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FCC LTE REPORT

Certification

Applicant Name:
Franklin Technology Inc.

Address:
906 JEI Platz, 186, Gasan digital 1-ro,
Geumcheon-gu, Seoul, Korea, (08502)

Date of Issue:
February 01, 2019

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

Report No.: HCT-RF-1902-FC006

FCC ID:	**XHG-T720**
APPLICANT:	**Franklin Technology Inc.**

Model(s): T720
EUT Type: Home Phone Connect
FCC Classification: PCS Licensed Transmitter (PCB)
FCC Rule Part(s): §27, §2

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band 41 (5)	2498.5 – 2687.5	4M51G7D	QPSK	0.610	27.85
		4M51W7D	16QAM	0.449	26.52
LTE – Band 41 (10)	2501.0 – 2685.0	8M97G7D	QPSK	0.648	28.11
		8M96W7D	16QAM	0.480	26.81
LTE – Band 41 (15)	2503.5 – 2682.5	13M4G7D	QPSK	0.609	27.84
		13M4W7D	16QAM	0.452	26.55
LTE – Band 41 (20)	2506.0 – 2680.0	17M9G7D	QPSK	0.639	28.05
		17M9W7D	16QAM	0.462	26.64

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

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

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

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-1902-FC006	February 01, 2019	- First Approval Report

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MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	Franklin Technology Inc.
Address:	906 JEI Platz, 186, Gasan digital 1-ro, Geumcheon-gu, Seoul, Korea, (08502)
FCC ID:	XHG-T720
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§27, §2
EUT Type:	Home Phone Connect
Model(s):	T720
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:	December 26, 2018 ~ January 28, 2019
Peak. Ant gain:	5.194 dBi

2. INTRODUCTION

2.1. Description of EUT

The EUT was a VoLTE Home Phone Connect with CDMA/EVDO Rev0/A and LTE.

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 v03 – Section 4.2 - ANSI C63.26-2015 – Section 5.4.4
Band Edge	- KDB 971168 D01 v03 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Peak- to- Average Ratio	- KDB 971168 D01 v03 – 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 v03 – Section 5.2 - ANSI C63.26-2015 – Section 5.2 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03 – Section 5.8 - 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 1MHz
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.

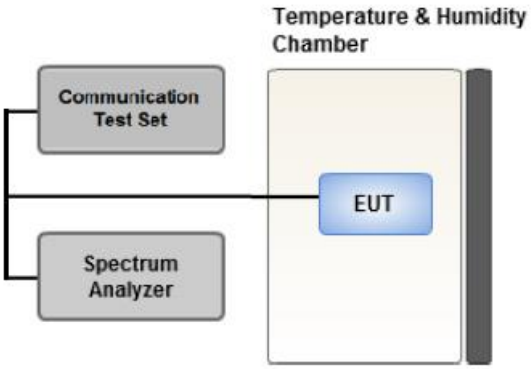
Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz 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 10th harmonics from 9 kHz.

Test Note

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

3.4 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.

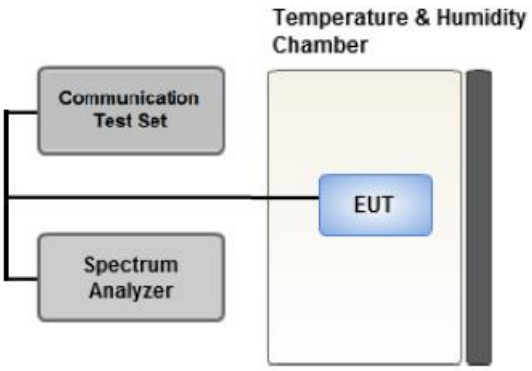
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

3.5 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

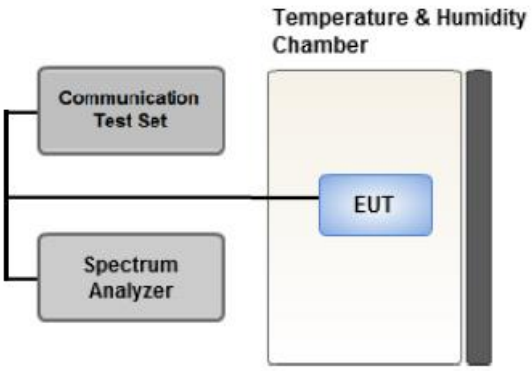
Test Overview

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 = Peak
4. Trace Mode = max hold
5. Sweep time = auto
6. Number of points in sweep ≥ 2 * Span / RBW

3.6 BAND EDGE



Test setup

Test Overview

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1% of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

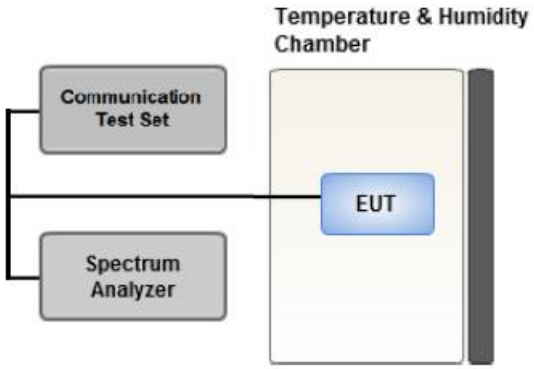
Test Notes

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

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

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

3.7 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.

3.8 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.
- Please refer to the table below.

[Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Radiated Spurious and Harmonic Emissions	QPSK	1	0	X

3.9 WORST CASE(CONDUCTED TEST)

[Worst case]

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

* Worst case : Of all modulation, We have tested modulation of the high Conducted Output Power.

4. LIST OF TEST EQUIPMENT

Manufacture	Model/ Equipment	Serial Number	Calibration Date	Calibration Interval	Calibration Due
REOHDE & SCHWARZ	SCU 18 / AMPLIFIER	10094	04/17/2018	Annual	04/17/2019
Wainwright	WHK1.2/15G-10EF/H.P.F	4	04/04/2018	Annual	04/04/2019
Wainwright	WHK3.3/18G-10EF/H.P.F	2	04/04/2018	Annual	04/04/2019
Hewlett Packard	11667B / Power Splitter(DC~26.5 GHz)	5001	06/07/2018	Annual	06/07/2019
Agilent	E3632A/DC Power Supply	KR75303243	05/09/2018	Annual	05/09/2019
Schwarzbeck	UHAP/ Dipole Antenna	557	03/31/2017	Biennial	03/31/2019
Schwarzbeck	UHAP/ Dipole Antenna	558	03/31/2017	Biennial	03/31/2019
ESPEC	SU-642 / Chamber	93000718	08/07/2018	Annual	08/07/2019
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	147	09/14/2018	Annual	09/14/2019
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	9120D-1298	10/04/2018	Annual	10/04/2019
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170342	04/25/2017	Biennial	04/25/2019
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170124	04/25/2017	Biennial	04/25/2019
Agilent	N9020A/Signal Analyzer(10Hz~26.5GHz)	MY52090906	06/08/2018	Annual	06/08/2019
Hewlett Packard	8493C/ATTENUATOR(20dB)	17280	06/21/2018	Annual	06/21/2019
REOHDE & SCHWARZ	FSV40/Spectrum Analyzer(10Hz~40GHz)	100931	10/22/2018	Annual	10/22/2019
Agilent	8960 (E5515C)/ Base Station	MY48360800	09/27/2018	Annual	09/27/2019
Anritsu Corp.	MT8820C/Wideband Radio Communication Tester	6201026545	02/08/2018	Annual	02/08/2019
Schwarzbeck	FMZB1513/ Loop Antenna(9kHz~30MHz)	1513-175	08/23/2018	Biennial	08/23/2020
Schwarzbeck	VULB9160/ Bilog Antenna	9160-3368	08/09/2018	Biennial	08/09/2020
Schwarzbeck	VULB9160/ Hybrid Antenna	760	04/06/2017	Biennial	04/06/2019
REOHDE & SCHWARZ	SMB100A/ SIGNAL GENERATOR (100kHz~40GHz)	177633	07/19/2018	Annual	07/19/2019
REOHDE & SCHWARZ	ESU40 / EMI TEST RECEIVER	100524	07/27/2018	Annual	07/27/2019
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.

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)	5.71

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	PASS
Equivalent Isotropic Radiated Power	§27.50(h)(2)	< 2 Watts max. EIRP	PASS
Frequency stability / variation of ambient temperature	§2.1055, §27.54	Emission must remain in band	PASS

6.2 Test Condition : Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Radiated Spurious and Harmonic Emissions	§2.1053, §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	PASS

7. SAMPLE CALCULATION

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

16QAM 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

Frequency (MHz)	Channel	Resource Block Size	Resource Block Offset	Conducted Power [dBm]		E.I.R.P [dBm]	
				QPSK	16QAM	QPSK	16QAM
2498.5	39675	1	0	22.36	20.86	27.55	26.05
		1	12	22.57	21.02	27.76	26.21
		1	24	22.36	20.85	27.55	26.04
		12	0	21.32	20.12	26.51	25.31
		12	6	21.25	20.12	26.44	25.31
		12	11	21.34	20.14	26.53	25.33
		25	0	21.31	20.53	26.50	25.72
2593.0	40620	1	0	22.55	21.09	27.74	26.28
		1	12	22.50	21.07	27.69	26.26
		1	24	22.29	20.95	27.48	26.14
		12	0	21.49	20.38	26.68	25.57
		12	6	21.41	20.39	26.60	25.58
		12	11	21.30	20.26	26.49	25.45
		25	0	21.41	20.31	26.60	25.50
2687.5	41565	1	0	22.66	21.30	27.85	26.49
		1	12	22.63	21.33	27.82	26.52
		1	24	22.51	21.08	27.70	26.27
		12	0	21.62	20.64	26.81	25.83
		12	6	21.58	20.67	26.77	25.86
		12	11	21.57	20.66	26.76	25.85
		25	0	21.57	20.52	26.76	25.71

LTE Conducted Average Output Powers (5 MHz Band 41 LTE)

Note:

1. E.I.R.P = Conducted Power + Peak. Ant Gain(dBi)
2. Peak. Ant Gain = 5.194 dBi
3. Limit = 2 Watts(=33.01dBm)

Frequency (MHz)	Channel	Resource Block Size	Resource Block Offset	Conducted Power [dBm]		E.I.R.P [dBm]	
				QPSK	16QAM	QPSK	16QAM
2501.0	39700	1	0	22.27	21.13	27.46	26.32
		1	24	22.74	21.27	27.93	26.46
		1	49	22.47	21.01	27.66	26.20
		25	0	21.42	20.64	26.61	25.83
		25	12	21.49	20.62	26.68	25.81
		25	24	21.44	20.67	26.63	25.86
		50	0	21.39	20.34	26.58	25.53
2593.0	40620	1	0	22.39	21.05	27.58	26.24
		1	24	22.91	21.37	28.10	26.56
		1	49	22.42	21.05	27.61	26.24
		25	0	21.50	20.74	26.69	25.93
		25	12	21.38	20.63	26.57	25.82
		25	24	21.42	20.57	26.61	25.76
		50	0	21.37	20.52	26.56	25.71
2685.0	41540	1	0	22.80	21.41	27.99	26.60
		1	24	22.92	21.62	28.11	26.81
		1	49	22.41	21.19	27.60	26.38
		25	0	21.61	20.61	26.80	25.80
		25	12	21.74	20.76	26.93	25.95
		25	24	21.49	20.57	26.68	25.76
		50	0	21.54	20.62	26.73	25.81

LTE Conducted Average Output Powers (10 MHz Band 41 LTE)

Note:

1. E.I.R.P = Conducted Power + Peak. Ant Gain(dBi)
2. Peak. Ant Gain = 5.194 dBi
3. Limit = 2 Watts(=33.01dBm)

Frequency (MHz)	Channel	Resource Block Size	Resource Block Offset	Conducted Power [dBm]		E.I.R.P [dBm]	
				QPSK	16QAM	QPSK	16QAM
2503.5	39725	1	0	22.35	21.05	27.54	26.24
		1	36	22.57	21.12	27.76	26.31
		1	74	22.47	20.94	27.66	26.13
		36	0	21.29	20.36	26.48	25.55
		36	18	21.32	20.39	26.51	25.58
		36	39	21.16	20.19	26.35	25.38
		75	0	21.22	20.33	26.41	25.52
2593.0	40620	1	0	22.41	21.08	27.60	26.27
		1	36	22.60	20.99	27.79	26.18
		1	74	22.36	20.98	27.55	26.17
		36	0	21.42	20.40	26.61	25.59
		36	18	21.34	20.35	26.53	25.54
		36	39	21.26	20.36	26.45	25.55
		75	0	21.32	20.36	26.51	25.55
2682.5	41515	1	0	22.65	21.36	27.84	26.55
		1	36	22.61	21.21	27.80	26.40
		1	74	22.30	21.07	27.49	26.26
		36	0	21.60	20.58	26.79	25.77
		36	18	21.64	20.70	26.83	25.89
		36	39	21.43	20.56	26.62	25.75
		75	0	21.44	20.61	26.63	25.80

LTE Conducted Average Output Powers (15 MHz Band 41 LTE)

Note:

1. E.I.R.P = Conducted Power + Peak. Ant Gain(dBi)
2. Peak. Ant Gain = 5.194 dBi
3. Limit = 2 Watts(=33.01dBm)

Frequency (MHz)	Channel	Resource Block Size	Resource Block Offset	Conducted Power [dBm]		E.I.R.P [dBm]	
				QPSK	16QAM	QPSK	16QAM
2506.0	39750	1	0	22.22	20.95	27.41	26.14
		1	49	22.63	21.02	27.82	26.21
		1	99	22.24	20.75	27.43	25.94
		50	0	21.19	20.23	26.38	25.42
		50	25	21.15	20.18	26.34	25.37
		50	49	21.16	20.12	26.35	25.31
		100	0	21.24	20.25	26.43	25.44
2593.0	40620	1	0	22.32	20.95	27.51	26.14
		1	49	22.81	21.33	28.00	26.52
		1	99	22.24	20.81	27.43	26.00
		50	0	21.44	20.44	26.63	25.63
		50	25	21.31	20.45	26.50	25.64
		50	49	21.28	20.33	26.47	25.52
		100	0	21.35	20.39	26.54	25.58
2680.0	41490	1	0	22.60	21.27	27.79	26.46
		1	49	22.86	21.45	28.05	26.64
		1	99	22.50	20.95	27.69	26.14
		50	0	21.58	20.57	26.77	25.76
		50	25	21.58	20.63	26.77	25.82
		50	49	21.49	20.53	26.68	25.72
		100	0	21.50	20.68	26.69	25.87

LTE Conducted Average Output Powers (20 MHz Band 41 LTE)

Note:

1. E.I.R.P = Conducted Power + Peak. Ant Gain(dBi)
2. Peak. Ant Gain = 5.194 dBi
3. Limit = 2 Watts(=33.01dBm)

8.2 RADIATED SPURIOUS EMISSIONS

▣ MODE: LTE B41

▣ MODULATION SIGNAL: 5 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 43 + 10 $\log_{10}$ (W)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	Margin (dB)	Detector
39675 (2498.5)	4,997.00	-46.18	12.89	-59.87	2.47	H	-49.45	24.45	Peak
	7,495.50	-34.56	11.51	-41.30	2.97	H	-32.76	7.76	Peak
	9,994.00	-49.80	11.21	-52.25	3.48	V	-44.52	19.52	Peak
	12,492.50	-48.21	14.20	-52.79	4.17	V	-42.76	17.76	Peak
	14,991.00	-52.23	13.20	-55.07	4.34	V	-46.21	21.21	Peak
40620 (2593.0)	5,186.00	-40.84	13.05	-53.44	2.58	V	-42.97	17.97	Peak
	7,779.00	-29.76	11.98	-37.28	2.93	V	-28.23	3.23	Peak
	10,372.00	-49.80	10.96	-52.79	3.62	V	-45.45	20.45	Peak
	12,965.00	-50.98	13.61	-53.58	4.08	V	-44.05	19.05	Peak
	15,558.00	-53.21	16.58	-58.02	4.40	V	-45.84	20.84	Peak
41565 (2687.5)	5,375.00	-36.80	13.49	-50.08	2.65	H	-39.24	14.24	Peak
	8,062.50	-32.87	11.46	-37.69	3.05	H	-29.28	4.28	Average
	10,750.00	-42.57	10.99	-45.47	3.67	V	-38.15	13.15	Peak
	13,437.50	-46.46	13.01	-47.93	4.09	V	-39.01	14.01	Peak
	16,125.00	-52.48	17.38	-56.88	4.62	V	-44.12	19.12	Peak

Note:

1. Limit = 55 + 10 $\log_{10}$ (W) = -25.0 dBm

▣ MODE: LTE B41

▣ MODULATION SIGNAL: 10 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 43 + 10 $\log_{10}$ (W)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	Margin (dB)	Detector
39700 (2501.0)	5,002.00	-46.44	12.89	-60.13	2.47	H	-49.71	24.71	Peak
	7,503.00	-36.47	11.53	-42.90	2.92	H	-34.30	9.30	Peak
	10,004.00	-50.00	11.25	-52.84	3.41	V	-45.00	20.00	Peak
	12,505.00	-51.00	14.24	-55.58	3.99	V	-45.33	20.33	Peak
40620 (2593.0)	5,186.00	-41.28	13.05	-53.88	2.58	V	-43.41	18.41	Peak
	7,779.00	-32.33	11.98	-39.85	2.93	V	-30.80	5.80	Peak
	10,372.00	-48.59	10.96	-51.58	3.62	V	-44.24	19.24	Peak
	12,965.00	-52.99	13.61	-55.59	4.08	V	-46.06	21.06	Peak
	15,558.00	-55.47	16.58	-60.28	4.40	V	-48.10	23.10	Peak
41540 (2685.0)	5,370.00	-35.95	13.50	-49.53	2.65	V	-38.68	13.68	Peak
	8,055.00	-33.13	11.46	-38.02	3.05	H	-29.62	4.62	Average
	10,740.00	-45.60	10.98	-48.41	3.62	V	-41.05	16.05	Peak
	13,425.00	-48.59	13.07	-50.18	4.18	V	-41.29	16.29	Peak
	16,110.00	-53.99	17.39	-58.02	4.54	V	-45.17	20.17	Peak

Note:

1. Limit = 55 + 10 $\log_{10}$ (W) = -25.0 dBm

▣ MODE: LTE B41

▣ MODULATION SIGNAL: 15 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 43 + 10 lo_{g10} (W)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	Margin (dB)	Detector
39725 (2503.5)	5,007.00	-46.24	12.86	-60.37	2.49	V	-50.00	25.00	Peak
	7,510.50	-36.90	11.54	-43.04	2.90	H	-34.40	9.40	Peak
	10,014.00	-51.00	11.27	-54.16	3.40	V	-46.30	21.30	Peak
	12,517.50	-50.68	14.23	-54.99	4.05	V	-44.81	19.81	Peak
	15,021.00	-53.45	13.31	-56.09	4.34	V	-47.12	22.12	Peak
40620 (2593.0)	5,186.00	-40.13	13.05	-52.73	2.58	H	-42.26	17.26	Peak
	7,779.00	-32.58	11.98	-40.10	2.93	H	-31.05	6.05	Peak
	10,372.00	-49.59	10.96	-52.58	3.62	V	-45.24	20.24	Peak
	12,965.00	-52.36	13.61	-54.96	4.08	V	-45.43	20.43	Peak
	15,558.00	-55.19	16.58	-60.00	4.40	V	-47.82	22.82	Peak
41515 (2682.5)	5,365.00	-35.48	13.51	-49.13	2.64	V	-38.26	13.26	Peak
	8,047.50	-33.90	11.45	-38.87	3.05	H	-30.47	5.47	Average
	10,730.00	-47.01	10.98	-49.82	3.60	V	-42.44	17.44	Peak
	13,412.50	-49.49	13.09	-51.48	4.17	V	-42.56	17.56	Peak
	16,095.00	-54.23	17.41	-58.03	4.55	V	-45.17	20.17	Peak

Note:

1. Limit = 55 + 10 $\log_{10}$ (W) = -25.0 dBm

▣ MODE: LTE B41

▣ MODULATION SIGNAL: 20 MHz QPSK

▣ DISTANCE: 1 meters

▣ LIMIT: 43 + 10 lo_{g10} (W)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	EIRP (dBm)	Margin (dB)	Detector
39750 (2506.0)	5,012.00	-44.90	12.86	-59.03	2.49	H	-48.66	23.66	Peak
	7,518.00	-36.31	11.57	-41.62	2.93	H	-32.98	7.98	Peak
	10,024.00	-51.60	11.29	-54.43	3.48	V	-46.61	21.61	Peak
	12,530.00	-49.44	14.22	-54.09	4.17	V	-44.04	19.04	Peak
40620 (2593.0)	5,186.00	-40.75	13.05	-53.35	2.58	V	-42.88	17.88	Peak
	7,779.00	-33.25	11.98	-40.77	2.93	V	-31.72	6.72	Peak
	10,372.00	-49.60	10.96	-52.59	3.62	V	-45.25	20.25	Peak
	12,965.00	-54.92	13.61	-57.52	4.08	V	-47.99	22.99	Peak
41490 (2680.0)	5,360.00	-36.32	13.51	-50.04	2.63	V	-39.16	14.16	Peak
	8,040.00	-35.85	11.46	-40.75	3.06	H	-32.35	7.35	Average
	10,720.00	-46.20	10.97	-48.83	3.66	V	-41.52	16.52	Peak
	13,400.00	-49.24	13.11	-50.76	4.16	V	-41.81	16.81	Peak

Note:

1. Limit = 55 + 10 $\log_{10}$ (W) = -25.0 dBm

8.3 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
41	5 MHz	2593.0	QPSK	25	0	4.5088
			16-QAM	25		4.5050
	10 MHz		QPSK	50		8.9732
			16-QAM	50		8.9644
	15 MHz		QPSK	75		13.438
			16-QAM	75		13.419
	20 MHz		QPSK	100		17.928
			16-QAM	100		17.860

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 35 ~ 42.

8.4 CONDUCTED SPURIOUS EMISSIONS

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	7.4901	28.591	-66.503	-37.912	-25.00
		2593.0	25.7831	30.131	-67.135	-37.004	
		2687.5	25.7946	30.131	-67.248	-37.117	
	10	2501.0	26.1320	30.131	-67.143	-37.012	
		2593.0	26.3078	30.131	-66.754	-36.623	
		2685.0	25.9027	30.131	-66.920	-36.789	
	15	2503.5	7.4257	28.591	-67.672	-39.081	
		2593.0	7.7597	28.591	-65.990	-37.399	
		2682.5	2.5404	27.976	-60.185	-32.209	
	20	2506.0	7.4920	28.591	-66.874	-38.283	
		2593.0	26.2211	30.131	-66.785	-36.654	
		2680.0	26.1914	30.131	-66.985	-36.854	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 71 ~ 98.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor(dB) = Cable Loss + Attenuator + Power Splitter

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

8.5 CHANNEL EDGE

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	-23.21	-23.49	-16.57	-16.77	-35.79	-37.50	-37.48
10 MHz	2501.0	QPSK	50/0	-24.42	-23.39	-20.24	-20.42	-25.80	-25.91	-41.02
15 MHz	2503.5	QPSK	75/0	-25.89	-29.22	-23.08	-23.59	-27.02	-26.70	-42.48
20 MHz	2506.0	QPSK	100/0	-26.67	-27.04	-24.39	-25.10	-27.96	-28.14	-42.40
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	-24.32	-25.05	-18.68	-19.40
	2687.5	QPSK	25	0	-23.88	-24.78	-17.21	-18.29
10 MHz	2593.0	QPSK	50	0	-25.26	-25.57	-20.10	-20.65
	2685.0	QPSK	50	0	-21.56	-22.34	-17.99	-19.23
15 MHz	2593.0	QPSK	75	0	-24.83	-26.17	-22.40	-23.82
	2682.5	QPSK	75	0	-20.95	-22.17	-17.89	-19.46
20 MHz	2593.0	QPSK	100	0	-25.76	-27.06	-23.50	-24.79
	2680.0	QPSK	100	0	-20.03	-21.08	-16.76	-18.74
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	-38.71	-45.03	-41.39	-44.85
	2687.5	QPSK	25	0	-36.01	-36.68	-37.59	-38.10
10 MHz	2593.0	QPSK	50	0	-25.68	-27.82	-40.01	-45.14
	2685.0	QPSK	50	0	-20.72	-23.50	-37.58	-40.05
15 MHz	2593.0	QPSK	75	0	-25.43	-27.33	-40.35	-43.57
	2682.5	QPSK	75	0	-20.25	-23.01	-37.79	-42.16
20 MHz	2593.0	QPSK	100	0	-27.07	-28.69	-41.82	-43.12
	2680.0	QPSK	100	0	-18.51	-21.70	-36.91	-42.39
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 43 ~ 70.

8.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ MODE: LTE 41

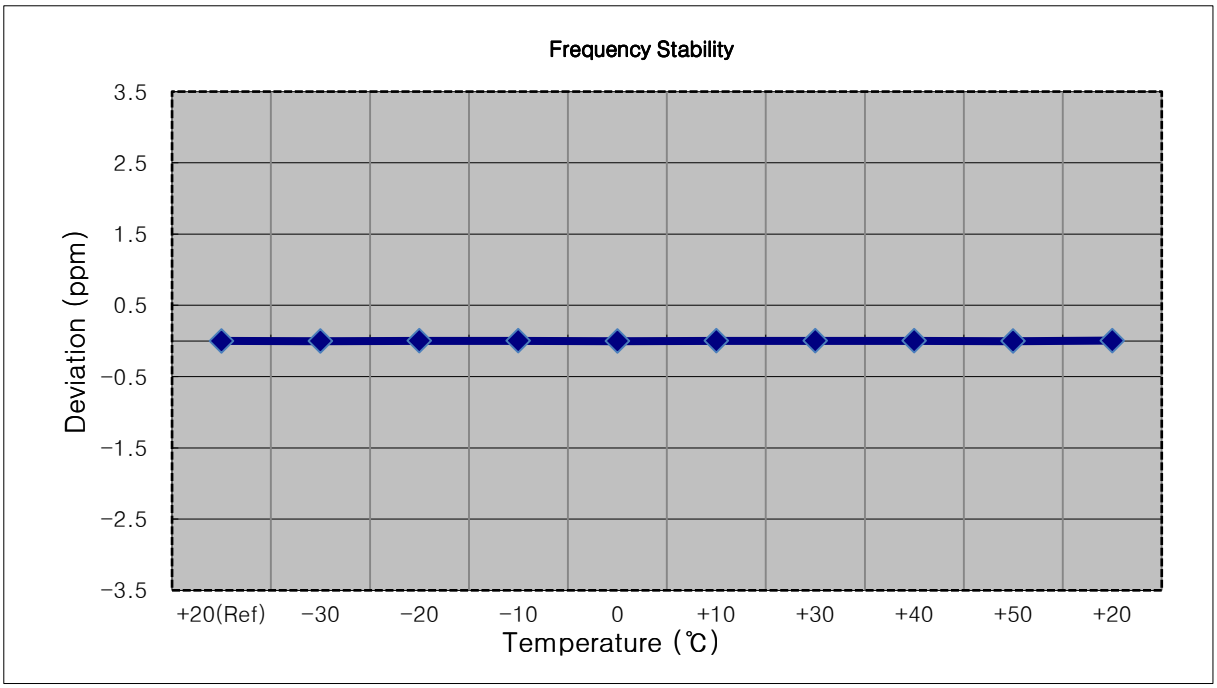
▣ OPERATING FREQUENCY: 2,498,500,000 Hz

▣ CHANNEL: 39675 (5 MHz)

▣ REFERENCE VOLTAGE: 3.80 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.80	+20(Ref)	2498 500 012	0.0	0.000 000	0.000
100%		-30	2498 500 005	-7.0	0.000 000	-0.003
100%		-20	2498 500 018	5.9	0.000 000	0.002
100%		-10	2498 500 017	5.3	0.000 000	0.002
100%		0	2498 500 008	-4.3	0.000 000	-0.002
100%		+10	2498 500 018	6.2	0.000 000	0.002
100%		+30	2498 500 019	7.1	0.000 000	0.003
100%		+40	2498 500 019	6.6	0.000 000	0.003
100%		+50	2498 500 007	-4.8	0.000 000	-0.002
Batt. Endpoint	3.40	+20	2498 500 021	8.8	0.000 000	0.004



▣ MODE: LTE 41

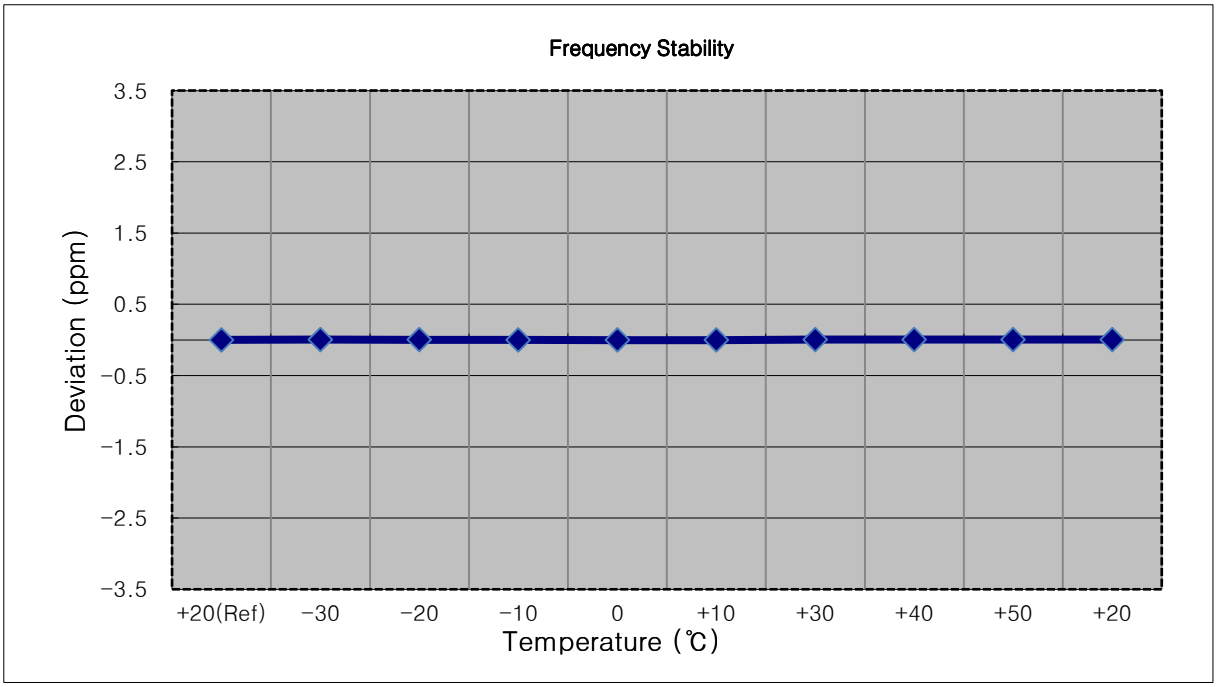
▣ OPERATING FREQUENCY: 2501.000,000 Hz

▣ CHANNEL: 39700 (10 MHz)

▣ REFERENCE VOLTAGE: 3.80 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.80	+20(Ref)	2501 000 009	0.0	0.000 000	0.000
100%		-30	2501 000 019	9.7	0.000 000	0.004
100%		-20	2501 000 014	4.9	0.000 000	0.002
100%		-10	2501 000 006	-3.7	0.000 000	-0.001
100%		0	2501 000 004	-5.6	0.000 000	-0.002
100%		+10	2501 000 004	-5.1	0.000 000	-0.002
100%		+30	2501 000 018	8.4	0.000 000	0.003
100%		+40	2501 000 020	10.4	0.000 000	0.004
100%		+50	2501 000 017	7.5	0.000 000	0.003
Batt. Endpoint	3.40	+20	2501 000 019	9.4	0.000 000	0.004



▣ MODE: LTE 41

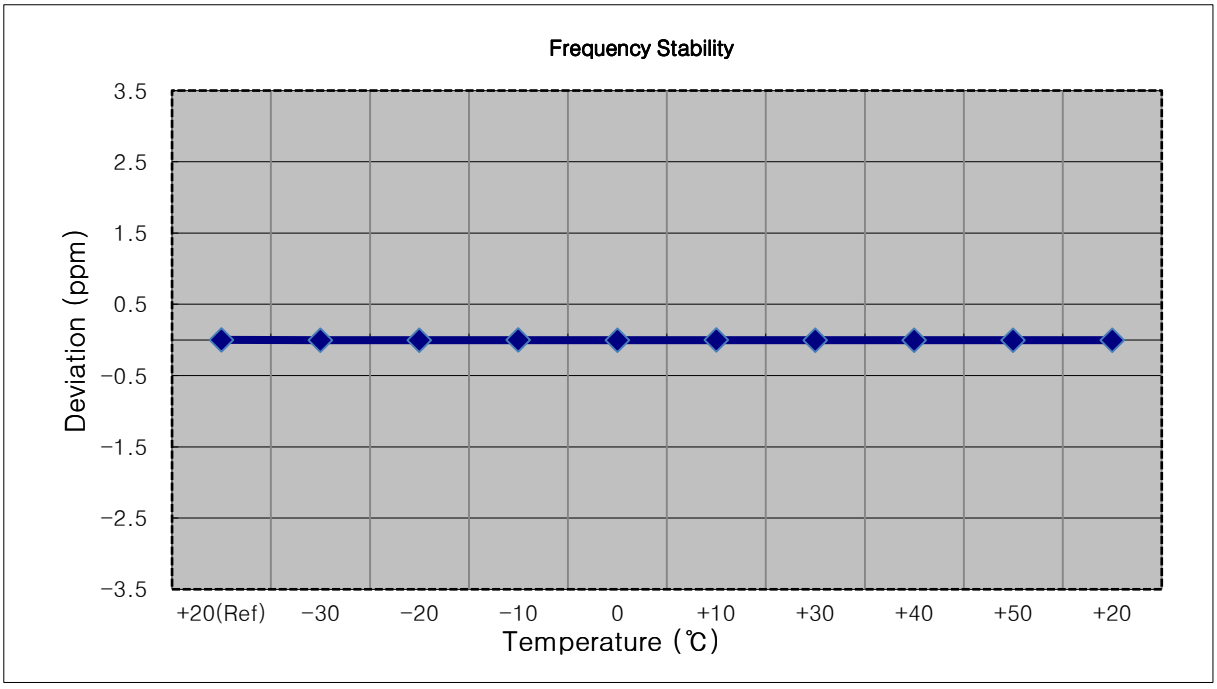
▣ OPERATING FREQUENCY: 2503.500,000 Hz

▣ CHANNEL: 39725 (15 MHz)

▣ REFERENCE VOLTAGE: 3.80 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.80	+20(Ref)	2503 499 990	0.0	0.000 000	0.000
100%		-30	2503 499 980	-10.4	0.000 000	-0.004
100%		-20	2503 499 979	-11.7	0.000 000	-0.005
100%		-10	2503 499 982	-8.2	0.000 000	-0.003
100%		0	2503 499 978	-12.1	0.000 000	-0.005
100%		+10	2503 499 984	-6.5	0.000 000	-0.003
100%		+30	2503 499 977	-12.9	-0.000 001	-0.005
100%		+40	2503 499 978	-12.7	-0.000 001	-0.005
100%		+50	2503 499 979	-11.7	0.000 000	-0.005
Batt. Endpoint	3.40	+20	2503 499 976	-14.1	-0.000 001	-0.006



▣ MODE: LTE 41

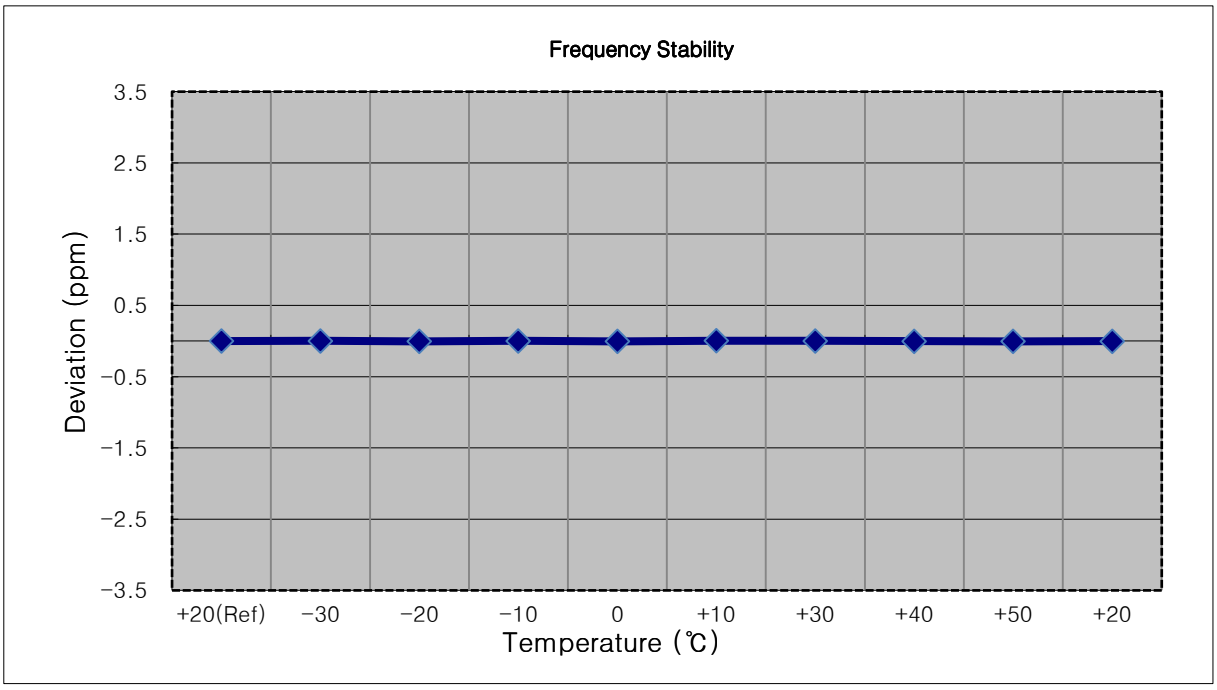
▣ OPERATING FREQUENCY: 2506.000,000 Hz

▣ CHANNEL: 39750 (20 MHz)

▣ REFERENCE VOLTAGE: 3.80 VDC

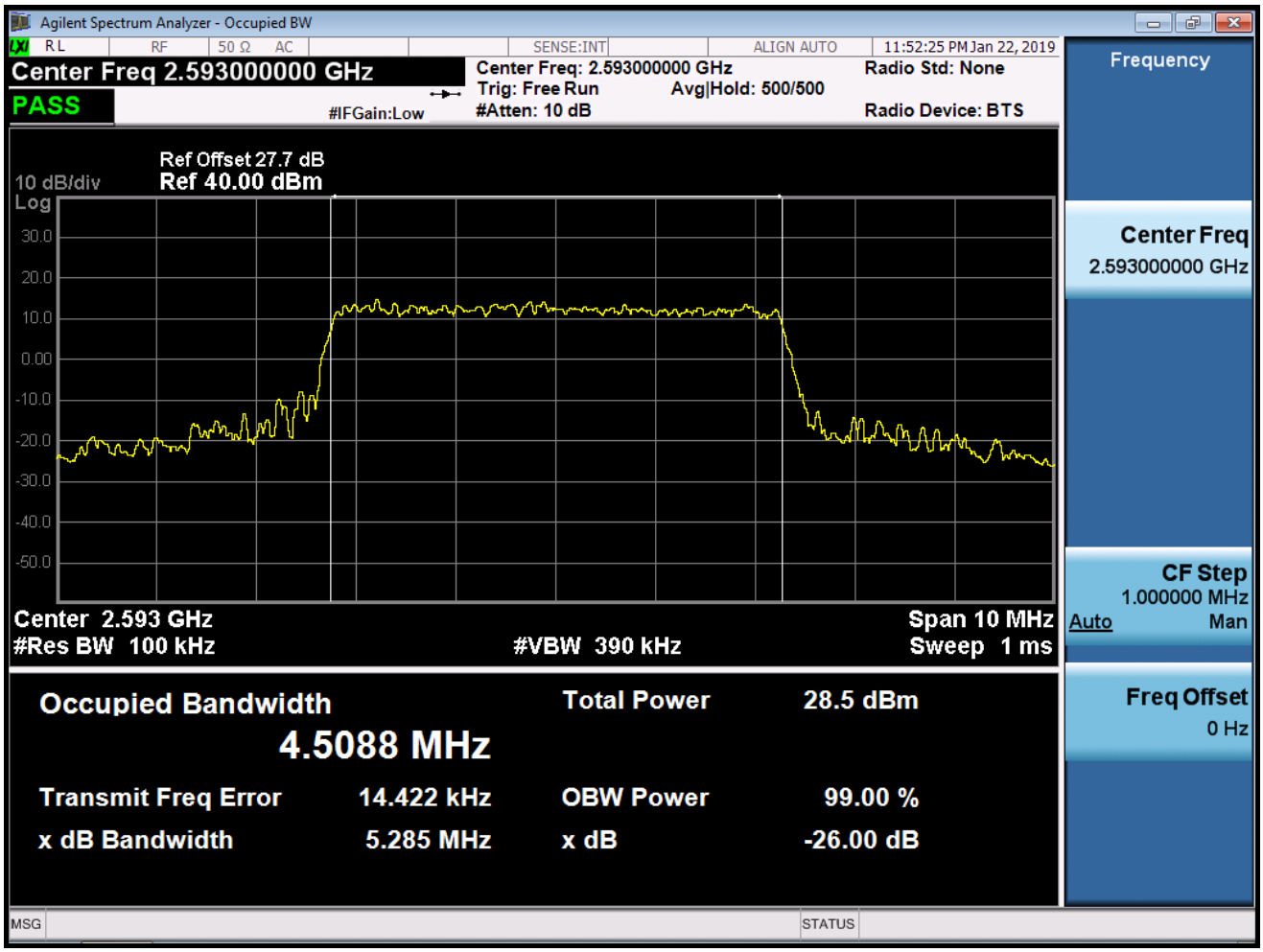
▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	3.80	+20(Ref)	2505 999 993	0.0	0.000 000	0.000
100%		-30	2506 000 001	8.3	0.000 000	0.003
100%		-20	2505 999 984	-8.8	0.000 000	-0.004
100%		-10	2505 999 999	6.3	0.000 000	0.003
100%		0	2505 999 985	-7.6	0.000 000	-0.003
100%		+10	2506 000 002	9.7	0.000 000	0.004
100%		+30	2505 999 997	4.7	0.000 000	0.002
100%		+40	2505 999 985	-7.3	0.000 000	-0.003
100%		+50	2505 999 985	-8.0	0.000 000	-0.003
Batt. Endpoint	3.40	+20	2505 999 987	-5.7	0.000 000	-0.002

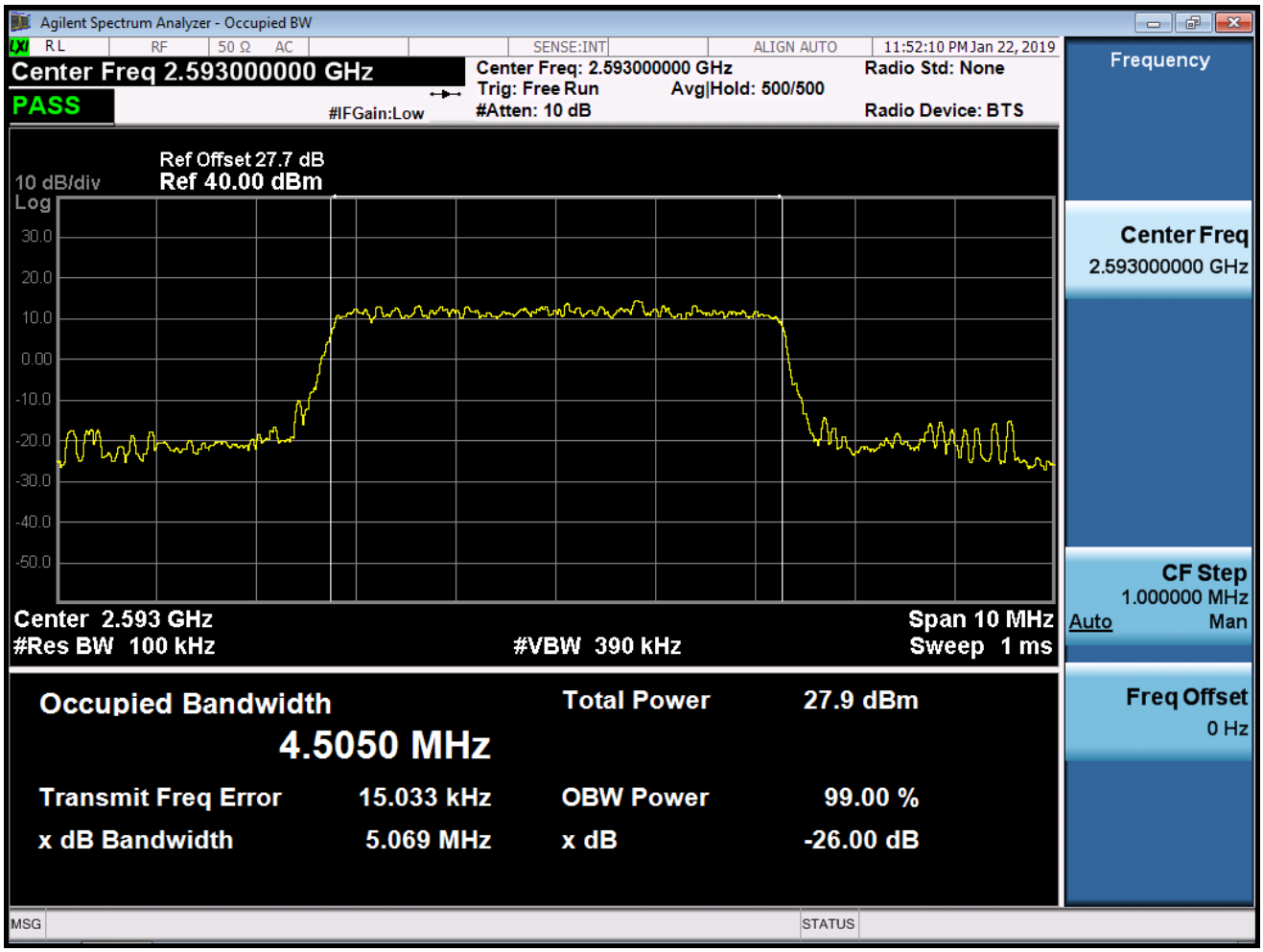


9. TEST PLOTS

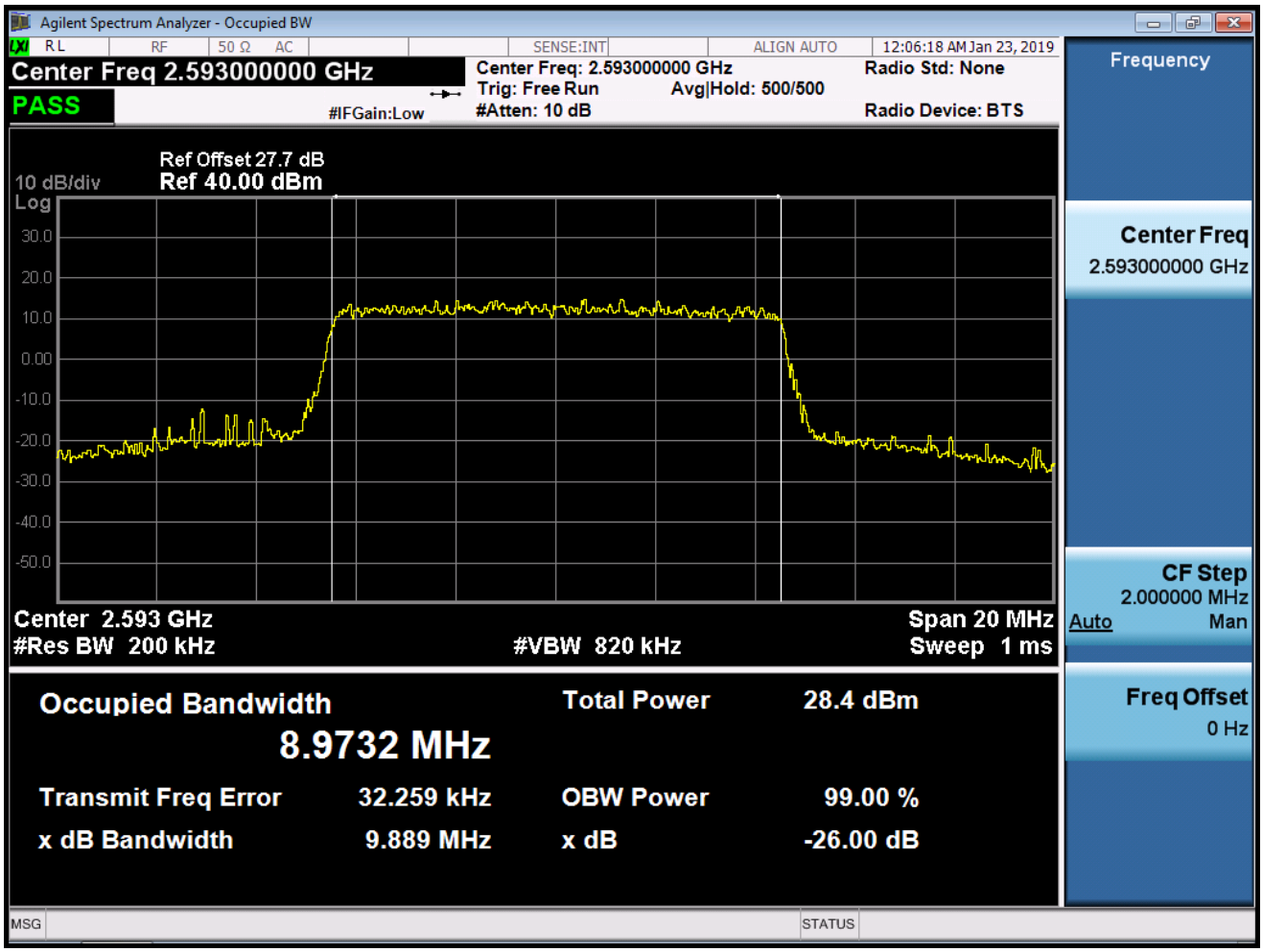
BAND 41. Occupied Bandwidth Plot (5 MHz Ch.40620 QPSK RB 25)



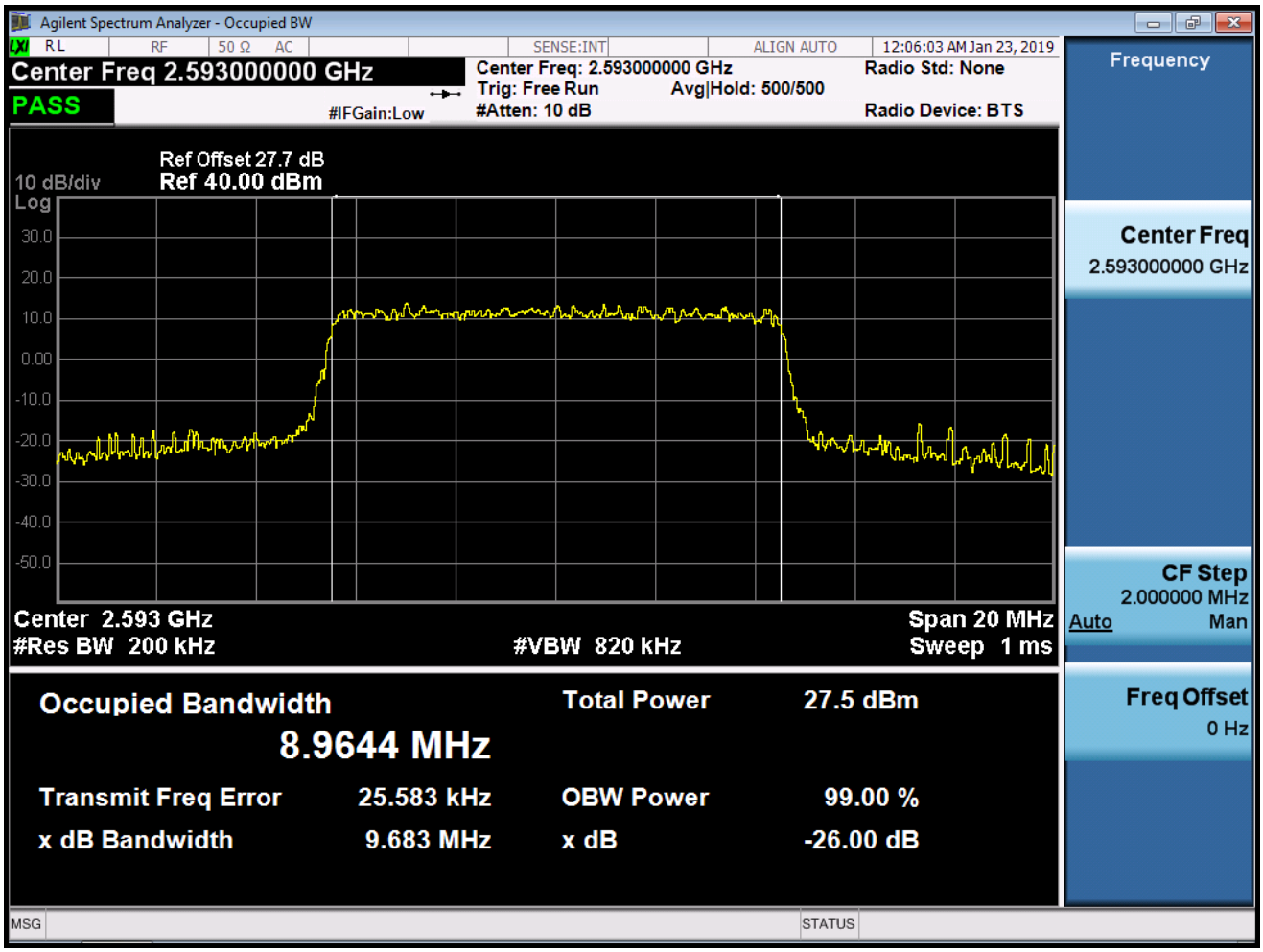
BAND 41. Occupied Bandwidth Plot (5 MHz Ch.40620 16-QAM RB 25)



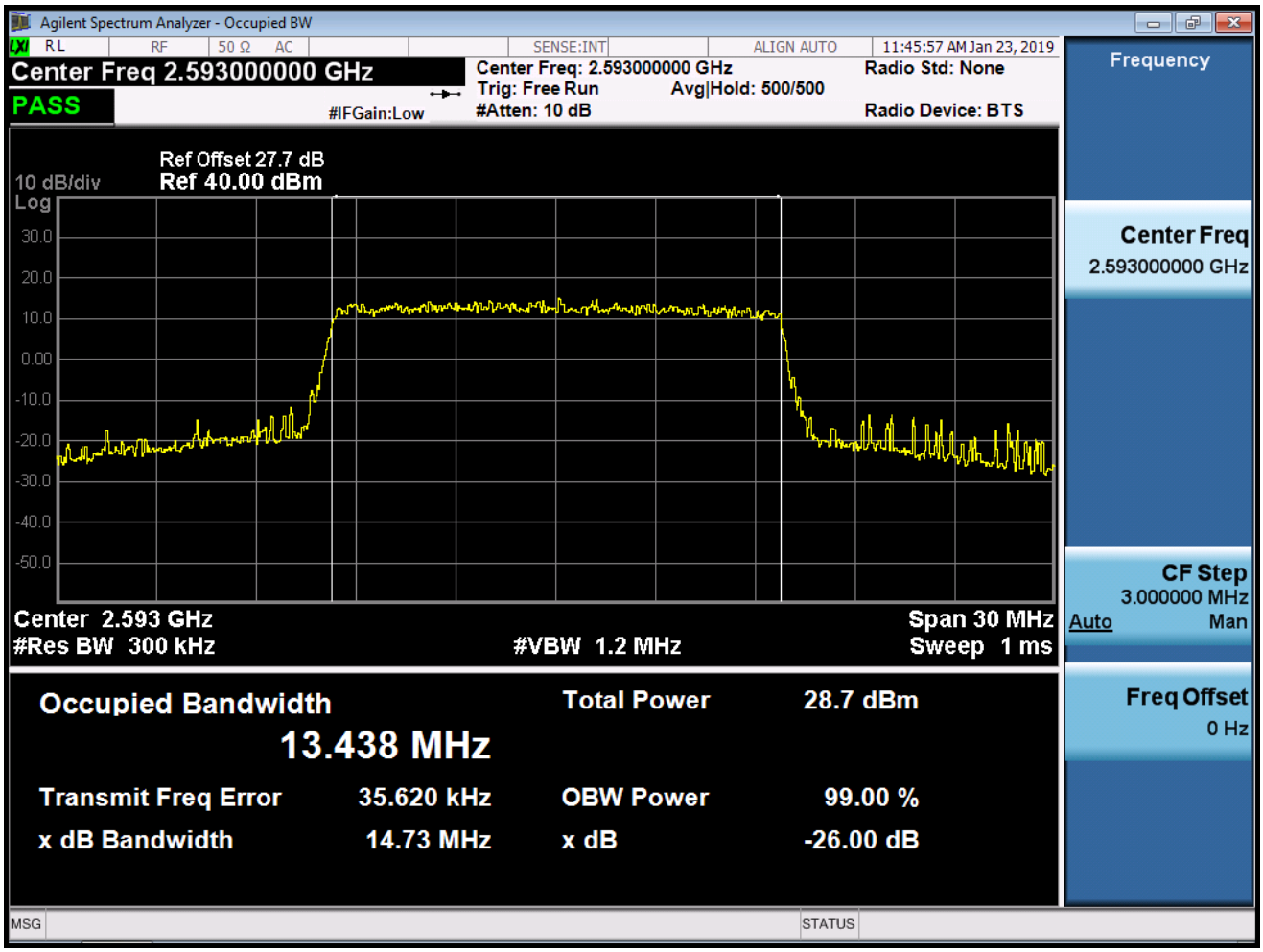
BAND 41. Occupied Bandwidth Plot (10 MHz Ch.40620 QPSK RB 50)



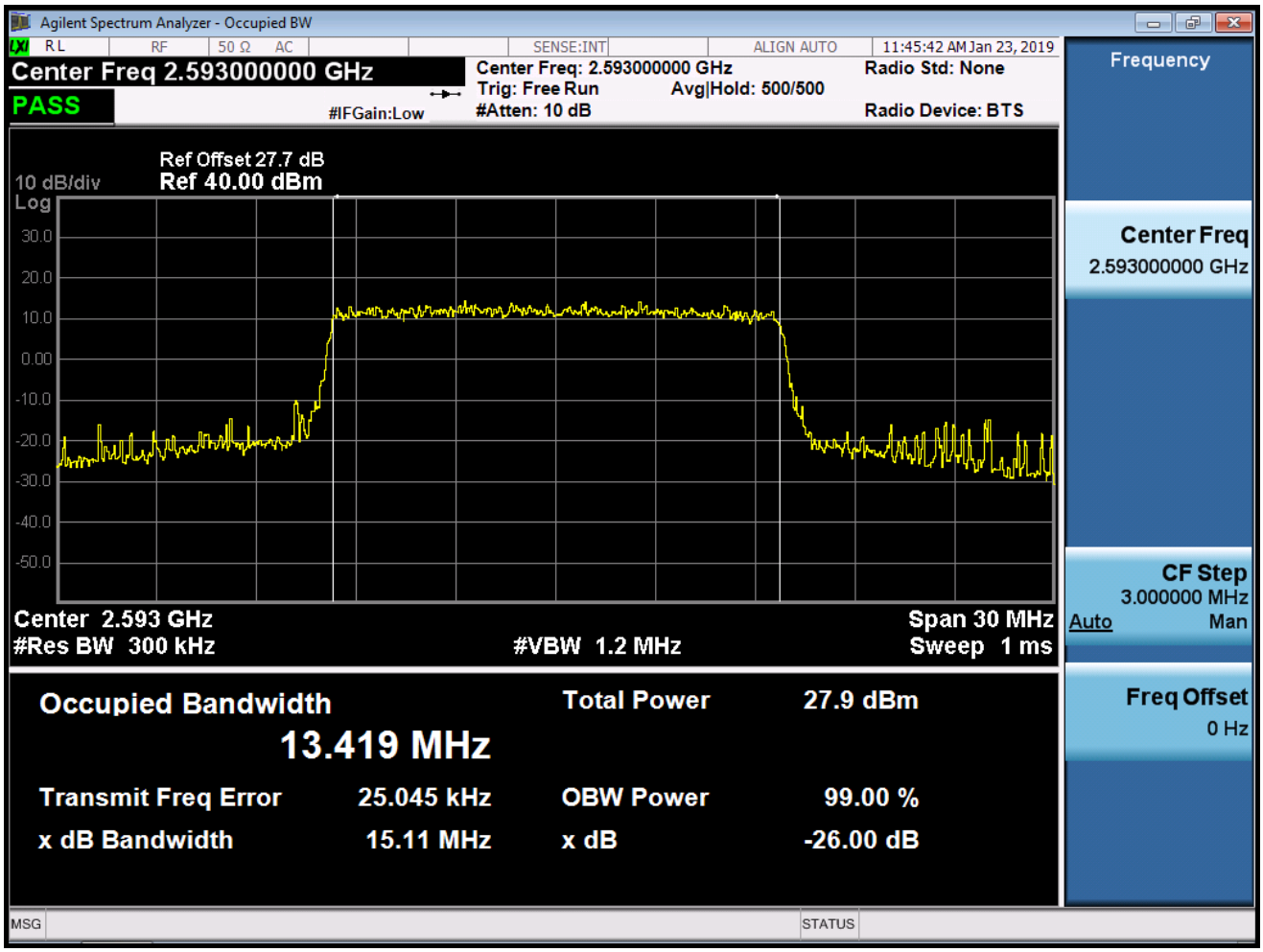
BAND 41. Occupied Bandwidth Plot (10 MHz Ch.40620 16-QAM RB 50)



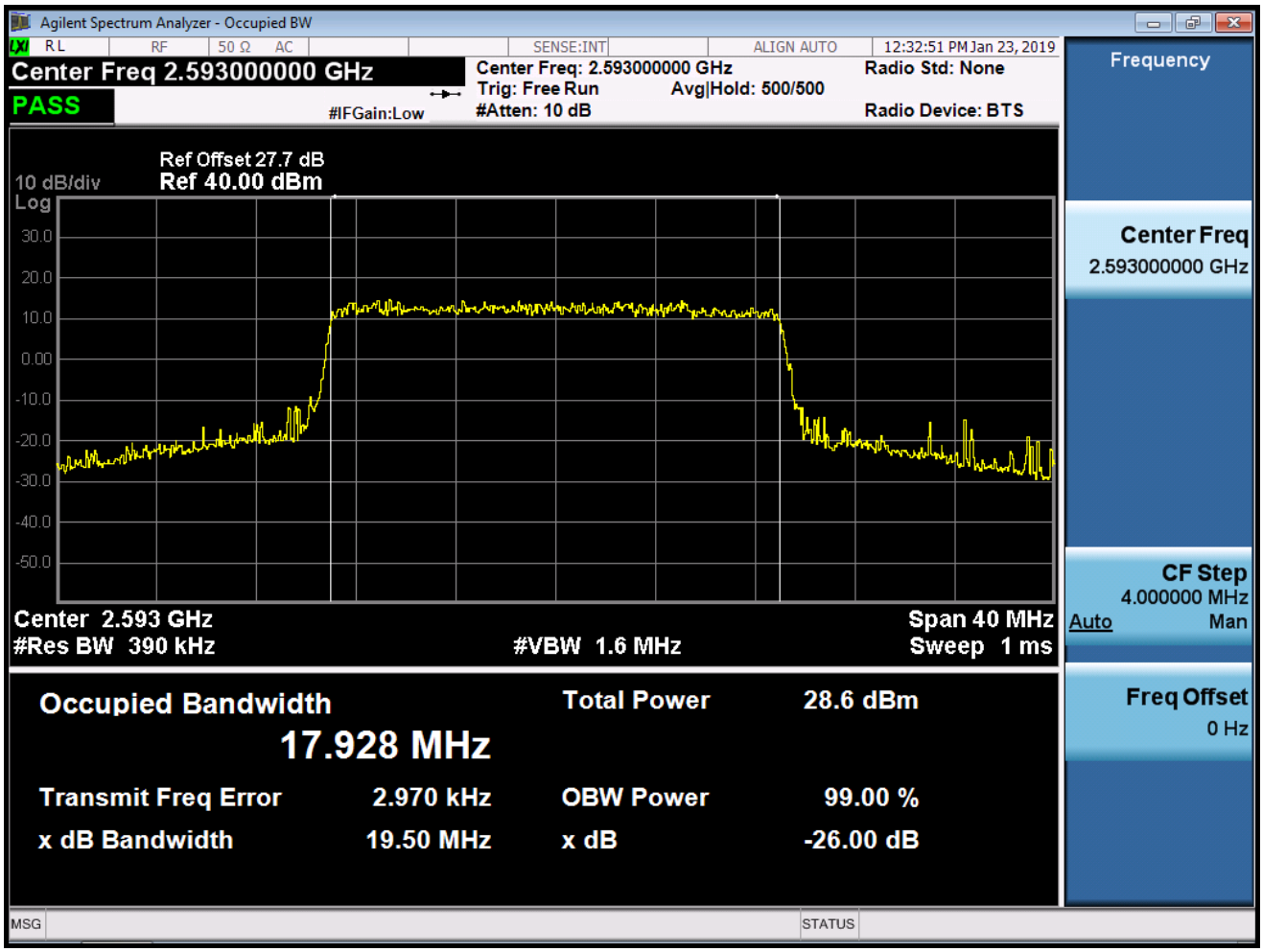
BAND 41. Occupied Bandwidth Plot (15 MHz Ch.40620 QPSK RB 75)



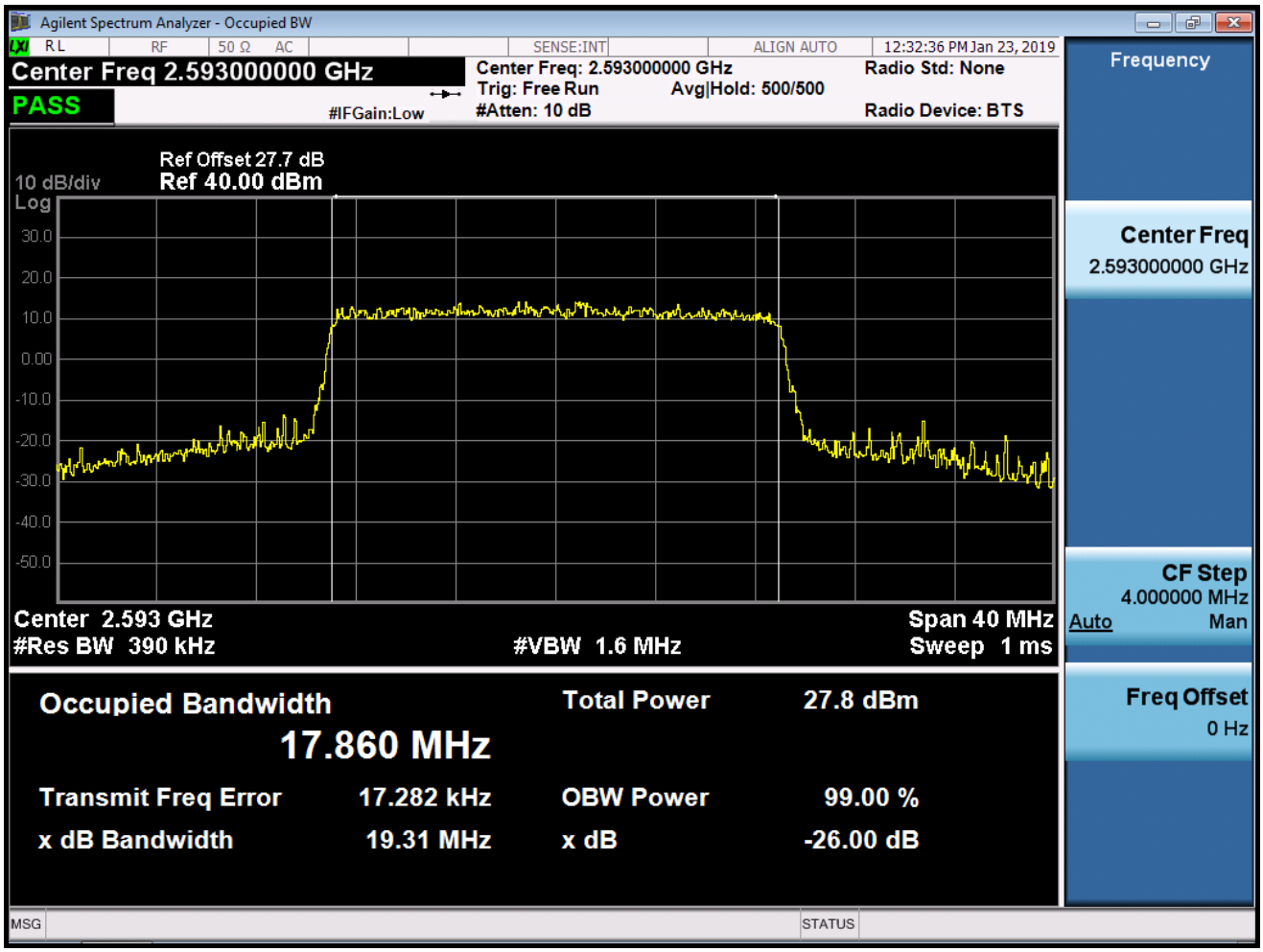
BAND 41. Occupied Bandwidth Plot (15 MHz Ch.40620 16-QAM RB 75)



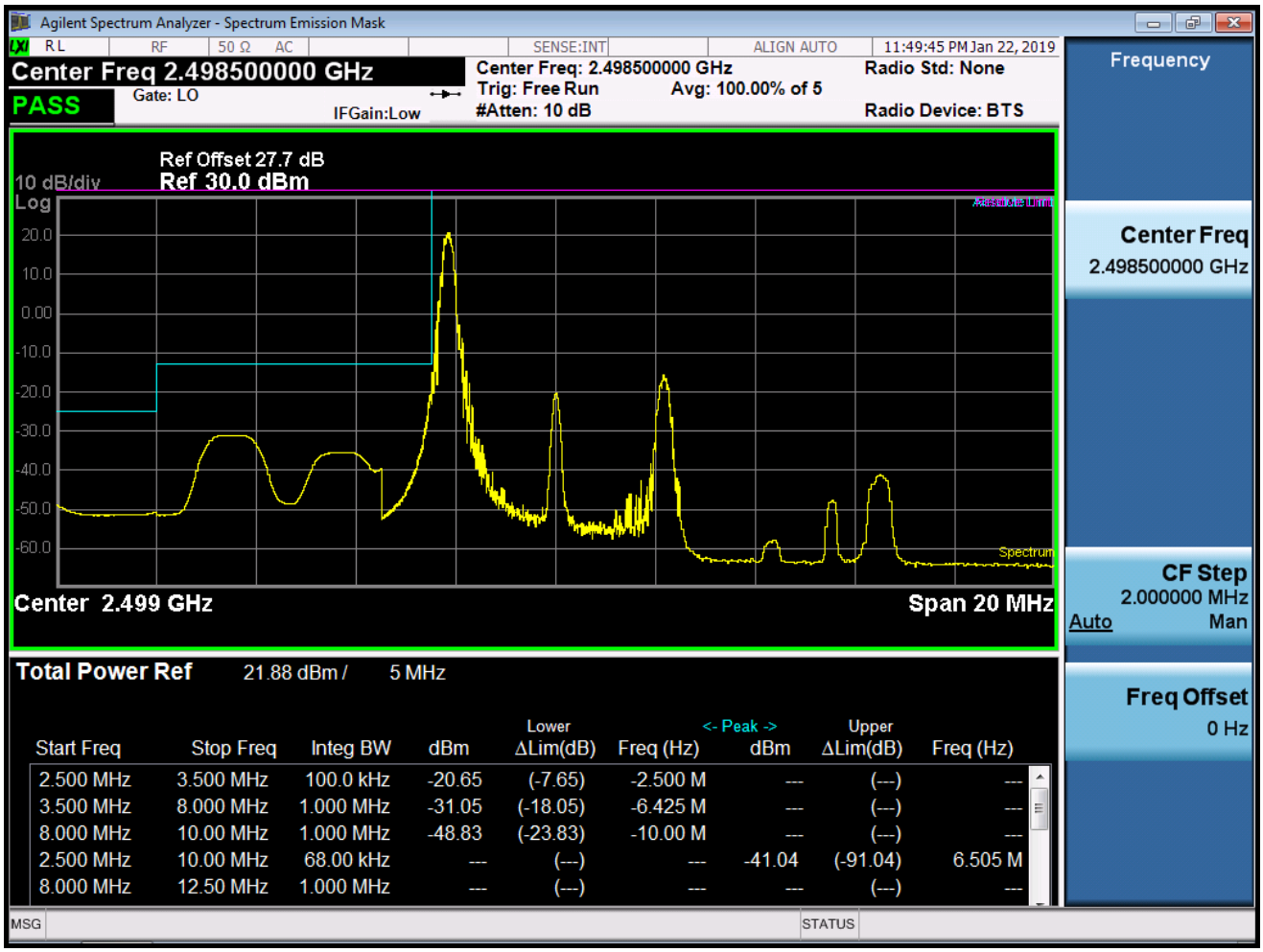
BAND 41. Occupied Bandwidth Plot (20 MHz Ch.40620 QPSK RB 100)



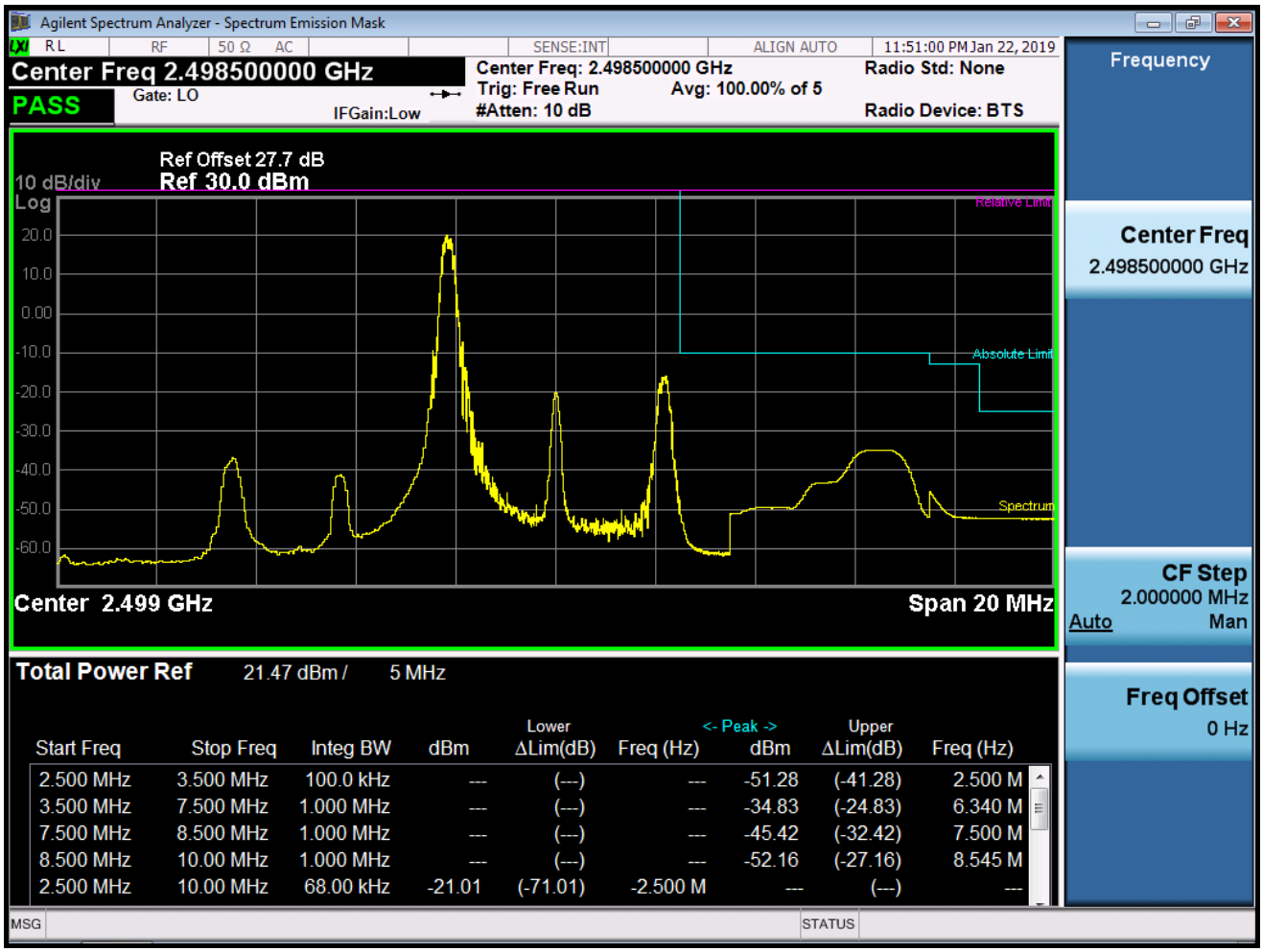
BAND 41. Occupied Bandwidth Plot (20 MHz Ch.40620 16-QAM RB 100)



BAND 41. Low Channel Edge Plot (5 MHz Ch.39675 QPSK RB 1, Offset 0)-1

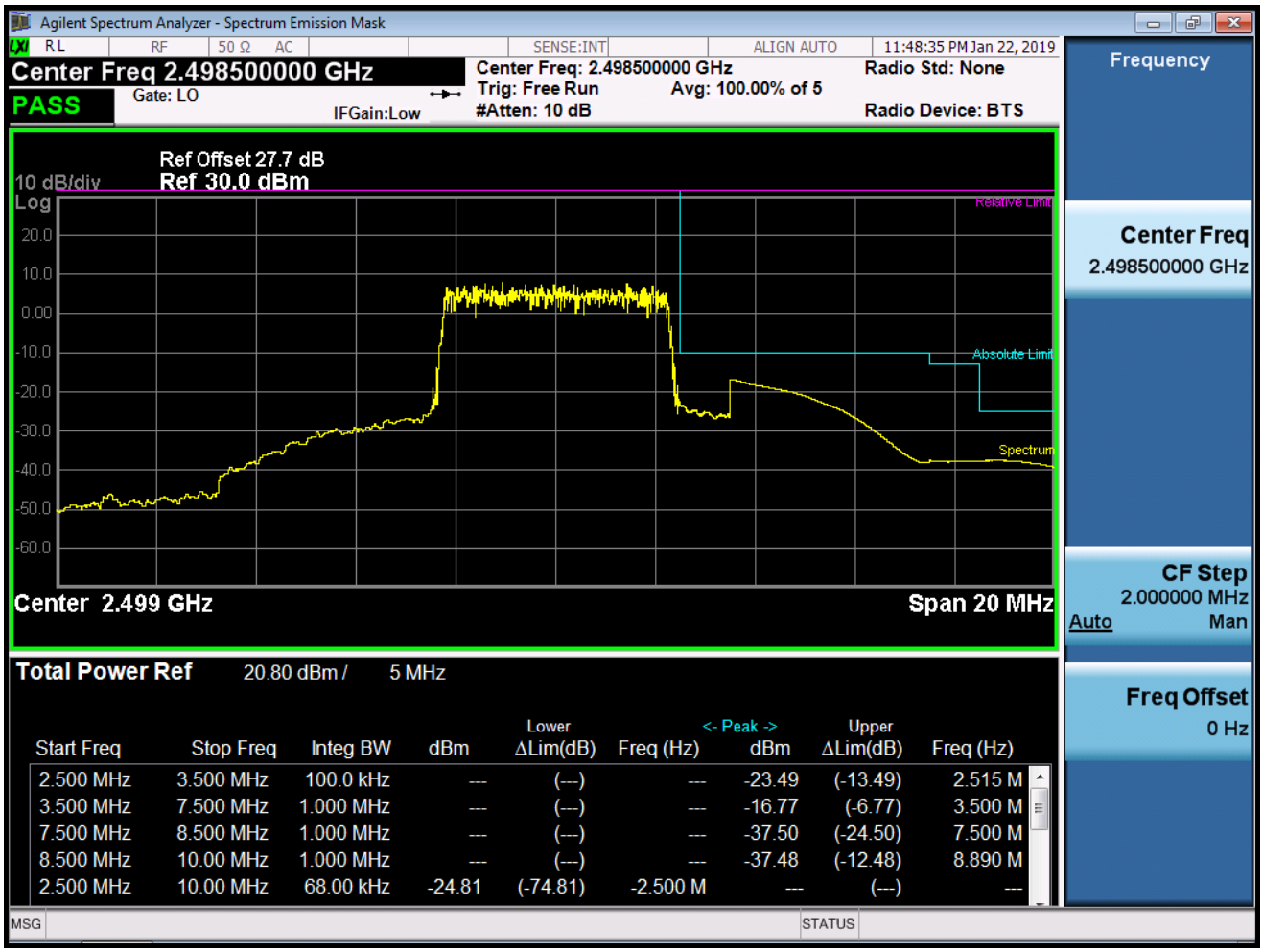


BAND 41. Low Channel Edge Plot (5 MHz Ch.39675 QPSK RB 1, Offset 0)-2

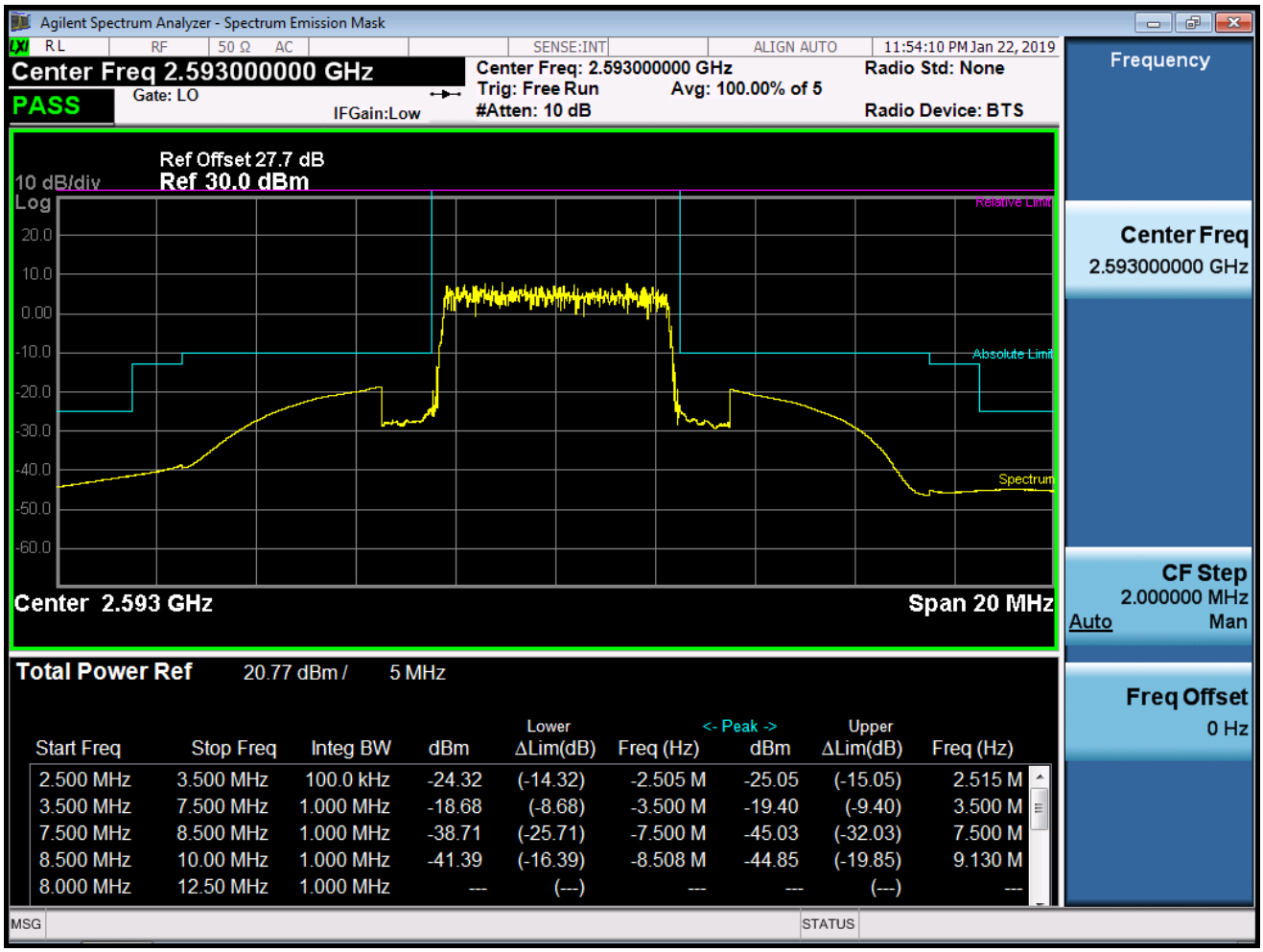


BAND 41. Low Channel Edge Plot (5 MHz Ch.39675 QPSK_RB25_Offset 0)-1

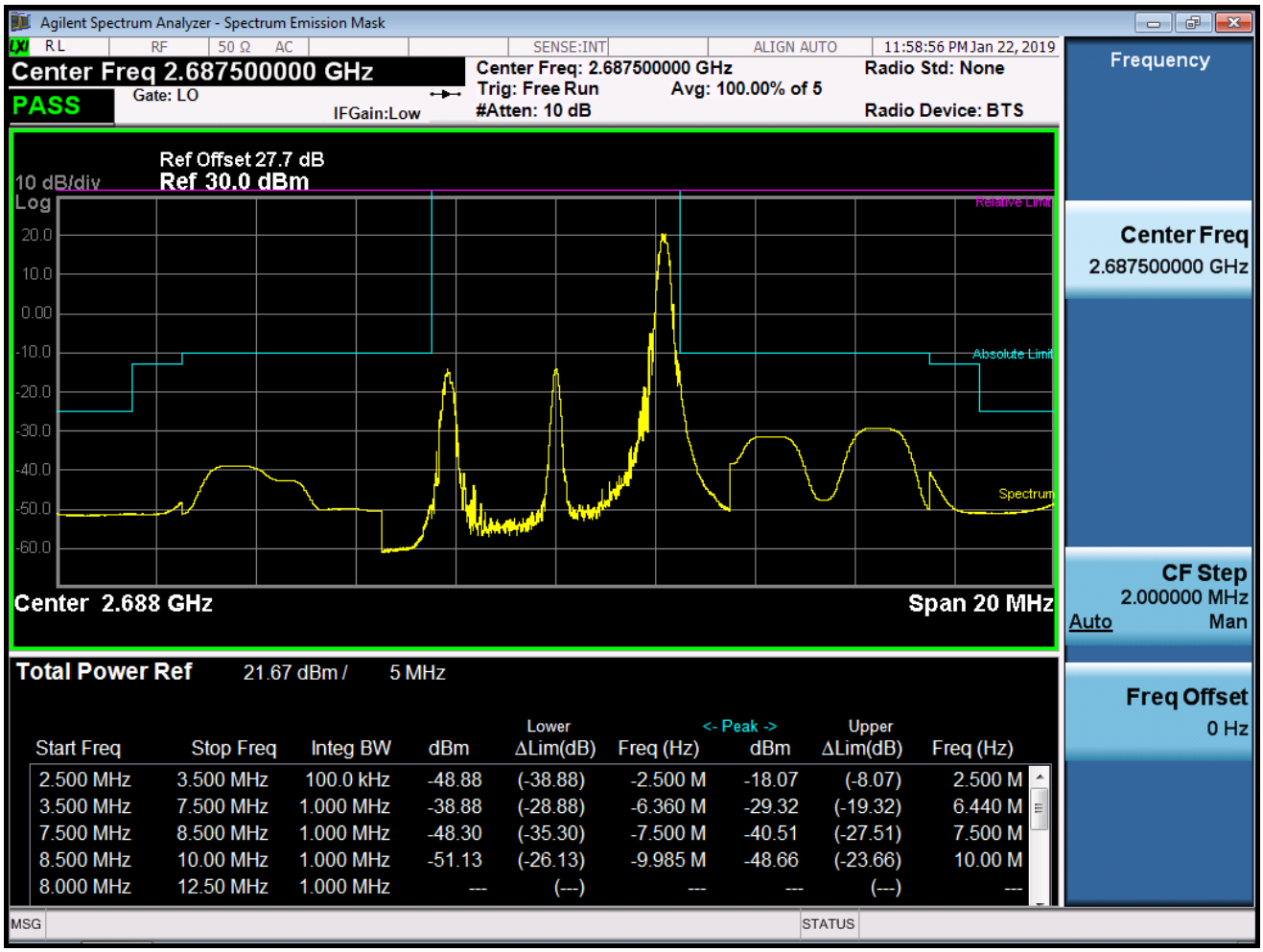
BAND 41. Low Channel Edge Plot (5 MHz Ch.39675 QPSK_RB25_Offset 0)-2



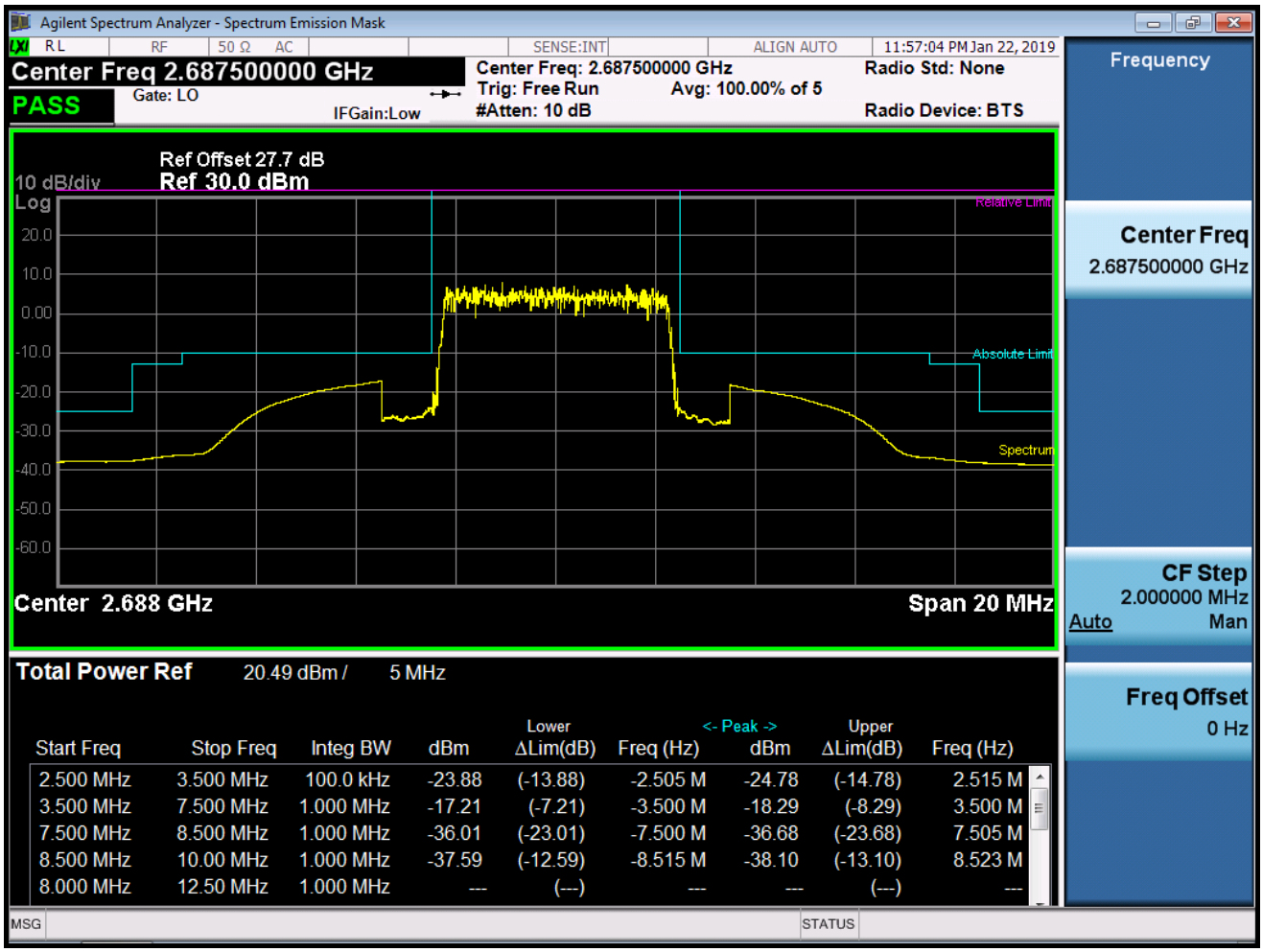
BAND 41. Mid Channel Edge Plot (5 MHz Ch.40620 QPSK RB 25)



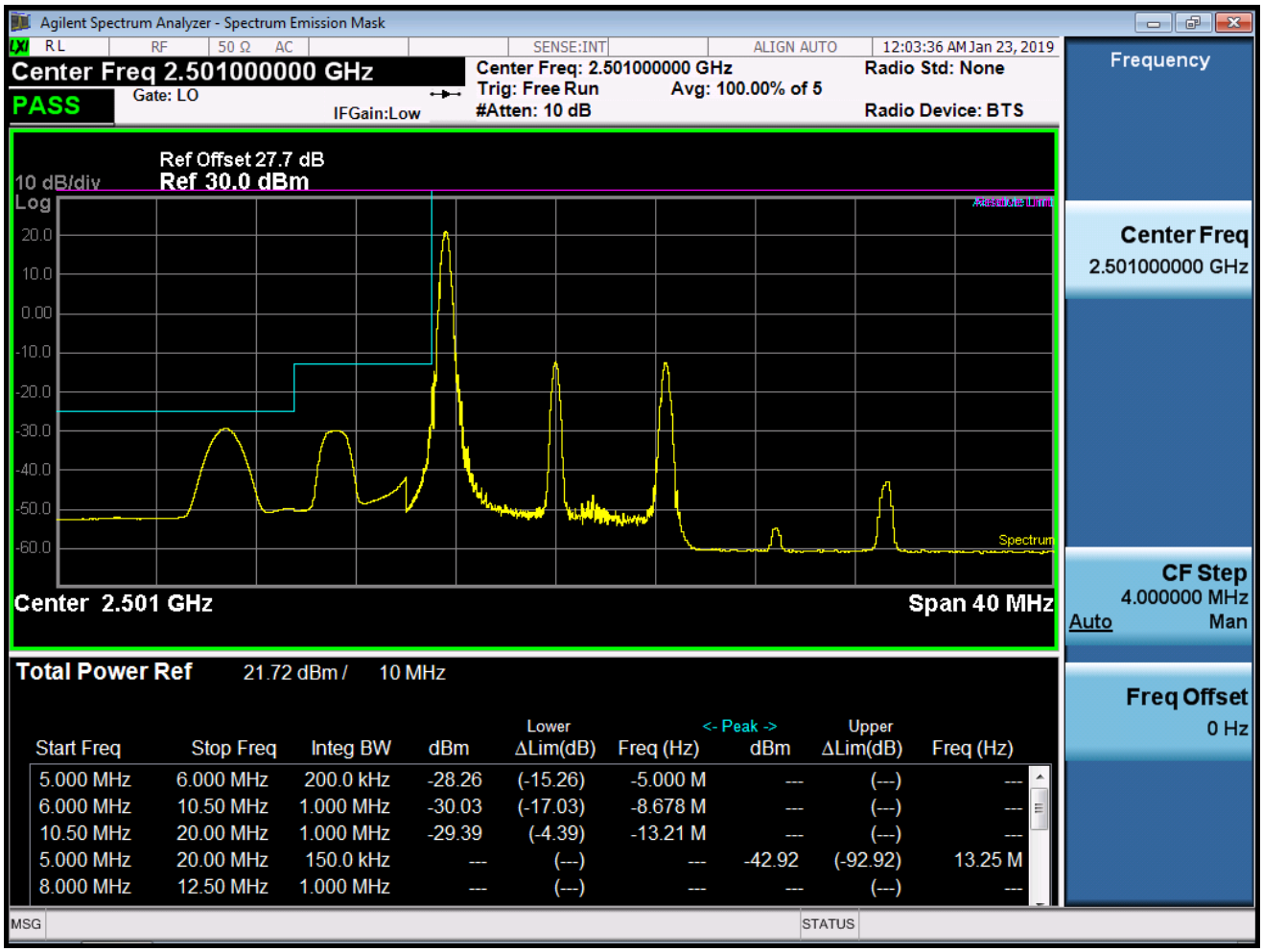
BAND 41. High Channel Edge Plot (5 MHz Ch.41565 QPSK RB 1, Offset 0)



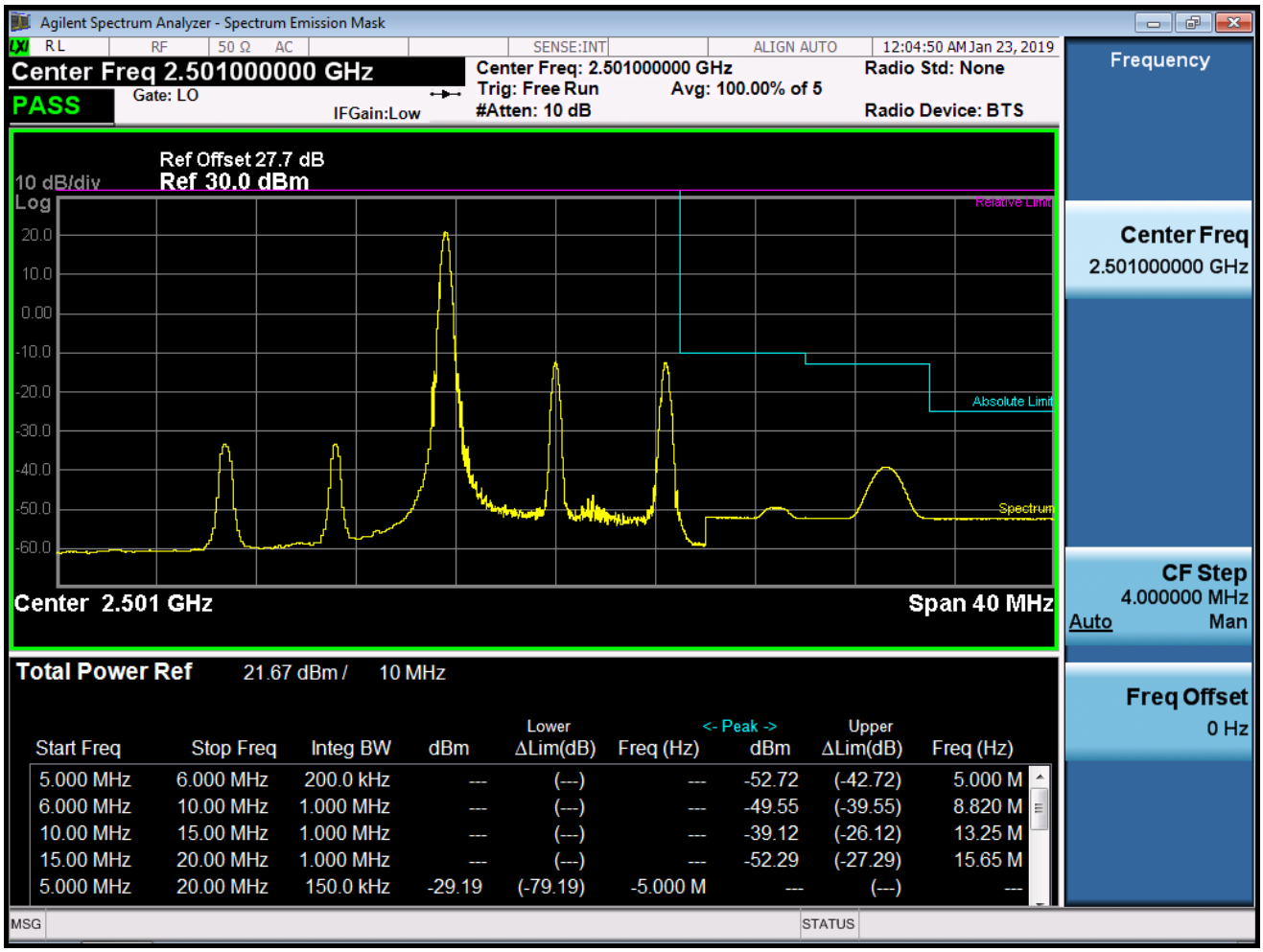
BAND 41. High Channel Edge Plot (5 MHz Ch.41565 QPSK_RB25_Offset 0)



BAND 41. Low Channel Edge Plot (10 MHz Ch.39700 QPSK RB 1, Offset 0)-1



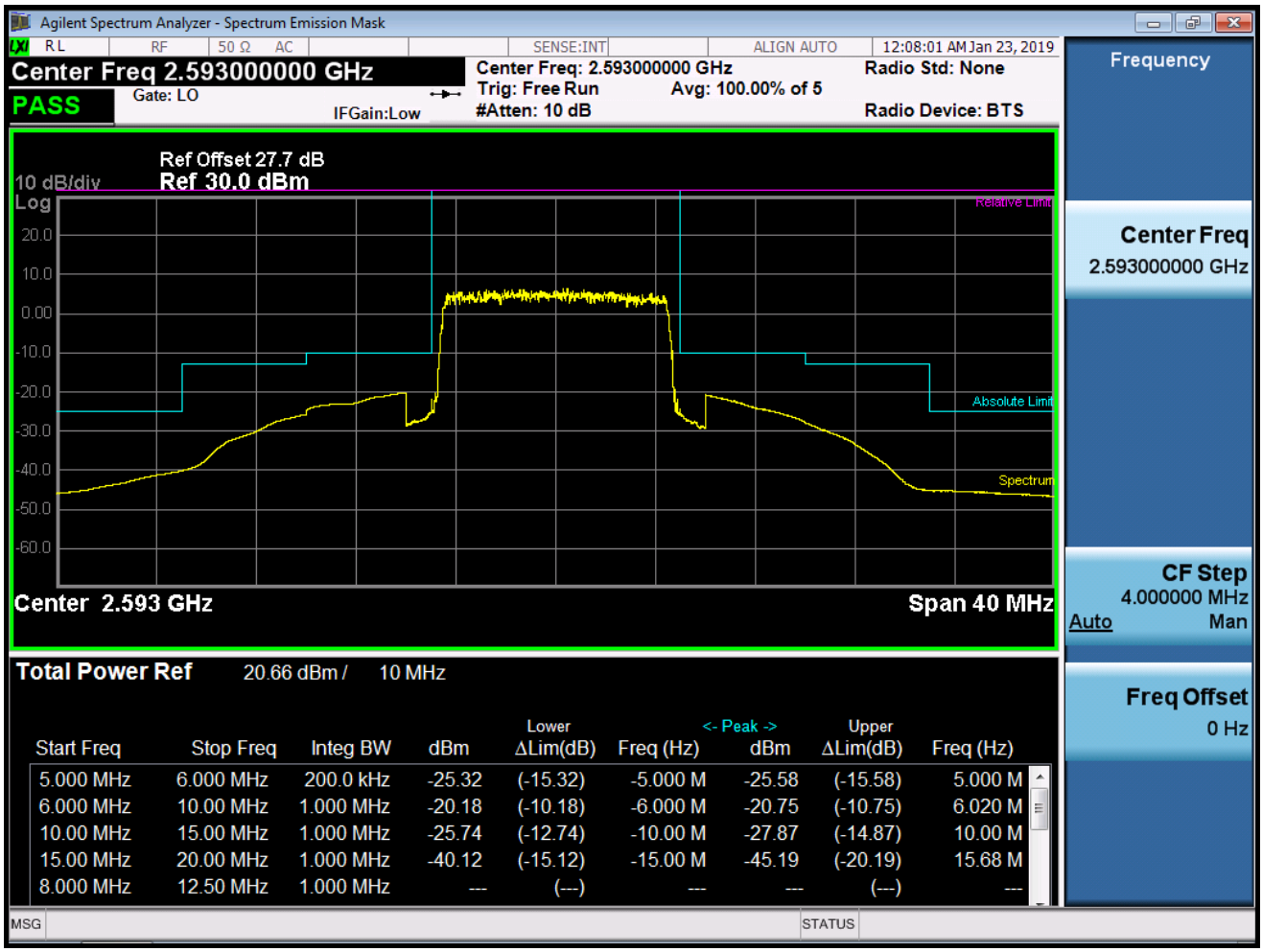
BAND 41. Low Channel Edge Plot (10 MHz Ch.39700 QPSK RB 1, Offset 0)-2



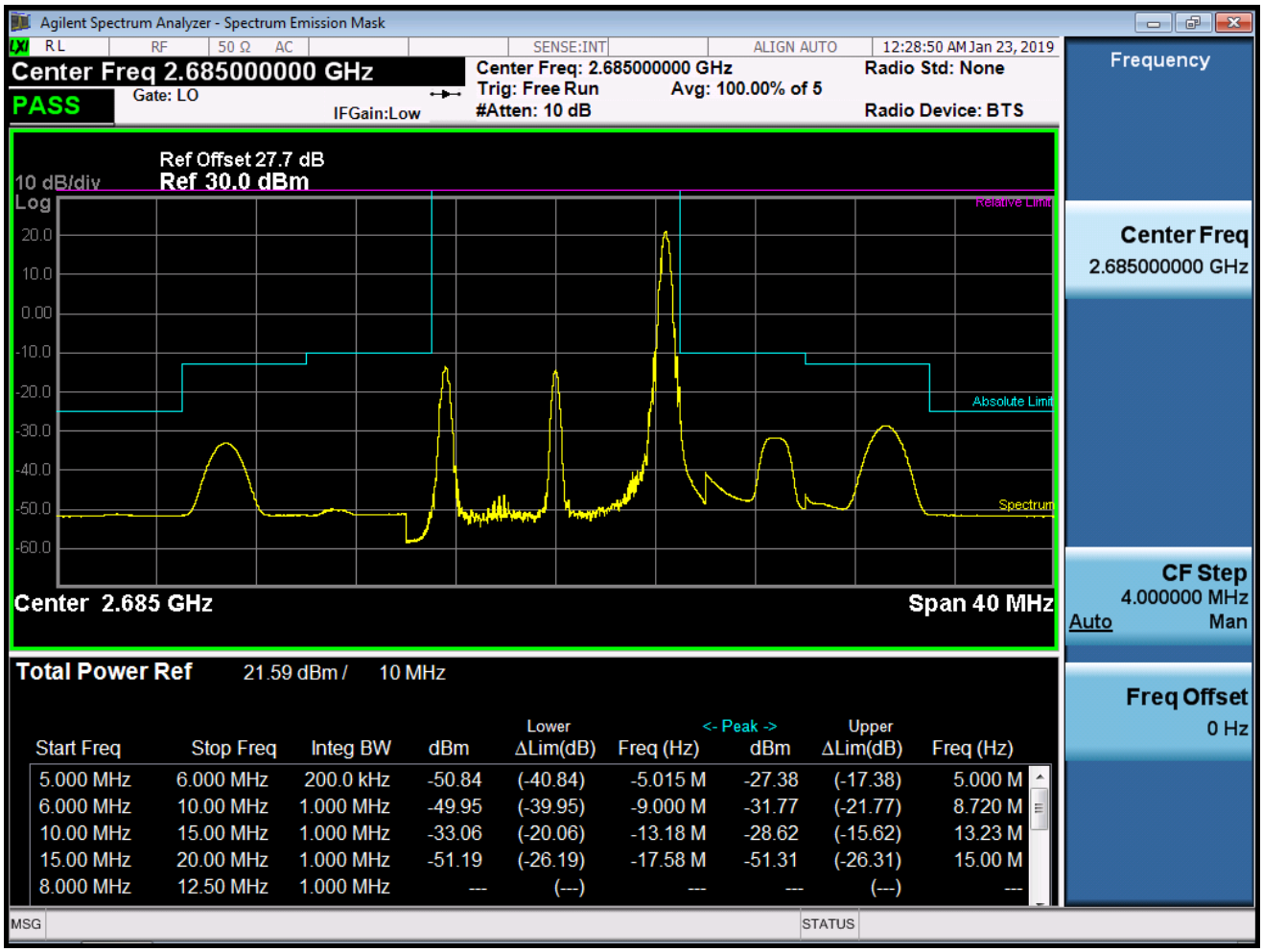
BAND 41. Low Channel Edge Plot (10 MHz Ch.39700 QPSK_RB50_Offset 0)-1

BAND 41. Low Channel Edge Plot (10 MHz Ch.39700 QPSK_RB50_Offset 0)-2

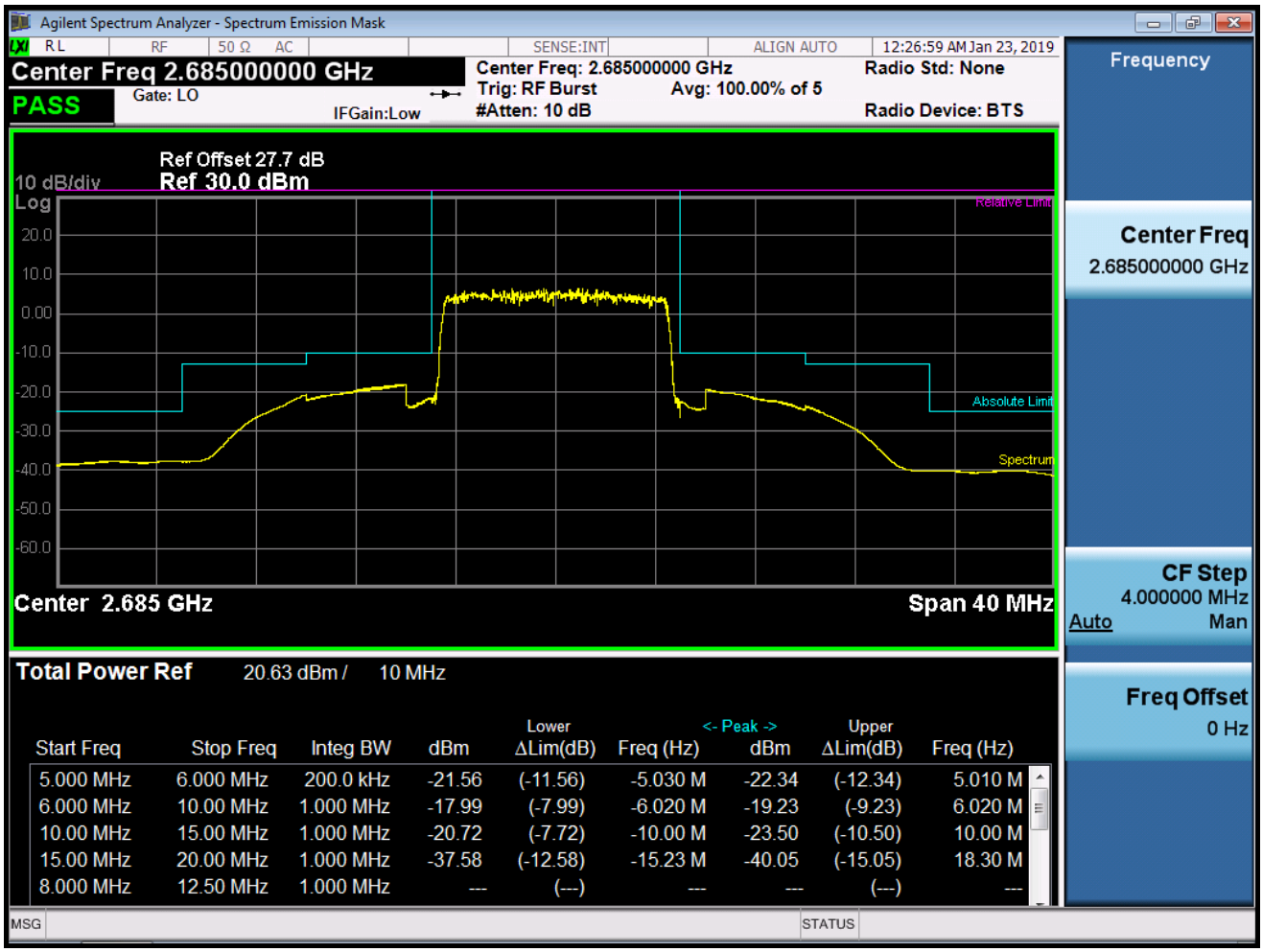
BAND 41. Mid Channel Edge Plot (10 MHz Ch.40620 QPSK RB 50)



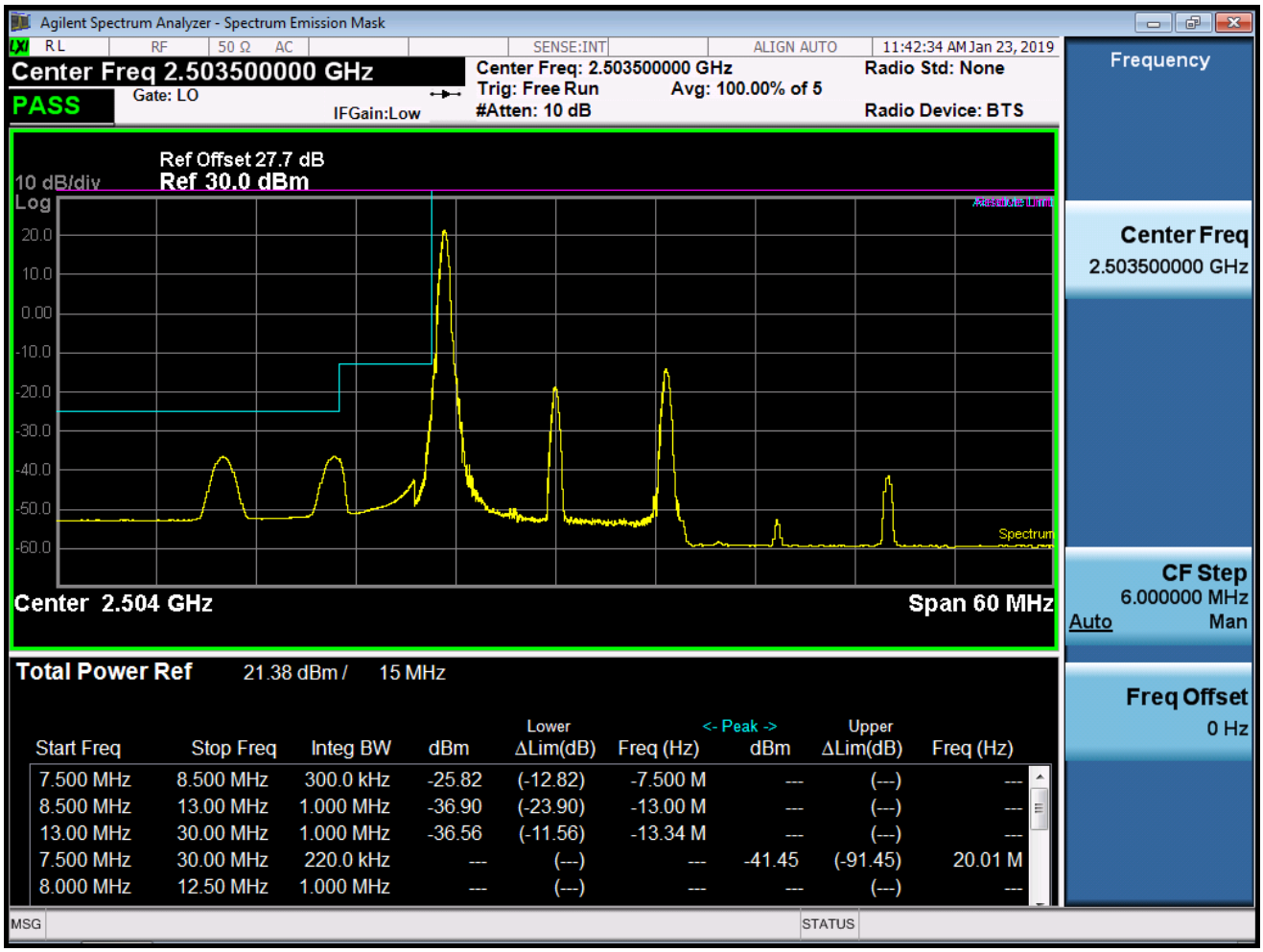
BAND 41. High Channel Edge Plot (10 MHz Ch.41540 QPSK RB 1, Offset 0)



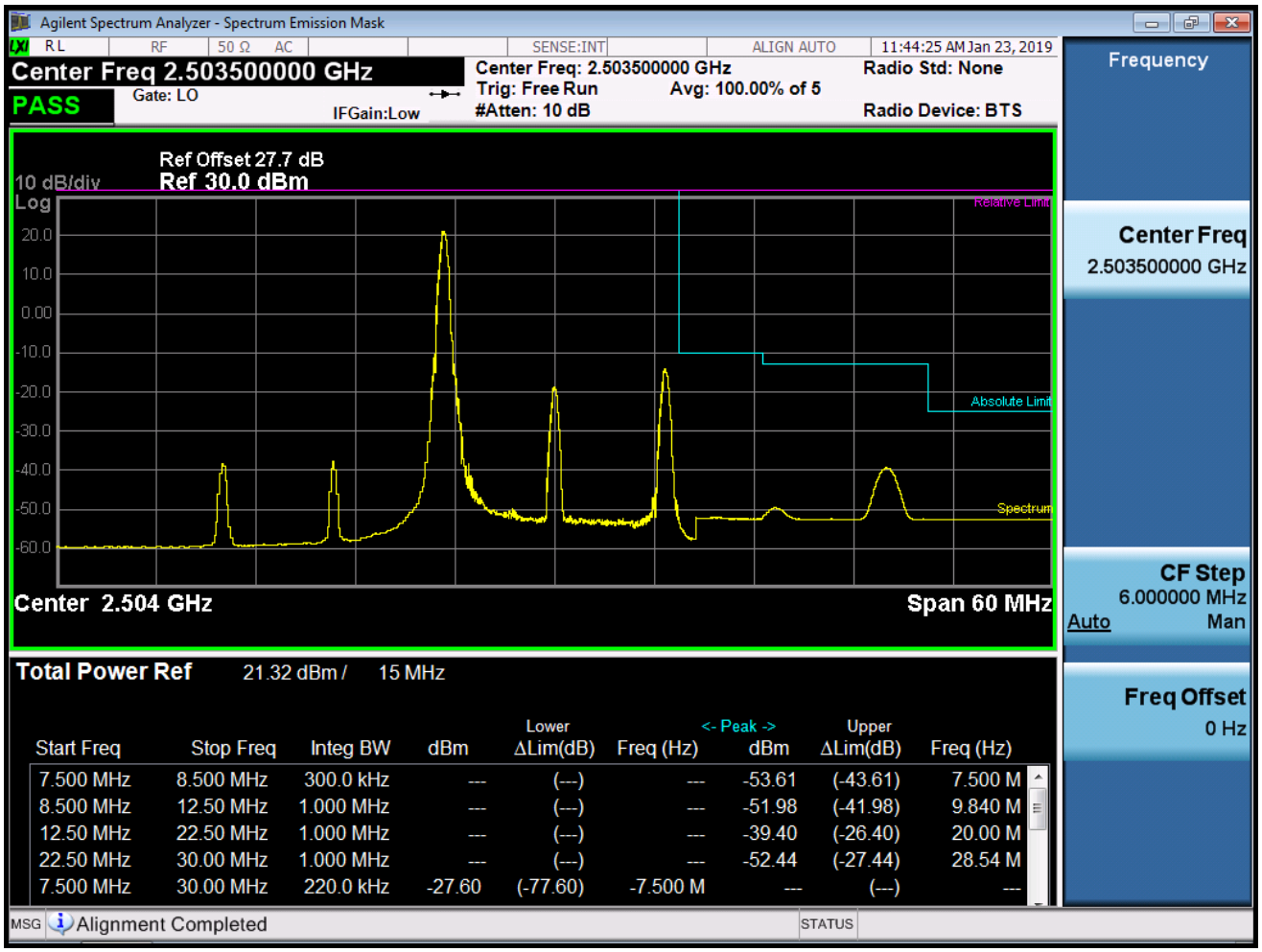
BAND 41. High Channel Edge Plot (10 MHz Ch.41540 QPSK_RB50_Offset 0)



BAND 41. Low Channel Edge Plot (15 MHz Ch.39725 QPSK RB 1, Offset 0)-1



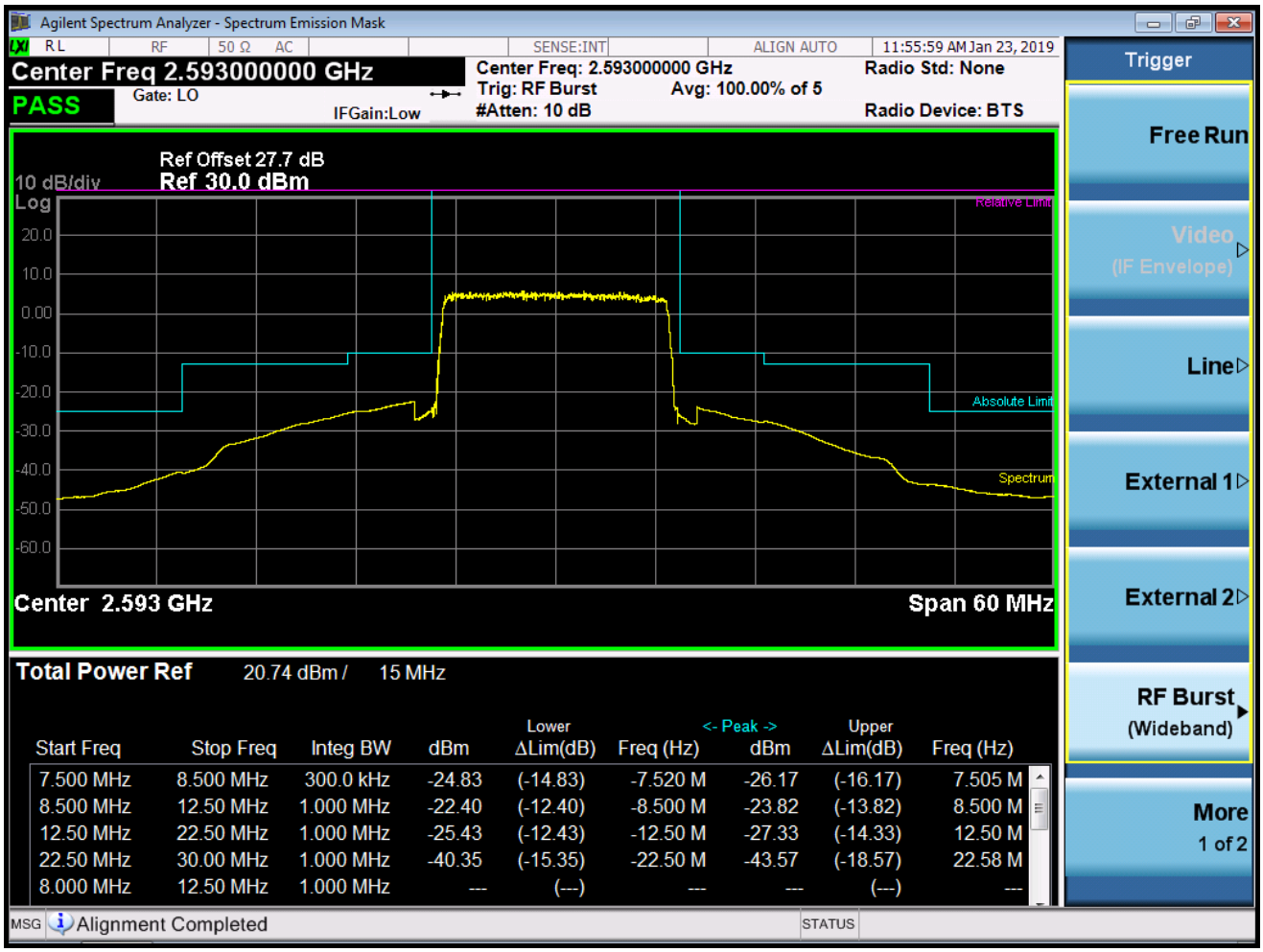
BAND 41. Low Channel Edge Plot (15 MHz Ch.39725 QPSK RB 1, Offset 0)-2



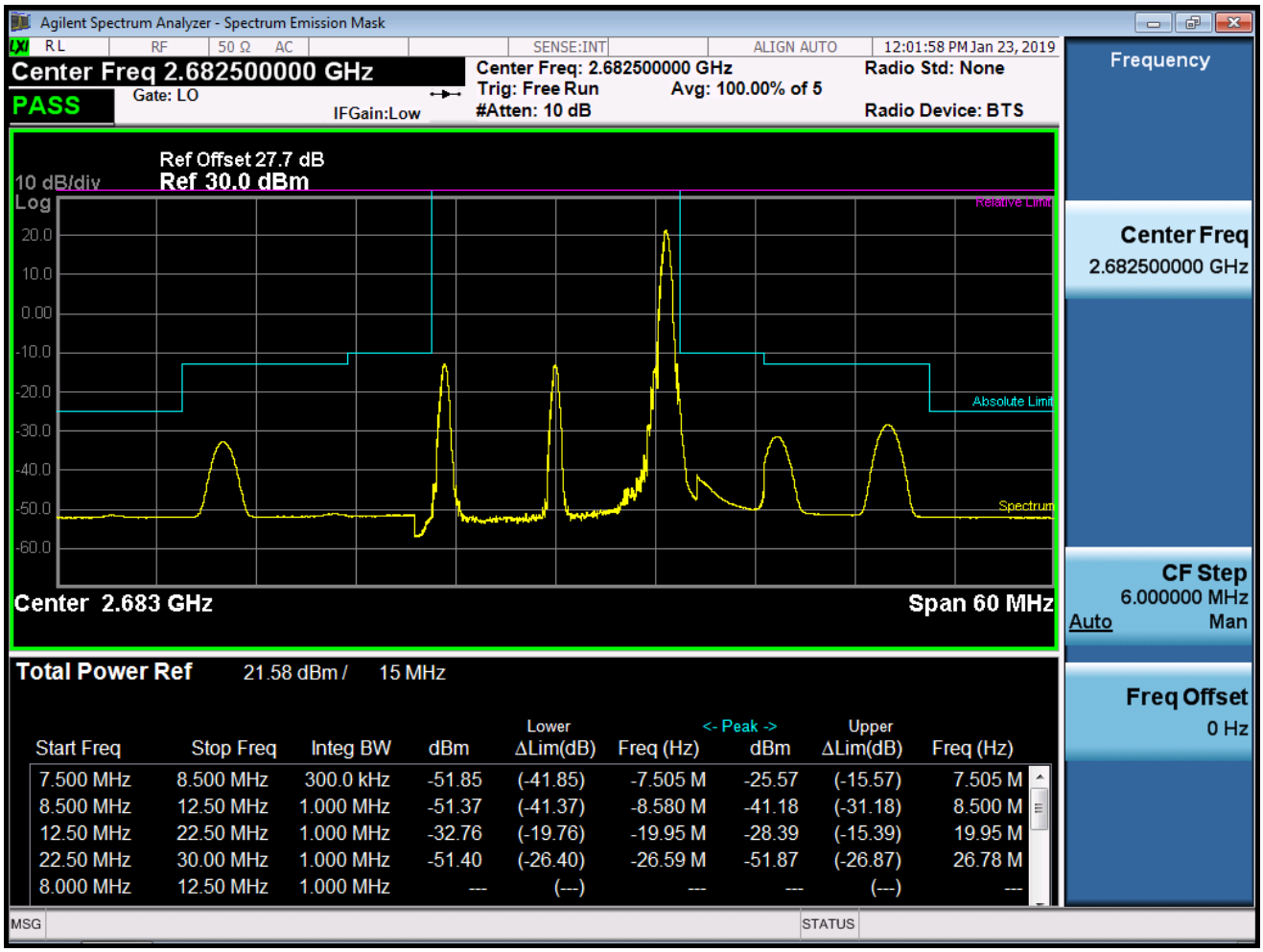
BAND 41. Low Channel Edge Plot (15 MHz Ch.39725 QPSK_RB75_Offset 0)-1

BAND 41. Low Channel Edge Plot (15 MHz Ch.39725 QPSK_RB75_Offset 0)-2

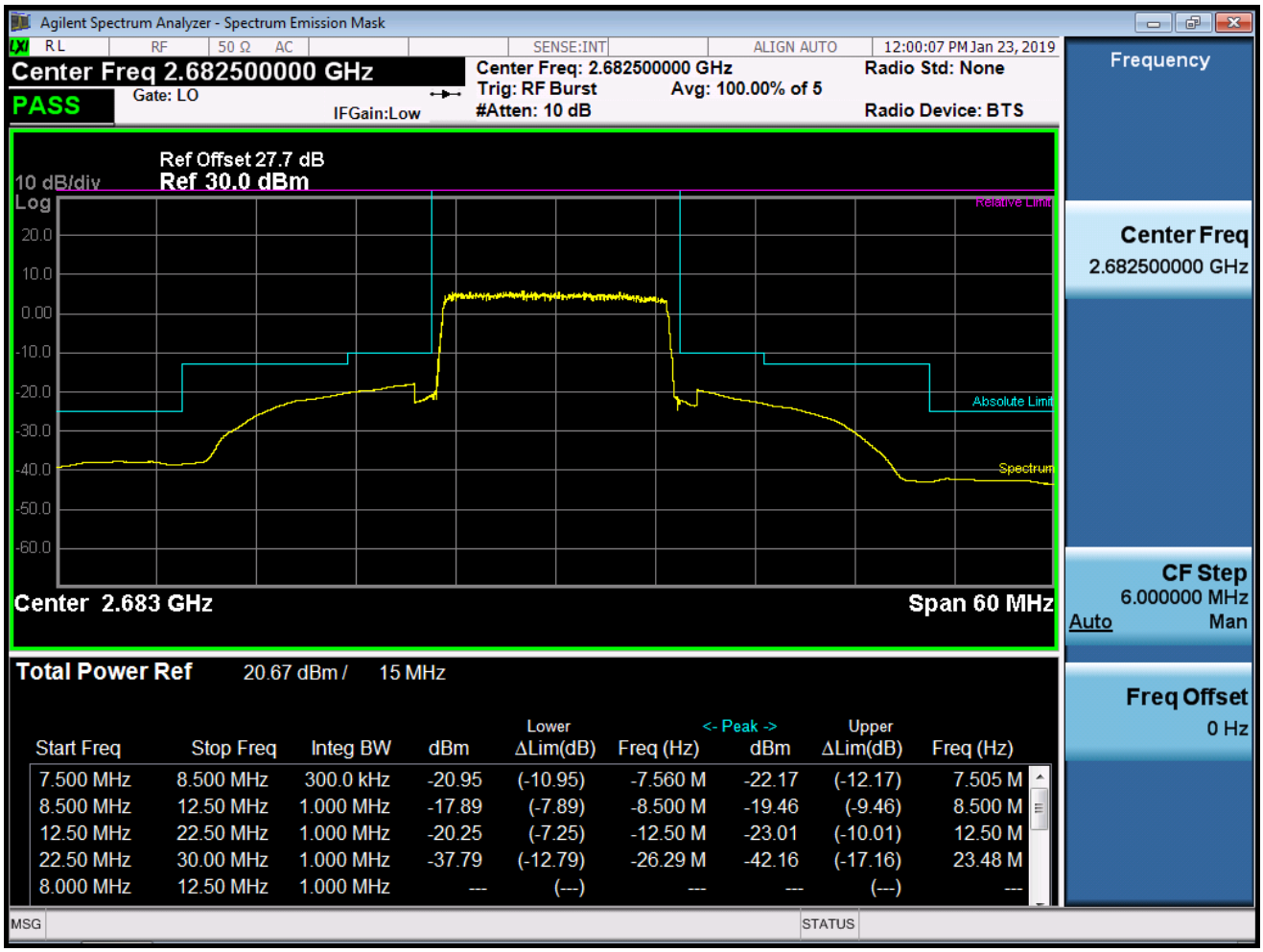
BAND 41. Mid Channel Edge Plot (15 MHz Ch.40620 QPSK RB 75)



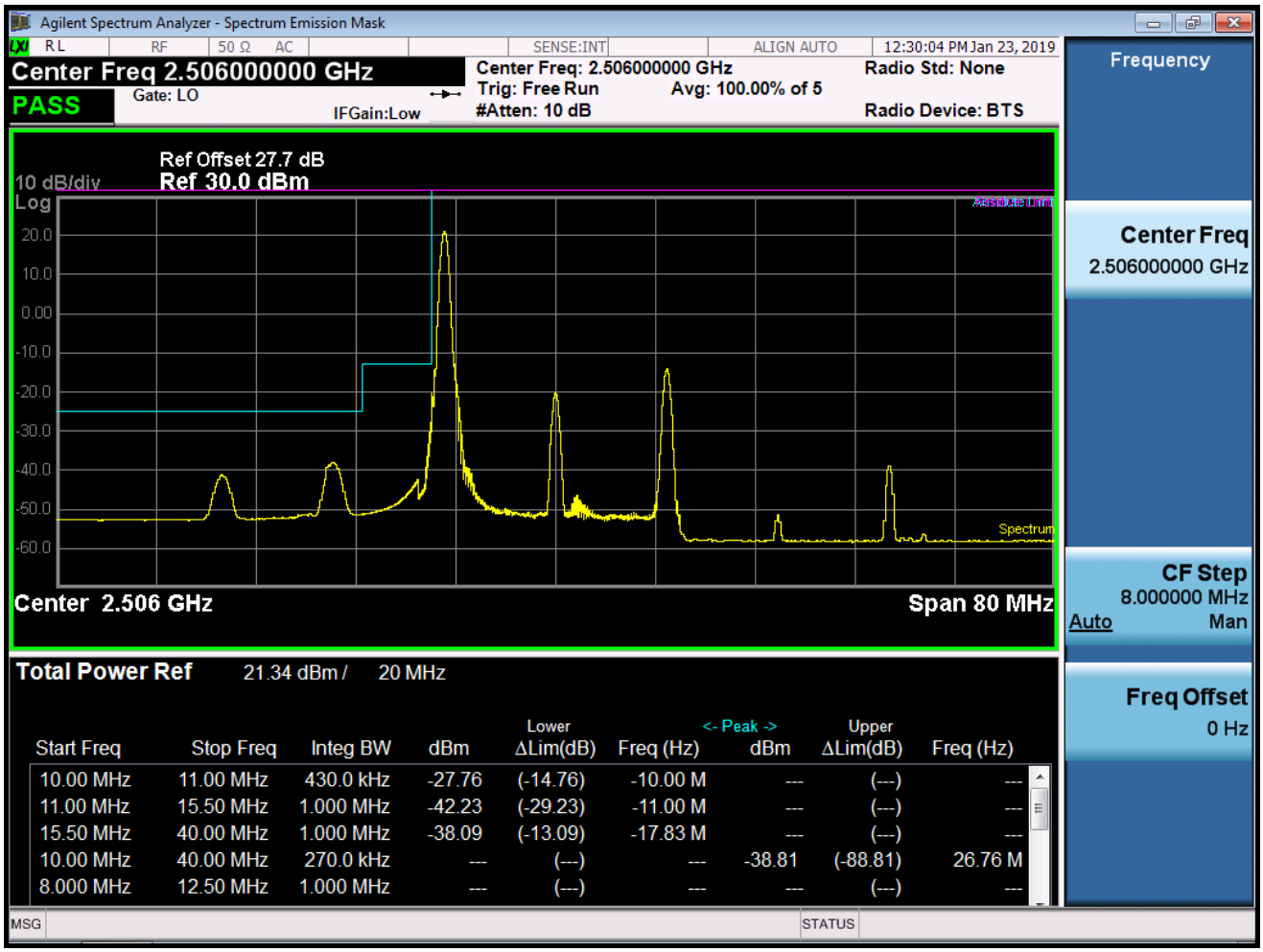
BAND 41. High Channel Edge Plot (15 MHz Ch.41515 QPSK RB 1, Offset 0)



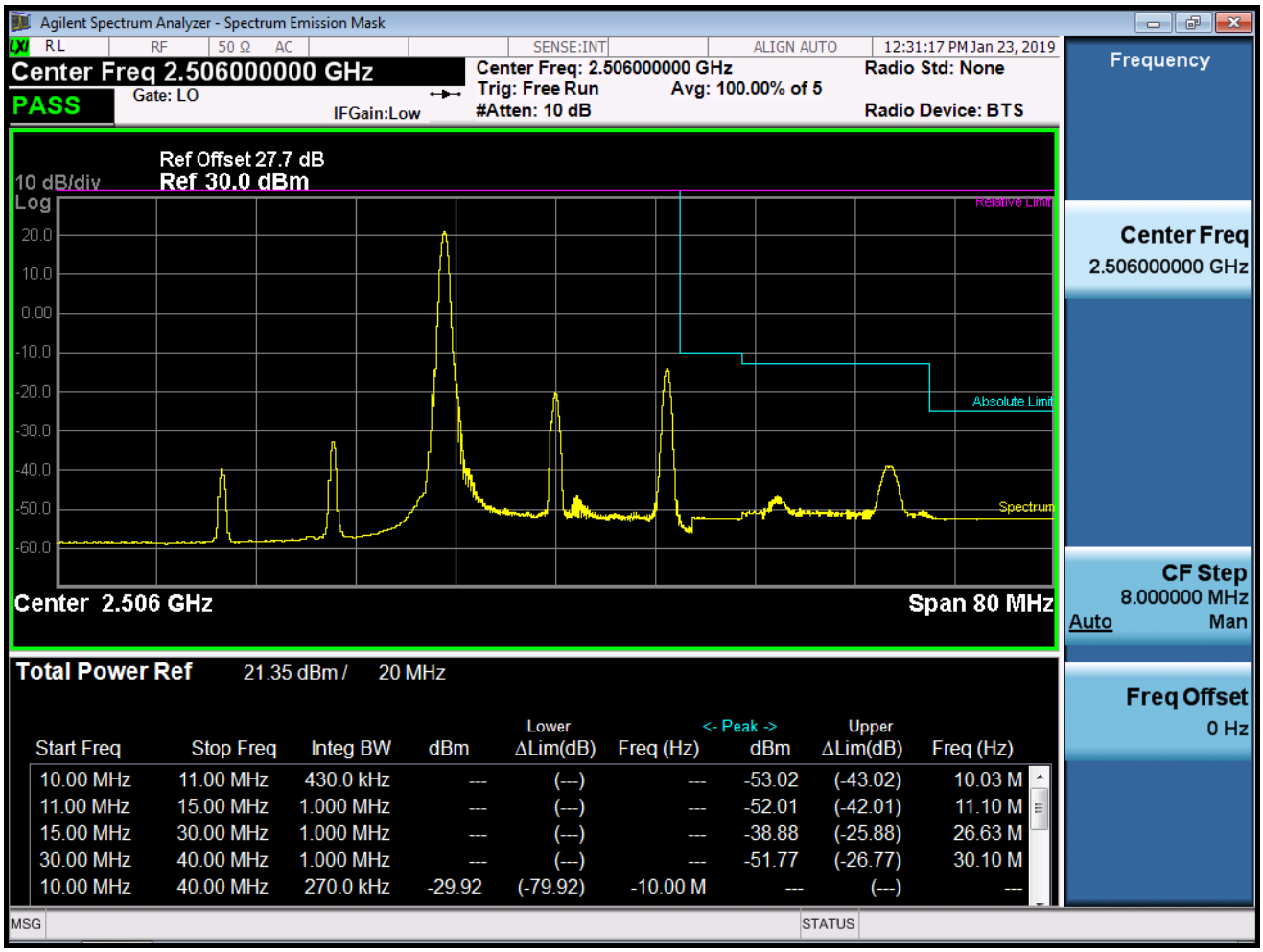
BAND 41. High Channel Edge Plot (15 MHz Ch.41515 QPSK_RB75_Offset 0)



BAND 41. Low Channel Edge Plot (20 MHz Ch.39750 QPSK RB 1, Offset 0)-1



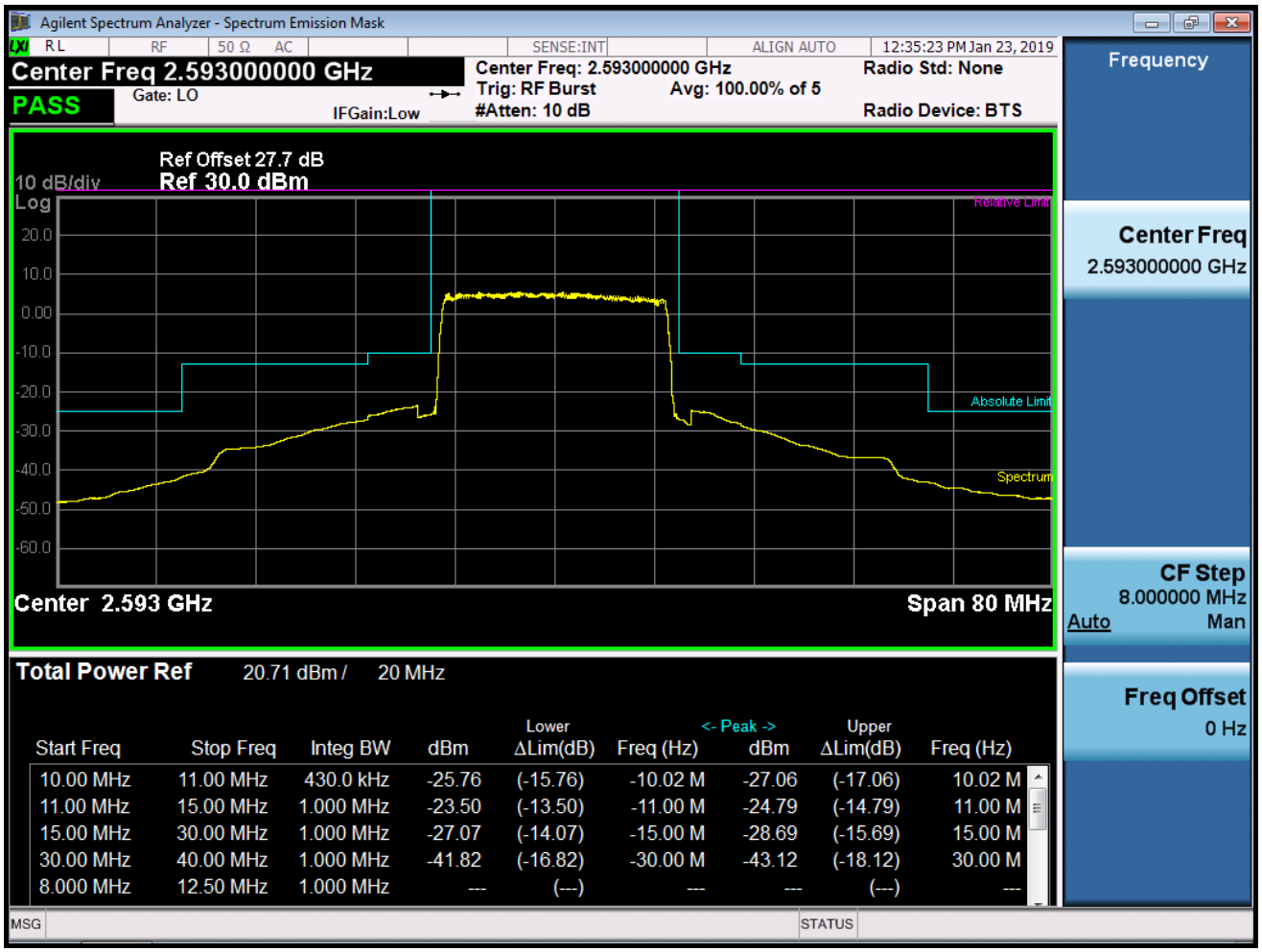
BAND 41. Low Channel Edge Plot (20 MHz Ch.39750 QPSK RB 1, Offset 0)-2



BAND 41. Low Channel Edge Plot (20 MHz Ch.39750 QPSK_RB100_Offset 0)-1

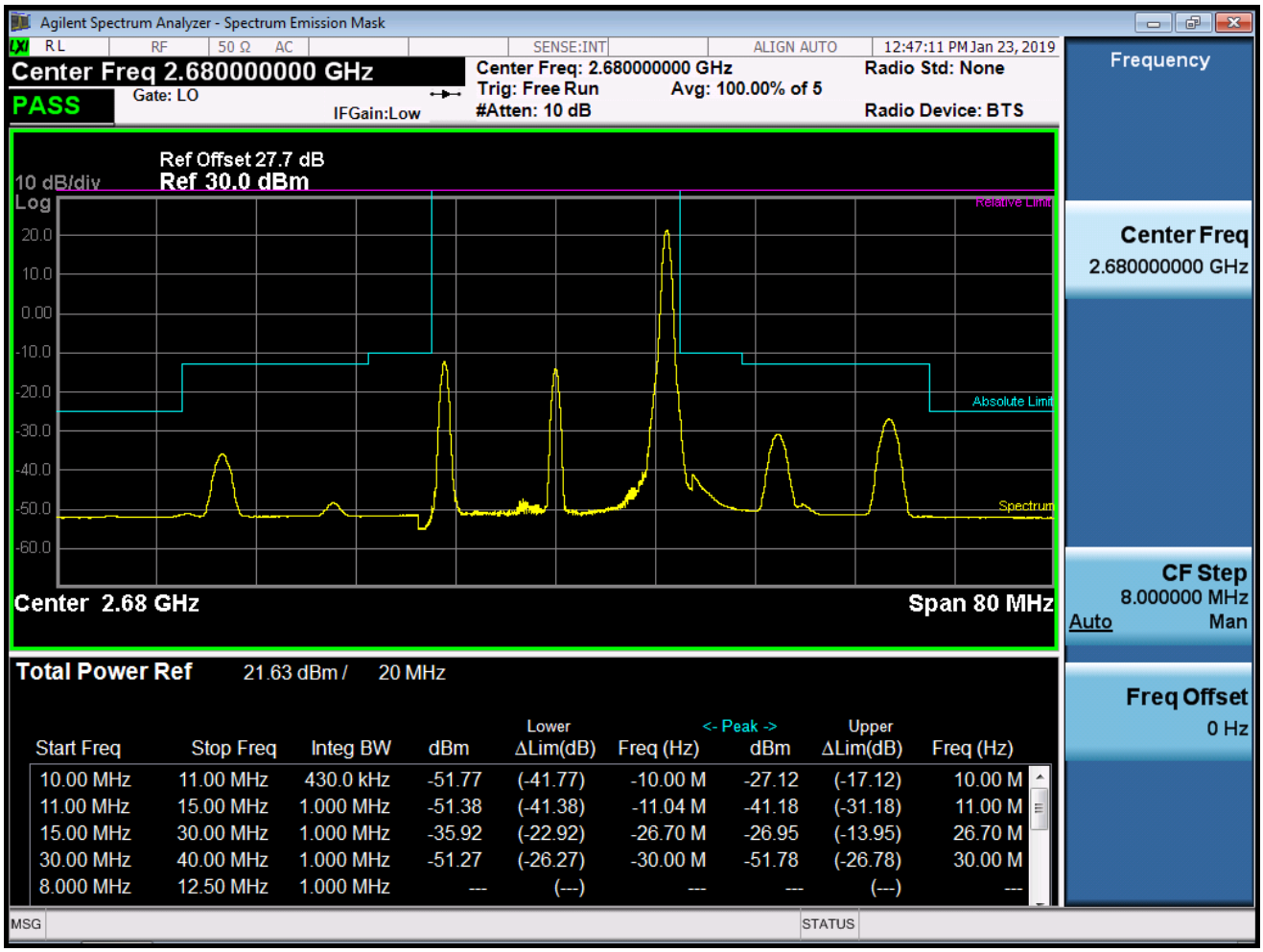
BAND 41. Low Channel Edge Plot (20 MHz Ch.39750 QPSK_RB100_Offset 0)-2

BAND 41. Mid Channel Edge Plot (20 MHz Ch.40620 QPSK RB 100)

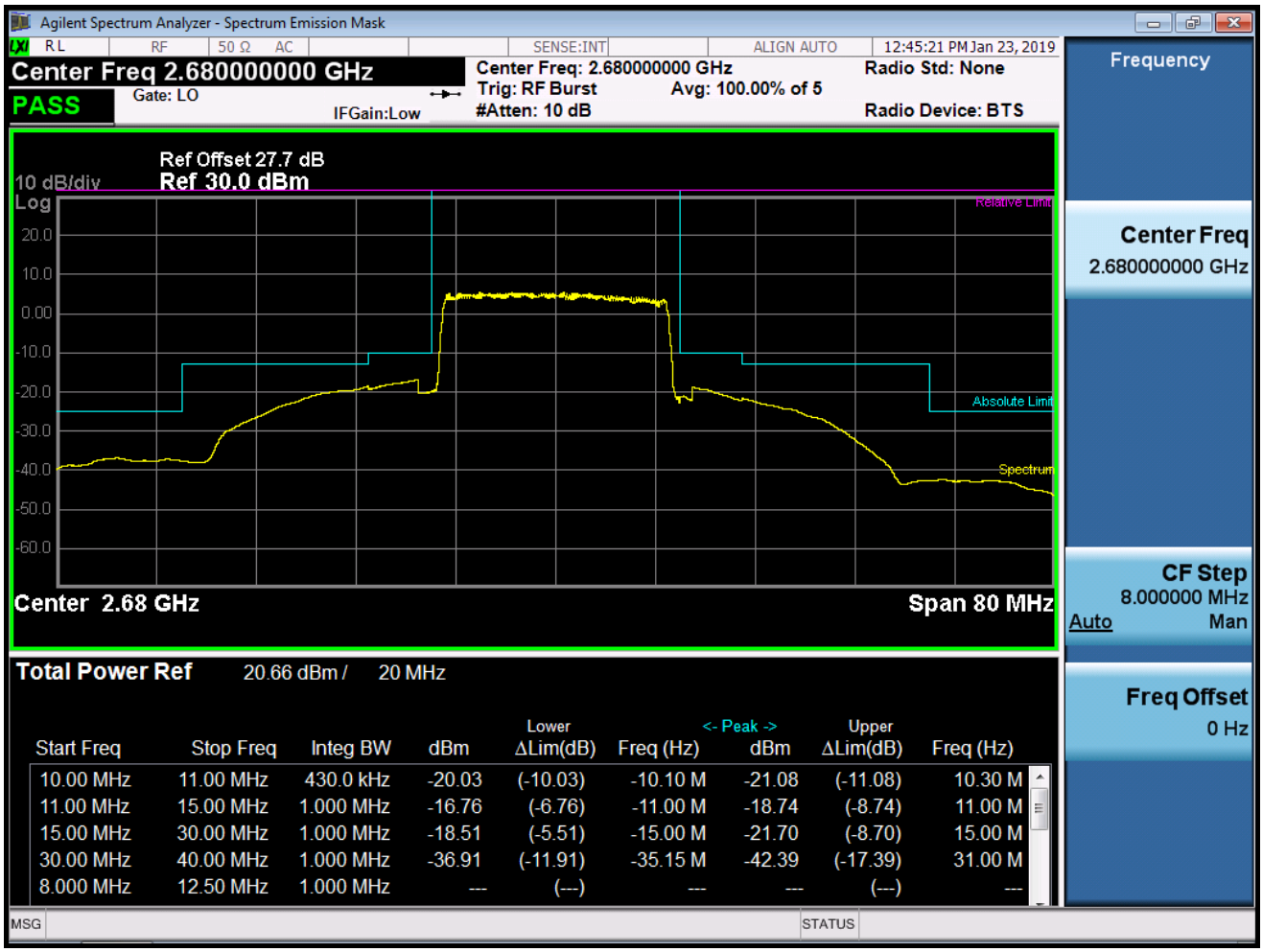


Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Lower Freq (Hz)	<- Peak -> dBm	Upper ΔLim(dB)	Upper Freq (Hz)
10.00 MHz	11.00 MHz	430.0 kHz	-25.76	(-15.76)	-10.02 M	-27.06	(-17.06)	10.02 M
11.00 MHz	15.00 MHz	1.000 MHz	-23.50	(-13.50)	-11.00 M	-24.79	(-14.79)	11.00 M
15.00 MHz	30.00 MHz	1.000 MHz	-27.07	(-14.07)	-15.00 M	-28.69	(-15.69)	15.00 M
30.00 MHz	40.00 MHz	1.000 MHz	-41.82	(-16.82)	-30.00 M	-43.12	(-18.12)	30.00 M
8.000 MHz	12.50 MHz	1.000 MHz	---	(---)	---	---	(---)	---

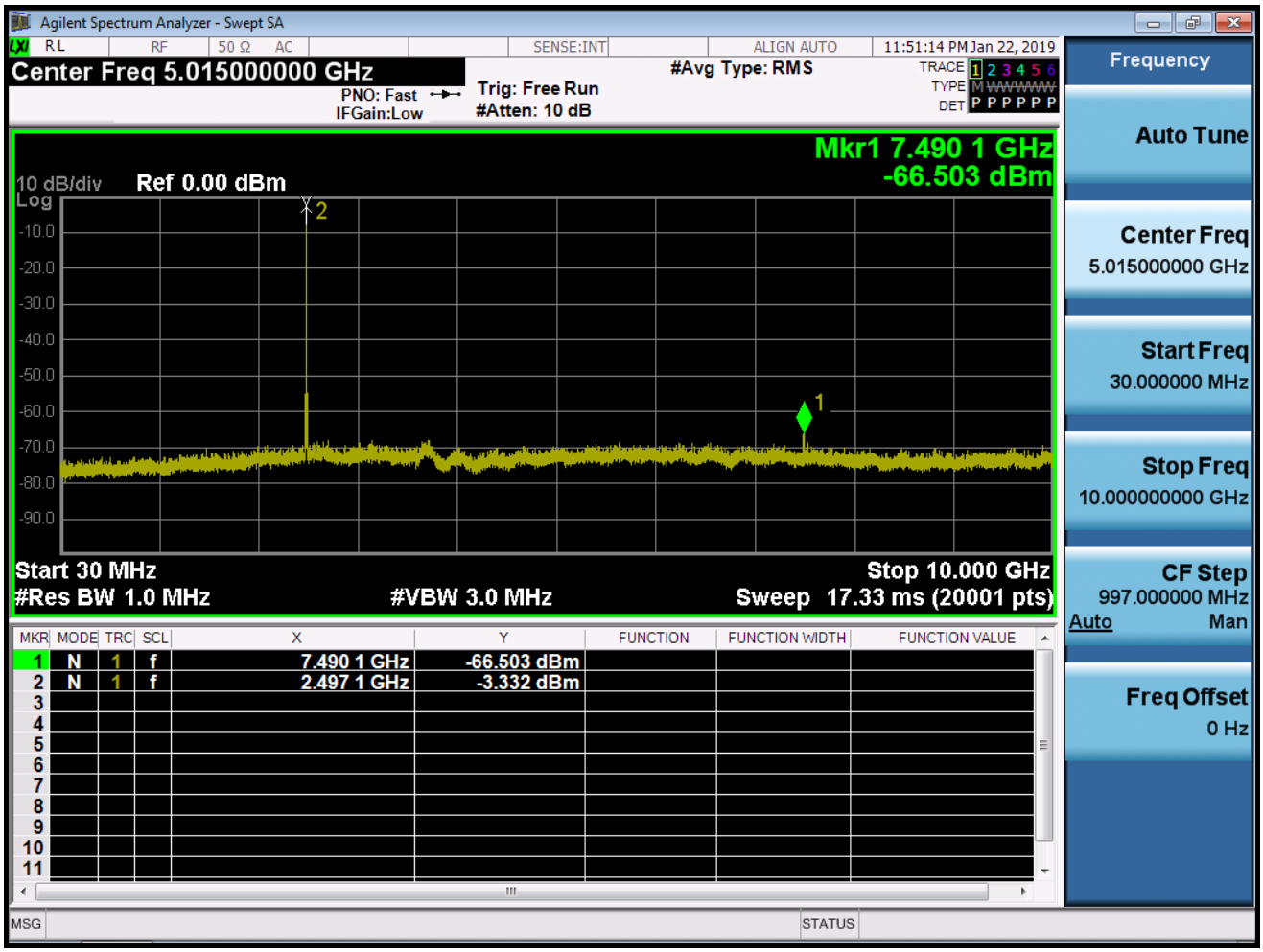
BAND 41. High Channel Edge Plot (20 MHz Ch.41490 QPSK RB 1, Offset 0)



BAND 41. High Channel Edge Plot (20 MHz Ch.41490 QPSK_RB100_Offset 0)

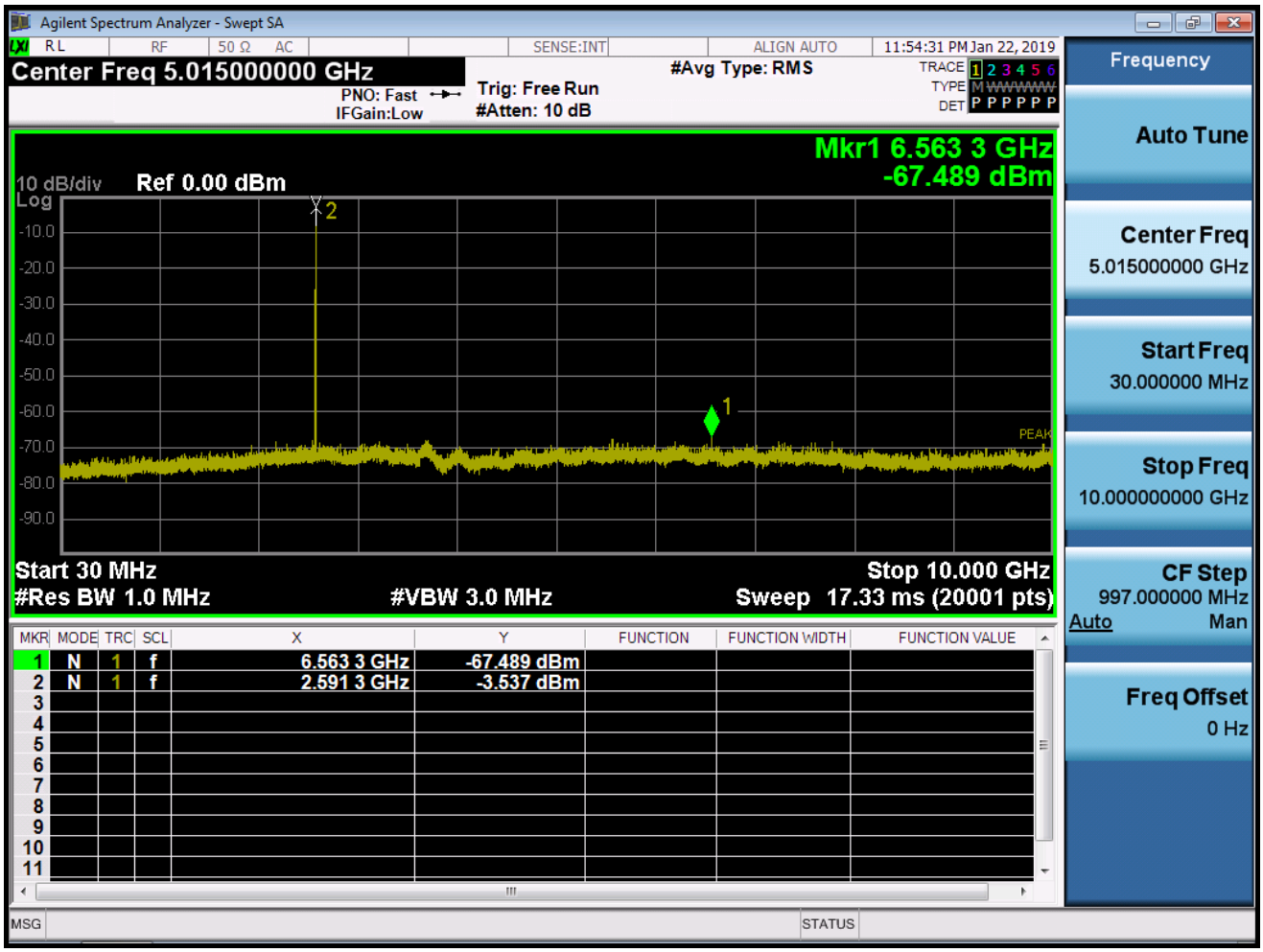


BAND 41. Conducted Spurious Plot 1 (5 MHz Ch.39675 QPSK RB 1, Offset 0)



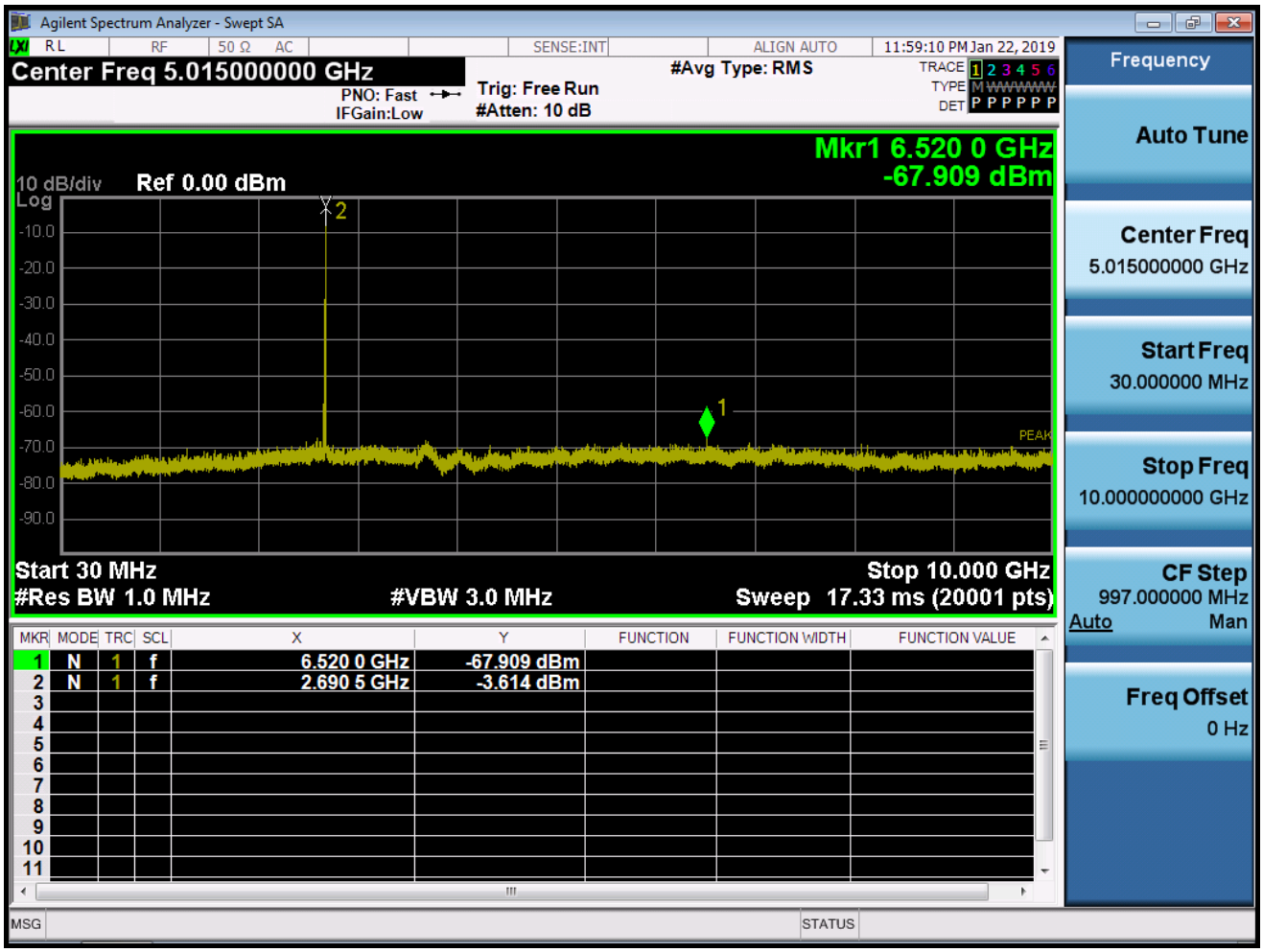
BAND 41. Conducted Spurious Plot 2 (5 MHz Ch. 39675 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 1 (5 MHz Ch.40620 QPSK RB 1, Offset 0)



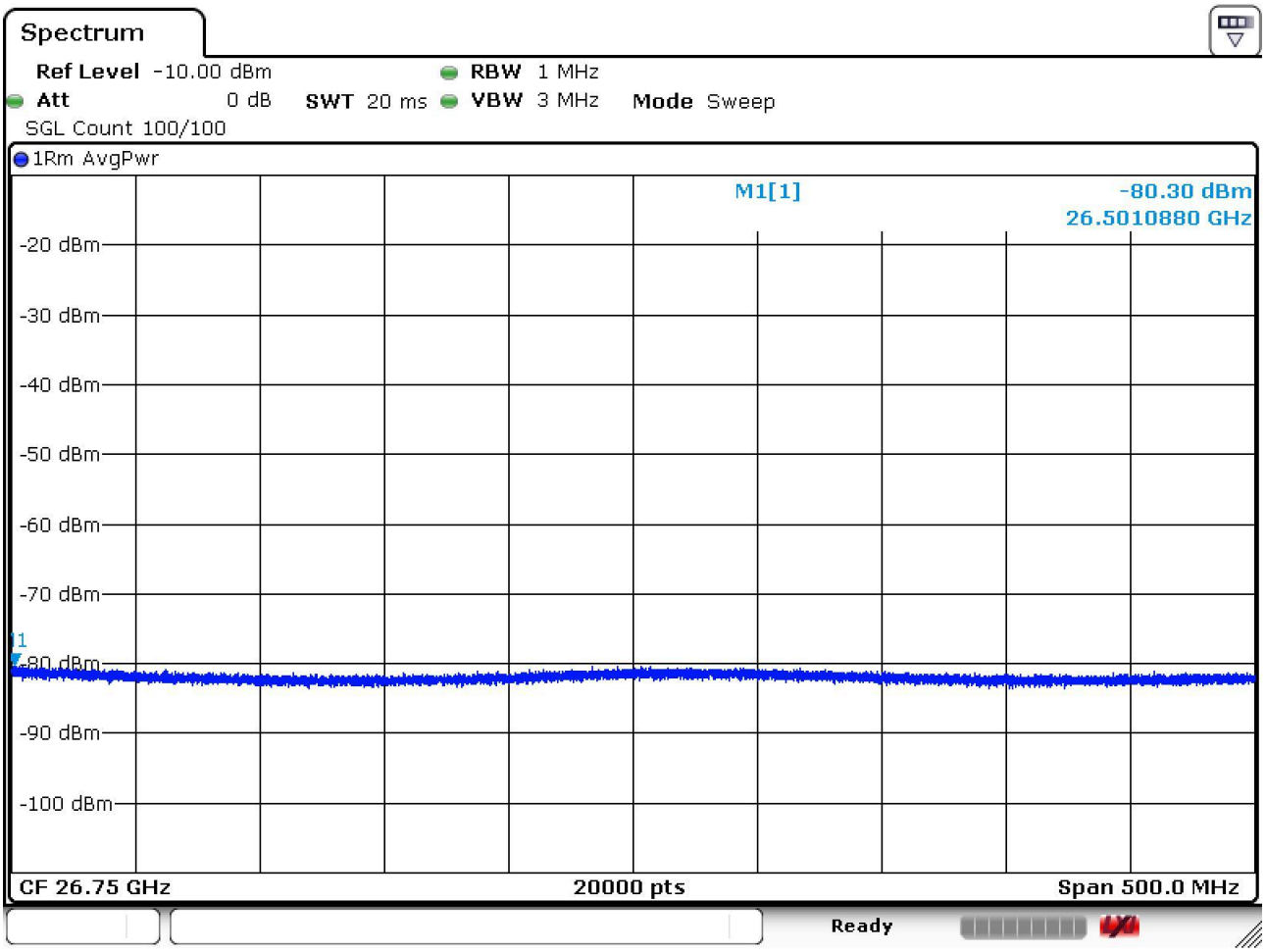
BAND 41. Conducted Spurious Plot 2 (5 MHz Ch. 40620 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 1 (5 MHz Ch.41565 QPSK RB 1, Offset 0)

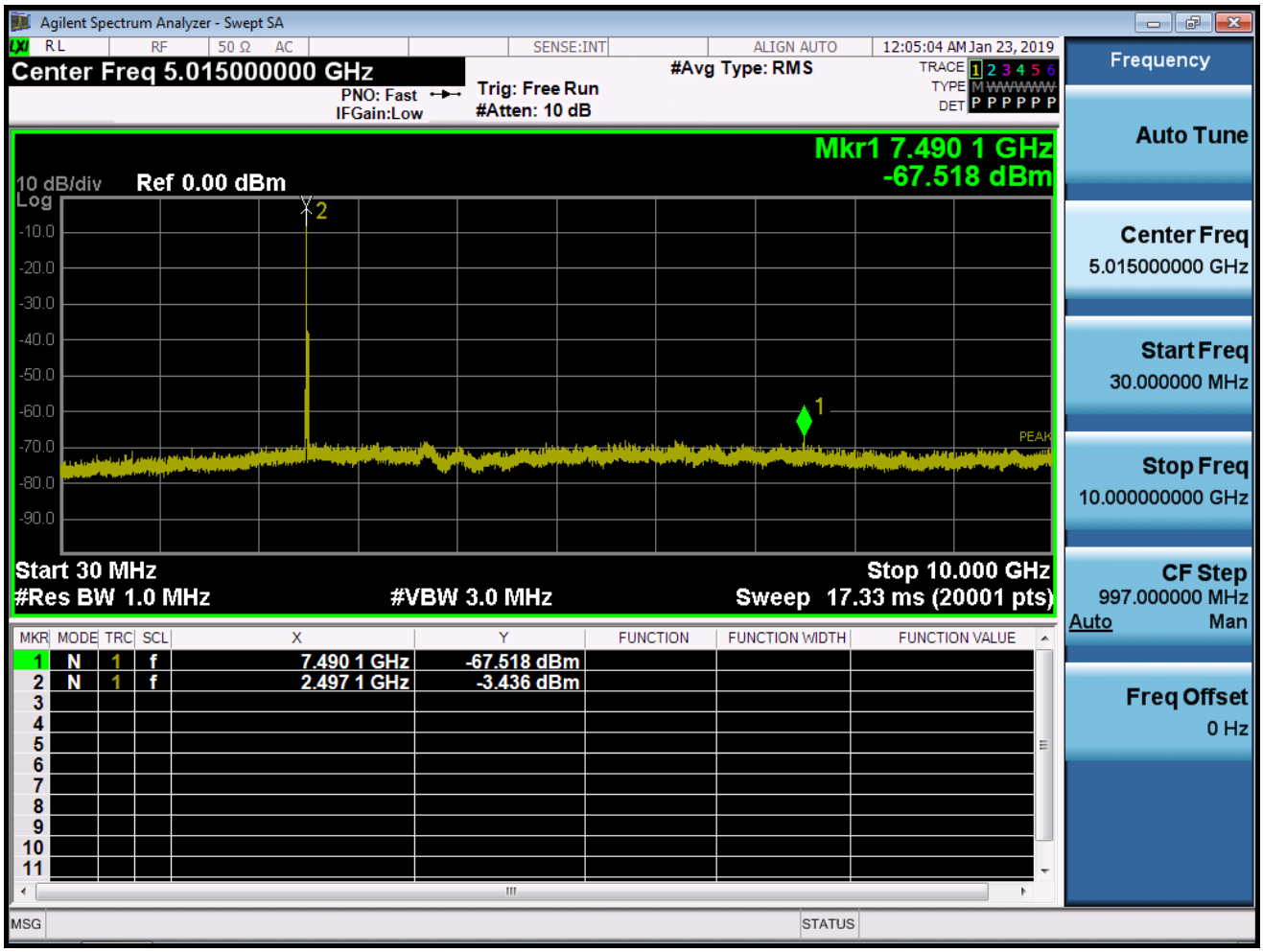


BAND 41. Conducted Spurious Plot 2 (5 MHz Ch. 41565 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 3 (5 MHz Ch. 41565 QPSK RB 1, Offset 0)

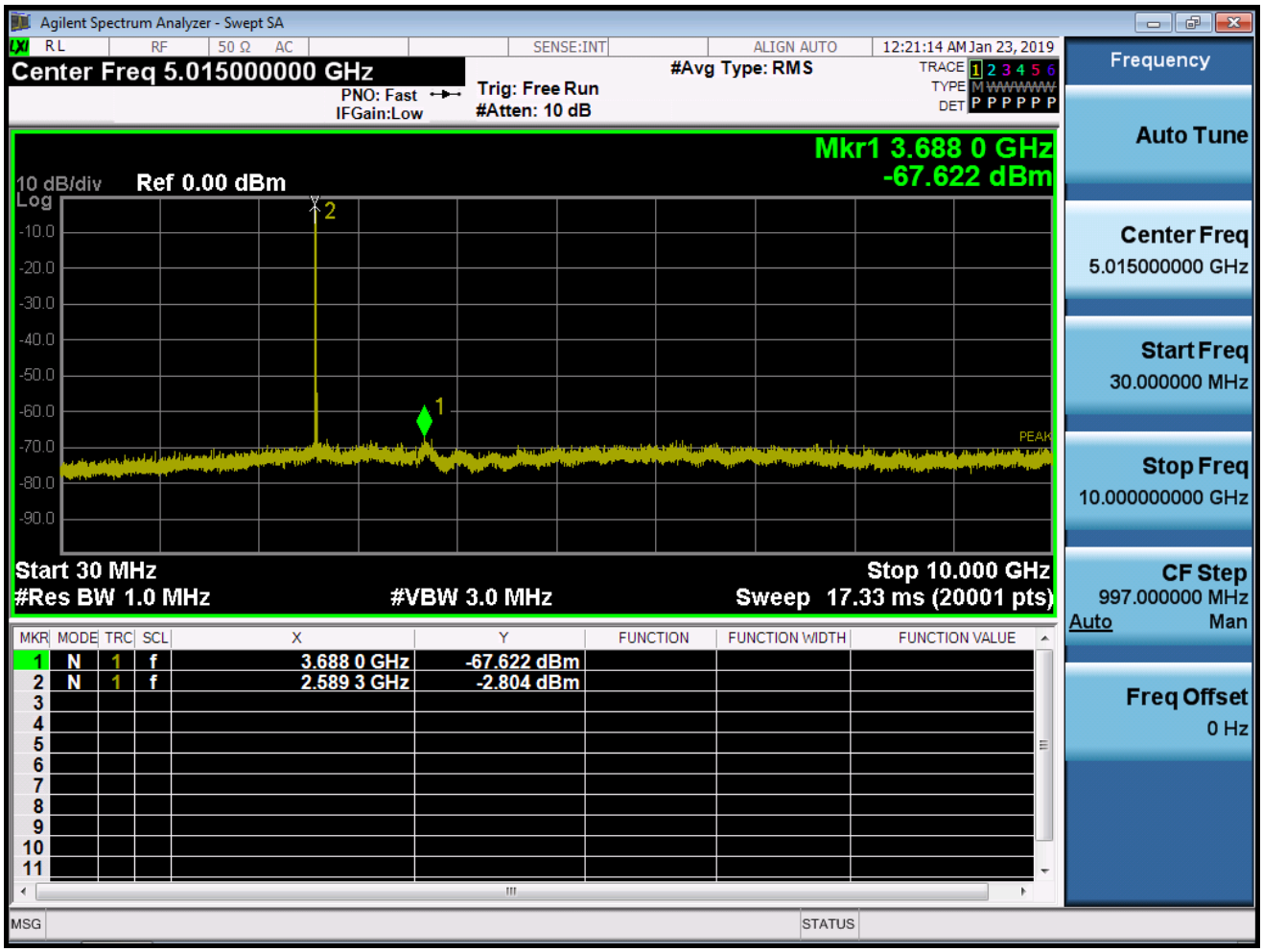


BAND 41. Conducted Spurious Plot 1 (10 MHz Ch.39700 QPSK RB 1, Offset 0)



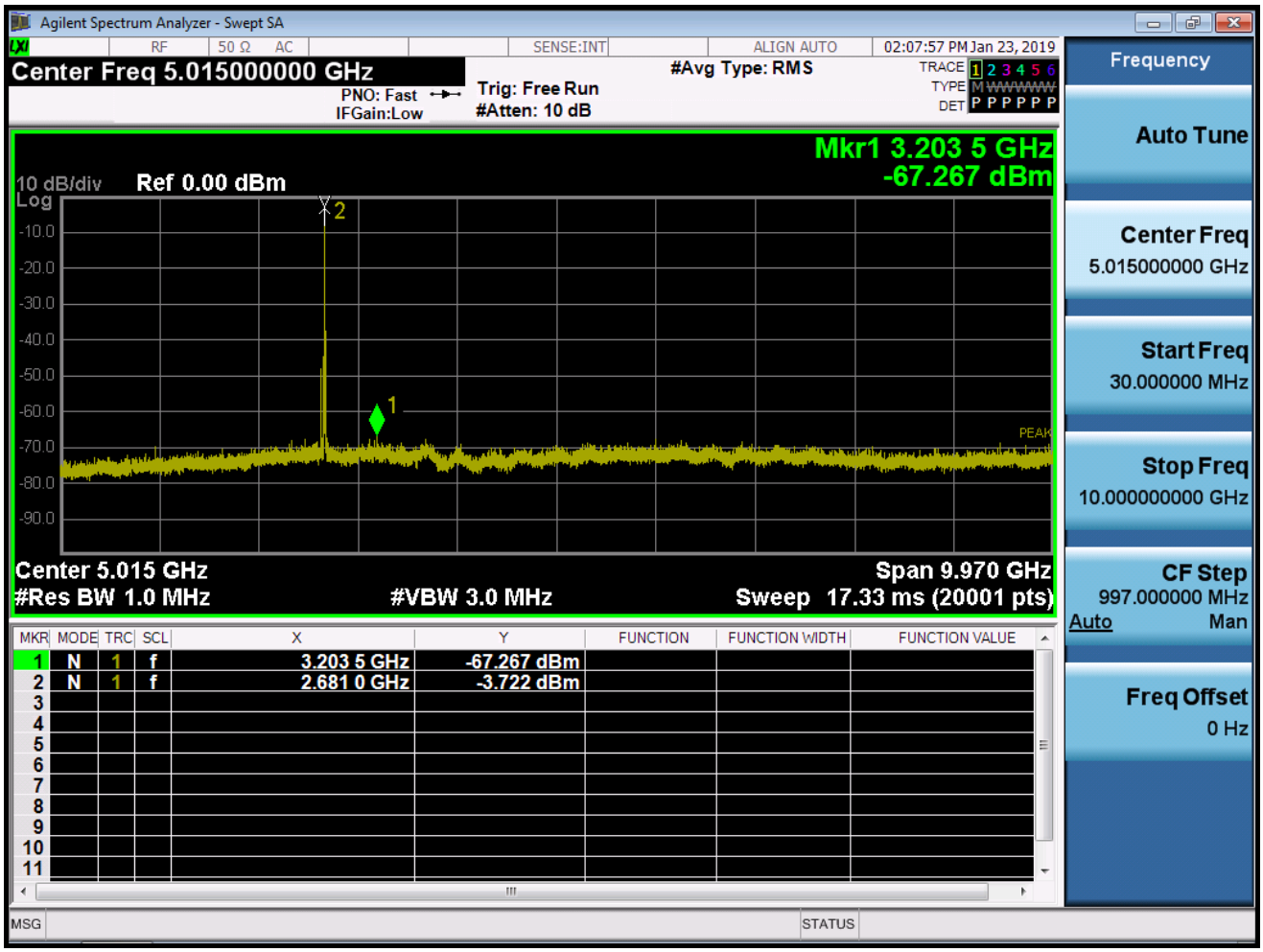
BAND 41. Conducted Spurious Plot 2 (10 MHz Ch. 39700 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 1 (10 MHz Ch.40620 QPSK RB 1, Offset 0)



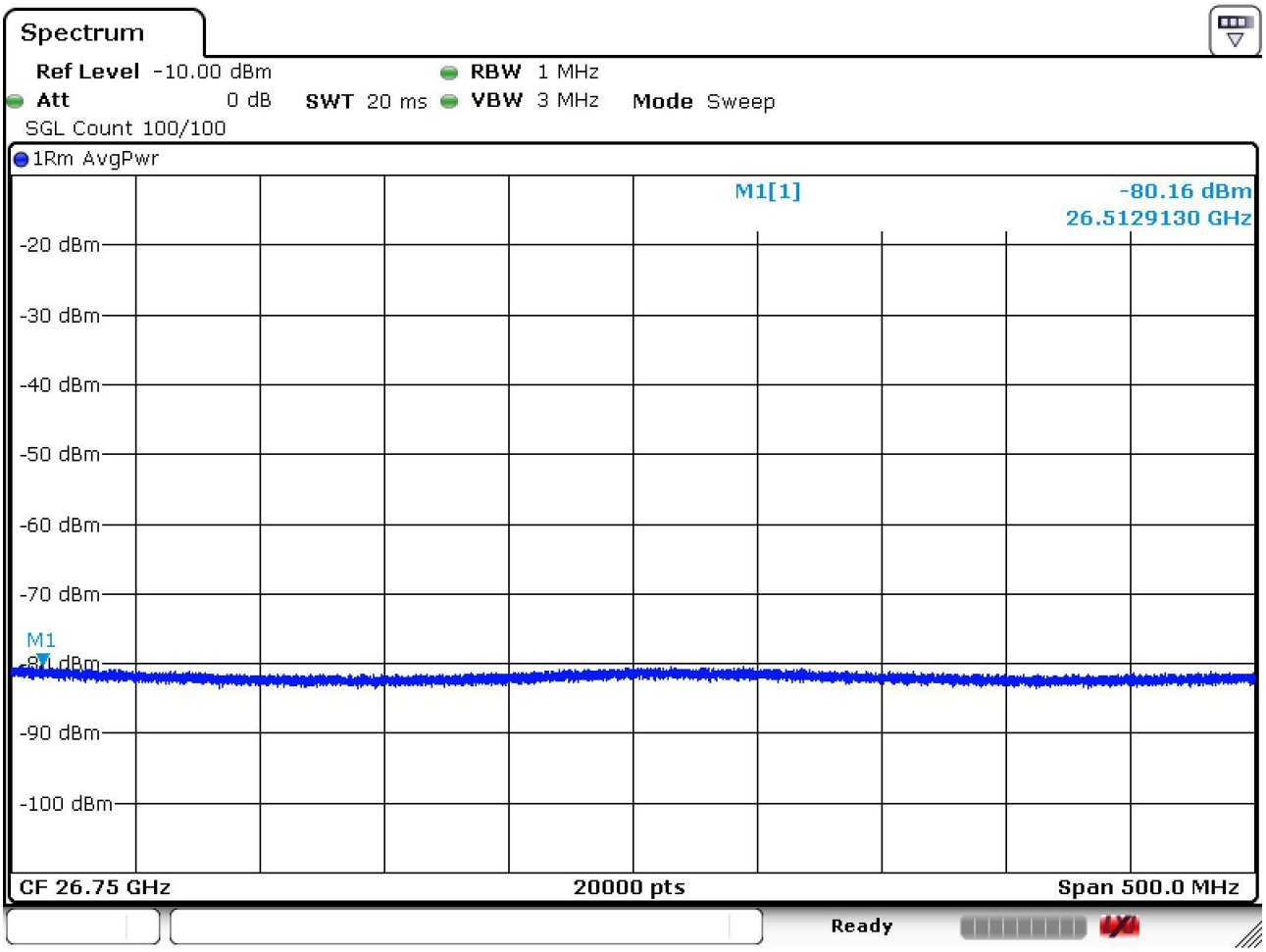
BAND 41. Conducted Spurious Plot 2 (10 MHz Ch. 40620 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 1 (10 MHz Ch. 41540 QPSK RB 1, Offset 0)

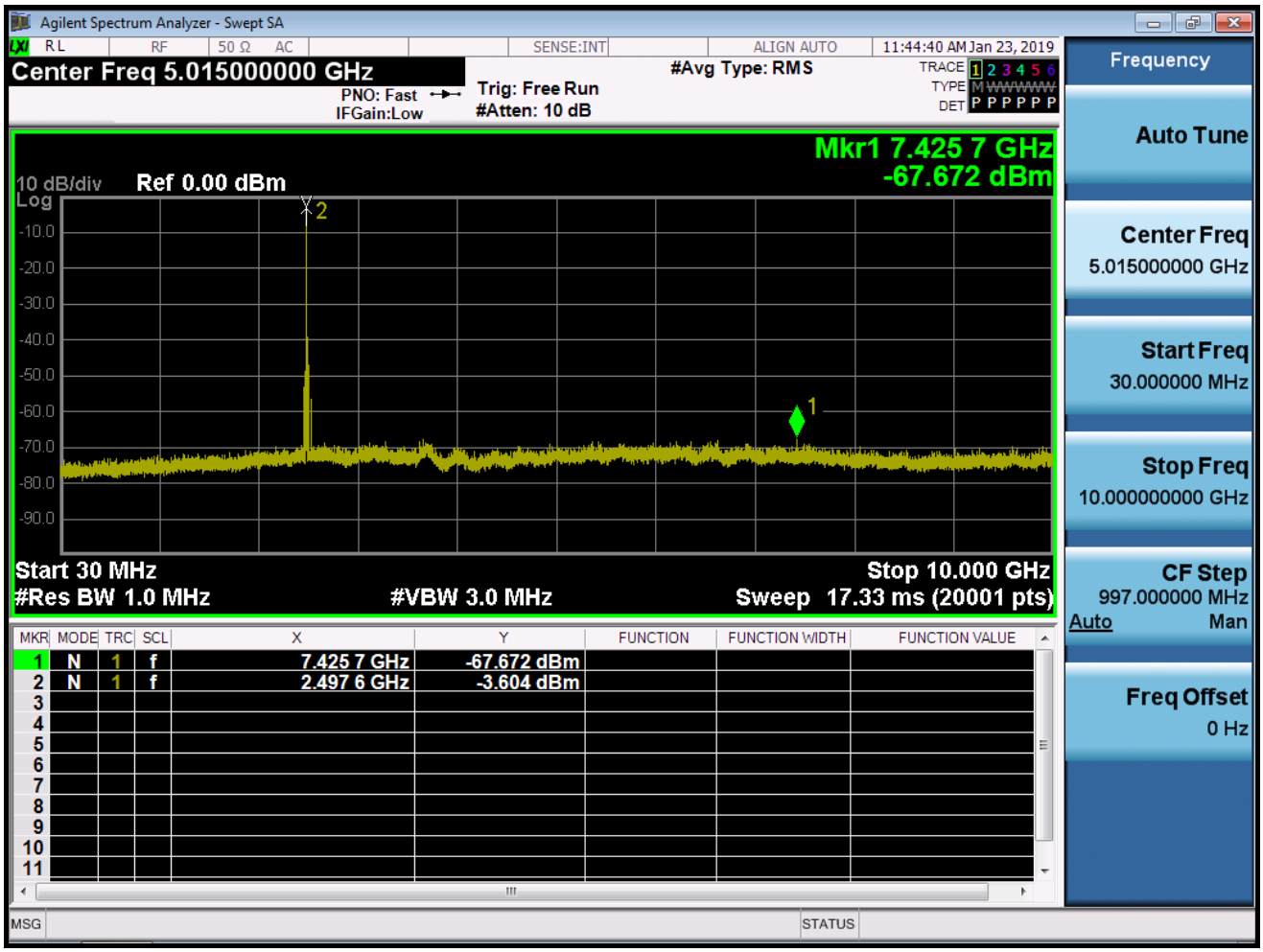


BAND 41. Conducted Spurious Plot 2 (10 MHz Ch. 41540 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 3 (10 MHz Ch. 41540 QPSK RB 1, Offset 0)

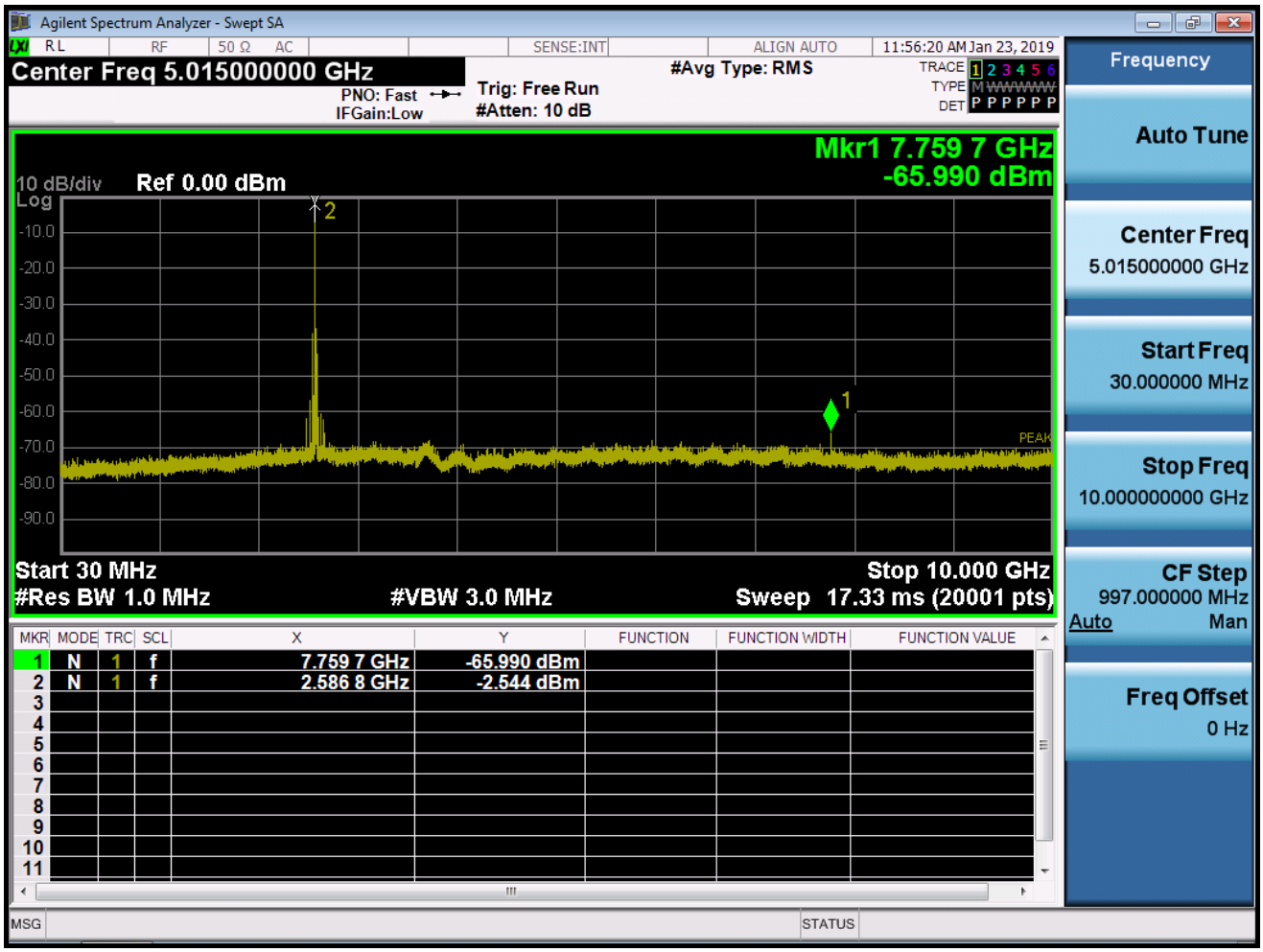


BAND 41. Conducted Spurious Plot 1 (15 MHz Ch.39725 QPSK RB 1, Offset 0)



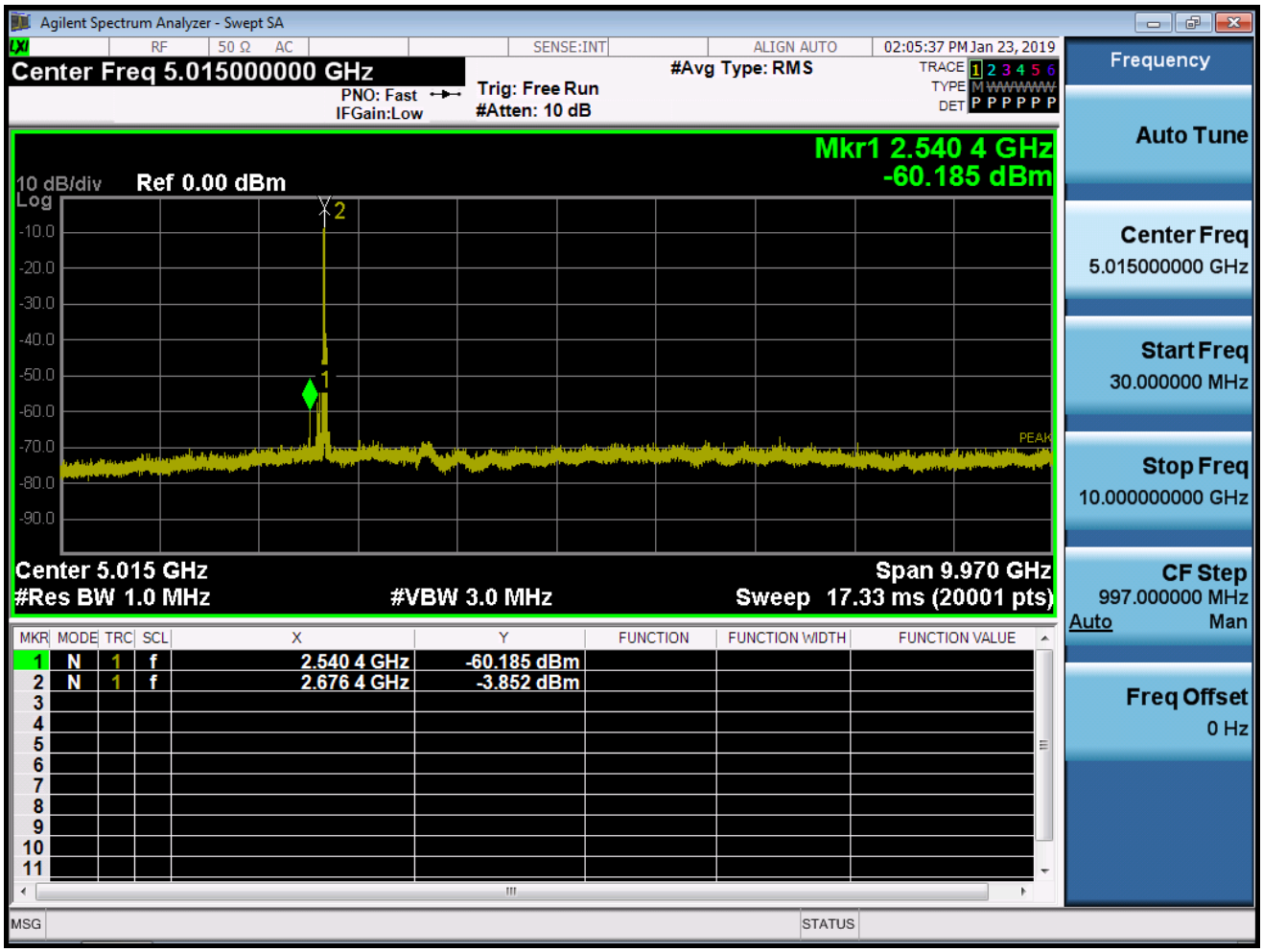
BAND 41. Conducted Spurious Plot 2 (15 MHz Ch. 39725 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 1 (15 MHz Ch.40620 QPSK RB 1, Offset 0)



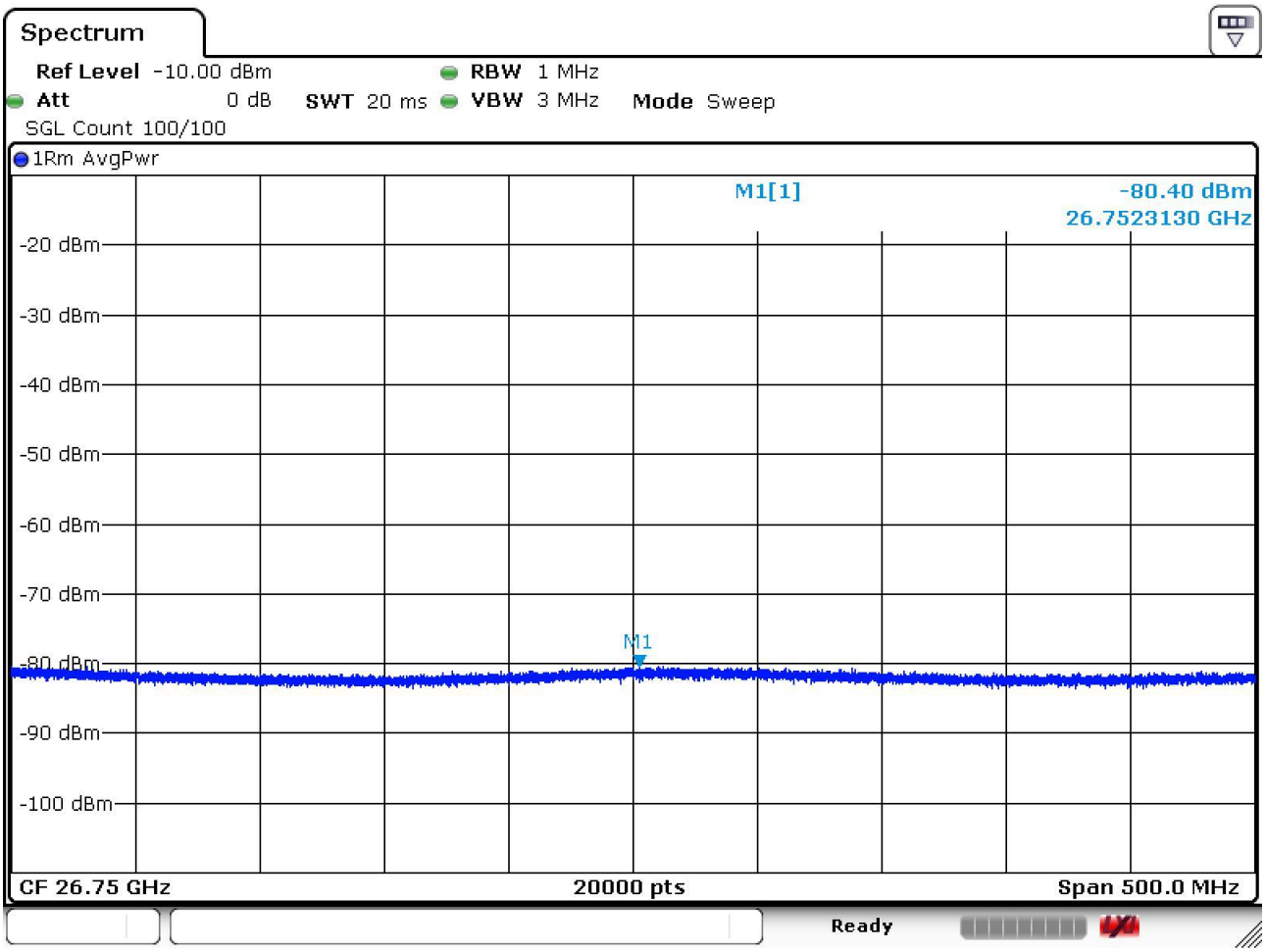
BAND 41. Conducted Spurious Plot 2 (15 MHz Ch. 40620 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 1 (15 MHz Ch.41515 QPSK RB 1, Offset 0)

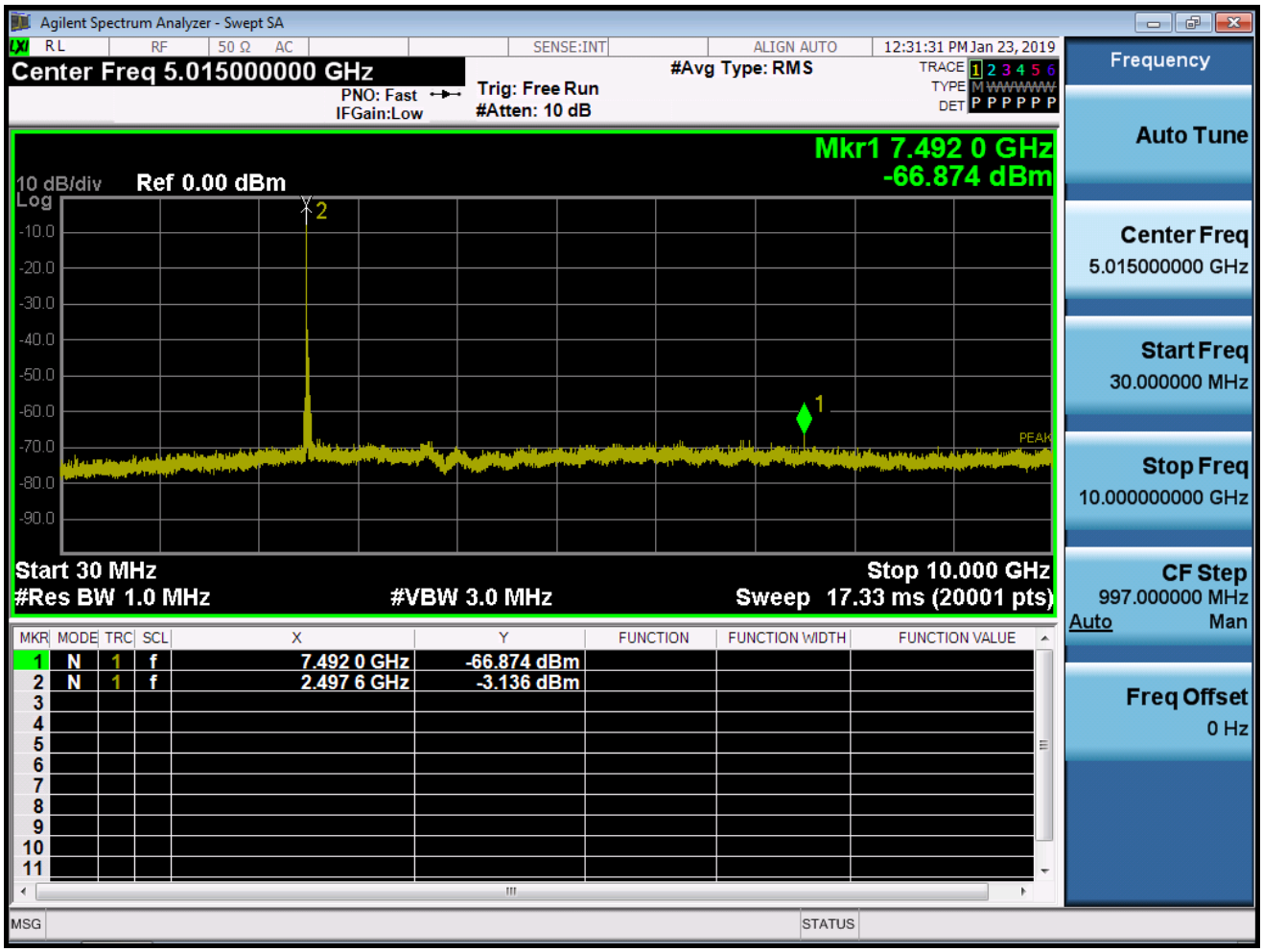


BAND 41. Conducted Spurious Plot 2 (15 MHz Ch. 41515 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 3 (15 MHz Ch. 41515 QPSK RB 1, Offset 0)

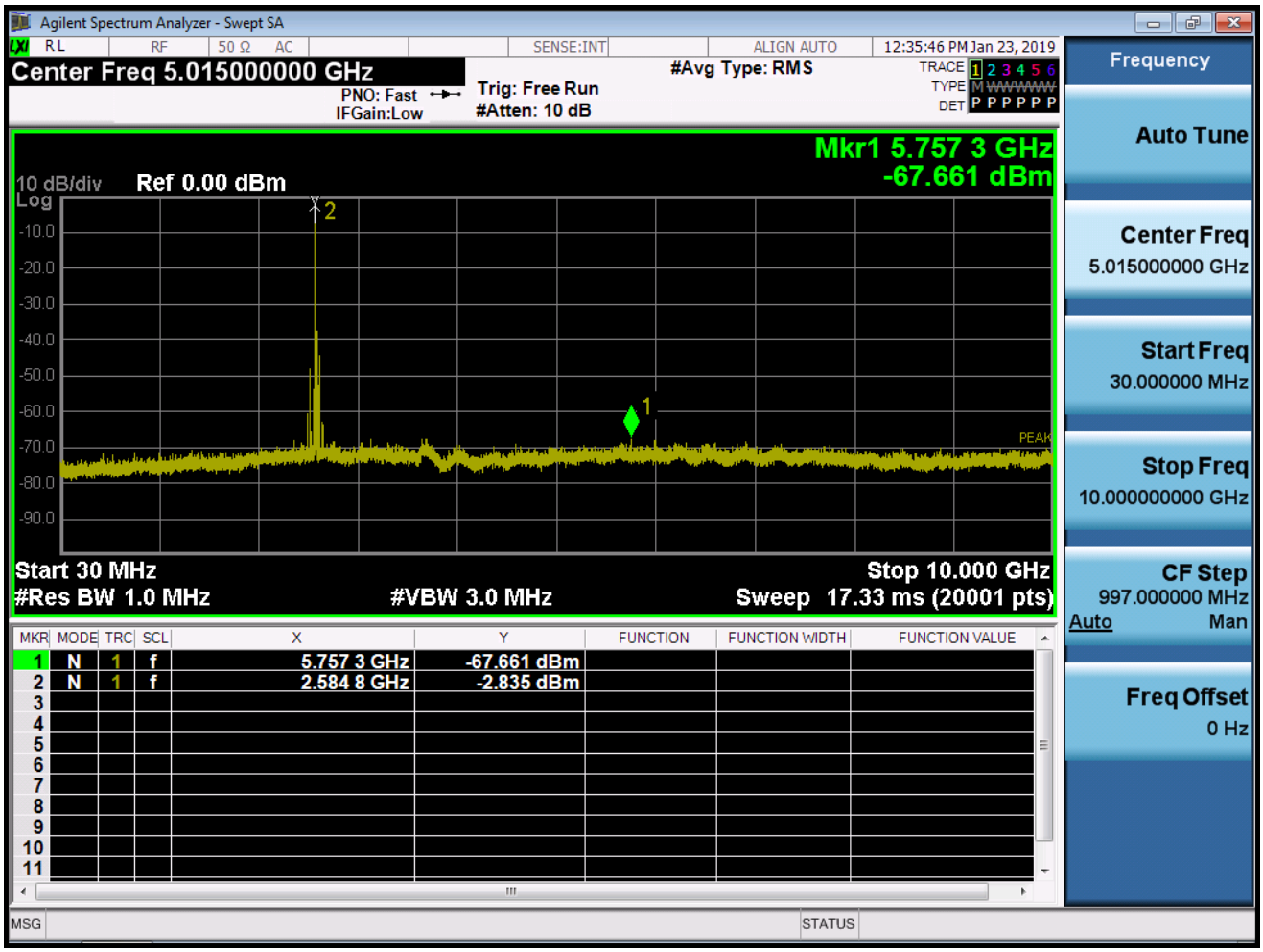


BAND 41. Conducted Spurious Plot 1 (20 MHz Ch.39750 QPSK RB 1, Offset 0)



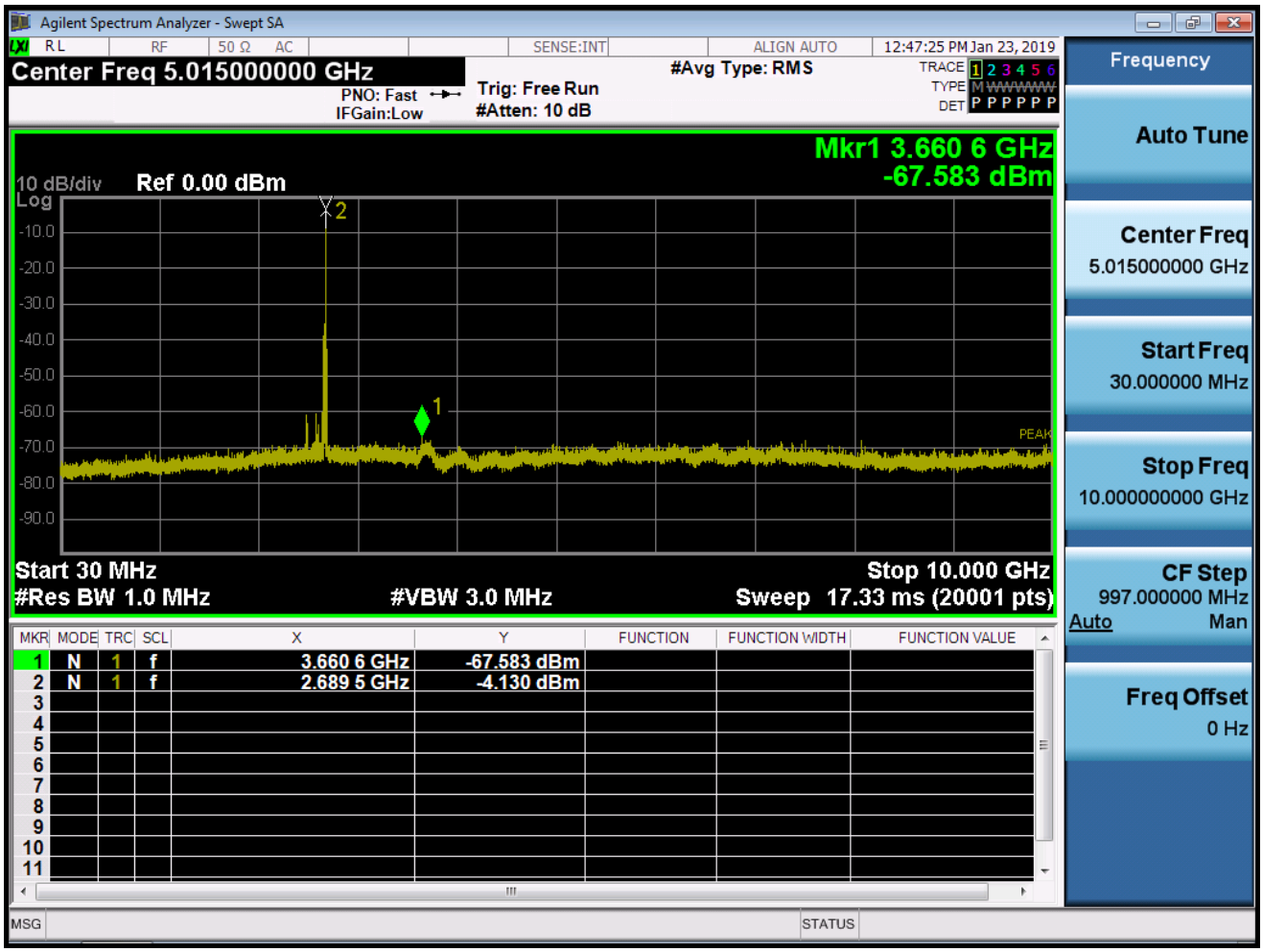
BAND 41. Conducted Spurious Plot 2 (20 MHz Ch. 39750 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 1 (20 MHz Ch.40620 QPSK RB 1, Offset 0)



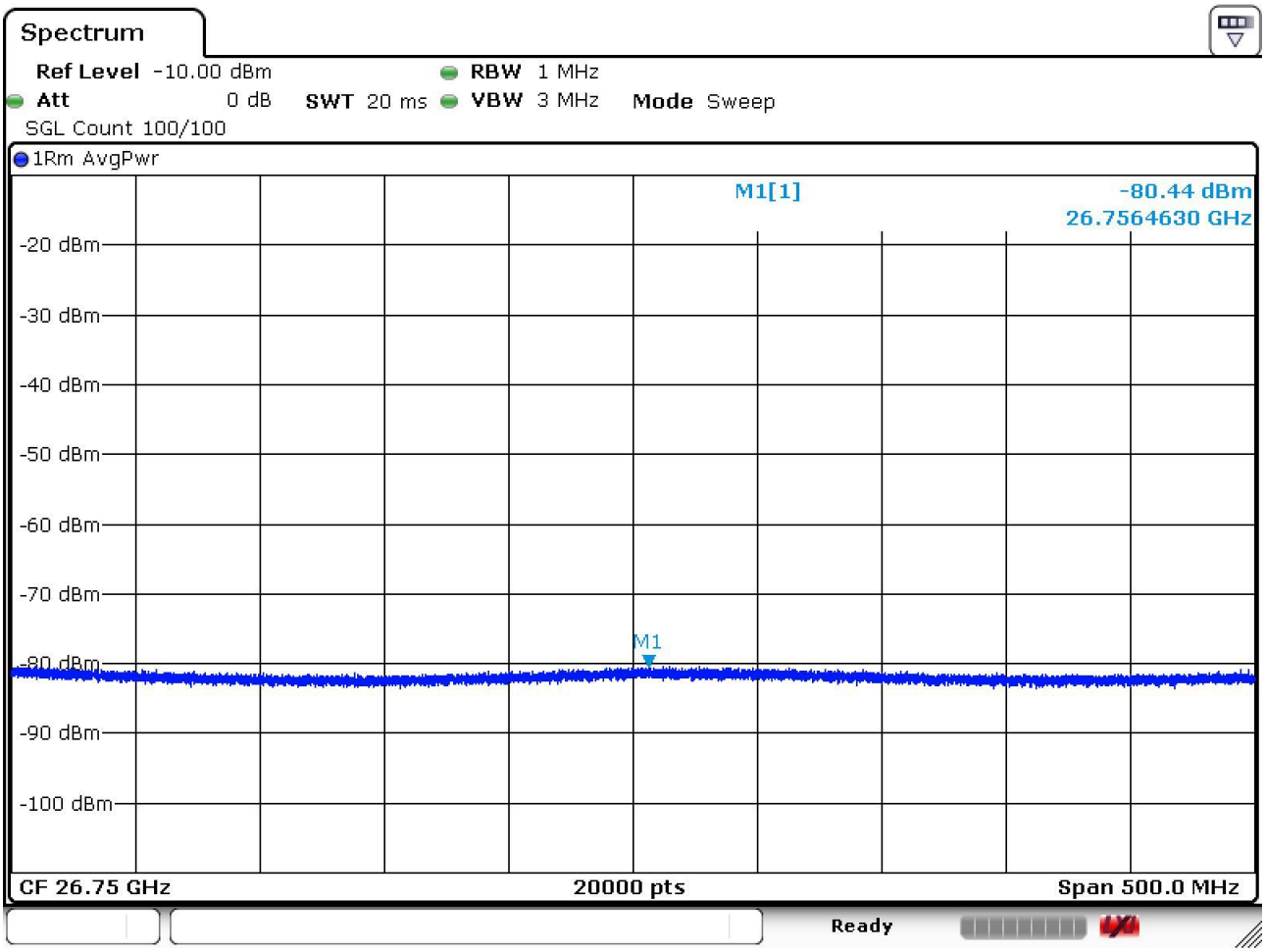
BAND 41. Conducted Spurious Plot 2 (20 MHz Ch. 40620 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 1 (20 MHz Ch.41490 QPSK RB 1, Offset 0)



BAND 41. Conducted Spurious Plot 2 (20 MHz Ch. 41490 QPSK RB 1, Offset 0)

BAND 41. Conducted Spurious Plot 3 (20 MHz Ch. 41490 QPSK RB 1, Offset 0)



10. Annex A_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-1902-FC006-P
2	HCT-RF-1902-FC007-P
3	HCT-RF-1902-FC008-P
4	HCT-RF-1902-FC009-P
5	HCT-RF-1902-FC010-P