.000 000	0.001
100 %		0	2535 000 007	2.7	0.000 000	0.001
100 %		+10	2535 000 007	3.2	0.000 000	0.001
100 %		+30	2535 000 006	2.3	0.000 000	0.001
100 %		+40	2535 000 007	3.4	0.000 000	0.001
100 %		+50	2535 000 008	4.3	0.000 000	0.002
Batt. Endpoint	3.300	+20	2535 000 008	4.3	0.000 000	0.002



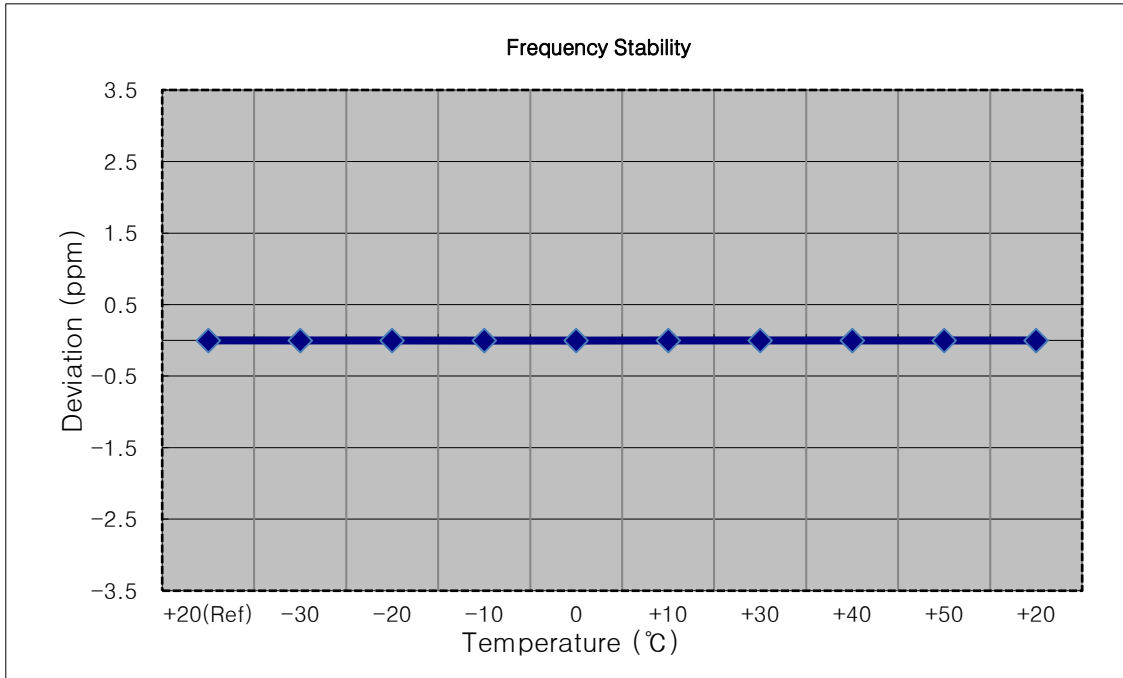
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 005	0.0	0.000 000	0.000
100 %		-30	2535 000 008	3.4	0.000 000	0.001
100 %		-20	2535 000 010	4.7	0.000 000	0.002
100 %		-10	2535 000 010	4.7	0.000 000	0.002
100 %		0	2535 000 011	5.7	0.000 000	0.002
100 %		+10	2535 000 009	3.5	0.000 000	0.001
100 %		+30	2535 000 010	4.5	0.000 000	0.002
100 %		+40	2535 000 010	5.4	0.000 000	0.002
100 %		+50	2535 000 010	4.8	0.000 000	0.002
Batt. Endpoint	3.300	+20	2535 000 009	4.1	0.000 000	0.002



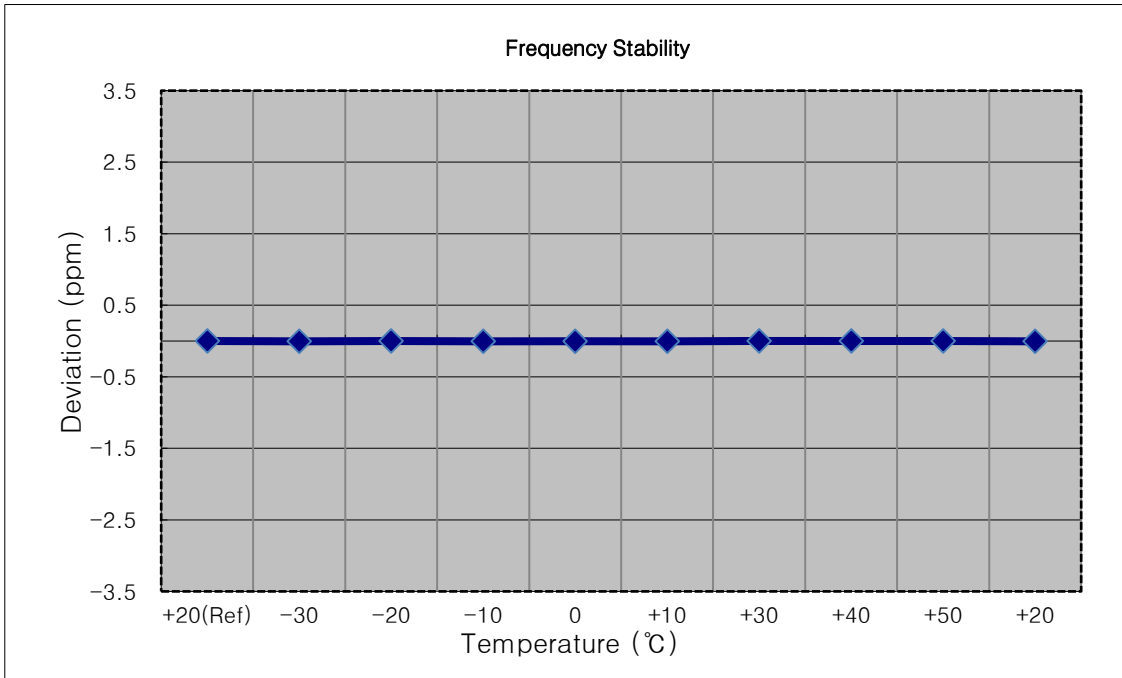
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,567,500,000 Hz
- ▣ CHANNEL: 21425 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2567 499 997	0.0	0.000 000	0.000
100 %		-30	2567 499 990	-7.2	0.000 000	-0.003
100 %		-20	2567 499 992	-4.6	0.000 000	-0.002
100 %		-10	2567 499 989	-8.1	0.000 000	-0.003
100 %		0	2567 499 989	-8.1	0.000 000	-0.003
100 %		+10	2567 499 990	-7.0	0.000 000	-0.003
100 %		+30	2567 499 993	-4.2	0.000 000	-0.002
100 %		+40	2567 499 991	-6.0	0.000 000	-0.002
100 %		+50	2567 499 989	-8.0	0.000 000	-0.003
Batt. Endpoint	3.300	+20	2567 499 990	-7.1	0.000 000	-0.003



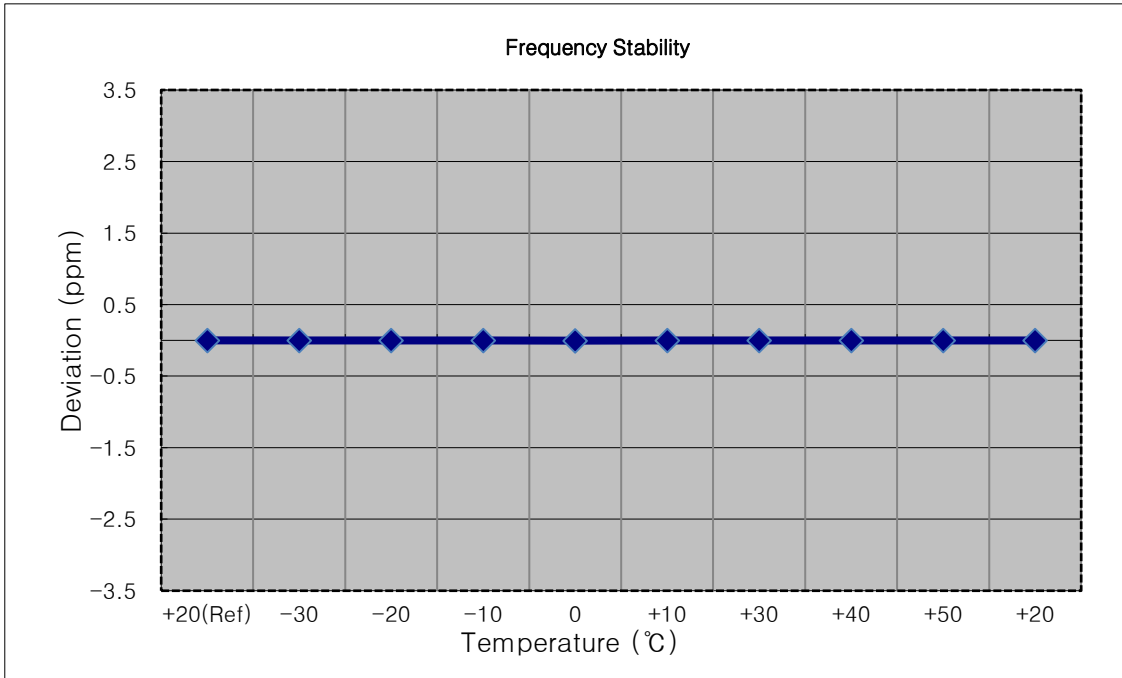
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,565,000,000 Hz
- ▣ CHANNEL: 21400 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2564 999 996	0.0	0.000 000	0.000
100 %		-30	2564 999 990	-5.5	0.000 000	-0.002
100 %		-20	2564 999 992	-3.8	0.000 000	-0.001
100 %		-10	2564 999 990	-5.4	0.000 000	-0.002
100 %		0	2564 999 989	-6.7	0.000 000	-0.003
100 %		+10	2564 999 990	-5.3	0.000 000	-0.002
100 %		+30	2564 999 999	3.1	0.000 000	0.001
100 %		+40	2564 999 993	-2.8	0.000 000	-0.001
100 %		+50	2564 999 991	-4.4	0.000 000	-0.002
Batt. Endpoint	3.300	+20	2564 999 990	-5.7	0.000 000	-0.002



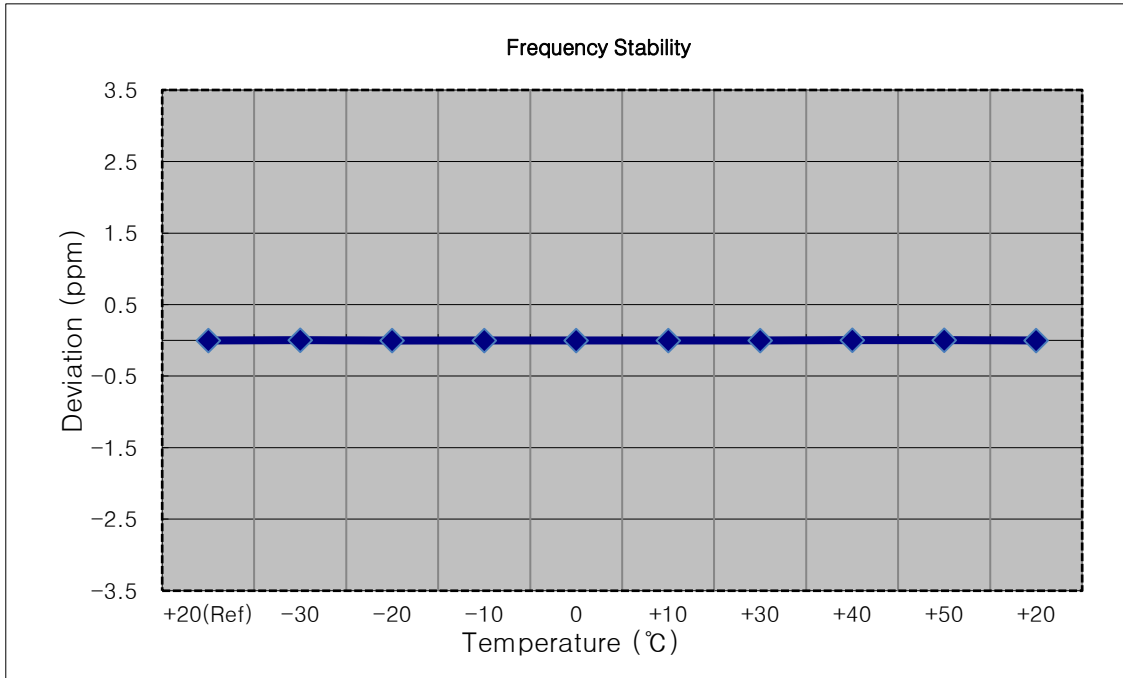
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,562,500,000 Hz
- ▣ CHANNEL: 21375 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2562 499 993	0.0	0.000 000	0.000
100 %		-30	2562 499 985	-8.0	0.000 000	-0.003
100 %		-20	2562 499 987	-6.0	0.000 000	-0.002
100 %		-10	2562 499 988	-5.1	0.000 000	-0.002
100 %		0	2562 499 984	-9.7	0.000 000	-0.004
100 %		+10	2562 499 988	-5.2	0.000 000	-0.002
100 %		+30	2562 499 989	-3.9	0.000 000	-0.002
100 %		+40	2562 499 989	-4.5	0.000 000	-0.002
100 %		+50	2562 499 987	-6.4	0.000 000	-0.002
Batt. Endpoint	3.300	+20	2562 499 988	-5.1	0.000 000	-0.002



- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,560,000,000 Hz
- ▣ CHANNEL: 21350 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2560 000 003	0.0	0.000 000	0.000
100 %		-30	2560 000 010	7.4	0.000 000	0.003
100 %		-20	2559 999 997	-6.2	0.000 000	-0.002
100 %		-10	2559 999 998	-4.7	0.000 000	-0.002
100 %		0	2560 000 000	-2.5	0.000 000	-0.001
100 %		+10	2560 000 000	-2.6	0.000 000	-0.001
100 %		+30	2560 000 000	-3.1	0.000 000	-0.001
100 %		+40	2560 000 006	2.9	0.000 000	0.001
100 %		+50	2560 000 006	3.3	0.000 000	0.001
Batt. Endpoint	3.300	+20	2559 999 999	-3.4	0.000 000	-0.001



10. TEST PLOTS (Main 2 Ant)

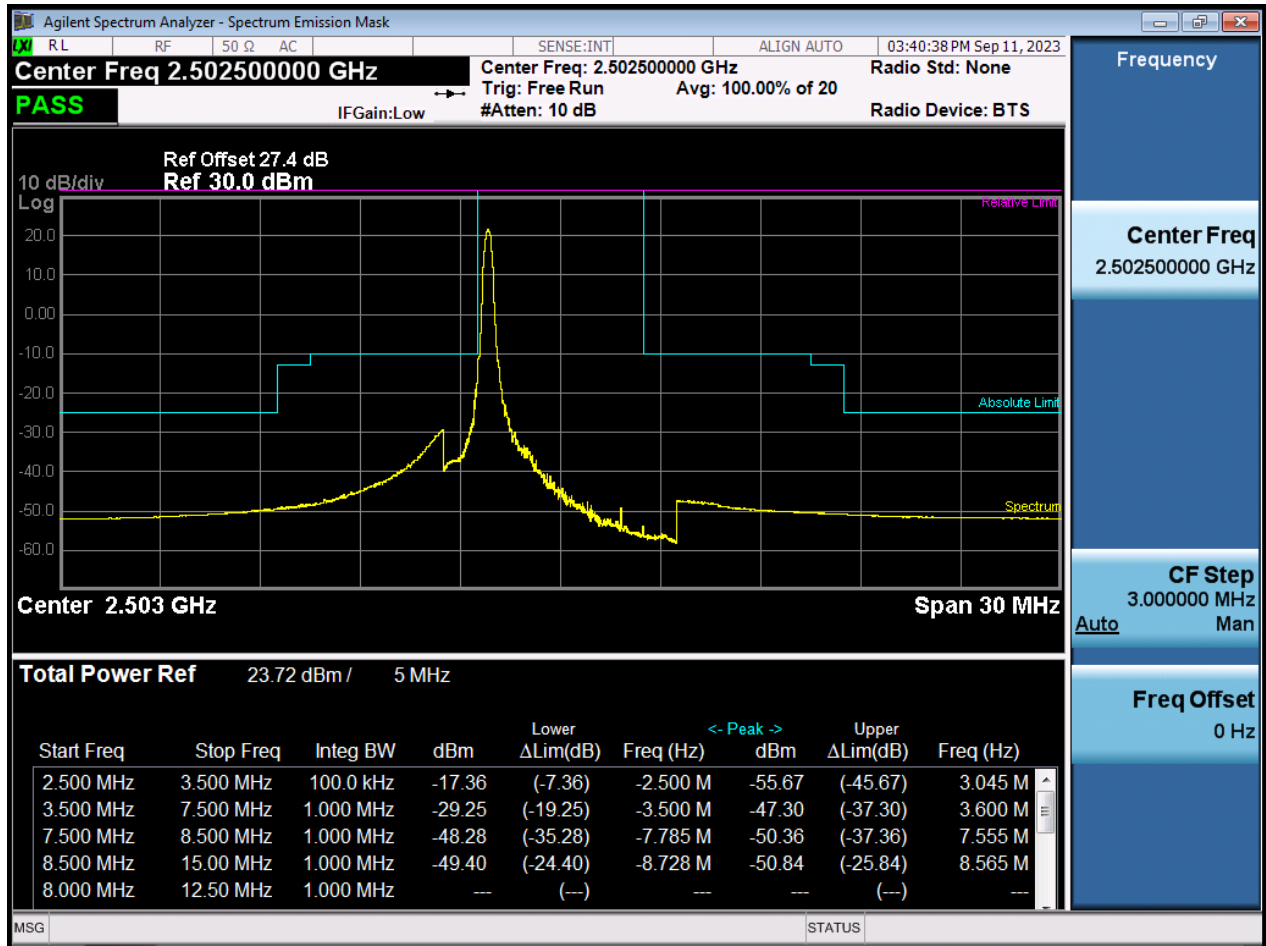
LTE7_5 M_BandEdge_Lower_Low_2502.5 MHz_QPSK_Full RB



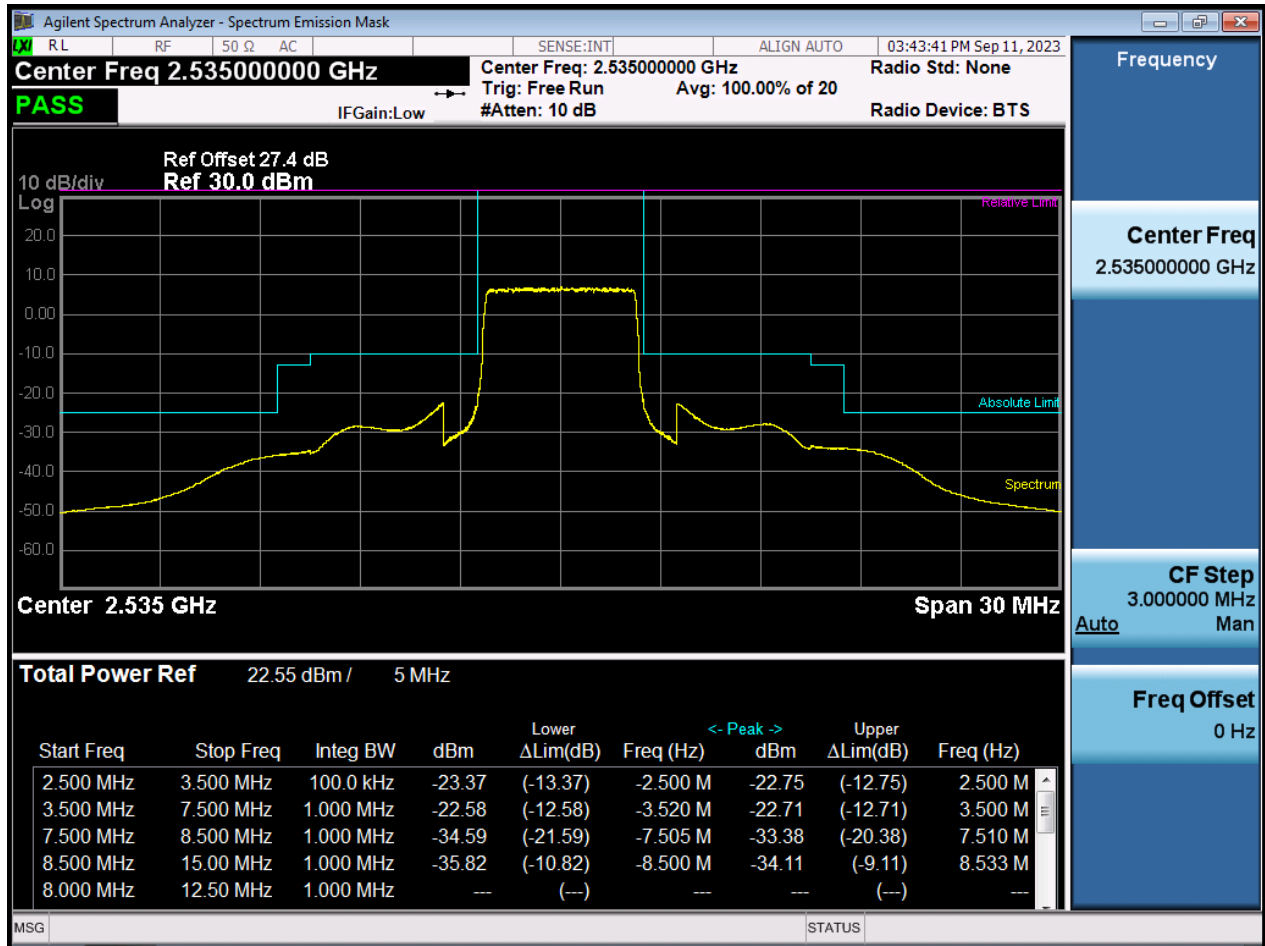
LTE7_5 M_BandEdge_Upper_Low_2502.5 MHz_QPSK_Full RB



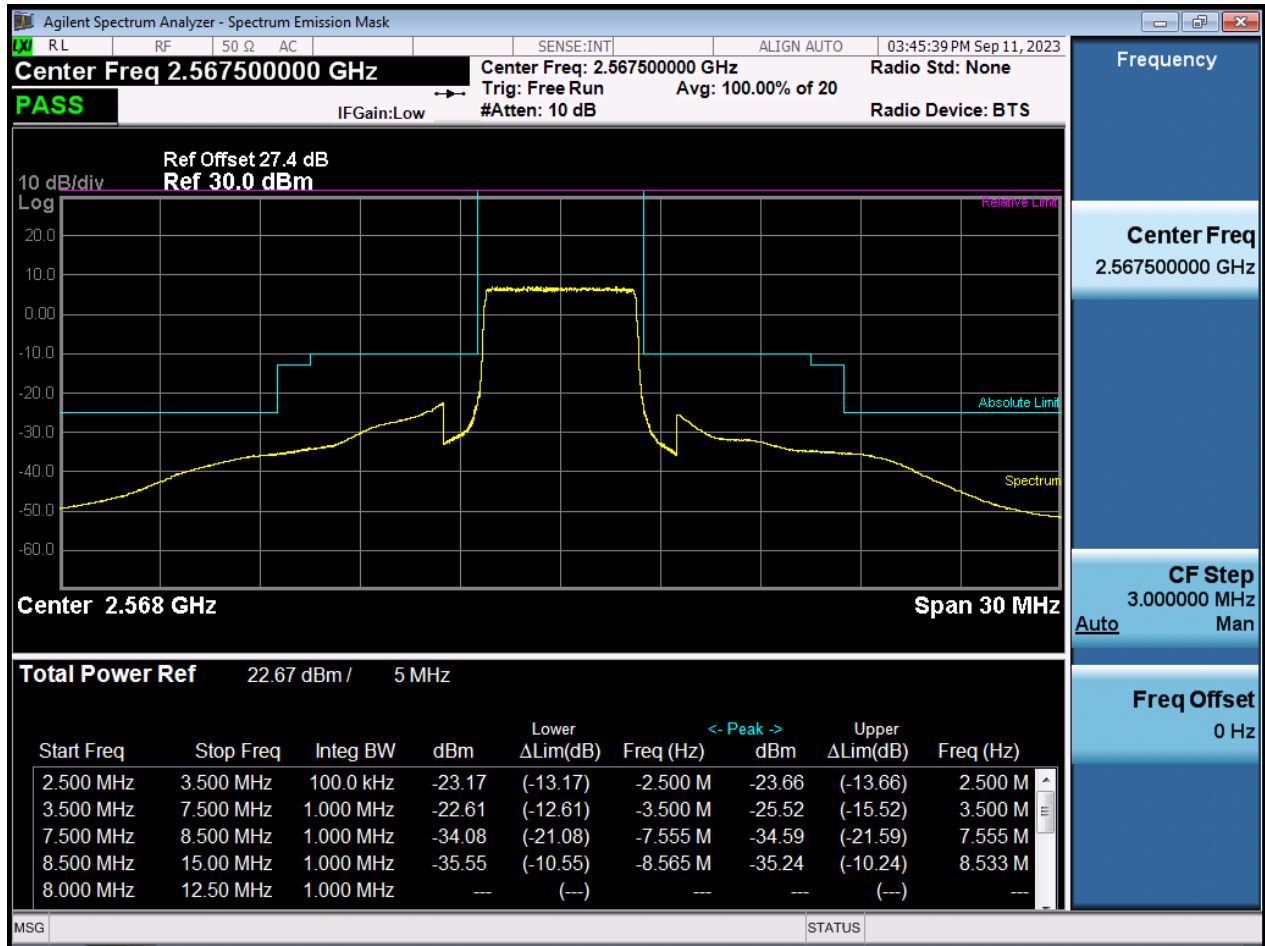
LTE7_5 M_BandEdge_Low_2502.5 MHz_QPSK_1RB



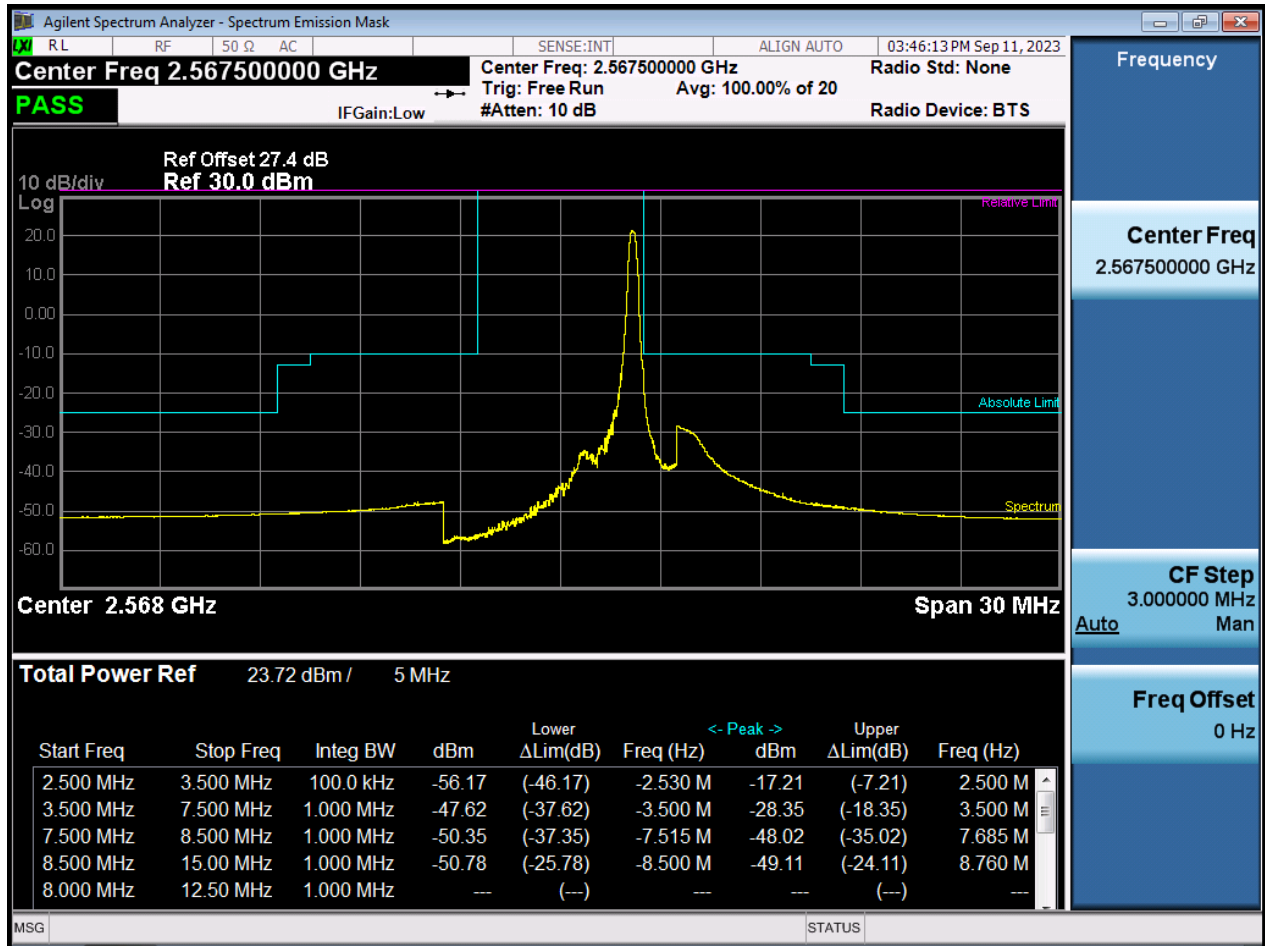
LTE7_5 M_BandEdge_Mid_2535 MHz_QPSK_Full RB



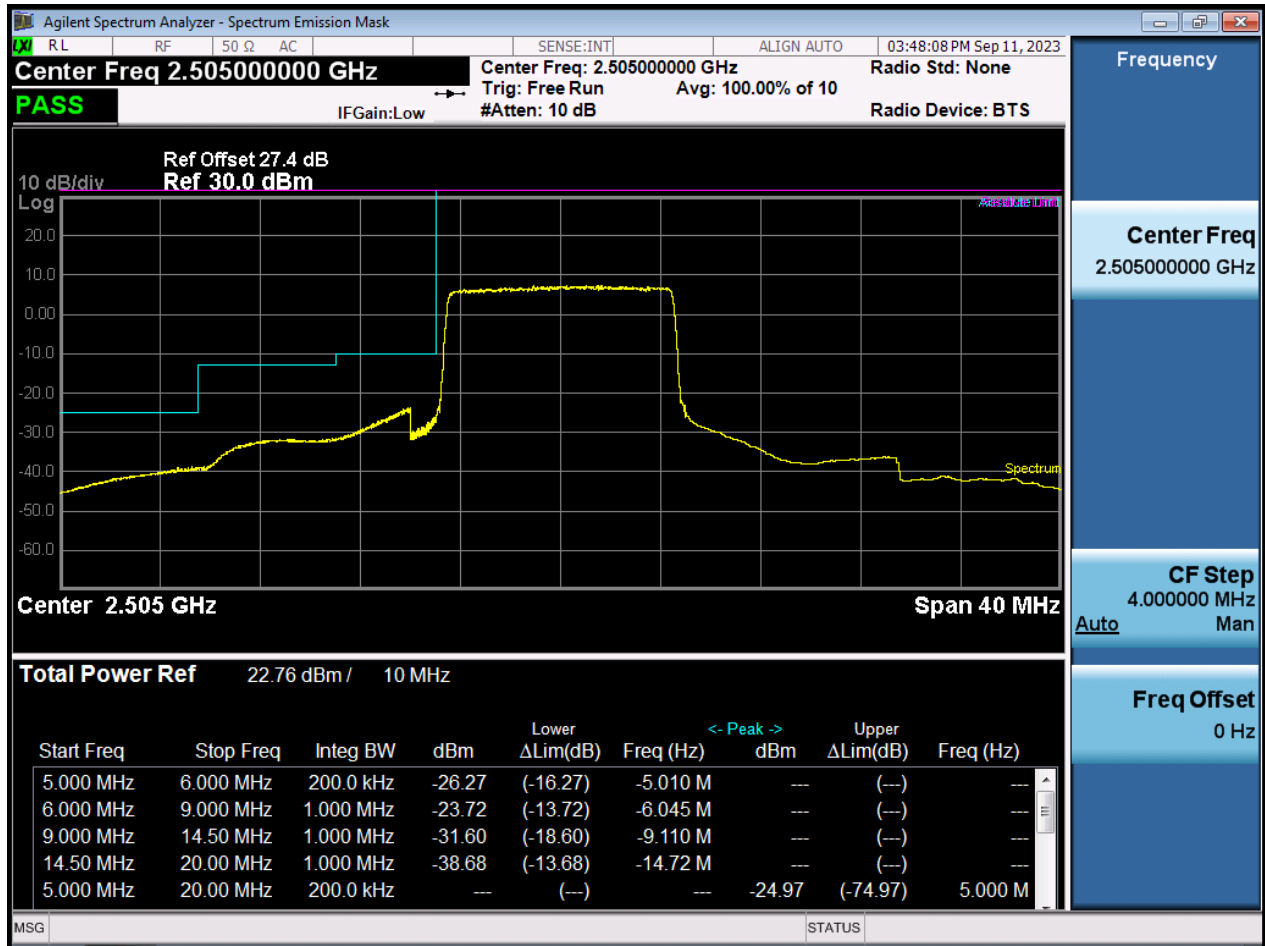
LTE7_5 M_BandEdge_High_2567.5 MHz_QPSK_Full RB



LTE7_5 M_BandEdge_High_2567.5 MHz_QPSK_1RB



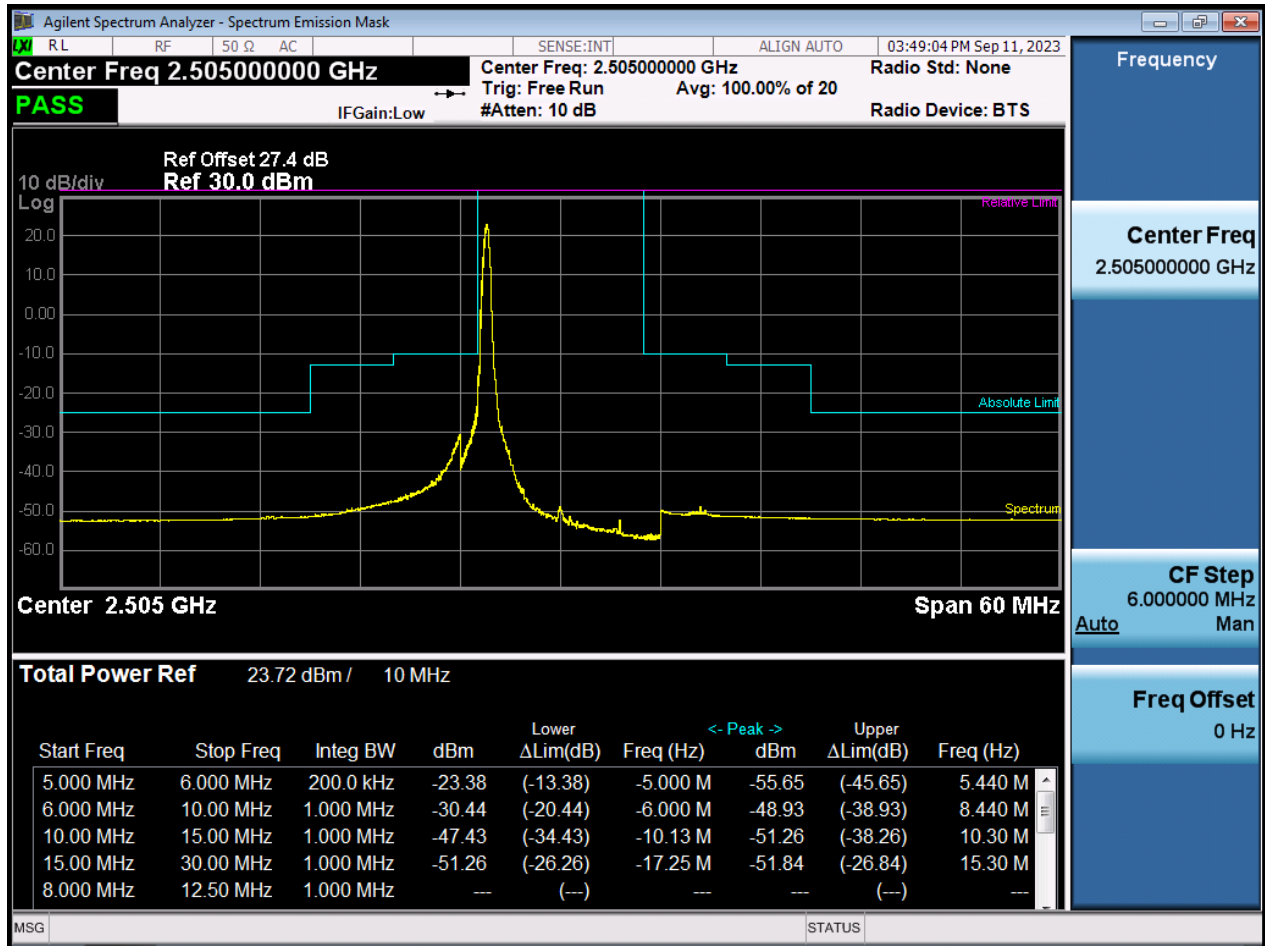
LTE7_10 M_BandEdge_Lower_Low_2505 MHz_QPSK_Full RB



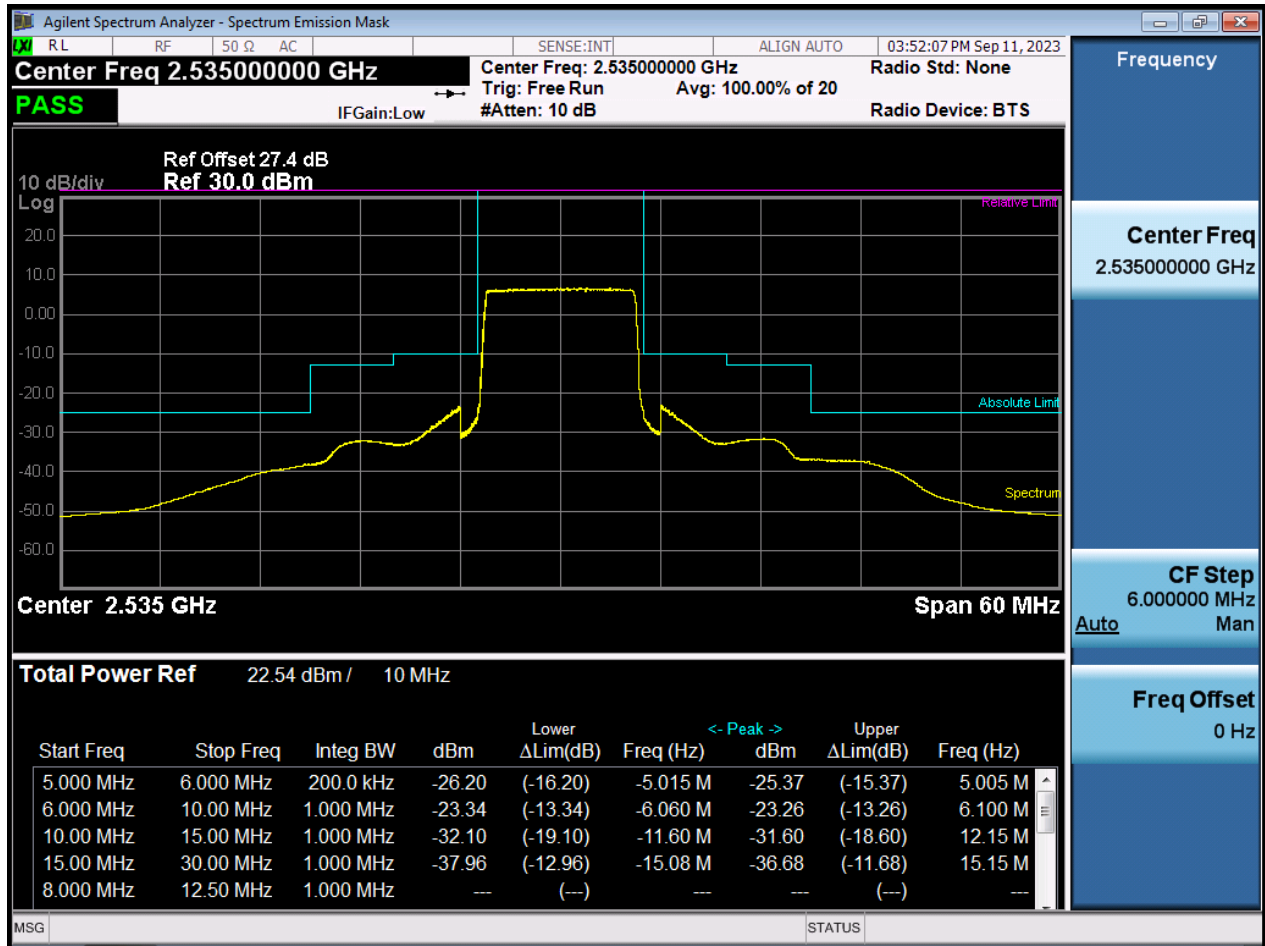
LTE7_10 M_BandEdge_Upper_Low_2505 MHz_QPSK_Full RB



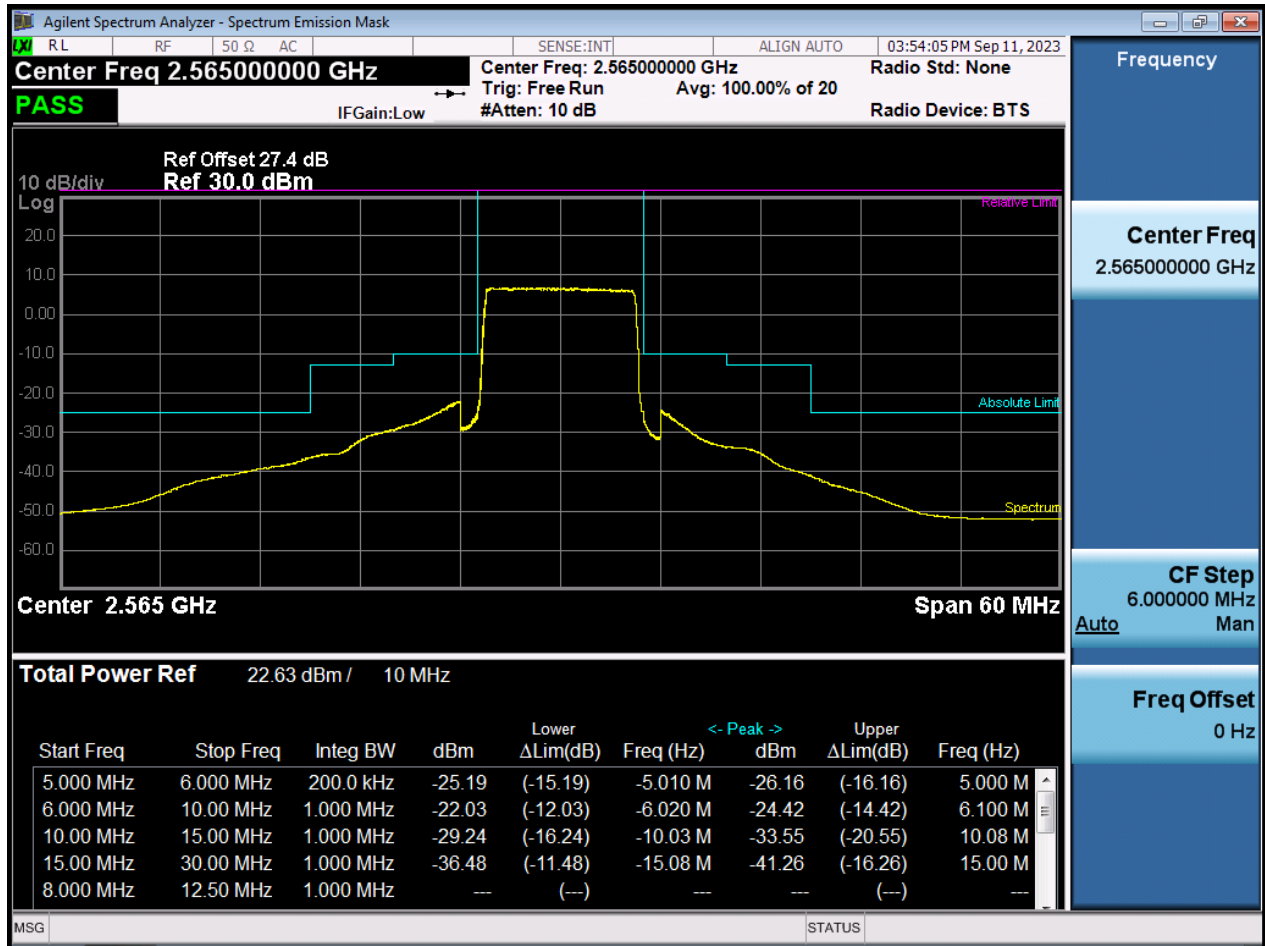
LTE7_10 M_BandEdge_Low_2505 MHz_QPSK_1RB



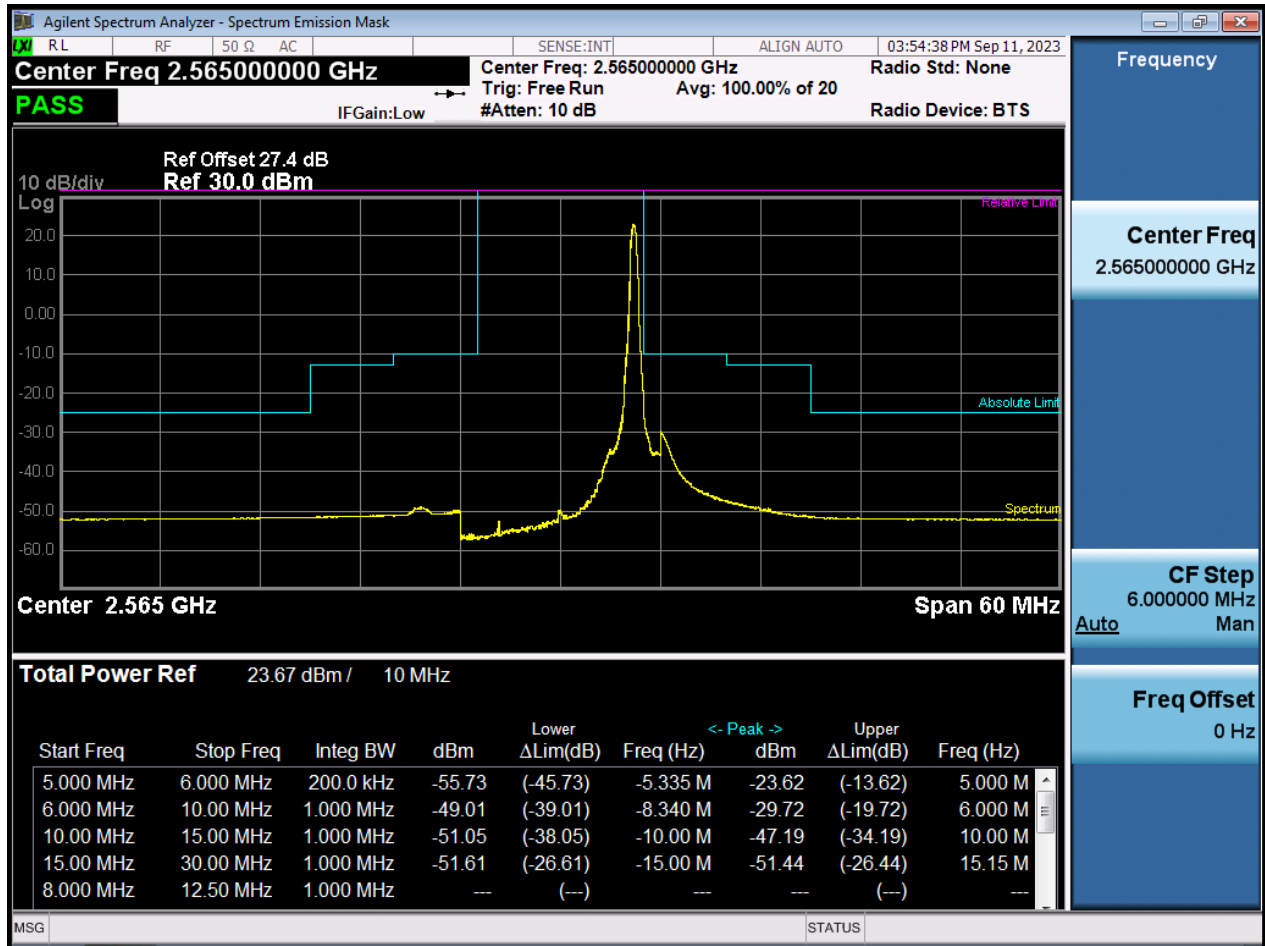
LTE7_10 M_BandEdge_Mid_2535 MHz_QPSK_Full RB



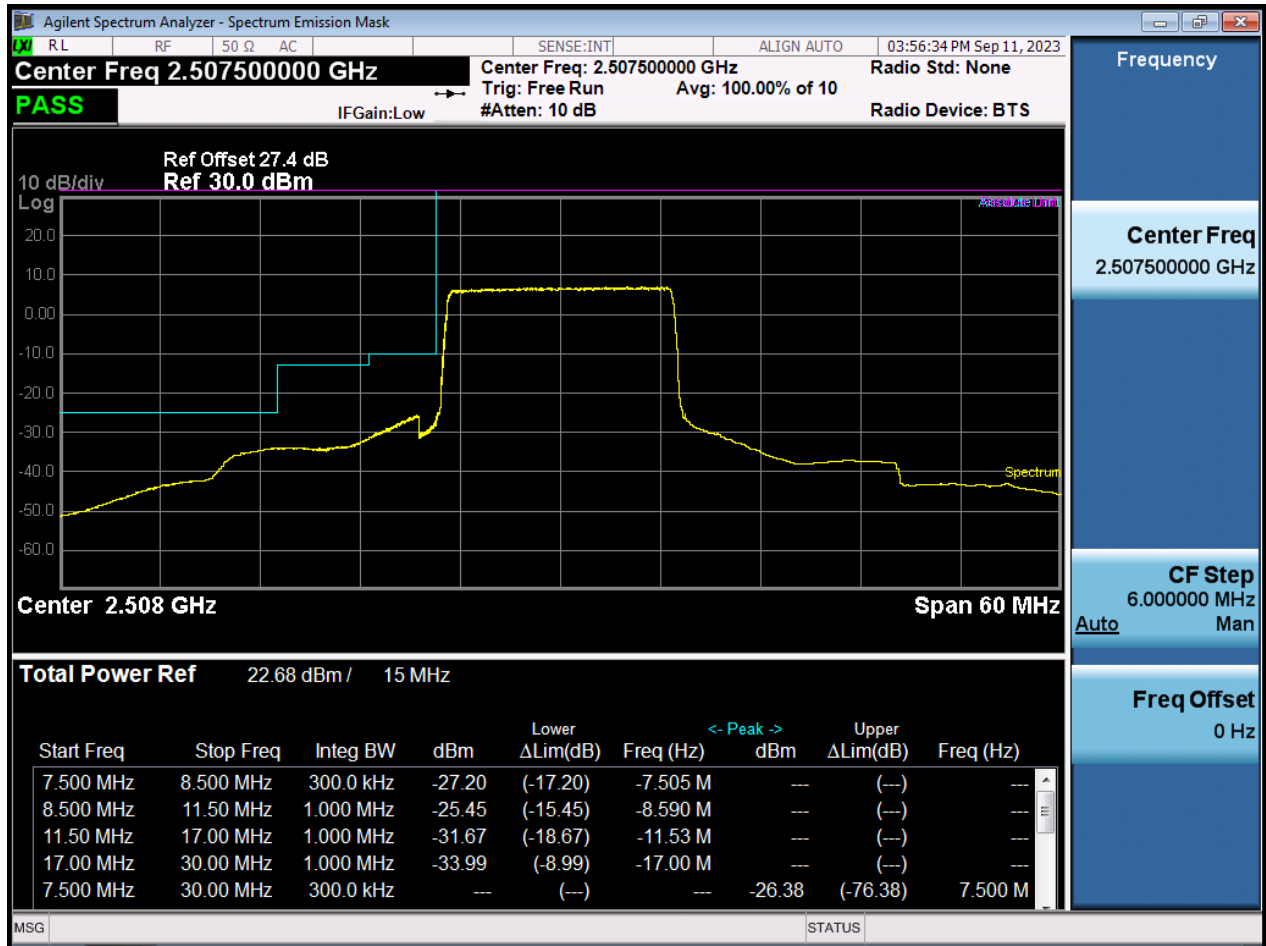
LTE7_10 M_BandEdge_High_2565 MHz_QPSK_Full RB



LTE7_10 M_BandEdge_High_2565 MHz_QPSK_1RB



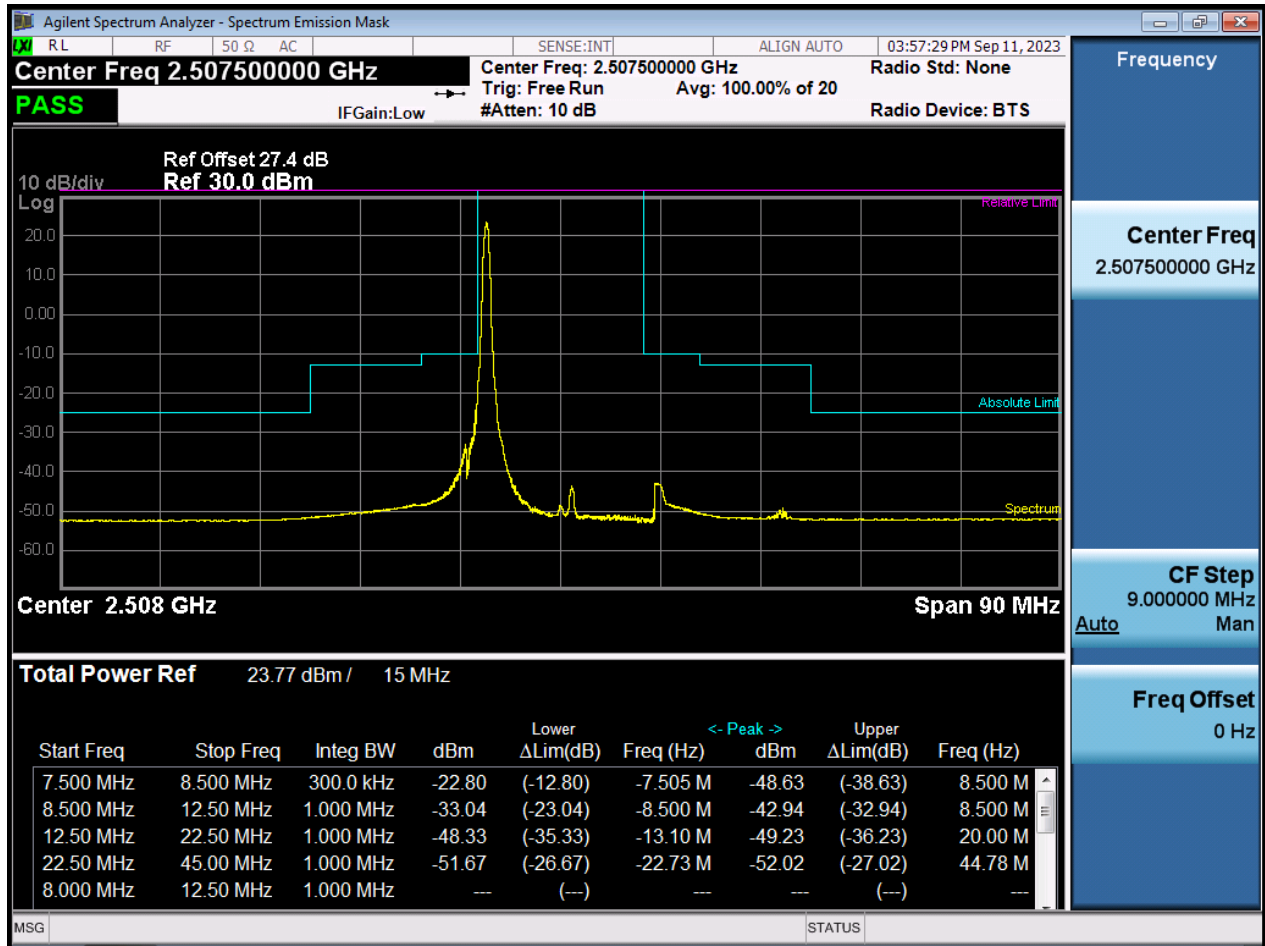
LTE7_15 M_BandEdge_Lower_Low_2507.5 MHz_QPSK_Full RB



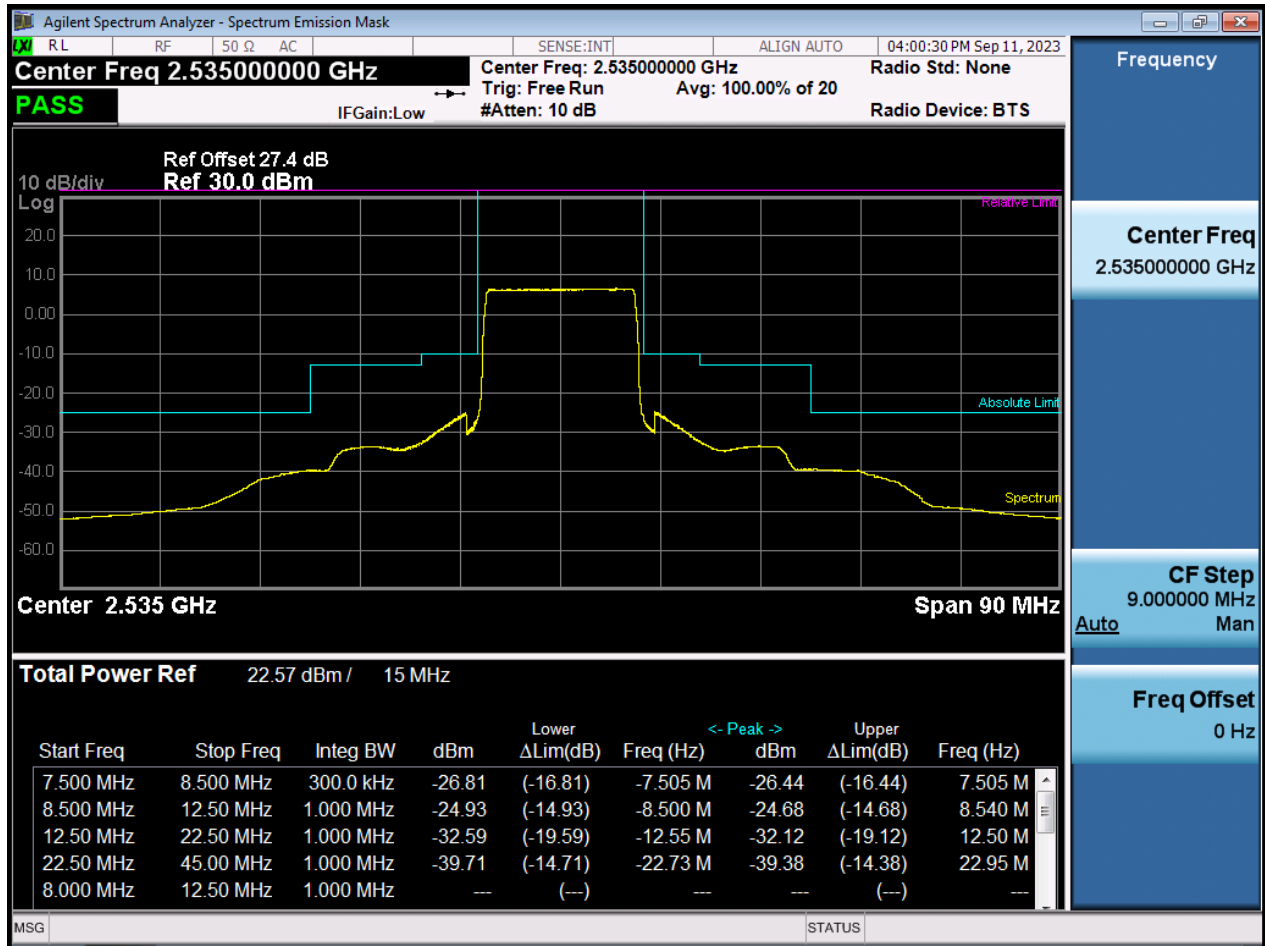
LTE7_15 M_BandEdge_Upper_Low_2507.5 MHz_QPSK_Full RB



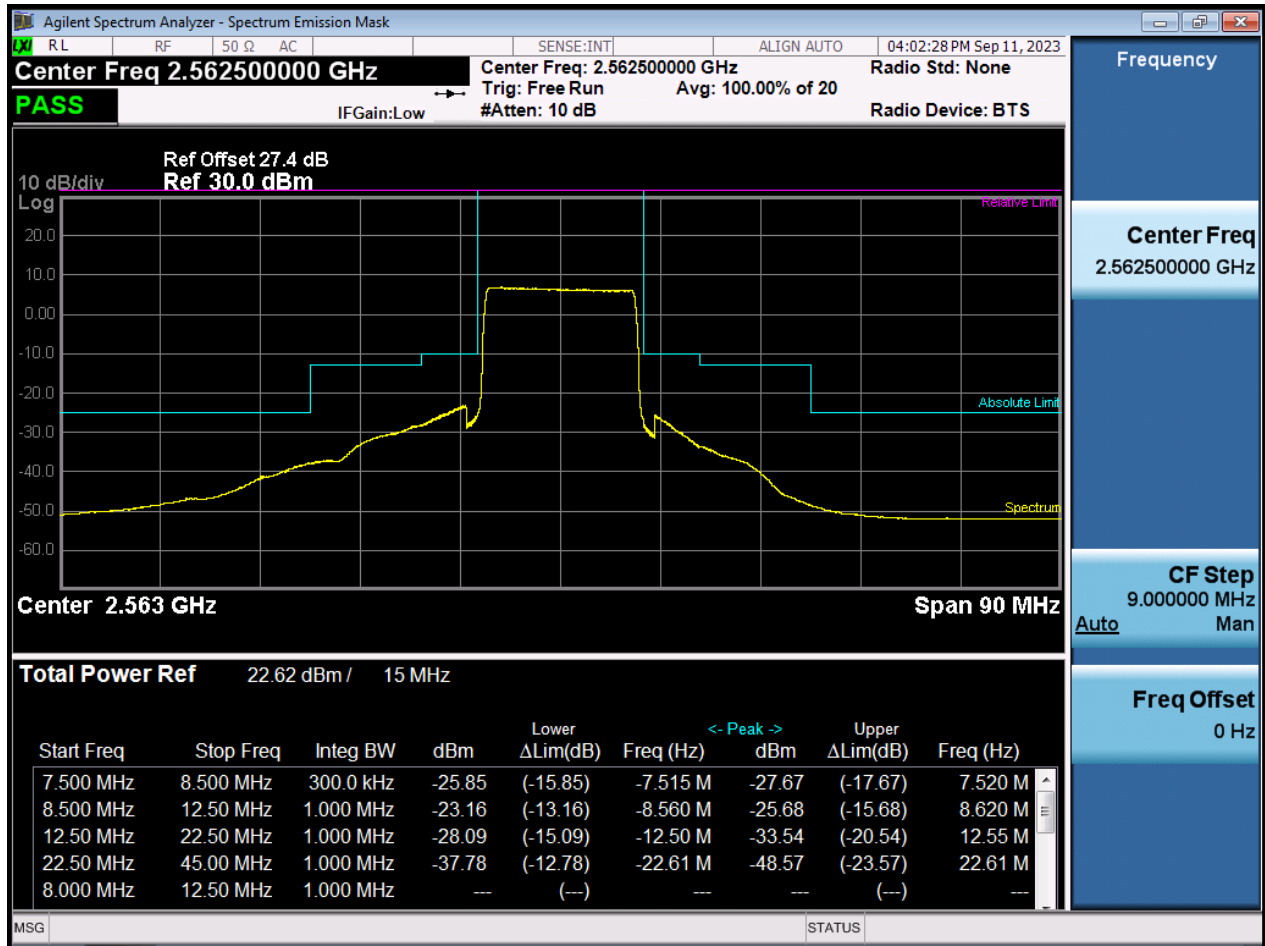
LTE7_15 M_BandEdge_Low_2507.5 MHz_QPSK_1RB



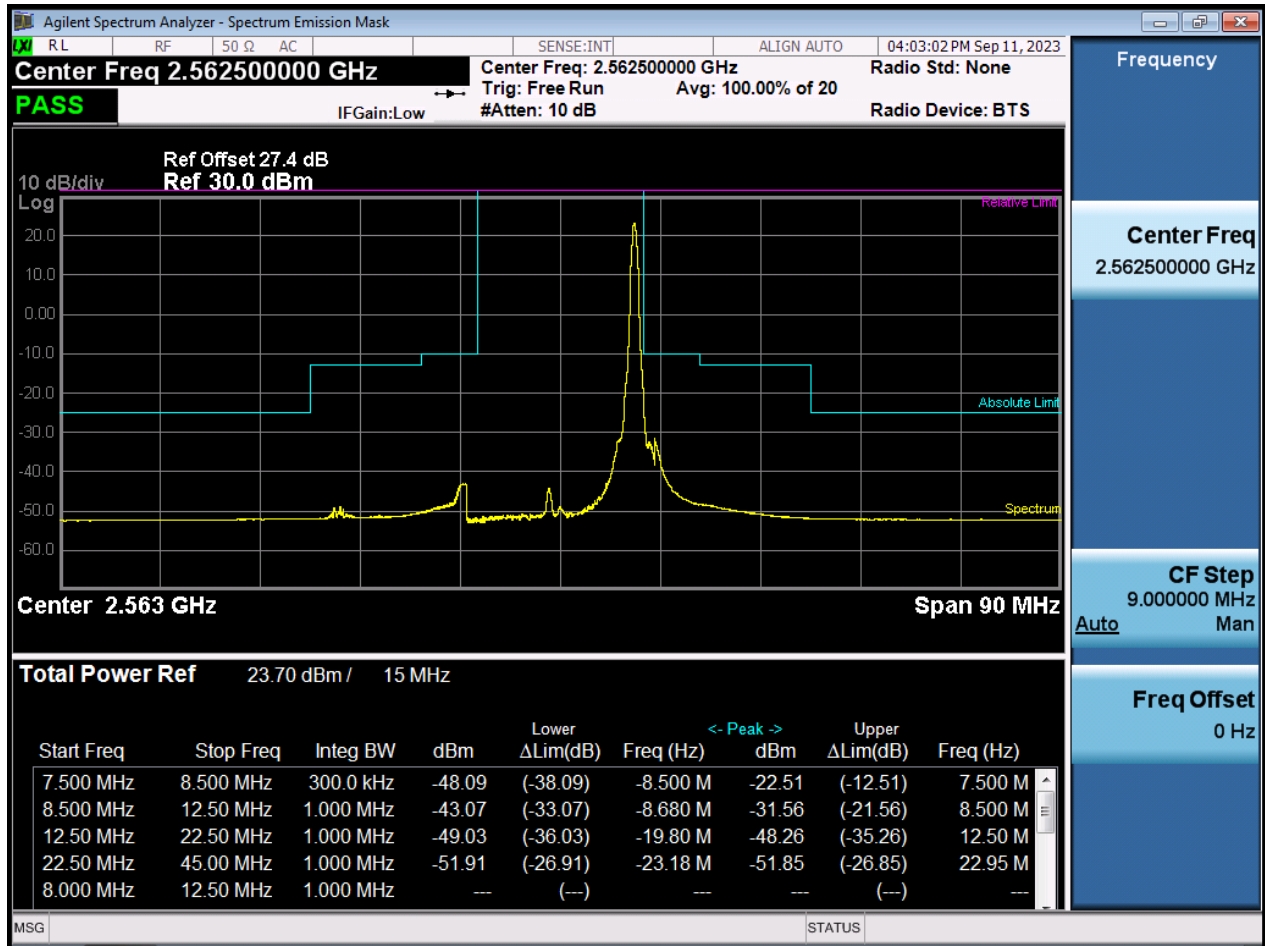
LTE7_15 M_BandEdge_Mid_2535 MHz_QPSK_Full RB



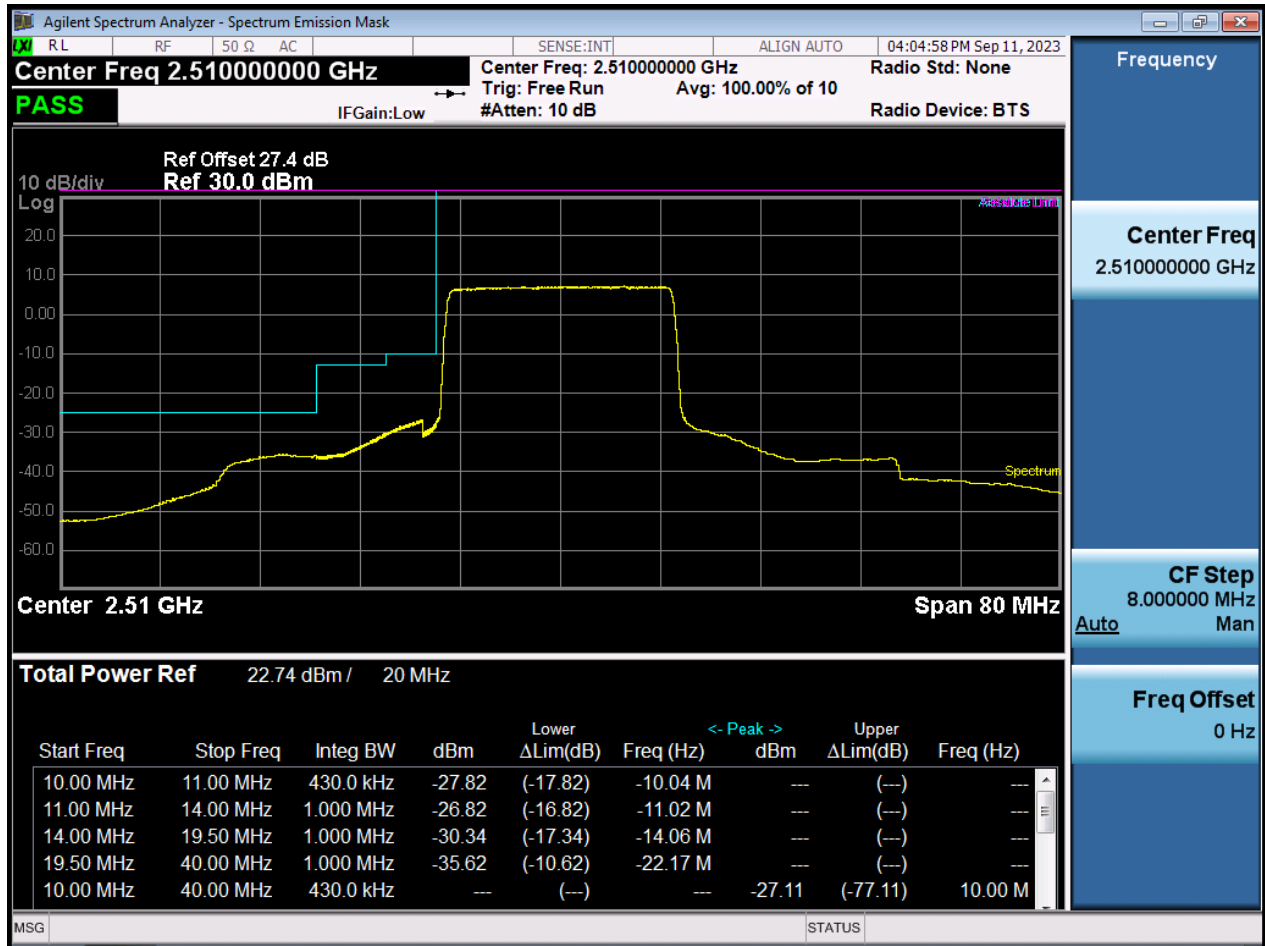
LTE7_15 M_BandEdge_High_2562.5 MHz_QPSK_Full RB



LTE7_15 M_BandEdge_High_2562.5 MHz_QPSK_1RB



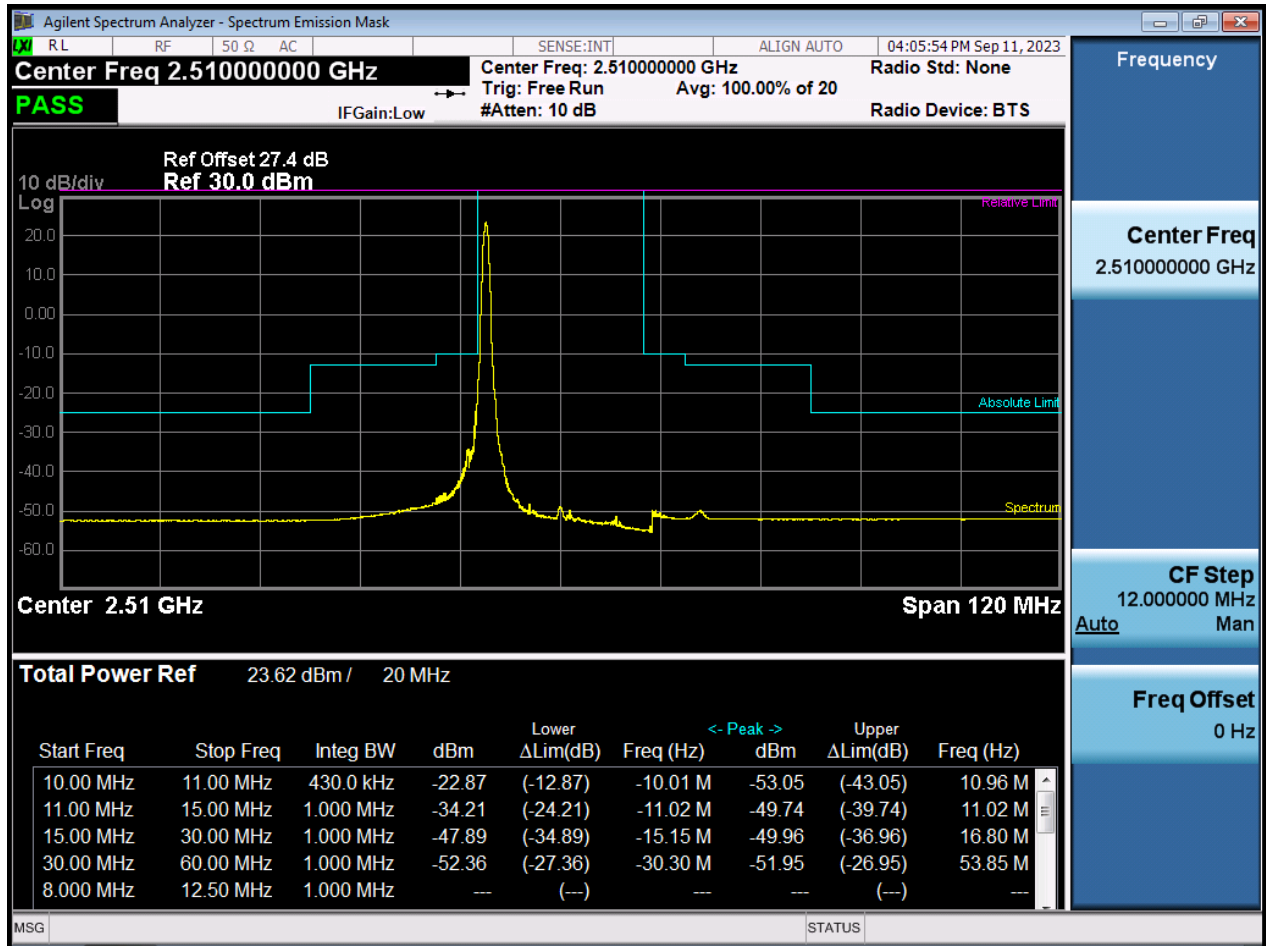
LTE7_20 M_BandEdge_Lower_Low_2510 MHz_QPSK_Full RB



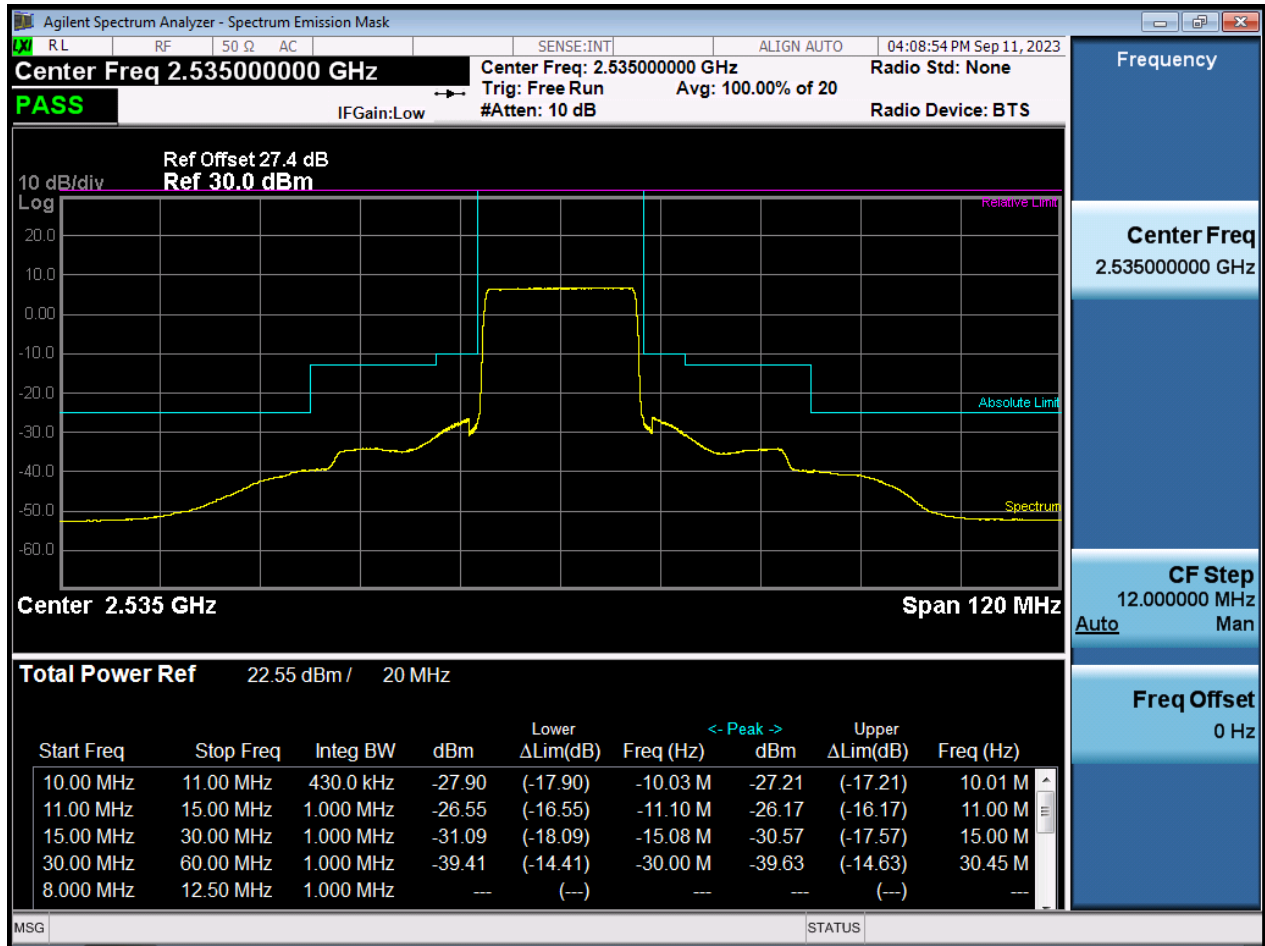
LTE7_20 M_BandEdge_Upper_Low_2510 MHz_QPSK_Full RB



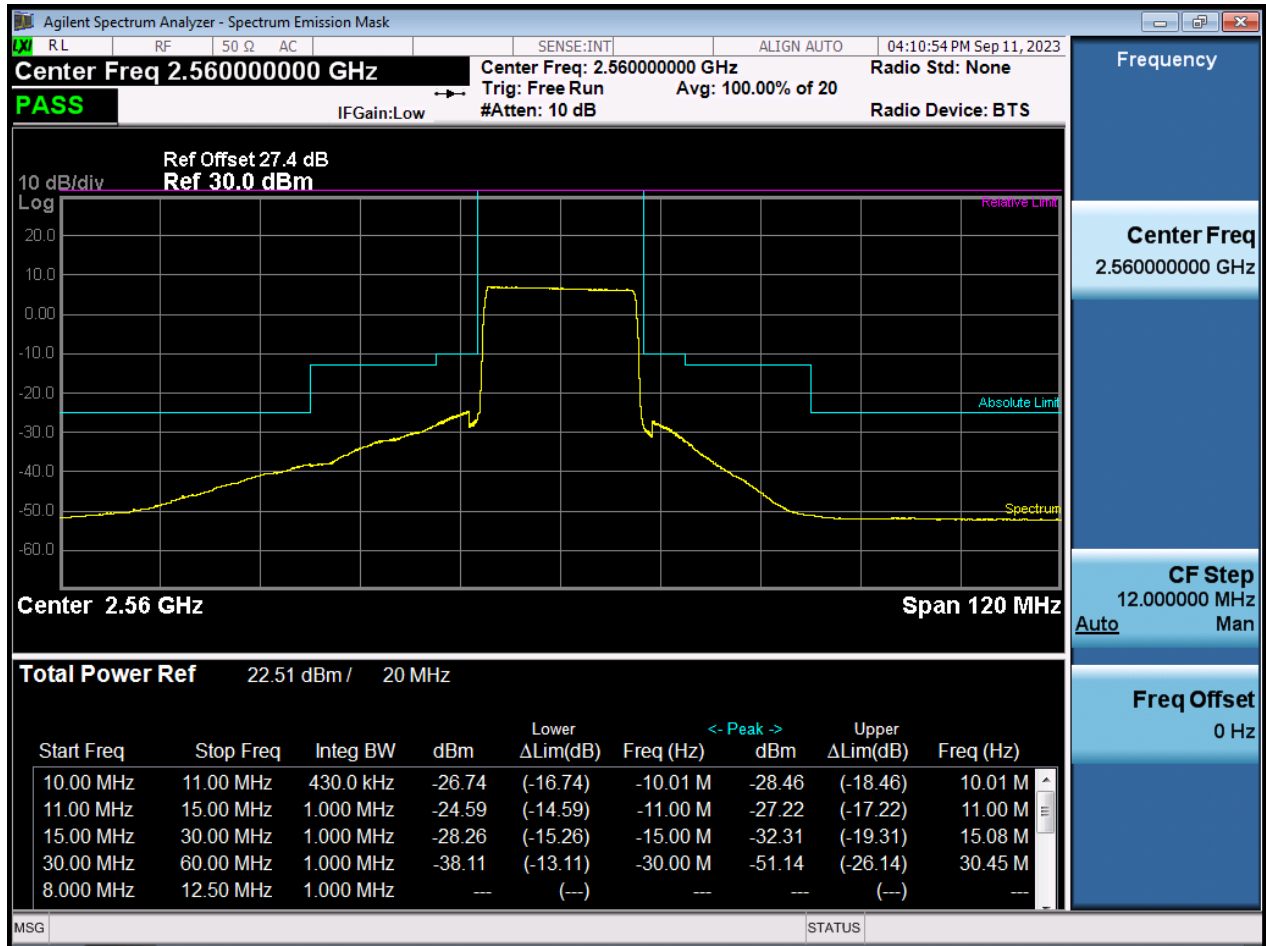
LTE7_20 M_BandEdge_Low_2510 MHz_QPSK_1RB



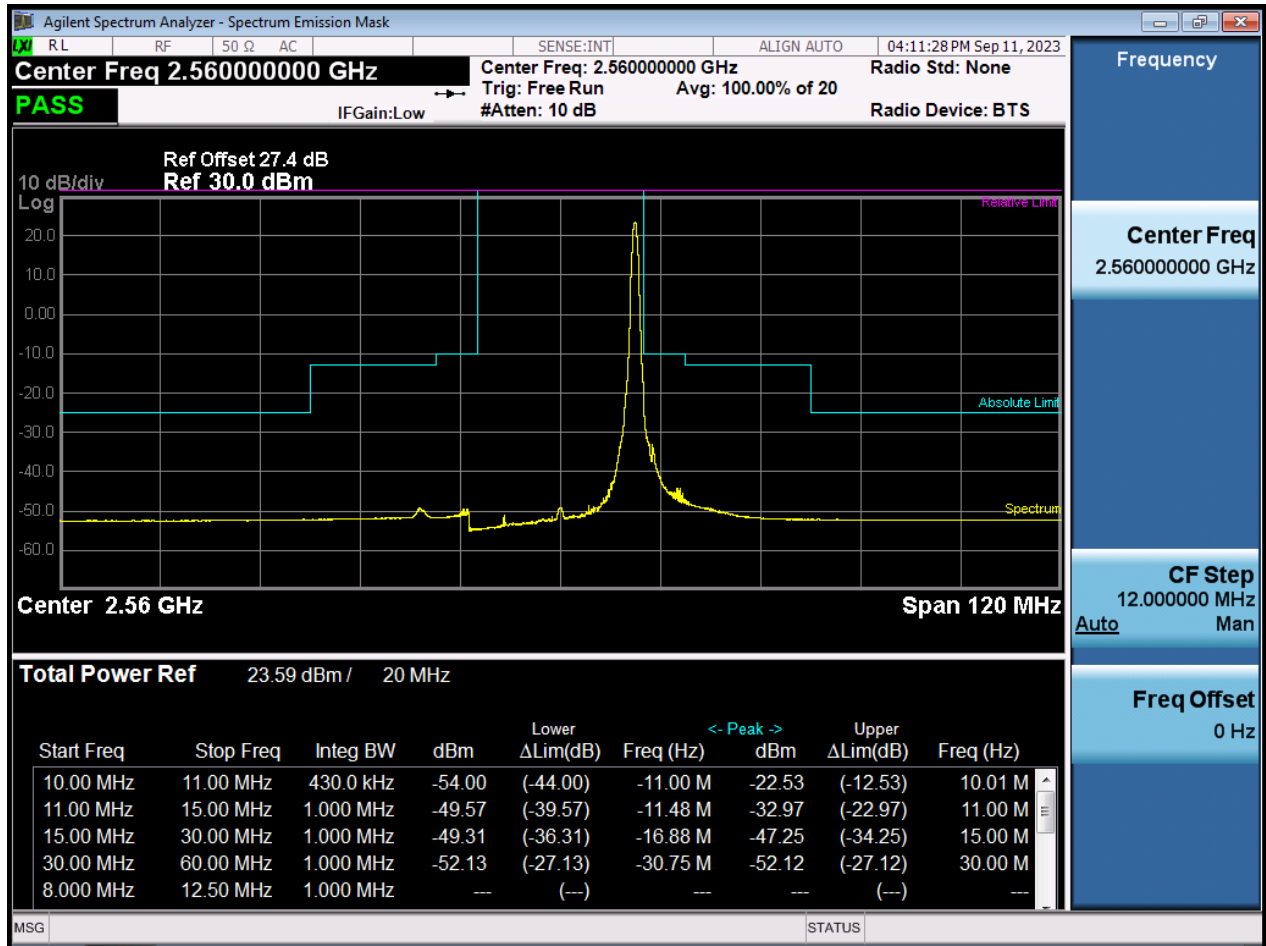
LTE7_20 M_BandEdge_Mid_2535 MHz_QPSK_Full RB



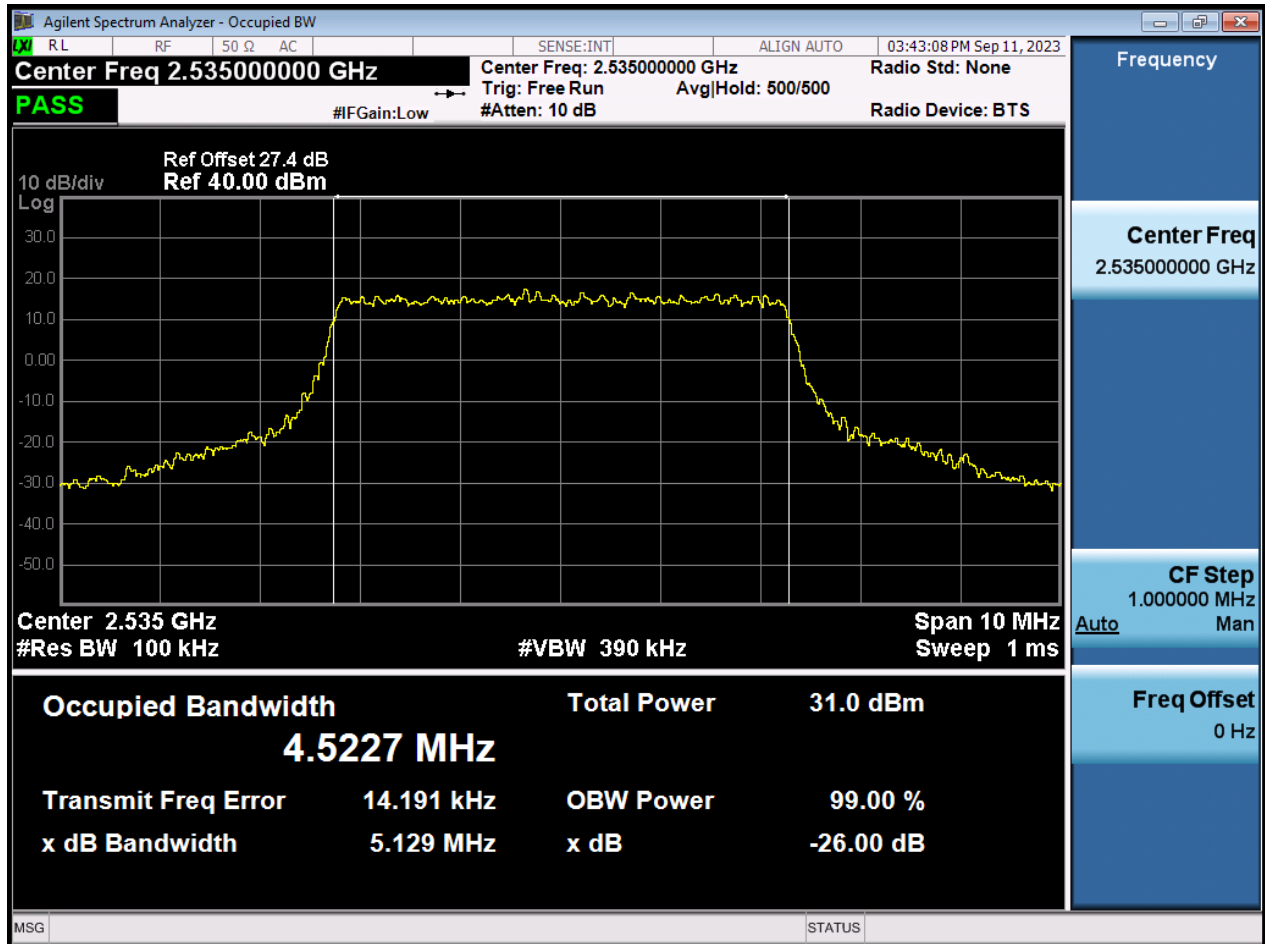
LTE7_20 M_BandEdge_High_2560 MHz_QPSK_Full RB



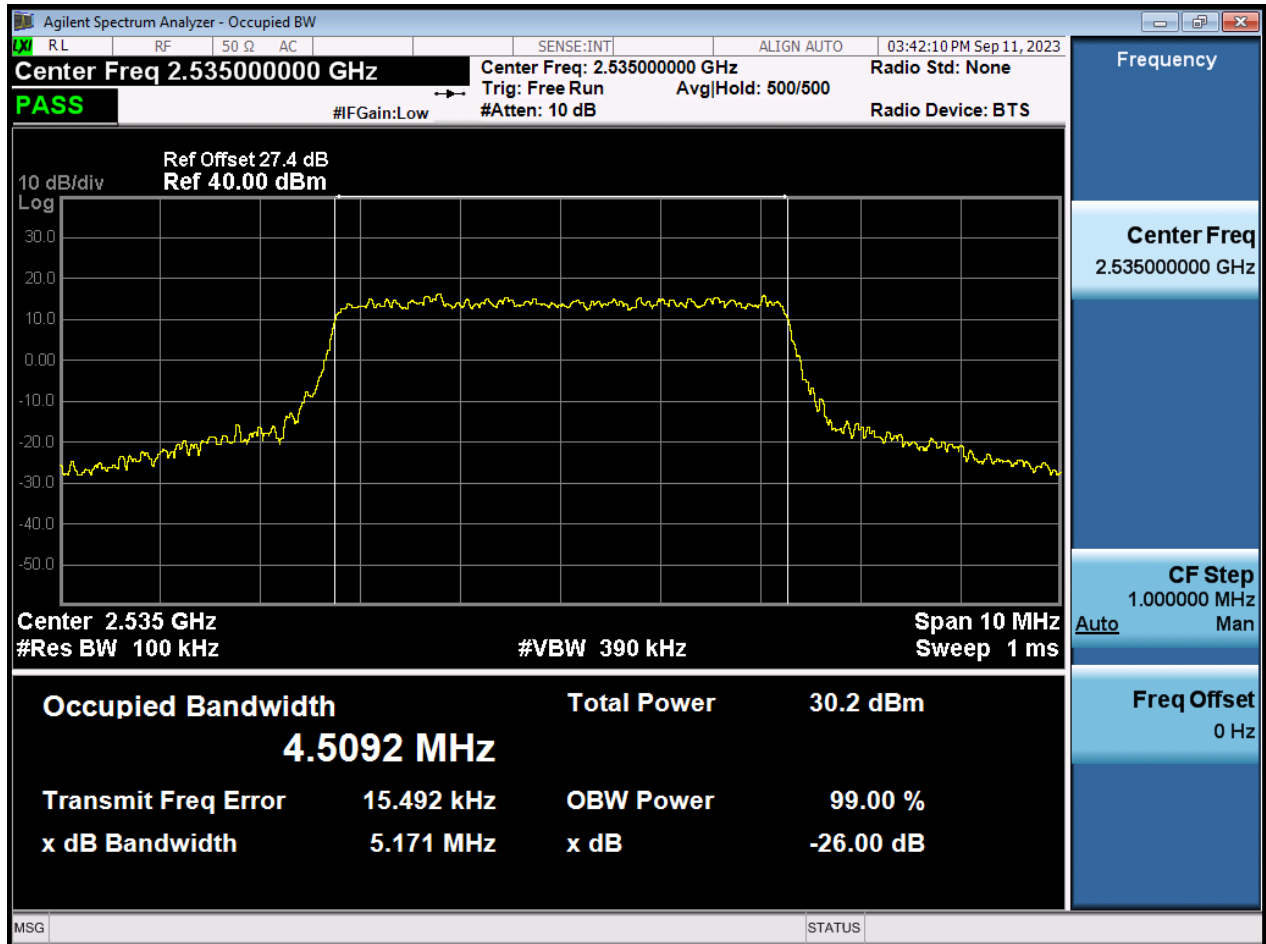
LTE7_20 M_BandEdge_High_2560 MHz_QPSK_1RB



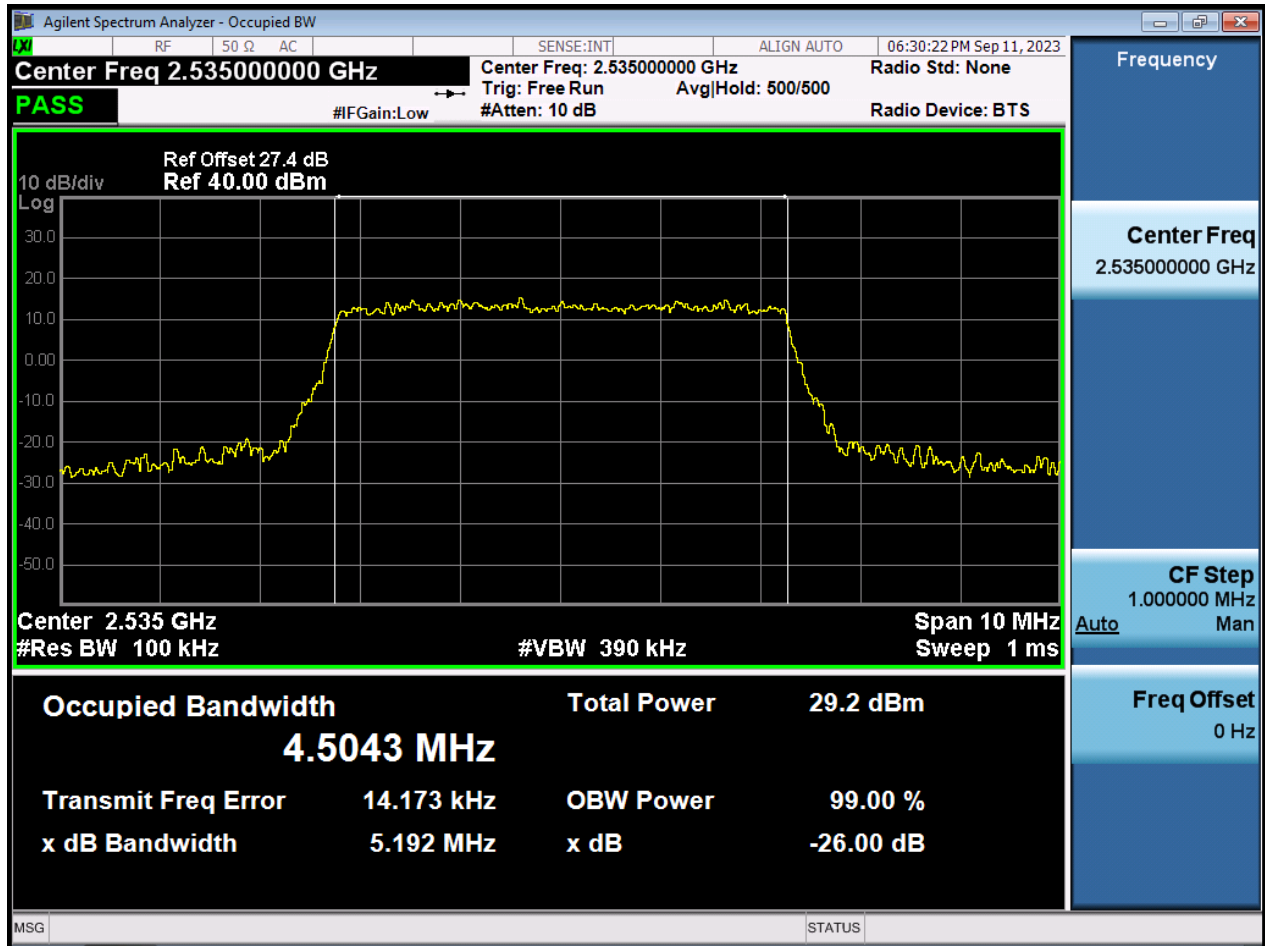
LTE7_5 M_OBW_Mid Channel_QPSK_Full RB



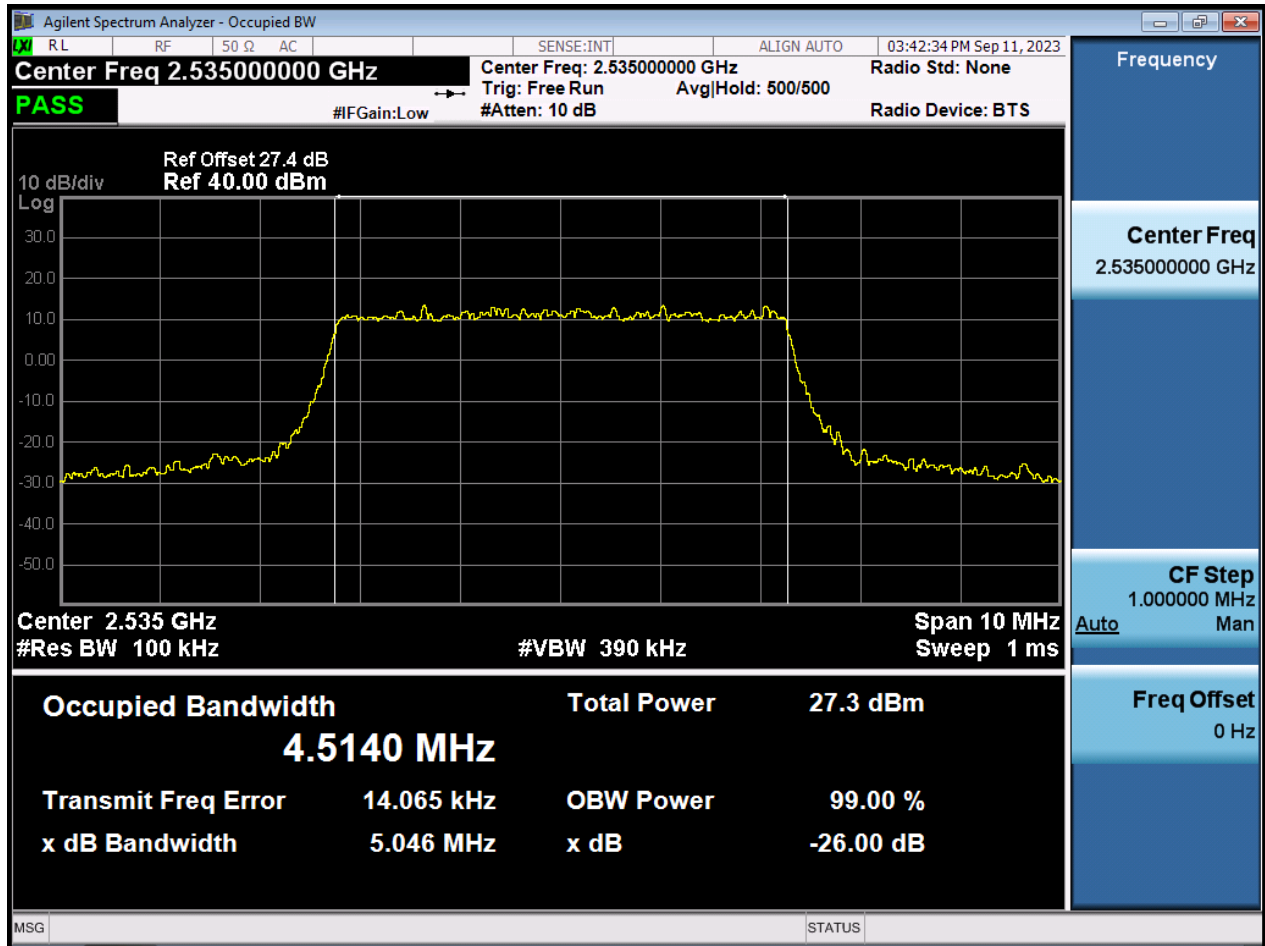
LTE7_5 M_OBW_Mid Channel_16QAM_Full RB



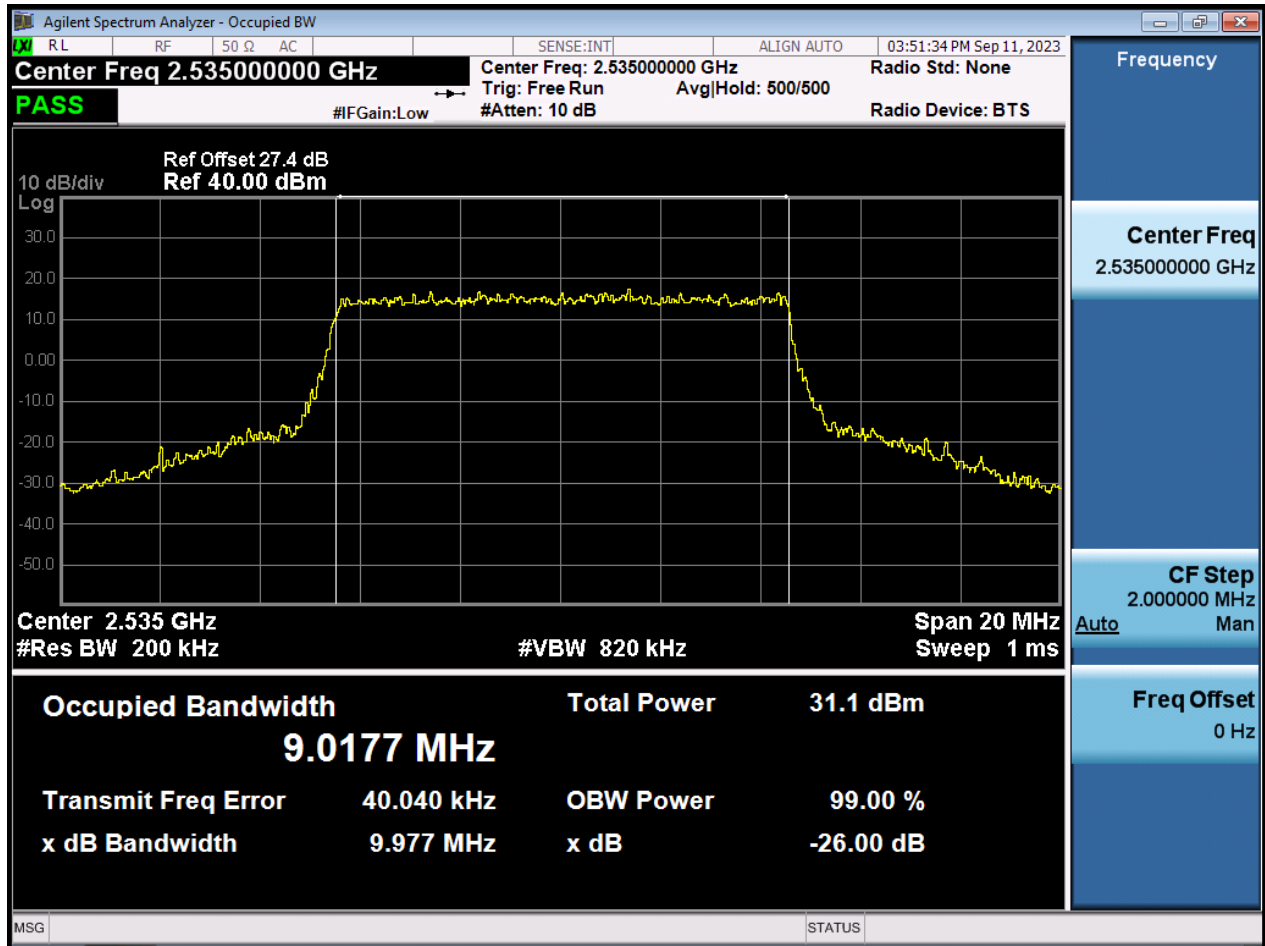
LTE7_5 M_OBW_Mid Channel_64QAM_Full RB



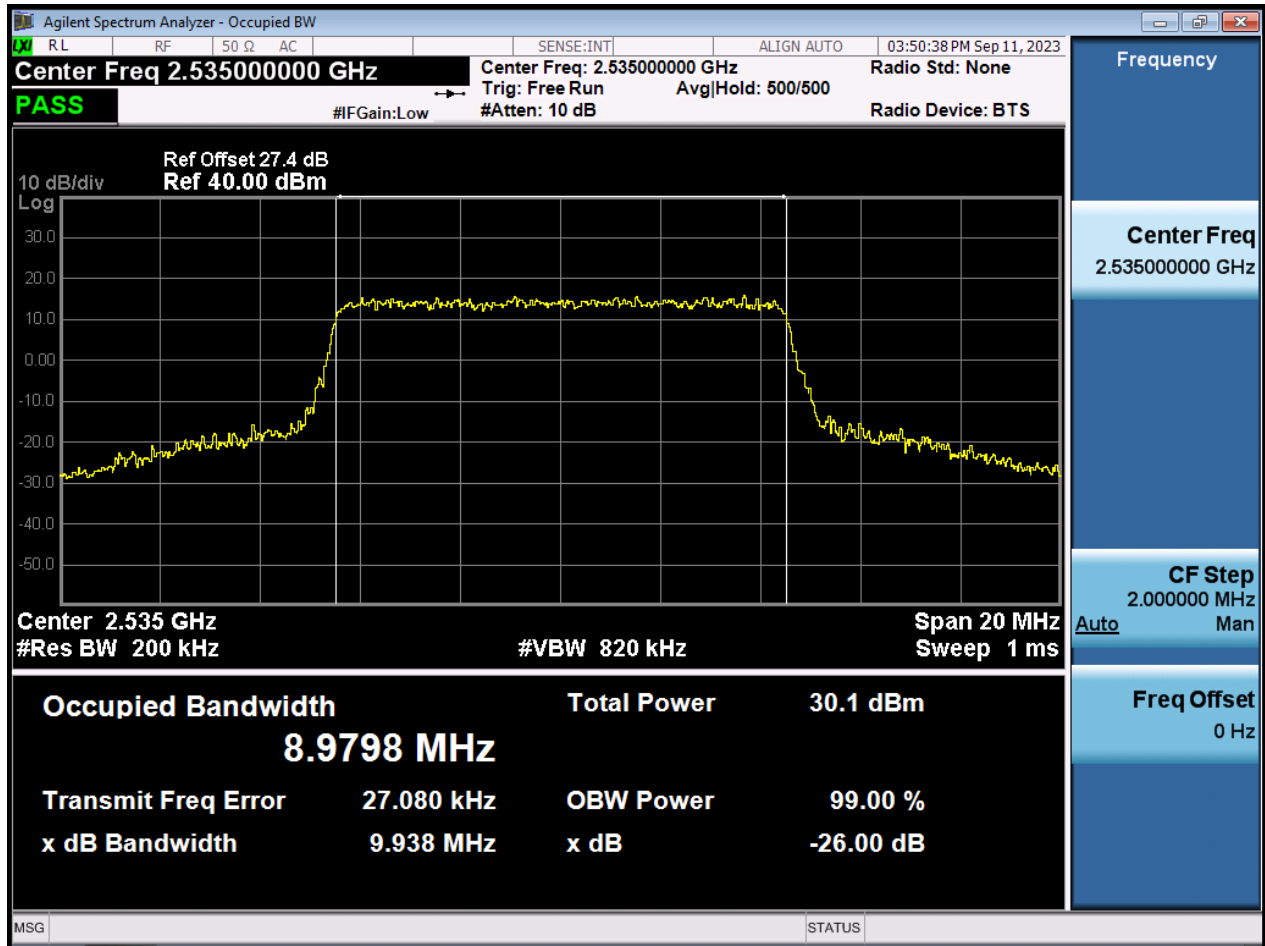
LTE7_5 M_OBW_Mid Channel_256QAM_Full RB



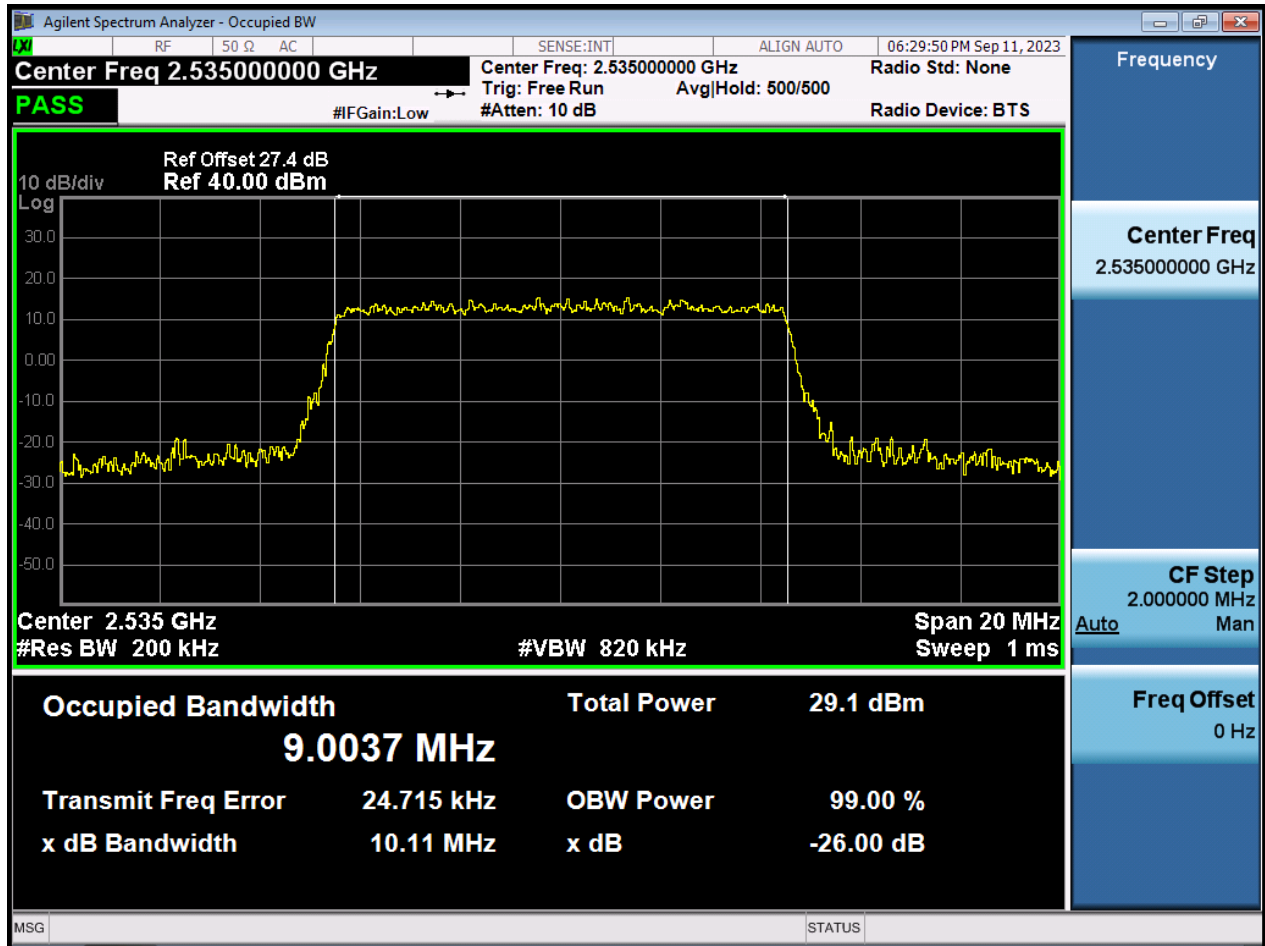
LTE7_10 M_OBW_Mid Channel_QPSK_Full RB



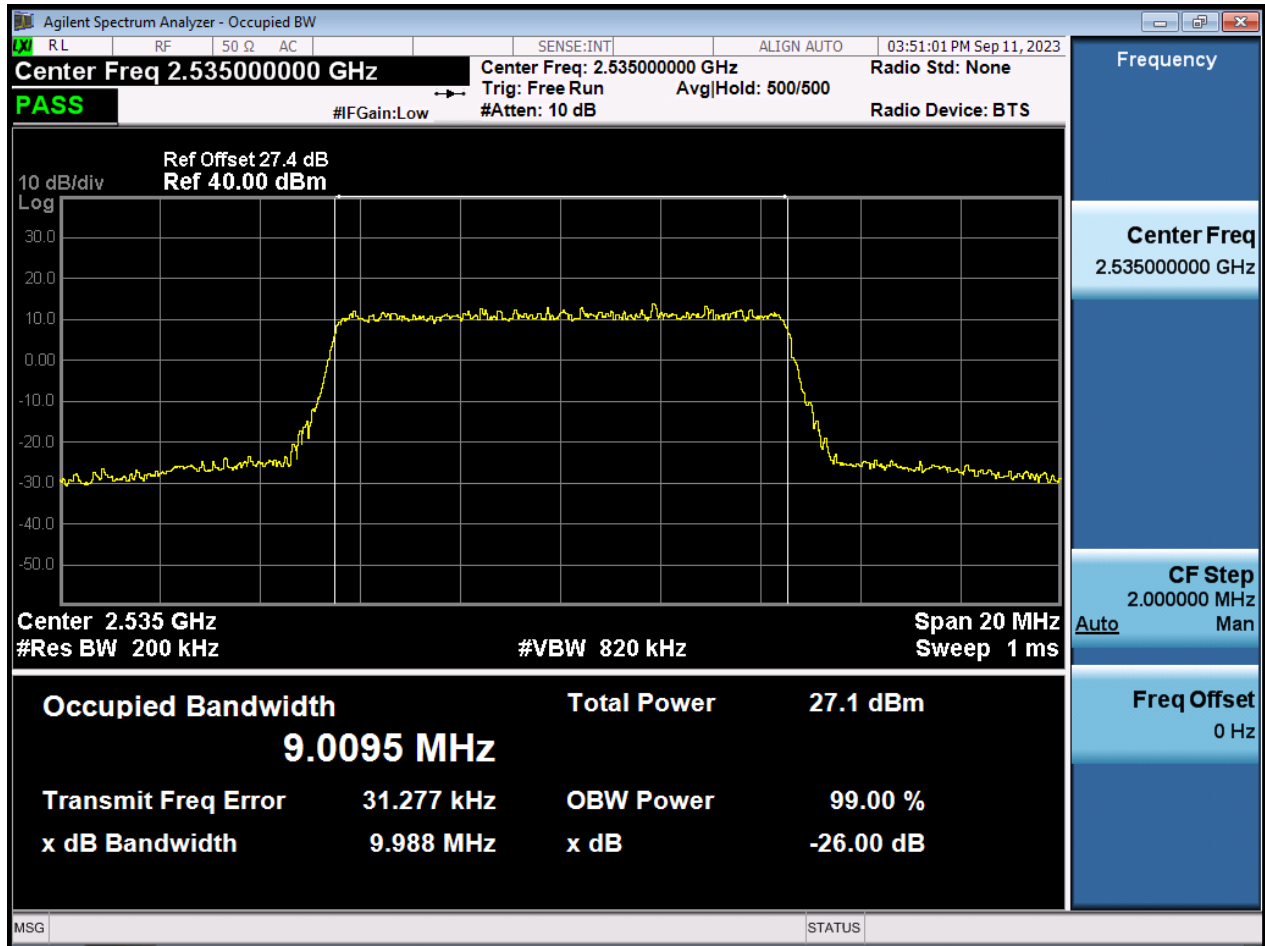
LTE7_10 M_OBW_Mid Channel_16QAM_Full RB



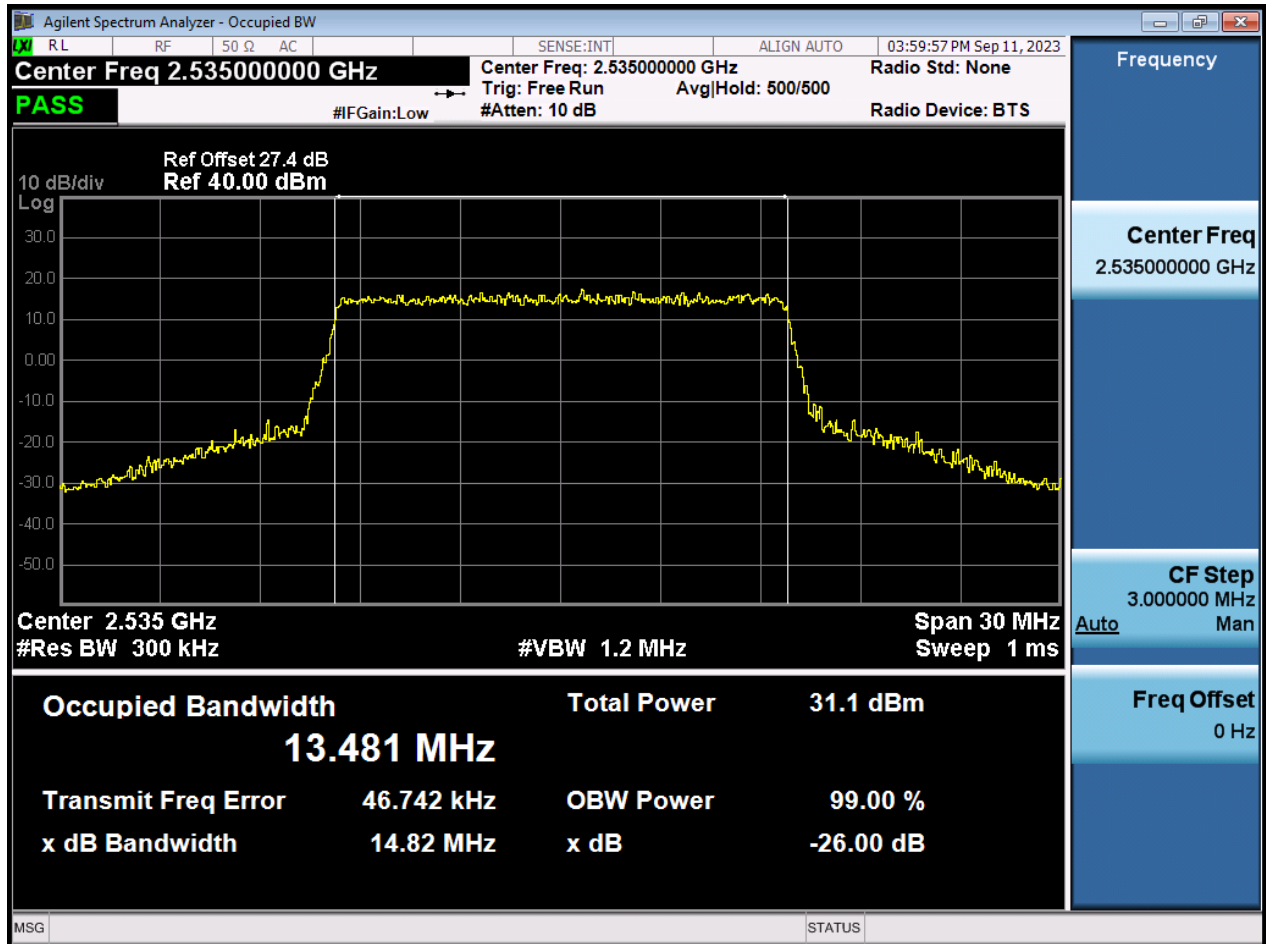
LTE7_10 M_OBW_Mid Channel_64QAM_Full RB



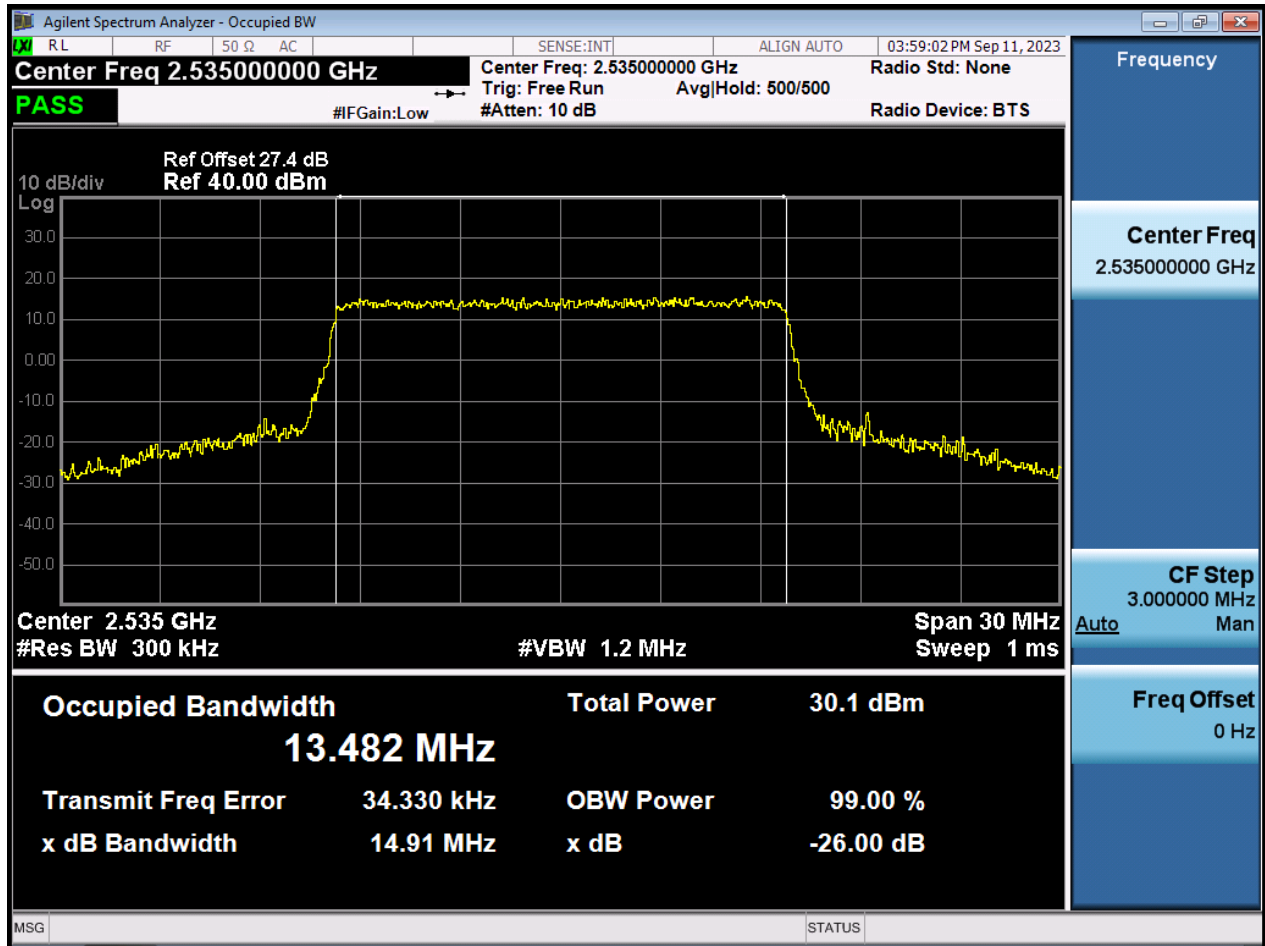
LTE7_10 M_OBW_Mid Channel_256QAM_Full RB



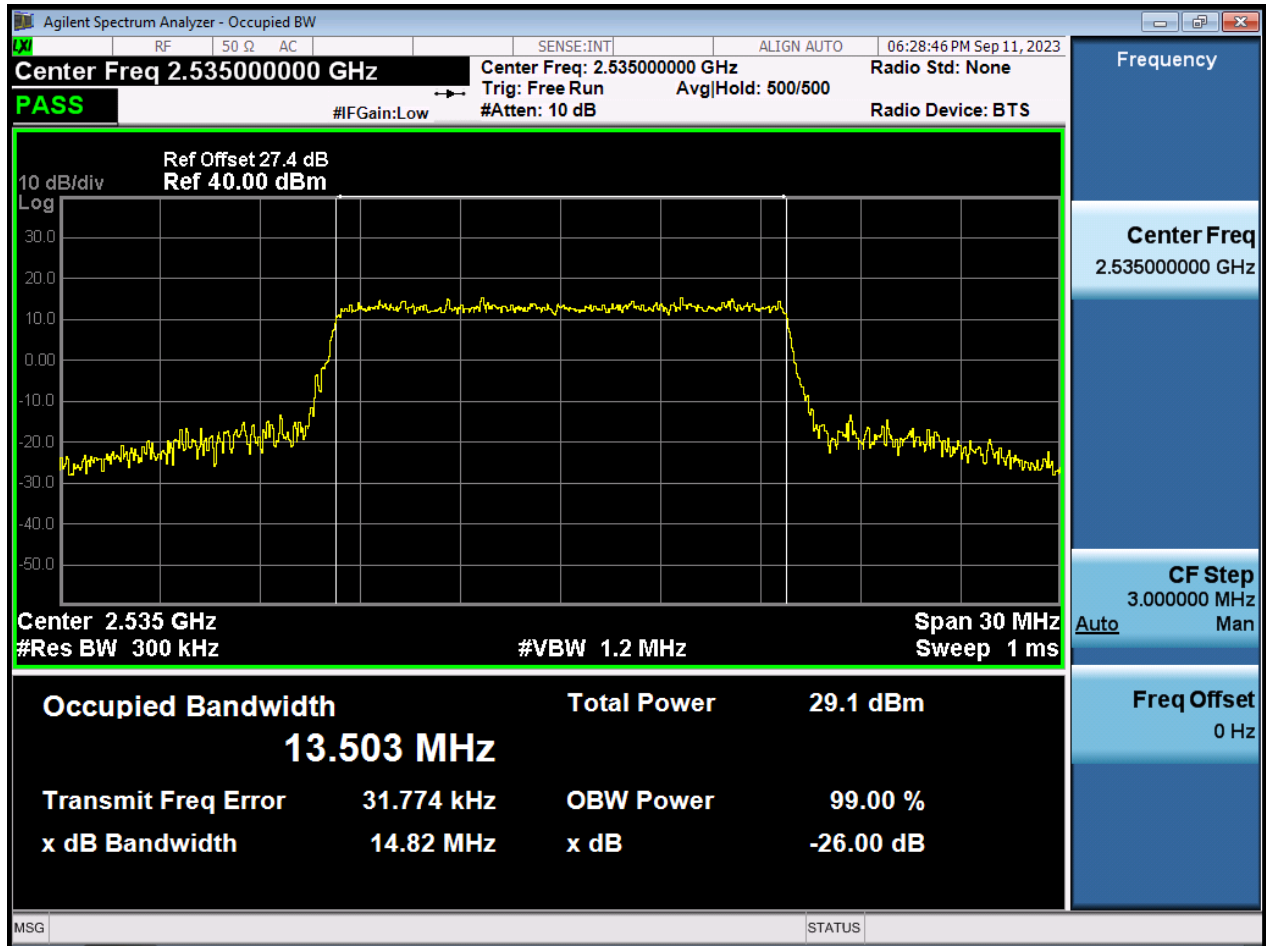
LTE7_15 M_OBW_Mid Channel_QPSK_Full RB



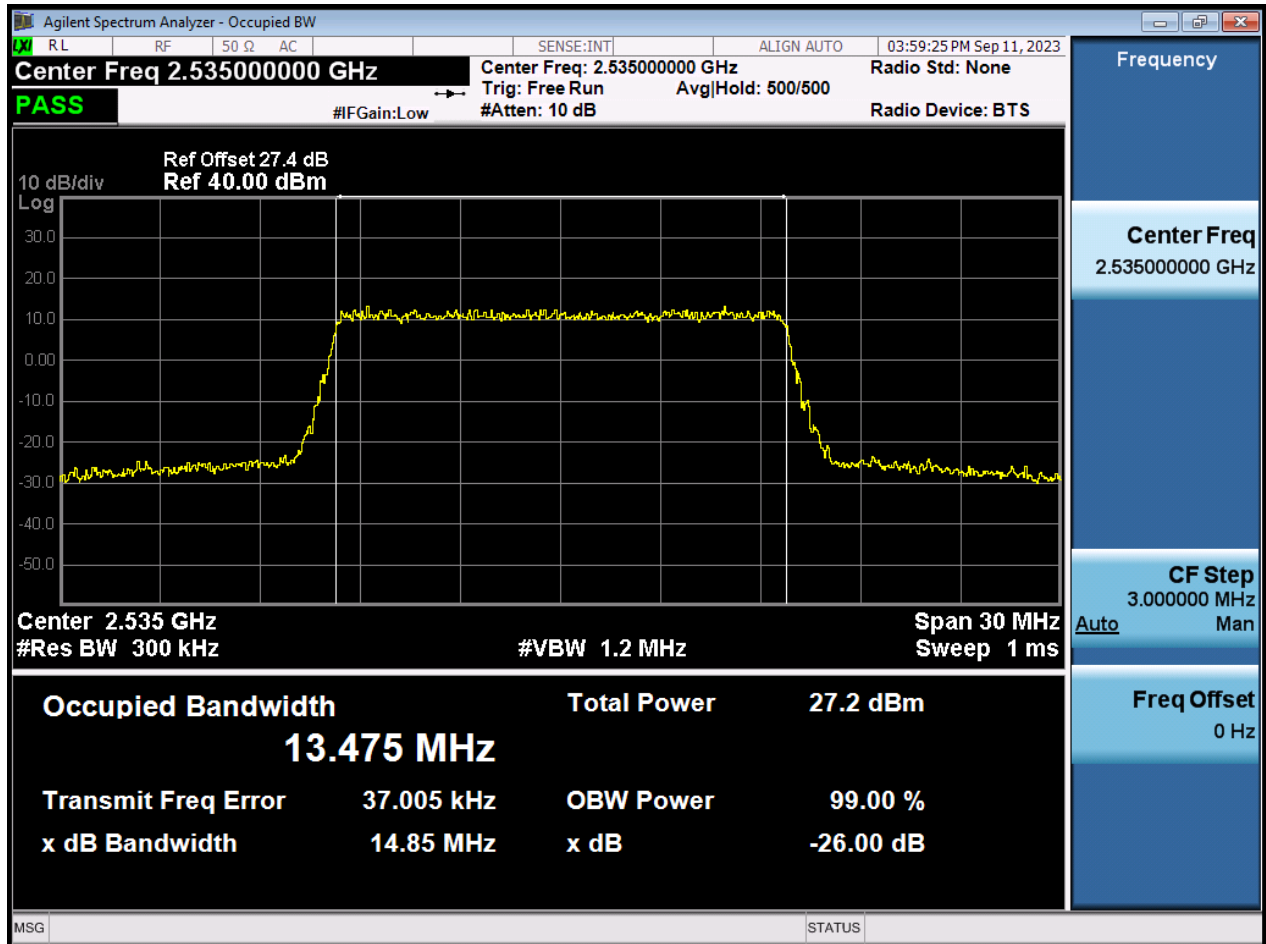
LTE7_15 M_OBW_Mid Channel_16QAM_Full RB



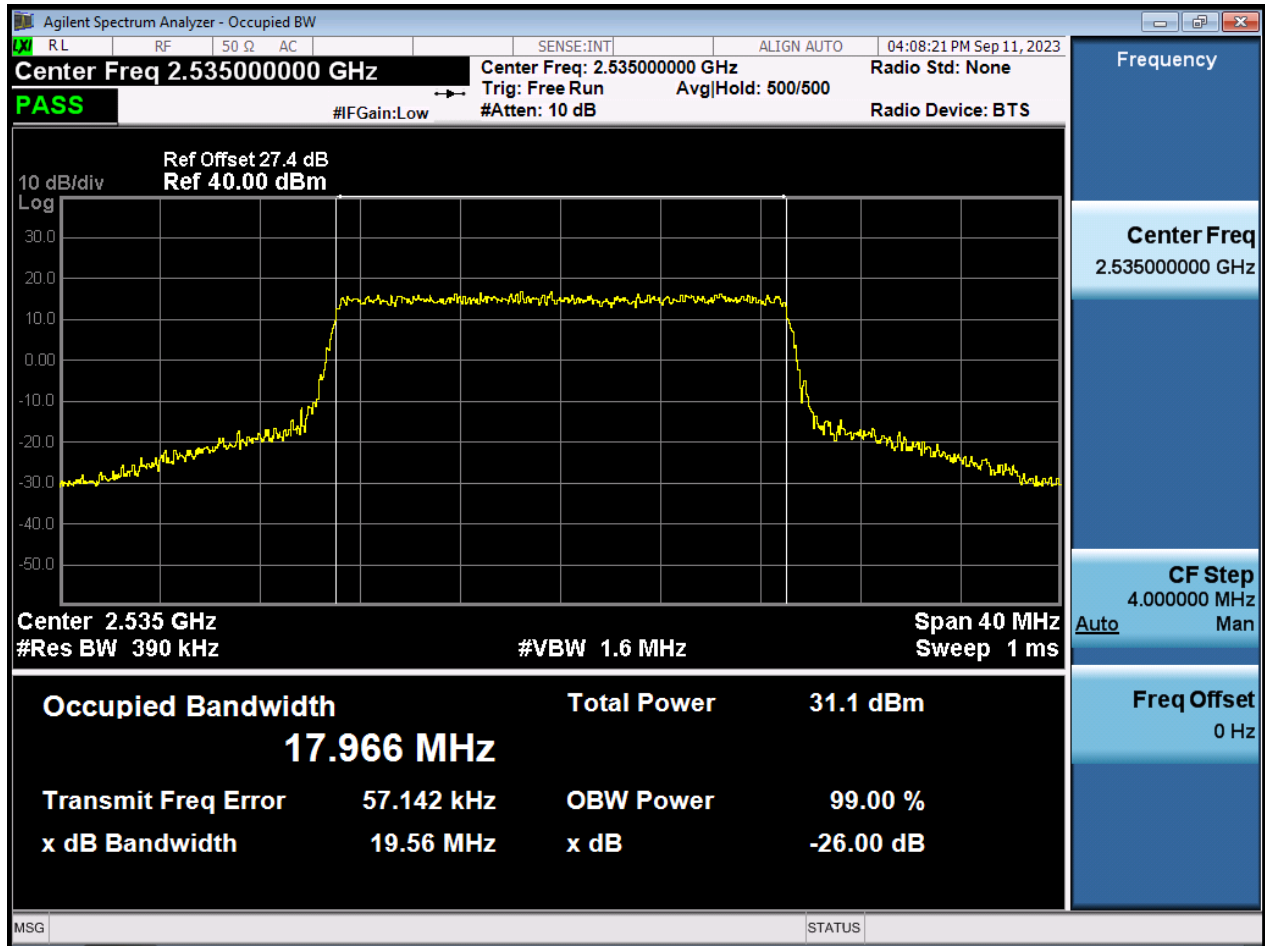
LTE7_15 M_OBW_Mid Channel_64QAM_Full RB



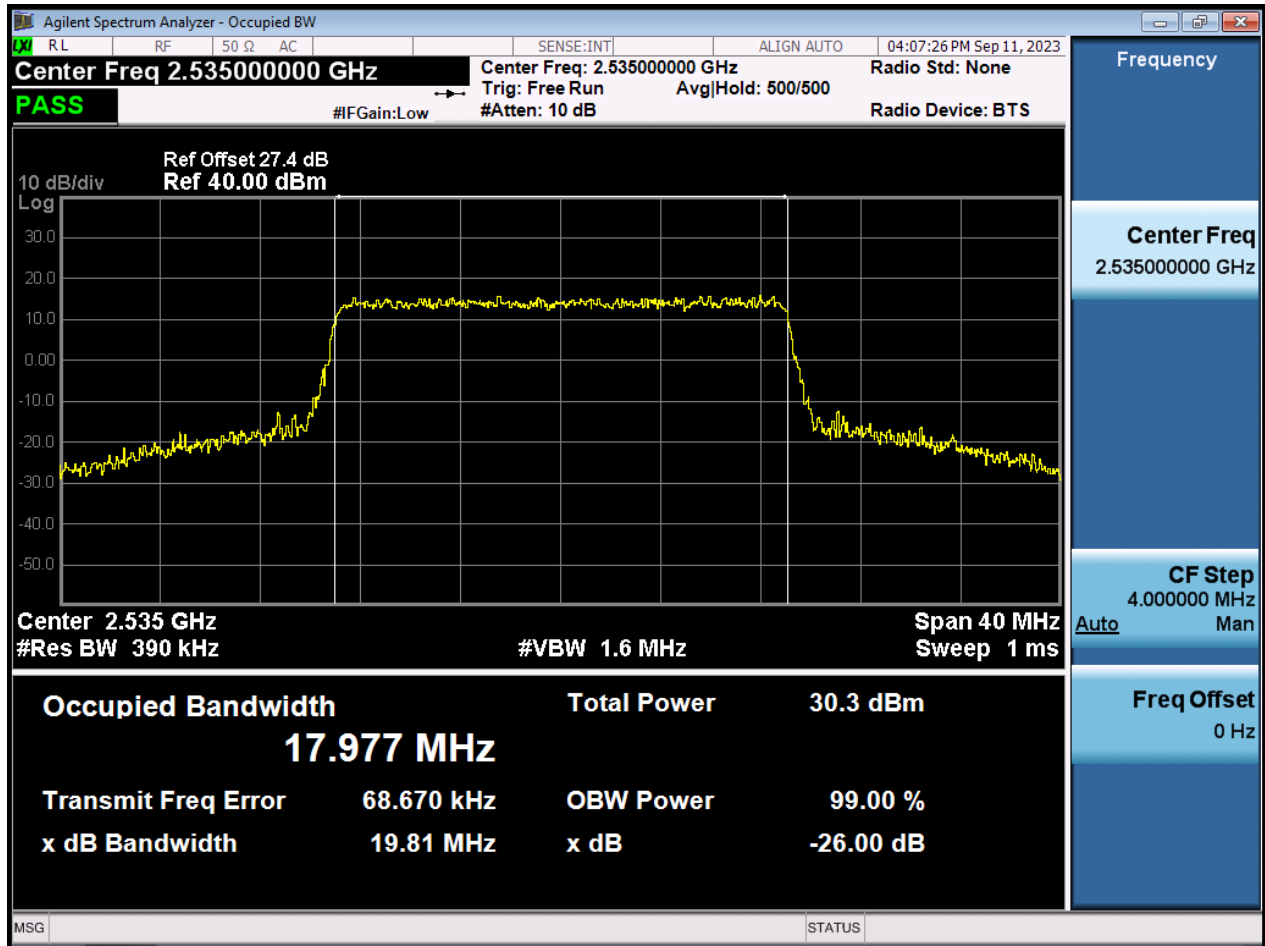
LTE7_15 M_OBW_Mid Channel_256QAM_Full RB



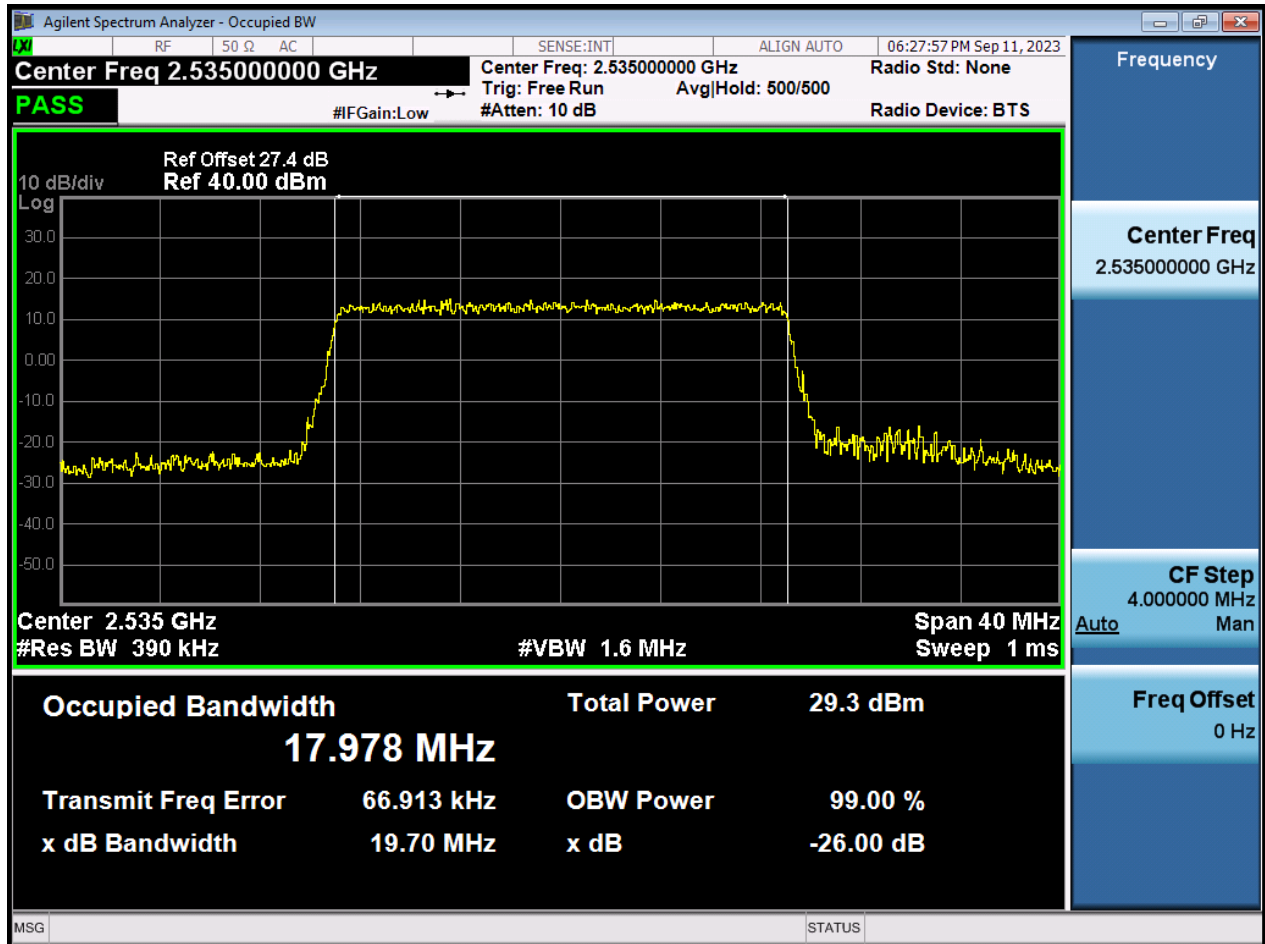
LTE7_20 M_OBW_Mid Channel_QPSK_Full RB



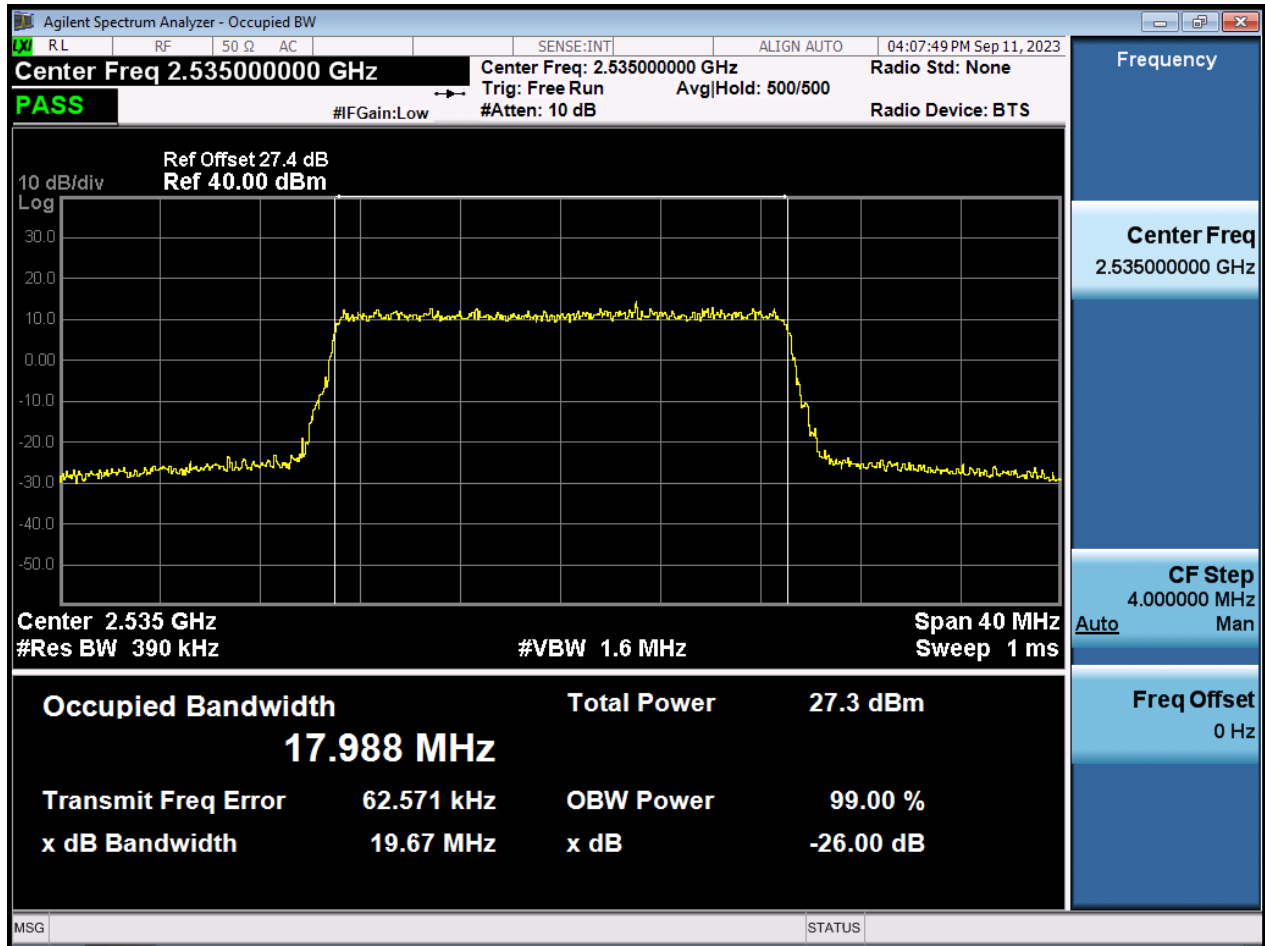
LTE7_20 M_OBW_Mid Channel_16QAM_Full RB



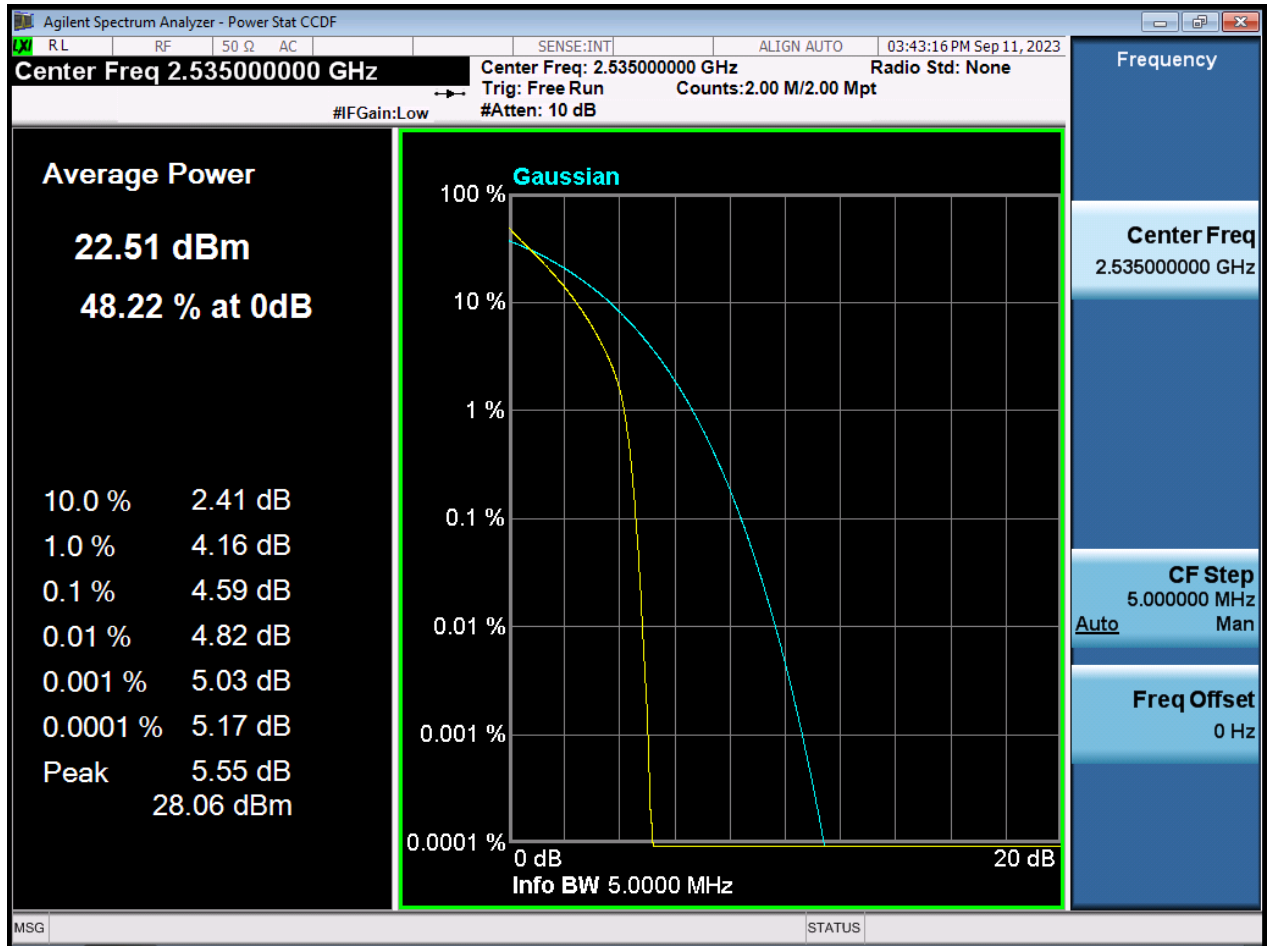
LTE7_20 M_OBW_Mid Channel_64QAM_Full RB



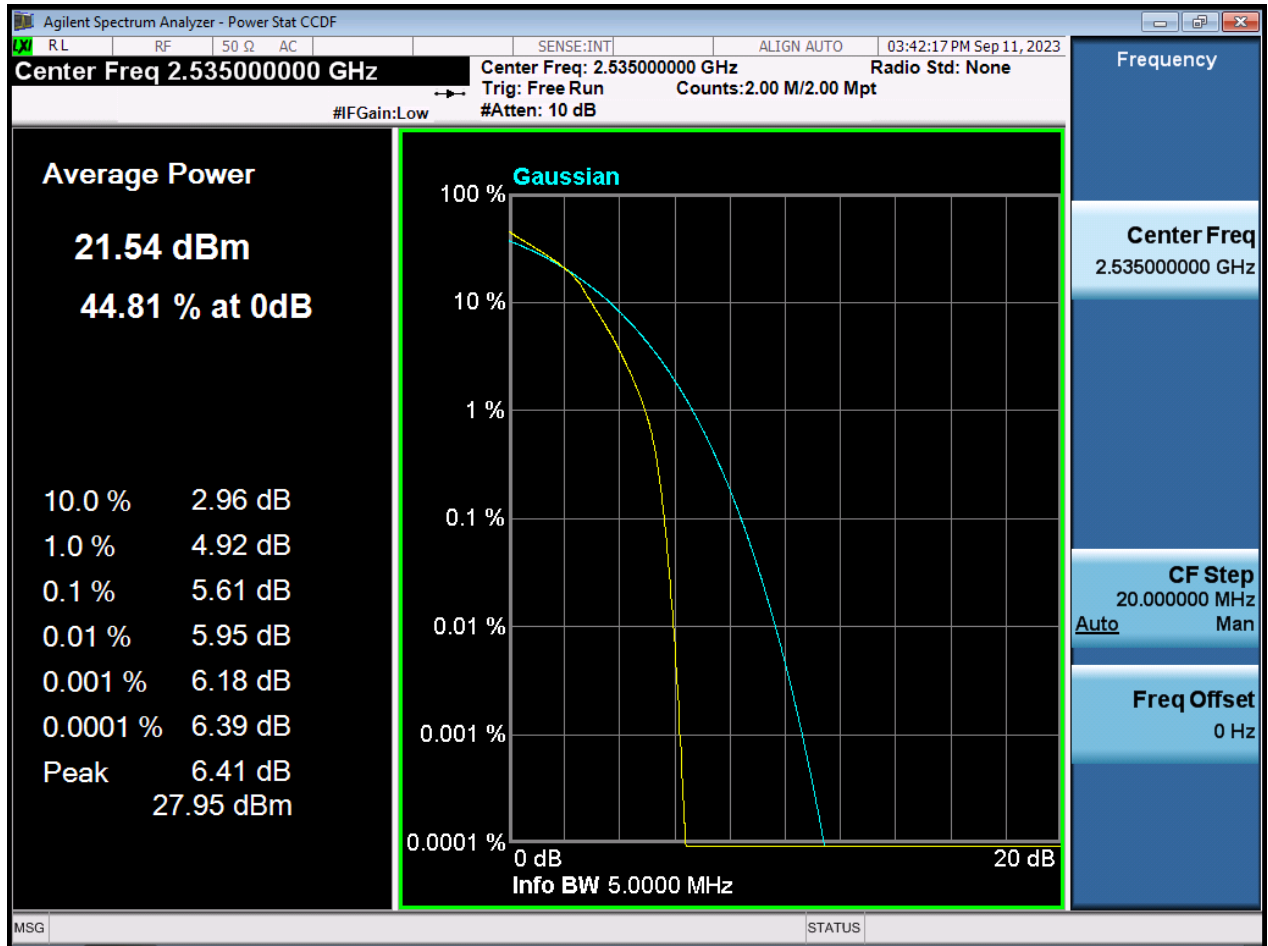
LTE7_20 M_OBW_Mid Channel_256QAM_Full RB



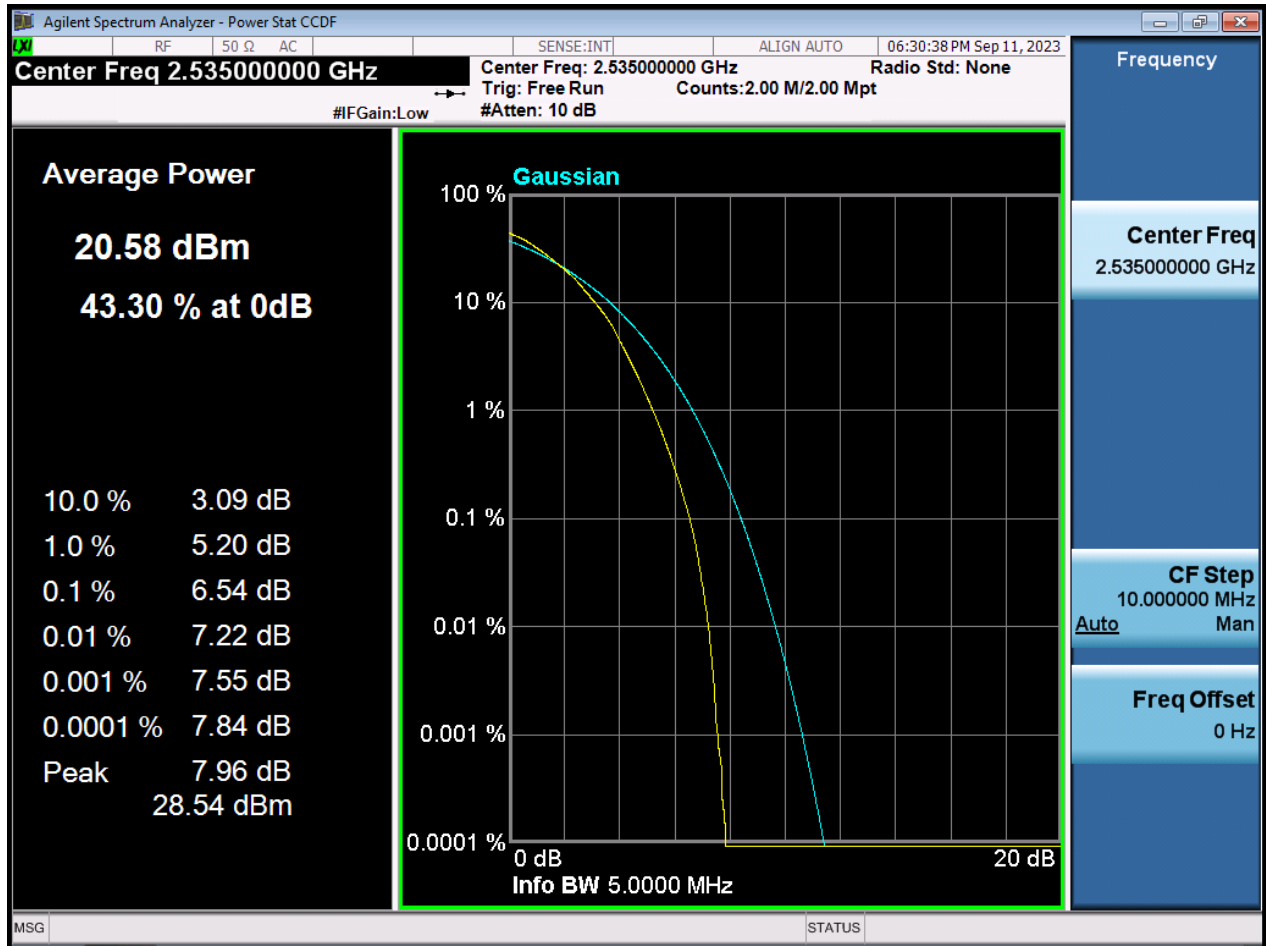
LTE7_5 M_PAR_Mid Channel_QPSK_Full RB



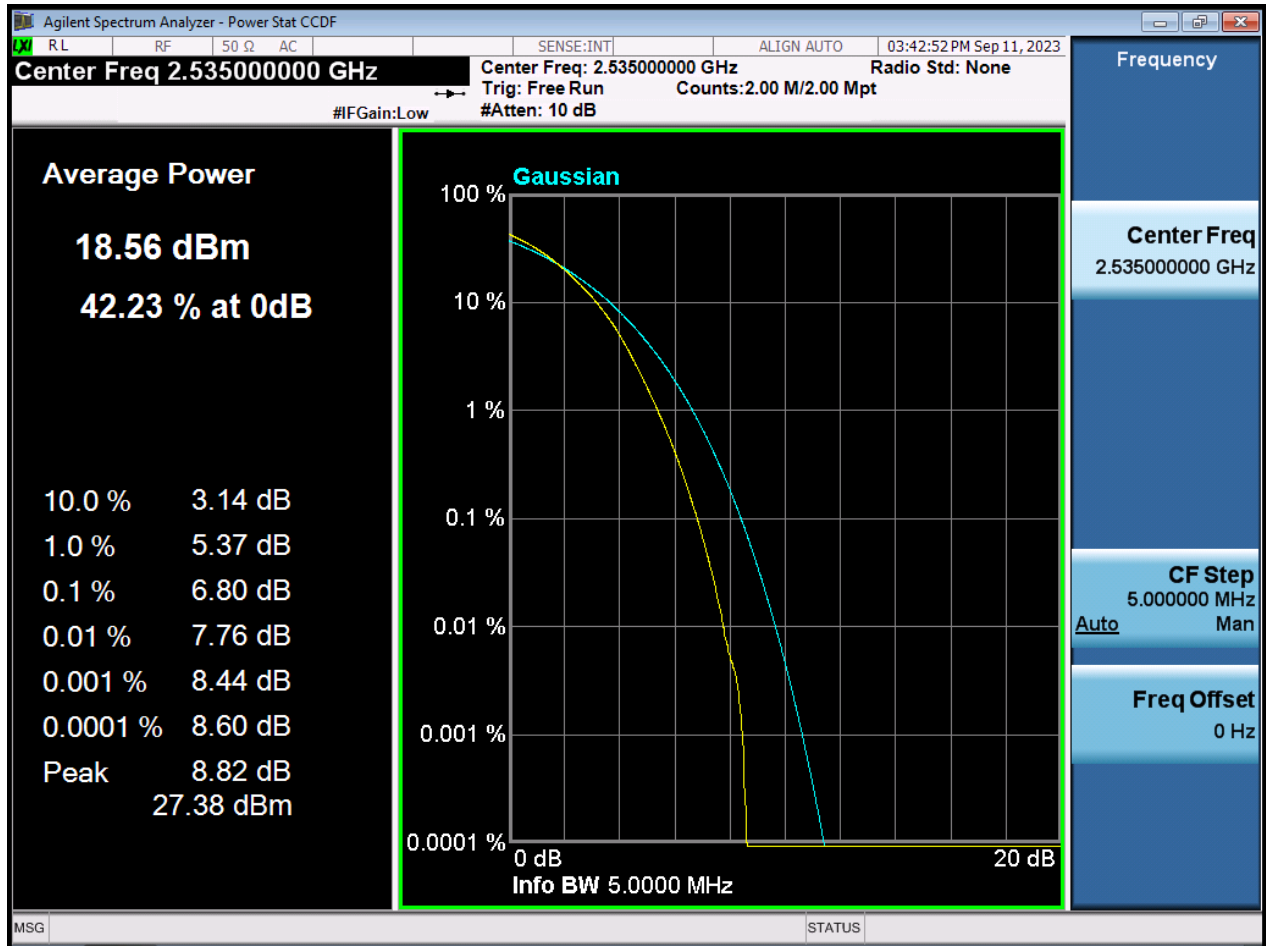
LTE7_5 M_PAR_Mid Channel_16QAM_Full RB



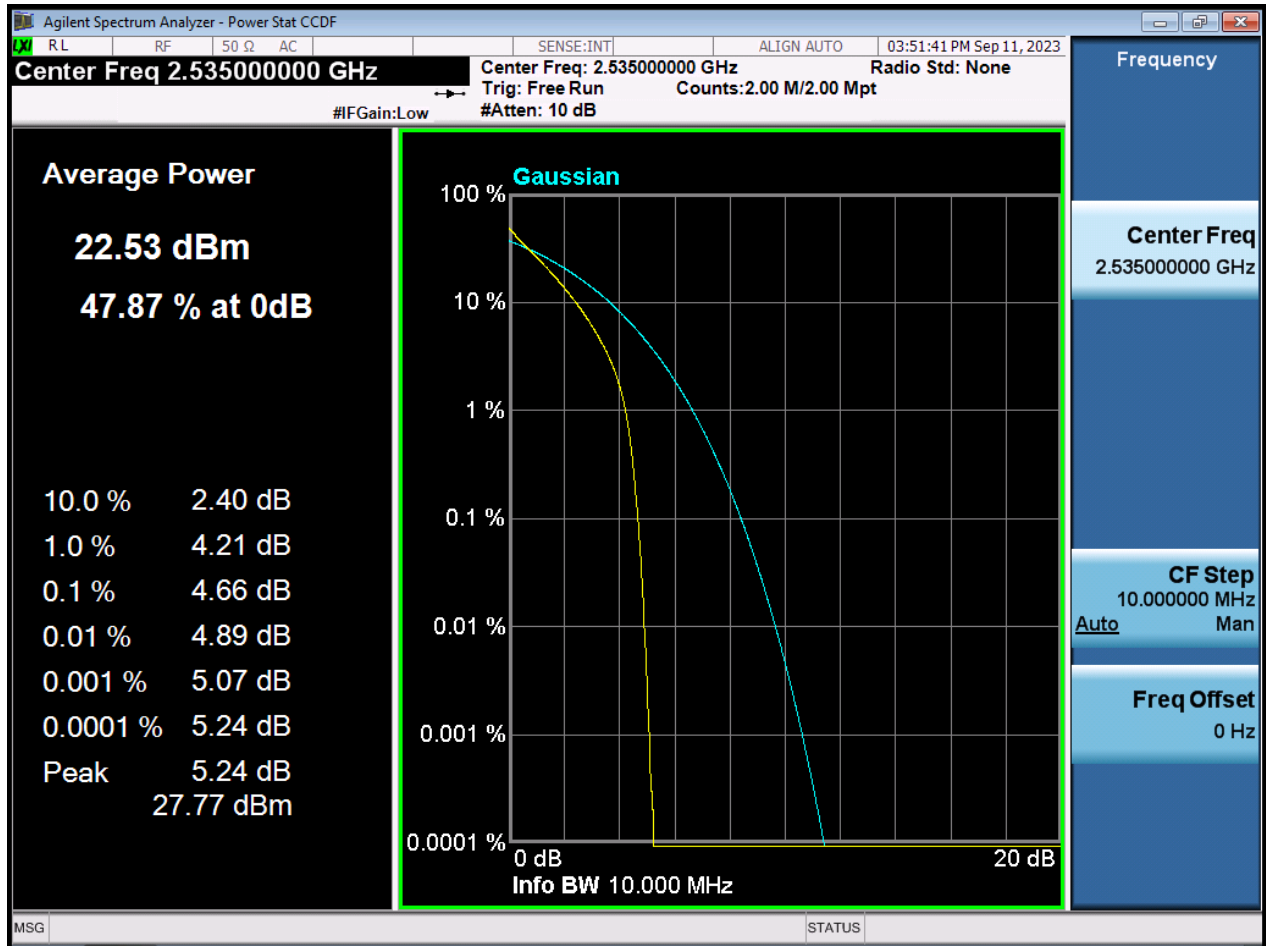
LTE7_5 M_PAR_Mid Channel_64QAM_Full RB



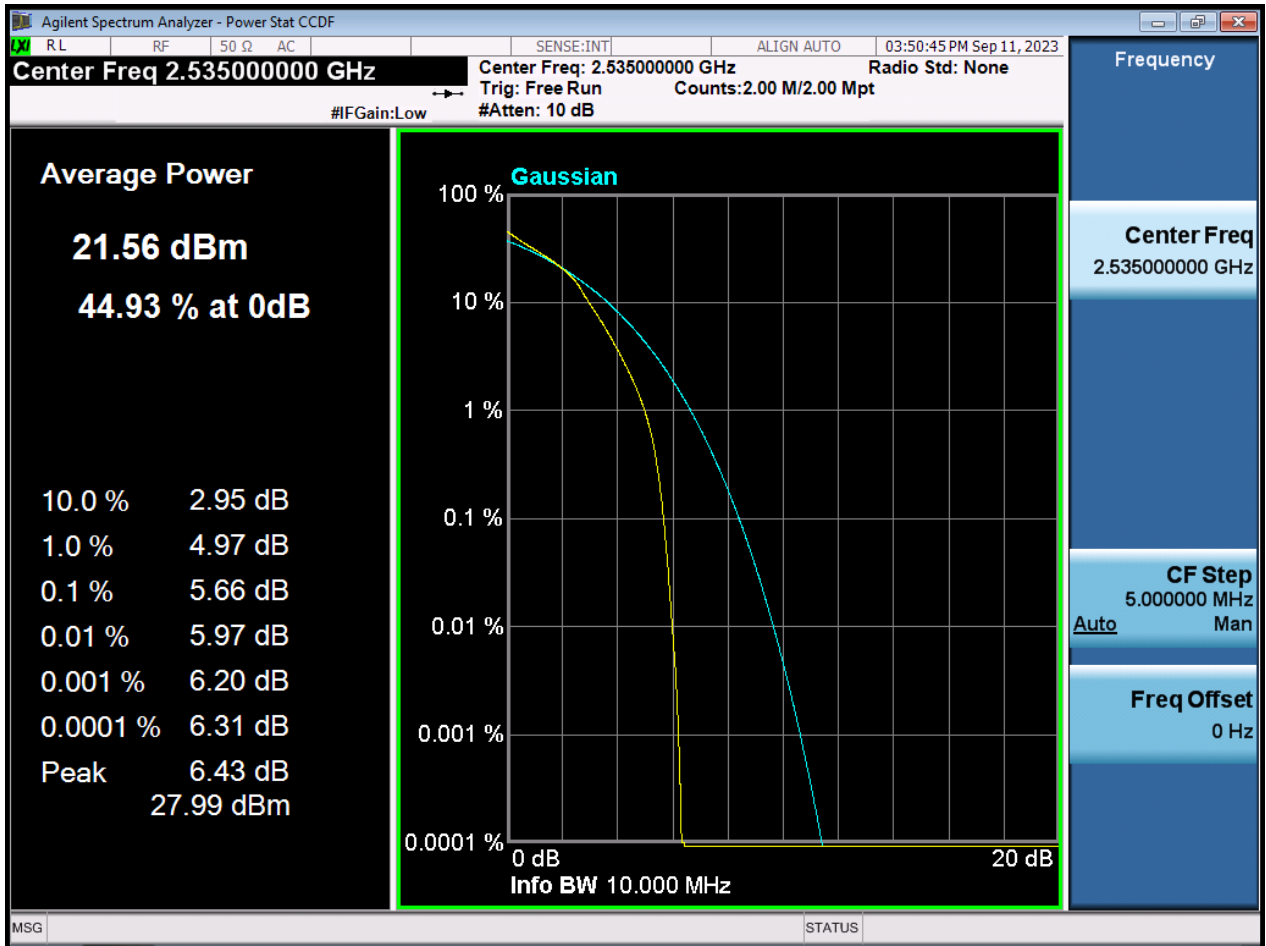
LTE7_5 M_PAR_Mid Channel_256QAM_Full RB



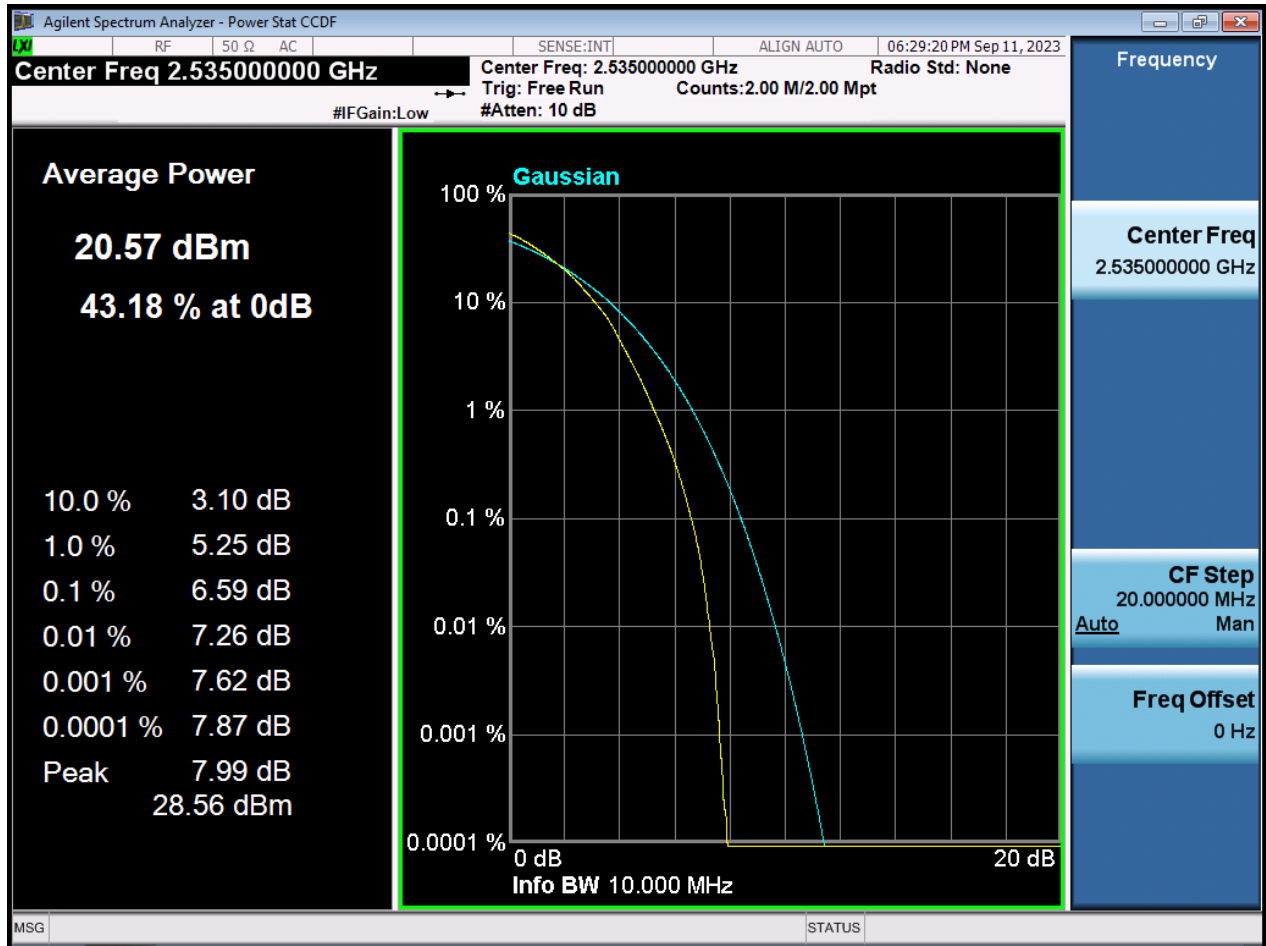
LTE7_10 M_PAR_Mid Channel_QPSK_Full RB



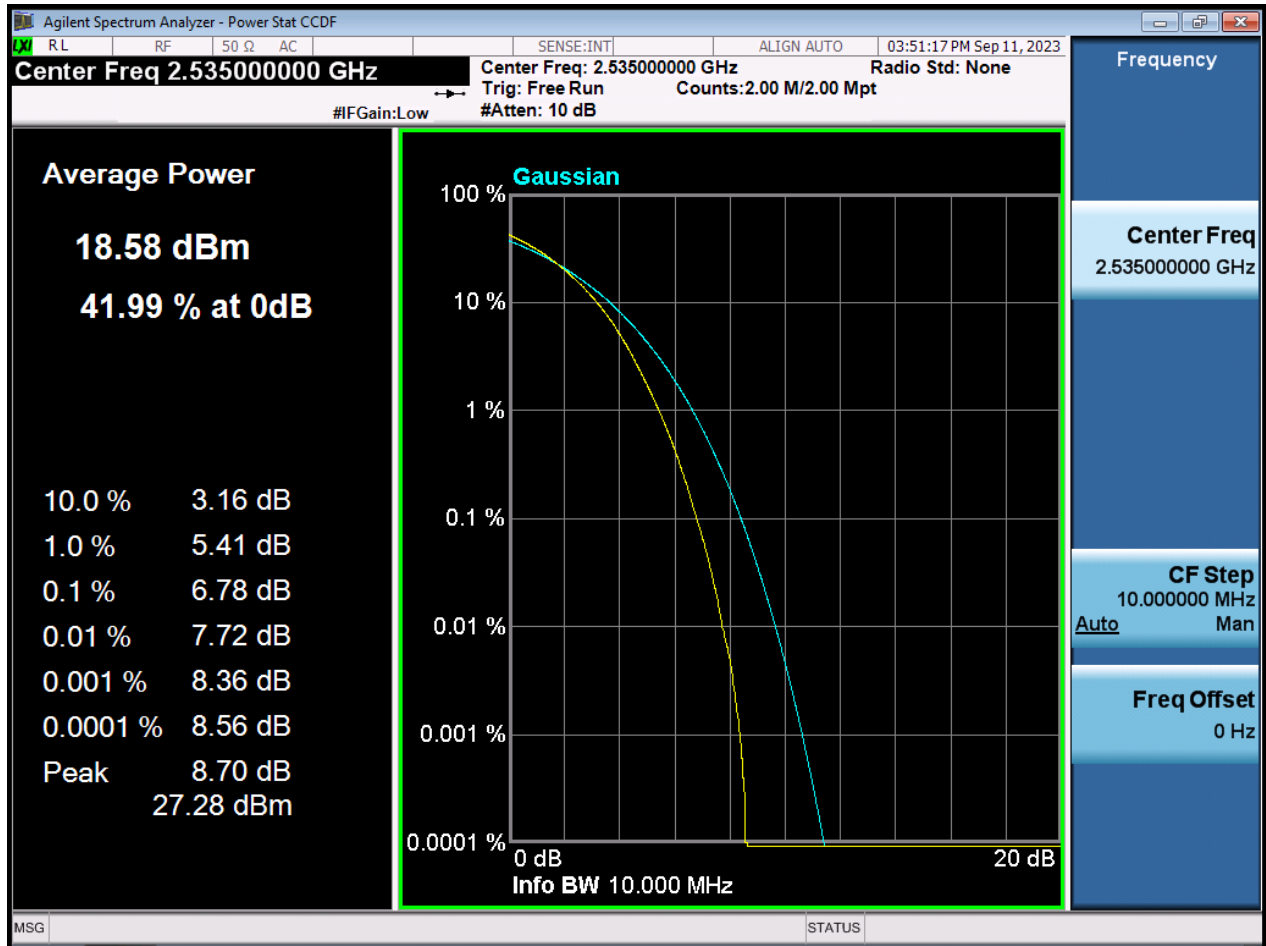
LTE7_10 M_PAR_Mid Channel_16QAM_Full RB



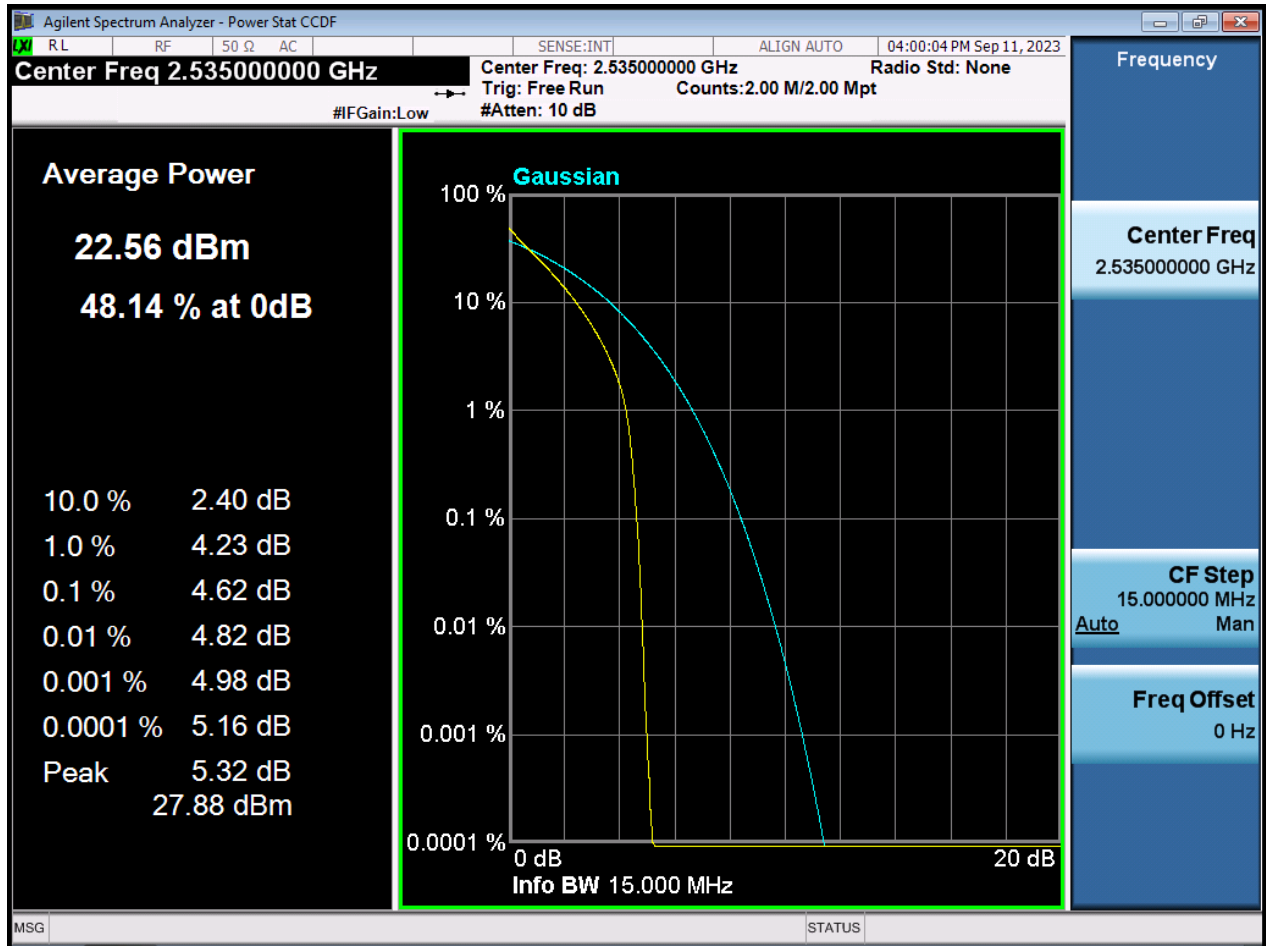
LTE7_10 M_PAR_Mid Channel_64QAM_Full RB



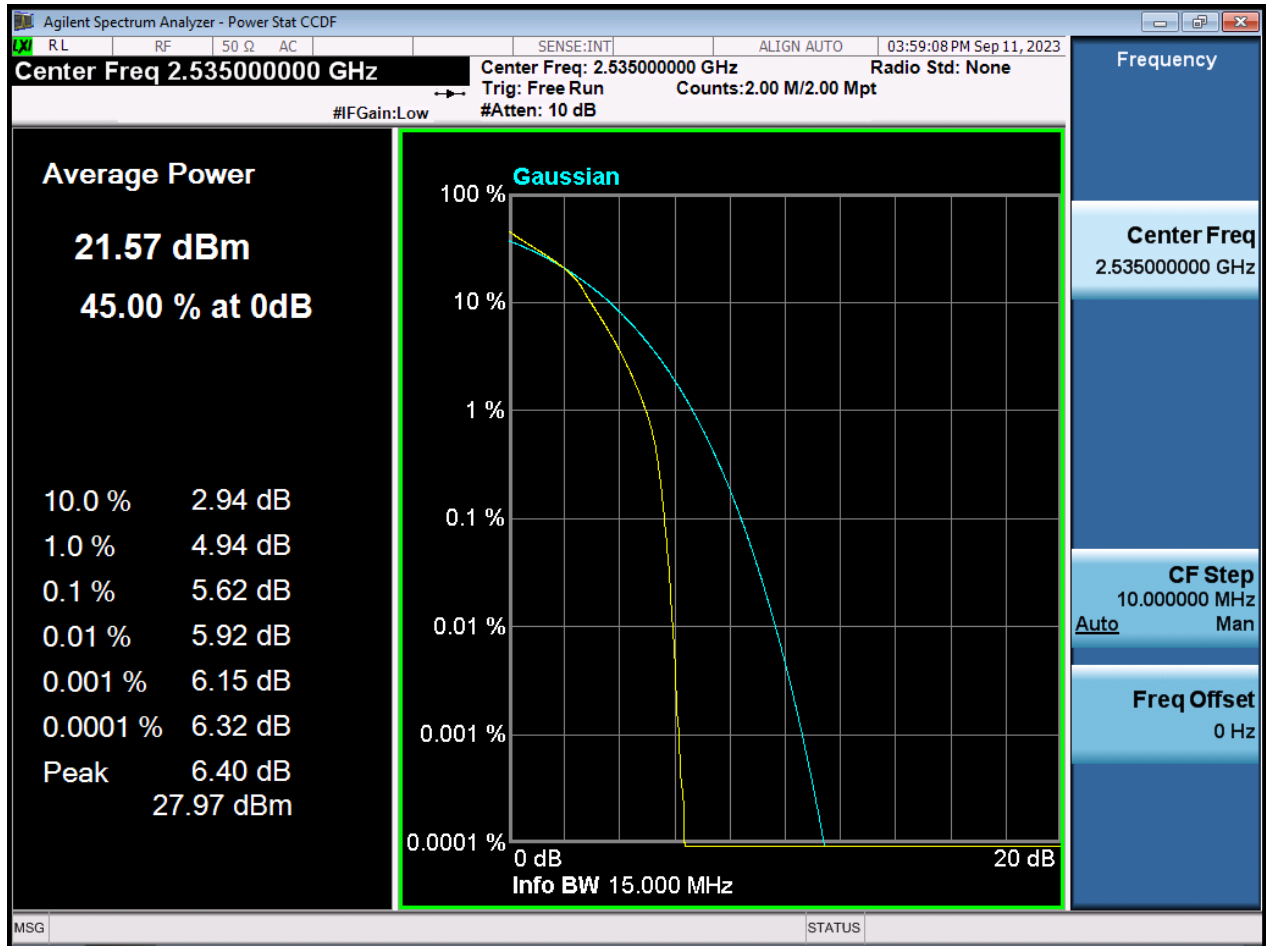
LTE7_10 M_PAR_Mid Channel_256QAM_Full RB



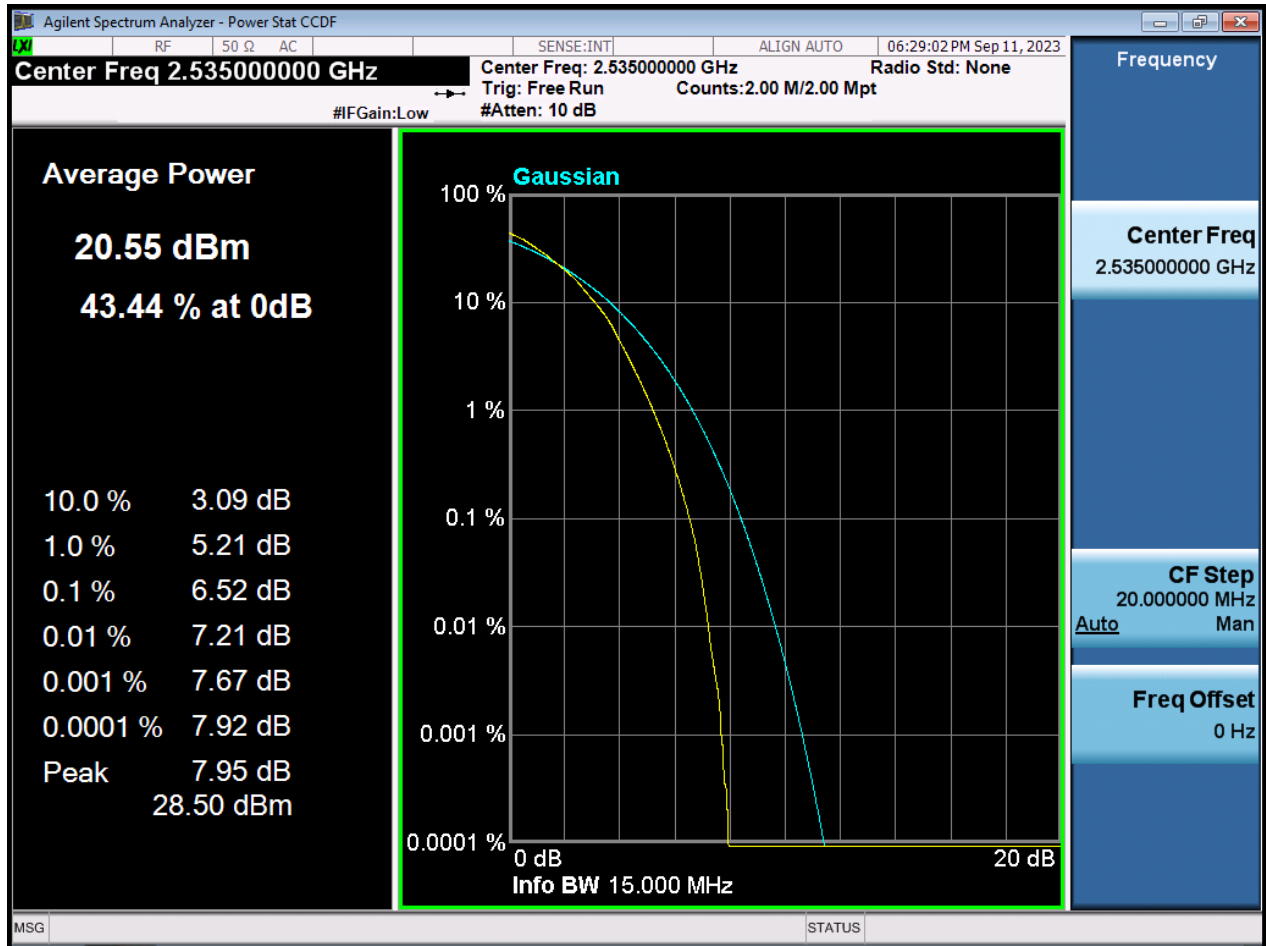
LTE7_15 M_PAR_Mid Channel_QPSK_Full RB



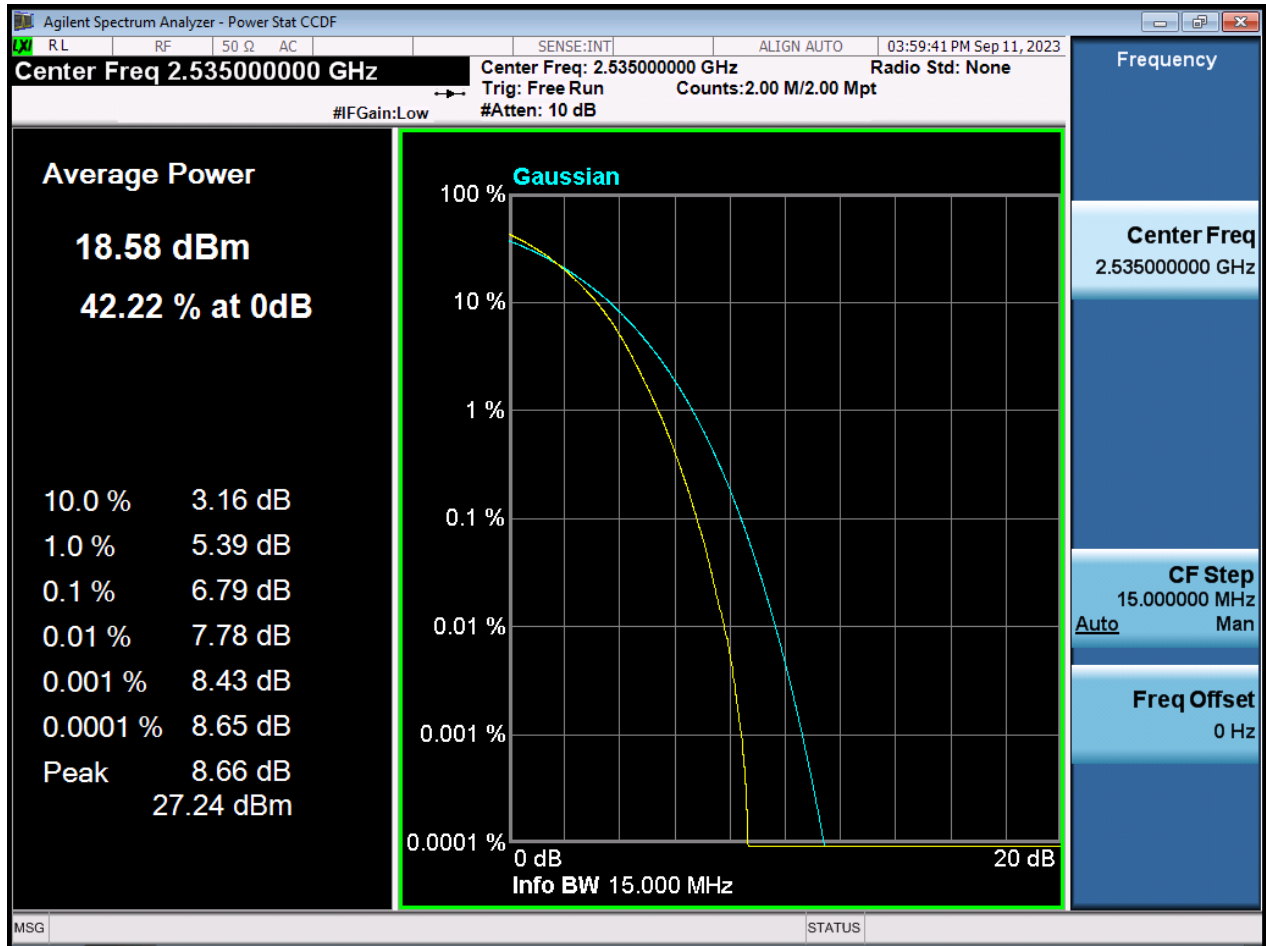
LTE7_15 M_PAR_Mid Channel_16QAM_Full RB



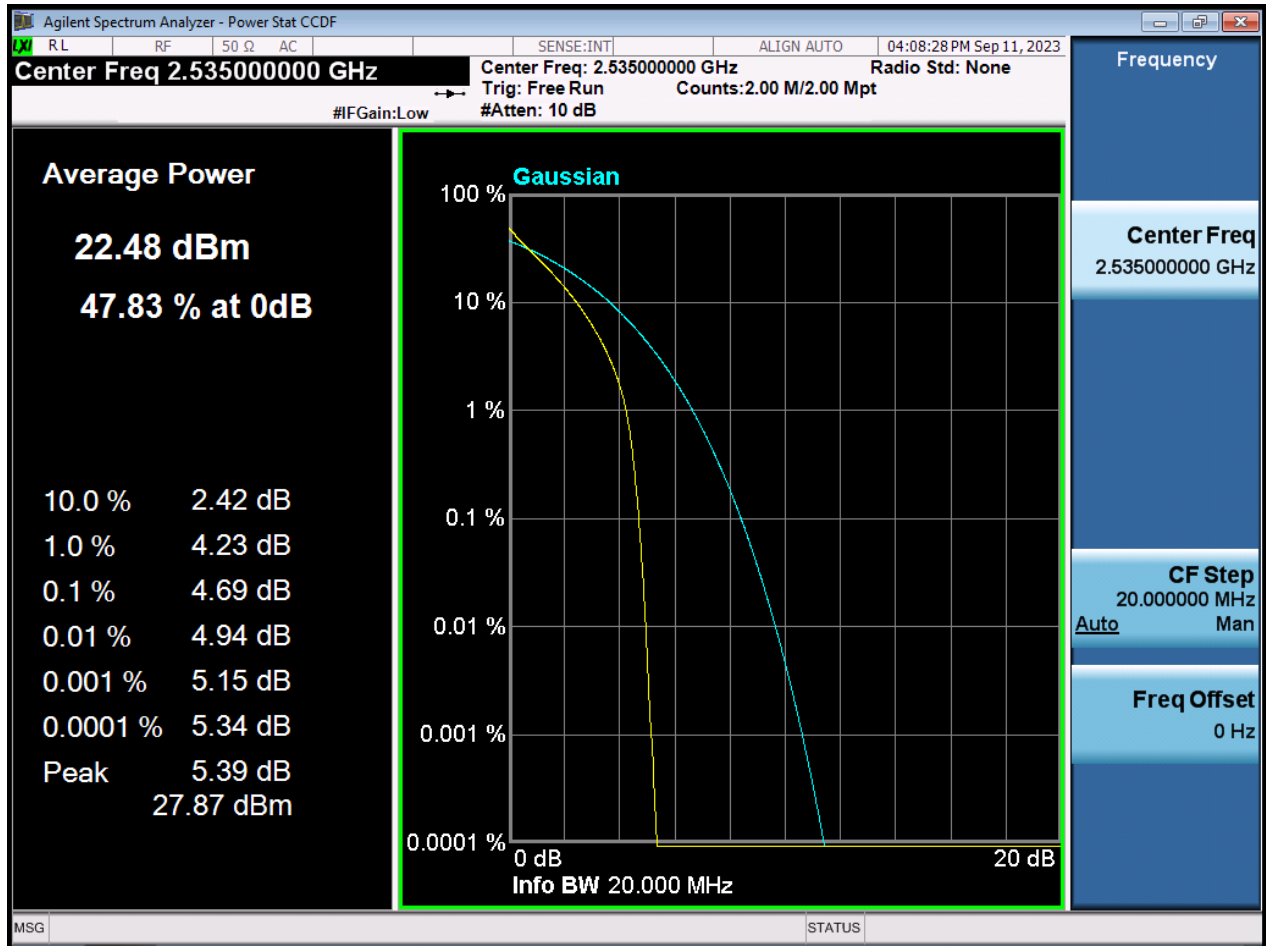
LTE7_15 M_PAR_Mid Channel_64QAM_Full RB



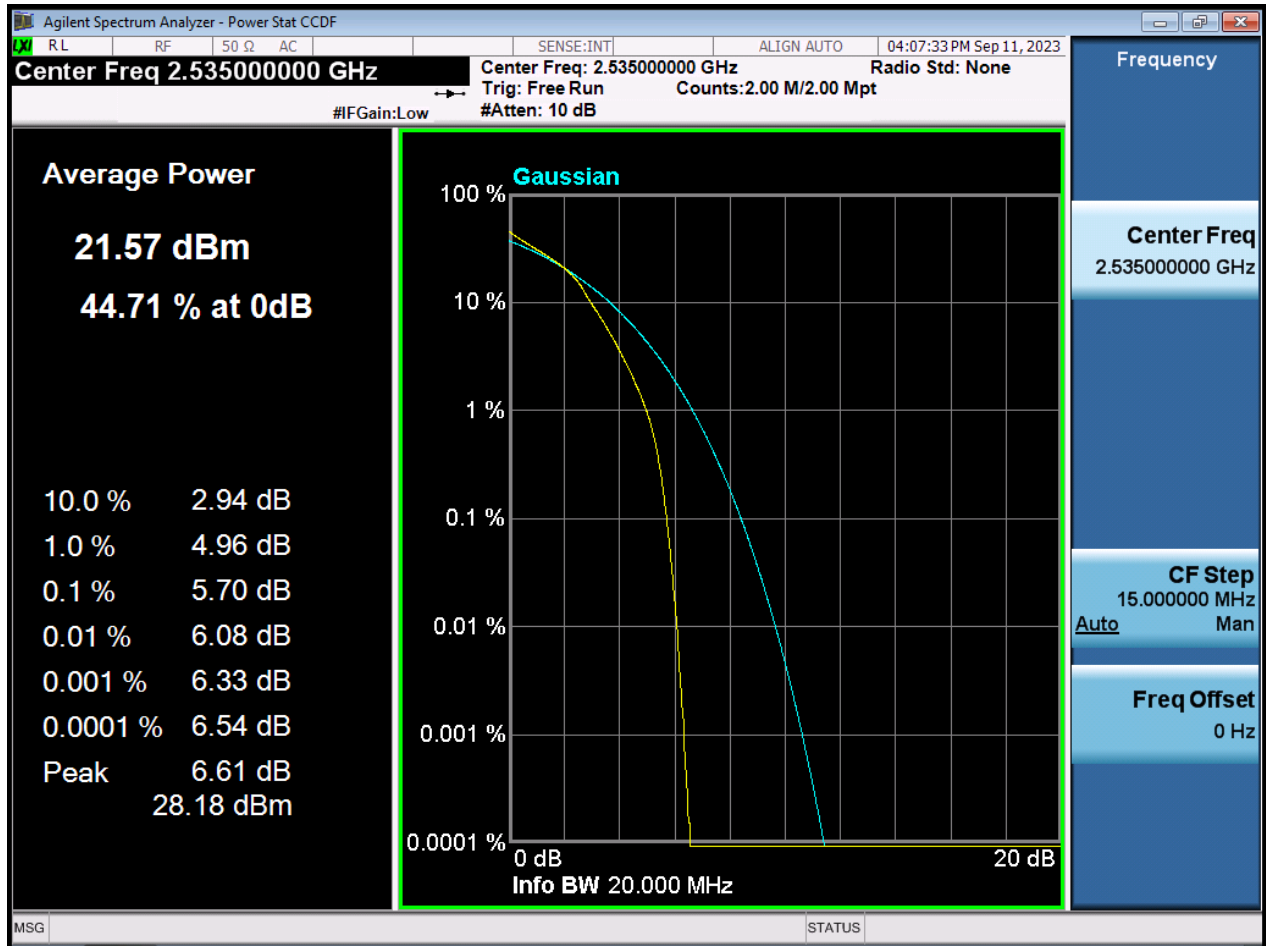
LTE7_15 M_PAR_Mid Channel_256QAM_Full RB



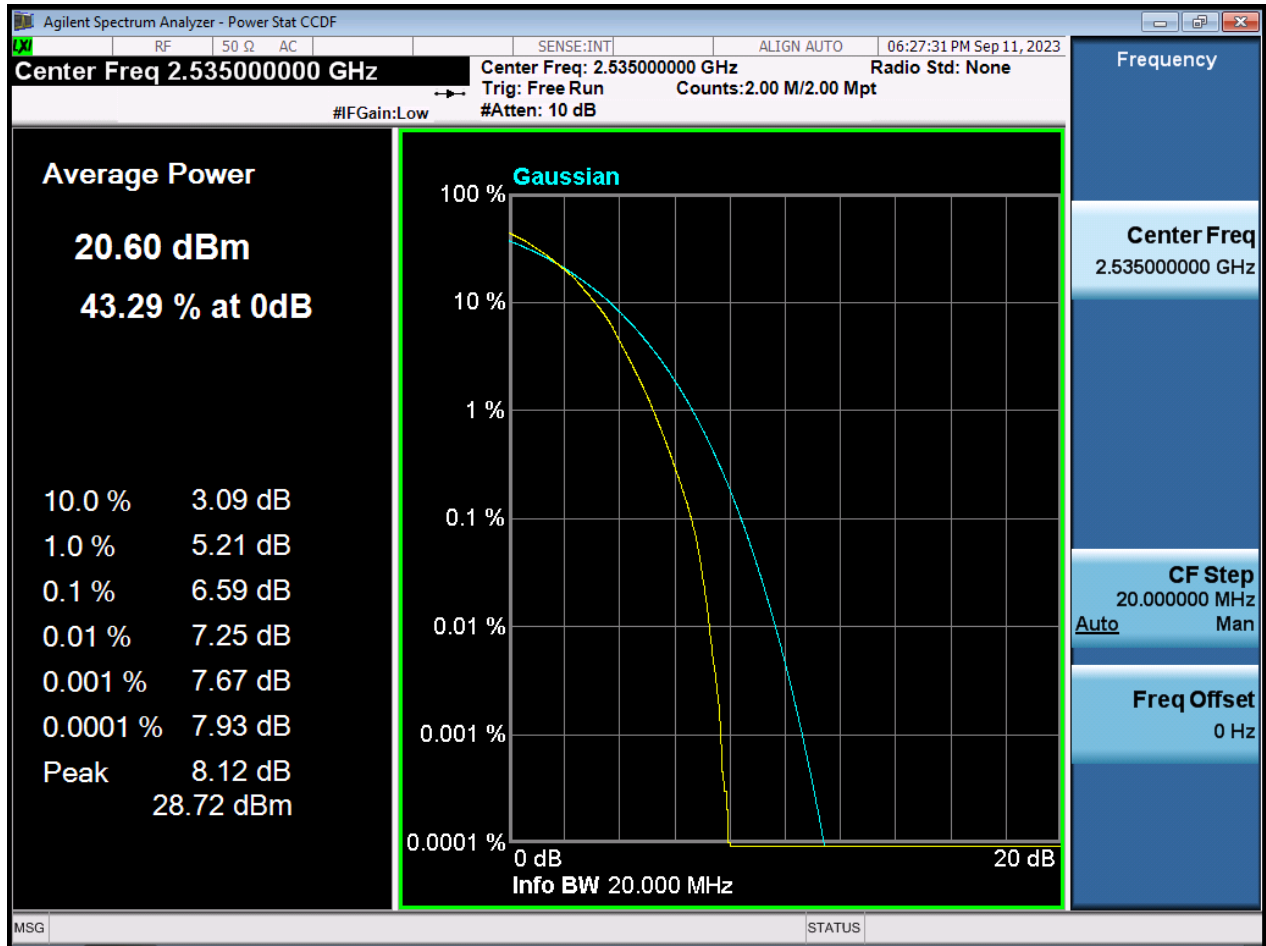
LTE7_20 M_PAR_Mid Channel_QPSK_Full RB



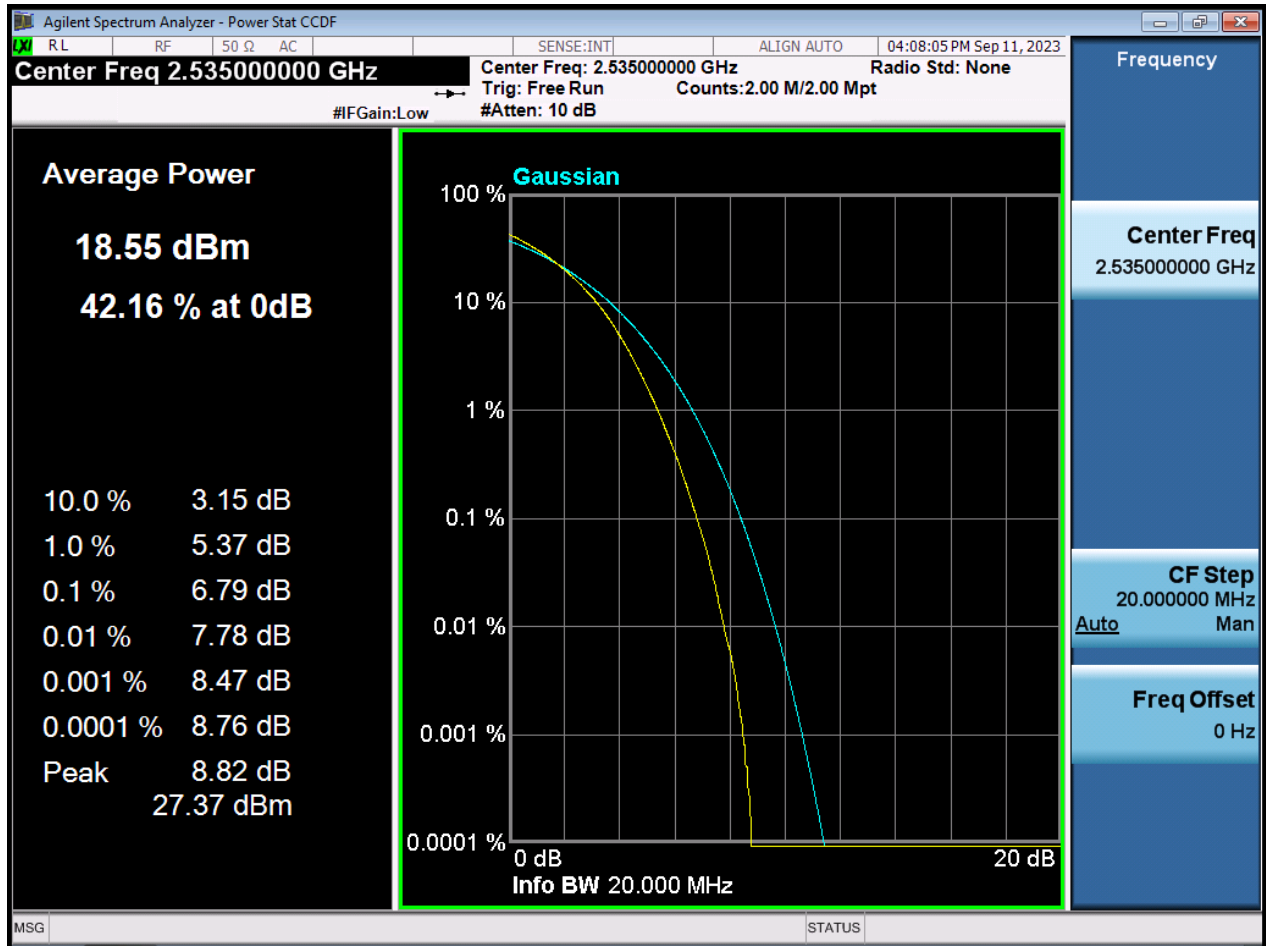
LTE7_20 M_PAR_Mid Channel_16QAM_Full RB



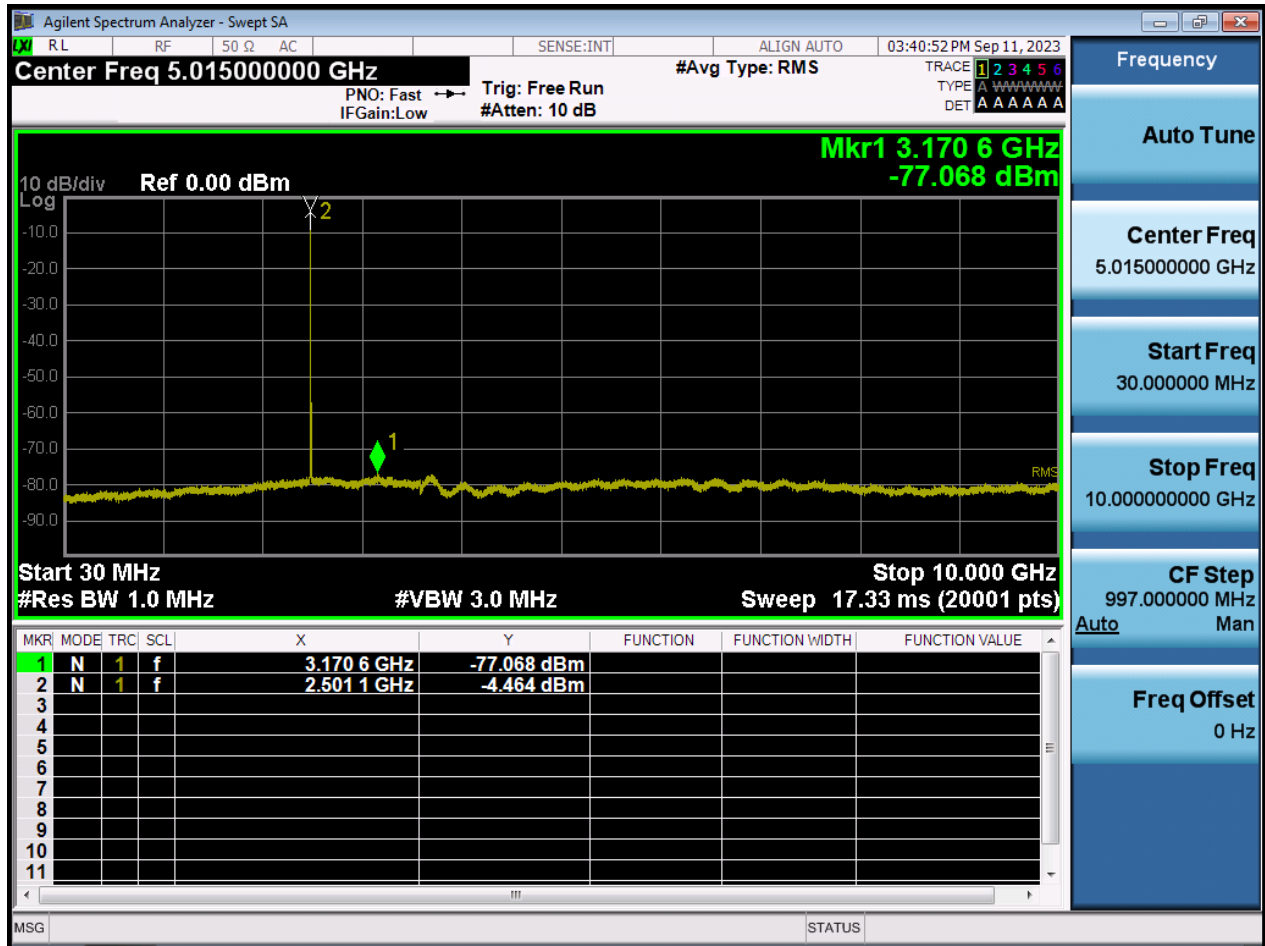
LTE7_20 M_PAR_Mid Channel_64QAM_Full RB



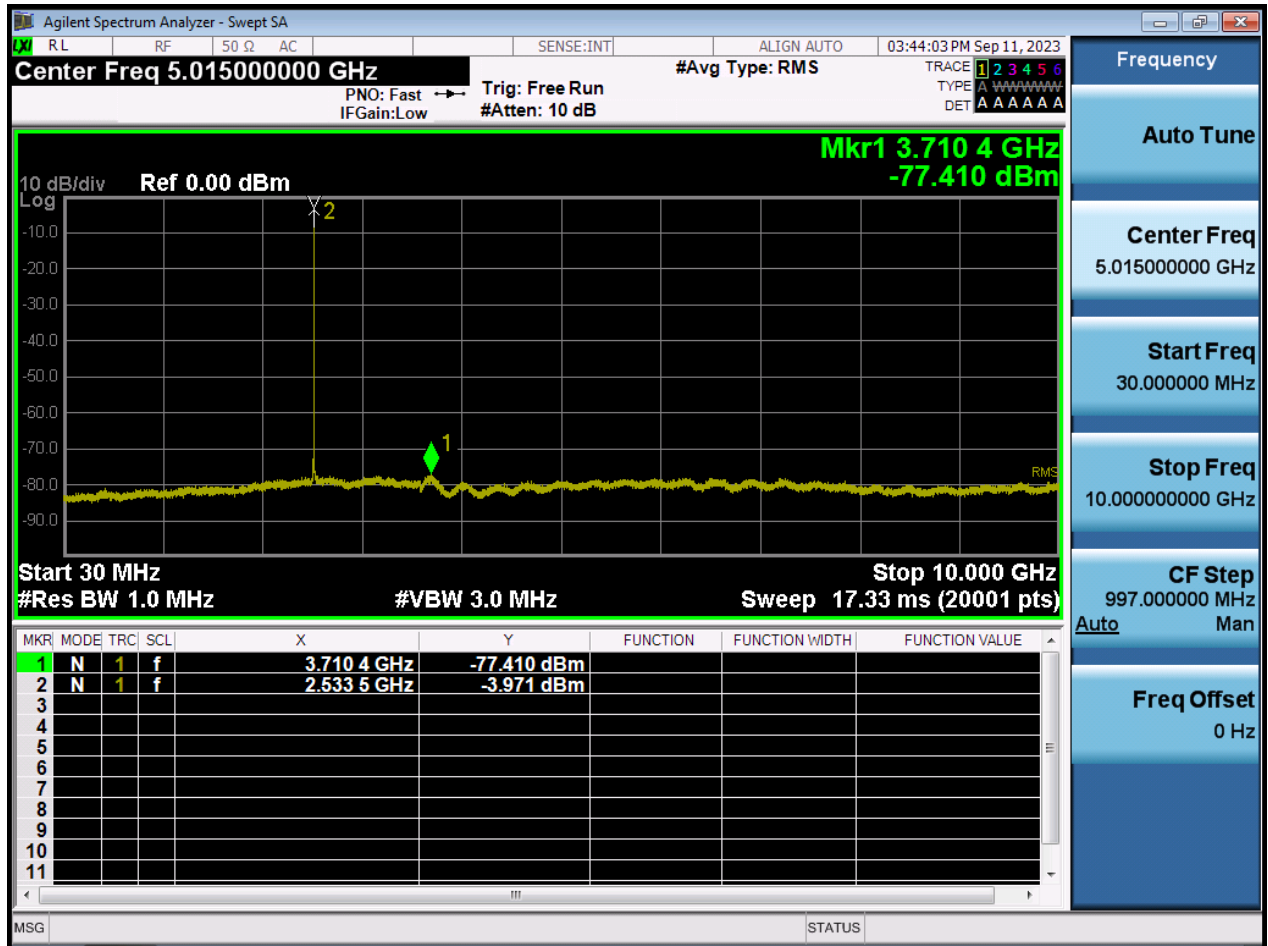
LTE7_20 M_PAR_Mid Channel_256QAM_Full RB



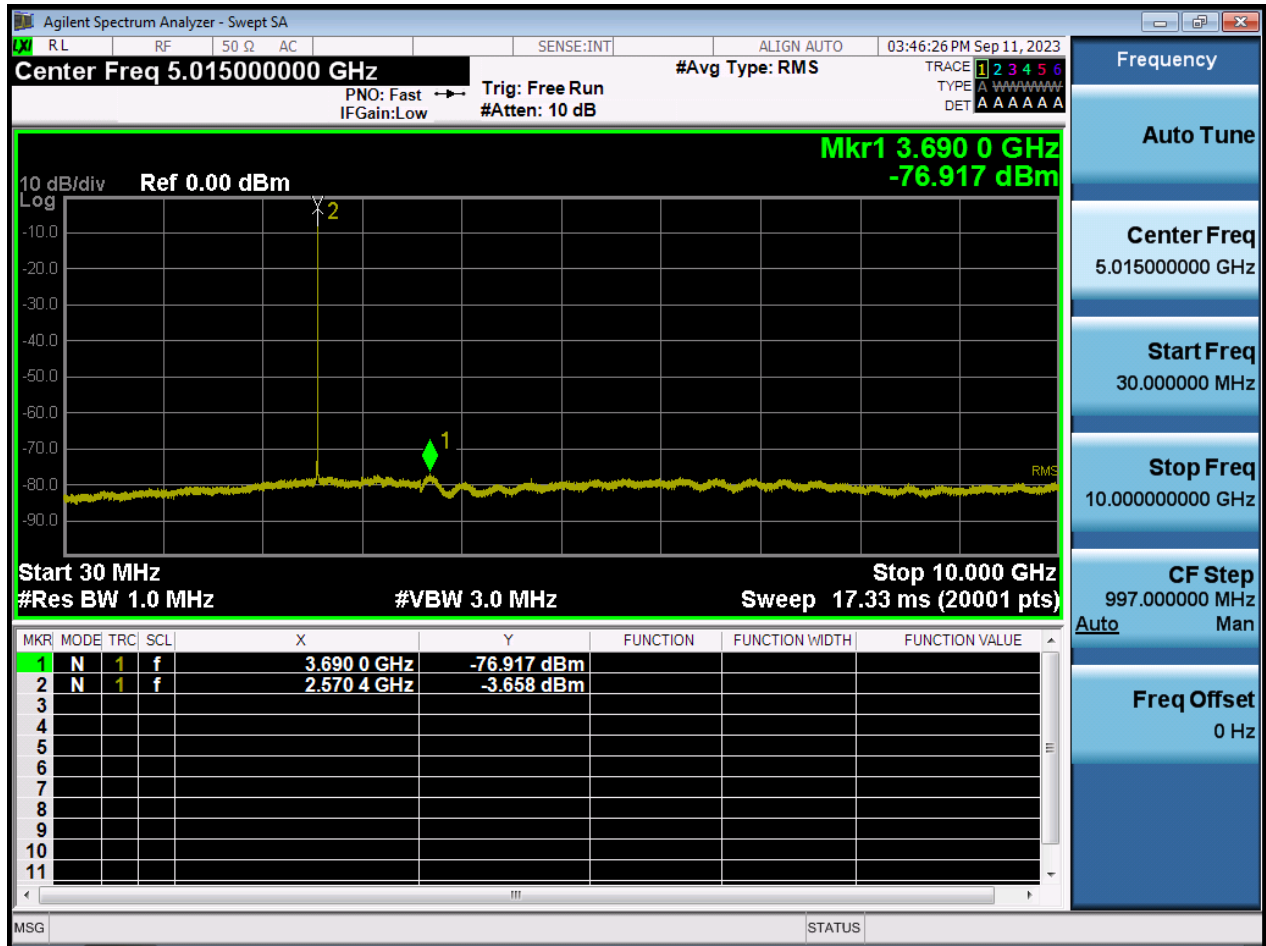
LTE7_5 M_CSE(30 M-10 G)_Lowest Channel



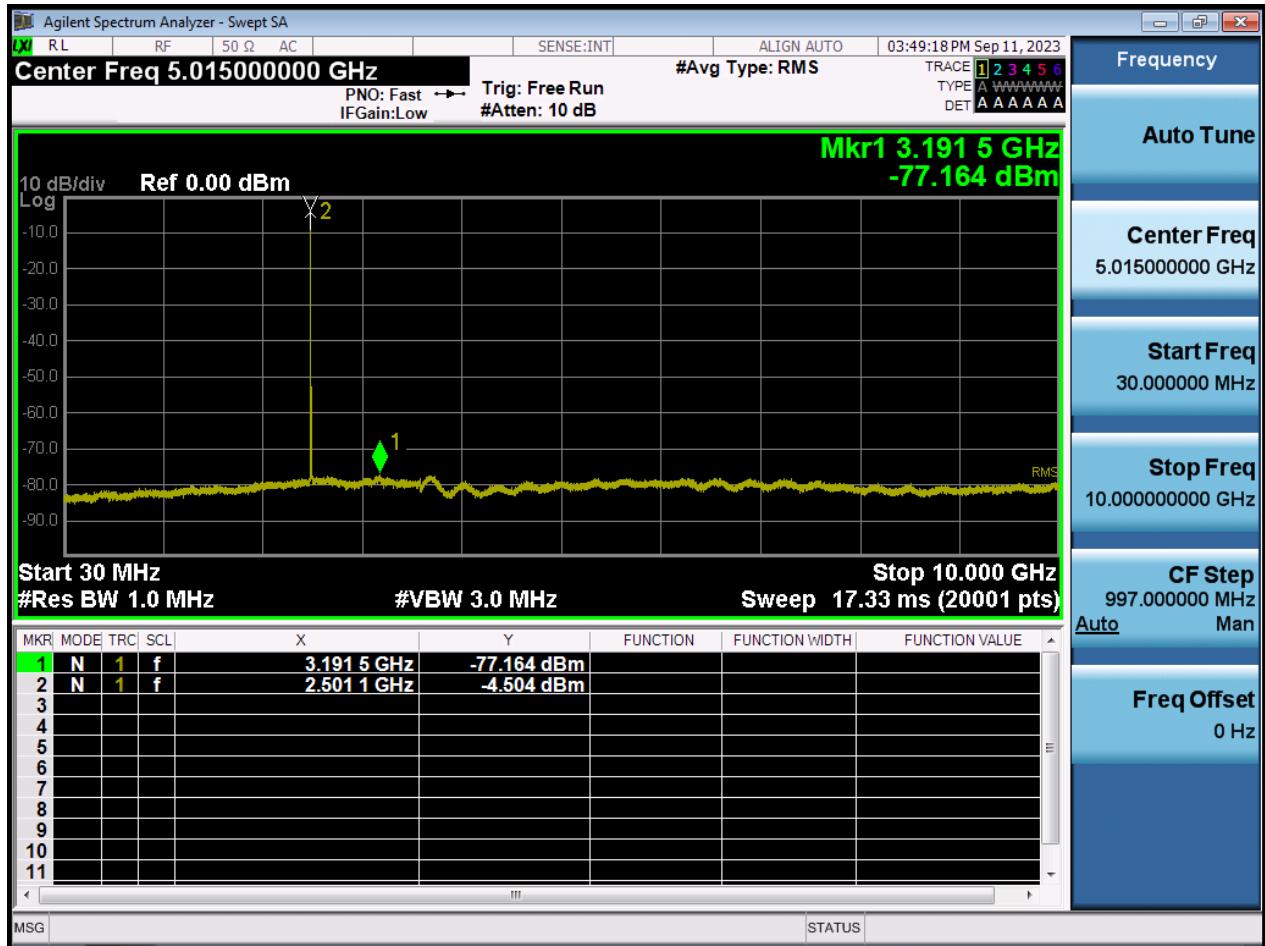
LTE7_5 M_CSE(30 M-10 G)_Mid Channel



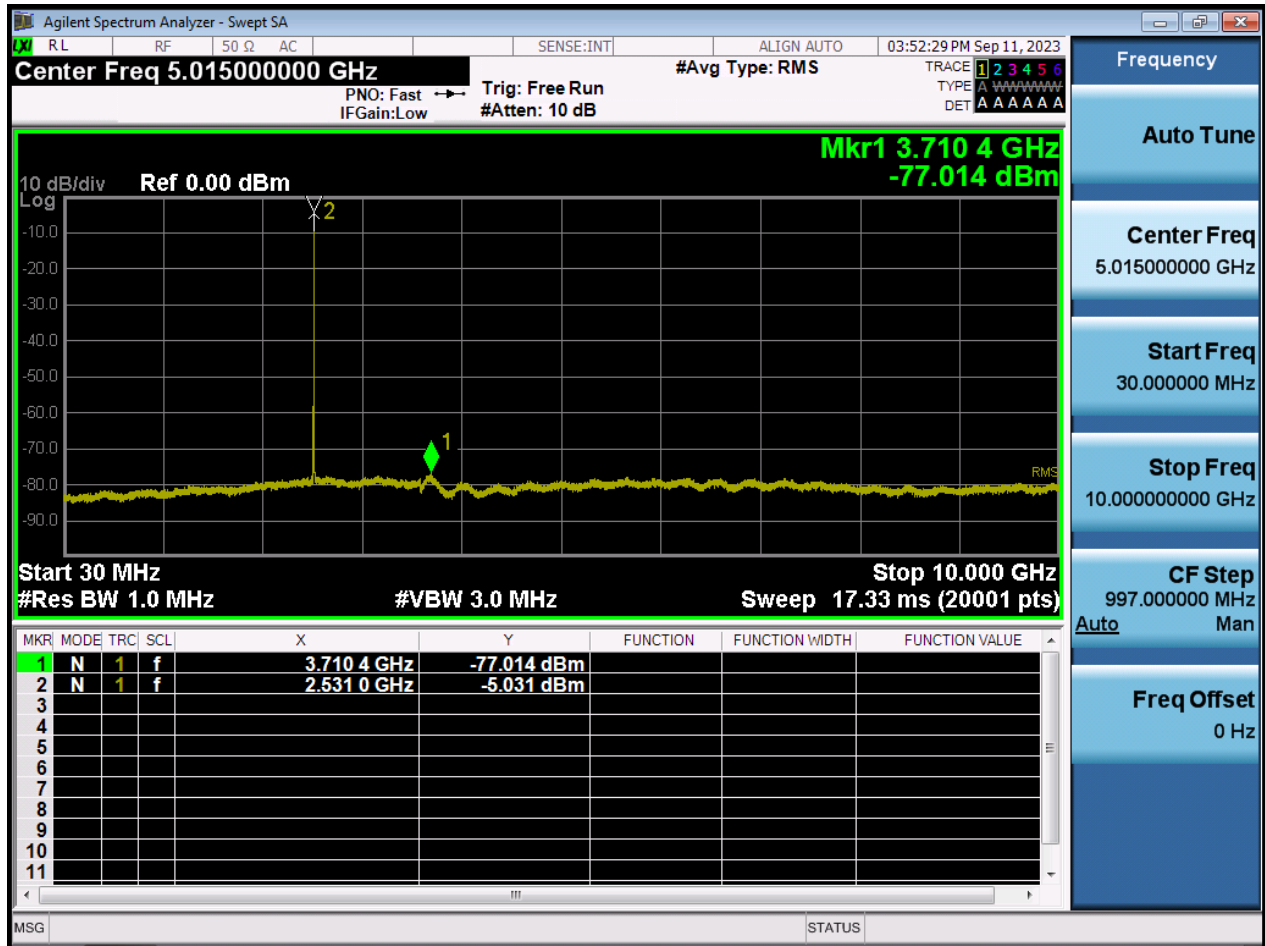
LTE7_5 M_CSE(30 M-10 G)_Highest Channel



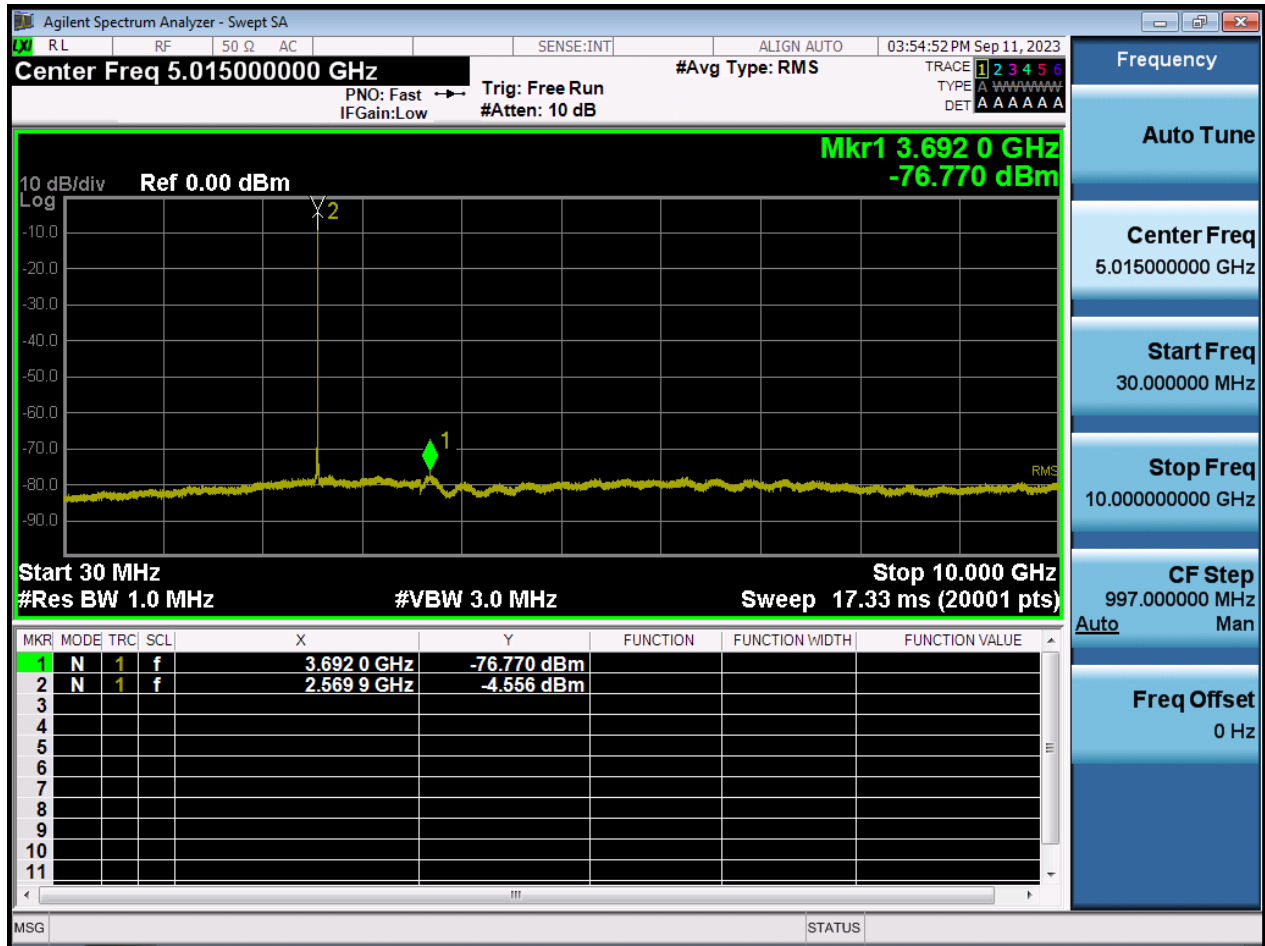
LTE7_10 M_CSE(30 M-10 G)_Lowest Channel



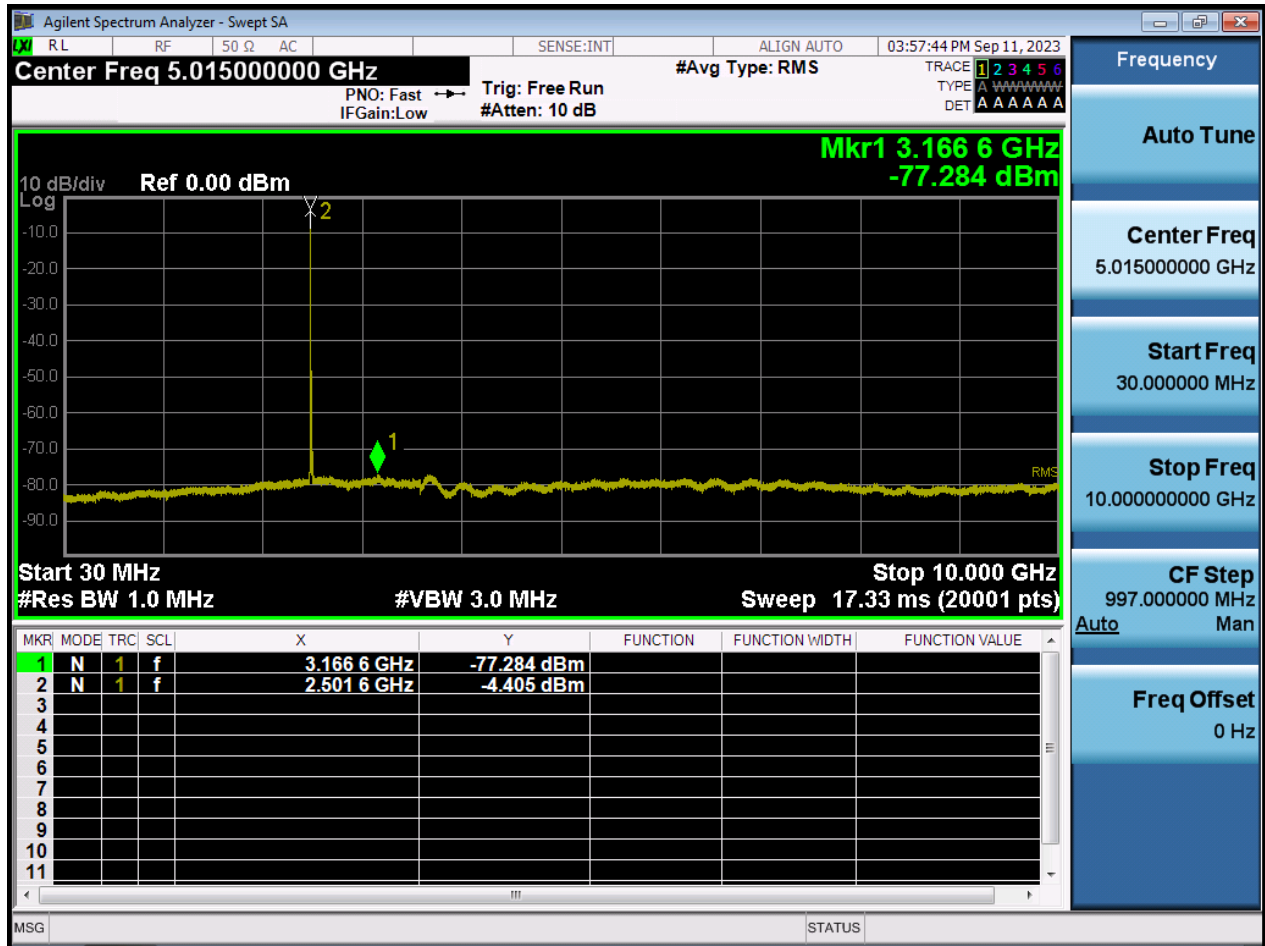
LTE7_10 M_CSE(30 M-10 G)_Mid Channel



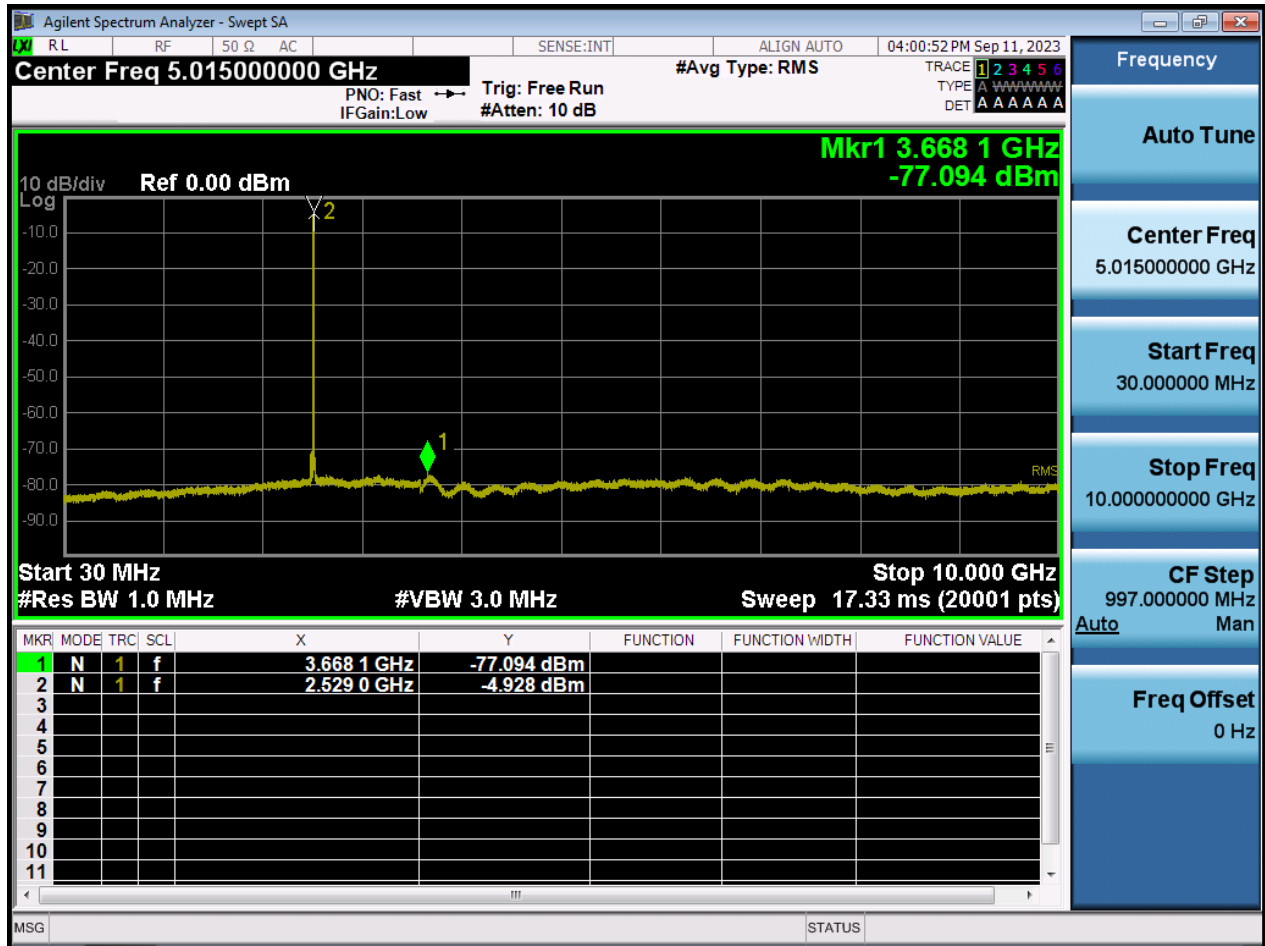
LTE7_10 M_CSE(30 M-10 G)_Highest Channel



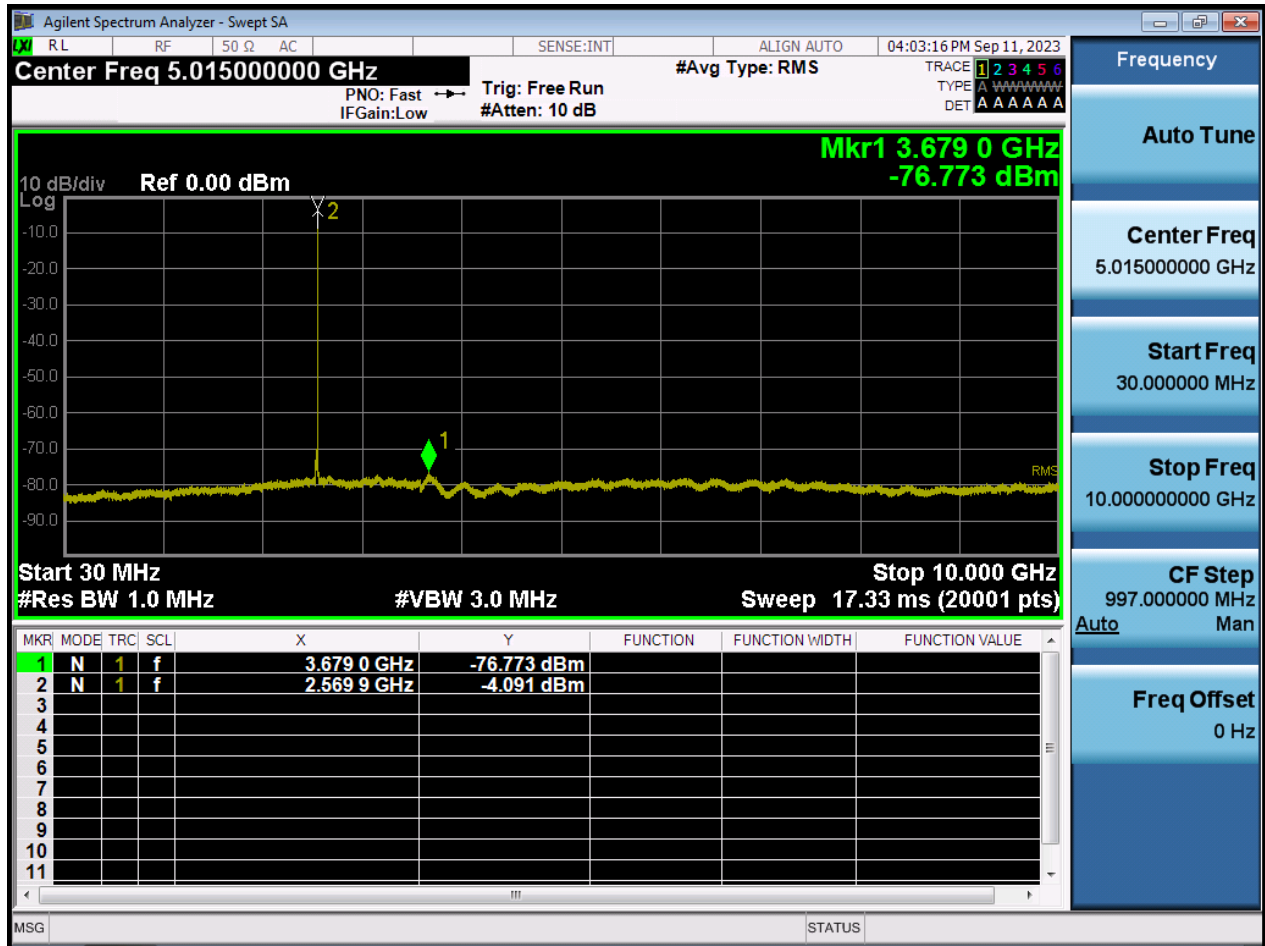
LTE7_15 M_CSE(30 M-10 G)_Lowest Channel



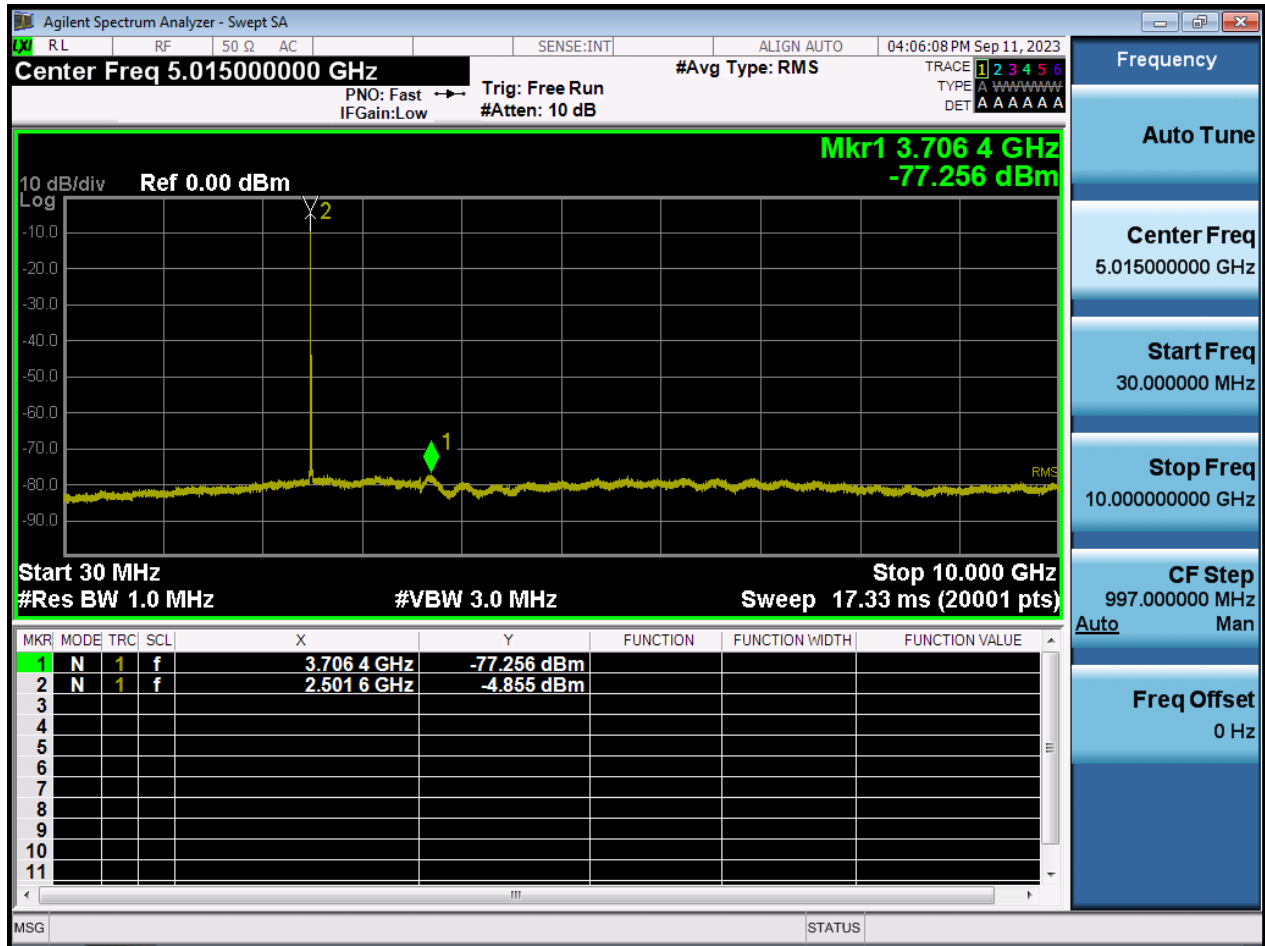
LTE7_15 M_CSE(30 M-10 G)_Mid Channel



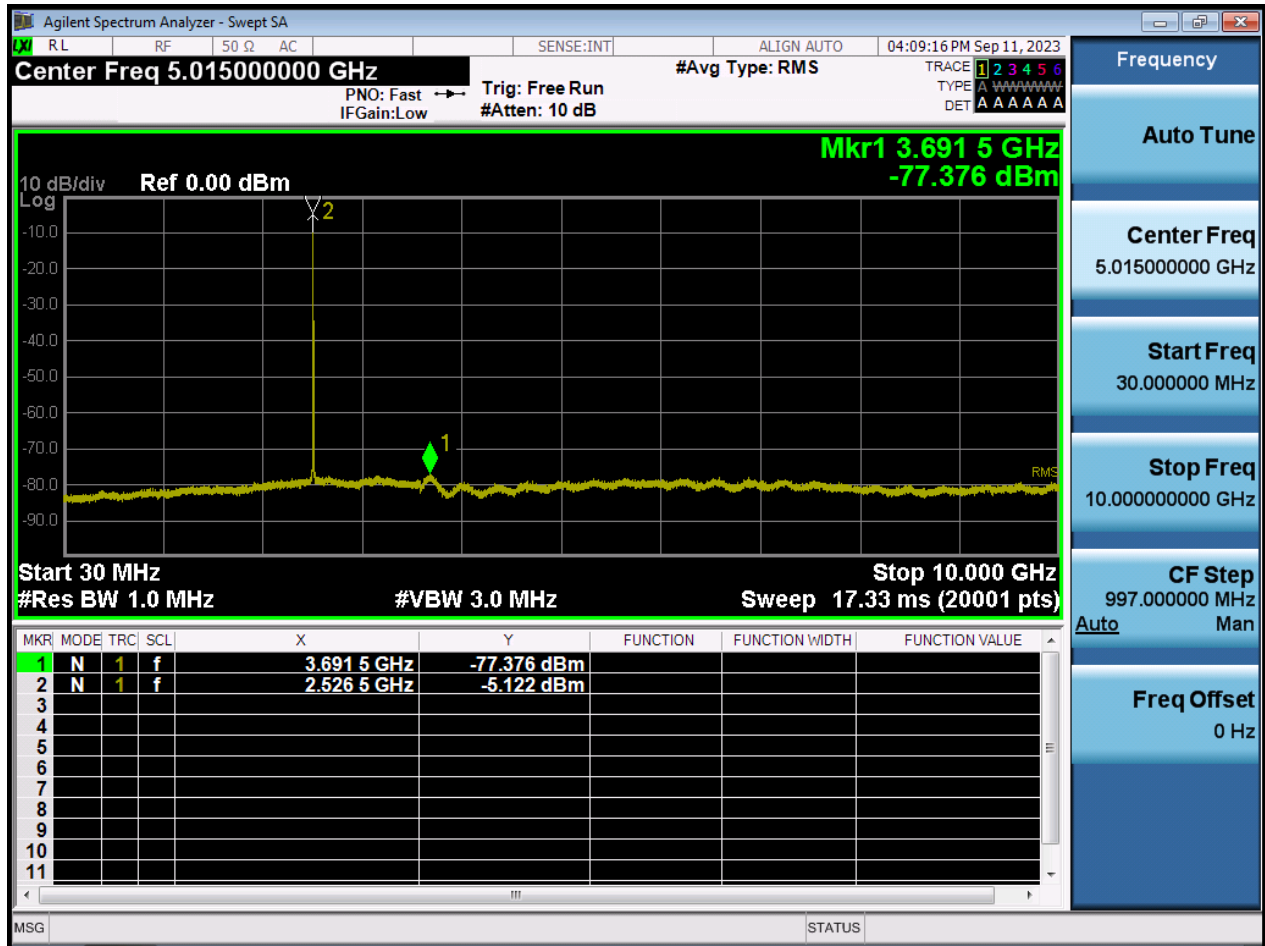
LTE7_15 M_CSE(30 M-10 G)_Highest Channel



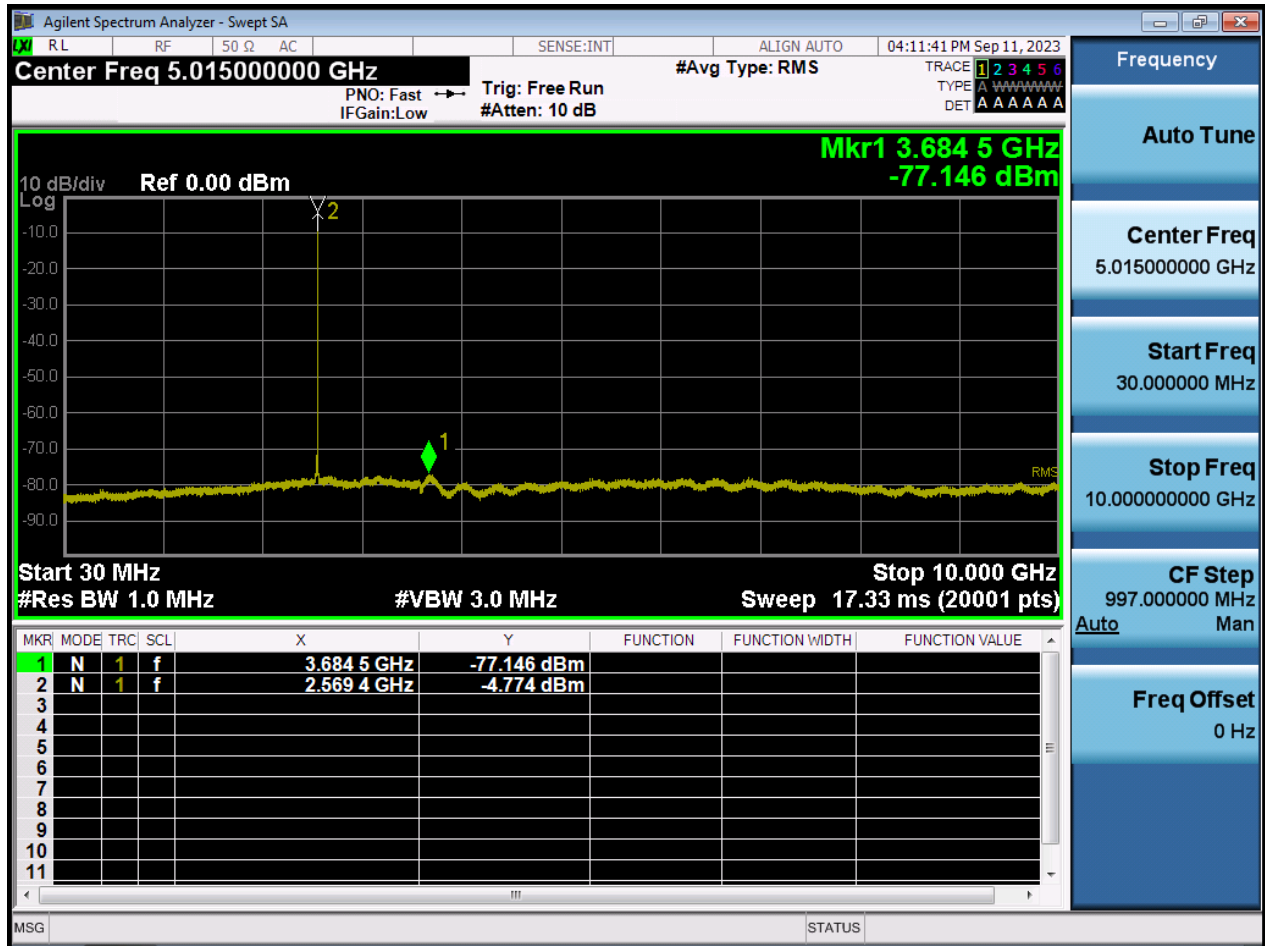
LTE7_20 M_CSE(30 M-10 G)_Lowest Channel



LTE7_20 M_CSE(30 M-10 G)_Mid Channel



LTE7_20 M_CSE(30 M-10 G)_Highest Channel



LTE7_5 M_CSE(10 G-26.5 G)_Lowest Channel



LTE7_5 M_CSE(10 G-26.5 G)_Mid Channel



LTE7_5 M_CSE(10 G-26.5 G)_Highest Channel



LTE7_10 M_CSE(10 G-26.5 G)_Lowest Channel



LTE7_10 M_CSE(10 G-26.5 G)_Mid Channel



LTE7_10 M_CSE(10 G-26.5 G)_Highest Channel



LTE7_15 M_CSE(10 G-26.5 G)_Lowest Channel



LTE7_15 M_CSE(10 G-26.5 G)_Mid Channel



LTE7_15 M_CSE(10 G-26.5 G)_Highest Channel



LTE7_20 M_CSE(10 G-26.5 G)_Lowest Channel



LTE7_20 M_CSE(10 G-26.5 G)_Mid Channel



LTE7_20 M_CSE(10 G-26.5 G)_Highest Channel



11. TEST PLOTS (Sub 2 Ant)

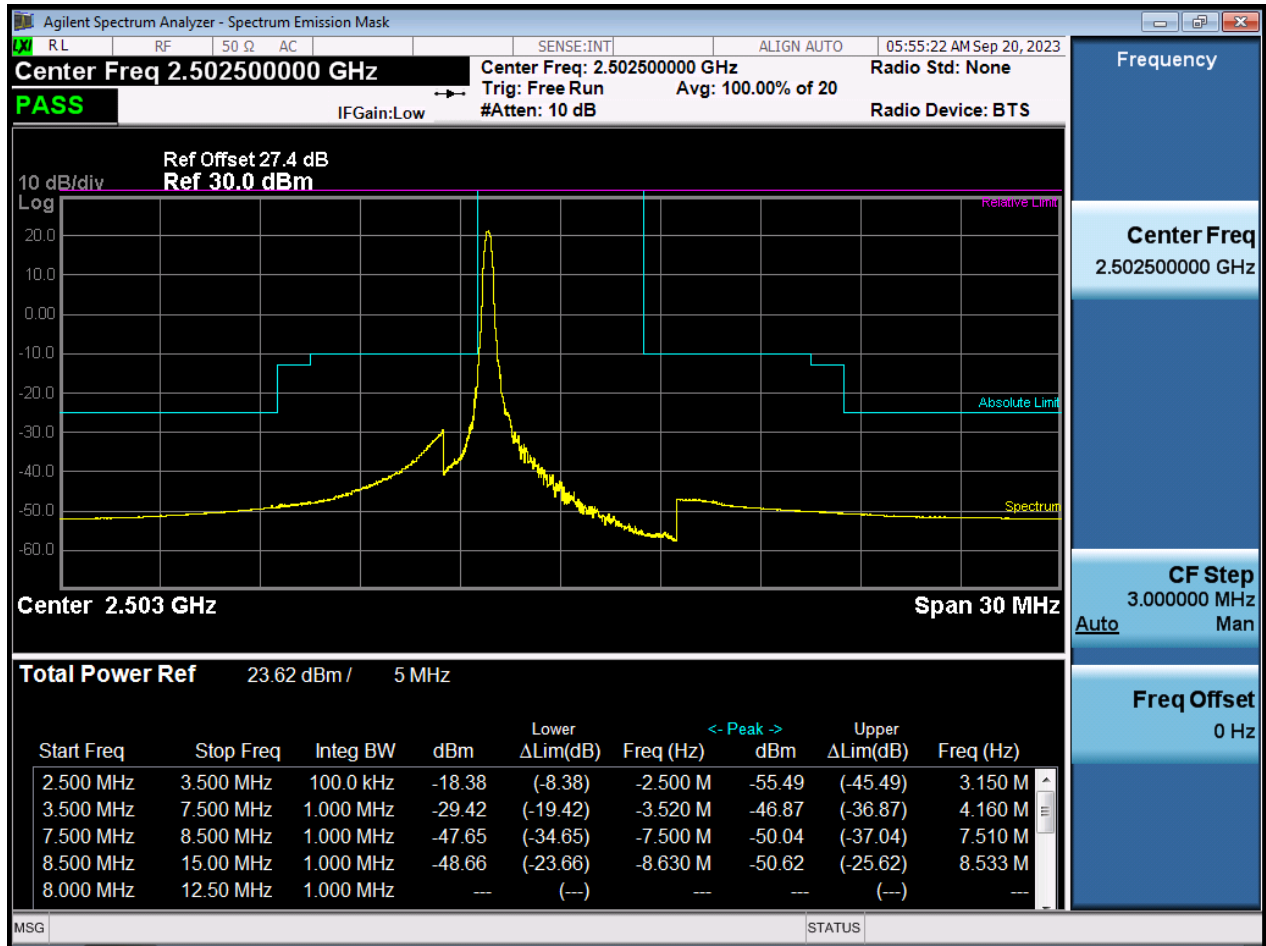
LTE7_5 M_BandEdge_Lower_Low_2502.5 MHz_QPSK_Full RB



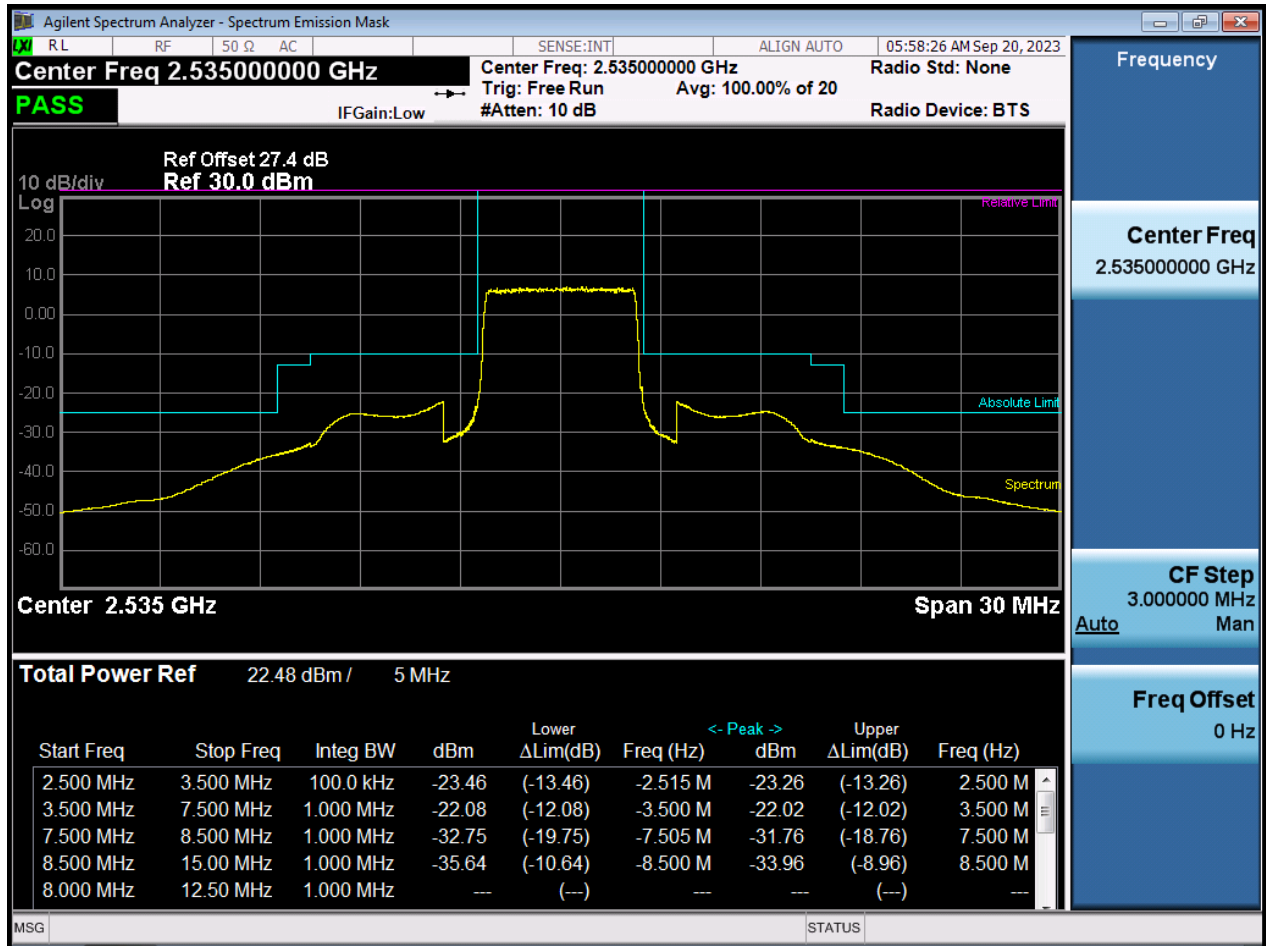
LTE7_5 M_BandEdge_Upper_Low_2502.5 MHz_QPSK_Full RB



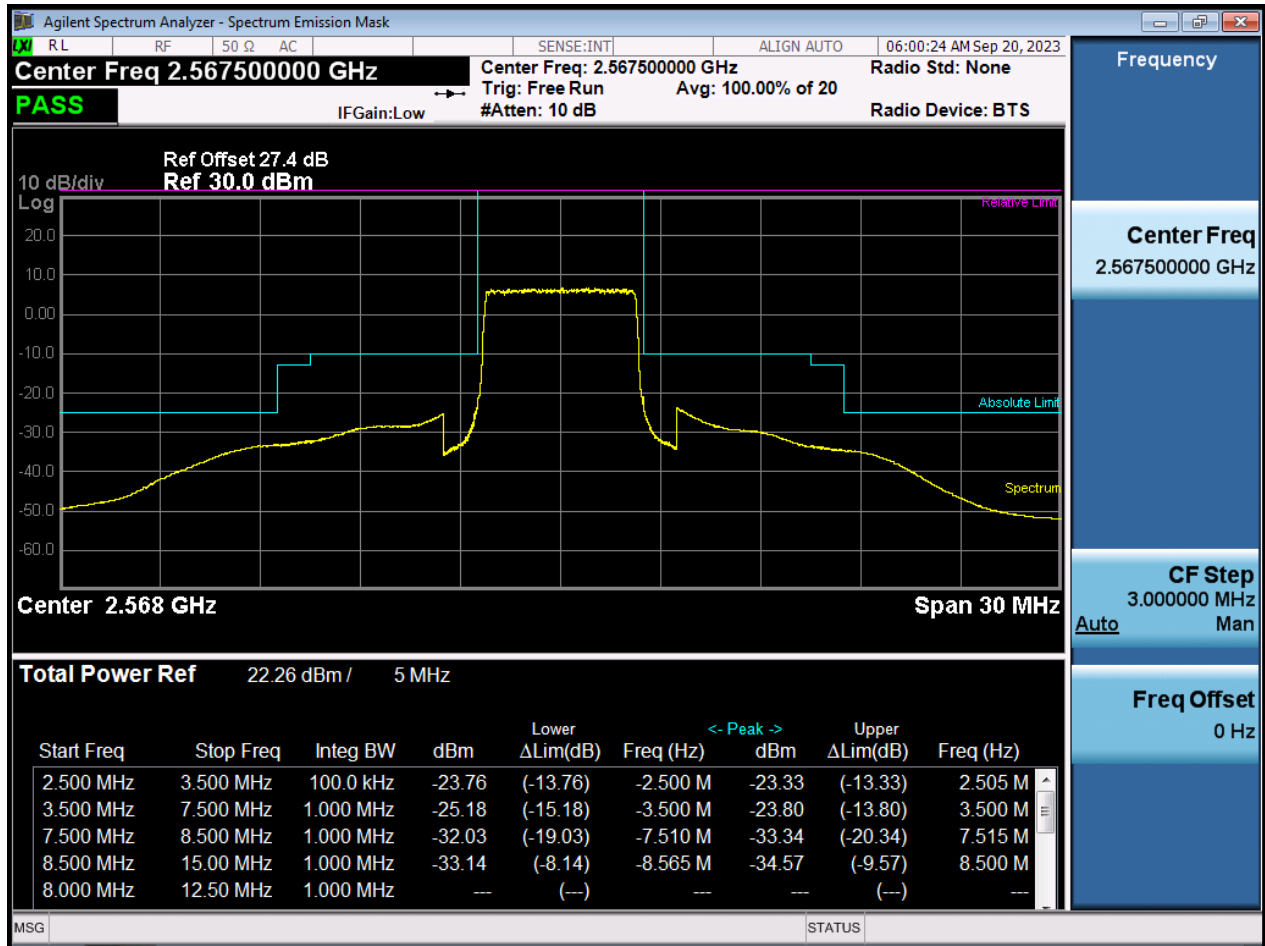
LTE7_5 M_BandEdge_Low_2502.5 MHz_QPSK_1RB



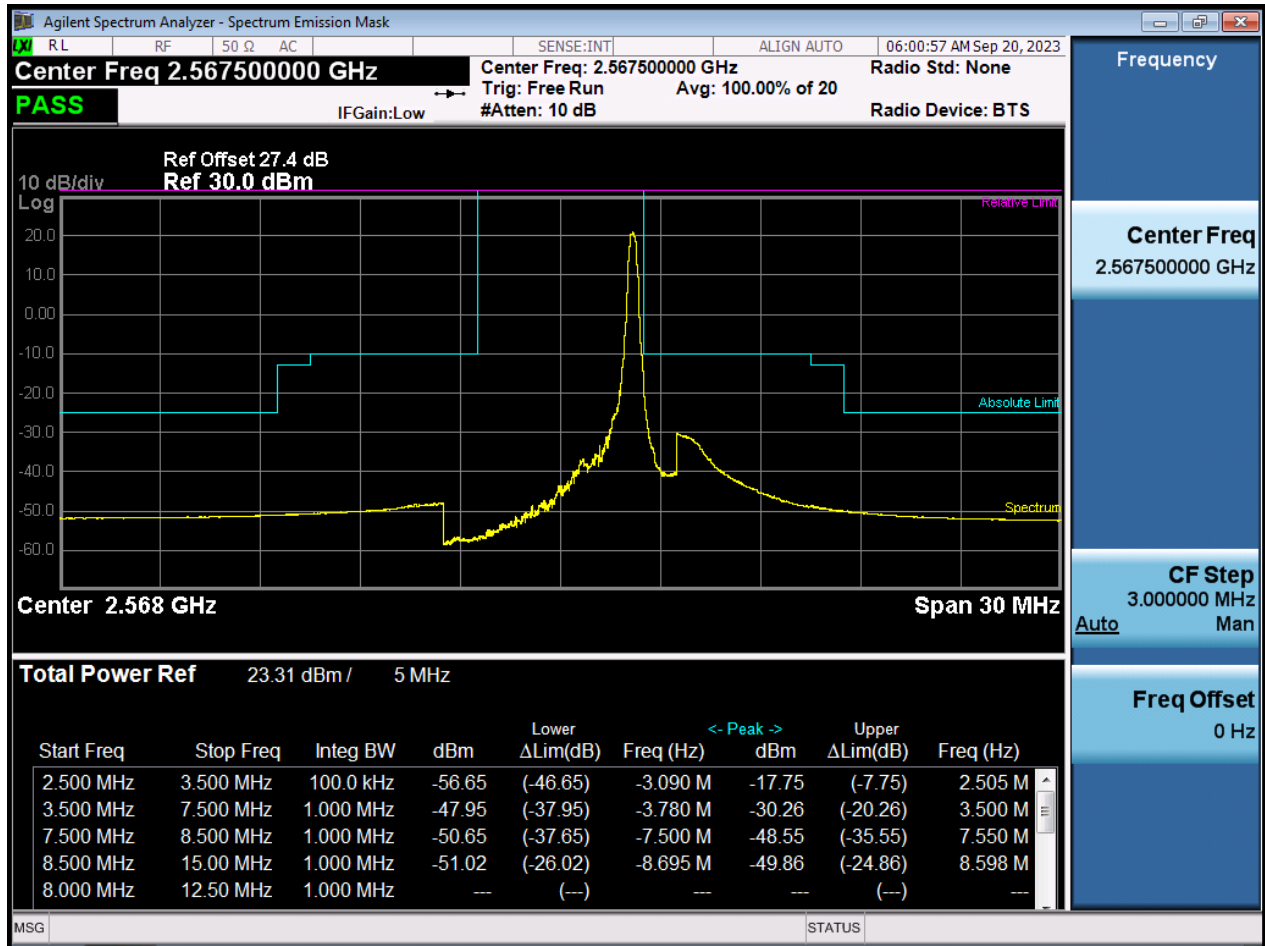
LTE7_5 M_BandEdge_Mid_2535 MHz_QPSK_Full RB



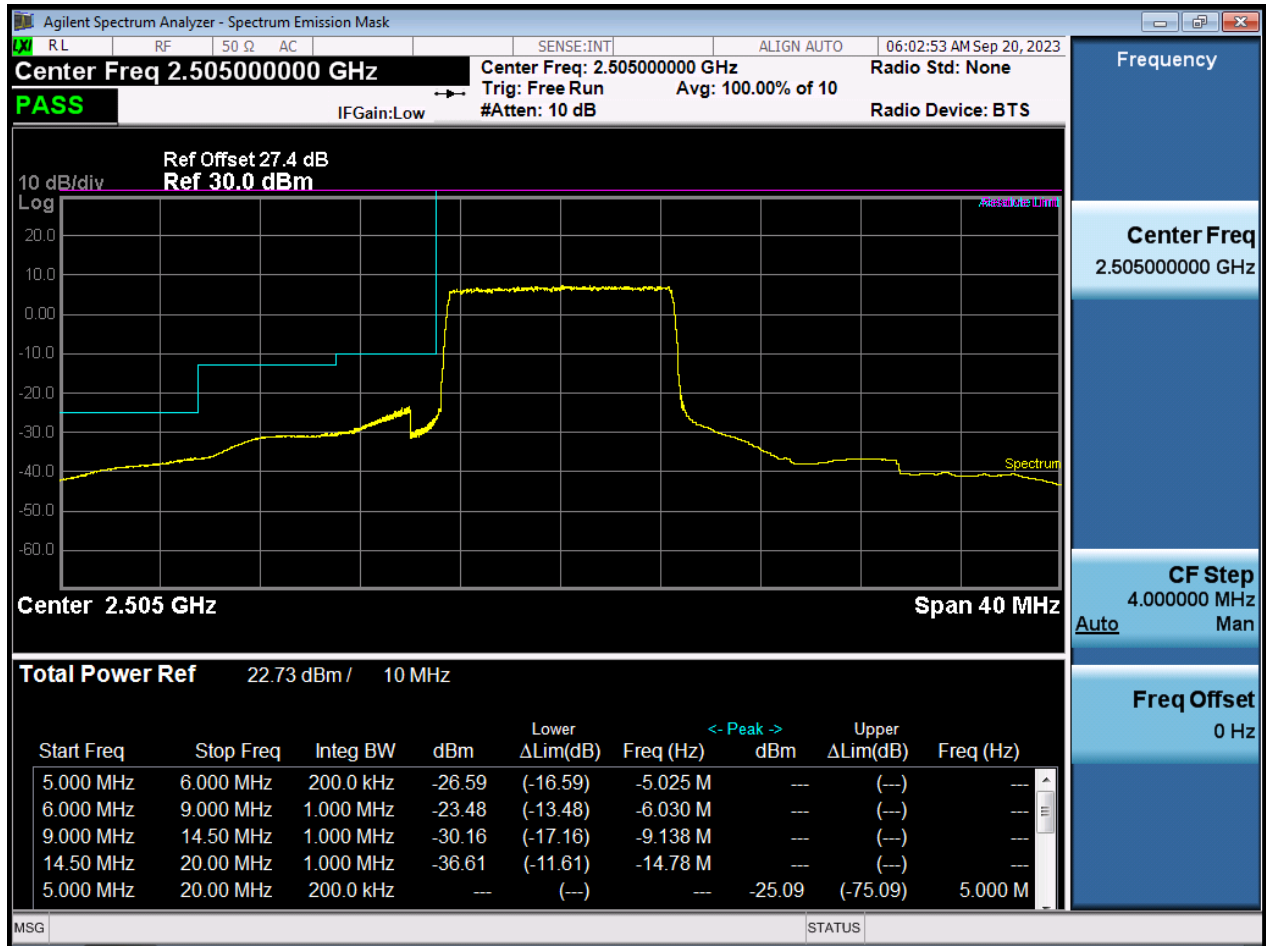
LTE7_5 M_BandEdge_High_2567.5 MHz_QPSK_Full RB



LTE7_5 M_BandEdge_High_2567.5 MHz_QPSK_1RB



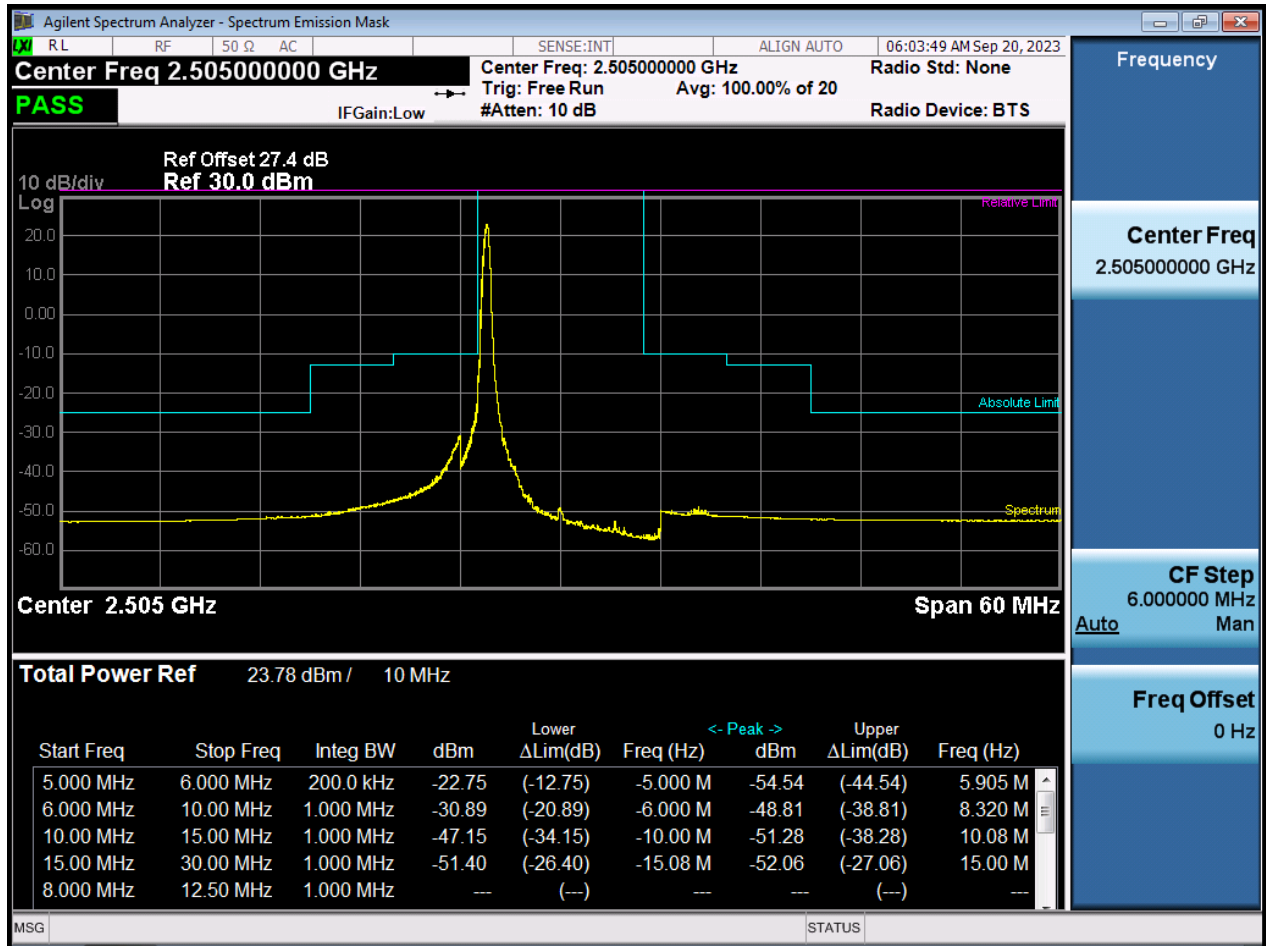
LTE7_10 M_BandEdge_Lower_Low_2505 MHz_QPSK_Full RB



LTE7_10 M_BandEdge_Upper_Low_2505 MHz_QPSK_Full RB



LTE7_10 M_BandEdge_Low_2505 MHz_QPSK_1RB



LTE7_10 M_BandEdge_Mid_2535 MHz_QPSK_Full RB

