HCT CO.,LTD.
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FCC LTE REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
June 15, 2021

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

Report No.: HCT-RF-2105-FC025-R1

FCC ID:	**A3LSMG990U**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s): SM-G990U
Additional Model(s): SM-G990U1/DS, SM-G990U1
EUT Type: Mobile Phone
FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s): §27, §2

	Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
					Max. Power (W)	Max. Power (dBm)
Power Class 3	LTE – Band 41/38 (5)	2498.5 – 2687.5	4M50G7D	QPSK	0.157	21.96
			4M49W7D	16QAM	0.129	21.10
			4M49W7D	64QAM	0.097	19.88
			4M48W7D	256QAM	0.051	17.09
	LTE – Band 41/38 (10)	2501.0 – 2685.0	8M95G7D	QPSK	0.154	21.89
			9M00W7D	16QAM	0.124	20.93
			8M95W7D	64QAM	0.095	19.80
			8M97W7D	256QAM	0.050	17.01
	LTE – Band 41/38 (15)	2503.5 – 2682.5	13M5G7D	QPSK	0.149	21.75
			13M5W7D	16QAM	0.117	20.67
			13M5W7D	64QAM	0.094	19.74
			13M5W7D	256QAM	0.049	16.91
	LTE – Band 41/38 (20)	2506.0 – 2680.0	17M9G7D	QPSK	0.146	21.66
			17M9W7D	16QAM	0.115	20.60
			17M9W7D	64QAM	0.093	19.68
			17M9W7D	256QAM	0.048	16.83
Power Class 2	LTE – Band 41 (5)	2498.5 – 2687.5	4M50G7D	QPSK	0.317	25.01
			4M51W7D	16QAM	0.268	24.28
			4M50W7D	64QAM	0.208	23.19
			4M50W7D	256QAM	0.105	20.21
	LTE – Band 41 (10)	2501.0 – 2685.0	8M98G7D	QPSK	0.292	24.66
			8M96W7D	16QAM	0.249	23.96
			8M97W7D	64QAM	0.187	22.72
			8M97W7D	256QAM	0.098	19.92
	LTE – Band 41 (15)	2503.5 – 2682.5	13M5G7D	QPSK	0.293	24.67
			13M5W7D	16QAM	0.238	23.77
			13M5W7D	64QAM	0.183	22.63
			13M5W7D	256QAM	0.096	19.84
	LTE – Band 41 (20)	2506.0 – 2680.0	17M9G7D	QPSK	0.254	24.05
			17M9W7D	16QAM	0.208	23.18
			17M9W7D	64QAM	0.161	22.07
			17M9W7D	256QAM	0.084	19.25

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)

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)

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2105-FC025	May 26, 2021	- First Approval Report
HCT-RF-2105-FC025-R1	June 15, 2021	- Revised the Additional model(s). (SM-G990U1 added)

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

Table of Contents

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMG990U
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2
EUT Type:	Mobile Phone
Model(s):	SM-G990U
Additional Model(s):	SM-G990U1/DS, SM-G990U1
Tx Frequency:	2498.5 – 2687.5 : 5 MHz 2501.0 – 2685.0 : 10 MHz 2503.5 – 2682.5 : 15 MHz 2506.0 – 2680.0 : 20 MHz
Date(s) of Tests:	April 19, 2021 ~ May 20, 2021
Serial number:	Radiated: 54136fe8da1e7ece Conducted: R3CR3117FBH

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS, CDMA(BC0, 1, 10) and LTE, Sub6.

It also supports IEEE 802.11 a/b/g/n/ac/ax (HT20/40/80), Bluetooth, BT LE, NFC, WPT, mmWave(n260/261).

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
Channel Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4 - ANSI C63.26-2015 – Section 5.2.6(only GSM)
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Effective Radiated Power/ Effective Isotropic Radiated Power	- KDB 971168 D01 v03r01 – Section 5.2 & 5.8 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12

3.2 RADIATED POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna in accordance with ANSI/TIA-603-E-2016 Clause 2.2.17.

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, not to exceed NormalHz
3. VBW ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points > 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Note

1. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission.
2. A half wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

   The power is calculated by the following formula;

   $$P_{d(dBm)} = Pg_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dB)}$$

   Where: P_d is the dipole equivalent power and P_g is the generator output power into the substitution antenna.
3. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration
4. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
5. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

3.3 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA-603-E-2016.

Test Settings

1. RBW = 100kHz for emissions below 1GHz and NormalHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points > 2 x span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10^{th} harmonics from 9 kHz.

Test Note

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

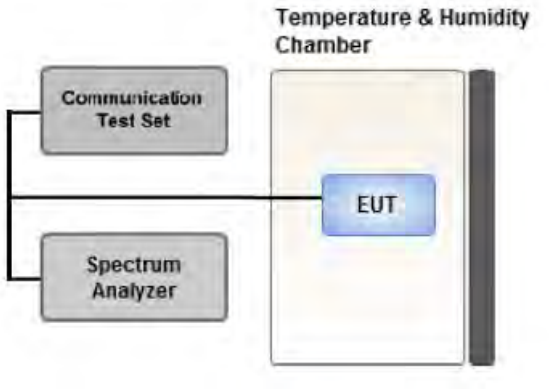
$$Result_{(dBm)} = Pg_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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

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

$$EIRP_{(dBm)} = ERP_{(dBm)} + 2.15$$

3.4 PEAK- TO- AVERAGE RATIO



Test setup

① CCDF Procedure for PAPR

Test Settings

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Set the measurement interval as follows:
   .- for continuous transmissions, set to 1 ms,
   .- or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
4. Record the maximum PAPR level associated with a probability of 0.1%.

② Alternate Procedure for PAPR

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

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

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

Test Settings(Peak Power)

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

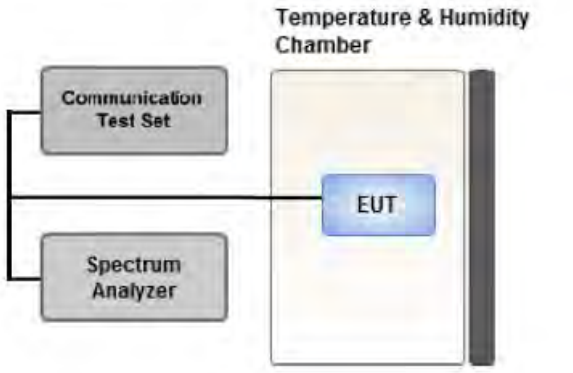
1. Set the RBW ≥ OBW.
2. Set VBW ≥ 3 × RBW.
3. Set span ≥ 2 × OBW.
4. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period).
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the peak amplitude level.

Test Settings(Average Power)

1. Set span to 2 × to 3 × the OBW.
2. Set RBW ≥ OBW.
3. Set VBW ≥ 3 × RBW.
4. Set number of measurement points in sweep ≥ 2 × span / RBW.
5. Sweep time:

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

3.5 OCCUPIED BANDWIDTH.



Test setup

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

The EUT makes a call to the communication simulator.

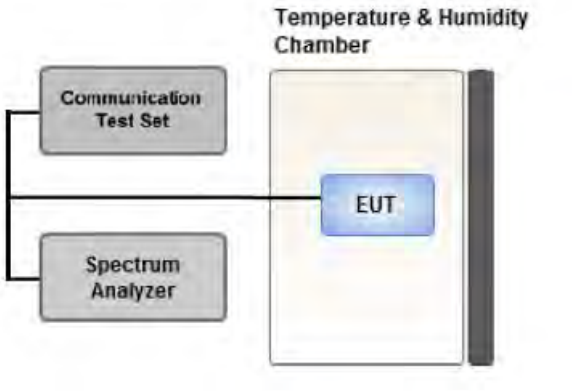
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

Test Settings

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

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

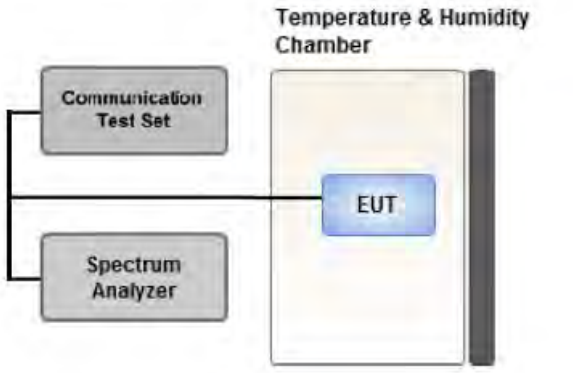
Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Settings

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

3.7 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 duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

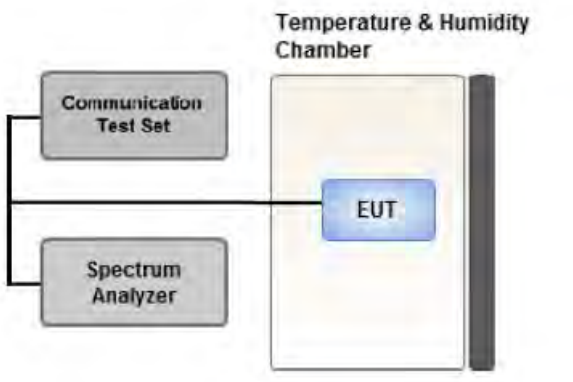
Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. 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 ≥ 2 x Span/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

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.
- The worst case is reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data.
- LTE Band 41 power class 3(5M/10M/15M/20M) overlaps the entire frequency range of LTE Band 38(5M/10M/15M/20M) and they have the same Tune-up power.
  Therefore, test data provided in this report covers Band38 as well as Band 41 power class 3.
- Please refer to the table below.
- All modes of operation were investigated and the worst case configuration results are reported.
- Please refer to the table below.
- SM-G990U & additional models were tested and the worst case results are reported.

(Worst case : SM-G990U)

[Worst case]

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

3.10 WORST CASE(CONDUCTED TEST)

- LTE Band 41 power class 3(5M/10M/15M/20M) overlaps the entire frequency range of LTE Band 38(5M/10M/15M/20M) and they have the same Tune-up power.
  Therefore, test data provided in this report covers Band38 as well as Band 41 power class 3.
- All modes of operation were investigated and the worst case configuration results are reported.
- SM-G990U & additional models were tested and the worst case results are reported.

(Worst case : SM-G990U)

[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 Radio	QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20	Mid	Full RB	0
Channel 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, Mid, 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

Manufacture	Model/ Equipment	Serial Number	Calibration Date	Calibration Interval	Calibration Due
T&M SYSTEM	FBSR-02B(WHK1.2/15G-10EF)/H.P.F	-	03/02/2021	Annual	03/02/2022
T&M SYSTEM	FBSR-02B(WHK3.3/18G-10EF)/H.P.F	-	03/02/2021	Annual	03/02/2022
Hewlett Packard	11667B / Power Splitter(DC~26.5 GHz)	11275	04/07/2021	Annual	04/07/2022
Hewlett Packard	E3632A/DC Power Supply	MY40004427	09/16/2020	Annual	09/16/2021
Schwarzbeck	UHAP/ Dipole Antenna	557	04/05/2021	Biennial	04/05/2023
Schwarzbeck	UHAP/ Dipole Antenna	558	04/05/2021	Biennial	04/05/2023
ESPEC	SU-642 / Chamber	93008124	03/15/2021	Annual	03/15/2022
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	147	08/29/2019	Biennial	08/29/2021
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	9120D-1298	09/25/2019	Biennial	09/25/2021
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170342	10/13/2020	Biennial	10/13/2022
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170124	02/11/2020	Biennial	02/11/2022
Agilent	N9020A/Signal Analyzer(10Hz~26.5GHz)	MY50200093	11/17/2020	Annual	11/17/2021
Hewlett Packard	8493C/ATTENUATOR(20dB)	17280	06/04/2020	Annual	06/04/2021
REOHDE & SCHWARZ	FSV40/Spectrum Analyzer(10Hz~40GHz)	100931	10/14/2020	Annual	10/14/2021
Agilent	8960 (E5515C)/ Base Station	MY48360800	08/26/2020	Annual	08/26/2021
Schwarzbeck	FMZB1513/ Loop Antenna(9kHz~30MHz)	1513-333	03/19/2020	Biennial	03/19/2022
Schwarzbeck	VULB9160/ Bilog Antenna	3150	03/03/2021	Biennial	03/03/2023
Schwarzbeck	VULB9168/ Hybrid Antenna	760	02/22/2021	Biennial	02/22/2023
Anritsu Corp.	MT8821C/Wideband Radio Communication Tester	6262116770	07/22/2020	Annual	07/22/2021
Anritsu Corp.	MT8820C/Wideband Radio Communication Tester	6201026545	01/07/2021	Annual	01/07/2022
REOHDE & SCHWARZ	SMB100A/ SIGNAL GENERATOR (100kHz~40GHz)	177633	07/13/2020	Annual	07/13/2021
KEYSIGHT	N9030B / Signal Analyzer(5Hz~40.0GHz)	MY55480167	06/04/2020	Annual	06/04/2021
HCT CO., LTD.,	FCC LTE Mobile Conducted RF Automation Test Software	-	-	-	-

Note:

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

5. MEASUREMENT UNCERTAINTY

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

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05

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)	■ < 40 + 10log10 (P[Watts]) at Channel edges ■ < 43 + 10log10 (P[Watts]) between 5 and X MHz from Channel edges ■ < 55 + 10log10 (P[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	See Note1
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 + 10log10 (P[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
40620	2593.0	-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

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

8.1.1 Power Class 3

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2498.5	LTE B41/38 5 MHz	QPSK	-24.18	13.00	10.70	2.49	H	< 2.00	0.132	21.21
		16-QAM	-25.04	12.14	10.70	2.49	H		0.108	20.35
		64-QAM	-26.23	10.95	10.70	2.49	H		0.082	19.16
		256-QAM	-29.09	8.09	10.70	2.49	H		0.043	16.30
2593.0		QPSK	-23.82	13.51	10.98	2.53	H		0.157	21.96
		16-QAM	-24.68	12.65	10.98	2.53	H		0.129	21.10
		64-QAM	-25.90	11.43	10.98	2.53	H		0.097	19.88
		256-QAM	-28.69	8.64	10.98	2.53	H		0.051	17.09
2687.5		QPSK	-25.45	12.16	11.10	2.59	H		0.117	20.67
		16-QAM	-26.24	11.37	11.10	2.59	H		0.097	19.88
		64-QAM	-27.44	10.17	11.10	2.59	H		0.074	18.68
		256-QAM	-30.29	7.32	11.10	2.59	H		0.038	15.83

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2501.0	LTE B41/38 10 MHz	QPSK	-24.21	12.97	10.70	2.49	H	< 2.00	0.131	21.18
		16-QAM	-25.17	12.01	10.70	2.49	H		0.105	20.22
		64-QAM	-26.24	10.94	10.70	2.49	H		0.082	19.15
		256-QAM	-29.32	7.86	10.70	2.49	H		0.040	16.07
2593.0		QPSK	-23.89	13.44	10.98	2.53	H		0.154	21.89
		16-QAM	-24.85	12.48	10.98	2.53	H		0.124	20.93
		64-QAM	-25.98	11.35	10.98	2.53	H		0.095	19.80
		256-QAM	-28.77	8.56	10.98	2.53	H		0.050	17.01
2685.0		QPSK	-25.81	11.81	11.10	2.58	H		0.108	20.33
		16-QAM	-26.73	10.89	11.10	2.58	H		0.087	19.41
		64-QAM	-27.90	9.72	11.10	2.58	H		0.067	18.24
		256-QAM	-30.68	6.94	11.10	2.58	H		0.035	15.46

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2503.5	LTE B41/38 15 MHz	QPSK	-24.37	12.81	10.70	2.49	H	< 2.00	0.126	21.02
		16-QAM	-25.44	11.74	10.70	2.49	H		0.099	19.95
		64-QAM	-26.35	10.83	10.70	2.49	H		0.080	19.04
		256-QAM	-29.39	7.79	10.70	2.49	H		0.040	16.00
2593.0		QPSK	-24.03	13.30	10.98	2.53	H		0.149	21.75
		16-QAM	-25.11	12.22	10.98	2.53	H		0.117	20.67
		64-QAM	-26.04	11.29	10.98	2.53	H		0.094	19.74
		256-QAM	-28.87	8.46	10.98	2.53	H		0.049	16.91
2682.5		QPSK	-25.40	12.22	11.10	2.57	H		0.119	20.75
		16-QAM	-26.44	11.18	11.10	2.57	H		0.094	19.71
		64-QAM	-27.37	10.25	11.10	2.57	H		0.076	18.78
		256-QAM	-30.13	7.49	11.10	2.57	H		0.040	16.02

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2506.0	LTE B41/38 20 MHz	QPSK	-24.46	12.78	10.73	2.50	H	< 2.00	0.126	21.01
		16-QAM	-25.51	11.73	10.73	2.50	H		0.099	19.96
		64-QAM	-26.42	10.82	10.73	2.50	H		0.080	19.05
		256-QAM	-29.59	7.65	10.73	2.50	H		0.039	15.88
2593.0		QPSK	-24.12	13.21	10.98	2.53	H		0.146	21.66
		16-QAM	-25.18	12.15	10.98	2.53	H		0.115	20.60
		64-QAM	-26.10	11.23	10.98	2.53	H		0.093	19.68
		256-QAM	-28.95	8.38	10.98	2.53	H		0.048	16.83
2680.0		QPSK	-25.75	11.87	11.10	2.57	H		0.110	20.40
		16-QAM	-26.77	10.85	11.10	2.57	H		0.087	19.38
		64-QAM	-27.70	9.92	11.10	2.57	H		0.070	18.45
		256-QAM	-30.46	7.16	11.10	2.57	H		0.037	15.69

8.1.2 Power Class 2

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2498.5	LTE B41/ 5 MHz	QPSK	-21.50	15.68	10.70	2.49	V	< 2.00	0.245	23.89
		16-QAM	-22.19	14.99	10.70	2.49	V		0.209	23.20
		64-QAM	-23.29	13.89	10.70	2.49	H		0.162	22.10
		256-QAM	-26.30	10.88	10.70	2.49	H		0.081	19.09
2593.0		QPSK	-20.77	16.56	10.98	2.53	V		0.317	25.01
		16-QAM	-21.50	15.83	10.98	2.53	V		0.268	24.28
		64-QAM	-22.59	14.74	10.98	2.53	H		0.208	23.19
		256-QAM	-25.57	11.76	10.98	2.53	H		0.105	20.21
2687.5		QPSK	-22.57	15.04	11.10	2.59	V		0.226	23.55
		16-QAM	-23.32	14.29	11.10	2.59	V		0.191	22.80
		64-QAM	-24.48	13.13	11.10	2.59	H		0.146	21.64
		256-QAM	-27.40	10.21	11.10	2.59	H		0.074	18.72

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2501.0	LTE B41/ 10 MHz	QPSK	-21.53	15.65	10.70	2.49	V	< 2.00	0.243	23.86
		16-QAM	-22.19	14.99	10.70	2.49	V		0.209	23.20
		64-QAM	-23.42	13.76	10.70	2.49	H		0.157	21.97
		256-QAM	-26.49	10.69	10.70	2.49	H		0.078	18.90
2593.0		QPSK	-21.12	16.21	10.98	2.53	V		0.292	24.66
		16-QAM	-21.82	15.51	10.98	2.53	V		0.249	23.96
		64-QAM	-23.06	14.27	10.98	2.53	H		0.187	22.72
		256-QAM	-25.86	11.47	10.98	2.53	H		0.098	19.92
2685.0		QPSK	-22.75	14.87	11.10	2.58	V		0.218	23.39
		16-QAM	-23.52	14.10	11.10	2.58	V		0.183	22.62
		64-QAM	-24.66	12.96	11.10	2.58	H		0.140	21.48
		256-QAM	-27.44	10.18	11.10	2.58	H		0.074	18.70

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2503.5	LTE B41/ 15 MHz	QPSK	-21.79	15.39	10.70	2.49	V	< 2.00	0.229	23.60
		16-QAM	-22.63	14.55	10.70	2.49	V		0.189	22.76
		64-QAM	-23.80	13.38	10.70	2.49	H		0.144	21.59
		256-QAM	-26.72	10.46	10.70	2.49	H		0.074	18.67
2593.0		QPSK	-21.11	16.22	10.98	2.53	V		0.293	24.67
		16-QAM	-22.01	15.32	10.98	2.53	V		0.238	23.77
		64-QAM	-23.15	14.18	10.98	2.53	H		0.183	22.63
		256-QAM	-25.94	11.39	10.98	2.53	H		0.096	19.84
2682.5		QPSK	-22.60	15.02	11.10	2.57	V		0.227	23.55
		16-QAM	-23.49	14.13	11.10	2.57	V		0.185	22.66
		64-QAM	-24.55	13.07	11.10	2.57	H		0.145	21.60
		256-QAM	-27.30	10.32	11.10	2.57	H		0.077	18.85

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
2506.0	LTE B41/ 20 MHz	QPSK	-21.59	15.65	10.73	2.50	V	< 2.00	0.244	23.88
		16-QAM	-22.47	14.77	10.73	2.50	V		0.200	23.00
		64-QAM	-23.64	13.60	10.73	2.50	H		0.152	21.83
		256-QAM	-26.66	10.58	10.73	2.50	H		0.076	18.81
2593.0		QPSK	-21.73	15.60	10.98	2.53	V		0.254	24.05
		16-QAM	-22.60	14.73	10.98	2.53	V		0.208	23.18
		64-QAM	-23.71	13.62	10.98	2.53	H		0.161	22.07
		256-QAM	-26.53	10.80	10.98	2.53	H		0.084	19.25
2680.0		QPSK	-22.57	15.05	11.10	2.57	V		0.228	23.58
		16-QAM	-23.50	14.12	11.10	2.57	V		0.184	22.65
		64-QAM	-24.60	13.02	11.10	2.57	H		0.143	21.55
		256-QAM	-27.34	10.28	11.10	2.57	H		0.076	18.81

8.2 RADIATED SPURIOUS EMISSIONS

8.2.1 Power Class 3

▣ OPERATING FREQUENCY : 2593.0 MHz

▣ MEASURED OUTPUT POWER: 21.96 dBm = 0.157 W

▣ MODE: LTE B41/38

▣ MODULATION SIGNAL: 5 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 55 + 10 log10 (W) = 46.96 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
39675 (2498.5)	4 997.00	-52.73	12.70	-62.04	3.61	H	-52.95	74.91
	7 495.50	-56.72	11.20	-56.91	4.47	V	-50.18	72.13
	9 994.00	-42.58	10.89	-39.38	5.27	H	-33.76	55.71
	12 492.50	-59.57	13.88	-56.74	6.03	H	-48.89	70.84
	14 991.00	-53.23	12.83	-43.29	6.69	H	-37.15	59.10
40620 (2593.0)	5 186.00	-47.68	12.75	-56.39	3.70	H	-47.33	69.29
	7 779.00	-56.66	11.65	-57.81	4.54	H	-50.70	72.65
	10 372.00	-54.46	10.75	-49.74	5.45	H	-44.44	66.40
	15 558.00	-47.69	16.08	-40.26	6.80	V	-30.98	52.94
41565 (2687.5)	5 375.00	-54.81	13.52	-64.14	3.78	H	-54.39	76.35
	8 062.50	-57.08	10.93	-55.81	4.61	H	-49.49	71.45
	10 750.00	-38.68	10.90	-34.02	5.54	H	-28.66	50.62
	13 437.50	-54.80	12.63	-46.14	6.26	H	-39.77	61.73
	16 125.00	-52.63	17.20	-43.44	6.94	V	-33.18	55.13

▣ OPERATING FREQUENCY : 2593.0 MHz

▣ MEASURED OUTPUT POWER: 21.89 dBm = 0.154 W

▣ MODE: LTE B41/38

▣ MODULATION SIGNAL: 10 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 55 + 10 log10 (W) = 46.89 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
39700 (2501.0)	5 002.00	-54.51	12.70	-63.82	3.61	H	-54.73	76.62
	7 503.00	-58.27	11.20	-58.67	4.47	H	-51.94	73.83
	10 004.00	-42.27	10.94	-39.29	5.27	H	-33.62	55.50
	15 006.00	-52.83	12.93	-42.79	6.67	H	-36.53	58.41
40620 (2593.0)	5 186.00	-51.73	12.75	-60.44	3.70	H	-51.38	73.27
	7 779.00	-57.35	11.65	-58.50	4.54	H	-51.39	73.27
	10 372.00	-38.06	10.75	-33.34	5.45	H	-28.04	49.92
	15 558.00	-49.13	16.08	-41.70	6.80	H	-32.42	54.31
41540 (2685.0)	5 370.00	-55.58	13.25	-64.81	3.77	H	-55.33	77.22
	8 055.00	-57.83	10.92	-56.54	4.61	H	-50.23	72.11
	10 740.00	-55.45	10.90	-50.91	5.52	H	-45.53	67.42
	13 425.00	-56.98	12.65	-48.68	6.22	H	-42.25	64.14
	16 110.00	-53.92	17.25	-44.29	6.94	H	-33.98	55.87

▣ OPERATING FREQUENCY : 2593.0 MHz

▣ MEASURED OUTPUT POWER: 21.75 dBm = 0.149 W

▣ MODE: LTE B41/38

▣ MODULATION SIGNAL: 15 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 55 + 10 log10 (W) = 46.75 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
39725 (2503.5)	5 007.00	-52.09	12.65	-61.36	3.60	H	-52.31	74.05
	7 510.50	-57.91	11.25	-59.05	4.48	H	-52.28	74.02
	10 014.00	-42.28	11.02	-38.99	5.27	H	-33.24	54.99
	15 021.00	-52.32	13.00	-42.23	6.67	H	-35.90	57.65
40620 (2593.0)	5 186.00	-53.60	12.75	-62.31	3.70	H	-53.25	75.00
	7 779.00	-57.19	11.65	-58.34	4.54	H	-51.23	72.97
	10 372.00	-39.36	10.75	-34.64	5.45	H	-29.34	51.08
	15 558.00	-49.29	16.08	-41.86	6.80	H	-32.58	54.33
41515 (2682.5)	5 365.00	-55.44	13.27	-64.85	3.77	H	-55.34	77.09
	8 047.50	-58.16	10.90	-56.84	4.60	H	-50.54	72.29
	10 730.00	-43.94	10.90	-39.45	5.50	H	-34.05	55.80
	16 095.00	-52.20	17.30	-42.33	6.95	H	-31.98	53.73

▣ OPERATING FREQUENCY : 2593.0 MHz

▣ MEASURED OUTPUT POWER: 21.66 dBm = 0.146 W

▣ MODE: LTE B41/38

▣ MODULATION SIGNAL: 20 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 55 + 10 log10 (W) = 46.66 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
39750 (2506.0)	5 012.00	-52.99	12.65	-62.20	3.59	H	-53.14	74.79
	7 518.00	-57.85	11.30	-59.19	4.46	H	-52.35	74.00
	10 024.00	-41.79	11.05	-38.18	5.27	H	-32.40	54.05
	15 036.00	-55.57	13.03	-45.31	6.67	H	-38.95	60.60
40620 (2593.0)	5 186.00	-53.53	12.75	-62.24	3.70	H	-53.18	74.84
	7 779.00	-57.24	11.65	-58.39	4.54	H	-51.28	72.93
	10 372.00	-40.23	10.75	-35.51	5.45	H	-30.21	51.86
	15 558.00	-50.59	16.08	-43.16	6.80	H	-33.88	55.54
41490 (2680.0)	5 360.00	-56.45	13.28	-66.02	3.76	H	-56.50	78.16
	8 040.00	-55.97	10.93	-54.72	4.59	H	-48.38	70.04
	10 720.00	-45.66	10.90	-41.46	5.48	H	-36.04	57.70
	16 080.00	-52.55	17.30	-41.94	6.95	H	-31.59	53.24

8.2.2 Power Class 2

▣ OPERATING FREQUENCY : 2593.0 MHz

▣ MEASURED OUTPUT POWER: 25.01 dBm = 0.317 W

▣ MODE: LTE B41

▣ MODULATION SIGNAL: 5 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 55 + 10 log10 (W) = 50.01 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
39675 (2498.5)	4 997.00	-52.89	12.70	-62.20	3.61	H	-53.11	78.12
	7 495.50	-56.79	11.20	-56.98	4.47	H	-50.25	75.25
	9 994.00	-42.83	10.89	-39.63	5.27	H	-34.01	59.01
	14 991.00	-51.33	12.83	-41.39	6.69	H	-35.25	60.25
40620 (2593.0)	5 186.00	-50.98	12.75	-59.69	3.70	H	-50.63	75.64
	7 779.00	-55.97	11.65	-57.12	4.54	V	-50.01	75.01
	10 372.00	-43.17	10.75	-38.45	5.45	H	-33.15	58.16
	15 558.00	-48.58	16.08	-41.15	6.80	V	-31.87	56.88
41565 (2687.5)	5 375.00	-51.13	13.52	-60.46	3.78	H	-50.71	75.72
	8 062.50	-57.12	10.93	-55.85	4.61	H	-49.53	74.54
	10 750.00	-46.78	10.90	-42.13	5.54	V	-36.77	61.77
	13 437.50	-52.87	12.63	-44.21	6.26	H	-37.84	62.85
	16 125.00	-54.45	17.20	-45.26	6.94	V	-35.00	60.00

▣ OPERATING FREQUENCY : 2593.0 MHz

▣ MEASURED OUTPUT POWER: 24.66 dBm = 0.292 W

▣ MODE: LTE B41

▣ MODULATION SIGNAL: 10 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 55 + 10 log10 (W) = 49.66 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
39700 (2501.0)	5 002.00	-55.36	12.70	-64.67	3.61	V	-55.58	80.24
	7 503.00	-57.18	11.20	-57.58	4.47	H	-50.85	75.51
	10 004.00	-42.06	10.94	-39.08	5.27	H	-33.41	58.06
	15 006.00	-50.76	12.93	-40.72	6.67	H	-34.46	59.11
40620 (2593.0)	5 186.00	-52.46	12.75	-61.17	3.70	H	-52.11	76.77
	7 779.00	-57.95	11.65	-59.10	4.54	H	-51.99	76.64
	10 372.00	-38.07	10.75	-33.35	5.45	H	-28.05	52.70
	15 558.00	-50.02	16.08	-42.59	6.80	H	-33.31	57.97
41540 (2685.0)	5 370.00	-55.72	13.25	-64.95	3.77	H	-55.47	80.13
	8 055.00	-57.81	10.92	-56.52	4.61	V	-50.21	74.86
	10 740.00	-39.06	10.90	-34.52	5.52	H	-29.14	53.80
	13 425.00	-53.04	12.65	-44.74	6.22	H	-38.31	62.97
	16 110.00	-55.04	17.25	-45.41	6.94	H	-35.10	59.76

▣ OPERATING FREQUENCY : 2593.0 MHz

▣ MEASURED OUTPUT POWER: 24.67 dBm = 0.293 W

▣ MODE: LTE B41

▣ MODULATION SIGNAL: 15 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 55 + 10 log10 (W) = 49.67 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
39725 (2503.5)	5 007.00	-52.81	12.65	-62.08	3.60	H	-53.03	77.69
	7 510.50	-58.62	11.25	-59.76	4.48	H	-52.99	77.65
	10 014.00	-41.40	11.02	-38.11	5.27	H	-32.36	57.03
	15 021.00	-52.10	13.00	-42.01	6.67	H	-35.68	60.35
40620 (2593.0)	5 186.00	-51.28	12.75	-59.99	3.70	V	-50.93	75.60
	7 779.00	-58.13	11.65	-59.28	4.54	V	-52.17	76.83
	10 372.00	-38.04	10.75	-33.32	5.45	H	-28.02	52.68
	15 558.00	-50.90	16.08	-43.47	6.80	H	-34.19	58.86
41515 (2682.5)	5 365.00	-56.29	13.27	-65.70	3.77	H	-56.19	80.86
	8 047.50	-57.85	10.90	-56.53	4.60	H	-50.23	74.90
	10 730.00	-39.48	10.90	-34.99	5.50	H	-29.59	54.26
	13 412.50	-53.09	12.68	-44.76	6.19	H	-38.27	62.94
	16 095.00	-55.13	17.30	-45.26	6.95	H	-34.91	59.58

▣ OPERATING FREQUENCY : 2593.0 MHz

▣ MEASURED OUTPUT POWER: 24.05 dBm = 0.254 W

▣ MODE: LTE B41

▣ MODULATION SIGNAL: 20 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 55 + 10 log10 (W) = 49.05 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	dBc
39750 (2506.0)	5 012.00	-53.20	12.65	-62.41	3.59	H	-53.35	77.39
	7 518.00	-56.85	11.30	-58.19	4.46	V	-51.35	75.39
	10 024.00	-41.03	11.05	-37.42	5.27	H	-31.64	55.68
	15 036.00	-51.11	13.03	-40.85	6.67	H	-34.49	58.53
40620 (2593.0)	5 186.00	-53.16	12.75	-61.87	3.70	H	-52.81	76.86
	7 779.00	-58.14	11.65	-59.29	4.54	H	-52.18	76.22
	10 372.00	-38.13	10.75	-33.41	5.45	H	-28.11	52.15
	15 558.00	-50.67	16.08	-43.24	6.80	H	-33.96	58.01
41490 (2680.0)	5 360.00	-55.79	13.28	-65.36	3.76	V	-55.84	79.89
	8 040.00	-58.07	10.93	-56.82	4.59	H	-50.48	74.53
	10 720.00	-39.27	10.90	-35.07	5.48	H	-29.65	53.69
	13 400.00	-51.35	12.70	-43.14	6.18	H	-36.62	60.66
	16 080.00	-55.26	17.30	-44.65	6.95	H	-34.30	58.34

8.3 PEAK-TO-AVERAGE RATIO

8.3.1 Power Class 3

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
41/38	5 MHz	2593.0	QPSK	25	0	5.09
			16-QAM			5.80
			64-QAM			7.03
			256-QAM			7.00
	10 MHz		QPSK	50		5.06
			16-QAM			5.89
			64-QAM			6.73
			256-QAM			7.23
	15 MHz		QPSK	75		5.05
			16-QAM			5.94
			64-QAM			6.63
			256-QAM			6.96
	20 MHz		QPSK	100		5.12
			16-QAM			5.97
			64-QAM			6.64
			256-QAM			6.64

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 102 ~ 117.

8.3.2 Power Class 2

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
41	5 MHz	2593.0	QPSK	25	0	4.98
			16-QAM			6.26
			64-QAM			6.97
			256-QAM			6.91
	10 MHz		QPSK	50		4.98
			16-QAM			6.24
			64-QAM			6.74
			256-QAM			7.46
	15 MHz		QPSK	75		4.92
			16-QAM			5.75
			64-QAM			6.62
			256-QAM			6.62
	20 MHz		QPSK	100		4.91
			16-QAM			5.75
			64-QAM			6.68
			256-QAM			6.70

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 118 ~ 133.

8.4 OCCUPIED BANDWIDTH

8.4.1 Power Class 3

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
41/38	5 MHz	2593.0	QPSK	25	0	4.4952
			16-QAM			4.4832
			64-QAM			4.4925
			256-QAM			4.4799
	10 MHz		QPSK	50		8.9486
			16-QAM			9.0012
			64-QAM			8.9526
			256-QAM			8.9686
	15 MHz		QPSK	75		13.471
			16-QAM			13.456
			64-QAM			13.467
			256-QAM			13.456
	20 MHz		QPSK	100		17.890
			16-QAM			17.883
			64-QAM			17.907
			256-QAM			17.852

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 70 ~ 85.

8.4.2 Power Class 2

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
41	5 MHz	2593.0	QPSK	25	0	4.5018
			16-QAM			4.5090
			64-QAM			4.4988
			256-QAM			4.5014
	10 MHz		QPSK	50		8.9778
			16-QAM			8.9620
			64-QAM			8.9675
			256-QAM			8.9686
	15 MHz		QPSK	75		13.504
			16-QAM			13.464
			64-QAM			13.459
			256-QAM			13.485
	20 MHz		QPSK	100		17.928
			16-QAM			17.851
			64-QAM			17.847
			256-QAM			17.917

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 86 ~ 101.

8.5 CONDUCTED SPURIOUS EMISSIONS

8.5.1 Power Class 3

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
41/38	5	2498.5	26.1083	34.110	-76.729	-42.619	-25.00
		2593.0	26.1173	34.110	-76.395	-42.285	
		2687.5	26.3391	34.110	-76.855	-42.745	
	10	2501.0	26.1326	34.110	-76.572	-42.462	
		2593.0	26.1334	34.110	-76.714	-42.604	
		2685.0	25.8584	34.110	-76.599	-42.489	
	15	2503.5	26.1232	34.110	-76.398	-42.288	
		2593.0	26.1581	34.110	-76.409	-42.299	
		2682.5	26.1096	34.110	-76.415	-42.305	
	20	2506.0	26.1487	34.110	-76.643	-42.533	
		2593.0	26.1474	34.110	-76.539	-42.429	
		2680.0	26.1640	34.110	-76.411	-42.301	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 190 ~ 213.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Duty Cycle factor already applied on the factor.
   - Duty Cycle factor(dB) = 3.979
   - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Splitter
   - Result(dBm) = Measurement Maximum Data (dBm) + Factor

Frequency Range (GHz)	Factor [dB]
0.03 – 1	29.249
1 – 5	31.955
5 – 10	32.570
10 – 15	33.095
15 – 20	33.468
Above 20	34.110

8.5.2 Power Class 2

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
41	5	2498.5	26.1360	34.110	-76.681	-42.571	-25.00
		2593.0	25.8061	34.110	-76.093	-41.983	
		2687.5	26.1432	34.110	-76.473	-42.363	
	10	2501.0	26.1181	34.110	-76.356	-42.246	
		2593.0	26.1687	34.110	-76.673	-42.563	
		2685.0	26.0896	34.110	-76.424	-42.314	
	15	2503.5	26.1474	34.110	-76.288	-42.178	
		2593.0	26.1500	34.110	-76.189	-42.079	
		2682.5	25.8486	34.110	-76.604	-42.494	
	20	2506.0	3.7054	31.955	-76.588	-44.633	
		2593.0	26.1270	34.110	-76.665	-42.555	
		2680.0	26.1330	34.110	-76.340	-42.230	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 214 ~ 237.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Duty Cycle factor already applied on the factor.
   - Duty Cycle factor(dB) = 3.979
   - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Splitter
   - Result(dBm) = Measurement Maximum Data (dBm) + Factor

Frequency Range (GHz)	Factor [dB]
0.03 – 1	29.249
1 – 5	31.955
5 – 10	32.570
10 – 15	33.095
15 – 20	33.468
Above 20	34.110

8.6 CHANNEL EDGE

8.6.1 Power Class 3

Band Width	Frequency (MHz)	Modulation	RB (Size/ Offset)	2 495 MHz ~ 2 496 MHz		C.E ~ (C.E +1MHz)		2 490.5 MHz ~ 2 495 MHz	(C.E + 1 MHz) ~ (C.E + 5 MHz)	Below 2 490.5 MHz	(C.E + 5 MHz) ~ (C.E + X MHz)	Above (C.E + X MHz)
				Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Upper
5 MHz	2498.5	QPSK	25/0	-25.86	-25.44	-23.53	-25.10	-31.97	-30.24	-32.07		
10 MHz	2501.0	QPSK	50/0	-28.95	-29.82	-27.31	-29.65	-31.83	-30.36	-35.18		
15 MHz	2503.5	QPSK	75/0	-29.25	-29.33	-27.36	-28.06	-31.51	-30.82	-34.66		
20 MHz	2506.0	QPSK	100/0	-29.12	-27.11	-27.78	-26.01	-31.72	-28.62	-36.47		
Limit				-13.0	-10.0	-13.0	-10.0	-25.0	-13.0	-25.0		

Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resoure Block Offset	C.E ~ (C.E ± 1MHz)		(C.E ± 1 MHz) ~ (C.E ± 5 MHz)	
					Lower	Upper	Lower	Upper
5 MHz	2593.0	QPSK	25	0	-25.10	-23.60	-22.73	-23.80
	2687.5	QPSK	25	0	-25.52	-25.79	-21.63	-23.69
10 MHz	2593.0	QPSK	50	0	-28.66	-31.00	-28.03	-29.88
	2685.0	QPSK	50	0	-28.68	-29.51	-25.21	-26.20
15 MHz	2593.0	QPSK	75	0	-28.48	-28.56	-27.00	-28.73
	2682.5	QPSK	75	0	-26.67	-27.26	-24.09	-23.64
20 MHz	2593.0	QPSK	100	0	-28.76	-28.54	-29.23	-27.90
	2680.0	QPSK	100	0	-26.41	-27.10	-23.52	-24.73
Limit					-10.0		-10.0	

Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resoure Block Offset	(C.E ± 5 MHz) ~ (C.E ± X MHz)		Above (C.E ± X MHz)	
					Lower	Upper	Lower	Upper
5 MHz	2593.0	QPSK	25	0	-29.08	-29.36	-30.63	-31.33
	2687.5	QPSK	25	0	-37.14	-36.50	-37.30	-36.21
10 MHz	2593.0	QPSK	50	0	-31.26	-30.14	-35.43	-34.93
	2685.0	QPSK	50	0	-31.16	-29.63	-37.22	-36.58
15 MHz	2593.0	QPSK	75	0	-31.32	-31.37	-36.19	-35.50
	2682.5	QPSK	75	0	-28.10	-27.62	-39.85	-39.24
20 MHz	2593.0	QPSK	100	0	-31.80	-31.24	-37.07	-36.03
	2680.0	QPSK	100	0	-27.67	-27.68	-39.07	-40.37
Limit					-13.0		-25.0	

Note:

1. C.E = Channel Edge
2. X = X is the greater of 6MHz or the actual emission bandwidth.
3. X = 6MHz(5MHz Bandwidth), 10MHz(10MHz Bandwidth), 15MHz(15MHz Bandwidth), 20MHz(20MHz Bandwidth)
4. Plots of the EUT's Channel Edge are shown Page 134 ~ 161. (1RB & Full RB)

8.6.2 Power Class 2

Band Width	Frequency (MHz)	Modulation	RB (Size/ Offset)	2 495 MHz ~ 2 496 MHz	C.E ~ (C.E +1MHz)	2 490.5 MHz ~ 2 495 MHz	(C.E + 1 MHz) ~ (C.E + 5 MHz)	Below 2 490.5 MHz	(C.E + 5 MHz) ~ (C.E + X MHz)	Above (C.E + X MHz)
				Lower	Upper	Lower	Upper	Lower	Upper	Upper
5 MHz	2498.5	QPSK	25/0	-27.02	-26.76	-26.30	-27.40	-34.64	-33.25	-34.21
10 MHz	2501.0	QPSK	50/0	-28.97	-30.34	-27.34	-29.52	-31.22	-29.97	-34.99
15 MHz	2503.5	QPSK	75/0	-32.01	-31.93	-30.19	-31.71	-34.61	-35.40	-37.66
20 MHz	2506.0	QPSK	100/0	-31.27	-29.87	-31.22	-28.43	-34.83	-32.43	-37.53
Limit				-13.0	-10.0	-13.0	-10.0	-25.0	-13.0	-25.0

Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resoure Block Offset	C.E ~ (C.E ± 1MHz)		(C.E ± 1 MHz) ~ (C.E ± 5 MHz)	
					Lower	Upper	Lower	Upper
5 MHz	2593.0	QPSK	25	0	-24.05	-23.18	-21.37	-22.59
	2687.5	QPSK	25	0	-22.40	-22.15	-17.00	-18.57
10 MHz	2593.0	QPSK	50	0	-27.52	-28.49	-25.55	-27.13
	2685.0	QPSK	50	0	-25.14	-25.31	-20.70	-21.43
15 MHz	2593.0	QPSK	75	0	-26.47	-26.98	-24.66	-26.14
	2682.5	QPSK	75	0	-23.58	-23.85	-20.29	-20.65
20 MHz	2593.0	QPSK	100	0	-25.84	-25.74	-26.06	-25.65
	2680.0	QPSK	100	0	-22.66	-23.07	-20.24	-21.32
Limit					-10.0		-10.0	

Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resoure Block Offset	(C.E ± 5 MHz) ~ (C.E ± X MHz)		Above (C.E ± X MHz)	
					Lower	Upper	Lower	Upper
5 MHz	2593.0	QPSK	25	0	-27.57	-27.91	-29.07	-29.01
	2687.5	QPSK	25	0	-24.36	-24.93	-26.61	-26.21
10 MHz	2593.0	QPSK	50	0	-28.93	-28.20	-32.62	-32.31
	2685.0	QPSK	50	0	-25.69	-25.67	-31.40	-30.70
15 MHz	2593.0	QPSK	75	0	-27.75	-28.15	-32.23	-31.75
	2682.5	QPSK	75	0	-24.16	-24.47	-31.87	-31.76
20 MHz	2593.0	QPSK	100	0	-28.08	-26.93	-32.50	-32.62
	2680.0	QPSK	100	0	-23.01	-24.41	-32.41	-33.20
Limit					-13.0		-25.0	

Note:

1. C.E = Channel Edge
2. X = X is the greater of 6MHz or the actual emission bandwidth.
3. X = 6MHz(5MHz Bandwidth), 10MHz(10MHz Bandwidth), 15MHz(15MHz Bandwidth), 20MHz(20MHz Bandwidth)
4. Plots of the EUT's Channel Edge are shown Page 162 ~ 189. (1RB & Full RB)

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

8.7.1 Power Class 3

▣ MODE: LTE 41/38

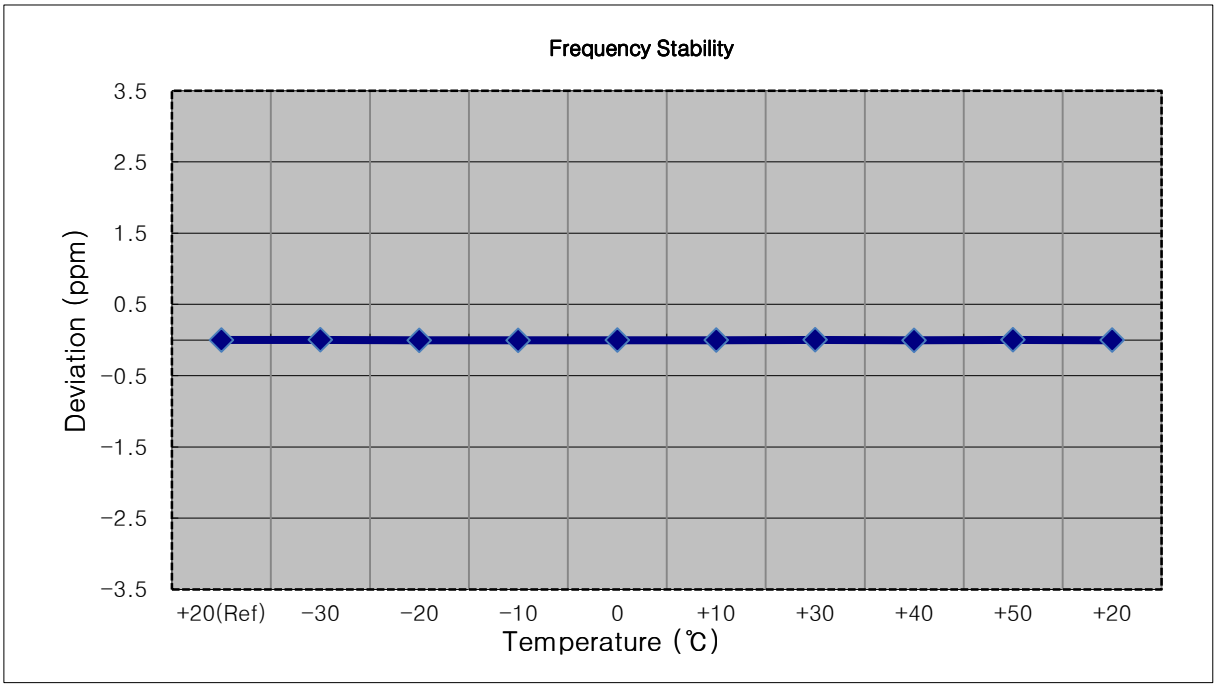
▣ OPERATING FREQUENCY: 2498,500,000 Hz

▣ BANDWIDTH: 39675 (5 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2498 499 997	0.0	0.000 000	0.000
100%		-30	2498 500 004	7.2	0.000 000	0.003
100%		-20	2498 499 984	-12.6	-0.000 001	-0.005
100%		-10	2498 499 985	-11.7	0.000 000	-0.005
100%		0	2498 499 988	-9.0	0.000 000	-0.004
100%		+10	2498 499 990	-6.9	0.000 000	-0.003
100%		+30	2498 500 001	4.8	0.000 000	0.002
100%		+40	2498 499 983	-13.2	-0.000 001	-0.005
100%		+50	2498 500 004	7.3	0.000 000	0.003
85%	3.650	+20	2498 499 992	-4.7	0.000 000	-0.002



▣ MODE: LTE 41/38

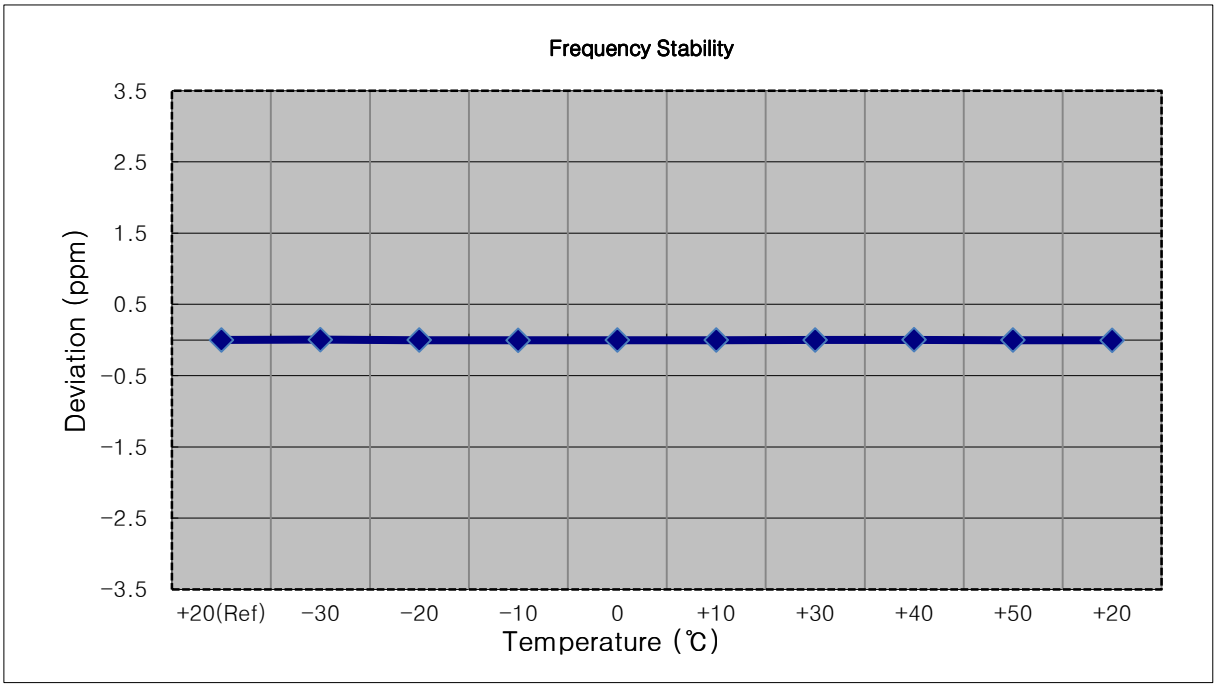
▣ OPERATING FREQUENCY: 2501,000,000 Hz

▣ BANDWIDTH: 39700 (10 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2501 000 006	0.0	0.000 000	0.000
100%		-30	2501 000 018	12.6	0.000 001	0.005
100%		-20	2501 000 002	-4.0	0.000 000	-0.002
100%		-10	2500 999 994	-11.2	0.000 000	-0.004
100%		0	2500 999 997	-8.7	0.000 000	-0.003
100%		+10	2500 999 999	-6.3	0.000 000	-0.003
100%		+30	2501 000 002	-3.3	0.000 000	-0.001
100%		+40	2501 000 010	4.5	0.000 000	0.002
100%		+50	2500 999 998	-8.0	0.000 000	-0.003
85%	3.650	+20	2500 999 992	-13.8	-0.000 001	-0.006



▣ MODE: LTE 41/38

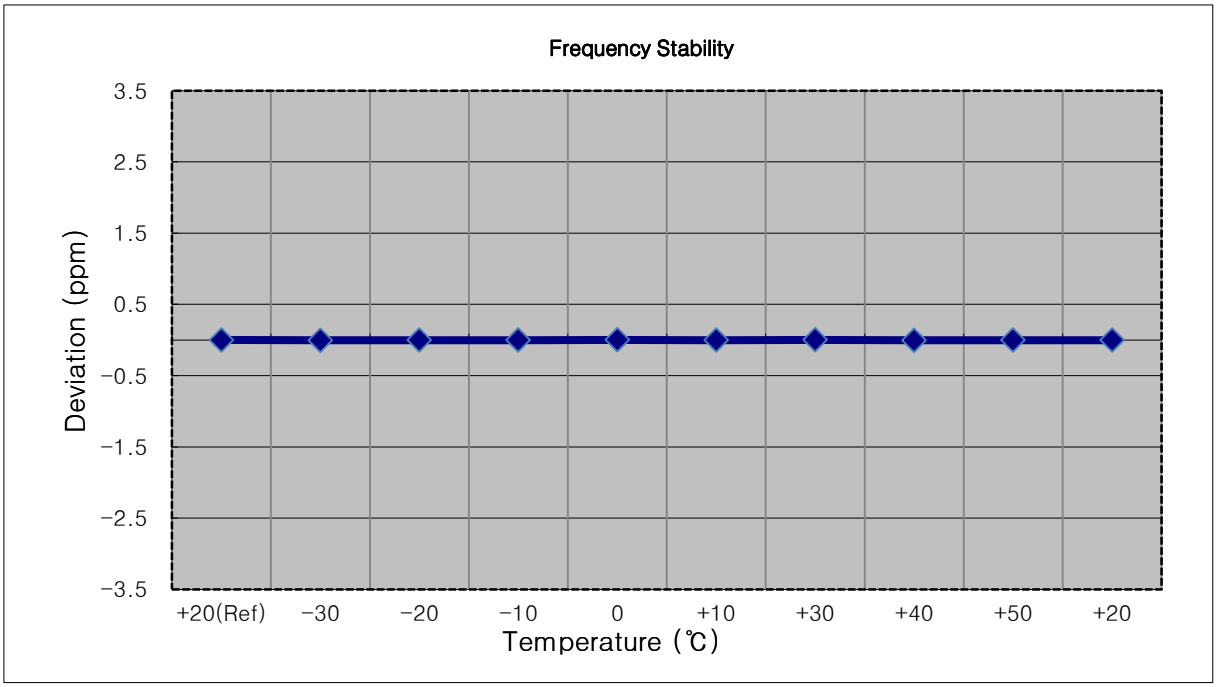
▣ OPERATING FREQUENCY: 2503,500,000 Hz

▣ BANDWIDTH: 39725 (15 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2503 499 990	0.0	0.000 000	0.000
100%		-30	2503 499 980	-10.6	0.000 000	-0.004
100%		-20	2503 499 984	-6.4	0.000 000	-0.003
100%		-10	2503 499 986	-4.1	0.000 000	-0.002
100%		0	2503 499 994	3.8	0.000 000	0.002
100%		+10	2503 499 982	-8.8	0.000 000	-0.004
100%		+30	2503 499 994	3.6	0.000 000	0.001
100%		+40	2503 499 978	-12.3	0.000 000	-0.005
100%		+50	2503 499 983	-7.4	0.000 000	-0.003
85%	3.650	+20	2503 499 982	-8.2	0.000 000	-0.003



▣ MODE: LTE 41/38

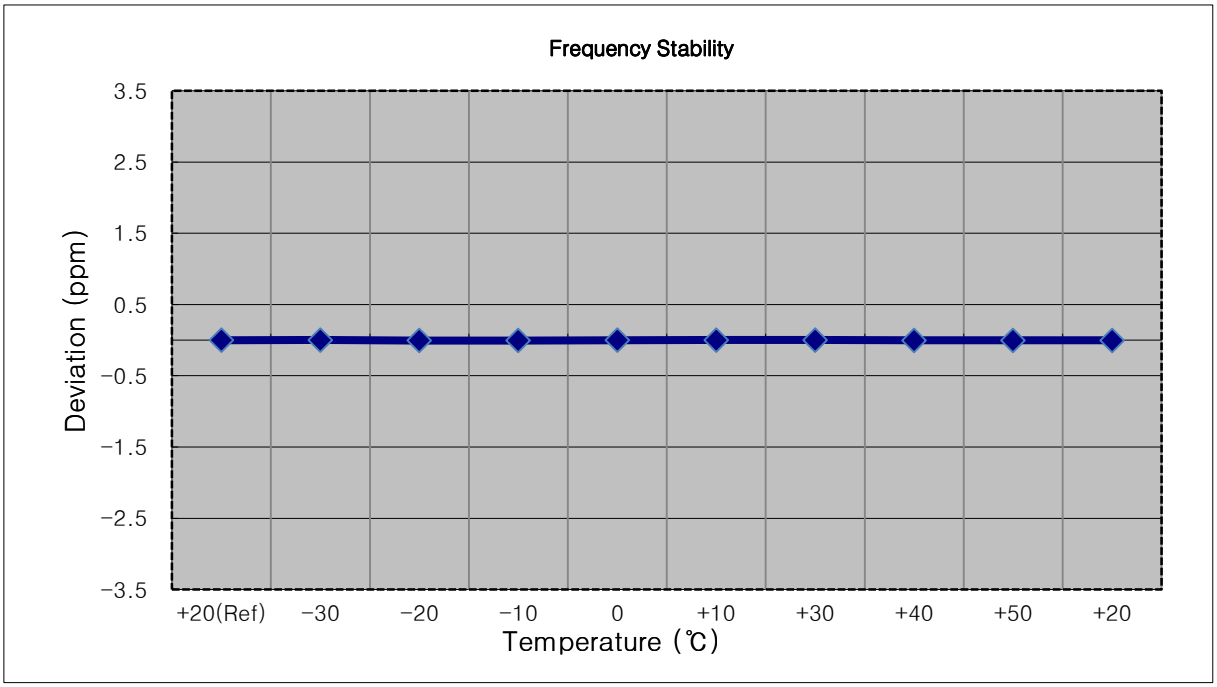
▣ OPERATING FREQUENCY: 2506,000,000 Hz

▣ BANDWIDTH: 39750 (20 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2506 000 007	0.0	0.000 000	0.000
100%		-30	2506 000 013	6.1	0.000 000	0.002
100%		-20	2505 999 994	-13.3	-0.000 001	-0.005
100%		-10	2505 999 994	-12.4	0.000 000	-0.005
100%		0	2506 000 004	-2.7	0.000 000	-0.001
100%		+10	2506 000 010	3.1	0.000 000	0.001
100%		+30	2506 000 012	5.6	0.000 000	0.002
100%		+40	2505 999 998	-9.3	0.000 000	-0.004
100%		+50	2506 000 002	-5.3	0.000 000	-0.002
85%	3.650	+20	2506 000 000	-7.2	0.000 000	-0.003



▣ MODE: LTE 41/38

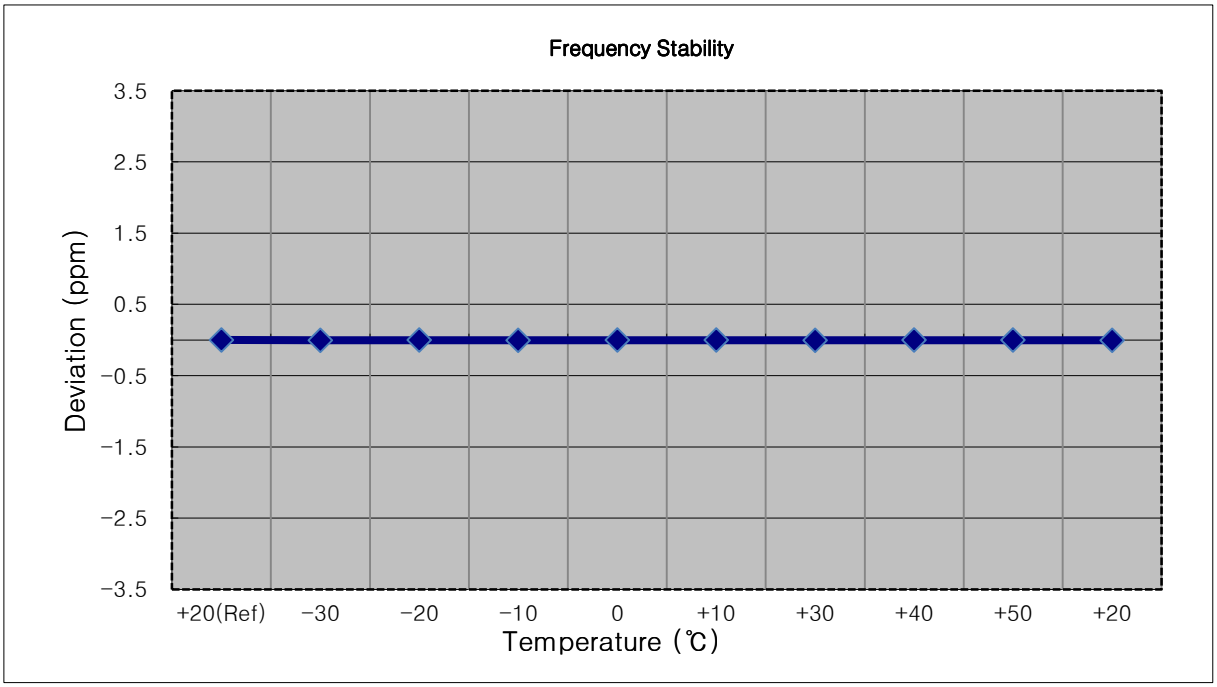
▣ OPERATING FREQUENCY: 2593,000,000 Hz

▣ BANDWIDTH: 40620 (5 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2593 000 004	0.0	0.000 000	0.000
100%		-30	2592 999 990	-13.4	-0.000 001	-0.005
100%		-20	2592 999 996	-8.2	0.000 000	-0.003
100%		-10	2592 999 994	-9.9	0.000 000	-0.004
100%		0	2593 000 000	-3.9	0.000 000	-0.002
100%		+10	2592 999 996	-8.0	0.000 000	-0.003
100%		+30	2592 999 990	-13.7	-0.000 001	-0.005
100%		+40	2592 999 997	-7.1	0.000 000	-0.003
100%		+50	2592 999 999	-4.8	0.000 000	-0.002
85%	3.650	+20	2592 999 990	-13.3	-0.000 001	-0.005



▣ MODE: LTE 41/38

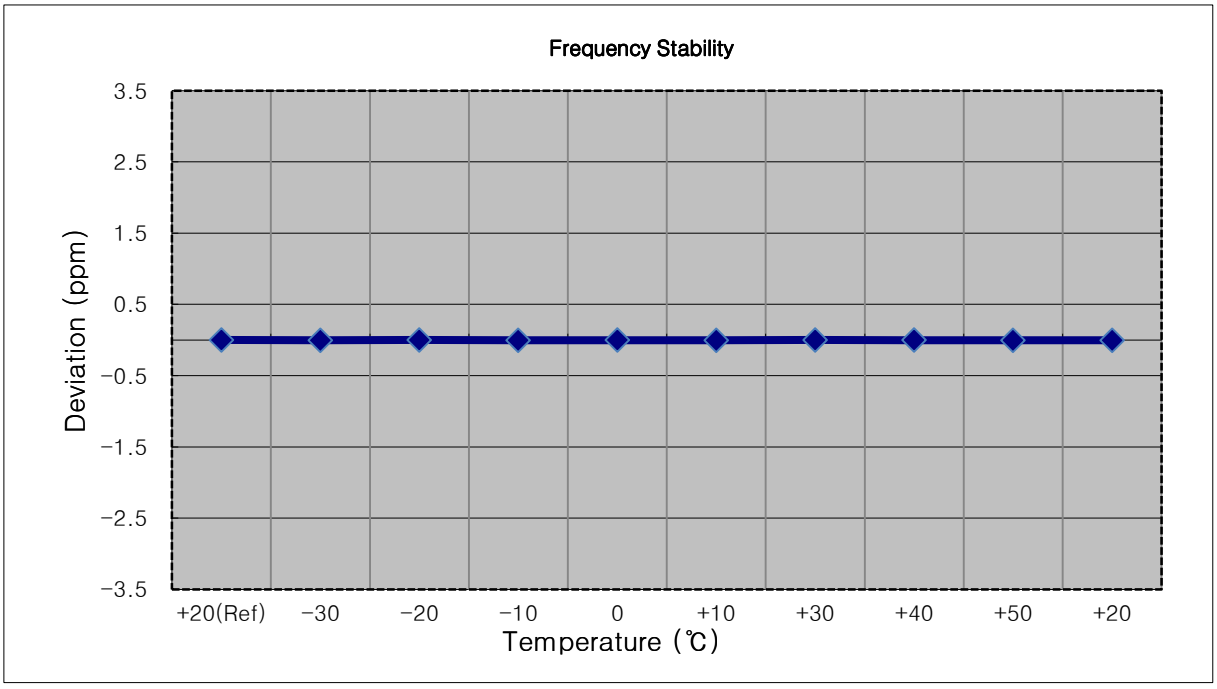
▣ OPERATING FREQUENCY: 2593,000,000 Hz

▣ BANDWIDTH: 40620 (10 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2592 999 986	0.0	0.000 000	0.000
100%		-30	2592 999 976	-10.0	0.000 000	-0.004
100%		-20	2592 999 984	-2.4	0.000 000	-0.001
100%		-10	2592 999 976	-10.0	0.000 000	-0.004
100%		0	2592 999 979	-7.5	0.000 000	-0.003
100%		+10	2592 999 973	-13.1	-0.000 001	-0.005
100%		+30	2592 999 983	-3.5	0.000 000	-0.001
100%		+40	2592 999 978	-8.3	0.000 000	-0.003
100%		+50	2592 999 974	-12.3	0.000 000	-0.005
85%	3.650	+20	2592 999 975	-11.0	0.000 000	-0.004



▣ MODE: LTE 41/38

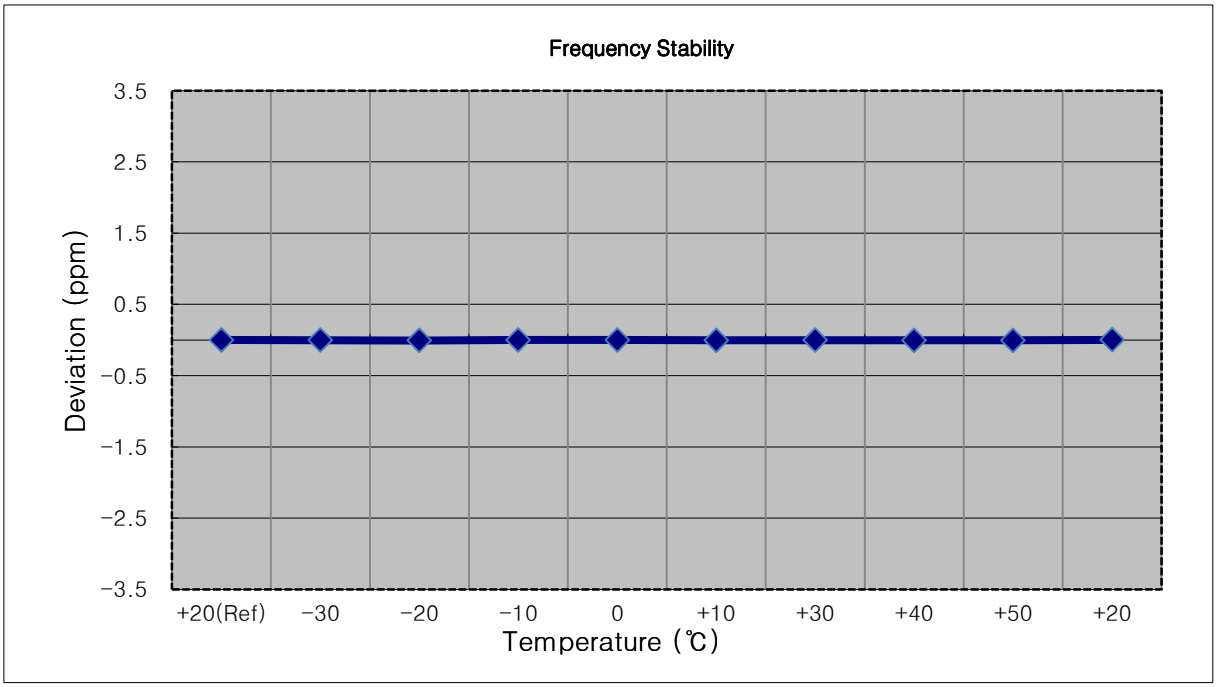
▣ OPERATING FREQUENCY: 2593,000,000 Hz

▣ BANDWIDTH: 40620 (15 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2592 999 997	0.0	0.000 000	0.000
100%		-30	2592 999 988	-9.4	0.000 000	-0.004
100%		-20	2592 999 981	-16.2	-0.000 001	-0.006
100%		-10	2592 999 995	-1.9	0.000 000	-0.001
100%		0	2592 999 994	-3.1	0.000 000	-0.001
100%		+10	2592 999 983	-13.7	-0.000 001	-0.005
100%		+30	2592 999 991	-5.6	0.000 000	-0.002
100%		+40	2592 999 984	-13.3	-0.000 001	-0.005
100%		+50	2592 999 982	-15.2	-0.000 001	-0.006
85%	3.650	+20	2593 000 000	3.0	0.000 000	0.001



▣ MODE: LTE 41/38

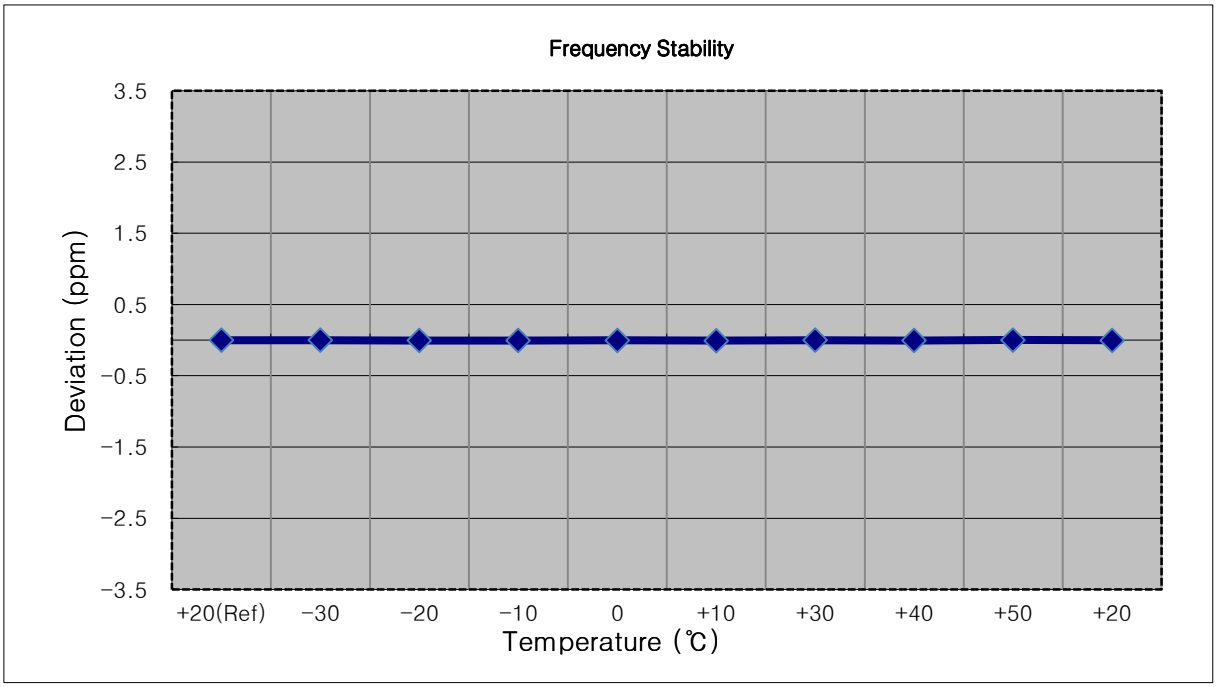
▣ OPERATING FREQUENCY: 2593,000,000 Hz

▣ BANDWIDTH: 40620 (20 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2593 000 003	0.0	0.000 000	0.000
100%		-30	2593 000 000	-2.4	0.000 000	-0.001
100%		-20	2592 999 989	-13.9	-0.000 001	-0.005
100%		-10	2592 999 992	-10.9	0.000 000	-0.004
100%		0	2592 999 997	-5.7	0.000 000	-0.002
100%		+10	2592 999 984	-18.7	-0.000 001	-0.007
100%		+30	2592 999 999	-3.2	0.000 000	-0.001
100%		+40	2592 999 989	-13.6	-0.000 001	-0.005
100%		+50	2593 000 007	4.4	0.000 000	0.002
85%	3.650	+20	2592 999 992	-10.3	0.000 000	-0.004



▣ MODE: LTE 41/38

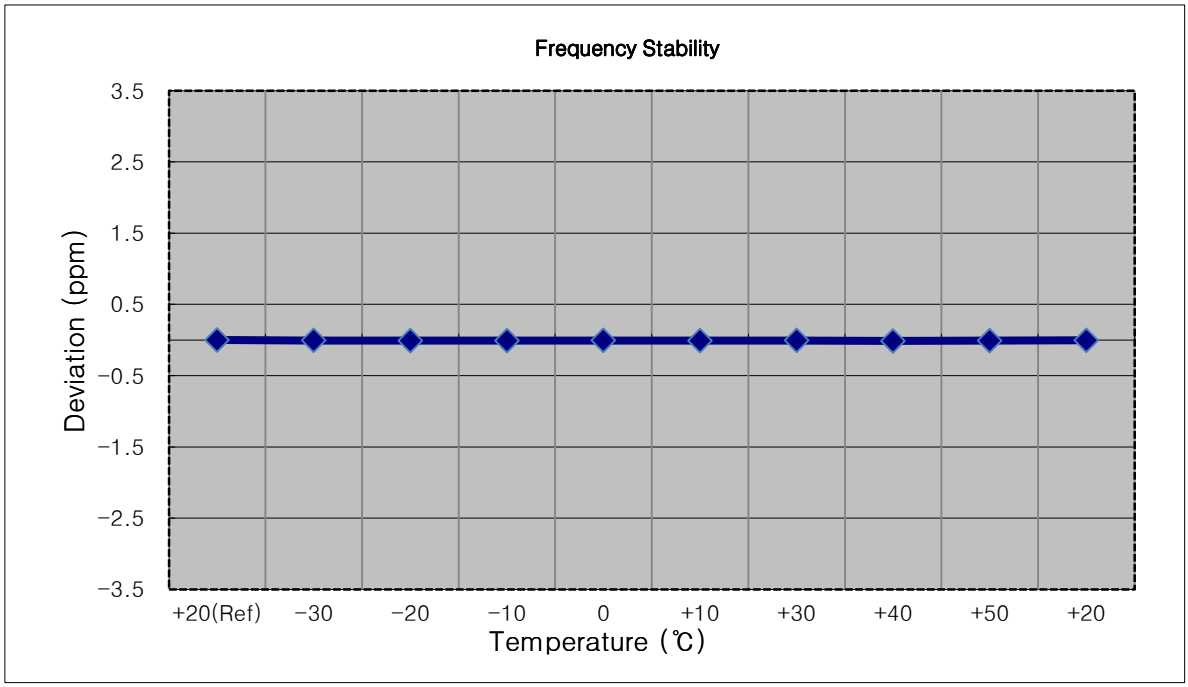
▣ OPERATING FREQUENCY: 2687,500,000 Hz

▣ BANDWIDTH: 41565 (5 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2687 499 974	0.0	0.000 000	0.000
100%		-30	2687 499 954	-20.0	-0.000 001	-0.007
100%		-20	2687 499 950	-23.5	-0.000 001	-0.009
100%		-10	2687 499 950	-24.3	-0.000 001	-0.009
100%		0	2687 499 953	-20.7	-0.000 001	-0.008
100%		+10	2687 499 947	-26.6	-0.000 001	-0.010
100%		+30	2687 499 955	-18.7	-0.000 001	-0.007
100%		+40	2687 499 938	-35.4	-0.000 001	-0.013
100%		+50	2687 499 949	-24.9	-0.000 001	-0.009
85%	3.650	+20	2687 499 959	-14.5	-0.000 001	-0.005



▣ MODE: LTE 41/38

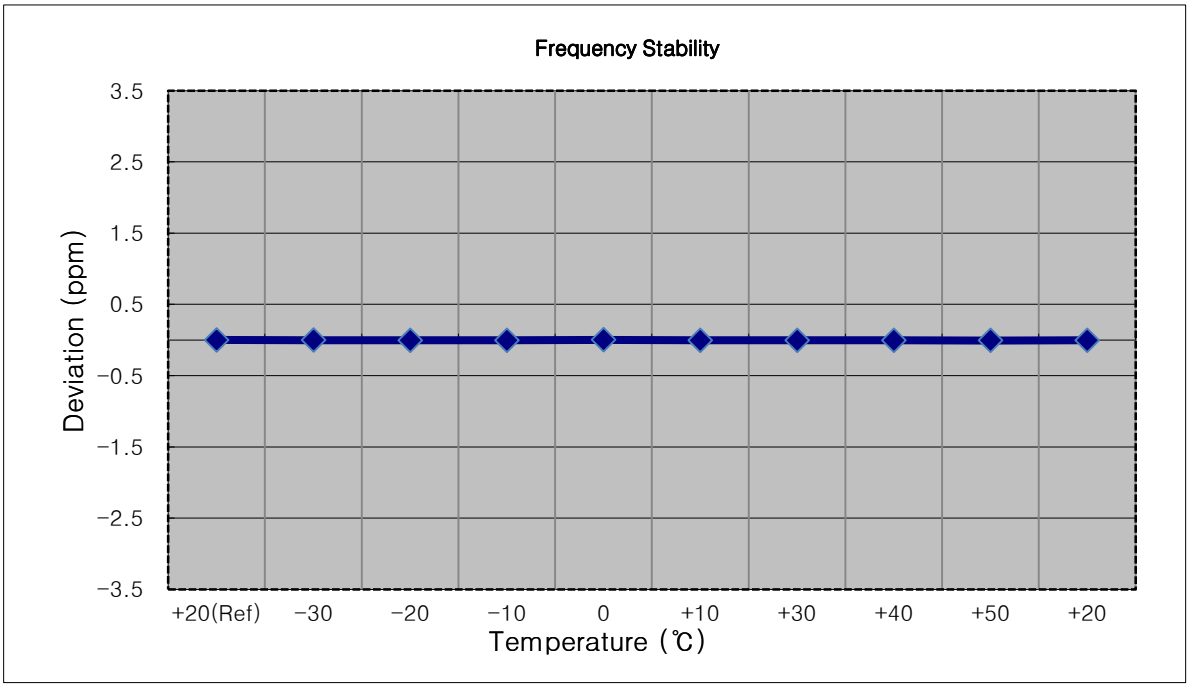
▣ OPERATING FREQUENCY: 2685,000,000 Hz

▣ BANDWIDTH: 41540 (10 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2684 999 985	0.0	0.000 000	0.000
100%		-30	2684 999 977	-8.4	0.000 000	-0.003
100%		-20	2684 999 970	-15.1	-0.000 001	-0.006
100%		-10	2684 999 971	-14.0	-0.000 001	-0.005
100%		0	2684 999 989	4.0	0.000 000	0.001
100%		+10	2684 999 973	-12.6	0.000 000	-0.005
100%		+30	2684 999 972	-13.7	-0.000 001	-0.005
100%		+40	2684 999 969	-16.1	-0.000 001	-0.006
100%		+50	2684 999 968	-17.7	-0.000 001	-0.007
85%	3.650	+20	2684 999 971	-14.6	-0.000 001	-0.005



▣ MODE: LTE 41/38

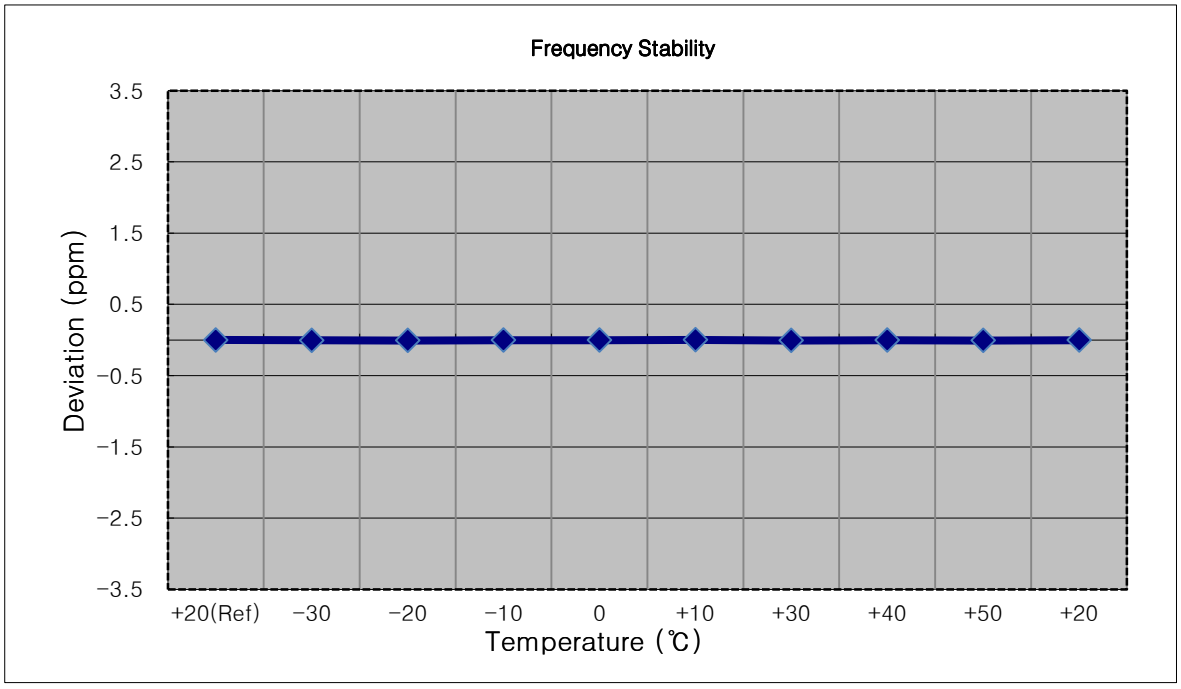
▣ OPERATING FREQUENCY: 2682,500,000 Hz

▣ BANDWIDTH: 41515 (15 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2682 499 998	0.0	0.000 000	0.000
100%		-30	2682 499 985	-13.1	0.000 000	-0.005
100%		-20	2682 499 980	-18.0	-0.000 001	-0.007
100%		-10	2682 499 988	-9.9	0.000 000	-0.004
100%		0	2682 499 994	-4.1	0.000 000	-0.002
100%		+10	2682 500 000	2.8	0.000 000	0.001
100%		+30	2682 499 980	-17.5	-0.000 001	-0.007
100%		+40	2682 499 989	-9.0	0.000 000	-0.003
100%		+50	2682 499 981	-16.4	-0.000 001	-0.006
85%	3.650	+20	2682 499 990	-7.3	0.000 000	-0.003



▣ MODE: LTE 41/38

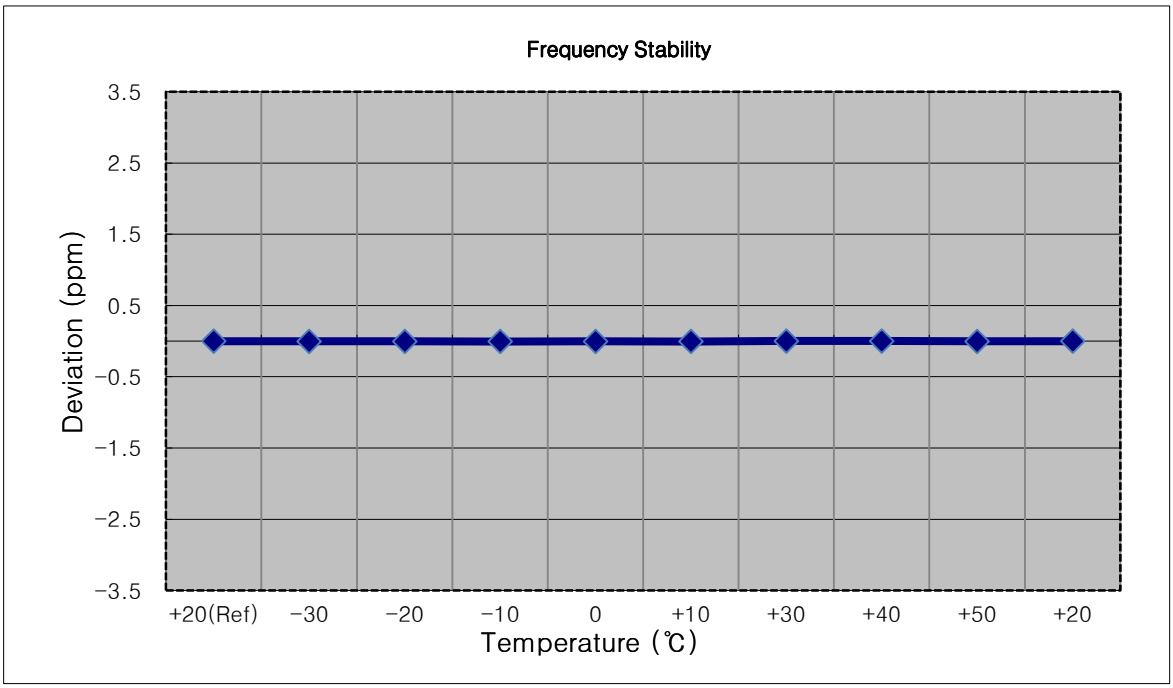
▣ OPERATING FREQUENCY: 2680,000,000 Hz

▣ BANDWIDTH: 41490 (20 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2679 999 987	0.0	0.000 000	0.000
100%		-30	2679 999 978	-8.3	0.000 000	-0.003
100%		-20	2679 999 978	-8.9	0.000 000	-0.003
100%		-10	2679 999 974	-12.3	0.000 000	-0.005
100%		0	2679 999 976	-10.4	0.000 000	-0.004
100%		+10	2679 999 970	-16.9	-0.000 001	-0.006
100%		+30	2679 999 990	3.3	0.000 000	0.001
100%		+40	2679 999 990	3.8	0.000 000	0.001
100%		+50	2679 999 982	-5.1	0.000 000	-0.002
85%	3.650	+20	2679 999 983	-3.7	0.000 000	-0.001



8.7.2 Power Class 2

▣ MODE: LTE 41

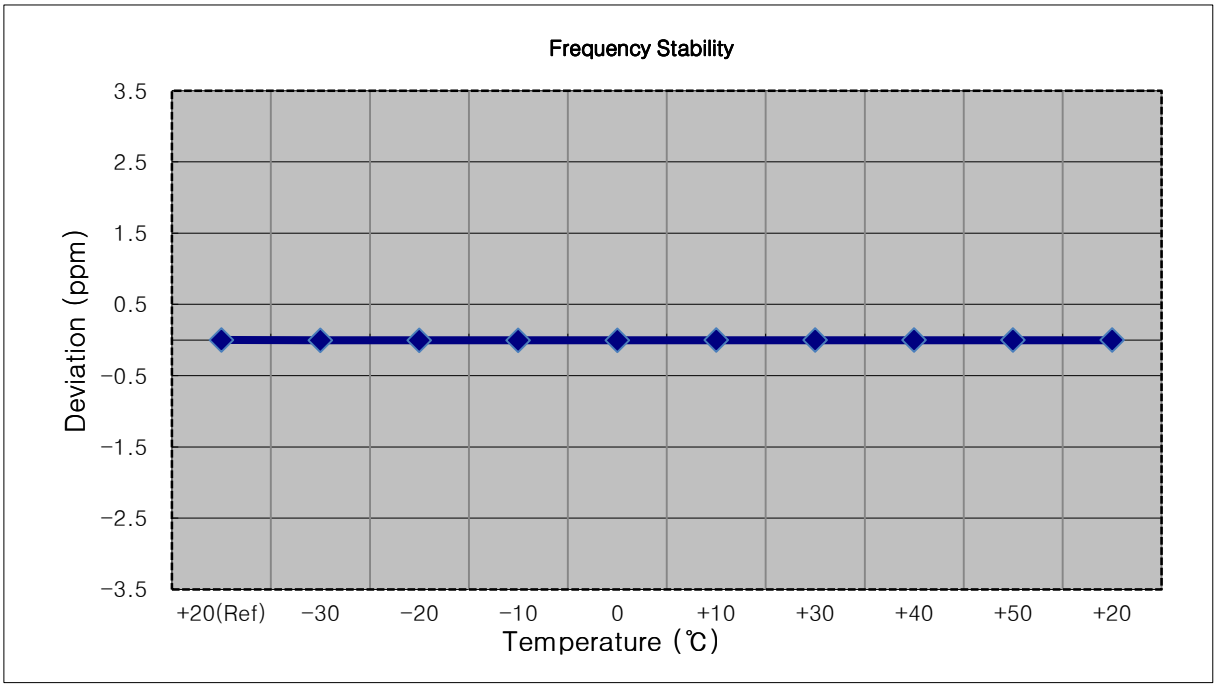
▣ OPERATING FREQUENCY: 2498,500,000 Hz

▣ BANDWIDTH: 39675 (5 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2498 499 990	0.0	0.000 000	0.000
100%		-30	2498 499 978	-12.0	0.000 000	-0.005
100%		-20	2498 499 977	-12.6	-0.000 001	-0.005
100%		-10	2498 499 979	-10.2	0.000 000	-0.004
100%		0	2498 499 980	-9.6	0.000 000	-0.004
100%		+10	2498 499 981	-8.8	0.000 000	-0.004
100%		+30	2498 499 985	-4.6	0.000 000	-0.002
100%		+40	2498 499 985	-4.4	0.000 000	-0.002
100%		+50	2498 499 986	-4.0	0.000 000	-0.002
85%	3.650	+20	2498 499 985	-4.8	0.000 000	-0.002



▣ MODE: LTE 41

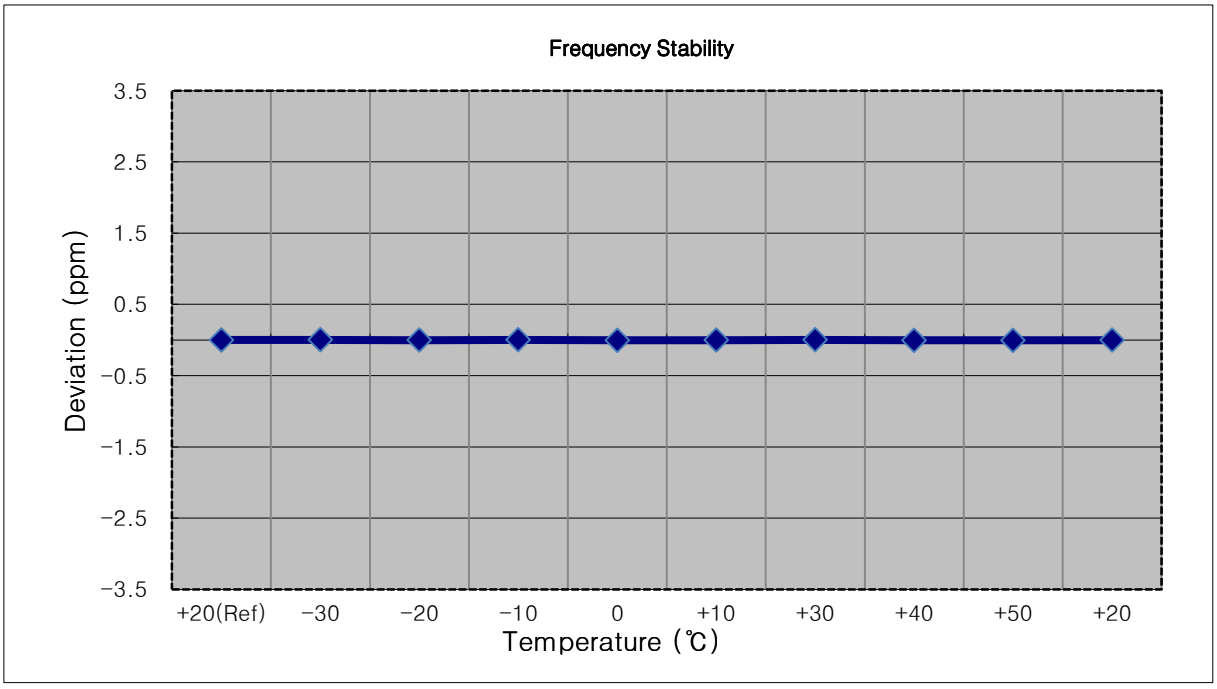
▣ OPERATING FREQUENCY: 2501,000,000 Hz

▣ BANDWIDTH: 39700 (10 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2501 000 002	0.0	0.000 000	0.000
100%		-30	2501 000 009	7.0	0.000 000	0.003
100%		-20	2500 999 994	-8.0	0.000 000	-0.003
100%		-10	2501 000 009	6.8	0.000 000	0.003
100%		0	2500 999 993	-9.6	0.000 000	-0.004
100%		+10	2500 999 997	-5.8	0.000 000	-0.002
100%		+30	2501 000 006	3.9	0.000 000	0.002
100%		+40	2500 999 989	-13.0	-0.000 001	-0.005
100%		+50	2500 999 991	-10.9	0.000 000	-0.004
85%	3.650	+20	2500 999 993	-9.1	0.000 000	-0.004



▣ MODE: LTE 41

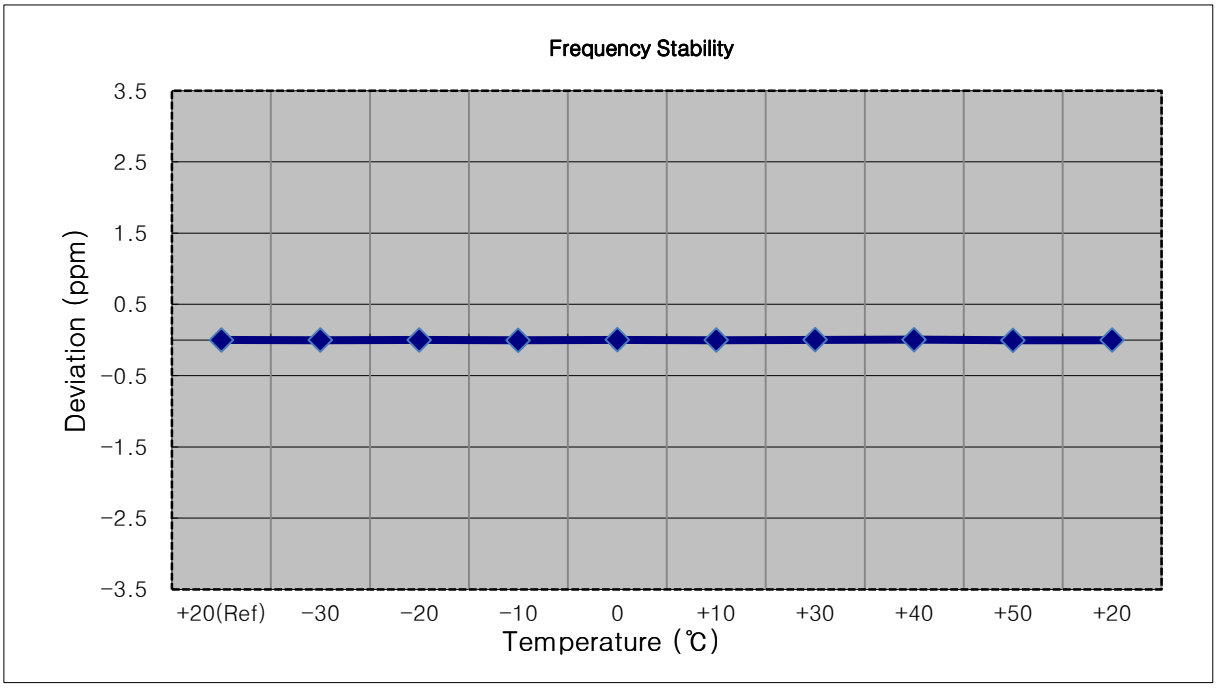
▣ OPERATING FREQUENCY: 2503,500,000 Hz

▣ BANDWIDTH: 39725 (15 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2503 499 992	0.0	0.000 000	0.000
100%		-30	2503 499 986	-5.5	0.000 000	-0.002
100%		-20	2503 499 990	-1.6	0.000 000	-0.001
100%		-10	2503 499 982	-9.6	0.000 000	-0.004
100%		0	2503 499 995	3.4	0.000 000	0.001
100%		+10	2503 499 985	-6.5	0.000 000	-0.003
100%		+30	2503 499 994	2.3	0.000 000	0.001
100%		+40	2503 500 000	8.9	0.000 000	0.004
100%		+50	2503 499 980	-12.0	0.000 000	-0.005
85%	3.650	+20	2503 499 986	-5.4	0.000 000	-0.002



▣ MODE: LTE 41

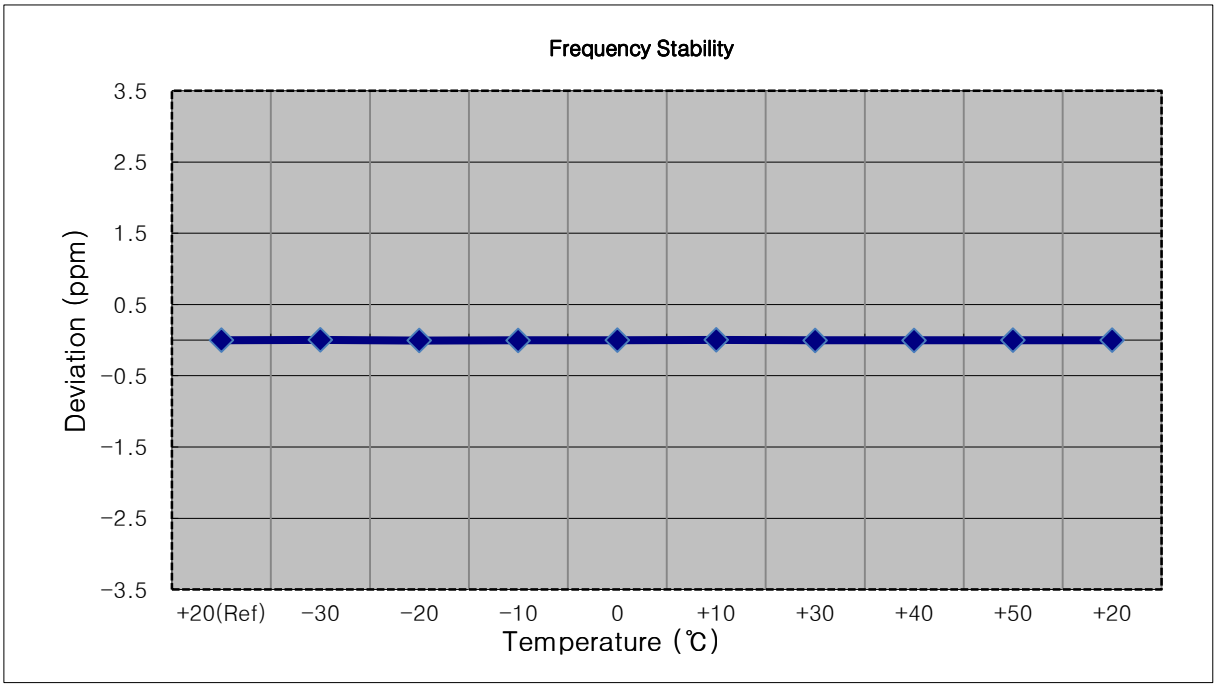
▣ OPERATING FREQUENCY: 2506,000,000 Hz

▣ BANDWIDTH: 39750 (20 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2505 999 991	0.0	0.000 000	0.000
100%		-30	2505 999 999	7.9	0.000 000	0.003
100%		-20	2505 999 979	-11.7	0.000 000	-0.005
100%		-10	2505 999 984	-7.3	0.000 000	-0.003
100%		0	2505 999 988	-3.1	0.000 000	-0.001
100%		+10	2506 000 000	8.7	0.000 000	0.003
100%		+30	2505 999 982	-9.4	0.000 000	-0.004
100%		+40	2505 999 985	-5.7	0.000 000	-0.002
100%		+50	2505 999 988	-3.0	0.000 000	-0.001
85%	3.650	+20	2505 999 988	-2.6	0.000 000	-0.001



▣ MODE: LTE 41

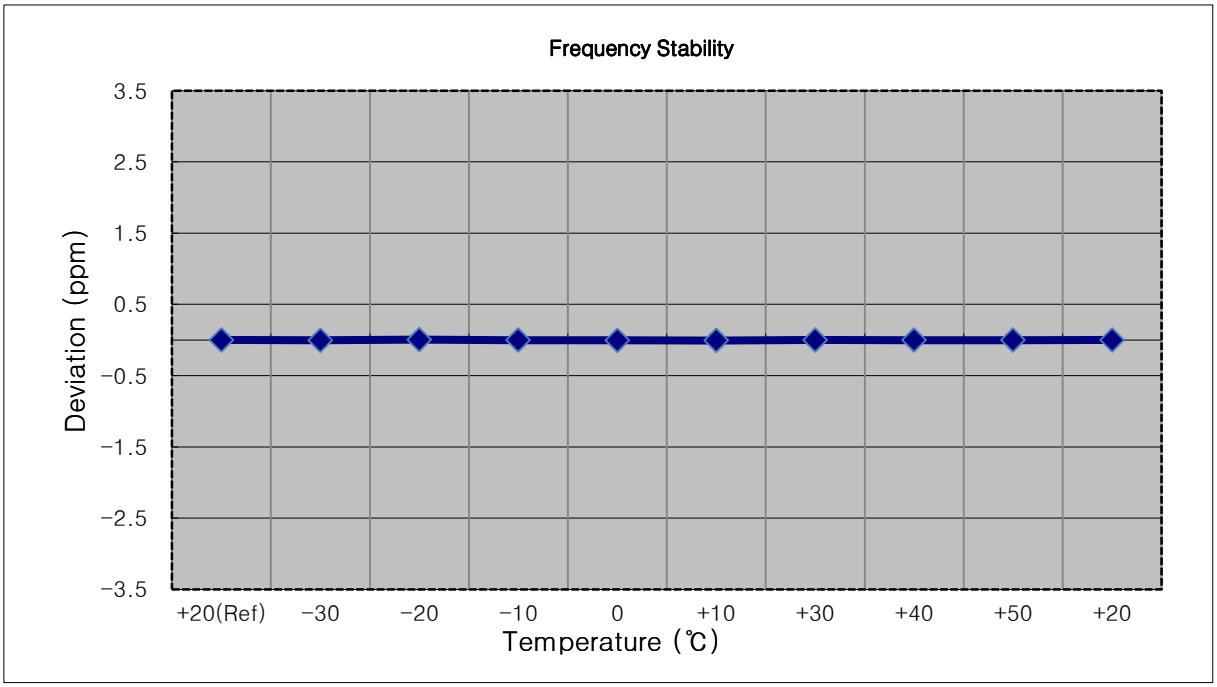
▣ OPERATING FREQUENCY: 2593,000,000 Hz

▣ BANDWIDTH: 40620 (5 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2592 999 989	0.0	0.000 000	0.000
100%		-30	2592 999 977	-11.9	0.000 000	-0.005
100%		-20	2592 999 998	8.9	0.000 000	0.003
100%		-10	2592 999 983	-5.9	0.000 000	-0.002
100%		0	2592 999 979	-10.8	0.000 000	-0.004
100%		+10	2592 999 974	-15.6	-0.000 001	-0.006
100%		+30	2592 999 986	-2.9	0.000 000	-0.001
100%		+40	2592 999 984	-5.2	0.000 000	-0.002
100%		+50	2592 999 983	-6.5	0.000 000	-0.003
85%	3.650	+20	2592 999 986	-3.5	0.000 000	-0.001



▣ MODE: LTE 41

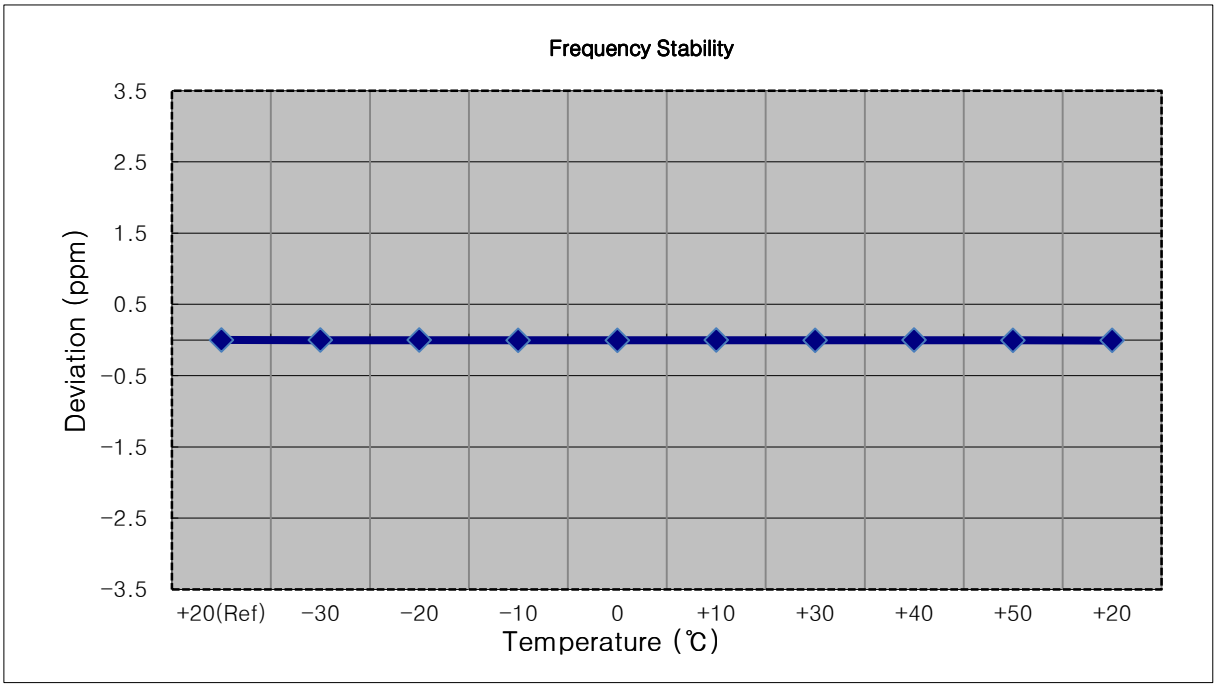
▣ OPERATING FREQUENCY: 2593,000,000 Hz

▣ BANDWIDTH: 40620 (10 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2592 999 994	0.0	0.000 000	0.000
100%		-30	2592 999 989	-5.4	0.000 000	-0.002
100%		-20	2592 999 985	-8.9	0.000 000	-0.003
100%		-10	2592 999 980	-14.4	-0.000 001	-0.006
100%		0	2592 999 979	-15.1	-0.000 001	-0.006
100%		+10	2592 999 986	-7.5	0.000 000	-0.003
100%		+30	2592 999 982	-12.1	0.000 000	-0.005
100%		+40	2592 999 987	-7.2	0.000 000	-0.003
100%		+50	2592 999 981	-13.4	-0.000 001	-0.005
85%	3.650	+20	2592 999 978	-15.8	-0.000 001	-0.006



▣ MODE: LTE 41

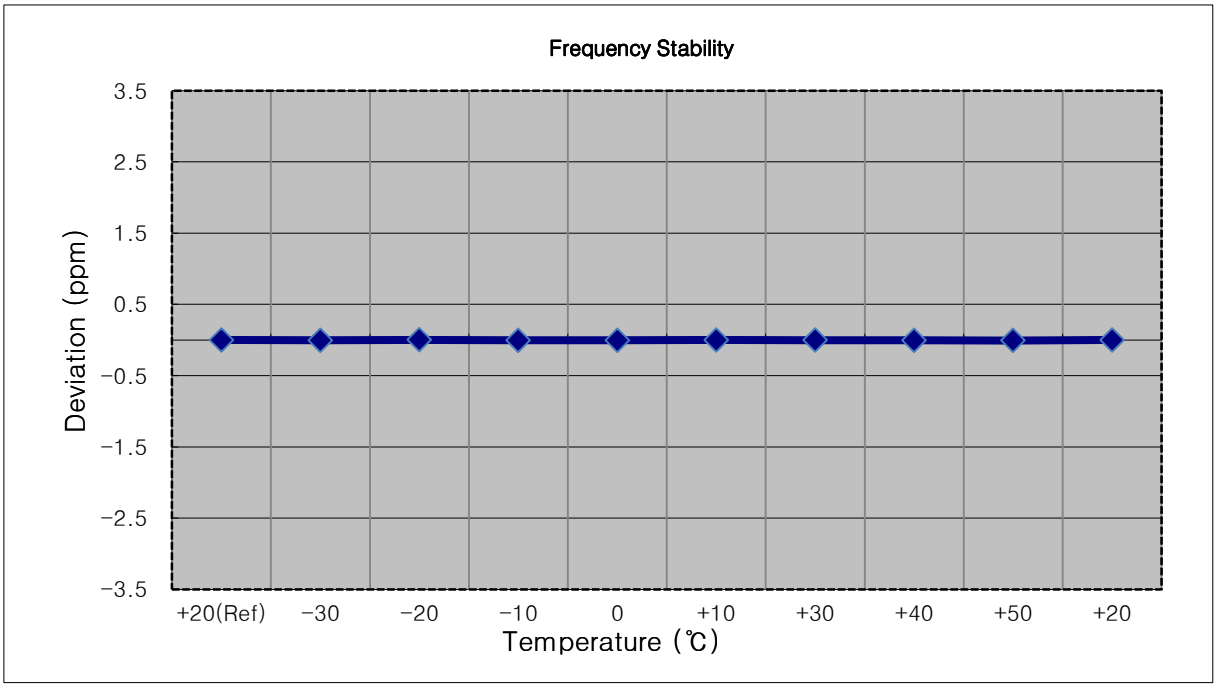
▣ OPERATING FREQUENCY: 2593,000,000 Hz

▣ BANDWIDTH: 40620 (15 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2592 999 988	0.0	0.000 000	0.000
100%		-30	2592 999 974	-14.2	-0.000 001	-0.005
100%		-20	2592 999 990	2.4	0.000 000	0.001
100%		-10	2592 999 978	-10.0	0.000 000	-0.004
100%		0	2592 999 973	-15.3	-0.000 001	-0.006
100%		+10	2592 999 986	-2.0	0.000 000	-0.001
100%		+30	2592 999 982	-6.1	0.000 000	-0.002
100%		+40	2592 999 976	-12.3	0.000 000	-0.005
100%		+50	2592 999 969	-18.6	-0.000 001	-0.007
85%	3.650	+20	2592 999 985	-2.9	0.000 000	-0.001



▣ MODE: LTE 41

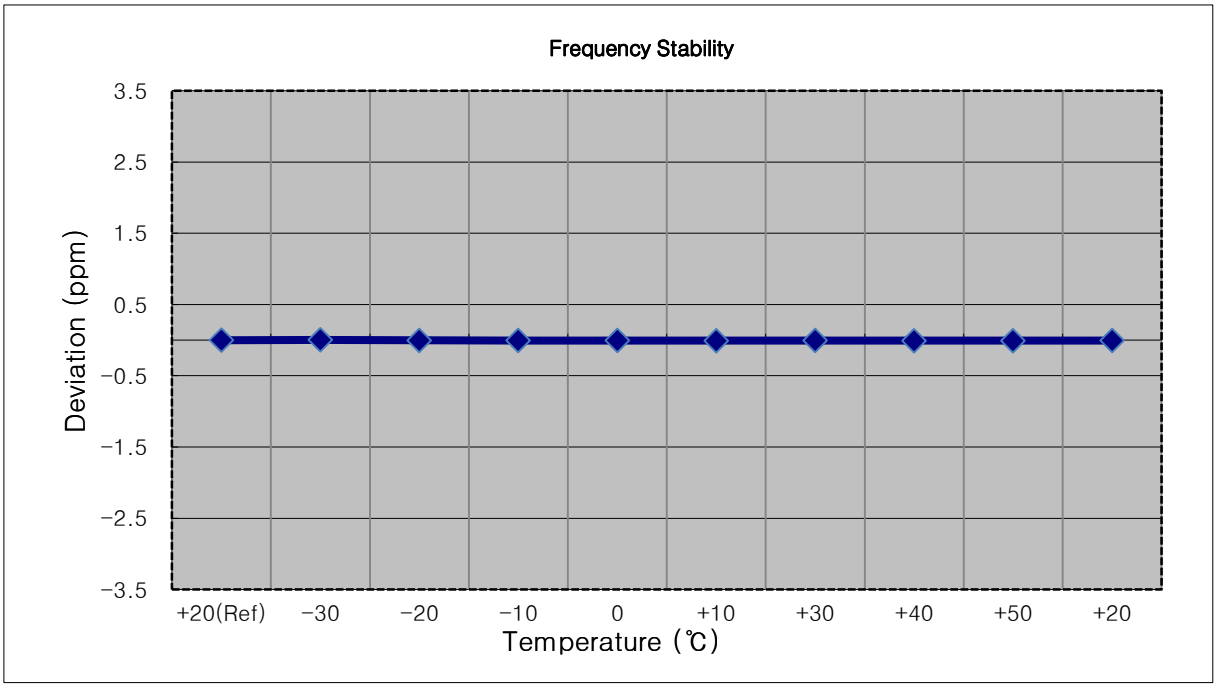
▣ OPERATING FREQUENCY: 2593,000,000 Hz

▣ BANDWIDTH: 40620 (20 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2592 999 989	0.0	0.000 000	0.000
100%		-30	2592 999 996	6.9	0.000 000	0.003
100%		-20	2592 999 982	-7.5	0.000 000	-0.003
100%		-10	2592 999 978	-11.4	0.000 000	-0.004
100%		0	2592 999 975	-13.9	-0.000 001	-0.005
100%		+10	2592 999 972	-17.2	-0.000 001	-0.007
100%		+30	2592 999 975	-14.6	-0.000 001	-0.006
100%		+40	2592 999 972	-17.6	-0.000 001	-0.007
100%		+50	2592 999 971	-18.4	-0.000 001	-0.007
85%	3.650	+20	2592 999 976	-13.5	-0.000 001	-0.005



▣ MODE: LTE 41

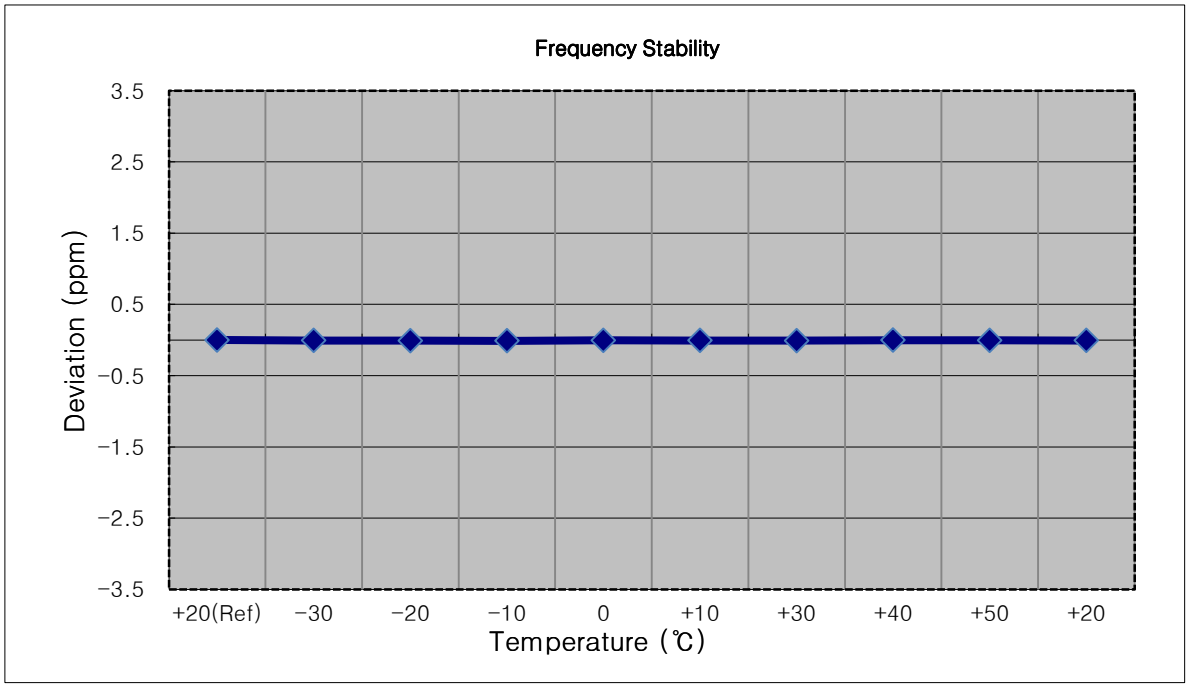
▣ OPERATING FREQUENCY: 2687,500,000 Hz

▣ BANDWIDTH: 41565 (5 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2687 499 981	0.0	0.000 000	0.000
100%		-30	2687 499 963	-18.3	-0.000 001	-0.007
100%		-20	2687 499 957	-24.3	-0.000 001	-0.009
100%		-10	2687 499 952	-29.2	-0.000 001	-0.011
100%		0	2687 499 968	-12.8	0.000 000	-0.005
100%		+10	2687 499 963	-18.0	-0.000 001	-0.007
100%		+30	2687 499 958	-23.3	-0.000 001	-0.009
100%		+40	2687 499 972	-9.0	0.000 000	-0.003
100%		+50	2687 499 965	-15.9	-0.000 001	-0.006
85%	3.650	+20	2687 499 961	-20.5	-0.000 001	-0.008



▣ MODE: LTE 41

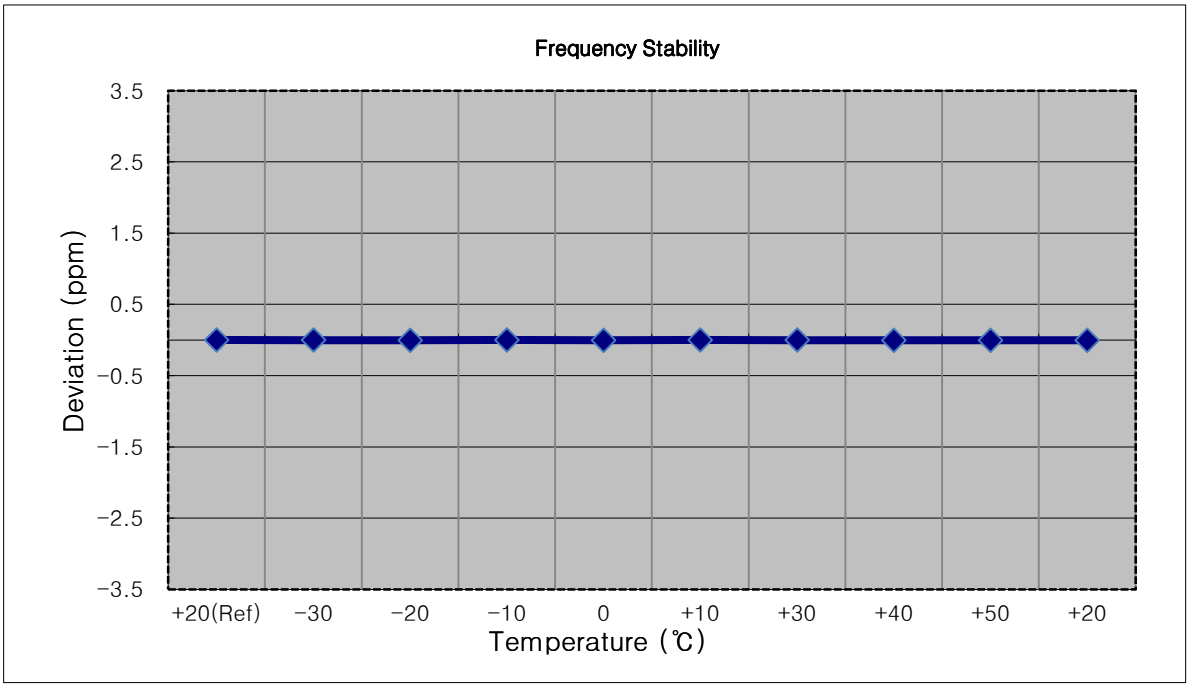
▣ OPERATING FREQUENCY: 2685,000,000 Hz

▣ BANDWIDTH: 41540 (10 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2684 999 996	0.0	0.000 000	0.000
100%		-30	2684 999 988	-7.8	0.000 000	-0.003
100%		-20	2684 999 981	-14.8	-0.000 001	-0.006
100%		-10	2684 999 993	-3.0	0.000 000	-0.001
100%		0	2684 999 984	-12.3	0.000 000	-0.005
100%		+10	2684 999 993	-3.1	0.000 000	-0.001
100%		+30	2684 999 988	-7.9	0.000 000	-0.003
100%		+40	2684 999 981	-14.6	-0.000 001	-0.005
100%		+50	2684 999 981	-15.2	-0.000 001	-0.006
85%	3.650	+20	2684 999 981	-14.8	-0.000 001	-0.006



▣ MODE: LTE 41

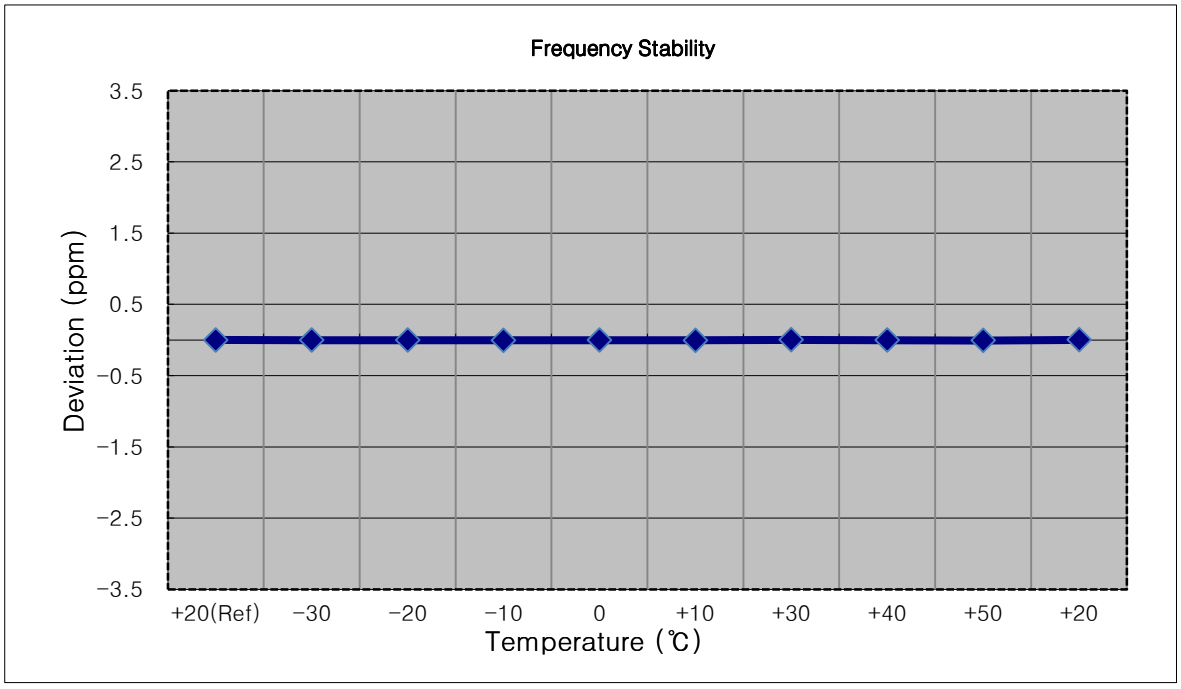
▣ OPERATING FREQUENCY: 2682,500,000 Hz

▣ BANDWIDTH: 41515 (15 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2682 499 998	0.0	0.000 000	0.000
100%		-30	2682 499 989	-8.7	0.000 000	-0.003
100%		-20	2682 499 990	-7.9	0.000 000	-0.003
100%		-10	2682 499 985	-12.4	0.000 000	-0.005
100%		0	2682 499 993	-4.3	0.000 000	-0.002
100%		+10	2682 499 986	-12.2	0.000 000	-0.005
100%		+30	2682 500 003	4.8	0.000 000	0.002
100%		+40	2682 499 992	-5.7	0.000 000	-0.002
100%		+50	2682 499 981	-16.5	-0.000 001	-0.006
85%	3.650	+20	2682 500 005	7.0	0.000 000	0.003



▣ MODE: LTE 41

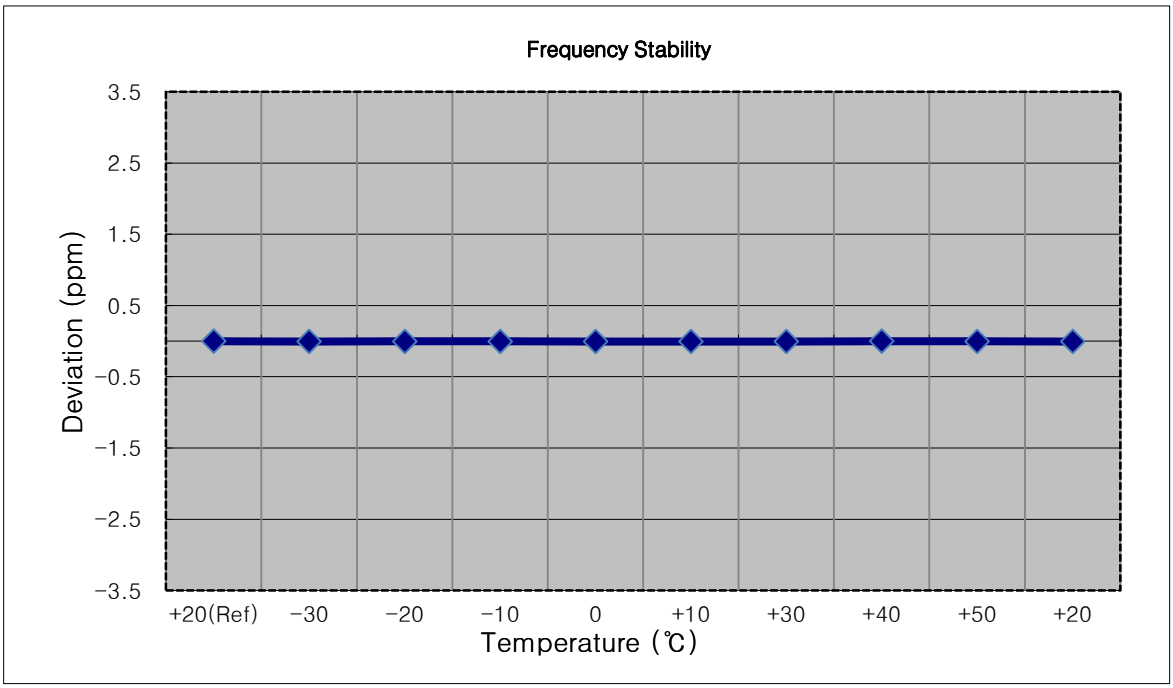
▣ OPERATING FREQUENCY: 2680,000,000 Hz

▣ BANDWIDTH: 41490 (20 MHz)

▣ REFERENCE VOLTAGE: 3.88 VDC

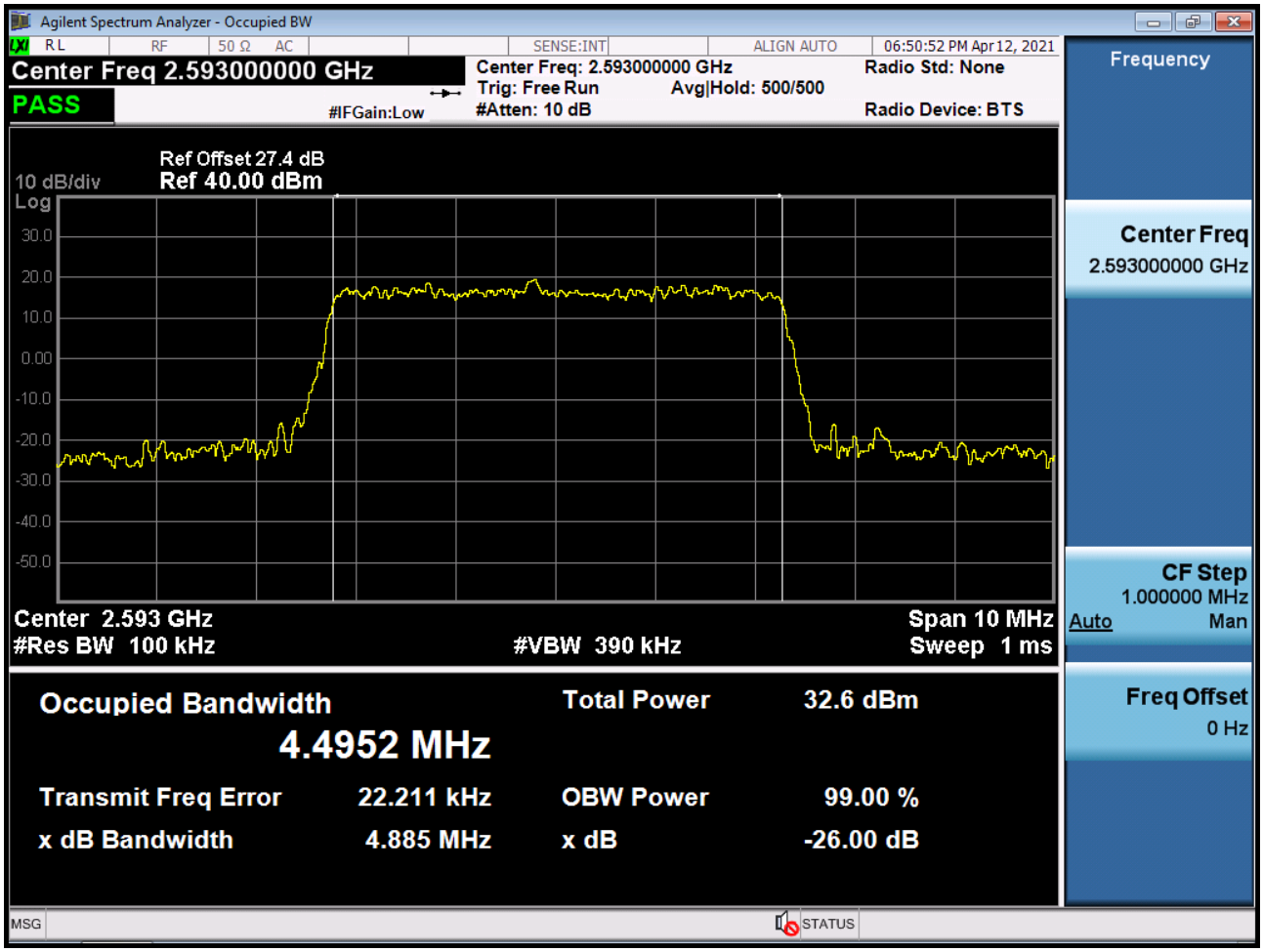
▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.880	+20(Ref)	2679 999 990	0.0	0.000 000	0.000
100%		-30	2679 999 973	-16.8	-0.000 001	-0.006
100%		-20	2679 999 985	-5.4	0.000 000	-0.002
100%		-10	2679 999 980	-10.0	0.000 000	-0.004
100%		0	2679 999 975	-15.2	-0.000 001	-0.006
100%		+10	2679 999 973	-16.5	-0.000 001	-0.006
100%		+30	2679 999 977	-13.4	-0.000 001	-0.005
100%		+40	2679 999 986	-4.2	0.000 000	-0.002
100%		+50	2679 999 982	-8.0	0.000 000	-0.003
85%	3.650	+20	2679 999 977	-12.8	0.000 000	-0.005

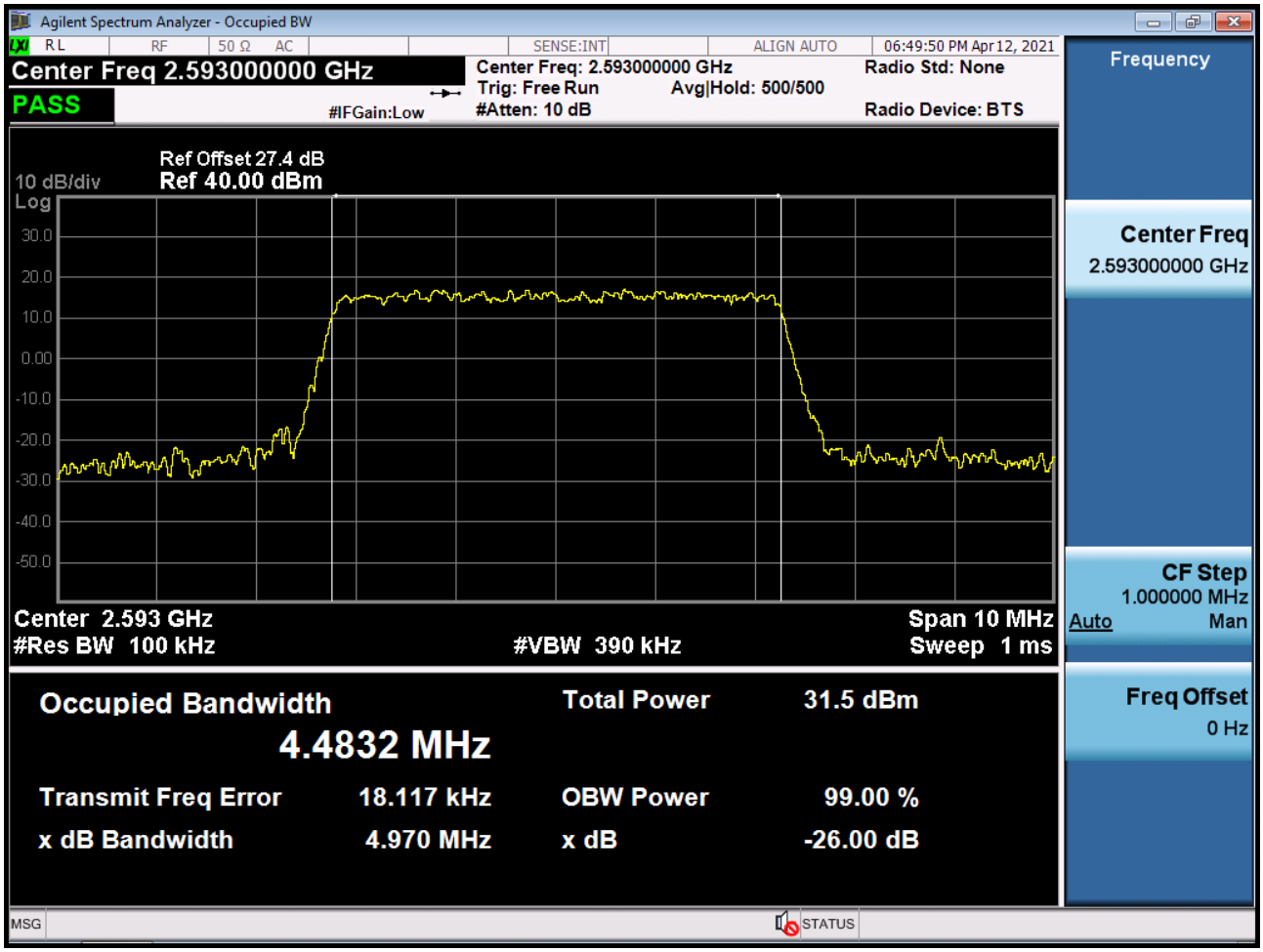


9. TEST PLOTS

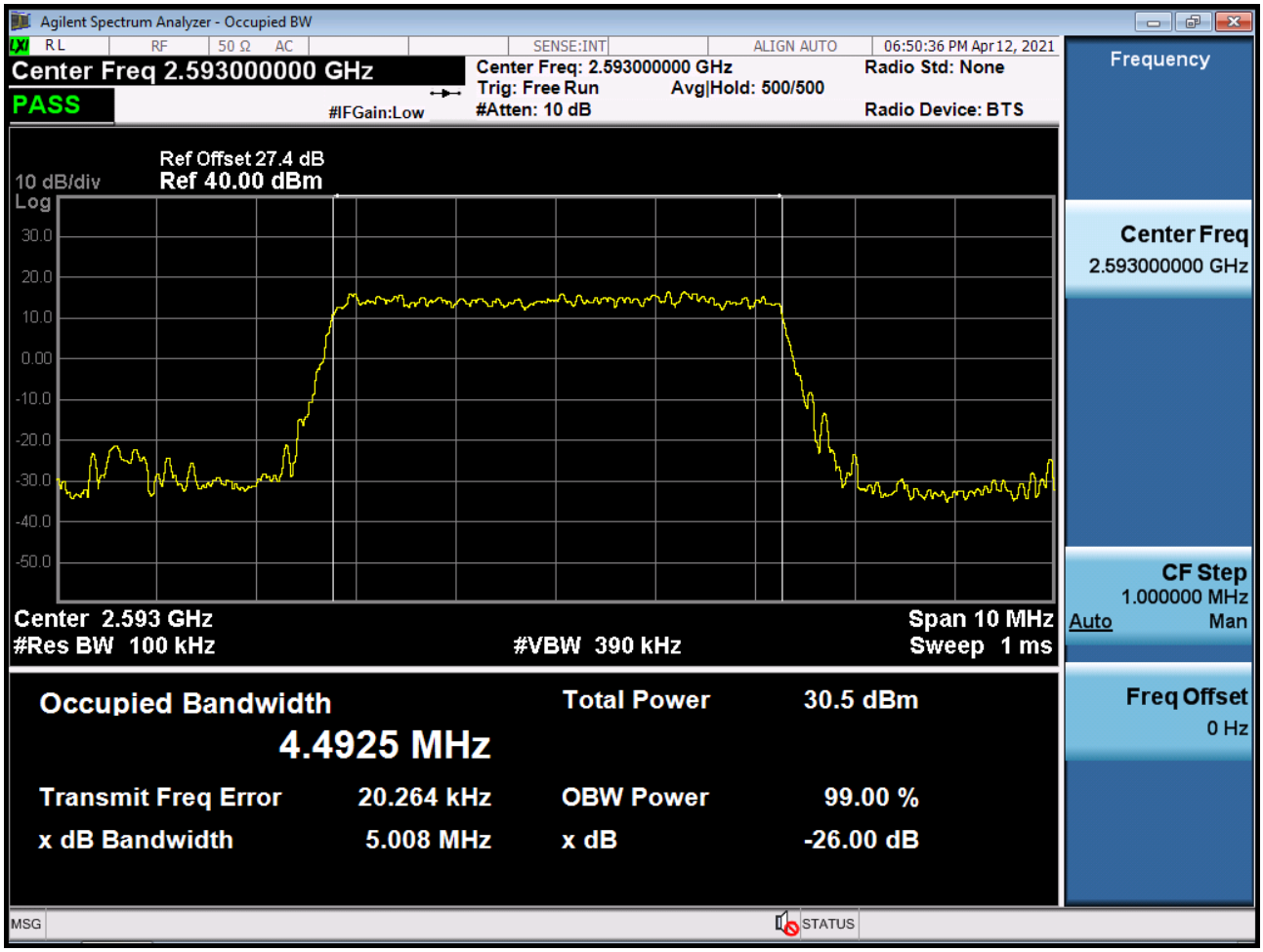
Occupied Bandwidth Plot (5 MHz Ch.40620 QPSK RB 25) (POWER CLASS 3)



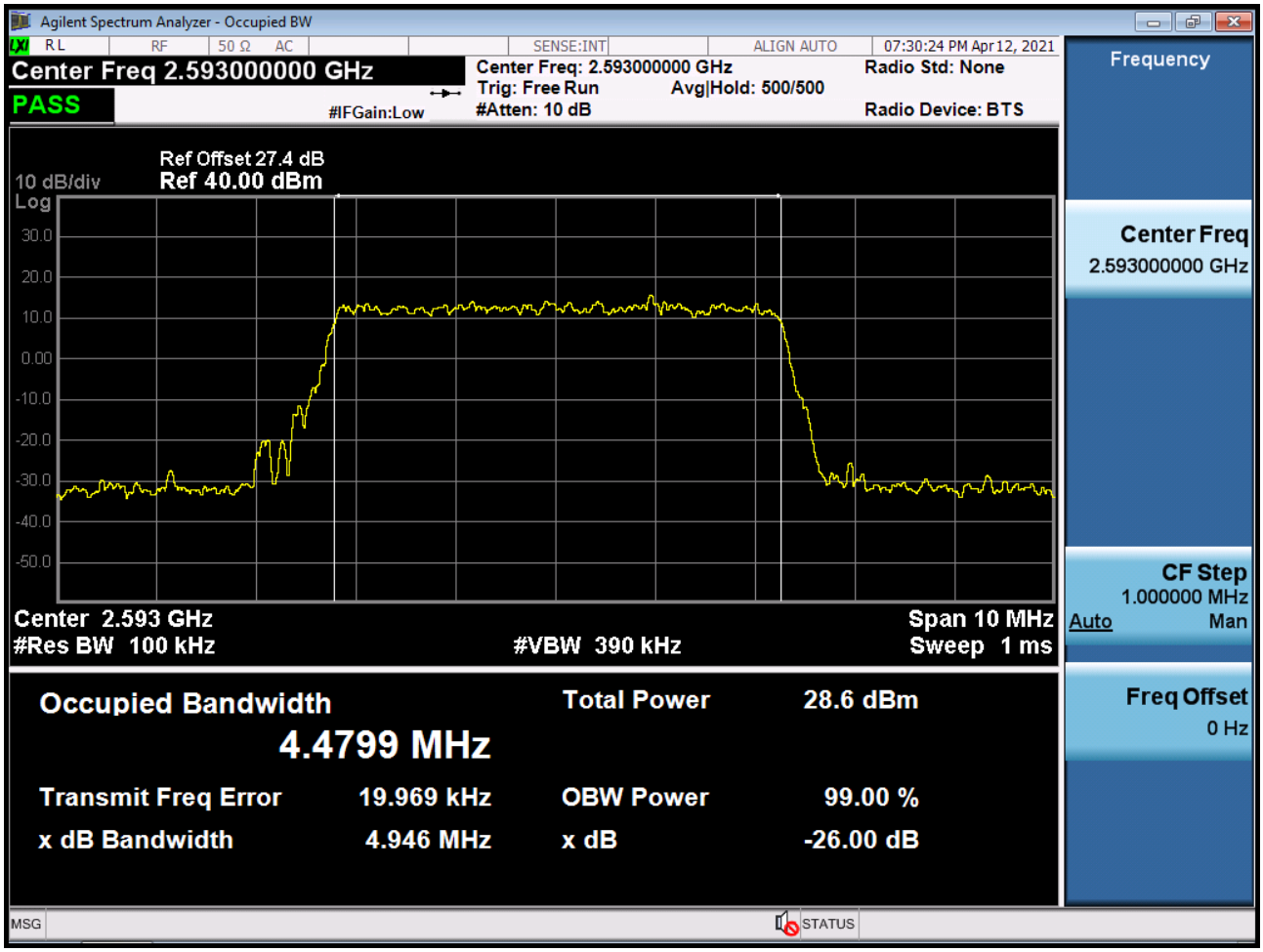
Occupied Bandwidth Plot (5 MHz Ch.40620 16-QAM RB 25) (POWER CLASS 3)



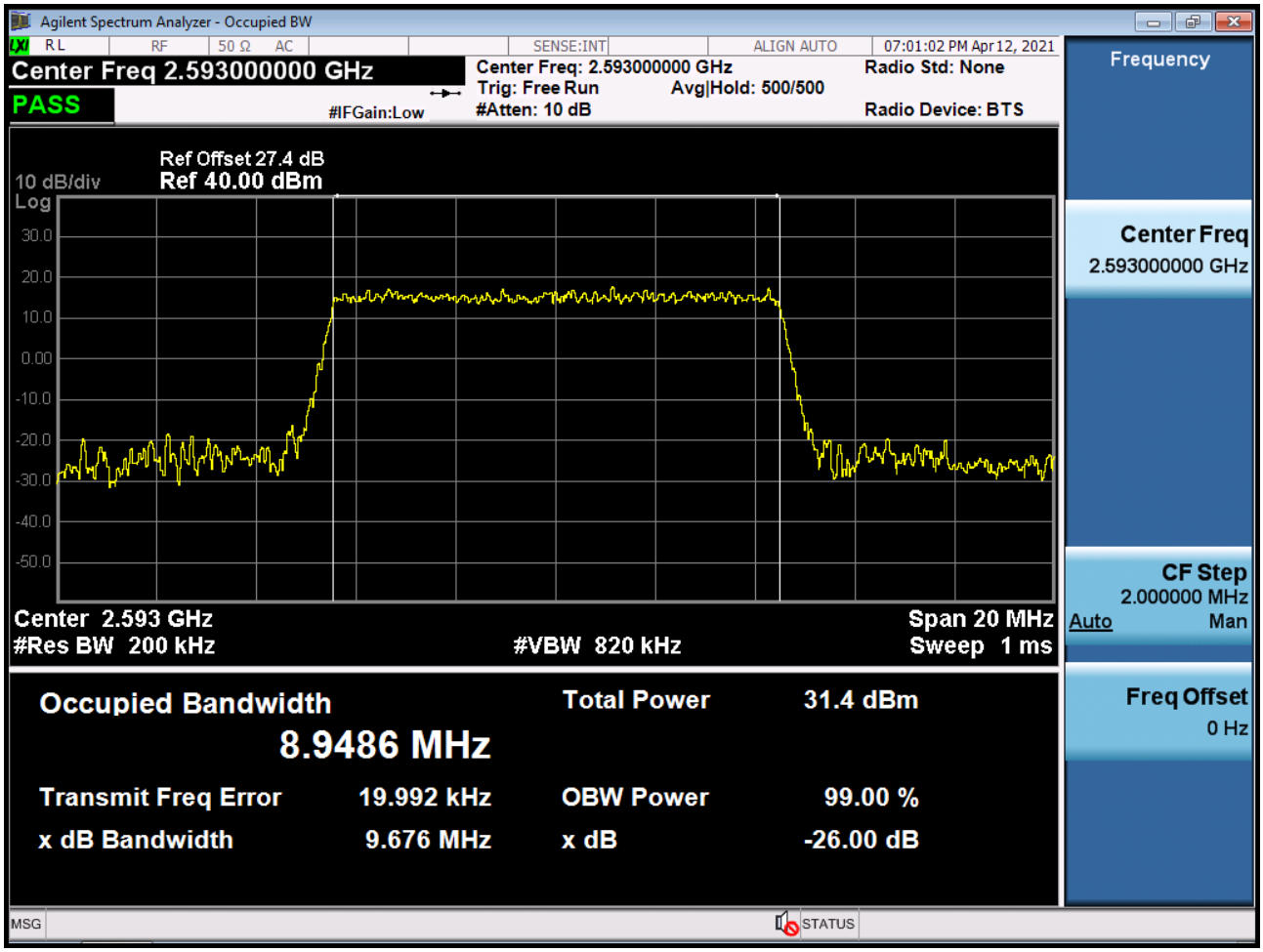
Occupied Bandwidth Plot (5 MHz Ch.40620 64-QAM RB 25) (POWER CLASS 3)



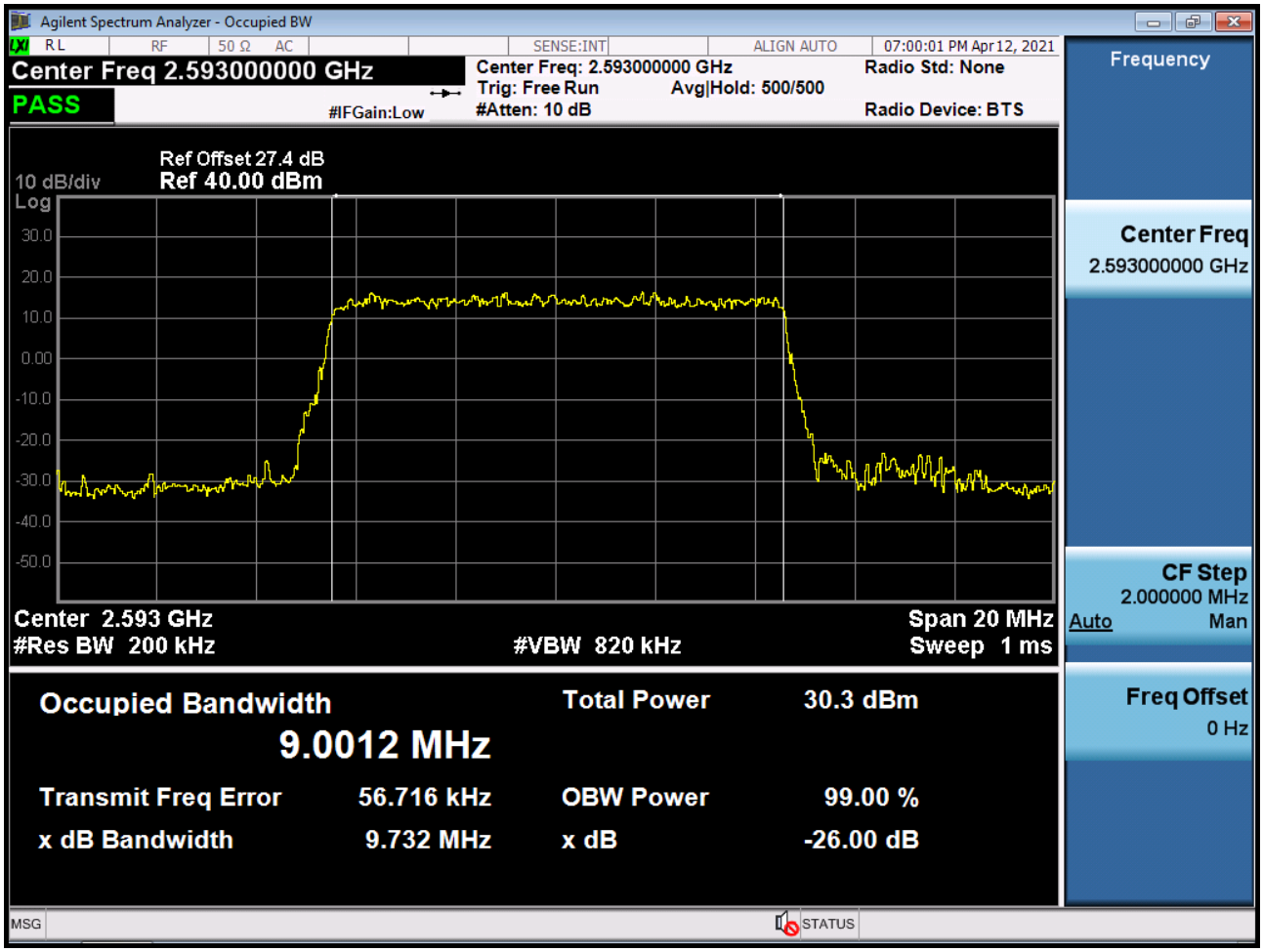
Occupied Bandwidth Plot (5 MHz Ch.40620 256-QAM RB 25) (POWER CLASS 3)



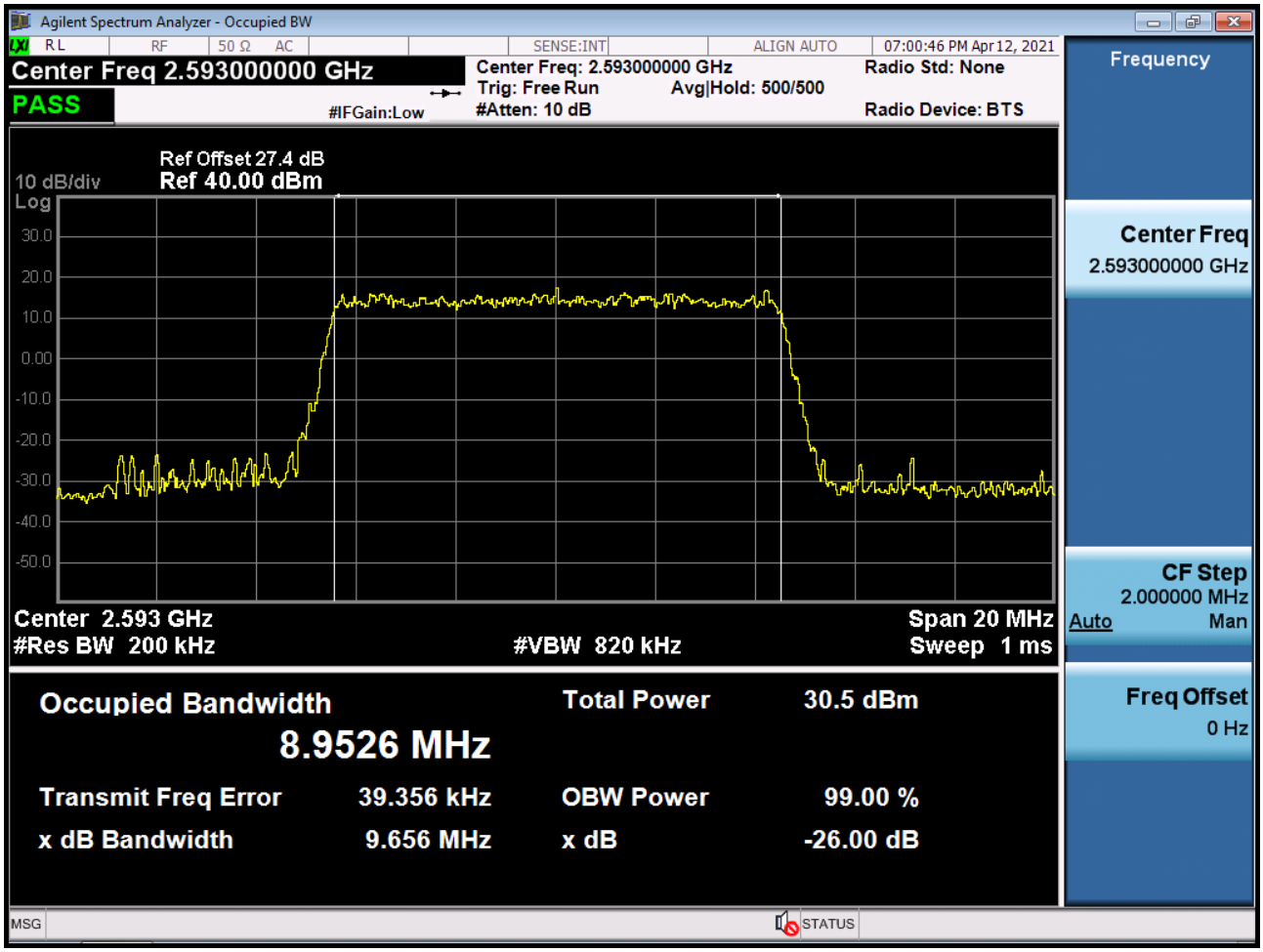
Occupied Bandwidth Plot (10 MHz Ch.40620 QPSK RB 50) (POWER CLASS 3)



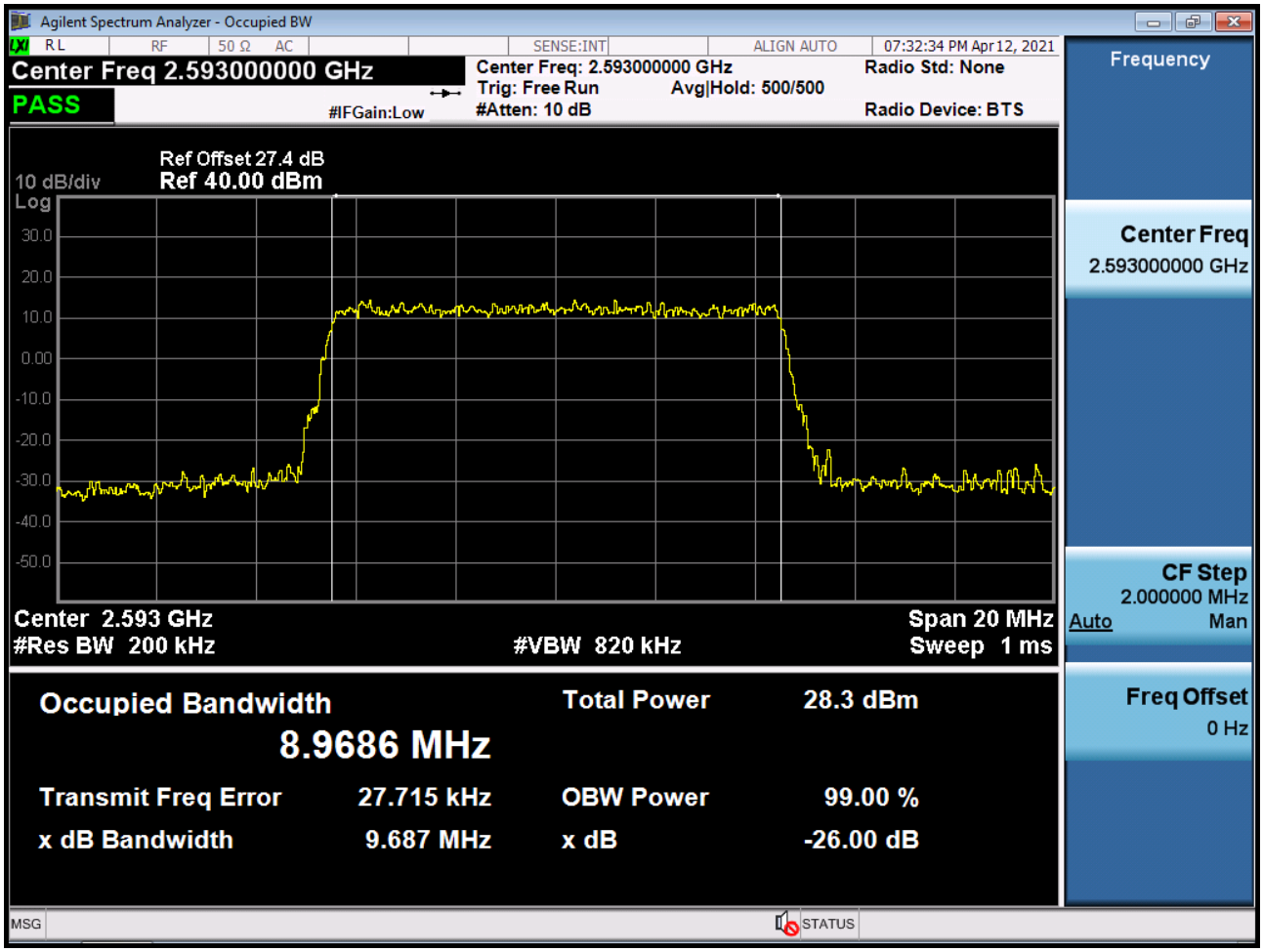
Occupied Bandwidth Plot (10 MHz Ch.40620 16-QAM RB 50) (POWER CLASS 3)



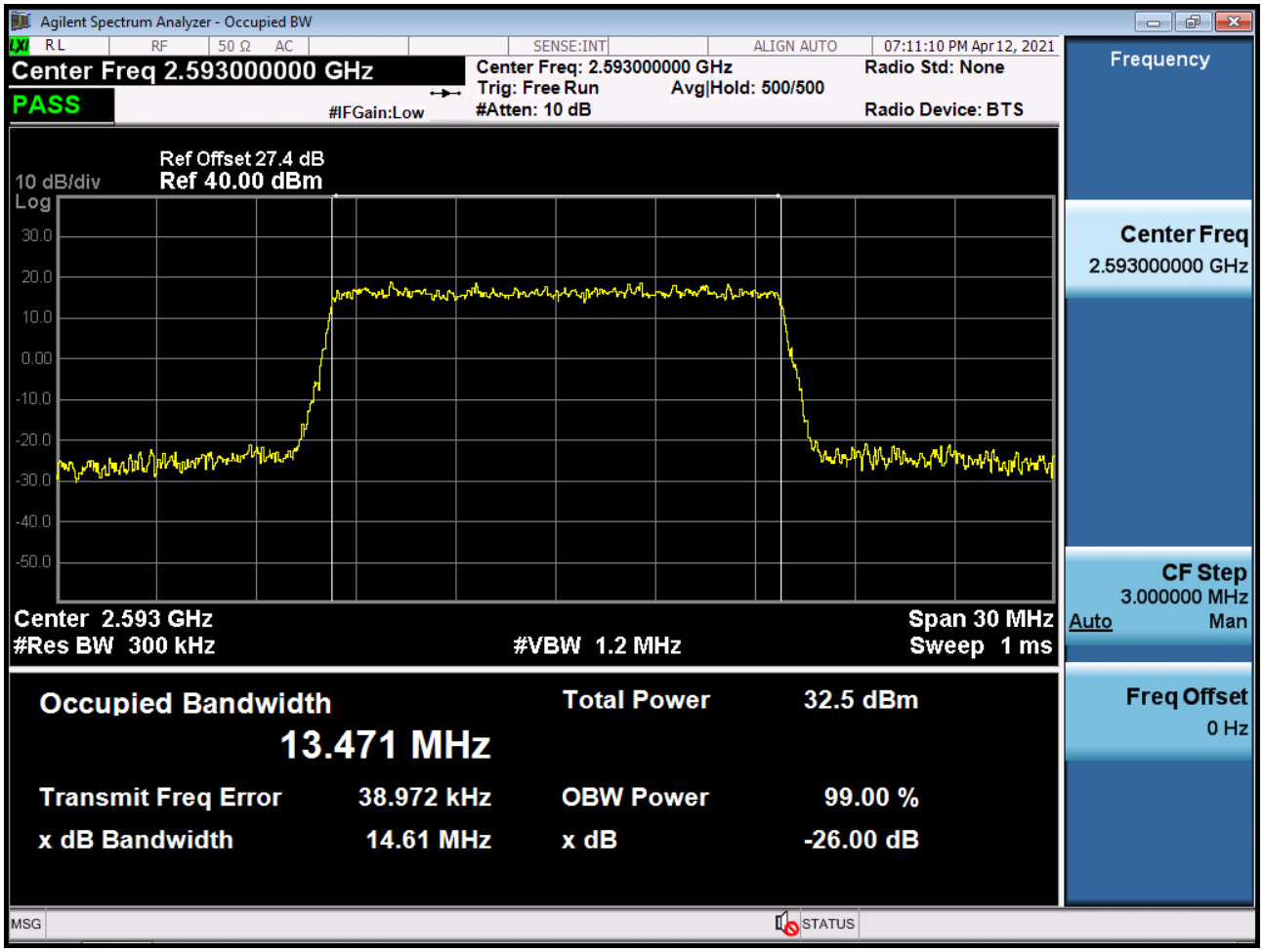
Occupied Bandwidth Plot (10 MHz Ch.40620 64-QAM RB 50) (POWER CLASS 3)



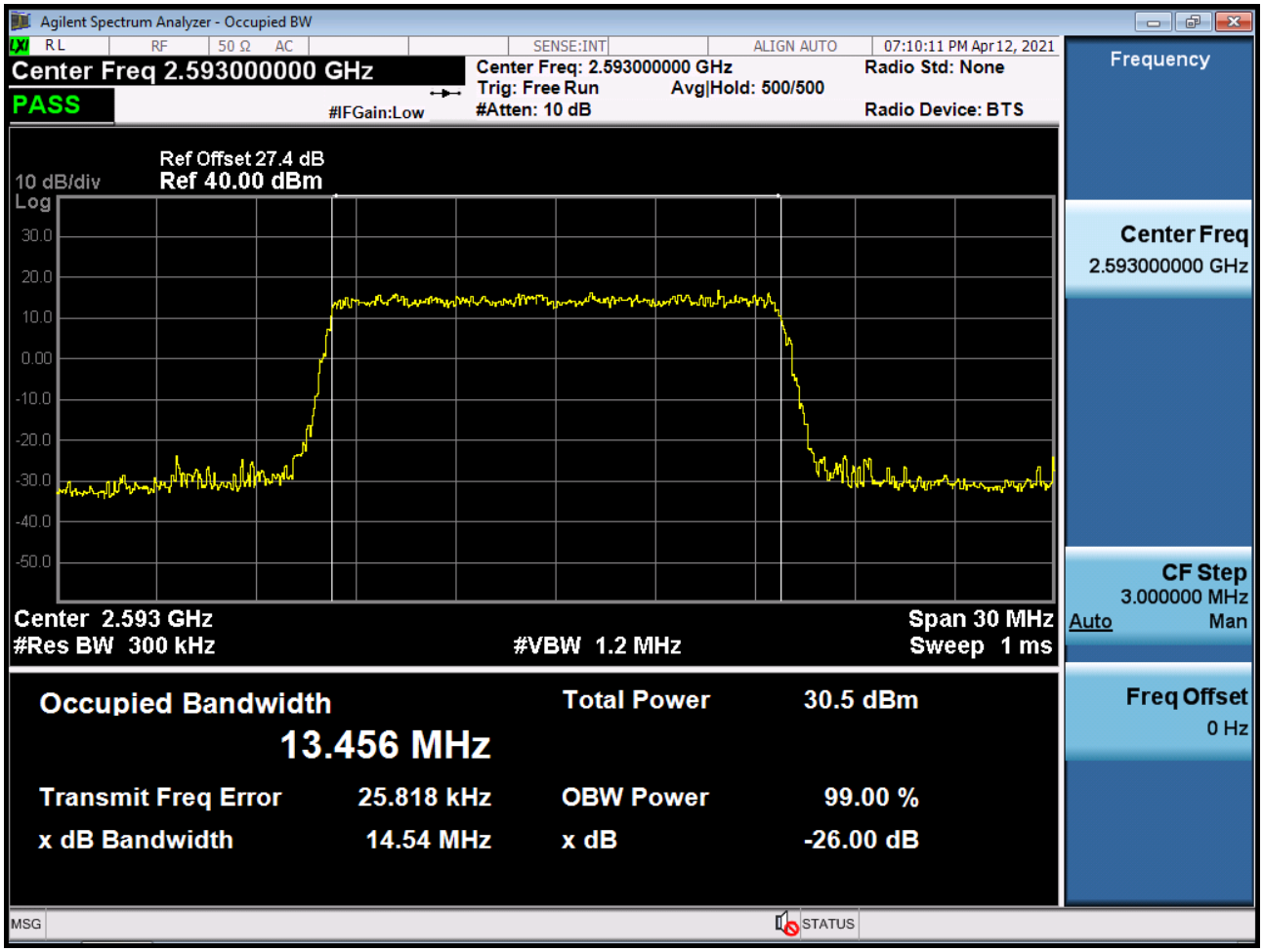
Occupied Bandwidth Plot (10 MHz Ch.40620 256-QAM RB 50) (POWER CLASS 3)



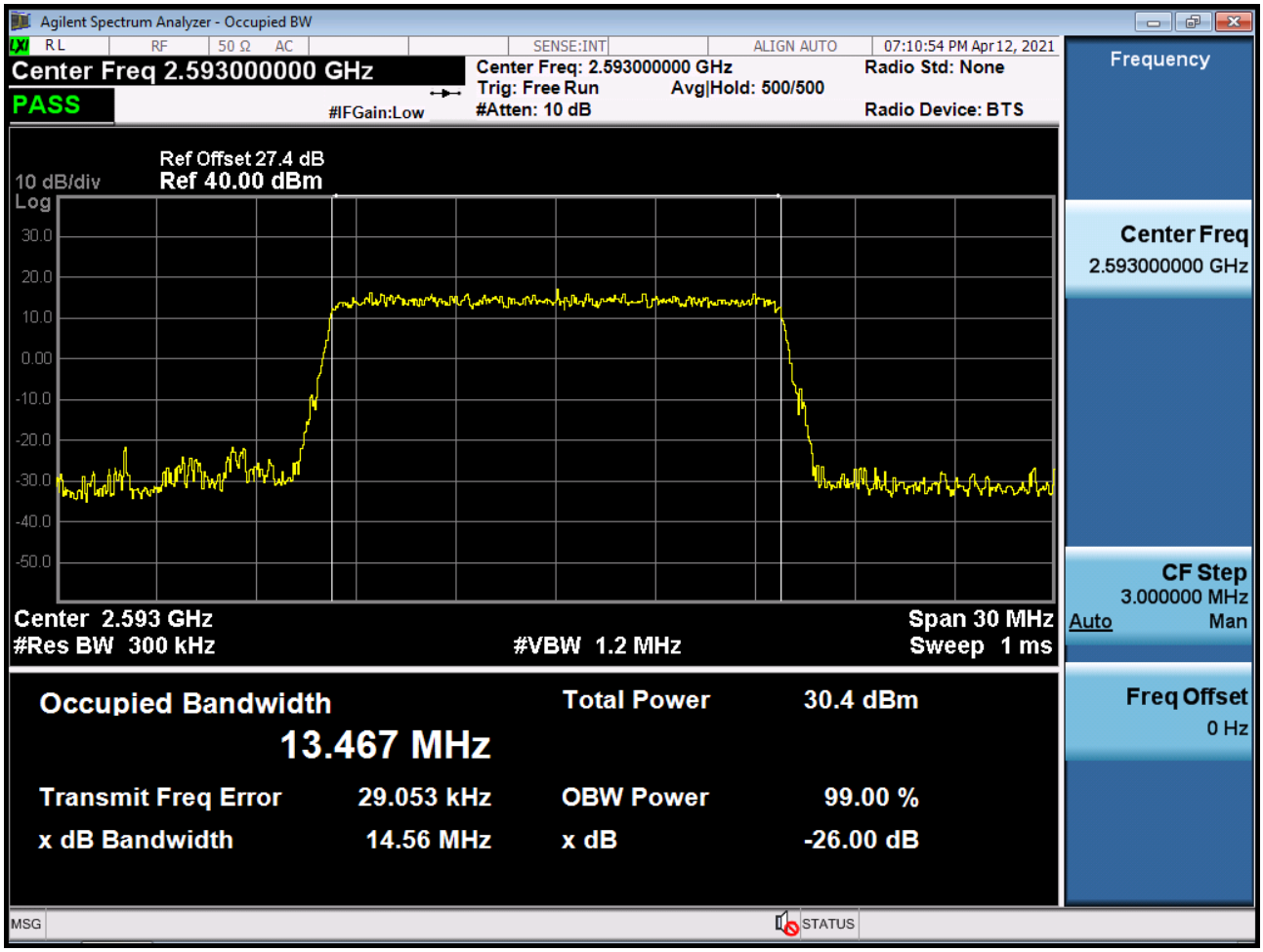
Occupied Bandwidth Plot (15 MHz Ch.40620 QPSK RB 75) (POWER CLASS 3)



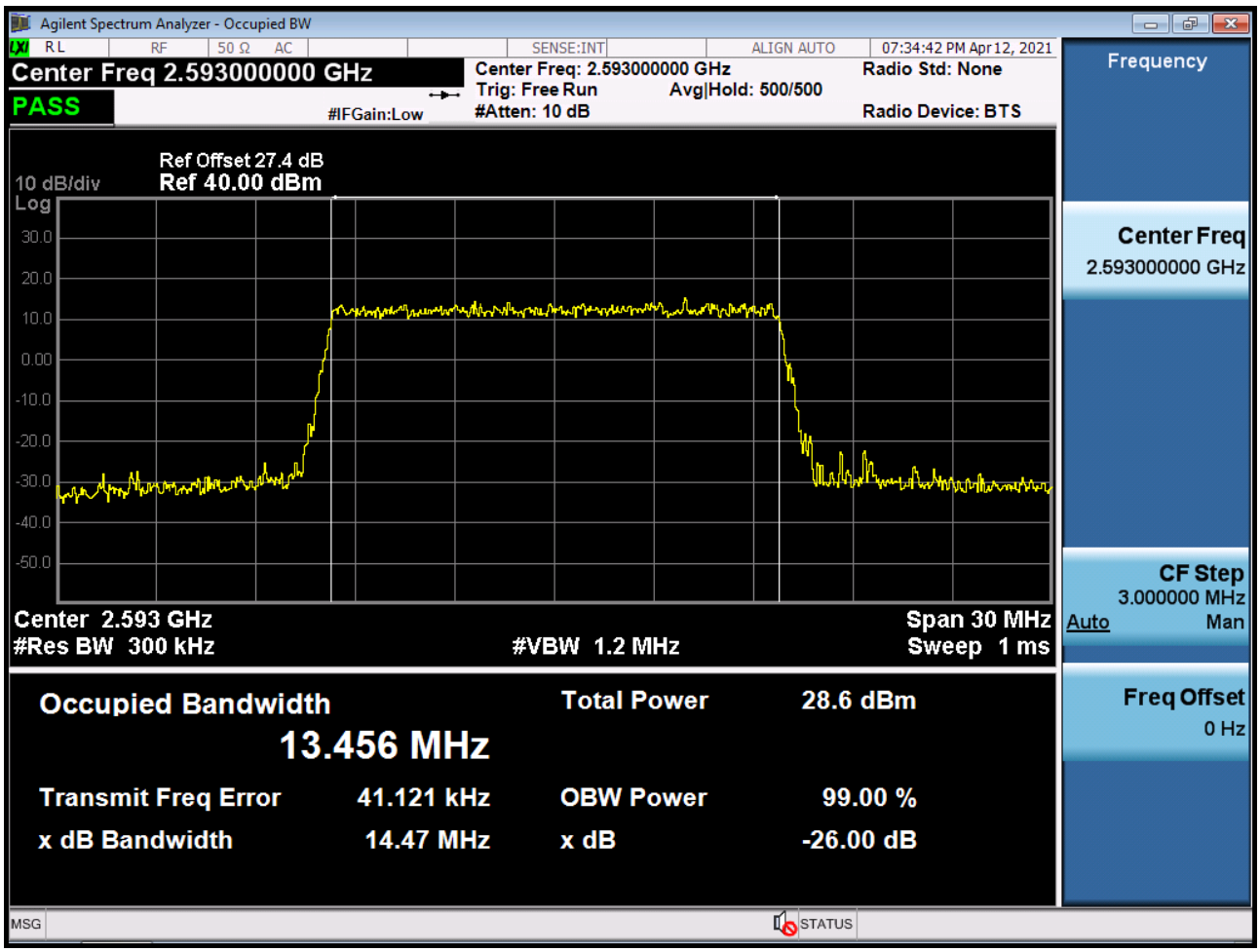
Occupied Bandwidth Plot (15 MHz Ch.40620 16-QAM RB 75) (POWER CLASS 3)



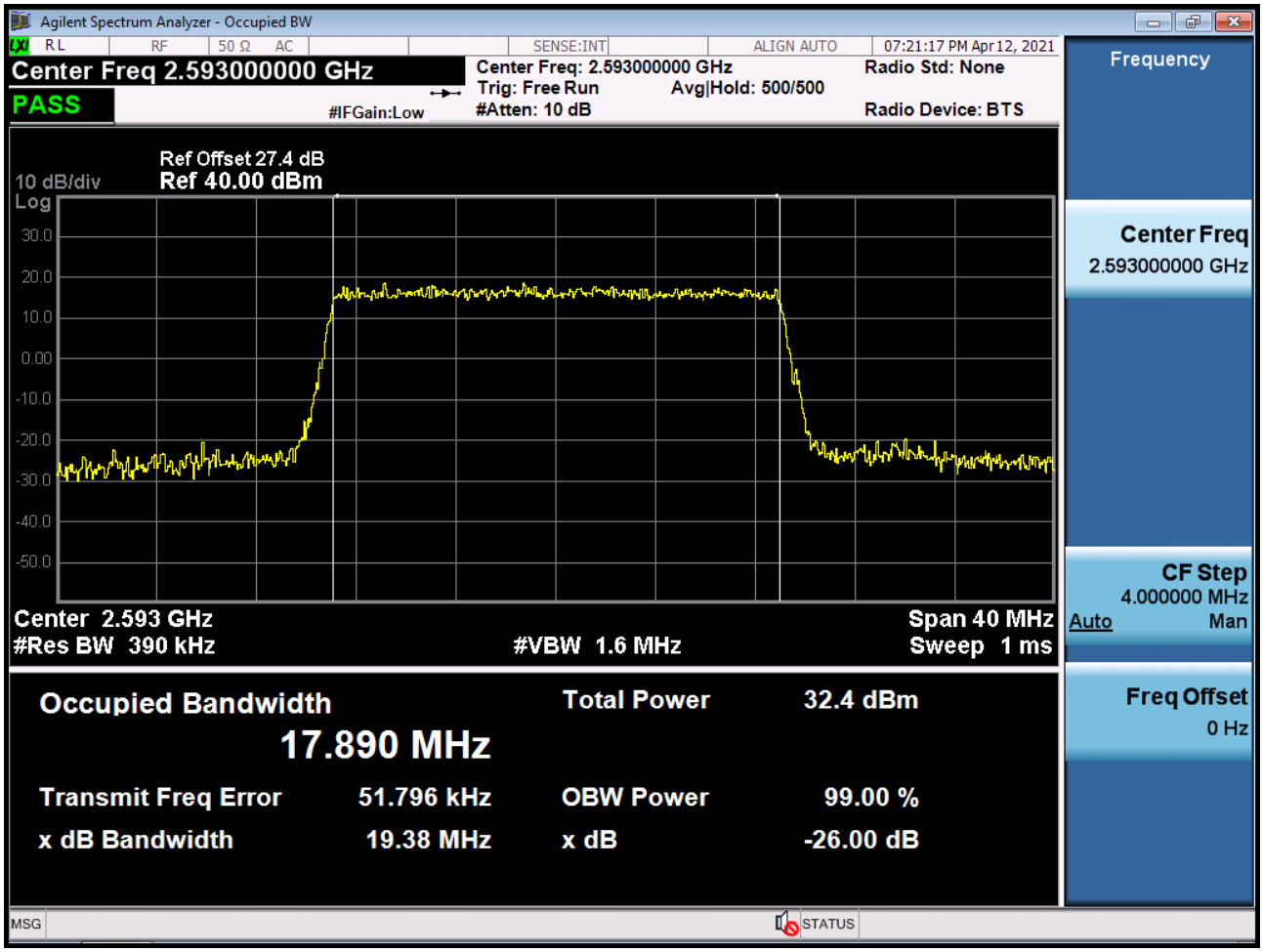
Occupied Bandwidth Plot (15 MHz Ch.40620 64-QAM RB 75) (POWER CLASS 3)



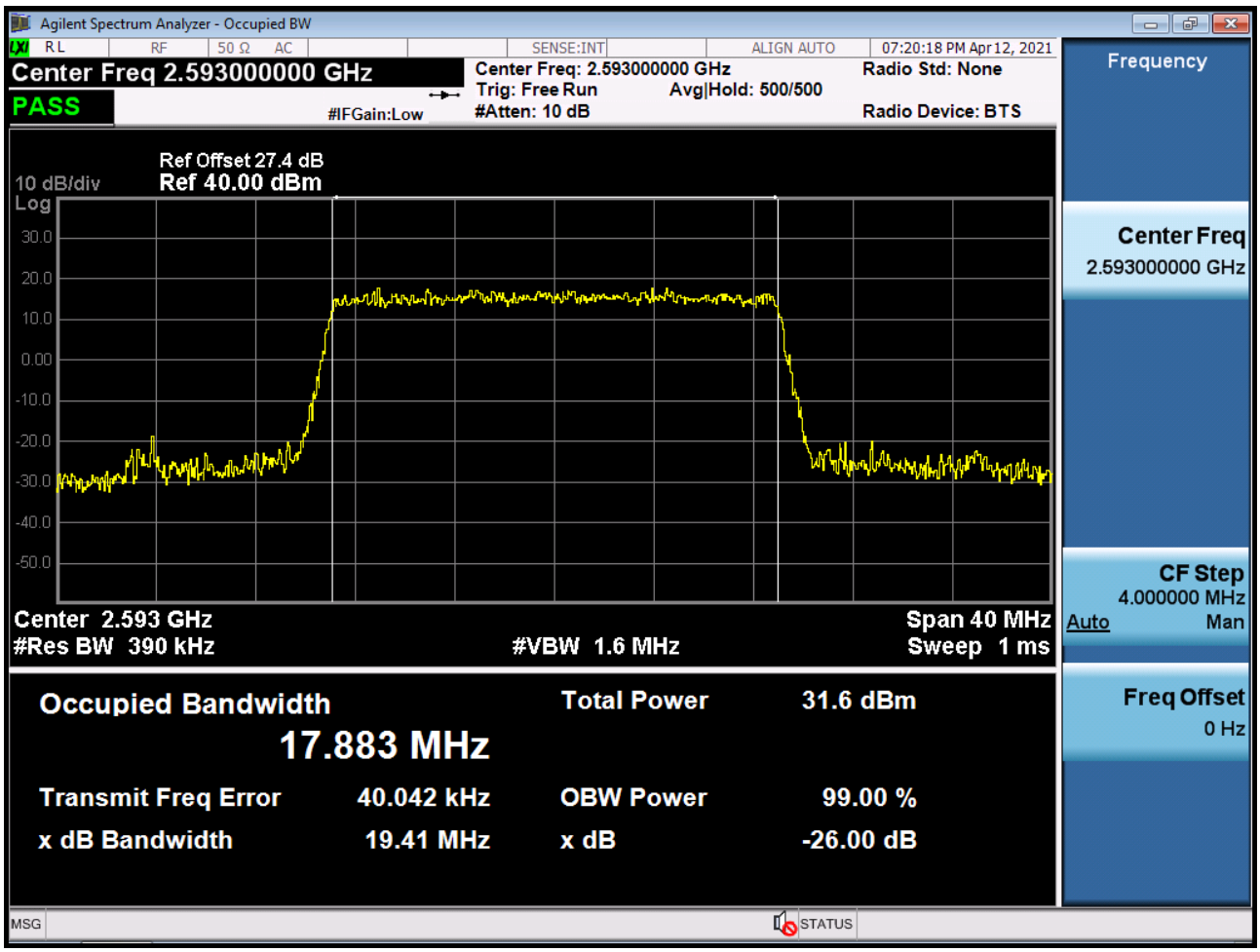
Occupied Bandwidth Plot (15 MHz Ch.40620 256-QAM RB 75) (POWER CLASS 3)



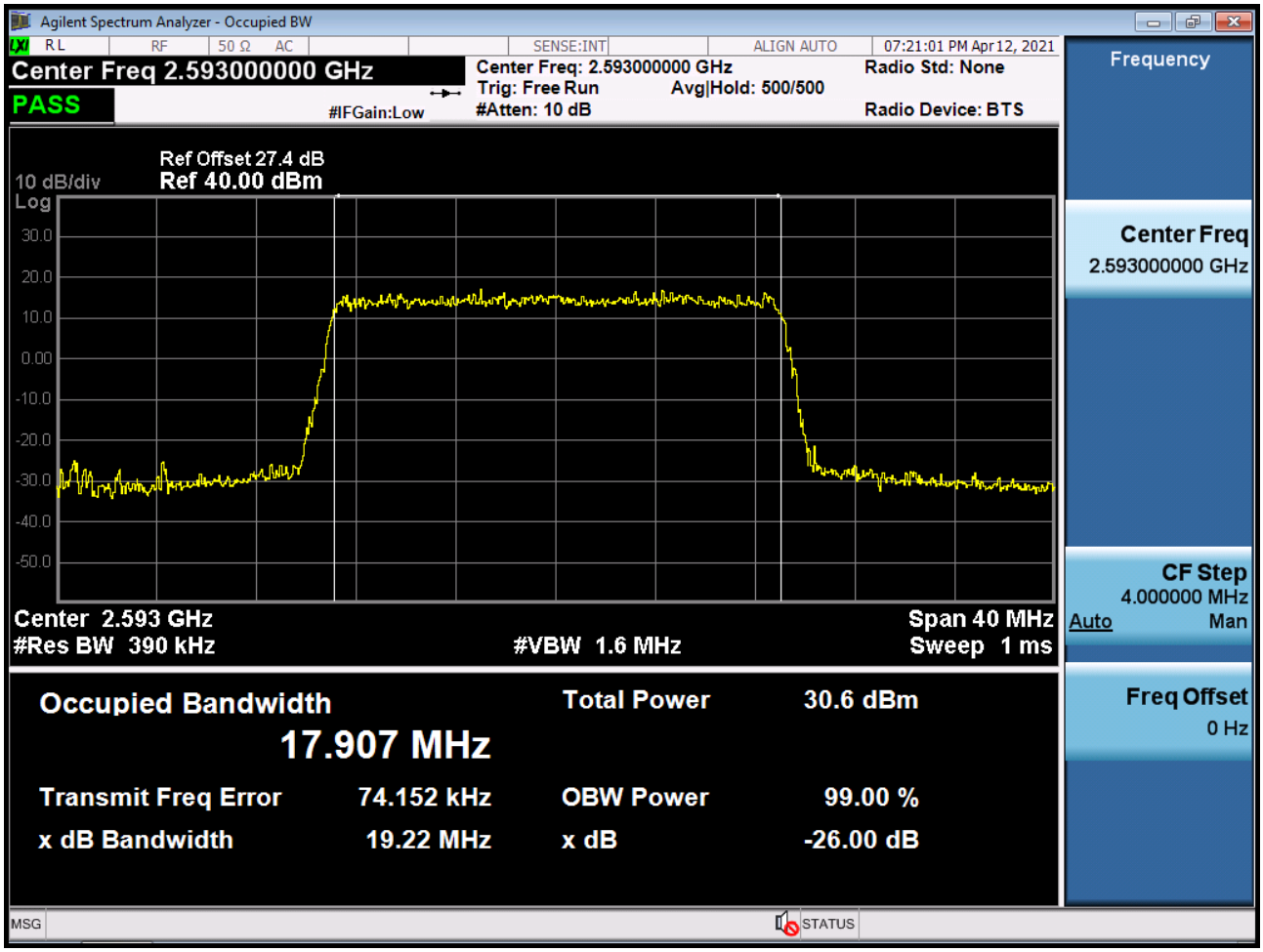
Occupied Bandwidth Plot (20 MHz Ch.40620 QPSK RB 100) (POWER CLASS 3)



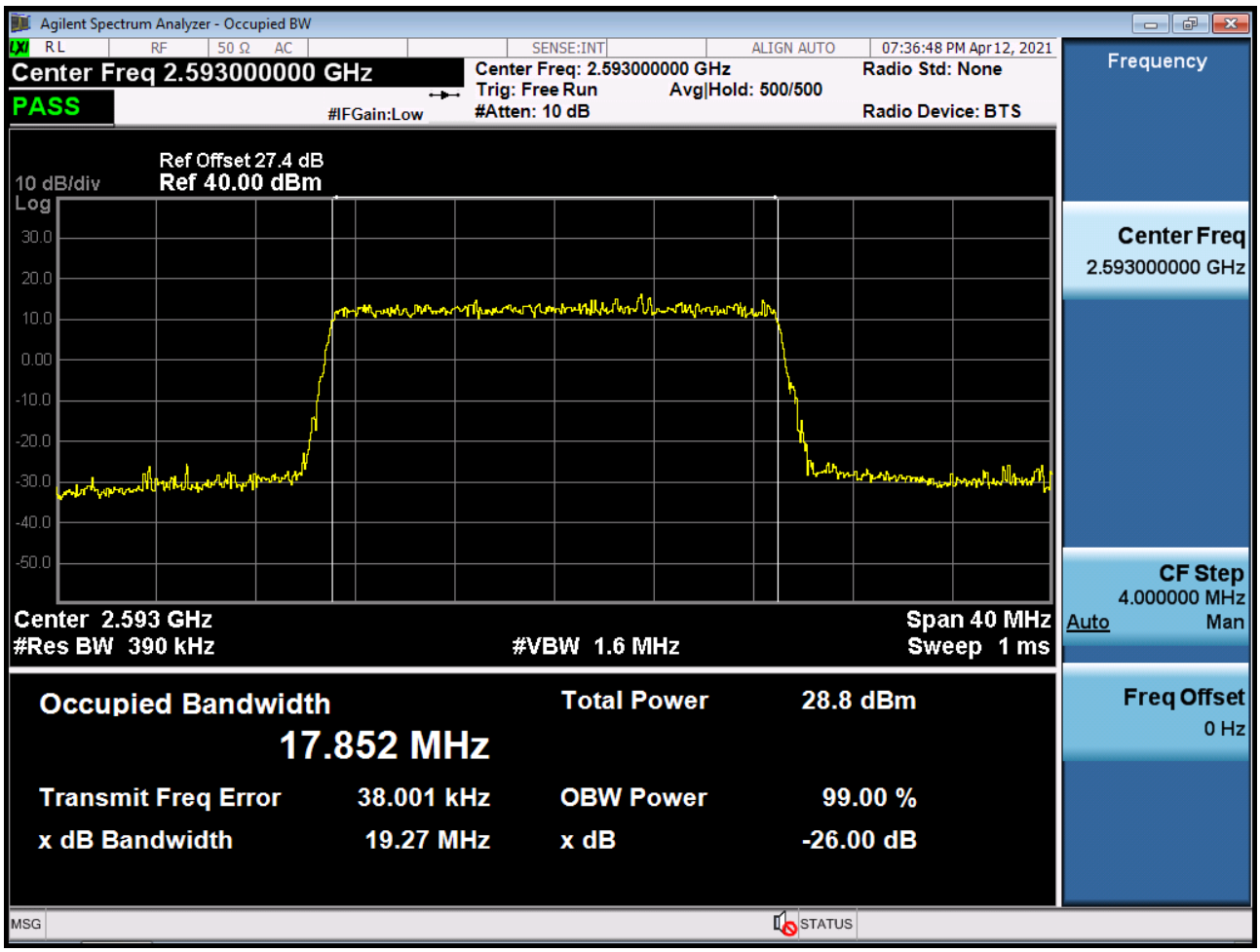
Occupied Bandwidth Plot (20 MHz Ch.40620 16-QAM RB 100) (POWER CLASS 3)



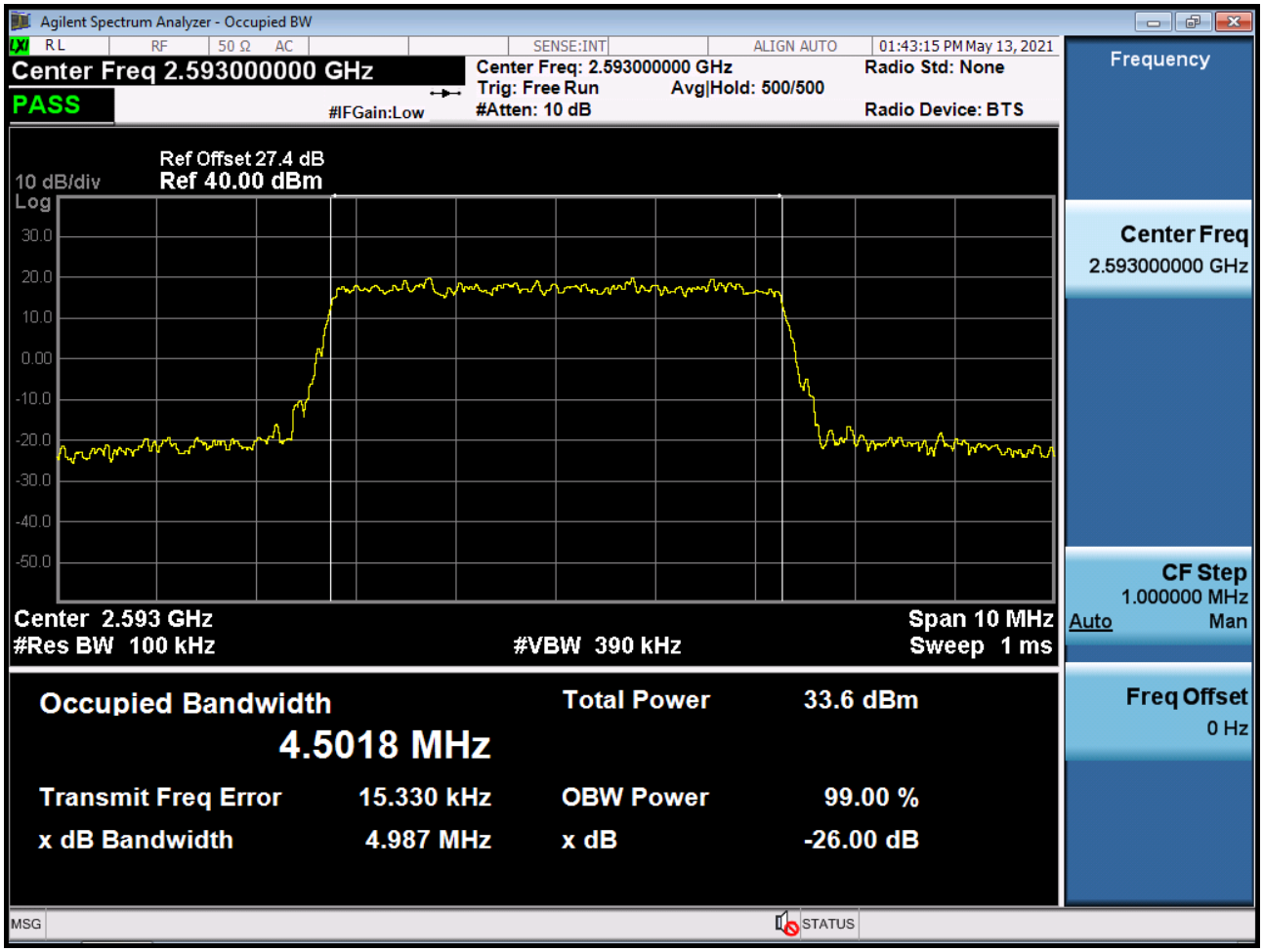
Occupied Bandwidth Plot (20 MHz Ch.40620 64-QAM RB 100) (POWER CLASS 3)



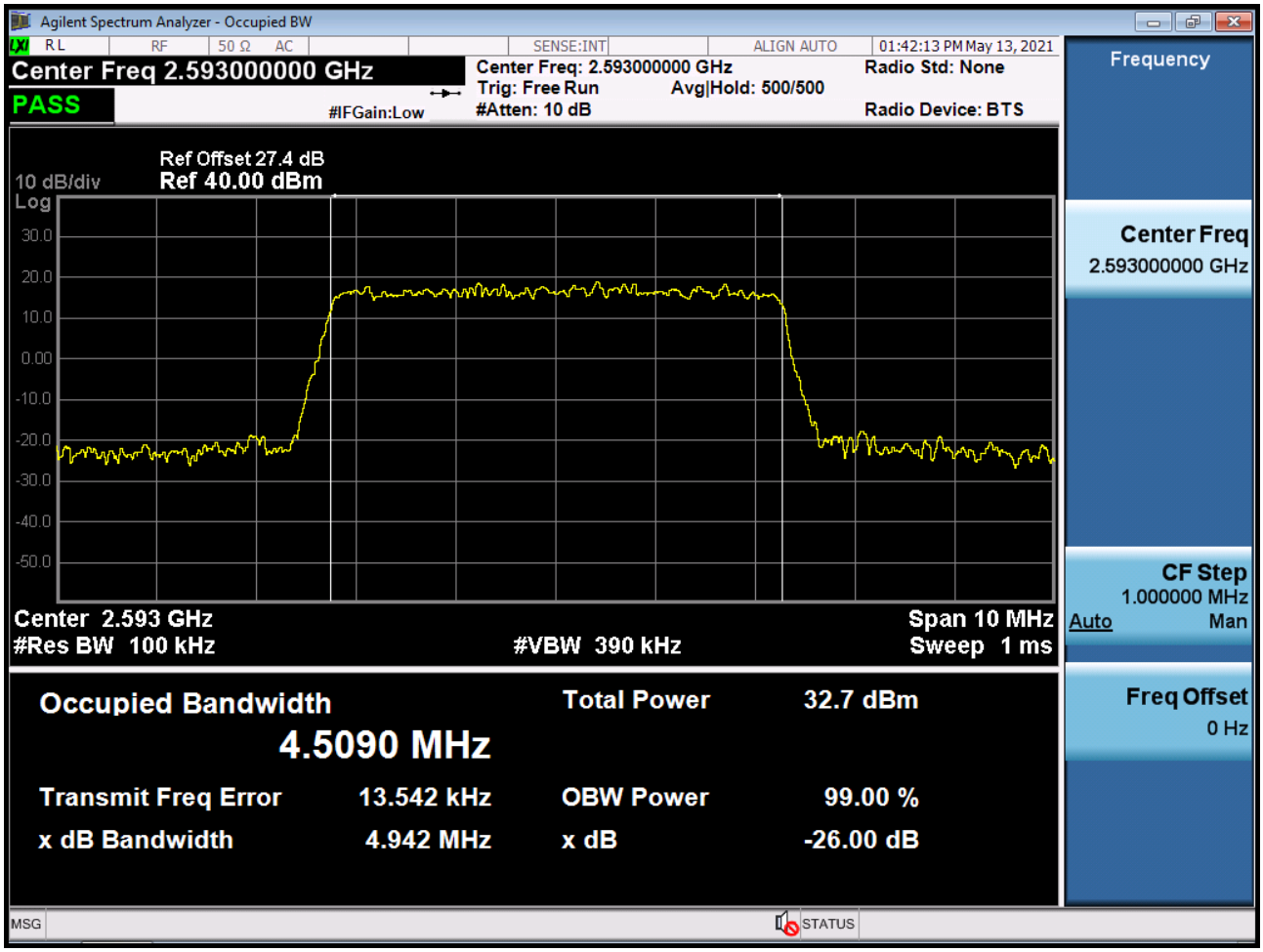
Occupied Bandwidth Plot (20 MHz Ch.40620 256-QAM RB 100) (POWER CLASS 3)



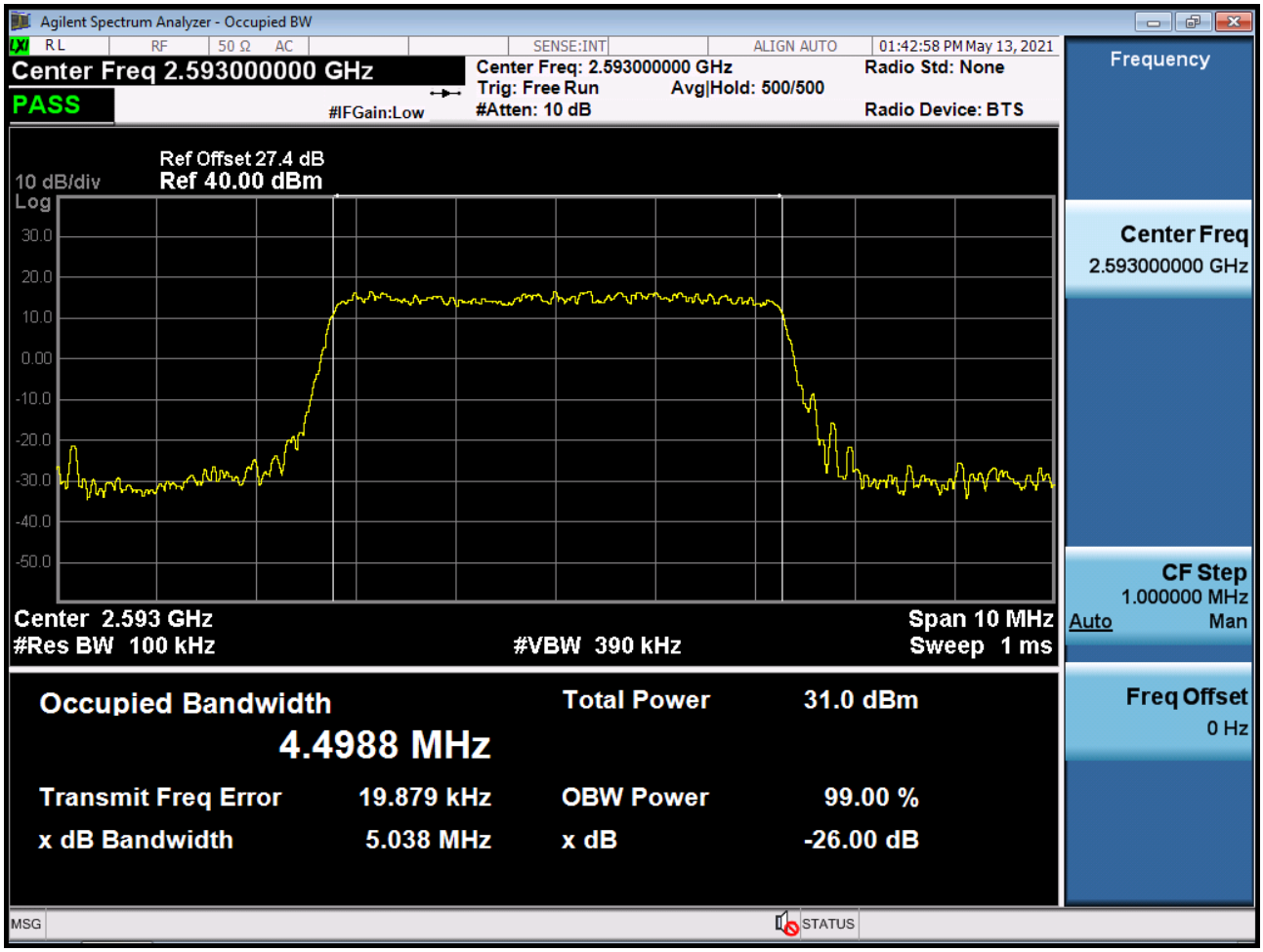
Occupied Bandwidth Plot (5 MHz Ch.40620 QPSK RB 25) (POWER CLASS 2)



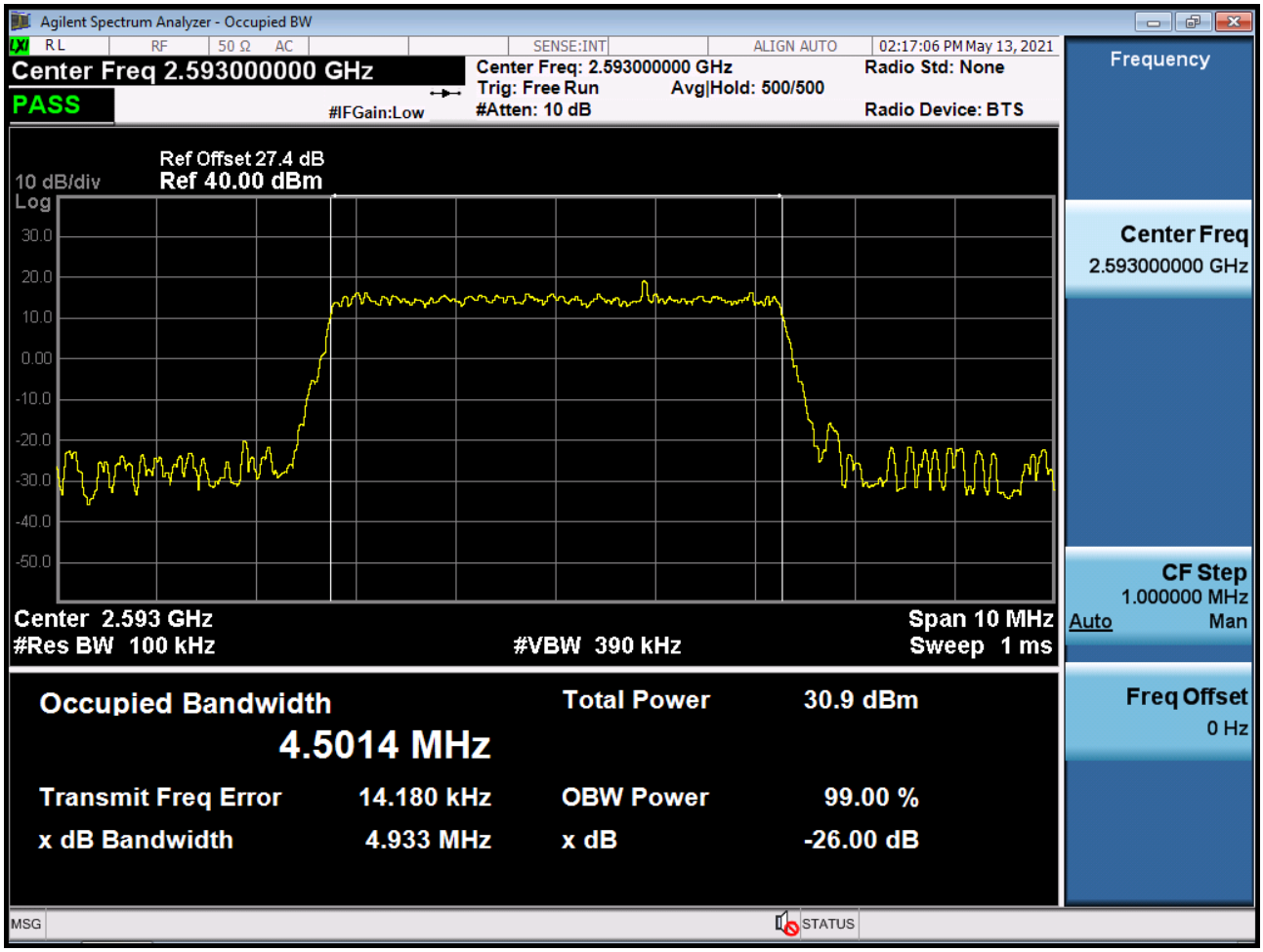
Occupied Bandwidth Plot (5 MHz Ch.40620 16-QAM RB 25) (POWER CLASS 2)



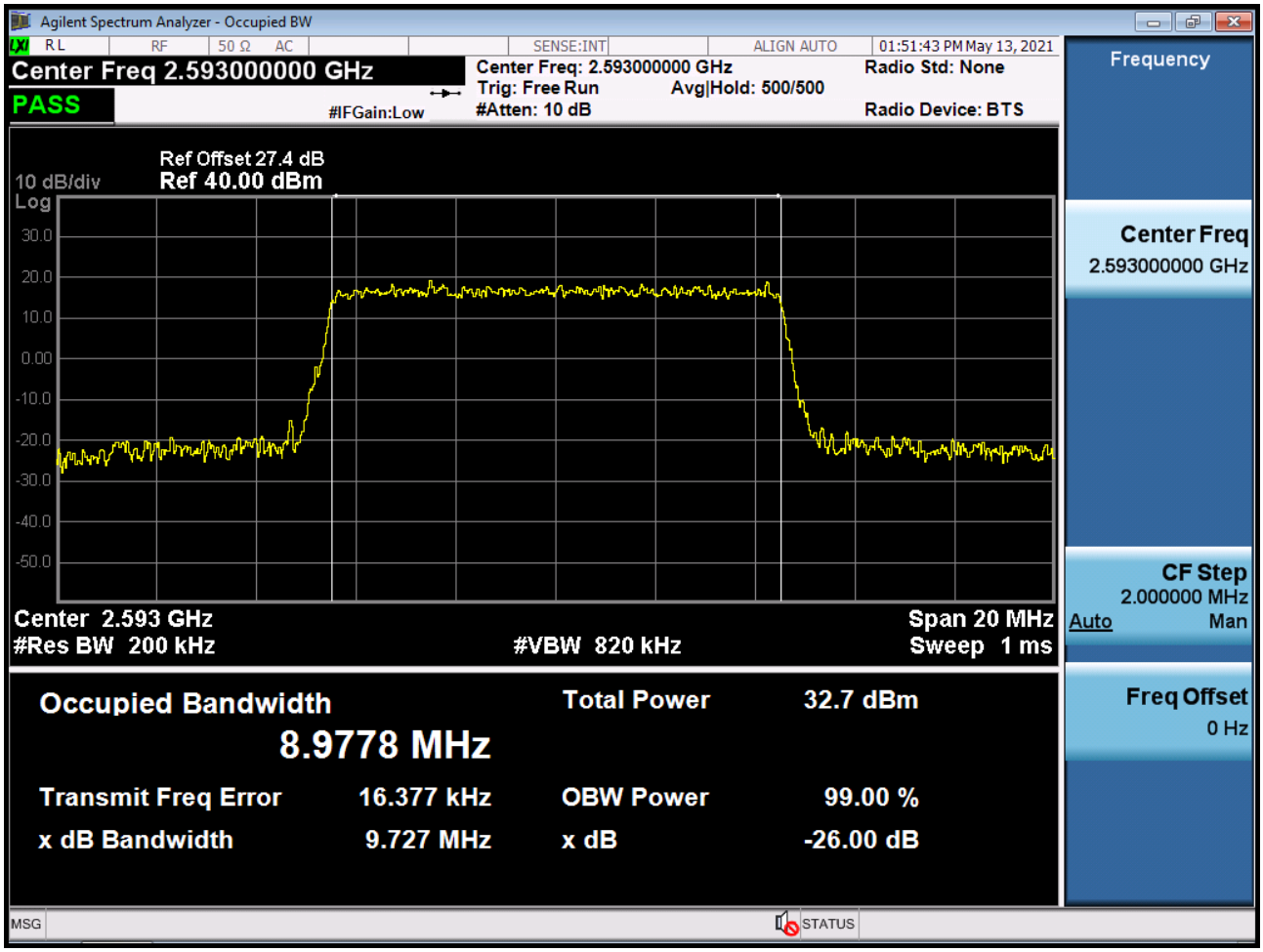
Occupied Bandwidth Plot (5 MHz Ch.40620 64-QAM RB 25) (POWER CLASS 2)



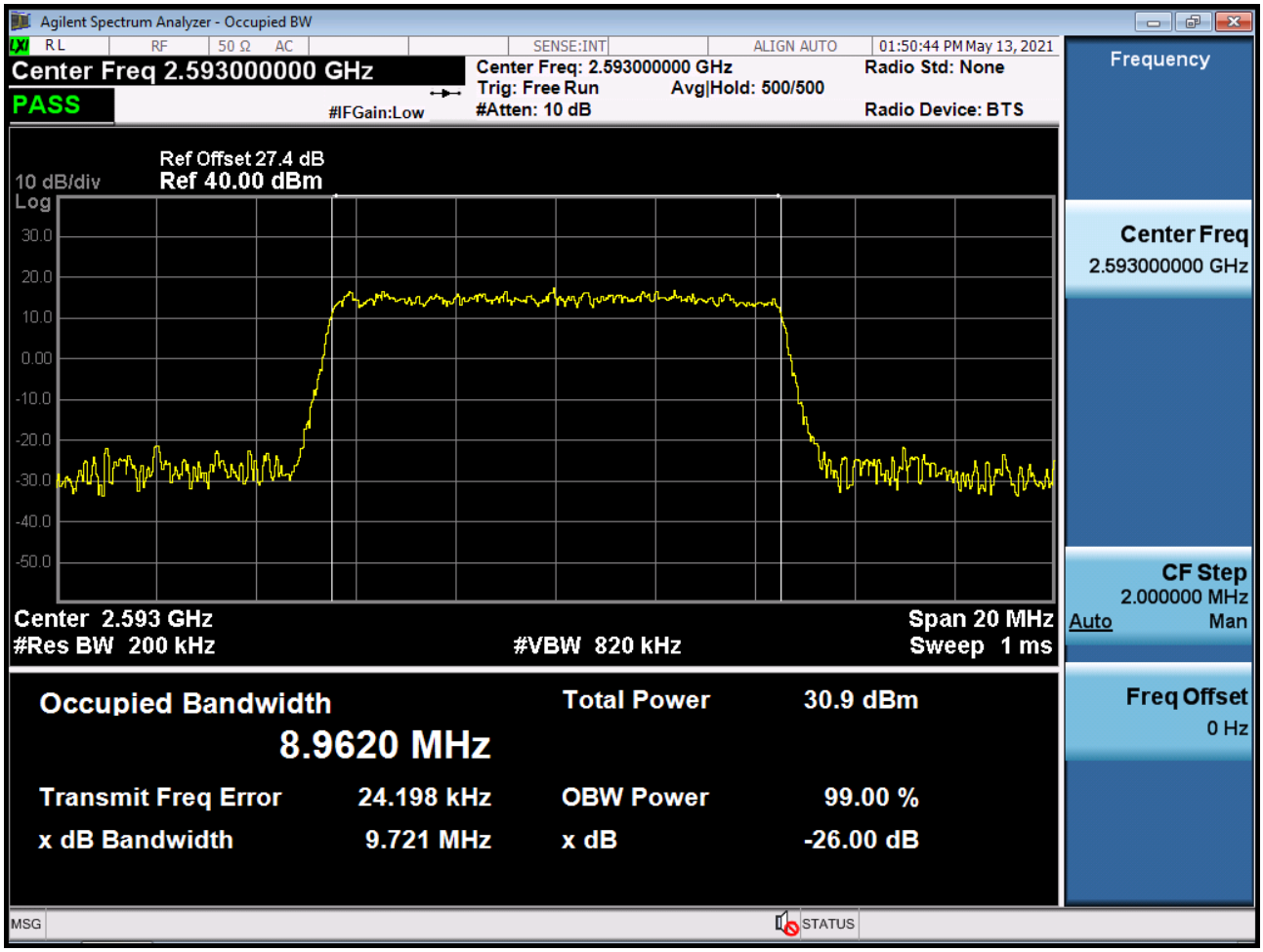
Occupied Bandwidth Plot (5 MHz Ch.40620 256-QAM RB 25) (POWER CLASS 2)



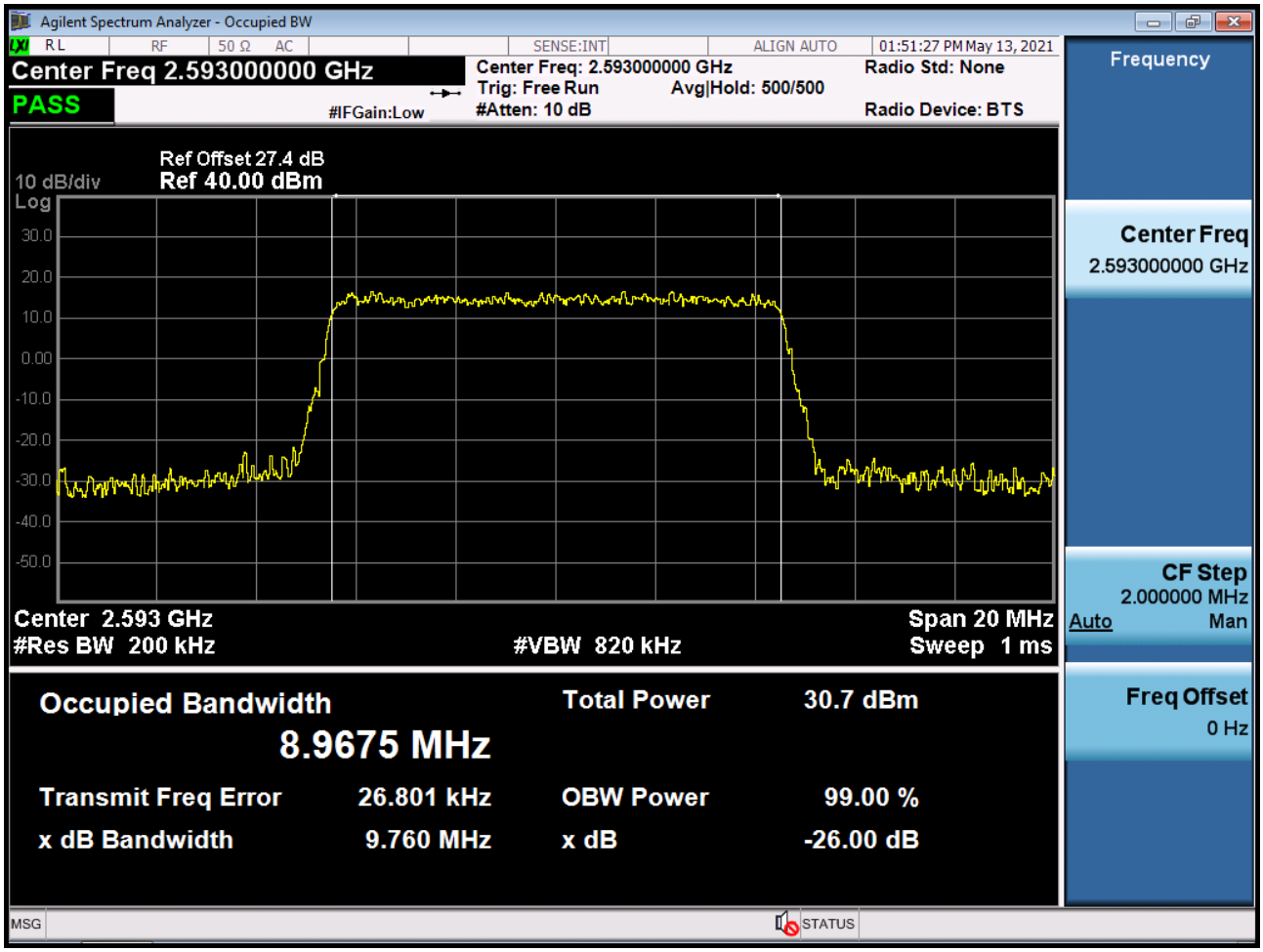
Occupied Bandwidth Plot (10 MHz Ch.40620 QPSK RB 50) (POWER CLASS 2)



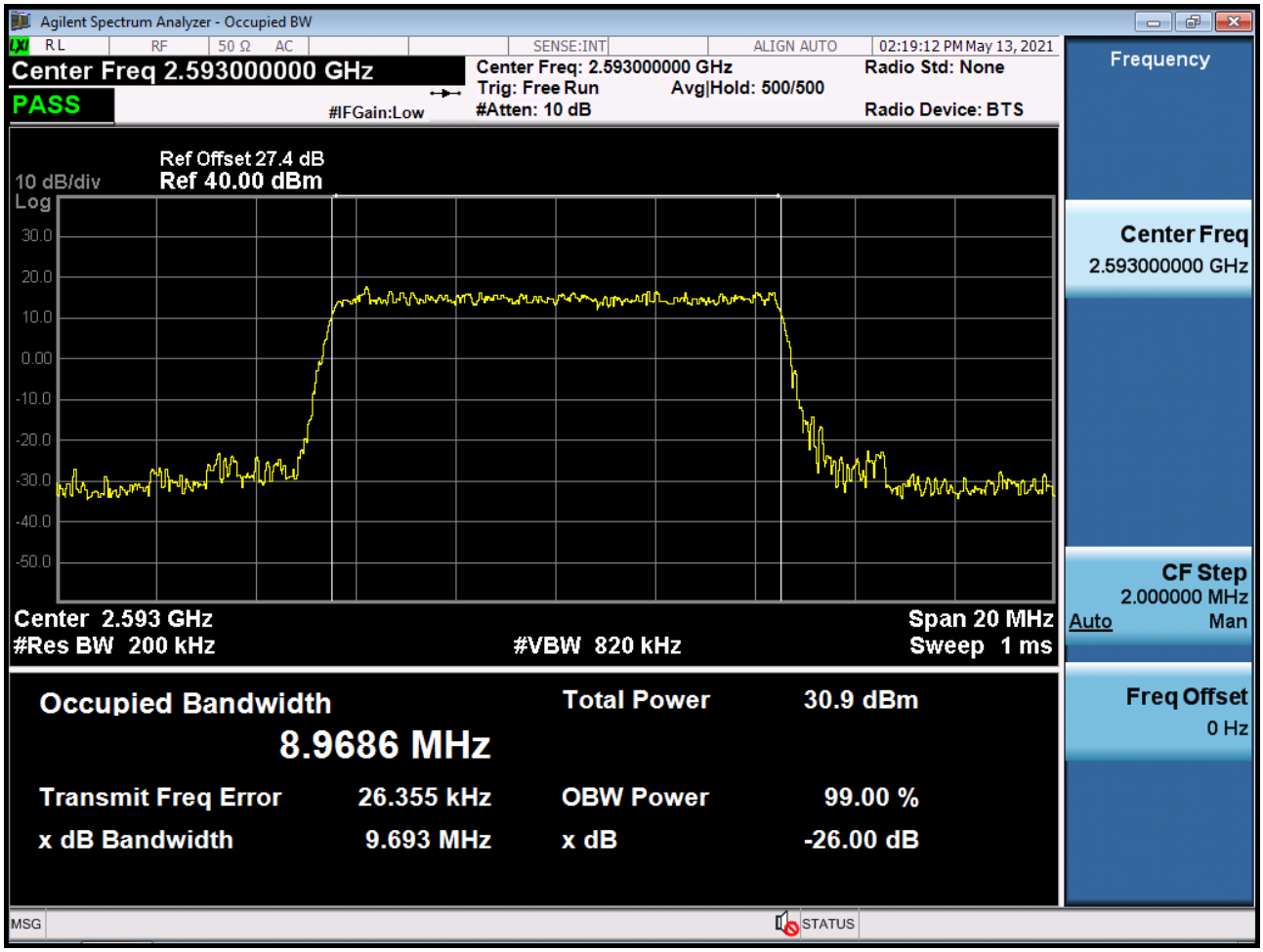
Occupied Bandwidth Plot (10 MHz Ch.40620 16-QAM RB 50) (POWER CLASS 2)



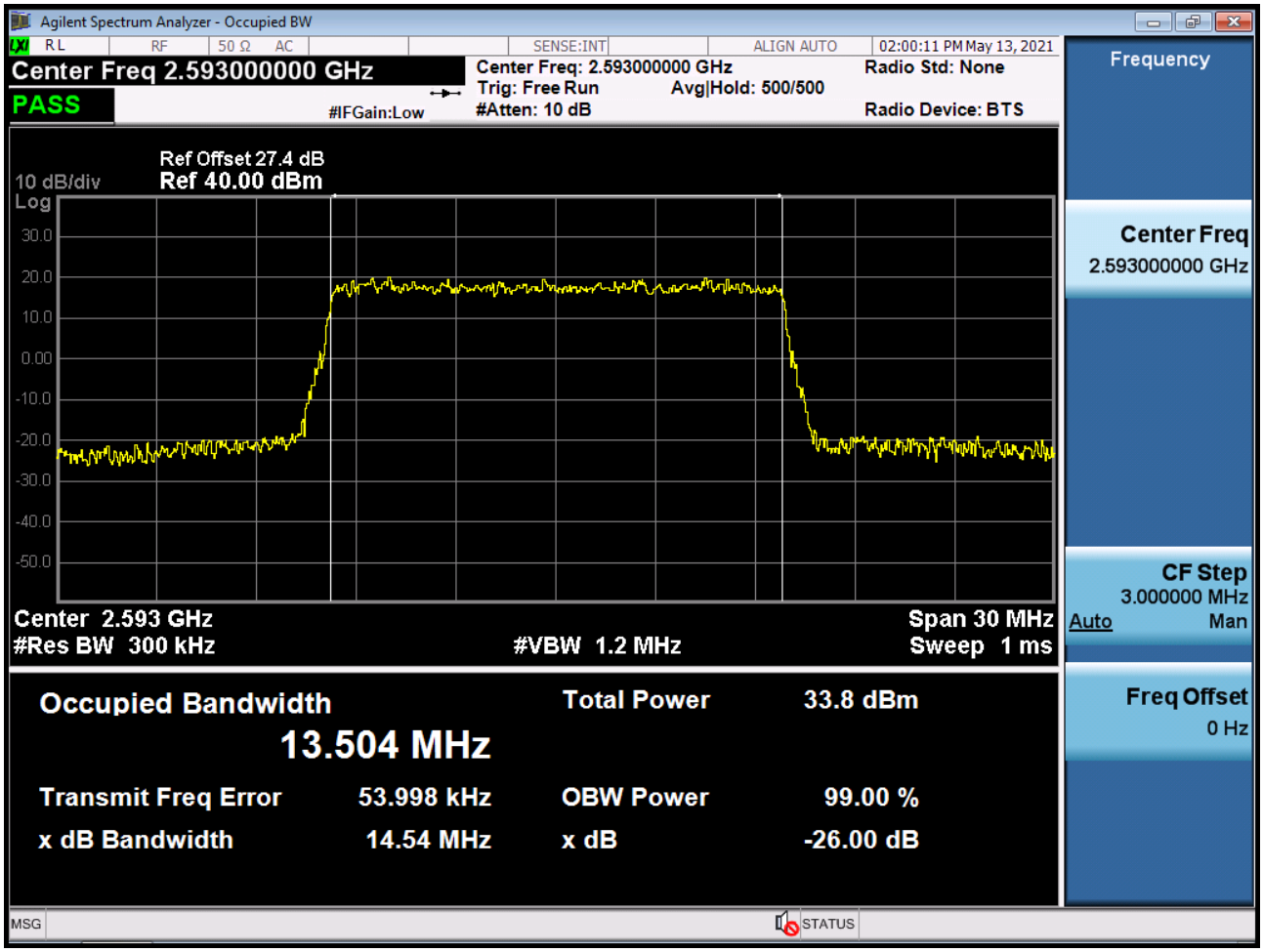
Occupied Bandwidth Plot (10 MHz Ch.40620 64-QAM RB 50) (POWER CLASS 2)



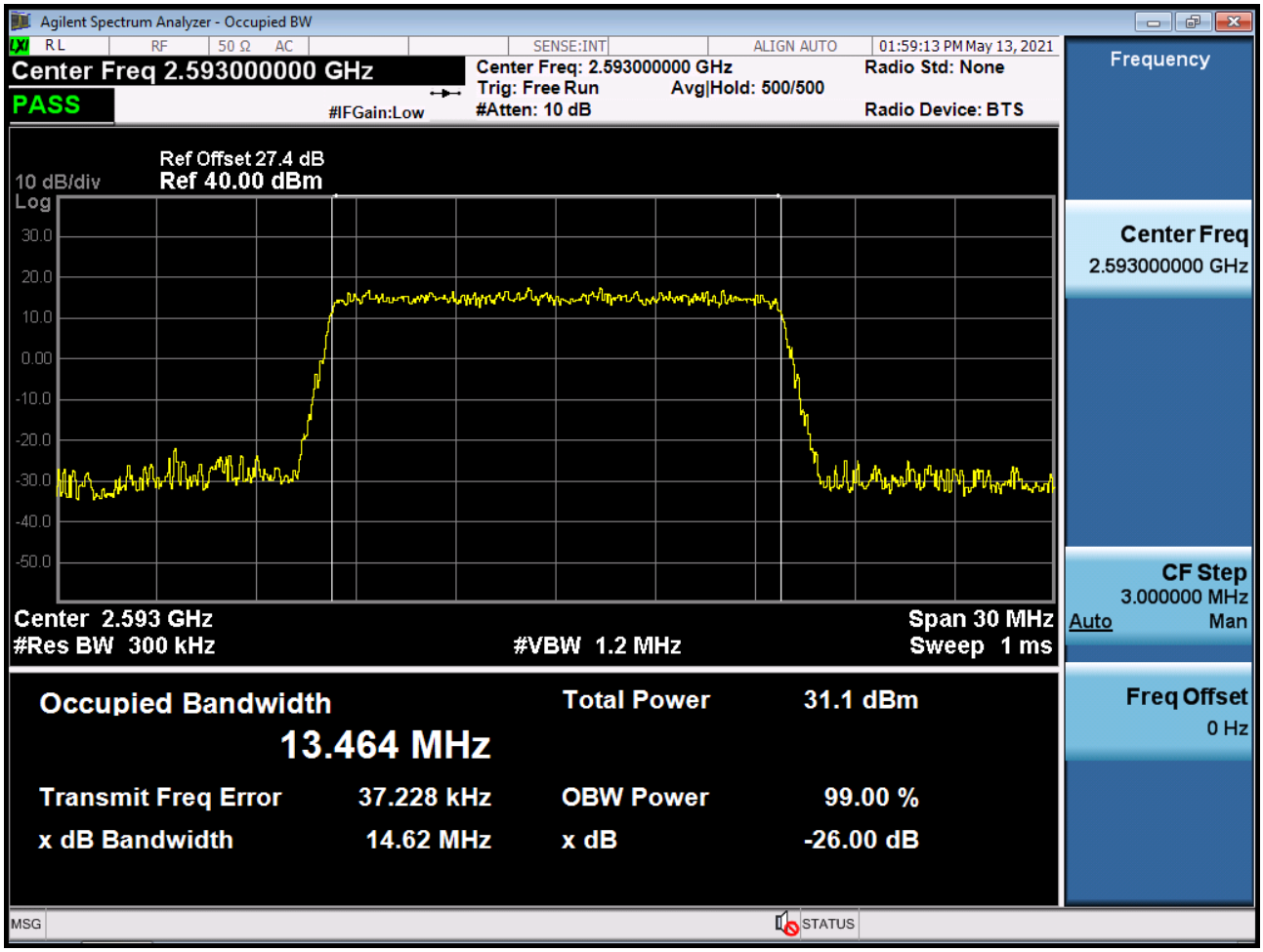
Occupied Bandwidth Plot (10 MHz Ch.40620 256-QAM RB 50) (POWER CLASS 2)



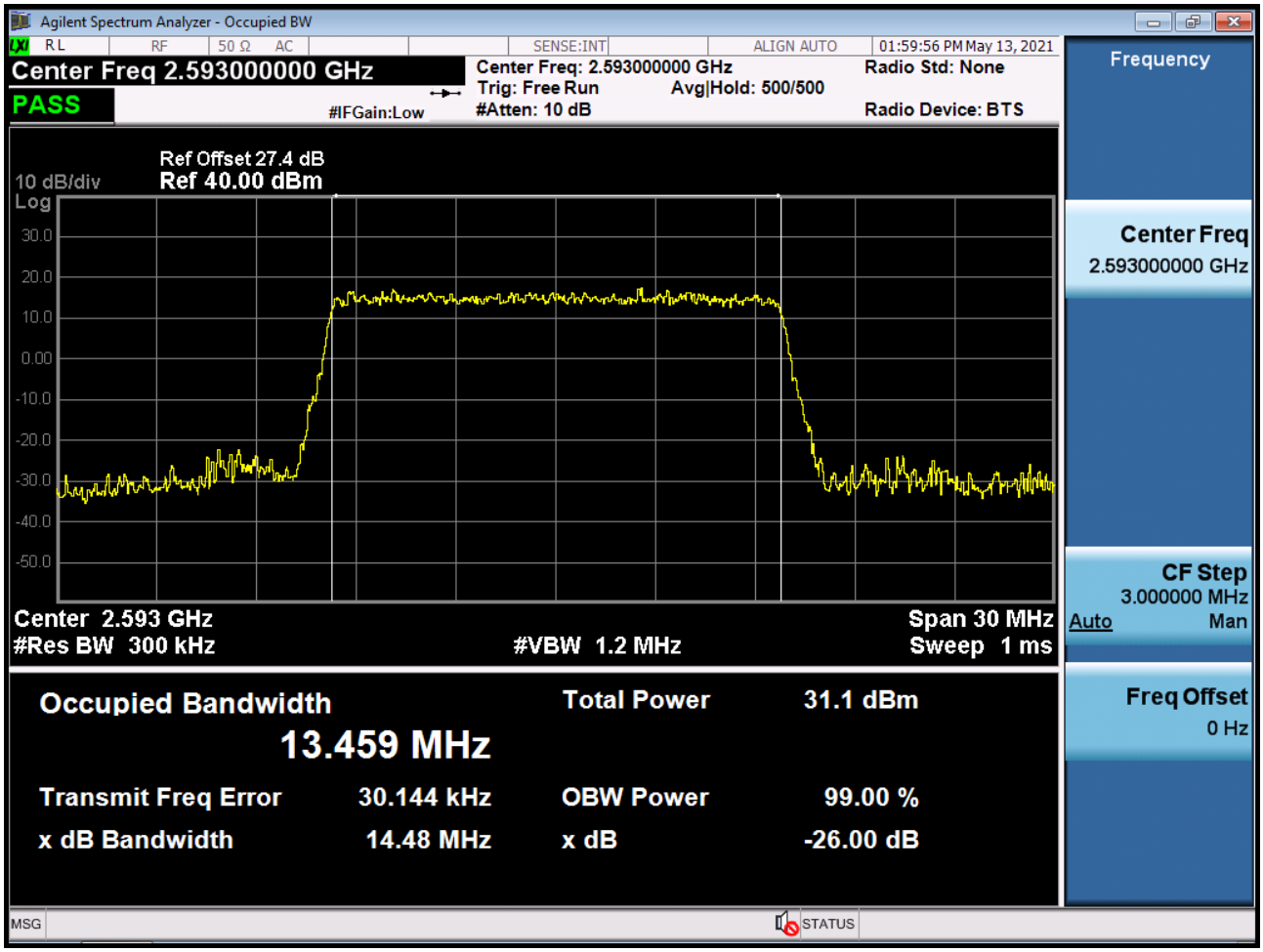
Occupied Bandwidth Plot (15 MHz Ch.40620 QPSK RB 75) (POWER CLASS 2)



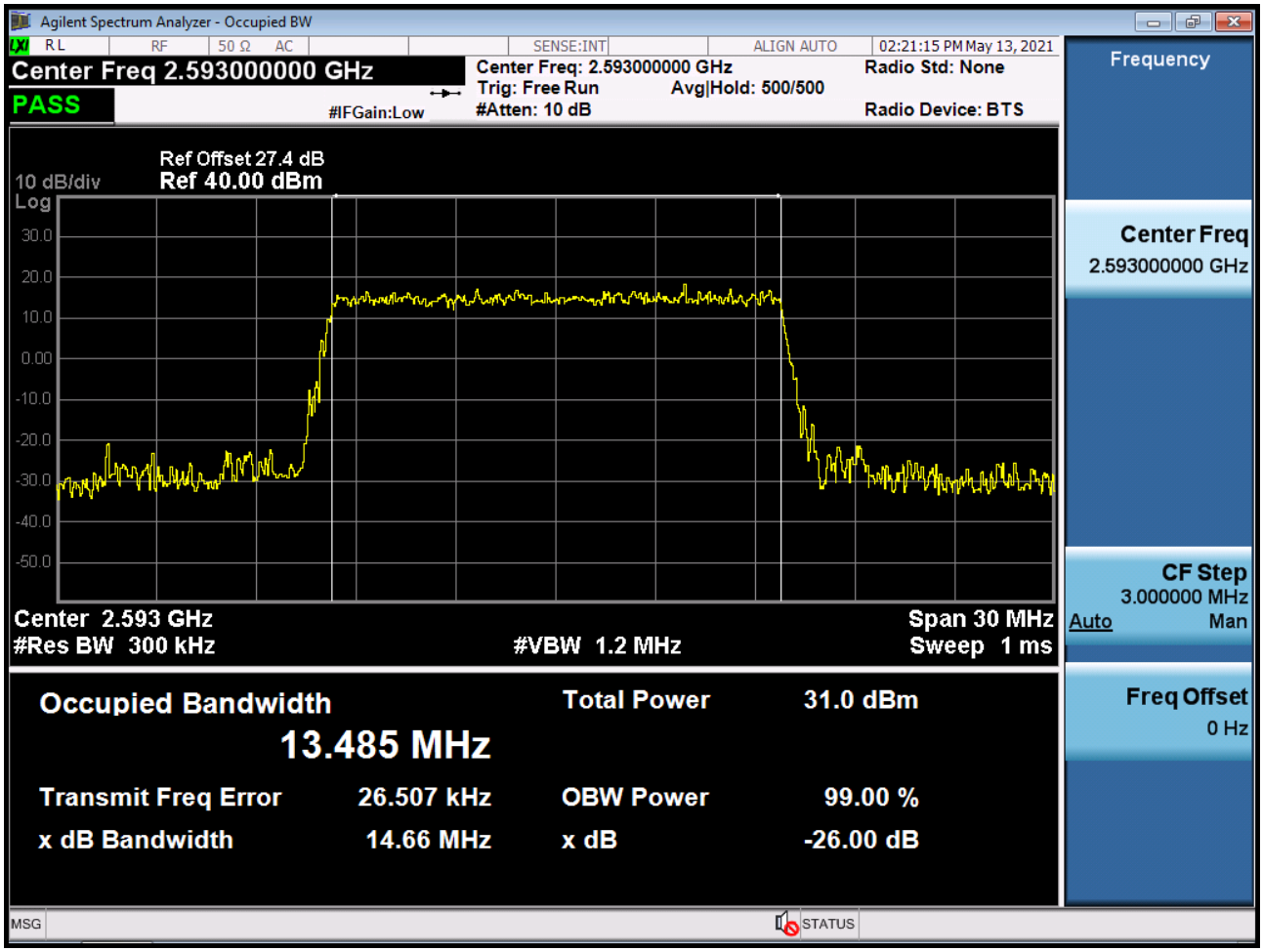
Occupied Bandwidth Plot (15 MHz Ch.40620 16-QAM RB 75) (POWER CLASS 2)



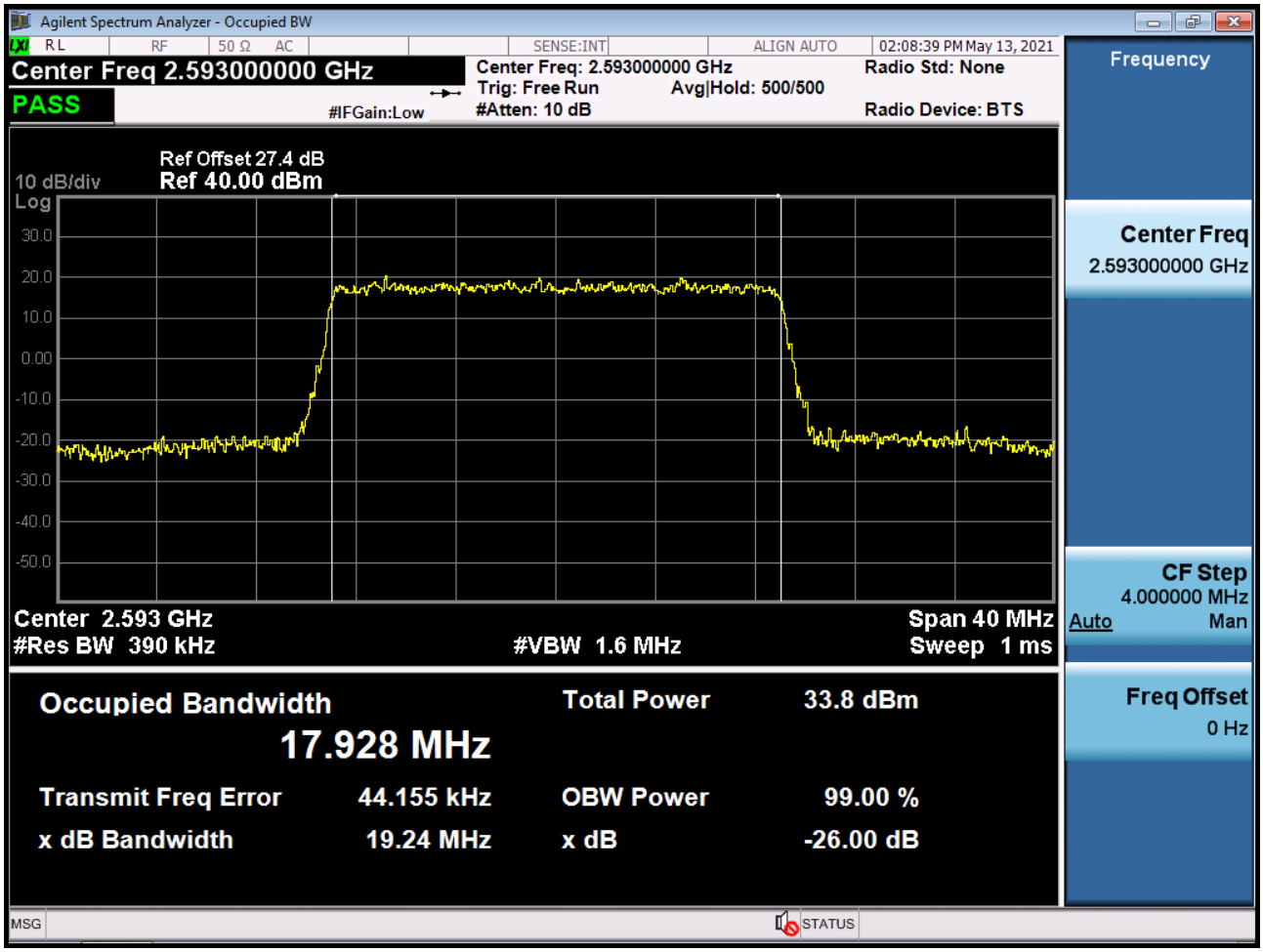
Occupied Bandwidth Plot (15 MHz Ch.40620 64-QAM RB 75) (POWER CLASS 2)



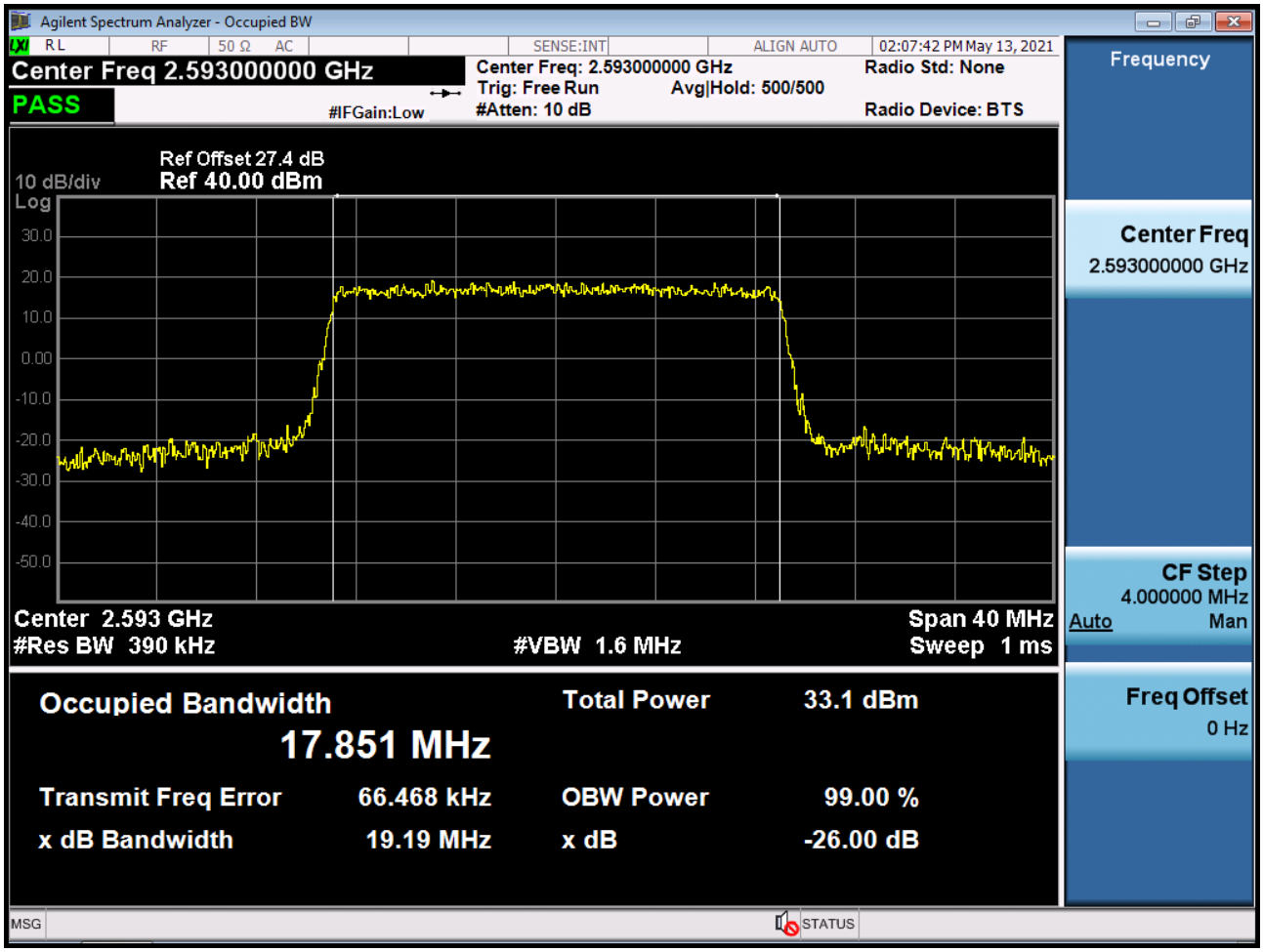
Occupied Bandwidth Plot (15 MHz Ch.40620 256-QAM RB 75) (POWER CLASS 2)



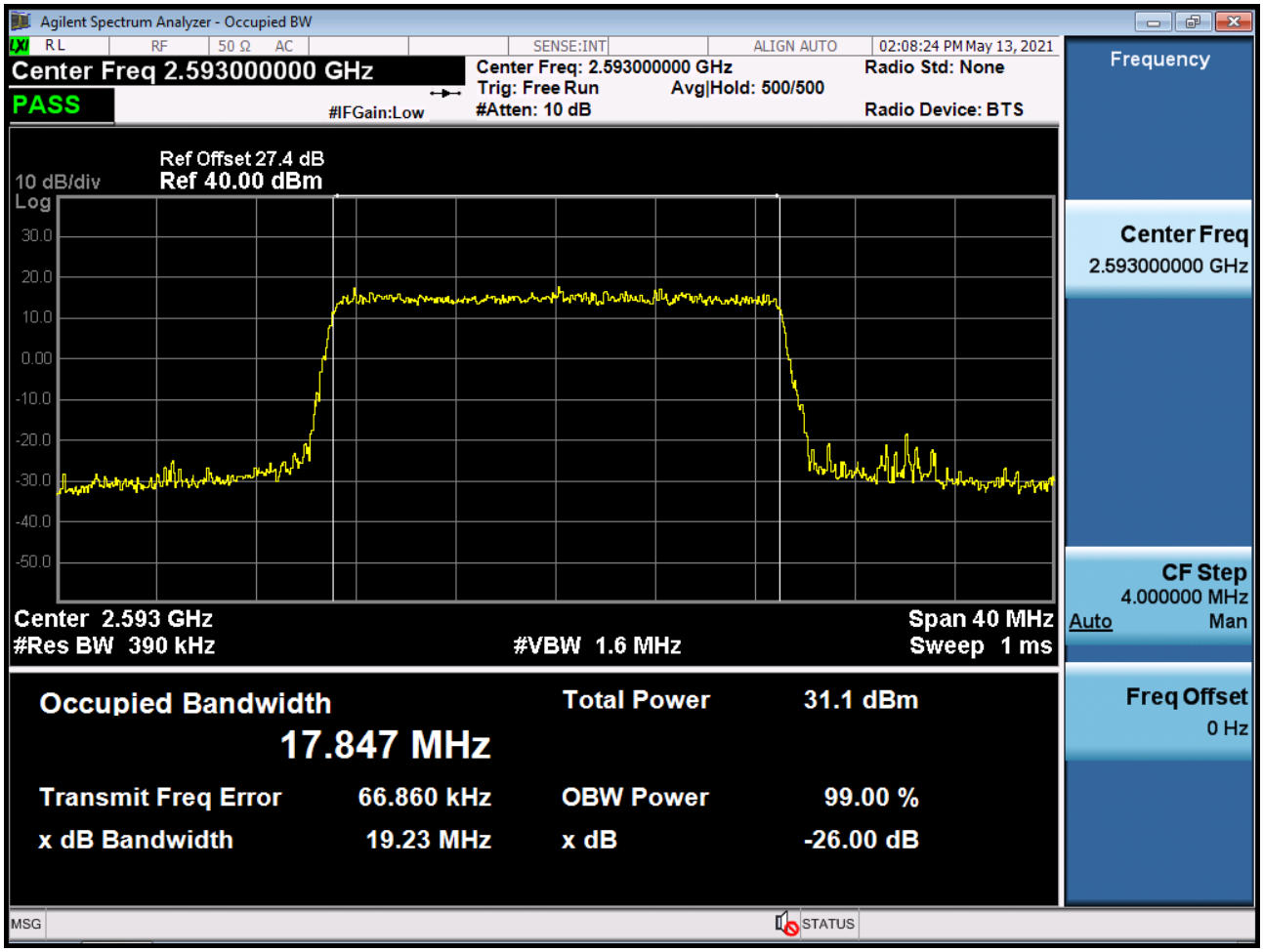
Occupied Bandwidth Plot (20 MHz Ch.40620 QPSK RB 100) (POWER CLASS 2)



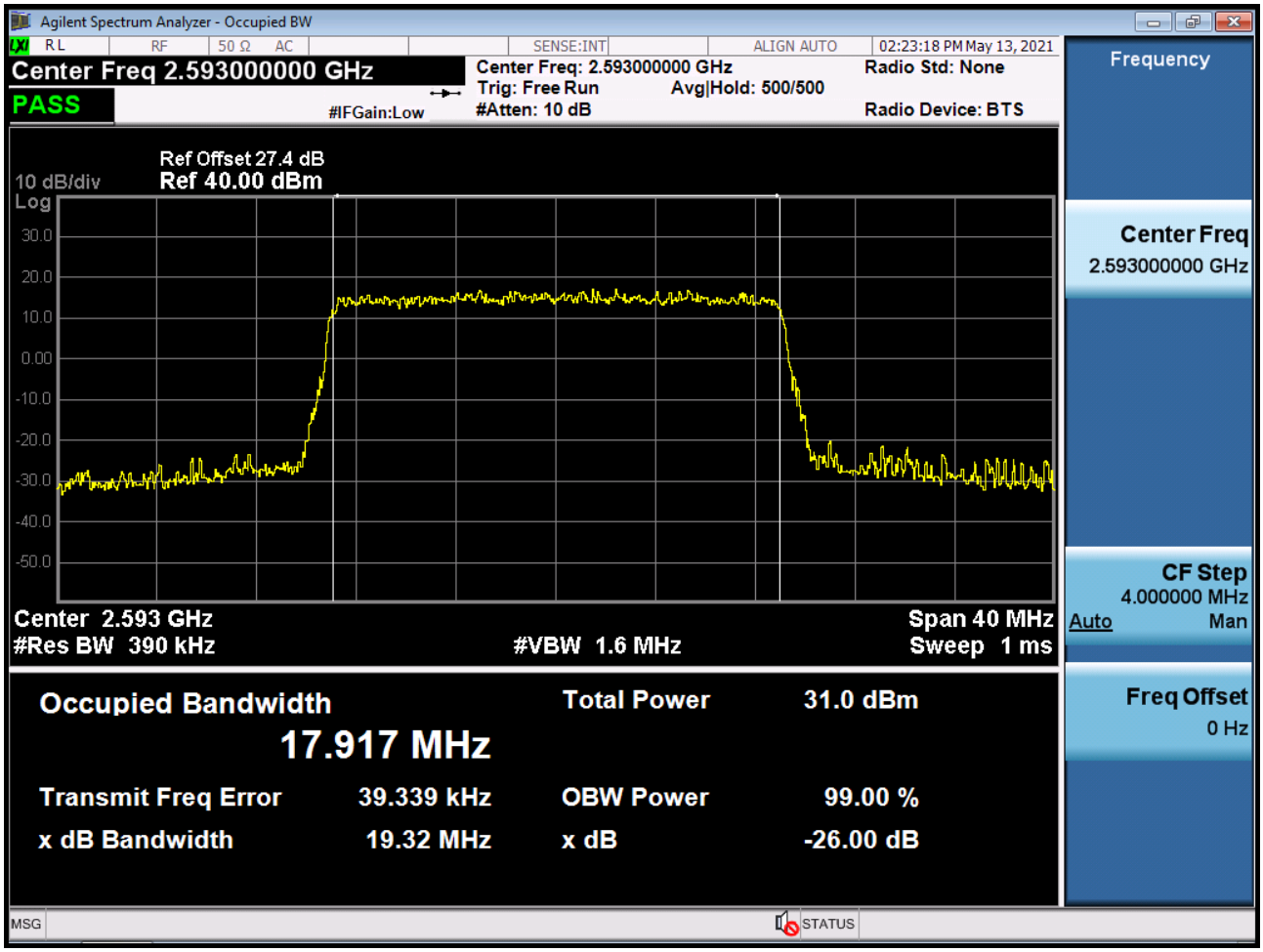
Occupied Bandwidth Plot (20 MHz Ch.40620 16-QAM RB 100) (POWER CLASS 2)



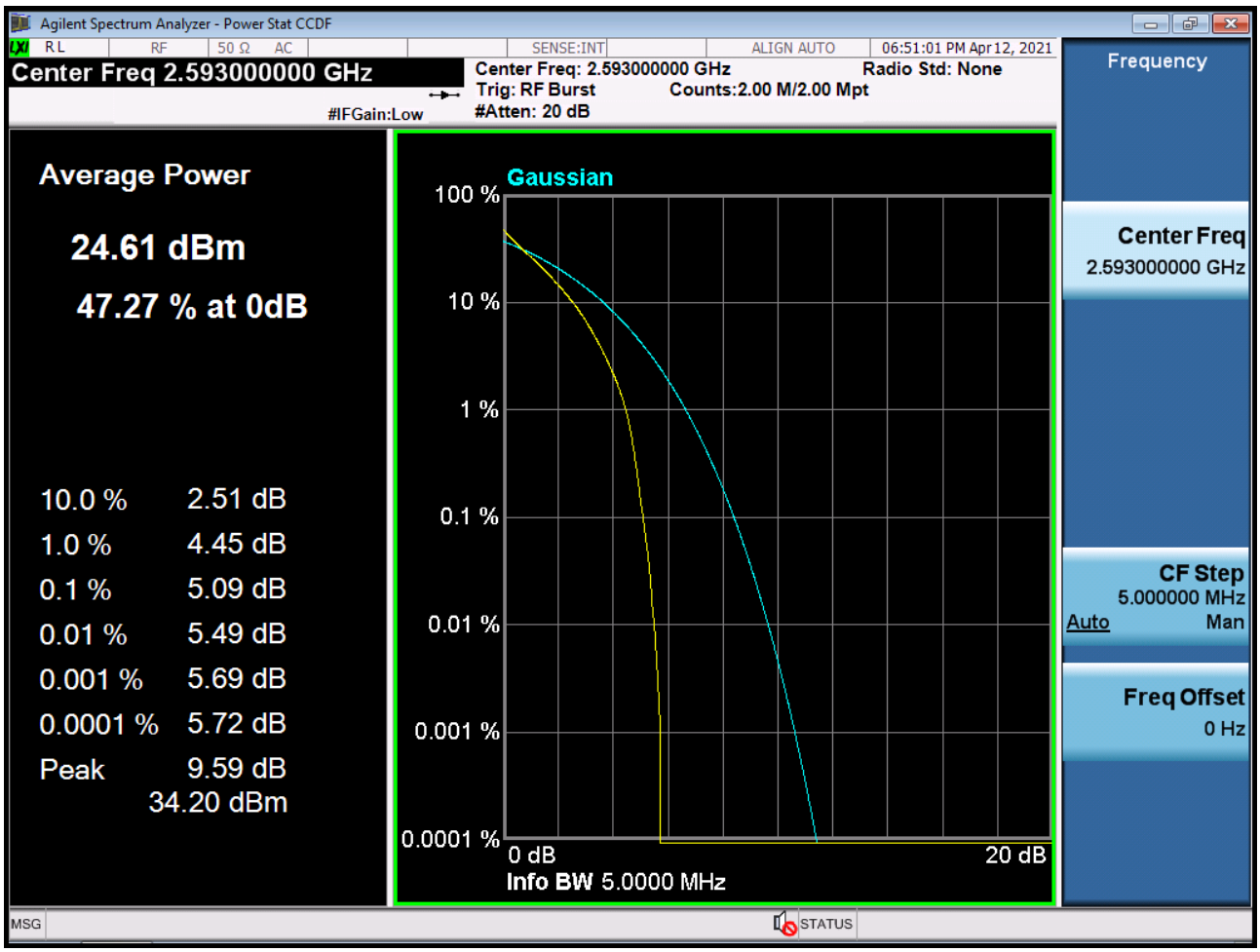
Occupied Bandwidth Plot (20 MHz Ch.40620 64-QAM RB 100) (POWER CLASS 2)



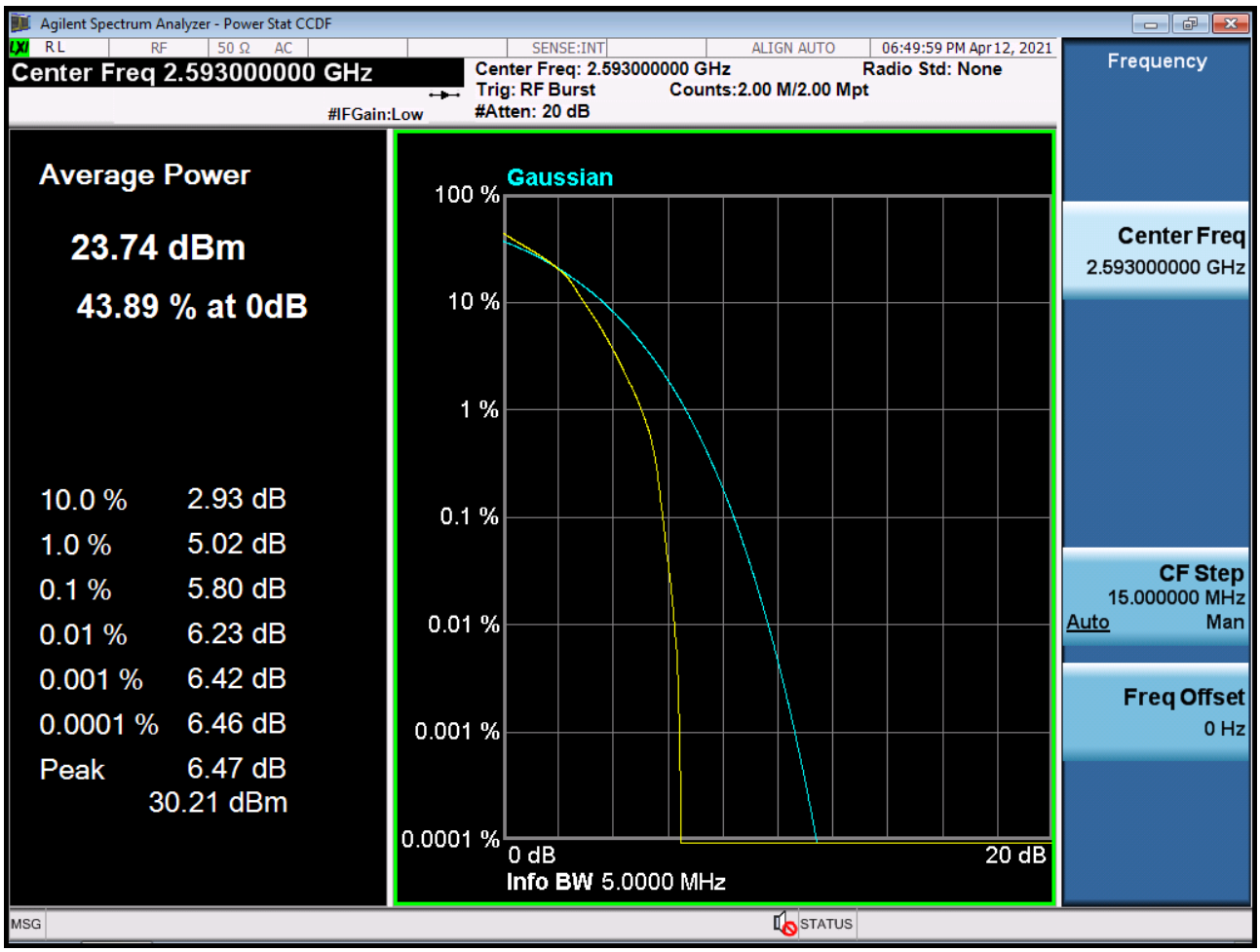
Occupied Bandwidth Plot (20 MHz Ch.40620 256-QAM RB 100) (POWER CLASS 2)



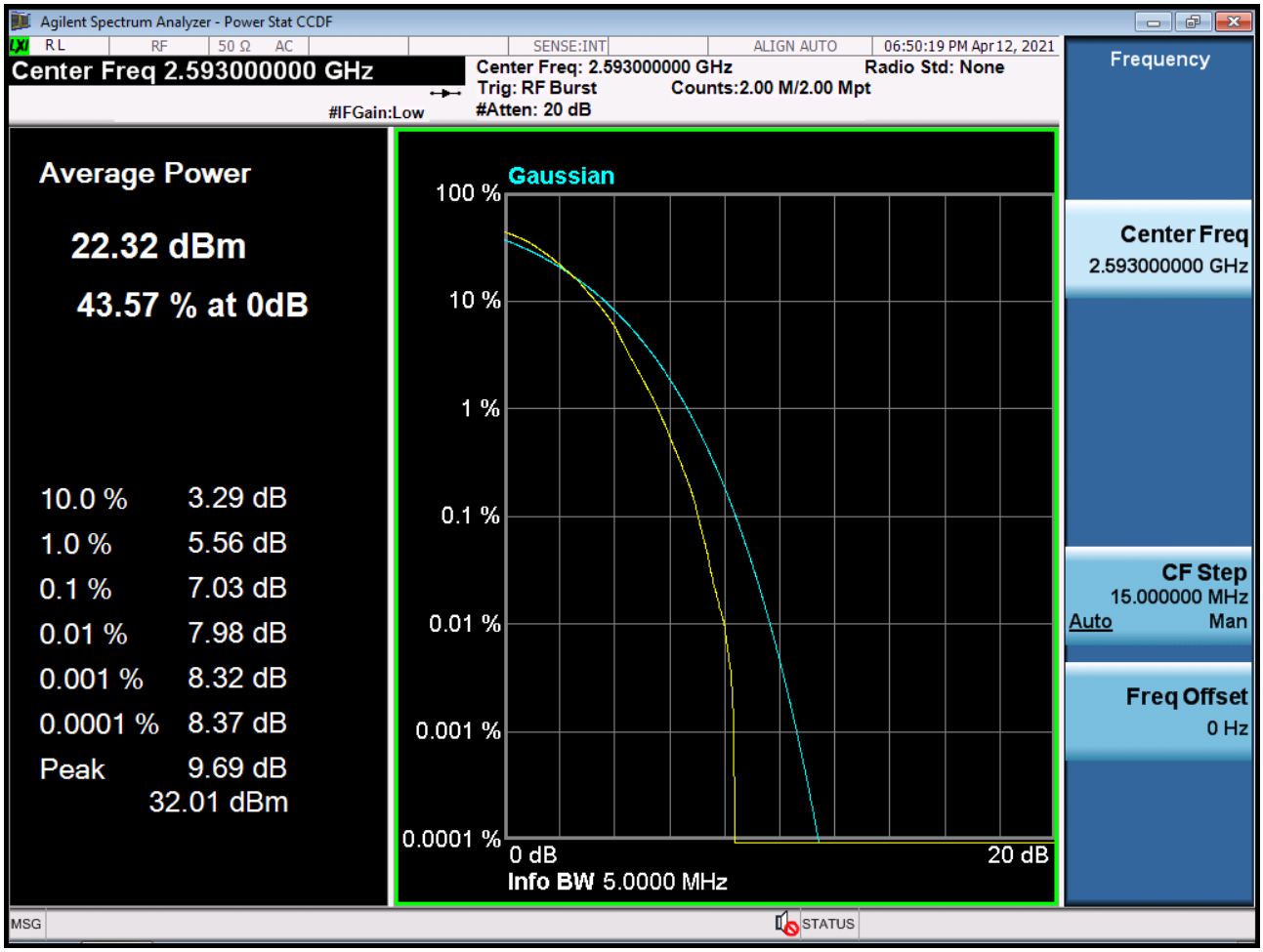
PAR Plot (5M BW_Ch.40620_QPSK_RB25_0) (POWER CLASS 3)



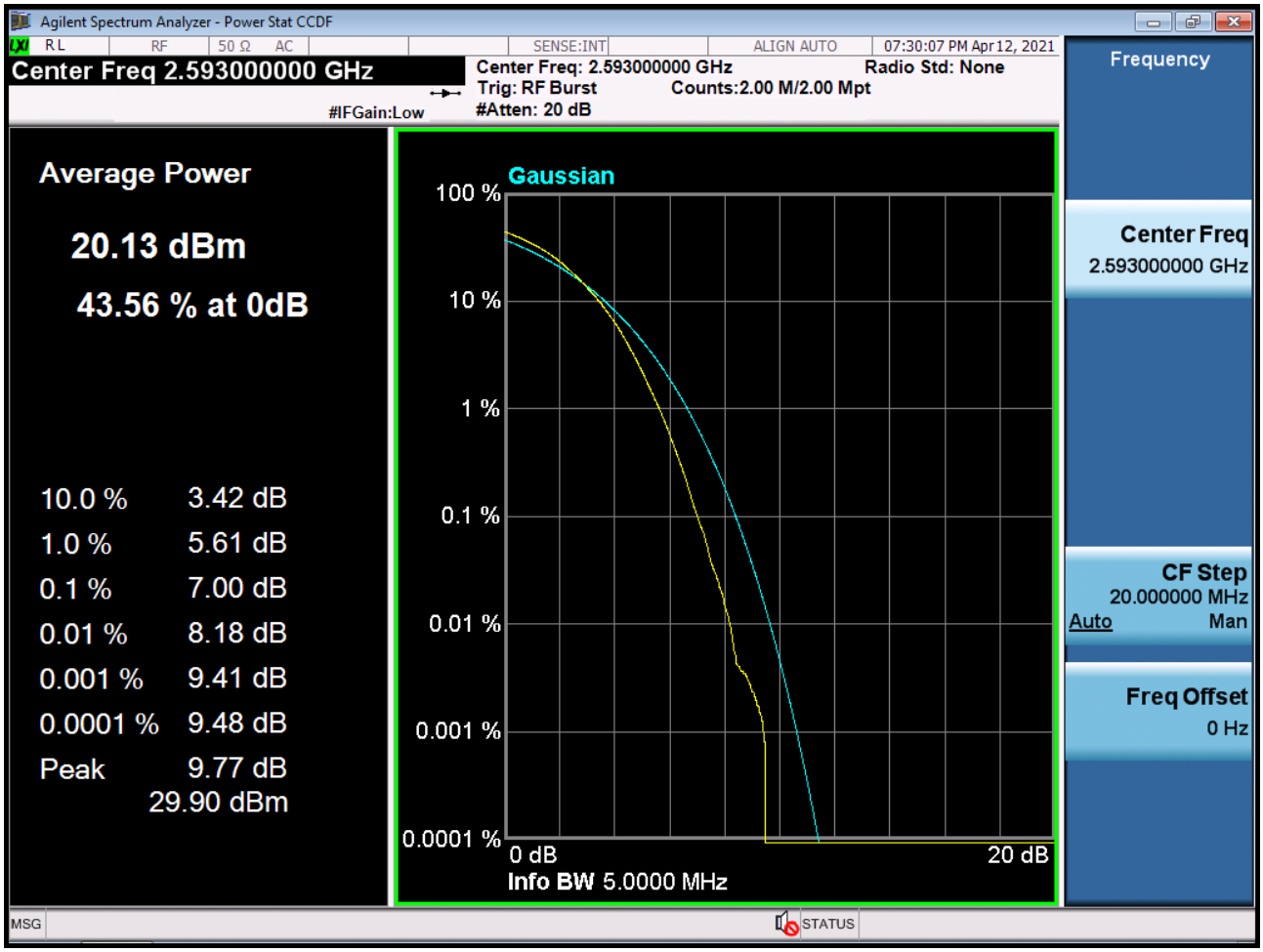
PAR Plot (5M BW_Ch.40620_16QAM_RB25_0) (POWER CLASS 3)



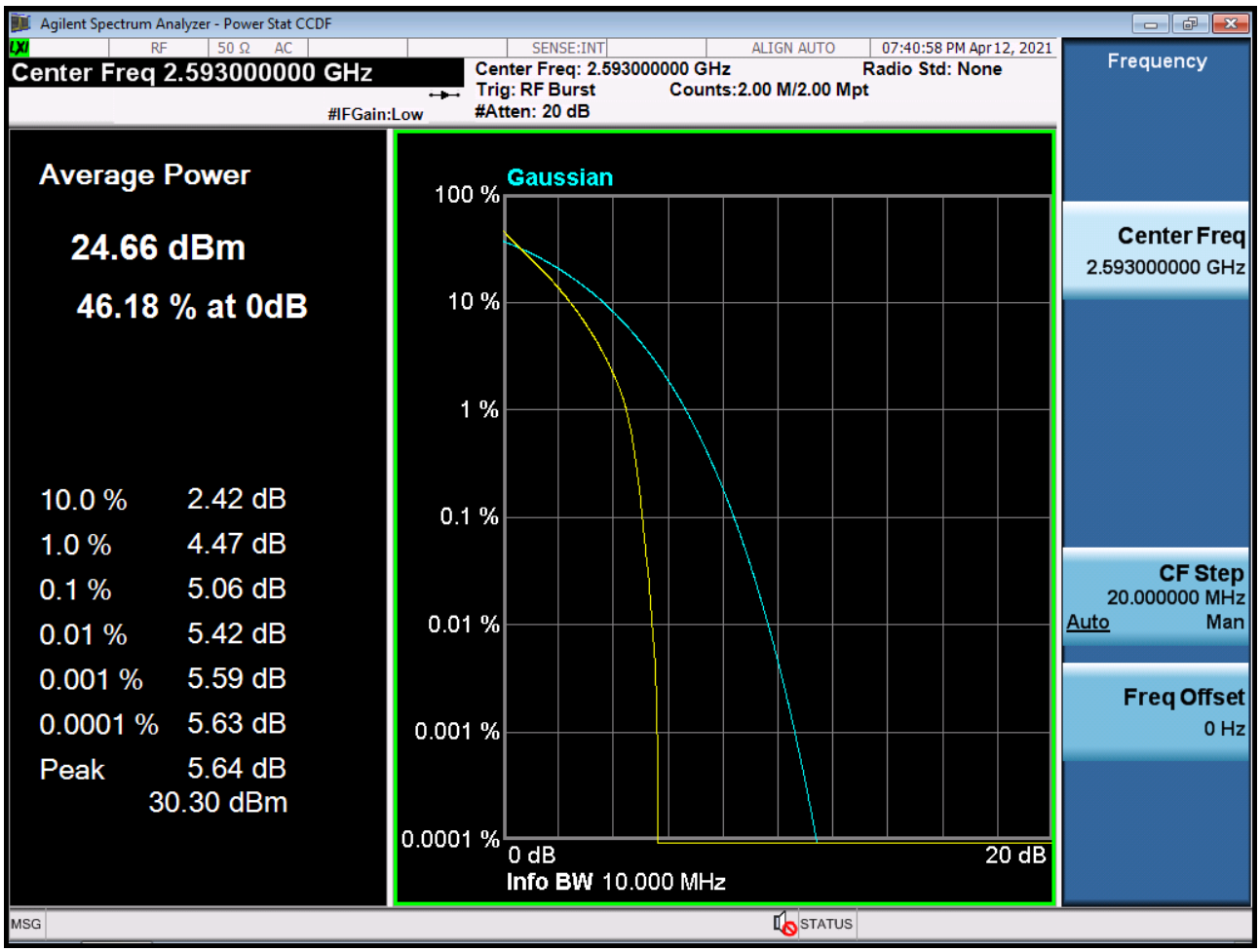
PAR Plot (5M BW_Ch.40620_64QAM_RB25_0) (POWER CLASS 3)



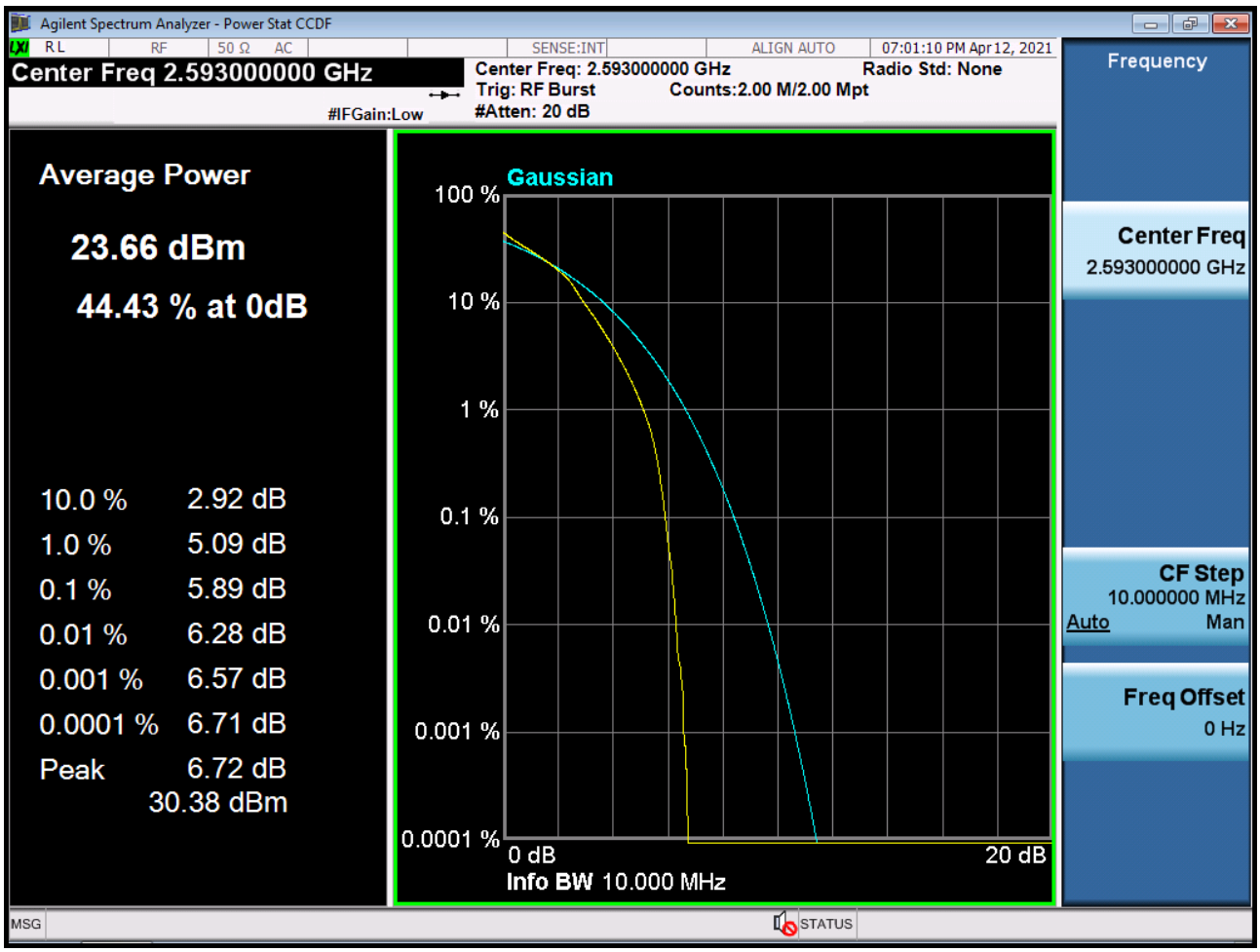
PAR Plot (5M BW_Ch.40620_256QAM_RB25_0) (POWER CLASS 3)



PAR Plot (10M BW_Ch.40620_QPSK_RB50_0) (POWER CLASS 3)

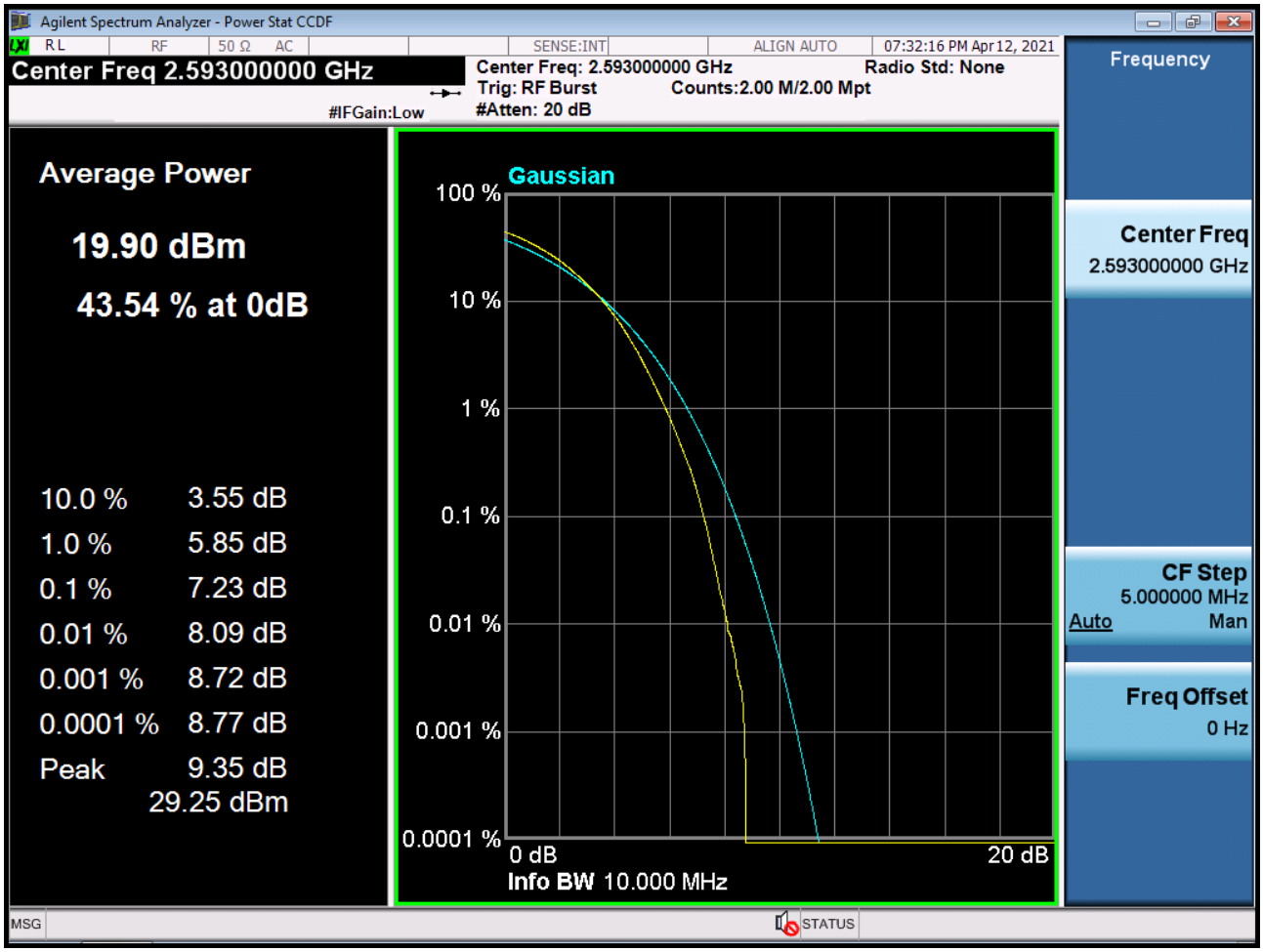


PAR Plot (10M BW_Ch.40620_16QAM_RB50_0) (POWER CLASS 3)

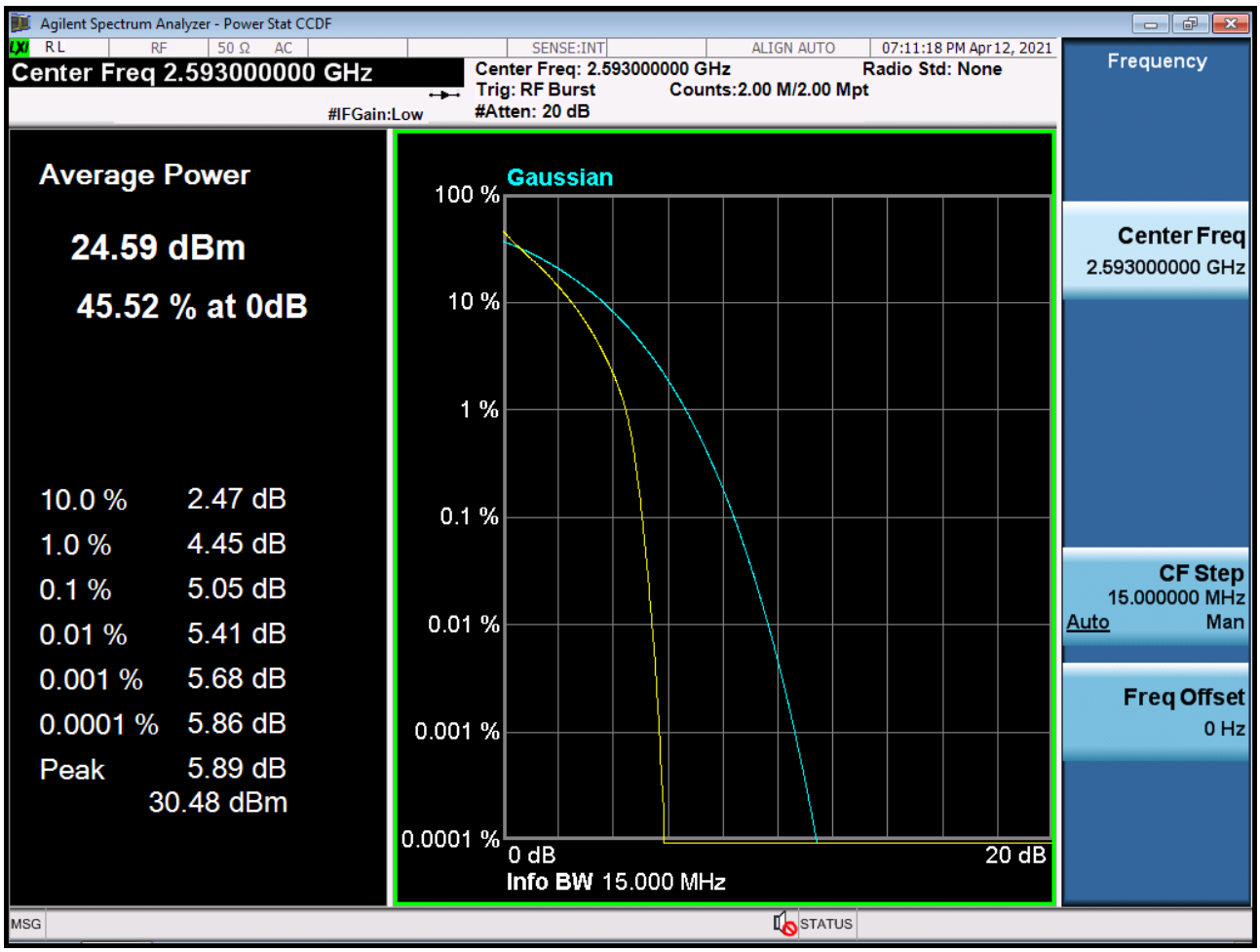


PAR Plot (10M BW_Ch.40620_64QAM_RB50_0) (POWER CLASS 3)

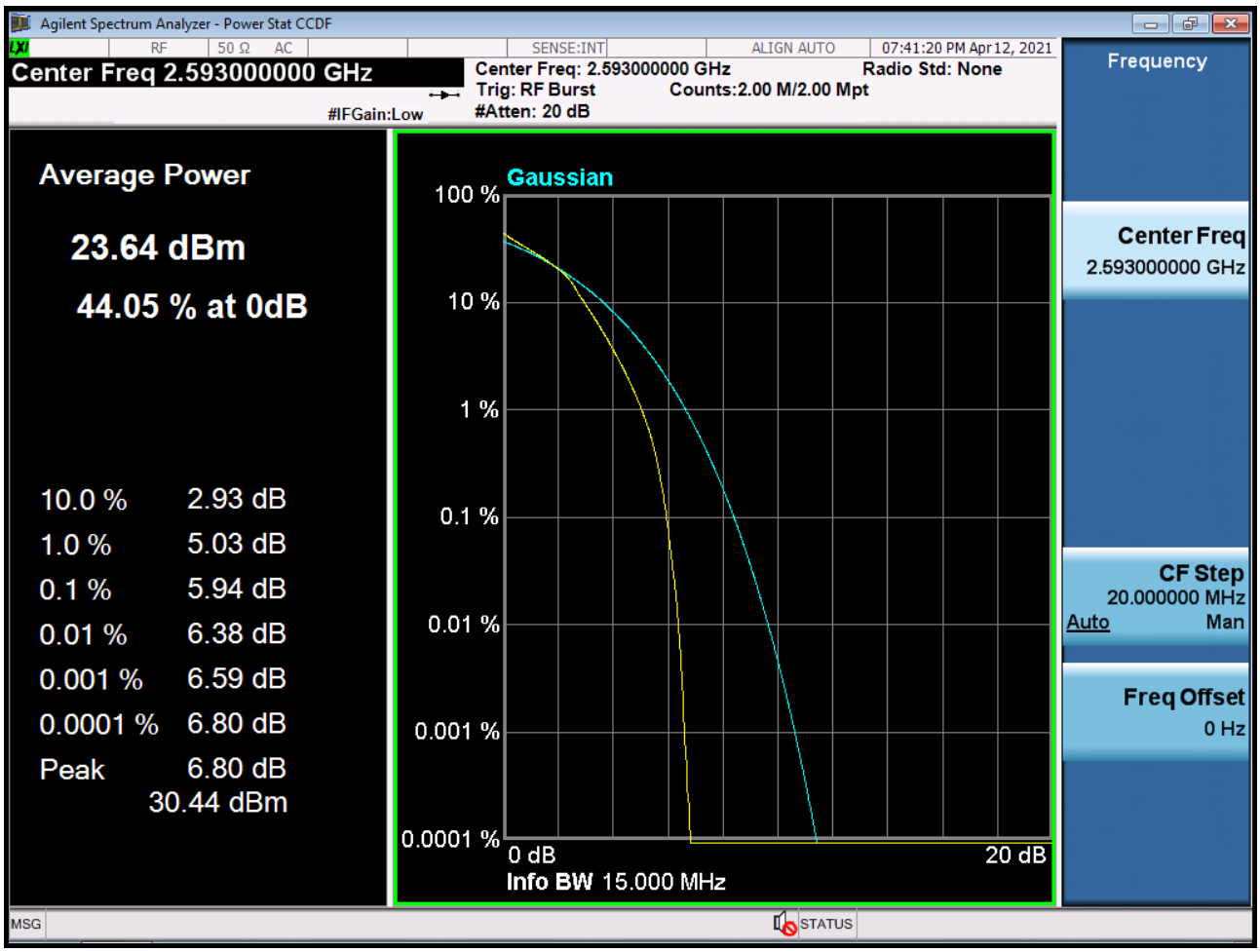
PAR Plot (10M BW_Ch.40620_256QAM_RB50_0) (POWER CLASS 3)



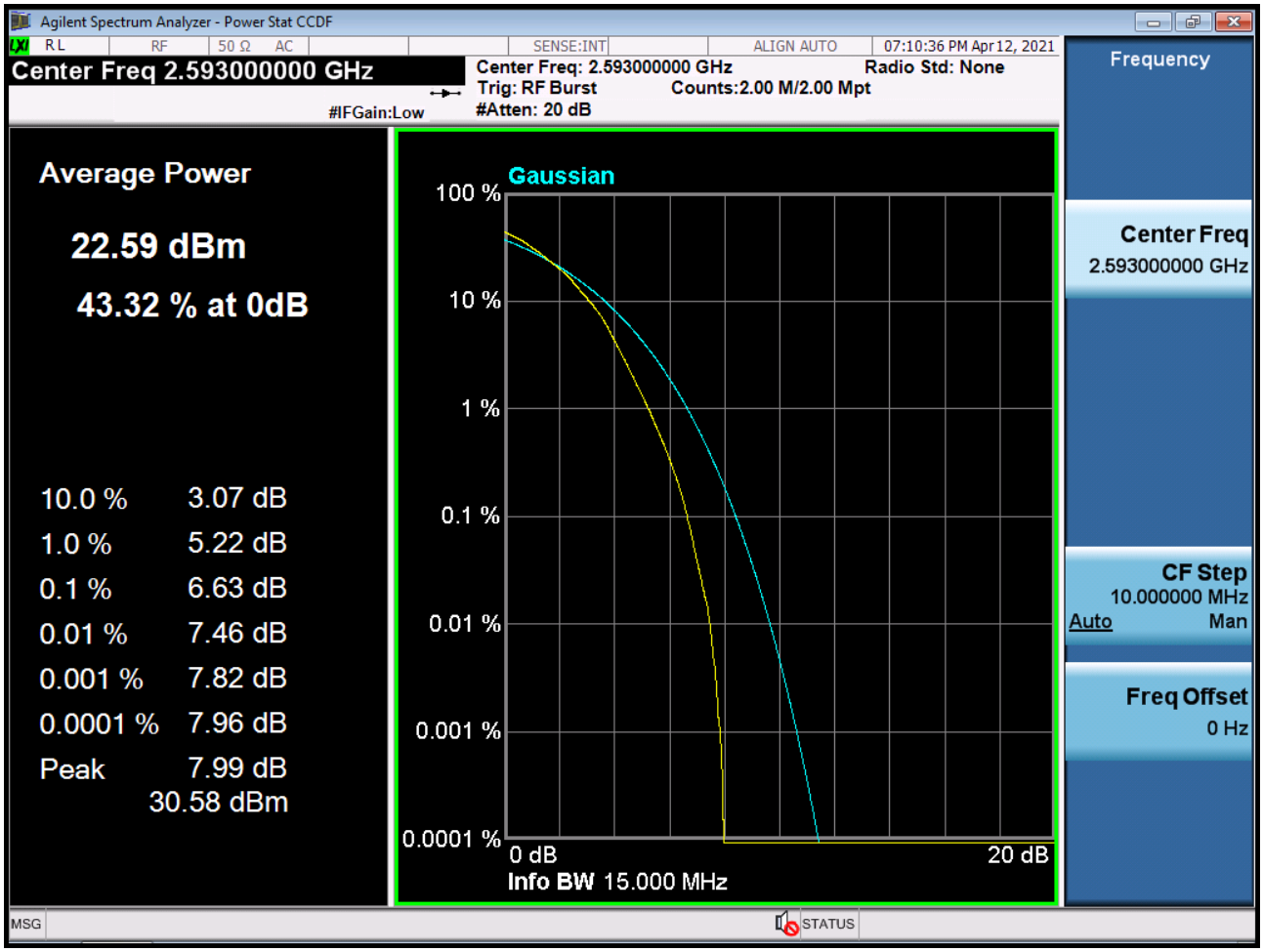
PAR Plot (15M BW_Ch.40620_QPSK_RB75_0) (POWER CLASS 3)



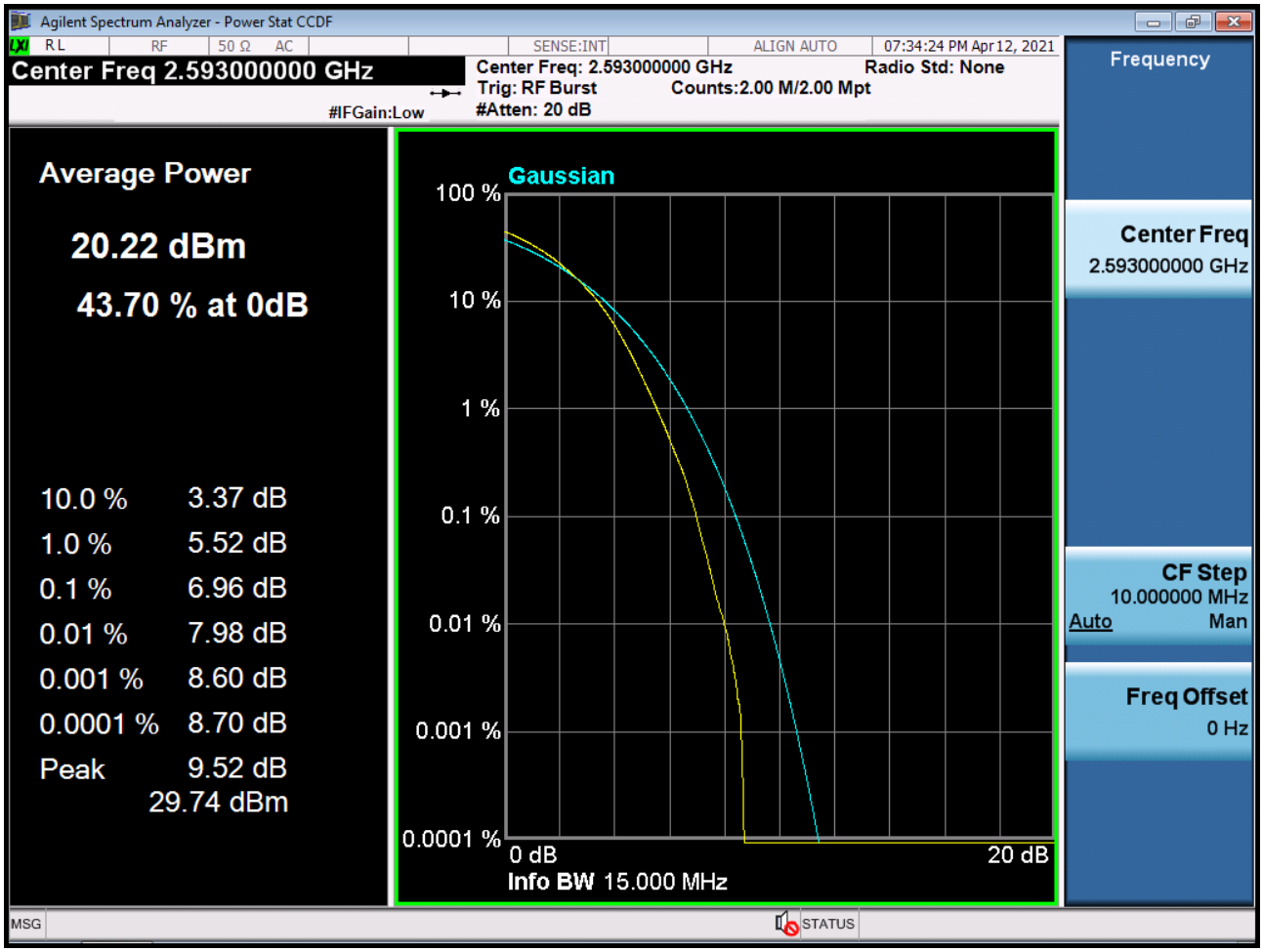
PAR Plot (15M BW_Ch.40620_16QAM_RB75_0) (POWER CLASS 3)



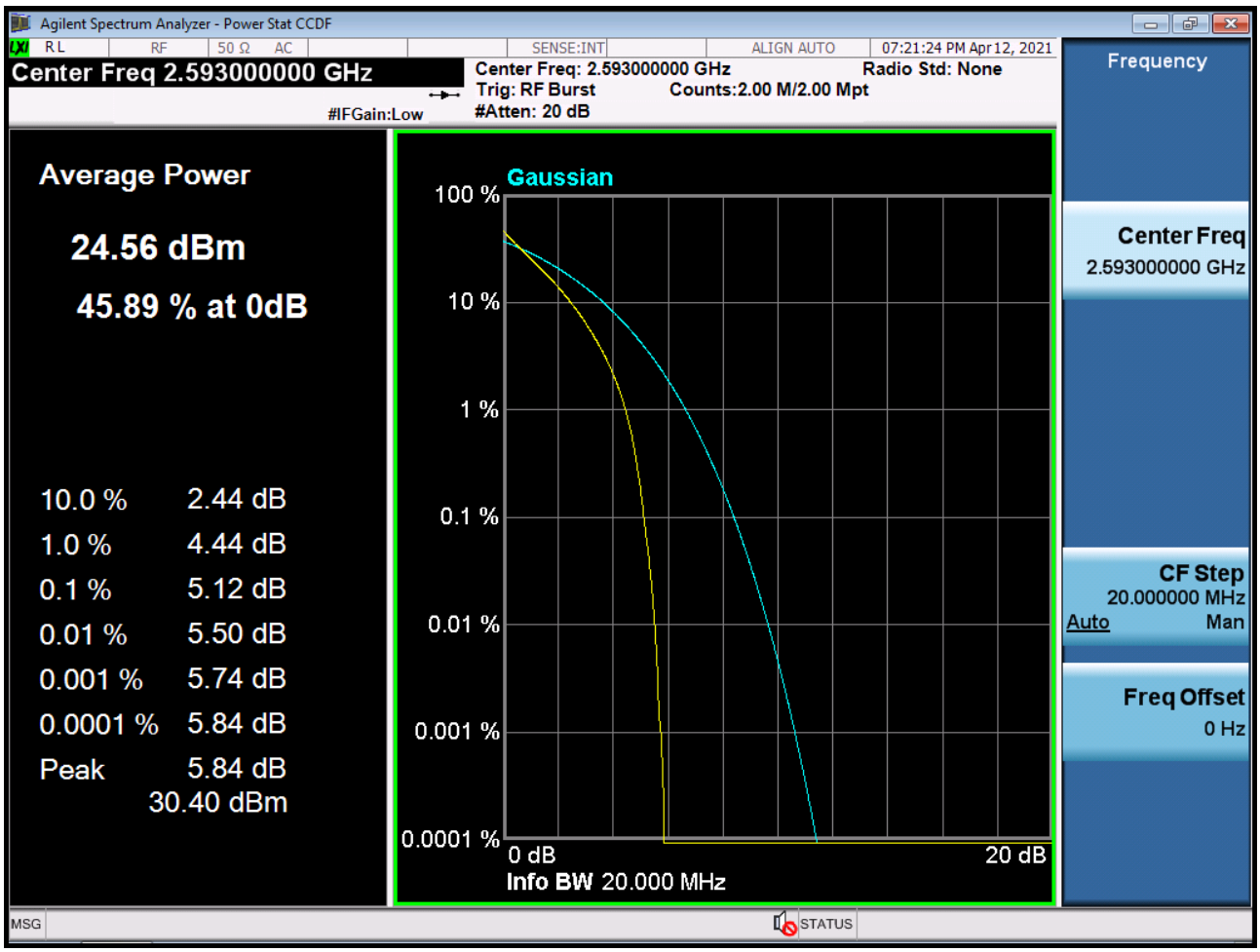
PAR Plot (15M BW_Ch.40620_64QAM_RB75_0) (POWER CLASS 3)



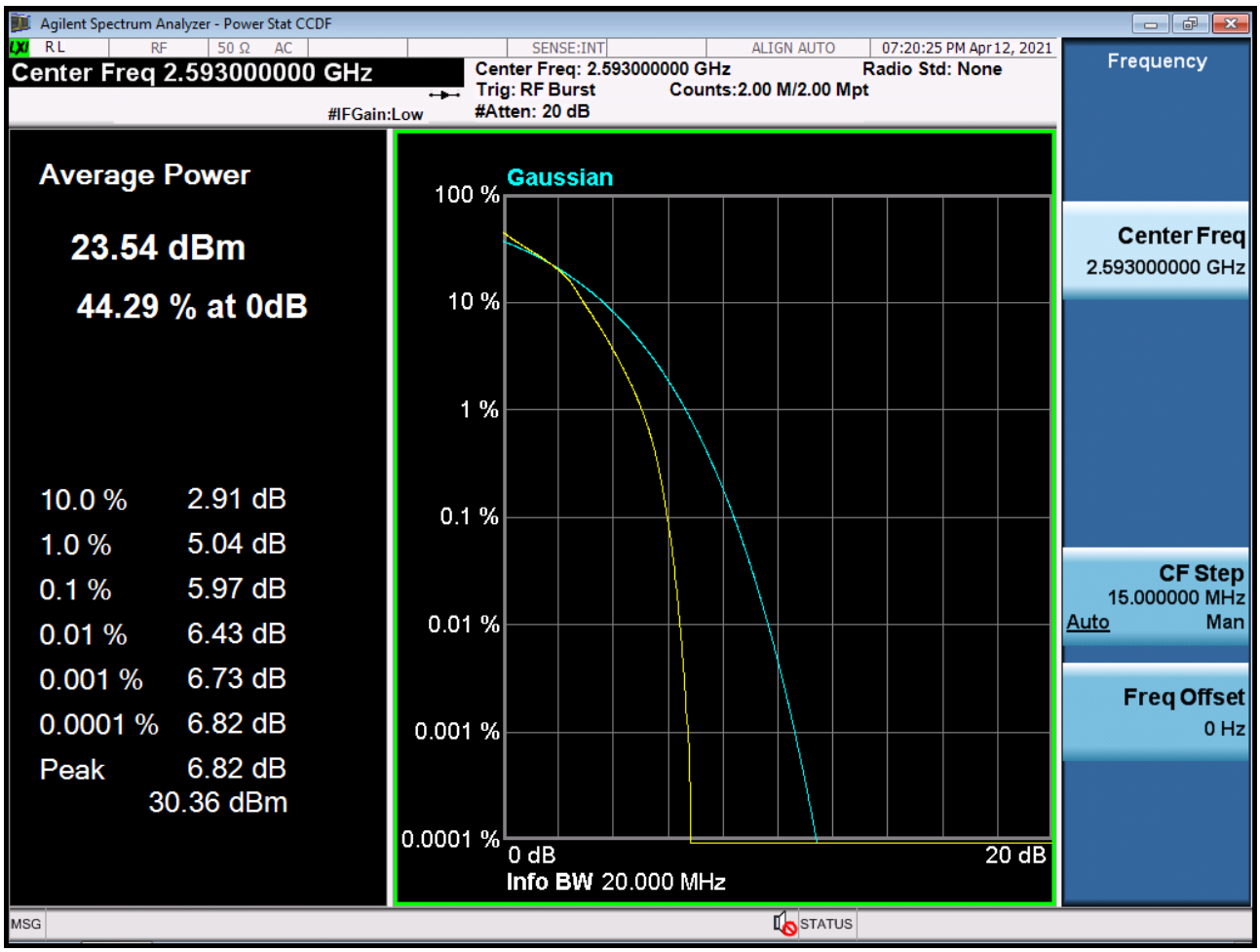
PAR Plot (15M BW_Ch.40620_256QAM_RB75_0) (POWER CLASS 3)



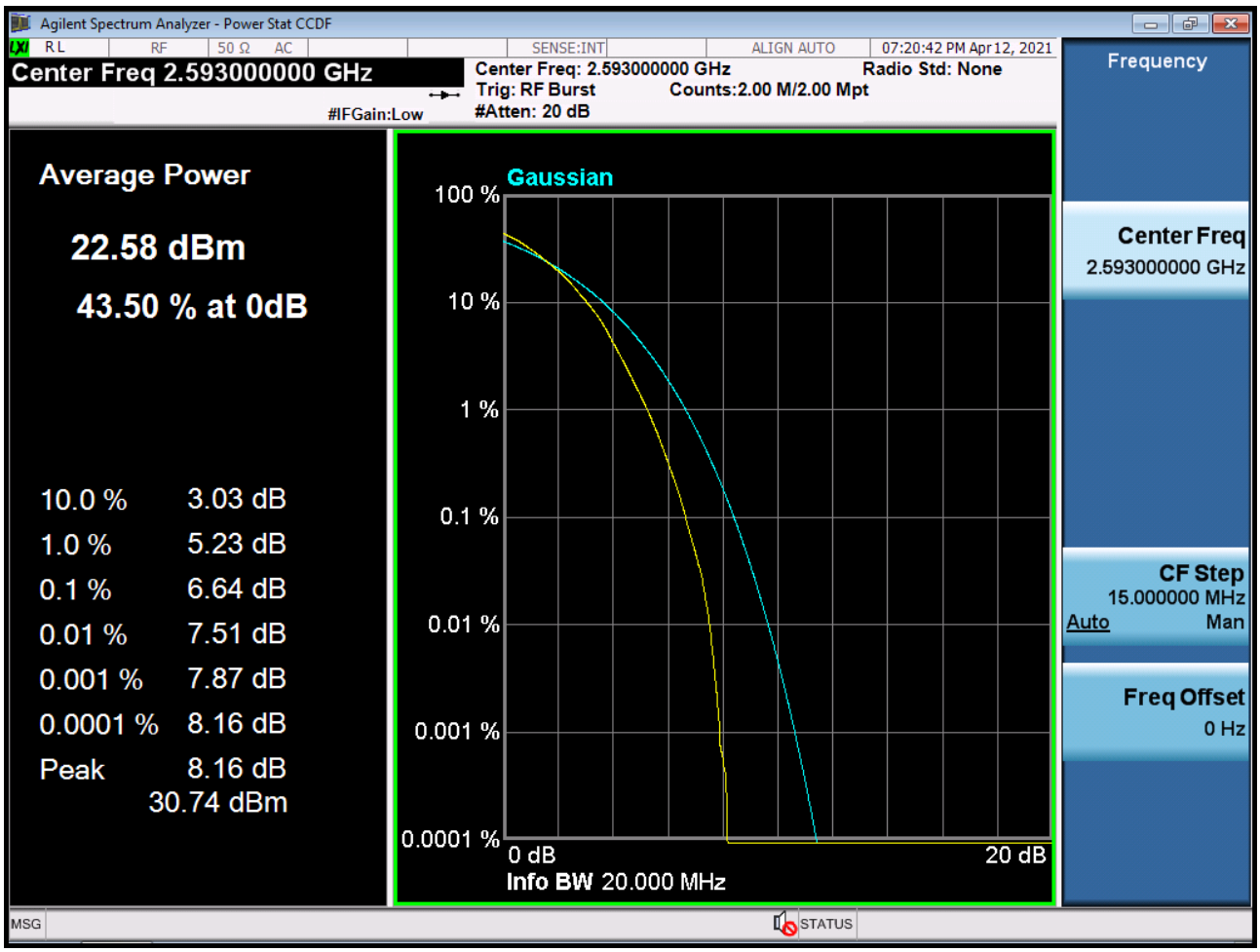
PAR Plot (20M BW_Ch.40620_QPSK_RB100_0) (POWER CLASS 3)



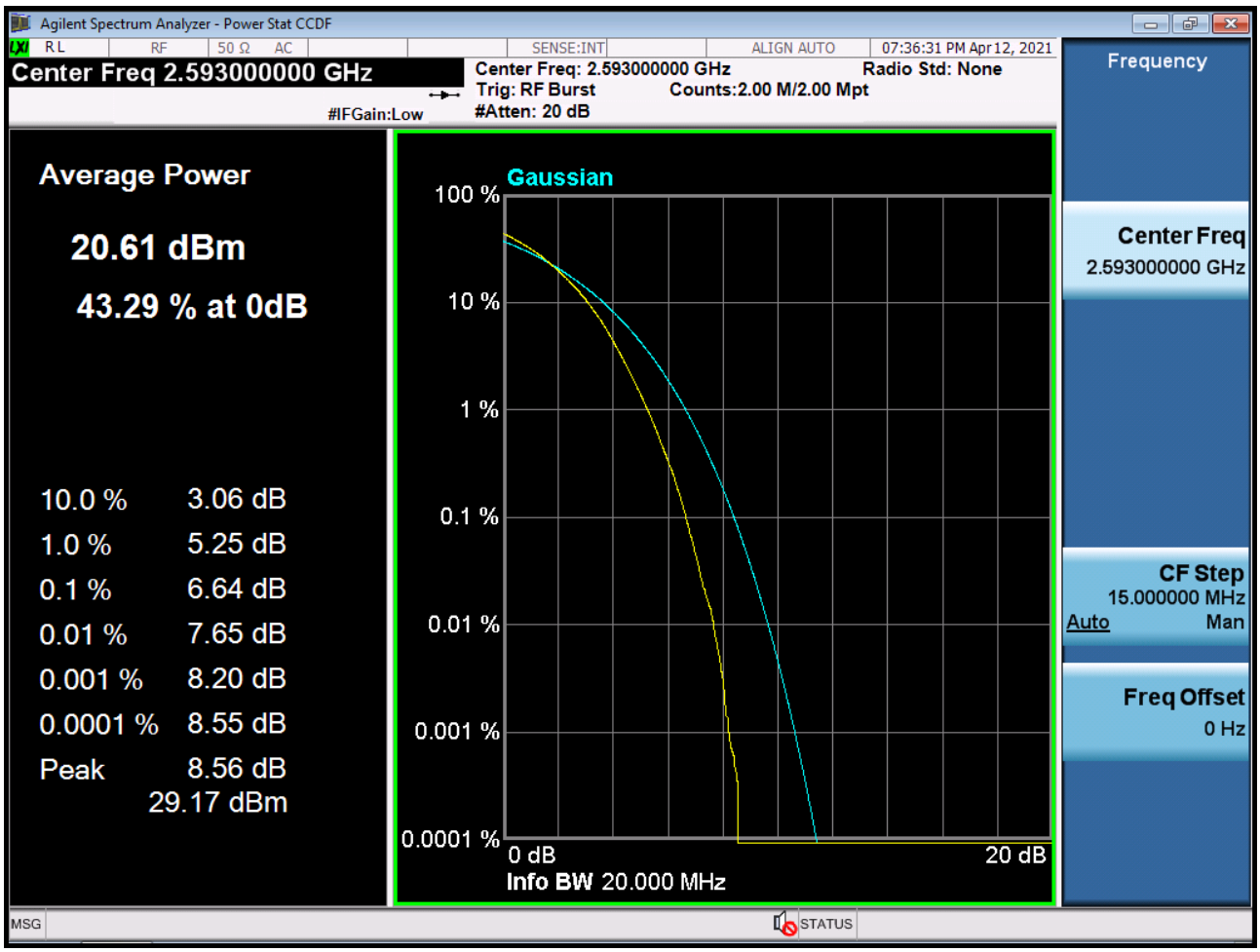
PAR Plot (20M BW_Ch.40620_16QAM_RB100_0) (POWER CLASS 3)



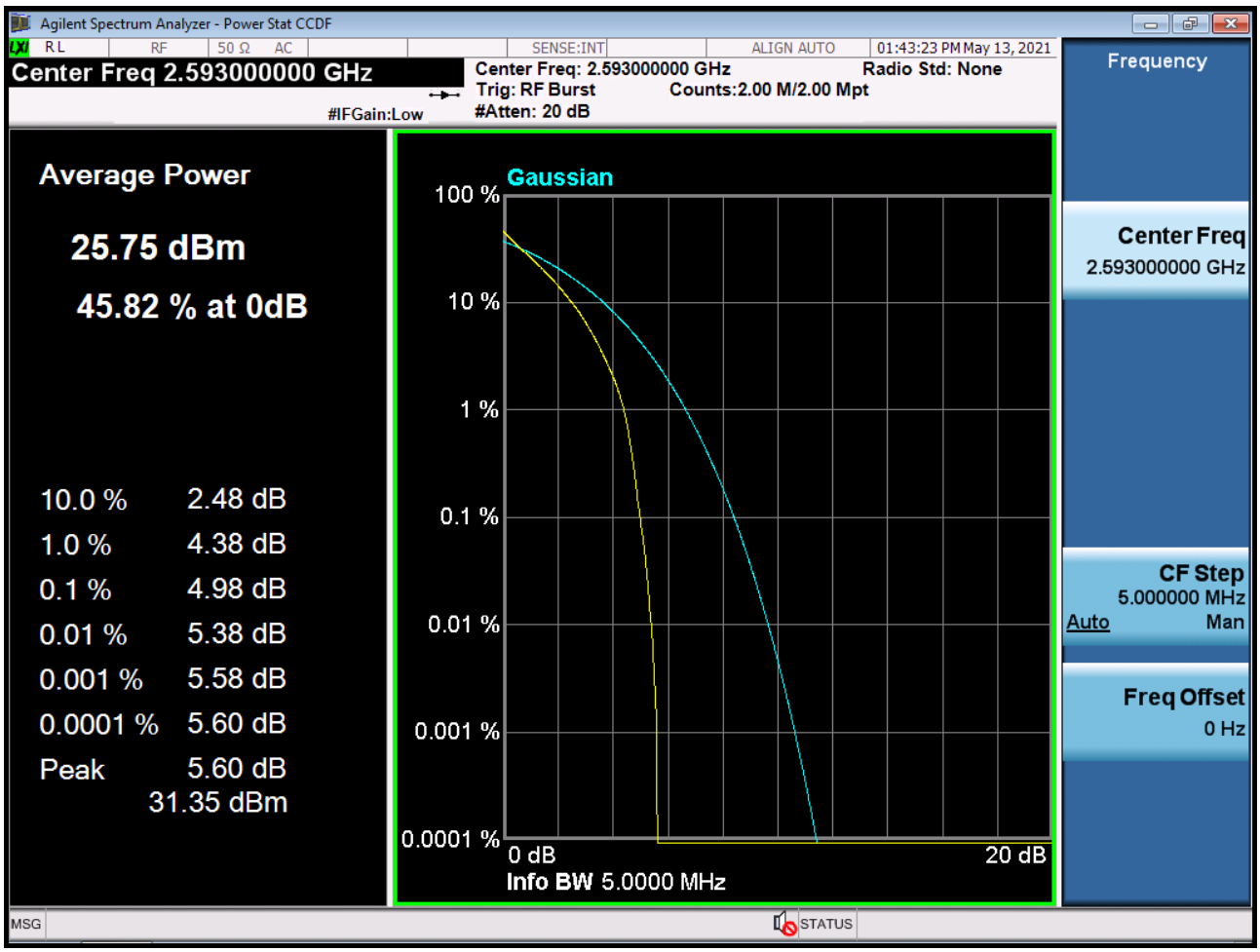
PAR Plot (20M BW_Ch.40620_64QAM_RB100_0) (POWER CLASS 3)



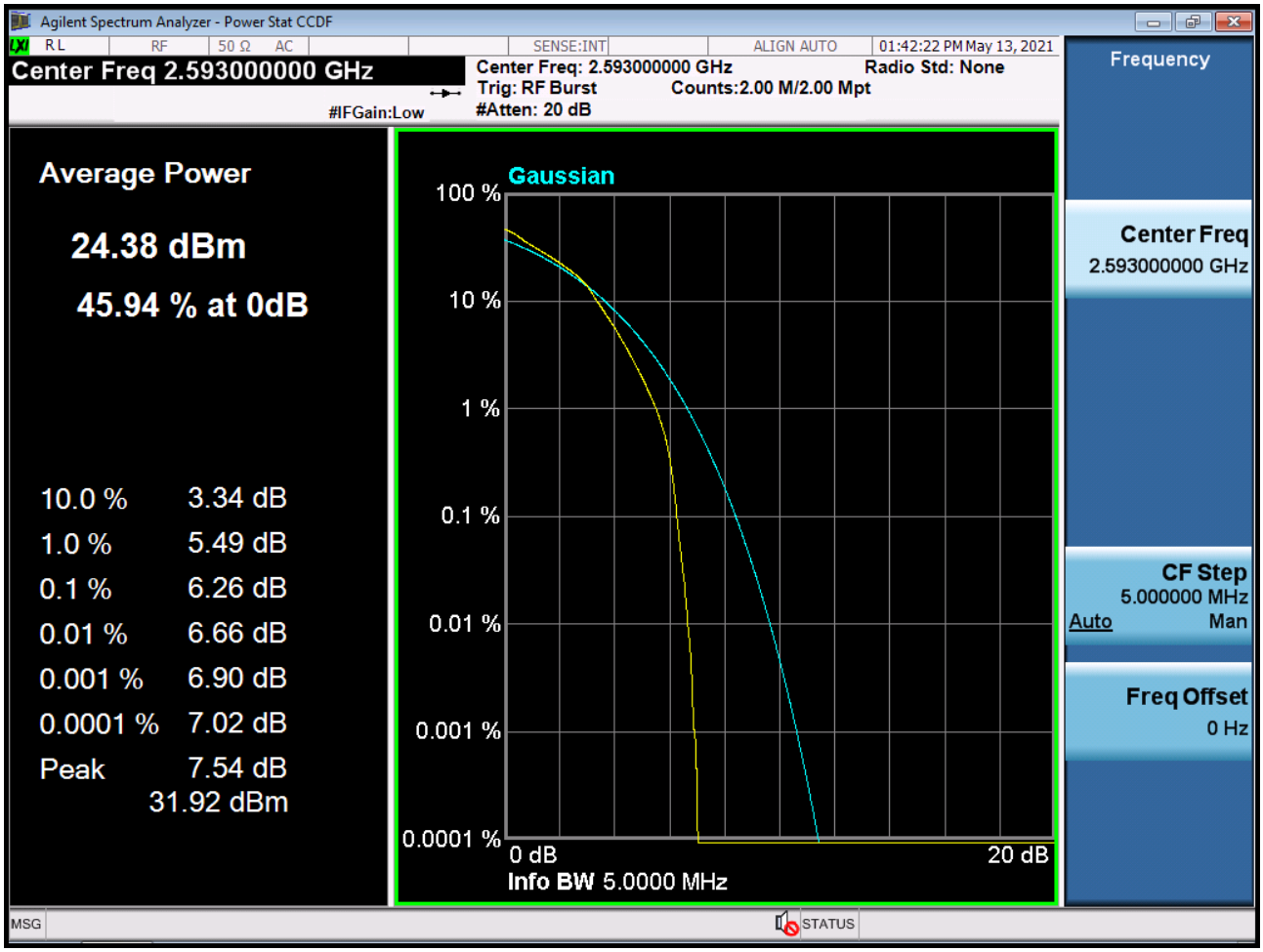
PAR Plot (20M BW_Ch.40620_256QAM_RB100_0) (POWER CLASS 3)



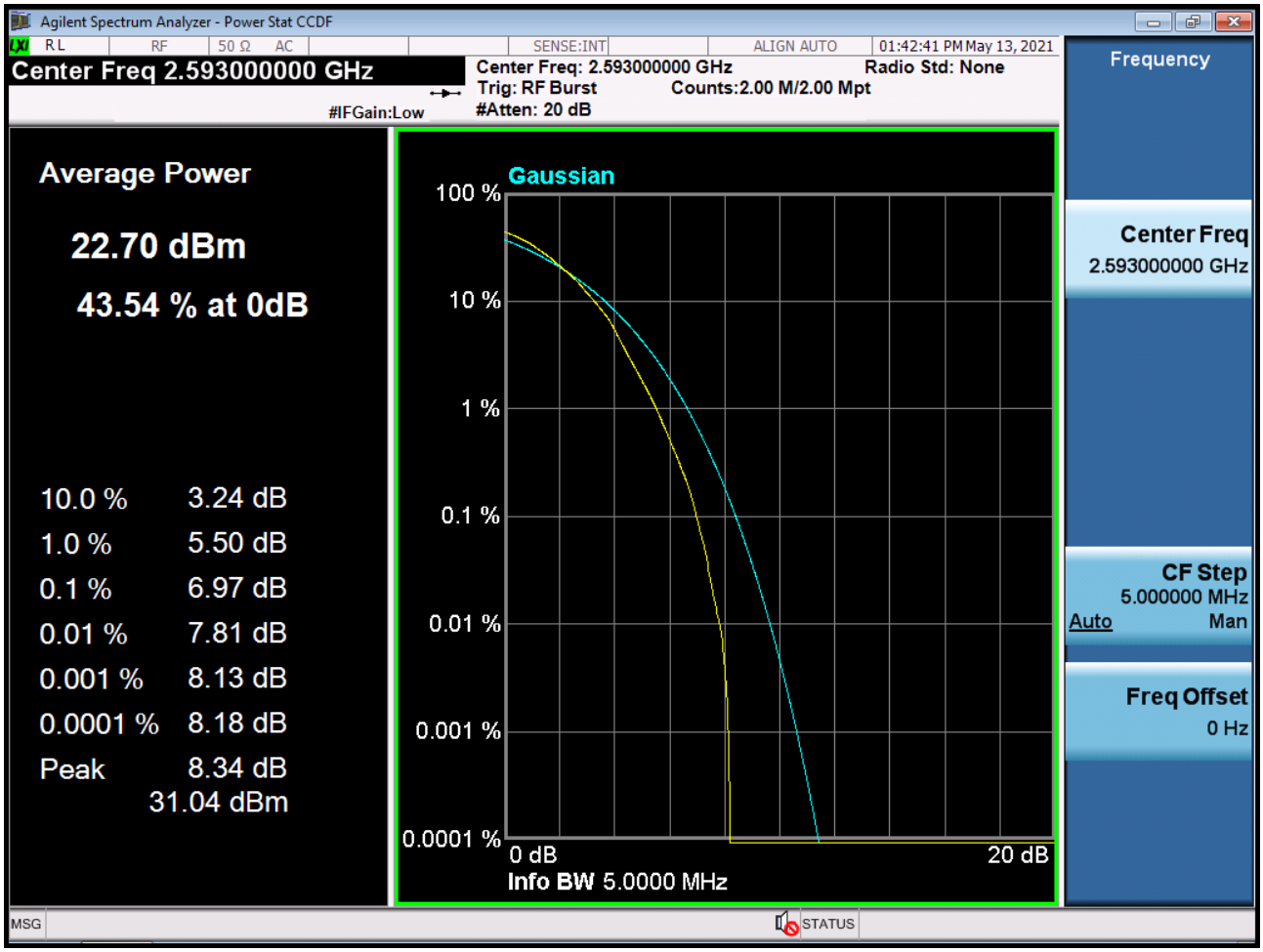
PAR Plot (5M BW_Ch.40620_QPSK_RB25_0) (POWER CLASS 2)



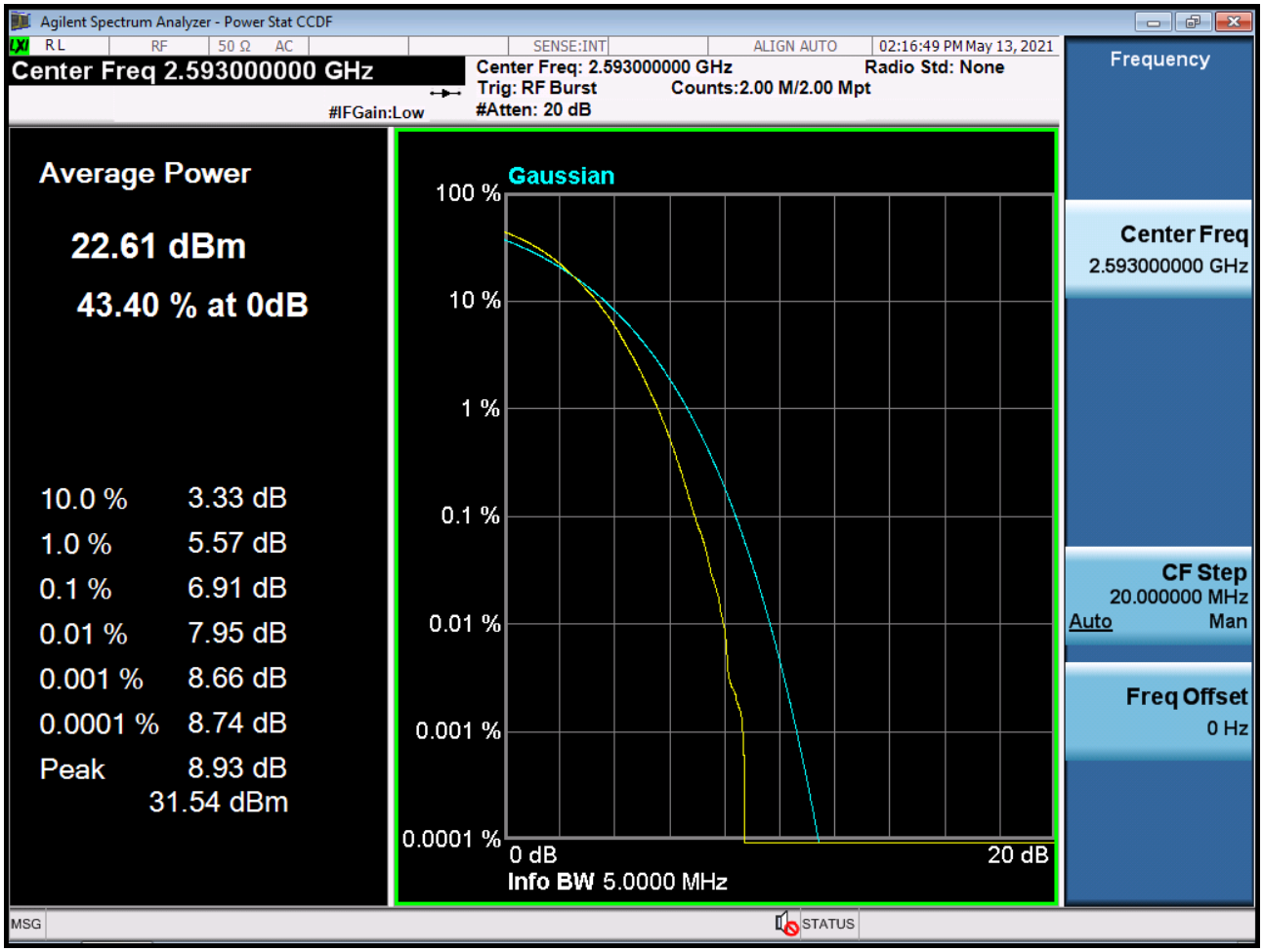
PAR Plot (5M BW_Ch.40620_16QAM_RB25_0) (POWER CLASS 2)



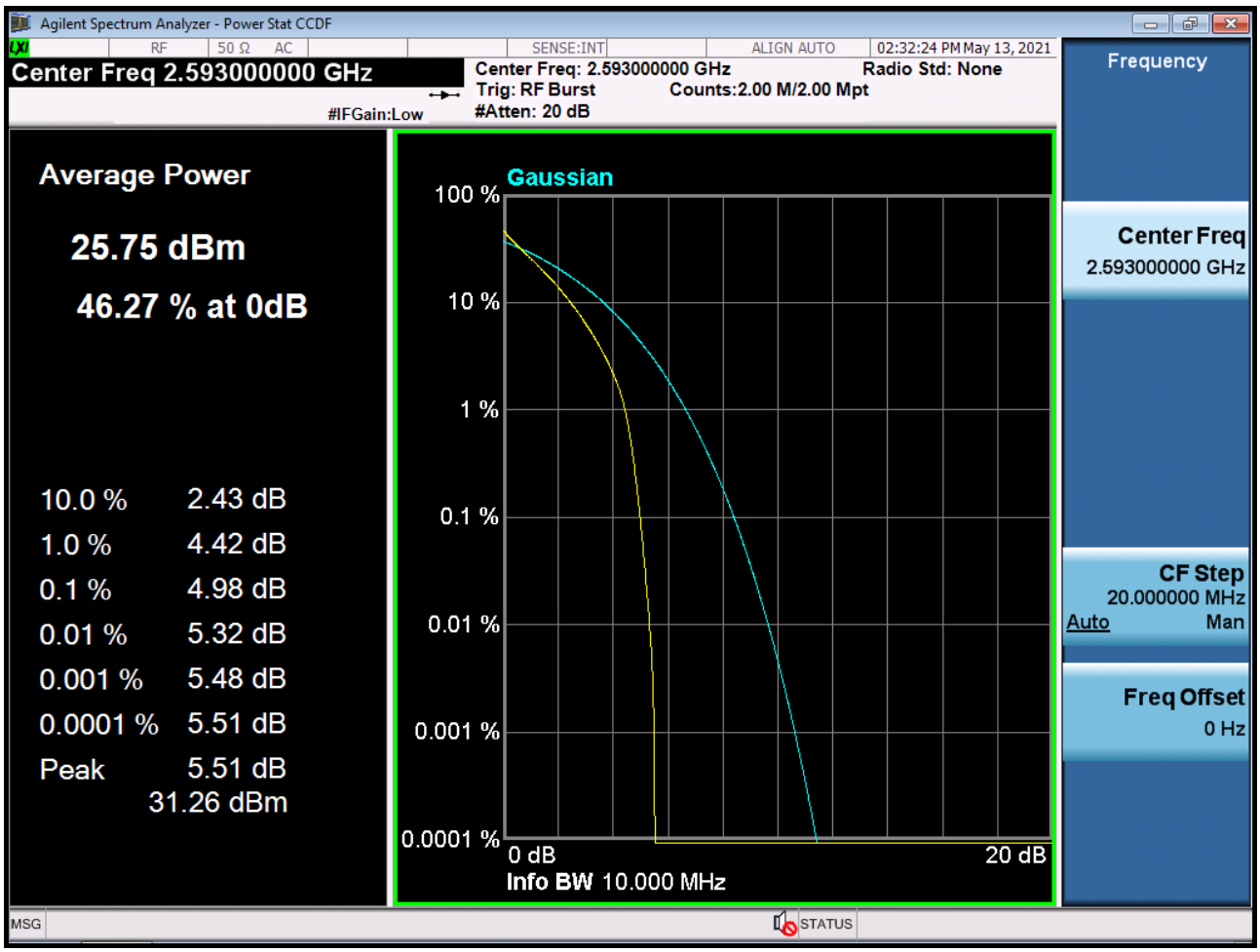
PAR Plot (5M BW_Ch.40620_64QAM_RB25_0) (POWER CLASS 2)



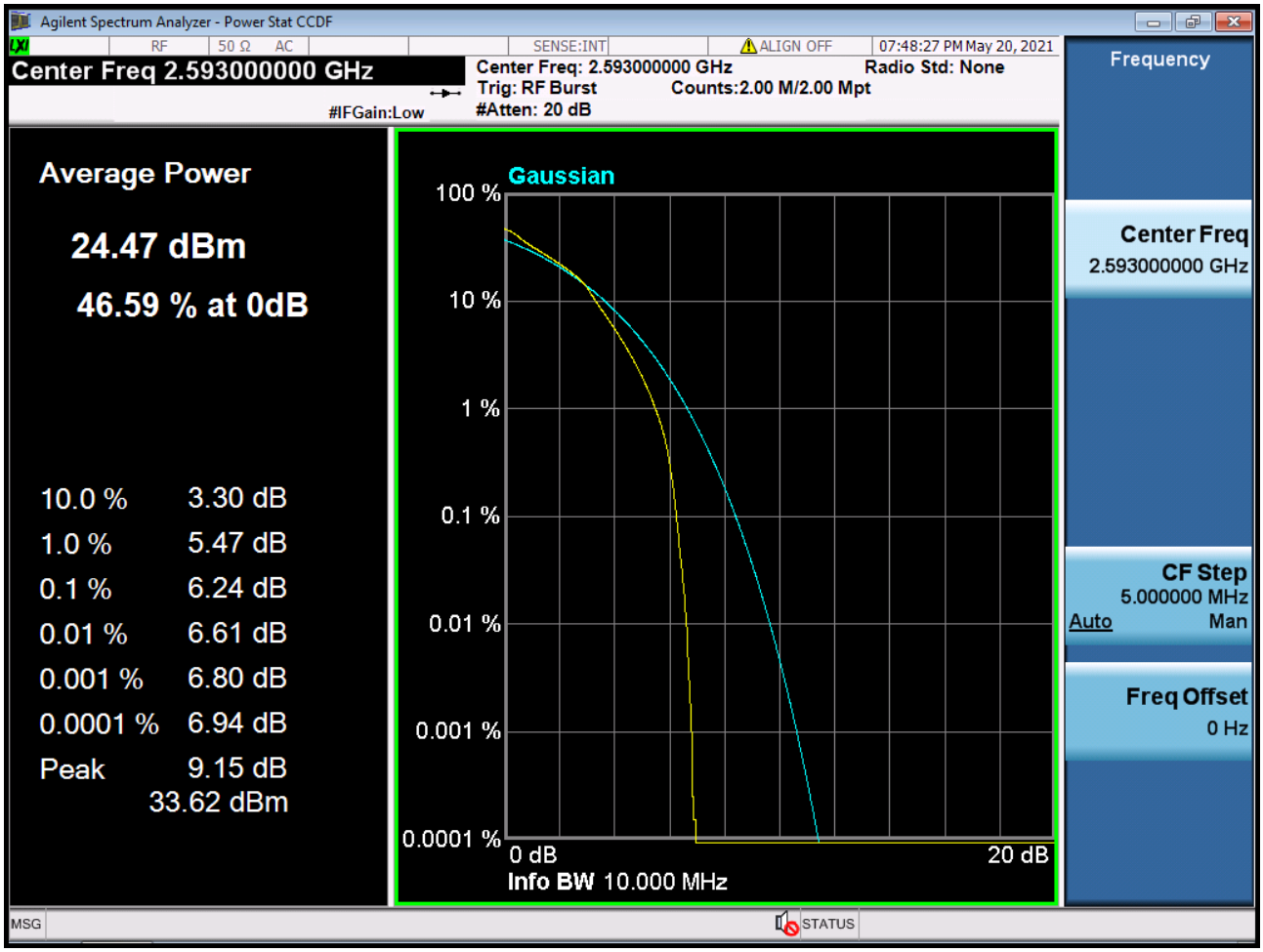
PAR Plot (5M BW_Ch.40620_256QAM_RB25_0) (POWER CLASS 2)



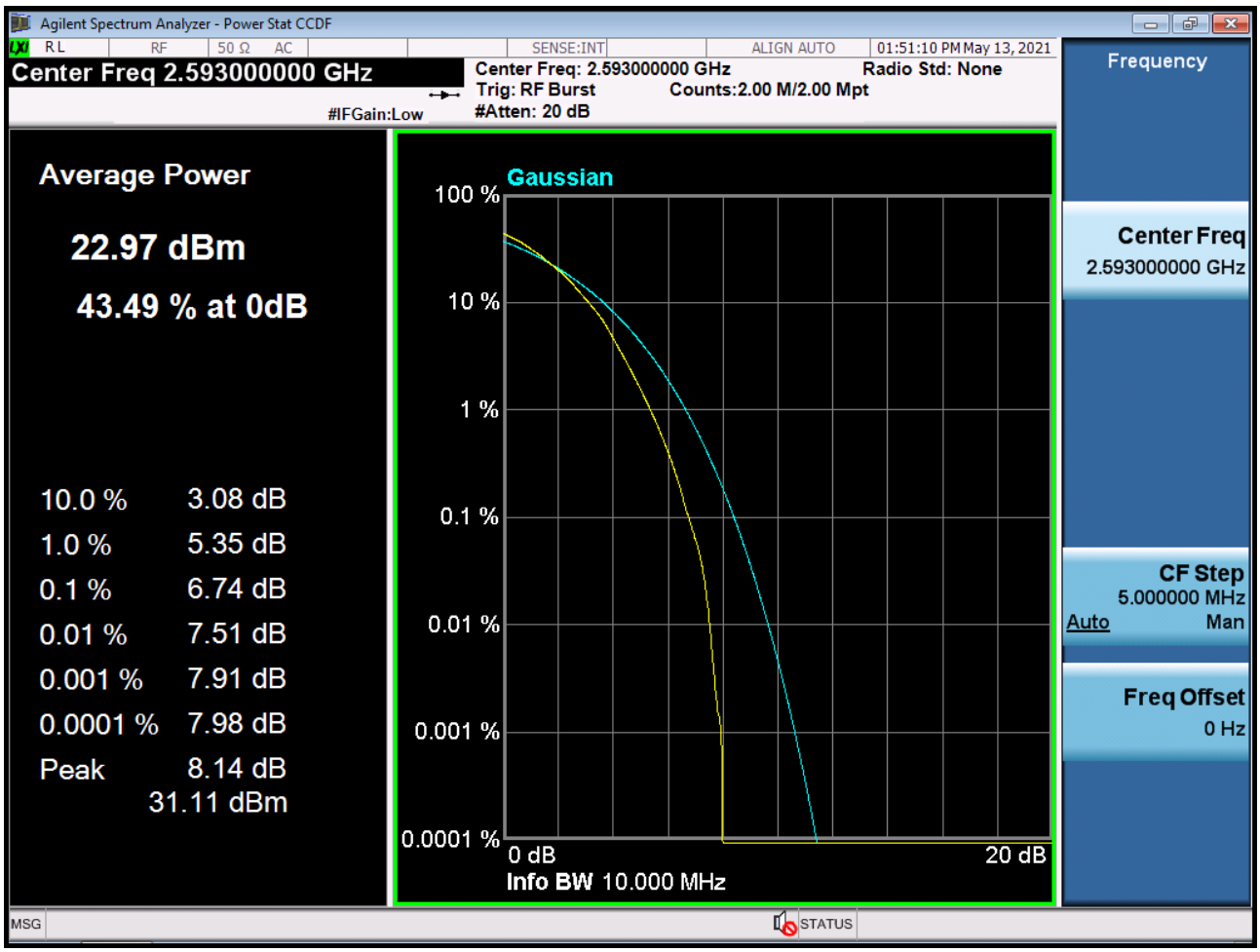
PAR Plot (10M BW_Ch.40620_QPSK_RB50_0) (POWER CLASS 2)



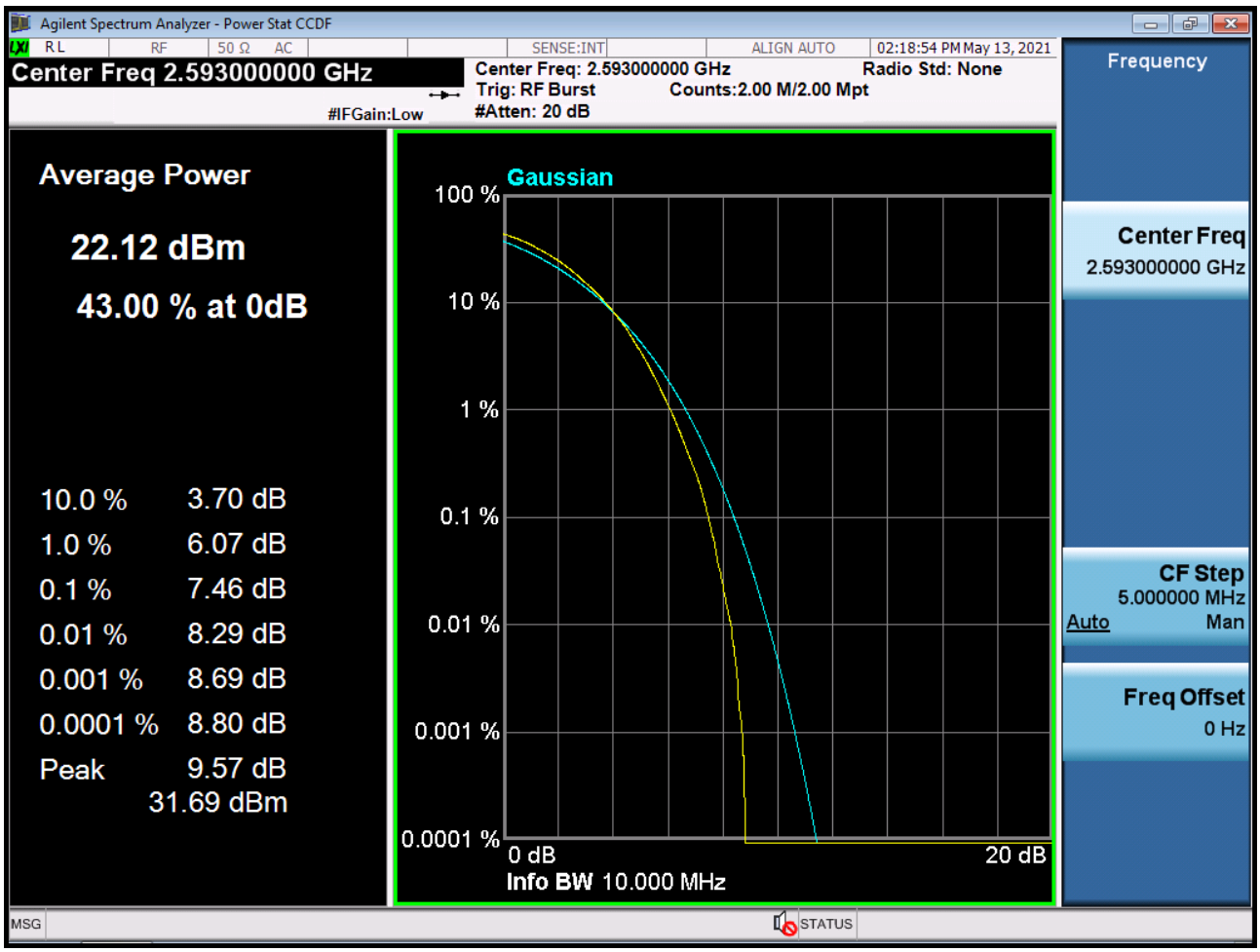
PAR Plot (10M BW_Ch.40620_16QAM_RB50_0) (POWER CLASS 2)



PAR Plot (10M BW_Ch.40620_64QAM_RB50_0) (POWER CLASS 2)



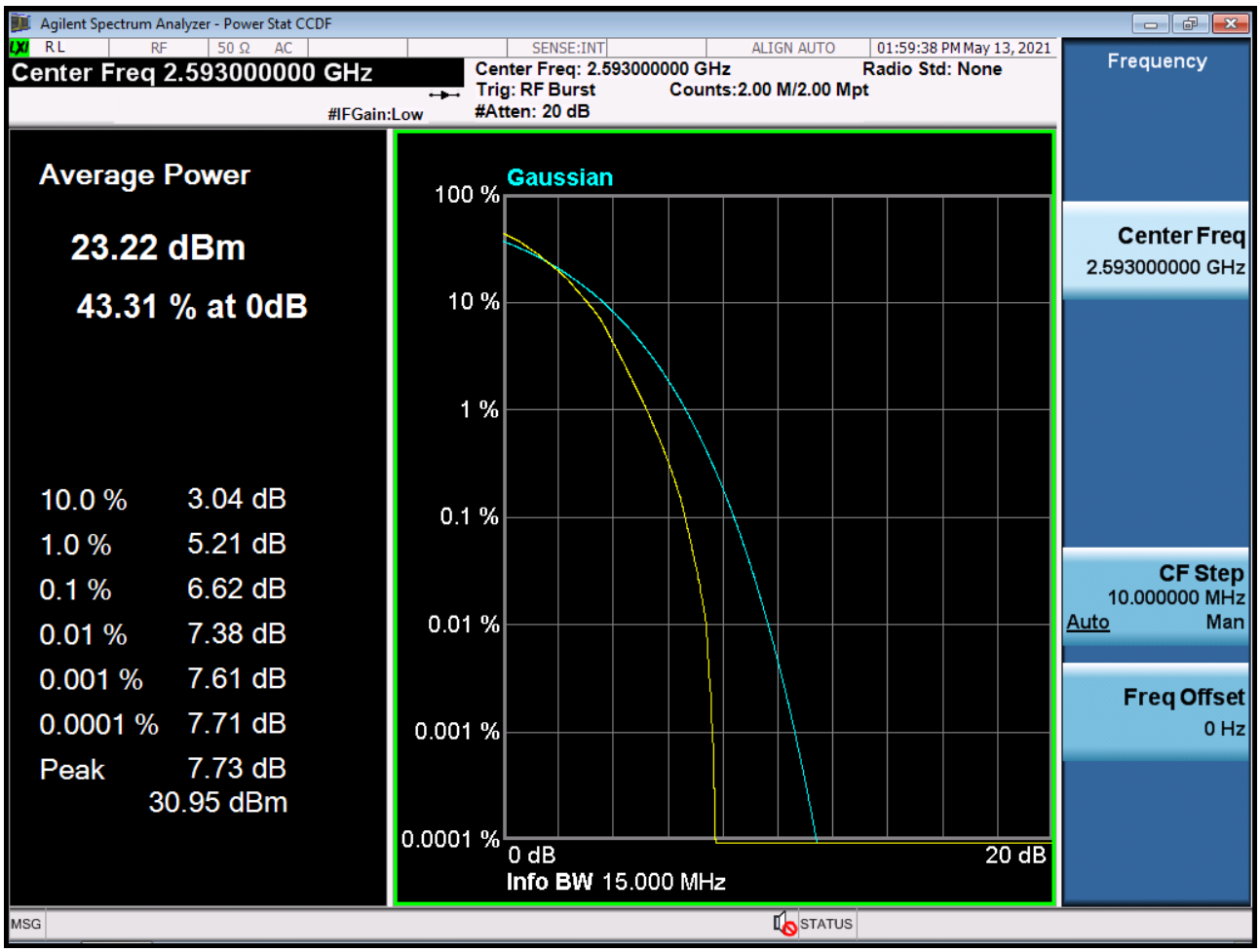
PAR Plot (10M BW_Ch.40620_256QAM_RB50_0) (POWER CLASS 2)



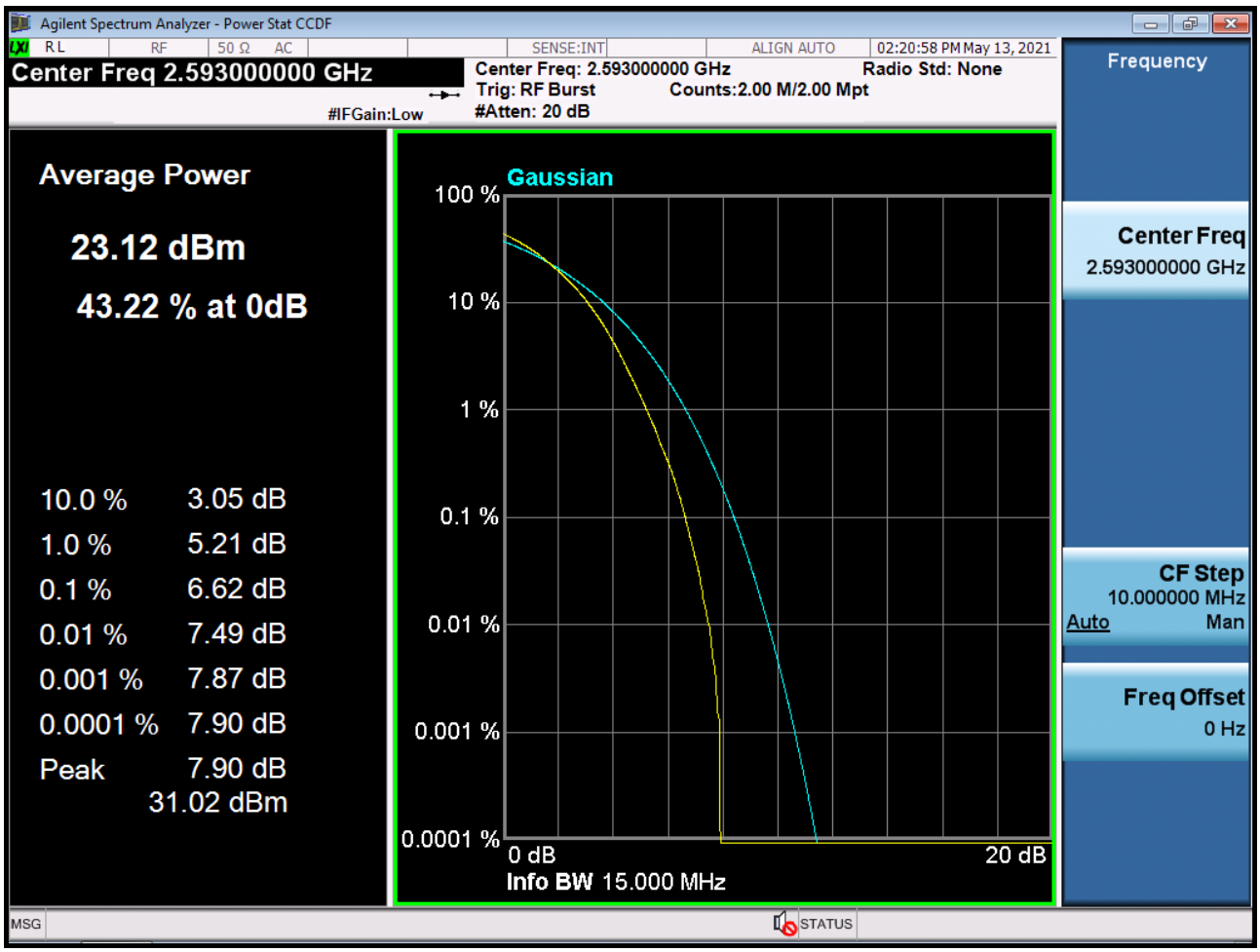
PAR Plot (15M BW_Ch.40620_QPSK_RB75_0) (POWER CLASS 2)

PAR Plot (15M BW_Ch.40620_16QAM_RB75_0) (POWER CLASS 2)

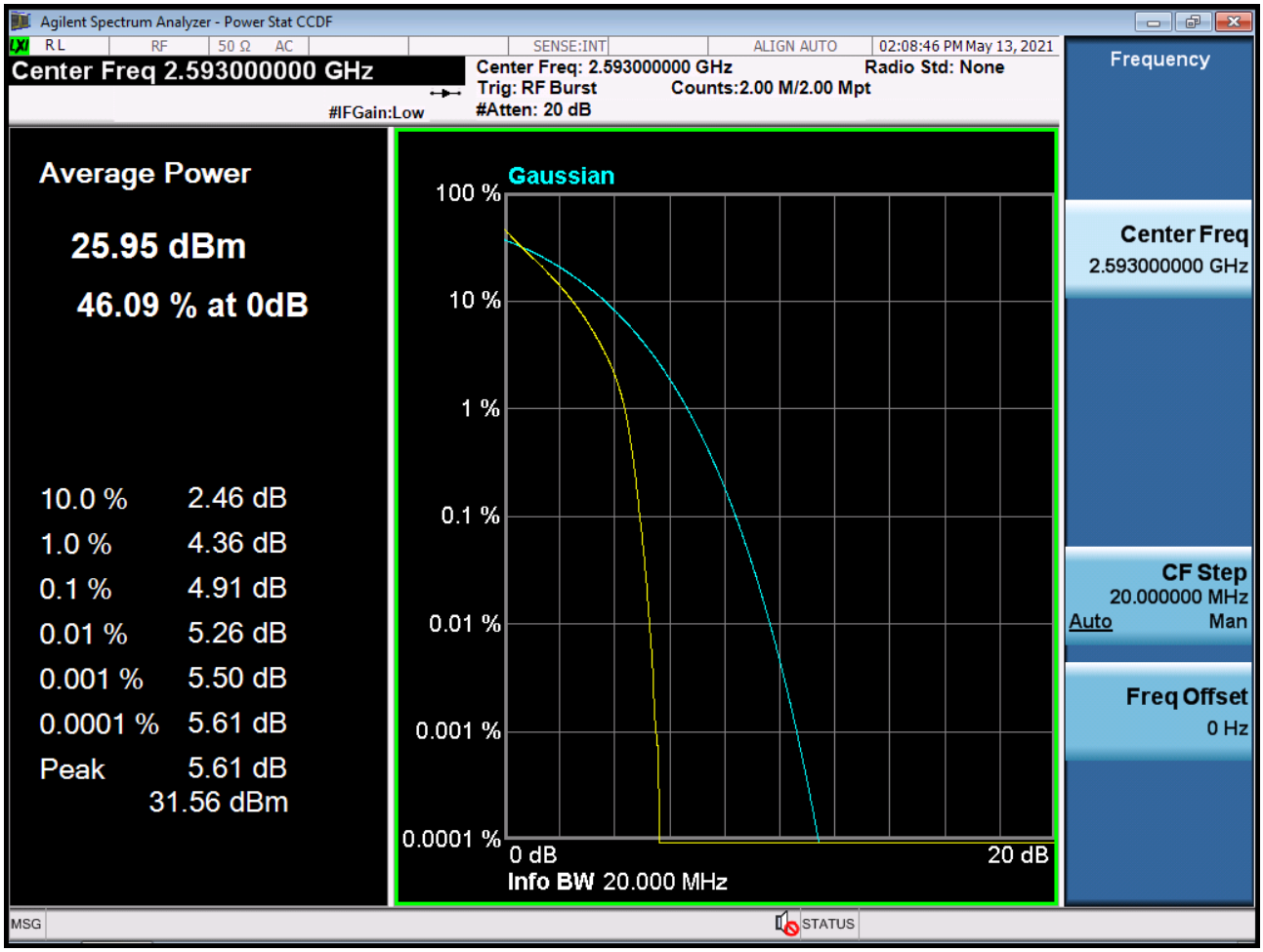
PAR Plot (15M BW_Ch.40620_64QAM_RB75_0) (POWER CLASS 2)



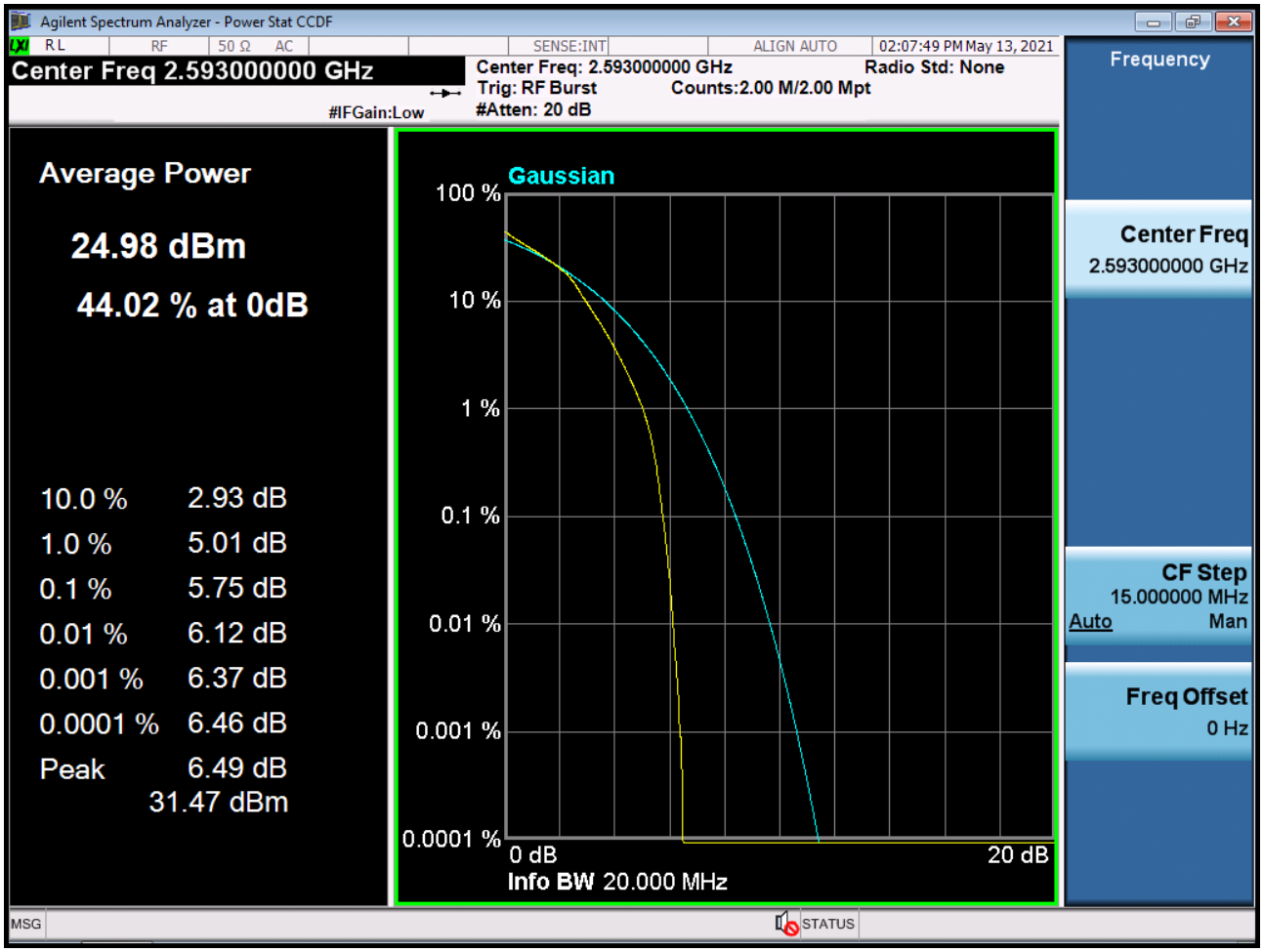
PAR Plot (15M BW_Ch.40620_256QAM_RB75_0) (POWER CLASS 2)



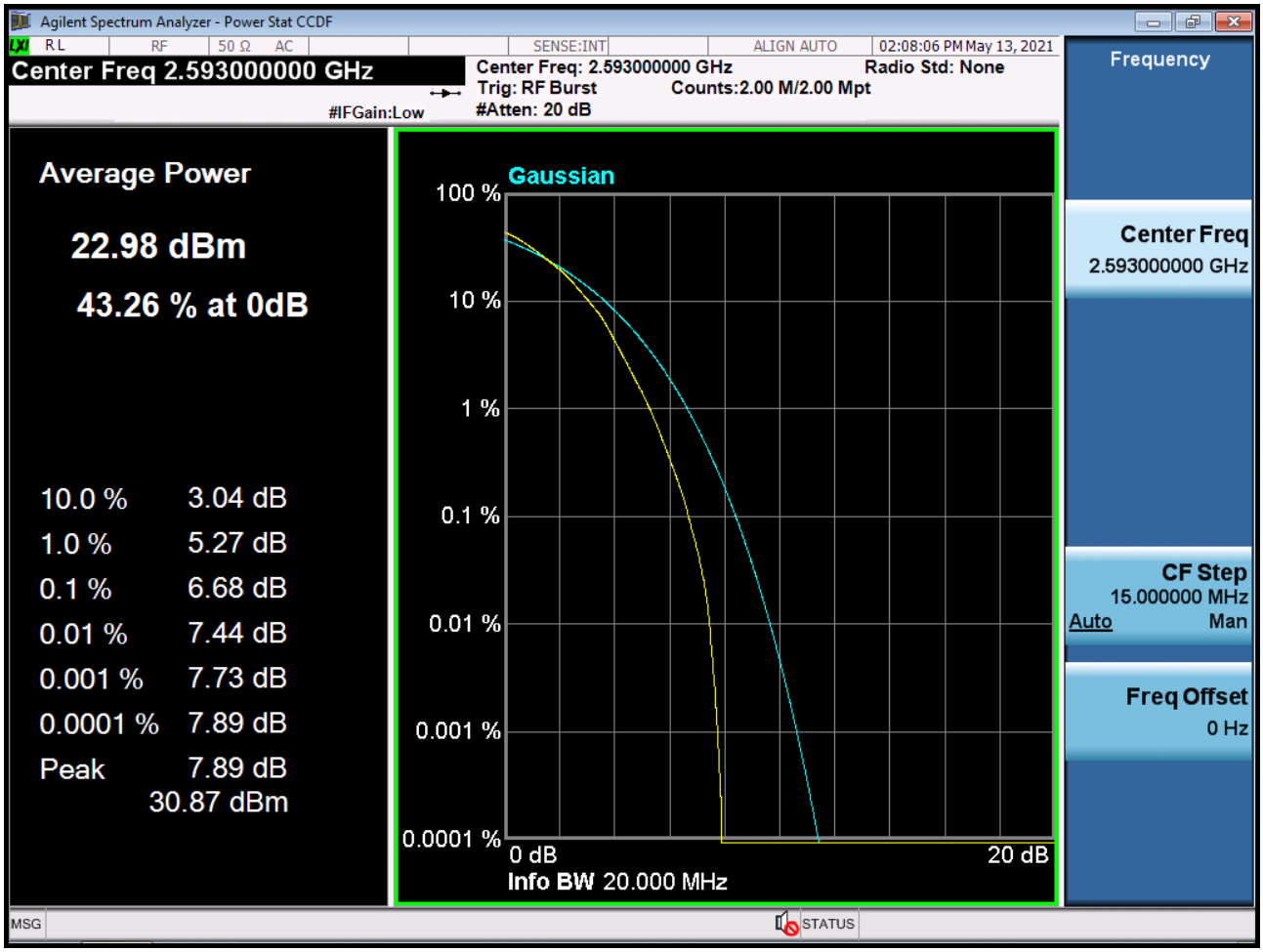
PAR Plot (20M BW_Ch.40620_QPSK_RB100_0) (POWER CLASS 2)



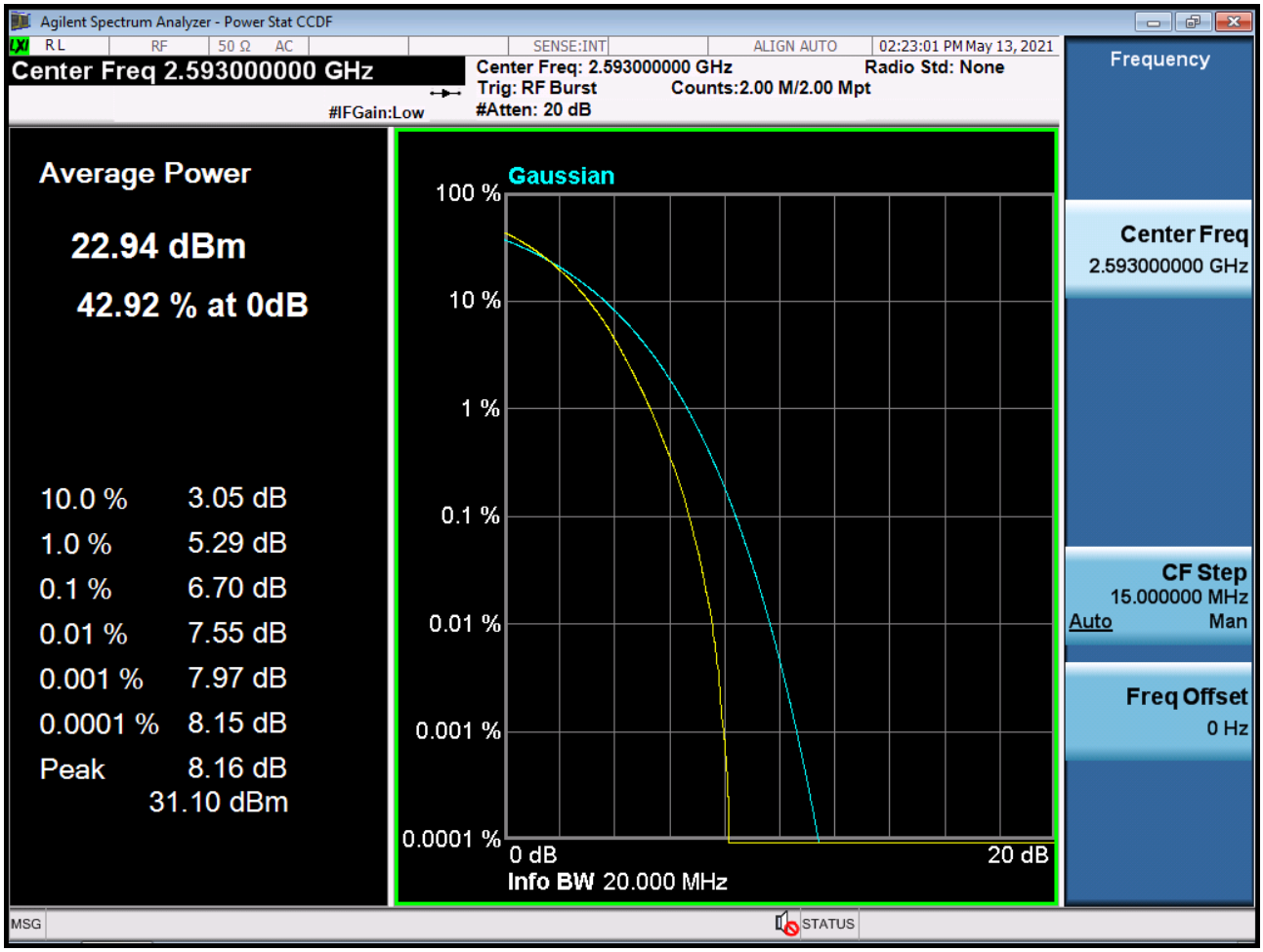
PAR Plot (20M BW_Ch.40620_16QAM_RB100_0) (POWER CLASS 2)



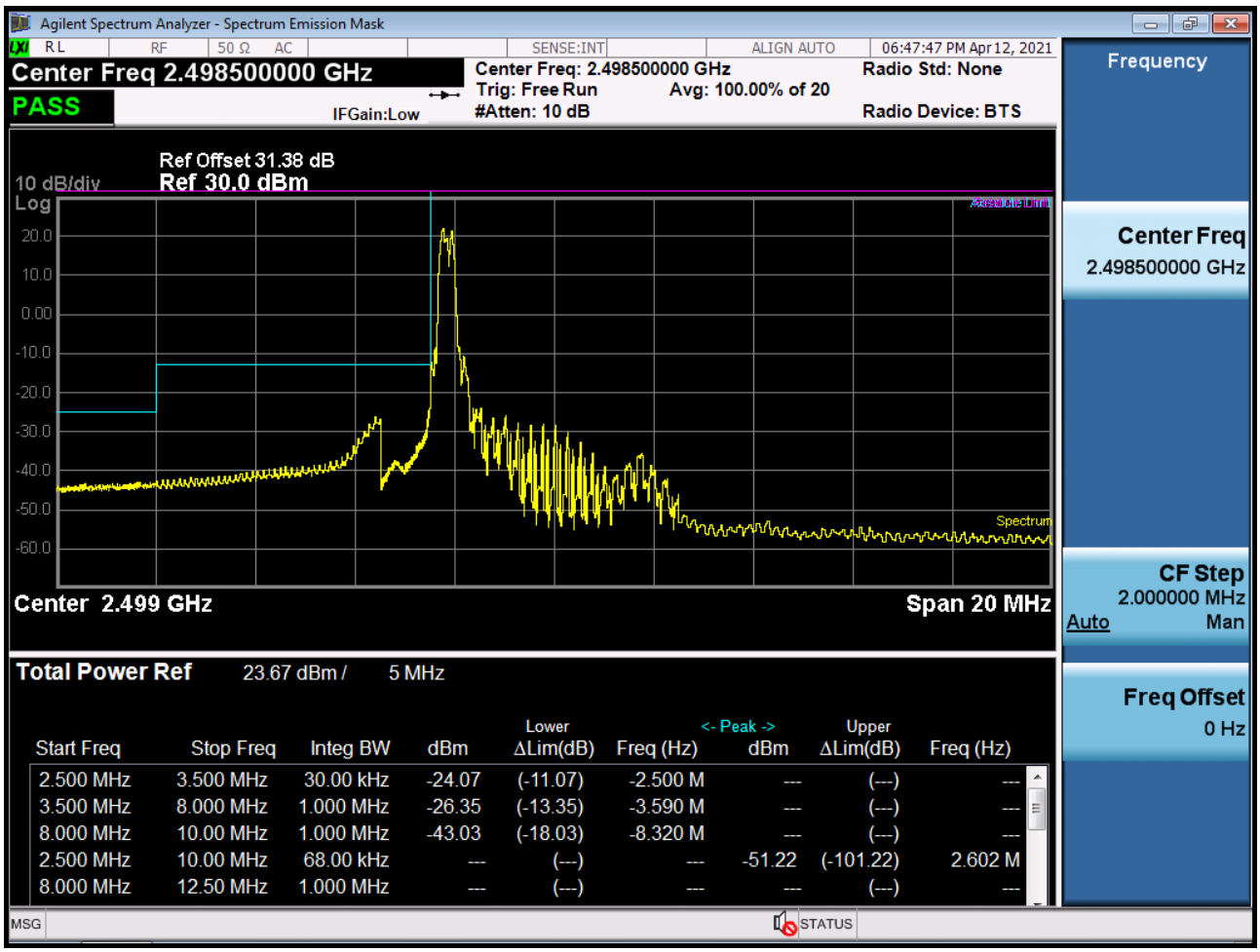
PAR Plot (20M BW_Ch.40620_64QAM_RB100_0) (POWER CLASS 2)



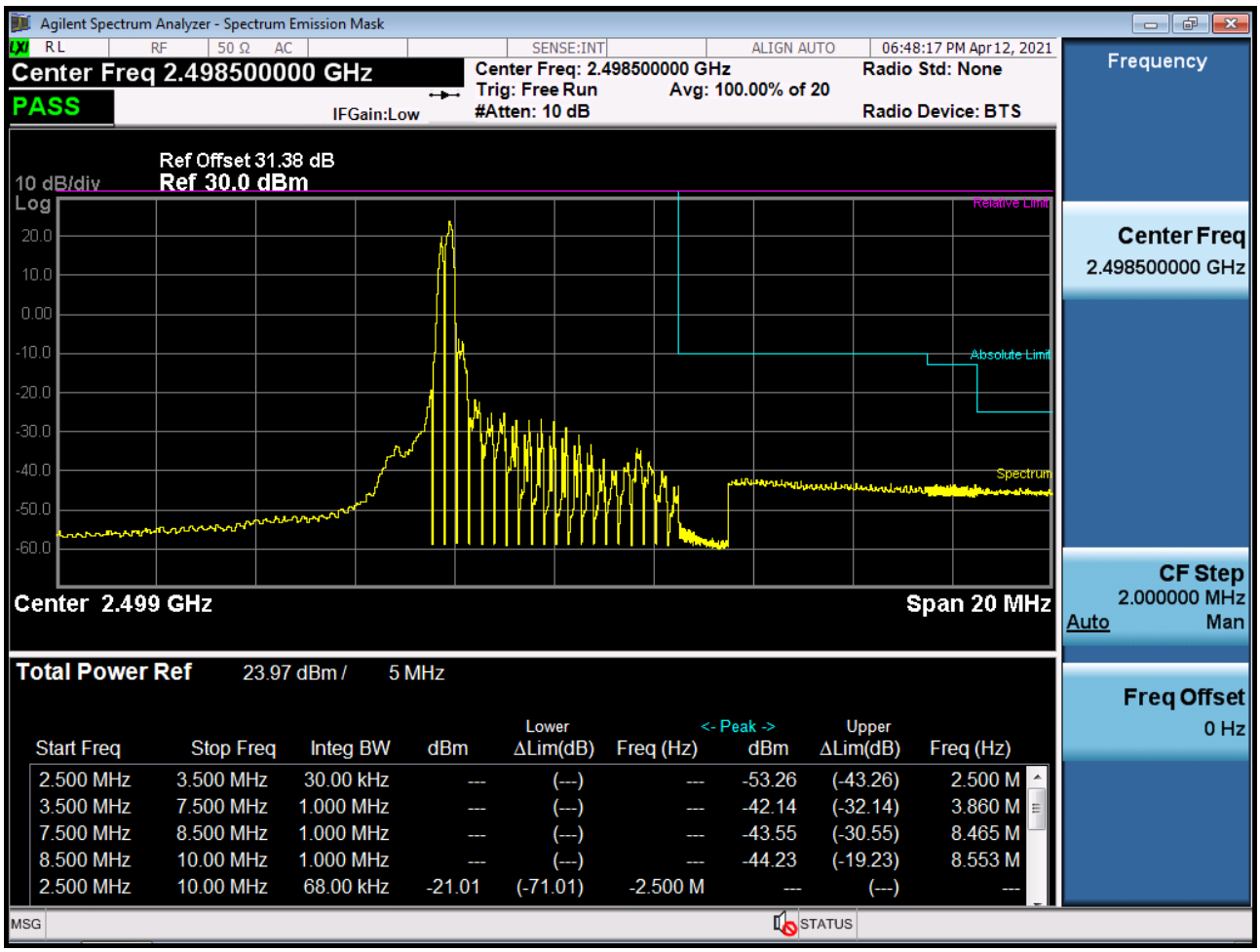
PAR Plot (20M BW_Ch.40620_256QAM_RB100_0) (POWER CLASS 2)



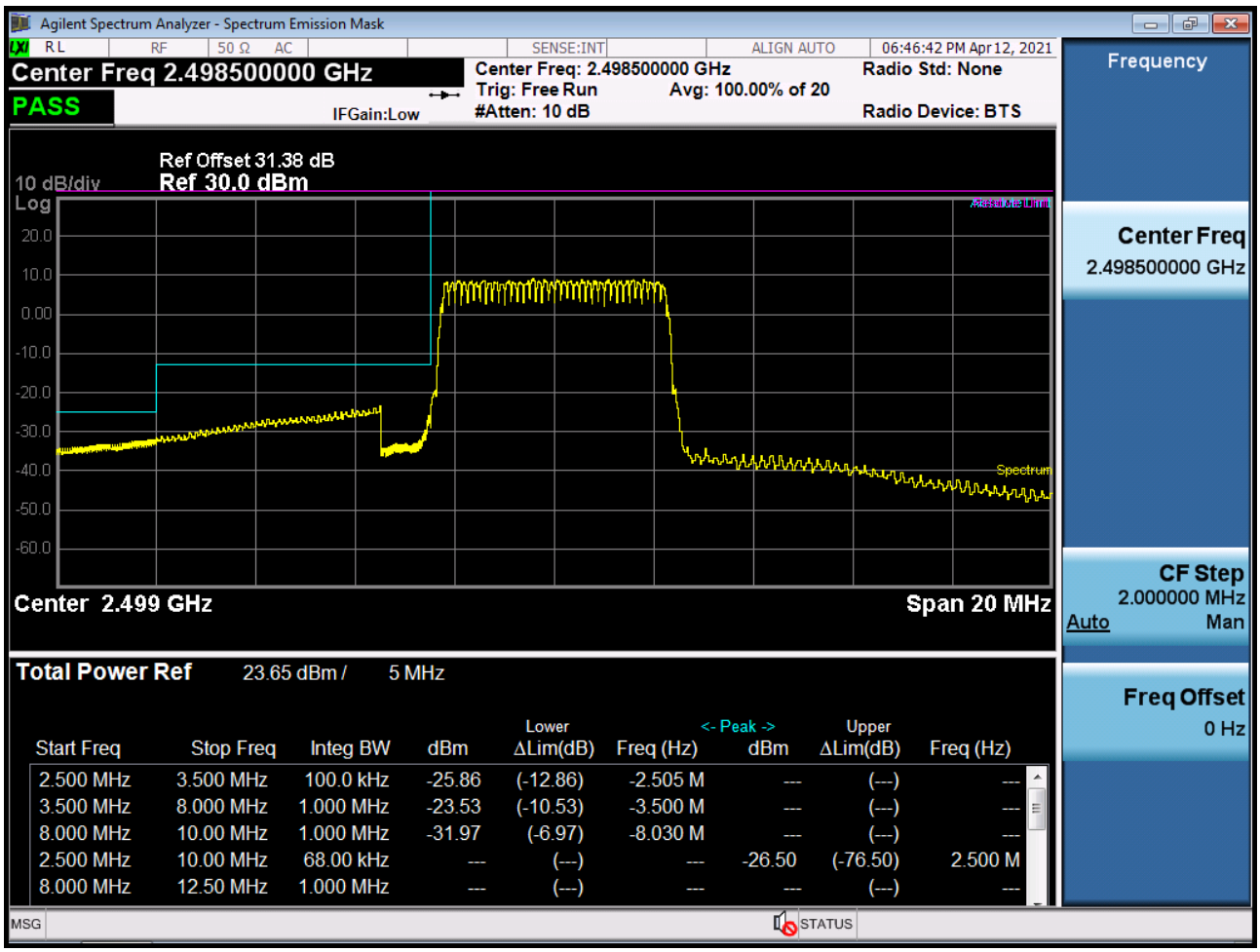
Low Channel Edge Plot (5 MHz Ch.39675 QPSK RB 1, Offset 0)-1 (POWER CLASS 3)



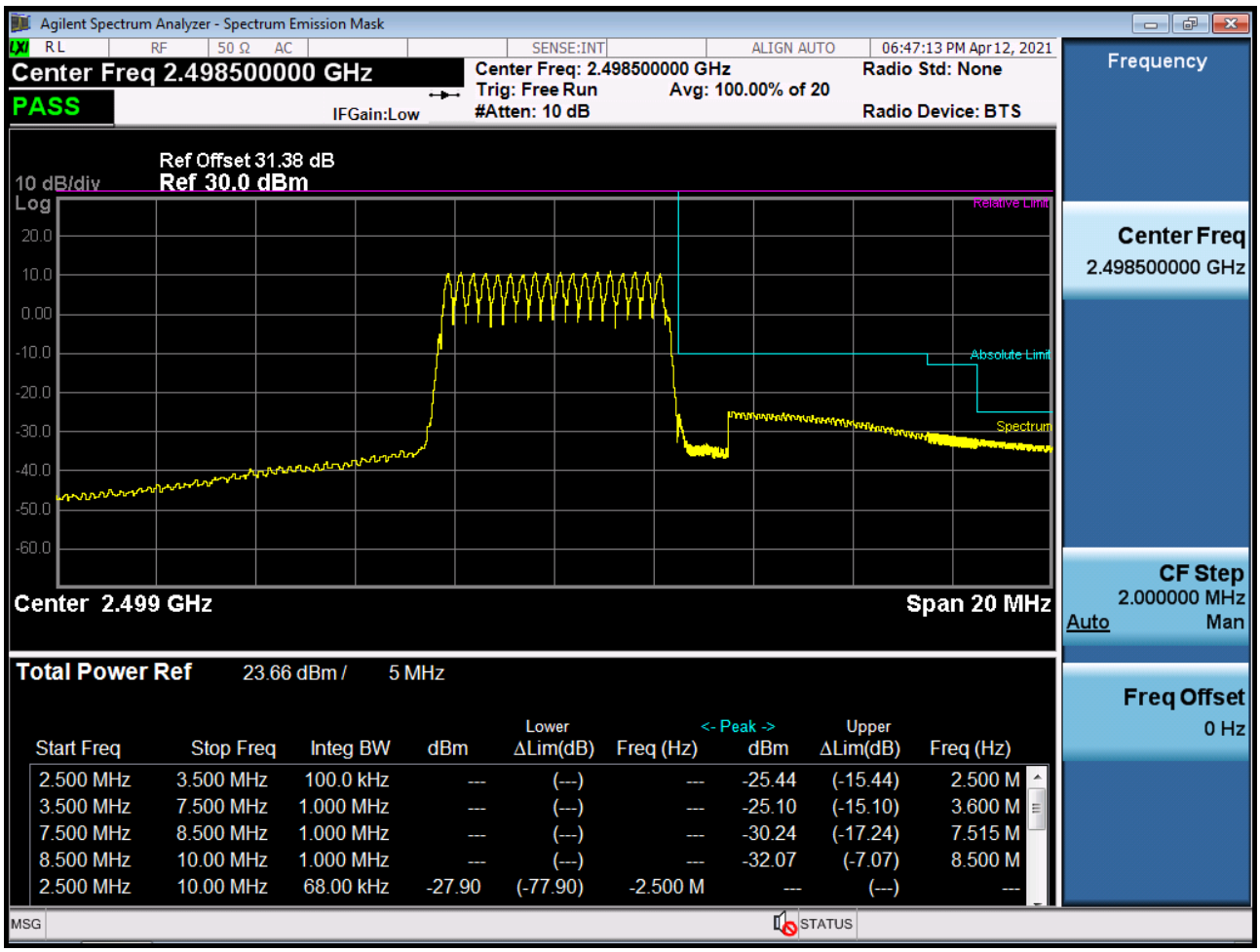
Low Channel Edge Plot (5 MHz Ch.39675 QPSK RB 1, Offset 0)-2 (POWER CLASS 3)



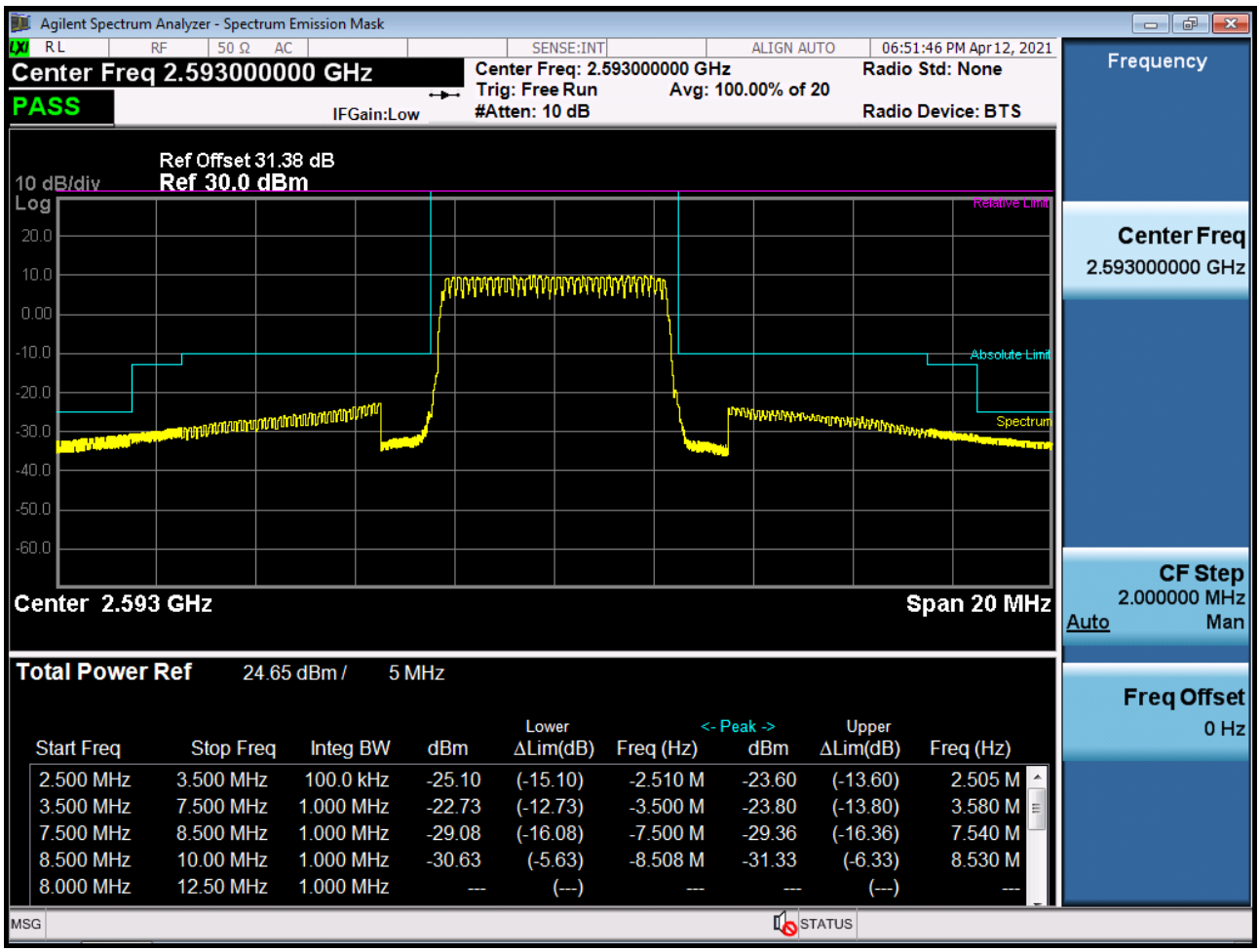
Low Channel Edge Plot (5 MHz Ch.39675 QPSK_RB25_Offset 0)-1 (POWER CLASS 3)



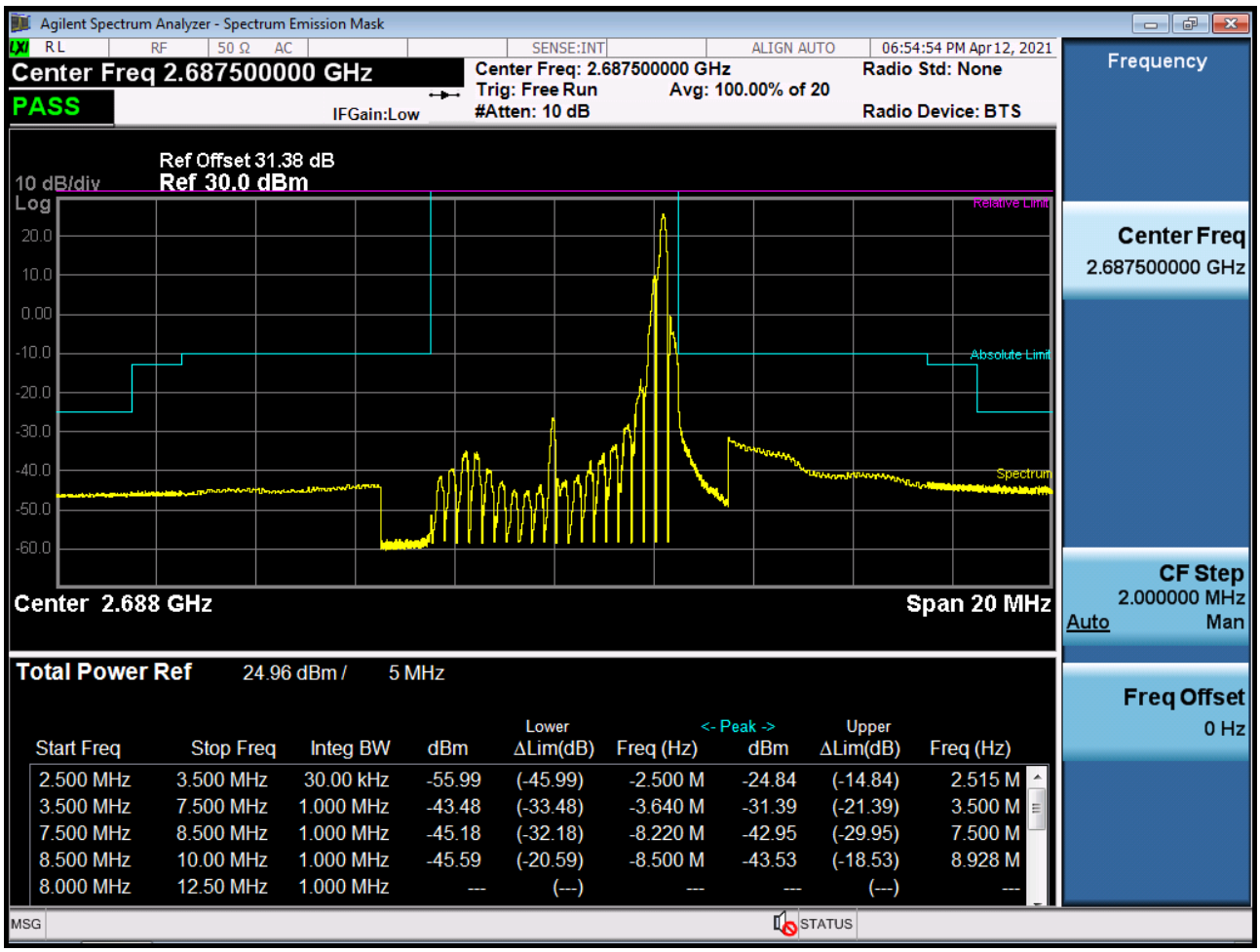
Low Channel Edge Plot (5 MHz Ch.39675 QPSK_RB25_Offset 0)-2 (POWER CLASS 3)



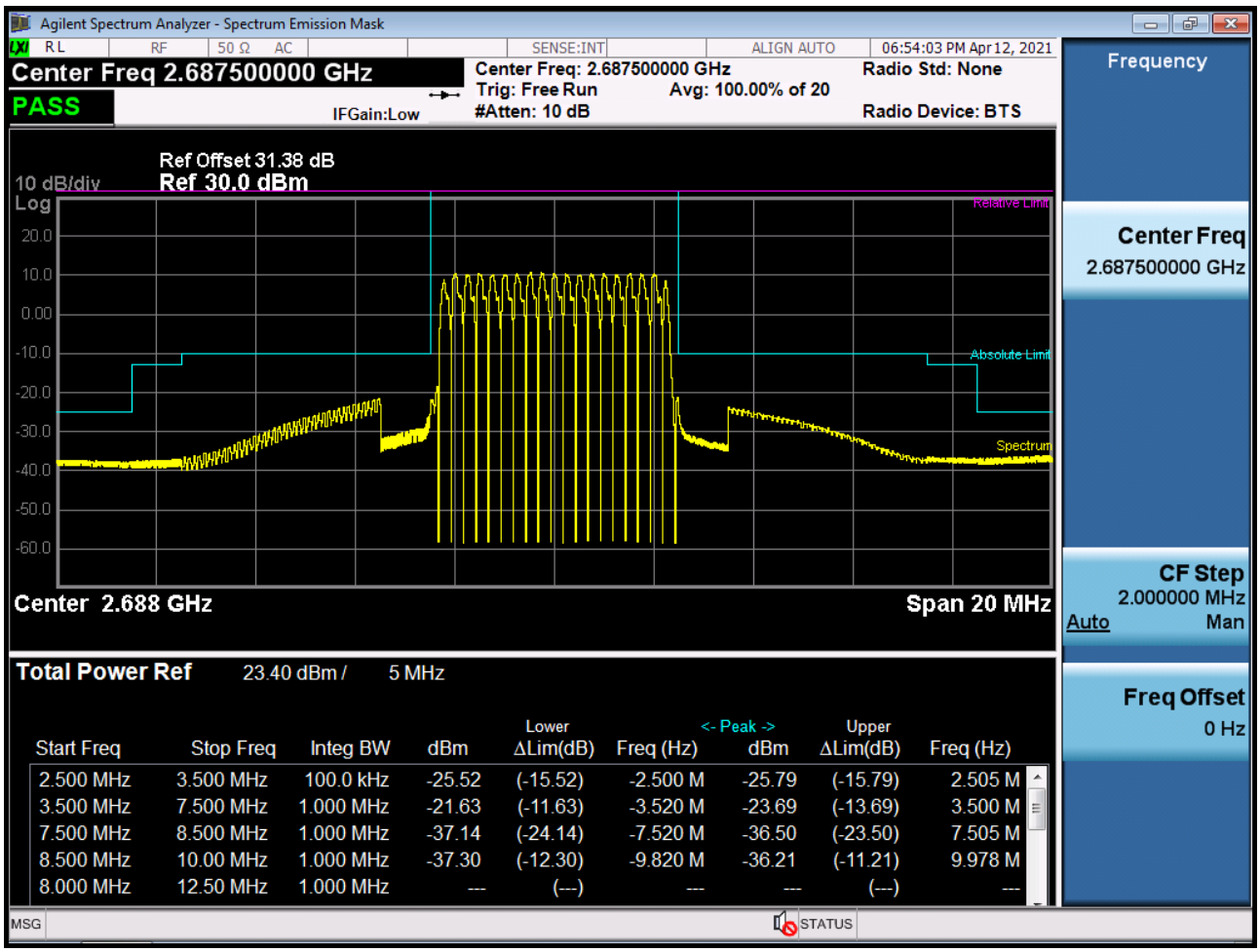
Mid Channel Edge Plot (5 MHz Ch.40620 QPSK RB 25) (POWER CLASS 3)



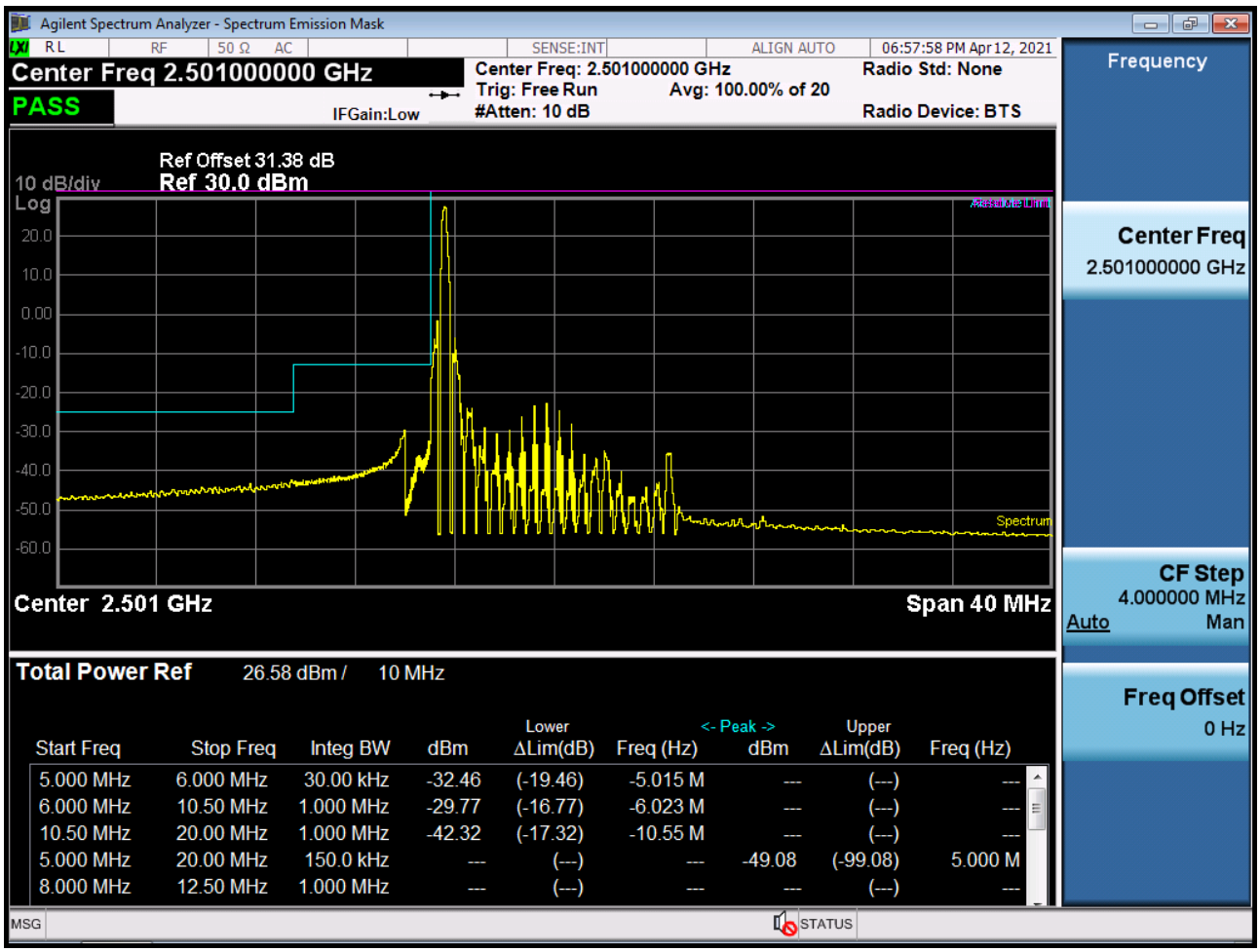
High Channel Edge Plot (5 MHz Ch.41565 QPSK RB 1, Offset 24) (POWER CLASS 3)



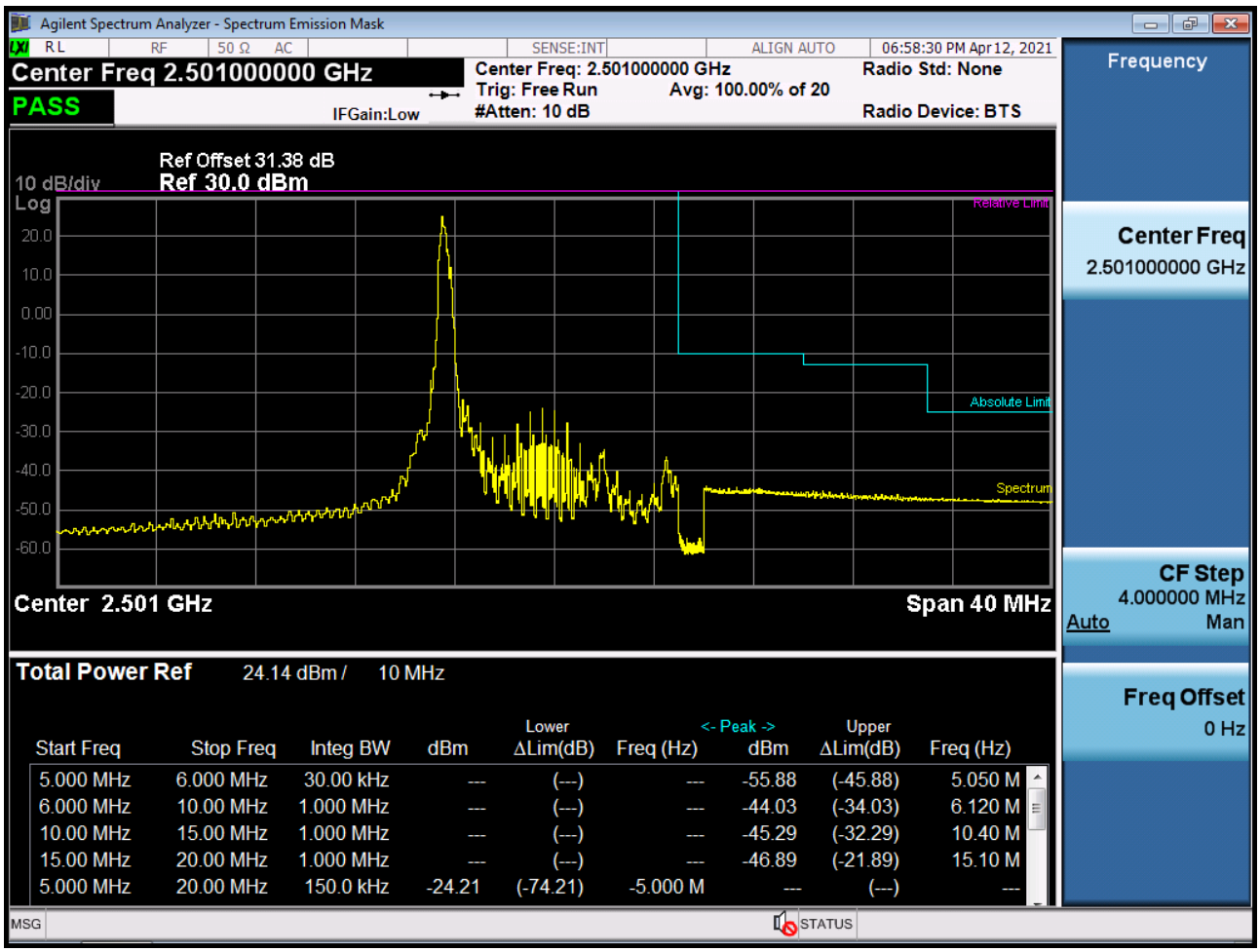
High Channel Edge Plot (5 MHz Ch.41565 QPSK_RB25_Offset 0) (POWER CLASS 3)



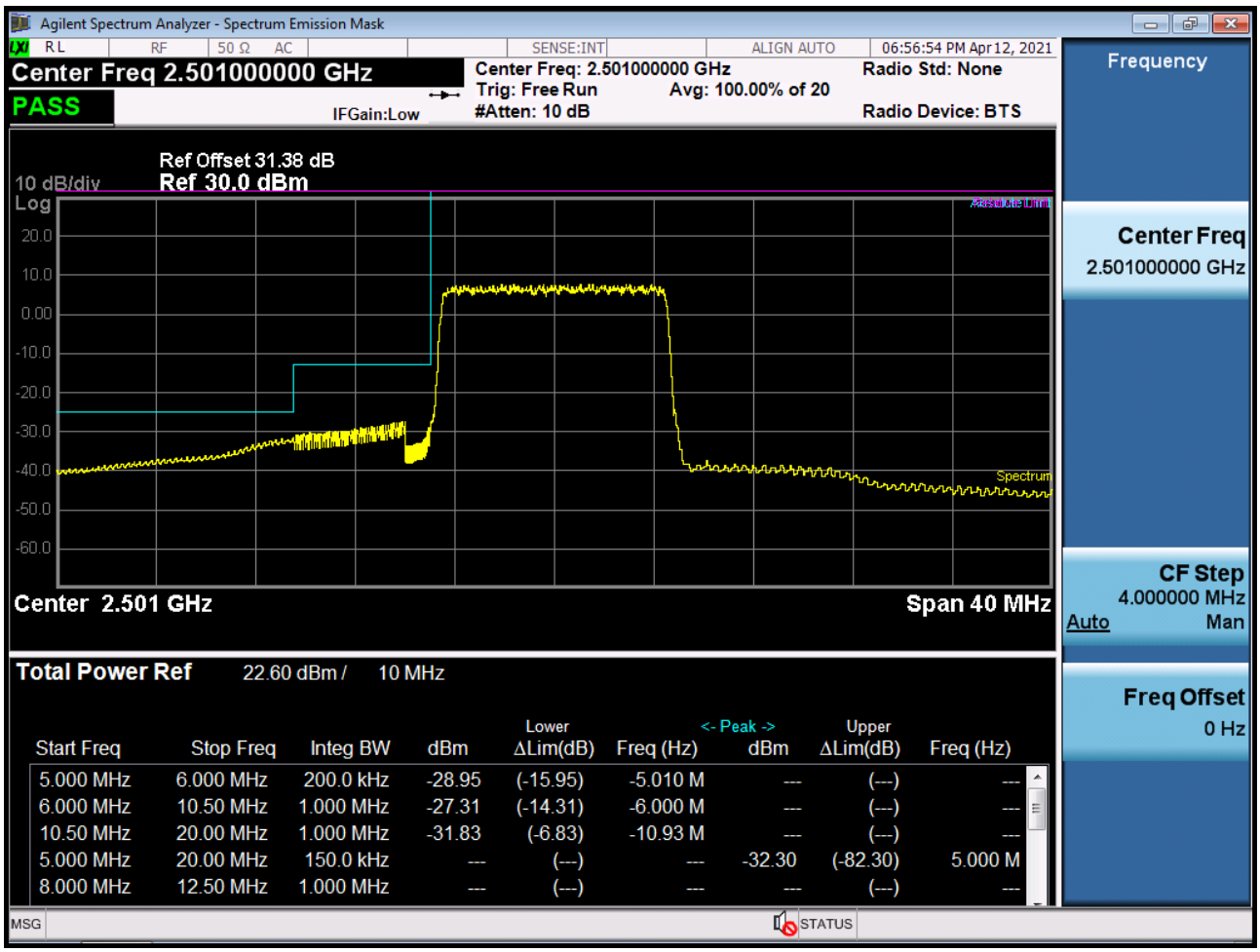
Low Channel Edge Plot (10 MHz Ch.39700 QPSK RB 1, Offset 0)-1 (POWER CLASS 3)



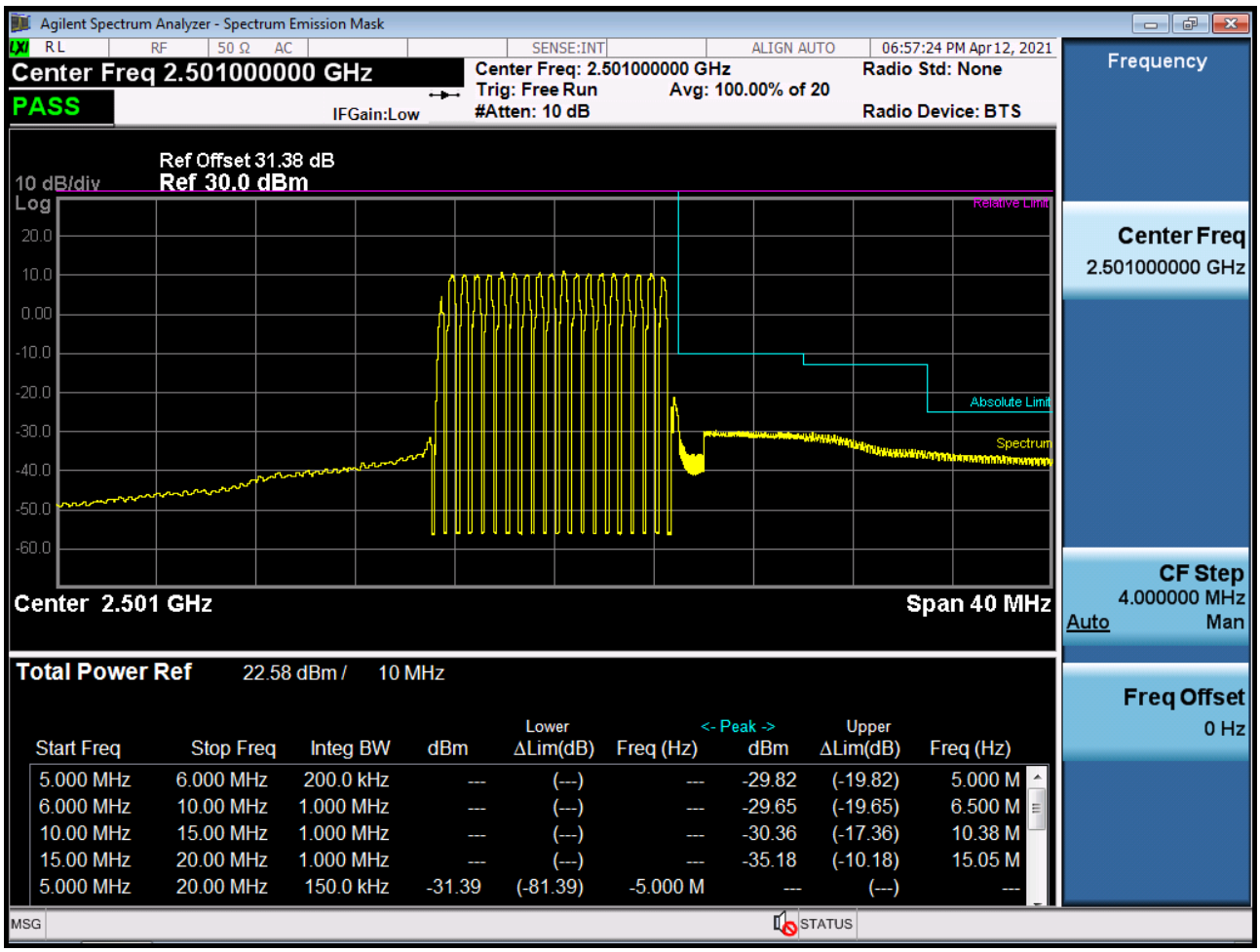
Low Channel Edge Plot (10 MHz Ch.39700 QPSK RB 1, Offset 0)-2 (POWER CLASS 3)



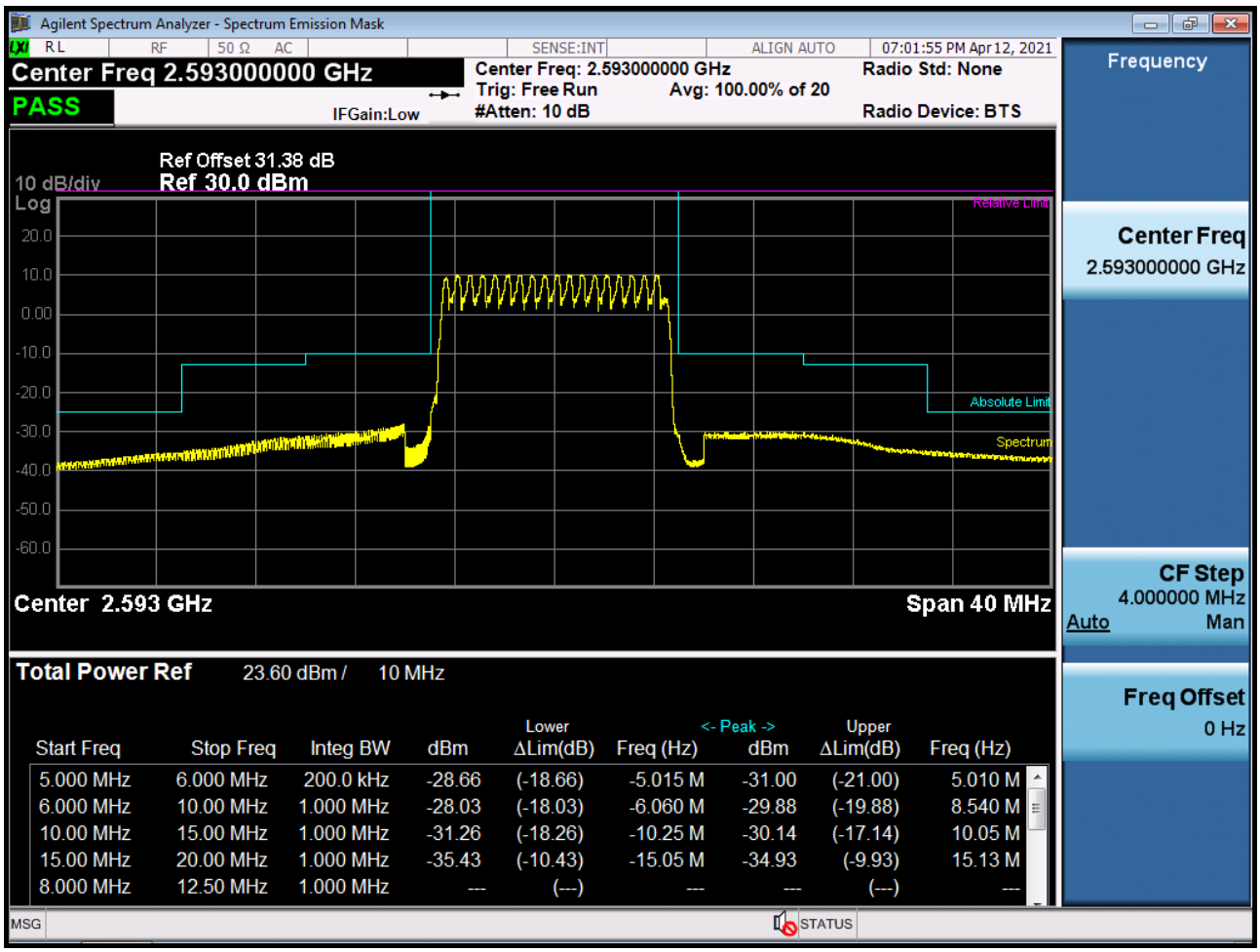
Low Channel Edge Plot (10 MHz Ch.39700 QPSK_RB50_Offset 0)-1 (POWER CLASS 3)



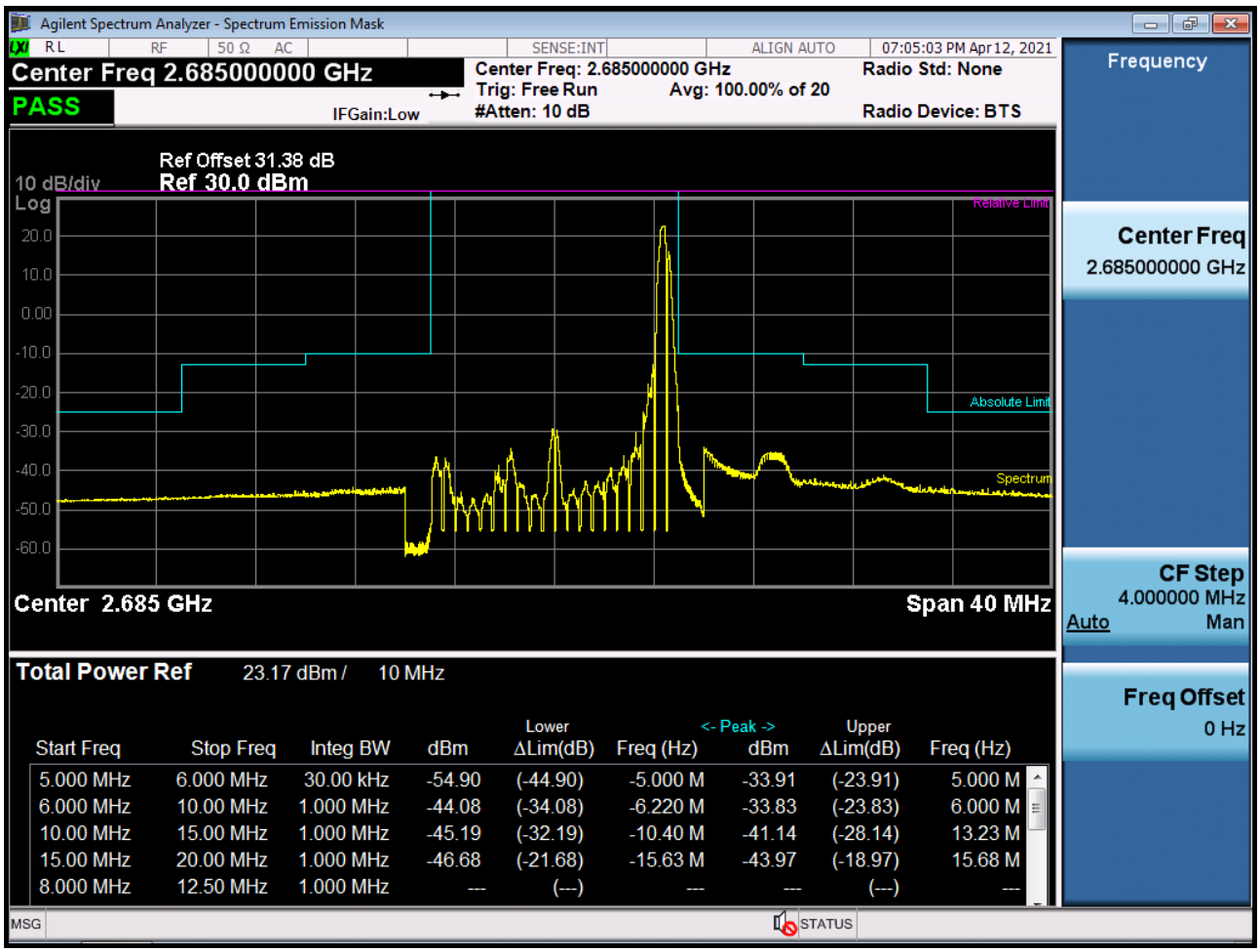
Low Channel Edge Plot (10 MHz Ch.39700 QPSK_RB50_Offset 0)-2 (POWER CLASS 3)



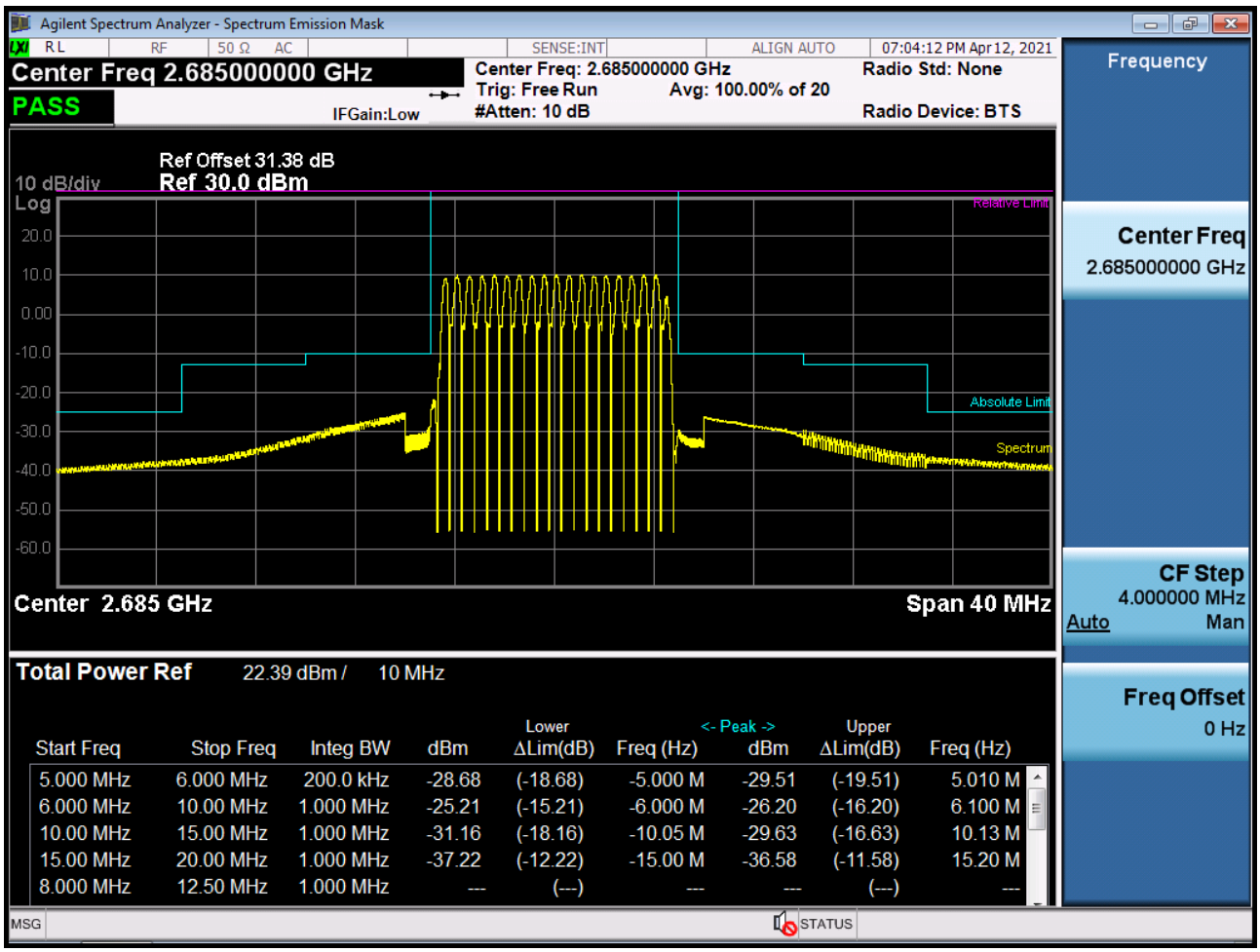
Mid Channel Edge Plot (10 MHz Ch.40620 QPSK RB 50) (POWER CLASS 3)



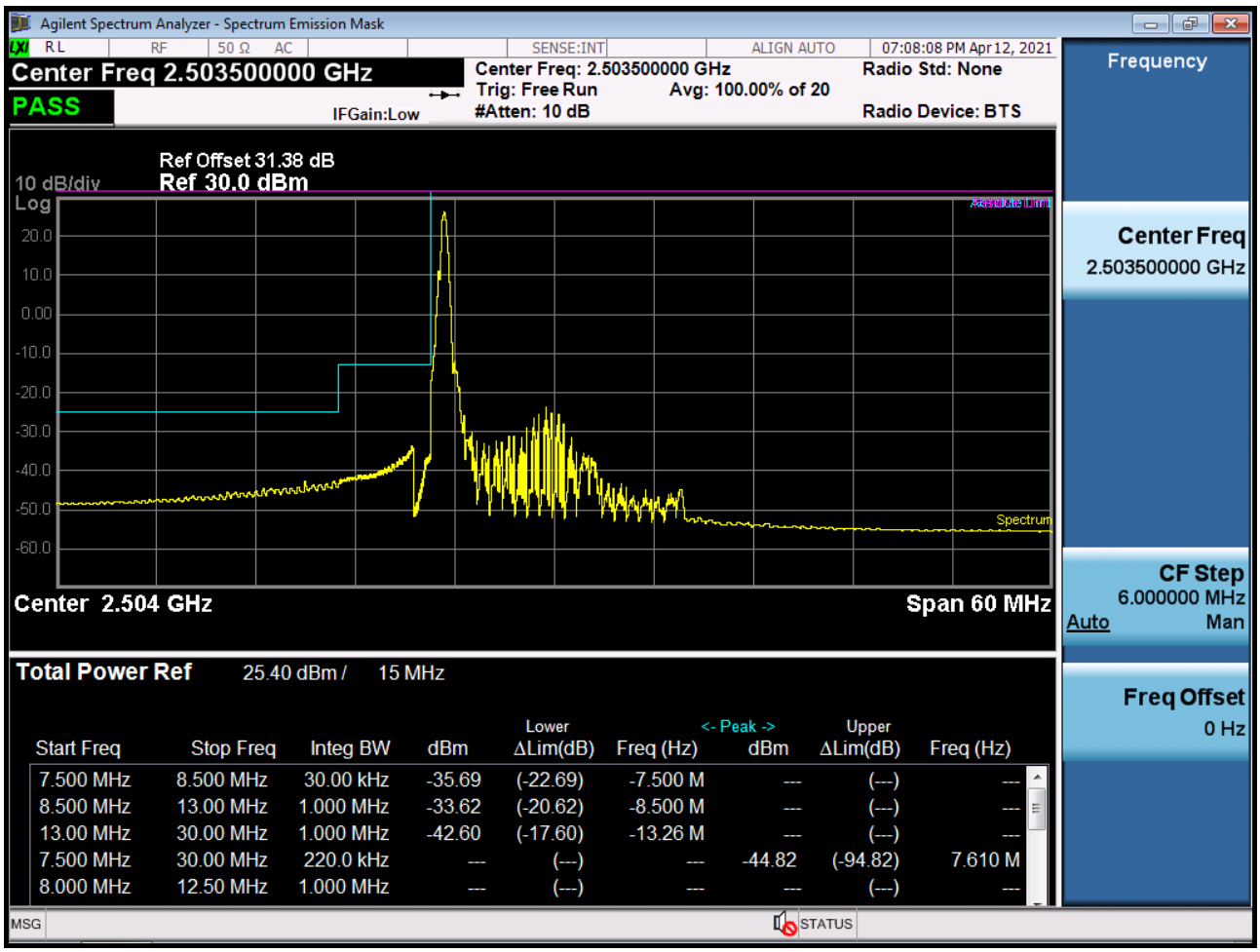
High Channel Edge Plot (10 MHz Ch.41540 QPSK RB 1, Offset 49) (POWER CLASS 3)



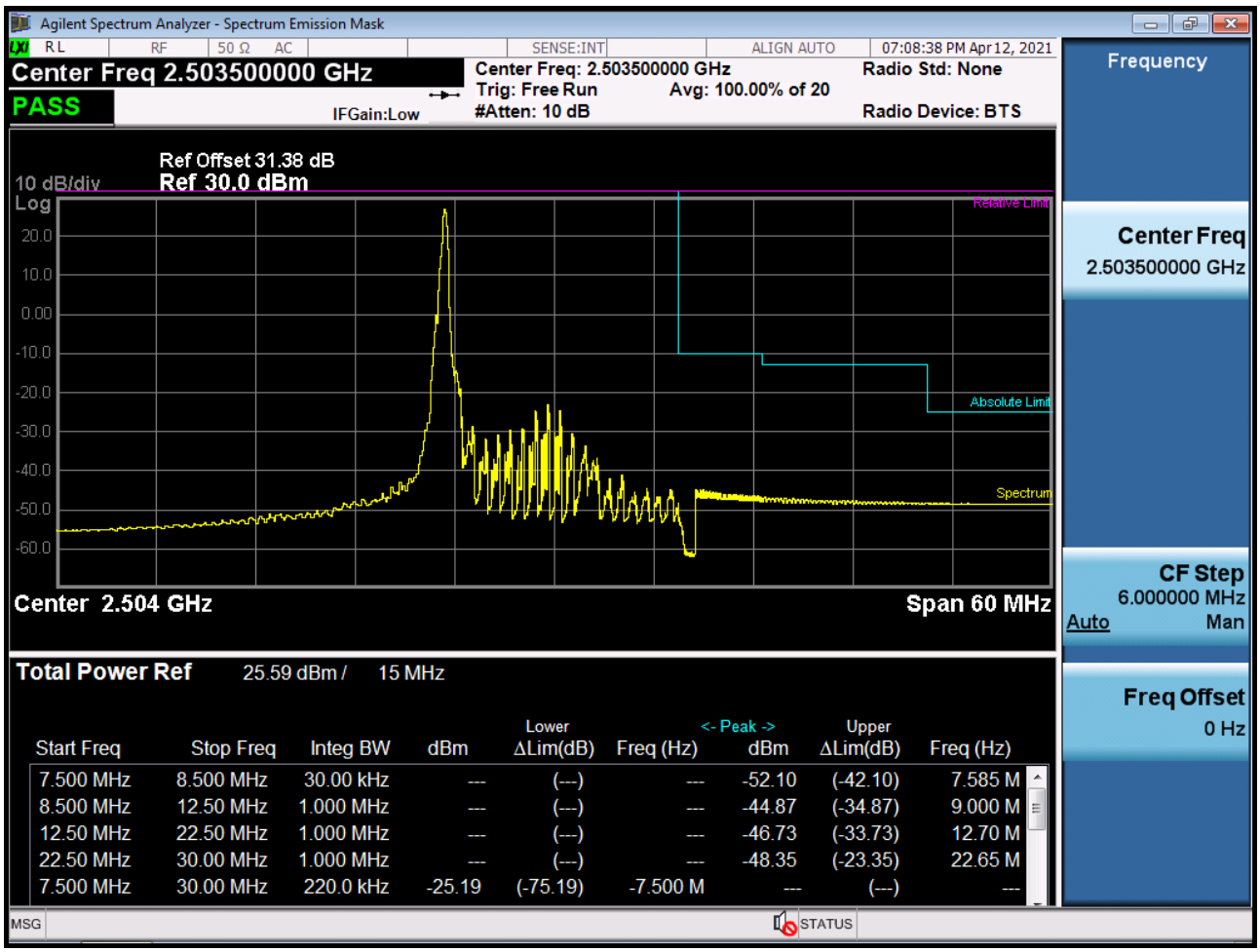
High Channel Edge Plot (10 MHz Ch.41540 QPSK_RB50_Offset 0) (POWER CLASS 3)



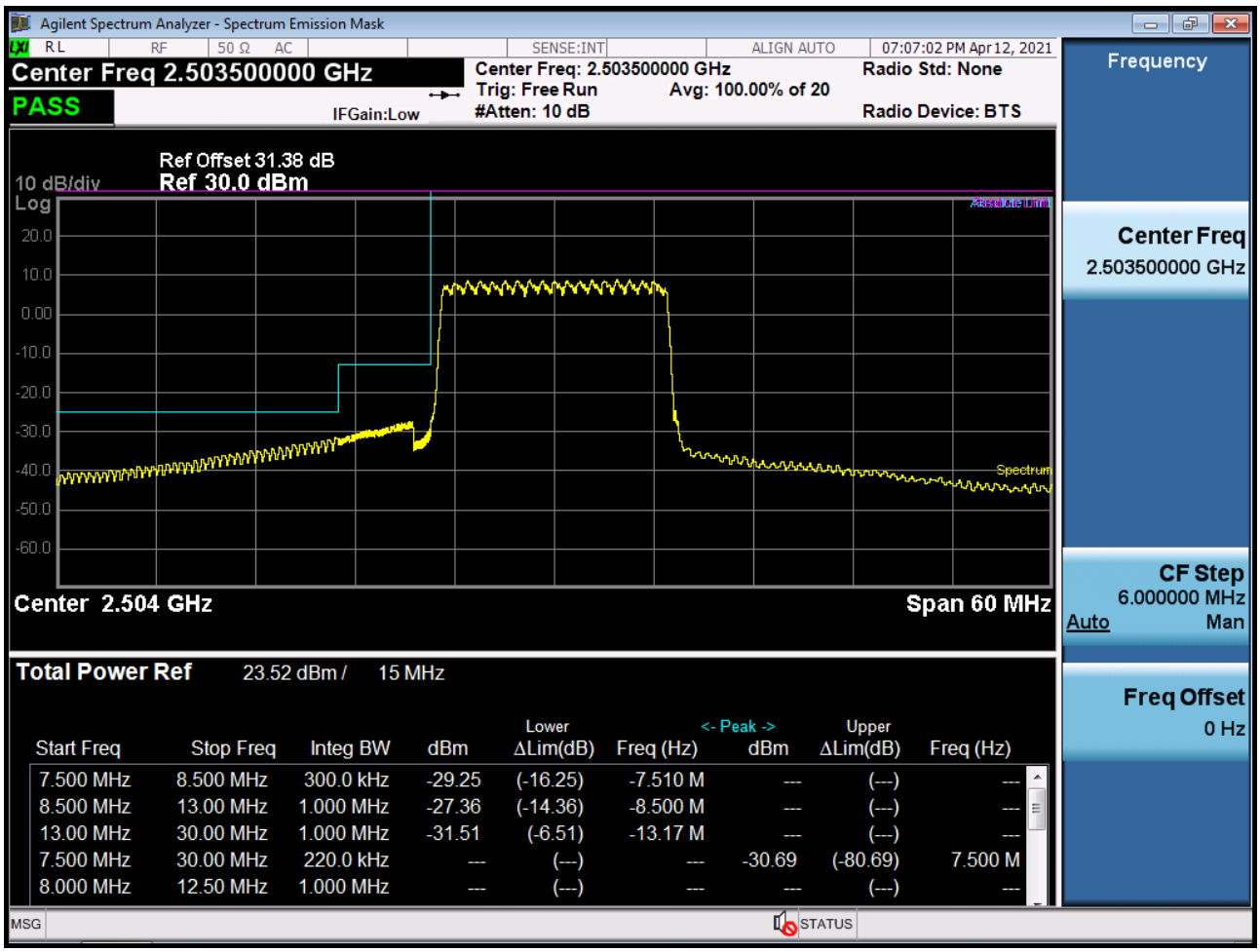
Low Channel Edge Plot (15 MHz Ch.39725 QPSK RB 1, Offset 0)-1 (POWER CLASS 3)



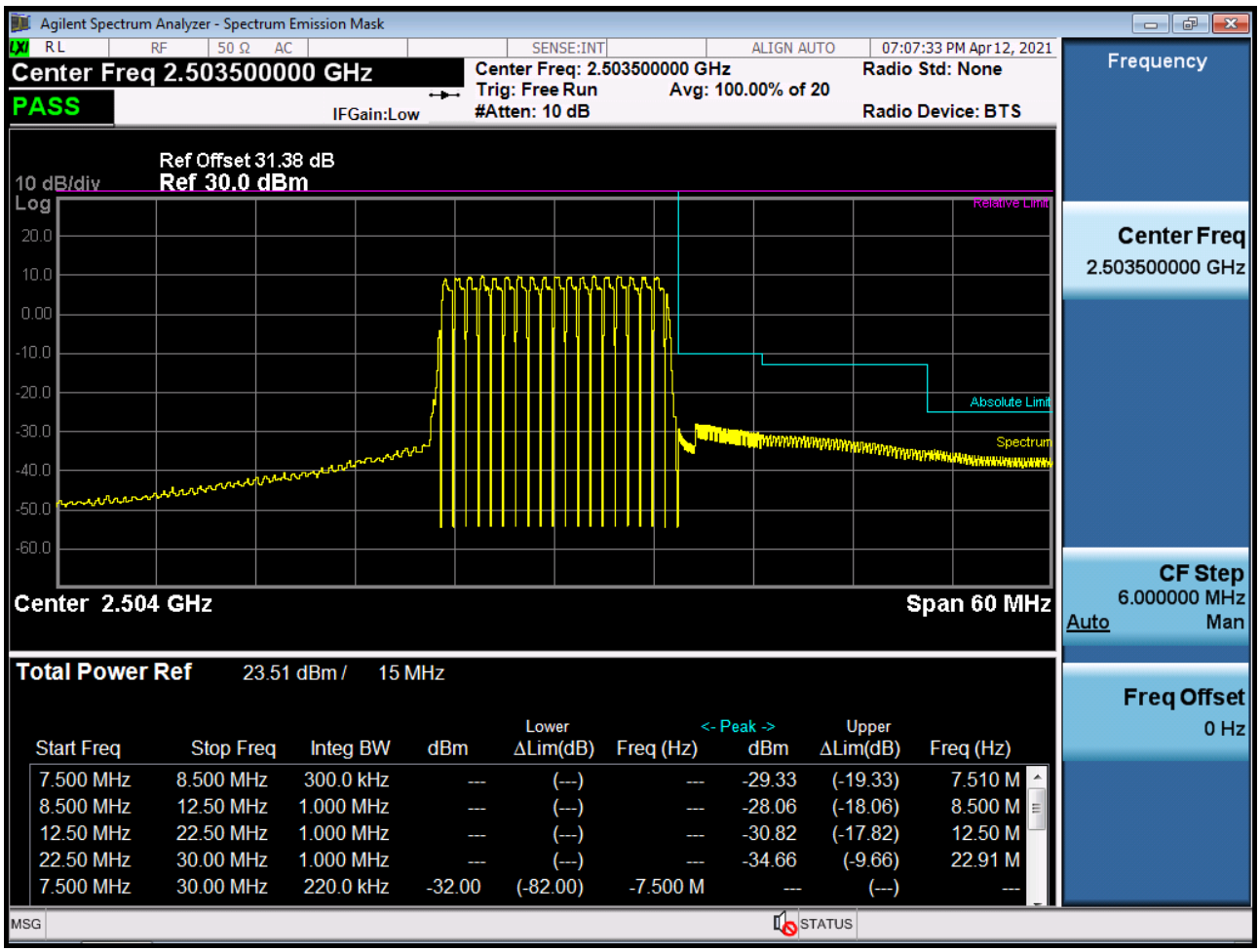
Low Channel Edge Plot (15 MHz Ch.39725 QPSK RB 1, Offset 0)-2 (POWER CLASS 3)



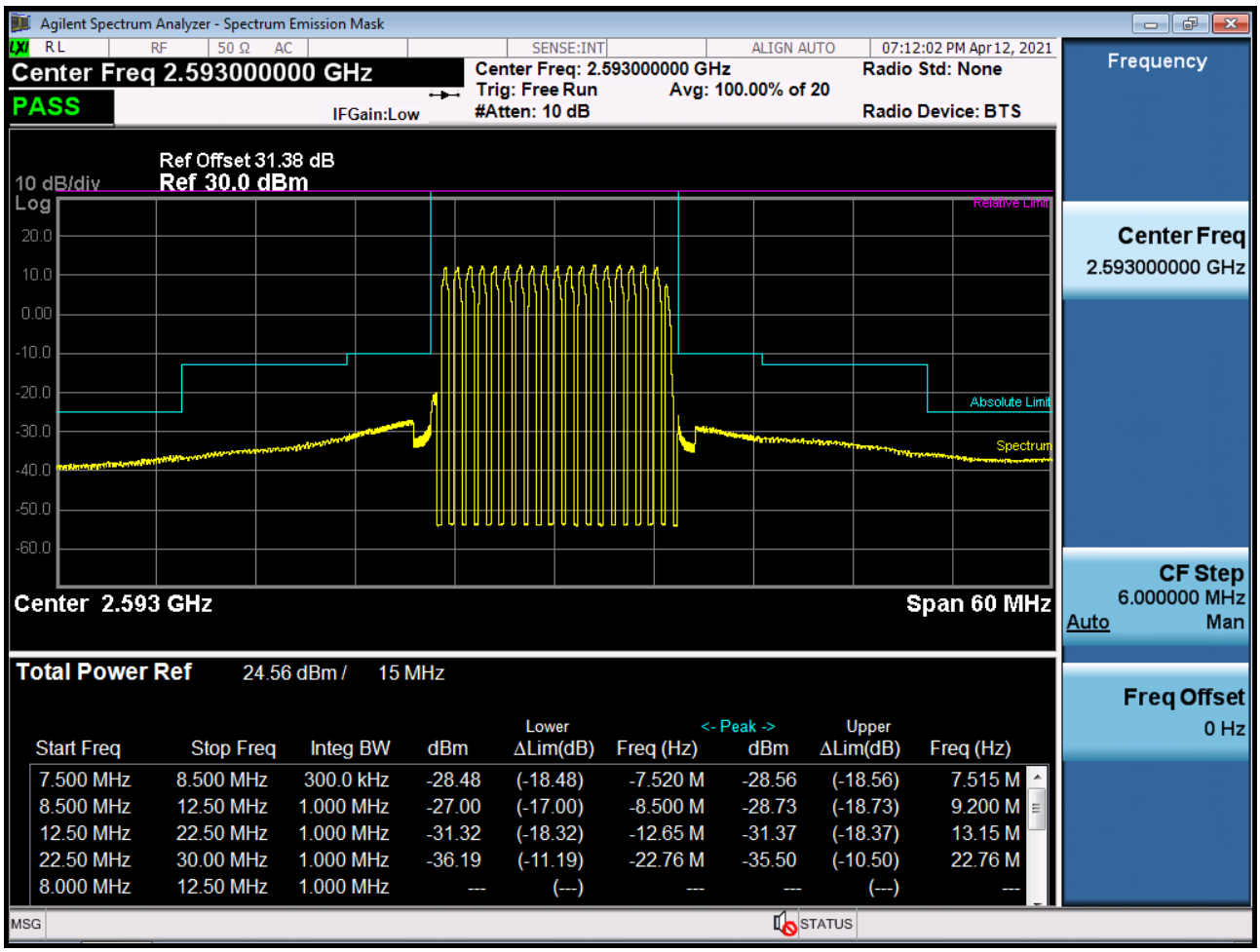
Low Channel Edge Plot (15 MHz Ch.39725 QPSK_RB75_Offset 0)-1 (POWER CLASS 3)



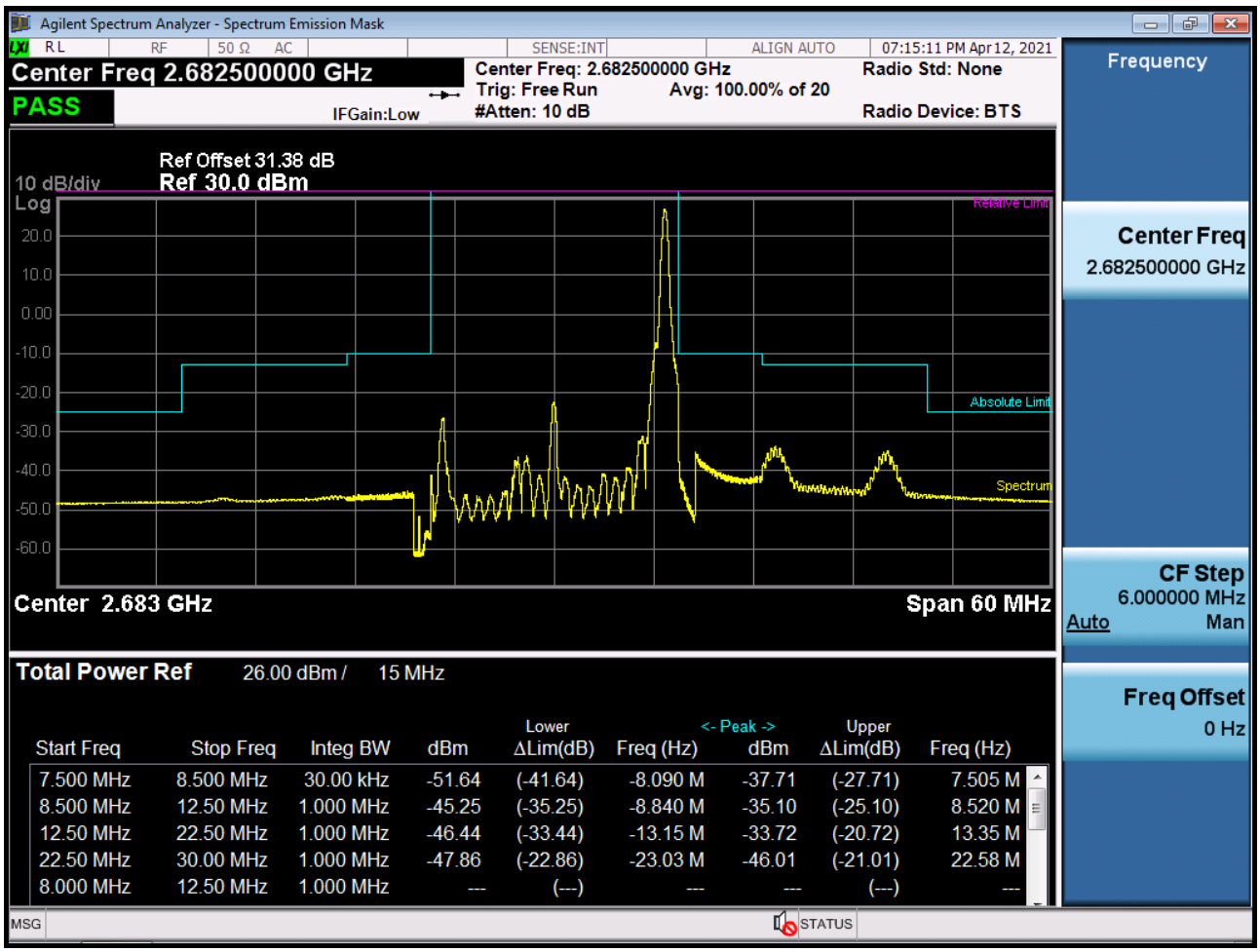
Low Channel Edge Plot (15 MHz Ch.39725 QPSK_RB75_Offset 0)-2 (POWER CLASS 3)



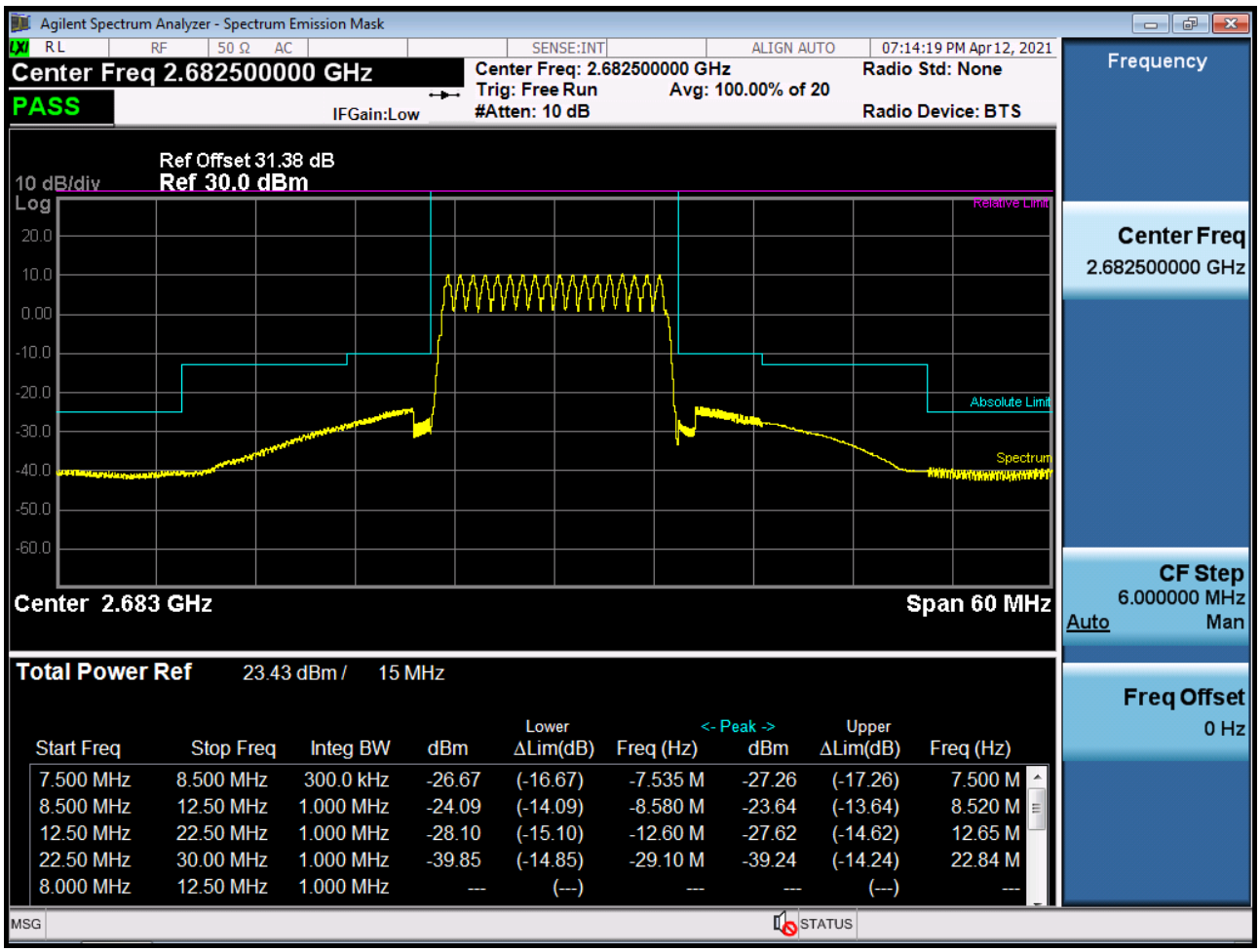
Mid Channel Edge Plot (15 MHz Ch.40620 QPSK RB 75) (POWER CLASS 3)



High Channel Edge Plot (15 MHz Ch.41515 QPSK RB 1, Offset 74) (POWER CLASS 3)



High Channel Edge Plot (15 MHz Ch.41515 QPSK_RB75_Offset 0) (POWER CLASS 3)



Low Channel Edge Plot (20 MHz Ch.39750 QPSK RB 1, Offset 0)-1 (POWER CLASS 3)