

FCC LTE REPORT

Certification

Applicant Name:
 SAMSUNG Electronics Co., Ltd.

Date of Issue:
 May 09, 2023

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 Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

Report No.: HCT-RF-2305-FC008

FCC ID: A3LSMX818U

APPLICANT: SAMSUNG Electronics Co., Ltd.

Model(s): SM-X818U
 EUT Type: Tablet
 FCC Classification: PCS Licensed Transmitter (PCB)
 FCC Rule Part(s): §27, §2

Main 1 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	0.249	23.97
		4M52W7D	16QAM	0.213	23.29
		4M51W7D	64QAM	0.167	22.23
		4M51W7D	256QAM	0.081	19.06
LTE – Band 7 (10)	2505.0 – 2565.0	9M04G7D	QPSK	0.244	23.87
		9M00W7D	16QAM	0.207	23.15
		9M00W7D	64QAM	0.159	22.02
		9M02W7D	256QAM	0.077	18.88
LTE – Band 7 (15)	2507.5 – 2562.5	13M5G7D	QPSK	0.236	23.73
		13M5W7D	16QAM	0.192	22.83
		13M5W7D	64QAM	0.152	21.81
		13M5W7D	256QAM	0.076	18.79
LTE – Band 7 (20)	2510.0 – 2560.0	18M0G7D	QPSK	0.239	23.78
		18M0W7D	16QAM	0.196	22.92
		18M0W7D	64QAM	0.153	21.85
		17M9W7D	256QAM	0.076	18.83

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	4M51G7D	QPSK	0.072	18.60
		4M51W7D	16QAM	0.057	17.58
		4M51W7D	64QAM	0.047	16.69
		4M52W7D	256QAM	0.024	13.76
LTE – Band 7 (10)	2505.0 – 2565.0	9M01G7D	QPSK	0.070	18.48
		8M99W7D	16QAM	0.055	17.42
		9M00W7D	64QAM	0.045	16.56
		8M99W7D	256QAM	0.023	13.57
LTE – Band 7 (15)	2507.5 – 2562.5	13M5G7D	QPSK	0.073	18.66
		13M5W7D	16QAM	0.059	17.73
		13M5W7D	64QAM	0.050	16.97
		13M5W7D	256QAM	0.028	14.51
LTE – Band 7 (20)	2510.0 – 2560.0	18M0G7D	QPSK	0.080	19.02
		18M0W7D	16QAM	0.063	18.02
		18M0W7D	64QAM	0.052	17.19
		18M0W7D	256QAM	0.028	14.54

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-2305-FC008

REVIEWED BY



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

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

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

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

The above Test Report is the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2305-FC008	May 09, 2023	- First Approval Report

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

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MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMX818U
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§27, §2
EUT Type:	Tablet
Model(s):	SM-X818U
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:	March 13, 2023 ~ April 17, 2023
Serial number:	Radiated: R32W2003H3M Conducted: R32W2003JJD

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

The EUT was a Tablet with UMTS and LTE, Sub6.

It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80/160 MHz), WIFI 6E AIT, Keyboard, S-pen, mmWave.

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;

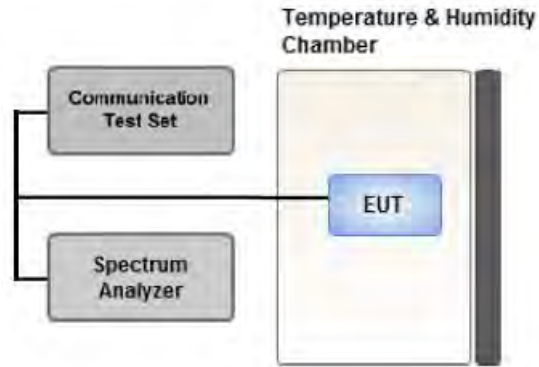
$$\text{Result}_{(dBm)} = P_g_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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.

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

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)

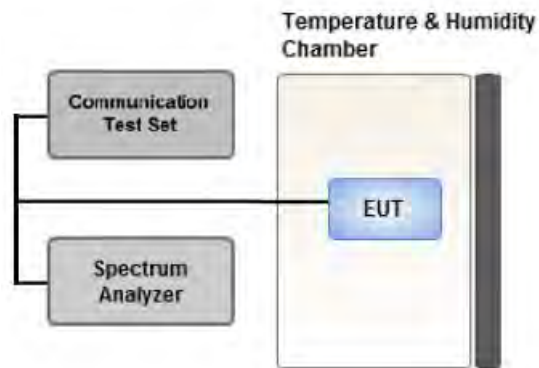
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW $\geq 3 \times$ RBW.

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.

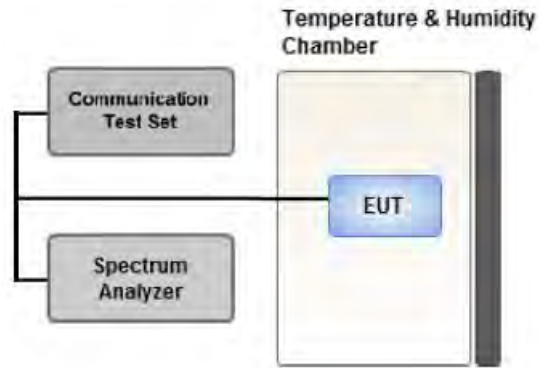
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

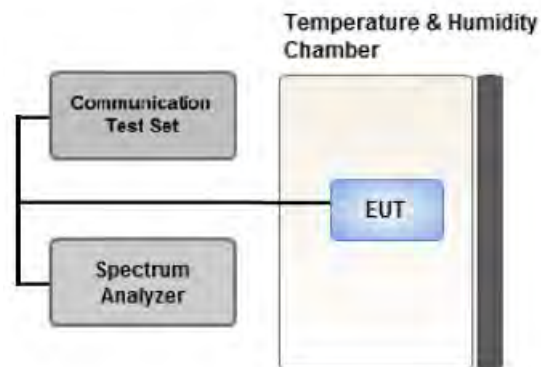
Test Overview

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

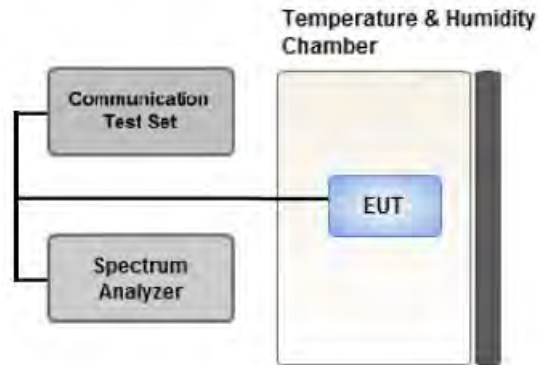
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. Within 1MHz of the channel edge the RBW should be 2% of EBW, then 1 MHz after that.
4. VBW > 3 x RBW
5.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

[Main 1 Ant Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset	Axis
Effective Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	5	Low, Mid	1	24	Z
			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	Z
			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	See Section 9.1		X
Radiated Spurious and Harmonic Emissions	QPSK	See Section 9.2		Z

3.10 WORST CASE(CONDUCTED TEST)

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

[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
H.P.F	FBSR-02B(WHK1.2/15 G-10EF)	T&M SYSTEM	-	01/19/2024	Annual
H.P.F	FBSR-02B(WHK3.3/18 G-10EF)	T&M SYSTEM	-	01/19/2024	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/19/2024	Annual
DC Power Supply	E3632A	Agilent	MY40010147	06/21/2023	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	08/30/2023	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/15/2023	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	08/29/2023	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2023	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	07/05/2023	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/30/2023	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

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

5. MEASUREMENT UNCERTAINTY

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

Parameter	Expanded Uncertainty (\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)	5.82 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.74 (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 1 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	-21.45	15.24	10.70	2.47	V	< 2.00	0.223	23.47
		16-QAM	-22.16	14.53	10.70	2.47	V		0.189	22.76
		64-QAM	-23.26	13.43	10.70	2.47	V		0.147	21.66
		256-QAM	-26.39	10.30	10.70	2.47	V		0.071	18.53
2535.0		QPSK	-20.65	15.80	10.70	2.53	V		0.249	23.97
		16-QAM	-21.33	15.12	10.70	2.53	V		0.213	23.29
		64-QAM	-22.39	14.06	10.70	2.53	V		0.167	22.23
		256-QAM	-25.56	10.89	10.70	2.53	V		0.081	19.06
2567.5		QPSK	-21.18	15.47	10.66	2.60	V		0.225	23.53
		16-QAM	-21.92	14.73	10.66	2.60	V		0.190	22.79
		64-QAM	-22.95	13.70	10.66	2.60	V		0.150	21.76
		256-QAM	-26.09	10.56	10.66	2.60	V		0.073	18.62

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	-21.31	15.38	10.70	2.48	V	< 2.00	0.229	23.60
		16-QAM	-22.02	14.67	10.70	2.48	V		0.195	22.89
		64-QAM	-23.13	13.56	10.70	2.48	V		0.151	21.78
		256-QAM	-26.23	10.46	10.70	2.48	V		0.074	18.68
2535.0		QPSK	-20.75	15.70	10.70	2.53	V		0.244	23.87
		16-QAM	-21.47	14.98	10.70	2.53	V		0.207	23.15
		64-QAM	-22.60	13.85	10.70	2.53	V		0.159	22.02
		256-QAM	-25.74	10.71	10.70	2.53	V		0.077	18.88
2565.0		QPSK	-21.11	15.52	10.67	2.60	V		0.229	23.59
		16-QAM	-21.84	14.79	10.67	2.60	V		0.193	22.86
		64-QAM	-22.92	13.71	10.67	2.60	V		0.151	21.78
		256-QAM	-26.06	10.57	10.67	2.60	V		0.073	18.64

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	-21.49	15.20	10.70	2.49	V	< 2.00	0.219	23.41
		16-QAM	-22.33	14.36	10.70	2.49	V		0.181	22.57
		64-QAM	-23.37	13.32	10.70	2.49	V		0.142	21.53
		256-QAM	-26.37	10.32	10.70	2.49	V		0.071	18.53
2535.0		QPSK	-20.89	15.56	10.70	2.53	V		0.236	23.73
		16-QAM	-21.79	14.66	10.70	2.53	V		0.192	22.83
		64-QAM	-22.81	13.64	10.70	2.53	V		0.152	21.81
		256-QAM	-25.83	10.62	10.70	2.53	V		0.076	18.79
2562.5		QPSK	-21.27	15.34	10.68	2.59	V		0.220	23.43
		16-QAM	-22.12	14.49	10.68	2.59	V		0.181	22.58
		64-QAM	-23.17	13.44	10.68	2.59	V		0.142	21.53
		256-QAM	-26.23	10.38	10.68	2.59	V		0.070	18.47

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	-21.34	15.35	10.70	2.49	V	< 2.00	0.227	23.56
		16-QAM	-22.18	14.51	10.70	2.49	V		0.187	22.72
		64-QAM	-23.28	13.41	10.70	2.49	V		0.145	21.62
		256-QAM	-26.28	10.41	10.70	2.49	V		0.073	18.62
2535.0		QPSK	-20.93	15.52	10.70	2.53	V		0.234	23.69
		16-QAM	-21.79	14.66	10.70	2.53	V		0.192	22.83
		64-QAM	-22.85	13.60	10.70	2.53	V		0.150	21.77
		256-QAM	-25.87	10.58	10.70	2.53	V		0.075	18.75
2560.0		QPSK	-20.92	15.69	10.68	2.59	V		0.239	23.78
		16-QAM	-21.78	14.83	10.68	2.59	V		0.196	22.92
		64-QAM	-22.85	13.76	10.68	2.59	V		0.153	21.85
		256-QAM	-25.87	10.74	10.68	2.59	V		0.076	18.83

8.2 RADIATED SPURIOUS EMISSIONS

- ▣ OPERATING FREQUENCY : 2535.0 MHz
- ▣ MEASURED OUTPUT POWER: 23.97 dBm = 0.249 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 5 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 48.97 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	-54.88	12.59	-65.05	3.79	H	-56.24	80.22
	7 507.50	-51.51	10.82	-51.19	4.61	H	-44.98	68.95
	10 010.00	-58.99	11.22	-55.18	5.49	H	-49.45	73.42
21100 (2535.0)	5 070.00	-55.29	12.38	-63.07	3.62	H	-54.31	78.28
	7 605.00	-52.94	11.12	-53.04	4.64	V	-46.56	70.53
	10 140.00	-58.70	11.40	-54.64	5.41	V	-48.65	72.63
21425 (2567.5)	5 135.00	-54.88	12.27	-62.44	3.73	H	-53.89	77.86
	7 702.50	-51.49	11.40	-51.84	4.70	V	-45.14	69.12
	10 270.00	-57.20	11.50	-51.78	5.78	H	-46.06	70.03

- ▣ OPERATING FREQUENCY : 2535.0 MHz
- ▣ MEASURED OUTPUT POWER: 23.87 dBm = 0.244 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 10 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 48.87 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	-55.14	12.58	-65.48	3.76	H	-56.66	80.53
	7 515.00	-51.44	10.83	-51.24	4.61	H	-45.02	68.89
	10 020.00	-59.85	11.24	-56.03	5.43	V	-50.22	74.09
21100 (2535.0)	5 070.00	-55.50	12.38	-63.28	3.62	V	-54.52	78.39
	7 605.00	-53.97	11.12	-54.07	4.64	V	-47.59	71.46
	10 140.00	-59.08	11.40	-55.02	5.41	V	-49.03	72.91
21400 (2565.0)	5 130.00	-55.82	12.26	-63.28	3.74	V	-54.76	78.63
	7 695.00	-52.48	11.40	-52.83	4.70	V	-46.13	70.01
	10 260.00	-59.01	11.50	-53.35	5.68	V	-47.53	71.40

- ▣ OPERATING FREQUENCY : 2535.0 MHz
- ▣ MEASURED OUTPUT POWER: 23.73 dBm = 0.236 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 15 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 48.73 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	-55.50	12.57	-65.83	3.74	V	-57.00	80.73
	7 522.50	-52.96	10.84	-52.88	4.61	V	-46.65	70.38
	10 030.00	-58.78	11.26	-54.76	5.38	H	-48.88	72.61
21100 (2535.0)	5 070.00	-55.75	12.38	-63.53	3.62	V	-54.77	78.50
	7 605.00	-52.90	11.12	-53.00	4.64	H	-46.52	70.25
	10 140.00	-57.53	11.40	-53.47	5.41	H	-47.48	71.22
21375 (2562.5)	5 125.00	-56.09	12.25	-63.59	3.77	V	-55.11	78.84
	7 687.50	-53.38	11.38	-53.47	4.67	H	-46.76	70.49
	10 250.00	-59.34	11.50	-53.59	5.56	V	-47.65	71.38

- ▣ OPERATING FREQUENCY : 2535.0 MHz
- ▣ MEASURED OUTPUT POWER: 23.78 dBm = 0.239 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 20 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 48.78 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	-55.60	12.56	-65.92	3.72	V	-57.08	80.86
	7 530.00	-52.07	10.86	-52.01	4.61	H	-45.76	69.54
	10 040.00	-59.40	11.28	-54.89	5.37	V	-48.98	72.76
21100 (2535.0)	5 070.00	-56.56	12.38	-64.34	3.62	V	-55.58	79.36
	7 605.00	-51.48	11.12	-51.58	4.64	V	-45.10	68.88
	10 140.00	-60.26	11.40	-56.20	5.41	H	-50.21	73.99
21350 (2560.0)	5 120.00	-55.70	12.24	-63.25	3.79	V	-54.80	78.58
	7 680.00	-53.53	11.36	-53.67	4.66	H	-46.97	70.75
	10 240.00	-58.54	11.50	-53.13	5.49	V	-47.12	70.90

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	5.36
			16-QAM	25	0	6.16
			64-QAM	25	0	6.53
			256-QAM	25	0	6.76
	10 MHz		QPSK	50	0	5.42
			16-QAM	50	0	6.16
			64-QAM	50	0	6.50
			256-QAM	50	0	6.73
	15 MHz		QPSK	75	0	5.37
			16-QAM	75	0	6.14
			64-QAM	75	0	6.49
			256-QAM	75	0	6.72
	20 MHz		QPSK	100	0	5.33
			16-QAM	100	0	6.14
			64-QAM	100	0	6.49
			256-QAM	100	0	6.71

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	4.5149
			16-QAM	25		4.5237
			64-QAM	25		4.5144
			256-QAM	25		4.5081
	10 MHz		QPSK	50		9.0420
			16-QAM	50		8.9980
			64-QAM	50		8.9994
			256-QAM	50		9.0179
	15 MHz		QPSK	75		13.527
			16-QAM	75		13.481
			64-QAM	75		13.467
			256-QAM	75		13.481
	20 MHz		QPSK	100		17.972
			16-QAM	100		17.990
			64-QAM	100		17.945
			256-QAM	100		17.940

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	26.1666	30.131	-76.655	-46.524	-25.00
		2535.0	26.1126	30.131	-76.425	-46.294	
		2567.5	26.1283	30.131	-76.655	-46.524	
	10	2505.0	26.1479	30.131	-76.566	-46.435	
		2535.0	26.1151	30.131	-76.568	-46.437	
		2565.0	26.1440	30.131	-75.933	-45.802	
	15	2507.5	26.1440	30.131	-76.576	-46.445	
		2535.0	26.1347	30.131	-76.414	-46.283	
		2562.5	26.1177	30.131	-76.315	-46.184	
	20	2510.0	26.1606	30.131	-76.495	-46.364	
		2535.0	26.1415	30.131	-76.666	-46.535	
		2560.0	26.1338	30.131	-76.402	-46.271	

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	-23.75	-23.45	-25.06	-24.30	-32.12	-34.21	-45.32	-35.62
10 MHz	2505.0	50 / 0	-27.89	-26.89	-26.88	-26.04	-29.44	-29.24	-38.05	-35.28
15 MHz	2507.5	75 / 0	-29.77	-28.97	-29.21	-27.86	-31.51	-30.61	-35.81	-38.46
20 MHz	2510.0	100 / 0	-31.11	-30.02	-30.43	-29.24	-32.44	-31.49	-35.91	-40.76
Limit			-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	-22.97	-23.27	-24.09	-24.14
	2567.5	25 / 0	-23.71	-23.82	-24.16	-24.53
10 MHz (QPSK)	2535.0	50 / 0	-26.98	-26.92	-25.13	-25.47
	2565.0	50 / 0	-27.81	-27.57	-26.16	-26.41
15 MHz (QPSK)	2535.0	75 / 0	-29.12	-29.05	-27.68	-27.76
	2562.5	75 / 0	-29.86	-30.07	-29.24	-29.34
20 MHz (QPSK)	2535.0	100 / 0	-30.06	-30.11	-29.29	-29.42
	2560.0	100 / 0	-30.80	-31.11	-30.23	-30.86
Limit			-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	-34.38	-34.19	-36.30	-36.37
	2567.5	25 / 0	-33.06	-34.78	-35.88	-38.02
10 MHz (QPSK)	2535.0	50 / 0	-29.12	-29.25	-36.12	-35.48
	2565.0	50 / 0	-29.77	-30.86	-35.70	-36.32
15 MHz (QPSK)	2535.0	75 / 0	-30.47	-30.67	-39.53	-39.09
	2562.5	75 / 0	-31.86	-32.74	-40.05	-42.11
20 MHz (QPSK)	2535.0	100 / 0	-31.25	-31.72	-41.53	-40.63
	2560.0	100 / 0	-32.00	-33.53	-41.68	-49.96
Limit			-13.0		-25.0	

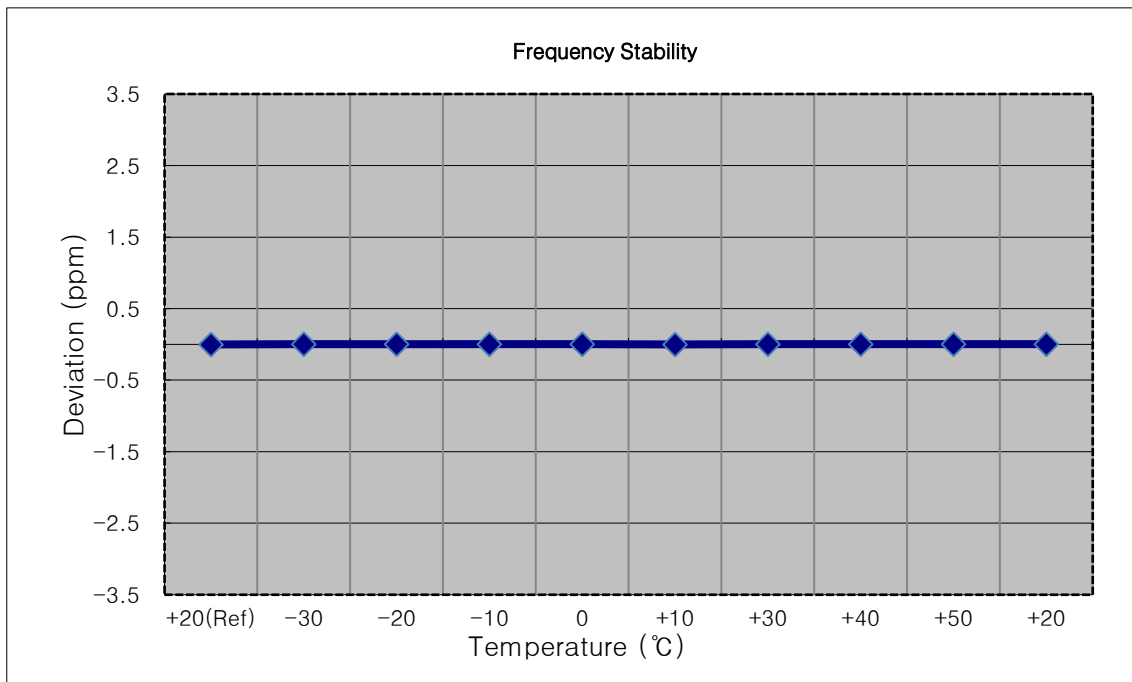
Note:

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

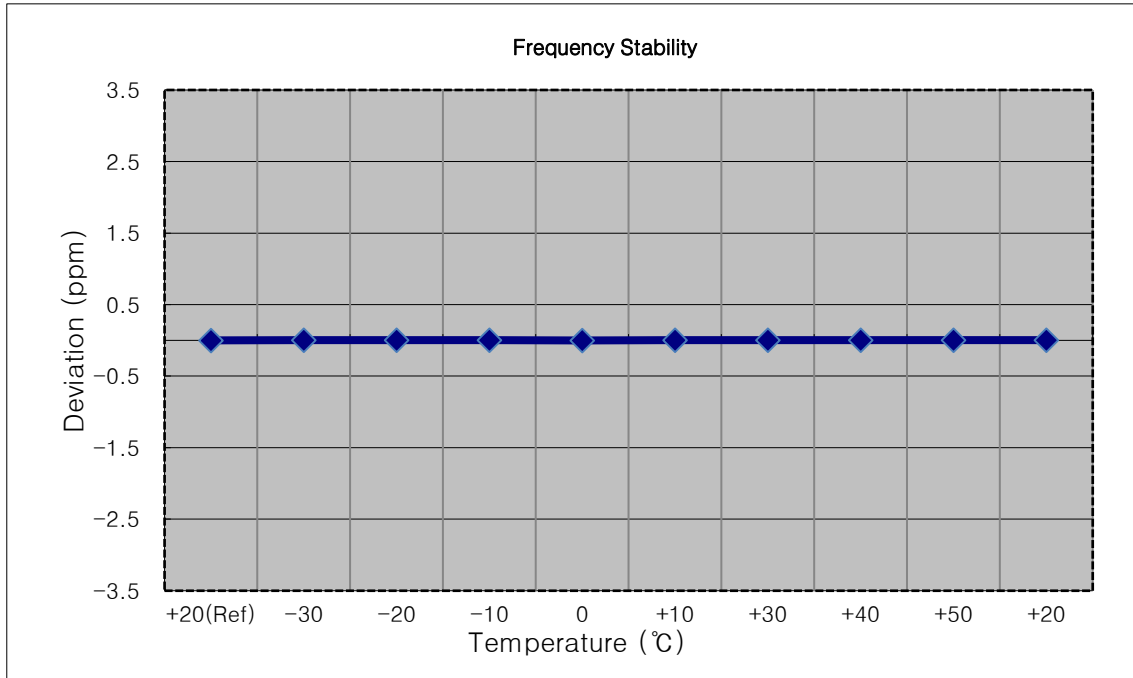
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,502,500,000 Hz
- ▣ CHANNEL: 20775 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2502 500 009	0.0	0.000 000	0.000
100 %		-30	2502 500 014	4.4	0.000 000	0.002
100 %		-20	2502 500 015	6.2	0.000 000	0.002
100 %		-10	2502 500 012	2.8	0.000 000	0.001
100 %		0	2502 500 015	5.9	0.000 000	0.002
100 %		+10	2502 500 007	-2.2	0.000 000	-0.001
100 %		+30	2502 500 014	5.1	0.000 000	0.002
100 %		+40	2502 500 015	5.7	0.000 000	0.002
100 %		+50	2502 500 015	5.3	0.000 000	0.002
Batt. Endpoint		3.400	+20	2502 500 013	4.1	0.000 000



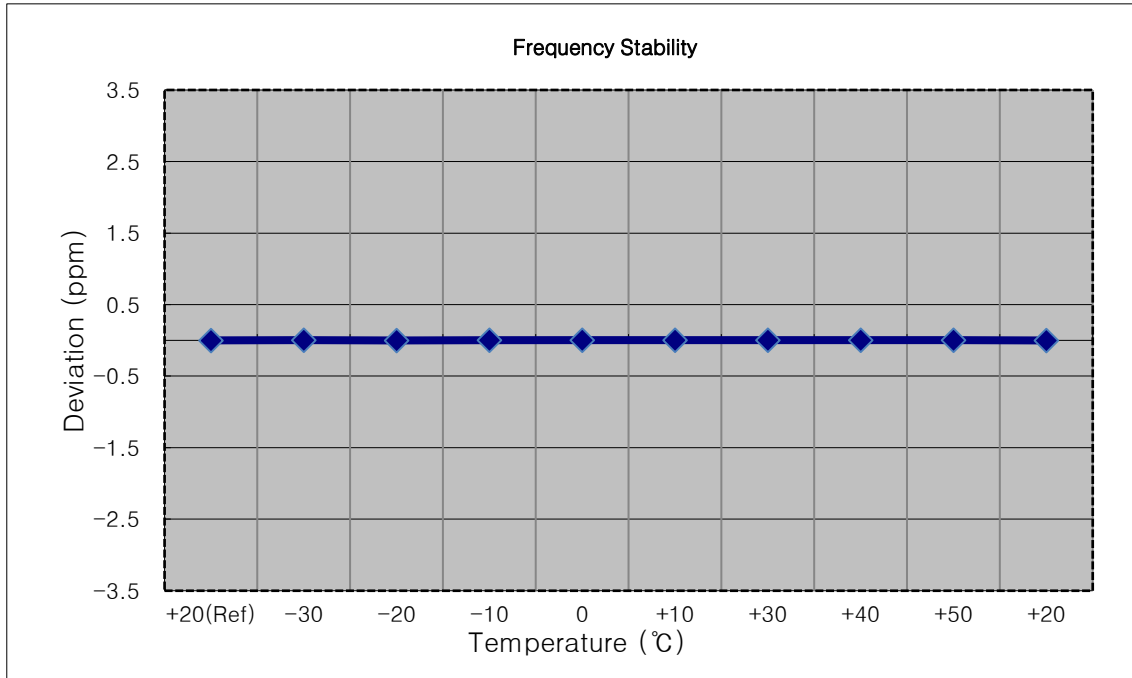
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,505,000,000 Hz
- ▣ CHANNEL: 20800 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2505 000 005	0.0	0.000 000	0.000
100 %		-30	2505 000 012	7.6	0.000 000	0.003
100 %		-20	2505 000 012	7.1	0.000 000	0.003
100 %		-10	2505 000 008	3.2	0.000 000	0.001
100 %		0	2505 000 007	2.3	0.000 000	0.001
100 %		+10	2505 000 009	4.6	0.000 000	0.002
100 %		+30	2505 000 011	6.1	0.000 000	0.002
100 %		+40	2505 000 013	8.1	0.000 000	0.003
100 %		+50	2505 000 014	9.1	0.000 000	0.004
Batt. Endpoint	3.400	+20	2505 000 012	7.3	0.000 000	0.003



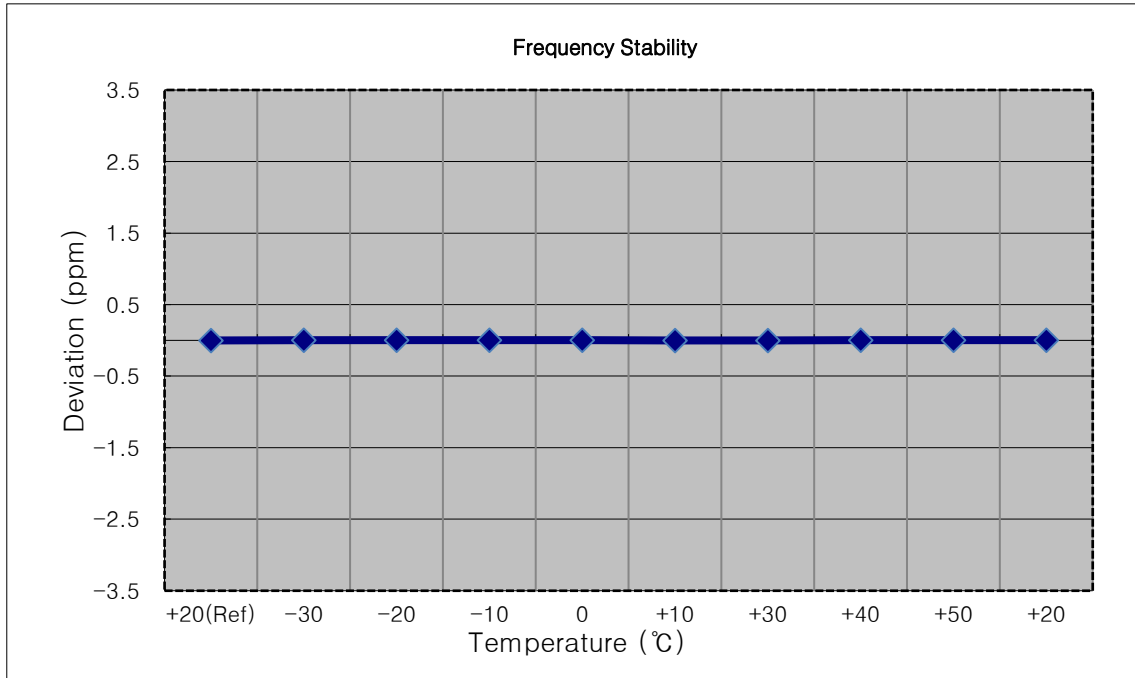
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,507,500,000 Hz
- ▣ CHANNEL: 20825 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2507 500 005	0.0	0.000 000	0.000
100 %		-30	2507 500 010	5.0	0.000 000	0.002
100 %		-20	2507 500 008	2.5	0.000 000	0.001
100 %		-10	2507 500 012	6.4	0.000 000	0.003
100 %		0	2507 500 009	3.6	0.000 000	0.001
100 %		+10	2507 500 009	4.0	0.000 000	0.002
100 %		+30	2507 500 009	3.5	0.000 000	0.001
100 %		+40	2507 500 008	2.9	0.000 000	0.001
100 %		+50	2507 500 011	5.5	0.000 000	0.002
Batt. Endpoint	3.400	+20	2507 500 007	1.3	0.000 000	0.001



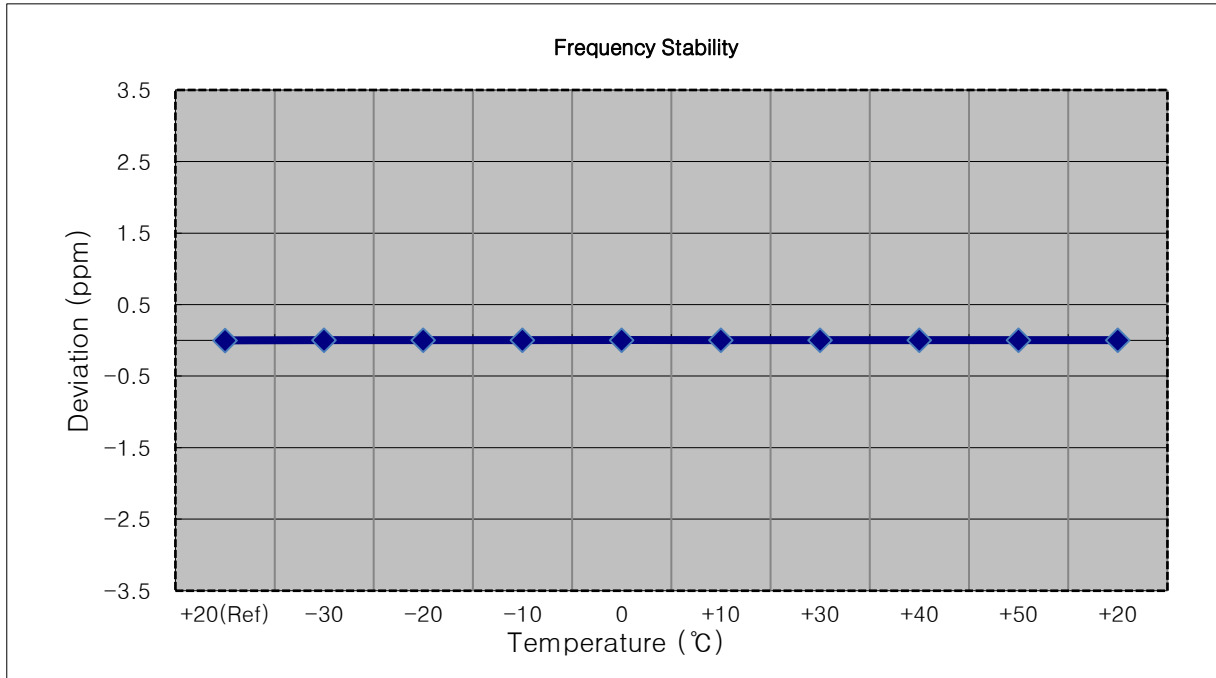
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,510,000,000 Hz
- ▣ CHANNEL: 20850 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2510 000 006	0.0	0.000 000	0.000
100 %		-30	2510 000 013	6.5	0.000 000	0.003
100 %		-20	2510 000 011	5.3	0.000 000	0.002
100 %		-10	2510 000 009	3.2	0.000 000	0.001
100 %		0	2510 000 012	6.1	0.000 000	0.002
100 %		+10	2510 000 008	2.3	0.000 000	0.001
100 %		+30	2510 000 004	-2.2	0.000 000	-0.001
100 %		+40	2510 000 010	4.3	0.000 000	0.002
100 %		+50	2510 000 012	6.2	0.000 000	0.002
Batt. Endpoint	3.400	+20	2510 000 010	4.1	0.000 000	0.002



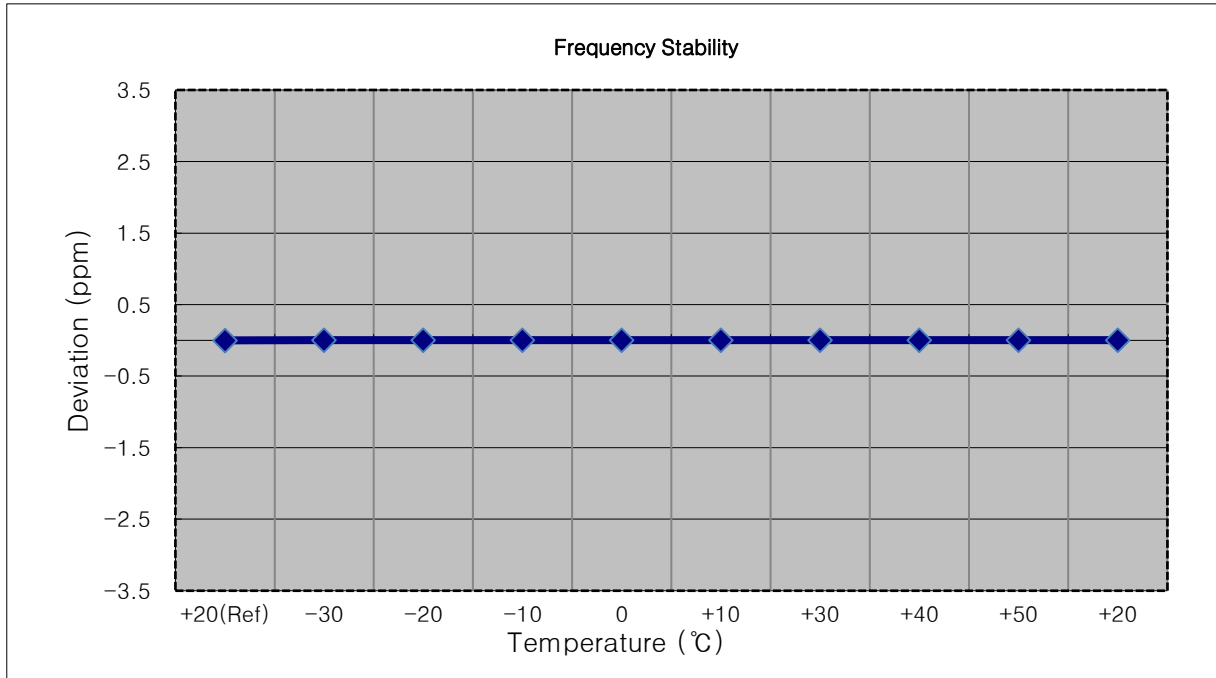
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 010	0.0	0.000 000	0.000
100 %		-30	2535 000 019	8.7	0.000 000	0.003
100 %		-20	2535 000 021	10.6	0.000 000	0.004
100 %		-10	2535 000 019	8.3	0.000 000	0.003
100 %		0	2535 000 023	12.7	0.000 001	0.005
100 %		+10	2535 000 019	8.6	0.000 000	0.003
100 %		+30	2535 000 021	10.9	0.000 000	0.004
100 %		+40	2535 000 020	10.1	0.000 000	0.004
100 %		+50	2535 000 019	9.1	0.000 000	0.004
Batt. Endpoint	3.400	+20	2535 000 020	9.6	0.000 000	0.004



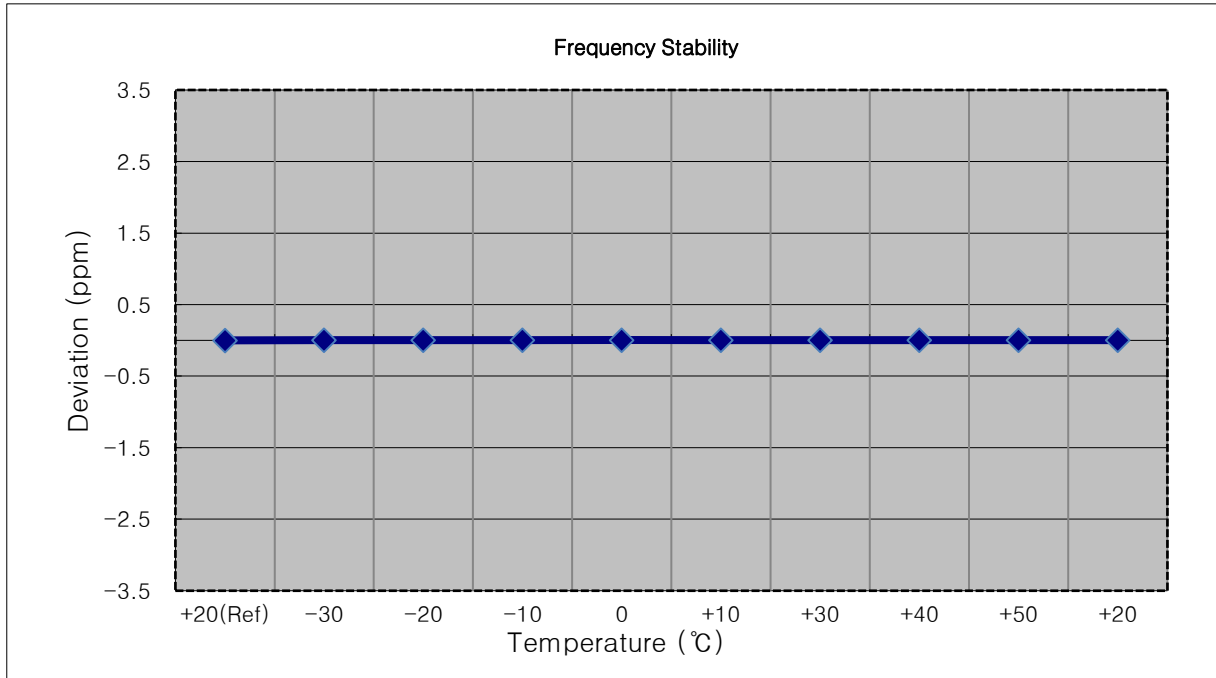
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 011	0.0	0.000 000	0.000
100 %		-30	2535 000 019	8.2	0.000 000	0.003
100 %		-20	2535 000 017	5.3	0.000 000	0.002
100 %		-10	2535 000 018	6.4	0.000 000	0.003
100 %		0	2535 000 019	8.1	0.000 000	0.003
100 %		+10	2535 000 020	8.8	0.000 000	0.003
100 %		+30	2535 000 017	5.8	0.000 000	0.002
100 %		+40	2535 000 018	6.5	0.000 000	0.003
100 %		+50	2535 000 019	8.2	0.000 000	0.003
Batt. Endpoint	3.400	+20	2535 000 017	5.3	0.000 000	0.002



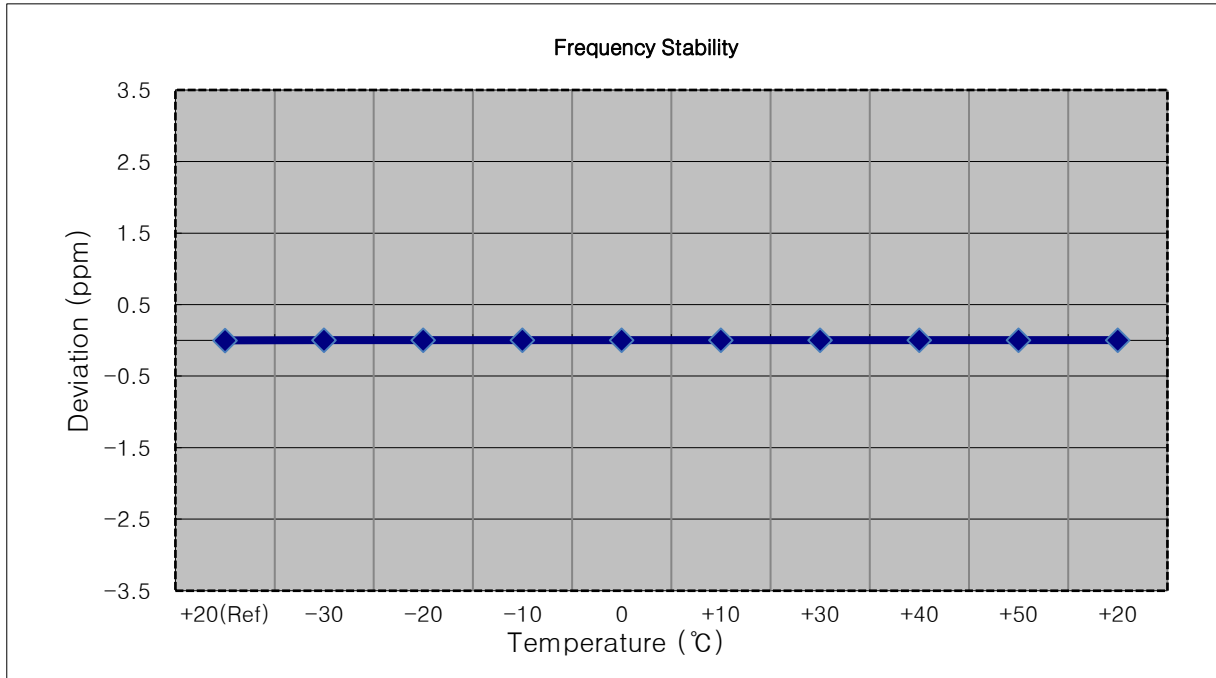
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 009	0.0	0.000 000	0.000
100 %		-30	2535 000 015	6.8	0.000 000	0.003
100 %		-20	2535 000 017	8.4	0.000 000	0.003
100 %		-10	2535 000 019	10.4	0.000 000	0.004
100 %		0	2535 000 021	12.7	0.000 001	0.005
100 %		+10	2535 000 015	6.5	0.000 000	0.003
100 %		+30	2535 000 018	9.8	0.000 000	0.004
100 %		+40	2535 000 018	9.5	0.000 000	0.004
100 %		+50	2535 000 016	7.7	0.000 000	0.003
Batt. Endpoint	3.400	+20	2535 000 018	9.9	0.000 000	0.004



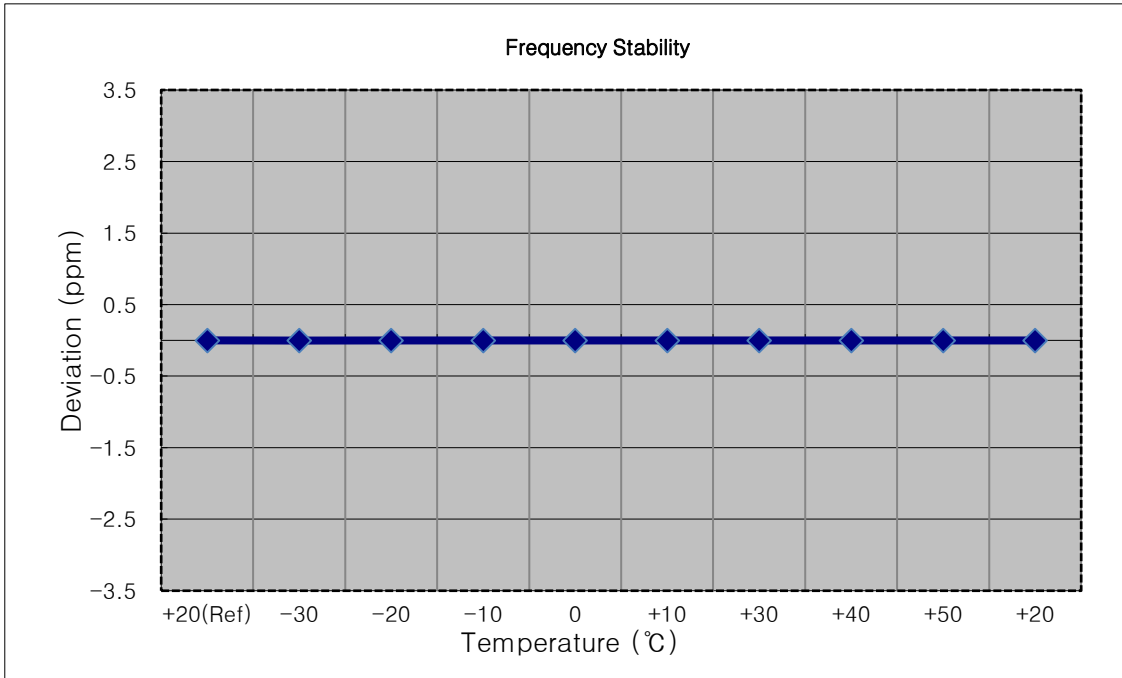
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 007	0.0	0.000 000	0.000
100 %		-30	2535 000 016	8.8	0.000 000	0.003
100 %		-20	2535 000 015	8.1	0.000 000	0.003
100 %		-10	2535 000 013	6.5	0.000 000	0.003
100 %		0	2535 000 015	8.4	0.000 000	0.003
100 %		+10	2535 000 016	8.6	0.000 000	0.003
100 %		+30	2535 000 014	7.1	0.000 000	0.003
100 %		+40	2535 000 012	5.4	0.000 000	0.002
100 %		+50	2535 000 014	6.9	0.000 000	0.003
Batt. Endpoint	3.400	+20	2535 000 017	9.7	0.000 000	0.004



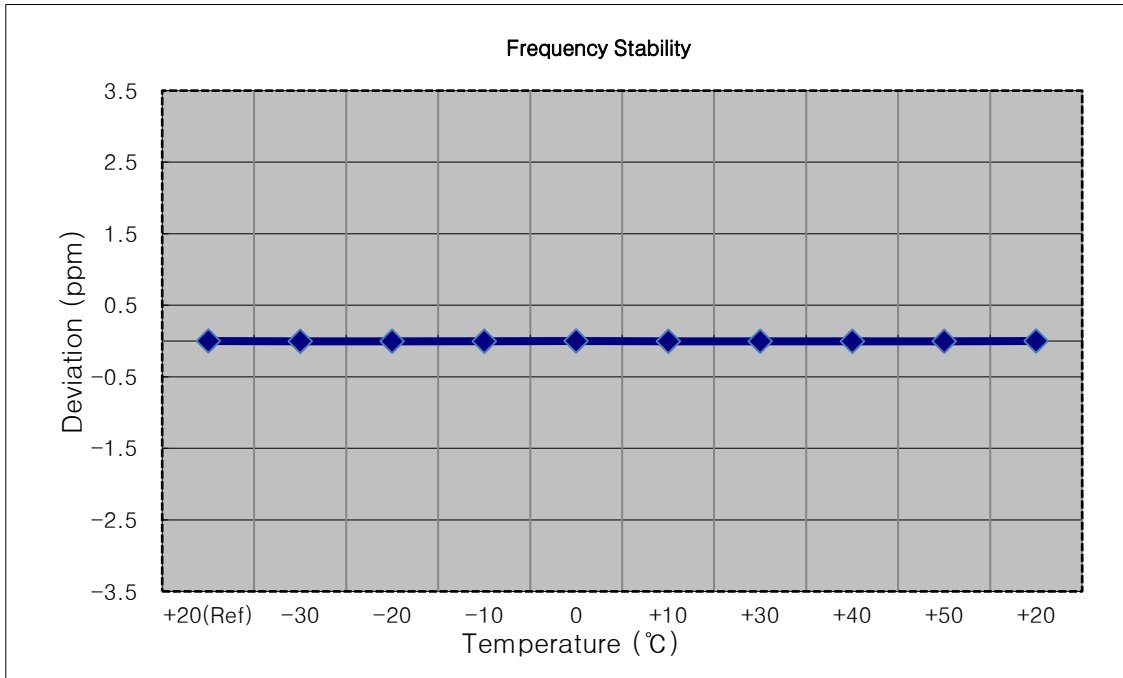
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,567,500,000 Hz
- ▣ CHANNEL: 21425 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2567 499 994	0.0	0.000 000	0.000
100 %		-30	2567 499 987	-7.2	0.000 000	-0.003
100 %		-20	2567 499 987	-7.1	0.000 000	-0.003
100 %		-10	2567 499 989	-4.8	0.000 000	-0.002
100 %		0	2567 499 990	-3.8	0.000 000	-0.001
100 %		+10	2567 499 991	-3.3	0.000 000	-0.001
100 %		+30	2567 499 987	-7.0	0.000 000	-0.003
100 %		+40	2567 499 989	-5.2	0.000 000	-0.002
100 %		+50	2567 499 989	-4.5	0.000 000	-0.002
Batt. Endpoint	3.400	+20	2567 499 988	-5.8	0.000 000	-0.002



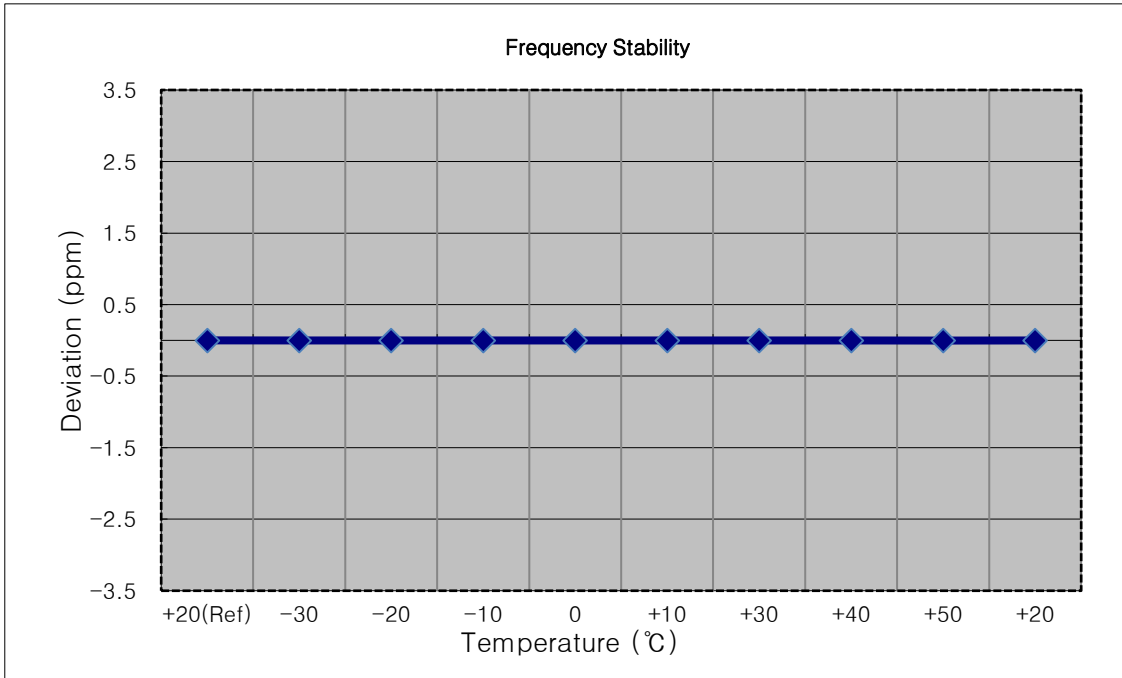
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,565,000,000 Hz
- ▣ CHANNEL: 21400 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2564 999 992	0.0	0.000 000	0.000
100 %		-30	2564 999 986	-5.9	0.000 000	-0.002
100 %		-20	2564 999 986	-6.4	0.000 000	-0.002
100 %		-10	2564 999 985	-7.7	0.000 000	-0.003
100 %		0	2564 999 988	-4.8	0.000 000	-0.002
100 %		+10	2564 999 986	-6.4	0.000 000	-0.002
100 %		+30	2564 999 985	-7.0	0.000 000	-0.003
100 %		+40	2564 999 987	-5.7	0.000 000	-0.002
100 %		+50	2564 999 985	-7.3	0.000 000	-0.003
Batt. Endpoint	3.400	+20	2564 999 989	-3.0	0.000 000	-0.001



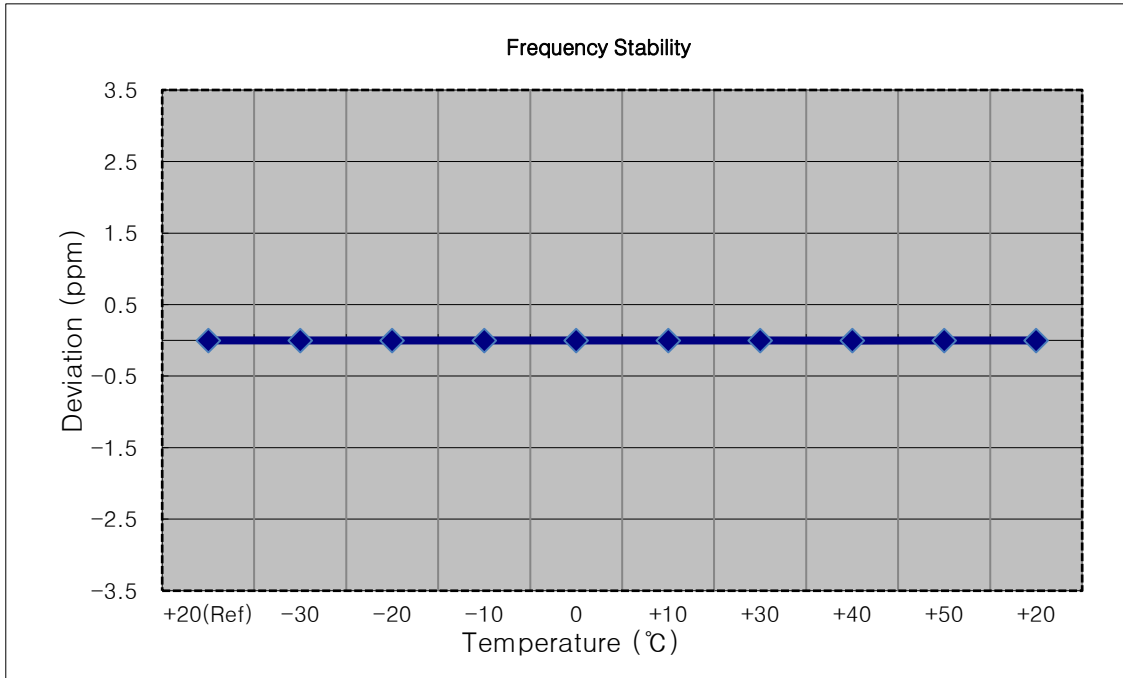
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,562,500,000 Hz
- ▣ CHANNEL: 21375 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2562 499 995	0.0	0.000 000	0.000
100 %		-30	2562 499 991	-3.9	0.000 000	-0.002
100 %		-20	2562 499 989	-5.4	0.000 000	-0.002
100 %		-10	2562 499 989	-5.2	0.000 000	-0.002
100 %		0	2562 499 989	-6.0	0.000 000	-0.002
100 %		+10	2562 499 991	-3.8	0.000 000	-0.001
100 %		+30	2562 499 989	-5.9	0.000 000	-0.002
100 %		+40	2562 499 990	-4.9	0.000 000	-0.002
100 %		+50	2562 499 988	-6.4	0.000 000	-0.002
Batt. Endpoint	3.400	+20	2562 499 990	-4.2	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 999 990	0.0	0.000 000	0.000
100 %		-30	2559 999 985	-4.4	0.000 000	-0.002
100 %		-20	2559 999 984	-5.9	0.000 000	-0.002
100 %		-10	2559 999 982	-7.9	0.000 000	-0.003
100 %		0	2559 999 985	-4.9	0.000 000	-0.002
100 %		+10	2559 999 986	-3.2	0.000 000	-0.001
100 %		+30	2559 999 983	-6.7	0.000 000	-0.003
100 %		+40	2559 999 981	-8.5	0.000 000	-0.003
100 %		+50	2559 999 986	-3.9	0.000 000	-0.002
Batt. Endpoint	3.400	+20	2559 999 985	-4.5	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		RB	
									W	W	dBm	Size
2502.5	LTE B7/ 5 MHz	QPSK	-26.21	10.43	10.30	2.47	H	< 2.00	0.067	18.26	1	24
		16-QAM	-27.20	9.44	10.30	2.47	H		0.053	17.27		
		64-QAM	-28.10	8.54	10.30	2.47	H		0.043	16.37		
		256-QAM	-30.99	5.65	10.30	2.47	H		0.022	13.48		
2535.0		QPSK	-25.43	10.82	10.30	2.52	H		0.072	18.60	1	0
		16-QAM	-26.45	9.80	10.30	2.52	H		0.057	17.58		
		64-QAM	-27.34	8.91	10.30	2.52	H		0.047	16.69		
		256-QAM	-30.27	5.98	10.30	2.52	H		0.024	13.76		
2567.5		QPSK	-26.45	10.09	10.20	2.60	H		0.059	17.69	1	0
		16-QAM	-27.50	9.04	10.20	2.60	H		0.046	16.64		
		64-QAM	-28.30	8.24	10.20	2.60	H		0.038	15.84		
		256-QAM	-31.06	5.48	10.20	2.60	H		0.020	13.08		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
2505.0	LTE B7/ 10 MHz	QPSK	-26.05	10.59	10.30	2.49	H	< 2.00	0.069	18.40	1	25
		16-QAM	-27.03	9.61	10.30	2.49	H		0.055	17.42		
		64-QAM	-27.89	8.75	10.30	2.49	H		0.045	16.56		
		256-QAM	-30.88	5.76	10.30	2.49	H		0.023	13.57		
2535.0		QPSK	-25.55	10.70	10.30	2.52	H		0.070	18.48	1	0
		16-QAM	-26.69	9.56	10.30	2.52	H		0.054	17.34		
		64-QAM	-27.65	8.60	10.30	2.52	H		0.044	16.38		
		256-QAM	-30.59	5.66	10.30	2.52	H		0.022	13.44		
2565.0		QPSK	-26.70	10.04	10.20	2.60	H		0.058	17.64	1	0
		16-QAM	-27.83	8.91	10.20	2.60	H		0.045	16.51		
		64-QAM	-28.78	7.96	10.20	2.60	H		0.036	15.56		
		256-QAM	-31.72	5.02	10.20	2.60	H		0.018	12.62		

Freq (MHz)	Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
2507.5	LTE B7/ 15 MHz	QPSK	-25.80	10.82	10.30	2.50	H	< 2.00	0.073	18.62	1	74
		16-QAM	-26.69	9.93	10.30	2.50	H		0.059	17.73		
		64-QAM	-27.45	9.17	10.30	2.50	H		0.050	16.97		
		256-QAM	-29.91	6.71	10.30	2.50	H		0.028	14.51		
2535.0		QPSK	-25.37	10.88	10.30	2.52	H		0.073	18.66	1	0
		16-QAM	-26.40	9.85	10.30	2.52	H		0.058	17.63		
		64-QAM	-27.39	8.86	10.30	2.52	H		0.046	16.64		
		256-QAM	-30.47	5.78	10.30	2.52	H		0.023	13.56		
2562.5		QPSK	-26.22	10.71	10.20	2.59	H		0.068	18.32	1	0
		16-QAM	-27.37	9.56	10.20	2.59	H		0.052	17.17		
		64-QAM	-28.36	8.57	10.20	2.59	H		0.042	16.18		
		256-QAM	-31.52	5.41	10.20	2.59	H		0.020	13.02		

Freq (MHz)	Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
2510.0	LTE B7/ 20 MHz	QPSK	-25.40	11.22	10.30	2.50	H	< 2.00	0.080	19.02	1	99
		16-QAM	-26.40	10.22	10.30	2.50	H		0.063	18.02		
		64-QAM	-27.23	9.39	10.30	2.50	H		0.052	17.19		
		256-QAM	-29.88	6.74	10.30	2.50	H		0.028	14.54		
2535.0		QPSK	-25.42	10.83	10.30	2.52	H		0.073	18.61	1	0
		16-QAM	-26.52	9.73	10.30	2.52	H		0.056	17.51		
		64-QAM	-27.50	8.75	10.30	2.52	H		0.045	16.53		
		256-QAM	-30.64	5.61	10.30	2.52	H		0.022	13.39		
2560.0		QPSK	-26.17	10.76	10.20	2.59	H		0.069	18.37	1	0
		16-QAM	-27.21	9.72	10.20	2.59	H		0.054	17.33		
		64-QAM	-28.13	8.80	10.20	2.59	H		0.044	16.41		
		256-QAM	-31.22	5.71	10.20	2.59	H		0.022	13.32		

9.2 RADIATED SPURIOUS EMISSIONS

- ▣ OPERATING FREQUENCY : 2535.0 MHz
- ▣ MEASURED OUTPUT POWER: 18.60 dBm = 0.072 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 5 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 43.60 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc	RB	
									Size	Offset
20775 (2502.5)	5 005.00	-45.30	10.70	-46.58	3.61	H	-39.49	58.09	1	24
	7 507.50	-52.77	11.10	-45.70	4.50	V	-39.10	57.70		
	10 010.00	-62.02	11.20	-53.88	5.27	V	-47.95	66.56		
	12 512.50	-62.50	12.10	-53.19	6.04	V	-47.13	65.73		
	15 015.00	-58.07	13.80	-51.56	6.65	V	-44.41	63.02		
21100 (2535.0)	5 070.00	-45.74	10.70	-47.02	3.62	H	-39.94	58.54	1	0
	7 605.00	-51.27	11.20	-44.26	4.53	H	-37.58	56.18		
	10 140.00	-61.32	11.10	-51.66	5.31	H	-45.87	64.47		
	12 675.00	-61.14	11.90	-51.28	6.06	H	-45.44	64.04		
	15 210.00	-58.03	14.40	-53.31	6.67	H	-45.58	64.19		
21425 (2567.5)	5 135.00	-44.51	10.80	-46.08	3.62	H	-38.89	57.49	1	0
	7 702.50	-51.44	11.00	-44.37	4.57	H	-37.94	56.55		
	10 270.00	-62.07	11.00	-51.27	5.35	V	-45.62	64.22		
	12 837.50	-63.72	11.80	-53.58	6.06	V	-47.84	66.44		
	15 405.00	-59.32	15.30	-53.41	6.75	V	-44.86	63.46		

- ▣ OPERATING FREQUENCY : 2510.0 MHz
- ▣ MEASURED OUTPUT POWER: 18.48 dBm = 0.070 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 10 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 43.48 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc	RB	
									Size	Offset
20800 (2505.0)	5 010.00	-44.05	10.70	-45.26	3.59	H	-38.15	56.64	1	25
	7 515.00	-52.13	11.10	-45.02	4.51	H	-38.43	56.91		
	10 020.00	-61.26	11.20	-52.17	5.28	H	-46.25	64.73		
	12 525.00	-60.19	12.10	-50.31	6.02	V	-44.23	62.72		
	15 030.00	-58.07	13.80	-51.75	6.64	H	-44.59	63.08		
21100 (2535.0)	5 070.00	-49.89	10.70	-51.17	3.62	H	-44.09	62.69	1	0
	7 605.00	-48.78	11.20	-41.77	4.53	H	-35.09	53.69		
	10 140.00	-63.42	11.10	-53.76	5.31	H	-47.97	66.57		
	12 675.00	-60.48	11.90	-50.62	6.06	V	-44.78	63.38		
	15 210.00	-58.45	14.40	-53.73	6.67	H	-46.00	64.61		
21400 (2565.0)	5 130.00	-48.12	10.80	-49.35	3.62	H	-42.17	60.65	1	0
	7 695.00	-49.03	11.05	-41.98	4.57	H	-35.50	53.99		
	10 260.00	-62.47	11.00	-52.11	5.35	H	-46.46	64.95		
	12 825.00	-63.57	11.80	-52.91	6.08	H	-47.19	65.67		
	15 390.00	-60.09	15.10	-54.08	6.75	H	-45.73	64.21		

- ▣ OPERATING FREQUENCY : 2510.0 MHz
- ▣ MEASURED OUTPUT POWER: 18.66 dBm = 0.073 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 15 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 43.66 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc	RB	
									Size	Offset
20825 (2507.5)	5 015.00	-44.36	10.70	-45.73	3.57	H	-38.60	57.26	1	74
	7 522.50	-53.88	11.10	-46.74	4.51	H	-40.15	58.81		
	10 030.00	-60.98	11.20	-52.42	5.27	H	-46.49	65.15		
	12 537.50	-62.29	12.10	-52.44	6.00	H	-46.34	65.01		
	15 045.00	-55.95	13.90	-49.84	6.66	H	-42.60	61.26		
21100 (2535.0)	5 070.00	-53.57	10.70	-54.85	3.62	V	-47.77	66.37	1	0
	7 605.00	-49.36	11.20	-42.35	4.53	H	-35.67	54.27		
	10 140.00	-62.30	11.10	-52.64	5.31	H	-46.85	65.45		
	12 675.00	-62.05	11.90	-52.19	6.06	H	-46.35	64.95		
	15 210.00	-58.56	14.40	-53.84	6.67	H	-46.11	64.72		
21375 (2562.5)	5 125.00	-51.01	10.80	-52.15	3.63	H	-44.98	63.64	1	0
	7 687.50	-48.14	11.10	-41.11	4.57	H	-34.58	53.25		
	10 250.00	-61.58	11.00	-50.84	5.35	H	-45.19	63.86		
	12 812.50	-63.00	11.80	-51.85	6.10	H	-46.15	64.82		
	15 375.00	-59.07	15.10	-53.26	6.74	H	-44.90	63.57		

- ▣ OPERATING FREQUENCY : 2510.0 MHz
- ▣ MEASURED OUTPUT POWER: 19.02 dBm = 0.080 W
- ▣ MODE: LTE B7
- ▣ MODULATION SIGNAL: 20 MHz QPSK
- ▣ DISTANCE: 1 meters
- ▣ LIMIT: $55 + 10 \log_{10}(W) =$ 44.02 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc	RB	
									Size	Offset
20850 (2510.0)	5 020.00	-46.29	10.70	-47.82	3.55	H	-40.67	59.69	1	99
	7 530.00	-53.06	11.10	-45.59	4.50	H	-38.99	58.01		
	10 040.00	-59.77	11.20	-50.51	5.26	H	-44.57	63.60		
	12 550.00	-62.48	12.10	-53.16	5.99	H	-47.05	66.07		
	15 060.00	-57.22	14.00	-51.41	6.65	H	-44.06	63.08		
21100 (2535.0)	5 070.00	-51.95	10.70	-53.23	3.62	H	-46.15	64.75	1	0
	7 605.00	-48.31	11.20	-41.30	4.53	H	-34.62	53.22		
	10 140.00	-62.34	11.10	-52.68	5.31	H	-46.89	65.49		
	12 675.00	-62.10	11.90	-52.24	6.06	H	-46.40	65.00		
	15 210.00	-58.34	14.40	-53.62	6.67	H	-45.89	64.50		
21350 (2560.0)	5 120.00	-52.39	10.80	-53.44	3.64	H	-46.28	65.30	1	0
	7 680.00	-48.46	11.10	-41.52	4.55	H	-34.97	54.00		
	10 240.00	-63.00	11.00	-53.09	5.33	H	-47.42	66.44		
	12 800.00	-63.45	11.80	-52.29	6.10	H	-46.59	65.61		
	15 360.00	-59.69	15.10	-54.16	6.72	H	-45.78	64.80		

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	5.36
			16-QAM	25	0	6.18
			64-QAM	25	0	6.66
			256-QAM	25	0	6.99
	10 MHz		QPSK	50	0	5.42
			16-QAM	50	0	6.18
			64-QAM	50	0	6.69
			256-QAM	50	0	6.95
	15 MHz		QPSK	75	0	5.40
			16-QAM	75	0	6.23
			64-QAM	75	0	6.69
			256-QAM	75	0	6.98
	20 MHz		QPSK	100	0	5.39
			16-QAM	100	0	6.24
			64-QAM	100	0	6.71
			256-QAM	100	0	6.95

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	4.5114
			16-QAM	25		4.5052
			64-QAM	25		4.5091
			256-QAM	25		4.5189
	10 MHz		QPSK	50		9.0071
			16-QAM	50		8.9939
			64-QAM	50		8.9953
			256-QAM	50		8.9906
	15 MHz		QPSK	75		13.498
			16-QAM	75		13.485
			64-QAM	75		13.474
			256-QAM	75		13.484
	20 MHz		QPSK	100		17.988
			16-QAM	100		17.978
			64-QAM	100		17.964
			256-QAM	100		17.969

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	9.7647	30.820	-80.771	-49.951	-25.00
		2535.0	9.4262	30.820	-80.797	-49.977	
		2567.5	4.0479	30.200	-80.693	-50.493	
	10	2505.0	3.7917	30.200	-80.830	-50.630	
		2535.0	4.9228	30.200	-80.763	-50.563	
		2565.0	8.8629	30.820	-80.031	-49.211	
	15	2507.5	5.0020	30.820	-79.692	-48.872	
		2535.0	9.7443	30.820	-80.671	-49.851	
		2562.5	8.2637	30.820	-81.011	-50.191	
	20	2510.0	9.9711	30.820	-80.122	-49.302	
		2535.0	9.6700	30.820	-80.187	-49.367	
		2560.0	9.9581	30.820	-80.101	-49.281	

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	27.494
1 – 5	30.200
5 – 10	30.820
10 – 15	31.340
15 – 20	31.710
Above 20	32.350

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	-23.37	-23.24	-19.75	-19.40	-26.01	-27.61	-46.04	-31.38
10 MHz	2505.0	50 / 0	-26.55	-25.74	-22.27	-21.15	-26.04	-25.65	-32.42	-30.46
15 MHz	2507.5	75 / 0	-27.98	-27.05	-24.72	-23.45	-26.99	-27.11	-31.45	-33.14
20 MHz	2510.0	100 / 0	-27.97	-27.14	-25.46	-24.78	-27.57	-27.48	-31.06	-34.96
Limit			-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	-23.06	-23.32	-19.99	-20.57
	2567.5	25 / 0	-23.47	-24.09	-19.90	-21.37
10 MHz (QPSK)	2535.0	50 / 0	-26.24	-26.20	-21.78	-22.59
	2565.0	50 / 0	-26.03	-26.28	-21.53	-22.45
15 MHz (QPSK)	2535.0	75 / 0	-26.98	-27.58	-23.53	-24.45
	2562.5	75 / 0	-26.38	-26.75	-22.66	-23.31
20 MHz (QPSK)	2535.0	100 / 0	-26.94	-27.81	-24.30	-25.43
	2560.0	100 / 0	-26.04	-26.34	-23.40	-23.73
Limit			-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	-28.33	-29.04	-32.48	-32.63
	2567.5	25 / 0	-27.76	-30.28	-31.78	-34.11
10 MHz (QPSK)	2535.0	50 / 0	-25.87	-27.16	-30.69	-31.73
	2565.0	50 / 0	-25.24	-27.25	-30.66	-33.38
15 MHz (QPSK)	2535.0	75 / 0	-26.70	-28.19	-33.87	-34.84
	2562.5	75 / 0	-25.96	-27.59	-33.52	-37.73
20 MHz (QPSK)	2535.0	100 / 0	-26.71	-28.30	-35.72	-36.09
	2560.0	100 / 0	-25.96	-27.20	-35.32	-46.29
Limit			-13.0		-25.0	

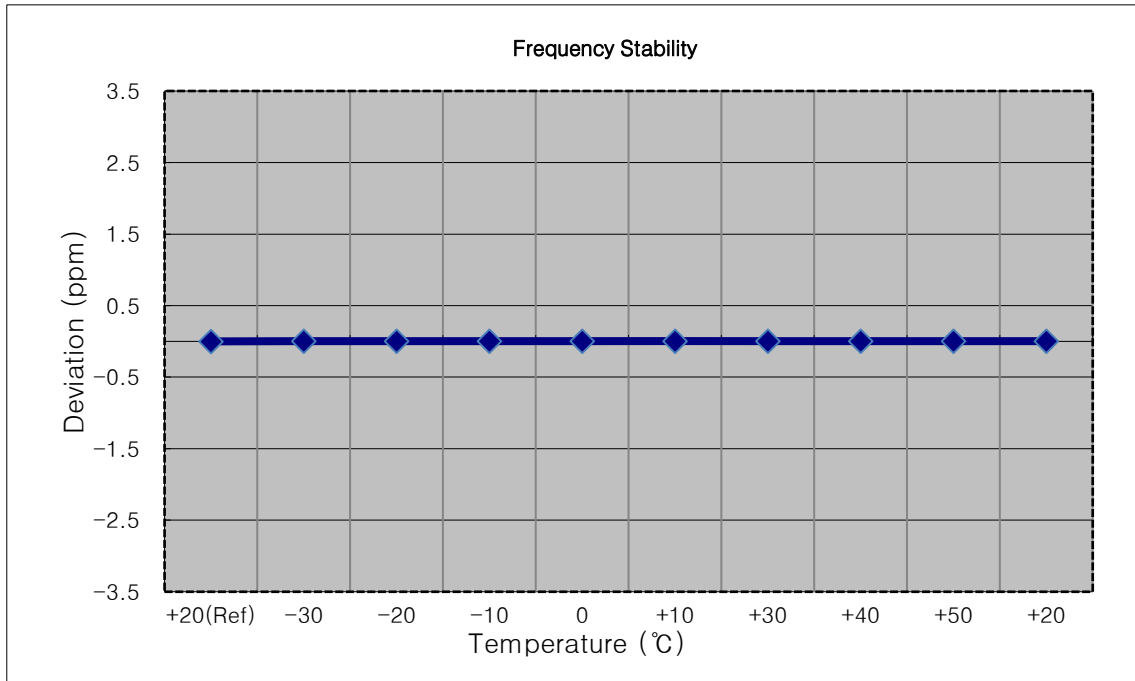
Note:

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

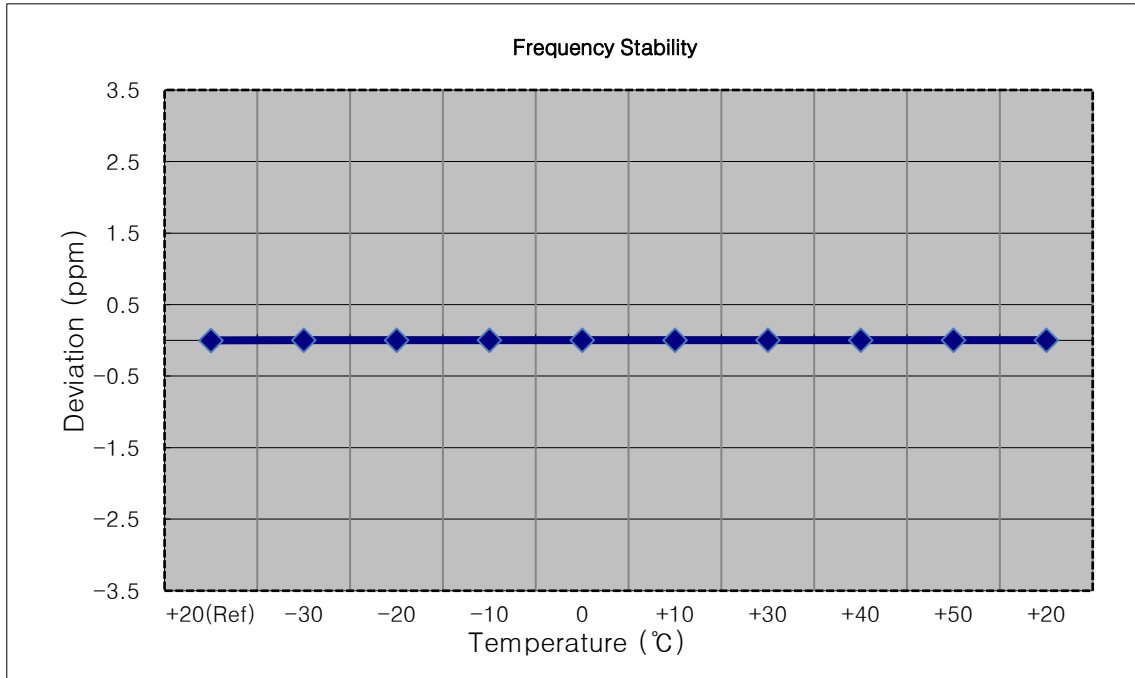
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,502,500,000 Hz
- ▣ CHANNEL: 20775 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2502 500 007	0.0	0.000 000	0.000
100 %		-30	2502 500 013	5.4	0.000 000	0.002
100 %		-20	2502 500 012	4.9	0.000 000	0.002
100 %		-10	2502 500 011	3.6	0.000 000	0.001
100 %		0	2502 500 014	6.8	0.000 000	0.003
100 %		+10	2502 500 018	10.8	0.000 000	0.004
100 %		+30	2502 500 015	7.1	0.000 000	0.003
100 %		+40	2502 500 013	5.7	0.000 000	0.002
100 %		+50	2502 500 015	7.9	0.000 000	0.003
Batt. Endpoint		3.400	+20	2502 500 018	10.3	0.000 000



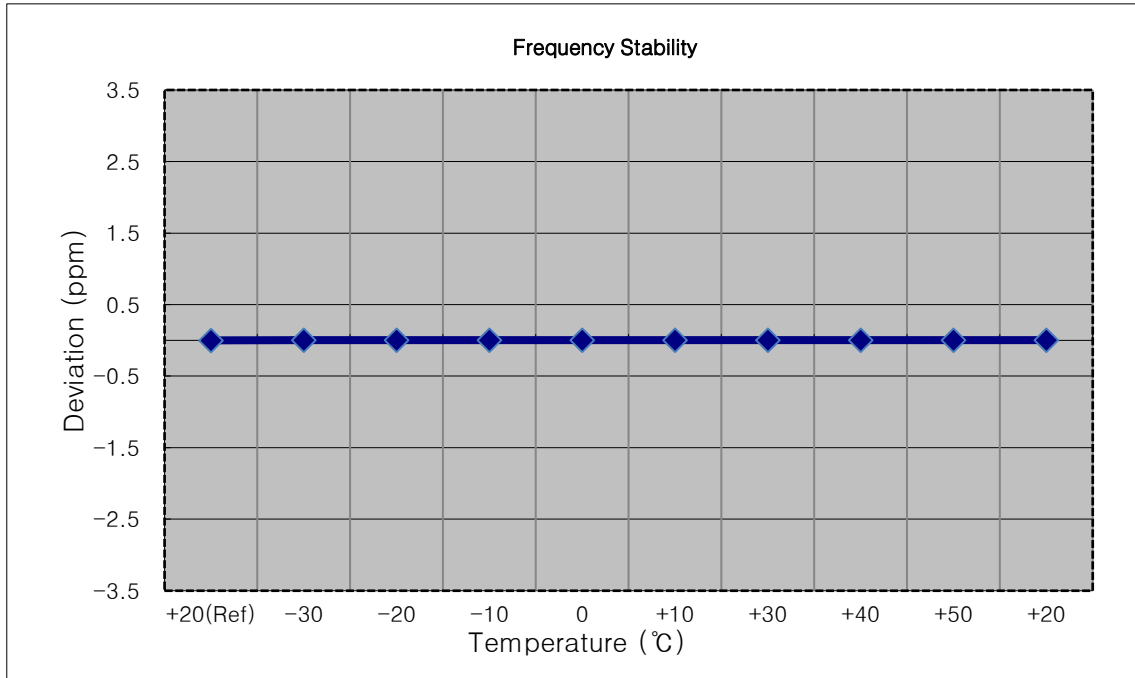
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,505,000,000 Hz
- ▣ CHANNEL: 20800 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2505 000 006	0.0	0.000 000	0.000
100 %		-30	2505 000 013	7.6	0.000 000	0.003
100 %		-20	2505 000 013	6.9	0.000 000	0.003
100 %		-10	2505 000 014	8.2	0.000 000	0.003
100 %		0	2505 000 012	5.9	0.000 000	0.002
100 %		+10	2505 000 012	6.7	0.000 000	0.003
100 %		+30	2505 000 014	7.9	0.000 000	0.003
100 %		+40	2505 000 012	6.2	0.000 000	0.002
100 %		+50	2505 000 014	8.6	0.000 000	0.003
Batt. Endpoint	3.400	+20	2505 000 013	7.3	0.000 000	0.003



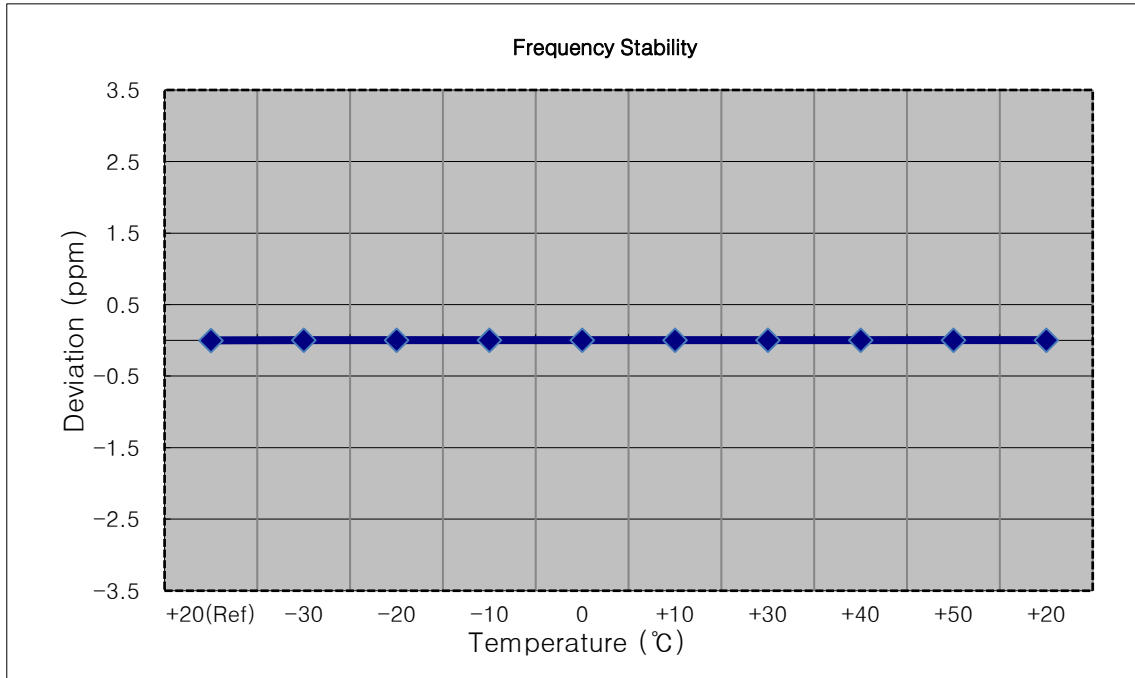
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,507,500,000 Hz
- ▣ CHANNEL: 20825 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2507 500 009	0.0	0.000 000	0.000
100 %		-30	2507 500 017	7.8	0.000 000	0.003
100 %		-20	2507 500 016	6.9	0.000 000	0.003
100 %		-10	2507 500 013	3.4	0.000 000	0.001
100 %		0	2507 500 016	6.2	0.000 000	0.002
100 %		+10	2507 500 016	6.7	0.000 000	0.003
100 %		+30	2507 500 018	9.0	0.000 000	0.004
100 %		+40	2507 500 014	4.6	0.000 000	0.002
100 %		+50	2507 500 015	5.7	0.000 000	0.002
Batt. Endpoint	3.400	+20	2507 500 015	5.6	0.000 000	0.002



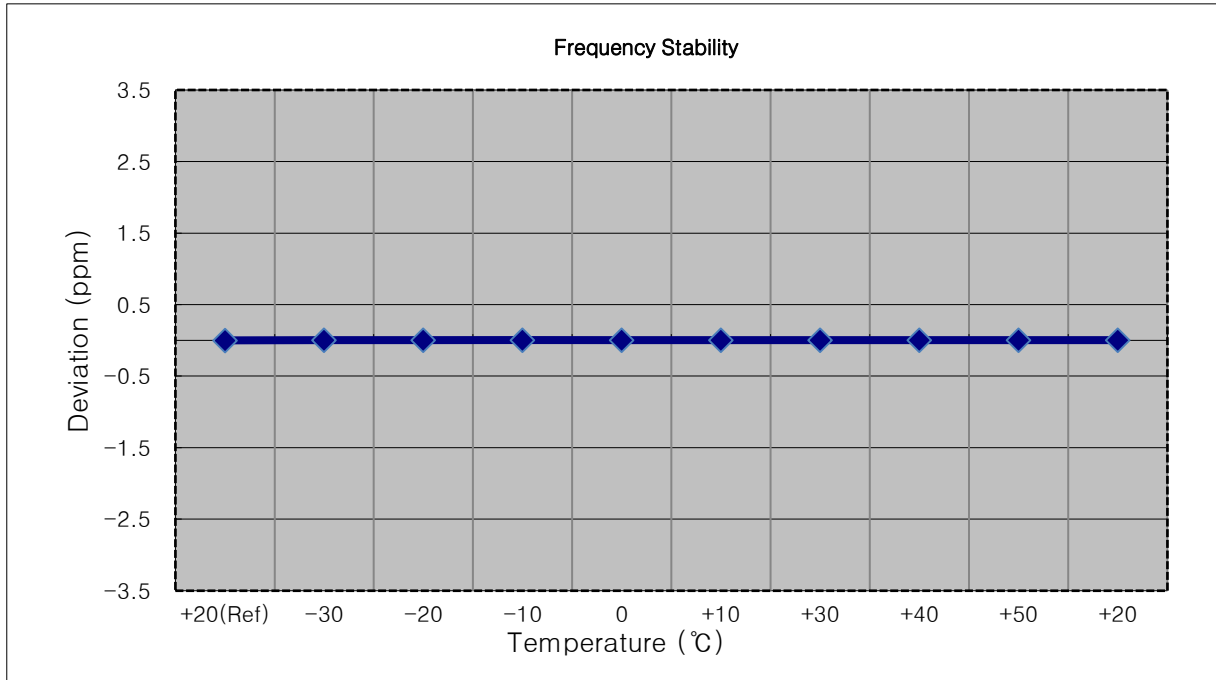
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,510,000,000 Hz
- ▣ CHANNEL: 20850 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2510 000 006	0.0	0.000 000	0.000
100 %		-30	2510 000 011	5.6	0.000 000	0.002
100 %		-20	2510 000 008	2.9	0.000 000	0.001
100 %		-10	2510 000 013	7.4	0.000 000	0.003
100 %		0	2510 000 010	4.5	0.000 000	0.002
100 %		+10	2510 000 013	7.8	0.000 000	0.003
100 %		+30	2510 000 011	5.4	0.000 000	0.002
100 %		+40	2510 000 014	8.0	0.000 000	0.003
100 %		+50	2510 000 015	9.8	0.000 000	0.004
Batt. Endpoint	3.400	+20	2510 000 014	8.2	0.000 000	0.003



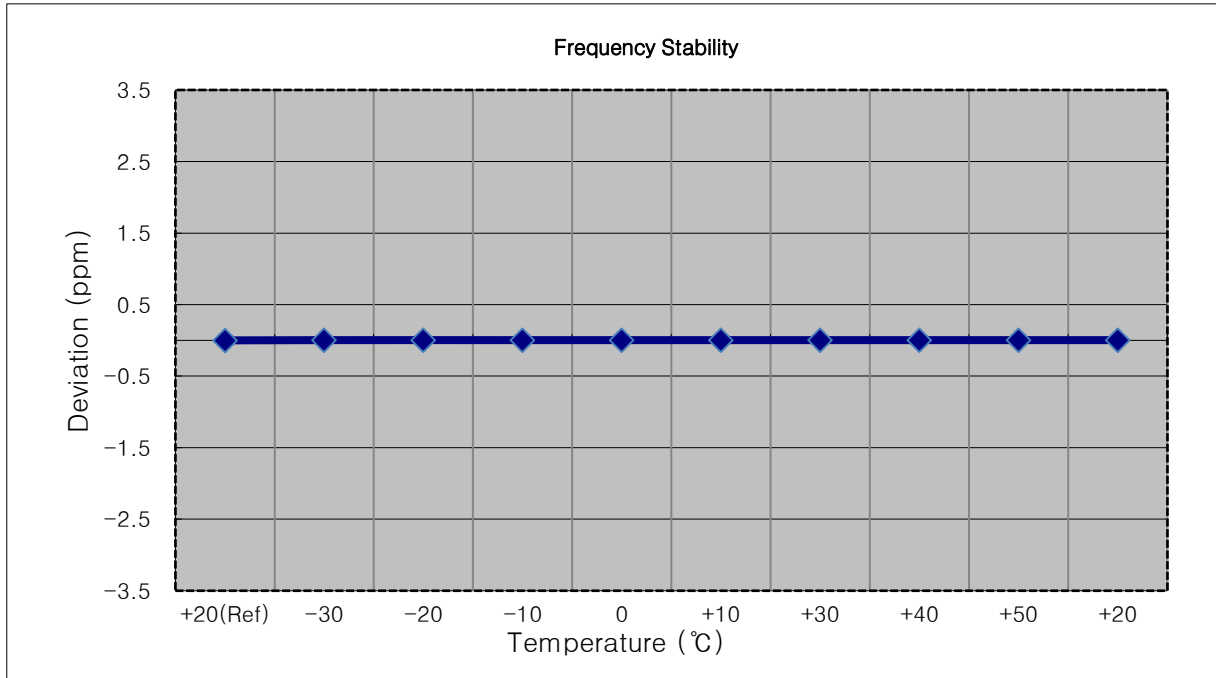
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 008	0.0	0.000 000	0.000
100 %		-30	2535 000 018	9.4	0.000 000	0.004
100 %		-20	2535 000 017	8.6	0.000 000	0.003
100 %		-10	2535 000 019	10.8	0.000 000	0.004
100 %		0	2535 000 016	8.0	0.000 000	0.003
100 %		+10	2535 000 016	7.9	0.000 000	0.003
100 %		+30	2535 000 017	8.2	0.000 000	0.003
100 %		+40	2535 000 018	9.2	0.000 000	0.004
100 %		+50	2535 000 015	6.6	0.000 000	0.003
Batt. Endpoint	3.400	+20	2535 000 017	8.4	0.000 000	0.003



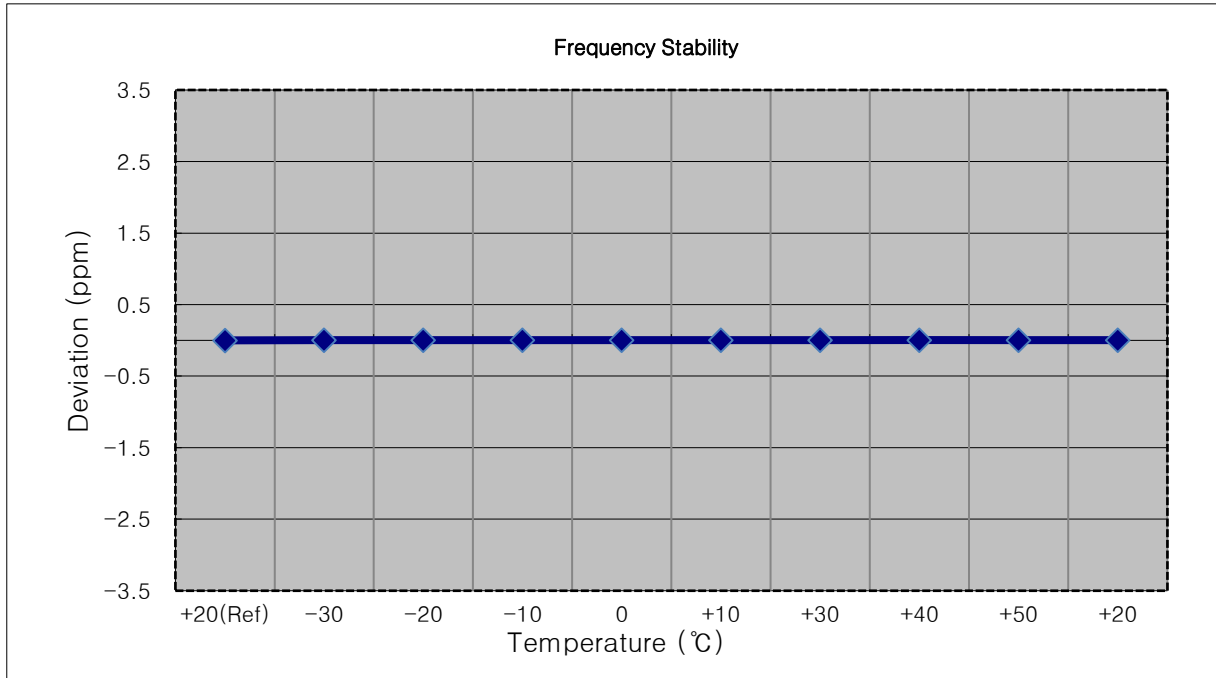
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 006	0.0	0.000 000	0.000
100 %		-30	2535 000 015	8.9	0.000 000	0.004
100 %		-20	2535 000 016	9.4	0.000 000	0.004
100 %		-10	2535 000 013	7.2	0.000 000	0.003
100 %		0	2535 000 013	6.5	0.000 000	0.003
100 %		+10	2535 000 011	4.9	0.000 000	0.002
100 %		+30	2535 000 014	7.5	0.000 000	0.003
100 %		+40	2535 000 013	7.3	0.000 000	0.003
100 %		+50	2535 000 012	6.0	0.000 000	0.002
Batt. Endpoint	3.400	+20	2535 000 012	5.5	0.000 000	0.002



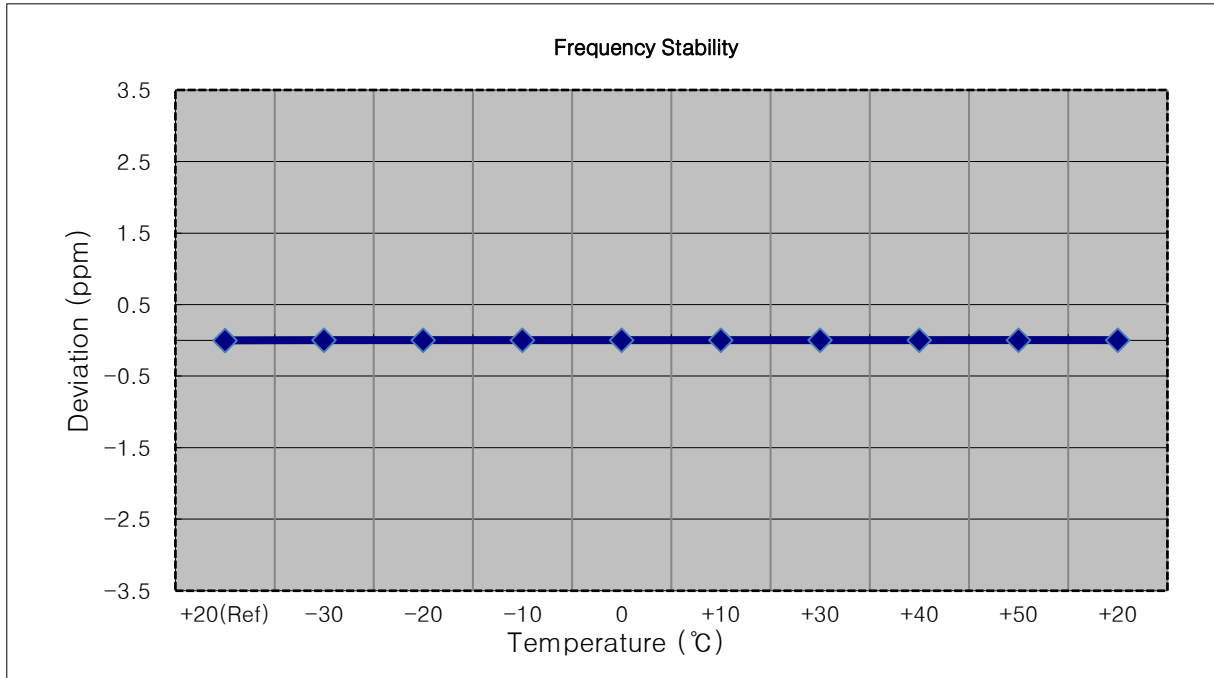
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 011	0.0	0.000 000	0.000
100 %		-30	2535 000 017	6.9	0.000 000	0.003
100 %		-20	2535 000 021	10.2	0.000 000	0.004
100 %		-10	2535 000 022	11.4	0.000 000	0.004
100 %		0	2535 000 019	8.5	0.000 000	0.003
100 %		+10	2535 000 020	9.6	0.000 000	0.004
100 %		+30	2535 000 018	7.4	0.000 000	0.003
100 %		+40	2535 000 022	11.6	0.000 000	0.005
100 %		+50	2535 000 021	10.6	0.000 000	0.004
Batt. Endpoint	3.400	+20	2535 000 019	8.6	0.000 000	0.003



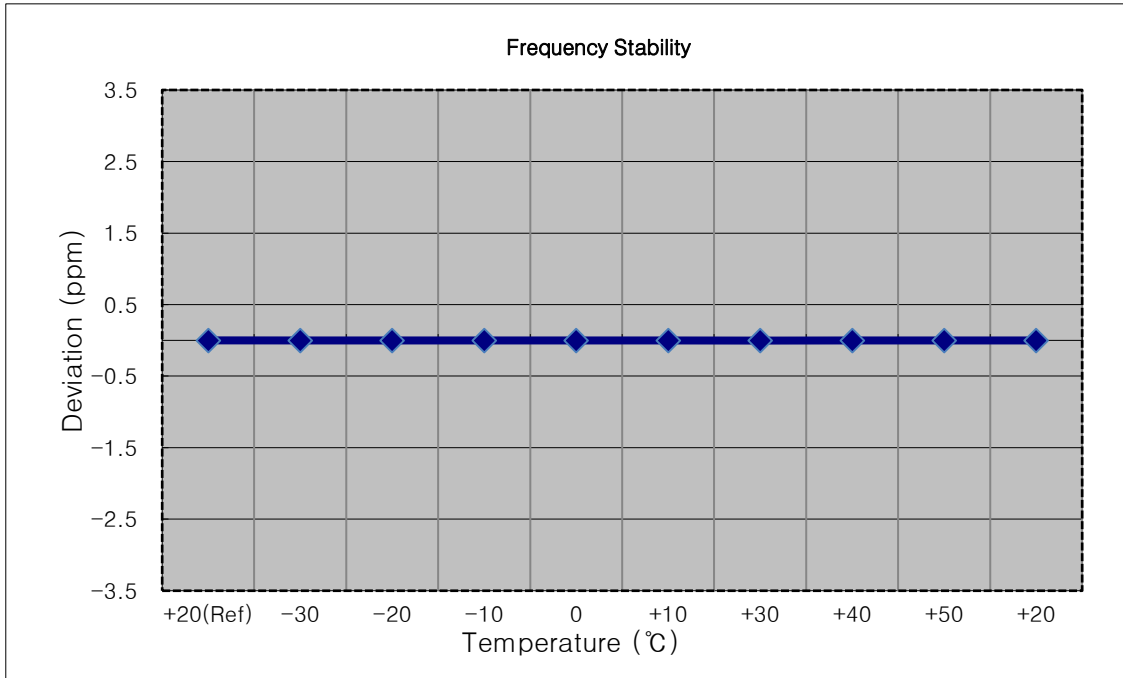
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,535,000,000 Hz
- ▣ CHANNEL: 21100 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2535 000 009	0.0	0.000 000	0.000
100 %		-30	2535 000 015	5.7	0.000 000	0.002
100 %		-20	2535 000 016	6.9	0.000 000	0.003
100 %		-10	2535 000 017	7.6	0.000 000	0.003
100 %		0	2535 000 017	8.2	0.000 000	0.003
100 %		+10	2535 000 015	5.5	0.000 000	0.002
100 %		+30	2535 000 016	6.8	0.000 000	0.003
100 %		+40	2535 000 018	9.1	0.000 000	0.004
100 %		+50	2535 000 019	10.0	0.000 000	0.004
Batt. Endpoint	3.400	+20	2535 000 017	7.9	0.000 000	0.003



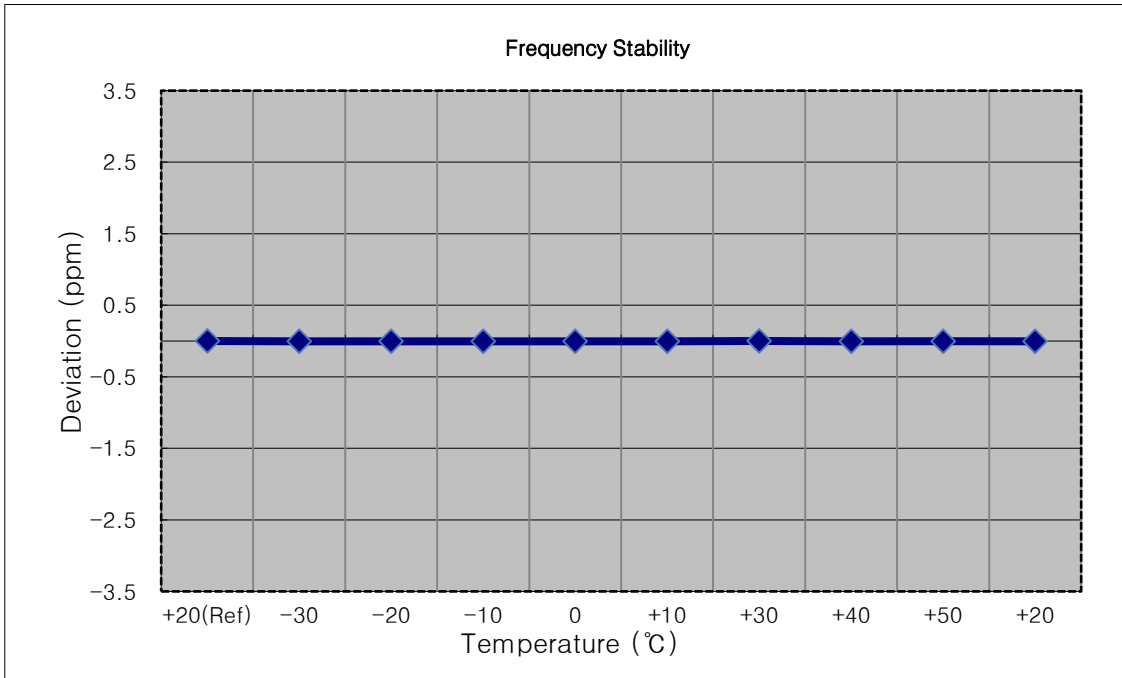
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,567,500,000 Hz
- ▣ CHANNEL: 21425 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

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 499 992	-4.8	0.000 000	-0.002
100 %		-20	2567 499 991	-6.0	0.000 000	-0.002
100 %		-10	2567 499 990	-6.3	0.000 000	-0.002
100 %		0	2567 499 993	-4.1	0.000 000	-0.002
100 %		+10	2567 499 992	-4.8	0.000 000	-0.002
100 %		+30	2567 499 989	-7.3	0.000 000	-0.003
100 %		+40	2567 499 993	-4.1	0.000 000	-0.002
100 %		+50	2567 499 992	-4.2	0.000 000	-0.002
Batt. Endpoint	3.400	+20	2567 499 993	-3.2	0.000 000	-0.001



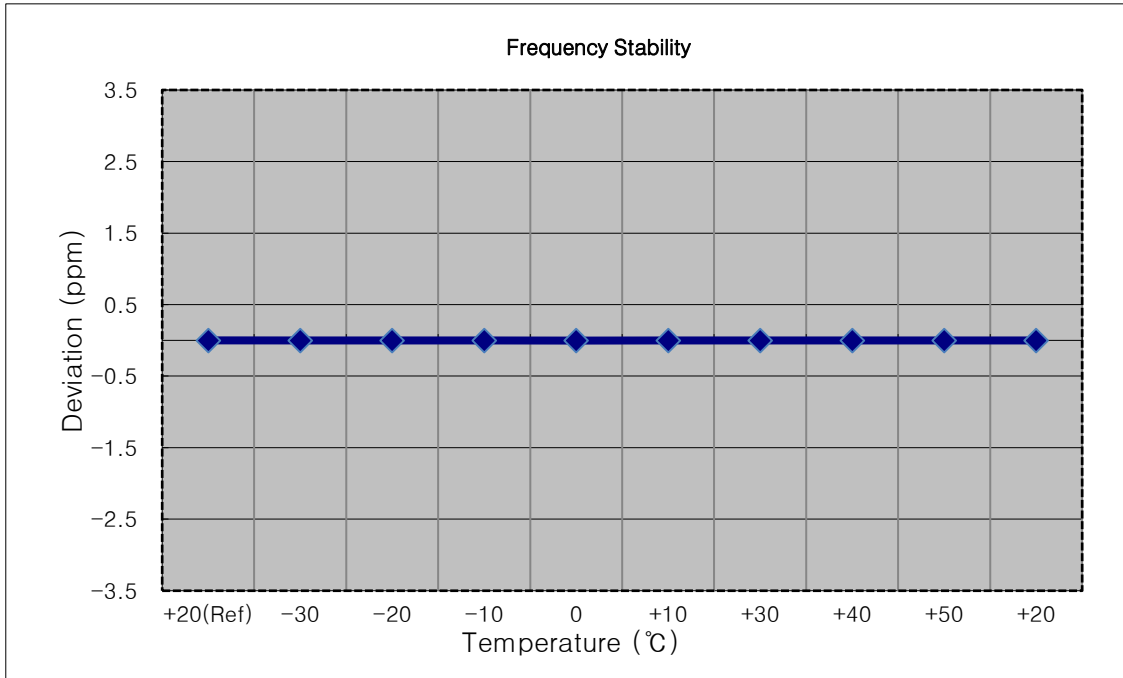
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,565,000,000 Hz
- ▣ CHANNEL: 21400 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	2564 999 994	0.0	0.000 000	0.000
100 %		-30	2564 999 989	-5.3	0.000 000	-0.002
100 %		-20	2564 999 988	-6.2	0.000 000	-0.002
100 %		-10	2564 999 988	-5.4	0.000 000	-0.002
100 %		0	2564 999 988	-5.7	0.000 000	-0.002
100 %		+10	2564 999 989	-5.2	0.000 000	-0.002
100 %		+30	2564 999 990	-3.4	0.000 000	-0.001
100 %		+40	2564 999 989	-5.1	0.000 000	-0.002
100 %		+50	2564 999 987	-7.2	0.000 000	-0.003
Batt. Endpoint	3.400	+20	2564 999 988	-5.5	0.000 000	-0.002



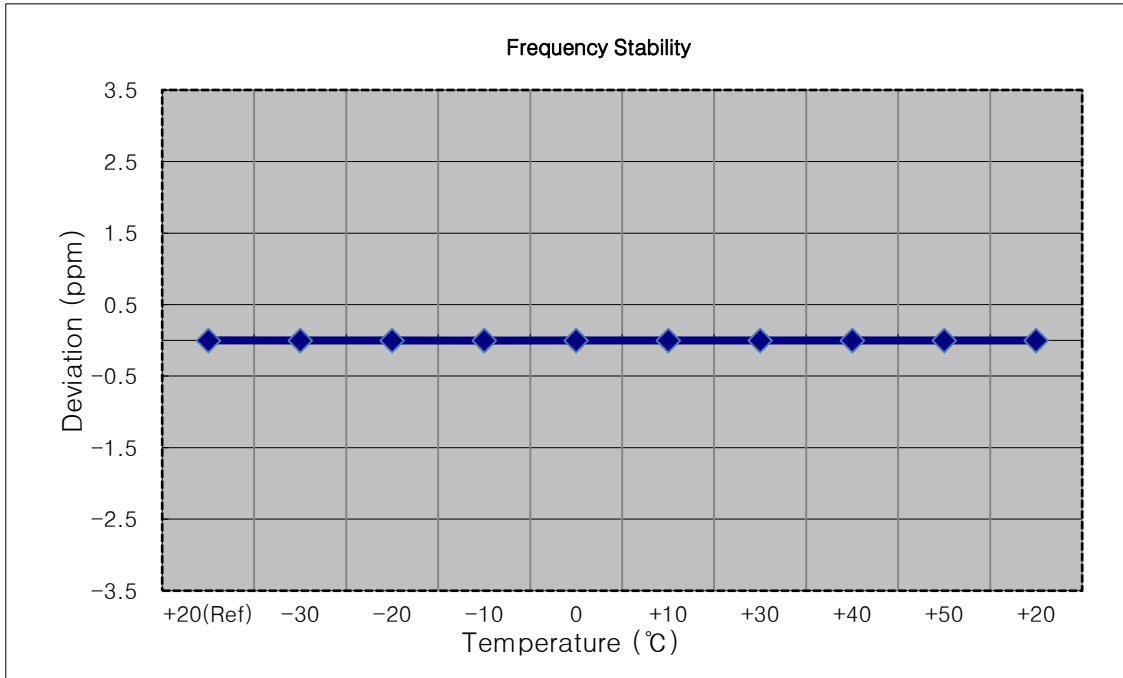
- ▣ MODE: LTE 7
- ▣ OPERATING FREQUENCY: 2,562,500,000 Hz
- ▣ CHANNEL: 21375 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

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 499 988	-5.2	0.000 000	-0.002
100 %		-20	2562 499 988	-5.1	0.000 000	-0.002
100 %		-10	2562 499 987	-6.5	0.000 000	-0.003
100 %		0	2562 499 985	-8.2	0.000 000	-0.003
100 %		+10	2562 499 988	-5.4	0.000 000	-0.002
100 %		+30	2562 499 985	-7.6	0.000 000	-0.003
100 %		+40	2562 499 989	-3.7	0.000 000	-0.001
100 %		+50	2562 499 988	-5.5	0.000 000	-0.002
Batt. Endpoint	3.400	+20	2562 499 987	-5.9	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 999 995	0.0	0.000 000	0.000
100 %		-30	2559 999 992	-3.3	0.000 000	-0.001
100 %		-20	2559 999 990	-4.9	0.000 000	-0.002
100 %		-10	2559 999 987	-7.7	0.000 000	-0.003
100 %		0	2559 999 990	-4.8	0.000 000	-0.002
100 %		+10	2559 999 989	-5.7	0.000 000	-0.002
100 %		+30	2559 999 988	-7.1	0.000 000	-0.003
100 %		+40	2559 999 988	-7.5	0.000 000	-0.003
100 %		+50	2559 999 989	-6.4	0.000 000	-0.003
Batt. Endpoint	3.400	+20	2559 999 991	-4.3	0.000 000	-0.002



10. TEST PLOTS (Main 1 Ant)

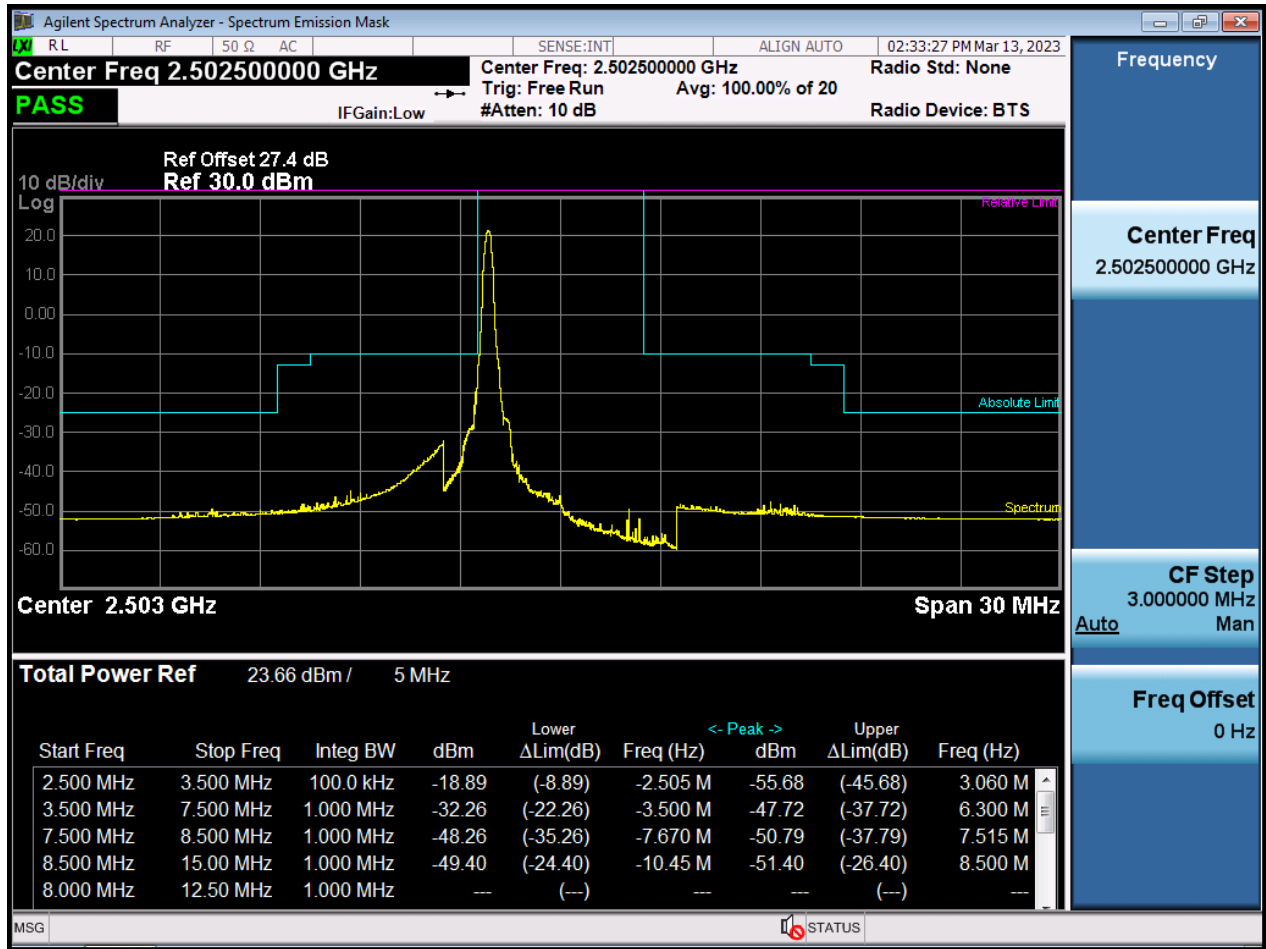
LTE7_5 M_BandEdge_Lower_Low_2502.5 MHz_QPSK_FullIRB



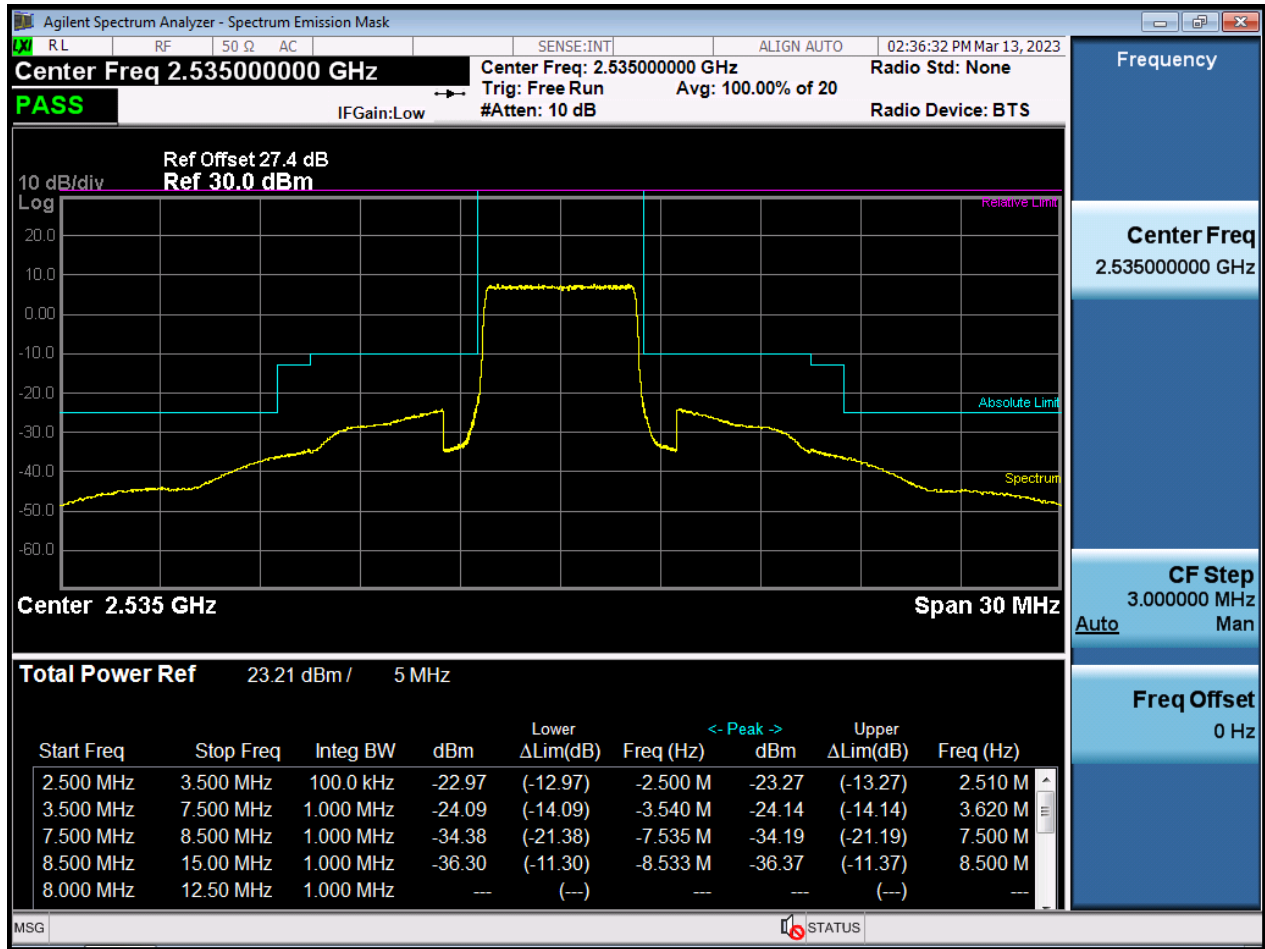
LTE7_5 M_BandEdge_Upper_Low_2502.5 MHz_QPSK_FullIRB



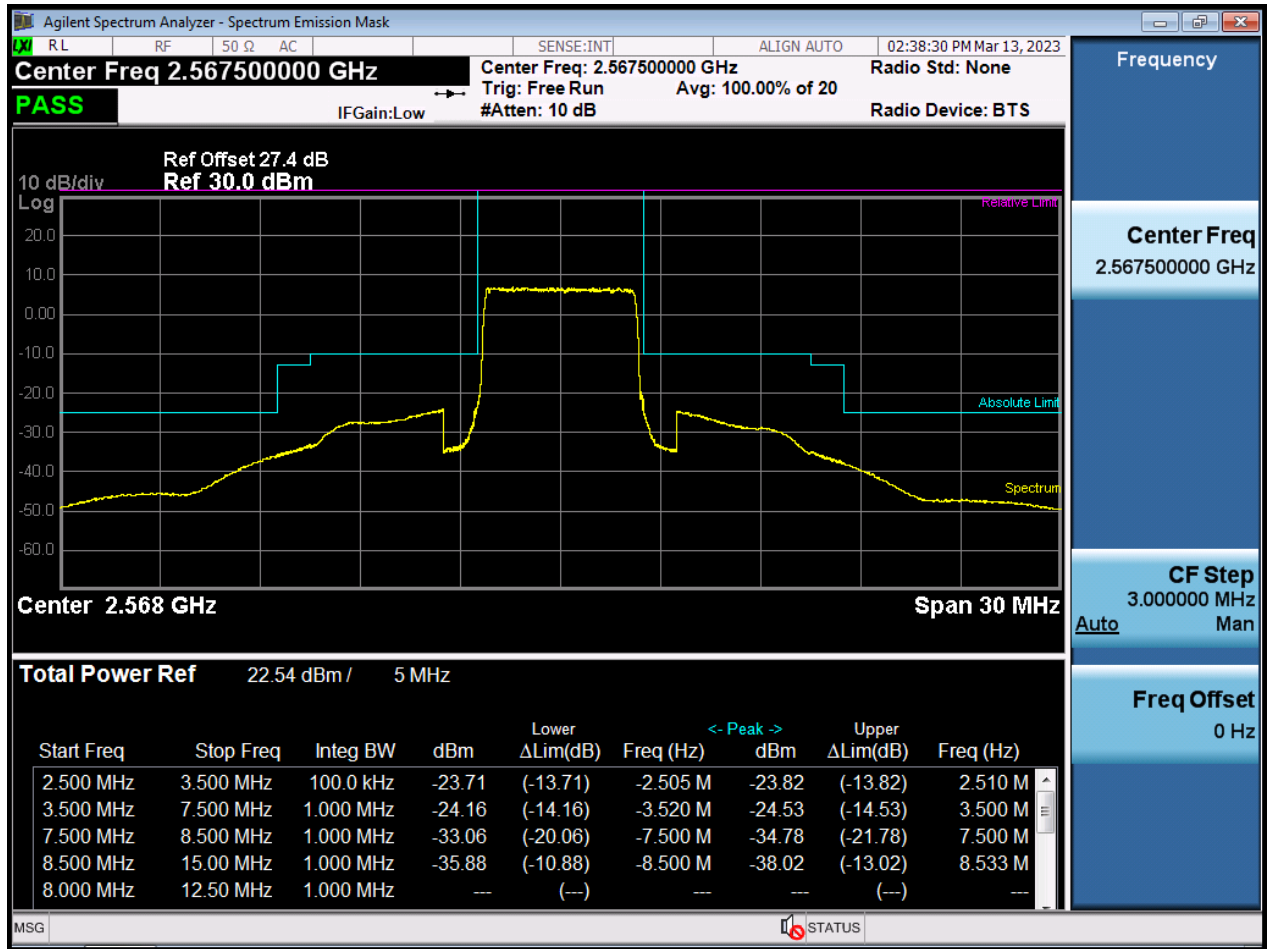
LTE7_5 M_BandEdge_Low_2502.5 MHz_QPSK_1RB



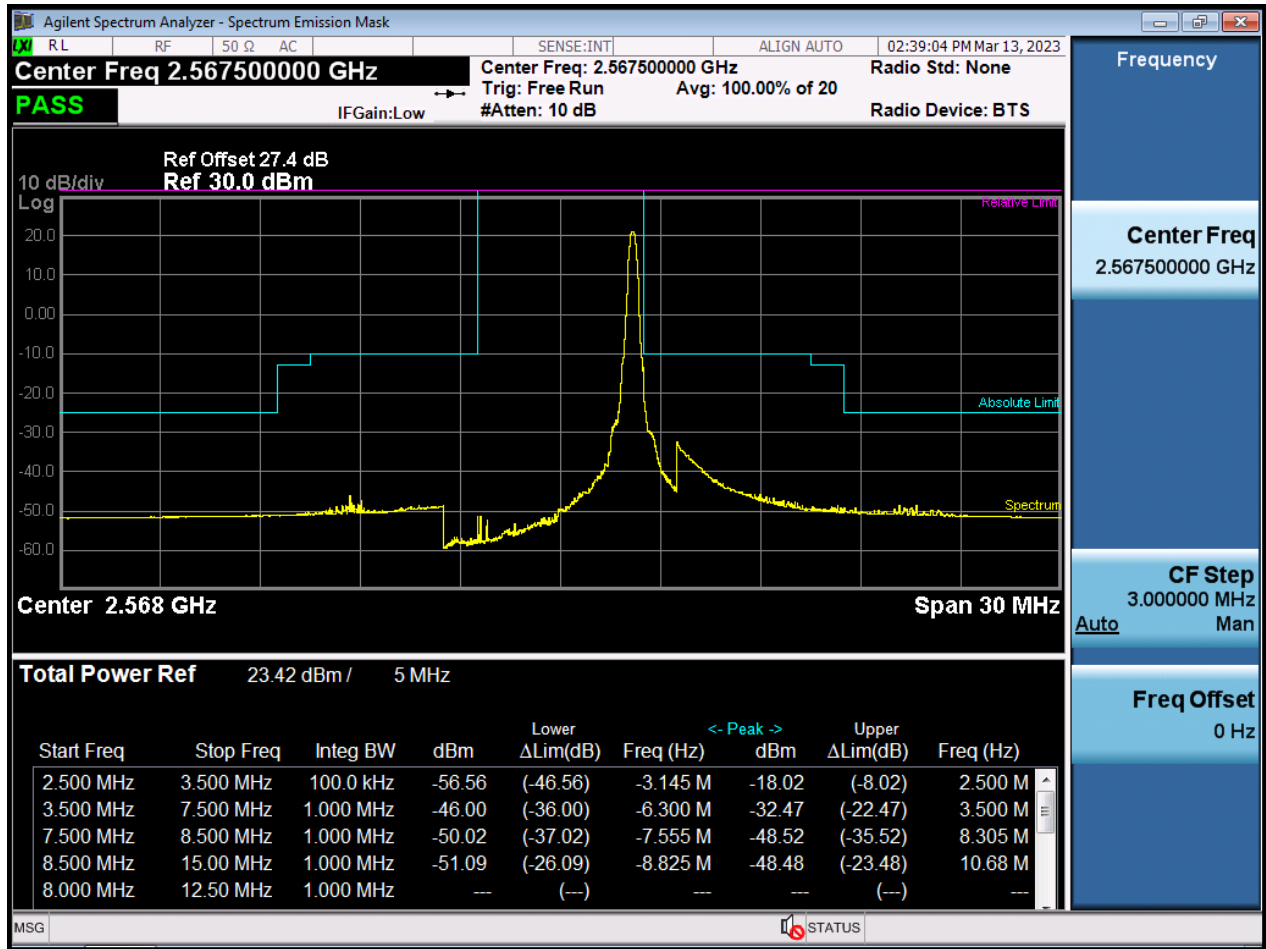
LTE7_5 M_BandEdge_Mid_2535 MHz_QPSK_FullRB



LTE7_5 M_BandEdge_High_2567.5 MHz_QPSK_FullIRB



LTE7_5 M_BandEdge_High_2567.5 MHz_QPSK_1RB



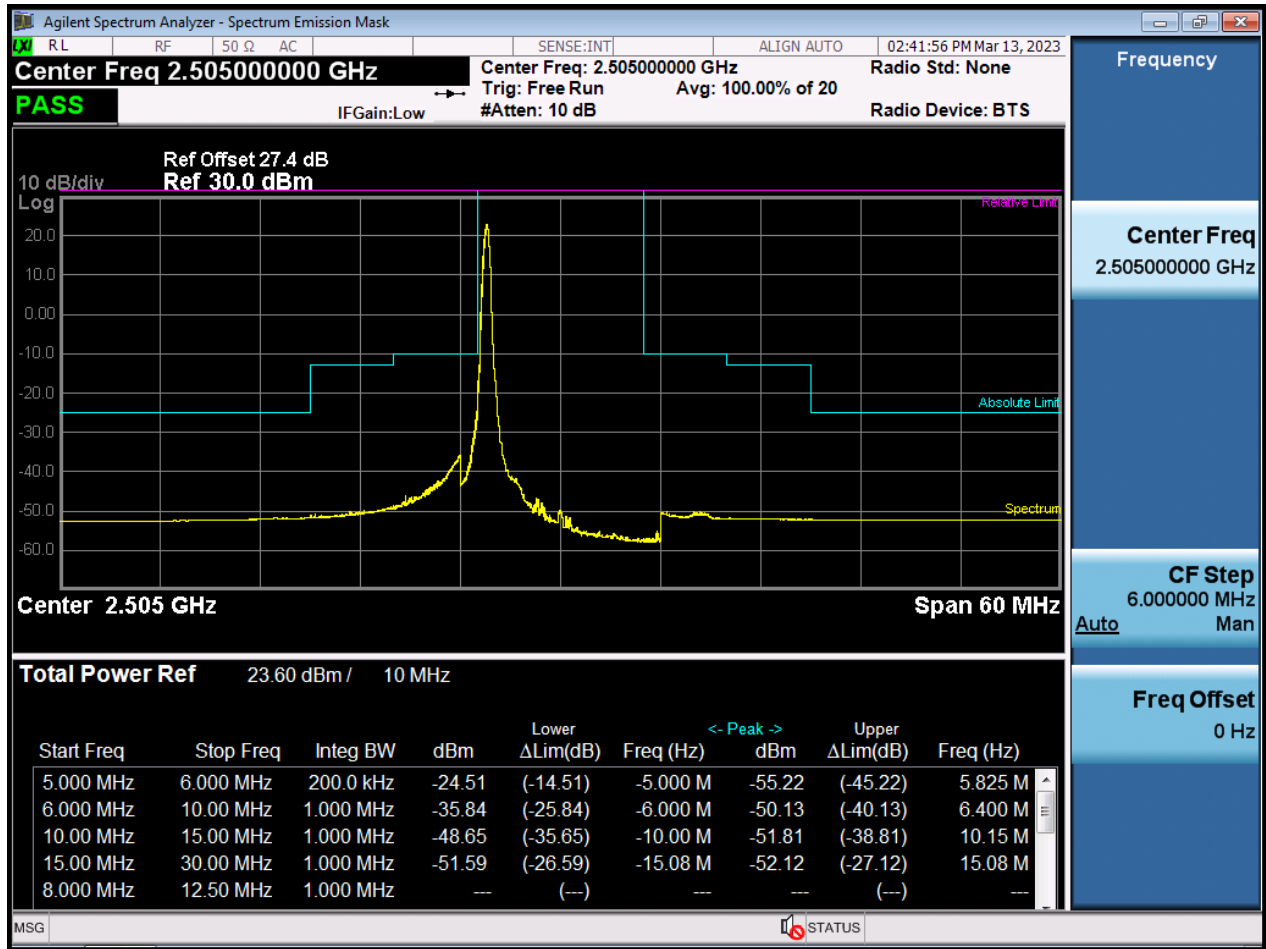
LTE7_10 M_BandEdge_Lower_Low_2505 MHz_QPSK_FullRB



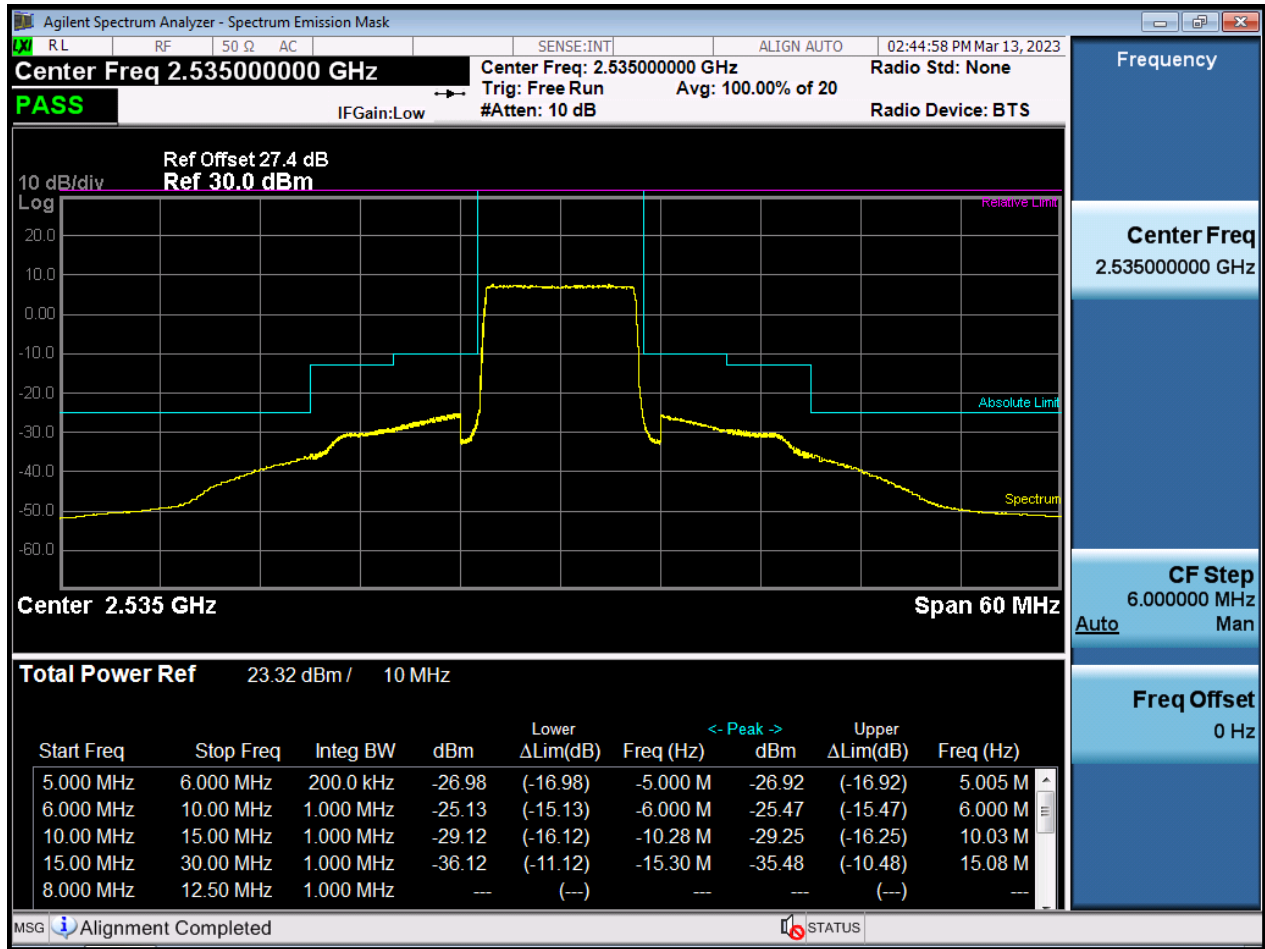
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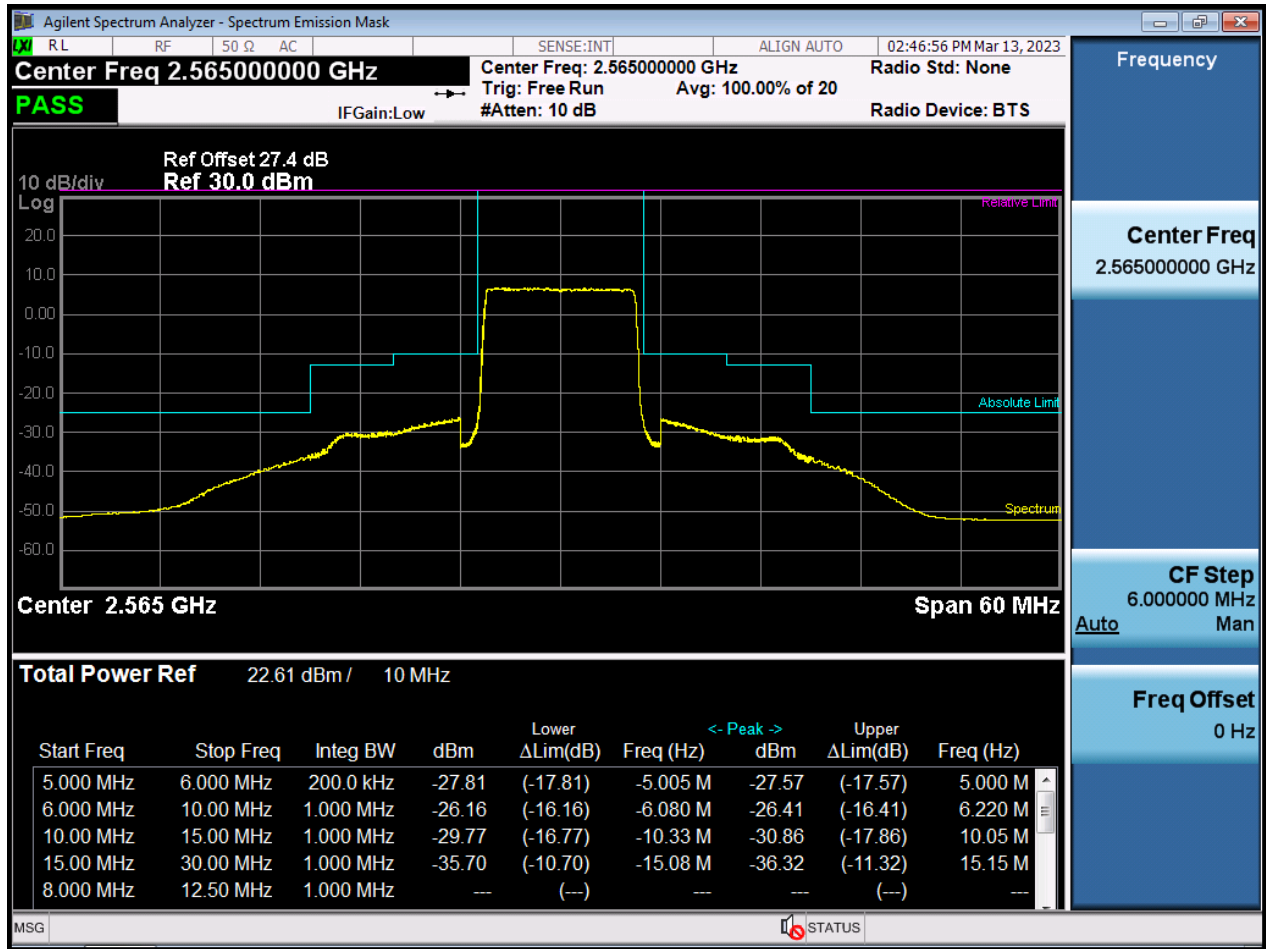
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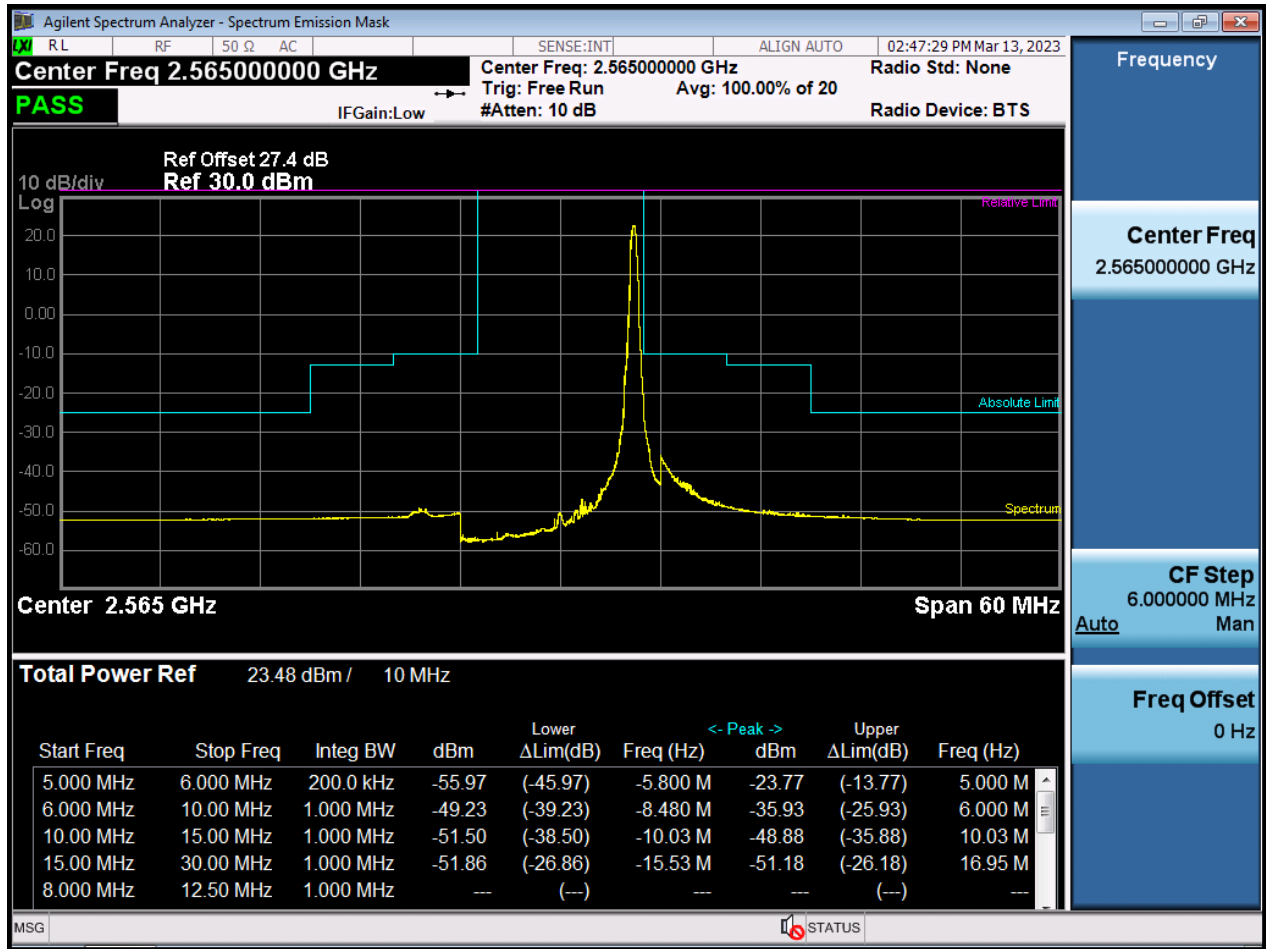
LTE7_10 M_BandEdge_Mid_2535 MHz_QPSK_FullIRB



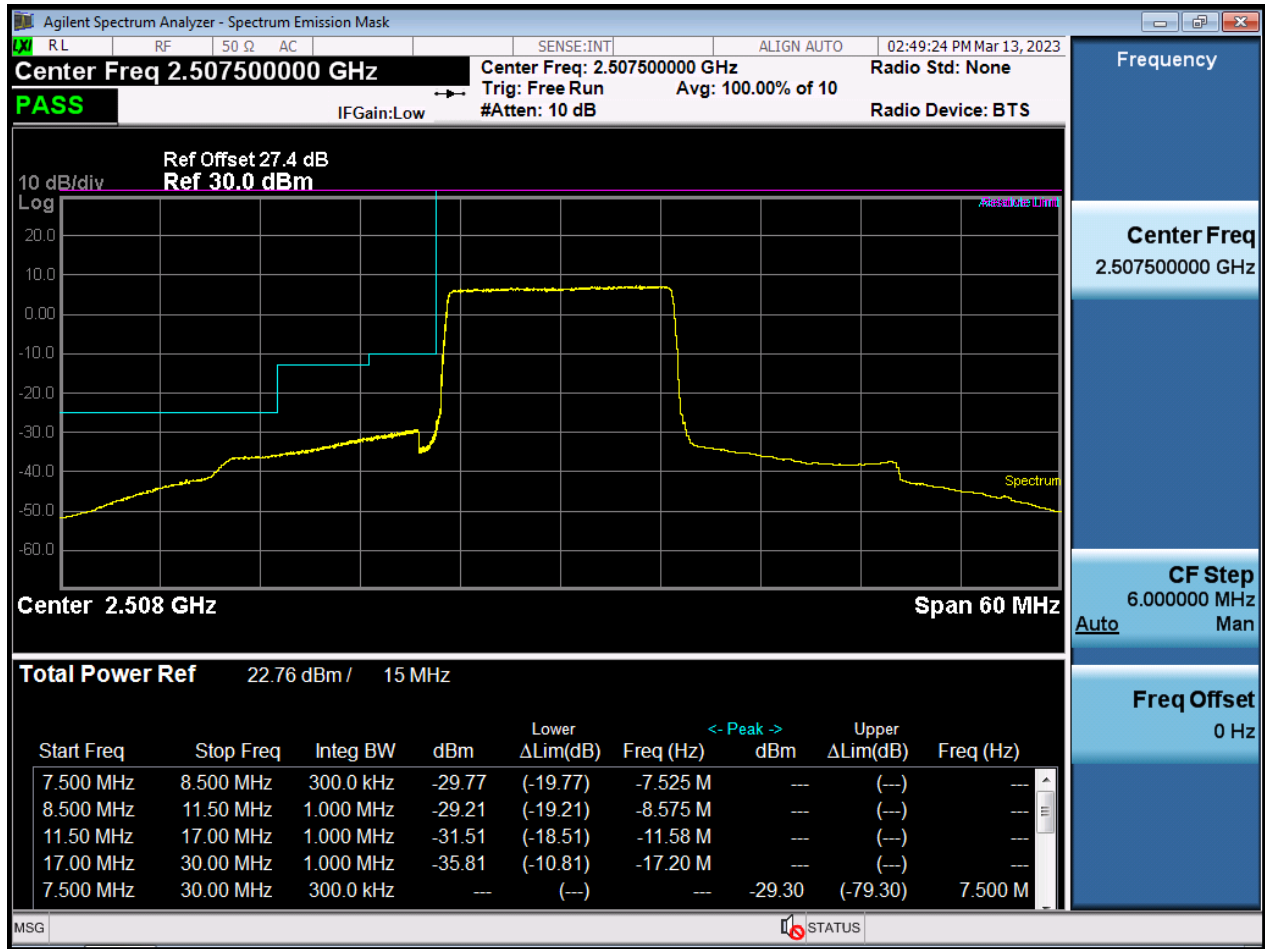
LTE7_10 M_BandEdge_High_2565 MHz_QPSK_FullIRB



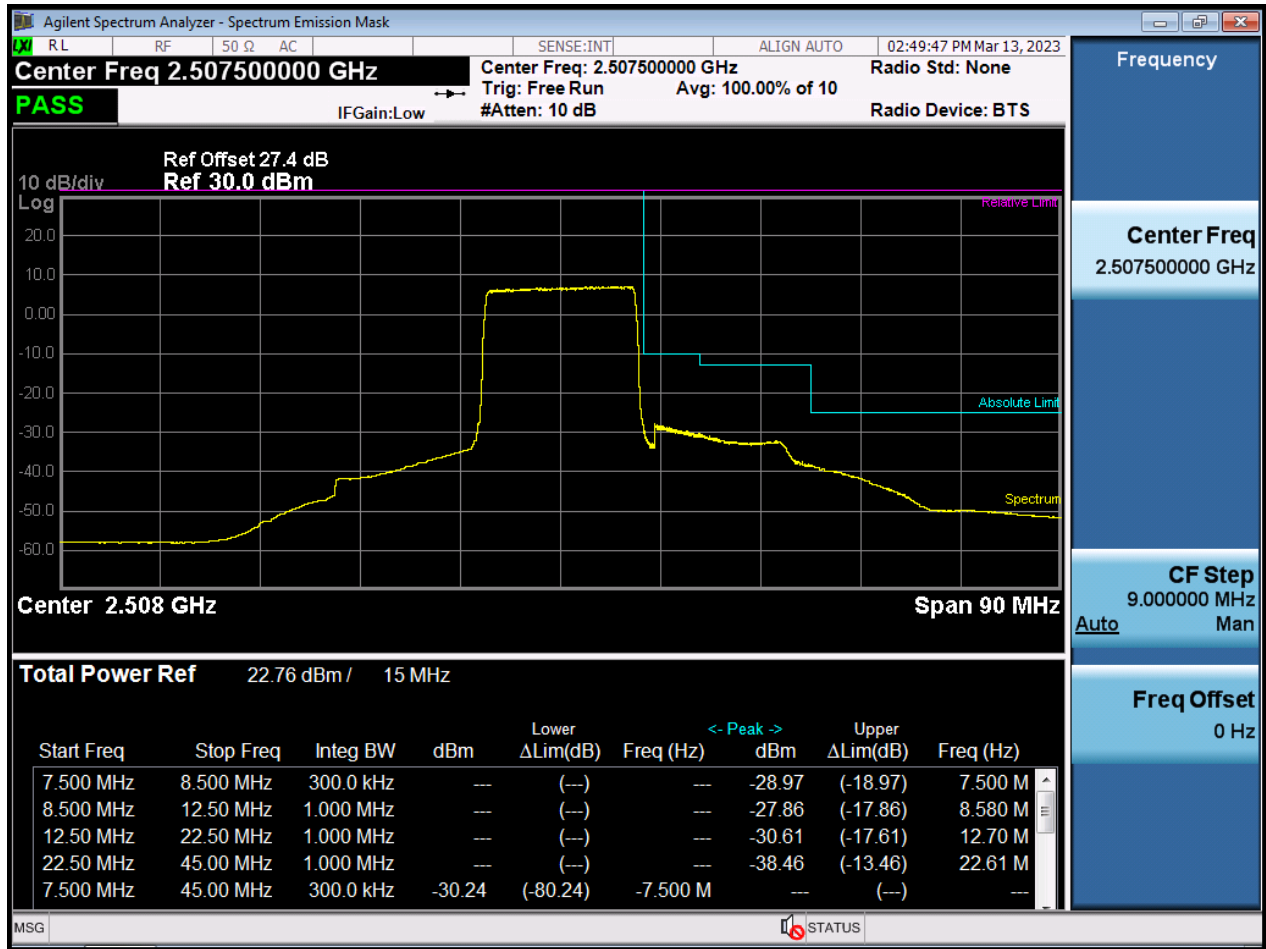
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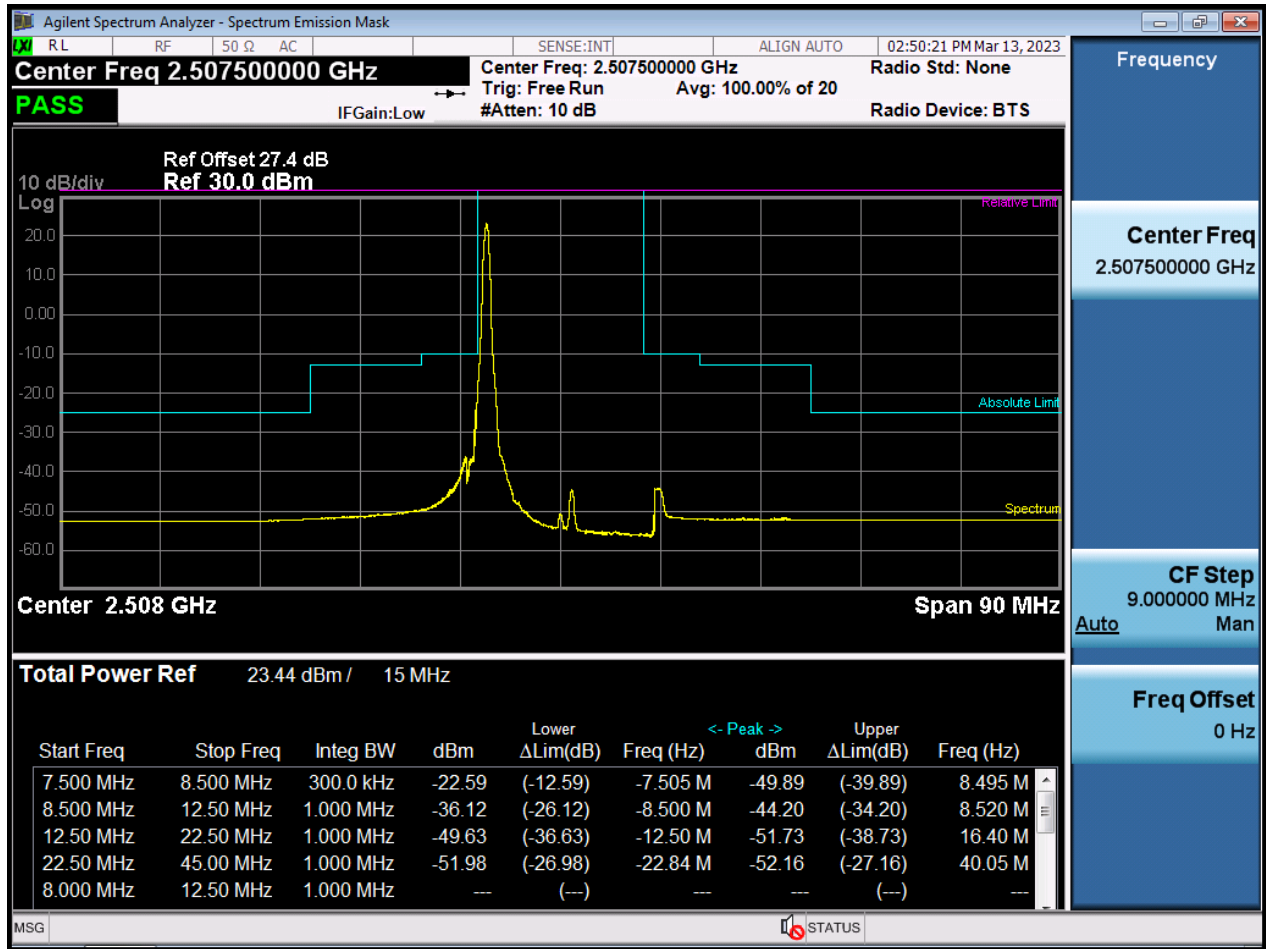
LTE7_15 M_BandEdge_Lower_Low_2507.5 MHz_QPSK_FullRB



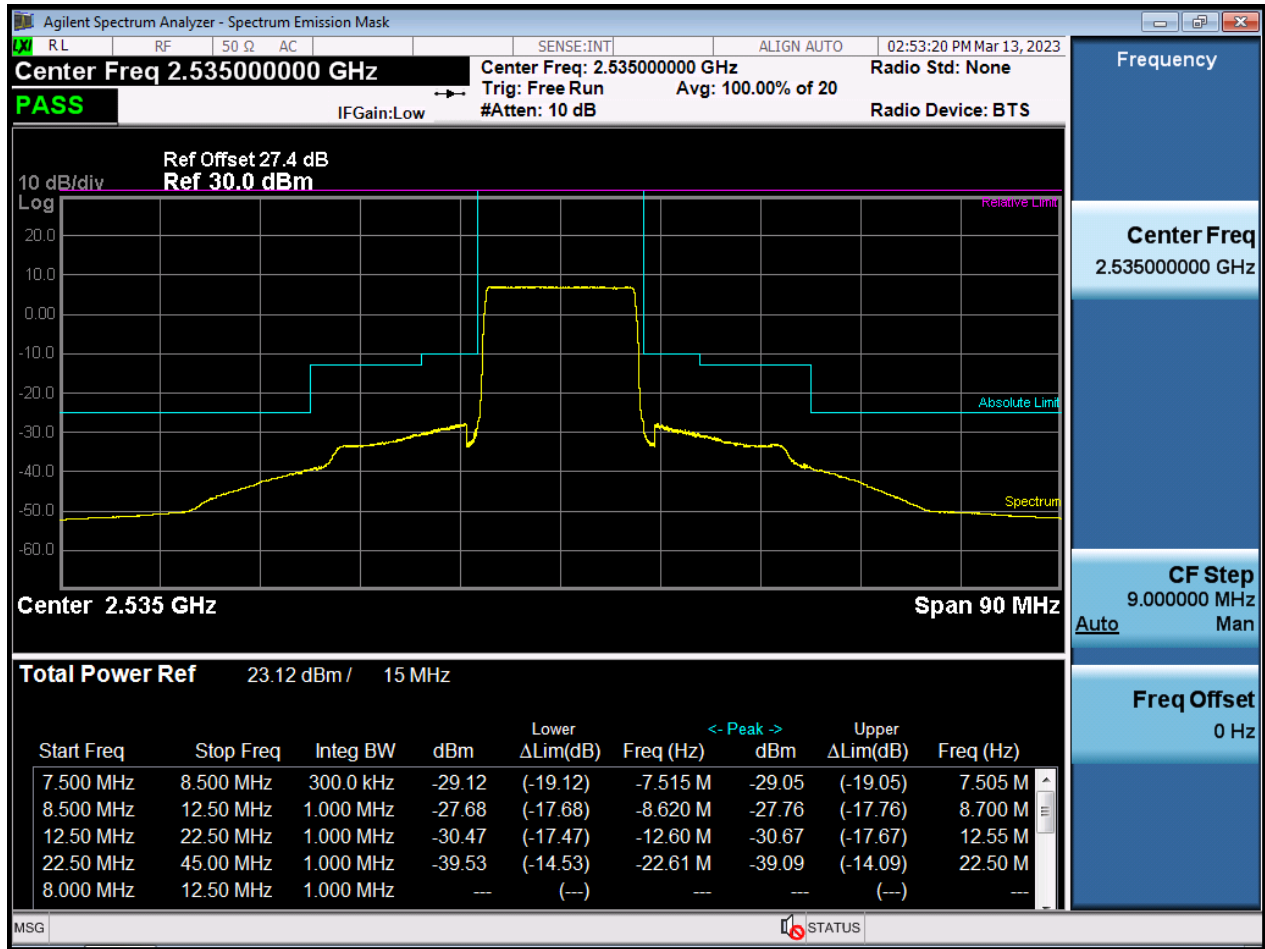
LTE7_15 M_BandEdge_Upper_Low_2507.5 MHz_QPSK_FullRB



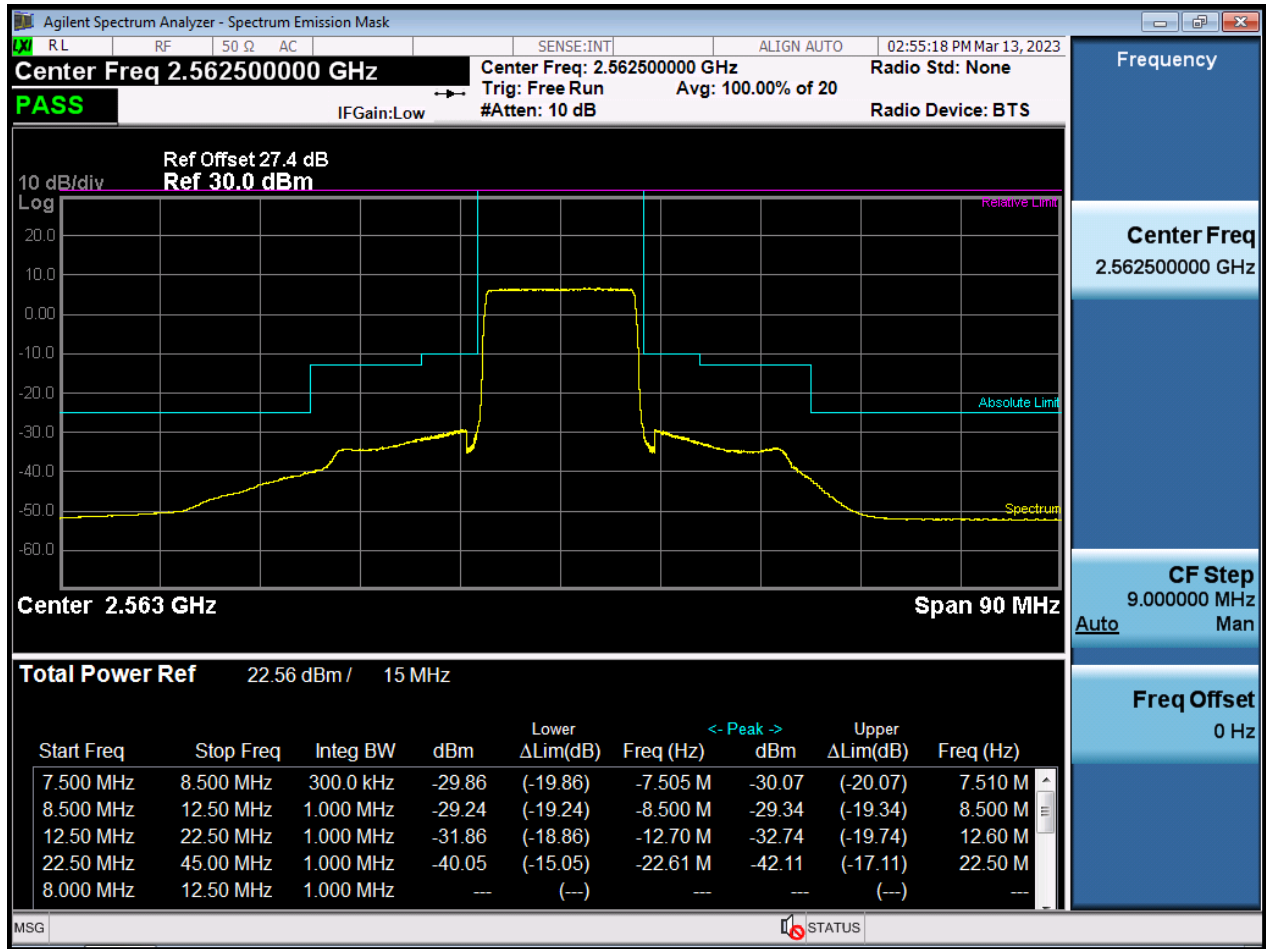
LTE7_15 M_BandEdge_Low_2507.5 MHz_QPSK_1RB



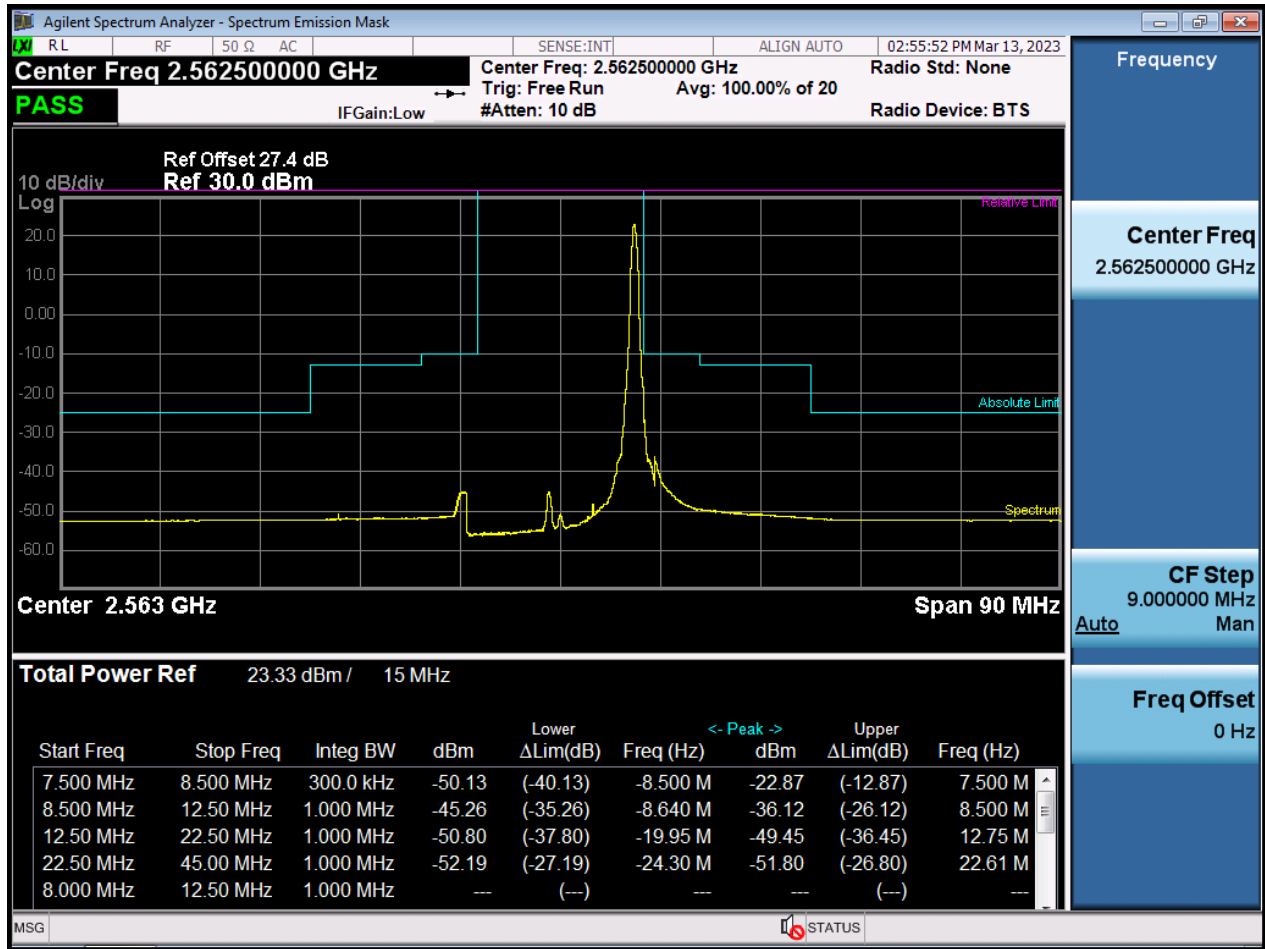
LTE7_15 M_BandEdge_Mid_2535 MHz_QPSK_FullIRB



LTE7_15 M_BandEdge_High_2562.5 MHz_QPSK_FullIRB



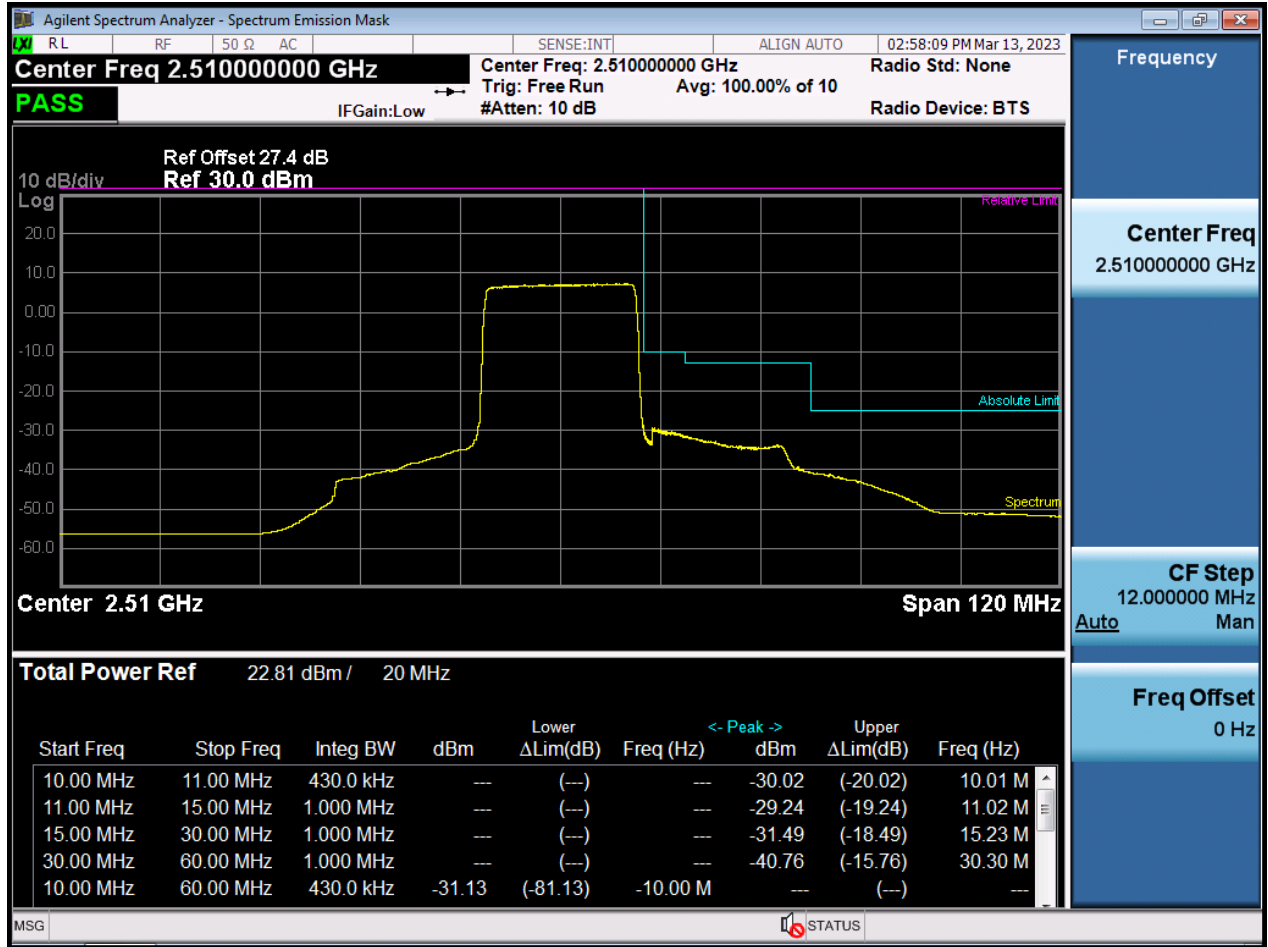
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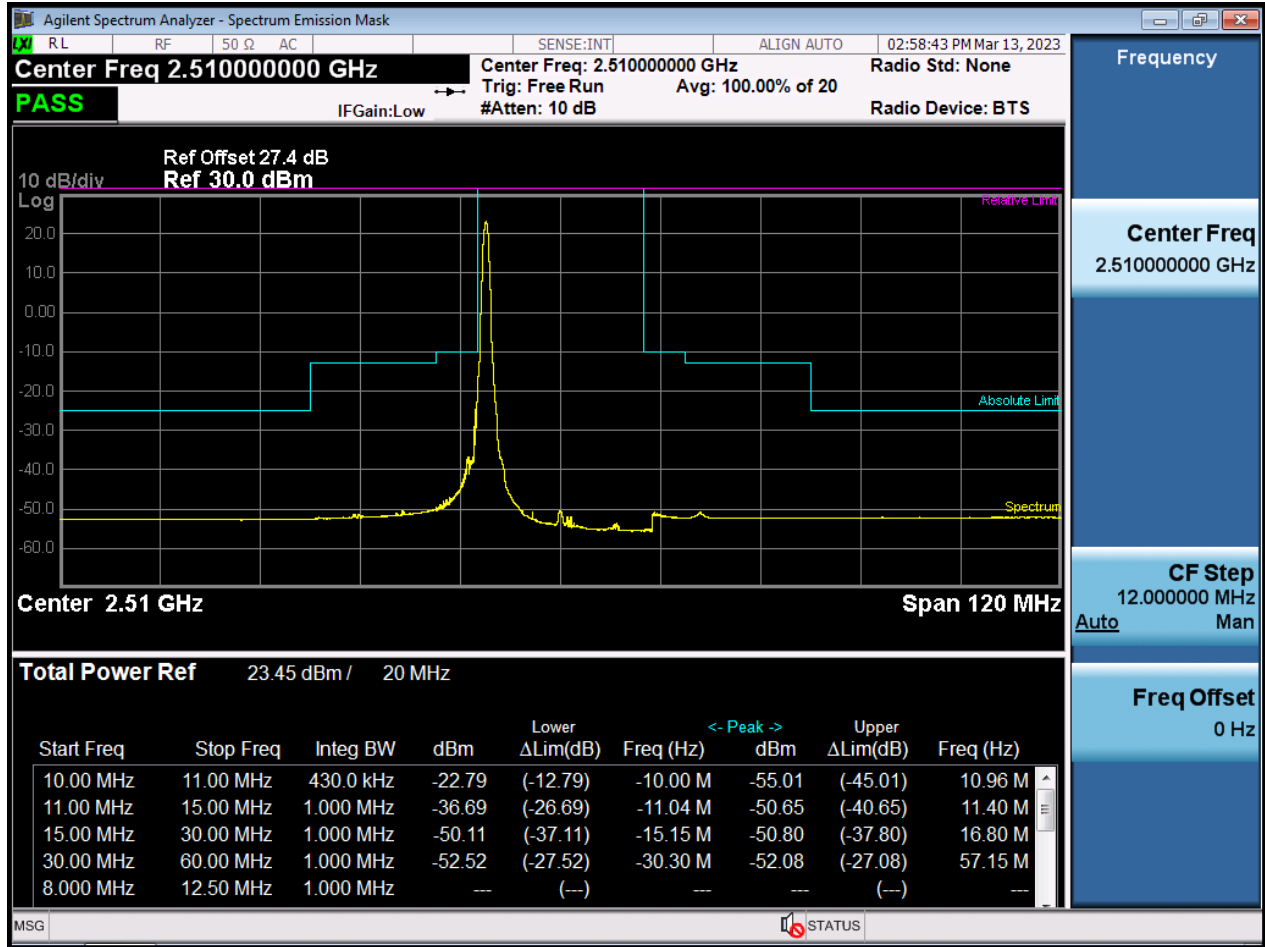
LTE7_20 M_BandEdge_Lower_Low_2510 MHz_QPSK_FullRB



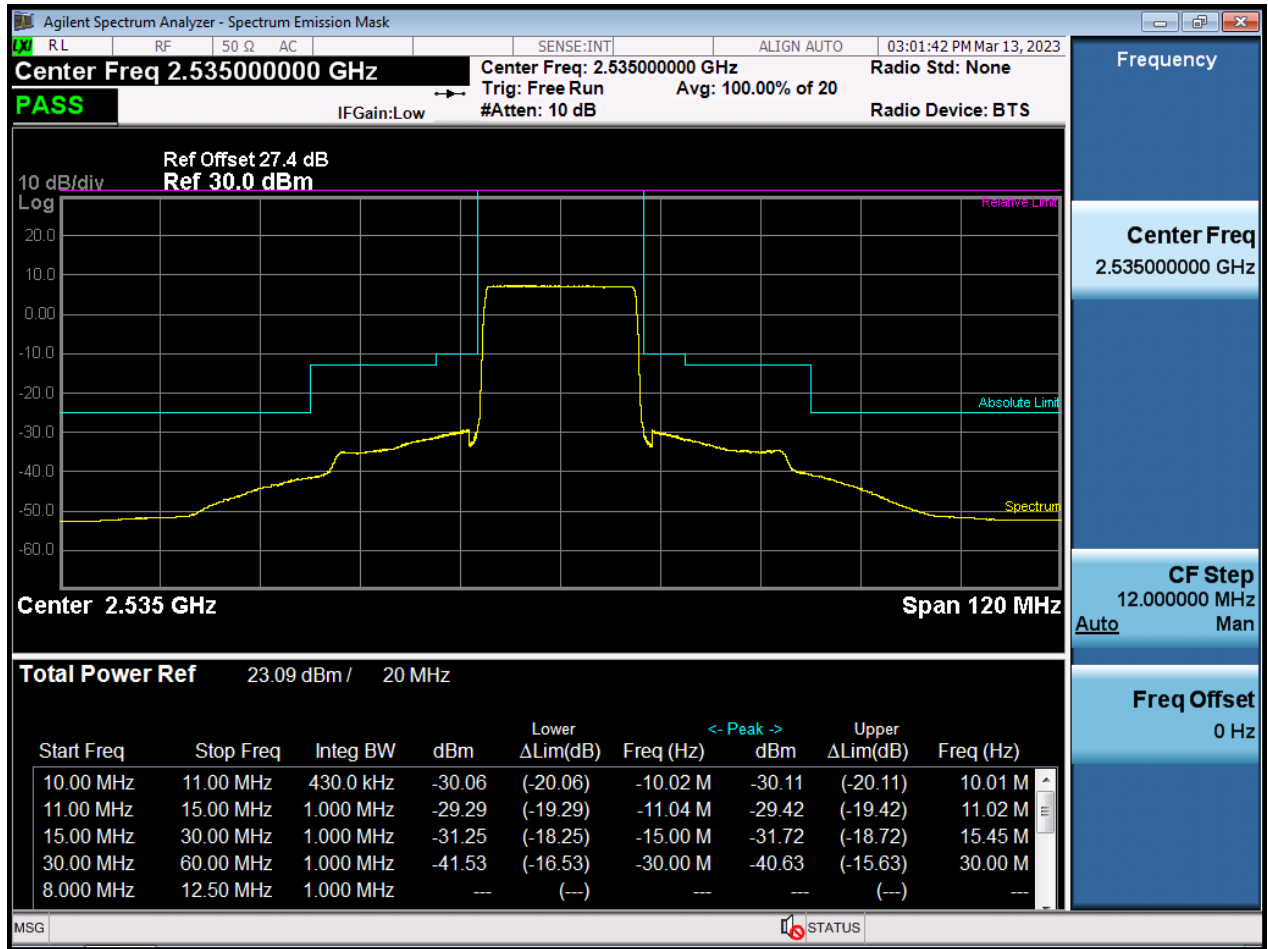
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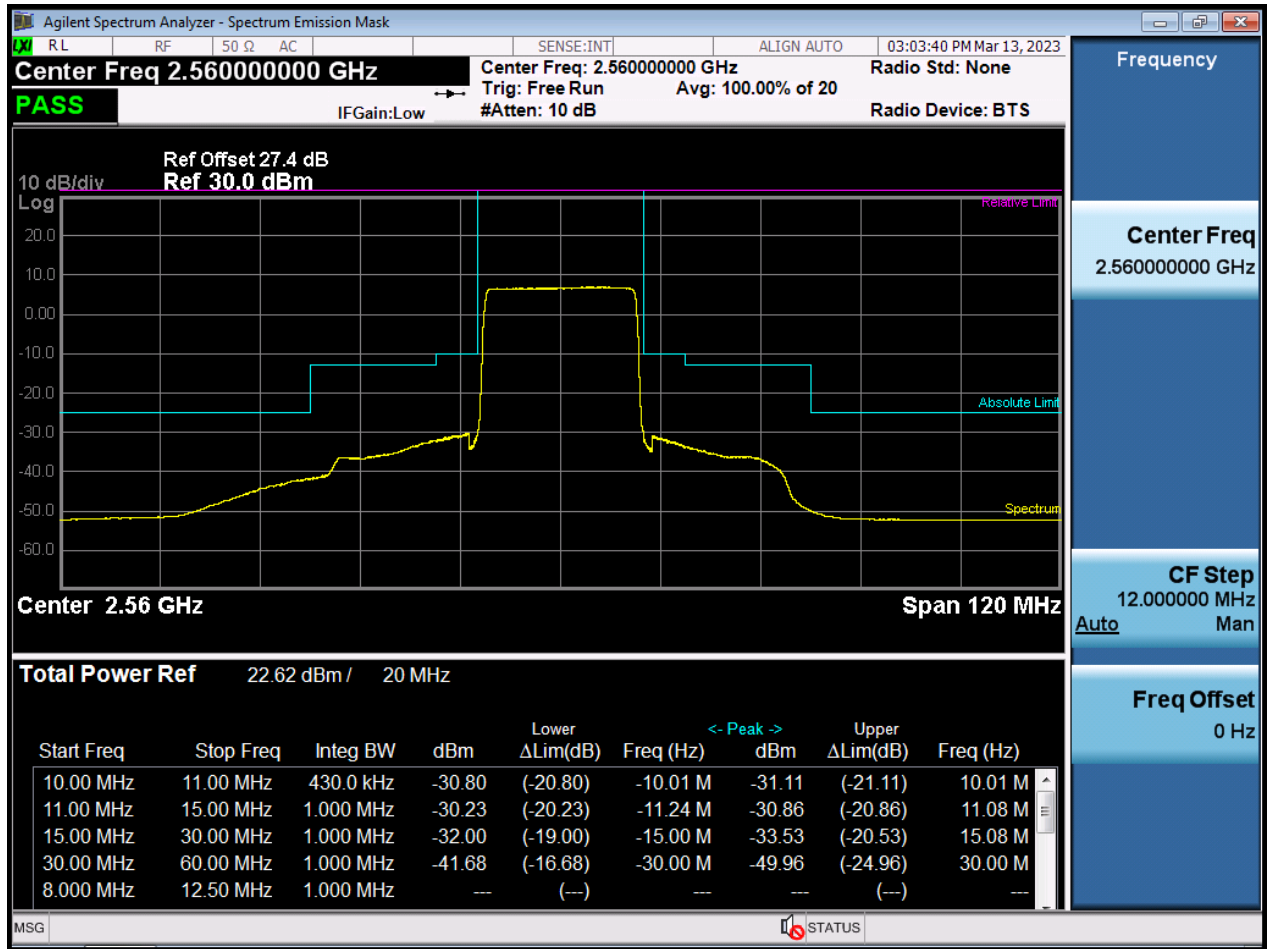
LTE7_20 M_BandEdge_Low_2510 MHz_QPSK_1RB



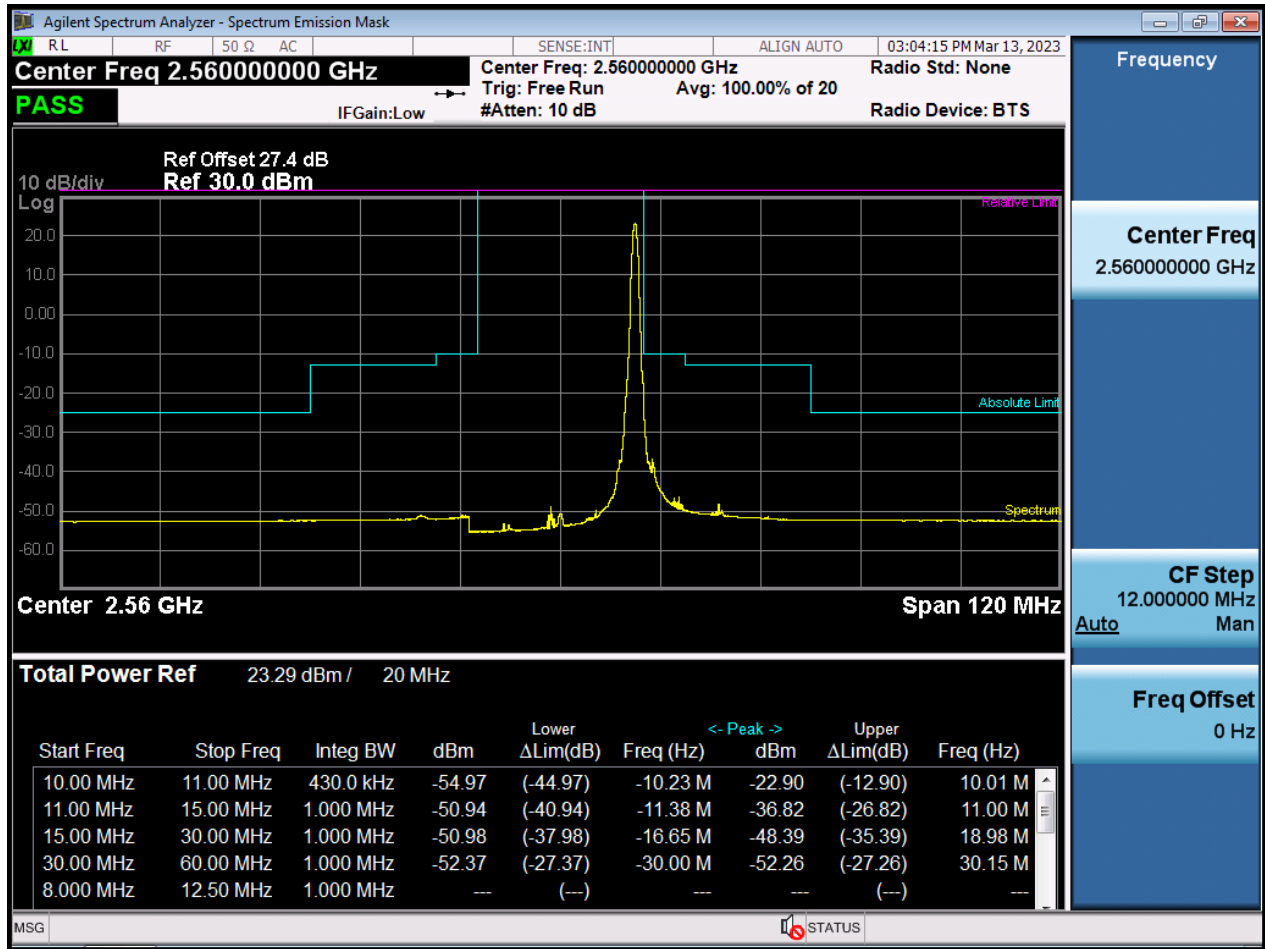
LTE7_20 M_BandEdge_Mid_2535 MHz_QPSK_FullIRB



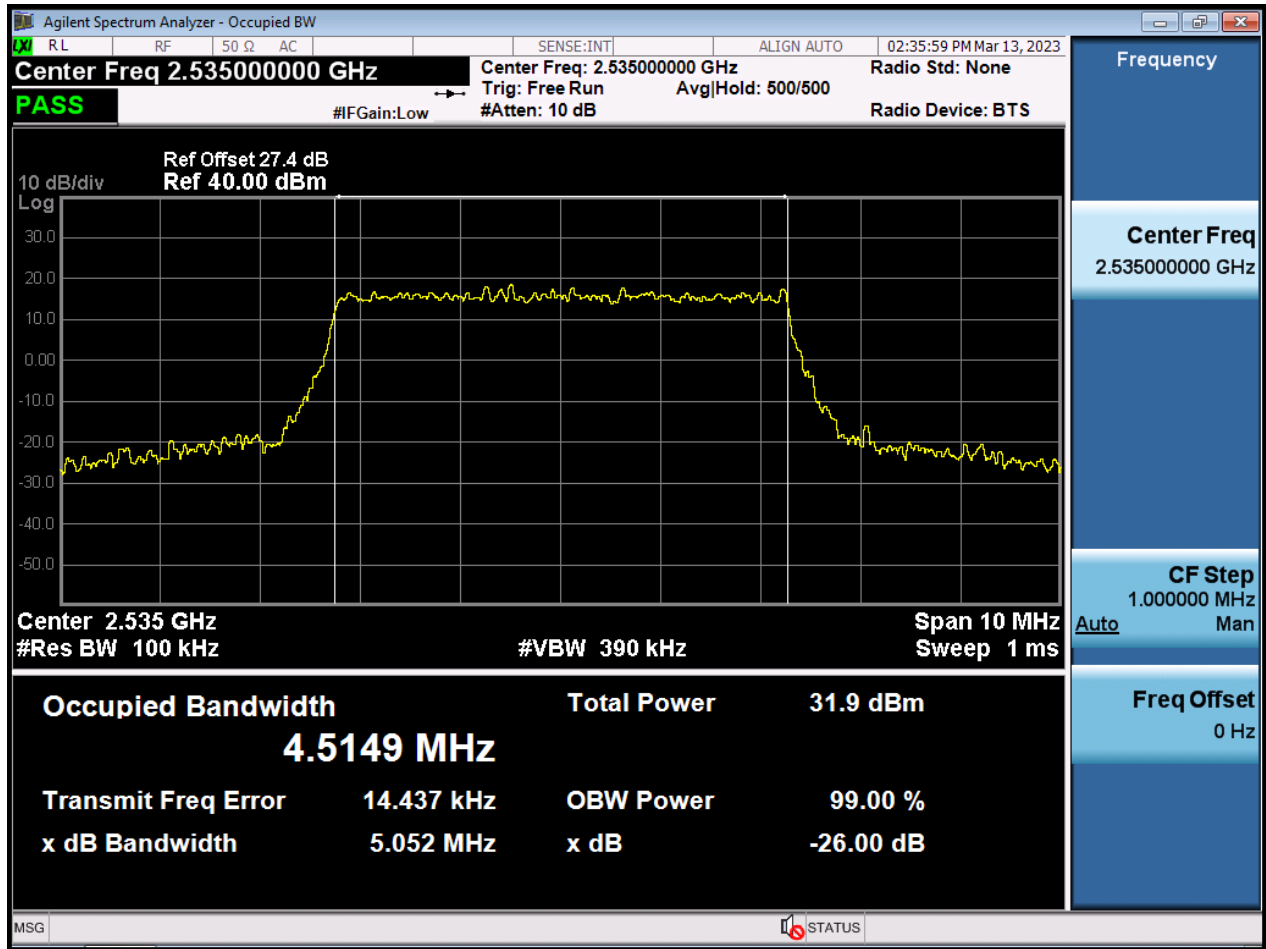
LTE7_20 M_BandEdge_High_2560 MHz_QPSK_FullIRB



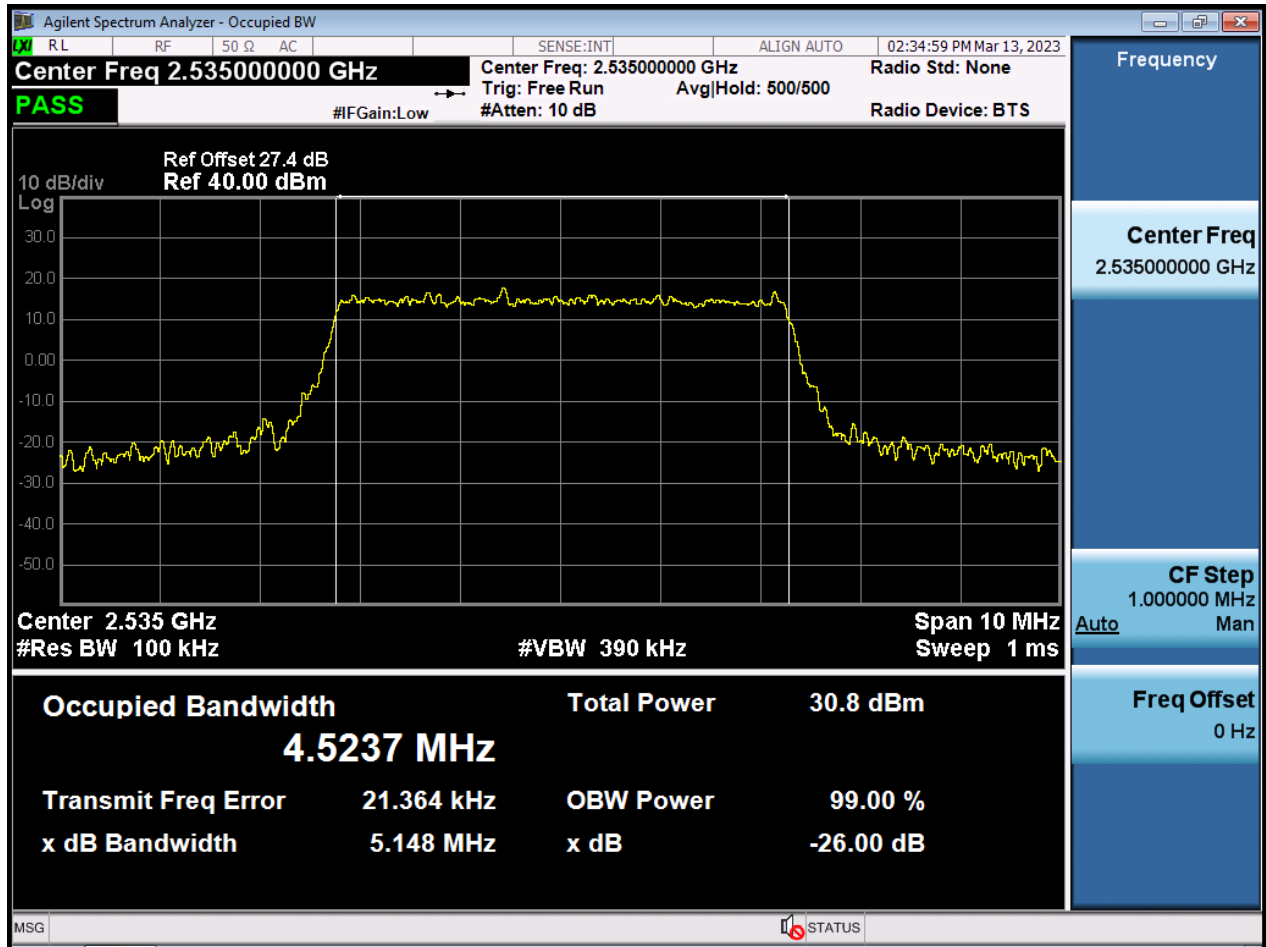
LTE7_20 M_BandEdge_High_2560 MHz_QPSK_1RB



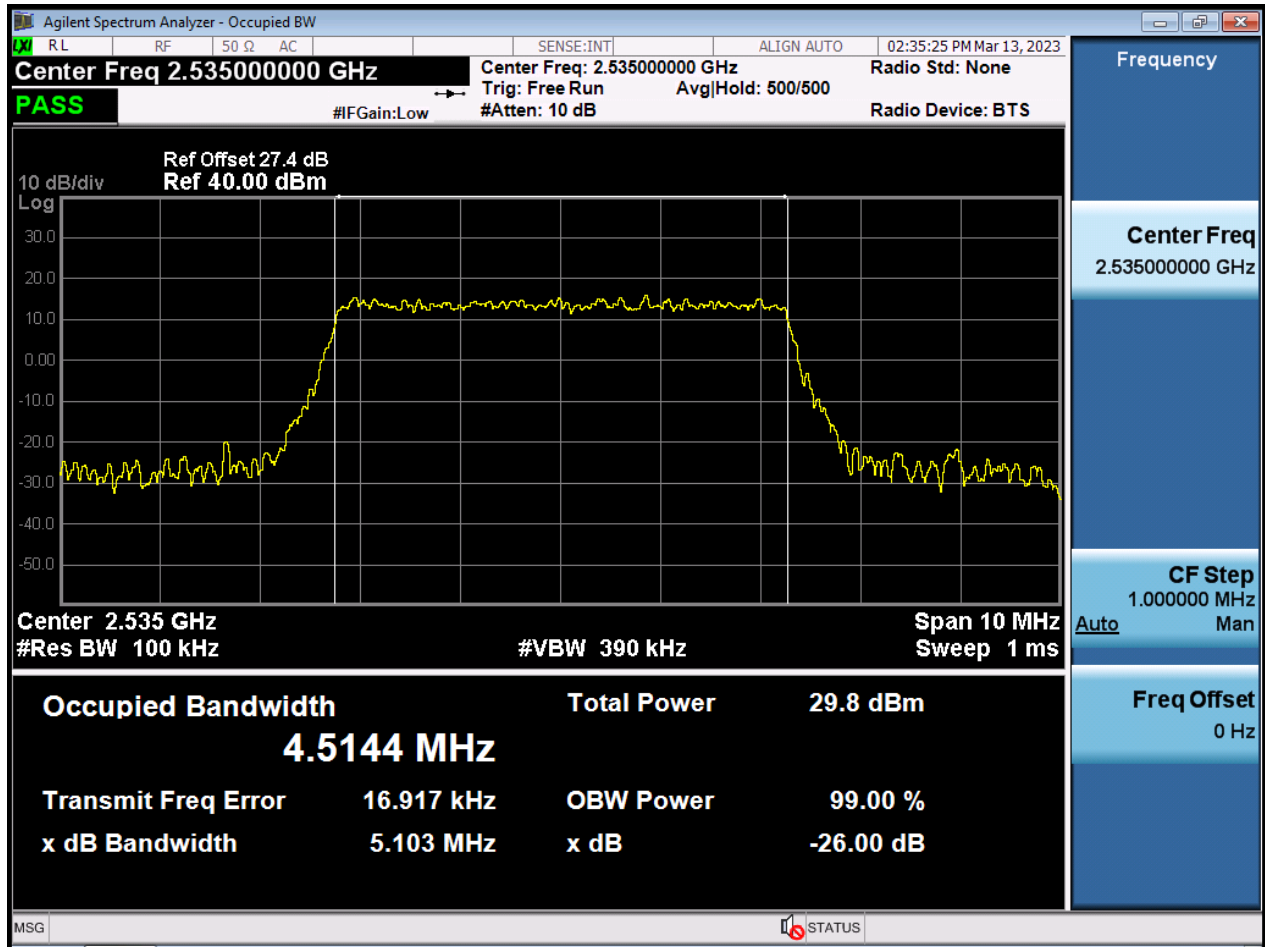
LTE7_5 M_OBW_Mid Channel_QPSK_FullRB



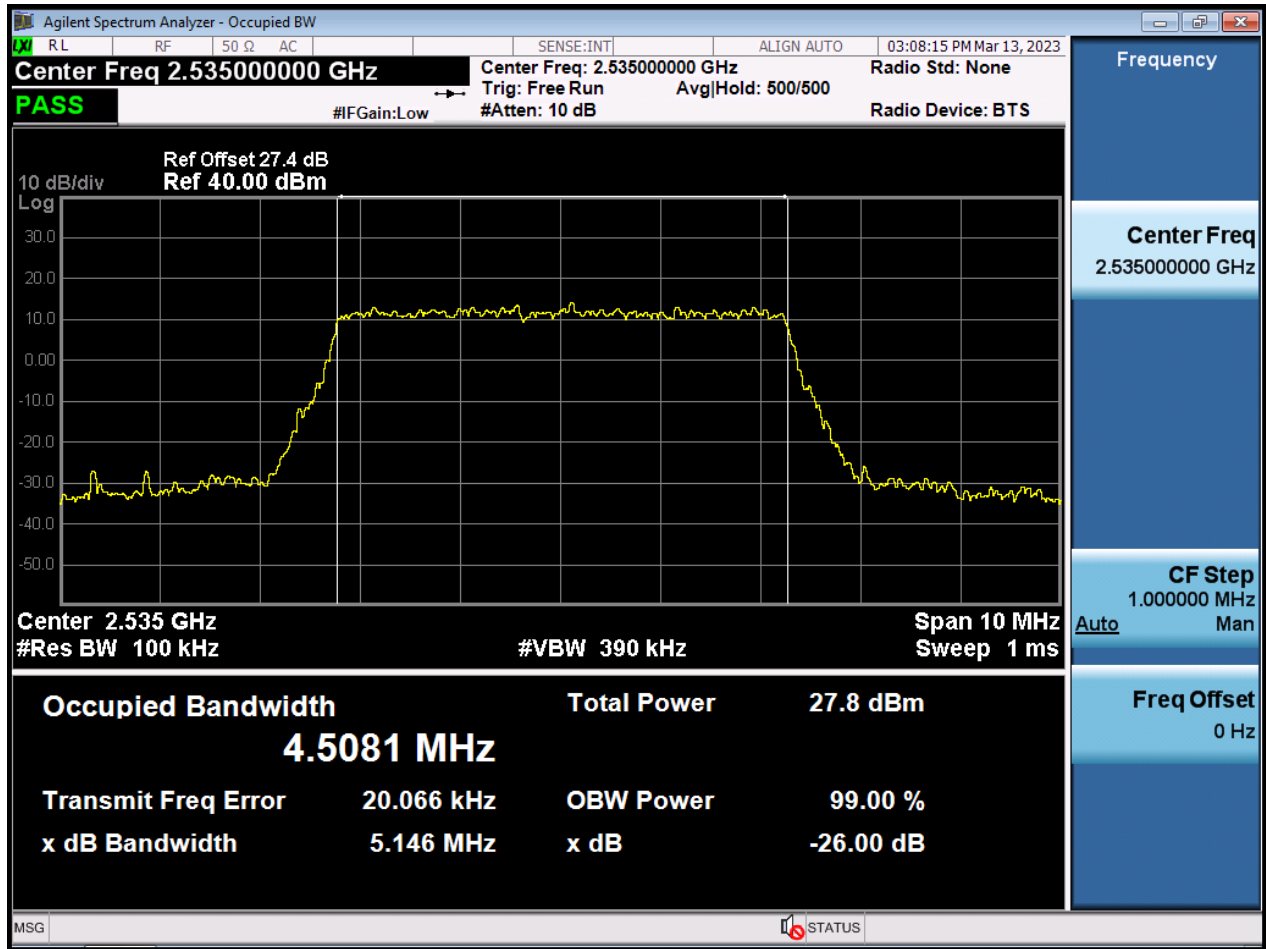
LTE7_5 M_OBW_Mid Channel_16QAM_FullRB



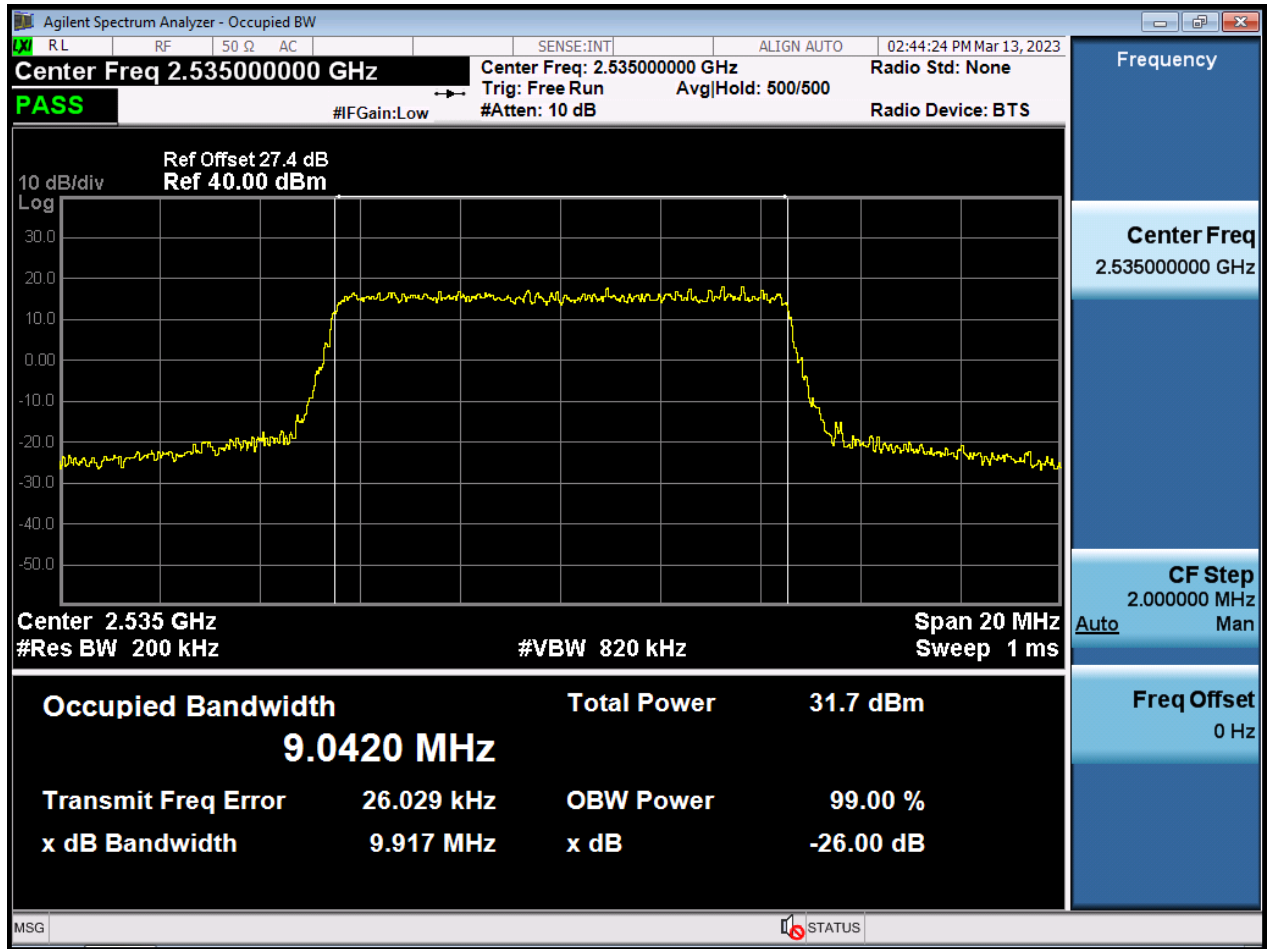
LTE7_5 M_OBW_Mid Channel_64QAM_FullRB



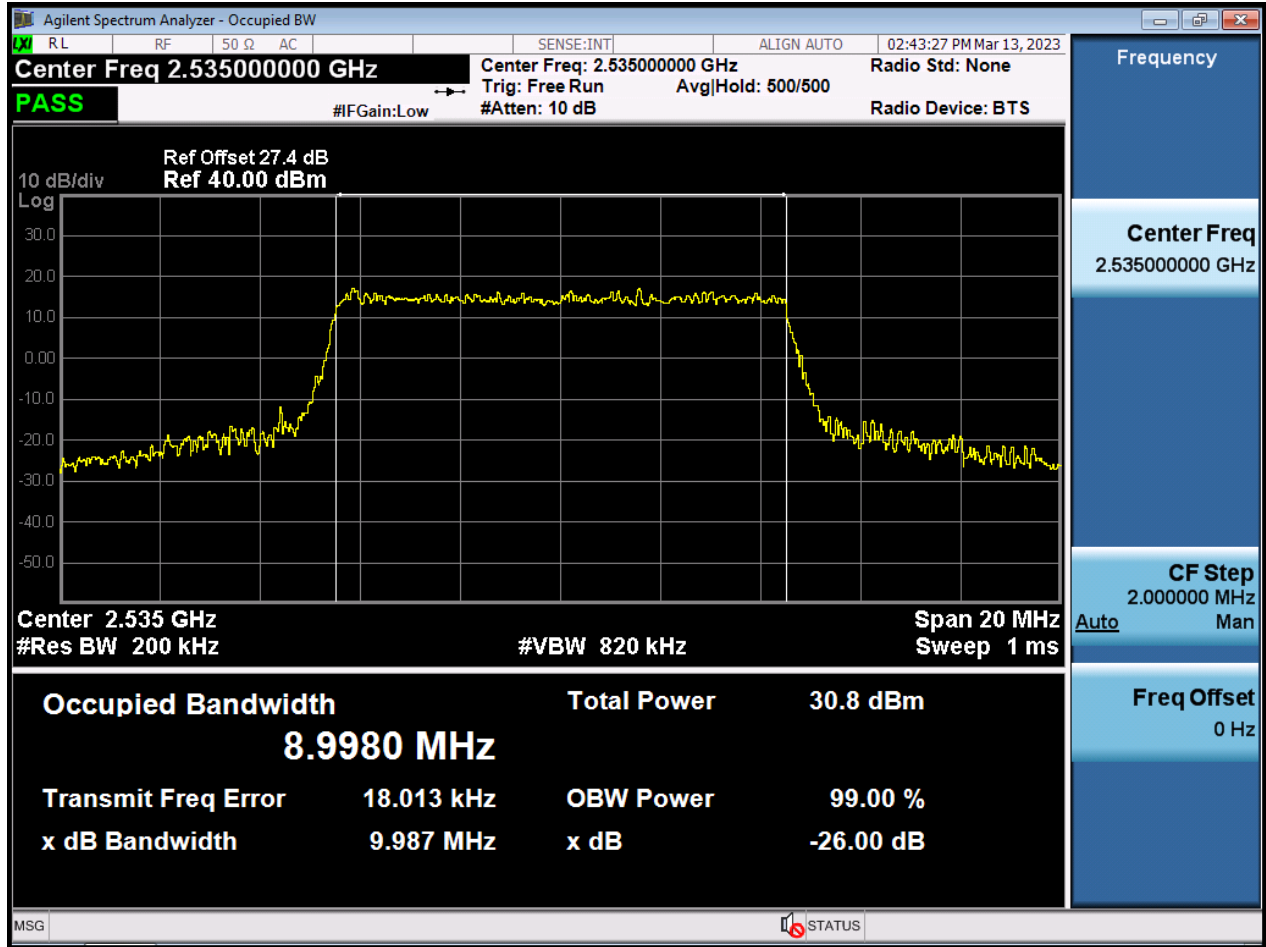
LTE7_5 M_OBW_Mid Channel_256QAM_FullIRB



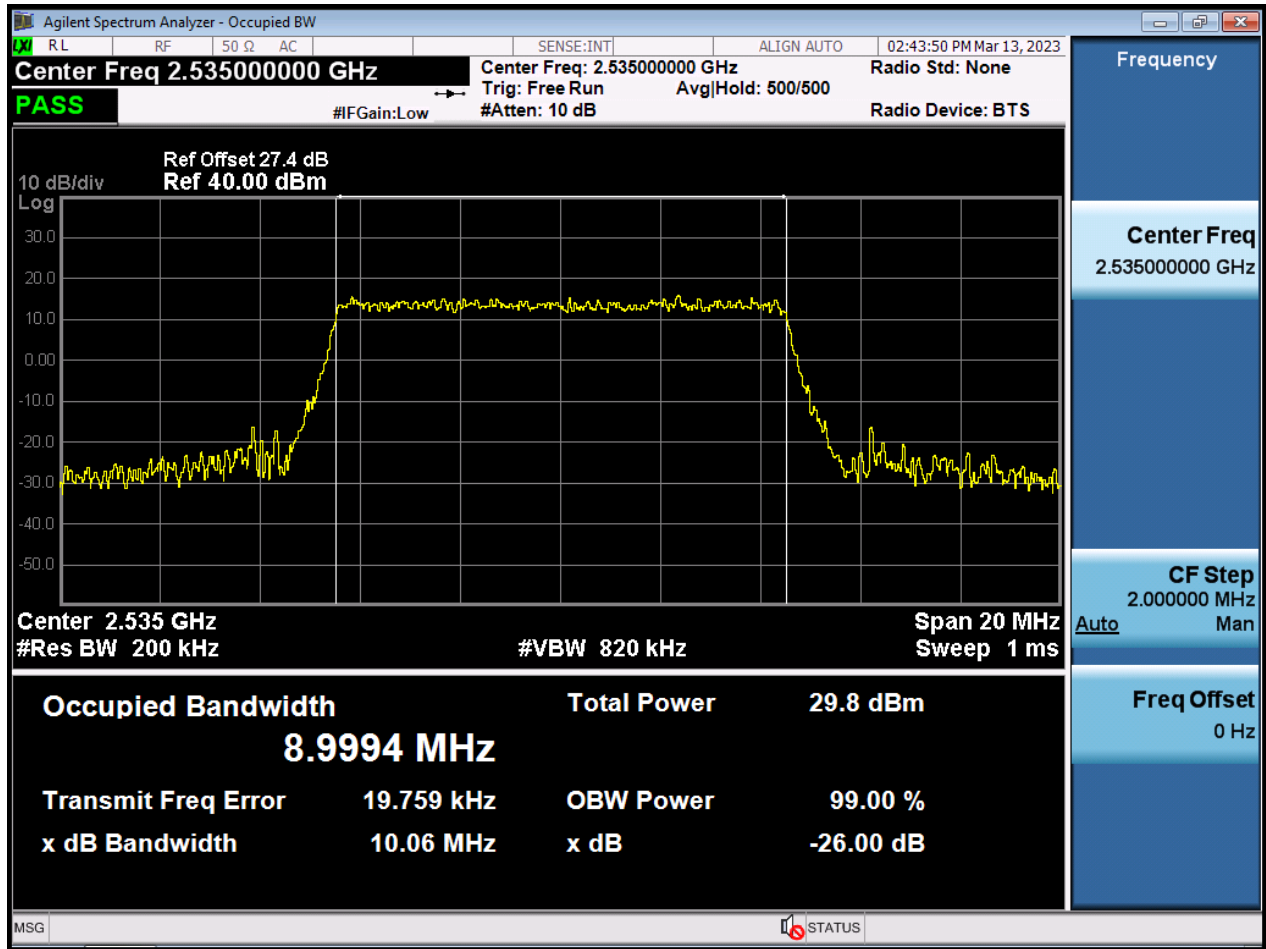
LTE7_10 M_OBW_Mid Channel_QPSK_FullIRB



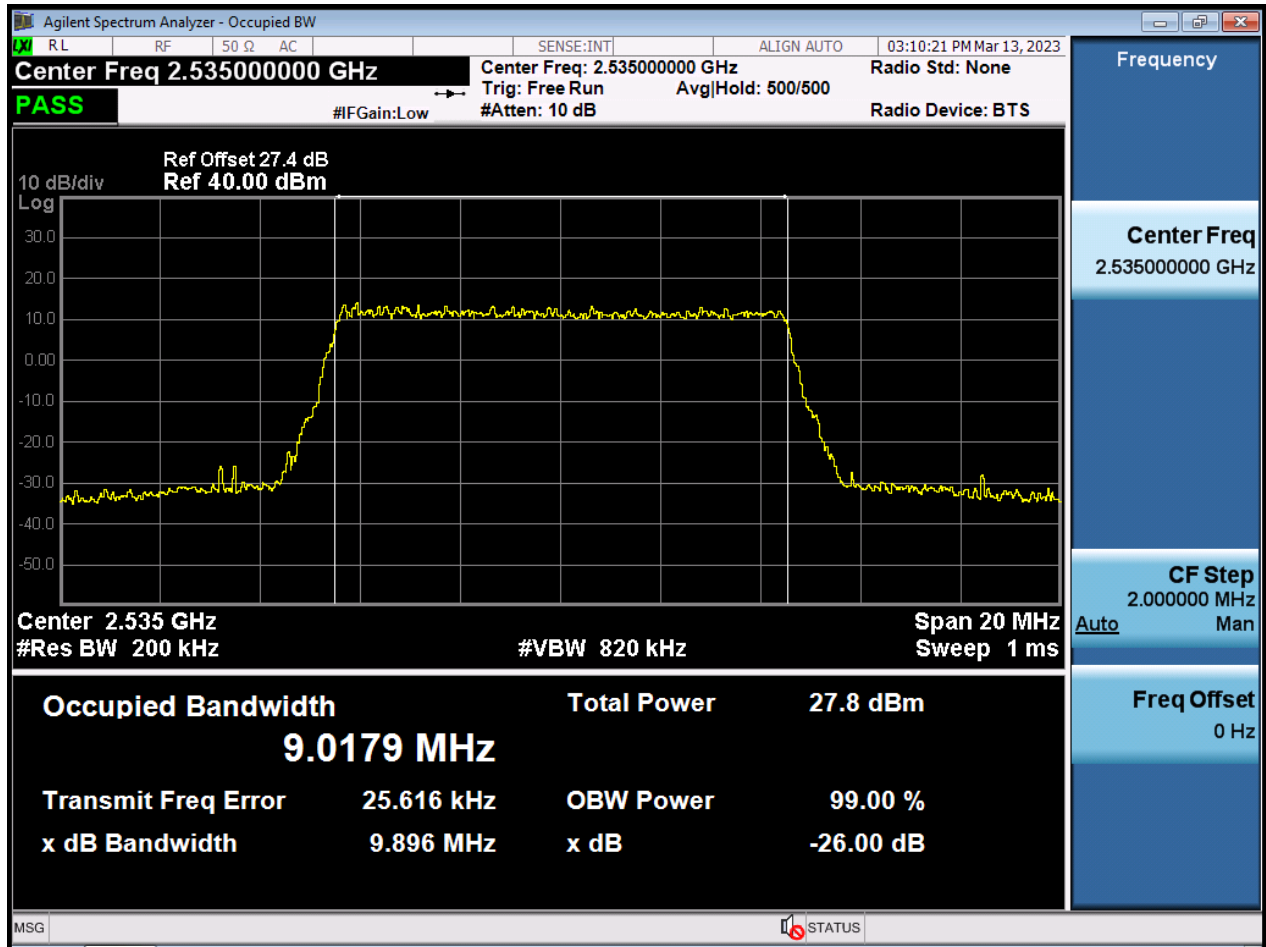
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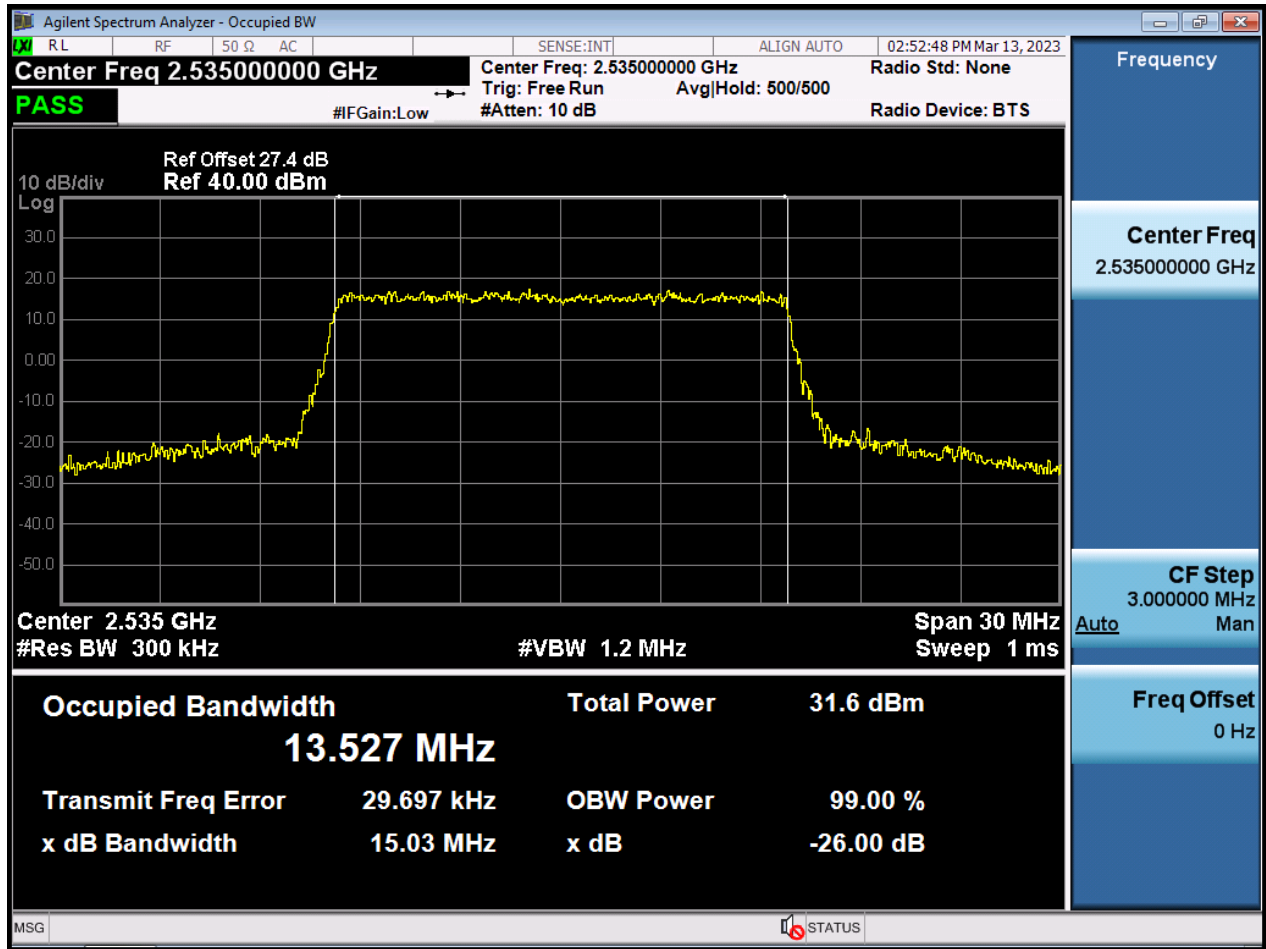
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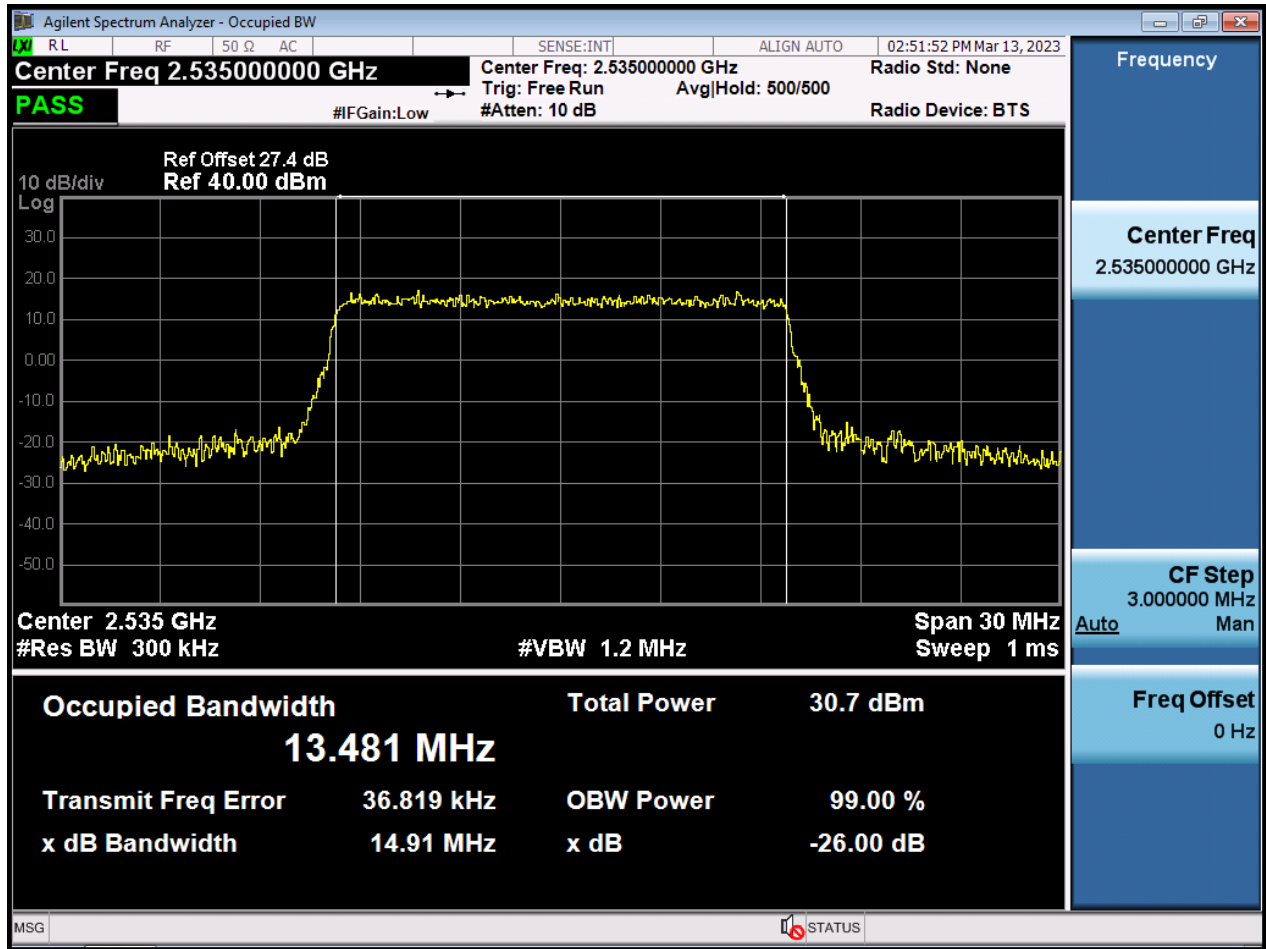
LTE7_10 M_OBW_Mid Channel_256QAM_FullRB



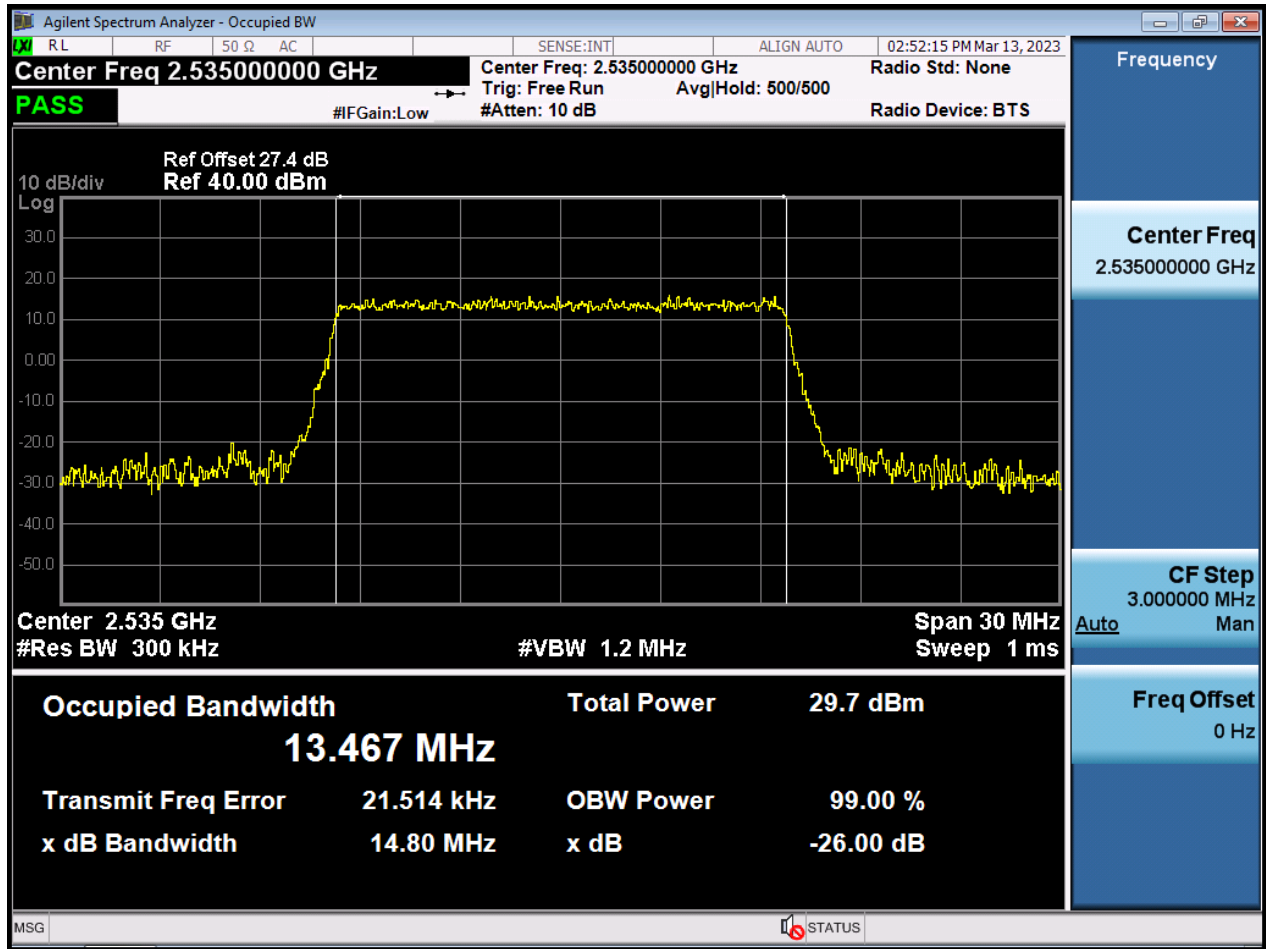
LTE7_15 M_OBW_Mid Channel_QPSK_FullRB



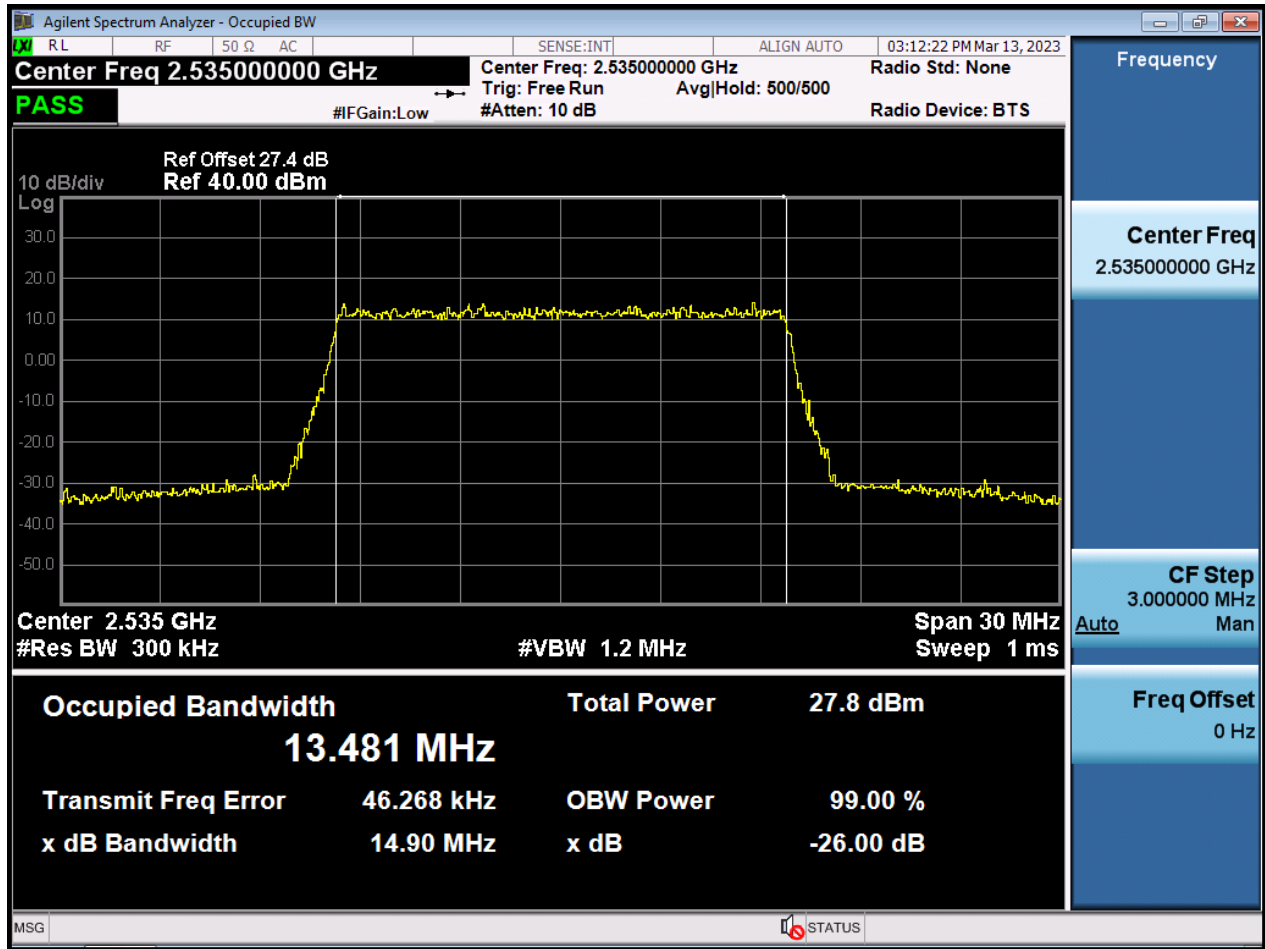
LTE7_15 M_OBW_Mid Channel_16QAM_FullIRB



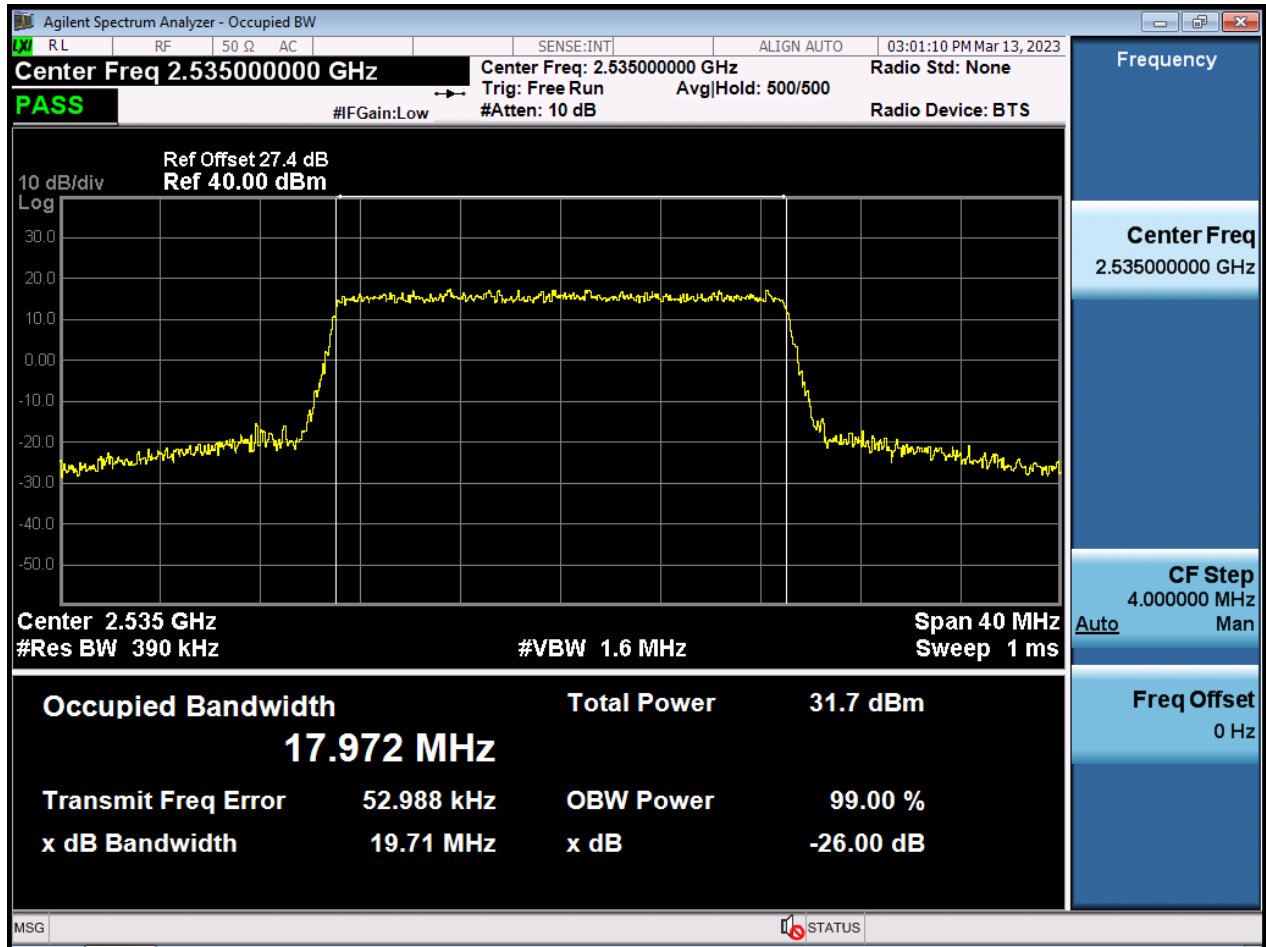
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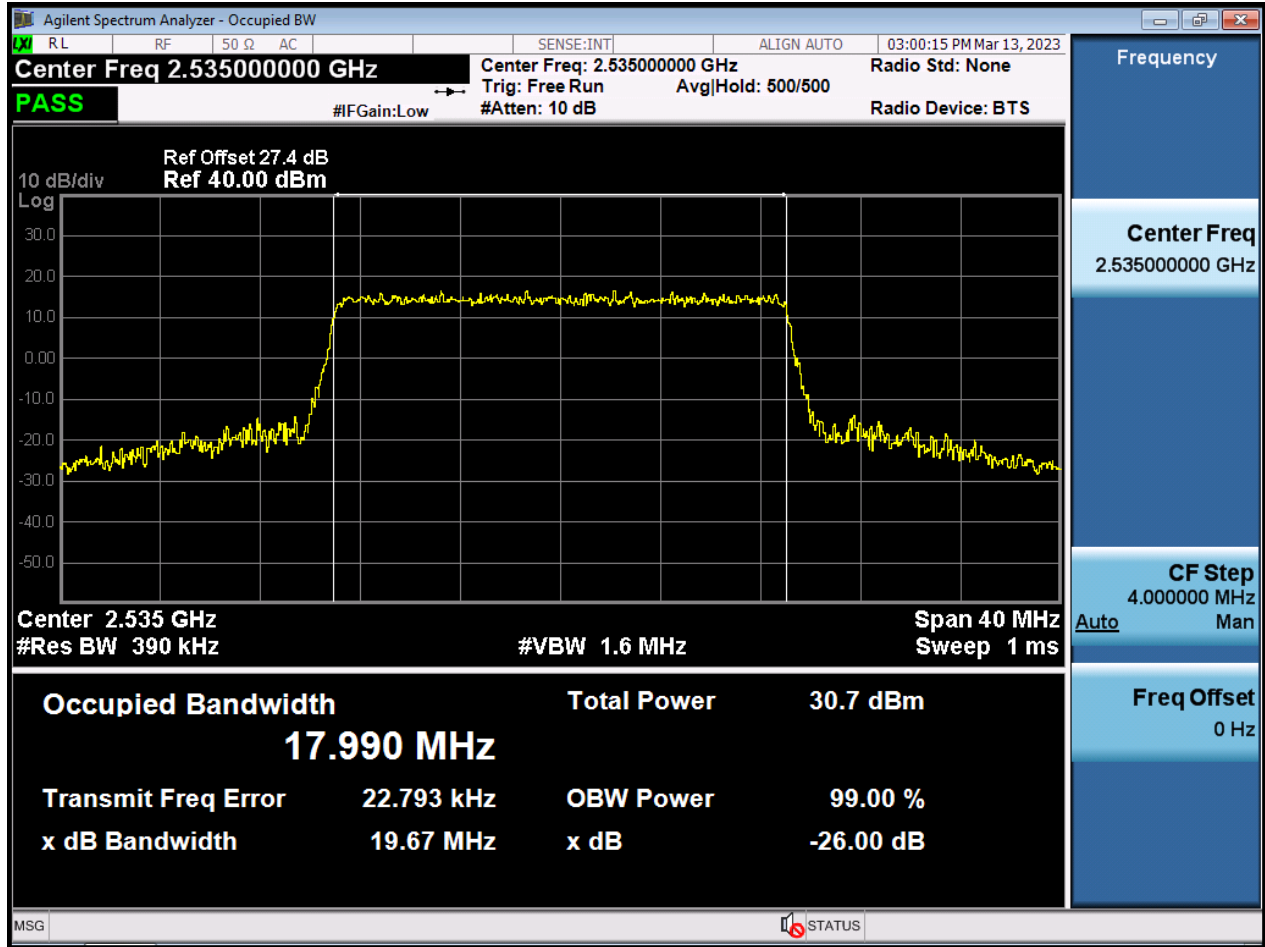
LTE7_15 M_OBW_Mid Channel_256QAM_FullRB



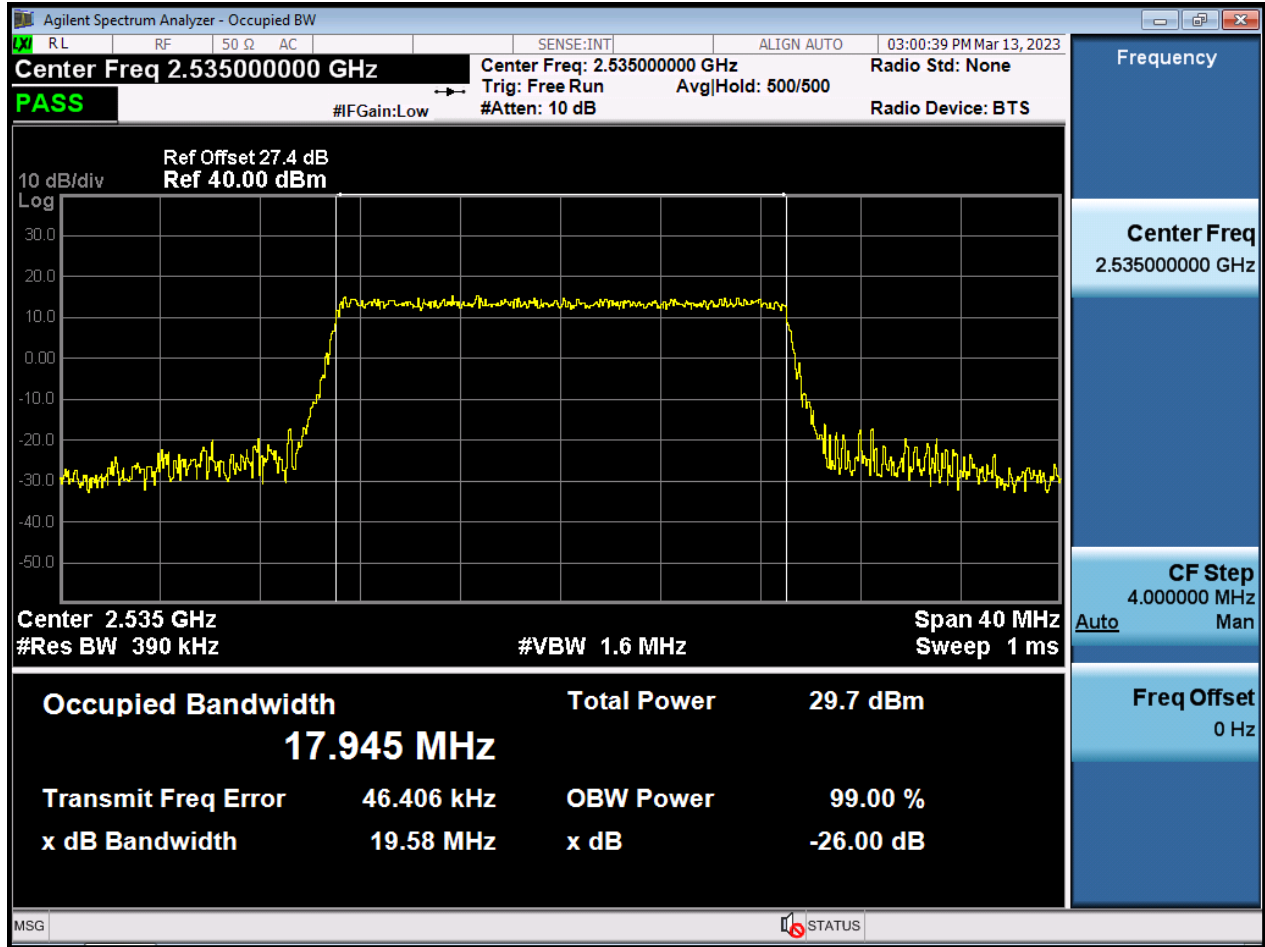
LTE7_20 M_OBW_Mid Channel_QPSK_FullRB



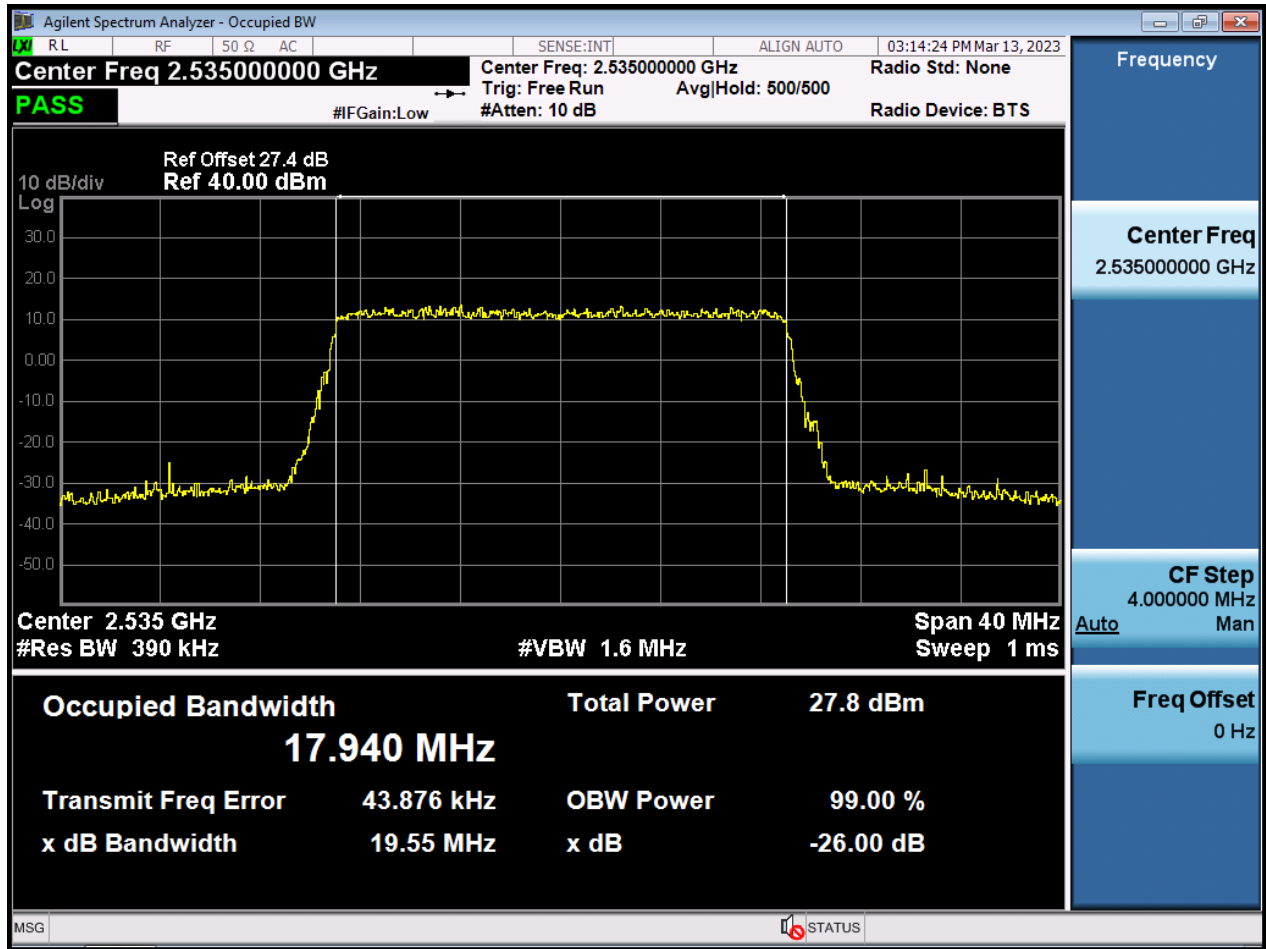
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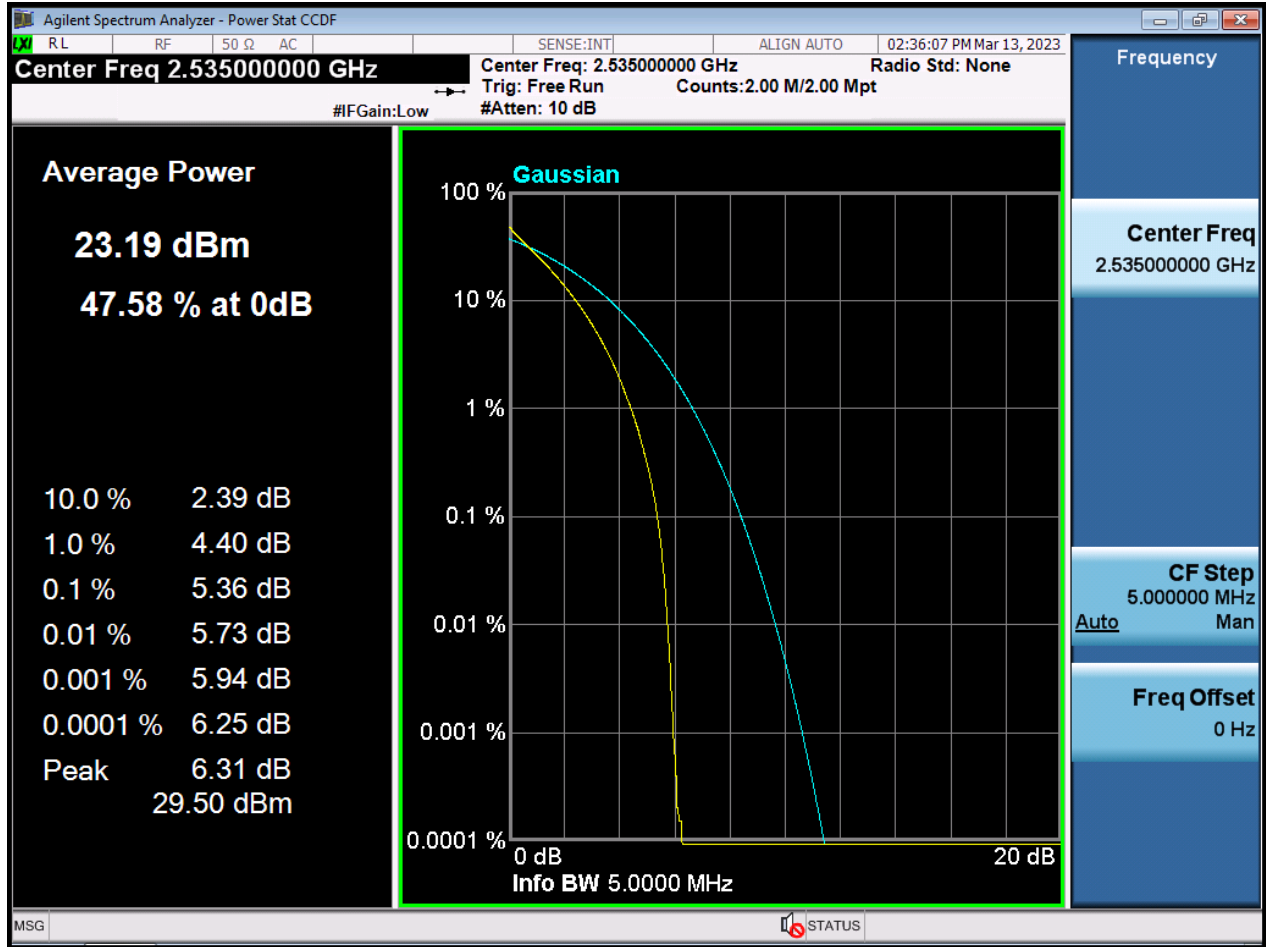
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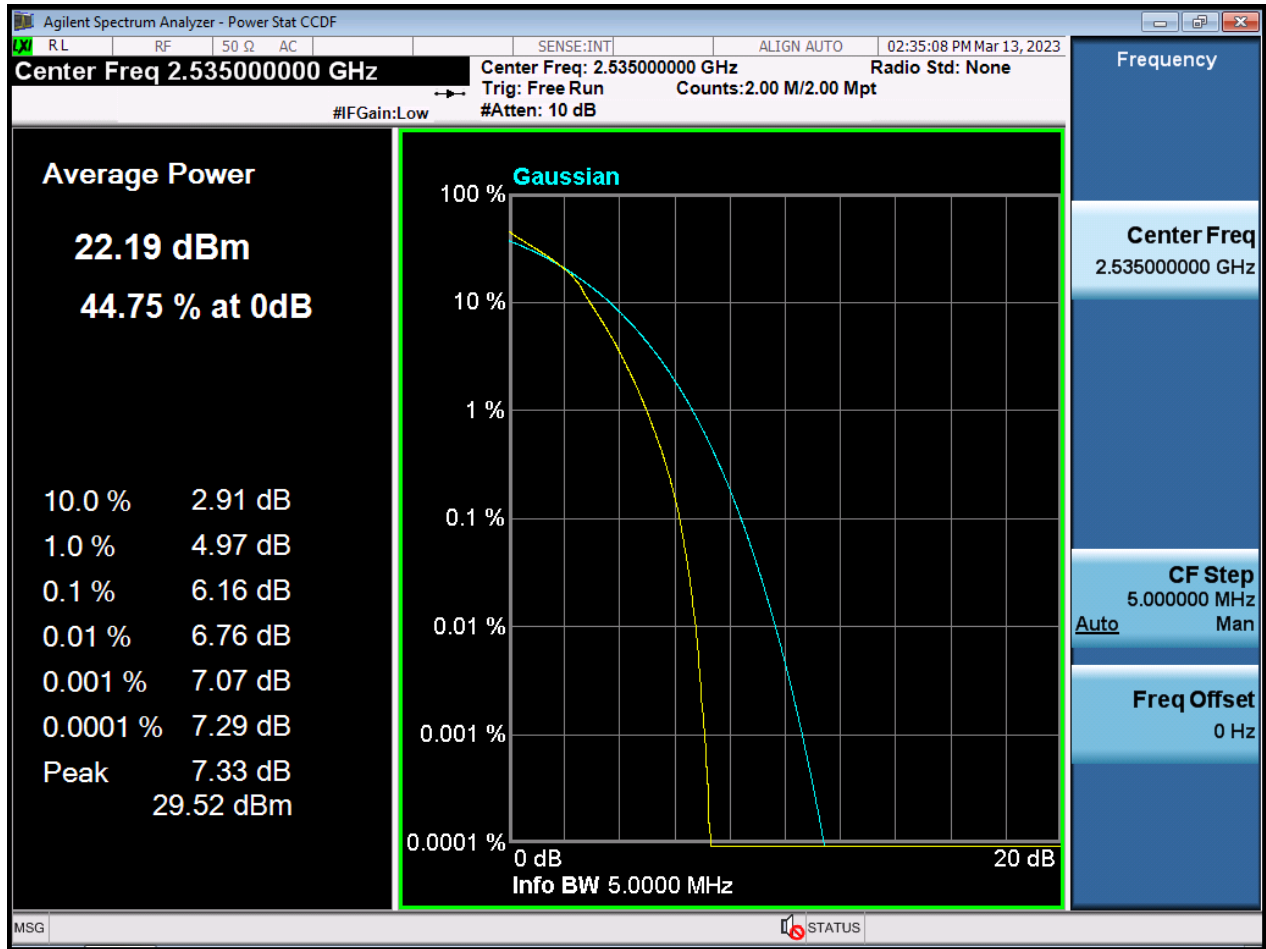
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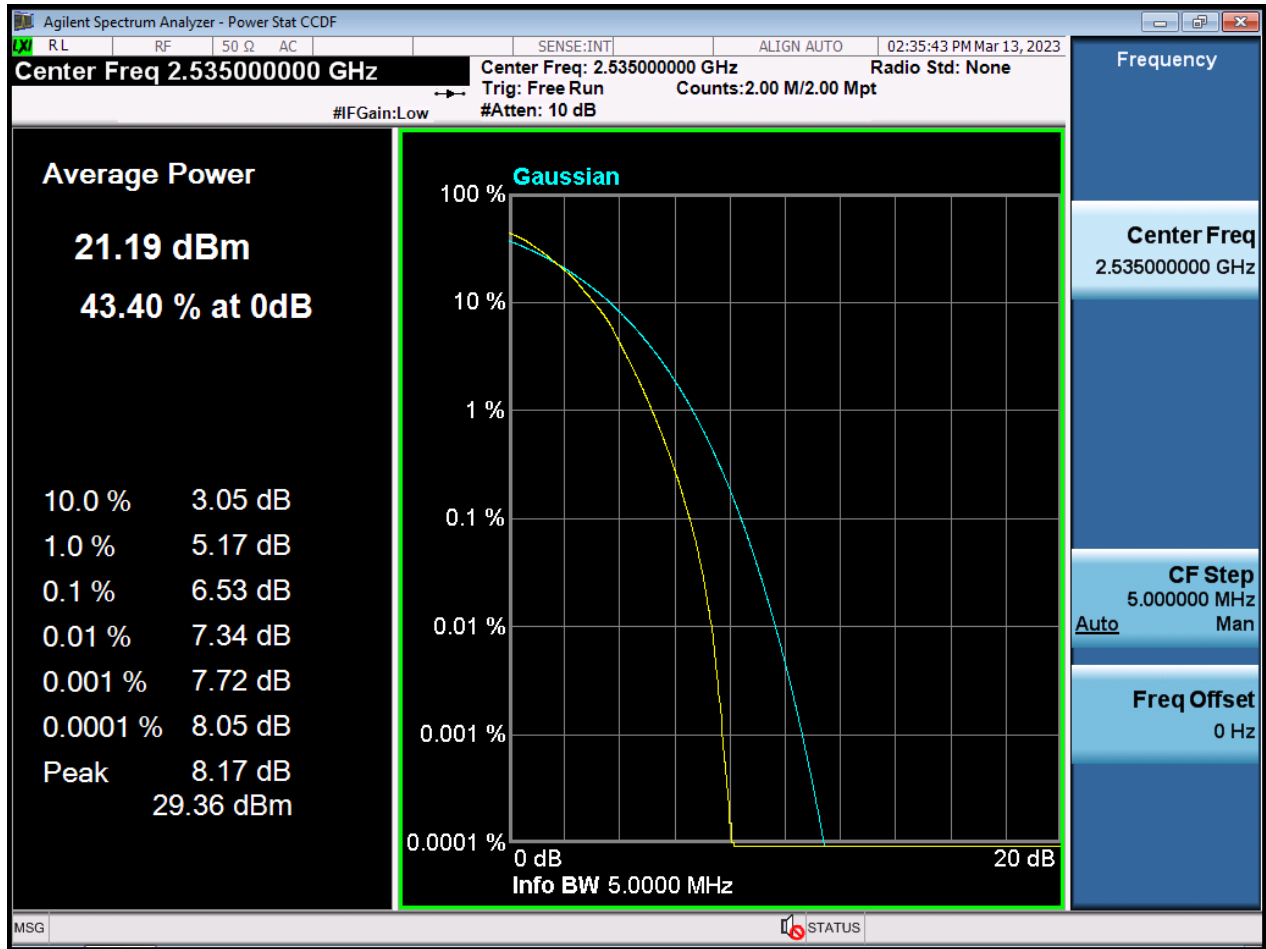
LTE7_5 M_PAR_Mid Channel_QPSK_FullRB



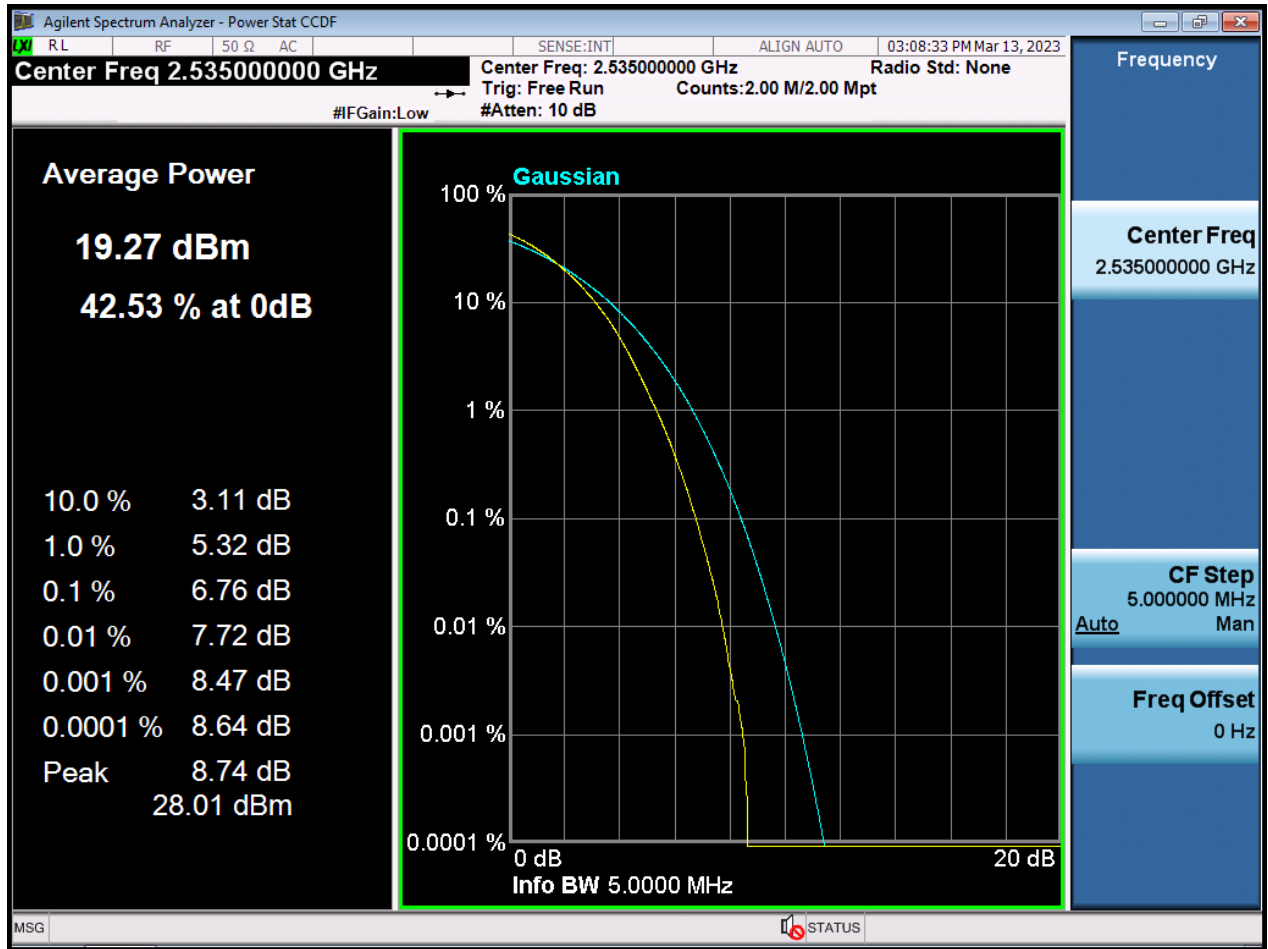
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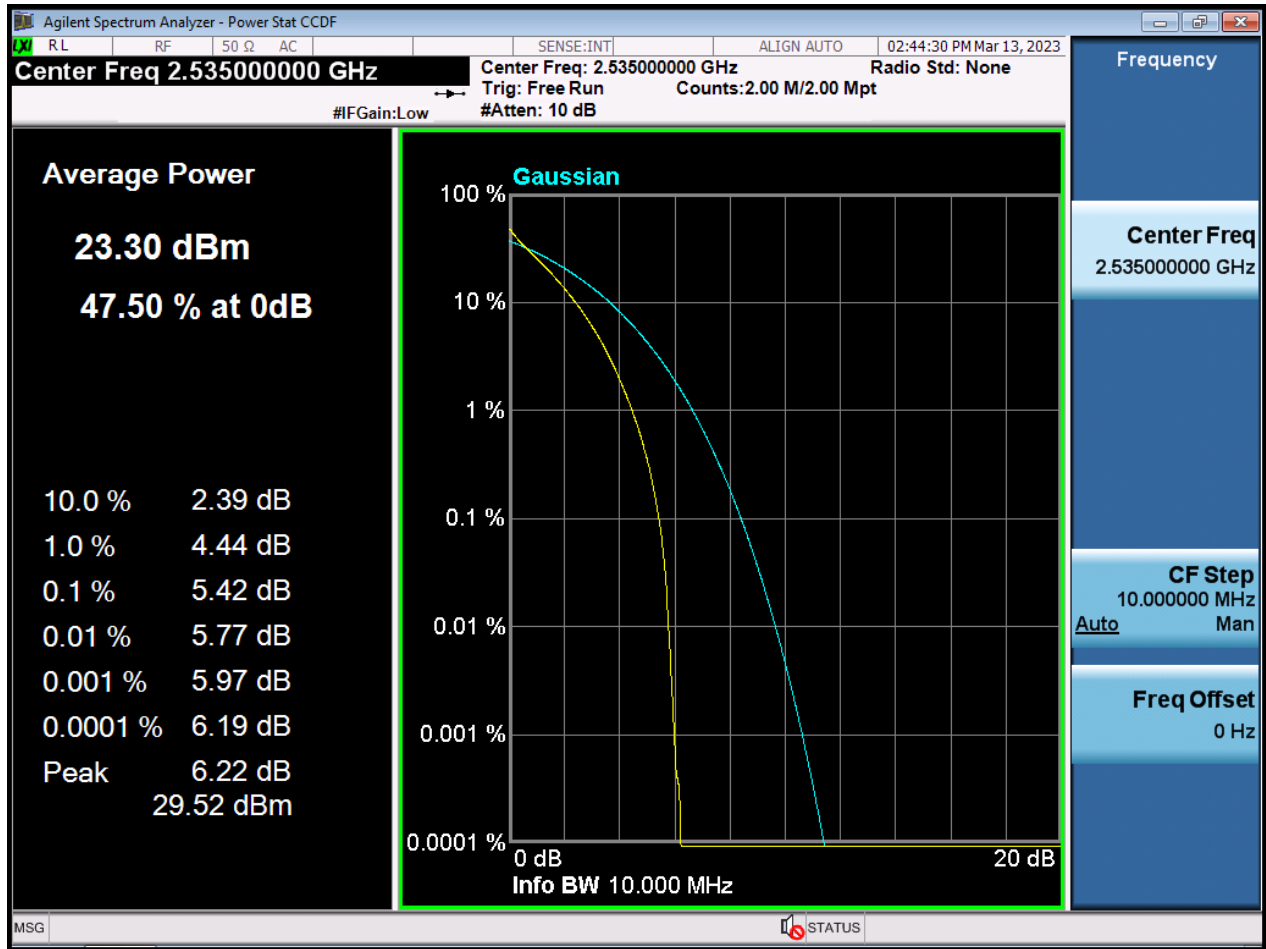
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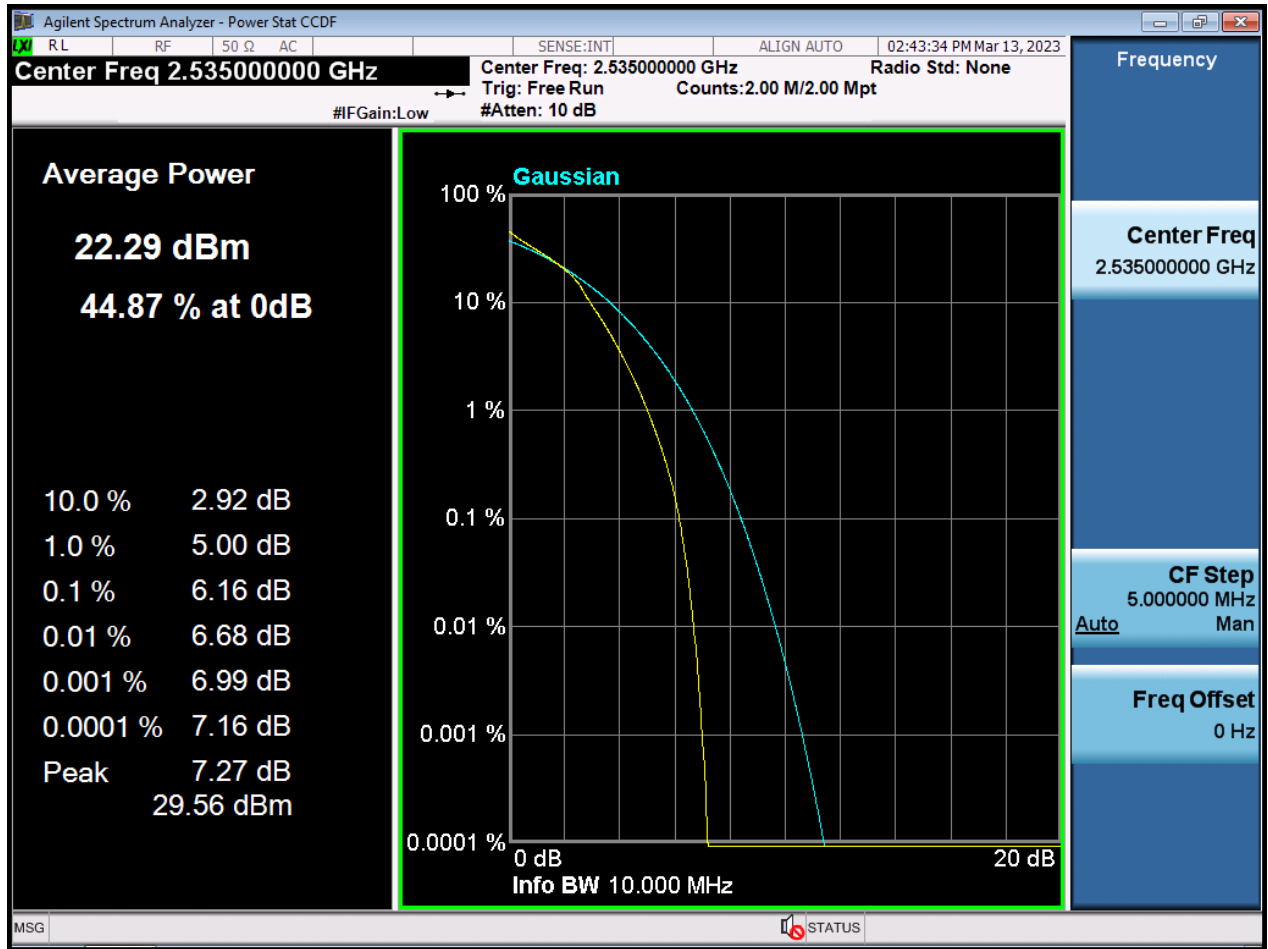
LTE7_5 M_PAR_Mid Channel_256QAM_FullRB



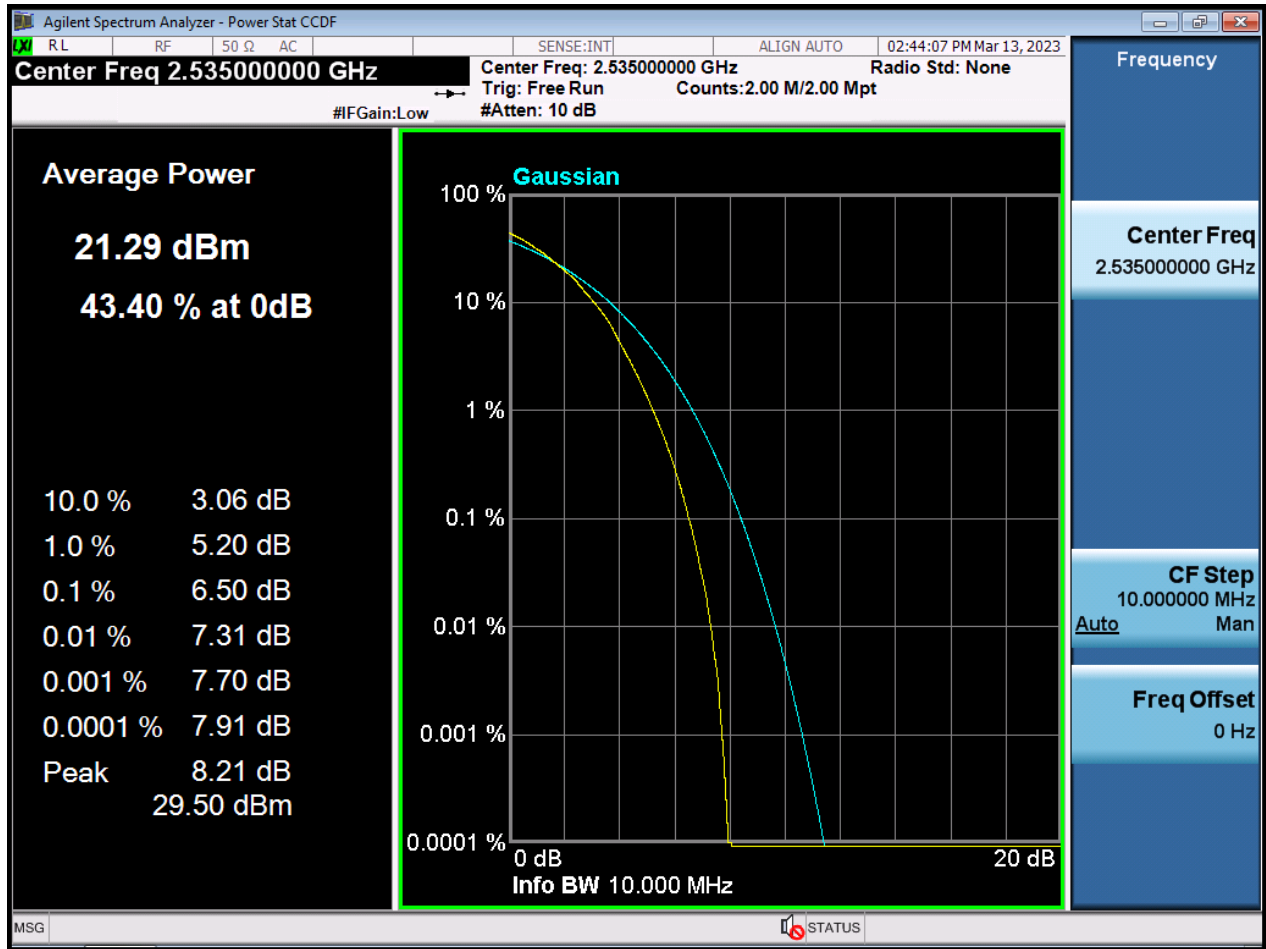
LTE7_10 M_PAR_Mid Channel_QPSK_FullIRB



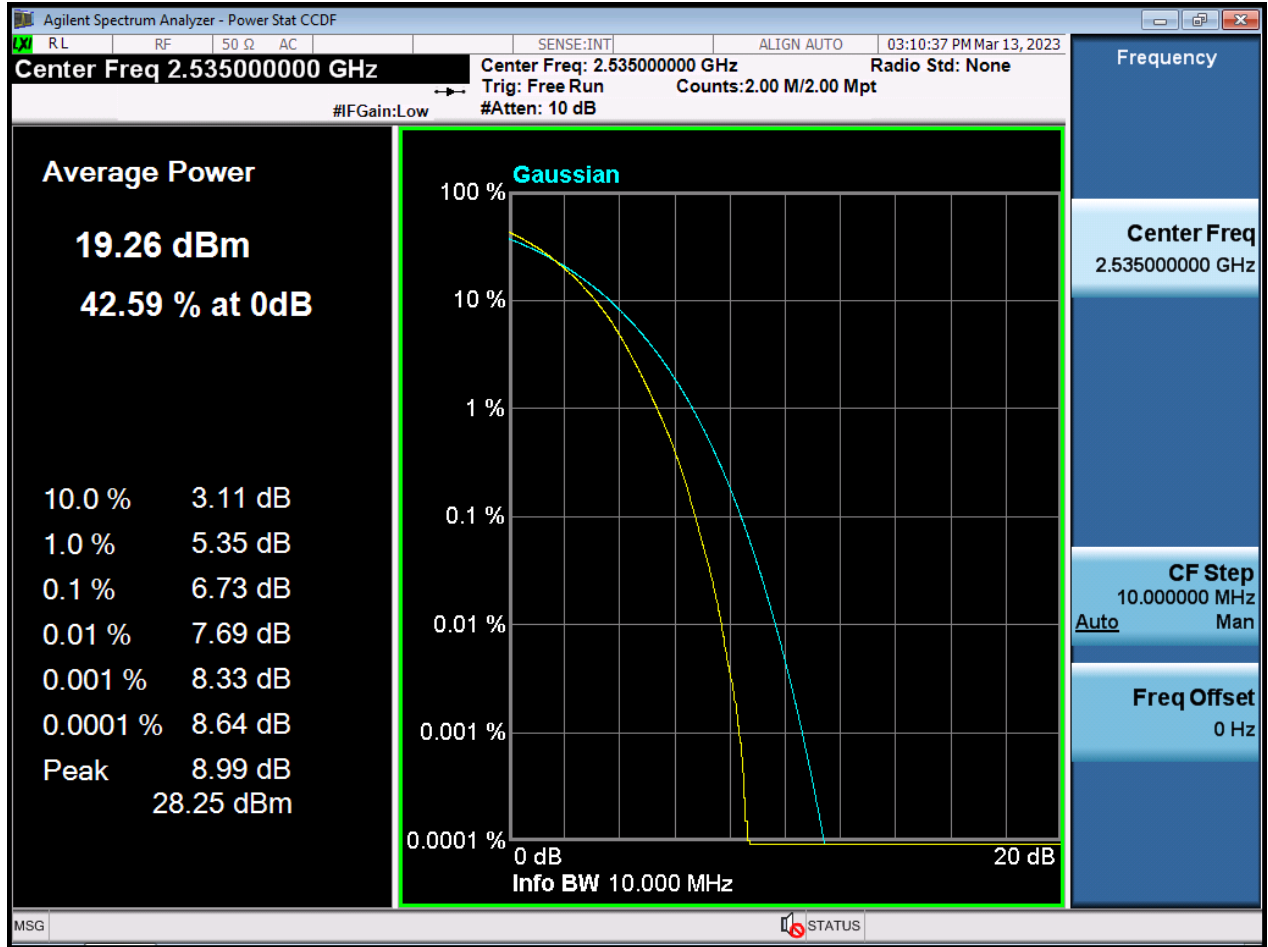
LTE7_10 M_PAR_Mid Channel_16QAM_FullRB



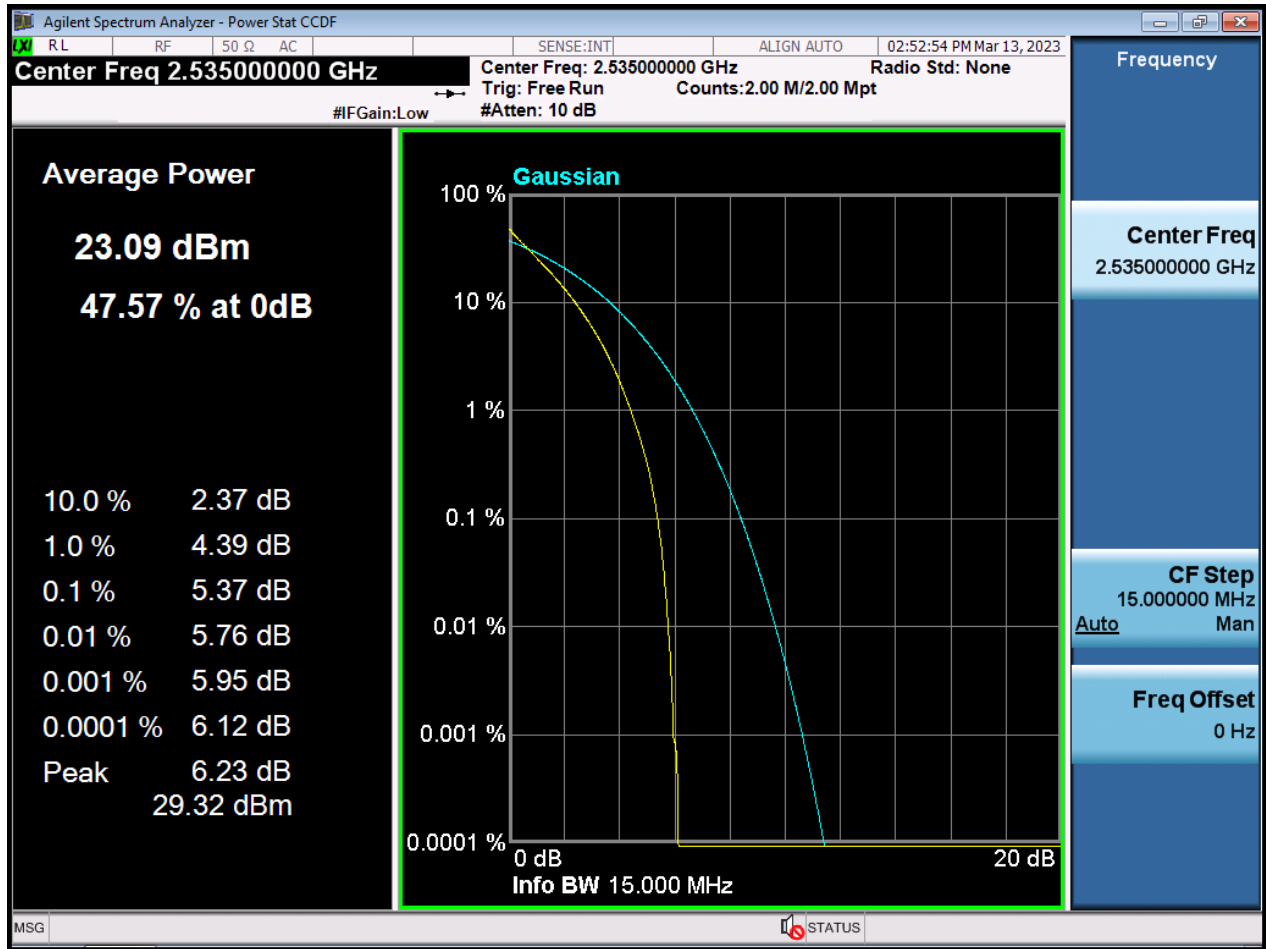
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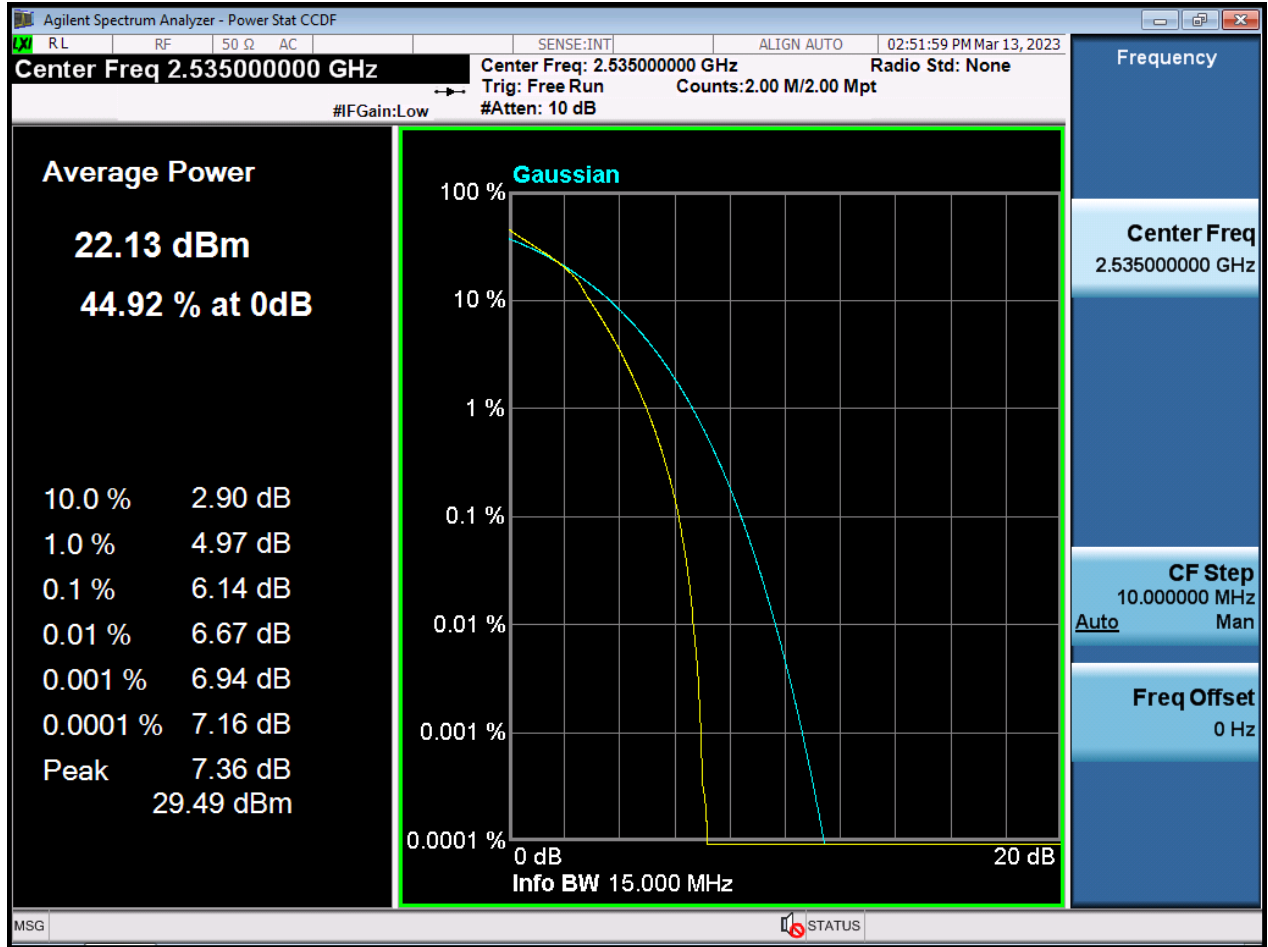
LTE7_10 M_PAR_Mid Channel_256QAM_FullRB



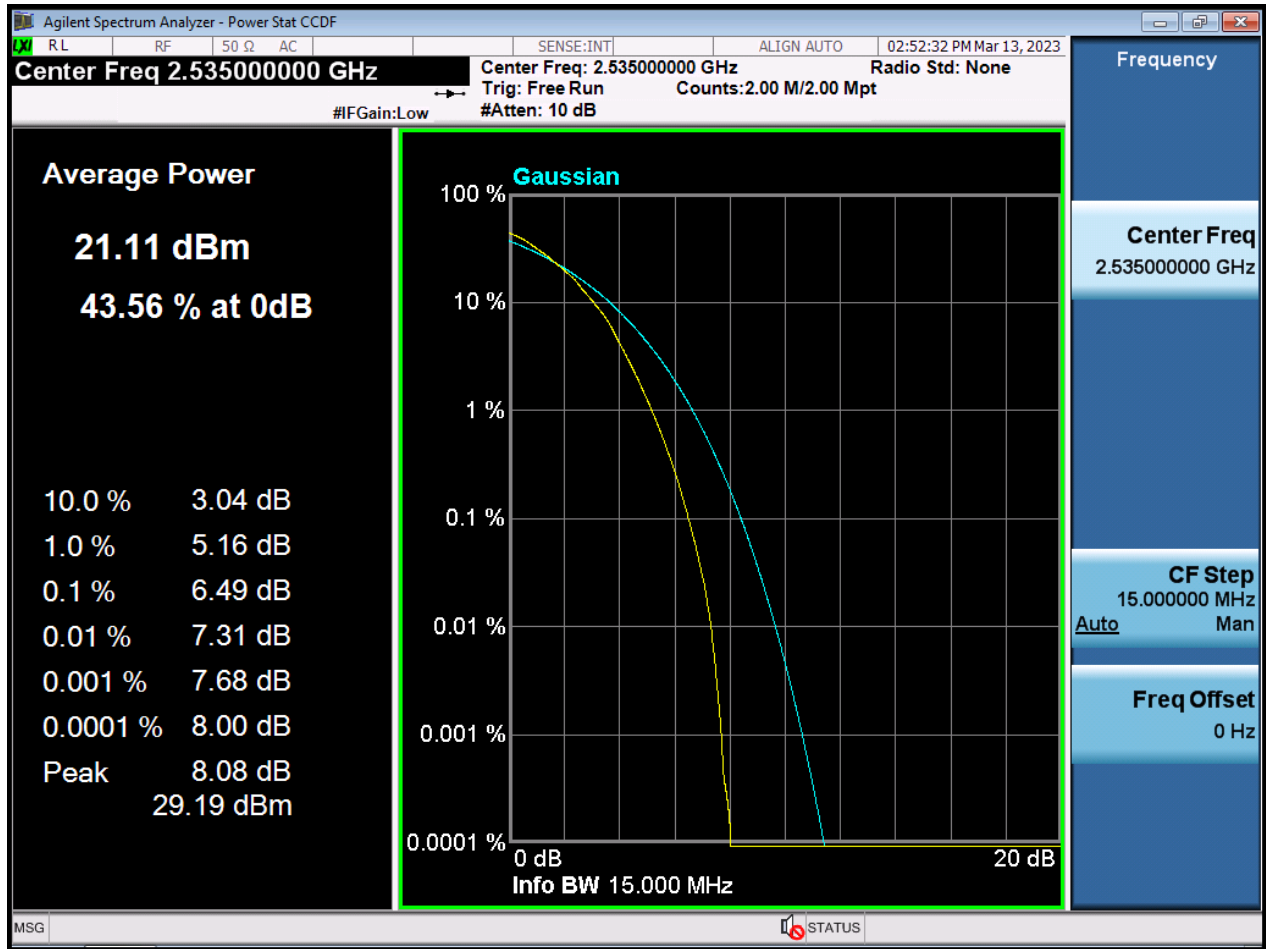
LTE7_15 M_PAR_Mid Channel_QPSK_FullIRB



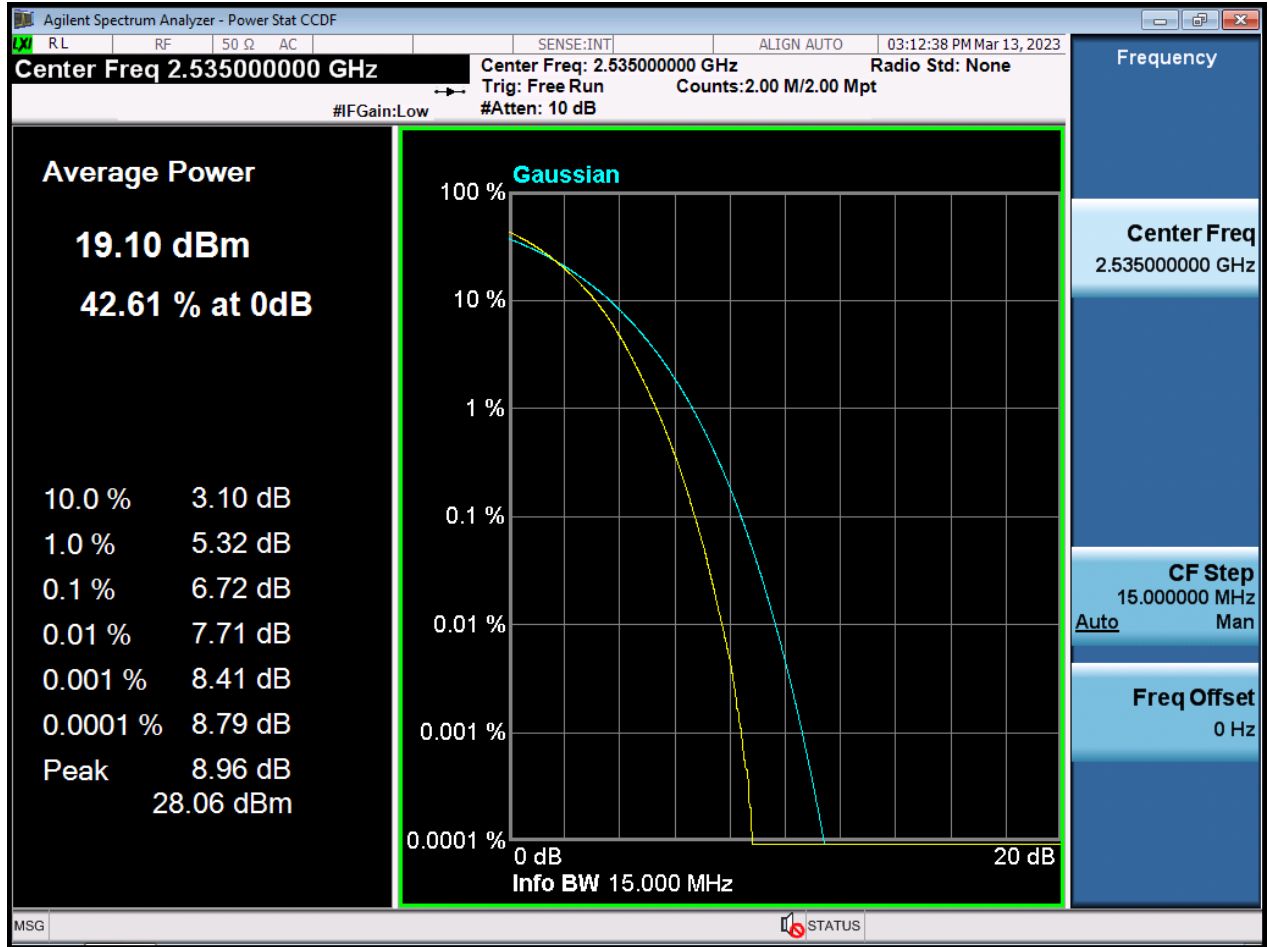
LTE7_15 M_PAR_Mid Channel_16QAM_FullRB



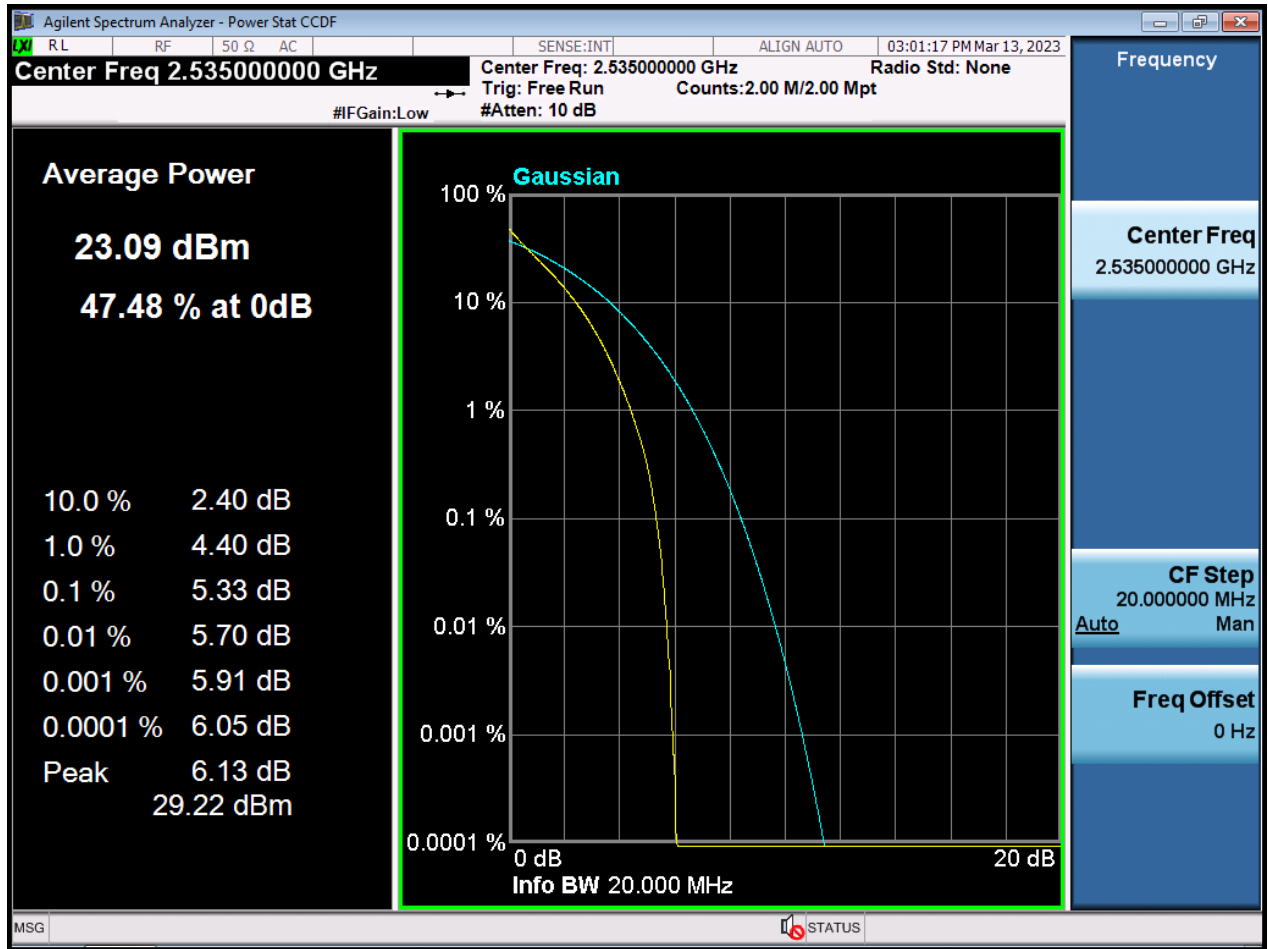
LTE7_15 M_PAR_Mid Channel_64QAM_FullRB



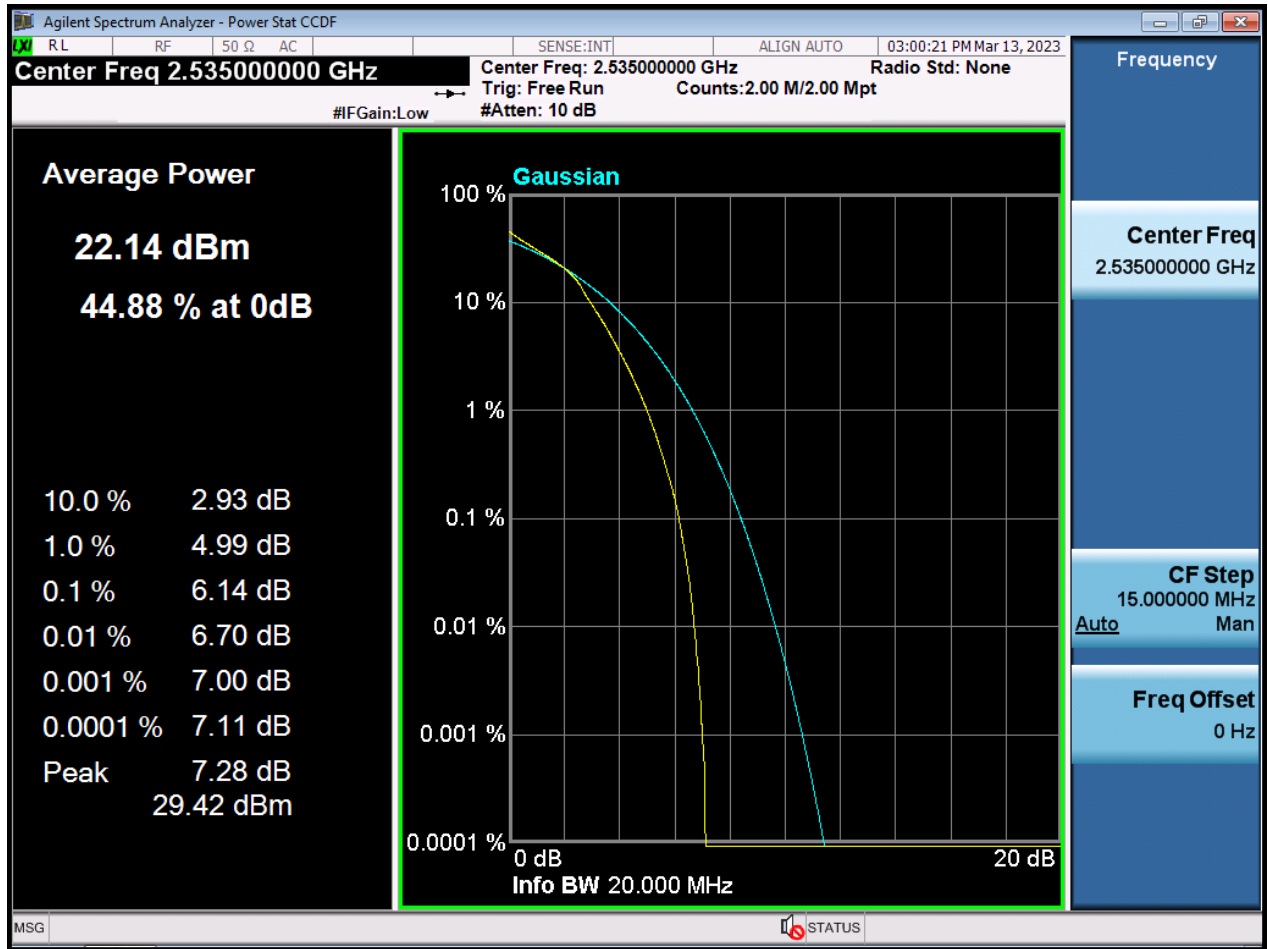
LTE7_15 M_PAR_Mid Channel_256QAM_FullRB



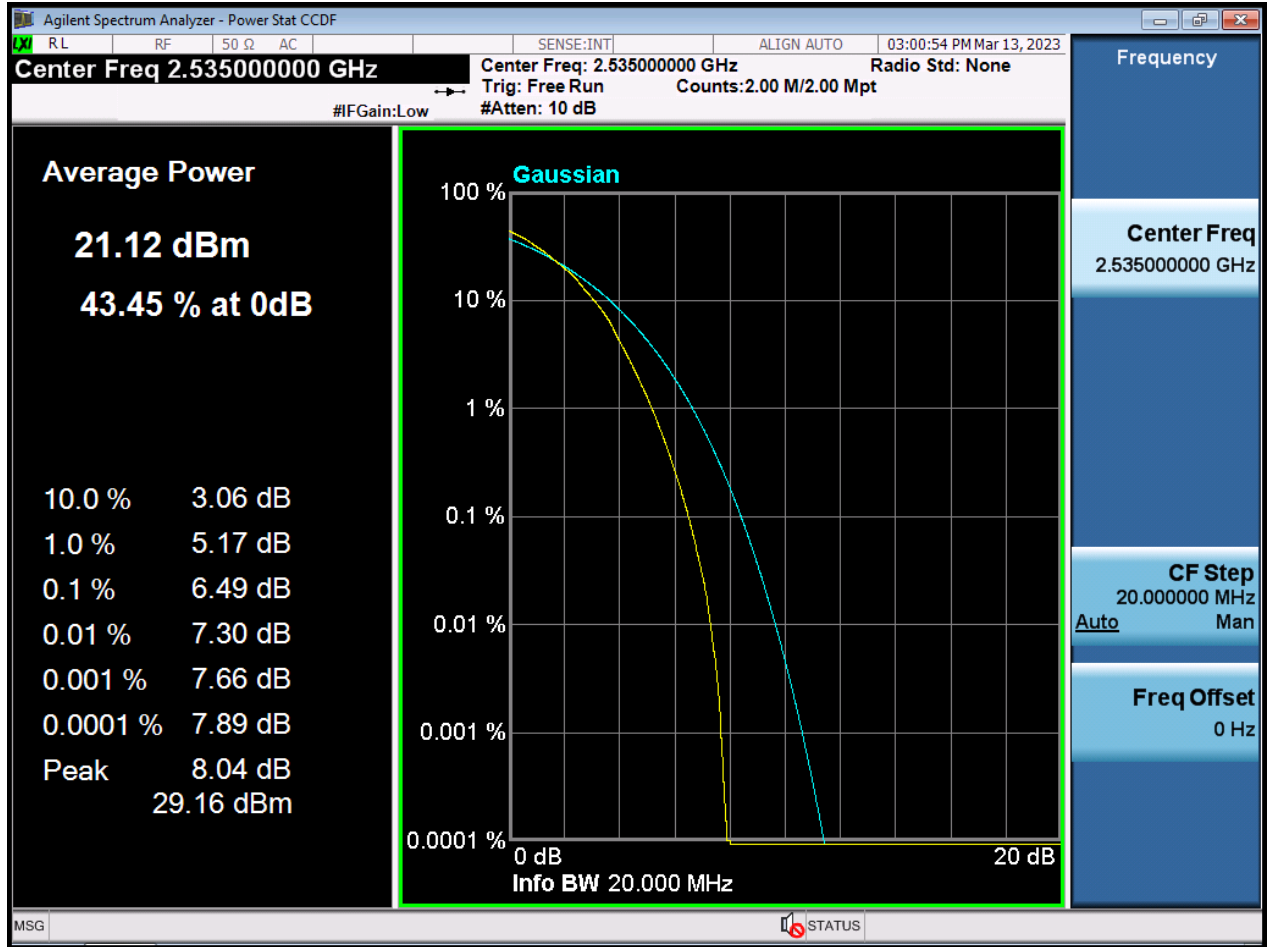
LTE7_20 M_PAR_Mid Channel_QPSK_FullIRB



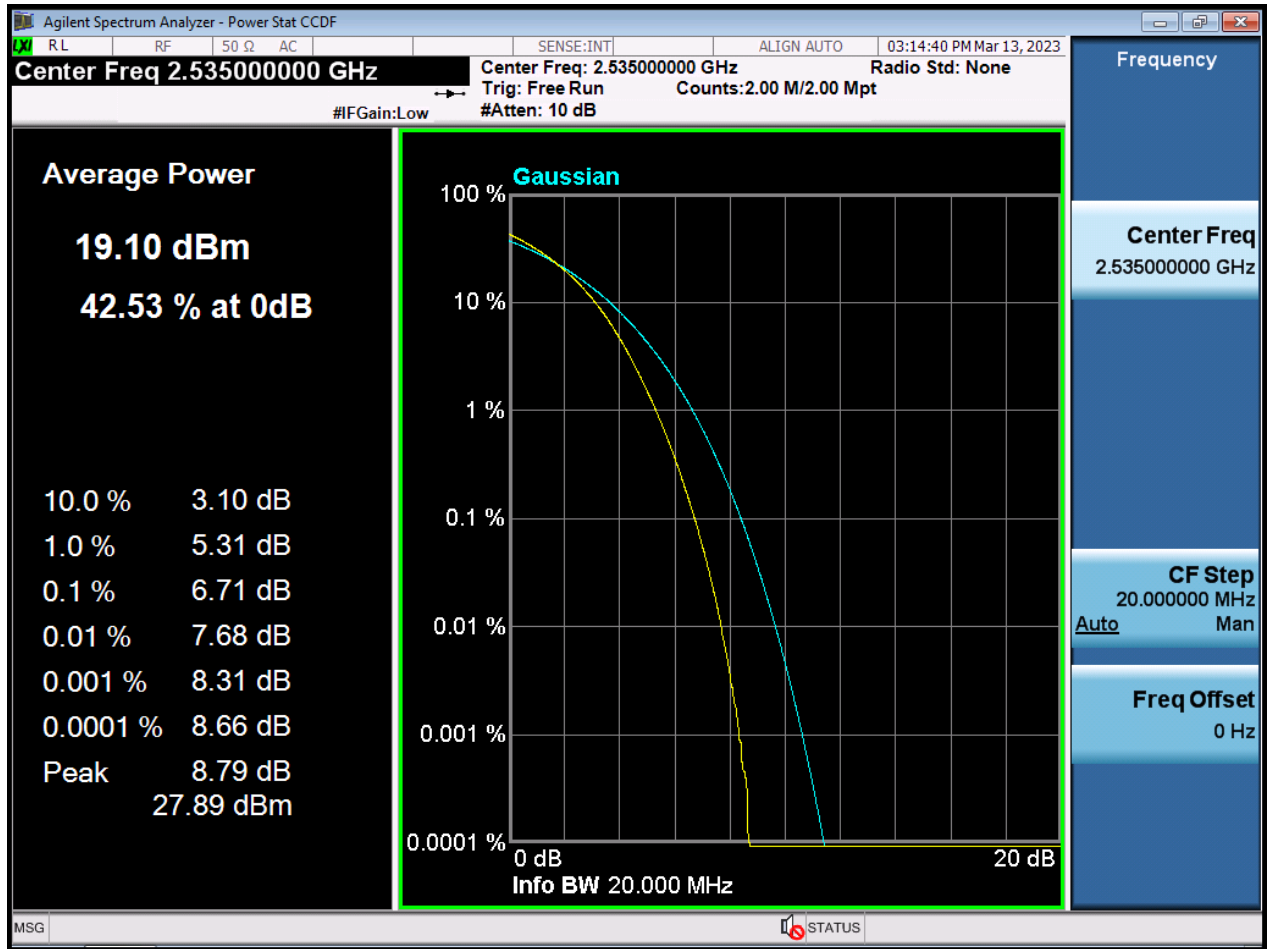
LTE7_20 M_PAR_Mid Channel_16QAM_FullRB



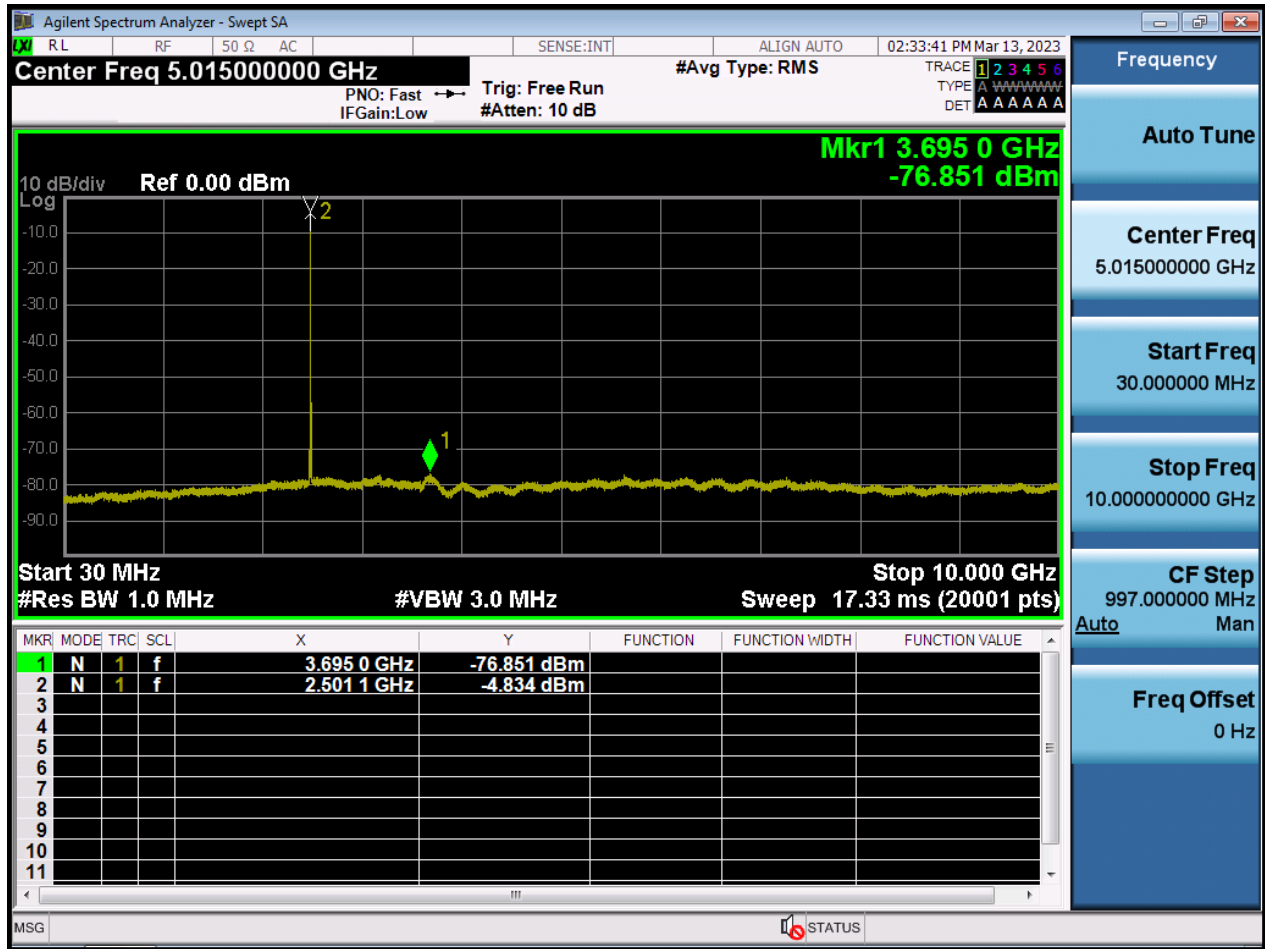
LTE7_20 M_PAR_Mid Channel_64QAM_FullRB



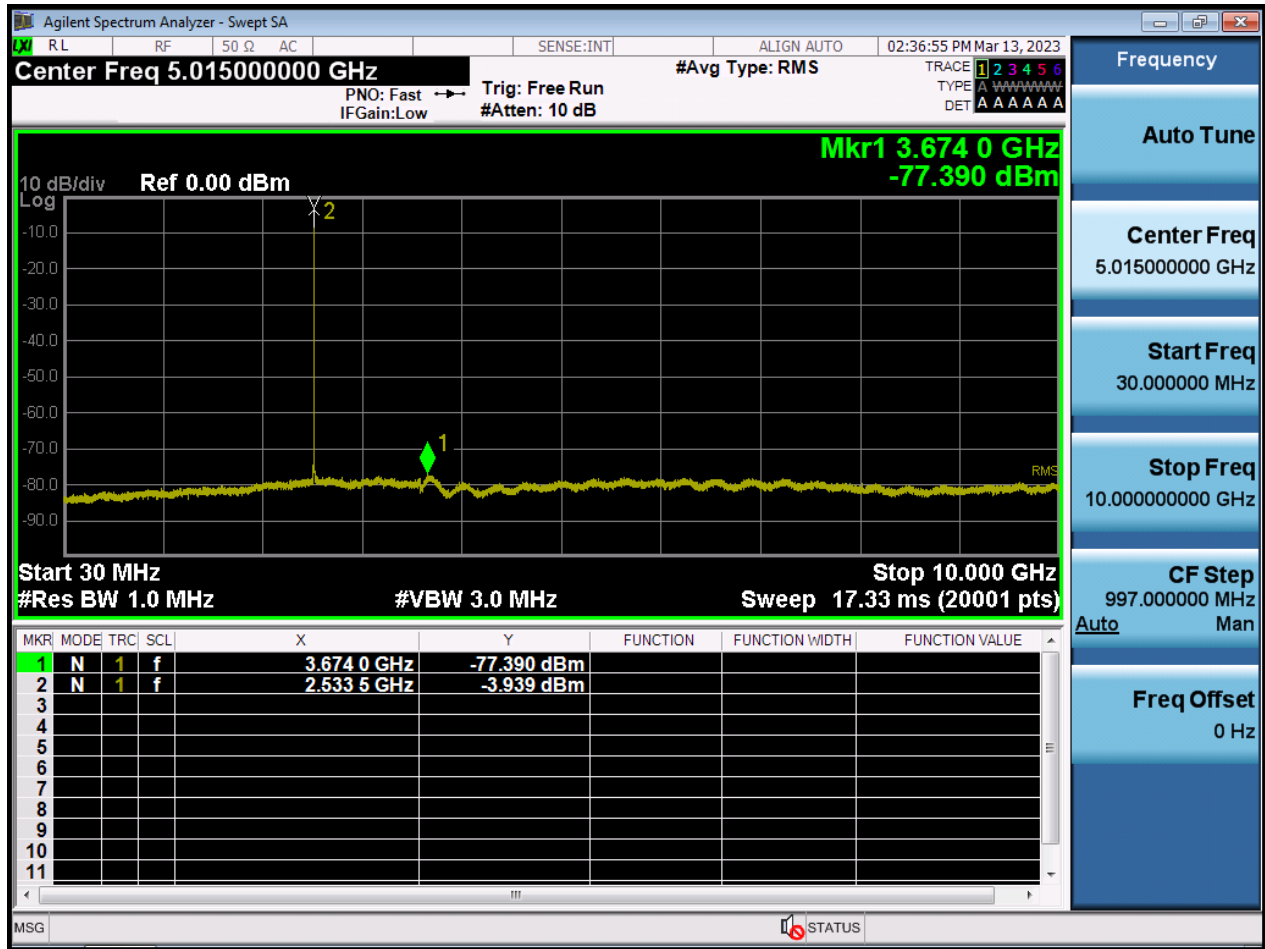
LTE7_20 M_PAR_Mid Channel_256QAM_FullRB



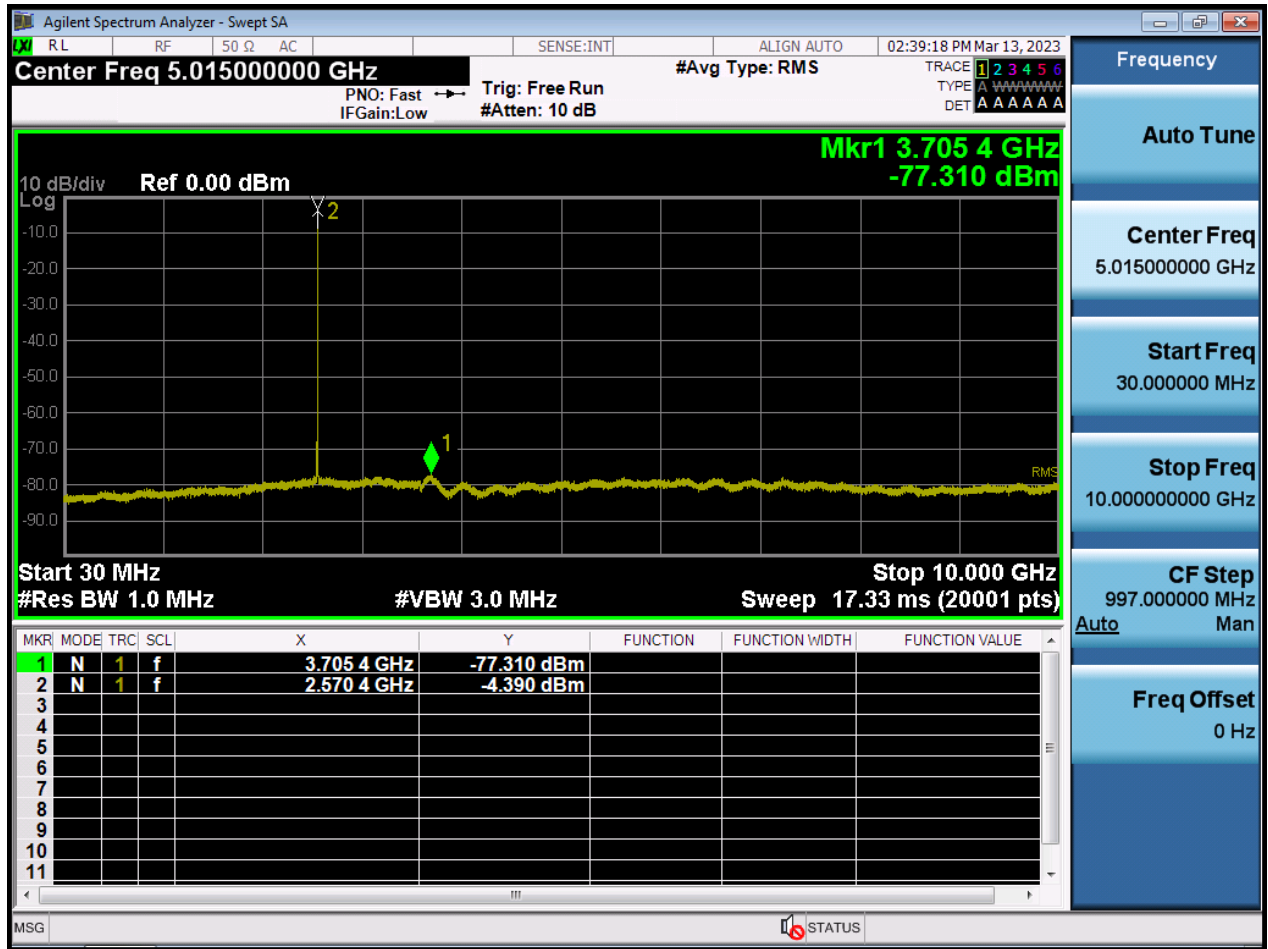
LTE7_5 M_CSE(30 M-10 G)_Lowest Channel



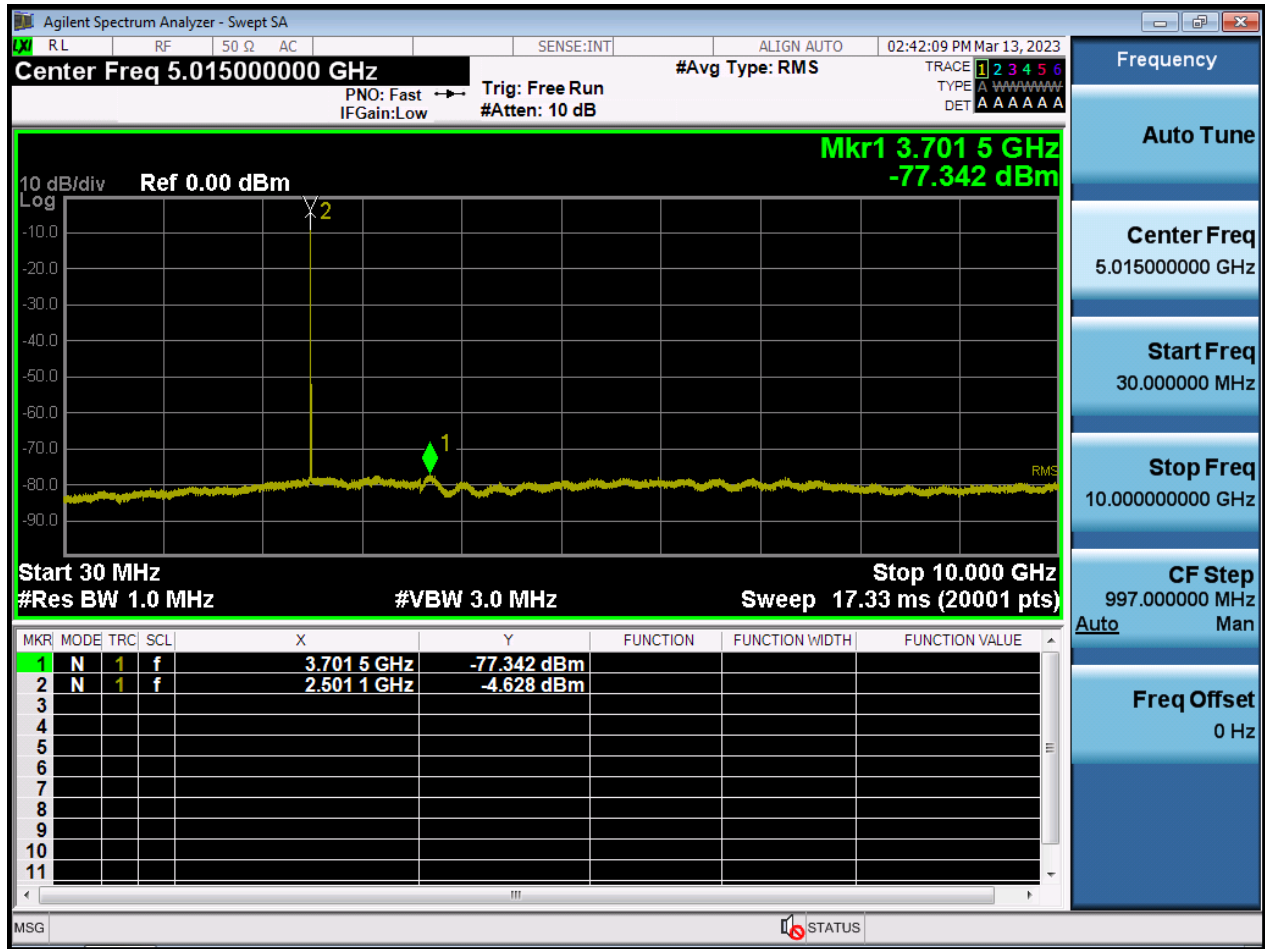
LTE7_5 M_CSE(30 M-10 G)_Mid Channel



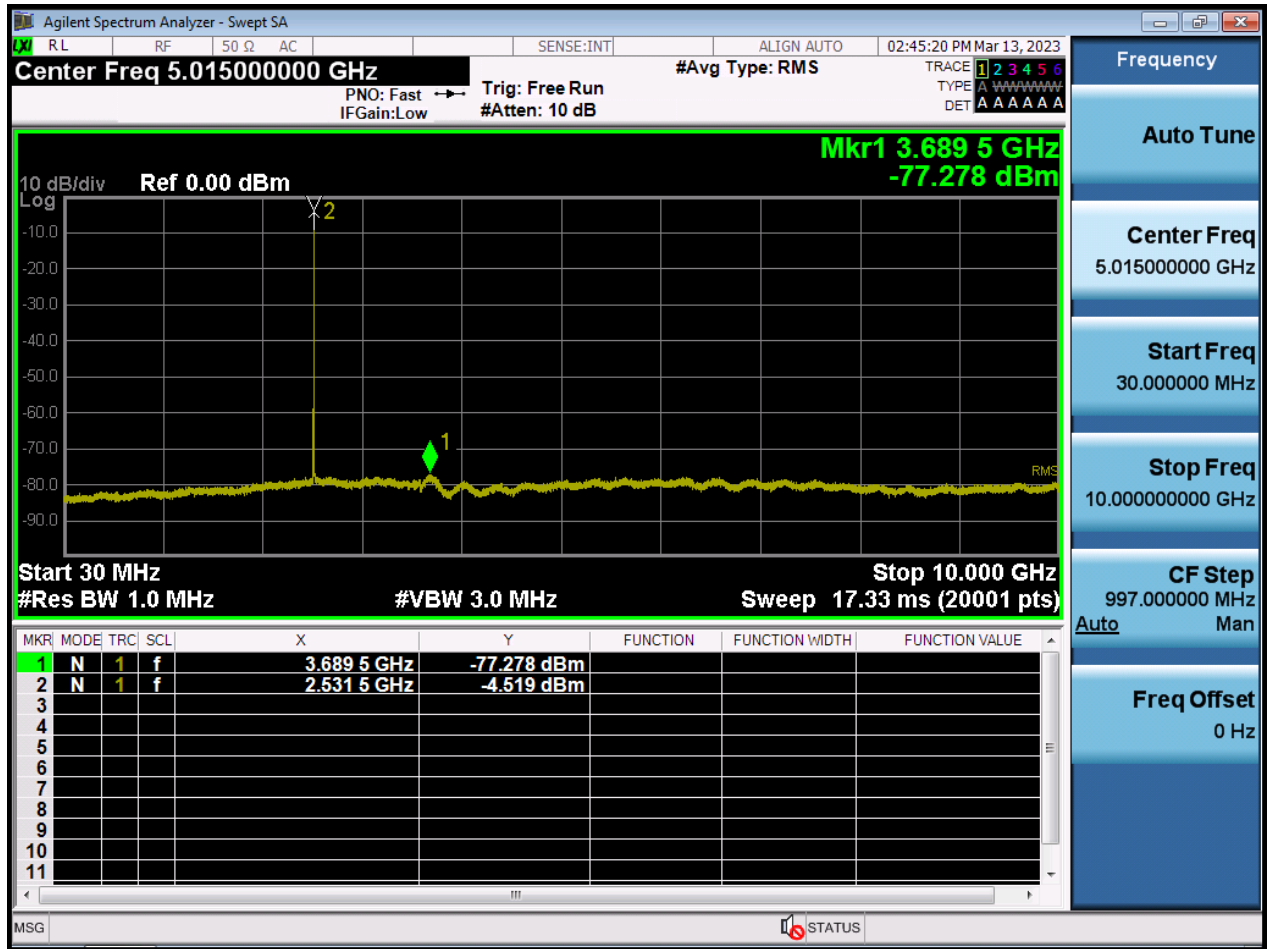
LTE7_5 M_CSE(30 M-10 G)_Highest Channel



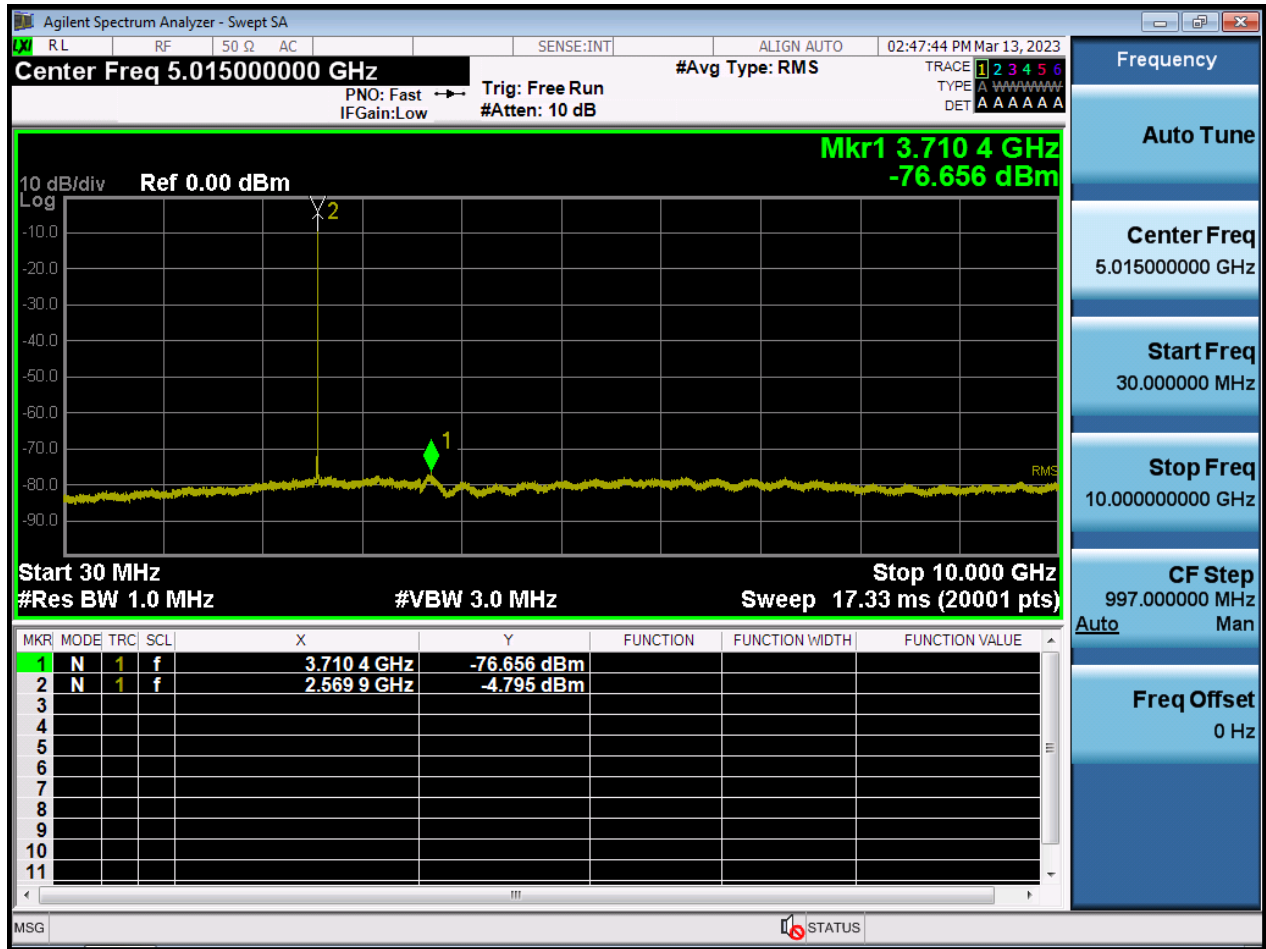
LTE7_10 M_CSE(30 M-10 G)_Lowest Channel



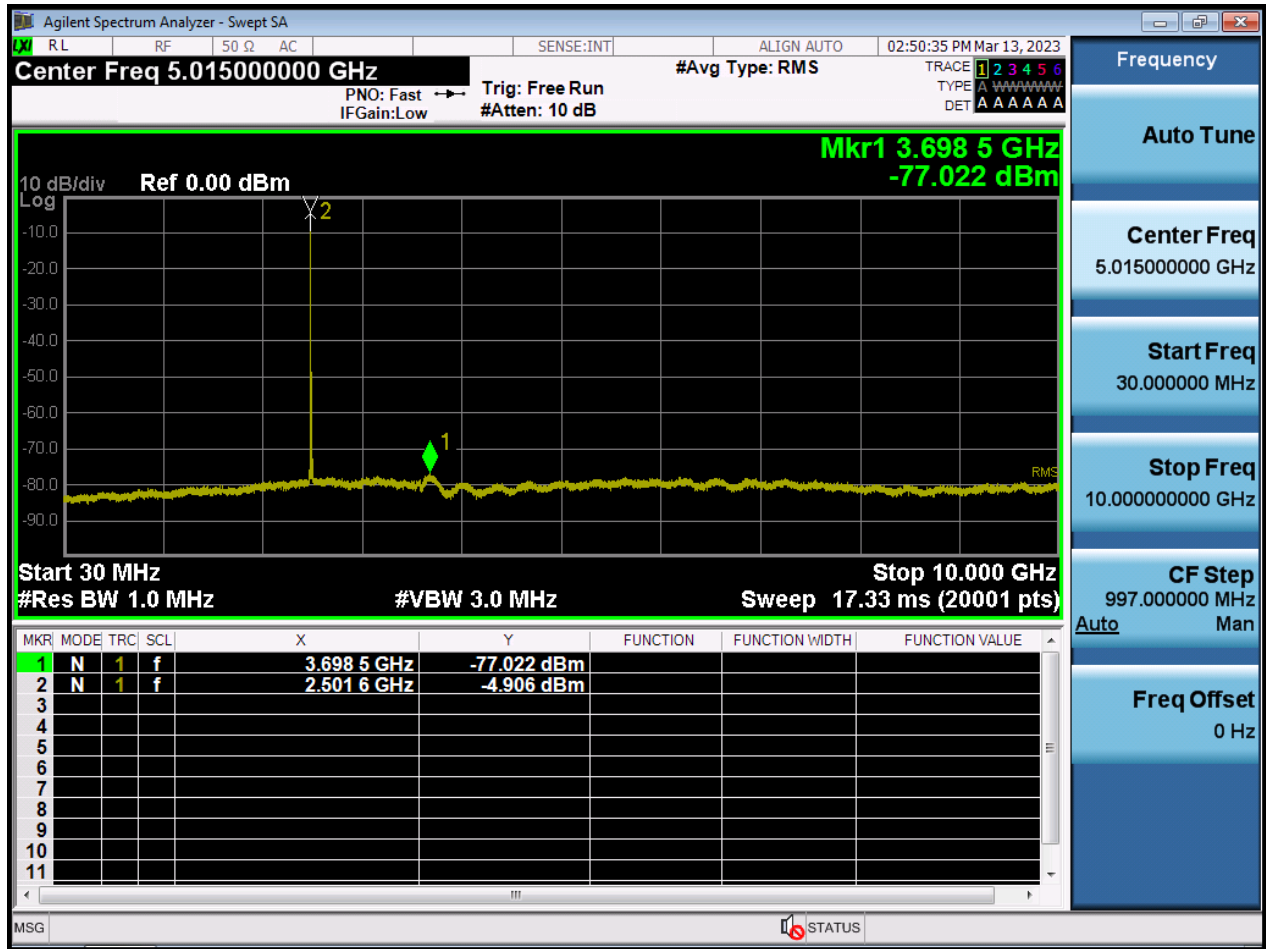
LTE7_10 M_CSE(30 M-10 G)_Mid Channel



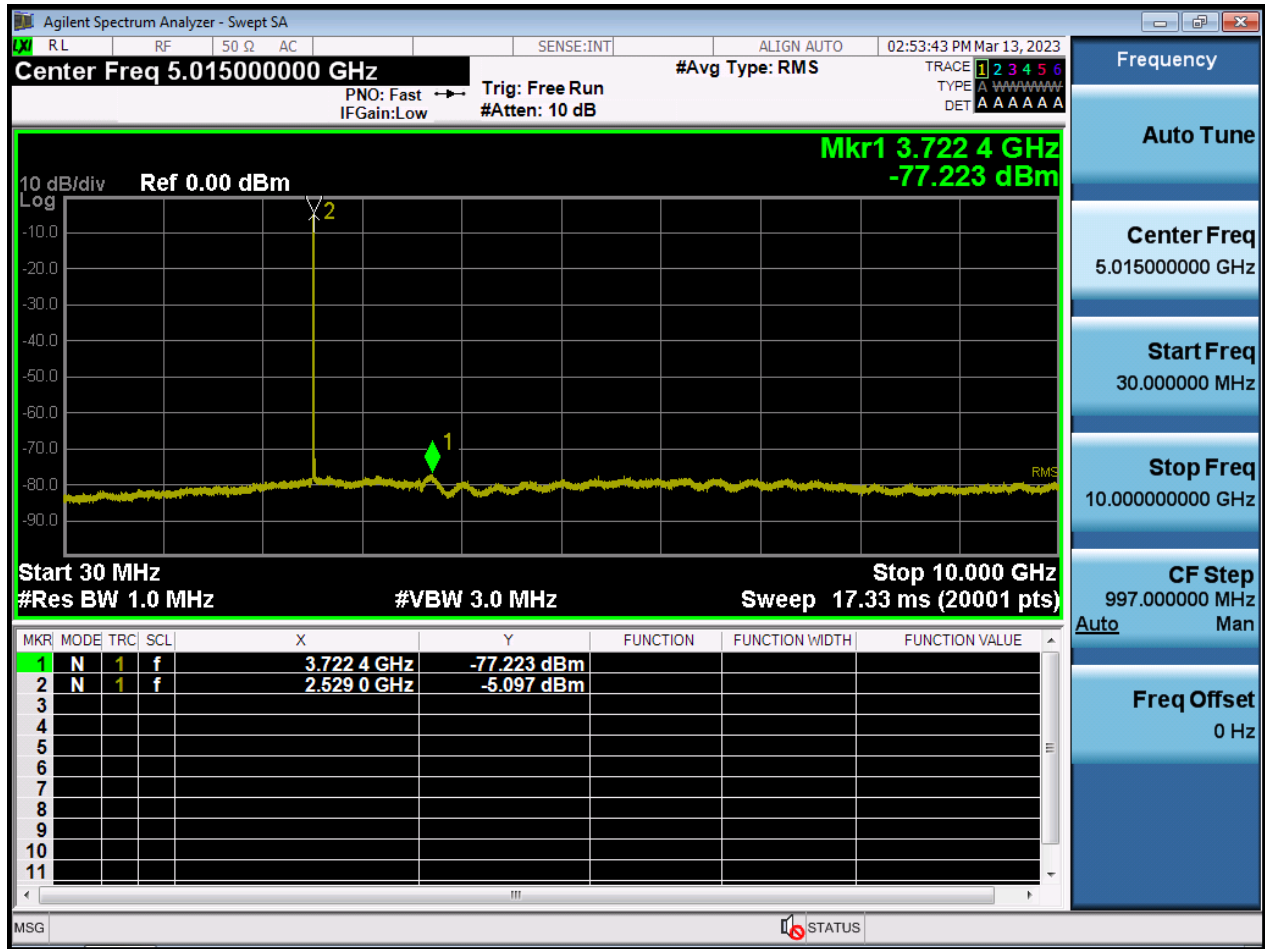
LTE7_10 M_CSE(30 M-10 G)_Highest Channel



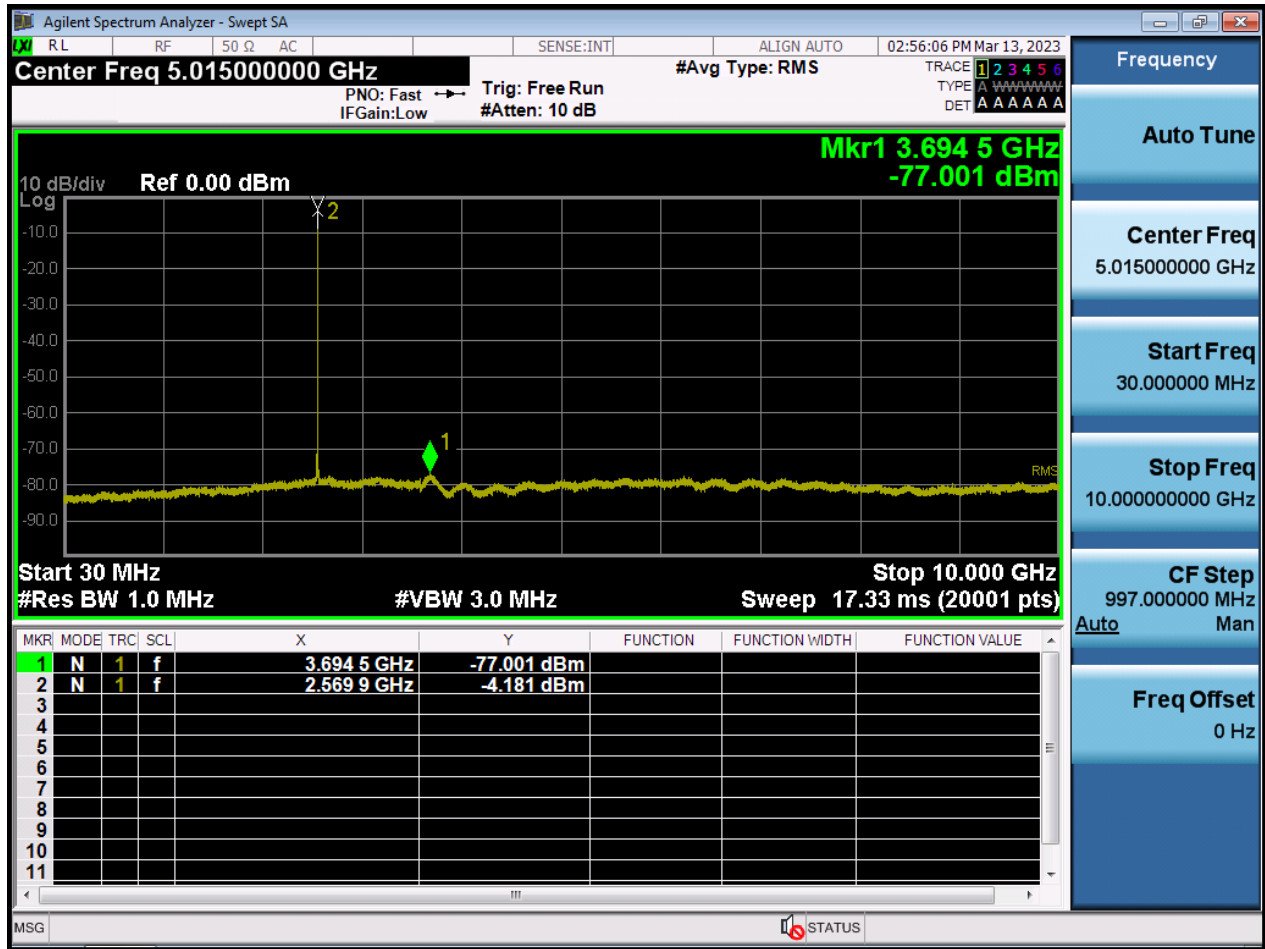
LTE7_15 M_CSE(30 M-10 G)_Lowest Channel



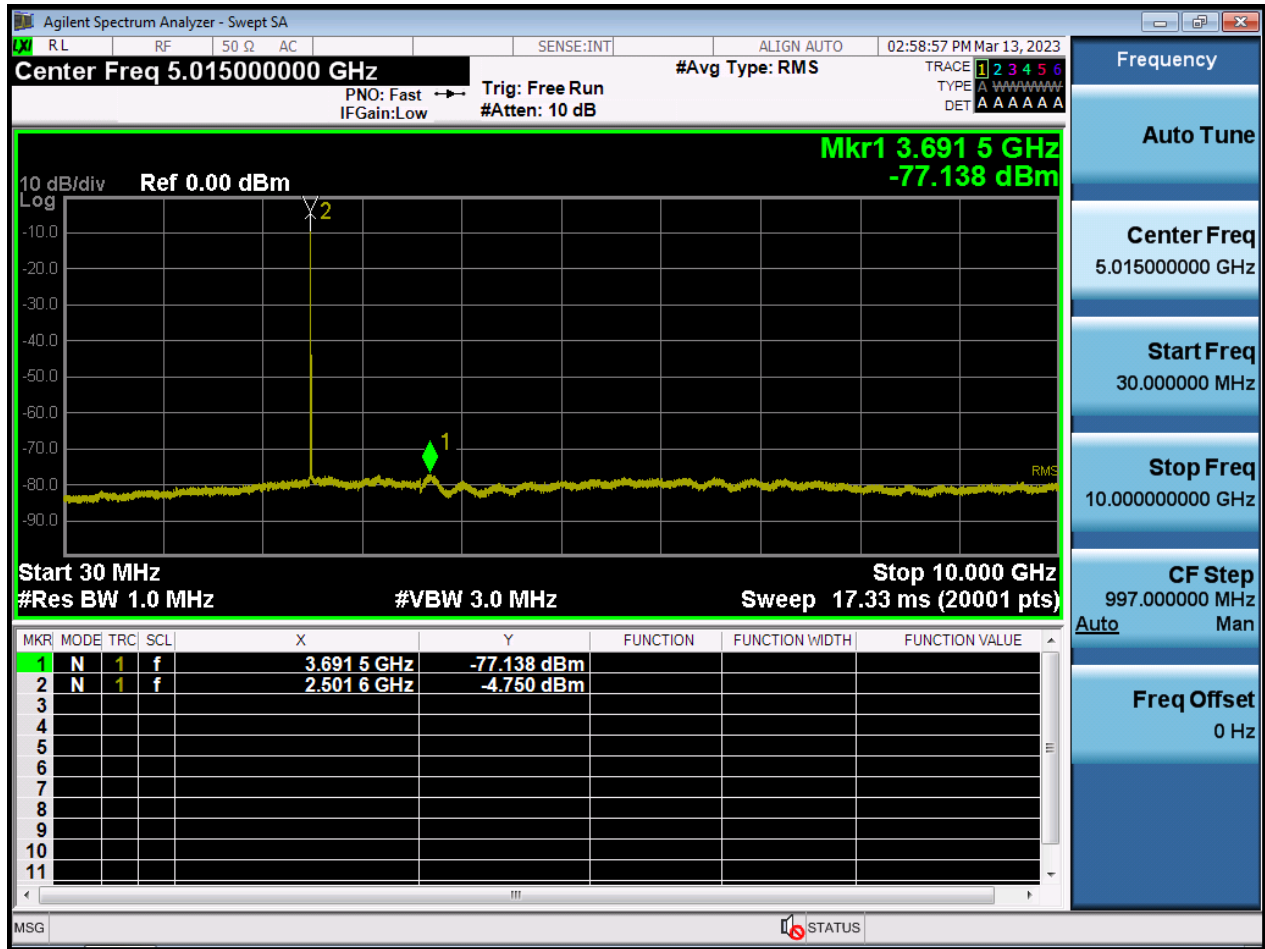
LTE7_15 M_CSE(30 M-10 G)_Mid Channel



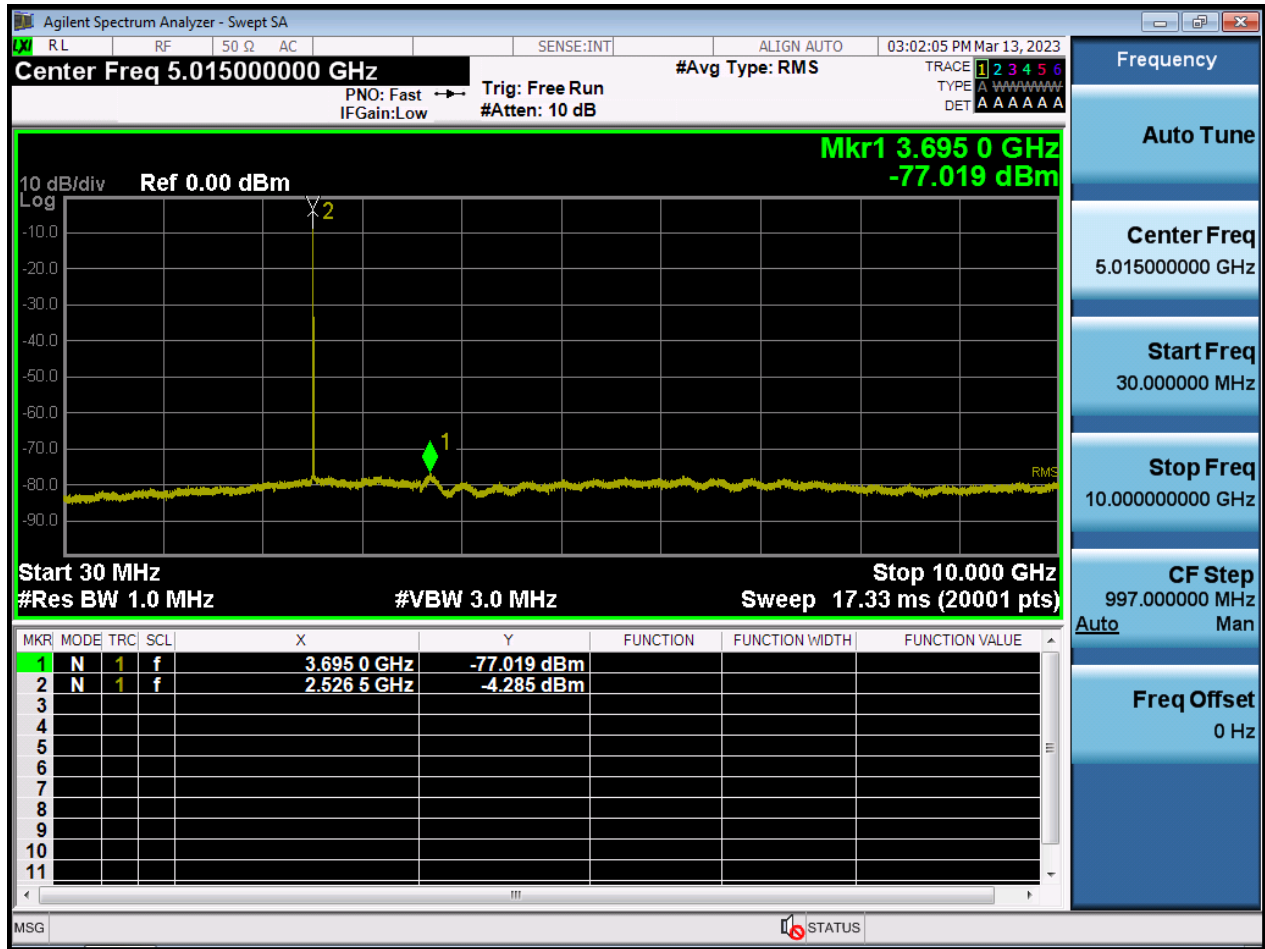
LTE7_15 M_CSE(30 M-10 G)_Highest Channel



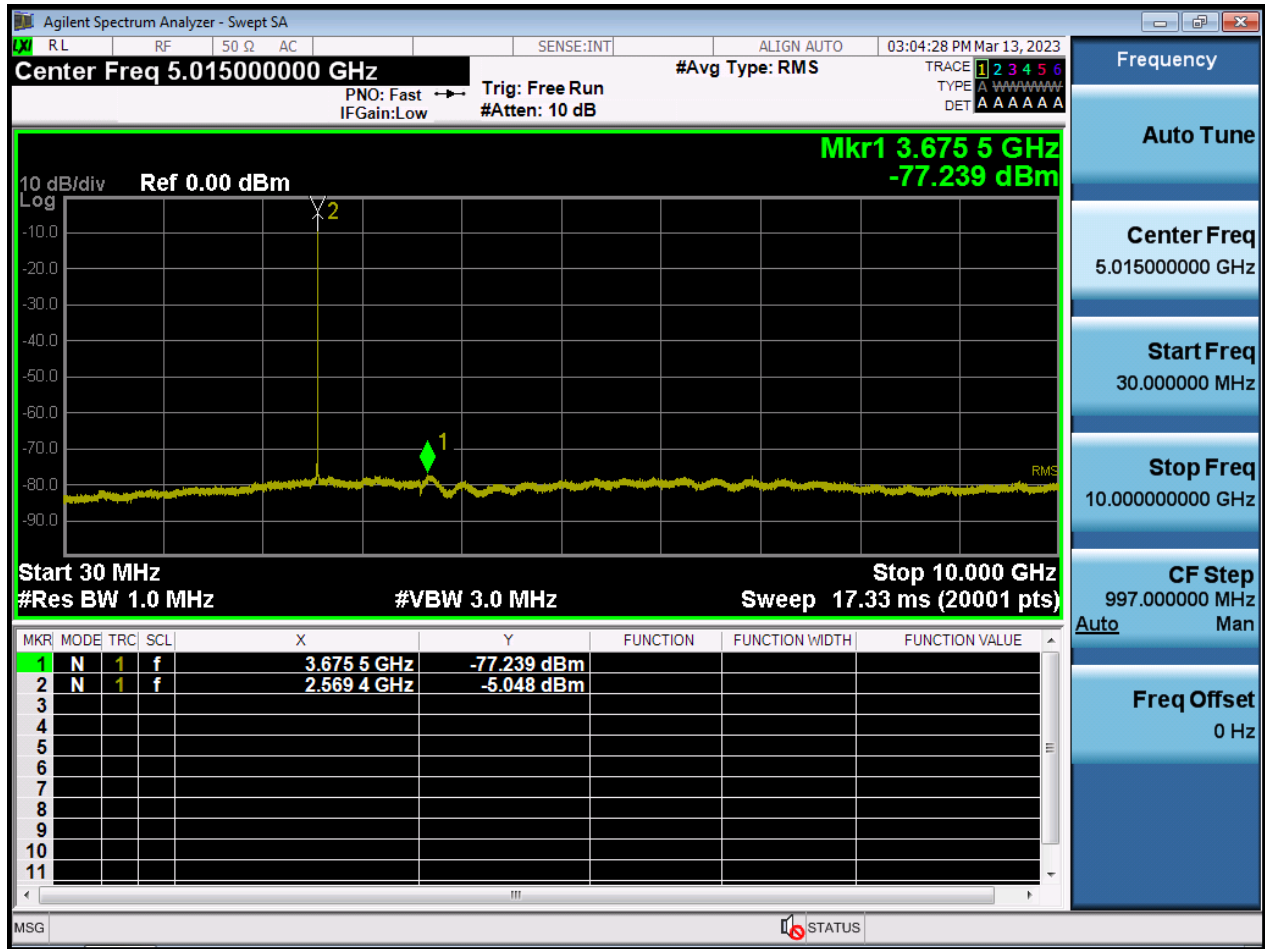
LTE7_20 M_CSE(30 M-10 G)_Lowest Channel



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

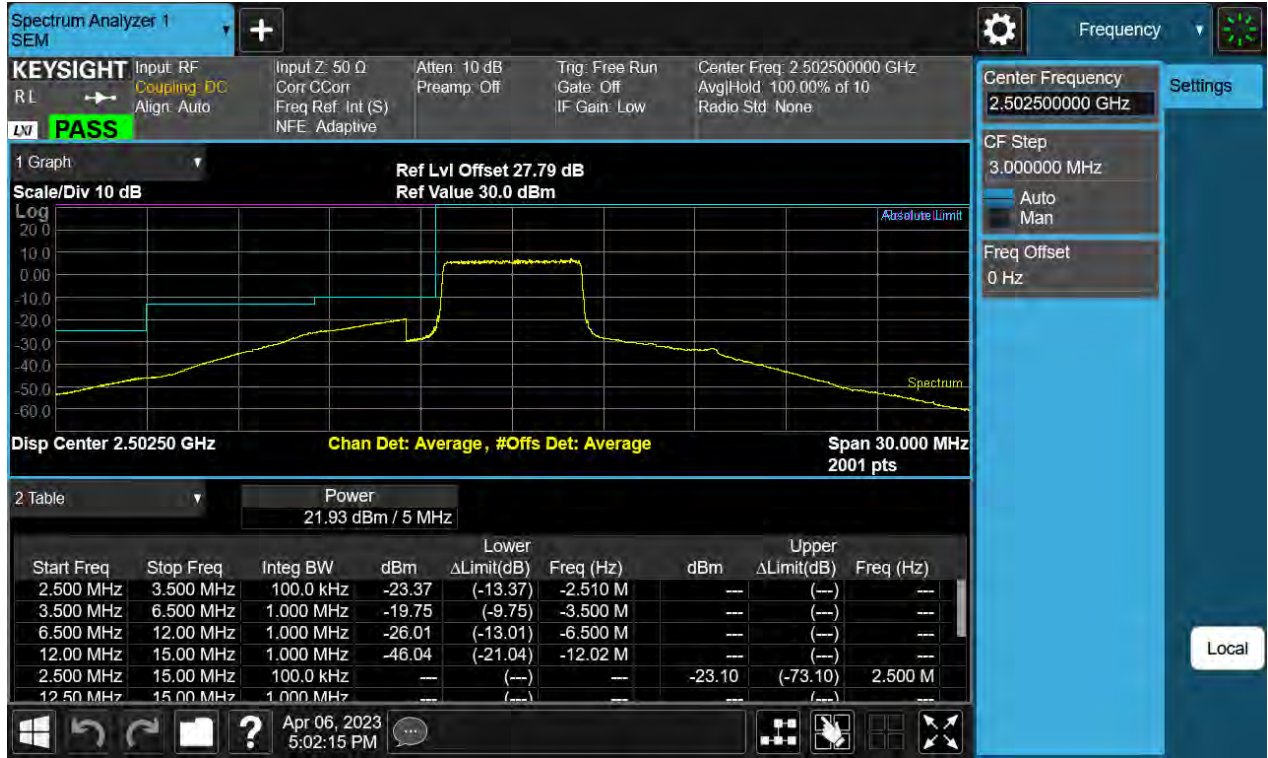


LTE7_20 M_CSE(10 G-26.5 G)_Highest Channel



11. TEST PLOTS (Sub 2 Ant)

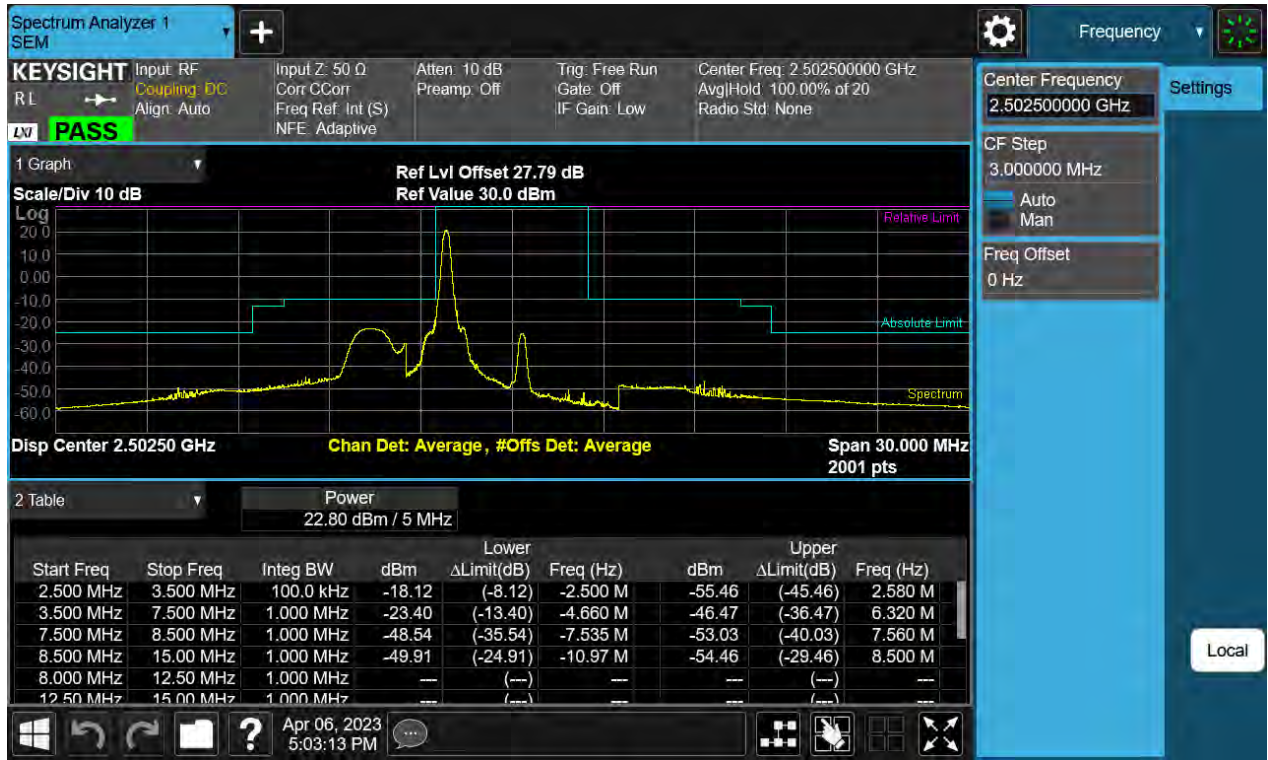
LTE7_5 M_BandEdge_Lower_Low_2502.5 MHz_QPSK_FullIRB



LTE7_5 M_BandEdge_Upper_Low_2502.5 MHz_QPSK_FullIRB



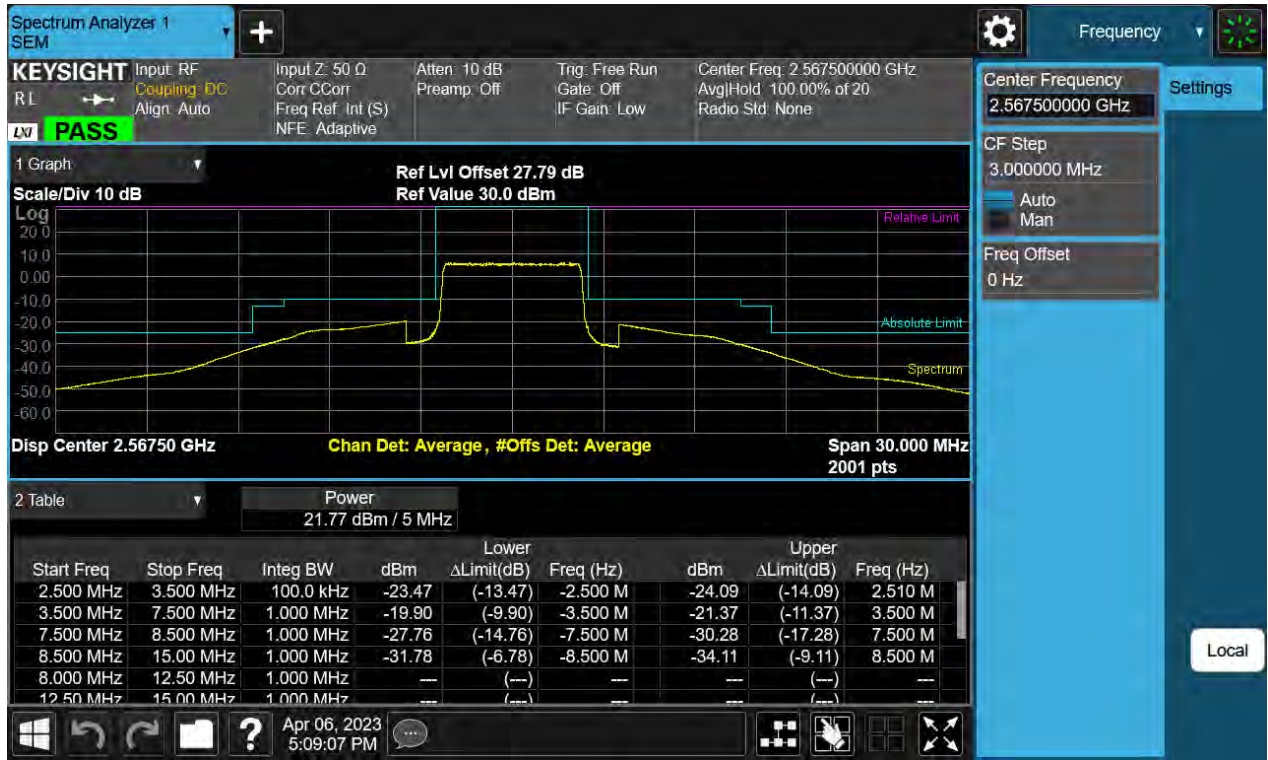
LTE7_5 M_BandEdge_Low_2502.5 MHz_QPSK_1RB



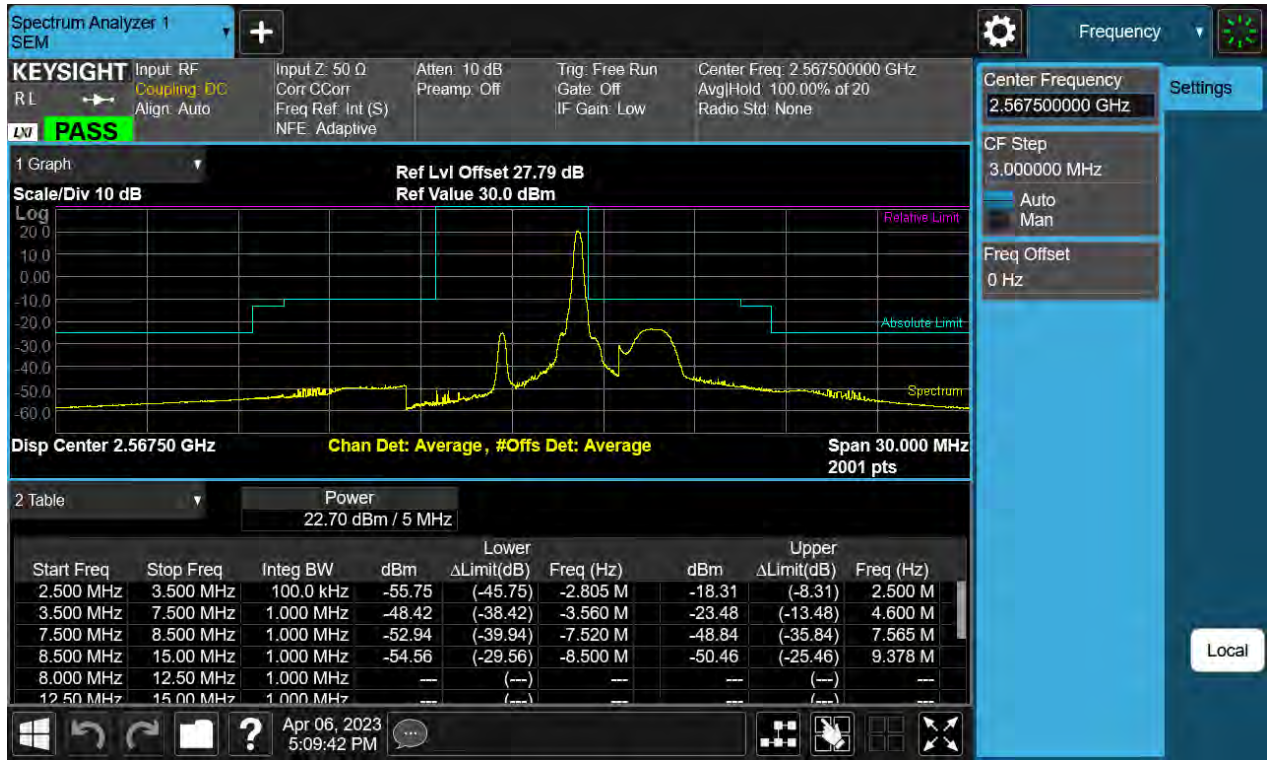
LTE7_5 M_BandEdge_Mid_2535 MHz_QPSK_FullRB



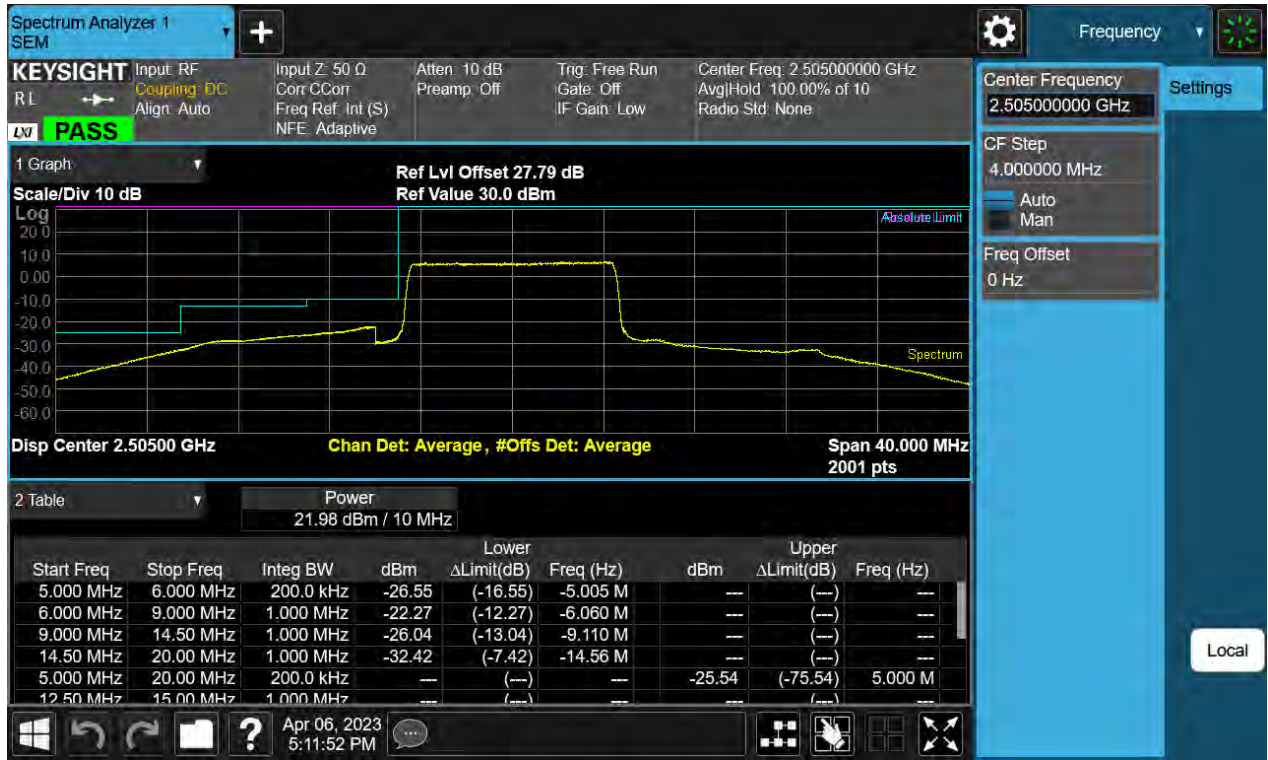
LTE7_5 M_BandEdge_High_2567.5 MHz_QPSK_FullIRB



LTE7_5 M_BandEdge_High_2567.5 MHz_QPSK_1RB



LTE7_10 M_BandEdge_Lower_Low_2505 MHz_QPSK_FullRB



LTE7_10 M_BandEdge_Upper_Low_2505 MHz_QPSK_FullRB

