HCT CO.,LTD.
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
TEL: +82-31-645-6300 FAX: +82-31-645-6401

FCC Sub6 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:
July 21, 2020

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

Report No.: HCT-RF-2007-FC035

FCC ID:	**A3LSMT878U**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-T878U
EUT Type:	Tablet
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§27, §2

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n71 (5)	665.5 - 695.5	4M49G7D	PI/2 BPSK	0.059	17.71
		4M51G7D	QPSK	0.057	17.52
		4M50W7D	16QAM	0.048	16.82
		4M50W7D	64QAM	0.034	15.37
		4M49W7D	256QAM	0.020	13.01
Sub6 n71 (10)	668.0 - 693.0	9M01G7D	PI/2 BPSK	0.058	17.60
		9M02G7D	QPSK	0.055	17.42
		9M01W7D	16QAM	0.047	16.72
		9M03W7D	64QAM	0.034	15.30
		9M01W7D	256QAM	0.020	13.05
Sub6 n71 (15)	670.5 - 690.5	13M6G7D	PI/2 BPSK	0.061	17.84
		13M5G7D	QPSK	0.060	17.76
		13M5W7D	16QAM	0.047	16.70
		13M5W7D	64QAM	0.035	15.49
		13M6W7D	256QAM	0.021	13.14
Sub6 n71 (20)	673.0 - 688.0	18M0G7D	PI/2 BPSK	0.061	17.82
		18M0G7D	QPSK	0.056	17.50
		18M0W7D	16QAM	0.049	16.89
		18M0W7D	64QAM	0.035	15.45
		18M0W7D	256QAM	0.020	12.98

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

This report only responds to the tested sample and may not be reproduced, except in full, without written approval of the HCT Co., Ltd.

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 KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2007-FC035	July 21, 2020	- First Approval Report

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

Table of Contents

REVIEWED BY 2
1. GENERAL INFORMATION 5
2. INTRODUCTION 6
2.1. DESCRIPTION OF EUT 6
2.2. MEASURING INSTRUMENT CALIBRATION 6
2.3. TEST FACILITY 6
3. DESCRIPTION OF TESTS 7
3.1 TEST PROCEDURE 7
3.2 RADIATED POWER 8
3.3 RADIATED SPURIOUS EMISSIONS 9
3.4 OCCUPIED BANDWIDTH. 10
3.5 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL 11
3.6 BAND EDGE 12
3.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE 13
3.8 WORST CASE(RADIATED TEST) 14
3.9 WORST CASE(CONDUCTED TEST) 15
4. LIST OF TEST EQUIPMENT 16
5. MEASUREMENT UNCERTAINTY 18
6. SUMMARY OF TEST RESULTS 19
7. SAMPLE CALCULATION 20
8. TEST DATA 22
8.1 EFFECTIVE RADIATED POWER 22
8.2 RADIATED SPURIOUS EMISSIONS 26
8.3 OCCUPIED BANDWIDTH 30
8.4 CONDUCTED SPURIOUS EMISSIONS 31
8.5 BAND EDGE 31
8.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE 32
9. TEST PLOTS 36
10. ANNEX A_ TEST SETUP PHOTO 101

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:	A3LSMT878U
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§27, §2
EUT Type:	Tablet
Model(s):	SM-T878U
SCS(kHz):	15
Bandwidth(MHz):	5, 10, 15, 20
Waveform:	CP-OFDM, DFT-S-OFDM
Modulation:	DFT-S-OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM
Tx Frequency:	665.5 MHz – 695.5 MHz (Sub6 n71(5 MHz)) 668.0 MHz – 693.0 MHz (Sub6 n71(10 MHz)) 670.5 MHz – 690.5 MHz (Sub6 n71(15 MHz)) 673.0 MHz – 688.0 MHz (Sub6 n71(20 MHz))
Date(s) of Tests:	June 07, 2020 ~ July 17, 2020

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

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

It also supports IEEE 802.11 a/b/g/n/ac/ax (HT20/40/80), Bluetooth, BT LE, 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
Band Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
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 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. 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;

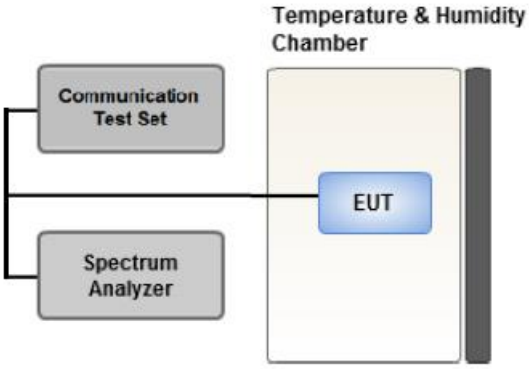
$$Result_{(dBm)} = Pg_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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

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

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

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.

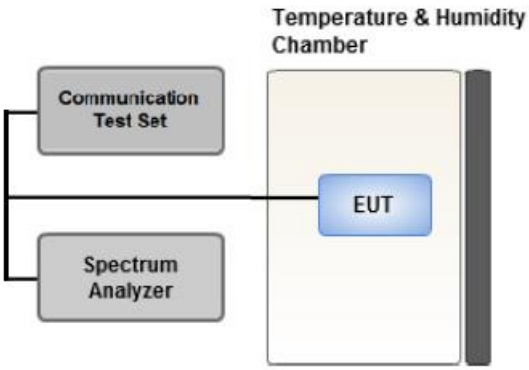
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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.

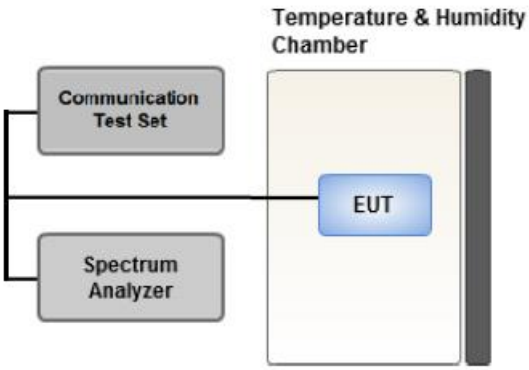
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

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 = RMS
4. Trace Mode = trace average
5. Sweep time = auto
6. Number of points in sweep ≥ 2 x 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

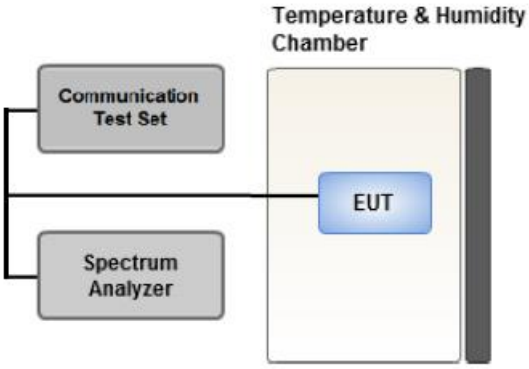
According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of The authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

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)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- 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.
- Radiated Spurious emissions are measured while operating in EN-DC mode with Sub 6 NR carrier as well as an LTE carrier (anchor).
  All EN-DC mode of operation were investigated and the worst case configuration results are reported.
(Worst case: 2A-n71A)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.

[Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Radiated Power	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	1	1	Y
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	1	1	Y

3.9 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
  (Worst case: PI/2 BPSK)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	5,10,15,20	Mid	Full RB	0
Band Edge	PI/2 BPSK	5	Low	1	0
			High	1	24
		10	Low	1	0
			High	1	51
		15	Low	1	0
			High	1	78
		20	Low	1	0
			High	1	105
		5,10,15,20	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	5,10,15,20	Low, Mid, High	1	1

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	-	03/09/2020	Annual	03/09/2021
T&M SYSTEM	FBSR-02B(WHK3.3/18G-10EF)/H.P.F	-	03/09/2020	Annual	03/09/2021
WAINWRIGHT INSTRUMENT	WHNX6.0/26.5G-6SS/H.P.F	1	03/19/2020	Annual	03/19/2021
Hewlett Packard	11667B / Power Splitter(DC~26.5 GHz)	11275	04/27/2020	Annual	04/27/2021
Hewlett Packard	E3632A/DC Power Supply	MY4004427	09/27/2019	Annual	09/27/2020
Schwarzbeck	UHAP/ Dipole Antenna	557	03/29/2019	Biennial	03/29/2021
Schwarzbeck	UHAP/ Dipole Antenna	558	03/29/2019	Biennial	03/29/2021
ESPEC	SU-642 / Chamber	93000717	08/14/2019	Annual	08/14/2020
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	04/29/2019	Biennial	04/29/2021
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170124	02/11/2020	Biennial	02/11/2022
Agilent	N9020A/Signal Analyzer(10Hz~26.5GHz)	MY51110063	04/27/2020	Annual	04/27/2021
Hewlett Packard	8493C/ATTENUATOR(20dB)	17280	06/04/2020	Annual	06/04/2021
REOHDE & SCHWARZ	FSV40/Spectrum Analyzer(10Hz~40GHz)	100931	10/14/2019	Annual	10/14/2020
Agilent	8960 (E5515C)/ Base Station	MY48360800	08/27/2019	Annual	08/27/2020
Schwarzbeck	FMZB1513/ Loop Antenna(9kHz~30MHz)	1513-175	04/26/2019	Biennial	04/26/2021
Schwarzbeck	VULB9160/ Bilog Antenna	9160-3368	08/09/2018	Biennial	08/09/2020
Schwarzbeck	VULB9160/ Hybrid Antenna	760	03/22/2019	Biennial	03/22/2021
Anritsu Corp.	MT8821C/Wideband Radio Communication Tester	6201502997	08/09/2019	Annual	08/09/2020
Anritsu Corp.	MT8820C/Wideband Radio Communication Tester	6201026545	01/22/2020	Annual	01/22/2021
REOHDE & SCHWARZ	SMB100A/ SIGNAL GENERATOR (100kHz~40GHz)	177633	07/13/2020	Annual	07/13/2021
KEYSIGHT	E7515B / 5G Wireless Tester	MY58300756	01/07/2020	Annual	01/07/2021
KEYSIGHT	N9030B / Signal Analyzer(5Hz~40.0GHz)	MY55480167	06/04/2020	Annual	06/04/2021
Mini-Circuits	ZC4PD-K1844+ / 4-Way Divider	942907	09/05/2019	Annual	09/05/2020
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).
3. Model : SMB100A (S/N: 177633)
   - Use date of Equipment : June 07, 2020 ~ July 12, 2020/ July 14, 2020 ~ July 17, 2020

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(g)	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions	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
2. The same samples were used for SAR and EMC

6.2 Test Condition : Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Effective Radiated Power	§27.50(c)(10)	< 3 Watts max. ERP	PASS
Radiated Spurious and Harmonic Emissions	§2.1053, §27.53(g)	< 43 + 10log10 (P[Watts]) for all out-of band emissions	PASS

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

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

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

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

7.2 EIRP Sample Calculation

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

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

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

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

16QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

64QAM 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 EFFECTIVE RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
665.5	Sub6 n71/ 5 MHz [15 kHz]	PI/2 BPSK	-30.91	27.86	-9.76	1.15	V	< 3.00	0.050	16.95
		QPSK	-31.10	27.67	-9.76	1.15	V		0.047	16.76
		16-QAM	-31.72	27.05	-9.76	1.15	V		0.041	16.14
		64-QAM	-33.22	25.55	-9.76	1.15	V		0.029	14.64
		256-QAM	-35.53	23.24	-9.76	1.15	V		0.017	12.33
680.5		PI/2 BPSK	-30.01	28.65	-9.78	1.16	V		0.059	17.71
		QPSK	-30.20	28.46	-9.78	1.16	V		0.057	17.52
		16-QAM	-30.90	27.76	-9.78	1.16	V		0.048	16.82
		64-QAM	-32.35	26.31	-9.78	1.16	V		0.034	15.37
		256-QAM	-34.71	23.95	-9.78	1.16	V		0.020	13.01
695.5		PI/2 BPSK	-31.20	27.57	-9.79	1.18	V		0.046	16.60
		QPSK	-31.47	27.30	-9.79	1.18	V		0.043	16.33
		16-QAM	-32.19	26.58	-9.79	1.18	V		0.036	15.61
		64-QAM	-33.50	25.27	-9.79	1.18	V		0.027	14.30
		256-QAM	-35.73	23.04	-9.79	1.18	V		0.016	12.07

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
668.0	Sub6 n71/ 10 MHz [15 kHz]	PI/2 BPSK	-30.92	27.67	-9.76	1.15	V	< 3.00	0.047	16.76
		QPSK	-31.13	27.46	-9.76	1.15	V		0.045	16.55
		16-QAM	-31.80	26.79	-9.76	1.15	V		0.039	15.88
		64-QAM	-33.28	25.31	-9.76	1.15	V		0.028	14.40
		256-QAM	-35.66	22.93	-9.76	1.15	V		0.016	12.02
680.5		PI/2 BPSK	-30.12	28.54	-9.78	1.16	V		0.058	17.60
		QPSK	-30.30	28.36	-9.78	1.16	V		0.055	17.42
		16-QAM	-31.00	27.66	-9.78	1.16	V		0.047	16.72
		64-QAM	-32.42	26.24	-9.78	1.16	V		0.034	15.30
		256-QAM	-34.67	23.99	-9.78	1.16	V		0.020	13.05
693.0		PI/2 BPSK	-30.90	27.91	-9.79	1.17	V		0.050	16.95
		QPSK	-31.09	27.72	-9.79	1.17	V		0.047	16.76
		16-QAM	-31.73	27.08	-9.79	1.17	V		0.041	16.12
		64-QAM	-33.17	25.64	-9.79	1.17	V		0.029	14.68
		256-QAM	-35.45	23.36	-9.79	1.17	V		0.017	12.40

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
670.5	Sub6 n71/ 15 MHz [15 kHz]	PI/2 BPSK	-30.82	27.71	-9.77	1.15	V	< 3.00	0.048	16.79
		QPSK	-31.12	27.41	-9.77	1.15	V		0.045	16.49
		16-QAM	-31.70	26.83	-9.77	1.15	V		0.039	15.91
		64-QAM	-33.25	25.28	-9.77	1.15	V		0.027	14.36
		256-QAM	-35.52	23.01	-9.77	1.15	V		0.016	12.09
680.5		PI/2 BPSK	-29.88	28.78	-9.78	1.16	V		0.061	17.84
		QPSK	-29.96	28.70	-9.78	1.16	V		0.060	17.76
		16-QAM	-31.05	27.61	-9.78	1.16	V		0.046	16.67
		64-QAM	-32.23	26.43	-9.78	1.16	V		0.035	15.49
		256-QAM	-34.58	24.08	-9.78	1.16	V		0.021	13.14
690.5		PI/2 BPSK	-30.31	28.52	-9.79	1.17	V		0.057	17.56
		QPSK	-30.48	28.35	-9.79	1.17	V		0.055	17.39
		16-QAM	-31.17	27.66	-9.79	1.17	V		0.047	16.70
		64-QAM	-32.55	26.28	-9.79	1.17	V		0.034	15.32
		256-QAM	-35.07	23.76	-9.79	1.17	V		0.019	12.80

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
673.0	Sub6 n71/ 20 MHz [15 kHz]	PI/2 BPSK	-30.89	27.58	-9.77	1.15	V	< 3.00	0.046	16.66
		QPSK	-31.12	27.35	-9.77	1.15	V		0.044	16.43
		16-QAM	-31.68	26.79	-9.77	1.15	V		0.039	15.87
		64-QAM	-33.19	25.28	-9.77	1.15	V		0.027	14.36
		256-QAM	-35.61	22.86	-9.77	1.15	V		0.016	11.94
680.5		PI/2 BPSK	-30.07	28.59	-9.78	1.16	V		0.058	17.65
		QPSK	-30.22	28.44	-9.78	1.16	V		0.056	17.50
		16-QAM	-30.89	27.77	-9.78	1.16	V		0.048	16.83
		64-QAM	-32.43	26.23	-9.78	1.16	V		0.034	15.29
		256-QAM	-34.74	23.92	-9.78	1.16	V		0.020	12.98
688.0		PI/2 BPSK	-30.04	28.77	-9.78	1.17	V		0.061	17.82
		QPSK	-30.38	28.43	-9.78	1.17	V		0.056	17.48
		16-QAM	-30.97	27.84	-9.78	1.17	V		0.049	16.89
		64-QAM	-32.41	26.40	-9.78	1.17	V		0.035	15.45
		256-QAM	-34.90	23.91	-9.78	1.17	V		0.020	12.96

8.2 RADIATED SPURIOUS EMISSIONS

- ▣ NR Band: N71
- ▣ LTE Band(Anchor): B2
- ▣ Bandwidth: 5 MHz
- ▣ Modulation: PI/2 BPSK
- ▣ Distance: 3 meters
- ▣ SCS: 15 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit
133100 (665.5)	1,331.00	-48.78	6.95	-57.03	1.64	H	-51.72	-13.00
	1,996.50	-54.35	10.39	-62.23	2.04	H	-53.88	-13.00
	2,662.00	-55.97	11.10	-59.19	2.39	H	-50.48	-13.00
136100 (680.5)	1,361.00	-46.84	7.23	-55.79	1.66	H	-50.22	-13.00
	2,041.50	-55.61	10.25	-62.18	2.06	V	-53.99	-13.00
	2,722.00	-56.22	11.05	-59.68	2.40	V	-51.03	-13.00
139100 (695.5)	1,391.00	-47.75	7.48	-57.08	1.69	H	-51.29	-13.00
	2,086.50	-54.07	9.95	-59.35	2.09	H	-51.49	-13.00
	2,782.00	-56.66	10.95	-59.59	2.46	H	-51.10	-13.00

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
18650 (1855.0)	3,710.00	-50.16	12.43	-55.15	2.86	V	-45.58	-13.00
	5,565.00	-56.71	13.18	-55.04	3.59	V	-45.45	-13.00
	7,420.00	-56.35	11.15	-46.59	4.24	H	-39.68	-13.00

▣ NR Band: N71

▣ LTE Band(Anchor): B2

▣ Bandwidth: 10 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 3 meters

▣ SCS: 15 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit
133600 (668.0)	1,336.00	-47.31	6.99	-55.79	1.64	H	-50.44	-13.00
	2,004.00	-54.47	10.38	-61.94	2.05	V	-53.61	-13.00
	2,672.00	-55.24	11.10	-58.49	2.39	H	-49.78	-13.00
136100 (680.5)	1,361.00	-50.60	7.23	-59.55	1.66	H	-53.98	-13.00
	2,041.50	-53.01	10.25	-59.58	2.06	V	-51.39	-13.00
	2,722.00	-56.63	11.05	-60.09	2.40	H	-51.44	-13.00
138600 (693.0)	1,386.00	-50.86	7.42	-60.11	1.69	H	-54.38	-13.00
	2,079.00	-55.22	10.00	-60.45	2.09	H	-52.54	-13.00
	2,772.00	-56.14	10.95	-58.89	2.46	V	-50.40	-13.00

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
18650 (1855.0)	3,710.00	-50.50	12.43	-55.49	2.86	V	-45.92	-13.00
	5,565.00	-56.53	13.18	-54.86	3.59	V	-45.27	-13.00
	7,420.00	-56.75	11.15	-46.99	4.24	H	-40.08	-13.00

- ▣ NR Band: N71
- ▣ LTE Band(Anchor): B2
- ▣ Bandwidth: 15 MHz
- ▣ Modulation: PI/2 BPSK
- ▣ Distance: 3 meters
- ▣ SCS: 15 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit
134100 (670.5)	1,341.00	-45.43	7.03	-53.76	1.64	H	-48.37	-13.00
	2,011.50	-54.29	10.35	-61.62	2.05	H	-53.32	-13.00
	2,682.00	-56.06	11.10	-59.57	2.38	V	-50.85	-13.00
136100 (680.5)	1,361.00	-49.83	7.23	-58.78	1.66	H	-53.21	-13.00
	2,041.50	-54.04	10.25	-60.61	2.06	V	-52.42	-13.00
	2,722.00	-56.91	11.05	-60.37	2.40	V	-51.72	-13.00
138100 (690.5)	1,381.00	-46.46	7.35	-55.64	1.68	H	-49.97	-13.00
	2,071.50	-54.24	10.00	-60.33	2.08	H	-52.41	-13.00
	2,762.00	-55.57	10.98	-58.84	2.45	V	-50.31	-13.00

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
18650 (1855.0)	3,710.00	-49.79	12.43	-54.78	2.86	V	-45.21	-13.00
	5,565.00	-56.28	13.18	-54.61	3.59	V	-45.02	-13.00
	7,420.00	-56.77	11.15	-47.01	4.24	H	-40.10	-13.00

▣ NR Band: N71

▣ LTE Band(Anchor): B2

▣ Bandwidth: 20 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 3 meters

▣ SCS: 15 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit
134600 (673.0)	1,346.00	-50.47	7.07	-59.14	1.65	H	-53.72	-13.00
	2,019.00	-52.82	10.30	-59.68	2.05	V	-51.43	-13.00
	2,692.00	-54.11	11.10	-56.89	2.39	H	-48.18	-13.00
136100 (680.5)	1,361.00	-44.41	7.23	-53.36	1.66	H	-47.79	-13.00
	2,041.50	-53.81	10.25	-60.38	2.06	H	-52.19	-13.00
	2,722.00	-55.57	11.05	-59.03	2.40	H	-50.38	-13.00
137600 (688.0)	1,376.00	-47.18	7.35	-56.22	1.68	H	-50.54	-13.00
	2,064.00	-54.69	10.05	-60.75	2.08	V	-52.77	-13.00
	2,752.00	-55.82	11.00	-59.30	2.42	H	-50.72	-13.00

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
18650 (1855.0)	3,710.00	-50.68	12.43	-55.67	2.86	V	-46.10	-13.00
	5,565.00	-56.21	13.18	-54.54	3.59	V	-44.95	-13.00
	7,420.00	-57.20	11.15	-47.44	4.24	H	-40.53	-13.00

8.3 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n71	5 MHz	680.5	BPSK	25	0	4.4911
			QPSK			4.5059
			16-QAM			4.5026
			64-QAM			4.4972
			256-QAM			4.4901
	10 MHz		BPSK	50		9.0078
			QPSK			9.0186
			16-QAM			9.0135
			64-QAM			9.0265
			256-QAM			9.0076
	15 MHz		BPSK	75		13.551
			QPSK			13.542
			16-QAM			13.530
			64-QAM			13.533
			256-QAM			13.559
	20 MHz		BPSK	100		17.982
			QPSK			17.999
			16-QAM			17.995
			64-QAM			17.976
			256-QAM			17.990

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 37 ~ 56.

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)
Sub6 n71	5	665.5	3.6840	30.278	-67.312	-37.034	-13.00
		680.5	3.7024	30.278	-67.174	-36.896	
		695.5	3.6915	30.278	-66.882	-36.604	
	10	668.0	3.7154	30.278	-67.197	-36.919	
		680.5	3.7044	30.278	-67.251	-36.973	
		693.0	3.6845	30.278	-67.243	-36.965	
	15	670.5	3.6925	30.278	-67.248	-36.970	
		680.5	3.6840	30.278	-67.374	-37.096	
		690.5	3.6880	30.278	-67.253	-36.975	
	20	673.0	3.7234	30.278	-67.001	-36.723	
		680.5	3.6850	30.278	-66.952	-36.674	
		688.0	3.7074	30.278	-67.219	-36.941	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 89 ~ 100.
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	28.691
1 – 5	30.278
5 – 10	31.391
10 – 15	31.716
15 – 20	32.553
Above 20(26.5)	33.984

8.5 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 57 ~ 88.

8.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 5 MHz

▣ Voltage(100%): 3.880 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
665.5	100%	+20(Ref)	665 500 012	0.0	0.000 000	0.000
	100%	-30	665 500 017	5.3	0.000 001	0.008
	100%	-20	665 500 019	7.3	0.000 001	0.011
	100%	-10	665 500 022	9.5	0.000 001	0.014
	100%	0	665 500 023	10.8	0.000 002	0.016
	100%	+10	665 500 021	8.7	0.000 001	0.013
	100%	+30	665 500 023	10.7	0.000 002	0.016
	100%	+40	665 500 022	10.4	0.000 002	0.016
	100%	+50	665 500 019	6.6	0.000 001	0.010
	Batt. Endpoint	+20	665 500 019	7.3	0.000 001	0.011
695.5	100%	+20(Ref)	695 500 007	0.0	0.000 000	0.000
	100%	-30	695 500 018	11.2	0.000 002	0.016
	100%	-20	695 500 013	5.7	0.000 001	0.008
	100%	-10	695 500 016	8.6	0.000 001	0.012
	100%	0	695 500 016	8.8	0.000 001	0.013
	100%	+10	695 500 023	15.3	0.000 002	0.022
	100%	+30	695 500 018	10.5	0.000 002	0.015
	100%	+40	695 500 020	12.9	0.000 002	0.019
	100%	+50	695 500 021	13.9	0.000 002	0.020
	Batt. Endpoint	+20	695 500 018	10.6	0.000 002	0.015

▣ BandWidth: 10 MHz

▣ Voltage(100%): 3.880 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
668.0	100%	+20(Ref)	668 000 013	0.0	0.000 000	0.000
	100%	-30	668 000 022	9.0	0.000 001	0.013
	100%	-20	668 000 016	3.8	0.000 001	0.006
	100%	-10	668 000 024	11.7	0.000 002	0.018
	100%	0	668 000 020	7.4	0.000 001	0.011
	100%	+10	668 000 026	12.9	0.000 002	0.019
	100%	+30	668 000 017	3.9	0.000 001	0.006
	100%	+40	668 000 021	7.9	0.000 001	0.012
	100%	+50	668 000 026	13.7	0.000 002	0.020
	Batt. Endpoint	+20	668 000 020	7.8	0.000 001	0.012
693.0	100%	+20(Ref)	693 000 007	0.0	0.000 000	0.000
	100%	-30	693 000 018	11.0	0.000 002	0.016
	100%	-20	693 000 011	4.7	0.000 001	0.007
	100%	-10	693 000 017	10.5	0.000 002	0.015
	100%	0	693 000 015	8.6	0.000 001	0.012
	100%	+10	693 000 011	4.1	0.000 001	0.006
	100%	+30	693 000 012	5.8	0.000 001	0.008
	100%	+40	693 000 022	15.8	0.000 002	0.023
	100%	+50	693 000 011	4.9	0.000 001	0.007
	Batt. Endpoint	+20	693 000 020	13.7	0.000 002	0.020

▣ BandWidth: 15 MHz

▣ Voltage(100%): 3.880 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
670.5	100%	+20(Ref)	670 500 005	0.0	0.000 000	0.000
	100%	-30	670 500 016	10.8	0.000 002	0.016
	100%	-20	670 500 019	14.0	0.000 002	0.021
	100%	-10	670 500 020	15.2	0.000 002	0.023
	100%	0	670 500 018	13.0	0.000 002	0.019
	100%	+10	670 500 014	8.7	0.000 001	0.013
	100%	+30	670 500 018	12.7	0.000 002	0.019
	100%	+40	670 500 012	7.3	0.000 001	0.011
	100%	+50	670 500 020	14.9	0.000 002	0.022
	Batt. Endpoint	+20	670 500 009	3.9	0.000 001	0.006
690.5	100%	+20(Ref)	690 500 006	0.0	0.000 000	0.000
	100%	-30	690 500 014	8.2	0.000 001	0.012
	100%	-20	690 500 013	6.8	0.000 001	0.010
	100%	-10	690 500 015	8.6	0.000 001	0.012
	100%	0	690 500 017	10.5	0.000 002	0.015
	100%	+10	690 500 016	9.9	0.000 001	0.014
	100%	+30	690 500 013	6.8	0.000 001	0.010
	100%	+40	690 500 019	12.8	0.000 002	0.018
	100%	+50	690 500 016	9.5	0.000 001	0.014
	Batt. Endpoint	+20	690 500 021	14.7	0.000 002	0.021

▣ BandWidth: 20 MHz

▣ Voltage(100%): 3.880 VDC

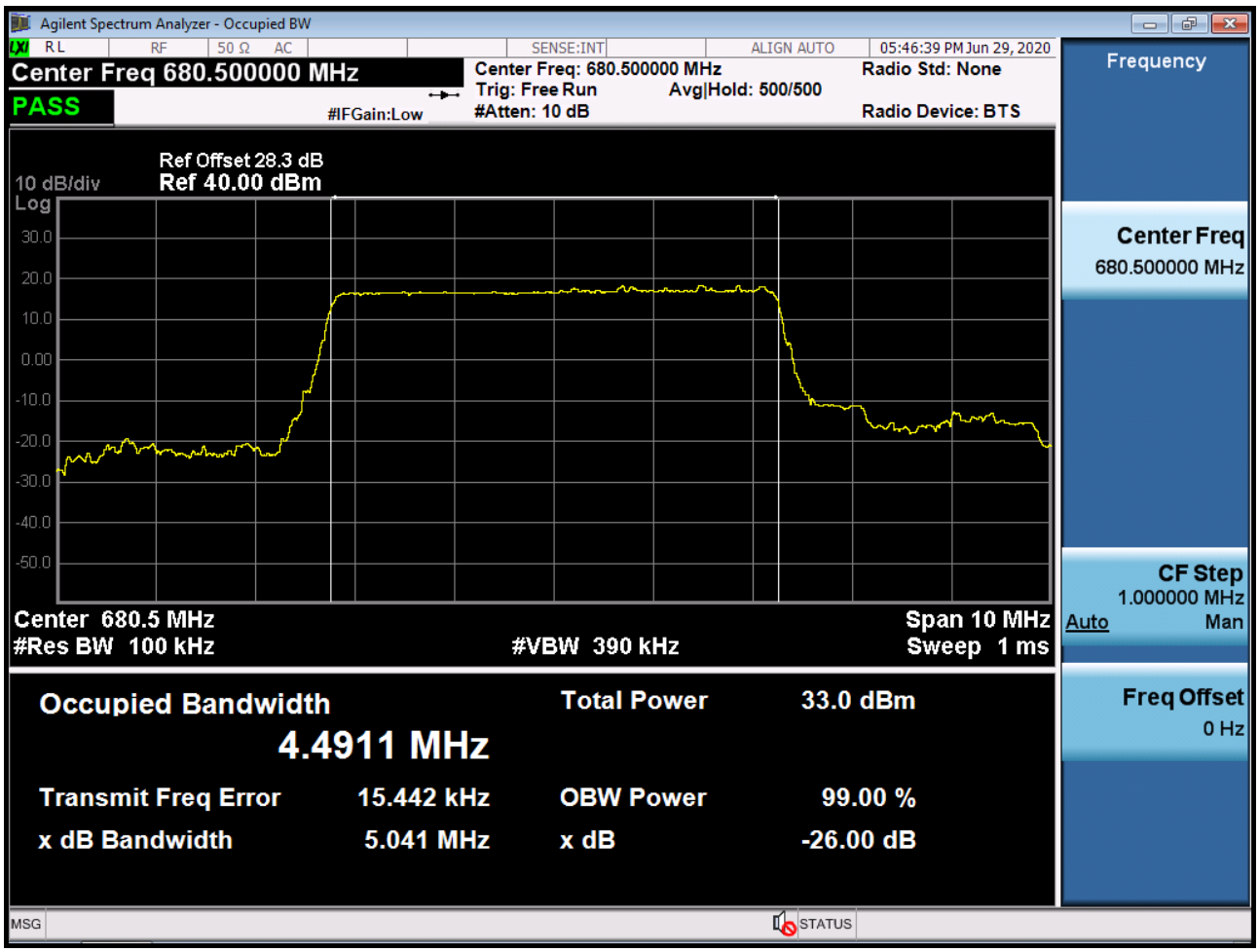
▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

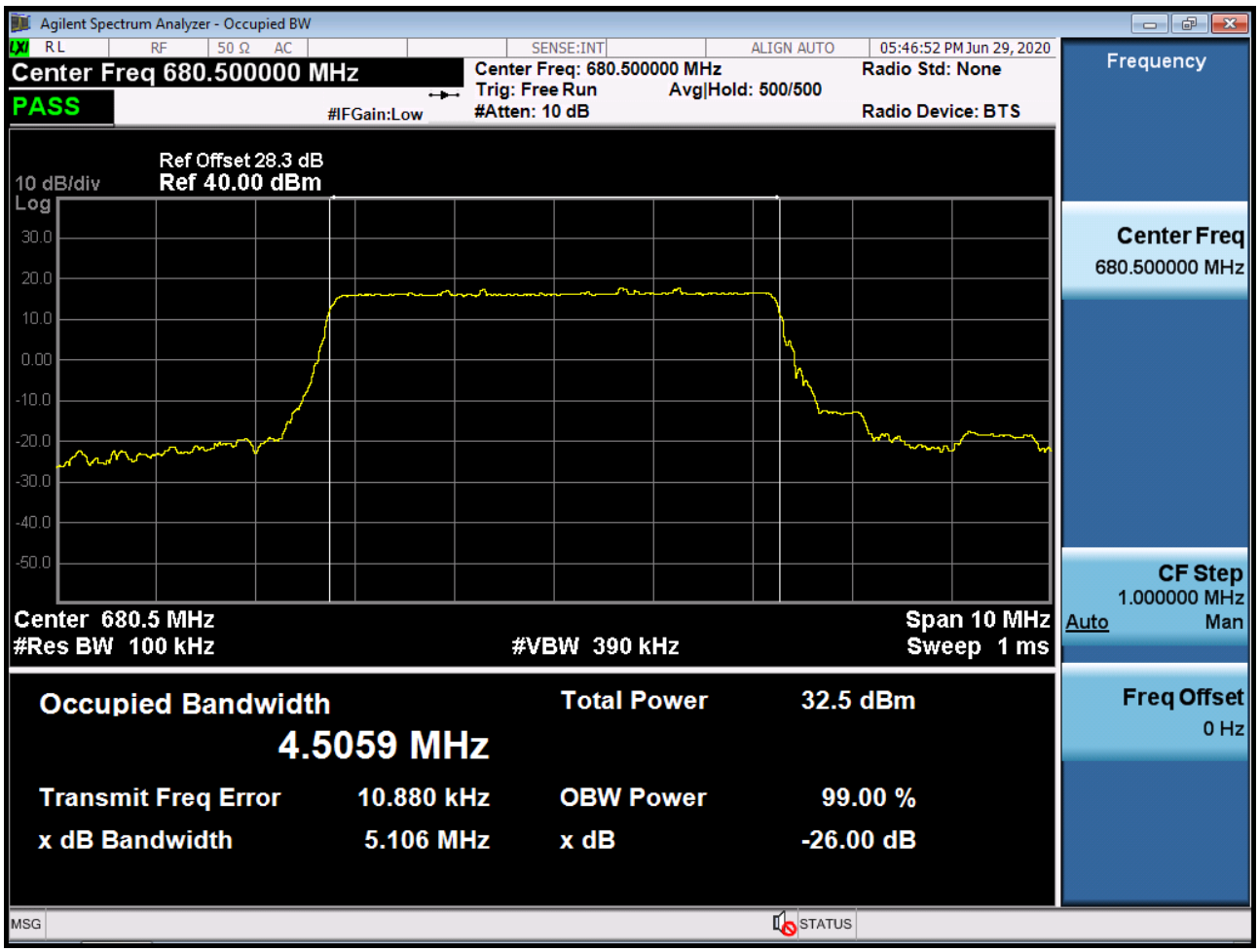
Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
673.0	100%	+20(Ref)	673 000 009	0.0	0.000 000	0.000
	100%	-30	673 000 025	15.8	0.000 002	0.023
	100%	-20	673 000 021	12.1	0.000 002	0.018
	100%	-10	673 000 016	7.0	0.000 001	0.010
	100%	0	673 000 021	12.2	0.000 002	0.018
	100%	+10	673 000 016	6.9	0.000 001	0.010
	100%	+30	673 000 016	7.0	0.000 001	0.010
	100%	+40	673 000 013	4.4	0.000 001	0.006
	100%	+50	673 000 023	14.2	0.000 002	0.021
	Batt. Endpoint	+20	673 000 022	13.2	0.000 002	0.020
688.0	100%	+20(Ref)	688 000 015	0.0	0.000 000	0.000
	100%	-30	688 000 022	6.4	0.000 001	0.009
	100%	-20	688 000 023	8.0	0.000 001	0.012
	100%	-10	688 000 024	8.4	0.000 001	0.012
	100%	0	688 000 026	11.4	0.000 002	0.016
	100%	+10	688 000 029	13.7	0.000 002	0.020
	100%	+30	688 000 019	4.1	0.000 001	0.006
	100%	+40	688 000 020	4.5	0.000 001	0.007
	100%	+50	688 000 030	14.8	0.000 002	0.021
	Batt. Endpoint	+20	688 000 029	14.4	0.000 002	0.021

9. TEST PLOTS

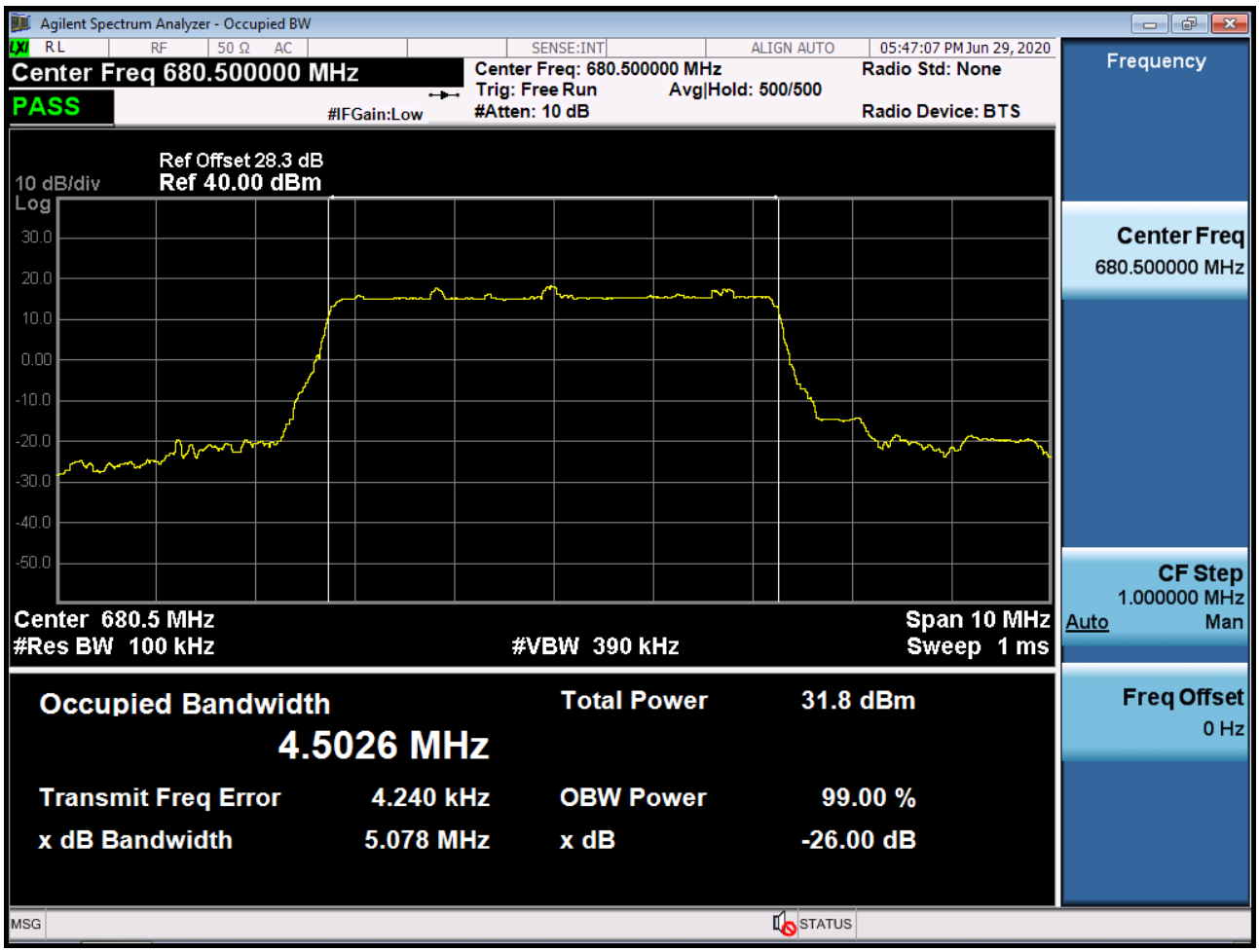
Sub6 n71. Occupied Bandwidth Plot (5M BW Ch.136100 BPSK_RB6_0)



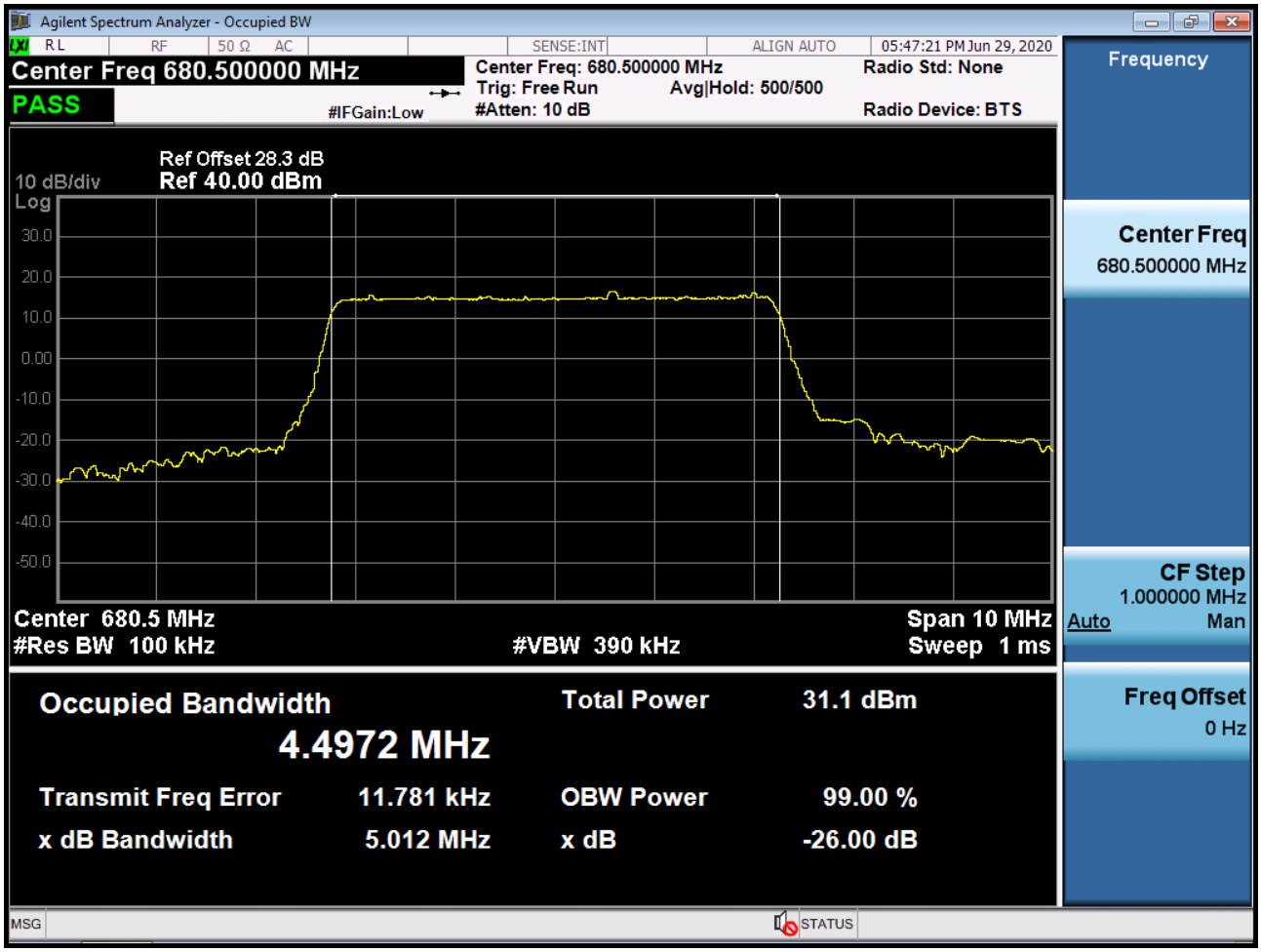
Sub6 n71. Occupied Bandwidth Plot (5M BW Ch.136100 QPSK_RB6_0)



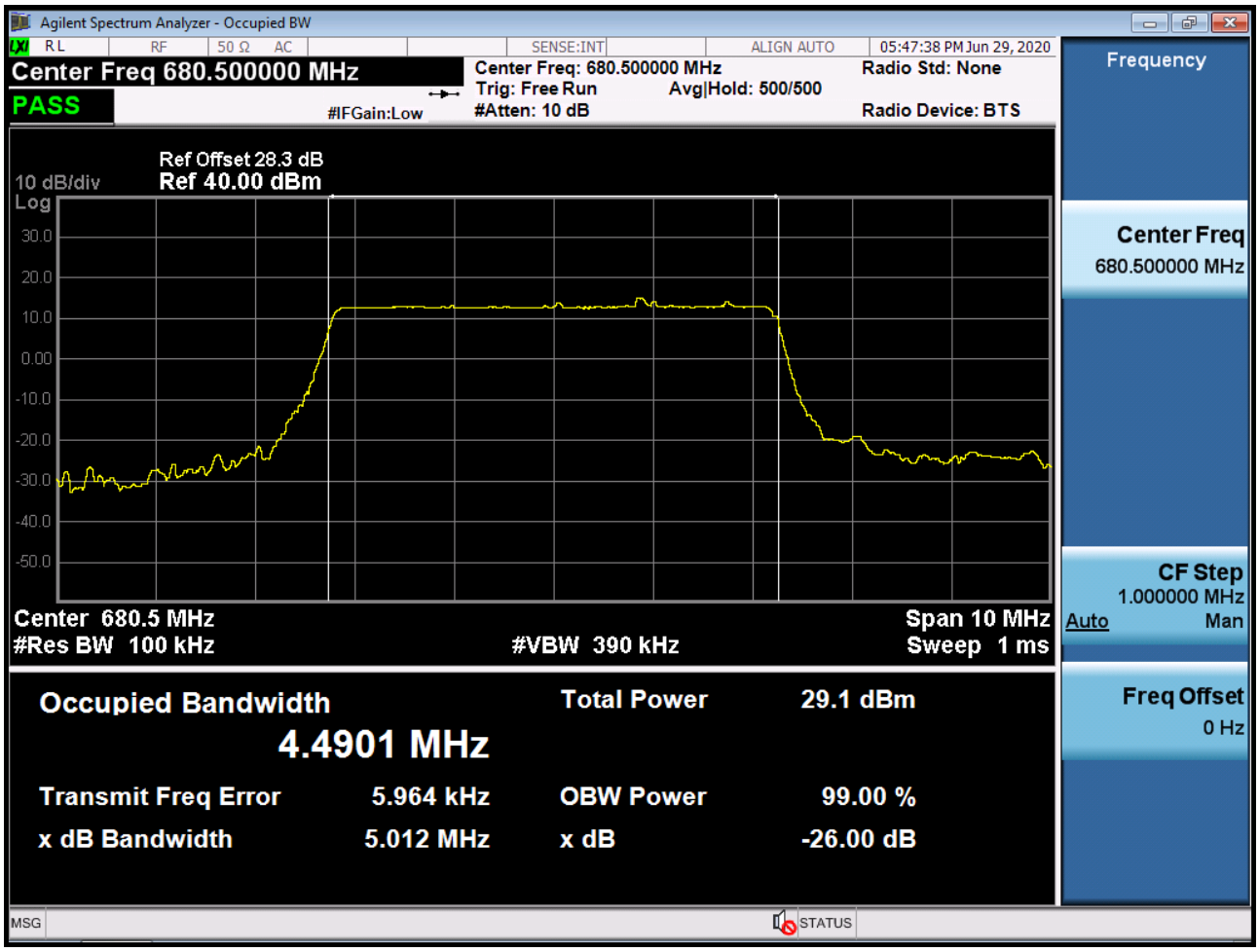
Sub6 n71. Occupied Bandwidth Plot (5M BW Ch.136100 16QAM_RB6_0)



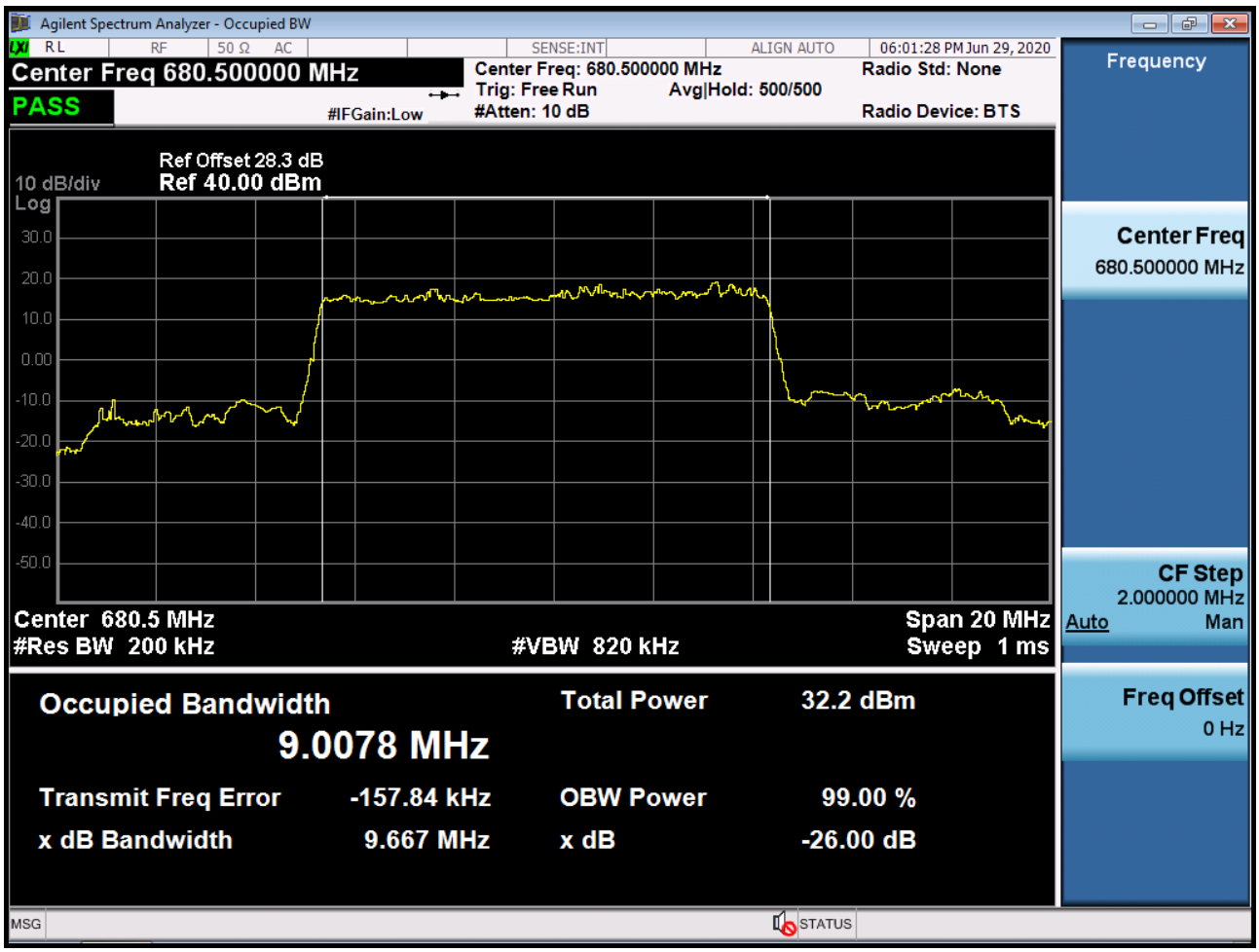
Sub6 n71. Occupied Bandwidth Plot (5M BW Ch.136100 64QAM_RB6_0)



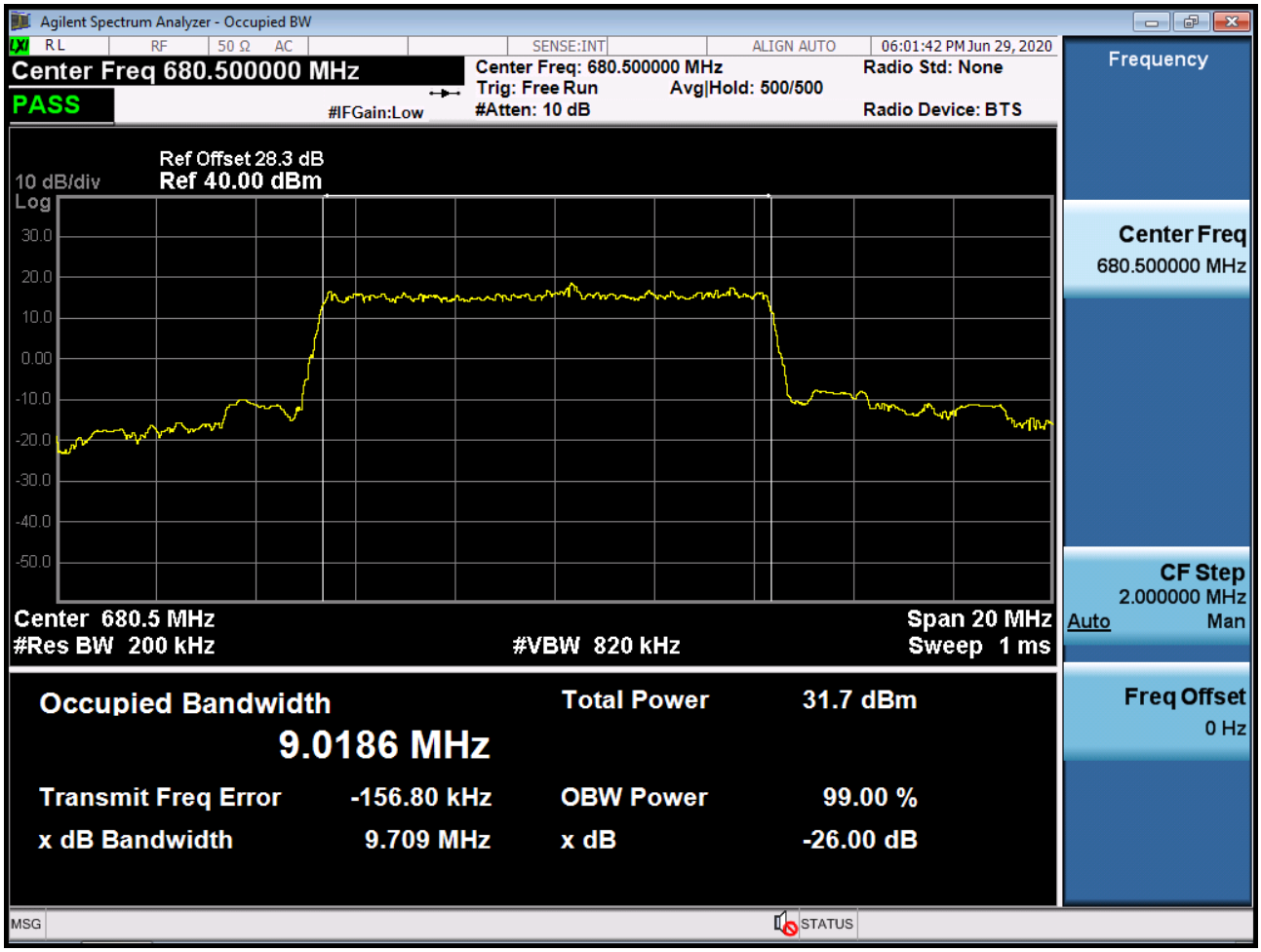
Sub6 n71. Occupied Bandwidth Plot (5M BW Ch.136100 256QAM_RB6_0)



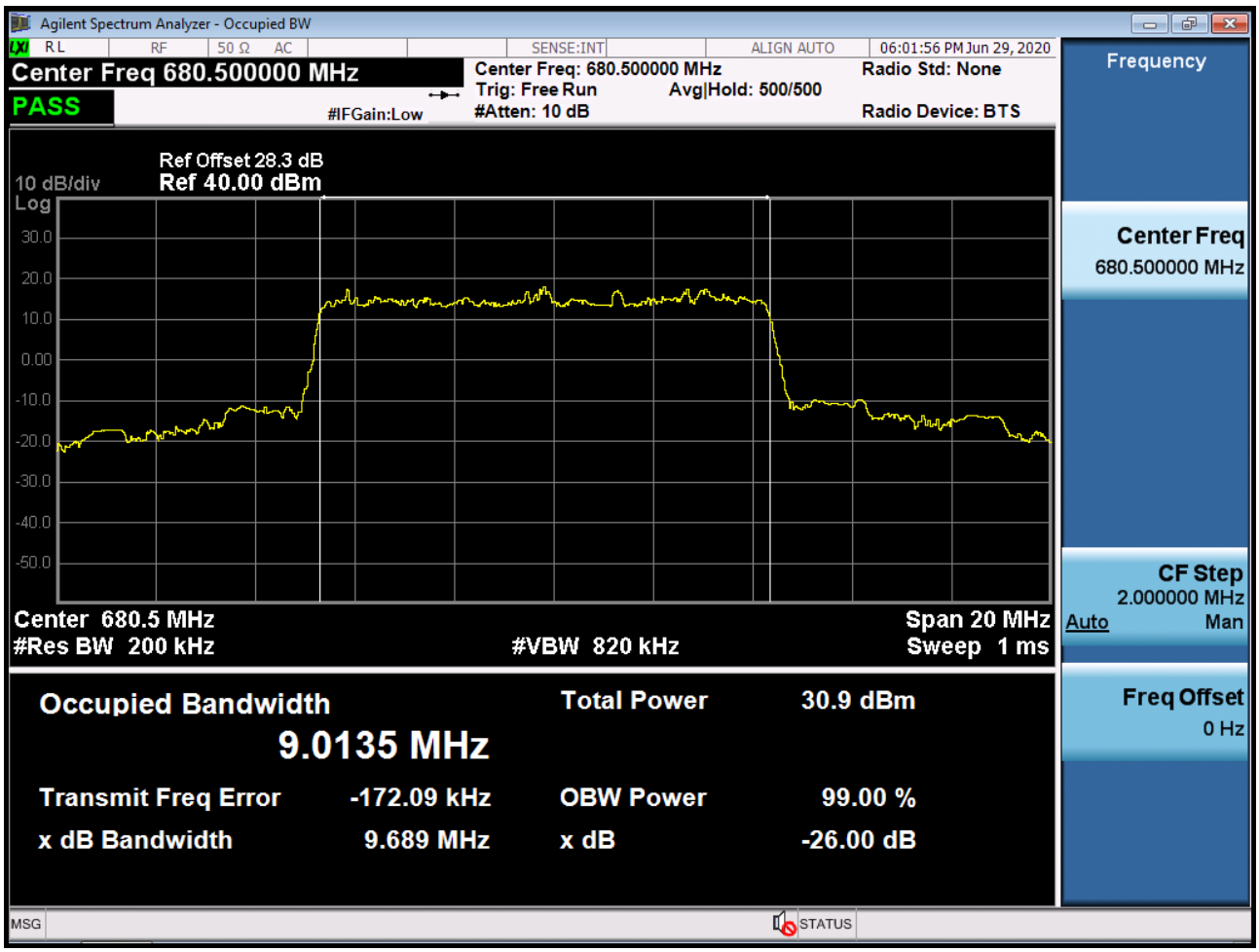
Sub6 n71. Occupied Bandwidth Plot (10M BW Ch.136100 BPSK_RB15_0)



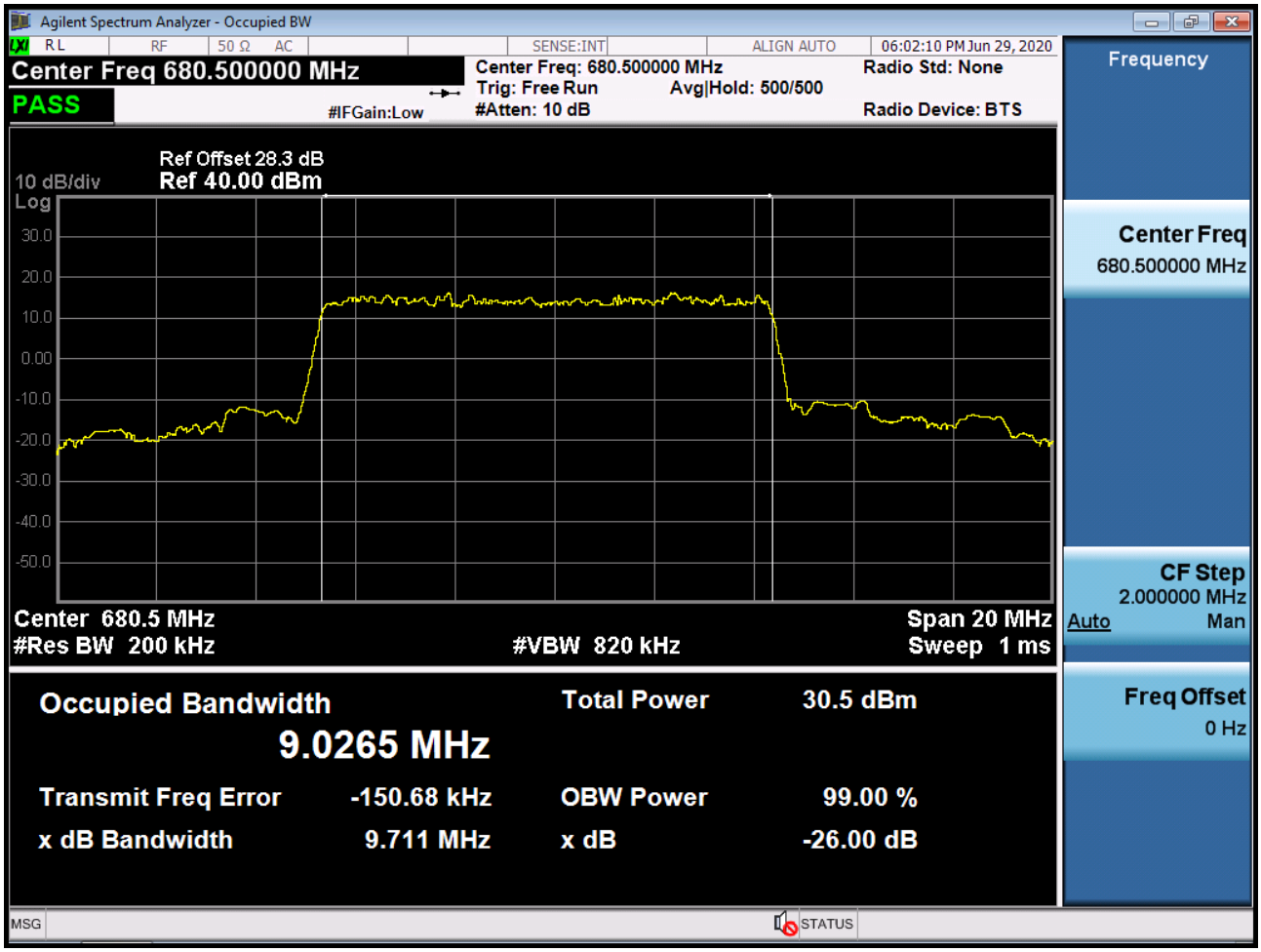
Sub6 n71. Occupied Bandwidth Plot (10M BW Ch.136100 QPSK_RB15_0)



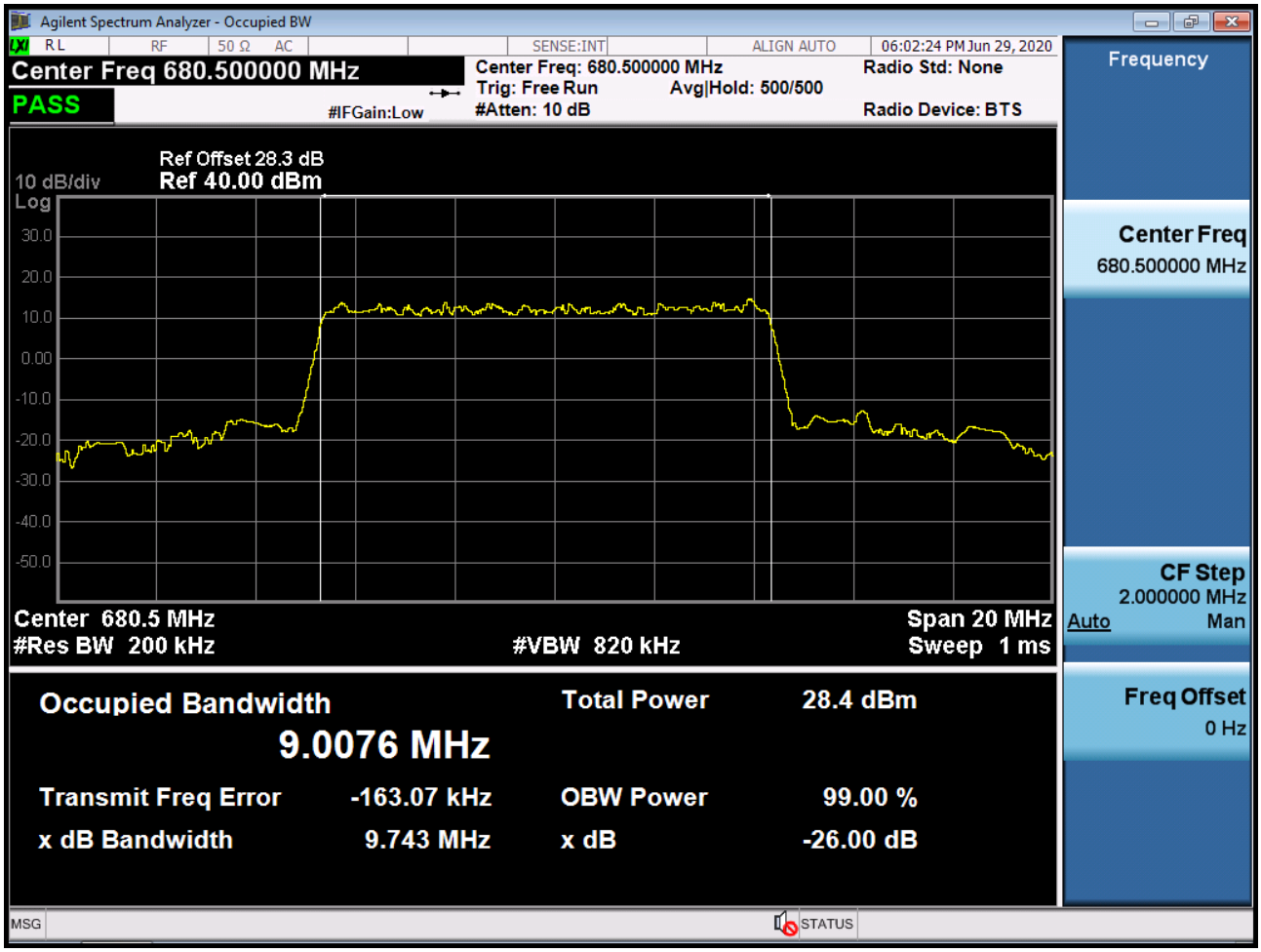
Sub6 n71. Occupied Bandwidth Plot (10M BW Ch.136100 16QAM_RB15_0)



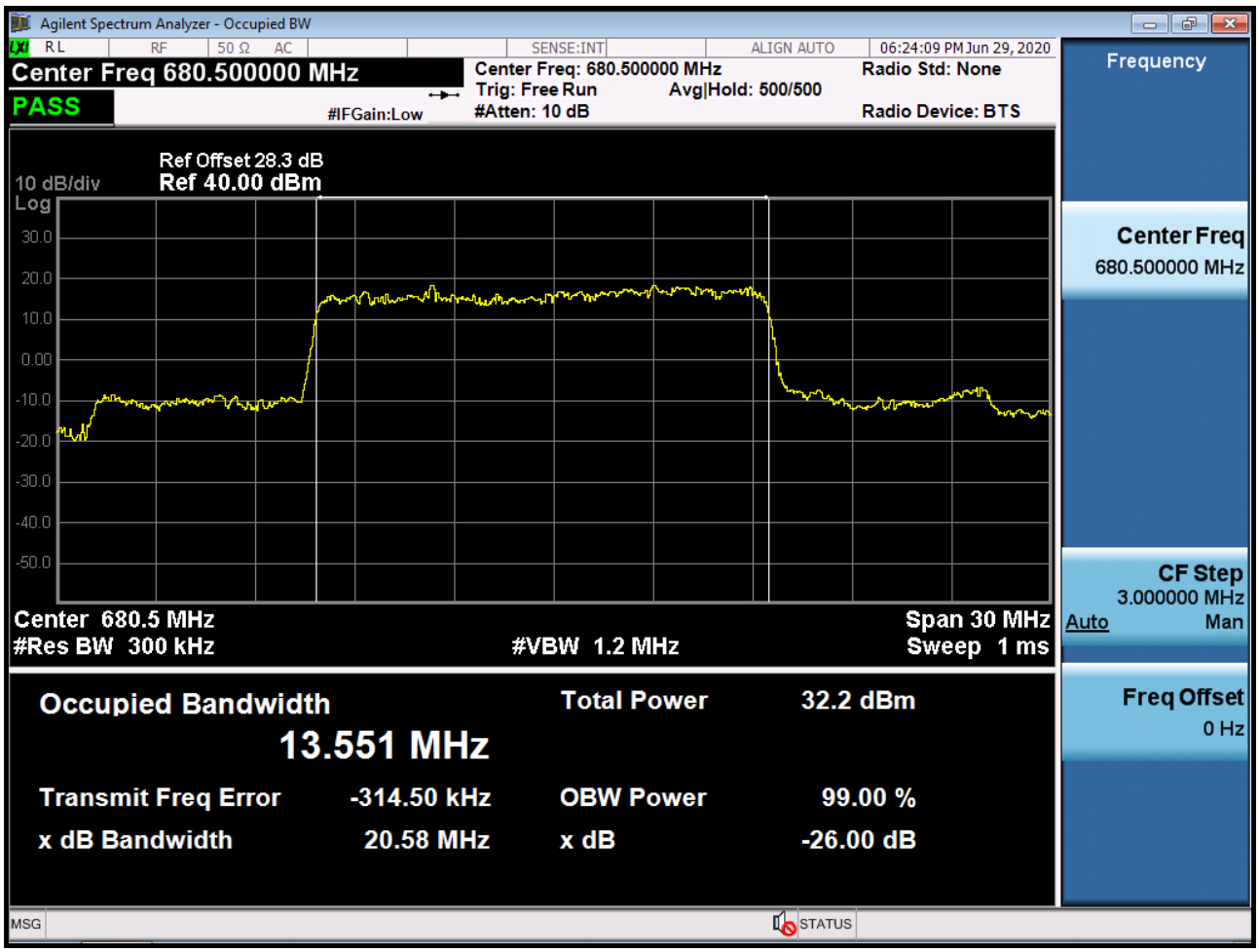
Sub6 n71. Occupied Bandwidth Plot (10M BW Ch.136100 64QAM_RB15_0)



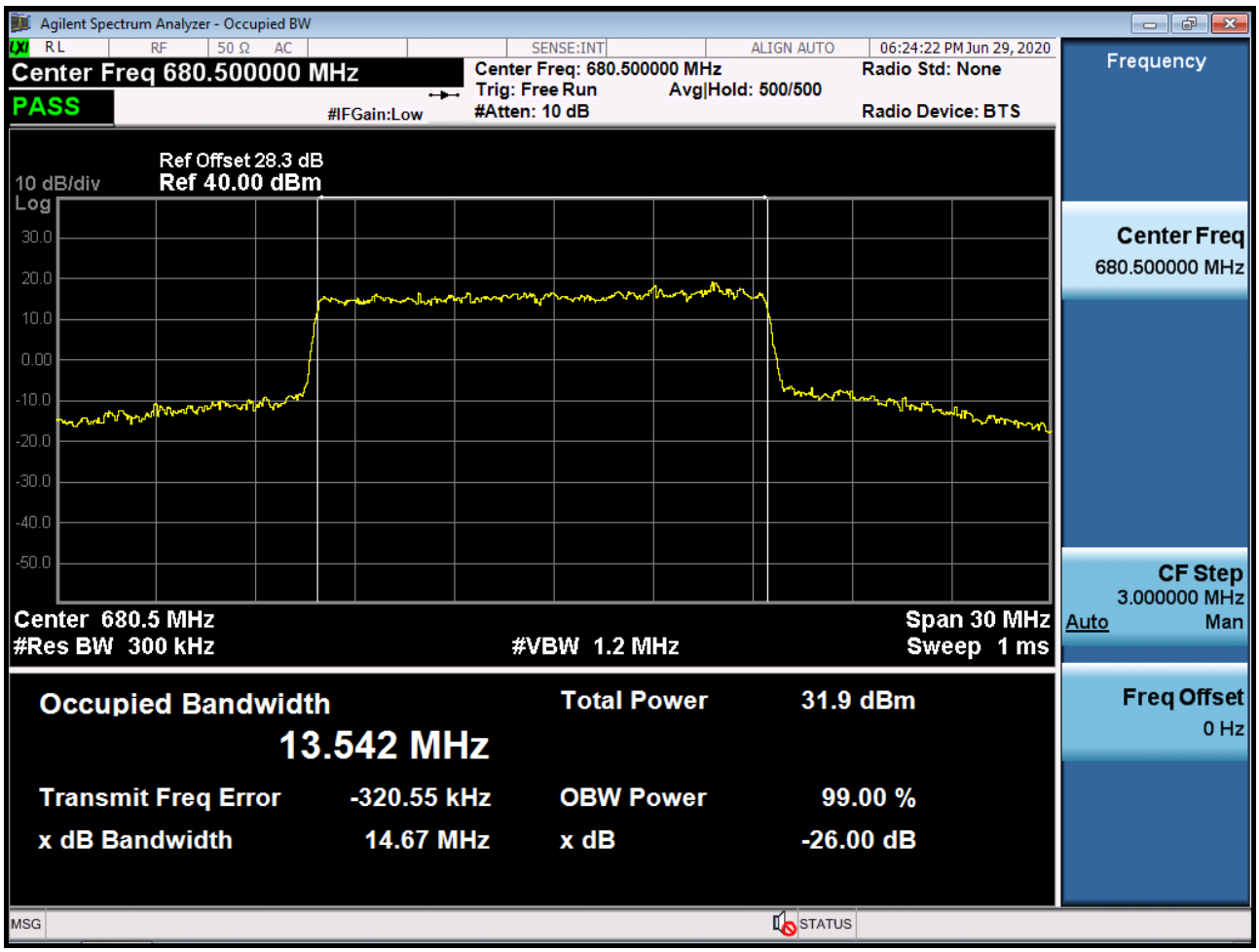
Sub6 n71. Occupied Bandwidth Plot (10M BW Ch.136100 256QAM_RB15_0)



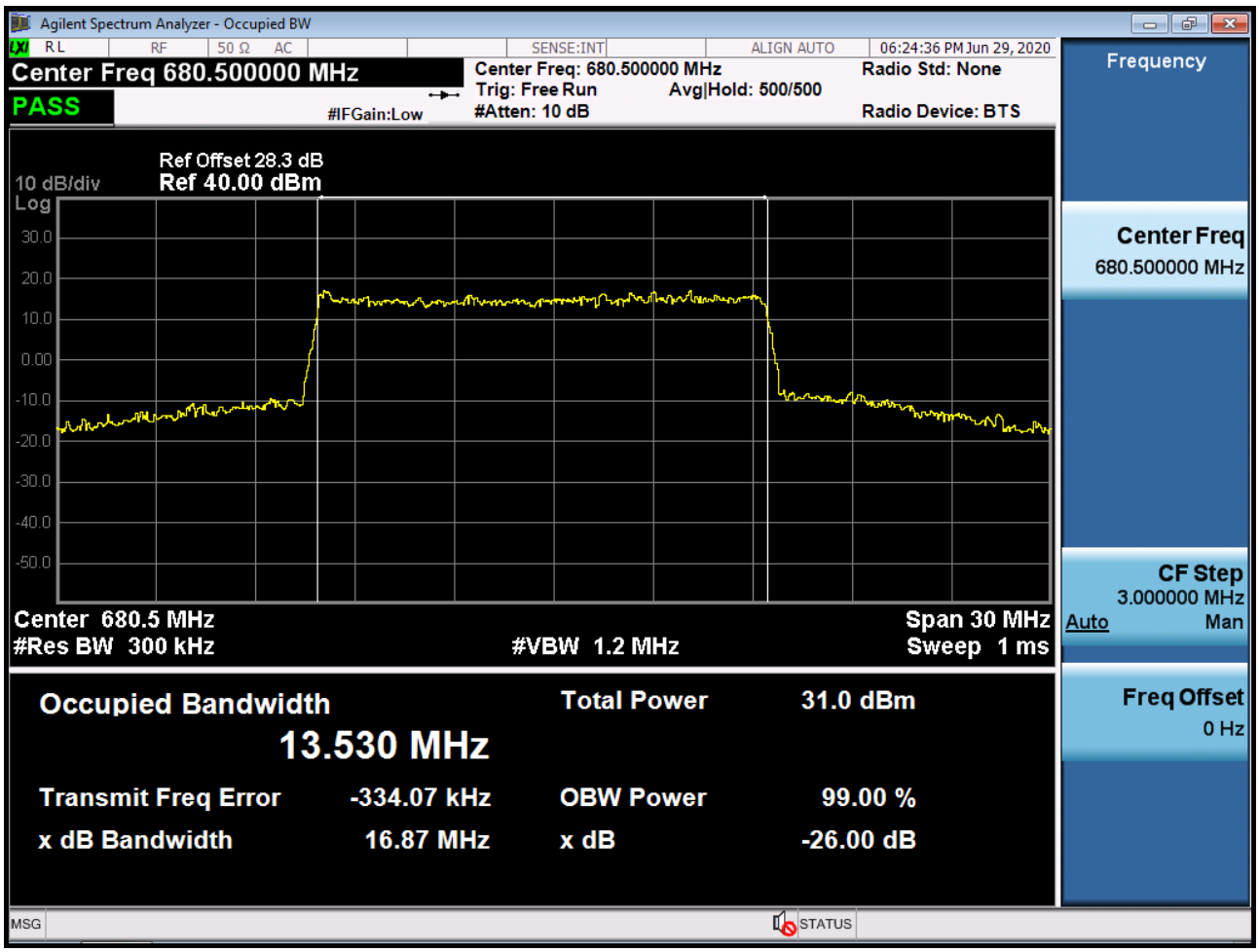
Sub6 n71. Occupied Bandwidth Plot (15M BW Ch.136100 BPSK_RB25_0)



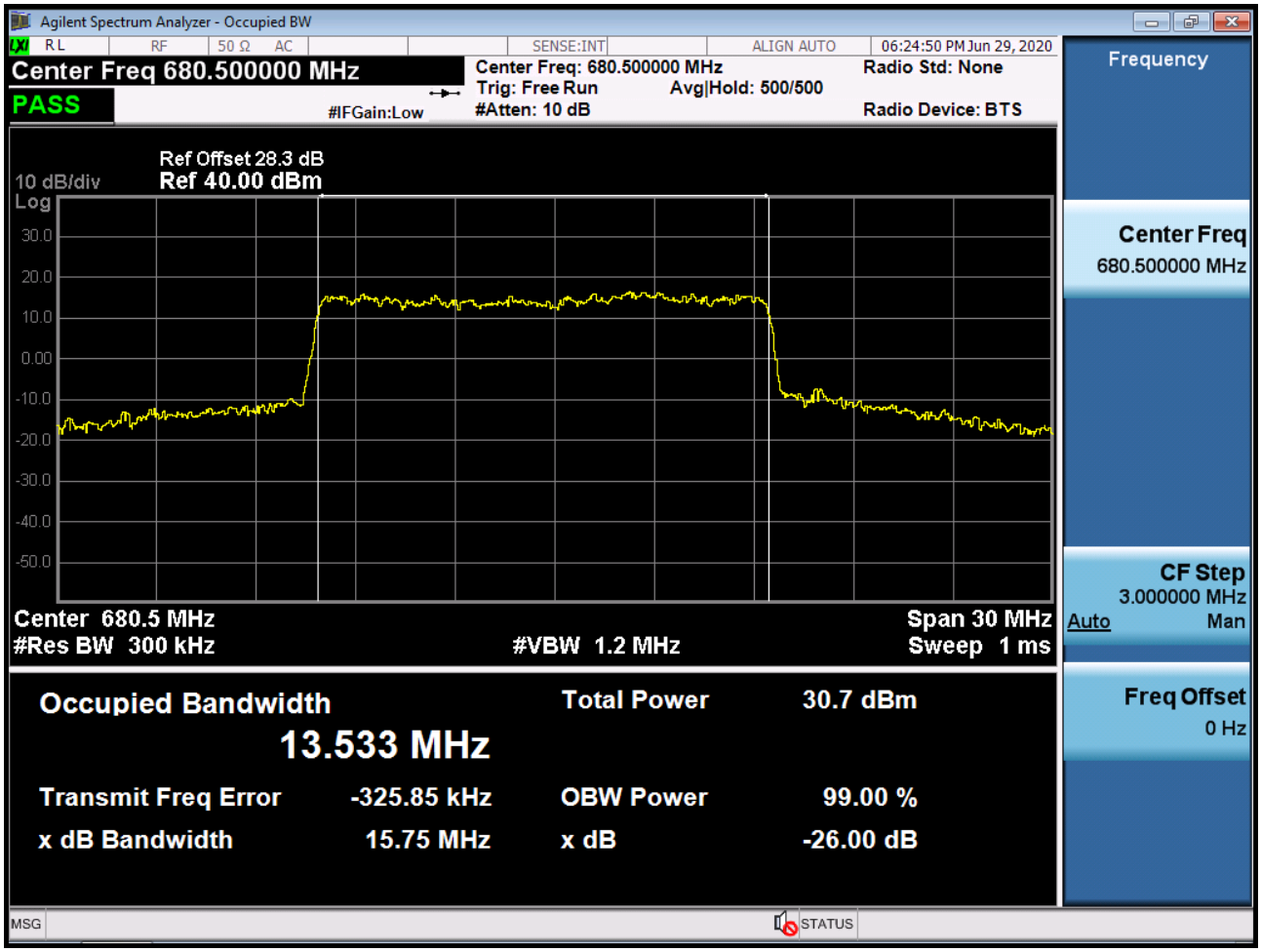
Sub6 n71. Occupied Bandwidth Plot (15M BW Ch.136100 QPSK_RB25_0)



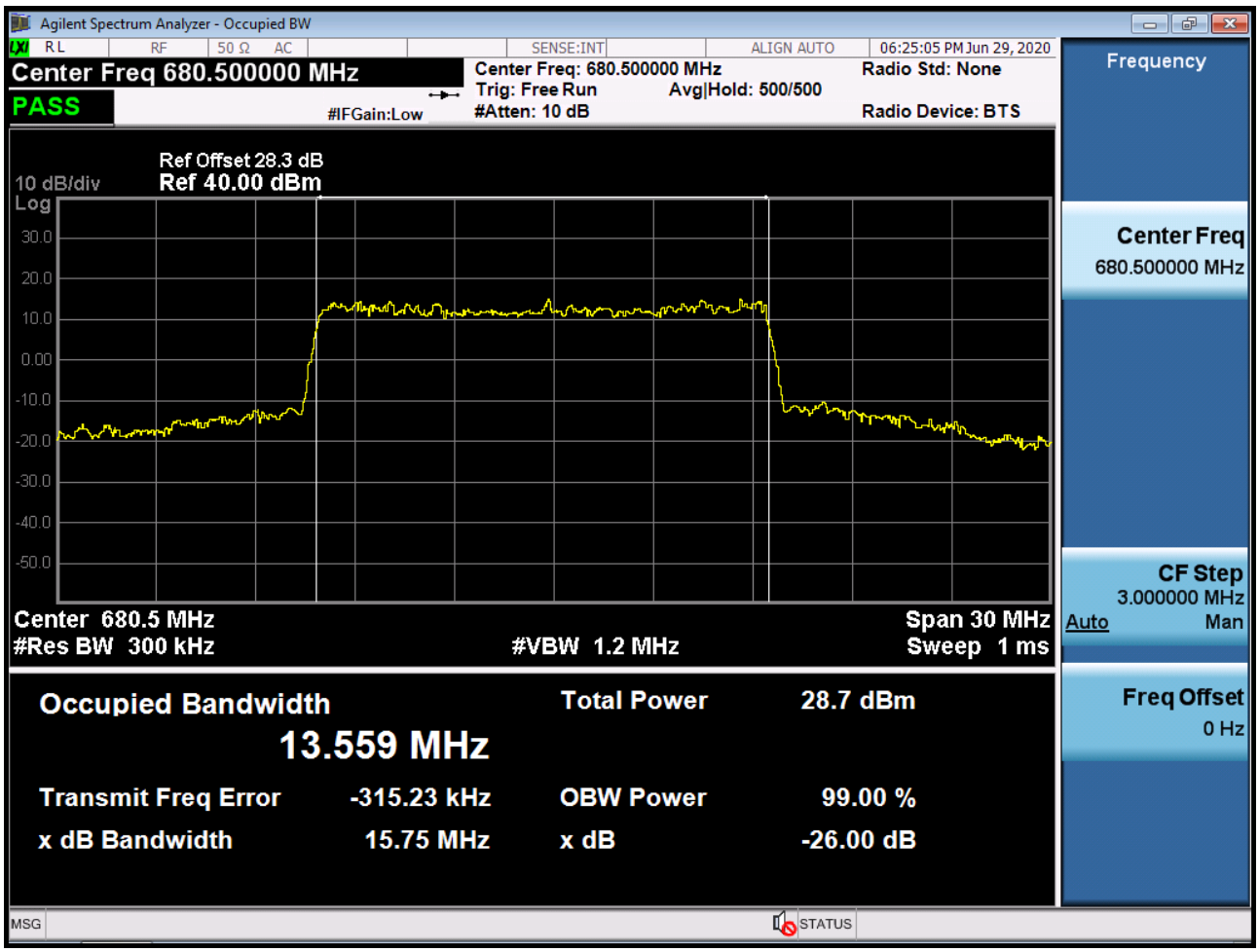
Sub6 n71. Occupied Bandwidth Plot (15M BW Ch.136100 16QAM_RB25_0)



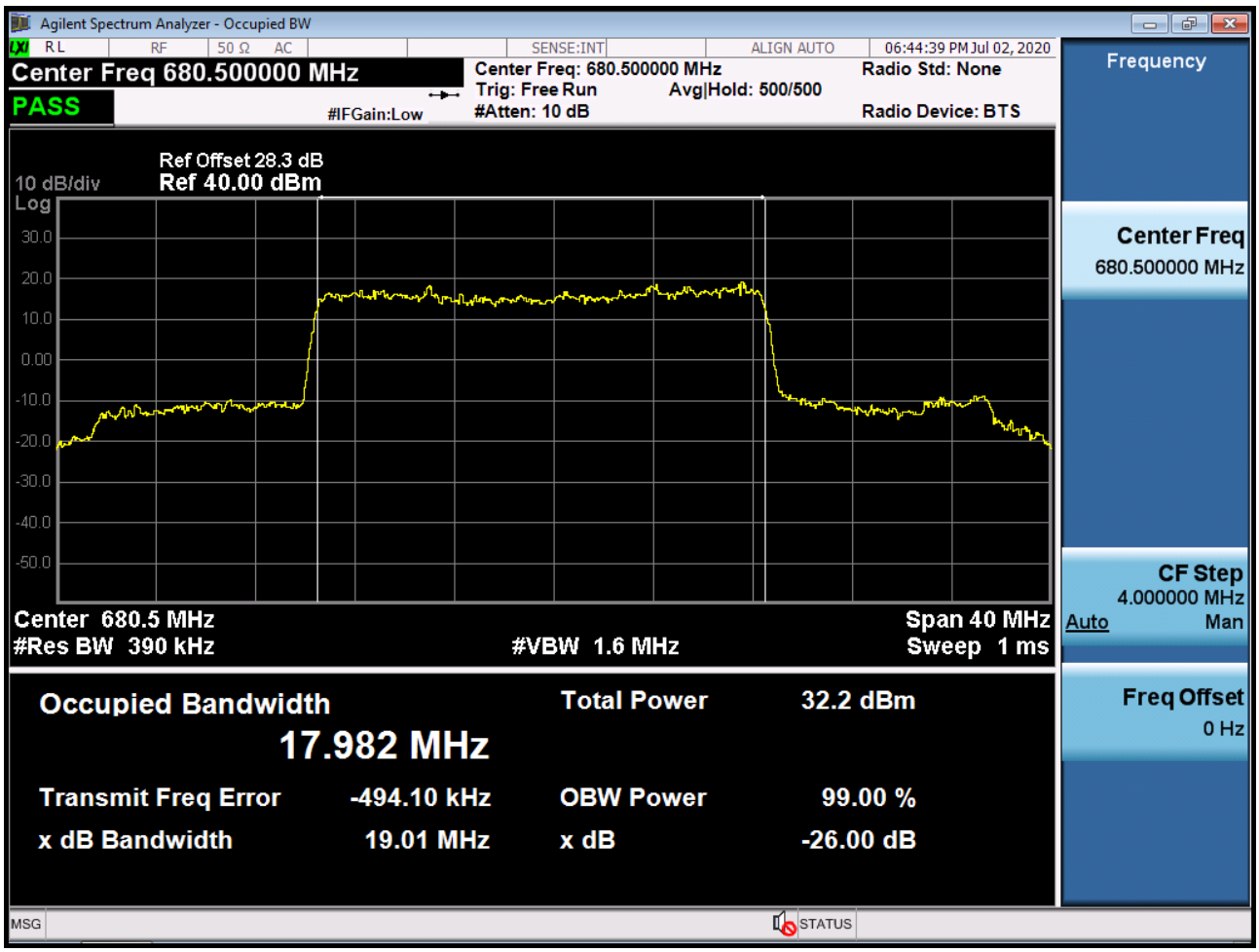
Sub6 n71. Occupied Bandwidth Plot (15M BW Ch.136100 64QAM_RB25_0)



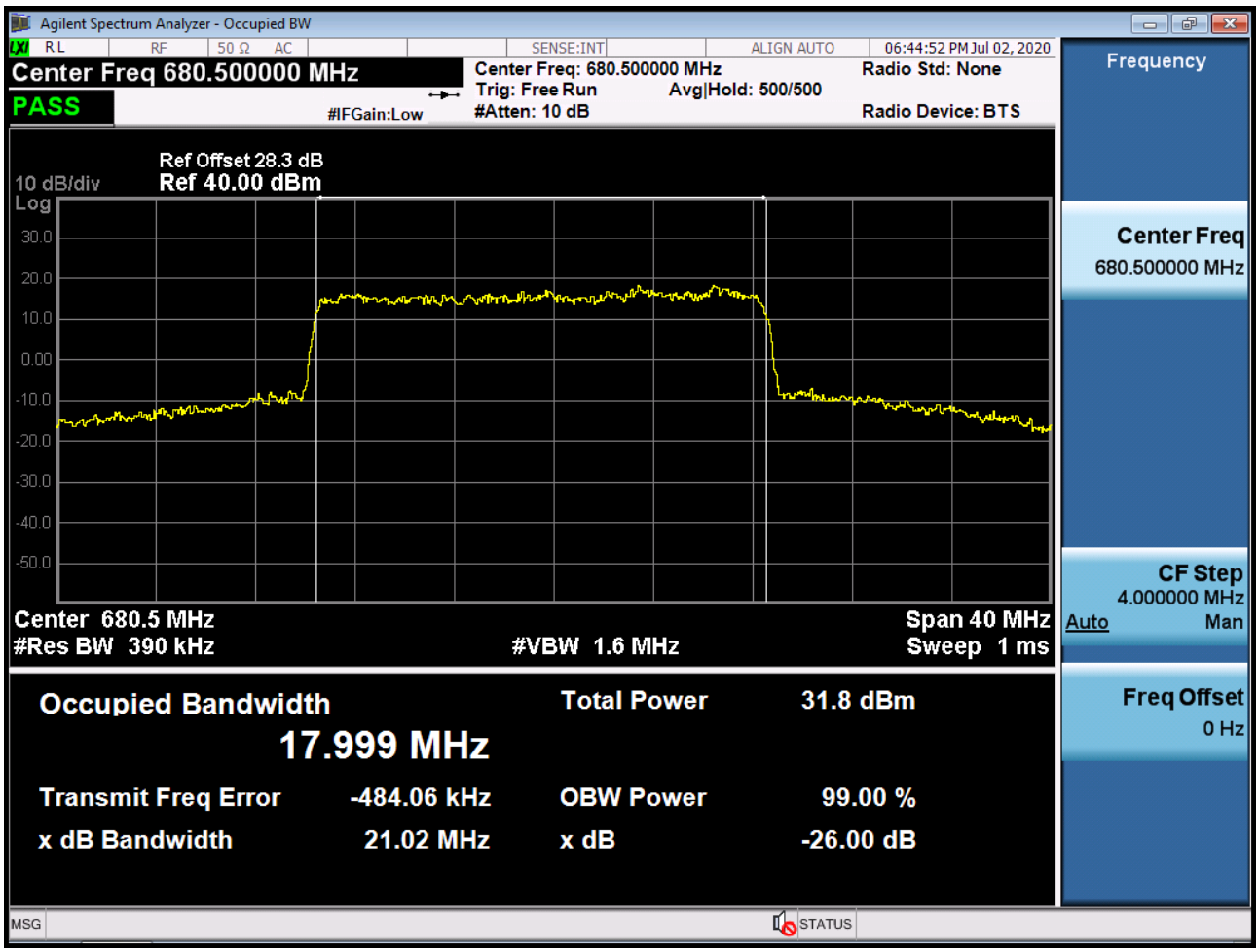
Sub6 n71. Occupied Bandwidth Plot (15M BW Ch.136100 256QAM_RB25_0)



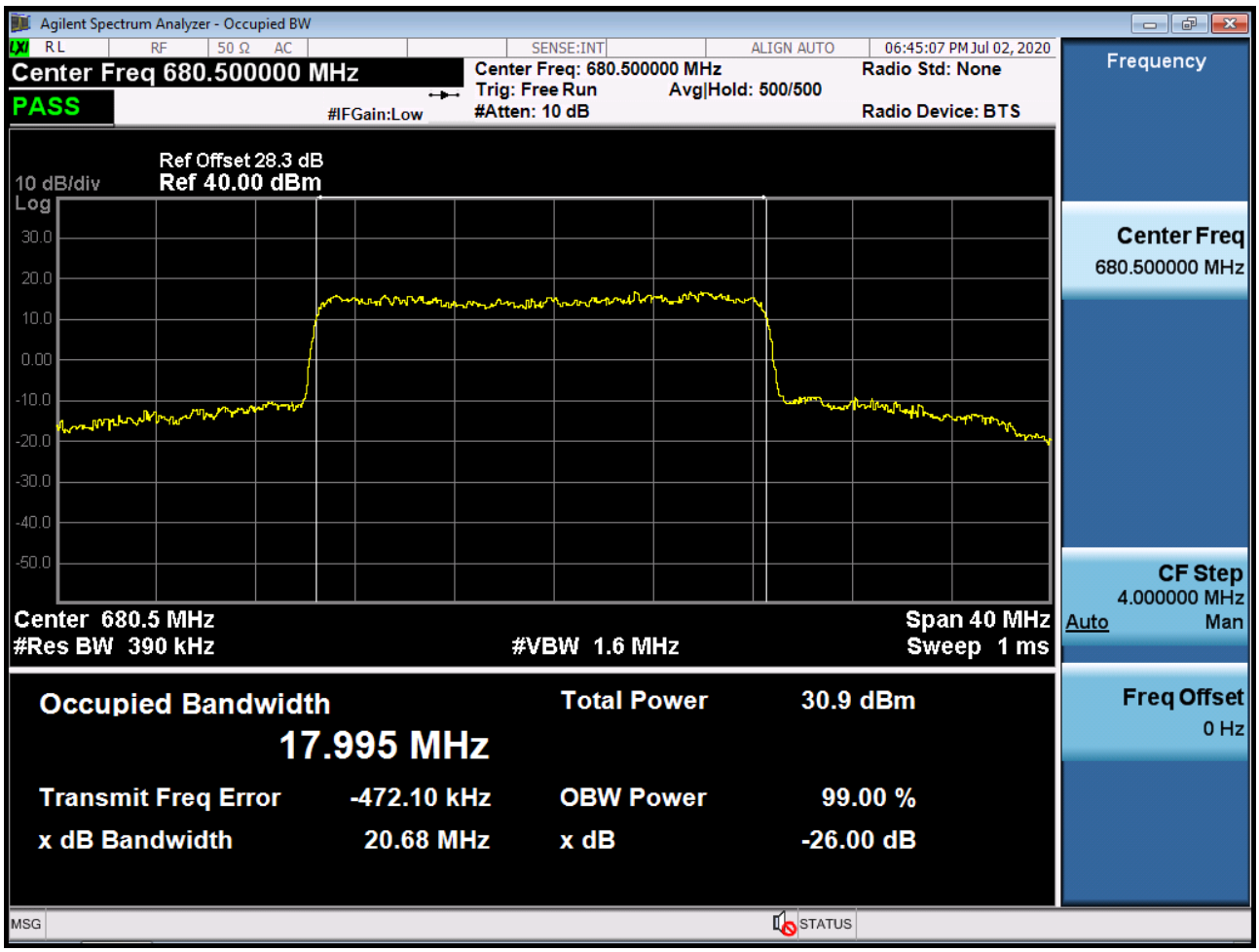
Sub6 n71. Occupied Bandwidth Plot (20M BW Ch.136100 BPSK_RB50_0)



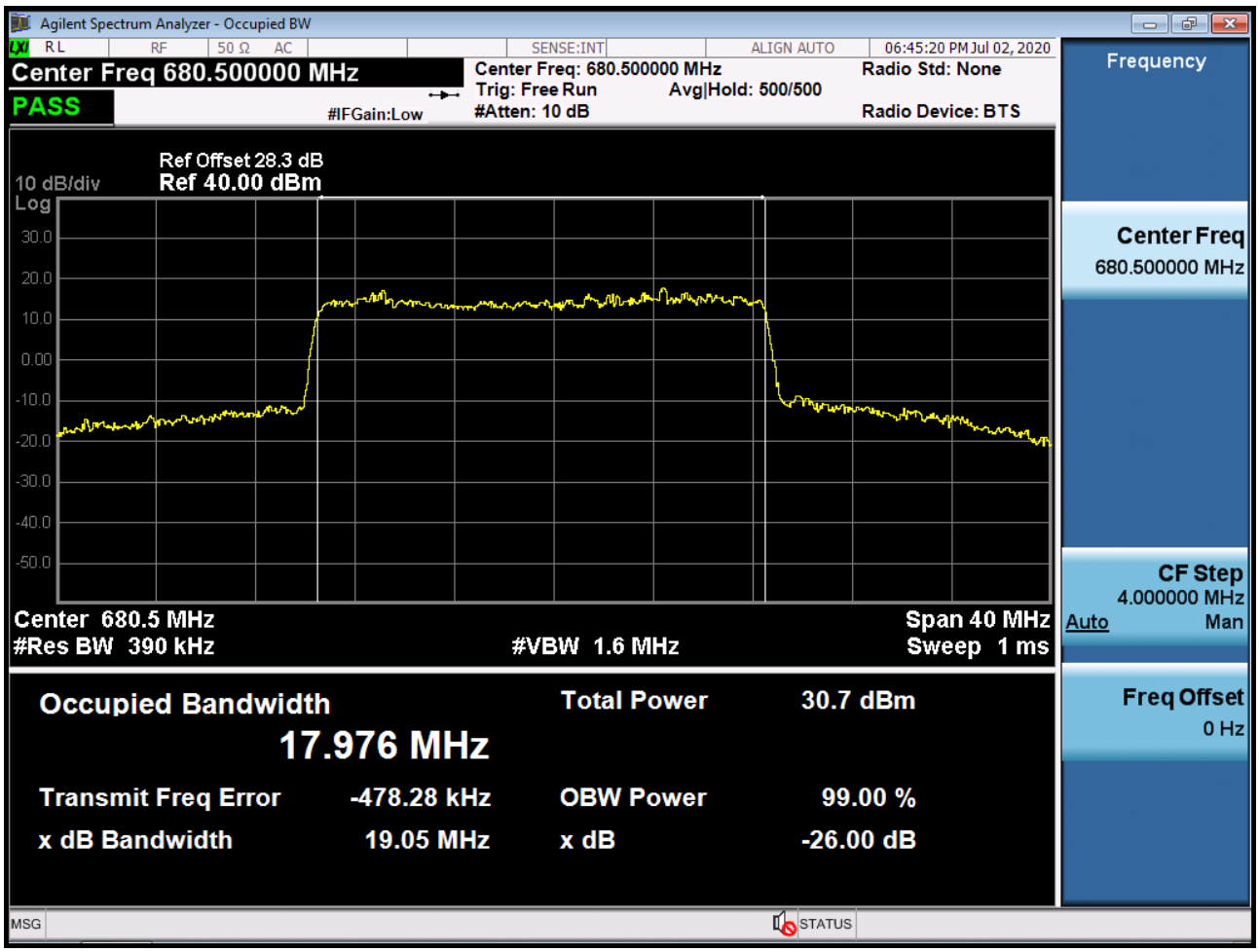
Sub6 n71. Occupied Bandwidth Plot (20M BW Ch.136100 QPSK_RB50_0)



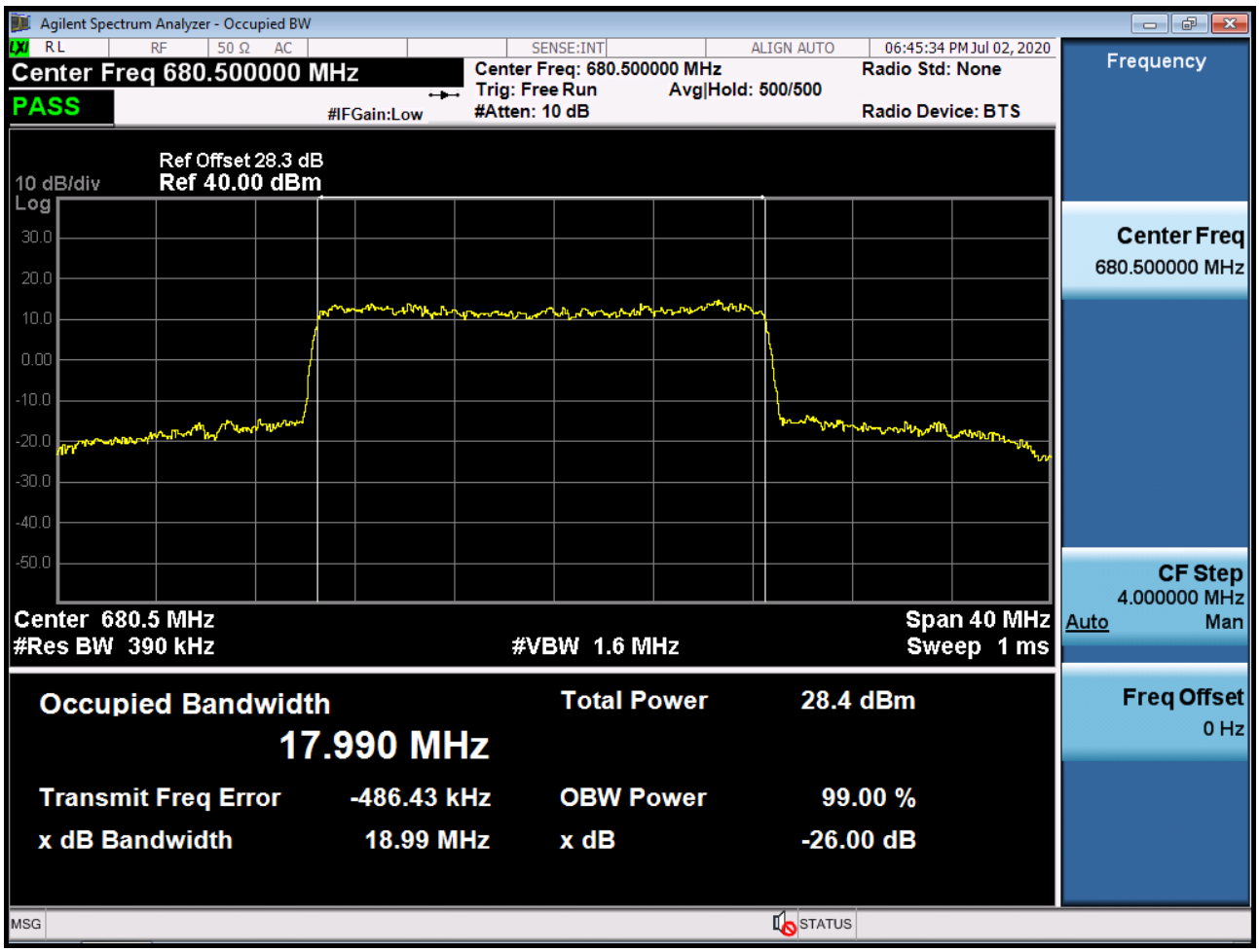
Sub6 n71. Occupied Bandwidth Plot (20M BW Ch.136100 16QAM_RB50_0)



Sub6 n71. Occupied Bandwidth Plot (20M BW Ch.136100 64QAM_RB50_0)



Sub6 n71. Occupied Bandwidth Plot (20M BW Ch.136100 256QAM_RB50_0)



Sub6 n71. Lower Band Edge Plot (5M BW Ch.133100 BPSK_RB1_Offset 0)_1

Sub6 n71. Lower Band Edge Plot (5M BW Ch.133100 BPSK_RB1_Offset 0)_2

Sub6 n71. Lower Band Edge Plot (5M BW Ch.133100 BPSK_RB6_Offset 0)

Sub6 n71. Lower Extended Band Edge Plot (5M BW Ch.133100 BPSK_RB6_0)

Sub6 n71. Lower Band Edge Plot (10M BW Ch.133600 BPSK_RB1_Offset 0)_1

Sub6 n71. Lower Band Edge Plot (10M BW Ch.133600 BPSK_RB1_Offset 0)_2

Sub6 n71. Lower Band Edge Plot (10M BW Ch.133600 BPSK_RB15_Offset 0)

Sub6 n71. Lower Extended Band Edge Plot (10M BW Ch.133600 BPSK_RB15_0)

Sub6 n71. Lower Band Edge Plot (15M BW Ch.134100 BPSK_RB1_Offset 0)_1

Sub6 n71. Lower Band Edge Plot (15M BW Ch.134100 BPSK_RB1_Offset 0)_2

Sub6 n71. Lower Band Edge Plot (15M BW Ch.134100 BPSK_RB25_Offset 0)

Sub6 n71. Lower Extended Band Edge Plot (15M BW Ch.134100 BPSK_RB25_0)

Sub6 n71. Lower Band Edge Plot (20M BW Ch.134600 BPSK_RB1_Offset 0)_1

Sub6 n71. Lower Band Edge Plot (20M BW Ch.134600 BPSK_RB1_Offset 0)_2

Sub6 n71. Lower Band Edge Plot (20M BW Ch.134600 BPSK_RB50_Offset 0)

Sub6 n71. Lower Extended Band Edge Plot (20M BW Ch.134600 BPSK_RB50_0)

Sub6 n71. Upper Band Edge Plot (5M BW Ch.139100 BPSK_RB1_Offset 5)_1

Sub6 n71. Upper Band Edge Plot (5M BW Ch.139100 BPSK_RB1_Offset 5)_2

Sub6 n71. Upper Band Edge Plot (5M BW Ch.139100 BPSK_RB6_Offset 0)

Sub6 n71. Upper Extended Band Edge Plot (5M BW Ch.139100 BPSK_RB6_0)

Sub6 n71. Upper Band Edge Plot (10M BW Ch.138600 BPSK_RB1_Offset 14)-1

Sub6 n71. Upper Band Edge Plot (10M BW Ch.138600 BPSK_RB1_Offset 14)-2

Sub6 n71. Upper Band Edge Plot (10M BW Ch.138600 BPSK_RB15_Offset 0)

Sub6 n71. Upper Extended Band Edge Plot (10M BW Ch.138600 BPSK_RB15_0)

Sub6 n71. Upper Band Edge Plot (15M BW Ch.138100 BPSK_RB1_Offset 24)_1

Sub6 n71. Upper Band Edge Plot (15M BW Ch.138100 BPSK_RB1_Offset 24)_2

Sub6 n71. Upper Band Edge Plot (15M BW Ch.138100 BPSK_RB25_Offset 0)

Sub6 n71. Upper Extended Band Edge Plot (15M BW Ch.138100 BPSK_RB25_0)

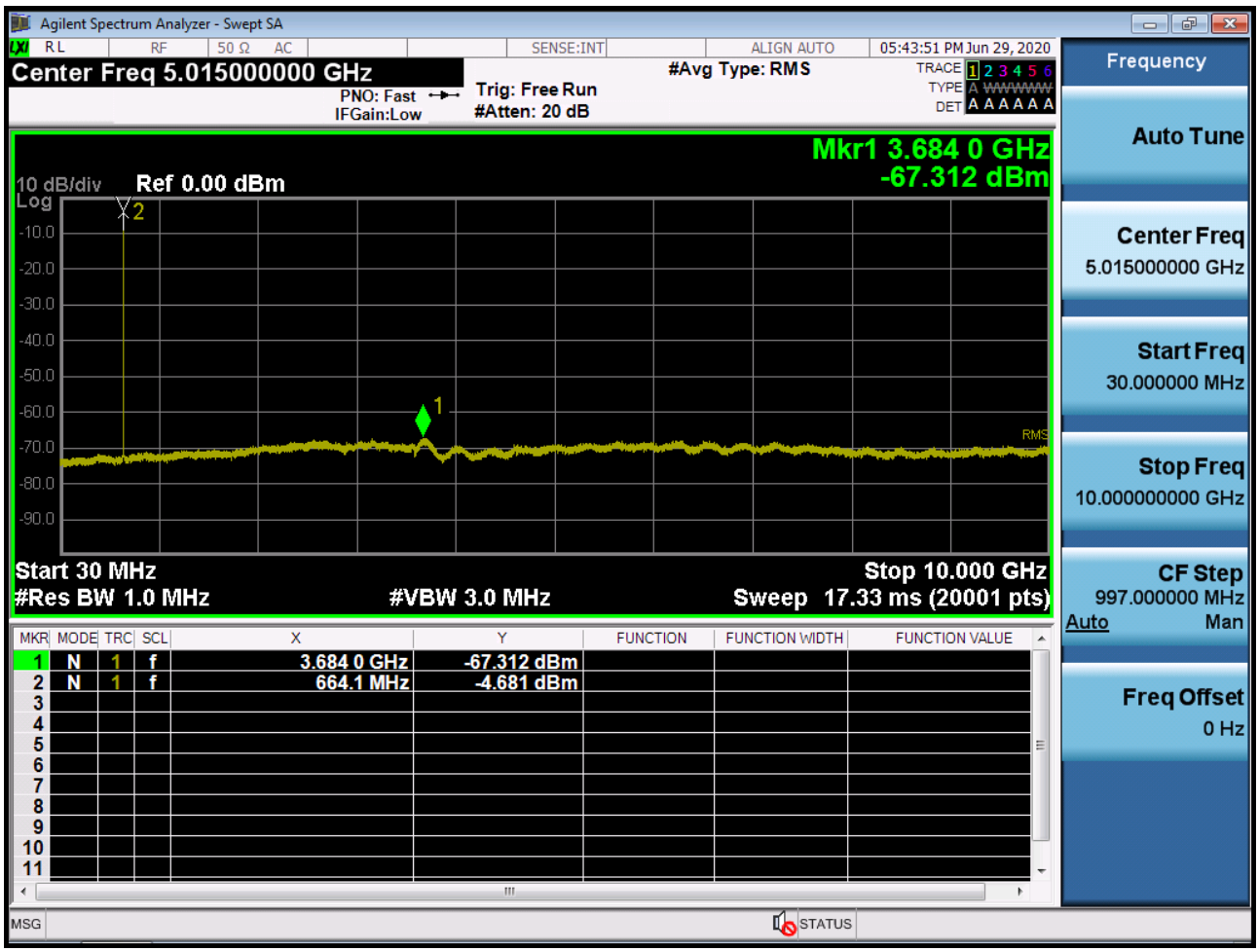
Sub6 n71. Upper Band Edge Plot (20M BW Ch.137600 BPSK_RB1_Offset 49)_1

Sub6 n71. Upper Band Edge Plot (20M BW Ch.137600 BPSK_RB1_Offset 49)_2

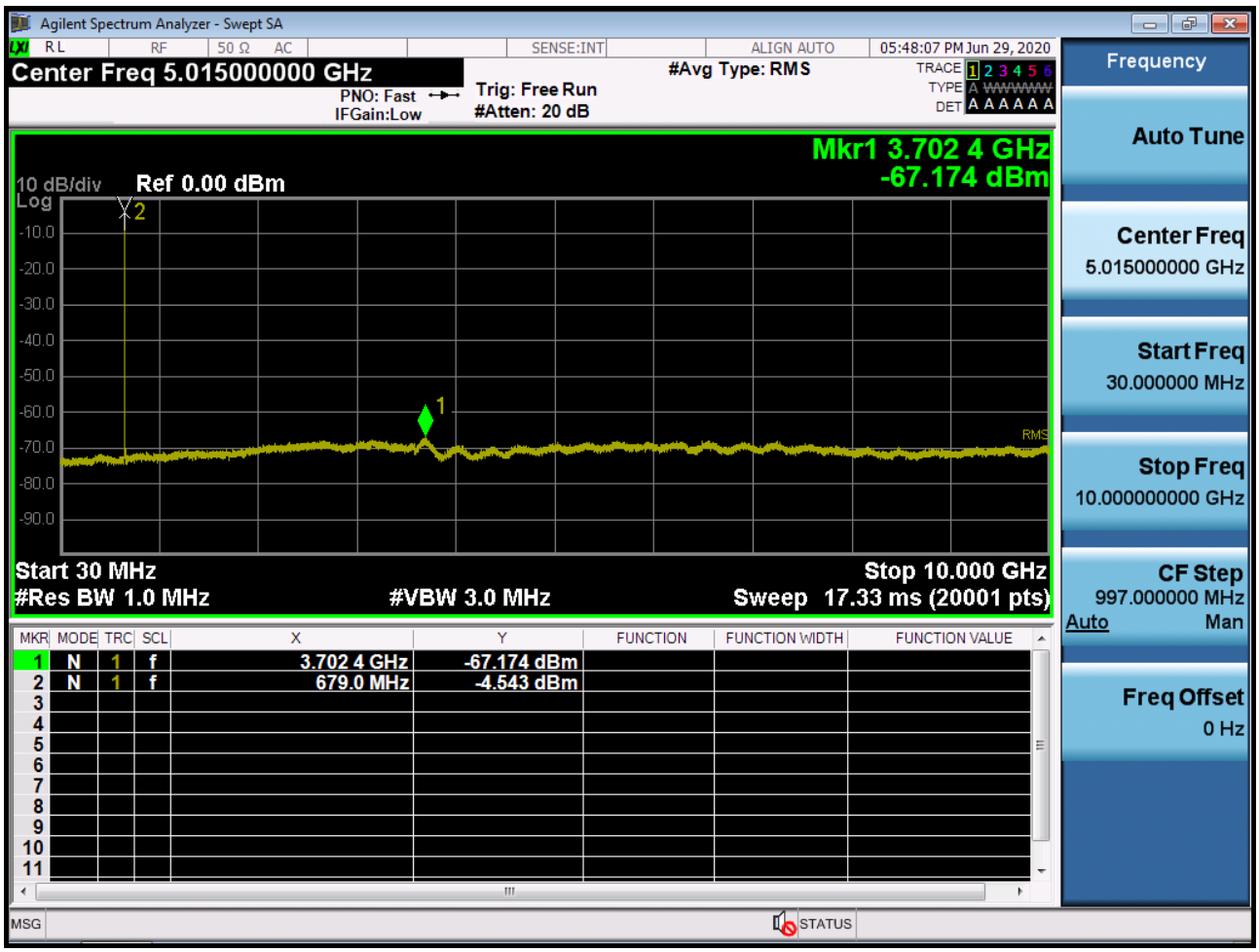
Sub6 n71. Upper Band Edge Plot (20M BW Ch.137600 BPSK_RB50_Offset 0)

Sub6 n71. Upper Extended Band Edge Plot (20M BW Ch.137600 BPSK_RB50_0)

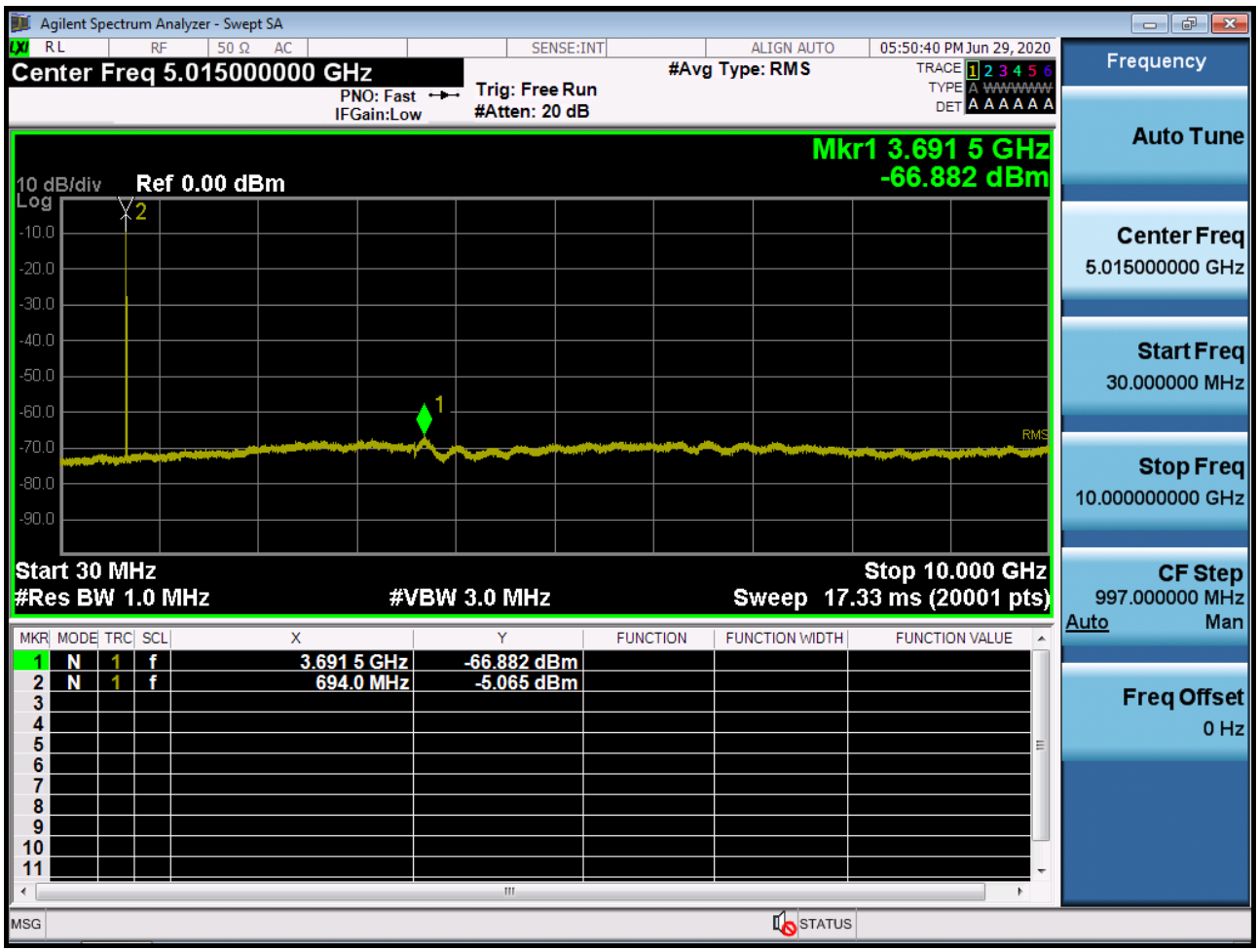
Sub6 n71. Conducted Spurious Plot _ (133100ch_5MHz_BPSK_RB 1_0)



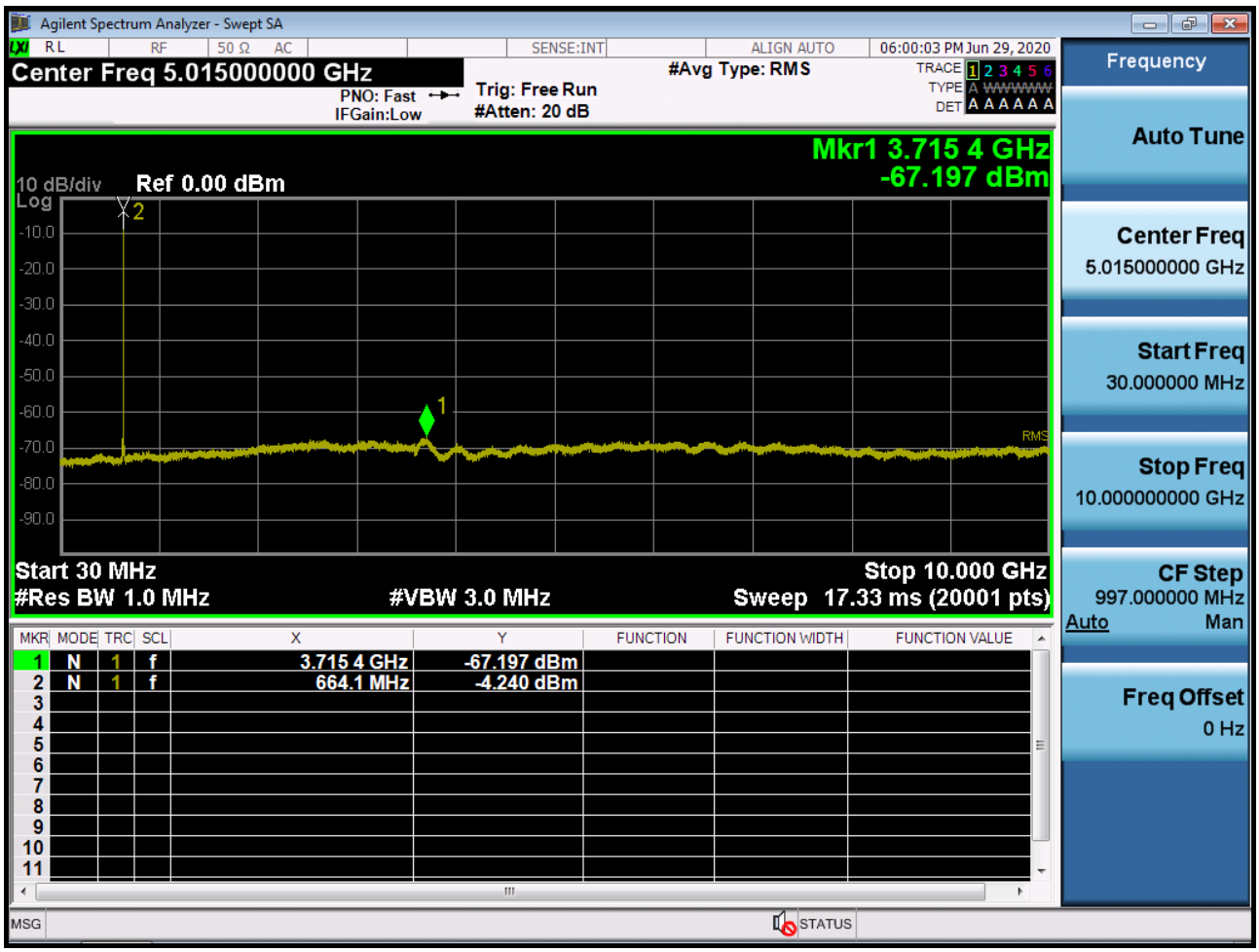
Sub6 n71. Conducted Spurious Plot _ (136100ch_5MHz_BPSK_RB 1_0)



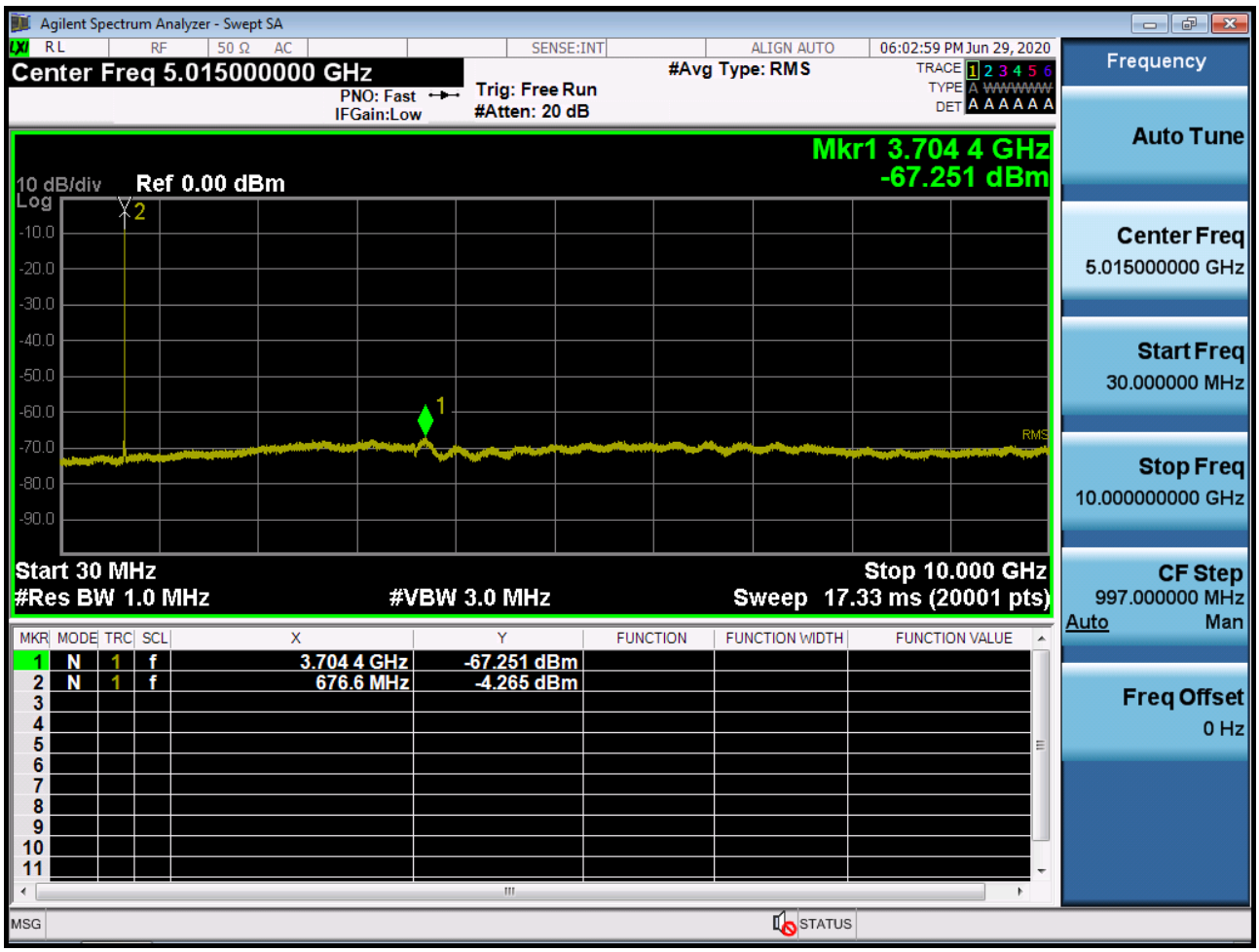
Sub6 n71. Conducted Spurious Plot _ (139100ch_5MHz_BPSK_RB 1_0)



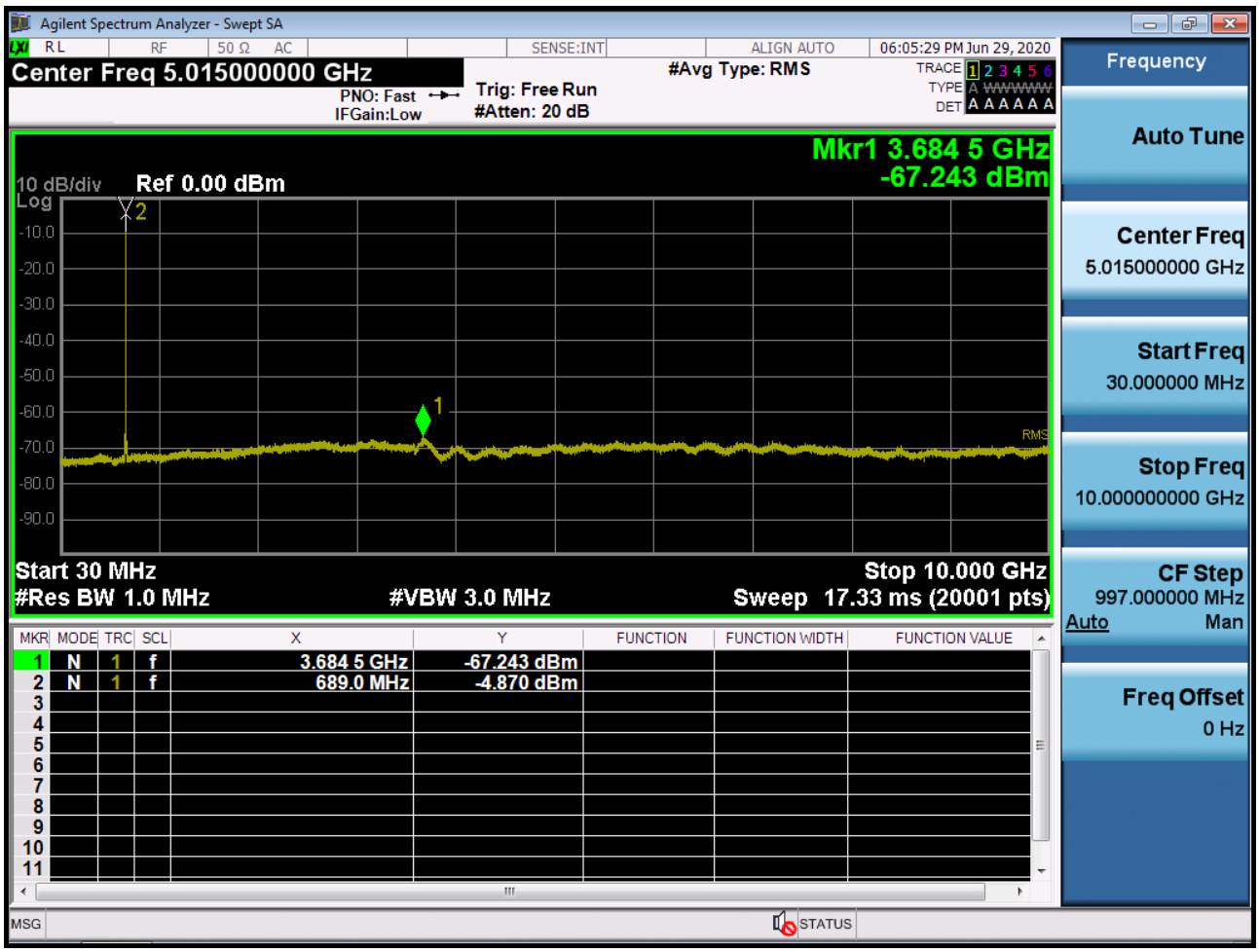
Sub6 n71. Conducted Spurious Plot _ (133600ch_10M Hz_BPSK_RB 1_0)



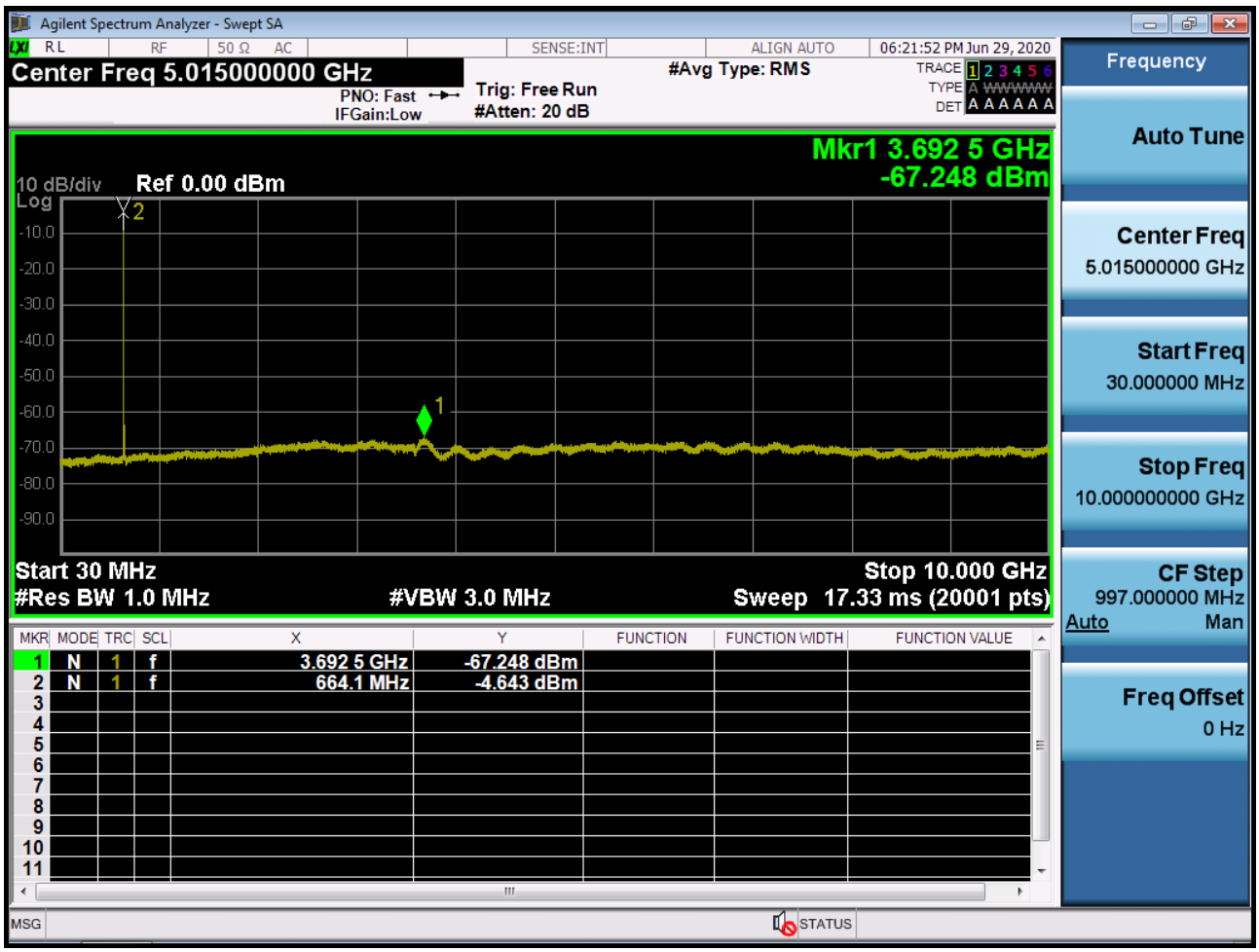
Sub6 n71. Conducted Spurious Plot _ (136100ch_10M Hz_BPSK_RB 1_0)



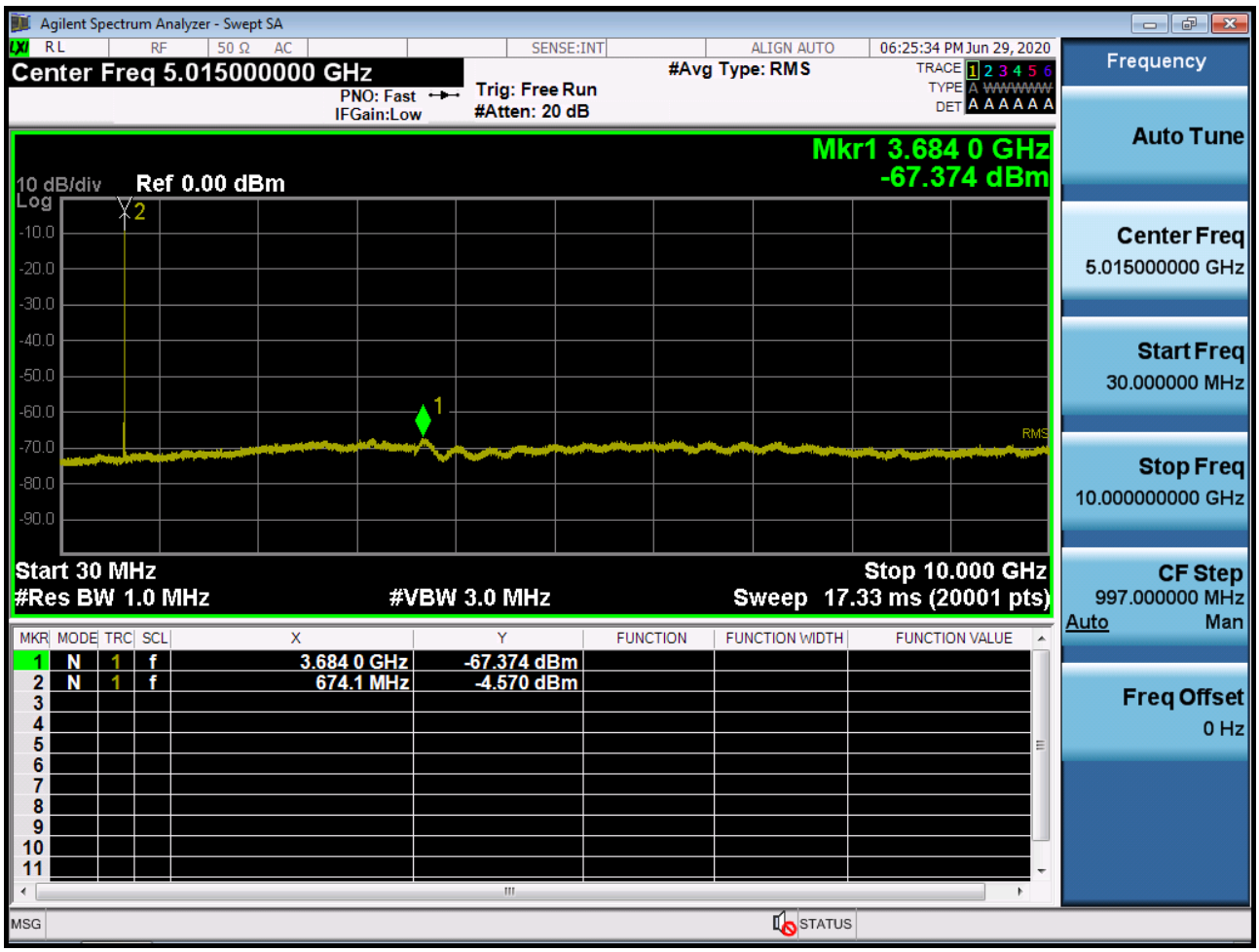
Sub6 n71. Conducted Spurious Plot _ (138600ch_10M Hz_BPSK_RB 1_0)



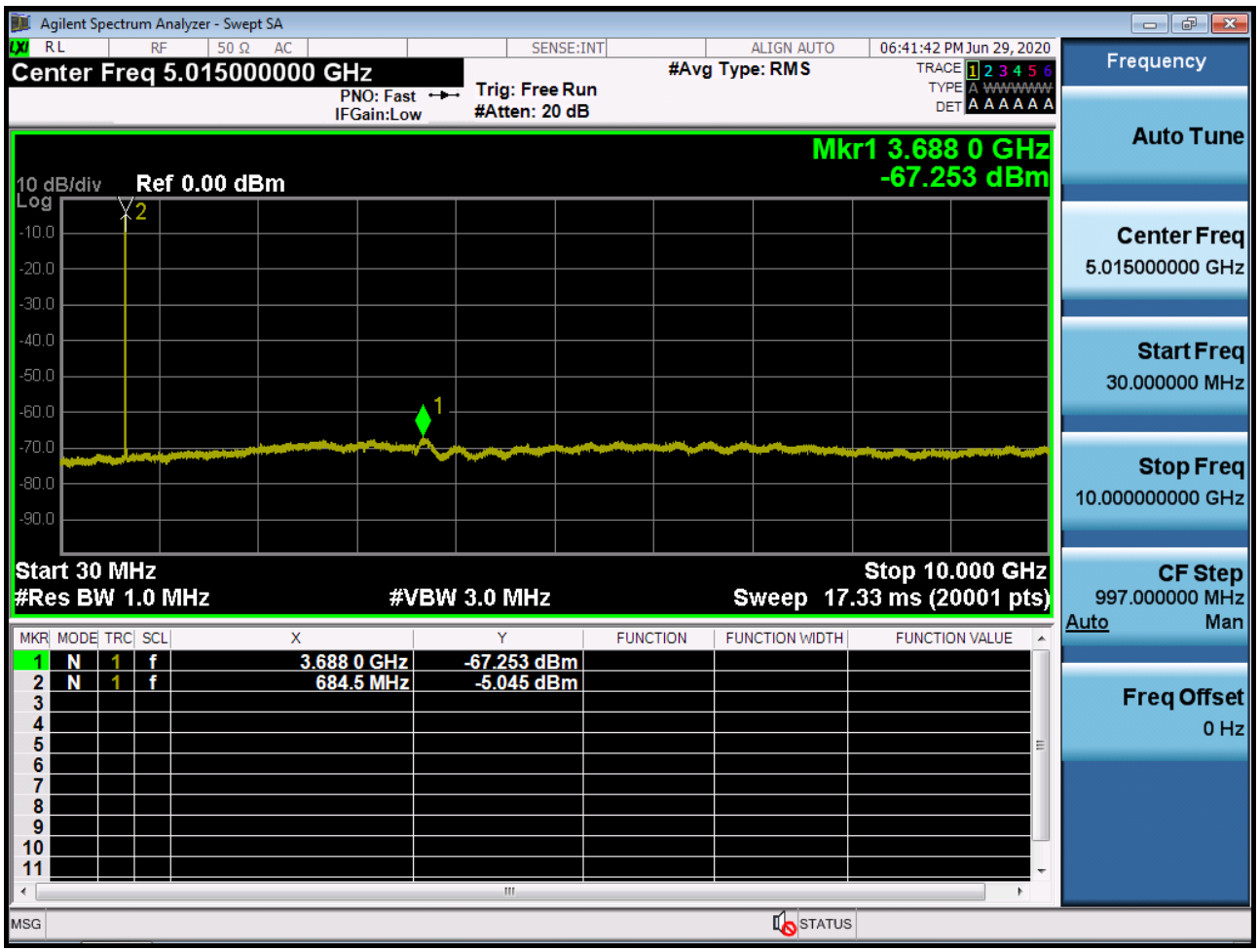
Sub6 n71. Conducted Spurious Plot _ (134100ch_15MHz_BPSK_RB 1_0)



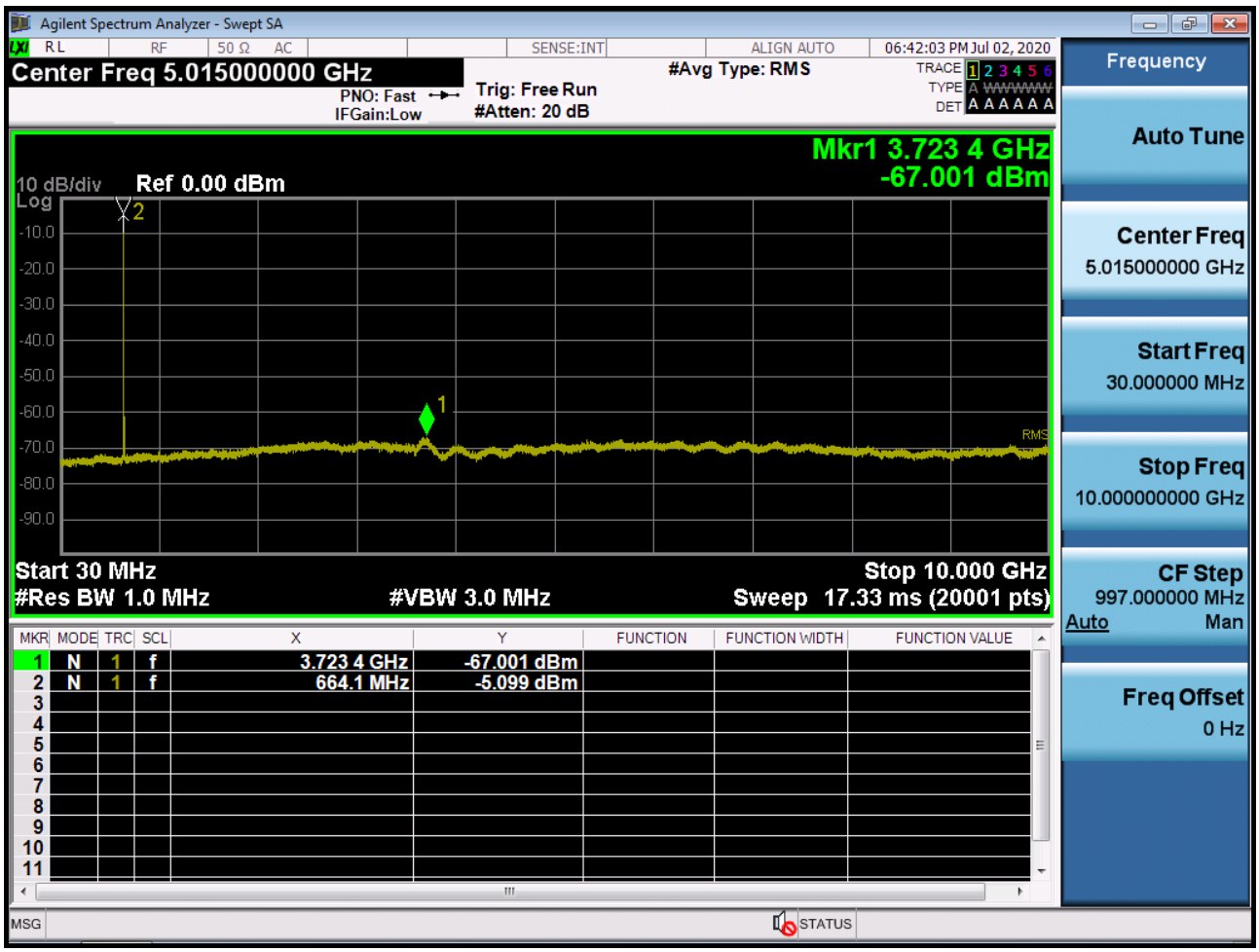
Sub6 n71. Conducted Spurious Plot _ (136100ch_15MHz_BPSK_RB 1_0)



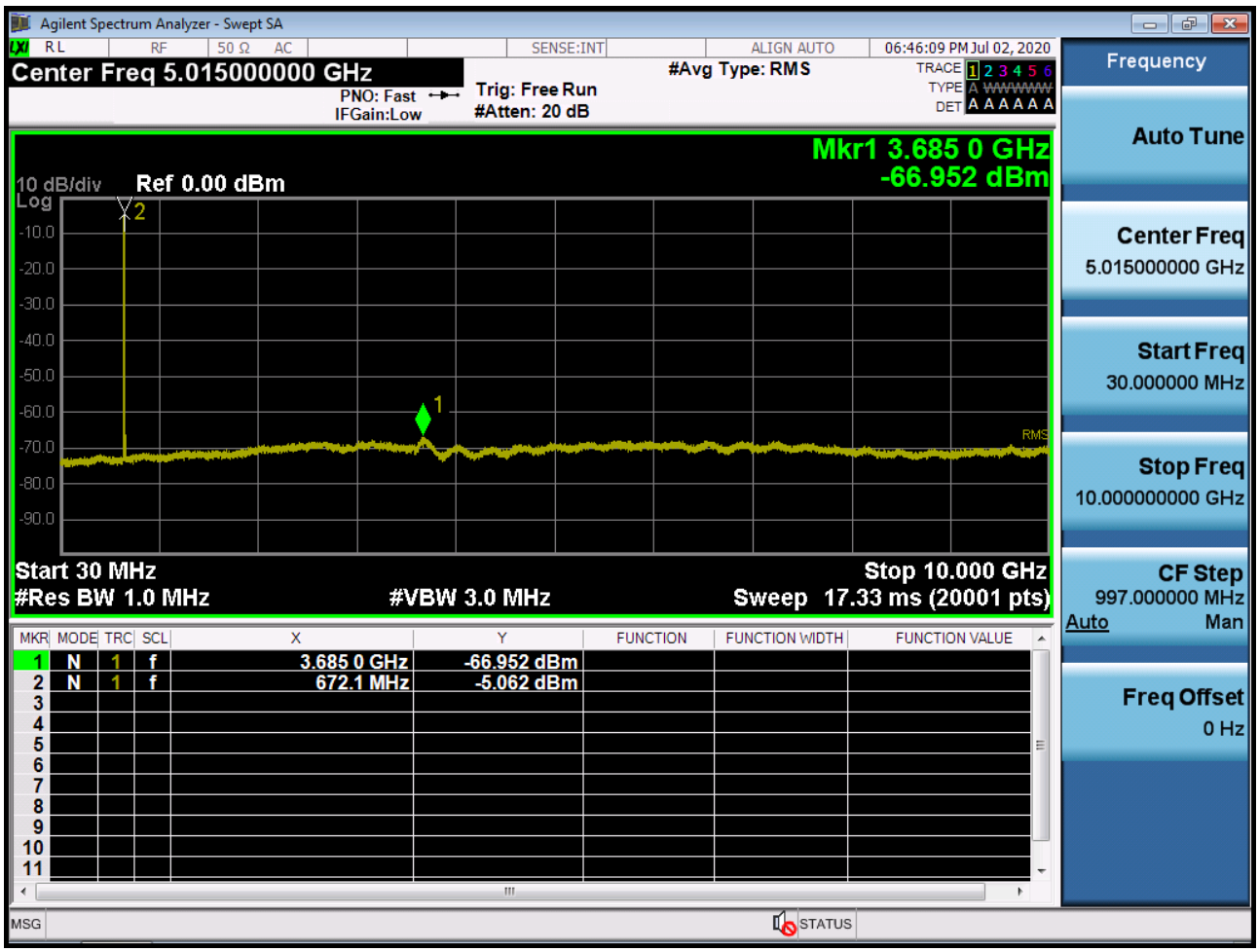
Sub6 n71. Conducted Spurious Plot _ (138100ch_15MHz_BPSK_RB 1_0)



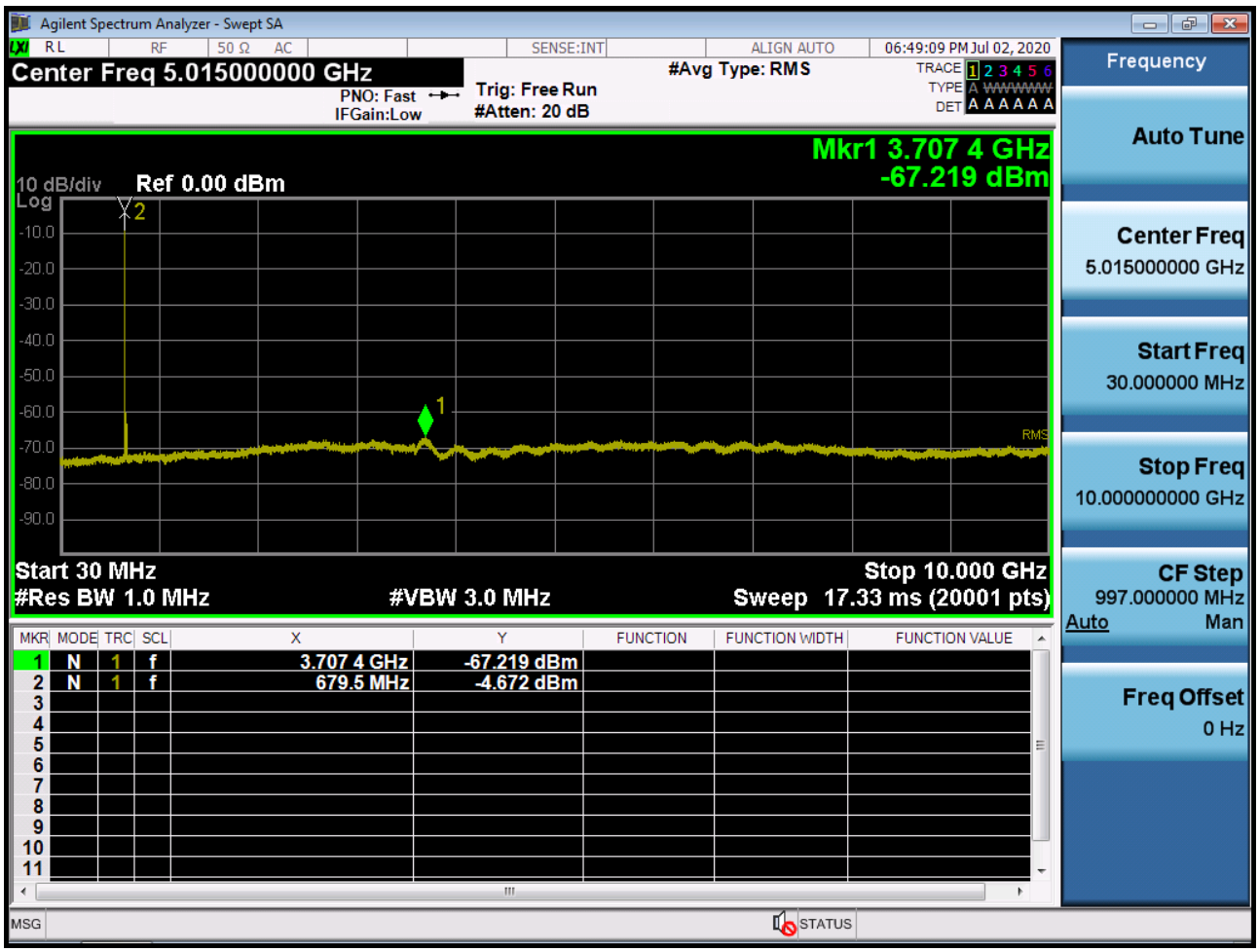
Sub6 n71. Conducted Spurious Plot _ (134600ch_20MHz_BPSK_RB 1_0)



Sub6 n71. Conducted Spurious Plot _ (136100ch_20MHz_BPSK_RB 1_0)



Sub6 n71. Conducted Spurious Plot _ (137600ch_20MHz_BPSK_RB 1_0)



10. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2007-FC035-P