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FCC LTE REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
October 16, 2023

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

Report No.: HCT-RF-2310-FC031

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

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

Main 1 Ant

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band71 (5)	665.5 - 695.5	4M52G7D	QPSK	0.059	17.74
		4M53W7D	16QAM	0.048	16.85
		4M50W7D	64QAM	0.038	15.79
		4M52W7D	256QAM	0.019	12.70
LTE – Band71 (10)	668.0 - 693.0	9M02G7D	QPSK	0.056	17.50
		9M00W7D	16QAM	0.047	16.75
		9M03W7D	64QAM	0.037	15.74
		9M01W7D	256QAM	0.019	12.70
LTE – Band71 (15)	670.5 - 690.5	13M5G7D	QPSK	0.058	17.66
		13M5W7D	16QAM	0.049	16.87
		13M5W7D	64QAM	0.038	15.82
		13M5W7D	256QAM	0.019	12.75
LTE – Band71 (20)	673.0 - 688.0	18M0G7D	QPSK	0.058	17.67
		18M0W7D	16QAM	0.049	16.91
		18M0W7D	64QAM	0.039	15.87
		18M0W7D	256QAM	0.019	12.79

Sub 1 Ant

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band71 (5)	665.5 - 695.5	4M49G7D	QPSK	0.055	17.37
		4M52W7D	16QAM	0.046	16.59
		4M51W7D	64QAM	0.036	15.56
		4M51W7D	256QAM	0.018	12.50
LTE – Band71 (10)	668.0 - 693.0	8M99G7D	QPSK	0.055	17.42
		9M02W7D	16QAM	0.045	16.55
		9M00W7D	64QAM	0.036	15.58
		9M00W7D	256QAM	0.018	12.50
LTE – Band71 (15)	670.5 - 690.5	13M5G7D	QPSK	0.054	17.31
		13M5W7D	16QAM	0.045	16.51
		13M5W7D	64QAM	0.036	15.51
		13M5W7D	256QAM	0.018	12.45
LTE – Band71 (20)	673.0 - 688.0	17M9G7D	QPSK	0.055	17.44
		17M9W7D	16QAM	0.047	16.71
		17M9W7D	64QAM	0.036	15.60
		17M9W7D	256QAM	0.018	12.53

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.
HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

REVIEWED BY

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

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

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

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

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2310-FC031	October 16, 2023	- First Approval Report

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MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMS926U
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27
EUT Type:	Mobile phone
Model(s):	SM-S926U
Additional Model(s):	SM-S926U1
Tx Frequency:	665.5 MHz – 695.5 MHz (LTE – Band 71 (5 MHz)) 668.0 MHz – 693.0 MHz (LTE – Band 71 (10 MHz)) 670.5 MHz – 690.5 MHz (LTE – Band 71 (15 MHz)) 673.0 MHz – 688.0 MHz (LTE – Band 71 (20 MHz))
Date(s) of Tests:	September 05, 2023 ~ October 11, 2023
Serial number:	Radiated: R3CW90B4EEV Conducted: R3CW808LYGJ(Main1 Ant), 741c314dee0f7ece(Sub1 Ant)

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

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

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

2.2. MEASURING INSTRUMENT CALIBRATION

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

2.3. TEST FACILITY

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

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Band Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Effective Radiated Power/ Effective Isotropic Radiated Power	- KDB 971168 D01 v03r01 – Section 5.2 & 5.8 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12

3.2 RADIATED POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

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

Test Settings

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

Test Note

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

   The power is calculated by the following formula;

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

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

Test Note

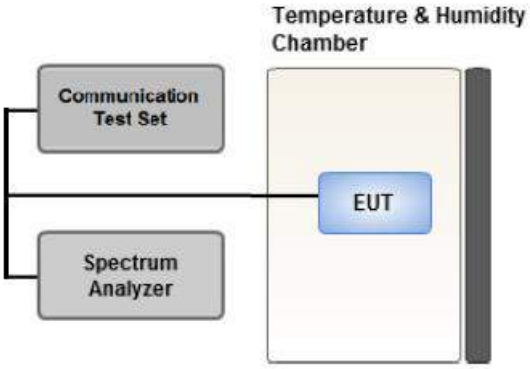
1. Measurements value show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
2. The EUT was tested in three orthogonal planes(X, Y,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

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

   Where: $P_g$is the generator output power into the substitution antenna.
   If the fundamental frequency is below 1 GHz, RF output power has been converted to EIRP.

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

3.4 OCCUPIED BANDWIDTH.



Test setup

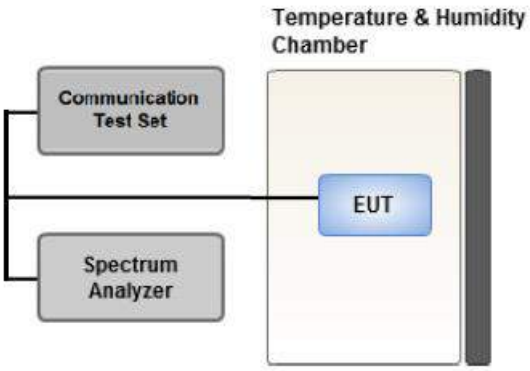
The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

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 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5 % of the expected OBW
3. VBW ≥ 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

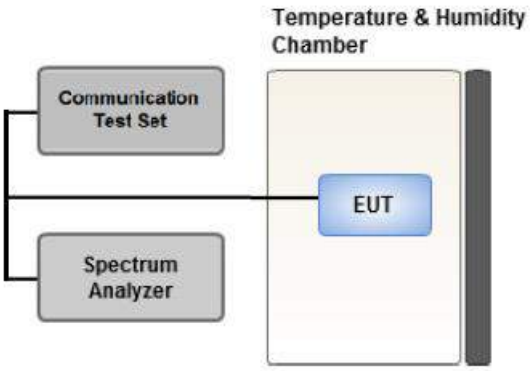
Test Overview

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 * 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

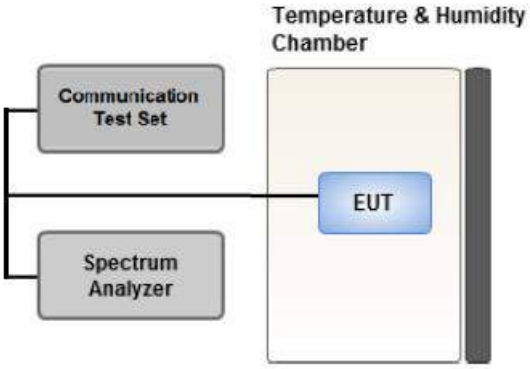
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
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.
Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.
However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz 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.

Where Margin < 1 dB the emission level is either corrected by 10 log(1 MHz/ RB) or the emission is integrated over a 1 MHz bandwidth to determine the final result. When using the integration method the integration window is either centered on the emission or, for emissions at the band edge, centered by an offset of 500 kHz from the block edge so that the integration window is the 1 MHz adjacent to the block edge.

3.7 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.
  Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
  Worst case : Stand alone
- We were performed the RSE test in condition of co-location.
  Mode : Stand alone, Simultaneous transmission scenarios
  Worst case : Stand alone
- In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported. (Worst case : 5 MHz(Main 1 Ant), 20 MHz(Sub 1 Ant))
- The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data.
- SM-S926U & additional models were tested and the worst case results are reported.
  (Worst case : SM-S926U)

[Main 1 Ant Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset	Axis
Effective Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	5	Low	1	24	Y
			Mid	1	13	
			High	1	0	
		10	Low	1	49	
			Mid	1	25	
			High	1	0	
		15	Low	1	74	
			Mid	1	38	
			High	1	0	
		20	Low	1	99	
			Mid	1	50	
			High	1	0	
Radiated Spurious and Harmonic Emissions	QPSK	5	Low	1	24	Y
			Mid	1	13	
			High	1	0	

[Sub 1 Ant Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset	Axis
Effective Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	5	Low, High	1	0	Y
			Mid	1	13	
		10	Low, High	1	0	
			Mid	1	25	
		15	Low	1	74	
			Mid	1	50	
			High	1	0	
		20	Low, Mid, High	1	99	
Radiated Spurious and Harmonic Emissions	QPSK	20	Low, Mid, High	1	99	X

3.9 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.
- SM-S926U & additional models were tested and the worst case results are reported.
  (Worst case : SM-S926U)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	5,10,15,20	Mid	Full RB	0
Band Edge	QPSK	5	Low	1	0
			High	1	24
		10	Low	1	0
			High	1	49
		15	Low	1	0
			High	1	74
		20	Low	1	0
			High	1	99
		5,10,15,20	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	QPSK	5,10,15,20	Low, Mid, High	1	0

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	FBSR-02B(1.2G HPF+LNA)	T&M SYSTEM	F1L1	01/19/2024	Annual
RF Switching System	FBSR-02B(3.3G HPF+LNA)	T&M SYSTEM	F1L2	01/19/2024	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/19/2024	Annual
DC Power Supply	E3632A	Agilent	MY40010147	06/23/2024	Annual
Dipole Antenna	UHAP	Schwarzbeck	557	03/09/2025	Biennial
Dipole Antenna	UHAP	Schwarzbeck	558	03/09/2025	Biennial
Chamber	SU-642	ESPEC	93008124	02/22/2024	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	147	08/17/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/11/2025	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/20/2024	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/19/2024	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	08/17/2024	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/10/2024	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/17/2024	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/16/2024	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	03/21/2024	Biennial
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262094331	12/01/2023	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	01/05/2024	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	06/22/2024	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/24/2024	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

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

5. MEASUREMENT UNCERTAINTY

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

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.90 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.14 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.16 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.57 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.76 (Confidence level about 95 %, k=2)
Radiated Disturbance (Above 40 GHz)	5.52 (Confidence level about 95 %, k=2)

6. SUMMARY OF TEST RESULTS

6.1 Test Condition: Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§2.1051, §27.53(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

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

QAM Modulation

Emission Designator = 4M48W7D
LTE BW = 4.48 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data transmission; telemetry; telecommand

8. TEST DATA(Main 1 Ant)

8.1 EFFECTIVE RADIATED POWER

Freq (MHz)	Mod (Bandwidth)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
665.5	LTE B71 (5 MHz)	QPSK	-31.12	28.82	-9.76	1.32	V	< 3.00	0.059	17.74
		16-QAM	-32.01	27.93	-9.76	1.32	V		0.048	16.85
		64-QAM	-33.07	26.87	-9.76	1.32	V		0.038	15.79
		256-QAM	-36.16	23.78	-9.76	1.32	V		0.019	12.70
680.5		QPSK	-30.82	28.63	-9.78	1.36	V		0.056	17.49
		16-QAM	-31.62	27.83	-9.78	1.36	V		0.047	16.69
		64-QAM	-32.63	26.82	-9.78	1.36	V		0.037	15.68
		256-QAM	-35.70	23.75	-9.78	1.36	V		0.018	12.61
695.5		QPSK	-30.83	28.51	-9.79	1.38	V		0.054	17.34
		16-QAM	-31.71	27.63	-9.79	1.38	V		0.044	16.46
		64-QAM	-32.72	26.62	-9.79	1.38	V		0.035	15.45
		256-QAM	-35.79	23.55	-9.79	1.38	V		0.017	12.38

Freq (MHz)	Mod (Bandwidth)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
668.0	LTE B71 (10 MHz)	QPSK	-31.33	28.52	-9.76	1.33	V	< 3.00	0.055	17.43
		16-QAM	-32.11	27.74	-9.76	1.33	V		0.046	16.65
		64-QAM	-33.02	26.83	-9.76	1.33	V		0.037	15.74
		256-QAM	-36.06	23.79	-9.76	1.33	V		0.019	12.70
680.5		QPSK	-30.95	28.50	-9.78	1.36	V		0.055	17.36
		16-QAM	-31.71	27.74	-9.78	1.36	V		0.046	16.60
		64-QAM	-32.73	26.72	-9.78	1.36	V		0.036	15.58
		256-QAM	-35.78	23.67	-9.78	1.36	V		0.018	12.53
693.0		QPSK	-30.72	28.66	-9.79	1.37	V		0.056	17.50
		16-QAM	-31.47	27.91	-9.79	1.37	V		0.047	16.75
		64-QAM	-32.51	26.87	-9.79	1.37	V		0.037	15.71
		256-QAM	-35.63	23.75	-9.79	1.37	V		0.018	12.59

Freq (MHz)	Mod (Bandwidth)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
670.5	LTE B71 (15 MHz)	QPSK	-31.02	28.63	-9.77	1.34	V	< 3.00	0.057	17.52
		16-QAM	-31.80	27.85	-9.77	1.34	V		0.047	16.74
		64-QAM	-32.77	26.88	-9.77	1.34	V		0.038	15.77
		256-QAM	-36.02	23.63	-9.77	1.34	V		0.018	12.52
680.5		QPSK	-30.65	28.80	-9.78	1.36	V		0.058	17.66
		16-QAM	-31.44	28.01	-9.78	1.36	V		0.049	16.87
		64-QAM	-32.49	26.96	-9.78	1.36	V		0.038	15.82
		256-QAM	-35.56	23.89	-9.78	1.36	V		0.019	12.75
690.5		QPSK	-30.71	28.62	-9.79	1.37	V		0.056	17.46
		16-QAM	-31.54	27.79	-9.79	1.37	V		0.046	16.63
		64-QAM	-32.54	26.79	-9.79	1.37	V		0.037	15.63
		256-QAM	-35.55	23.78	-9.79	1.37	V		0.018	12.62

Freq (MHz)	Mod (Bandwidth)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
673.0	LTE B71 (20 MHz)	QPSK	-30.76	28.78	-9.77	1.34	V	< 3.00	0.058	17.67
		16-QAM	-31.52	28.02	-9.77	1.34	V		0.049	16.91
		64-QAM	-32.56	26.98	-9.77	1.34	V		0.039	15.87
		256-QAM	-35.70	23.84	-9.77	1.34	V		0.019	12.73
680.5		QPSK	-30.65	28.80	-9.78	1.36	V		0.058	17.66
		16-QAM	-31.44	28.01	-9.78	1.36	V		0.049	16.87
		64-QAM	-32.49	26.96	-9.78	1.36	V		0.038	15.82
		256-QAM	-35.52	23.93	-9.78	1.36	V		0.019	12.79
688.0		QPSK	-30.78	28.47	-9.78	1.37	V		0.054	17.32
		16-QAM	-31.66	27.59	-9.78	1.37	V		0.044	16.44
		64-QAM	-32.59	26.66	-9.78	1.37	V		0.036	15.51
		256-QAM	-35.70	23.55	-9.78	1.37	V		0.017	12.40

8.2 RADIATED SPURIOUS EMISSIONS

▣ MODE: LTE B71

▣ MODULATION SIGNAL: 5 MHz QPSK

▣ DISTANCE: 3 meters

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit
133147 (665.5)	1 331.00	-52.65	7.20	-61.52	1.90	V	-56.22	-13.00
	1 996.50	-55.02	10.37	-62.40	2.40	V	-54.43	-13.00
	2 662.00	-57.09	10.70	-58.98	2.74	V	-51.02	-13.00
133297 (680.5)	1 361.00	-51.51	7.38	-59.92	1.90	V	-54.44	-13.00
	2 041.50	-55.04	10.02	-60.85	2.34	H	-53.17	-13.00
	2 722.00	-56.29	10.76	-59.09	2.65	V	-50.98	-13.00
133447 (693.0)	1 391.00	-51.59	7.55	-61.23	1.97	V	-55.65	-13.00
	2 086.50	-55.04	9.58	-60.05	2.44	V	-52.91	-13.00
	2 782.00	-57.58	10.81	-59.79	2.75	V	-51.73	-13.00

8.3 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
71	5 MHz	680.5	QPSK	25	0	4.5161
			16-QAM			4.5273
			64-QAM			4.5019
			256-QAM			4.5242
	10 MHz		QPSK	50		9.0199
			16-QAM			8.9955
			64-QAM			9.0249
			256-QAM			9.0137
	15 MHz		QPSK	75		13.501
			16-QAM			13.454
			64-QAM			13.495
			256-QAM			13.474
	20 MHz		QPSK	100		17.995
			16-QAM			17.986
			64-QAM			17.988
			256-QAM			17.968

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 82 ~ 97.

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)
71	5	665.5	3.6990	27.976	-67.344	-39.368	-13.00
		680.5	3.6840	27.976	-67.173	-39.197	
		695.5	3.6760	27.976	-67.058	-39.082	
	10	668.0	3.6840	27.976	-67.166	-39.190	
		680.5	3.6885	27.976	-67.179	-39.203	
		693.0	3.6646	27.976	-67.281	-39.305	
	15	670.5	3.7164	27.976	-67.005	-39.029	
		680.5	3.6910	27.976	-67.065	-39.089	
		690.5	3.7114	27.976	-67.312	-39.336	
	20	673.0	3.6950	27.976	-66.933	-38.957	
		680.5	3.1770	27.976	-67.271	-39.295	
		688.0	3.6965	27.976	-67.091	-39.115	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 98 ~ 109.
2. Conducted Spurious Emissions was tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor(dB) = Cable Loss + Attenuator + Power Splitter

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

8.5 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 58 ~ 81.

8.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ MODE: LTE B71

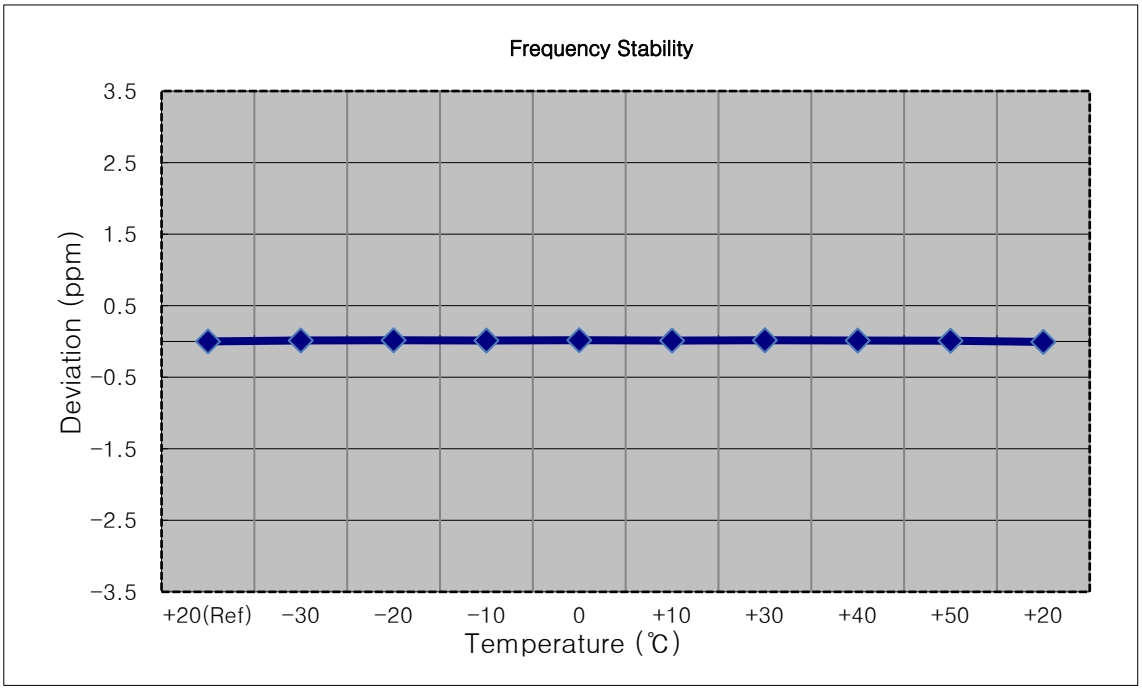
▣ OPERATING FREQUENCY: 665,500,000 Hz

▣ CHANNEL: 133147 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	665 500 007	0.0	0.000 000	0.000
100 %		-30	665 500 016	9.0	0.000 001	0.014
100 %		-20	665 500 018	11.0	0.000 002	0.017
100 %		-10	665 500 015	8.6	0.000 001	0.013
100 %		0	665 500 018	11.6	0.000 002	0.017
100 %		+10	665 500 015	8.1	0.000 001	0.012
100 %		+30	665 500 018	11.2	0.000 002	0.017
100 %		+40	665 500 016	8.9	0.000 001	0.013
100 %		+50	665 500 013	6.6	0.000 001	0.010
Batt. Endpoint	3.300	+20	665 500 003	-4.0	-0.000 001	-0.006



▣ MODE: LTE B71

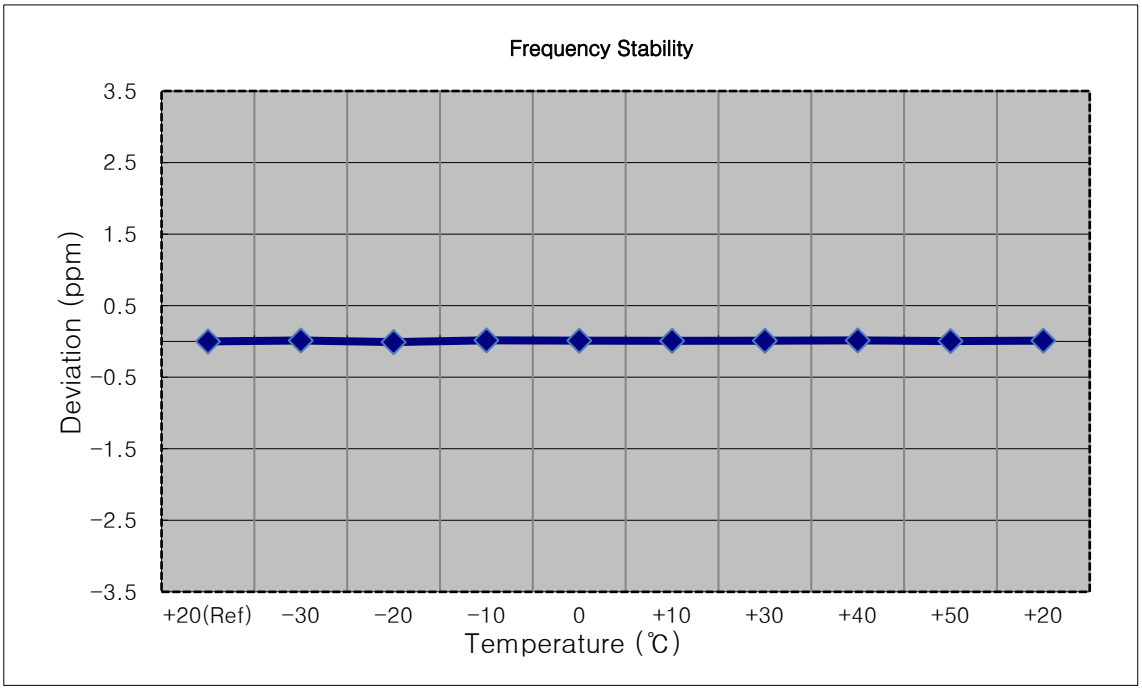
▣ OPERATING FREQUENCY: 668,000,000 Hz

▣ CHANNEL: 133172 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	668 000 008	0.0	0.000 000	0.000
100 %		-30	668 000 016	8.6	0.000 001	0.013
100 %		-20	668 000 002	-6.2	-0.000 001	-0.009
100 %		-10	668 000 018	10.2	0.000 002	0.015
100 %		0	668 000 015	7.2	0.000 001	0.011
100 %		+10	668 000 014	5.9	0.000 001	0.009
100 %		+30	668 000 014	6.6	0.000 001	0.010
100 %		+40	668 000 017	9.5	0.000 001	0.014
100 %		+50	668 000 011	3.0	0.000 000	0.004
Batt. Endpoint	3.300	+20	668 000 015	7.4	0.000 001	0.011



▣ MODE: LTE B71

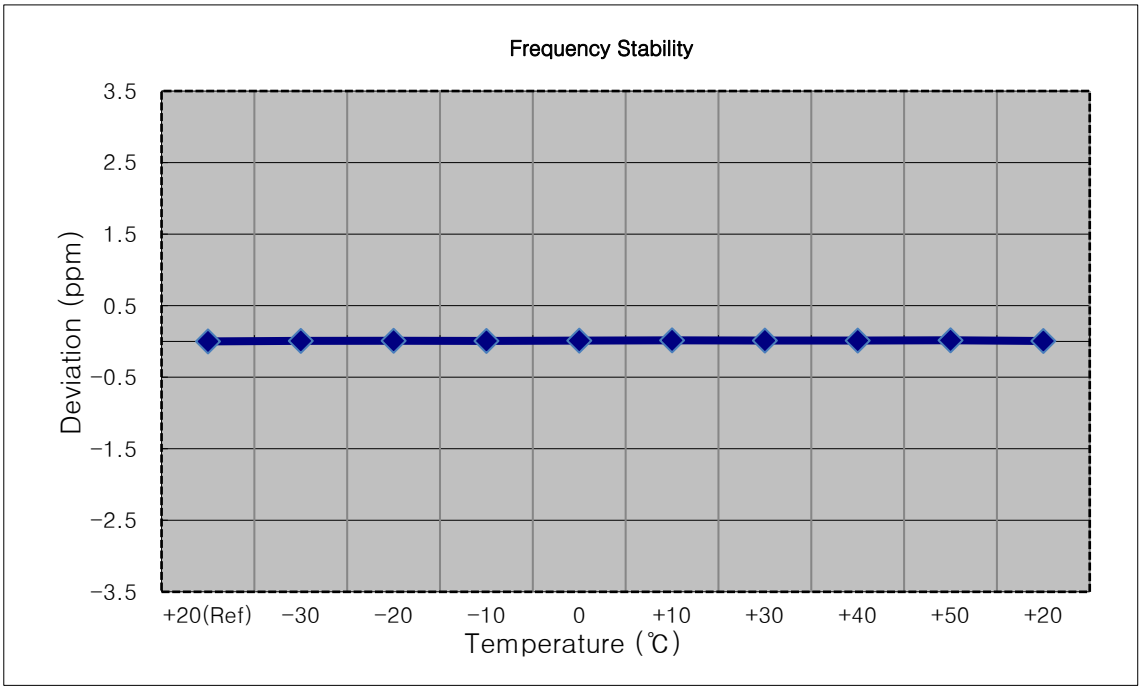
▣ OPERATING FREQUENCY: 670,500,000 Hz

▣ CHANNEL: 133197 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	670 500 011	0.0	0.000 000	0.000
100 %		-30	670 500 016	5.0	0.000 001	0.007
100 %		-20	670 500 018	6.4	0.000 001	0.010
100 %		-10	670 500 016	4.6	0.000 001	0.007
100 %		0	670 500 019	7.5	0.000 001	0.011
100 %		+10	670 500 022	10.4	0.000 002	0.016
100 %		+30	670 500 020	8.3	0.000 001	0.012
100 %		+40	670 500 019	8.0	0.000 001	0.012
100 %		+50	670 500 022	10.7	0.000 002	0.016
Batt. Endpoint	3.300	+20	670 500 015	4.1	0.000 001	0.006



▣ MODE: LTE B71

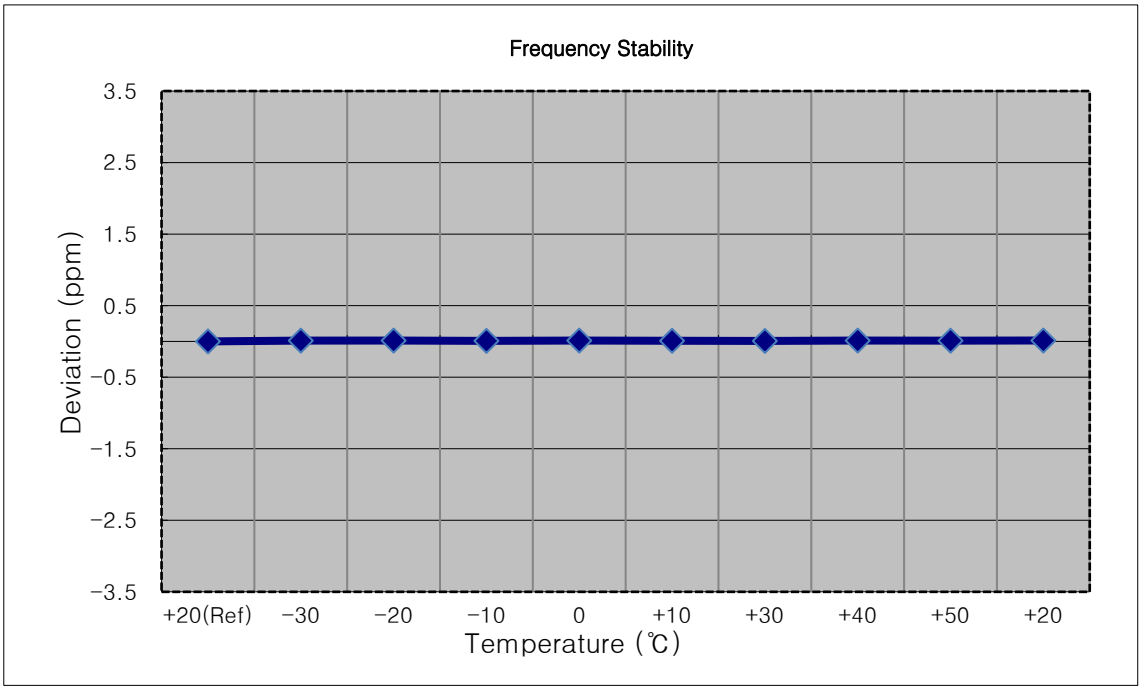
▣ OPERATING FREQUENCY: 673,000,000 Hz

▣ CHANNEL: 133222 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	673 000 008	0.0	0.000 000	0.000
100 %		-30	673 000 016	7.7	0.000 001	0.011
100 %		-20	673 000 016	8.2	0.000 001	0.012
100 %		-10	673 000 013	5.1	0.000 001	0.008
100 %		0	673 000 016	8.4	0.000 001	0.012
100 %		+10	673 000 014	6.3	0.000 001	0.009
100 %		+30	673 000 012	4.6	0.000 001	0.007
100 %		+40	673 000 016	8.2	0.000 001	0.012
100 %		+50	673 000 015	7.5	0.000 001	0.011
Batt. Endpoint	3.300	+20	673 000 017	8.9	0.000 001	0.013



▣ MODE: LTE B71

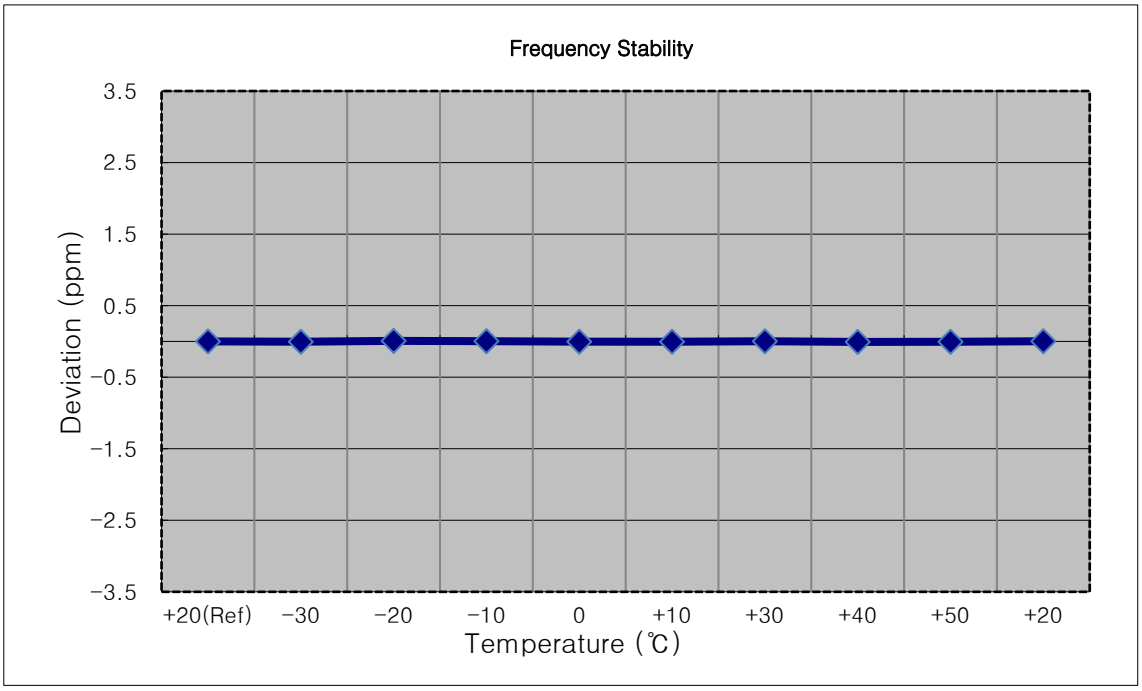
▣ OPERATING FREQUENCY: 680,500,000 Hz

▣ CHANNEL: 133297 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	680 499 997	0.0	0.000 000	0.000
100 %		-30	680 499 995	-2.8	0.000 000	-0.004
100 %		-20	680 500 003	5.3	0.000 001	0.008
100 %		-10	680 500 000	2.5	0.000 000	0.004
100 %		0	680 499 995	-2.3	0.000 000	-0.003
100 %		+10	680 499 995	-2.7	0.000 000	-0.004
100 %		+30	680 499 999	1.8	0.000 000	0.003
100 %		+40	680 499 993	-4.7	-0.000 001	-0.007
100 %		+50	680 499 994	-3.3	0.000 000	-0.005
Batt. Endpoint	3.300	+20	680 499 999	1.9	0.000 000	0.003



▣ MODE: LTE B71

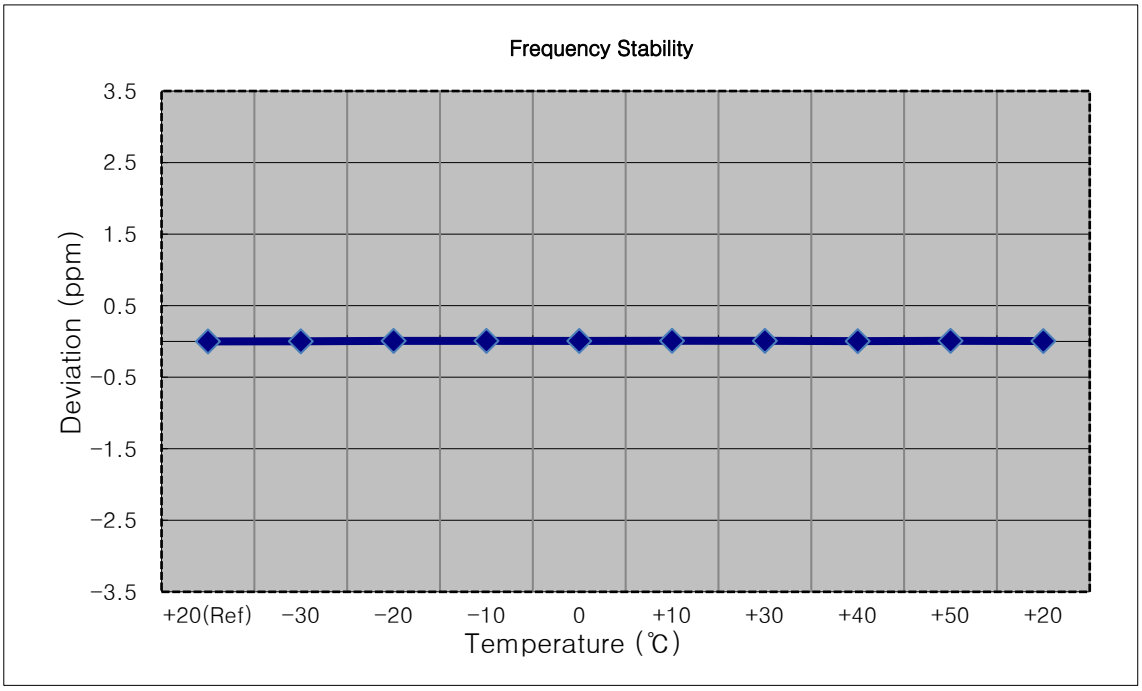
▣ OPERATING FREQUENCY: 680,500,000 Hz

▣ CHANNEL: 133297 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	680 500 003	0.0	0.000 000	0.000
100 %		-30	680 500 004	1.5	0.000 000	0.002
100 %		-20	680 500 008	5.5	0.000 001	0.008
100 %		-10	680 500 008	5.3	0.000 001	0.008
100 %		0	680 500 008	4.8	0.000 001	0.007
100 %		+10	680 500 009	6.4	0.000 001	0.009
100 %		+30	680 500 008	5.6	0.000 001	0.008
100 %		+40	680 500 006	3.0	0.000 000	0.004
100 %		+50	680 500 009	5.7	0.000 001	0.008
Batt. Endpoint	3.300	+20	680 500 007	3.8	0.000 001	0.006



▣ MODE: LTE B71

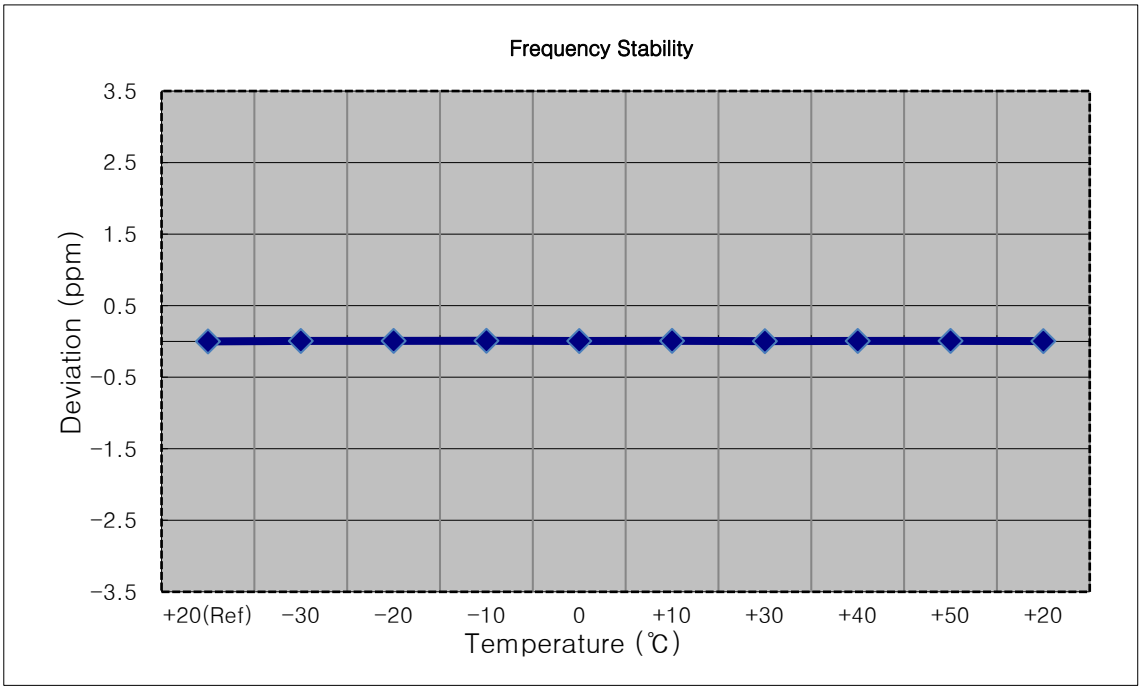
▣ OPERATING FREQUENCY: 680,500,000 Hz

▣ CHANNEL: 133297 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	680 500 004	0.0	0.000 000	0.000
100 %		-30	680 500 009	4.9	0.000 001	0.007
100 %		-20	680 500 009	5.5	0.000 001	0.008
100 %		-10	680 500 010	6.1	0.000 001	0.009
100 %		0	680 500 008	4.1	0.000 001	0.006
100 %		+10	680 500 010	5.9	0.000 001	0.009
100 %		+30	680 500 006	2.7	0.000 000	0.004
100 %		+40	680 500 008	4.7	0.000 001	0.007
100 %		+50	680 500 009	5.3	0.000 001	0.008
Batt. Endpoint	3.300	+20	680 500 007	3.5	0.000 001	0.005



▣ MODE: LTE B71

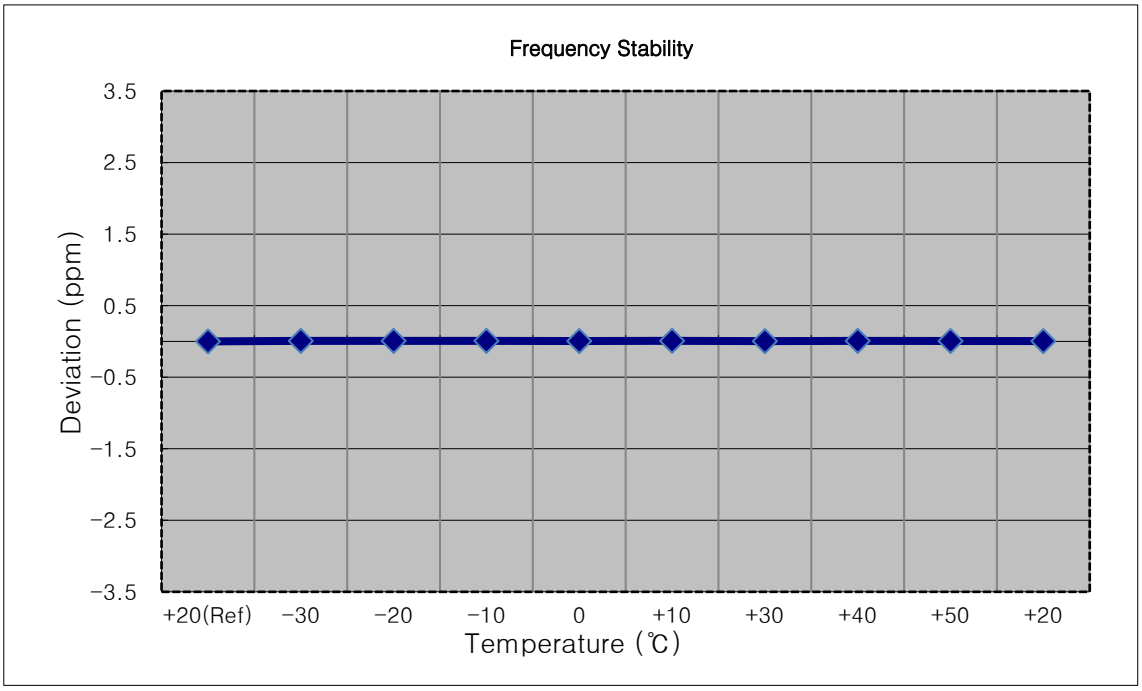
▣ OPERATING FREQUENCY: 680,500,000 Hz

▣ CHANNEL: 133297 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	680 500 005	0.0	0.000 000	0.000
100 %		-30	680 500 011	5.5	0.000 001	0.008
100 %		-20	680 500 011	5.4	0.000 001	0.008
100 %		-10	680 500 011	5.4	0.000 001	0.008
100 %		0	680 500 009	3.6	0.000 001	0.005
100 %		+10	680 500 011	5.6	0.000 001	0.008
100 %		+30	680 500 008	2.6	0.000 000	0.004
100 %		+40	680 500 011	5.4	0.000 001	0.008
100 %		+50	680 500 009	4.1	0.000 001	0.006
Batt. Endpoint	3.300	+20	680 500 009	3.5	0.000 001	0.005



▣ MODE: LTE B71

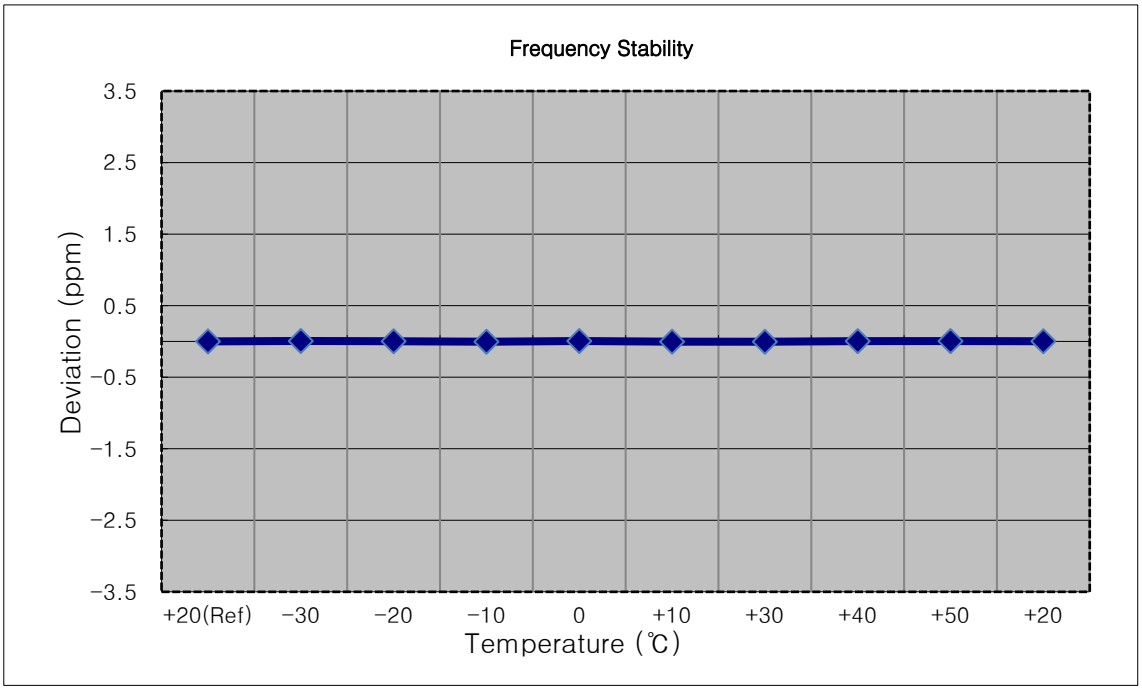
▣ OPERATING FREQUENCY: 695,500,000 Hz

▣ CHANNEL: 133447 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	695 500 003	0.0	0.000 000	0.000
100 %		-30	695 500 008	4.4	0.000 001	0.006
100 %		-20	695 500 005	1.9	0.000 000	0.003
100 %		-10	695 500 000	-3.0	0.000 000	-0.004
100 %		0	695 500 007	3.9	0.000 001	0.006
100 %		+10	695 500 001	-2.6	0.000 000	-0.004
100 %		+30	695 500 001	-2.8	0.000 000	-0.004
100 %		+40	695 500 006	2.9	0.000 000	0.004
100 %		+50	695 500 007	3.6	0.000 001	0.005
Batt. Endpoint	3.300	+20	695 500 005	1.9	0.000 000	0.003



▣ MODE: LTE B71

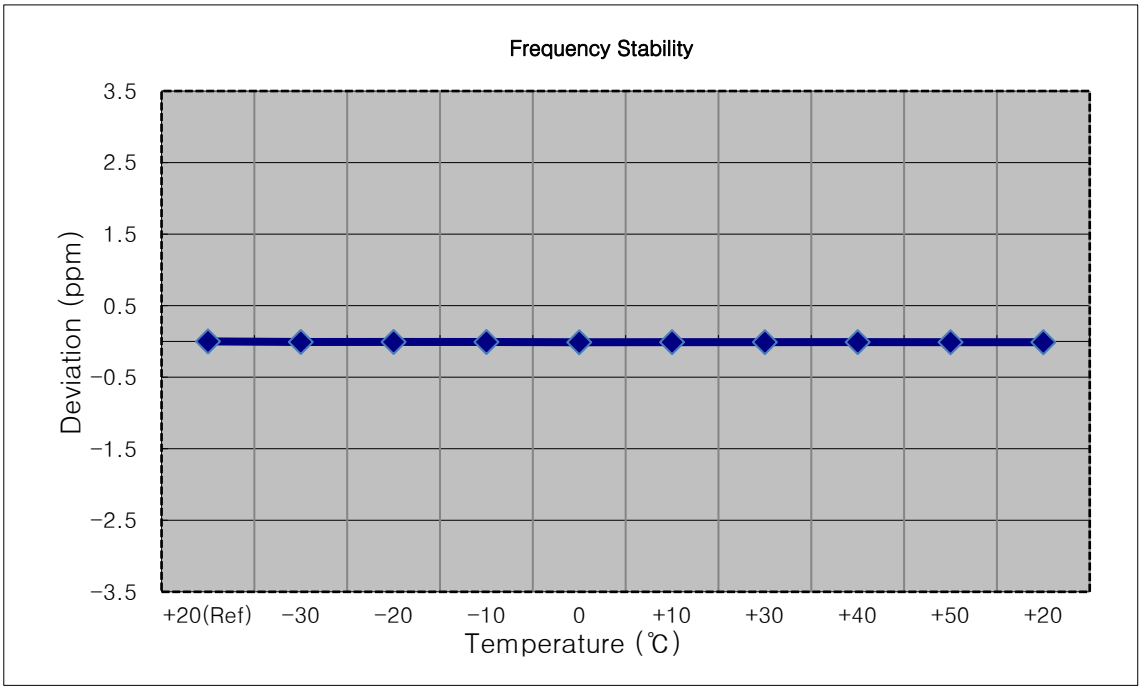
▣ OPERATING FREQUENCY: 693,000,000 Hz

▣ CHANNEL: 133422 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	692 999 996	0.0	0.000 000	0.000
100 %		-30	692 999 990	-5.4	-0.000 001	-0.008
100 %		-20	692 999 991	-5.0	-0.000 001	-0.007
100 %		-10	692 999 990	-5.5	-0.000 001	-0.008
100 %		0	692 999 988	-7.8	-0.000 001	-0.011
100 %		+10	692 999 989	-7.2	-0.000 001	-0.010
100 %		+30	692 999 989	-7.1	-0.000 001	-0.010
100 %		+40	692 999 989	-6.5	-0.000 001	-0.009
100 %		+50	692 999 988	-7.5	-0.000 001	-0.011
Batt. Endpoint	3.300	+20	692 999 989	-7.3	-0.000 001	-0.011



▣ MODE: LTE B71

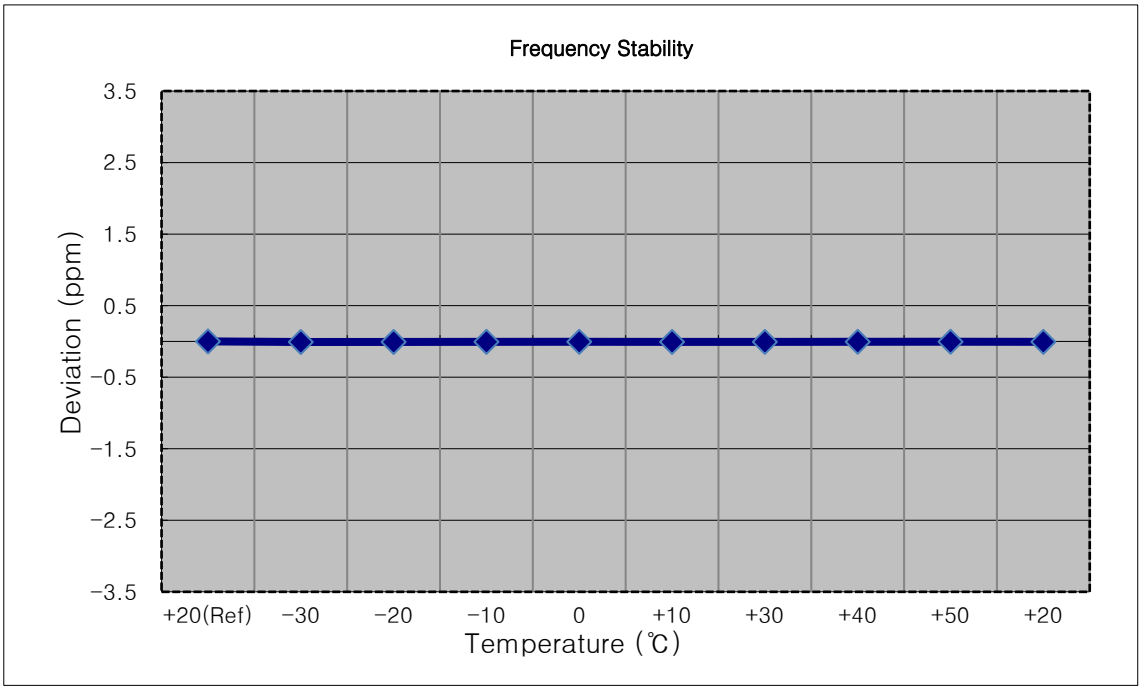
▣ OPERATING FREQUENCY: 690,500,000 Hz

▣ CHANNEL: 133397 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	690 499 994	0.0	0.000 000	0.000
100 %		-30	690 499 988	-5.4	-0.000 001	-0.008
100 %		-20	690 499 989	-5.0	-0.000 001	-0.007
100 %		-10	690 499 990	-3.9	-0.000 001	-0.006
100 %		0	690 499 990	-3.2	0.000 000	-0.005
100 %		+10	690 499 989	-4.3	-0.000 001	-0.006
100 %		+30	690 499 989	-4.6	-0.000 001	-0.007
100 %		+40	690 499 990	-3.5	-0.000 001	-0.005
100 %		+50	690 499 991	-2.9	0.000 000	-0.004
Batt. Endpoint	3.300	+20	690 499 989	-4.1	-0.000 001	-0.006



▣ MODE: LTE B71

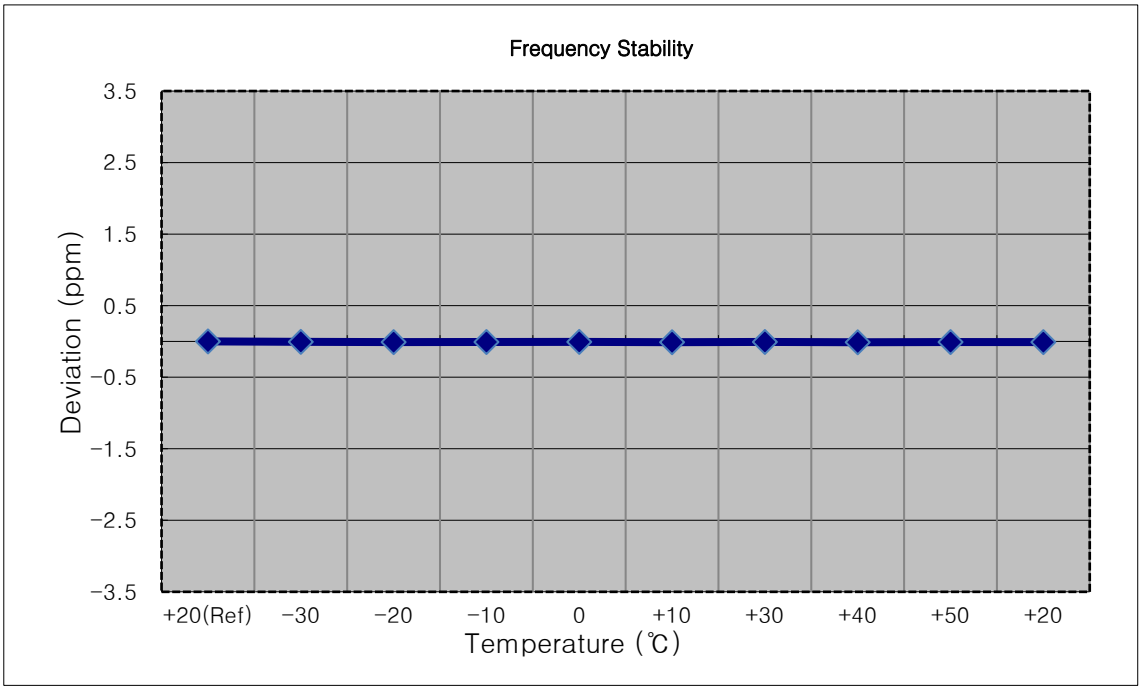
▣ OPERATING FREQUENCY: 688,000,000 Hz

▣ CHANNEL: 133372 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	687 999 995	0.0	0.000 000	0.000
100 %		-30	687 999 990	-4.1	-0.000 001	-0.006
100 %		-20	687 999 988	-6.2	-0.000 001	-0.009
100 %		-10	687 999 989	-5.4	-0.000 001	-0.008
100 %		0	687 999 990	-4.4	-0.000 001	-0.006
100 %		+10	687 999 987	-7.5	-0.000 001	-0.011
100 %		+30	687 999 990	-4.7	-0.000 001	-0.007
100 %		+40	687 999 986	-8.2	-0.000 001	-0.012
100 %		+50	687 999 989	-5.9	-0.000 001	-0.009
Batt. Endpoint	3.300	+20	687 999 988	-6.6	-0.000 001	-0.010



9. TEST DATA(Sub 1 Ant)

9.1 EFFECTIVE RADIATED POWER

Freq (MHz)	Mod (Bandwidth)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
665.5	LTE B71 (5 MHz)	QPSK	-32.41	27.53	-9.76	1.32	V	< 3.00	0.044	16.45
		16-QAM	-33.16	26.78	-9.76	1.32	V		0.037	15.70
		64-QAM	-33.99	25.95	-9.76	1.32	V		0.031	14.87
		256-QAM	-37.04	22.90	-9.76	1.32	V		0.015	11.82
680.5		QPSK	-30.94	28.51	-9.78	1.36	V		0.055	17.37
		16-QAM	-31.72	27.73	-9.78	1.36	V		0.046	16.59
		64-QAM	-32.75	26.70	-9.78	1.36	V		0.036	15.56
		256-QAM	-35.81	23.64	-9.78	1.36	V		0.018	12.50
695.5		QPSK	-30.92	28.42	-9.79	1.38	V		0.053	17.25
		16-QAM	-31.70	27.64	-9.79	1.38	V		0.044	16.47
		64-QAM	-32.74	26.60	-9.79	1.38	V		0.035	15.43
		256-QAM	-35.79	23.55	-9.79	1.38	V		0.017	12.38

Freq (MHz)	Mod (Bandwidth)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
668.0	LTE B71 (10 MHz)	QPSK	-32.61	27.24	-9.76	1.33	V	< 3.00	0.041	16.15
		16-QAM	-33.32	26.53	-9.76	1.33	V		0.035	15.44
		64-QAM	-34.09	25.76	-9.76	1.33	V		0.029	14.67
		256-QAM	-37.11	22.74	-9.76	1.33	V		0.015	11.65
680.5		QPSK	-30.89	28.56	-9.78	1.36	V		0.055	17.42
		16-QAM	-31.76	27.69	-9.78	1.36	V		0.045	16.55
		64-QAM	-32.73	26.72	-9.78	1.36	V		0.036	15.58
		256-QAM	-35.81	23.64	-9.78	1.36	V		0.018	12.50
693.0		QPSK	-31.06	28.32	-9.79	1.37	V		0.052	17.16
		16-QAM	-31.87	27.51	-9.79	1.37	V		0.043	16.35
		64-QAM	-32.99	26.39	-9.79	1.37	V		0.033	15.23
		256-QAM	-36.11	23.27	-9.79	1.37	V		0.016	12.11

Freq (MHz)	Mod (Bandwidth)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
670.5	LTE B71 (15 MHz)	QPSK	-31.37	28.28	-9.77	1.34	V	< 3.00	0.052	17.17
		16-QAM	-32.12	27.53	-9.77	1.34	V		0.044	16.42
		64-QAM	-33.09	26.56	-9.77	1.34	V		0.035	15.45
		256-QAM	-36.14	23.51	-9.77	1.34	V		0.017	12.40
680.5		QPSK	-31.06	28.39	-9.78	1.36	V		0.053	17.25
		16-QAM	-31.82	27.63	-9.78	1.36	V		0.045	16.49
		64-QAM	-32.80	26.65	-9.78	1.36	V		0.036	15.51
		256-QAM	-35.86	23.59	-9.78	1.36	V		0.018	12.45
690.5		QPSK	-30.86	28.47	-9.79	1.37	V		0.054	17.31
		16-QAM	-31.66	27.67	-9.79	1.37	V		0.045	16.51
		64-QAM	-32.71	26.62	-9.79	1.37	V		0.035	15.46
		256-QAM	-35.79	23.54	-9.79	1.37	V		0.017	12.38

Freq (MHz)	Mod (Bandwidth)	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
673.0	LTE B71 (20 MHz)	QPSK	-30.99	28.55	-9.77	1.34	V	< 3.00	0.055	17.44
		16-QAM	-31.72	27.82	-9.77	1.34	V		0.047	16.71
		64-QAM	-32.83	26.71	-9.77	1.34	V		0.036	15.60
		256-QAM	-35.90	23.64	-9.77	1.34	V		0.018	12.53
680.5		QPSK	-30.97	28.48	-9.78	1.36	V		0.054	17.34
		16-QAM	-31.76	27.69	-9.78	1.36	V		0.045	16.55
		64-QAM	-32.82	26.63	-9.78	1.36	V		0.035	15.49
		256-QAM	-36.16	23.29	-9.78	1.36	V		0.016	12.15
688.0		QPSK	-31.09	28.16	-9.78	1.37	V		0.050	17.01
		16-QAM	-31.87	27.38	-9.78	1.37	V		0.042	16.23
		64-QAM	-32.89	26.36	-9.78	1.37	V		0.033	15.21
		256-QAM	-36.09	23.16	-9.78	1.37	V		0.016	12.01

9.2 RADIATED SPURIOUS EMISSIONS

▣ MODE: LTE B71

▣ MODULATION SIGNAL: 20 MHz QPSK

▣ DISTANCE: 3 meters

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit
133222 (673.0)	1 346.00	-52.72	7.29	-61.43	1.89	H	-56.03	-13.00
	2 019.00	-55.95	10.21	-62.48	2.32	H	-54.59	-13.00
	2 692.00	-57.21	10.74	-60.25	2.75	H	-52.26	-13.00
133297 (680.5)	1 361.00	-52.14	7.38	-60.55	1.90	V	-55.07	-13.00
	2 041.50	-55.53	10.02	-61.34	2.34	H	-53.66	-13.00
	2 722.00	-56.72	10.76	-59.52	2.65	V	-51.41	-13.00
133372 (688.0)	1 376.00	-50.96	7.47	-60.12	1.93	H	-54.58	-13.00
	2 064.00	-55.59	9.78	-61.17	2.44	H	-53.84	-13.00
	2 752.00	-56.11	10.79	-58.95	2.79	V	-50.95	-13.00

9.3 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
71	5 MHz	680.5	QPSK	25	0	4.4899
			16-QAM			4.5181
			64-QAM			4.5057
			256-QAM			4.5135
	10 MHz		QPSK	50		8.9935
			16-QAM			9.0162
			64-QAM			8.9993
			256-QAM			9.0044
	15 MHz		QPSK	75		13.516
			16-QAM			13.499
			64-QAM			13.523
			256-QAM			13.491
	20 MHz		QPSK	100		17.944
			16-QAM			17.936
			64-QAM			17.939
			256-QAM			17.930

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 135 ~ 150.

9.4 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
71	5	665.5	3.7015	27.976	-67.274	-39.298	-13.00
		680.5	3.6700	27.976	-67.092	-39.116	
		695.5	3.6955	27.976	-67.426	-39.450	
	10	668.0	3.1651	27.976	-67.356	-39.380	
		680.5	3.7129	27.976	-67.460	-39.484	
		693.0	3.6960	27.976	-67.129	-39.153	
	15	670.5	3.6720	27.976	-67.204	-39.228	
		680.5	3.6880	27.976	-67.642	-39.666	
		690.5	3.7054	27.976	-67.159	-39.183	
	20	673.0	3.6725	27.976	-67.082	-39.106	
		680.5	3.6870	27.976	-67.183	-39.207	
		688.0	3.6830	27.976	-67.127	-39.151	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 151 ~ 162.
2. Conducted Spurious Emissions was tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor(dB) = Cable Loss + Attenuator + Power Splitter

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

9.5 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 111 ~ 134.

9.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ MODE: LTE B71

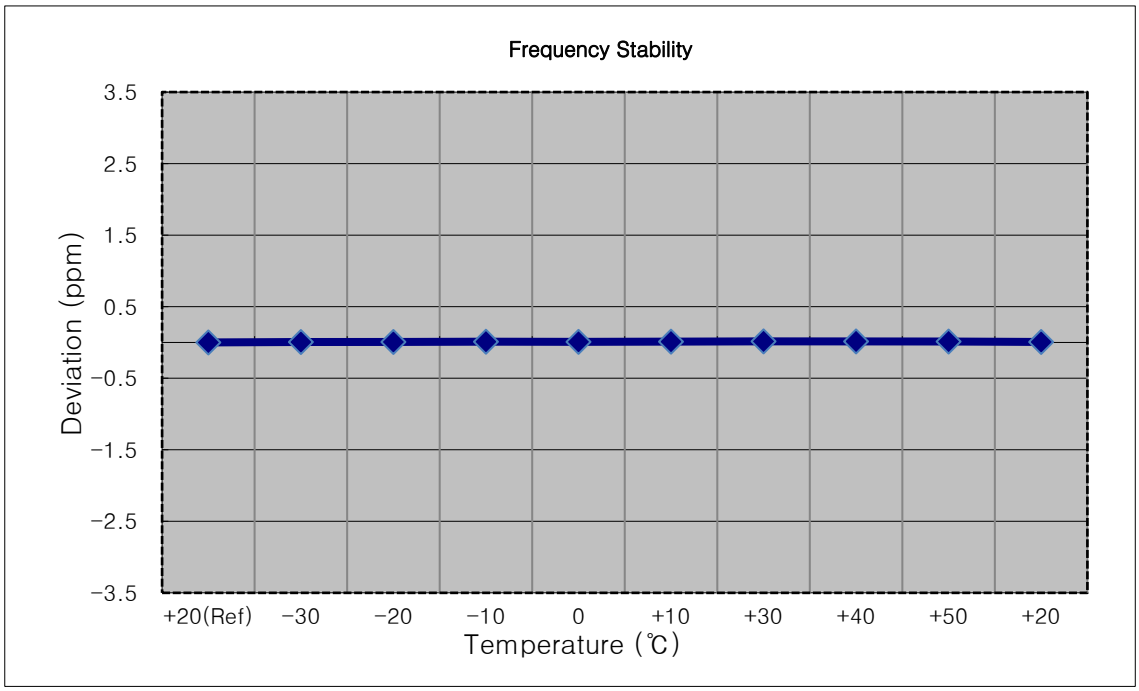
▣ OPERATING FREQUENCY: 665,500,000 Hz

▣ CHANNEL: 133147 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	665 500 004	0.0	0.000 000	0.000
100 %		-30	665 500 009	4.3	0.000 001	0.006
100 %		-20	665 500 009	4.7	0.000 001	0.007
100 %		-10	665 500 011	7.0	0.000 001	0.011
100 %		0	665 500 010	5.6	0.000 001	0.008
100 %		+10	665 500 012	7.7	0.000 001	0.012
100 %		+30	665 500 014	10.1	0.000 002	0.015
100 %		+40	665 500 014	9.7	0.000 001	0.015
100 %		+50	665 500 013	8.5	0.000 001	0.013
Batt. Endpoint	3.300	+20	665 500 009	4.9	0.000 001	0.007



▣ MODE: LTE B71

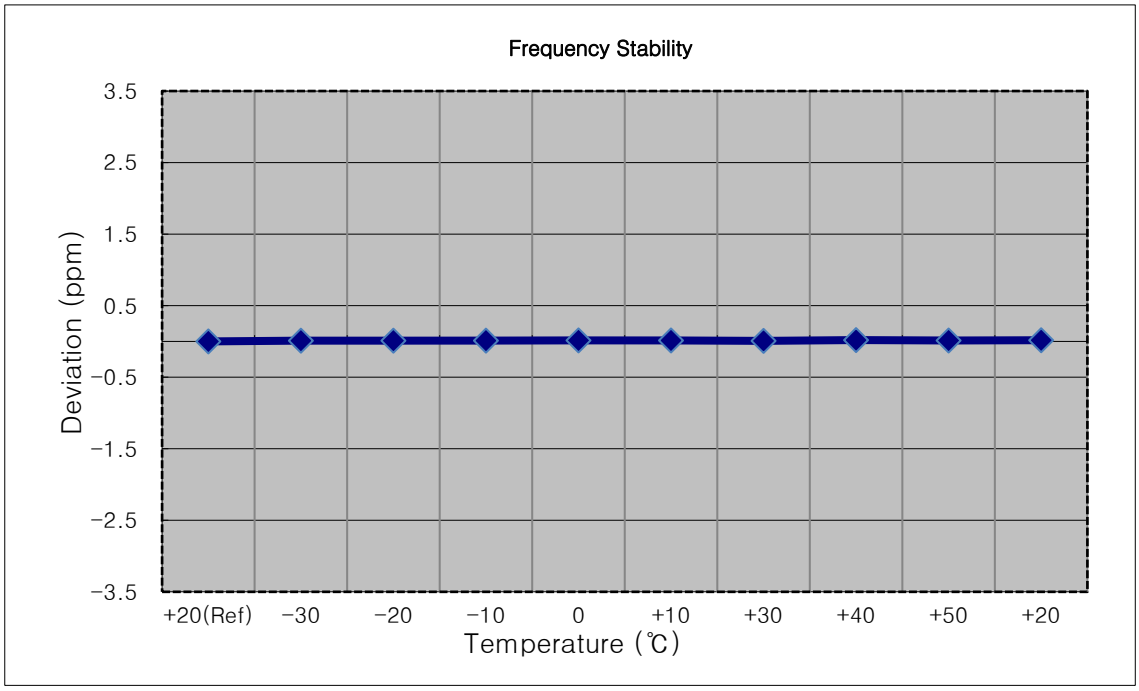
▣ OPERATING FREQUENCY: 668,000,000 Hz

▣ CHANNEL: 133172 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	668 000 006	0.0	0.000 000	0.000
100 %		-30	668 000 014	7.2	0.000 001	0.011
100 %		-20	668 000 014	7.3	0.000 001	0.011
100 %		-10	668 000 014	7.6	0.000 001	0.011
100 %		0	668 000 016	9.9	0.000 001	0.015
100 %		+10	668 000 016	9.3	0.000 001	0.014
100 %		+30	668 000 012	5.4	0.000 001	0.008
100 %		+40	668 000 019	12.9	0.000 002	0.019
100 %		+50	668 000 015	8.9	0.000 001	0.013
Batt. Endpoint	3.300	+20	668 000 017	11.0	0.000 002	0.016



▣ MODE: LTE B71

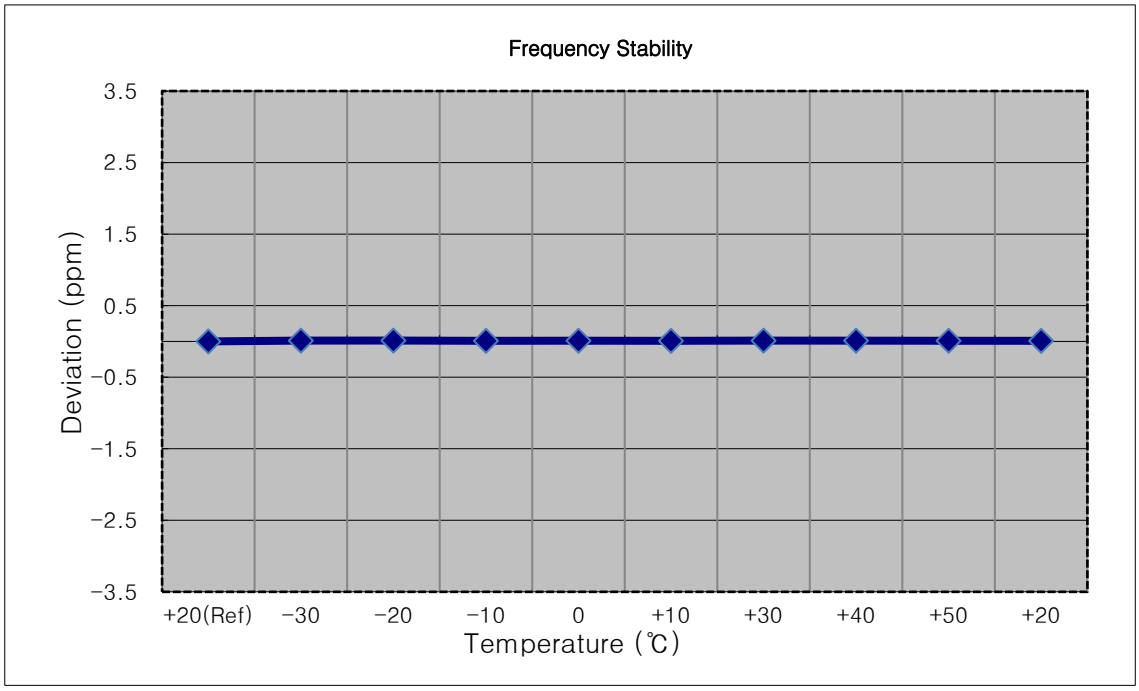
▣ OPERATING FREQUENCY: 670,500,000 Hz

▣ CHANNEL: 133197 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	670 500 007	0.0	0.000 000	0.000
100 %		-30	670 500 015	7.8	0.000 001	0.012
100 %		-20	670 500 015	8.2	0.000 001	0.012
100 %		-10	670 500 013	5.9	0.000 001	0.009
100 %		0	670 500 013	6.5	0.000 001	0.010
100 %		+10	670 500 012	5.7	0.000 001	0.009
100 %		+30	670 500 015	7.9	0.000 001	0.012
100 %		+40	670 500 014	7.3	0.000 001	0.011
100 %		+50	670 500 013	6.1	0.000 001	0.009
Batt. Endpoint	3.300	+20	670 500 013	5.9	0.000 001	0.009



▣ MODE: LTE B71

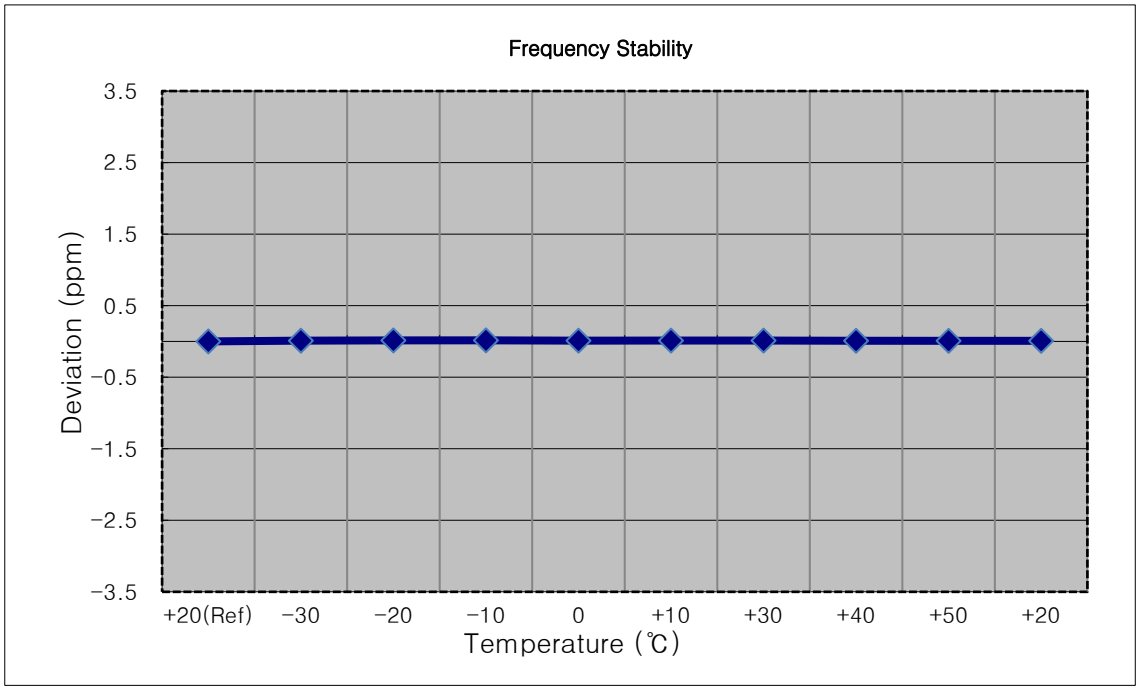
▣ OPERATING FREQUENCY: 673,000,000 Hz

▣ CHANNEL: 133222 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	673 000 010	0.0	0.000 000	0.000
100 %		-30	673 000 018	7.4	0.000 001	0.011
100 %		-20	673 000 020	10.0	0.000 001	0.015
100 %		-10	673 000 021	10.4	0.000 002	0.015
100 %		0	673 000 018	7.5	0.000 001	0.011
100 %		+10	673 000 018	8.1	0.000 001	0.012
100 %		+30	673 000 019	8.4	0.000 001	0.012
100 %		+40	673 000 017	6.5	0.000 001	0.010
100 %		+50	673 000 016	5.9	0.000 001	0.009
Batt. Endpoint	3.300	+20	673 000 016	5.9	0.000 001	0.009



▣ MODE: LTE B71

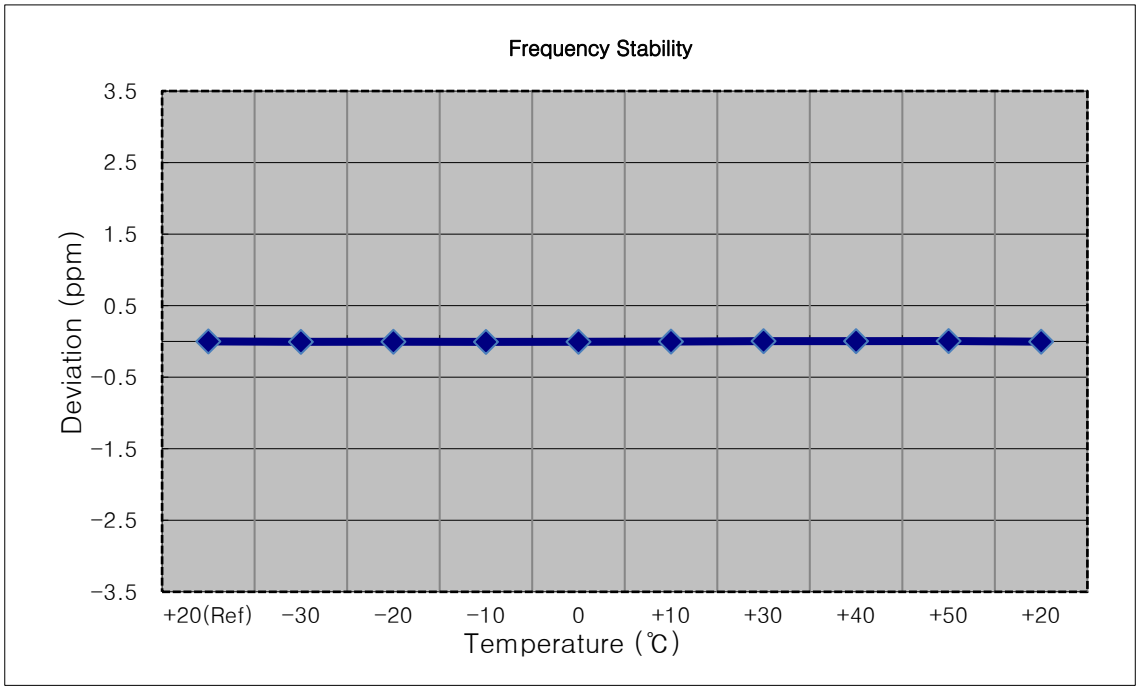
▣ OPERATING FREQUENCY: 680,500,000 Hz

▣ CHANNEL: 133297 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	680 499 997	0.0	0.000 000	0.000
100 %		-30	680 499 994	-3.6	-0.000 001	-0.005
100 %		-20	680 499 995	-2.6	0.000 000	-0.004
100 %		-10	680 499 993	-4.1	-0.000 001	-0.006
100 %		0	680 499 994	-3.2	0.000 000	-0.005
100 %		+10	680 499 996	-1.3	0.000 000	-0.002
100 %		+30	680 500 000	2.8	0.000 000	0.004
100 %		+40	680 500 000	2.6	0.000 000	0.004
100 %		+50	680 500 001	3.7	0.000 001	0.005
Batt. Endpoint	3.300	+20	680 499 995	-2.3	0.000 000	-0.003



▣ MODE: LTE B71

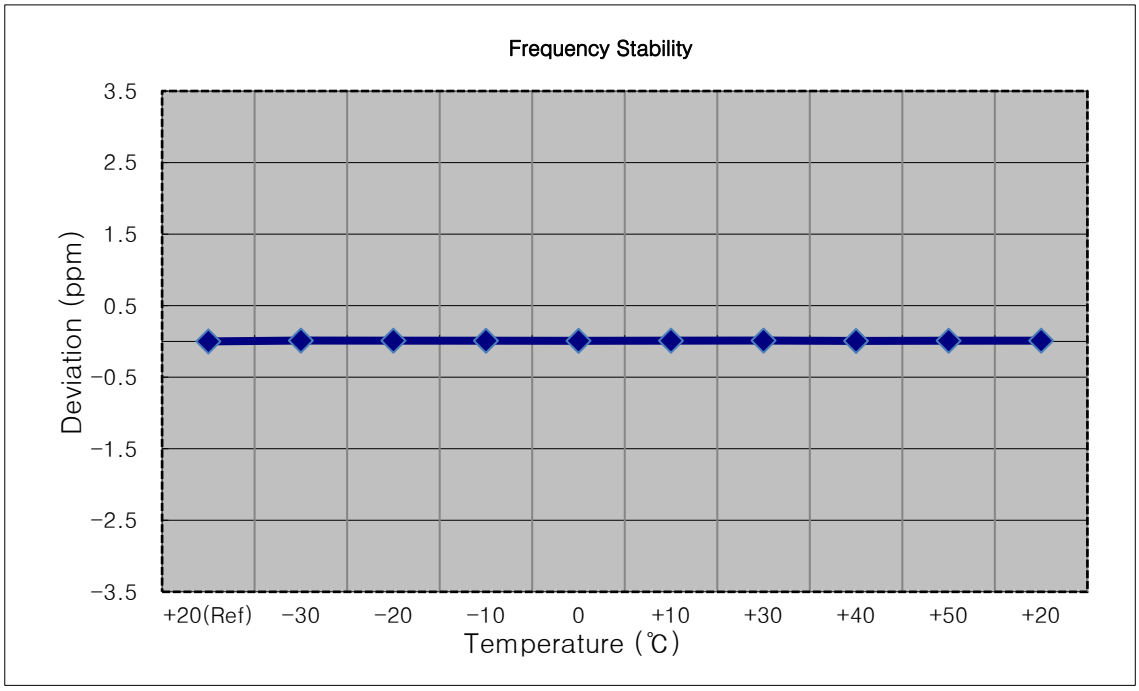
▣ OPERATING FREQUENCY: 680,500,000 Hz

▣ CHANNEL: 133297 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	680 500 004	0.0	0.000 000	0.000
100 %		-30	680 500 013	8.6	0.000 001	0.013
100 %		-20	680 500 011	7.3	0.000 001	0.011
100 %		-10	680 500 011	6.8	0.000 001	0.010
100 %		0	680 500 010	5.9	0.000 001	0.009
100 %		+10	680 500 011	7.2	0.000 001	0.011
100 %		+30	680 500 013	8.4	0.000 001	0.012
100 %		+40	680 500 009	4.7	0.000 001	0.007
100 %		+50	680 500 011	6.9	0.000 001	0.010
Batt. Endpoint	3.300	+20	680 500 011	7.1	0.000 001	0.010



▣ MODE: LTE B71

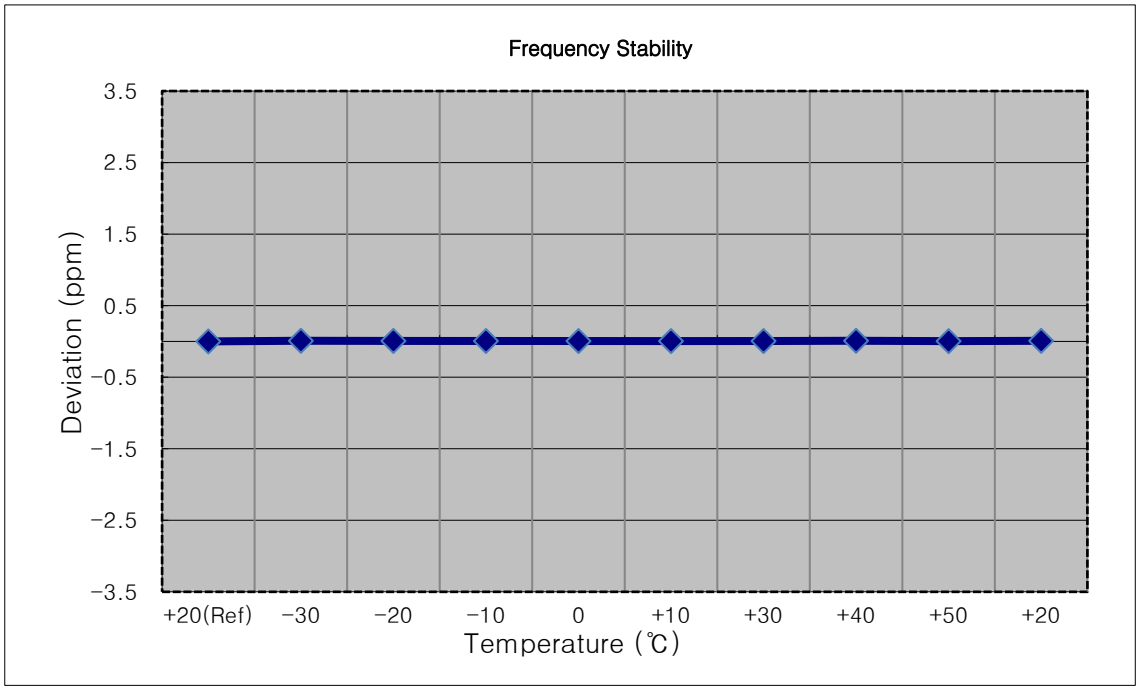
▣ OPERATING FREQUENCY: 680,500,000 Hz

▣ CHANNEL: 133297 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	680 500 005	0.0	0.000 000	0.000
100 %		-30	680 500 011	6.2	0.000 001	0.009
100 %		-20	680 500 010	4.9	0.000 001	0.007
100 %		-10	680 500 009	4.1	0.000 001	0.006
100 %		0	680 500 009	3.7	0.000 001	0.005
100 %		+10	680 500 008	3.1	0.000 000	0.005
100 %		+30	680 500 009	3.7	0.000 001	0.005
100 %		+40	680 500 011	6.5	0.000 001	0.010
100 %		+50	680 500 008	2.9	0.000 000	0.004
Batt. Endpoint	3.300	+20	680 500 011	5.7	0.000 001	0.008



▣ MODE: LTE B71

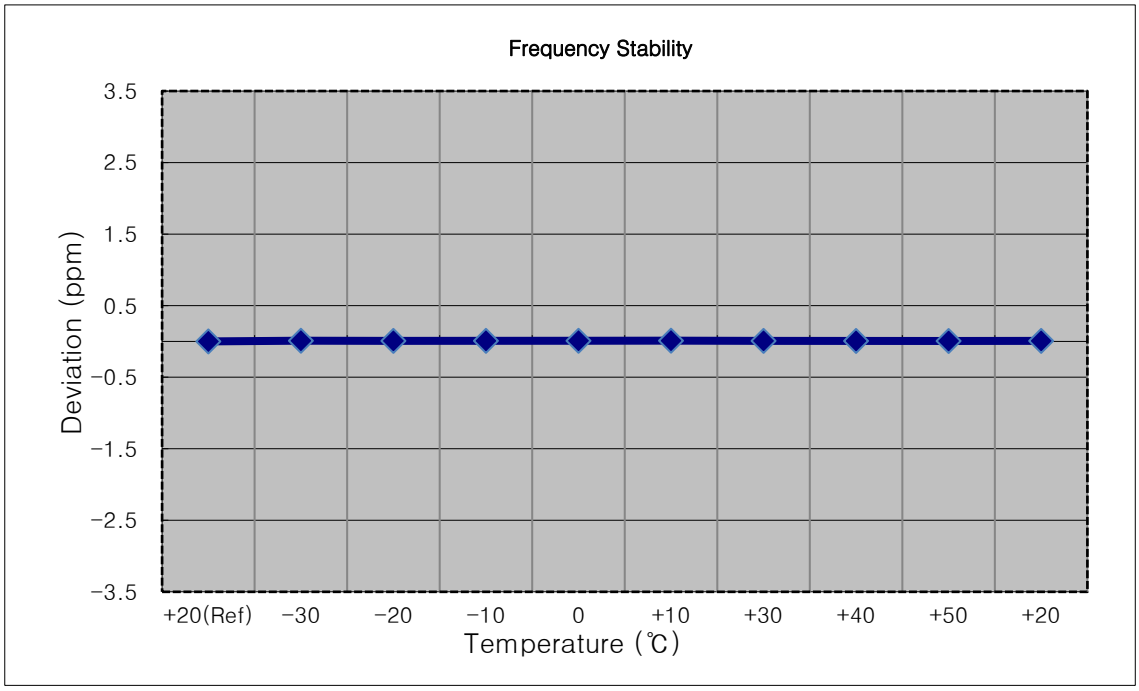
▣ OPERATING FREQUENCY: 680,500,000 Hz

▣ CHANNEL: 133297 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	680 500 006	0.0	0.000 000	0.000
100 %		-30	680 500 012	6.6	0.000 001	0.010
100 %		-20	680 500 011	5.2	0.000 001	0.008
100 %		-10	680 500 011	5.7	0.000 001	0.008
100 %		0	680 500 012	6.3	0.000 001	0.009
100 %		+10	680 500 013	7.2	0.000 001	0.011
100 %		+30	680 500 011	5.3	0.000 001	0.008
100 %		+40	680 500 011	4.9	0.000 001	0.007
100 %		+50	680 500 010	4.1	0.000 001	0.006
Batt. Endpoint	3.300	+20	680 500 011	5.1	0.000 001	0.007



▣ MODE: LTE B71

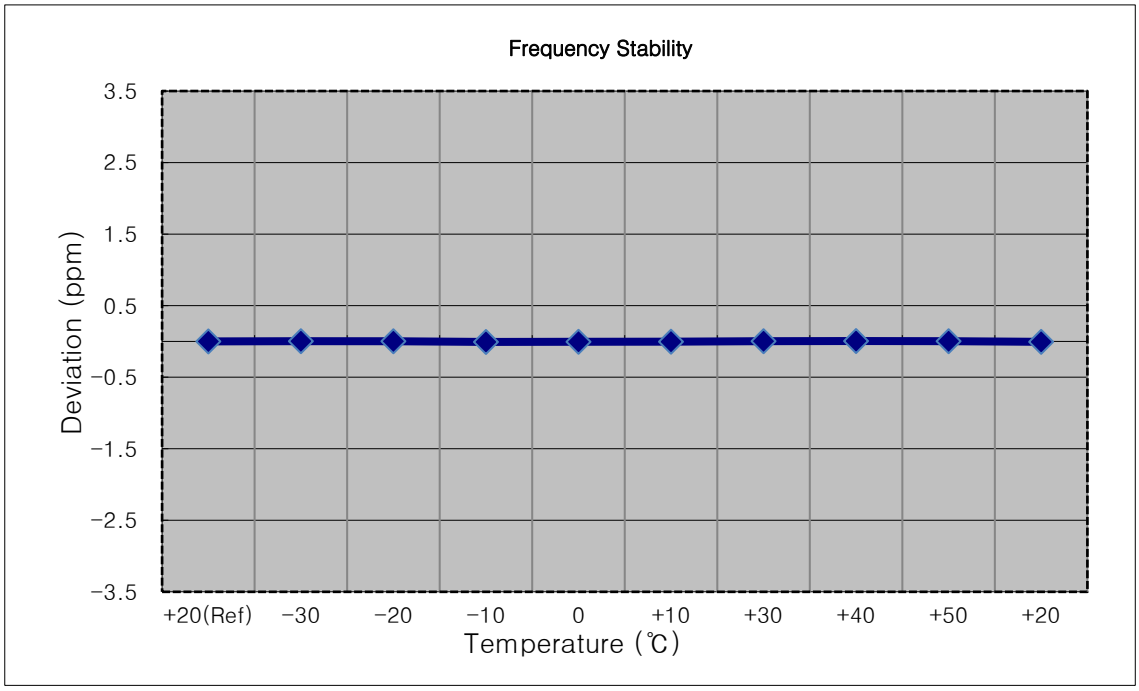
▣ OPERATING FREQUENCY: 695,500,000 Hz

▣ CHANNEL: 133447 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	695 499 996	0.0	0.000 000	0.000
100 %		-30	695 499 998	2.5	0.000 000	0.004
100 %		-20	695 499 998	1.8	0.000 000	0.003
100 %		-10	695 499 991	-5.0	-0.000 001	-0.007
100 %		0	695 499 993	-3.2	0.000 000	-0.005
100 %		+10	695 499 993	-2.4	0.000 000	-0.003
100 %		+30	695 499 998	2.3	0.000 000	0.003
100 %		+40	695 500 000	3.7	0.000 001	0.005
100 %		+50	695 499 998	2.5	0.000 000	0.004
Batt. Endpoint	3.300	+20	695 499 992	-3.9	-0.000 001	-0.006



▣ MODE: LTE B71

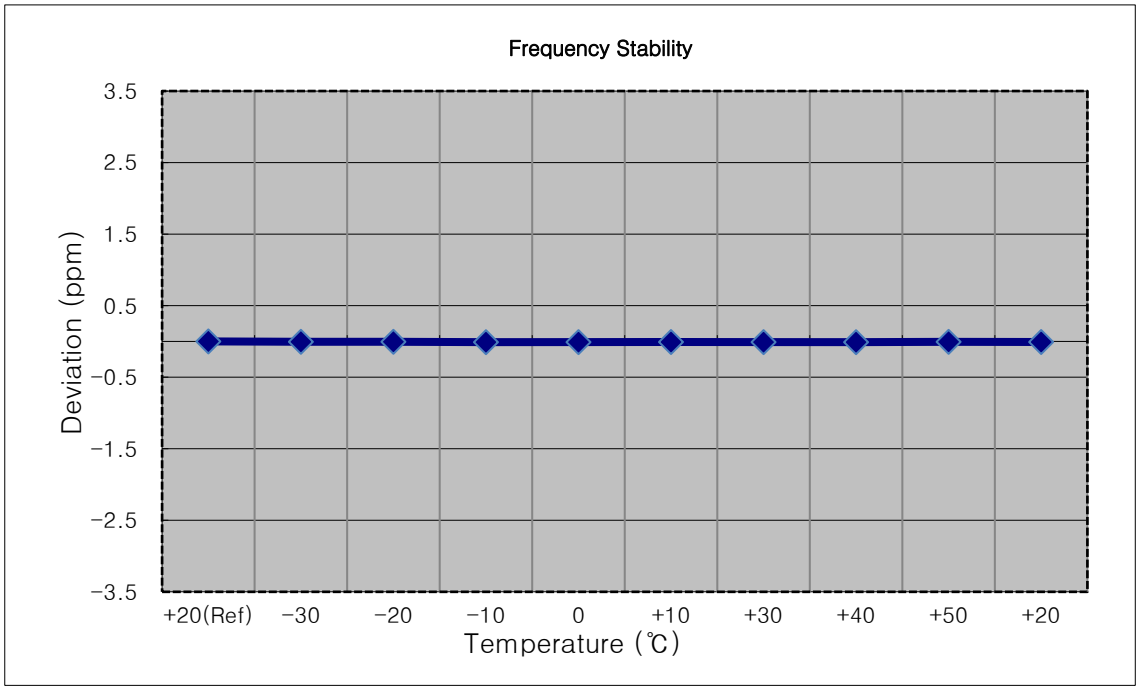
▣ OPERATING FREQUENCY: 693,000,000 Hz

▣ CHANNEL: 133422 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	692 999 993	0.0	0.000 000	0.000
100 %		-30	692 999 990	-3.5	-0.000 001	-0.005
100 %		-20	692 999 990	-3.6	-0.000 001	-0.005
100 %		-10	692 999 986	-6.9	-0.000 001	-0.010
100 %		0	692 999 987	-6.3	-0.000 001	-0.009
100 %		+10	692 999 988	-5.5	-0.000 001	-0.008
100 %		+30	692 999 987	-6.7	-0.000 001	-0.010
100 %		+40	692 999 986	-7.0	-0.000 001	-0.010
100 %		+50	692 999 989	-4.1	-0.000 001	-0.006
Batt. Endpoint	3.300	+20	692 999 988	-5.7	-0.000 001	-0.008



▣ MODE: LTE B71

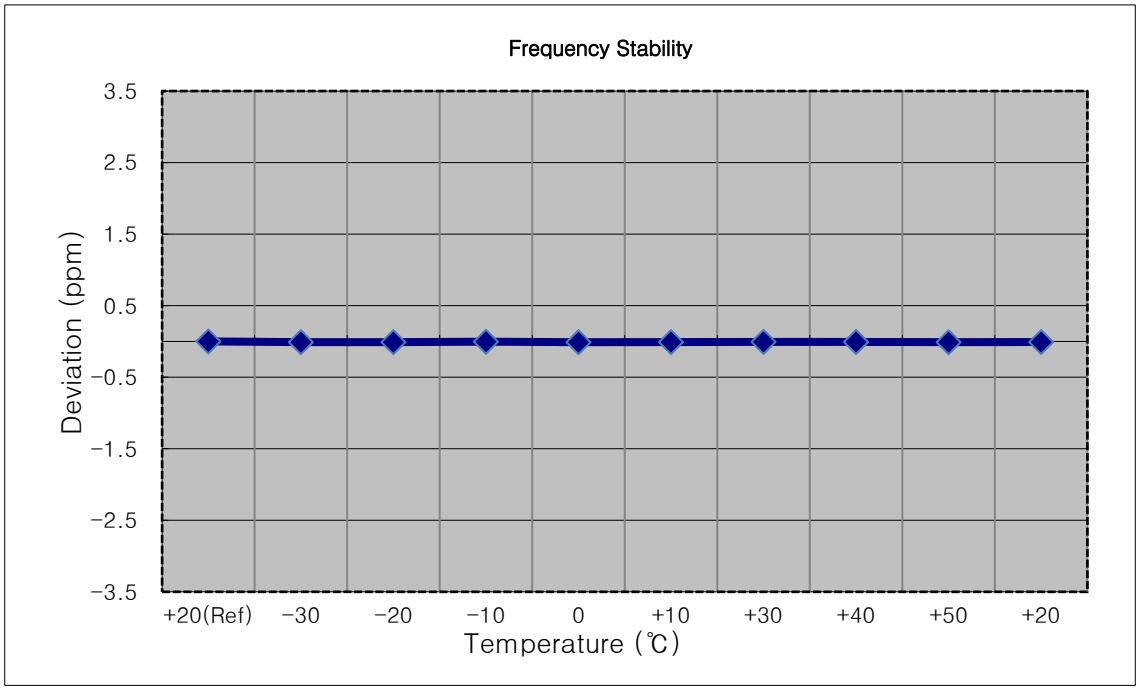
▣ OPERATING FREQUENCY: 690,500,000 Hz

▣ CHANNEL: 133397 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	690 499 996	0.0	0.000 000	0.000
100 %		-30	690 499 989	-7.2	-0.000 001	-0.010
100 %		-20	690 499 989	-6.9	-0.000 001	-0.010
100 %		-10	690 499 993	-2.4	0.000 000	-0.003
100 %		0	690 499 988	-7.5	-0.000 001	-0.011
100 %		+10	690 499 989	-6.7	-0.000 001	-0.010
100 %		+30	690 499 992	-4.2	-0.000 001	-0.006
100 %		+40	690 499 991	-5.0	-0.000 001	-0.007
100 %		+50	690 499 989	-7.0	-0.000 001	-0.010
Batt. Endpoint	3.300	+20	690 499 990	-6.1	-0.000 001	-0.009



▣ MODE: LTE B71

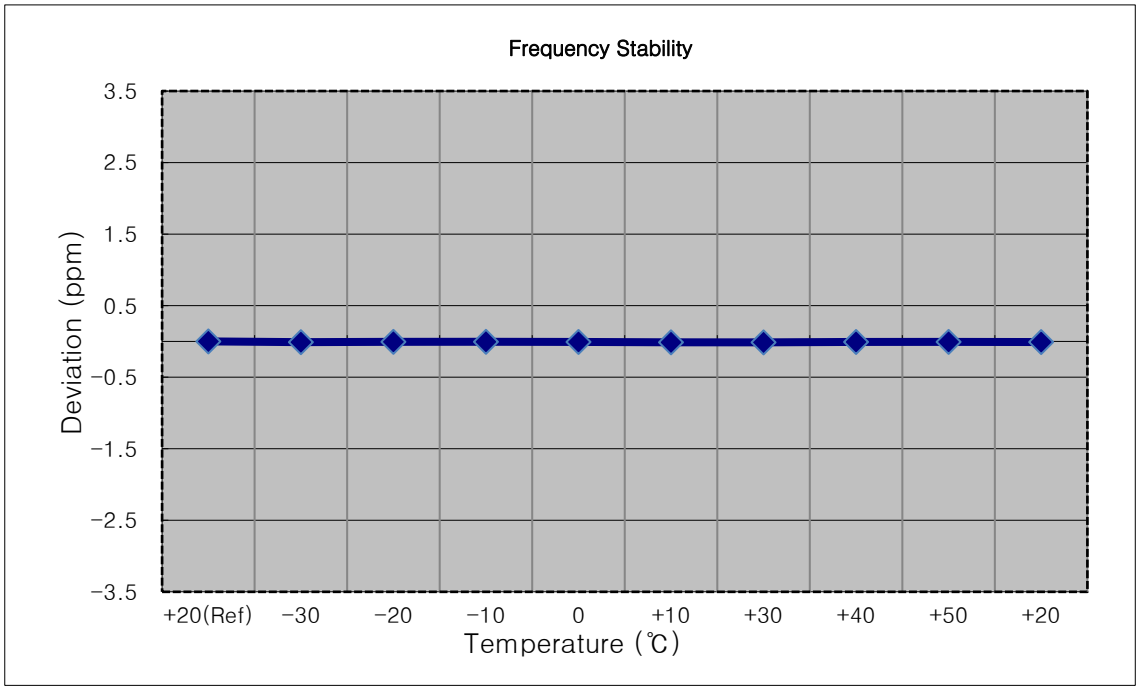
▣ OPERATING FREQUENCY: 688,000,000 Hz

▣ CHANNEL: 133372 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	687 999 994	0.0	0.000 000	0.000
100 %		-30	687 999 987	-6.9	-0.000 001	-0.010
100 %		-20	687 999 990	-3.7	-0.000 001	-0.005
100 %		-10	687 999 991	-3.3	0.000 000	-0.005
100 %		0	687 999 989	-5.1	-0.000 001	-0.007
100 %		+10	687 999 985	-8.7	-0.000 001	-0.013
100 %		+30	687 999 985	-9.2	-0.000 001	-0.013
100 %		+40	687 999 989	-4.9	-0.000 001	-0.007
100 %		+50	687 999 989	-4.6	-0.000 001	-0.007
Batt. Endpoint	3.300	+20	687 999 988	-6.1	-0.000 001	-0.009



10. TEST PLOTS(Main 1 Ant)

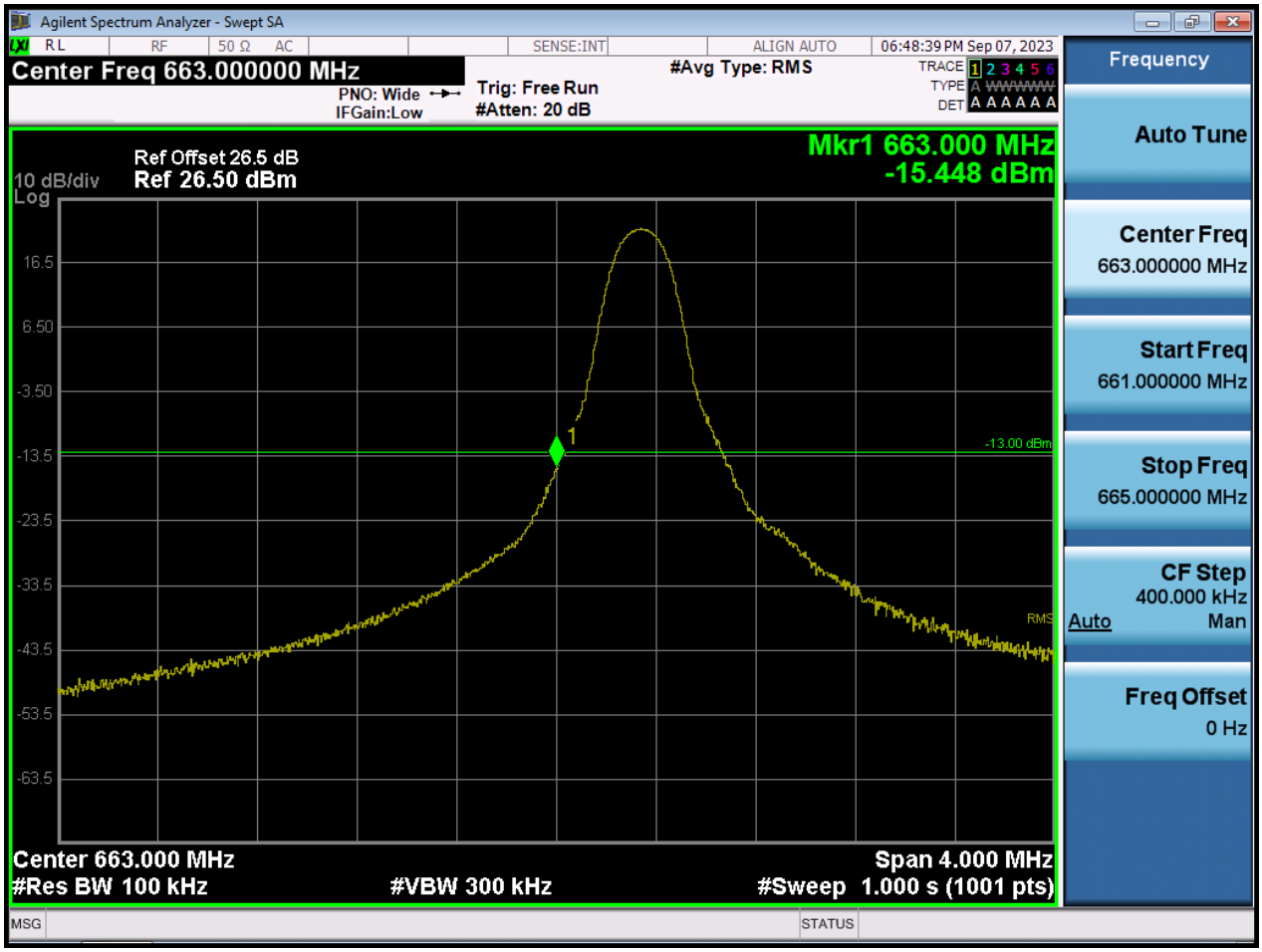
5 M_BandEdge_Lowest Channel_QPSK_Full RB(1)

5 M_BandEdge_Lowest Channel_QPSK_Full RB(2)

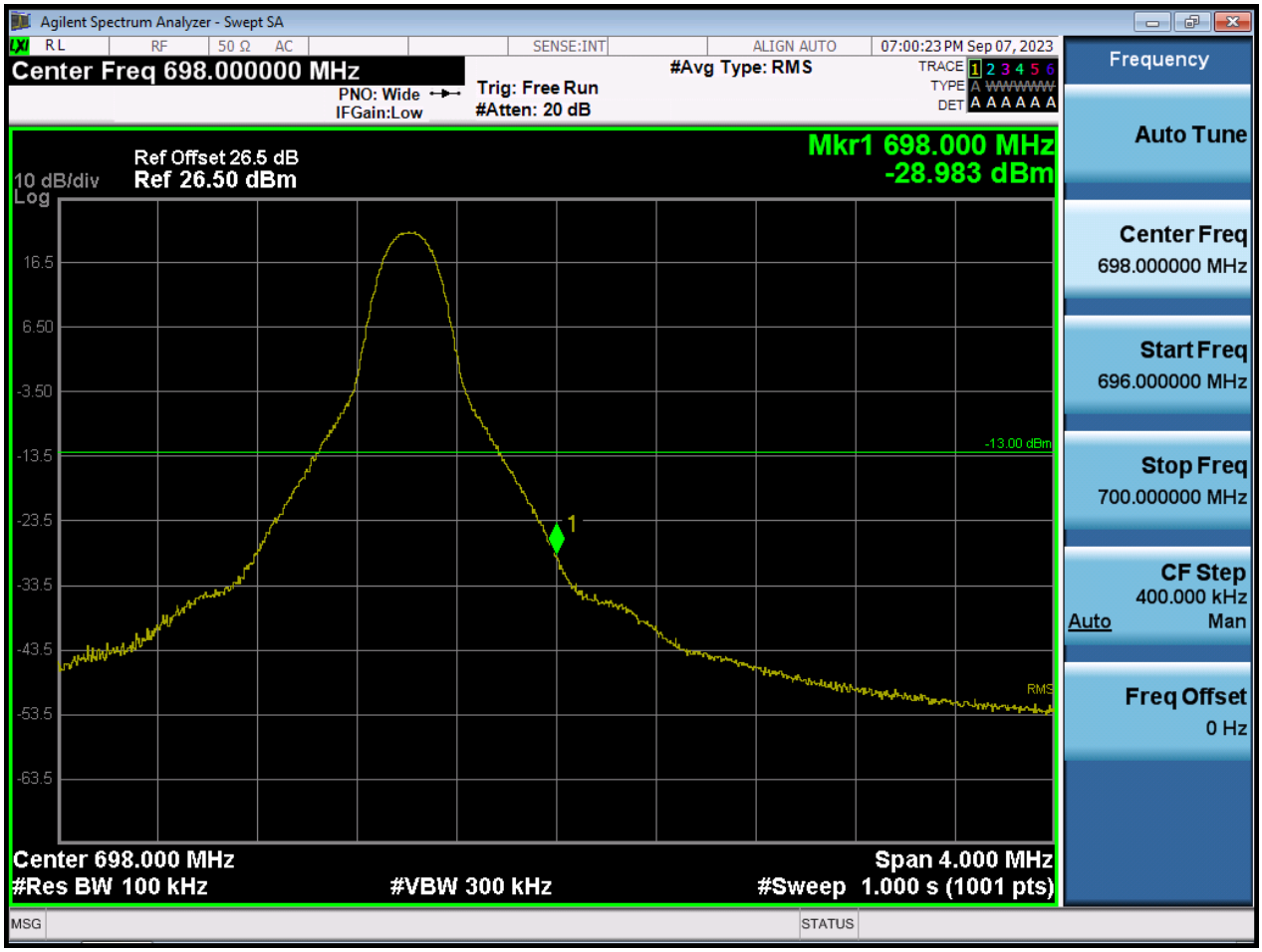
5 M_BandEdge_Highest Channel_QPSK_Full RB(1)

5 M_BandEdge_Highest Channel_QPSK_Full RB(2)

5 M_BandEdge_Lowest Channel_QPSK_1RB



5 M_BandEdge_Highest Channel_QPSK_1RB



10 M_BandEdge_Lowest Channel_QPSK_Full RB(1)

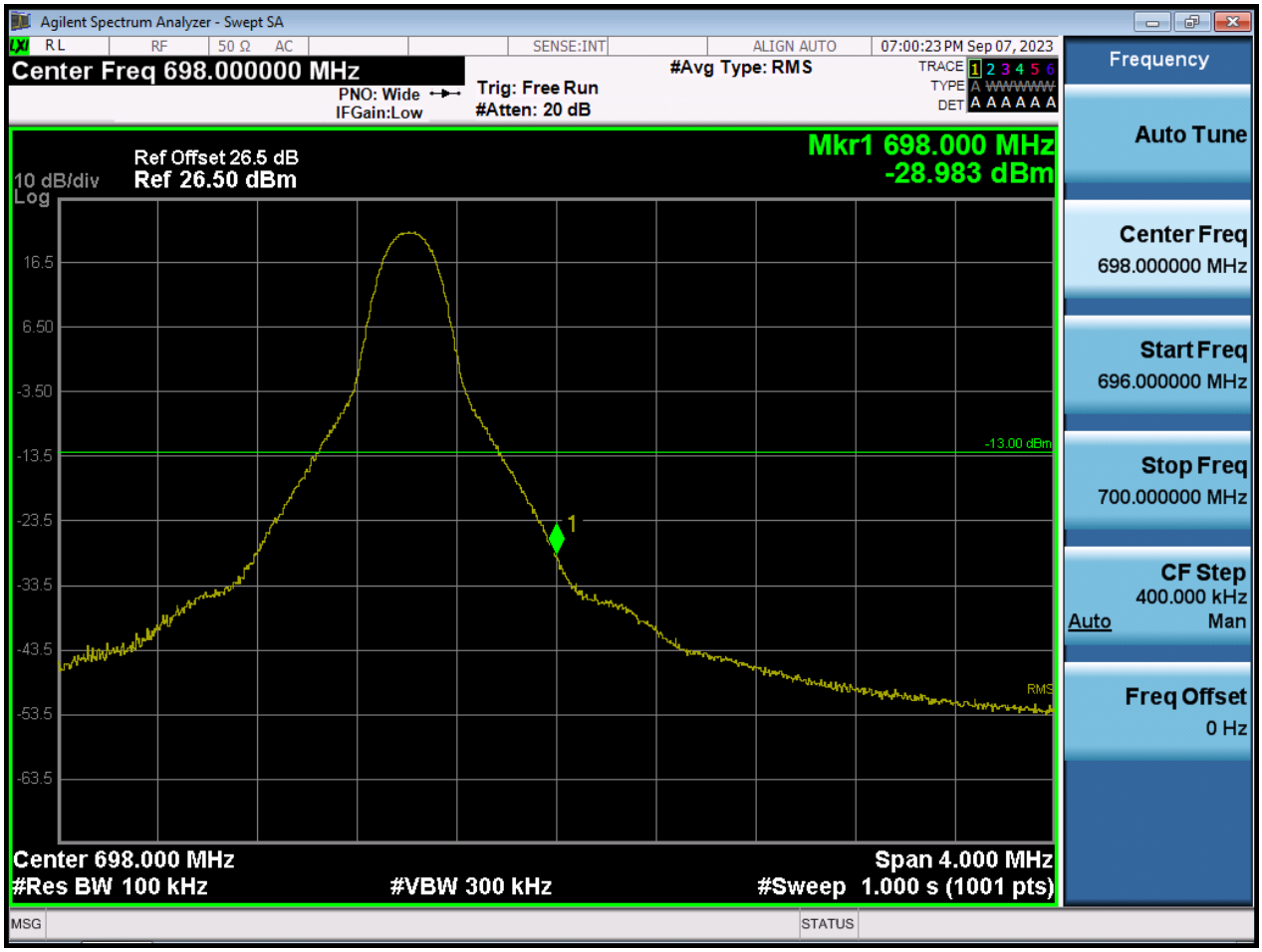
10 M_BandEdge_Lowest Channel_QPSK_Full RB(2)

10 M_BandEdge_Highest Channel_QPSK_Full RB(1)

10 M_BandEdge_Highest Channel_QPSK_Full RB(2)

10 M_BandEdge_Lowest Channel_QPSK_1RB

10 M_BandEdge_Highest Channel_QPSK_1RB



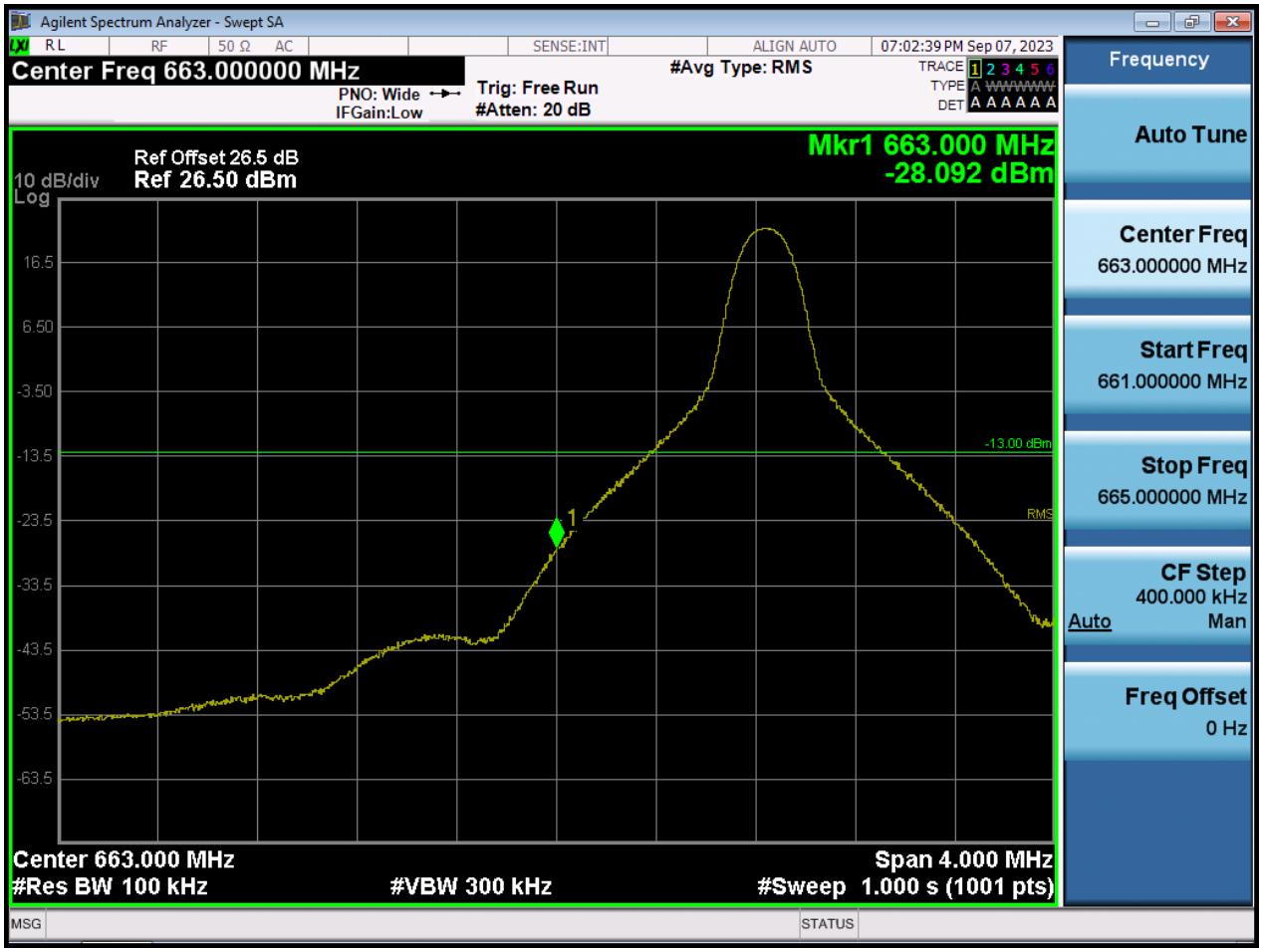
15 M_BandEdge_Lowest Channel_QPSK_Full RB(1)

15 M_BandEdge_Lowest Channel_QPSK_Full RB(2)

15 M_BandEdge_Highest Channel_QPSK_Full RB(1)

15 M_BandEdge_Highest Channel_QPSK_Full RB(2)

15 M_BandEdge_Lowest Channel_QPSK_1RB



15 M_BandEdge_Highest Channel_QPSK_1RB

20 M_BandEdge_Lowest Channel_QPSK_Full RB(1)

20 M_BandEdge_Lowest Channel_QPSK_Full RB(2)

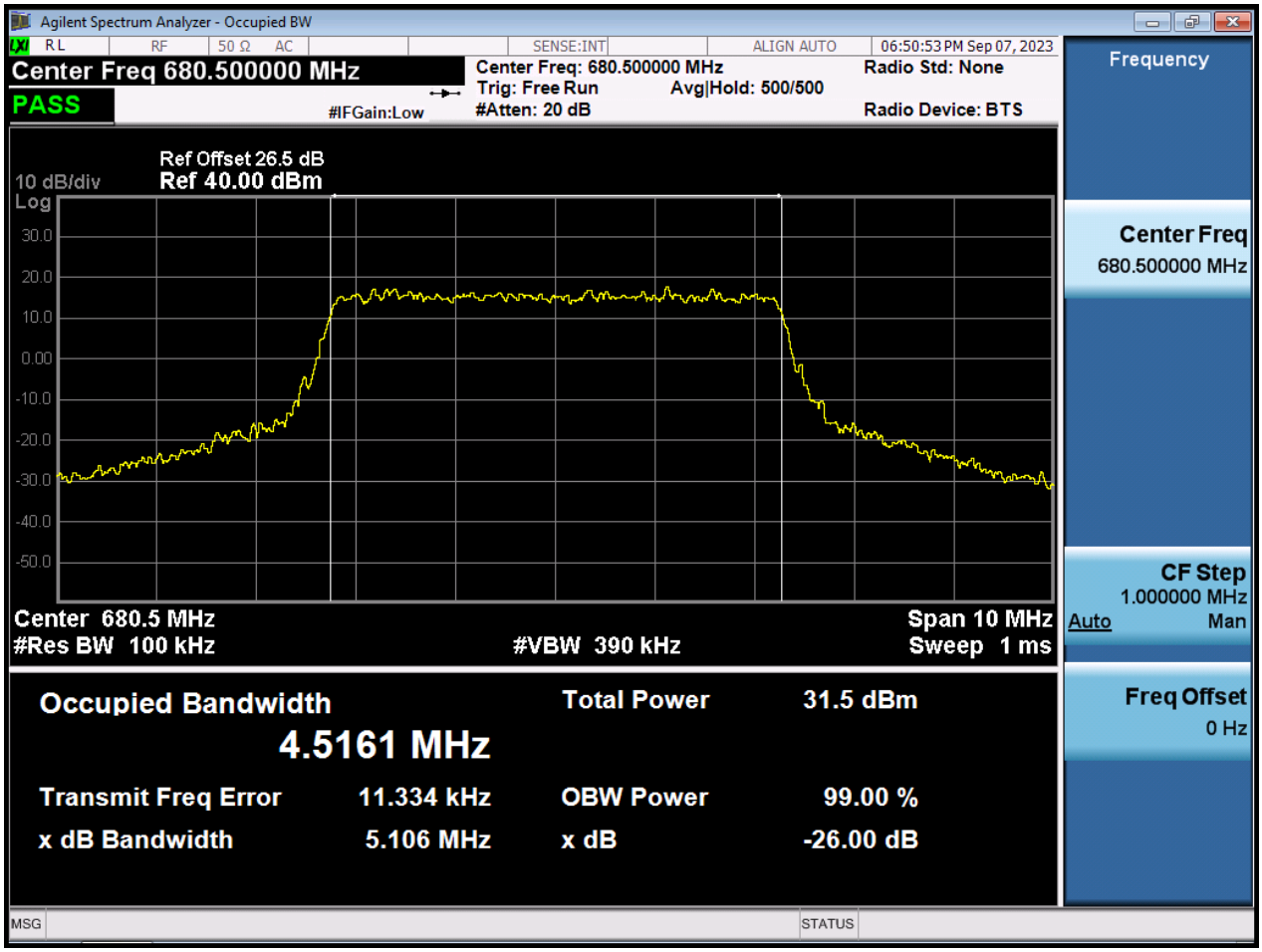
20 M_BandEdge_Highest Channel_QPSK_Full RB(1)

20 M_BandEdge_Highest Channel_QPSK_Full RB(2)

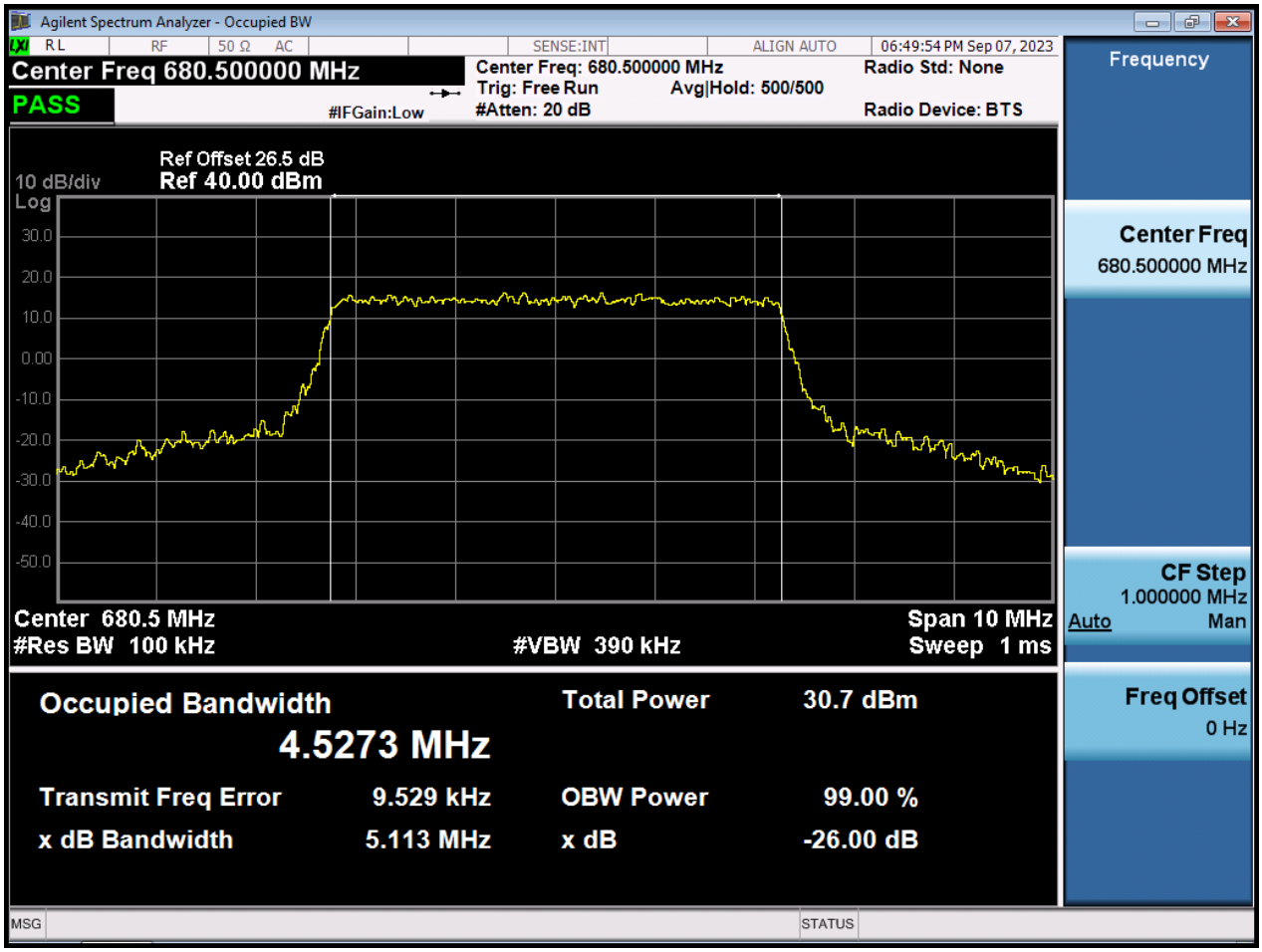
20 M_BandEdge_Lowest Channel_QPSK_1RB

20 M_BandEdge_Highest Channel_QPSK_1RB

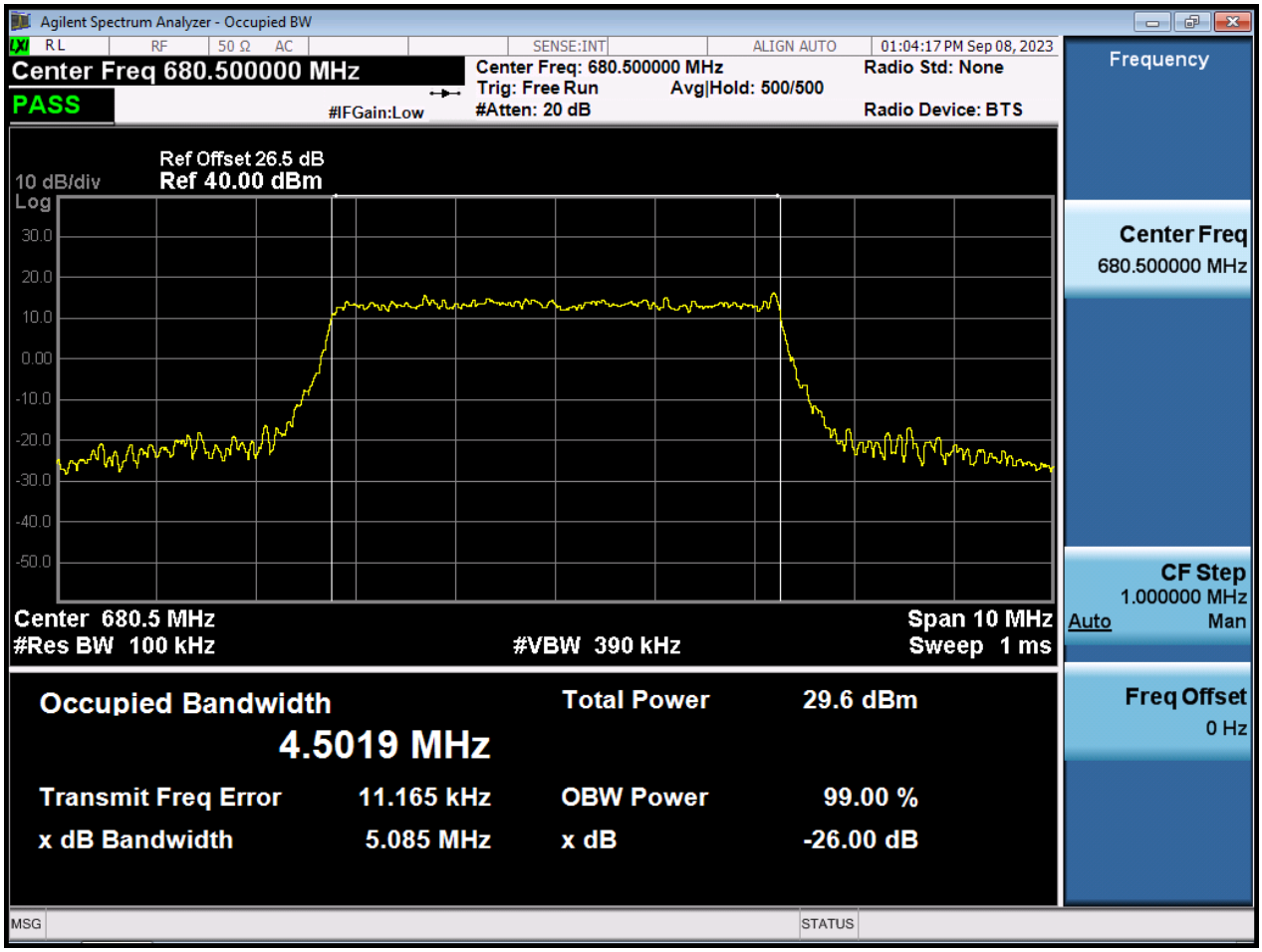
5 M_OBW_Mid Channel_QPSK_Full RB



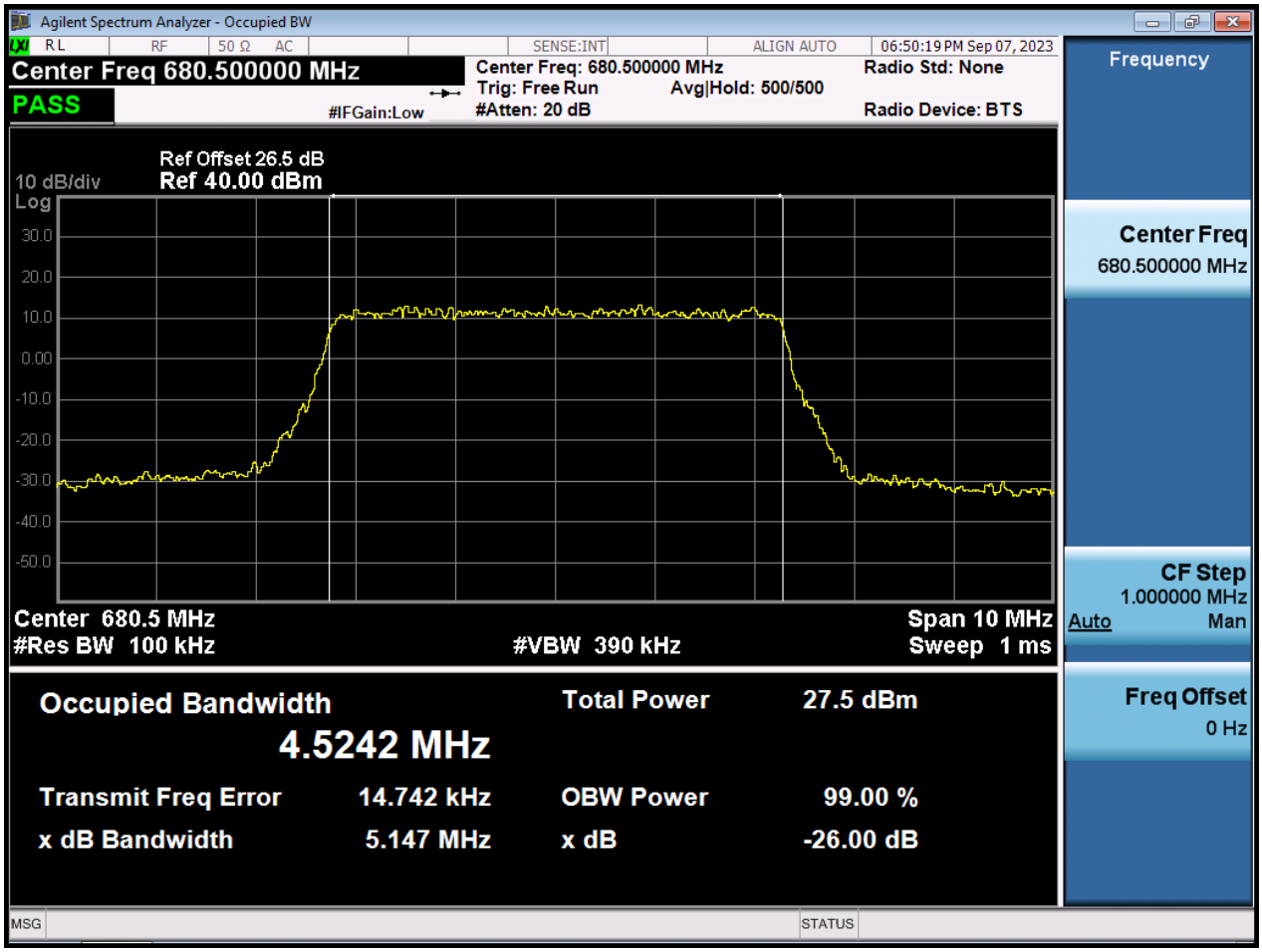
5 M_OBW_Mid Channel_16QAM_Full RB



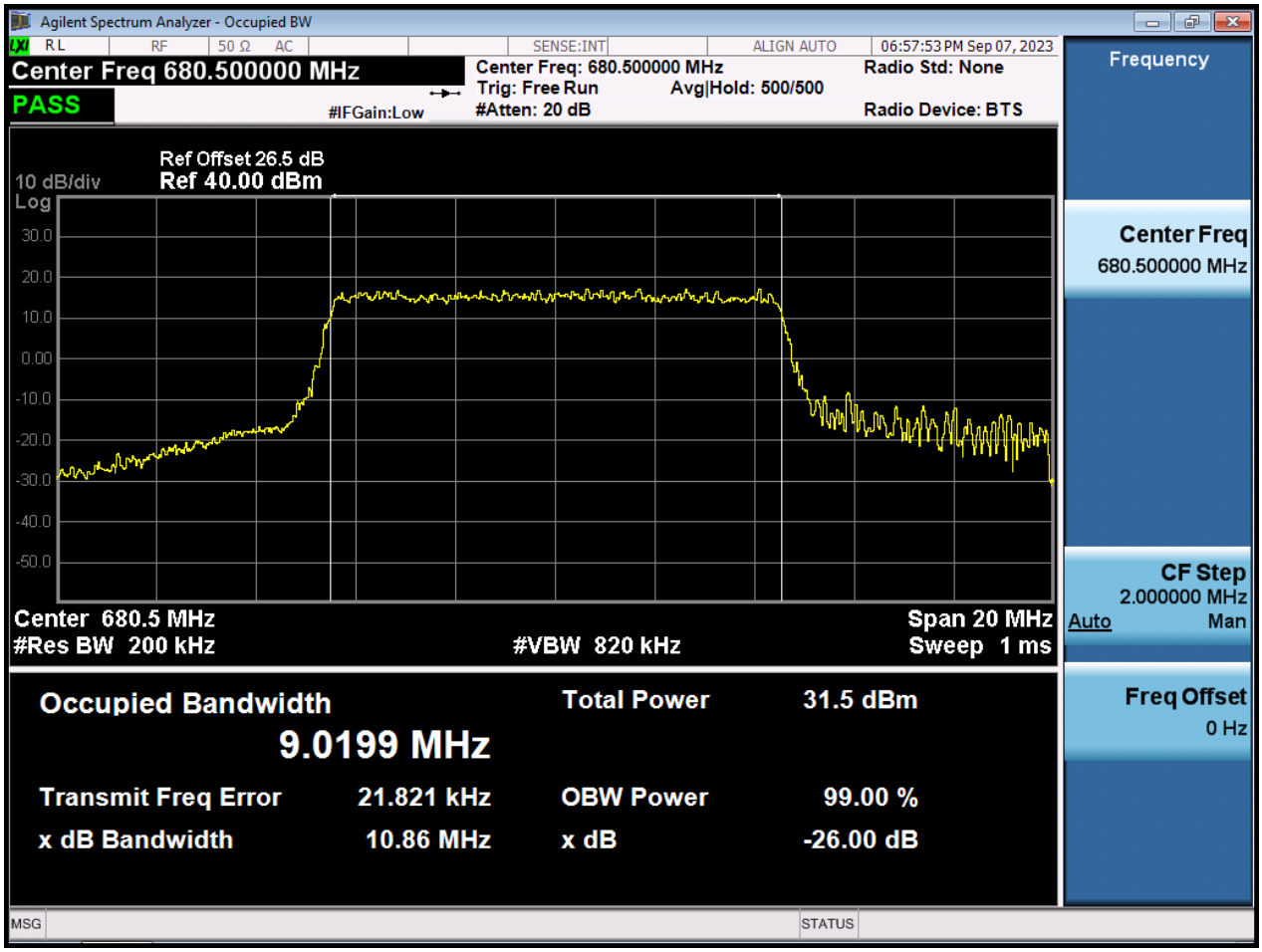
5 M_OBW_Mid Channel_64QAM_Full RB



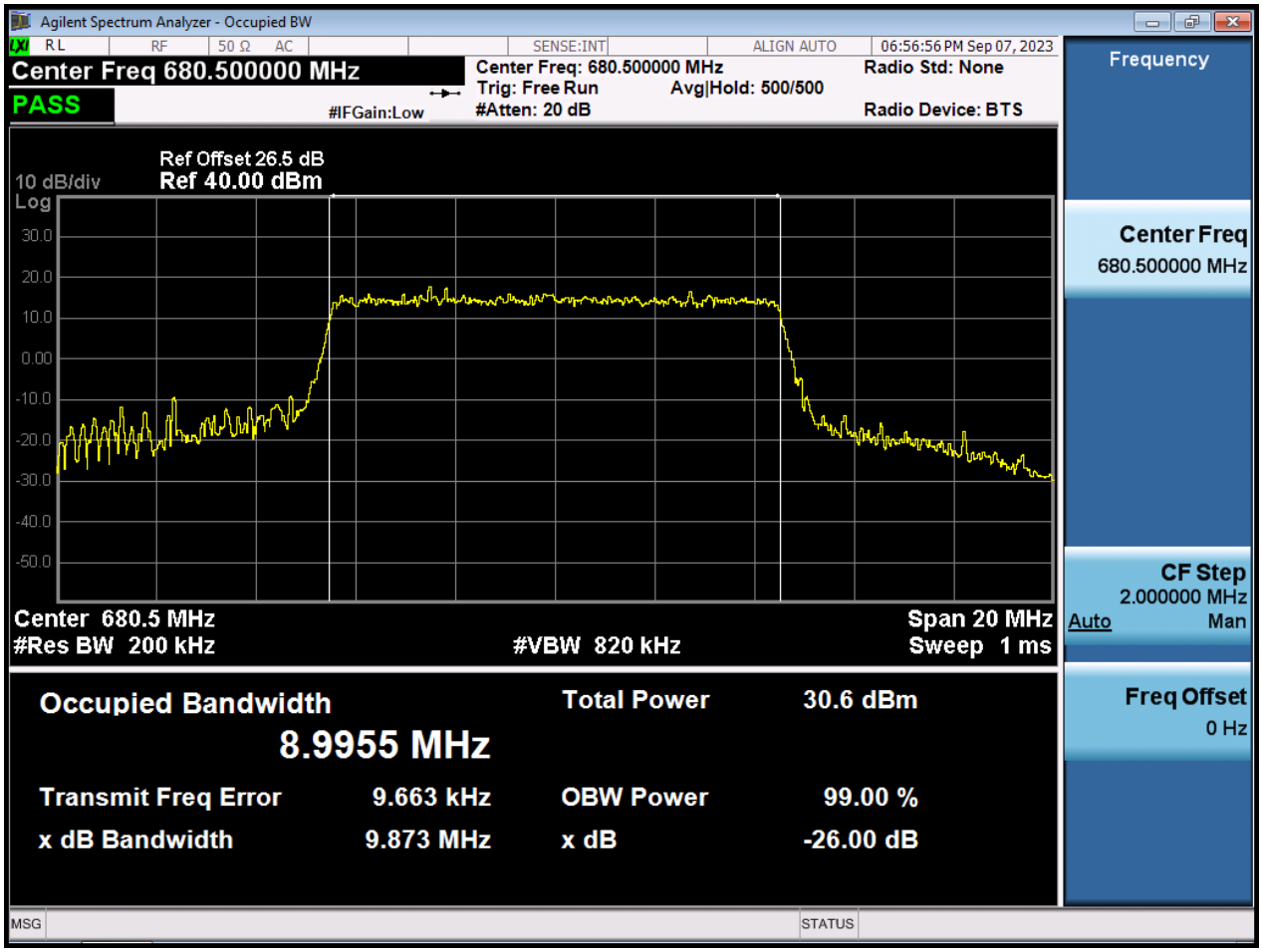
5 M_OBW_Mid Channel_256QAM_Full RB



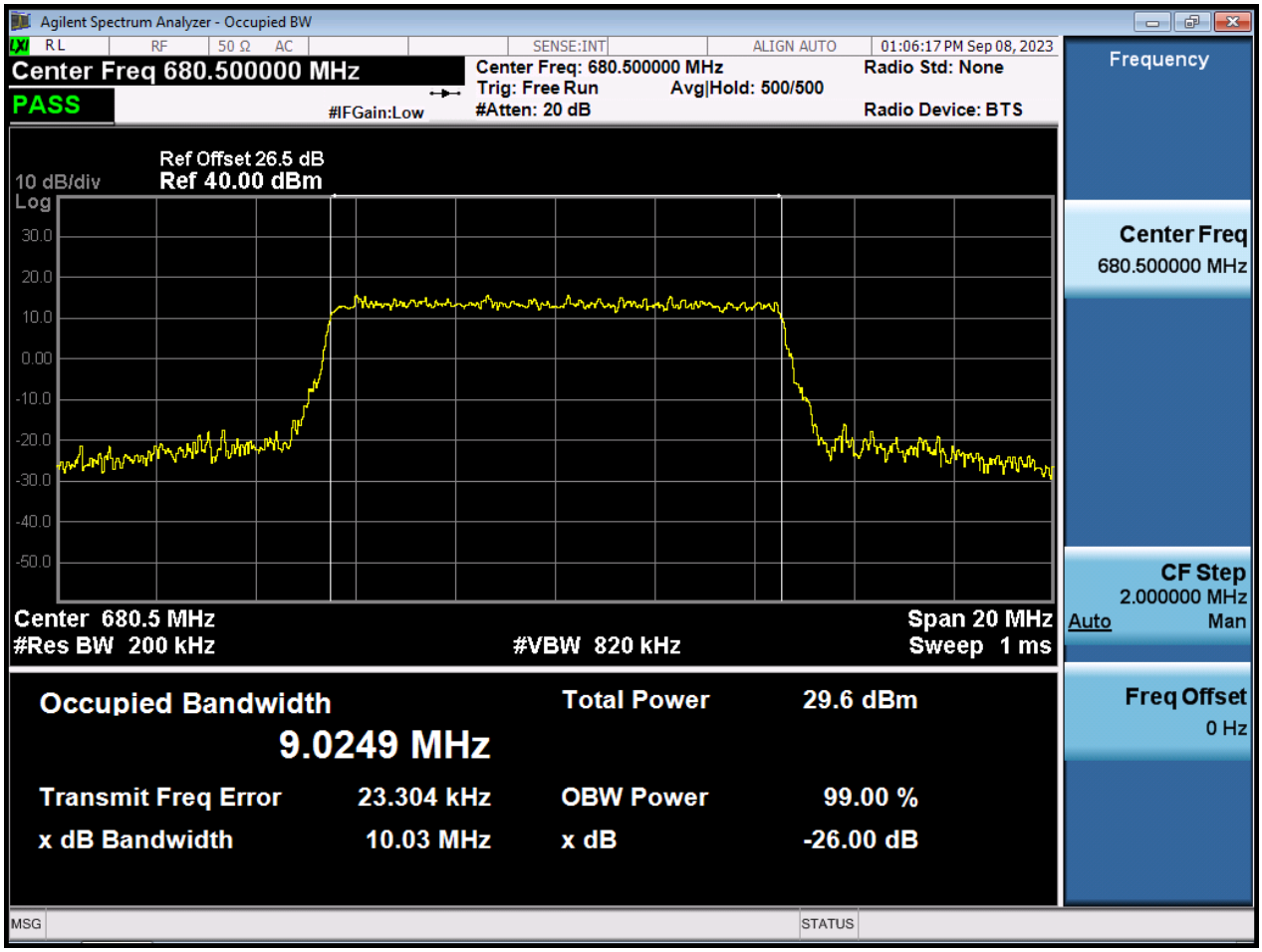
10 M_OBW_Mid Channel_QPSK_Full RB



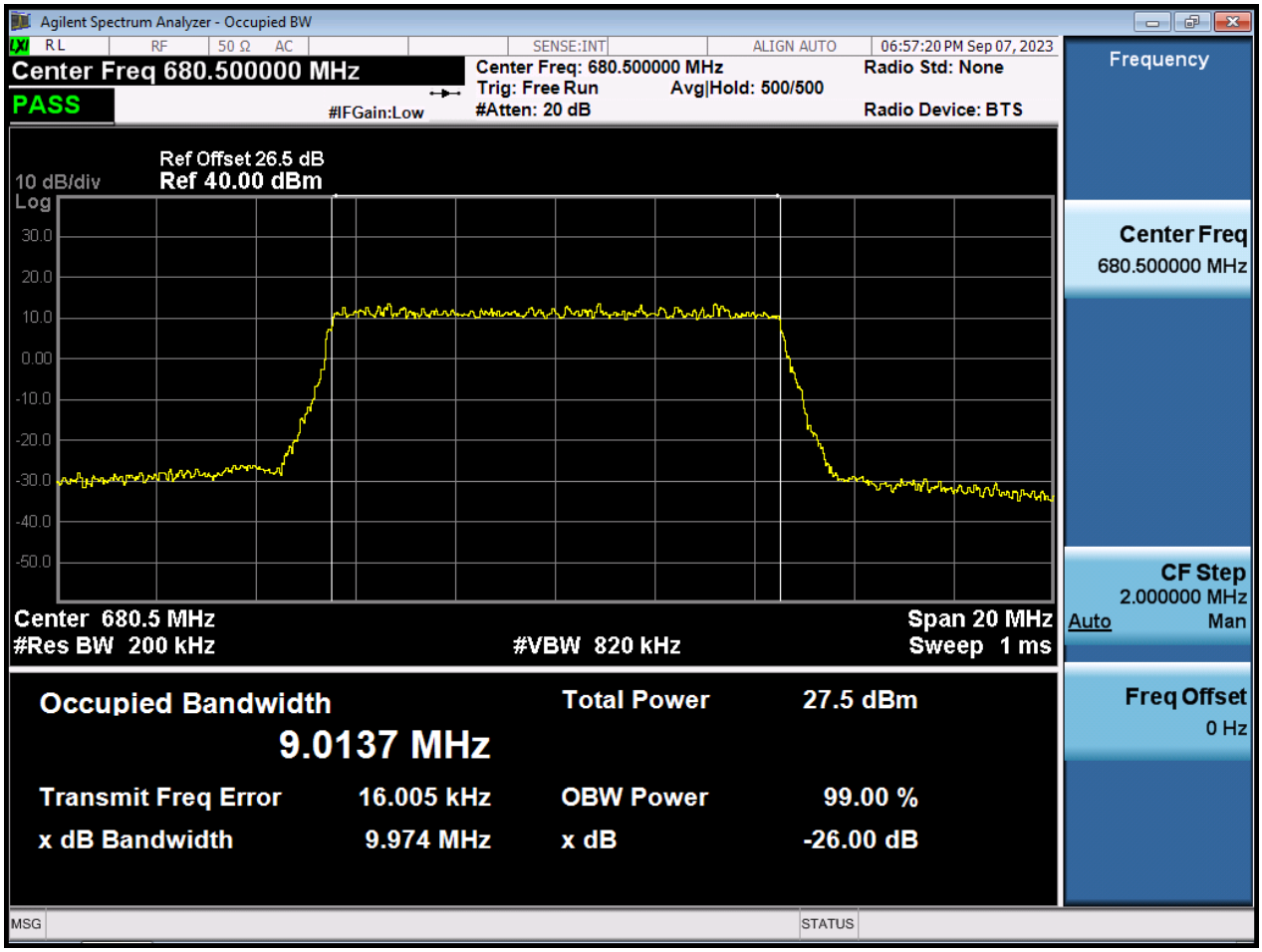
10 M_OBW_Mid Channel_16QAM_Full RB



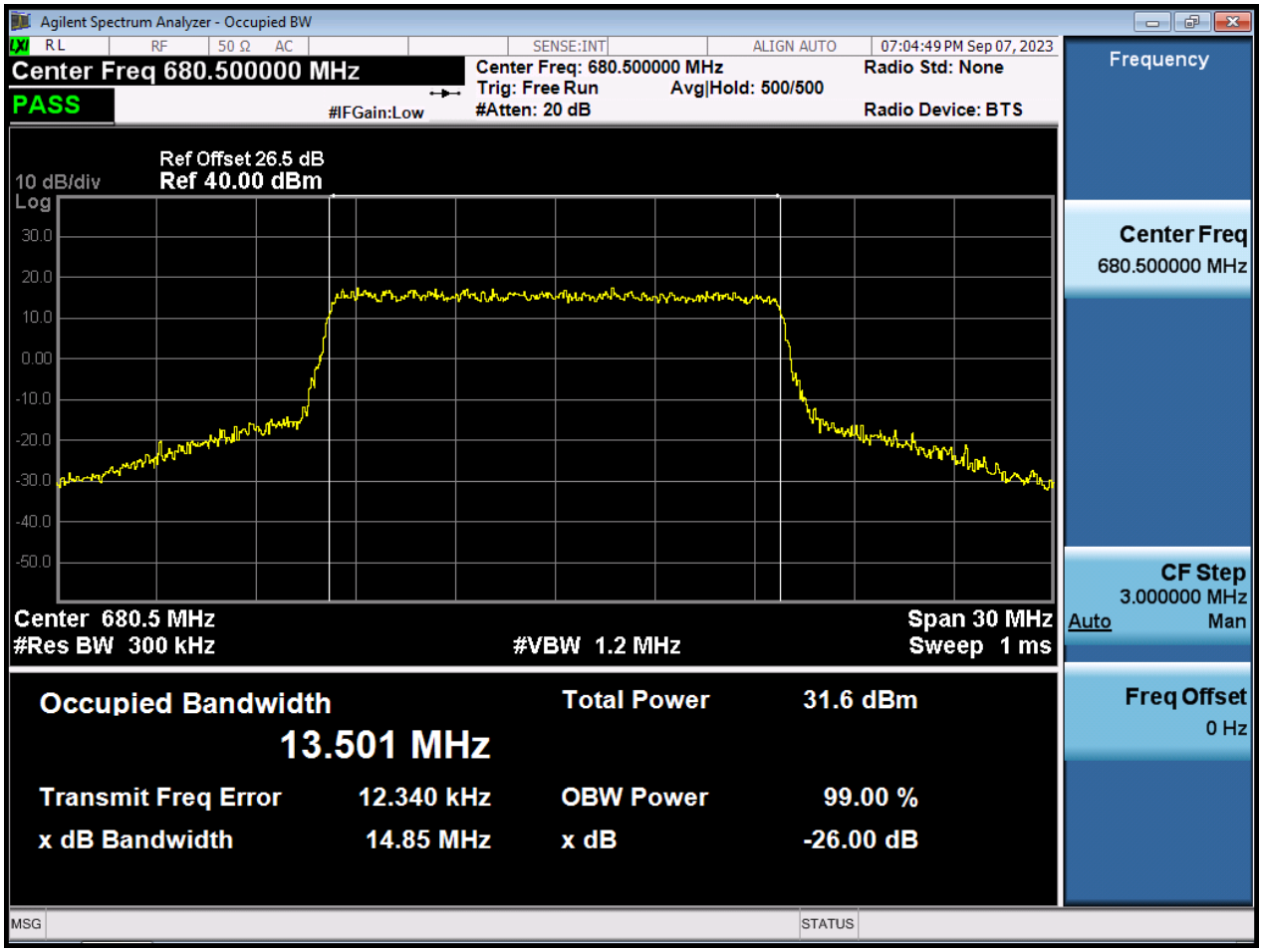
10 M_OBW_Mid Channel_64QAM_Full RB



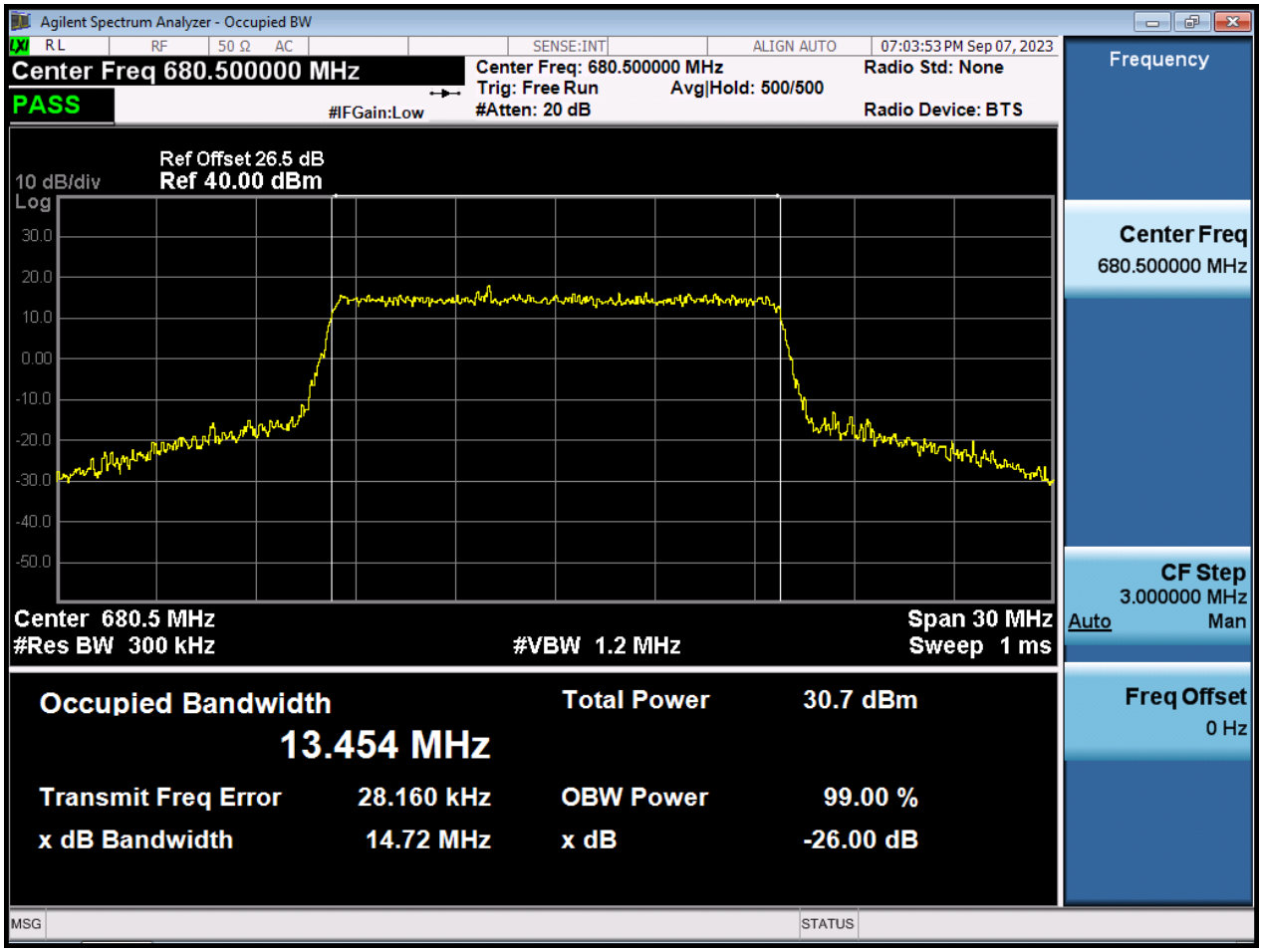
10 M_OBW_Mid Channel_256QAM_Full RB



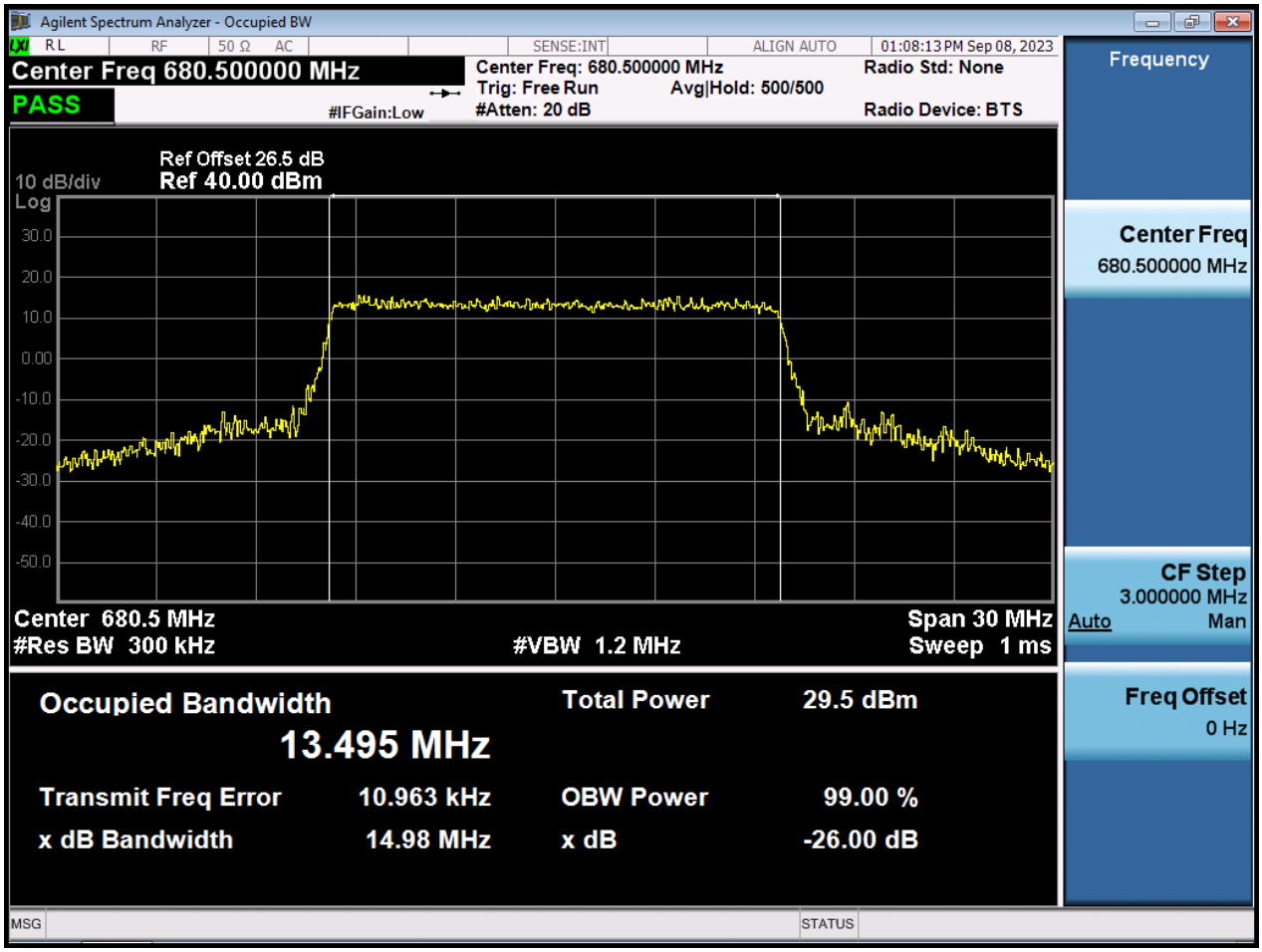
15 M_OBW_Mid Channel_QPSK_Full RB



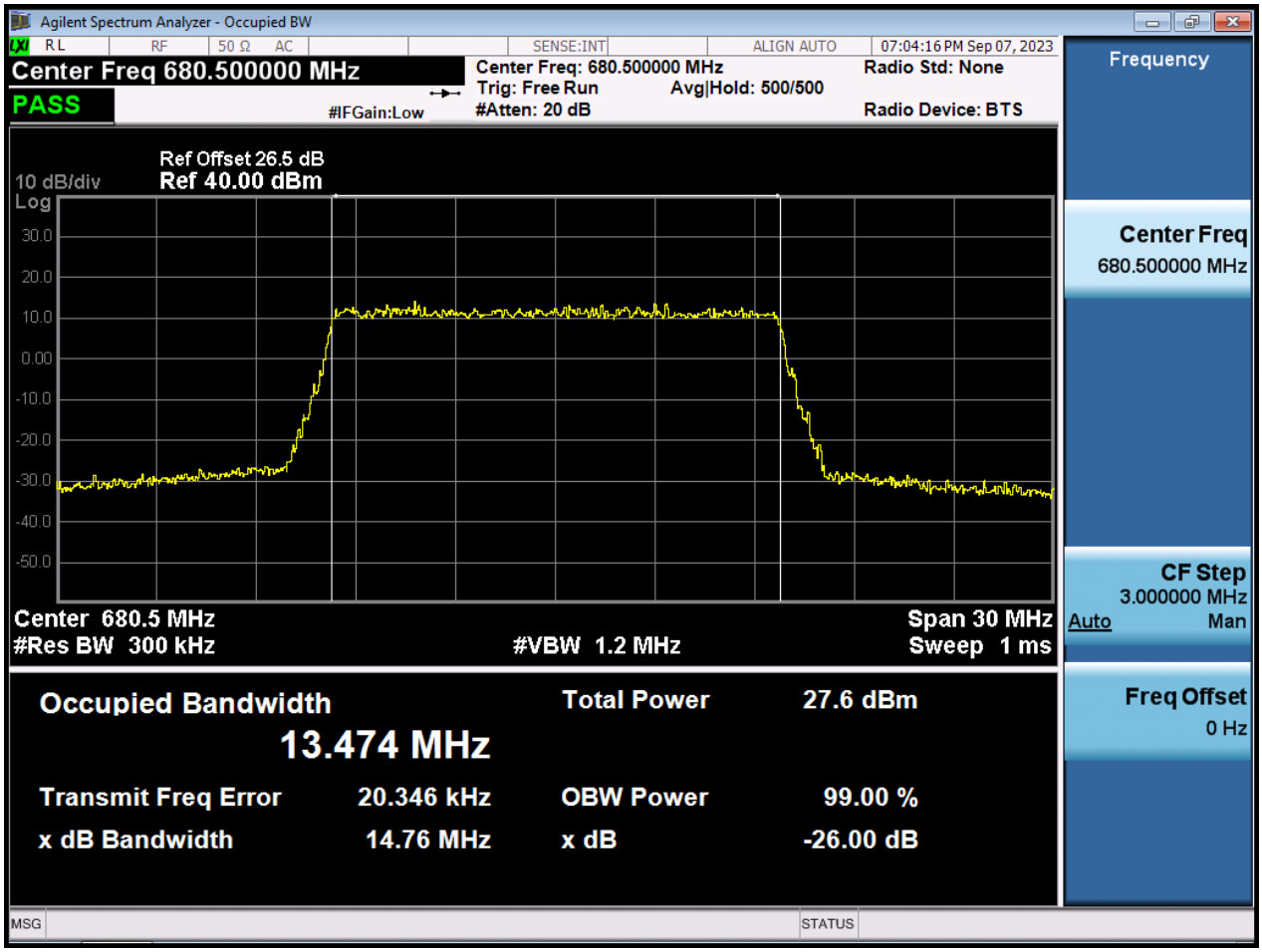
15 M_OBW_Mid Channel_16QAM_Full RB



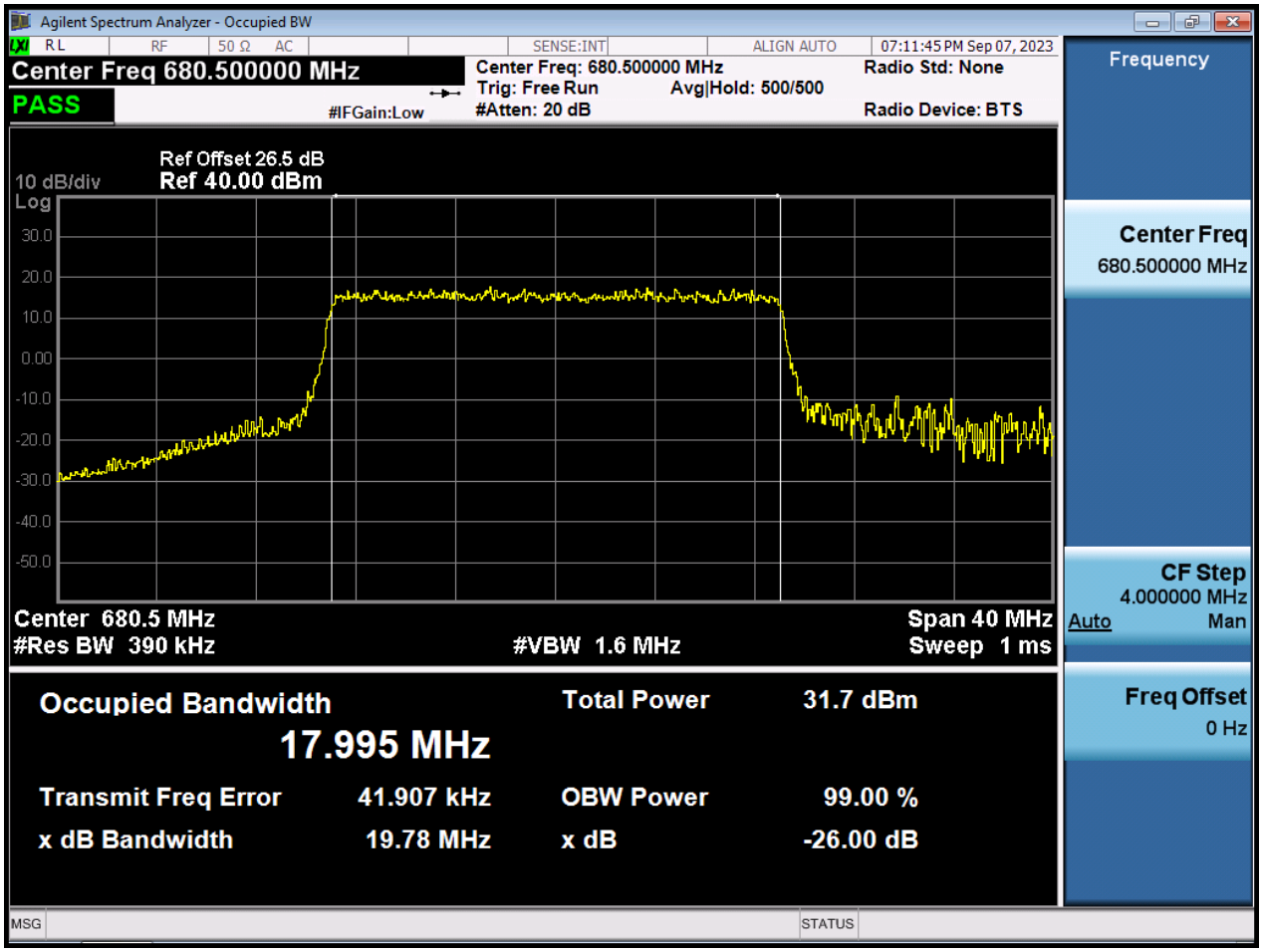
15 M_OBW_Mid Channel_64QAM_Full RB



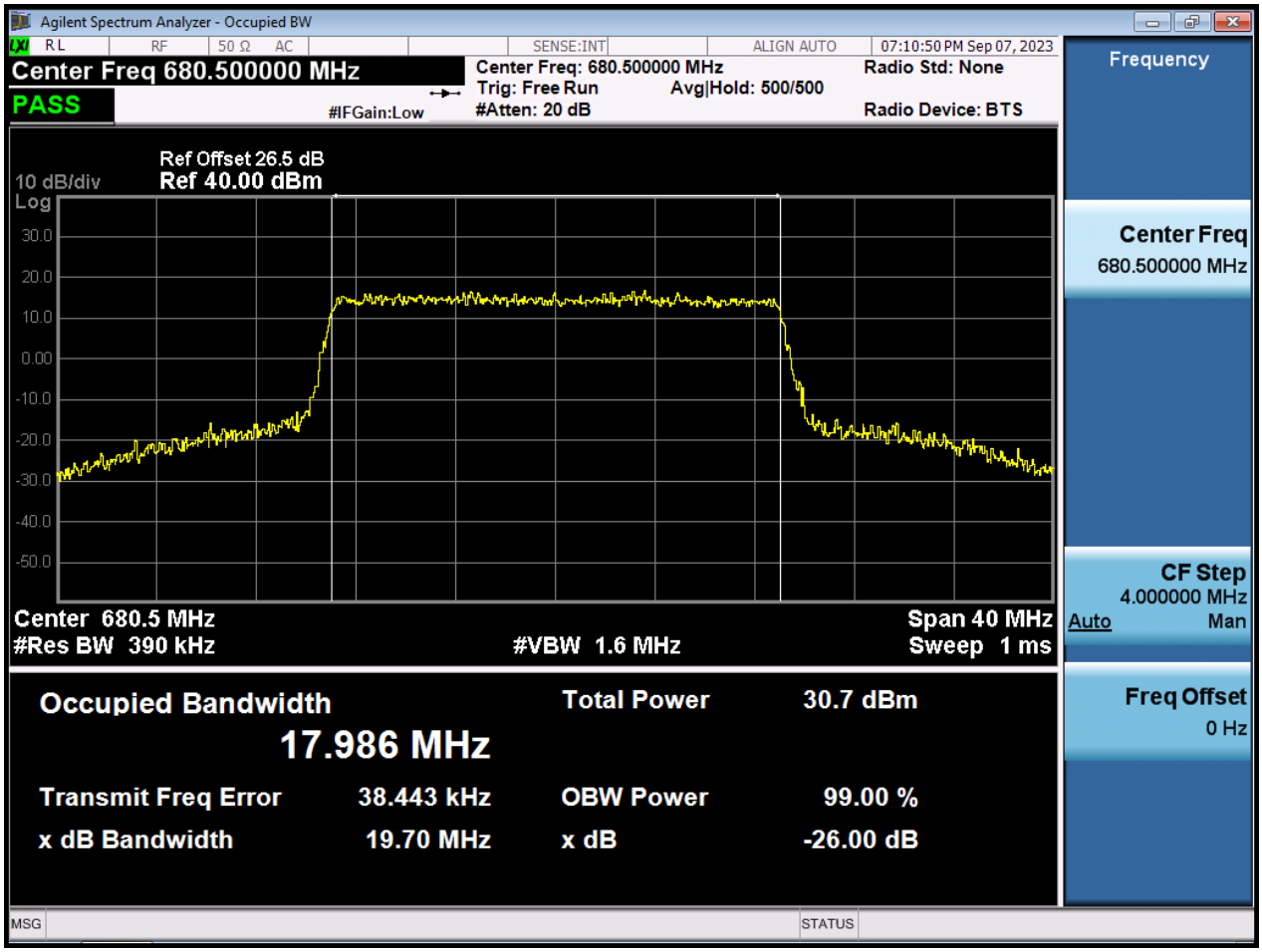
15 M_OBW_Mid Channel_256QAM_Full RB



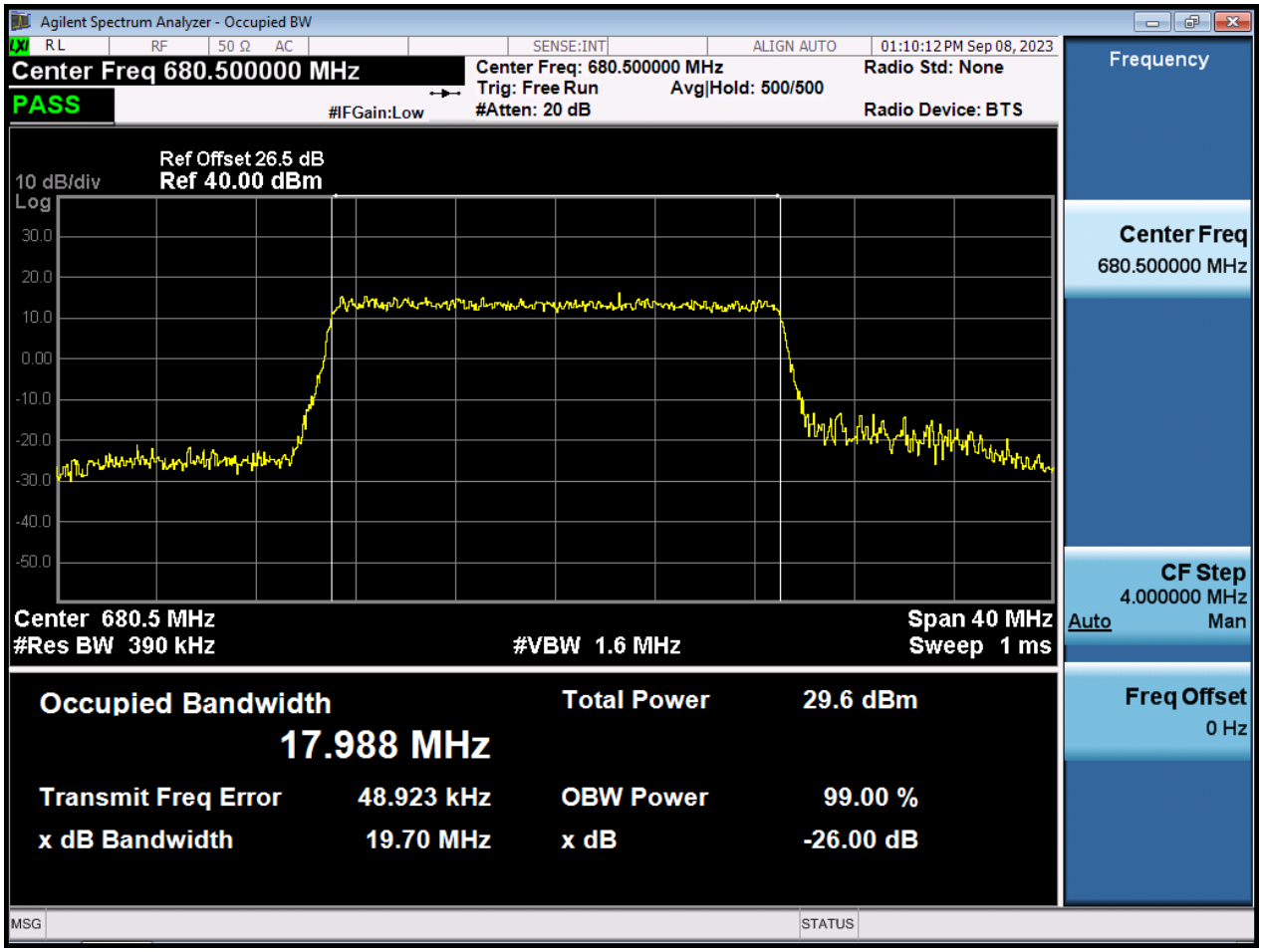
20 M_OBW_Mid Channel_QPSK_Full RB



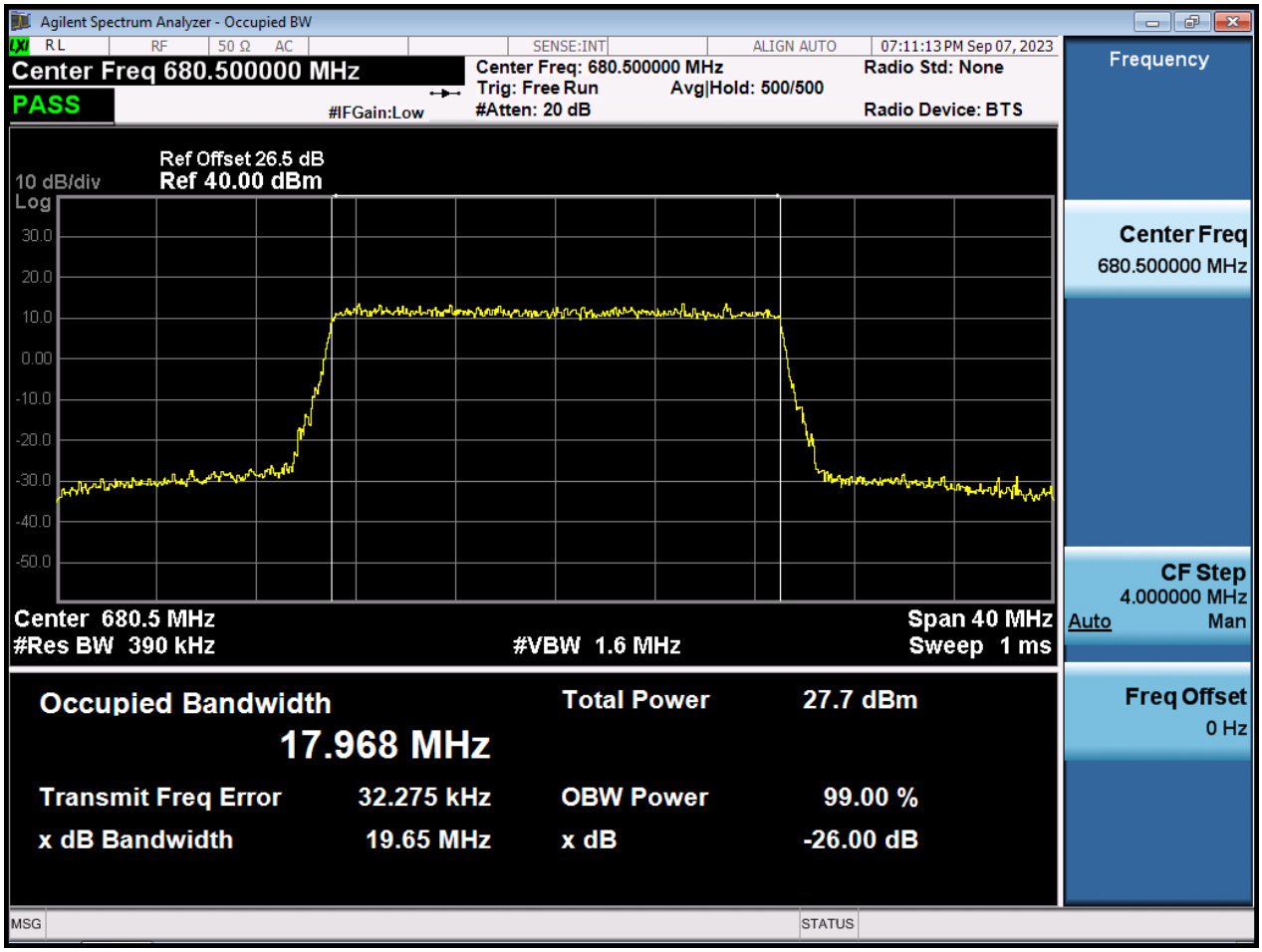
20 M_OBW_Mid Channel_16QAM_Full RB



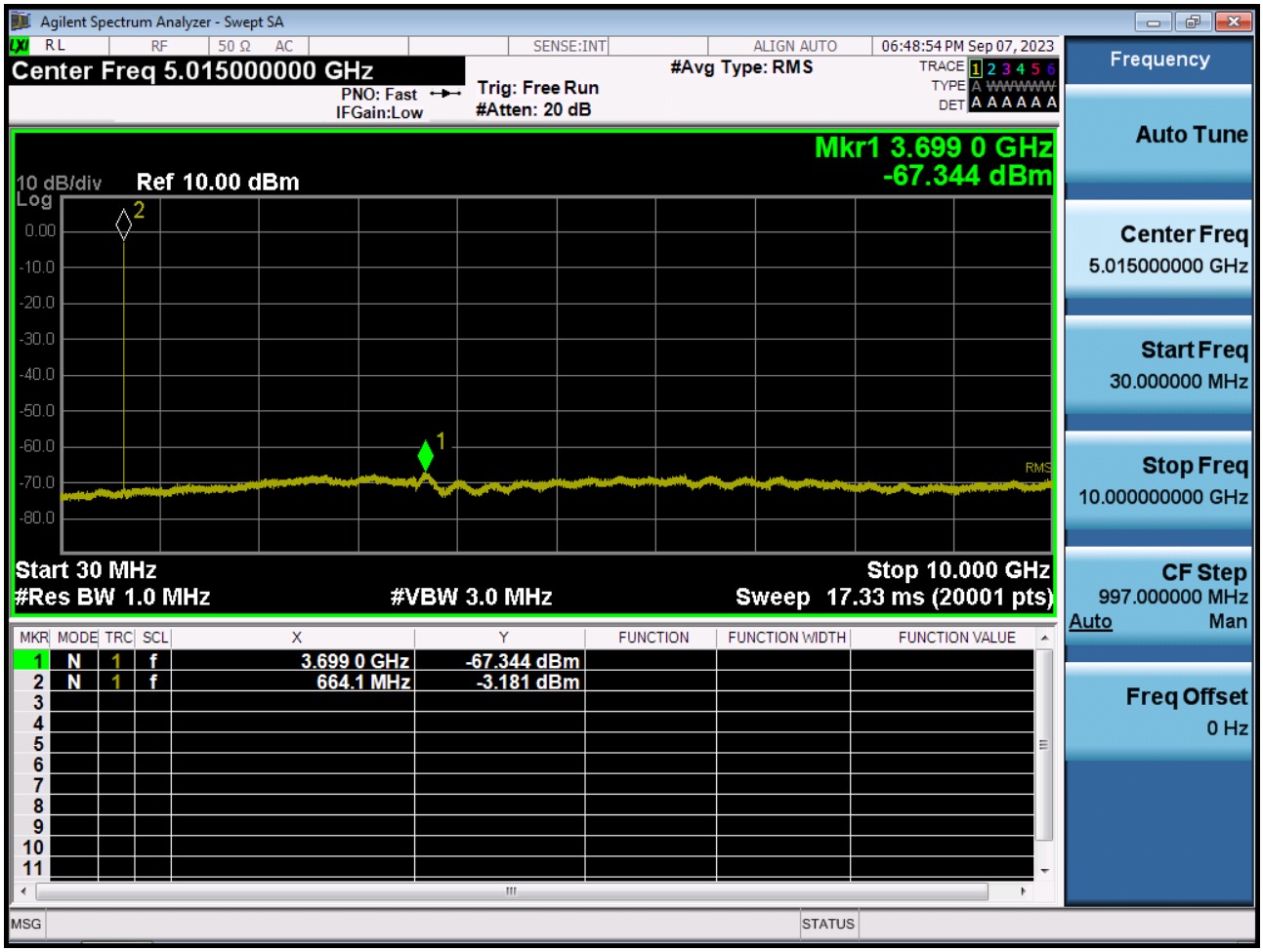
20 M_OBW_Mid Channel_64QAM_Full RB



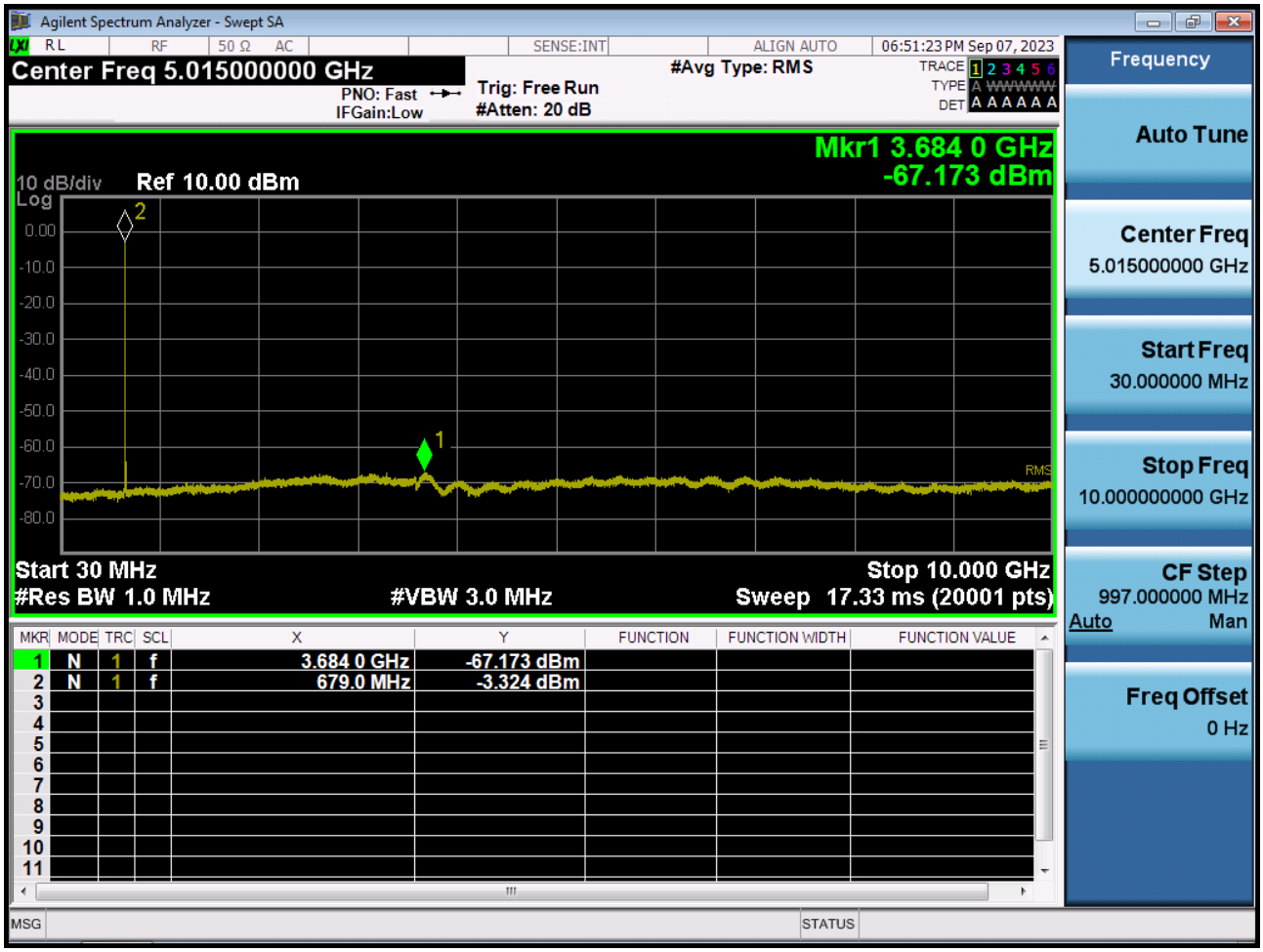
20 M_OBW_Mid Channel_256QAM_Full RB



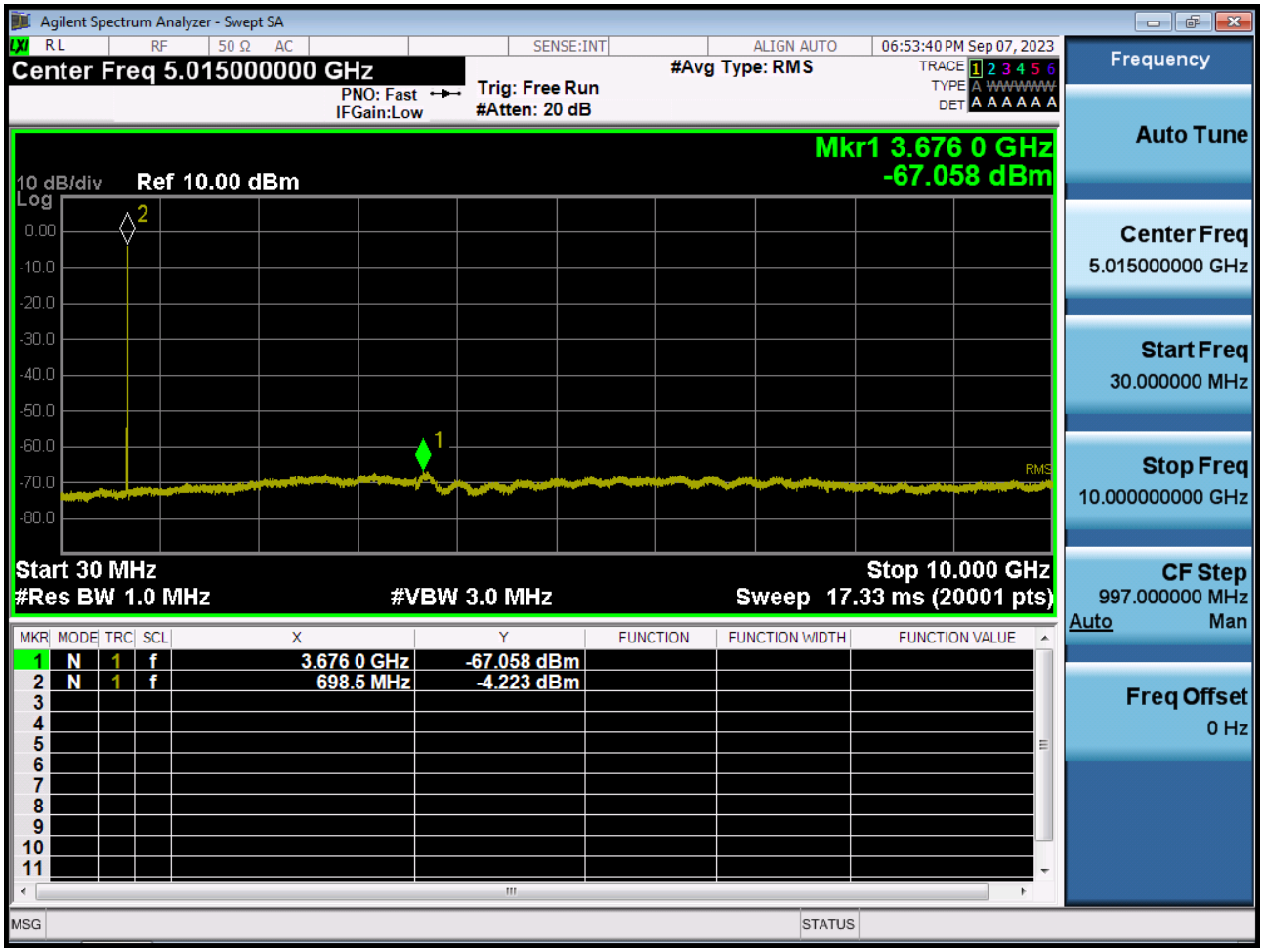
LTE71_5 M_CSE(30 M-10 G)_Lowest Channel



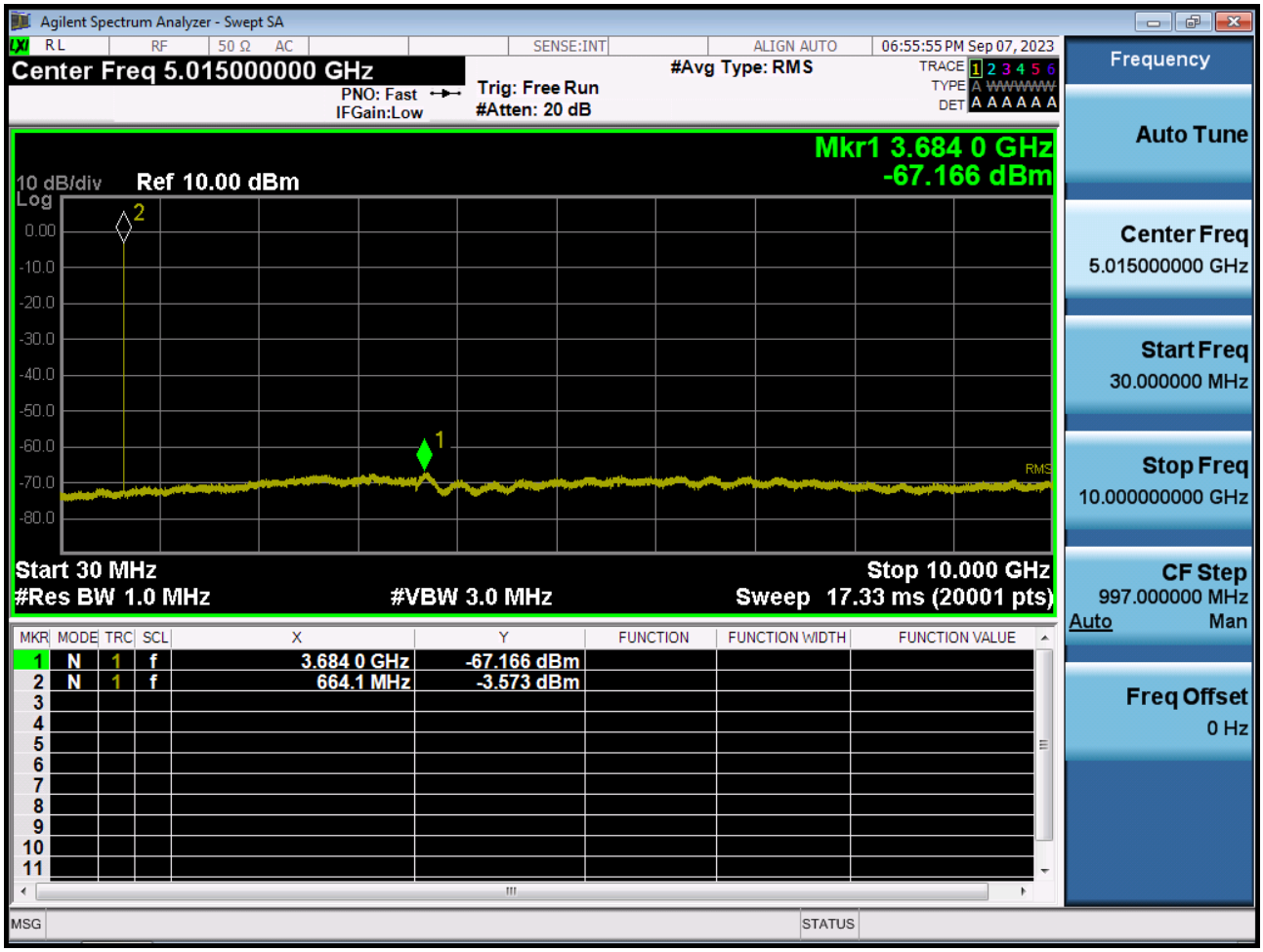
LTE71_5 M_CSE(30 M-10 G)_Mid Channel



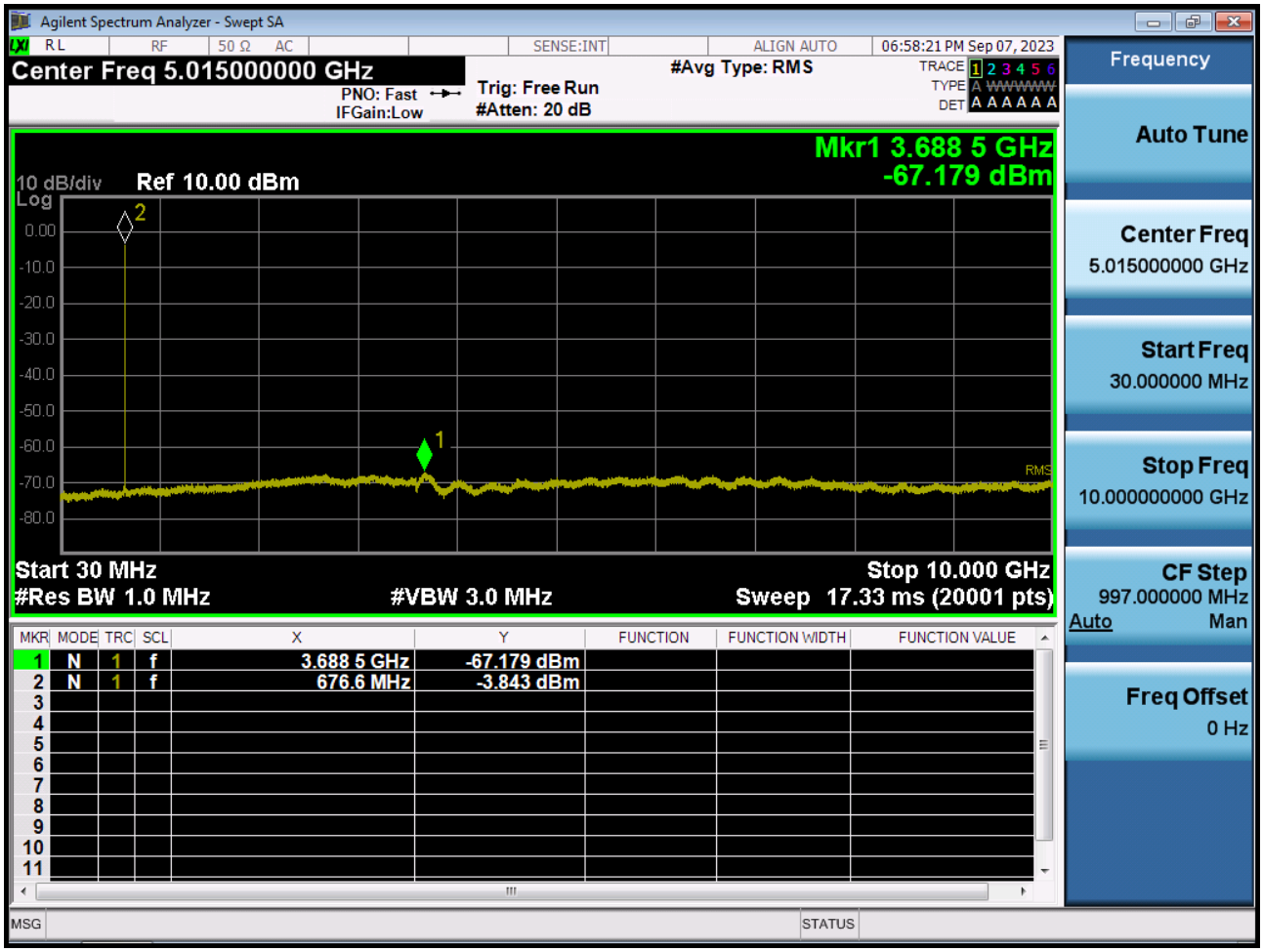
LTE71_5 M_CSE(30 M-10 G)_Highest Channel



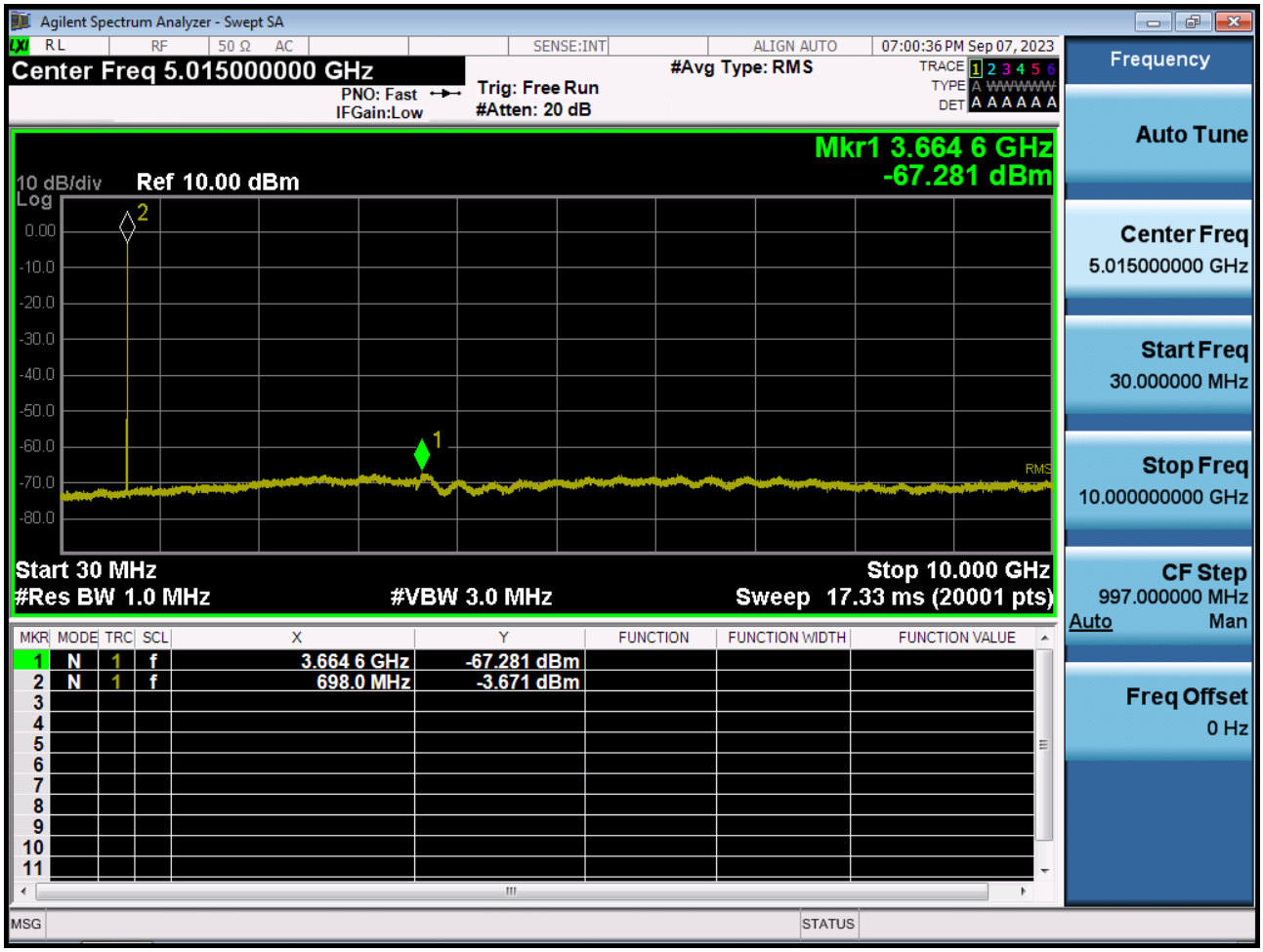
LTE71_10 M_CSE(30 M-10 G)_Lowest Channel



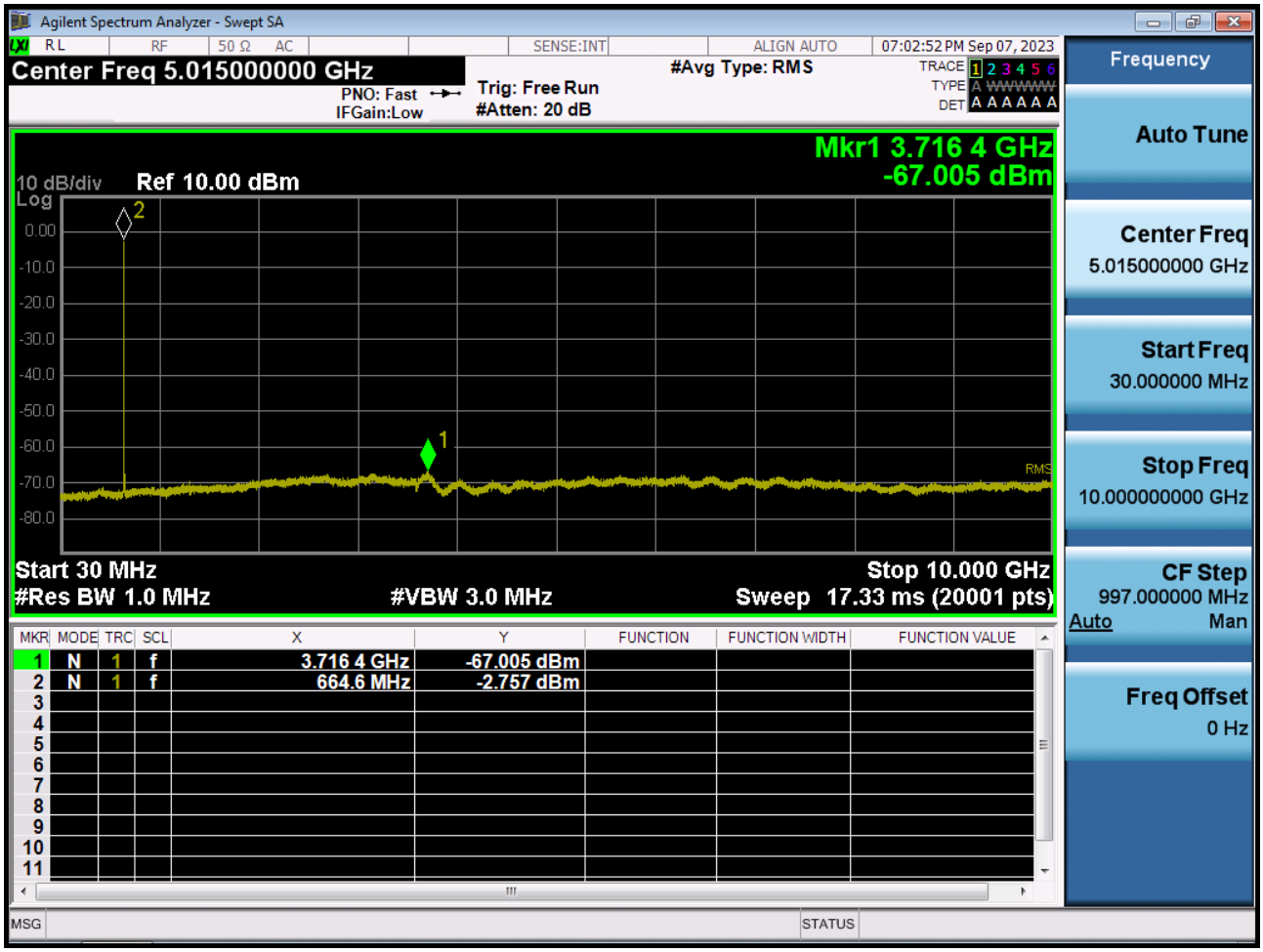
LTE71_10 M_CSE(30 M-10 G)_Mid Channel



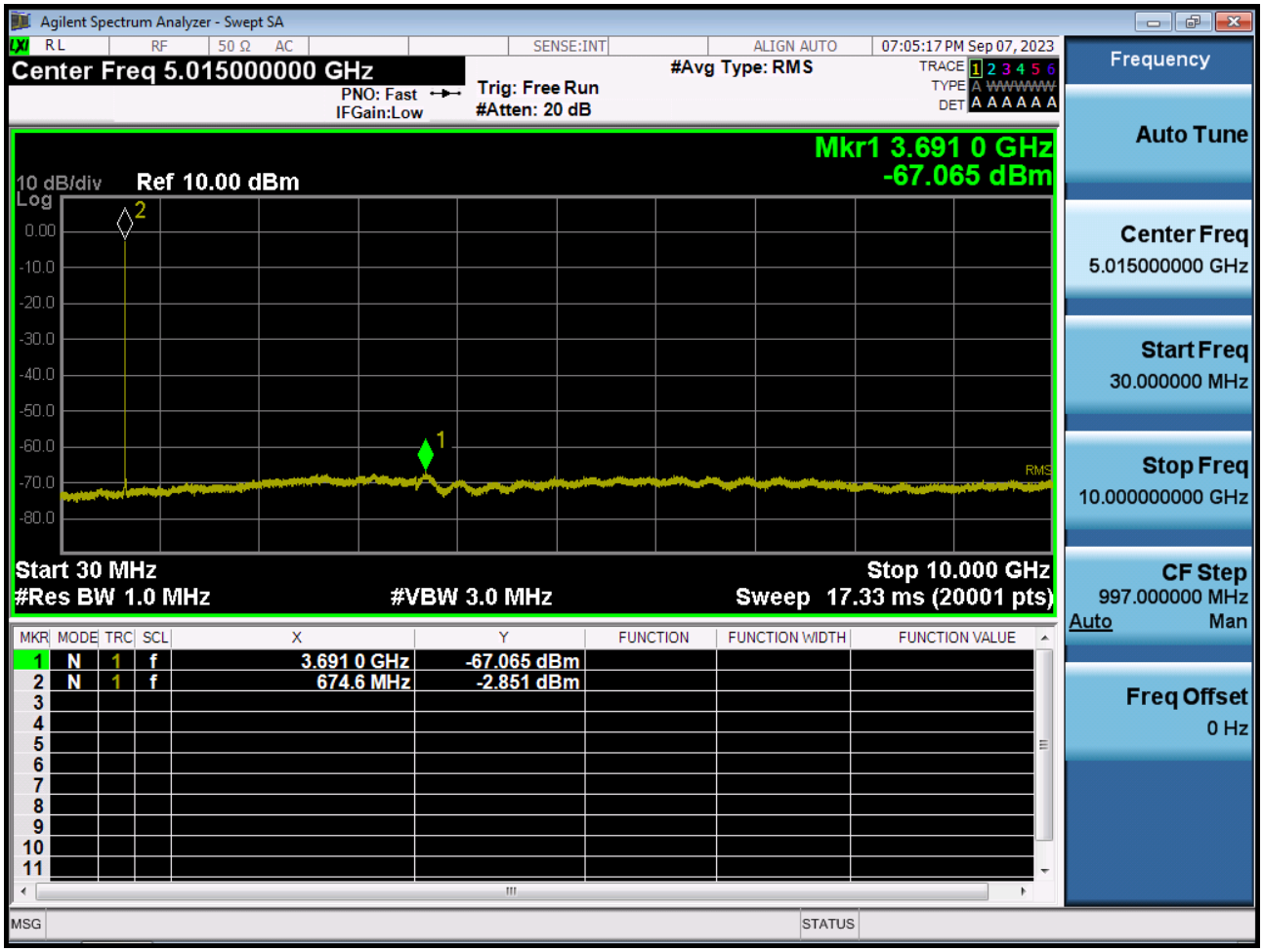
LTE71_10 M_CSE(30 M-10 G)_Highest Channel



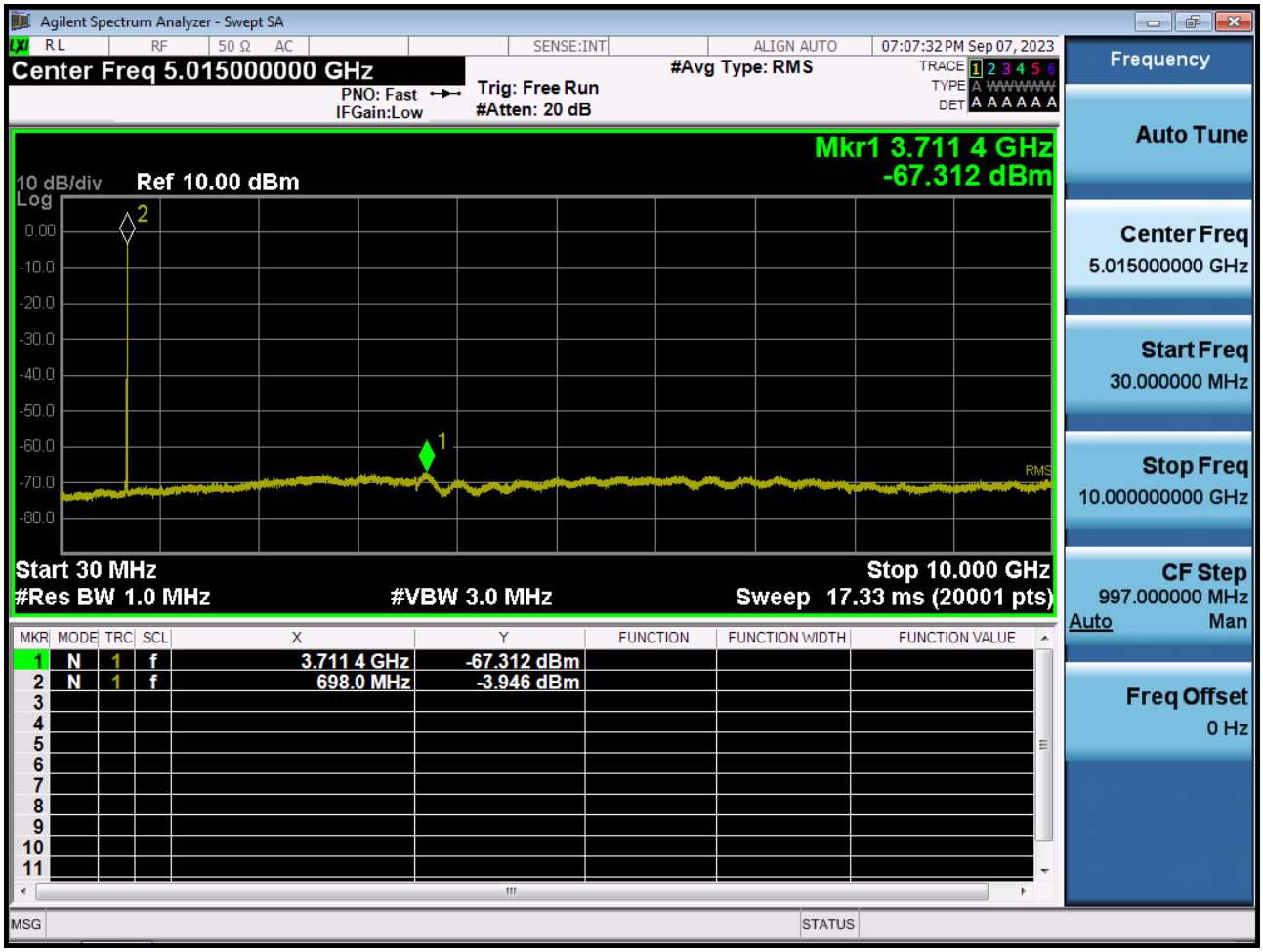
LTE71_15 M_CSE(30 M-10 G)_Lowest Channel



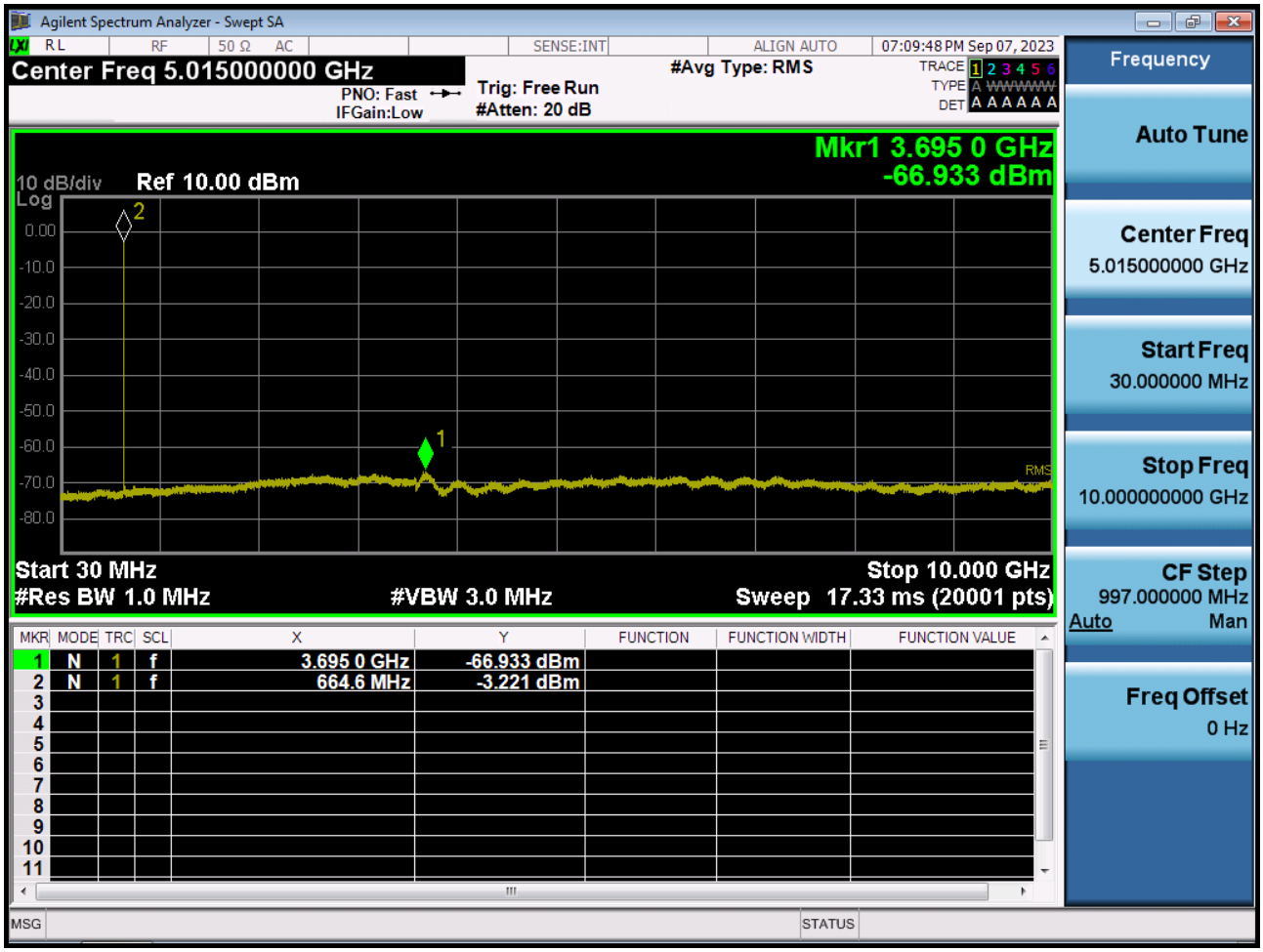
LTE71_15 M_CSE(30 M-10 G)_Mid Channel



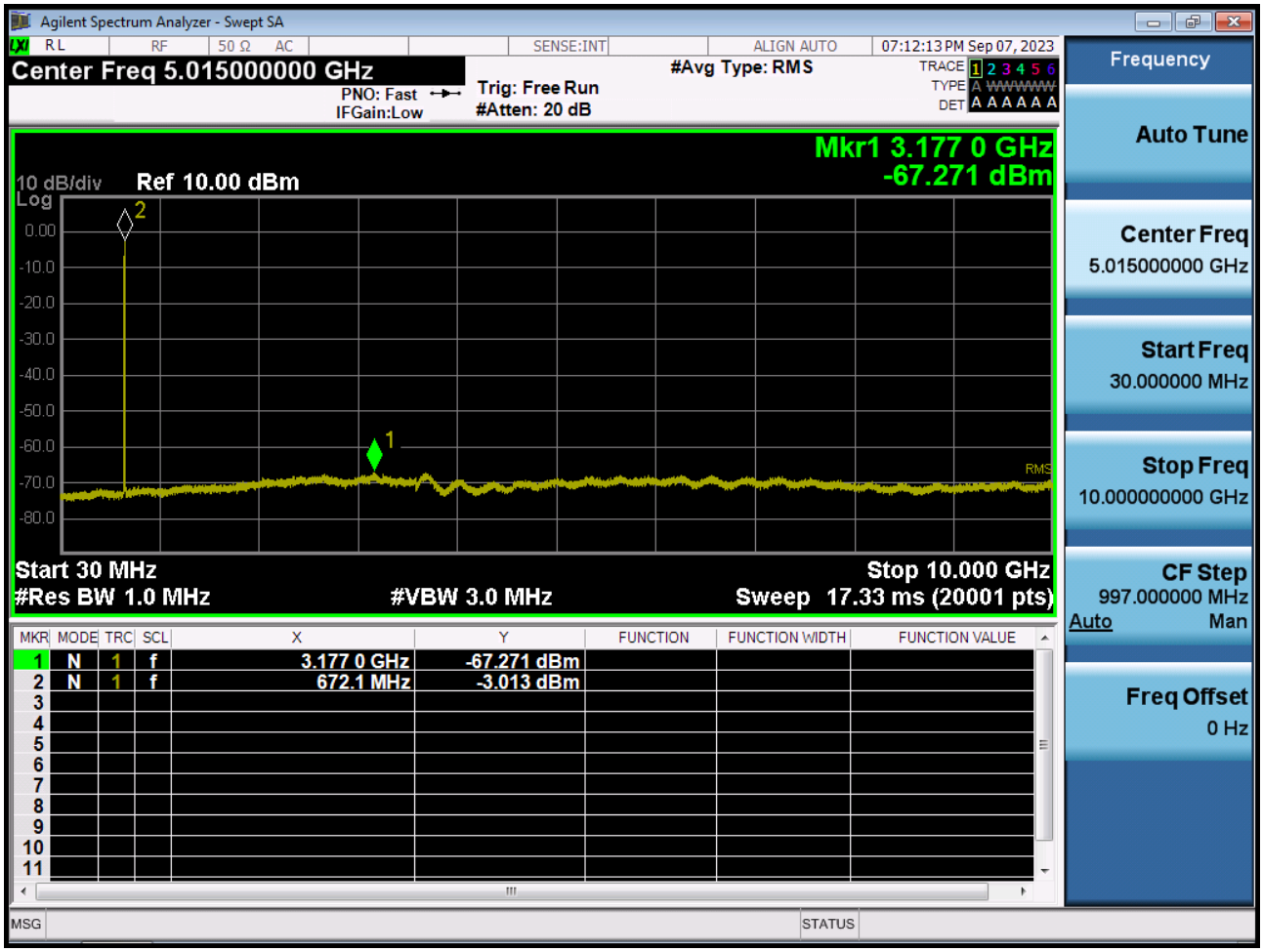
LTE71_15 M_CSE(30 M-10 G)_Highest Channel



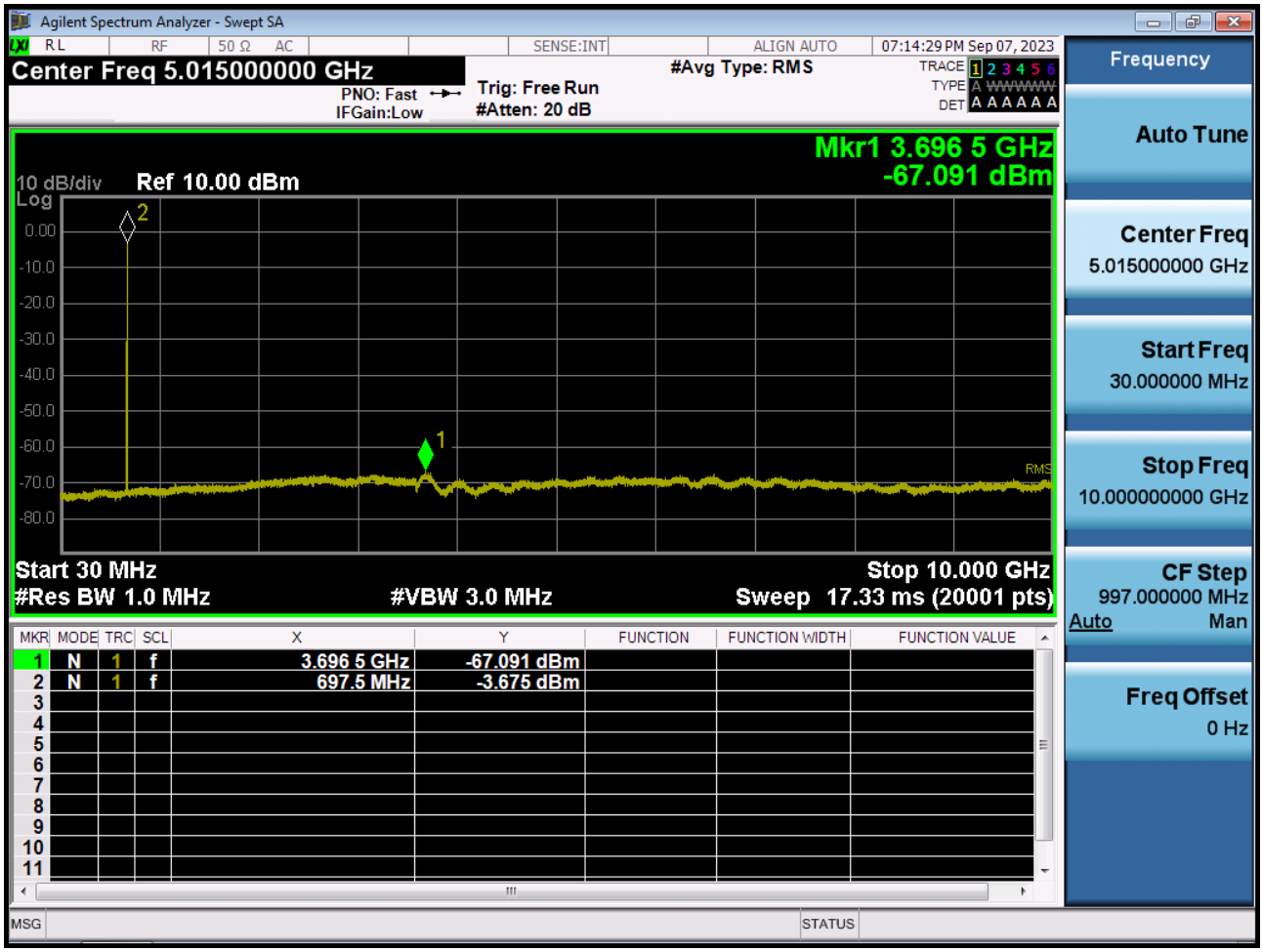
LTE71_20 M_CSE(30 M-10 G)_Lowest Channel



LTE71_20 M_CSE(30 M-10 G)_Mid Channel



LTE71_20 M_CSE(30 M-10 G)_Highest Channel



11. TEST PLOTS(Sub 1 Ant)

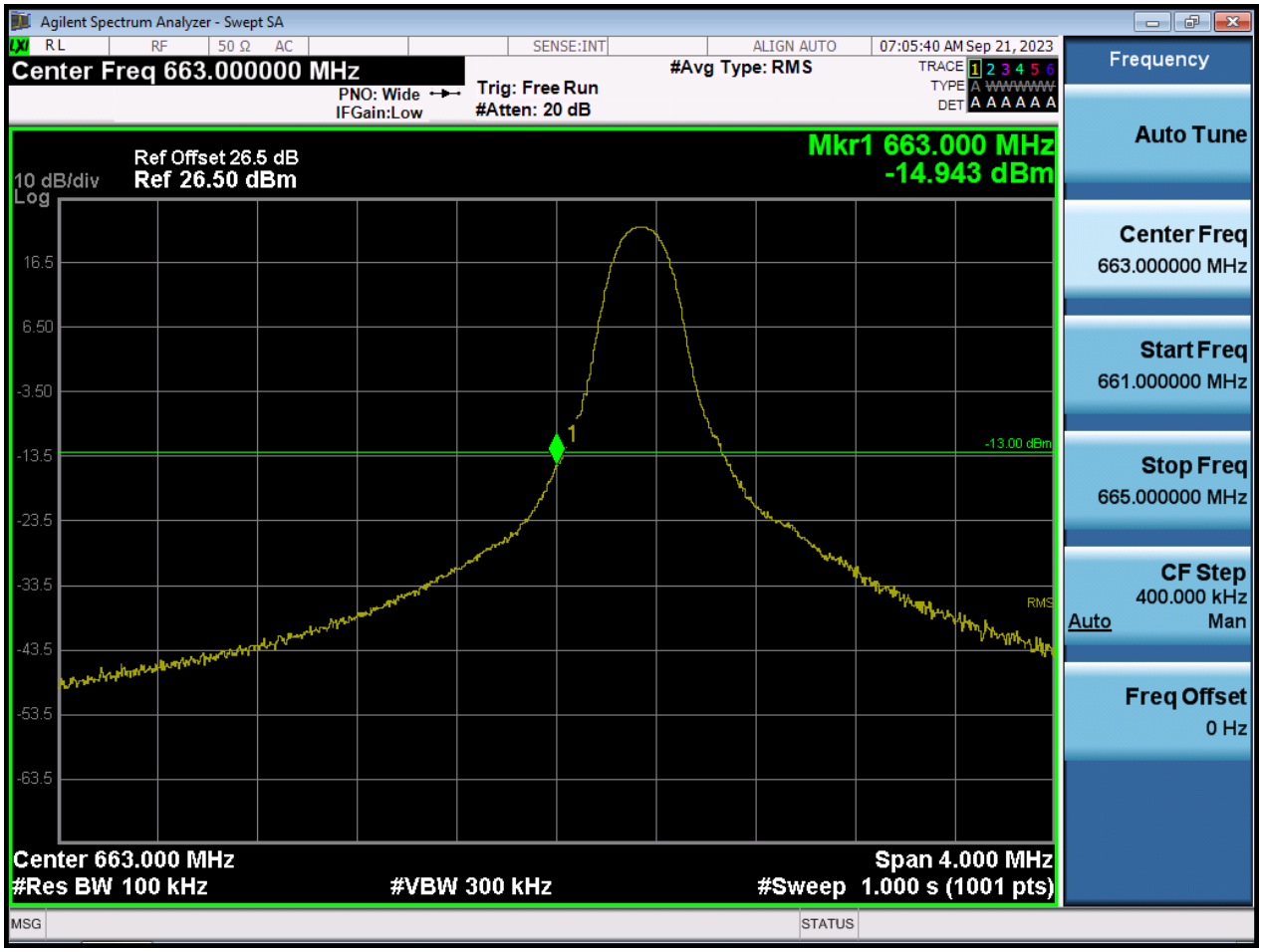
5 M_BandEdge_Lowest Channel_QPSK_Full RB(1)

5 M_BandEdge_Lowest Channel_QPSK_Full RB(2)

5 M_BandEdge_Highest Channel_QPSK_Full RB(1)

5 M_BandEdge_Highest Channel_QPSK_Full RB(2)

5 M_BandEdge_Lowest Channel_QPSK_1RB



5 M_BandEdge_Highest Channel_QPSK_1RB

10 M_BandEdge_Lowest Channel_QPSK_Full RB(1)

10 M_BandEdge_Lowest Channel_QPSK_Full RB(2)

10 M_BandEdge_Highest Channel_QPSK_Full RB(1)

10 M_BandEdge_Highest Channel_QPSK_Full RB(2)

10 M_BandEdge_Lowest Channel_QPSK_1RB

10 M_BandEdge_Highest Channel_QPSK_1RB

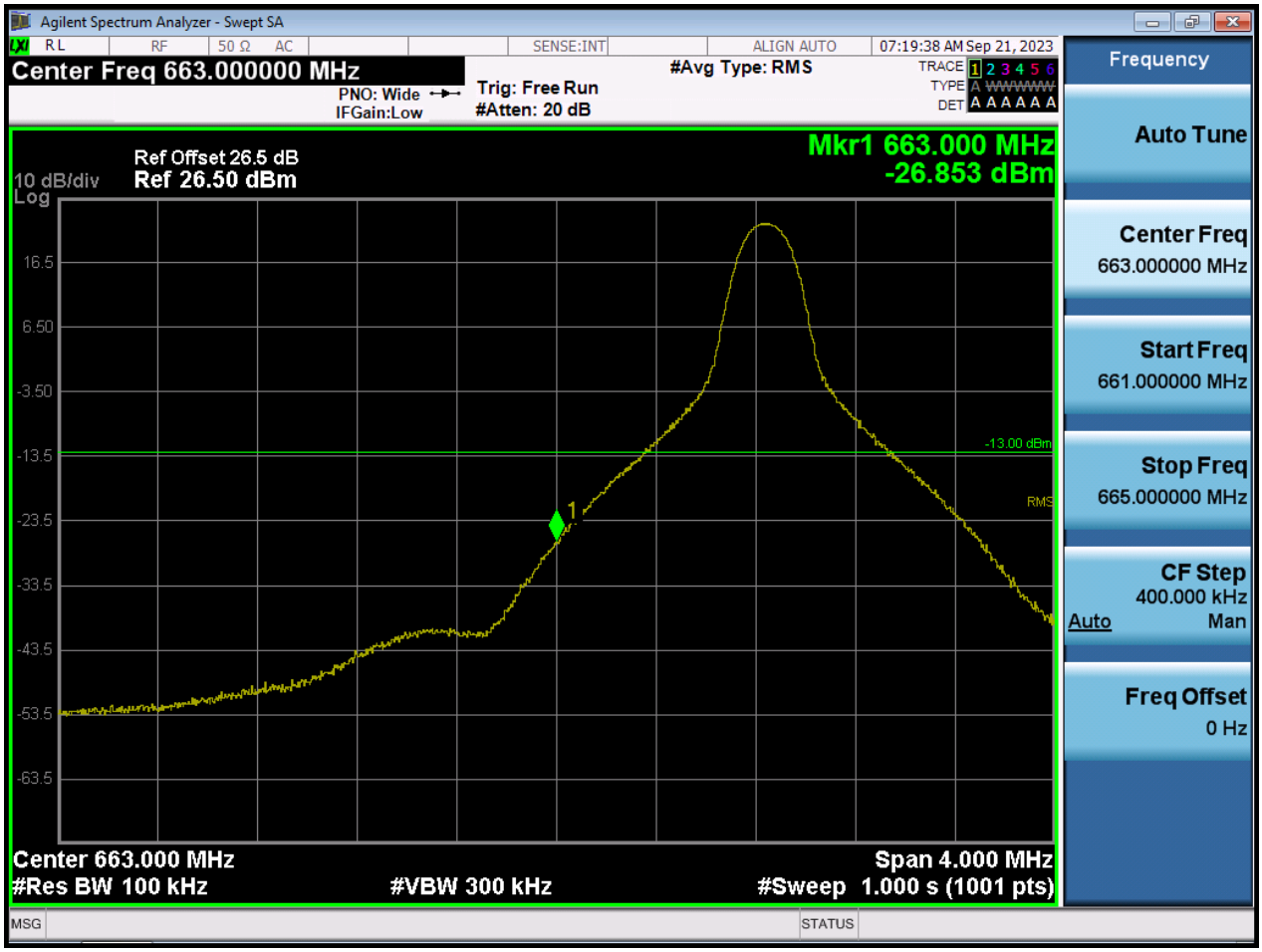
15 M_BandEdge_Lowest Channel_QPSK_Full RB(1)

15 M_BandEdge_Lowest Channel_QPSK_Full RB(2)

15 M_BandEdge_Highest Channel_QPSK_Full RB(1)

15 M_BandEdge_Highest Channel_QPSK_Full RB(2)

15 M_BandEdge_Lowest Channel_QPSK_1RB



15 M_BandEdge_Highest Channel_QPSK_1RB

20 M_BandEdge_Lowest Channel_QPSK_Full RB(1)

20 M_BandEdge_Lowest Channel_QPSK_Full RB(2)

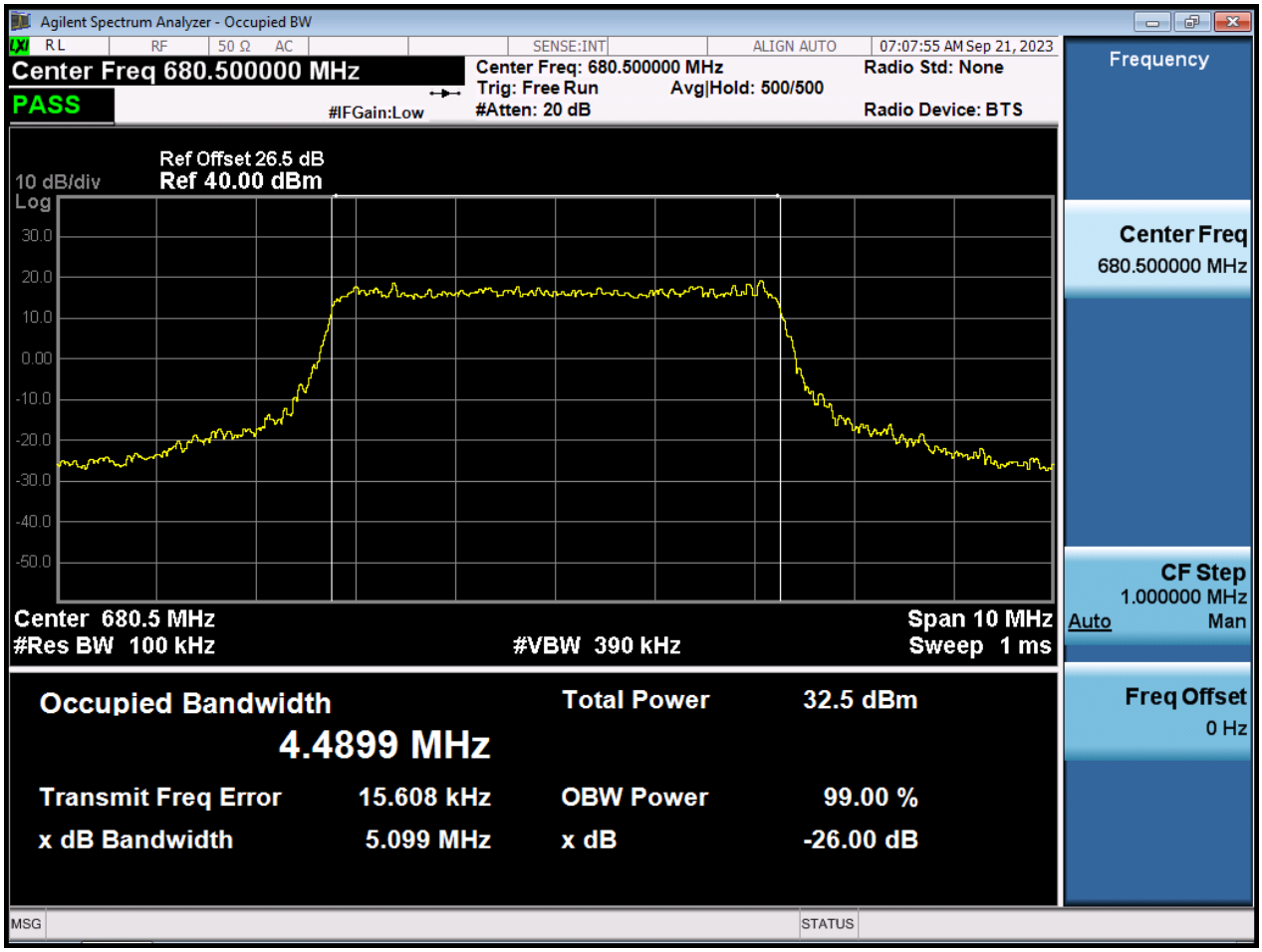
20 M_BandEdge_Highest Channel_QPSK_Full RB(1)

20 M_BandEdge_Highest Channel_QPSK_Full RB(2)

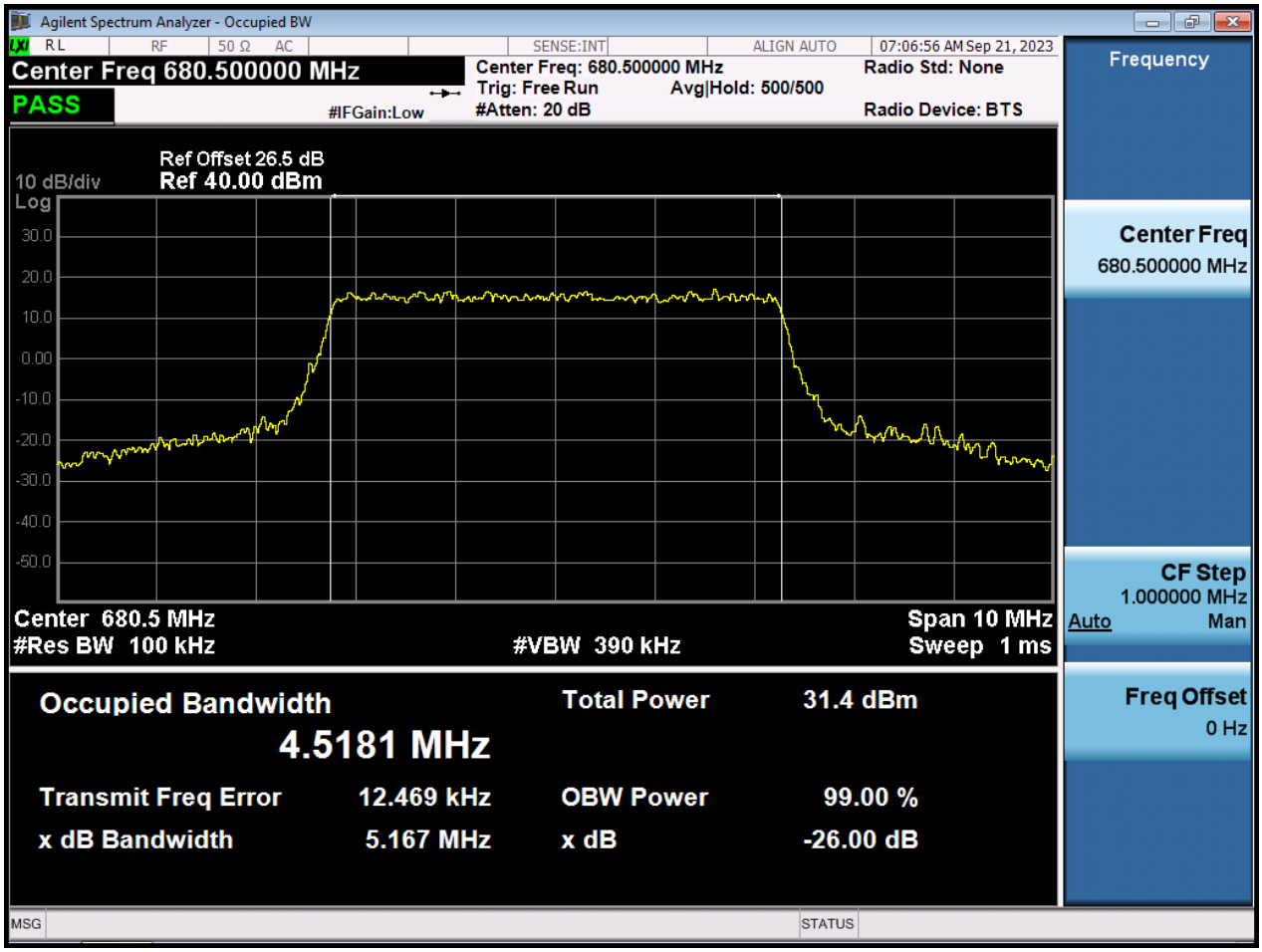
20 M_BandEdge_Lowest Channel_QPSK_1RB

20 M_BandEdge_Highest Channel_QPSK_1RB

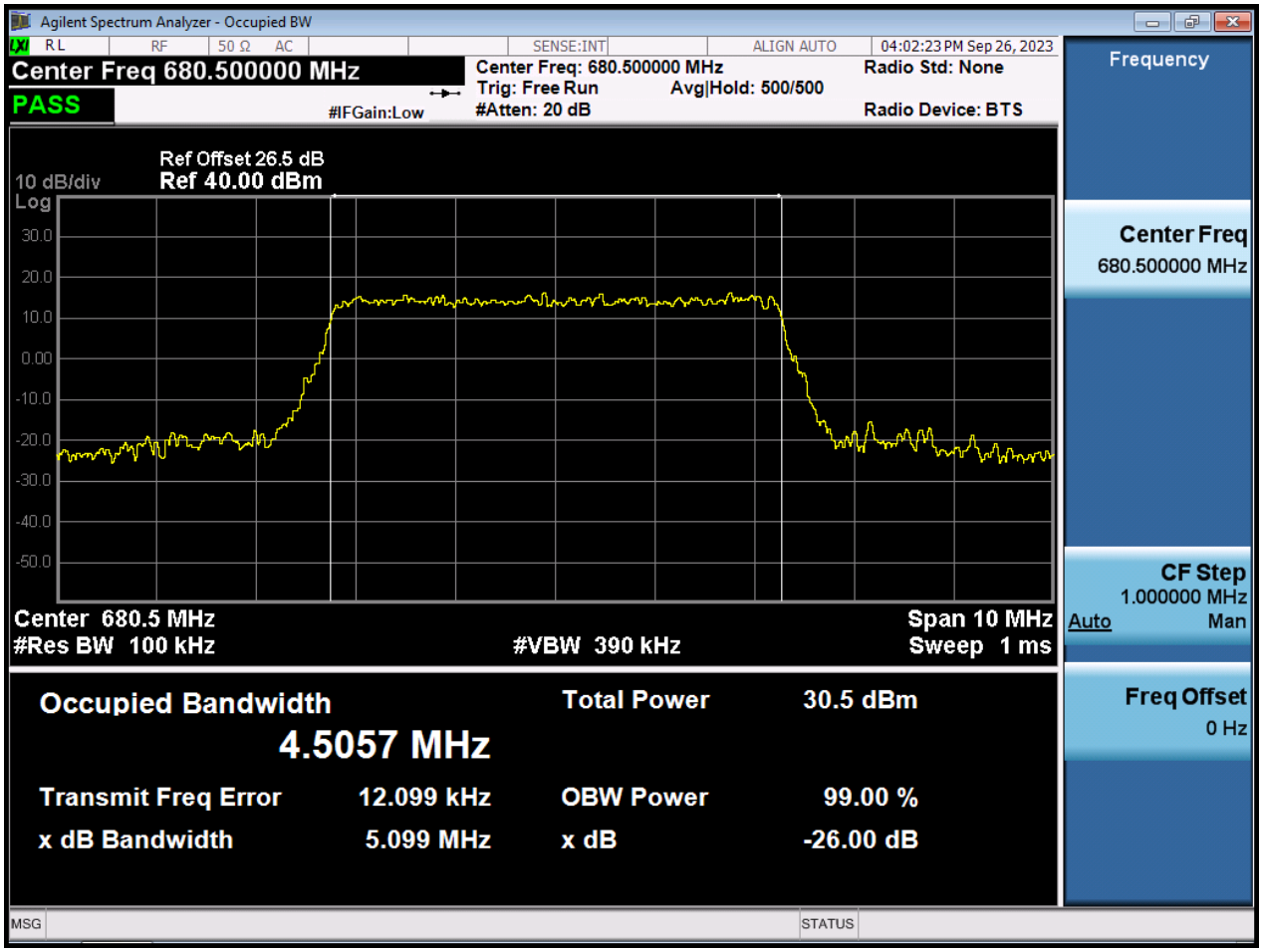
5 M_OBW_Mid Channel_QPSK_Full RB



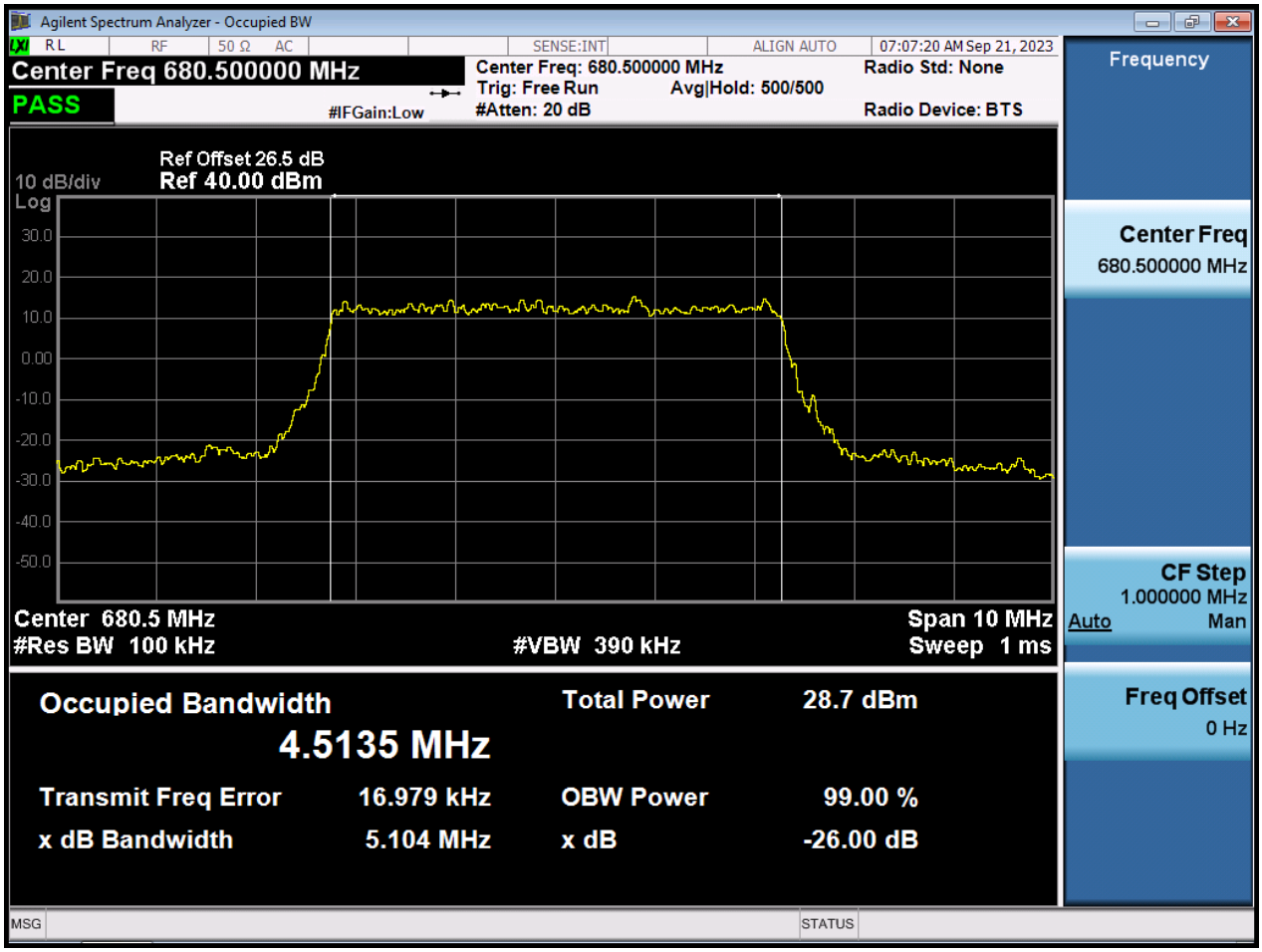
5 M_OBW_Mid Channel_16QAM_Full RB



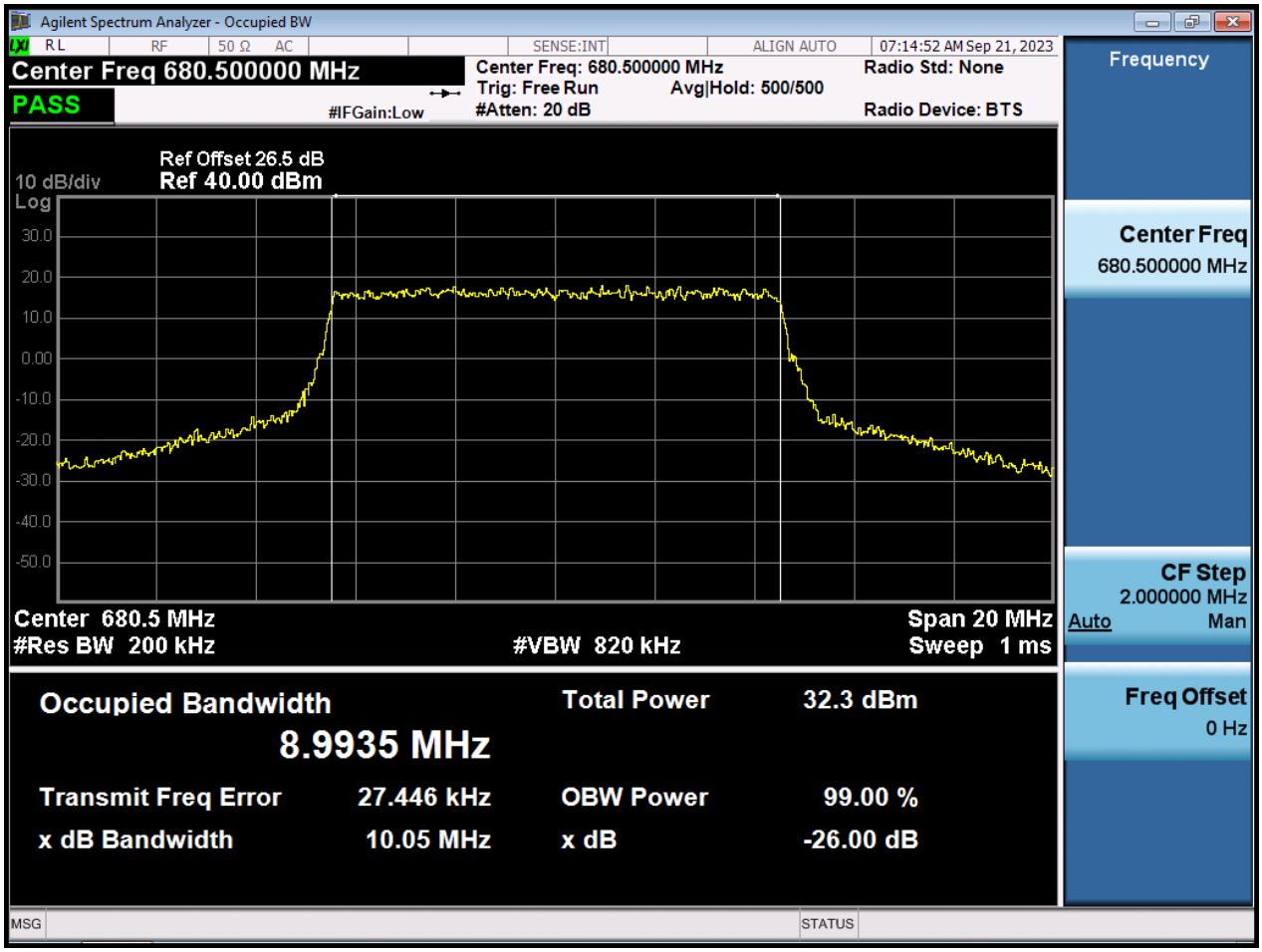
5 M_OBW_Mid Channel_64QAM_Full RB



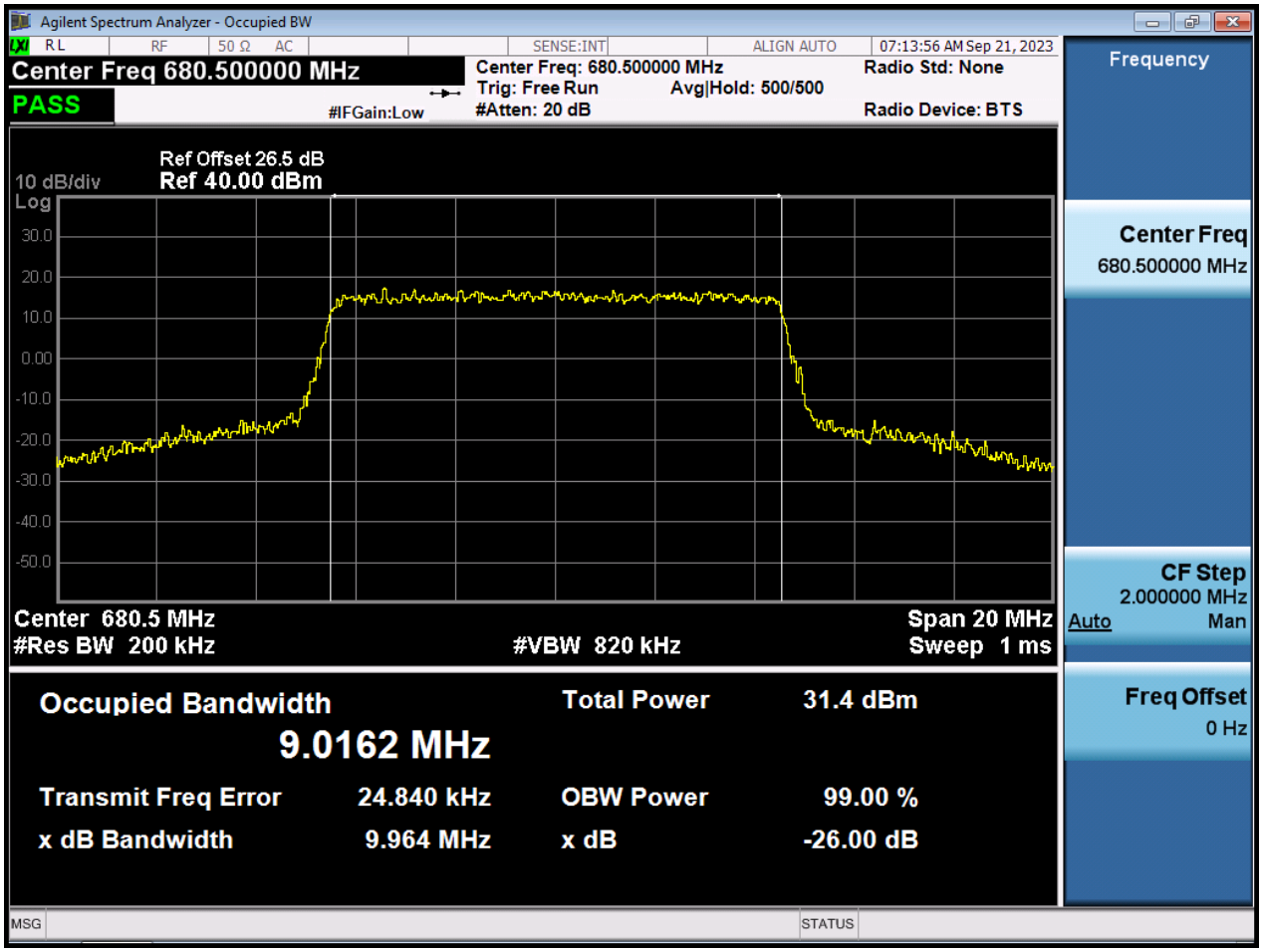
5 M_OBW_Mid Channel_256QAM_Full RB



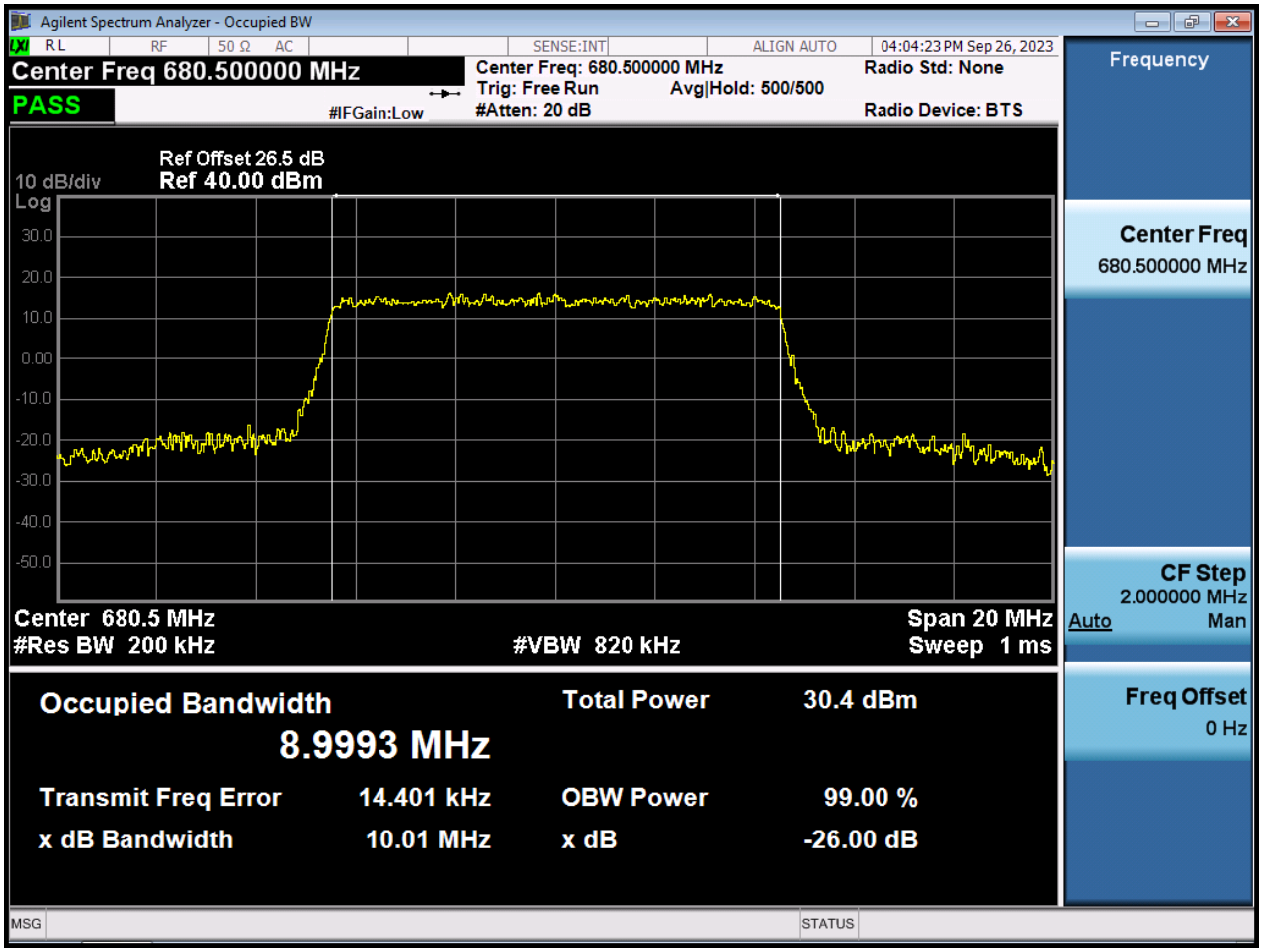
10 M_OBW_Mid Channel_QPSK_Full RB



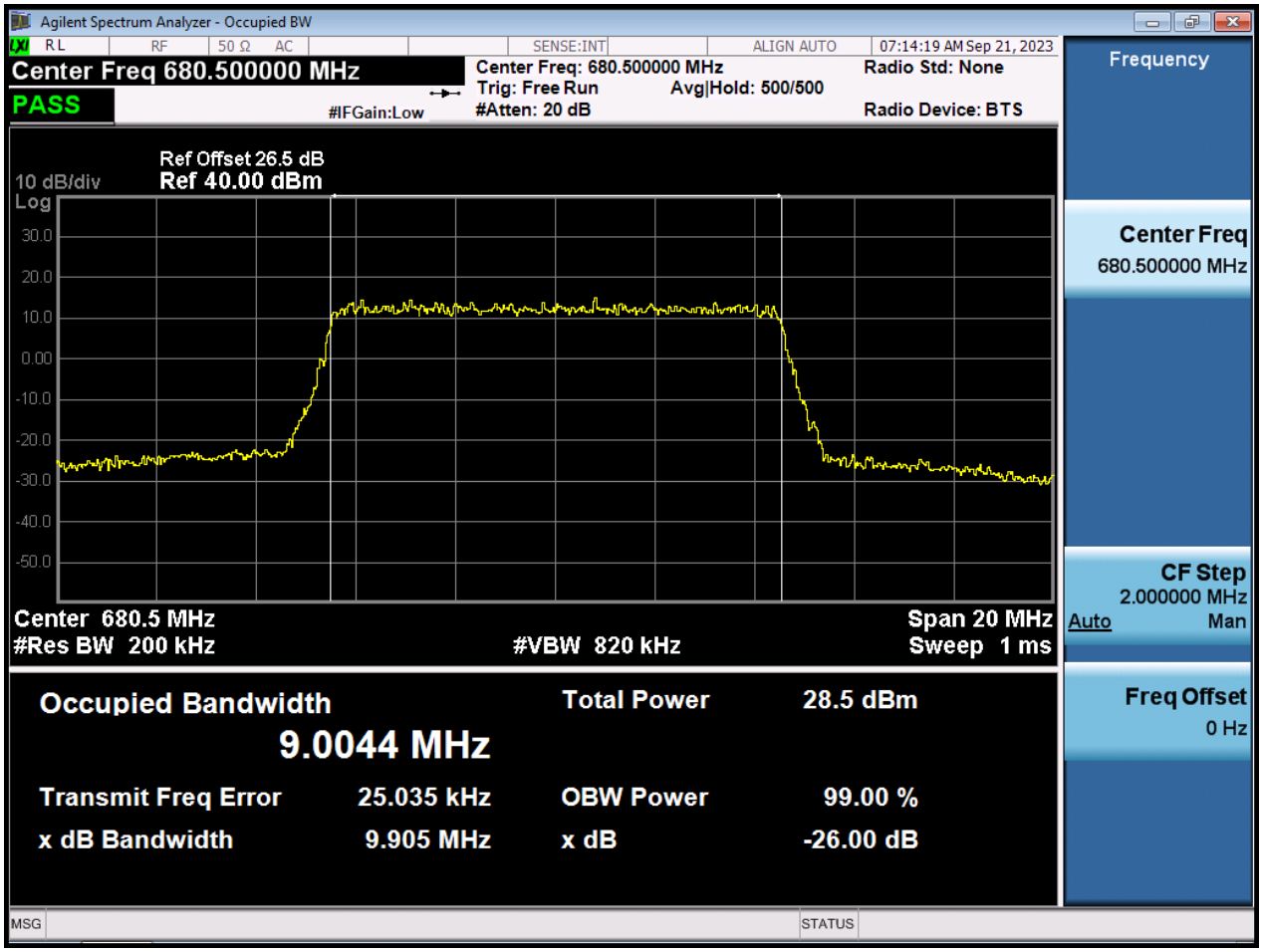
10 M_OBW_Mid Channel_16QAM_Full RB



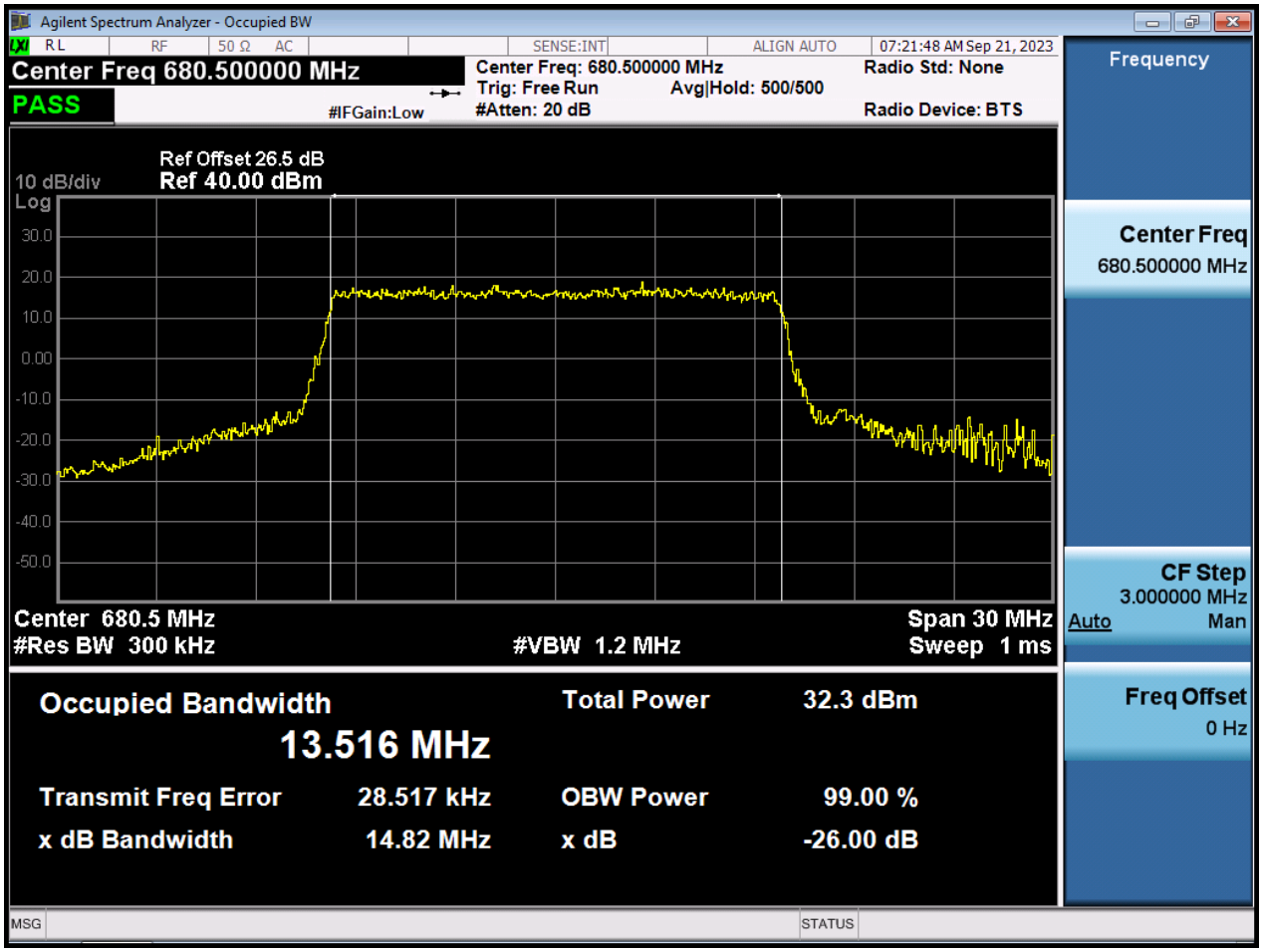
10 M_OBW_Mid Channel_64QAM_Full RB



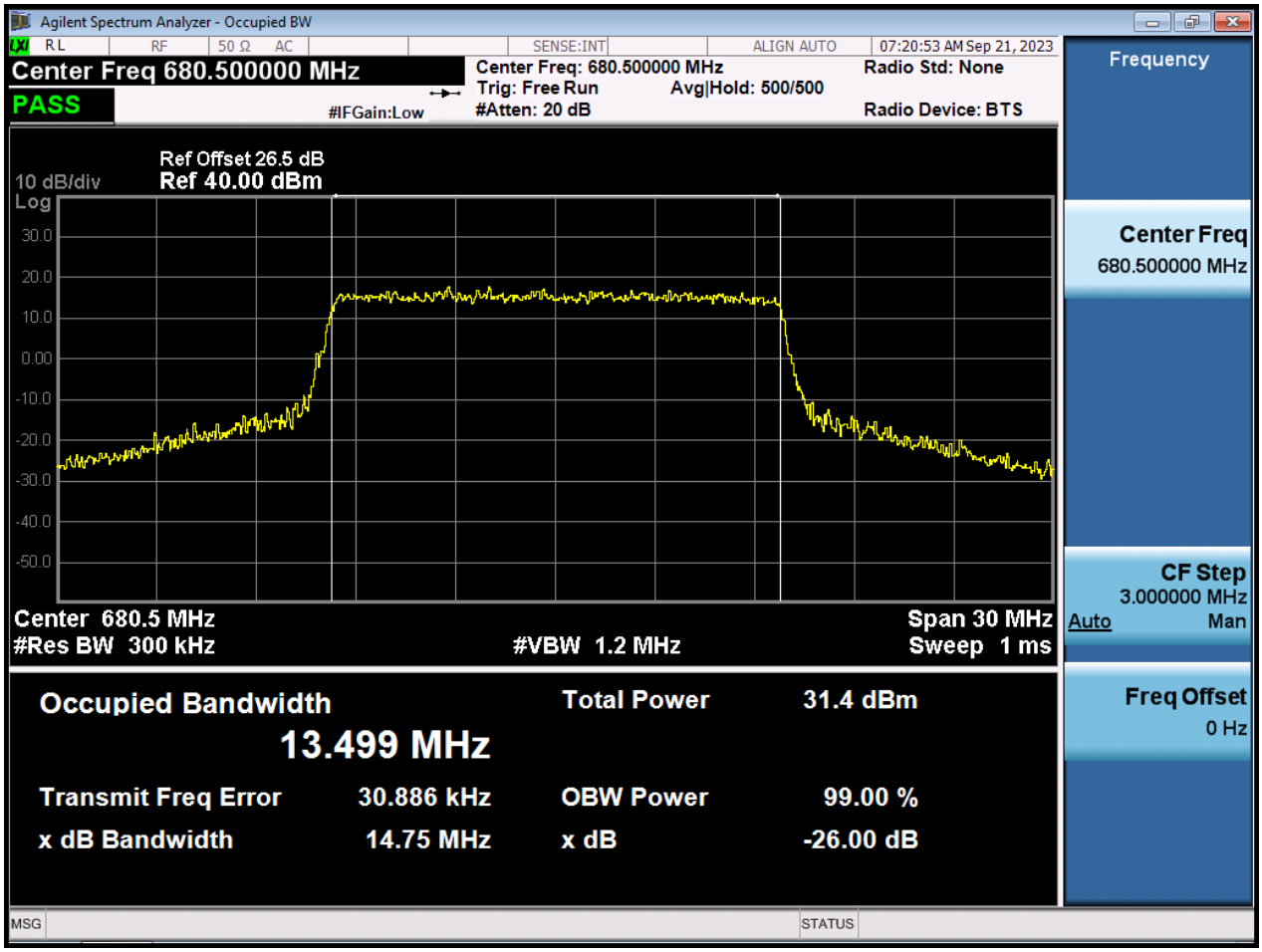
10 M_OBW_Mid Channel_256QAM_Full RB



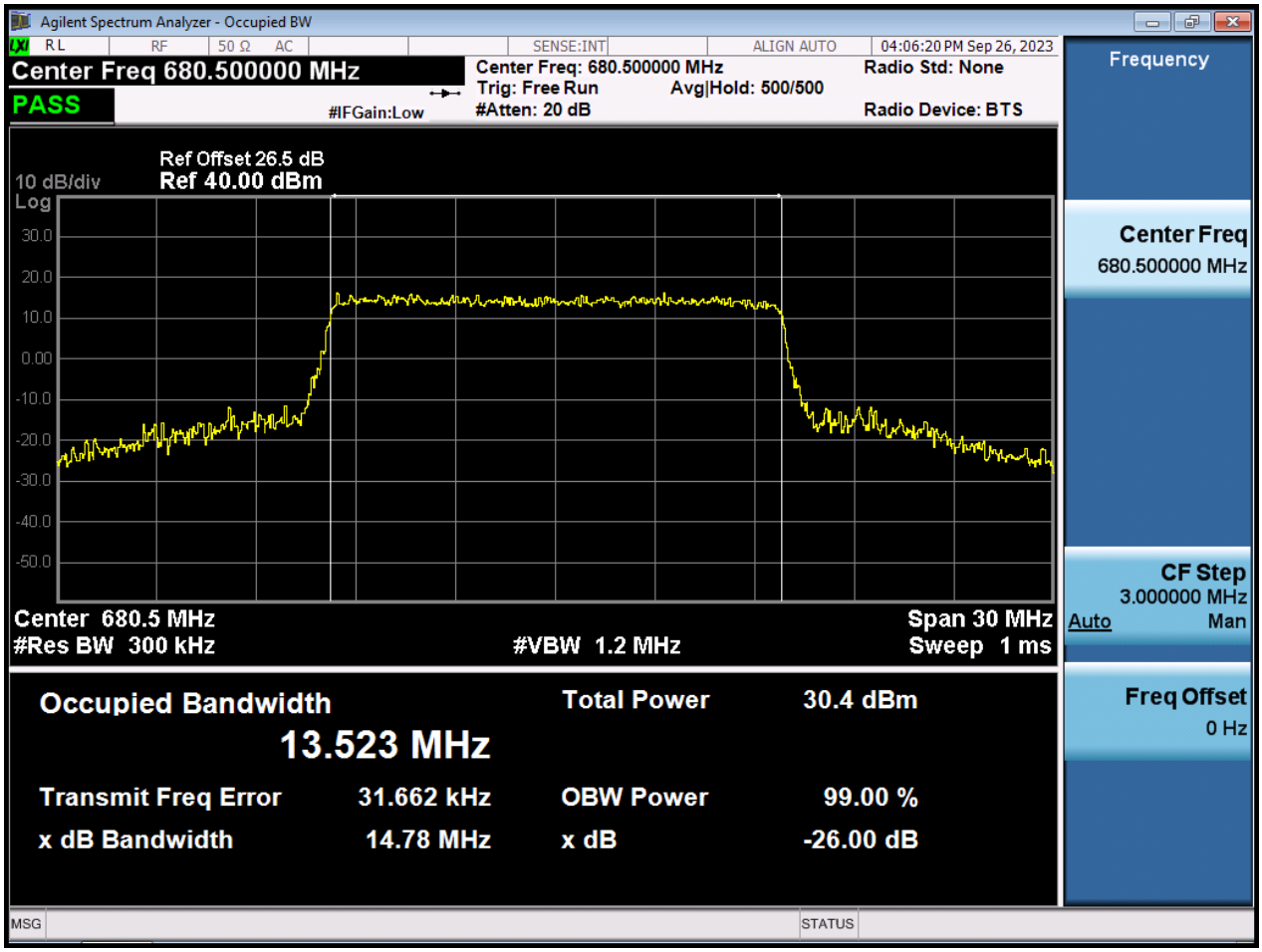
15 M_OBW_Mid Channel_QPSK_Full RB



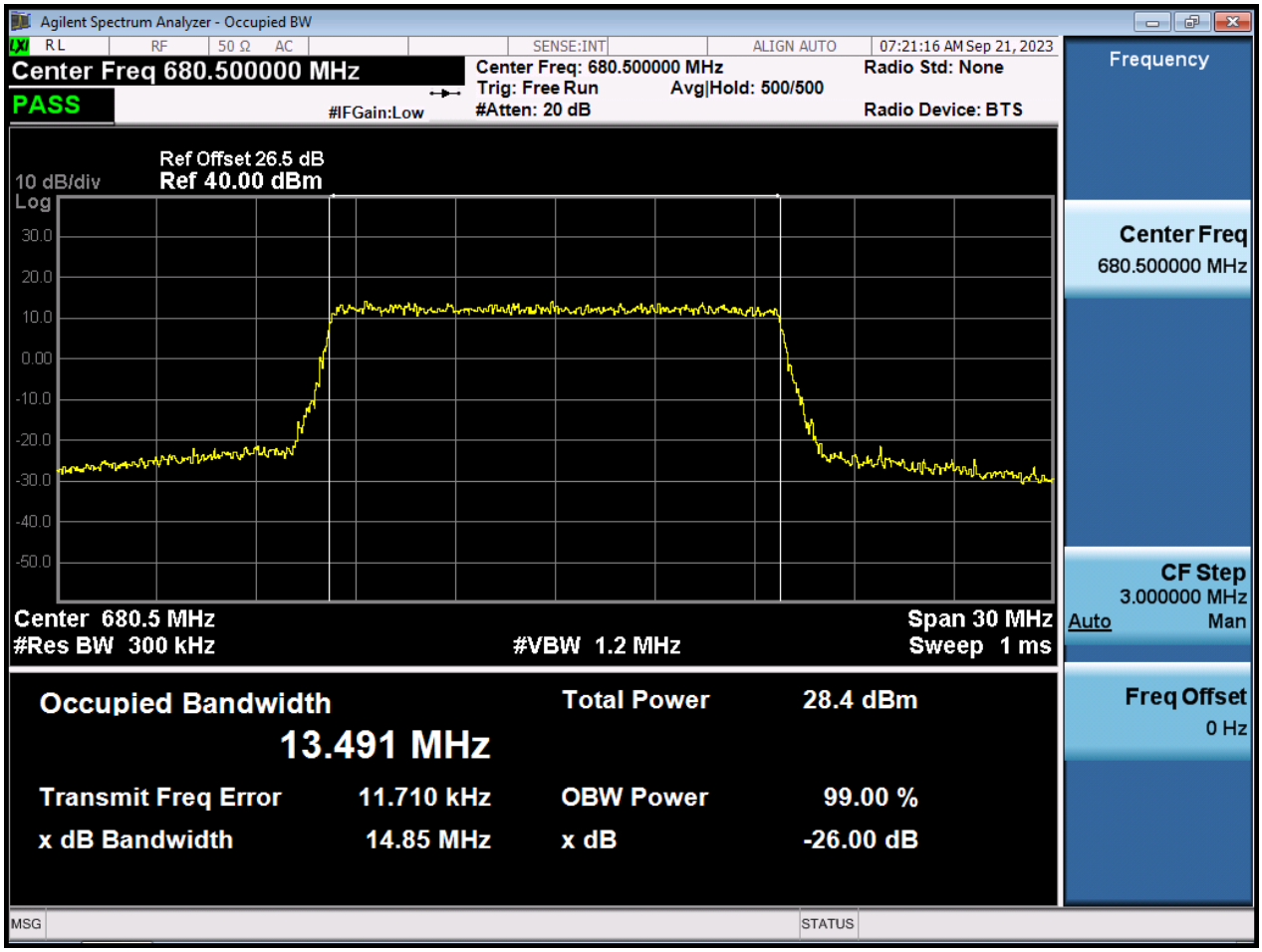
15 M_OBW_Mid Channel_16QAM_Full RB



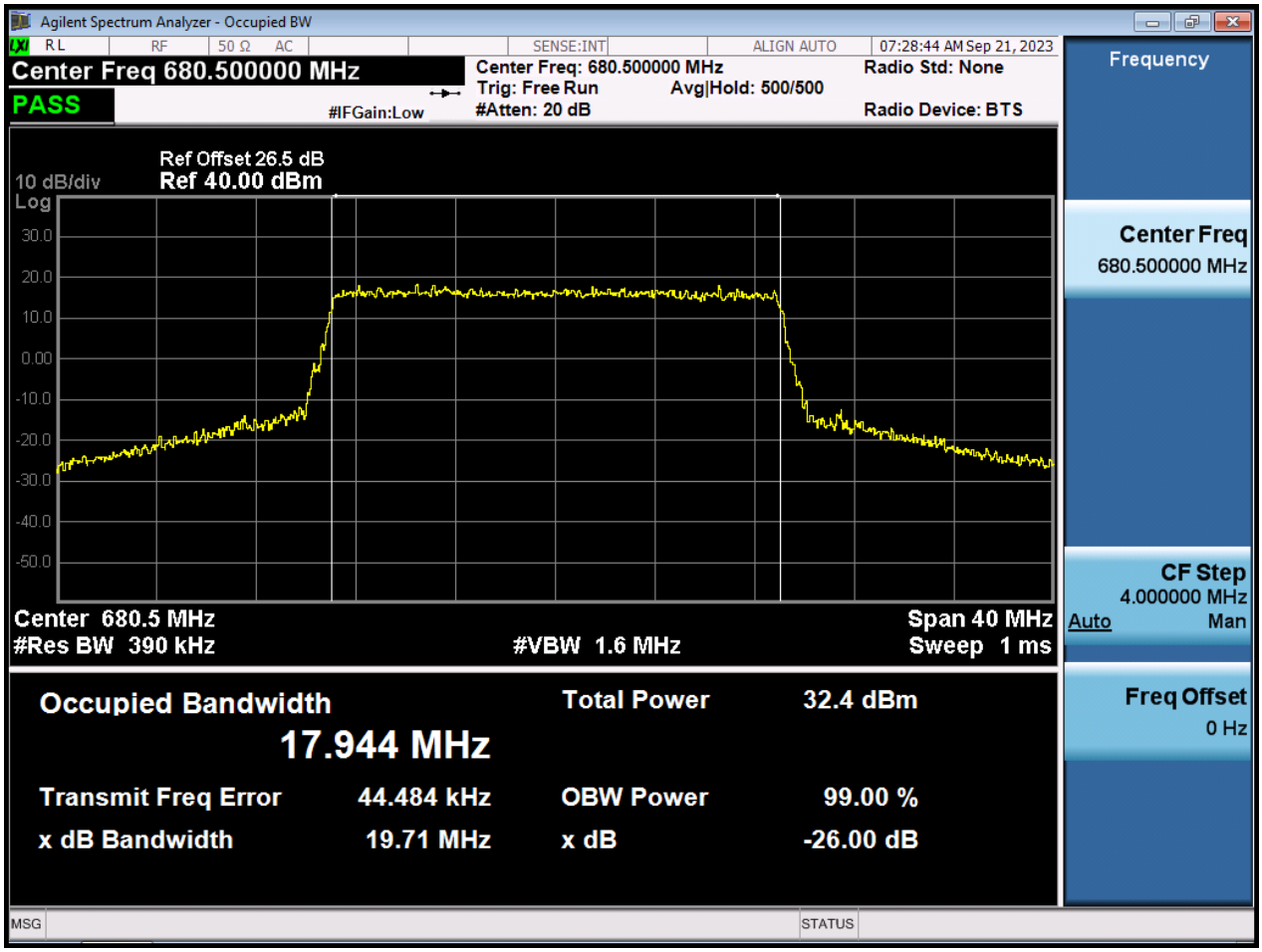
15 M_OBW_Mid Channel_64QAM_Full RB



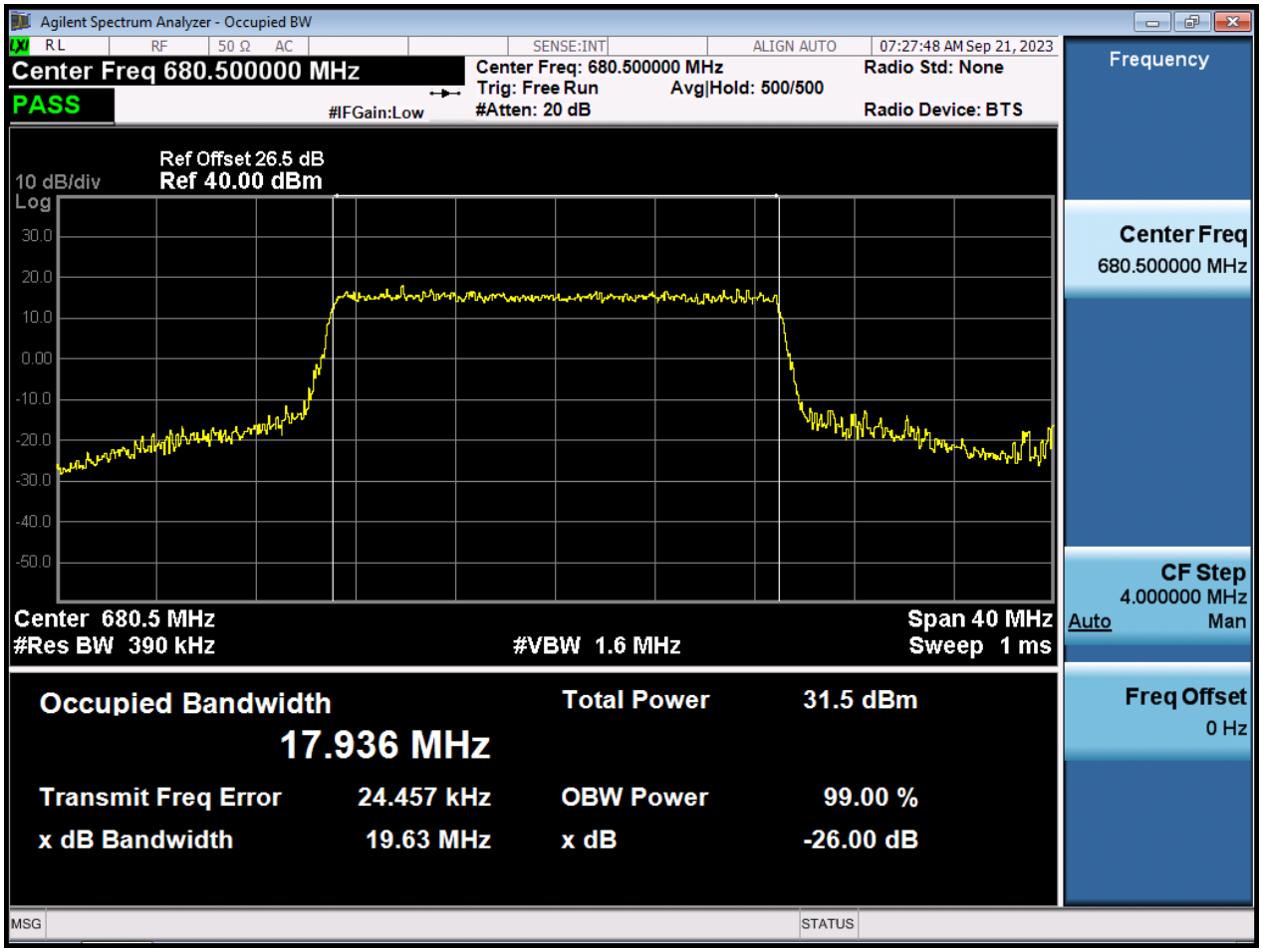
15 M_OBW_Mid Channel_256QAM_Full RB



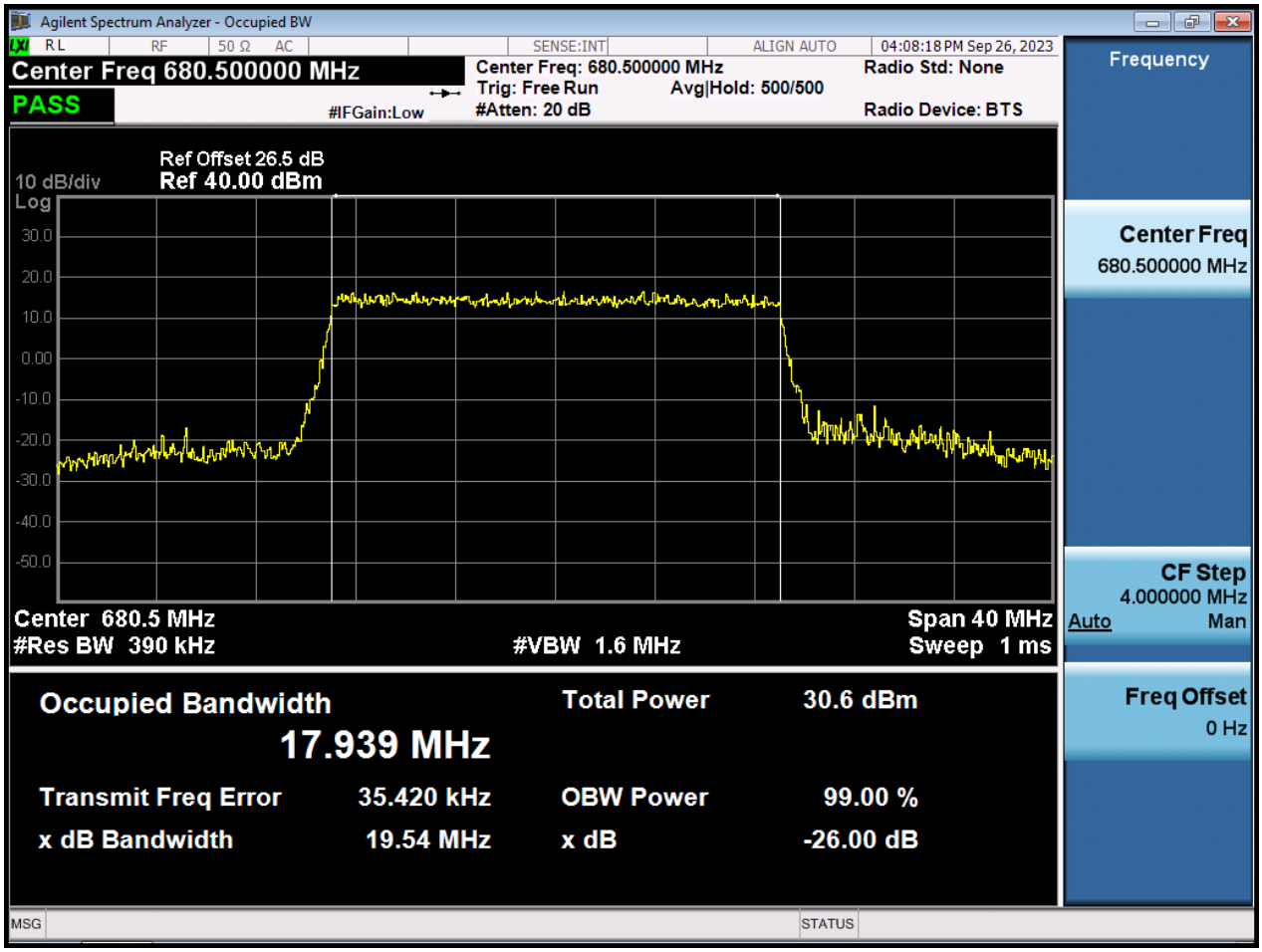
20 M_OBW_Mid Channel_QPSK_Full RB



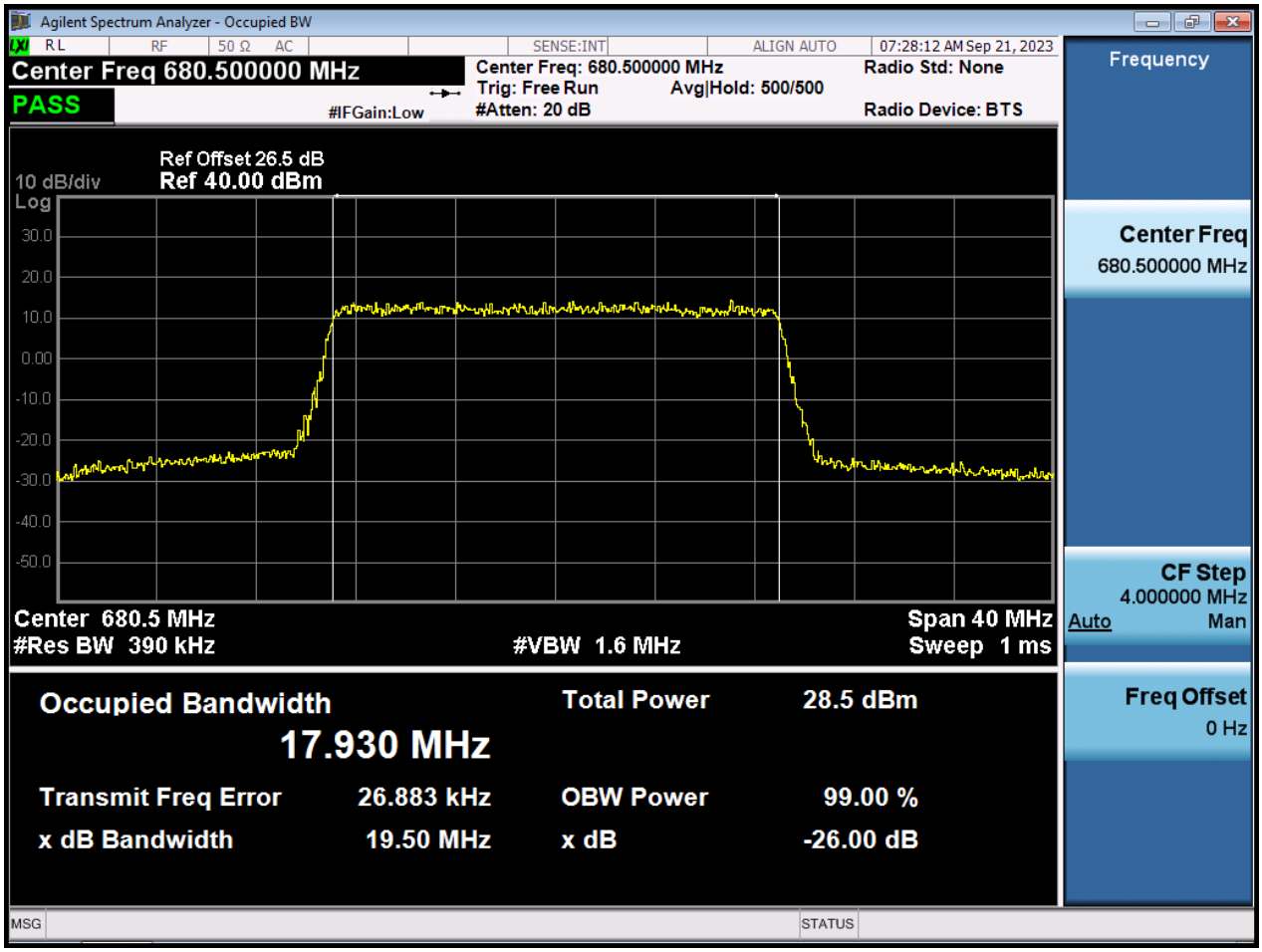
20 M_OBW_Mid Channel_16QAM_Full RB



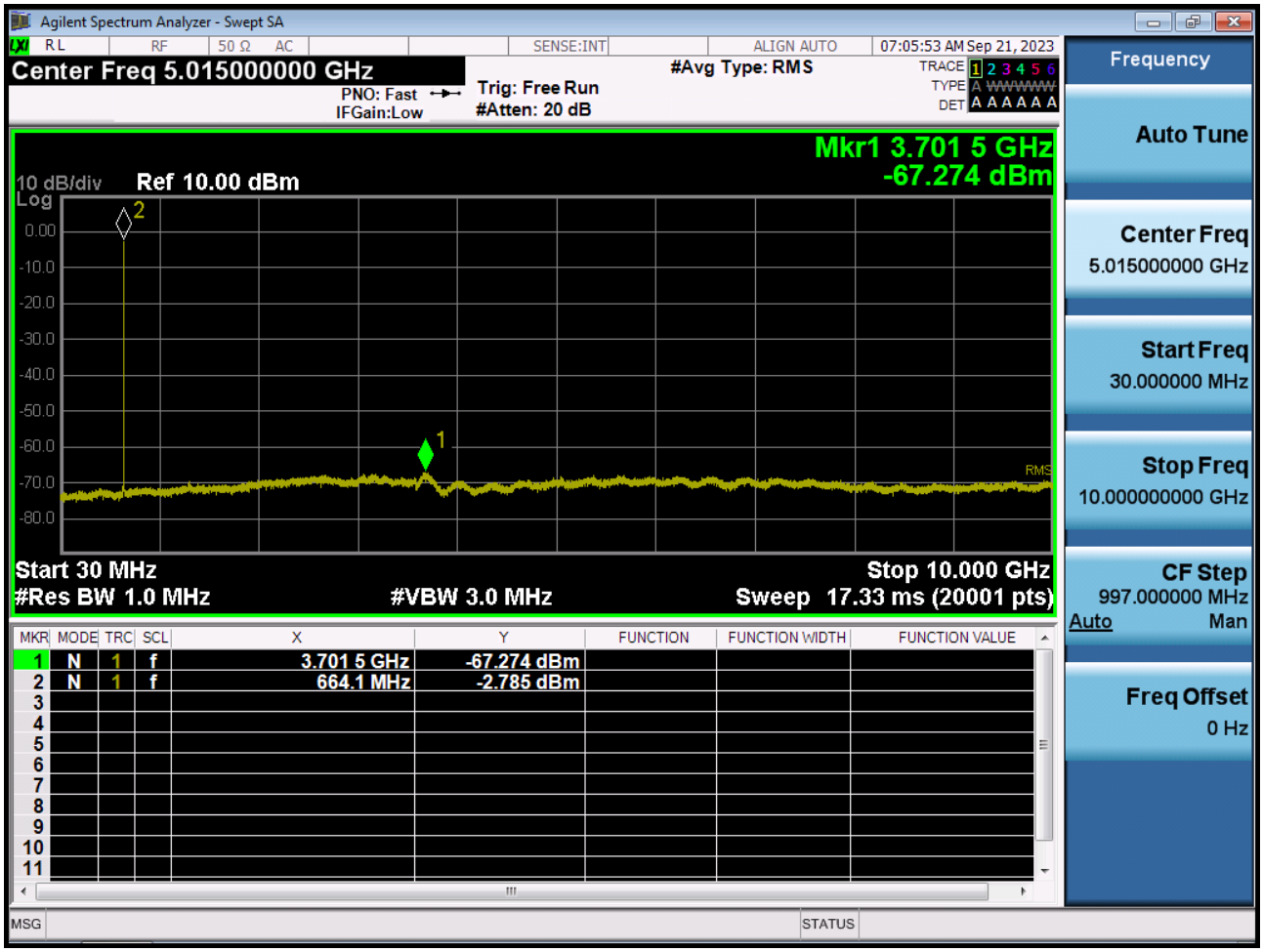
20 M_OBW_Mid Channel_64QAM_Full RB



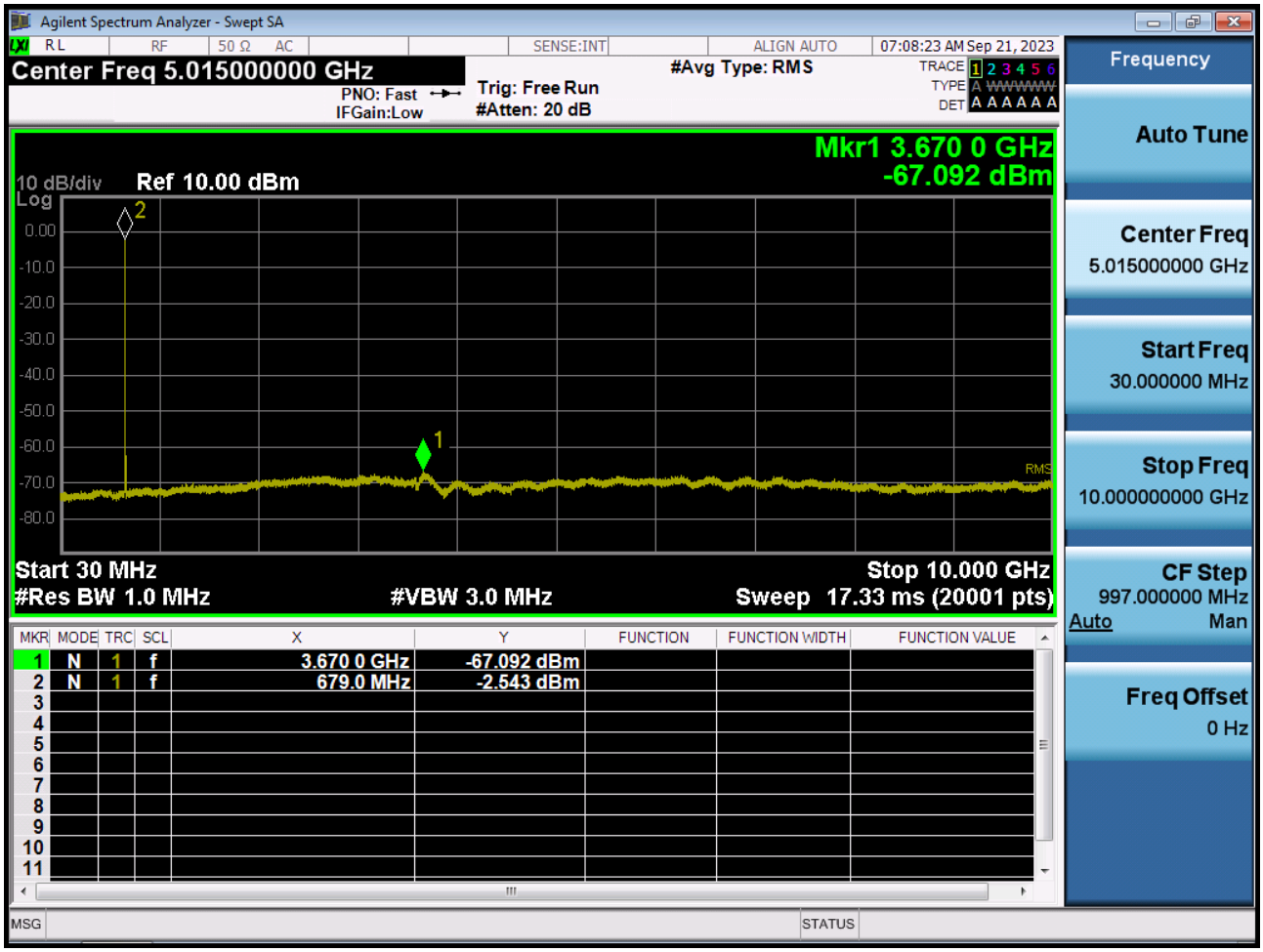
20 M_OBW_Mid Channel_256QAM_Full RB



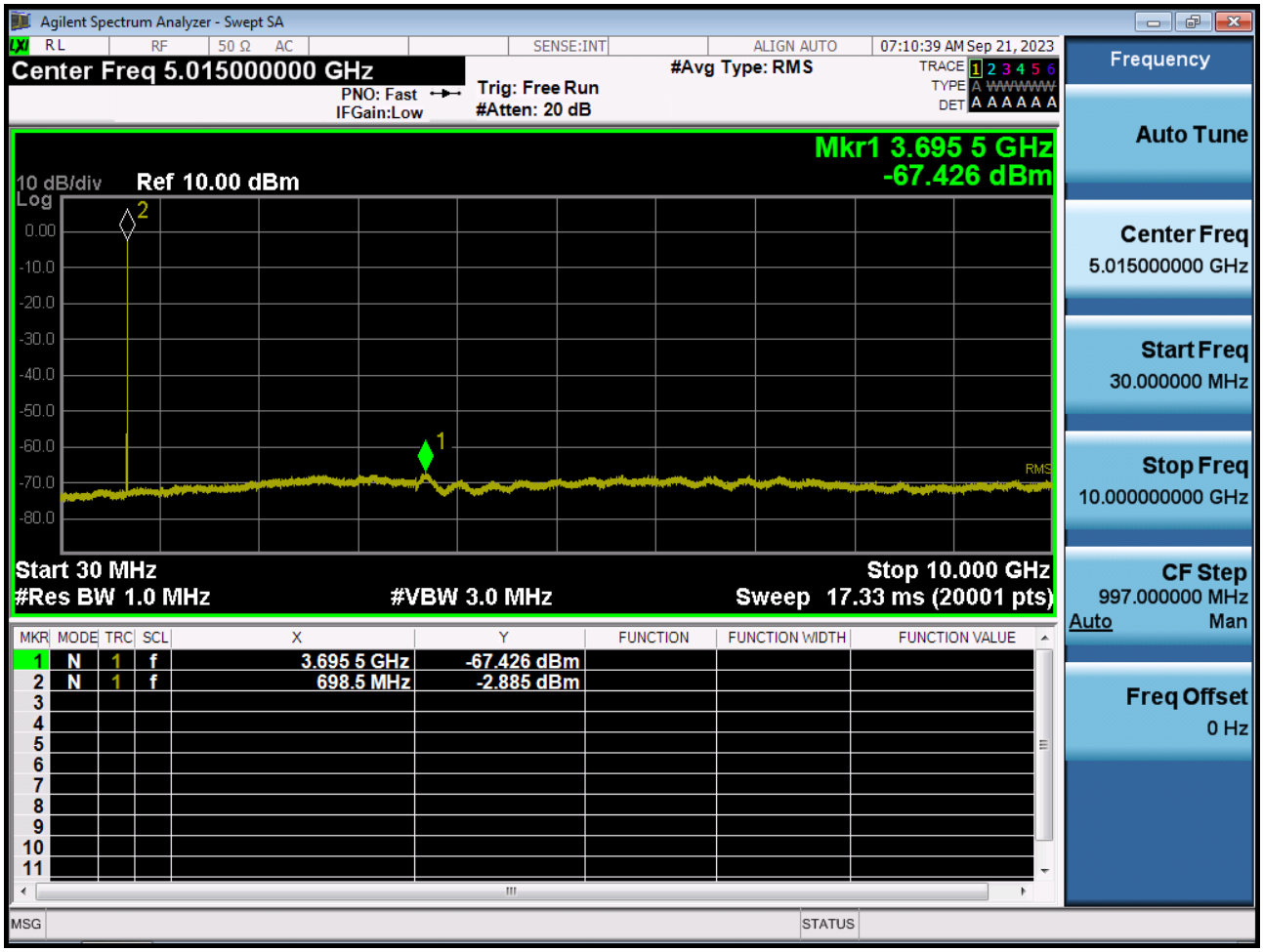
LTE71_5 M_CSE(30 M-10 G)_Lowest Channel



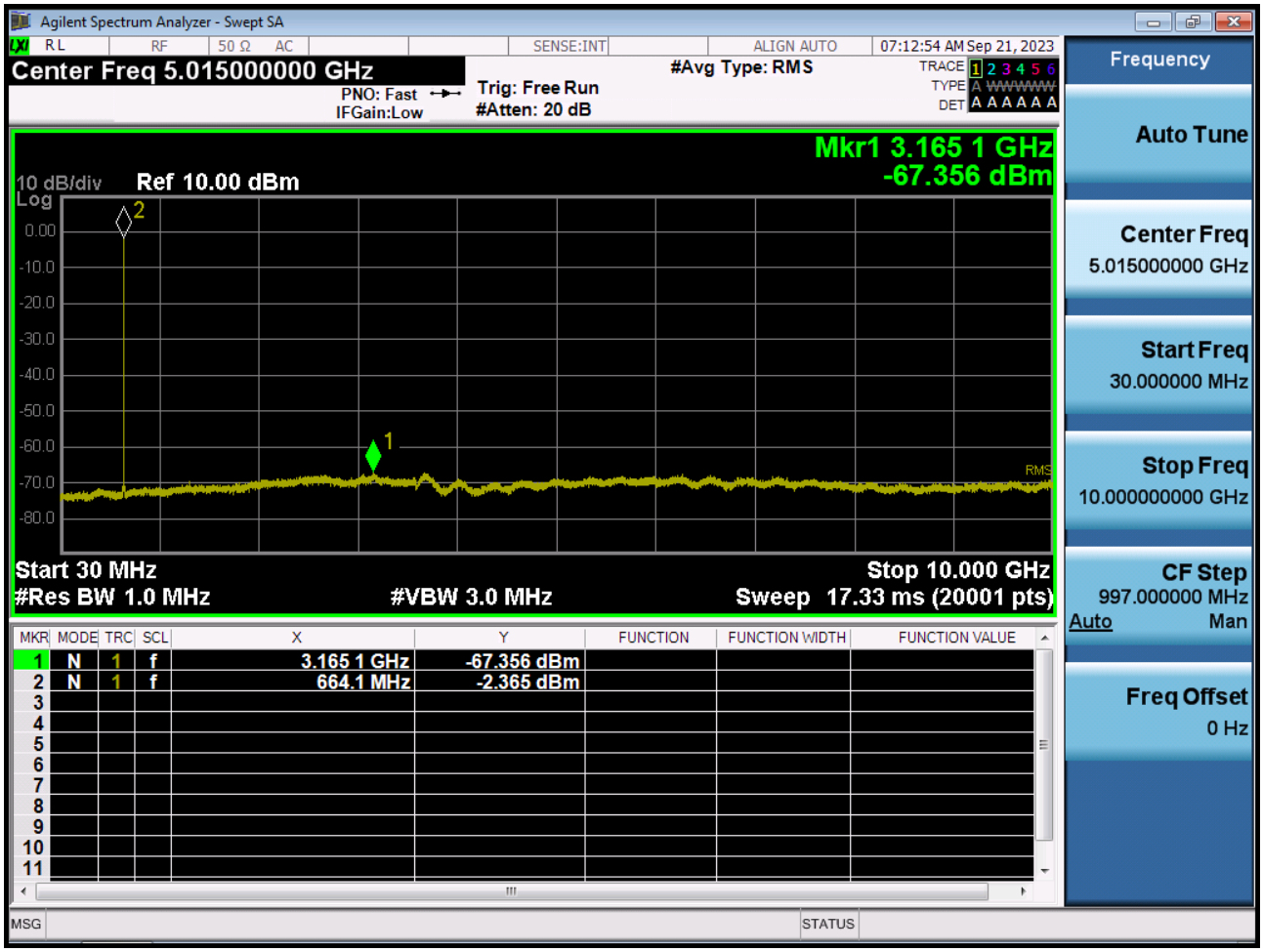
LTE71_5 M_CSE(30 M-10 G)_Mid Channel



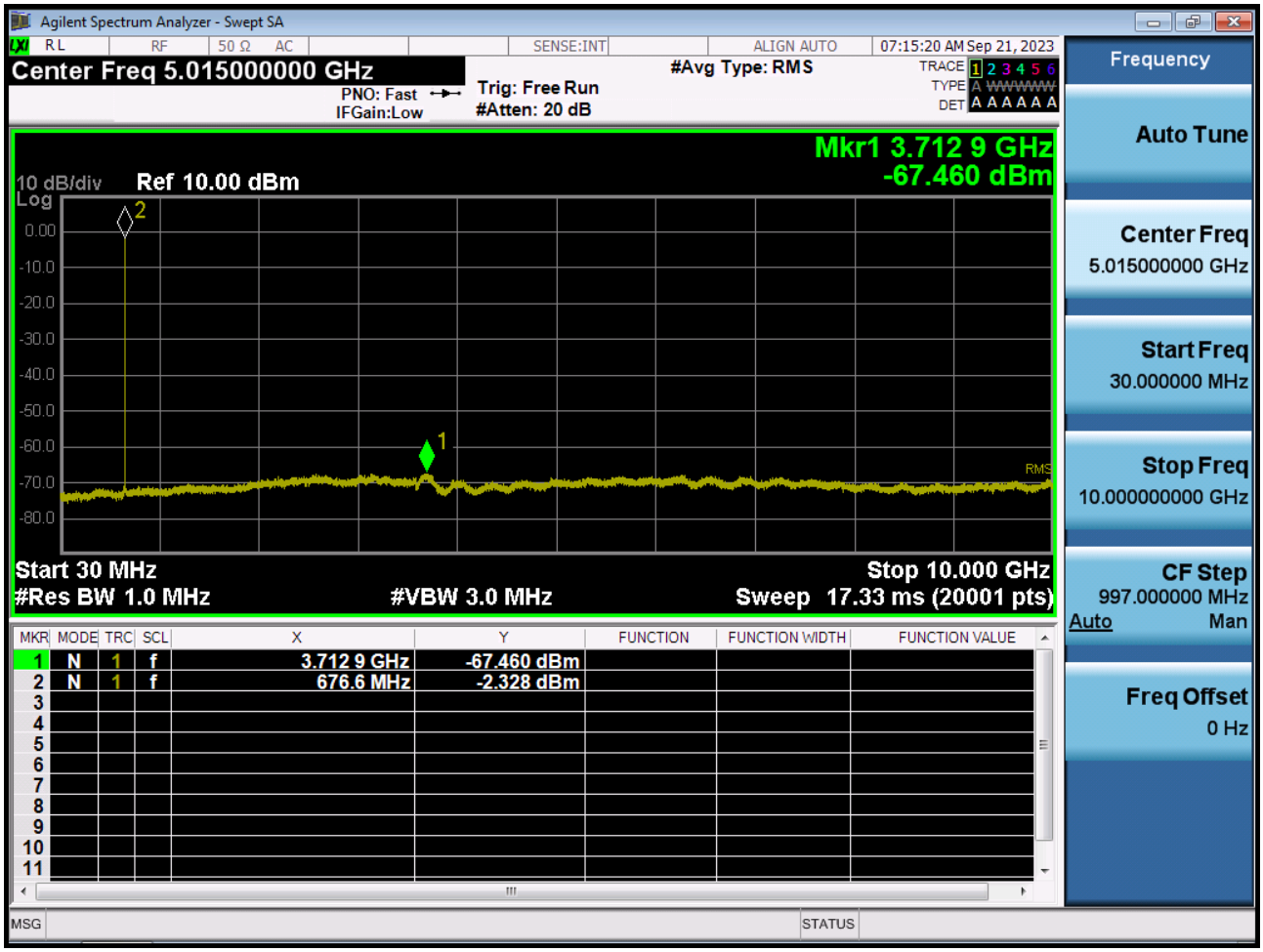
LTE71_5 M_CSE(30 M-10 G)_Highest Channel



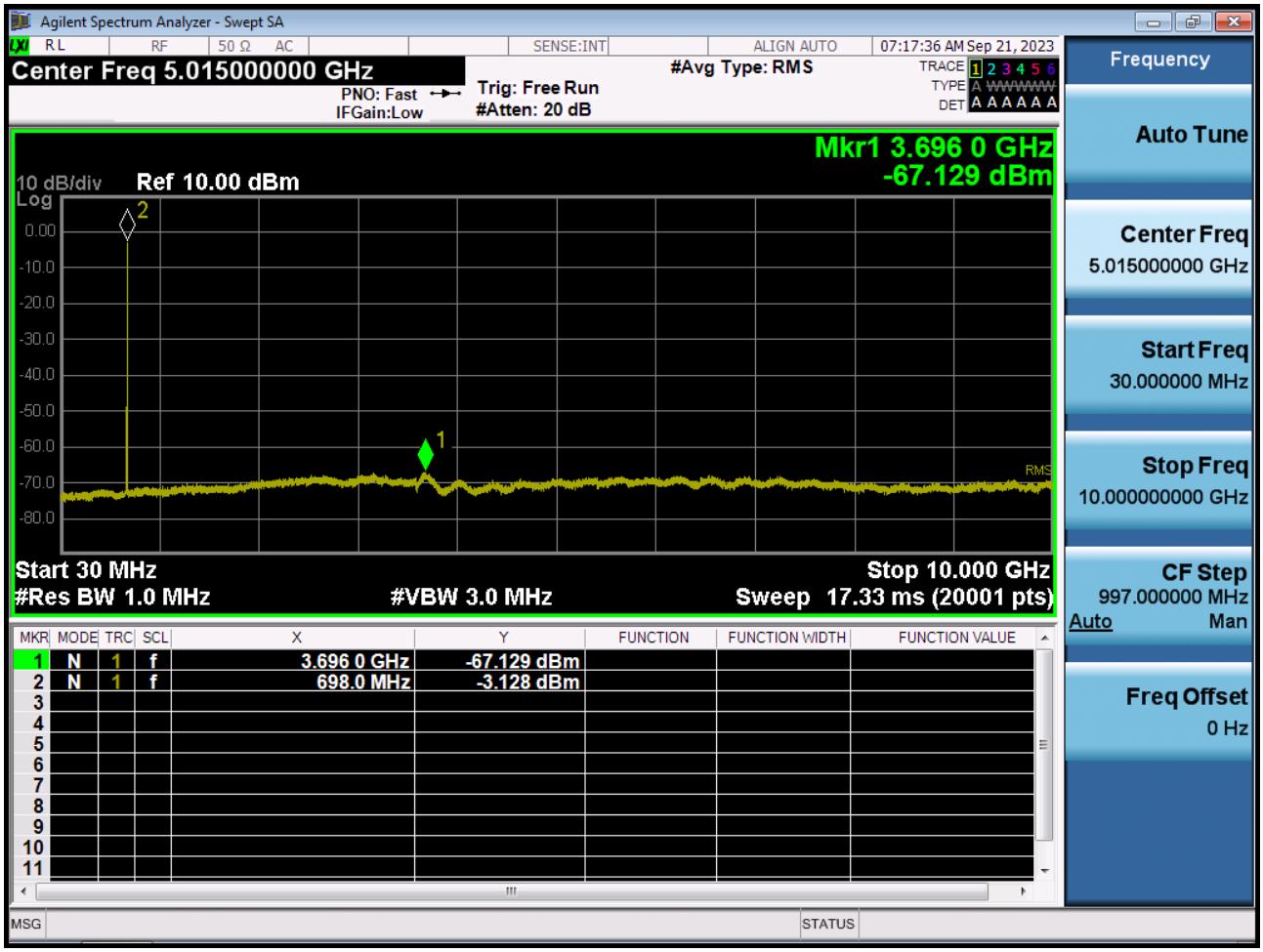
LTE71_10 M_CSE(30 M-10 G)_Lowest Channel



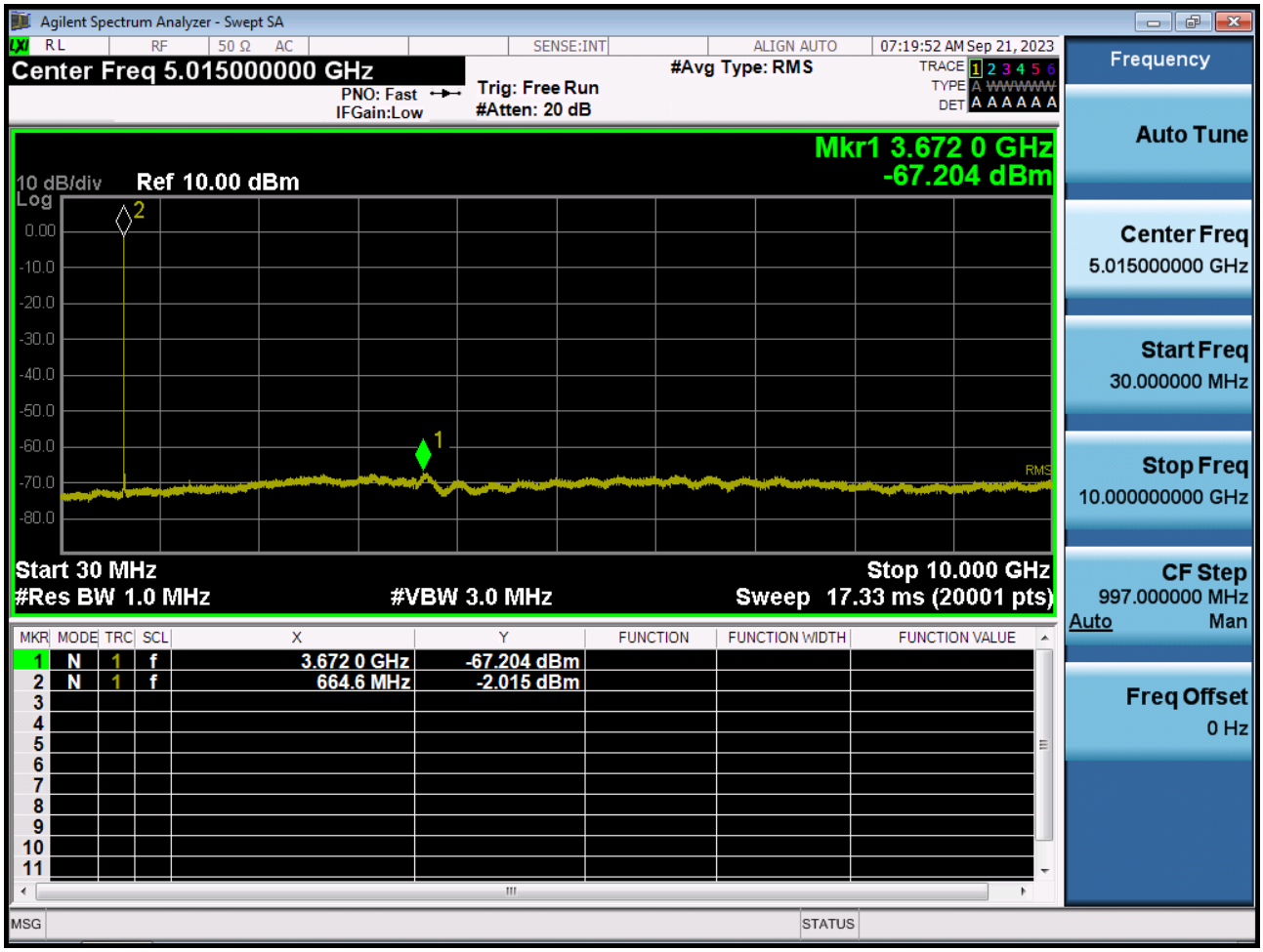
LTE71_10 M_CSE(30 M-10 G)_Mid Channel



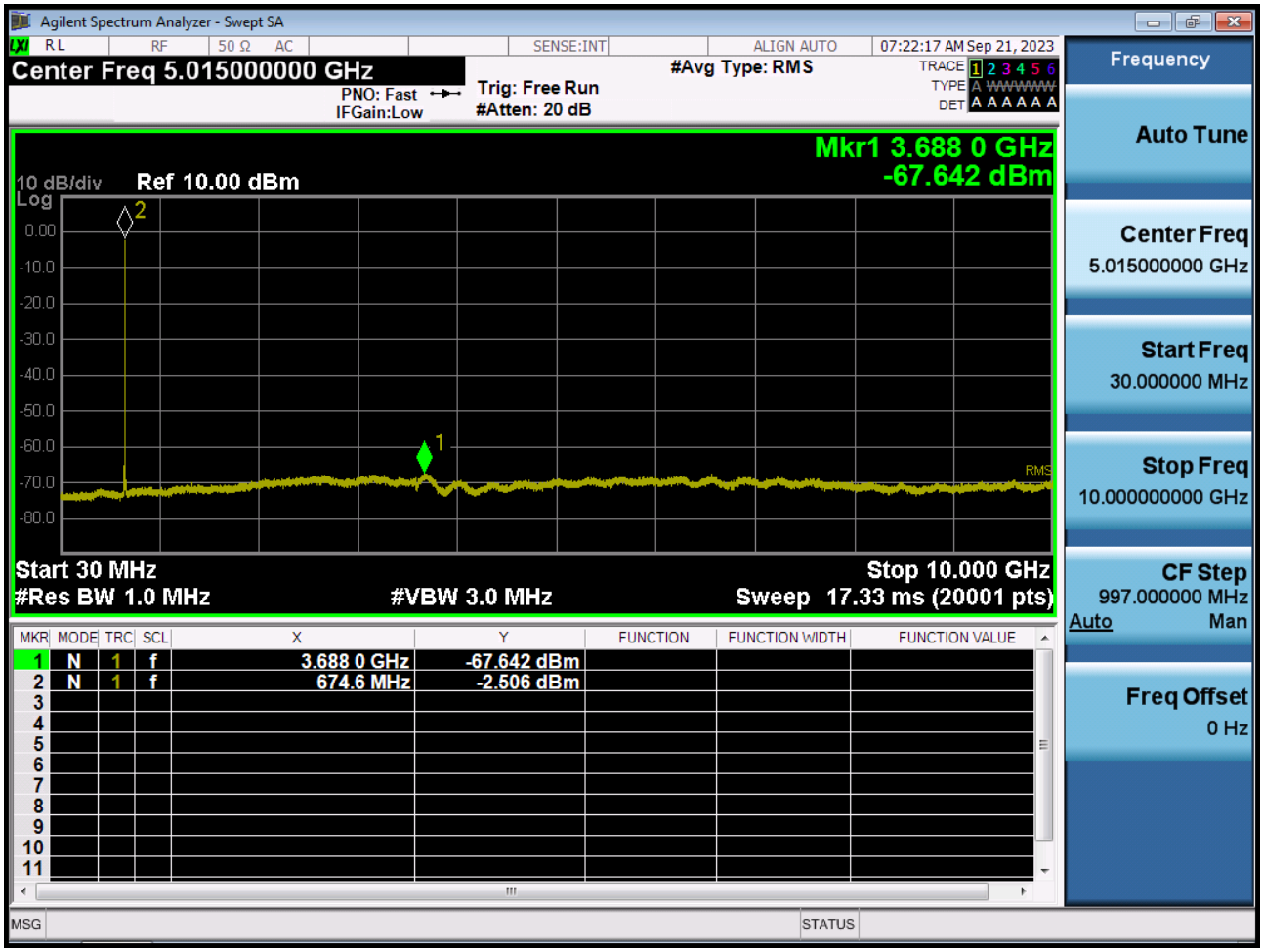
LTE71_10 M_CSE(30 M-10 G)_Highest Channel



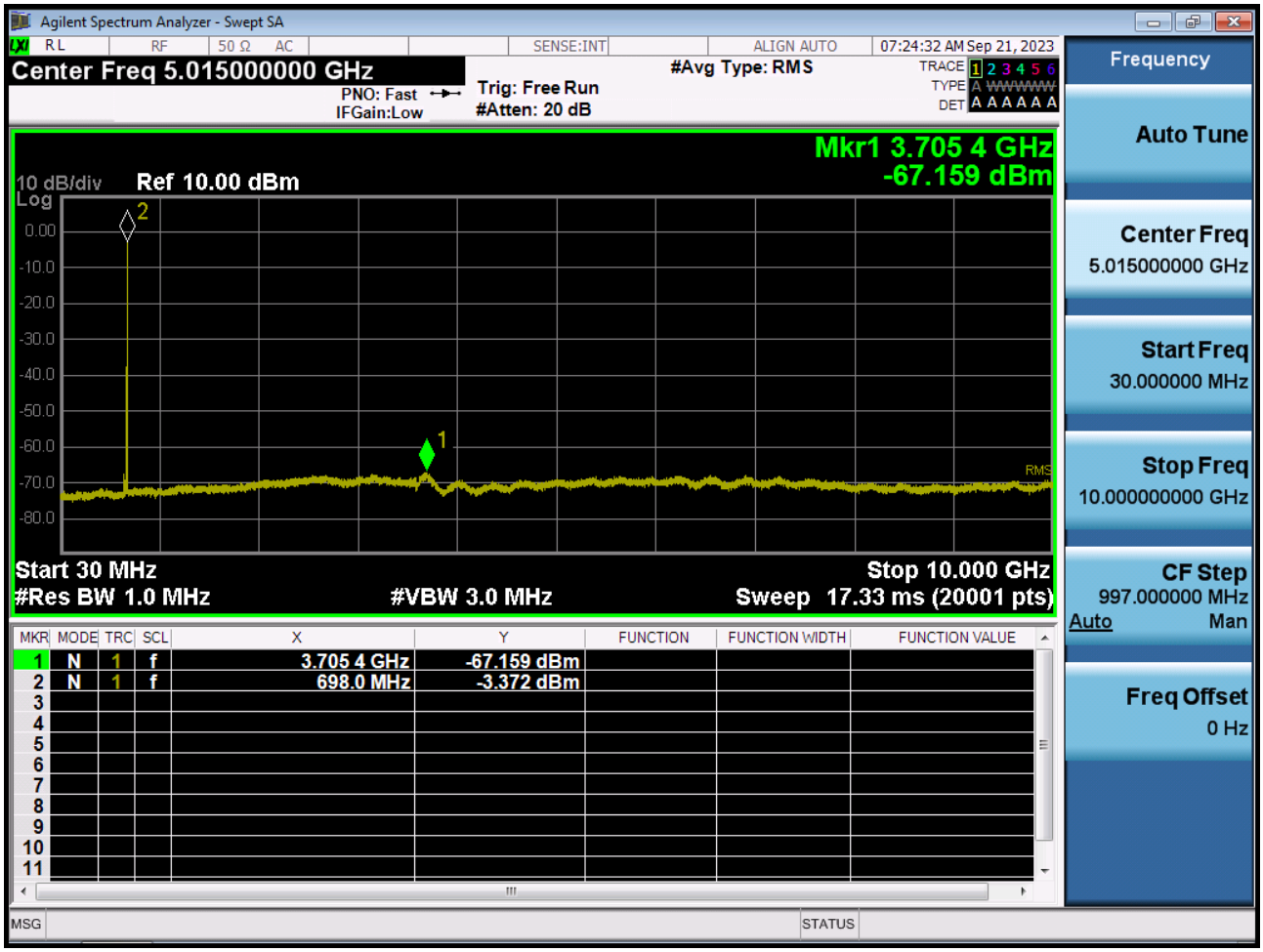
LTE71_15 M_CSE(30 M-10 G)_Lowest Channel



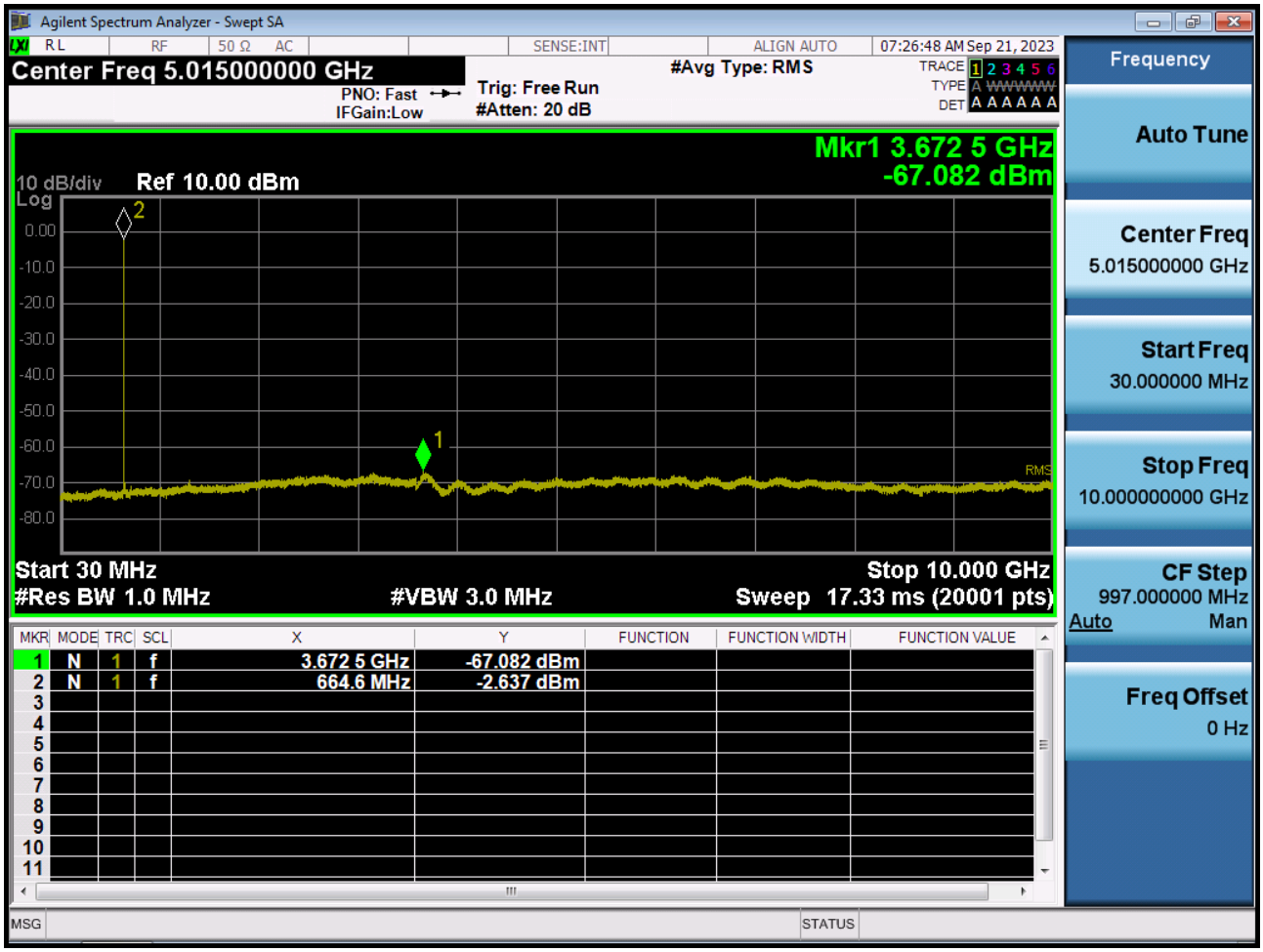
LTE71_15 M_CSE(30 M-10 G)_Mid Channel



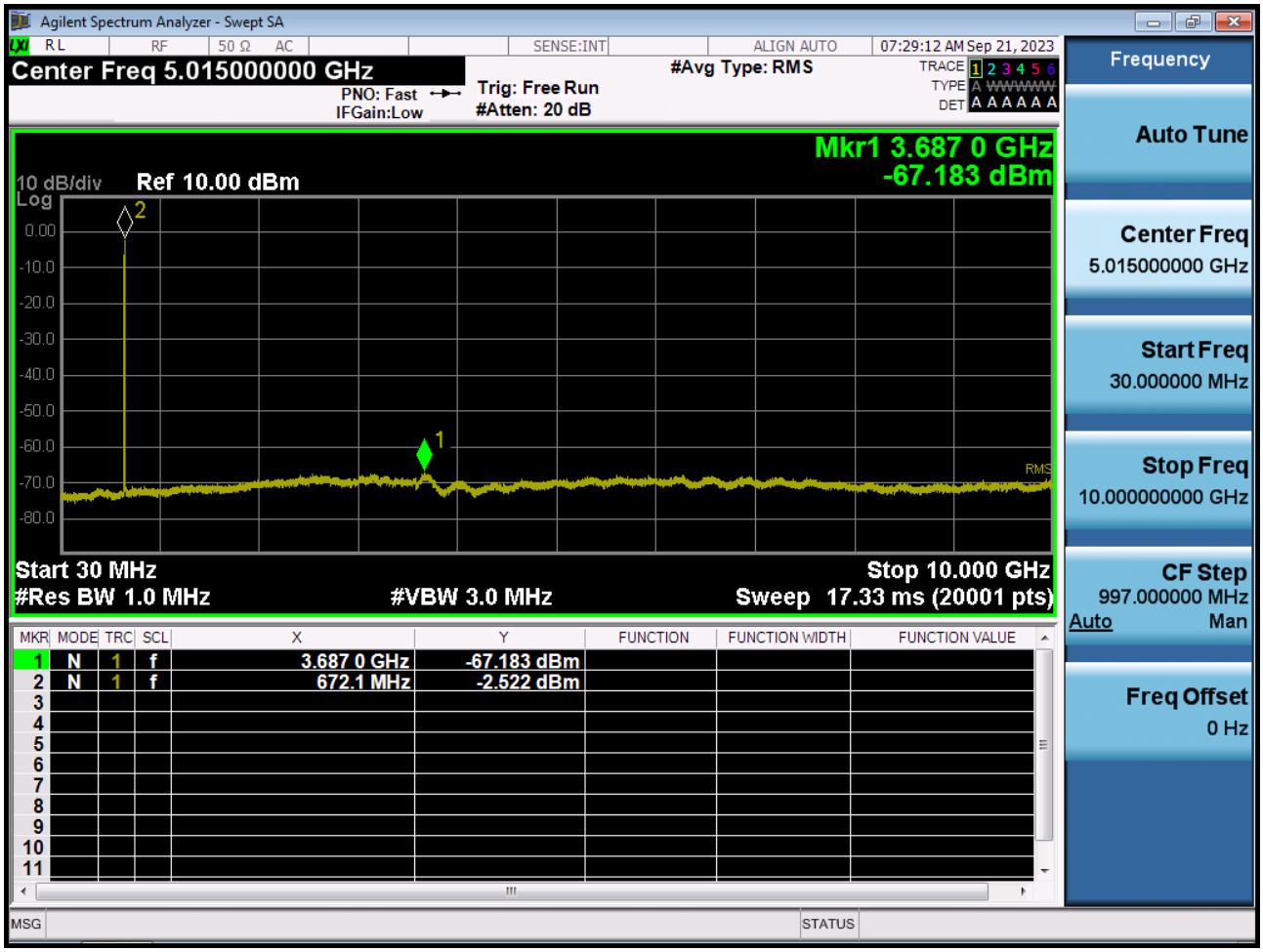
LTE71_15 M_CSE(30 M-10 G)_Highest Channel



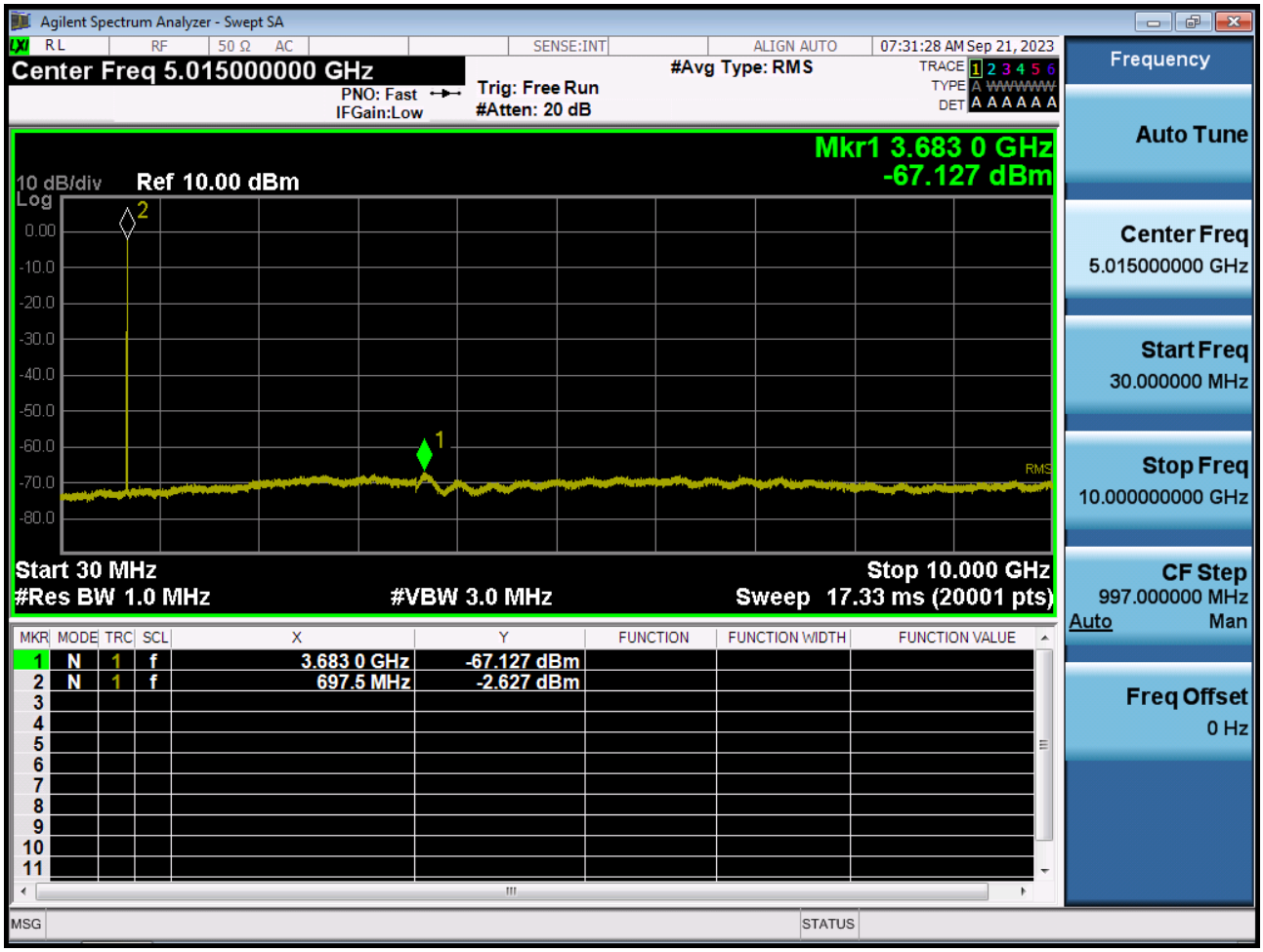
LTE71_20 M_CSE(30 M-10 G)_Lowest Channel



LTE71_20 M_CSE(30 M-10 G)_Mid Channel



LTE71_20 M_CSE(30 M-10 G)_Highest Channel



12. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2310-FC031-P