TEST REPORT

FCC LTE B66(4) Test for SM-F761U
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2504-FC066

DATE OF ISSUE
April 29, 2025

Tested by
Jae Ryang Do

Technical Manager
Jong Seok Lee

HCT CO., LTD.
BongJai Huh / CEO

The report shall not be (partly) reproduced except in full without approval of the laboratory.
HCT CO., LTD. 2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea Tel. +82 31 645 6300 Fax. +82 31 645 6401

HCT CO.,LTD.
2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea
Tel. +82 31 645 6300 Fax. +82 31 645 6401

TEST REPORT

REPORT NO.
HCT-RF-2504-FC066

DATE OF ISSUE
April 29, 2025

Additional Model
SM-F761U1

Applicant	**SAMSUNG Electronics Co., Ltd.** 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Product Name Model Name	Mobile Phone SM-F761U
Date of Test	February 26, 2025 ~ April 28, 2025
FCC ID	A3LSMF761U
Location of Test	■ Permanent Testing Lab ☐ On Site Testing (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
Test Standard Used	FCC Rule Part: § 27
Test Results	PASS

The report shall not be (partly) reproduced except in full without approval of the laboratory.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	April 29, 2025	Initial Release

Notice

Content
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) The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated. The test results have only been applied with the test methods required by the standard(s). The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***. When confirmation of authenticity of this test report is required, please contact www.hct.co.kr The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

The report shall not be (partly) reproduced except in full without approval of the laboratory.

CONTENTS

1. GENERAL INFORMATION 5
1.1. MAXIMUM OUTPUT POWER 6
2. INTRODUCTION 8
2.1. DESCRIPTION OF EUT 8
2.2. MEASURING INSTRUMENT CALIBRATION 8
2.3. TEST FACILITY 8
3. DESCRIPTION OF TESTS 9
3.1 TEST PROCEDURE 9
3.2 RADIATED POWER 10
3.3 RADIATED SPURIOUS EMISSIONS 11
3.4 PEAK- TO- AVERAGE RATIO 12
3.5 OCCUPIED BANDWIDTH. 14
3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL 15
3.7 BAND EDGE 16
3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE 18
3.9 WORST CASE(RADIATED TEST) 19
3.10 WORST CASE(CONDUCTED TEST) 20
4. LIST OF TEST EQUIPMENT 21
5. MEASUREMENT UNCERTAINTY 22
6. SUMMARY OF TEST RESULTS 23
7. SAMPLE CALCULATION 24
8. TEST DATA(Main 1 ANT) 26
8.1 EQUIVALENT ISOTROPIC RADIATED POWER 26
8.2 RADIATED SPURIOUS EMISSIONS 29
8.3 PEAK-TO-AVERAGE RATIO 30
8.4 OCCUPIED BANDWIDTH 31
8.5 CONDUCTED SPURIOUS EMISSIONS 32
8.6 BAND EDGE 32
8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE 33
9. TEST DATA(Sub 5 ANT) 51
9.1 EQUIVALENT ISOTROPIC RADIATED POWER 51
9.2 RADIATED SPURIOUS EMISSIONS 54
9.3 PEAK-TO-AVERAGE RATIO 55
9.4 OCCUPIED BANDWIDTH 56
9.5 CONDUCTED SPURIOUS EMISSIONS 57
9.6 BAND EDGE 57
9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE 58
10. TEST PLOTS(Main 1 ANT) 76
11. TEST PLOTS(Sub 5 ANT) 197
12. ANNEX A_ TEST SETUP PHOTO 318

The report shall not be (partly) reproduced except in full without approval of the laboratory.

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:	A3LSMF761U
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§ 27
EUT Type:	Mobile phone
Model(s):	SM-F761U
Additional Model(s)	SM-F761U1
Tx Frequency:	1710.7 MHz – 1779.3 MHz (LTE – Band 66/4 (1.4 MHz)) 1711.5 MHz – 1778.5 MHz (LTE – Band 66/4 (3 MHz)) 1712.5 MHz – 1777.5 MHz (LTE – Band 66/4 (5 MHz)) 1715.0 MHz – 1775.0 MHz (LTE – Band 66/4 (10 MHz)) 1717.5 MHz – 1772.5 MHz (LTE – Band 66/4 (15 MHz)) 1720.0 MHz – 1770.0 MHz (LTE – Band 66/4 (20 MHz))
Date(s) of Tests:	February 26, 2025 ~ April 28, 2025
Serial number:	Radiated : R3CY20BS28E(Main 1 ANT), R3CY20BQHFP(Sub 5 ANT) Conducted : R3CY20BSA1L
Antenna Information	Please refer to the Antenna Specification document.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

1.1. MAXIMUM OUTPUT POWER

Main 1 ANT

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band66/4 (1.4)	1710.7 – 1779.3	1M10G7D	QPSK	0.186	22.69
		1M10W7D	16QAM	0.156	21.94
		1M10W7D	64QAM	0.119	20.77
		1M10W7D	256QAM	0.058	17.67
LTE – Band66/4 (3)	1711.5 – 1778.5	2M72G7D	QPSK	0.188	22.74
		2M71W7D	16QAM	0.160	22.03
		2M71W7D	64QAM	0.124	20.92
		2M71W7D	256QAM	0.059	17.71
LTE – Band66/4 (5)	1712.5 – 1777.5	4M53G7D	QPSK	0.188	22.75
		4M52W7D	16QAM	0.157	21.95
		4M52W7D	64QAM	0.121	20.81
		4M54W7D	256QAM	0.059	17.71
LTE – Band66/4 (10)	1715.0 – 1775.0	9M04G7D	QPSK	0.189	22.76
		9M02W7D	16QAM	0.156	21.92
		9M01W7D	64QAM	0.120	20.78
		9M01W7D	256QAM	0.059	17.70
LTE – Band66/4 (15)	1717.5 – 1772.5	13M5G7D	QPSK	0.191	22.82
		13M5W7D	16QAM	0.158	21.98
		13M5W7D	64QAM	0.122	20.85
		13M5W7D	256QAM	0.059	17.72
LTE – Band66/4 (20)	1720.0 – 1770.0	18M0G7D	QPSK	0.190	22.78
		18M0W7D	16QAM	0.156	21.93
		17M9W7D	64QAM	0.120	20.78
		18M0W7D	256QAM	0.059	17.72

The report shall not be (partly) reproduced except in full without approval of the laboratory.

Sub 5 ANT

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band66/4 (1.4)	1710.7 – 1779.3	1M10G7D	QPSK	0.200	23.02
		1M10W7D	16QAM	0.169	22.27
		1M10W7D	64QAM	0.130	21.13
		1M09W7D	256QAM	0.065	18.13
LTE – Band66/4 (3)	1711.5 – 1778.5	2M72G7D	QPSK	0.204	23.10
		2M70W7D	16QAM	0.171	22.32
		2M71W7D	64QAM	0.132	21.20
		2M71W7D	256QAM	0.066	18.21
LTE – Band66/4 (5)	1712.5 – 1777.5	4M53G7D	QPSK	0.206	23.14
		4M51W7D	16QAM	0.171	22.34
		4M52W7D	64QAM	0.132	21.22
		4M52W7D	256QAM	0.067	18.24
LTE – Band66/4 (10)	1715.0 – 1775.0	9M02G7D	QPSK	0.208	23.18
		9M02W7D	16QAM	0.171	22.33
		9M01W7D	64QAM	0.132	21.21
		9M03W7D	256QAM	0.067	18.23
LTE – Band66/4 (15)	1717.5 – 1772.5	13M5G7D	QPSK	0.211	23.24
		13M5W7D	16QAM	0.172	22.36
		13M5W7D	64QAM	0.134	21.26
		13M5W7D	256QAM	0.067	18.27
LTE – Band66/4 (20)	1720.0 – 1770.0	18M0G7D	QPSK	0.214	23.30
		18M0W7D	16QAM	0.171	22.34
		17M9W7D	64QAM	0.132	21.22
		17M9W7D	256QAM	0.068	18.30

The report shall not be (partly) reproduced except in full without approval of the laboratory.

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

Please refer to the [2G3G] Test Report.

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, Republic of Korea.**

The report shall not be (partly) reproduced except in full without approval of the laboratory.

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Band Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Radiated Power	- ANSI C63.26-2015 – Section 5.2.4.4 - KDB 971168 D01 v03r01 – Section 5.8
Radiated Spurious and Harmonic Emissions	- ANSI C63.26-2015 – Section 5.5.3 - KDB 971168 D01 v03r01 – Section 5.8

The report shall not be (partly) reproduced except in full without approval of the laboratory.

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.

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

The report shall not be (partly) reproduced except in full without approval of the laboratory.

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.

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 10th harmonics from 9 kHz.

Test Note

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

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

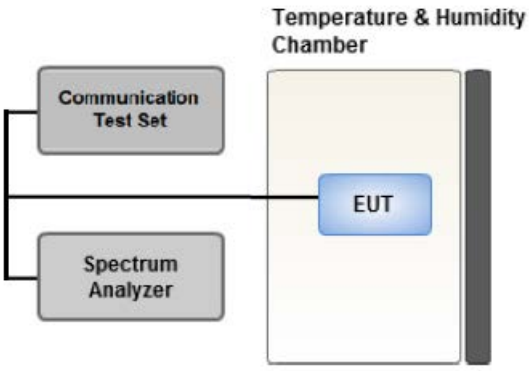
Where: P_g is the generator output power into the substitution antenna.

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

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

The report shall not be (partly) reproduced except in full without approval of the laboratory.

3.4 PEAK- TO- AVERAGE RATIO



Test setup

① CCDF Procedure for PAPR

Test Settings

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

② Alternate Procedure for PAPR

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

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

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

The report shall not be (partly) reproduced except in full without approval of the laboratory.

Test Settings(Peak Power)

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

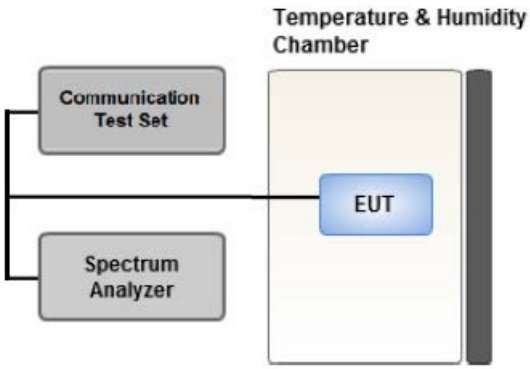
1. Set the RBW ≥ OBW.
2. Set VBW ≥ 3 × RBW.
3. Set span ≥ 2 × OBW.
4. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period).
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the peak amplitude level.

Test Settings(Average Power)

1. Set span to 2 × to 3 × the OBW.
2. Set RBW ≥ OBW.
3. Set VBW ≥ 3 × RBW.
4. Set number of measurement points in sweep ≥ 2 × span / RBW.
5. Sweep time:
   Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (automation-compatible) measurement. The transmission period is the (on + off) time.
6. Detector = power averaging (rms).
7. Set sweep trigger to "free run."
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
9. Use the peak marker function to determine the maximum amplitude level.
10. Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission. For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is a constant 25 %.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

3.5 OCCUPIED BANDWIDTH.



Test setup

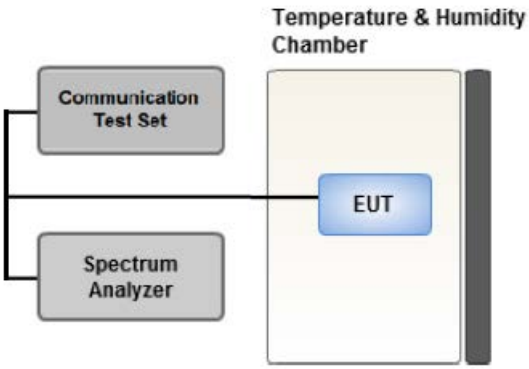
The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.
The EUT makes a call to the communication simulator.
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.
Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5 % of the expected OBW
3. VBW ≥ 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

The report shall not be (partly) reproduced except in full without approval of the laboratory.

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

Test Overview

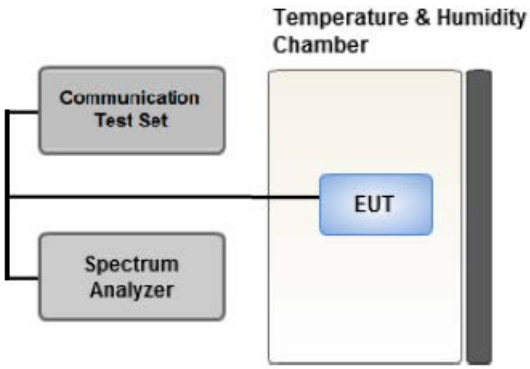
The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured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

Test Settings

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

The report shall not be (partly) reproduced except in full without approval of the laboratory.

3.7 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

The report shall not be (partly) reproduced except in full without approval of the laboratory.

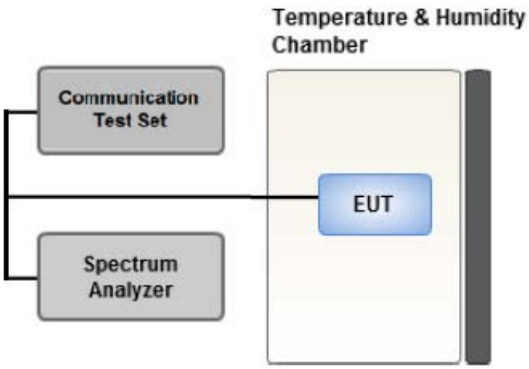
Test Notes

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.

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.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015.

The frequency stability of the transmitter is measured by:

1. Temperature:
   The temperature is varied from -30 °C to +50 °C in 10 °C increments using an environmental chamber.
2. Primary Supply Voltage:
   .- Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.
   .- For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter.
   Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

3.9 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
  Worst case : Stand alone
- All simultaneous transmission scenarios of operation were investigated, and the test results showed no additional significant emissions relative to the least restrictive limit were observed.
  Therefore, only the worst case(stand-alone) results were reported.
- In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported. (Worst case : 20 MHz (Main 1 ANT), 20 MHz(Sub 5 ANT))
- The EUT was tested in three modes(Open, Half-open, Closed), the worst case configuration results are reported. (Worst case: Half-open mode)
- The worst case is reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data.
- Please refer to the table below.
- LTE Band 66 (1710 – 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 - 1755 MHz) and they have the same Tune-up power. Therefore, test data provided in this report covers Band 4 as well as Band 66.
- SM-F761U & additional models were tested and the worst case results are reported.
  (Worst case : SM-F761U)

[Main 1 ANT Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	See Section 8.1		X
Radiated Spurious and Harmonic Emissions	QPSK	See Section 8.2		Y

[Sub 5 ANT Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	See Section 9.1		Y
Radiated Spurious and Harmonic Emissions	QPSK	See Section 9.2		Y

The report shall not be (partly) reproduced except in full without approval of the laboratory.

3.10 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.
- LTE Band 66 (1710 – 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 - 1755 MHz) and they have the same Tune-up power. Therefore, test data provided in this report covers Band 4 as well as Band 66.
- SM-F761U & additional models were tested and the worst case results are reported.
  (Worst case : SM-F761U)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5, 10, 15, 20	Mid	Full RB	0
Peak-To-Average Ratio	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5, 10, 15, 20	Mid	Full RB	0
Band Edge	QPSK	1.4	Low	1	0
			High	1	5
		3	Low	1	0
			High	1	14
		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
		1.4, 3, 5, 10, 15, 20	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	QPSK	1.4, 3, 5, 10, 15, 20	Low, Mid, High	1	0

The report shall not be (partly) reproduced except in full without approval of the laboratory.

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	Switch box(1.2 G HPF+LNA)	HCT CO., LTD.	F1L1	11/11/2025	Annual
RF Switching System	Switch box(3.3 G HPF+LNA)	HCT CO., LTD.	F1L2	11/11/2025	Annual
RF Switching System	Switch box(LNA)	HCT CO., LTD.	F1L4	11/11/2025	Annual
RF Switching System	Switch box(6 G HPF+LNA)	HCT CO., LTD.	F1L7	11/11/2025	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/07/2025	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/19/2026	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/10/2026	Annual
DC Power Supply	E3632A	Agilent	MY40010147	08/06/2025	Annual
Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Dipole Antenna	UHAP	Schwarzbeck	01288	08/07/2026	Biennial
Chamber	SU-642	ESPEC	93008124	02/11/2026	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	09/20/2026	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/23/2027	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/14/2026	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/10/2026	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	08/06/2025	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/28/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	08/19/2026	Biennial
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262094331	11/13/2025	Annual
Radio Communication Test Station	MT8000A	Anritsu Corp.	6272613402	08/28/2025	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/26/2025	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/17/2025	Annual
Signal Analyzer(2 Hz ~ 50.0 GHz)	N9040B	KEYSIGHT	US55230216	12/09/2025	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).

The report shall not be (partly) reproduced except in full without approval of the laboratory.

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 (±kHz)
Occupied Bandwidth	95 (Confidence level about 95 %, *k*=2)
Frequency stability	28 (Confidence level about 95 %, *k*=2)

Parameter	Expanded Uncertainty (±dB)
Block Edge	0.70 (Confidence level about 95 %, *k*=2)
Conducted Spurious Emissions	1.18 (Confidence level about 95 %, *k*=2)
Peak- to- Average Ratio	0.68 (Confidence level about 95 %, *k*=2)
Radiated Power	4.74 (Confidence level about 95 %, *k*=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, *k*=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.68 (Confidence level about 95 %, *k*=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.75 (Confidence level about 95 %, *k*=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.82 (Confidence level about 95 %, *k*=2)
Radiated Disturbance (Above 40 GHz)	5.58 (Confidence level about 95 %, *k*=2)

The report shall not be (partly) reproduced except in full without approval of the laboratory.

6. SUMMARY OF TEST RESULTS

-. The decision rule applies 'simple acceptance'

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(h)	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions	PASS
Conducted Output Power	§ 2.1046	N/A	See Note1
Peak- to- Average Ratio	§ 27.50(d)(5)	< 13 dB	PASS
Frequency stability / variation of ambient temperature	§ 2.1055, § 27.54	Emission must remain in band	PASS

Note:

1. See SAR Report

6.2 Test Condition : Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§ 27.50(d)(4)	< 1 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§ 2.1053, § 27.53(h)	< 43 + 10log10 (P[Watts]) for all out-of band emissions	PASS

The report shall not be (partly) reproduced except in full without approval of the laboratory.

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.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

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

The report shall not be (partly) reproduced except in full without approval of the laboratory.

8. TEST DATA(Main 1 ANT)

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1710.7	LTE B66/B4 1.4 MHz	QPSK	-19.72	13.65	10.04	2.06	H	< 1.00	0.146	21.63	1	5
		16-QAM	-20.48	12.89	10.04	2.06	H		0.122	20.87		
		64-QAM	-21.64	11.73	10.04	2.06	H		0.094	19.71		
		256-QAM	-24.76	8.61	10.04	2.06	H		0.046	16.59		
1745.0		QPSK	-18.88	14.58	10.18	2.07	H		0.186	22.69	1	5
		16-QAM	-19.63	13.83	10.18	2.07	H		0.156	21.94		
		64-QAM	-20.80	12.66	10.18	2.07	H		0.119	20.77		
		256-QAM	-23.90	9.56	10.18	2.07	H		0.058	17.67		
1779.3		QPSK	-19.46	14.36	10.26	2.09	H		0.179	22.53	1	0
		16-QAM	-20.14	13.68	10.26	2.09	H		0.153	21.85		
		64-QAM	-21.29	12.53	10.26	2.09	H		0.117	20.70		
		256-QAM	-24.52	9.30	10.26	2.09	H		0.056	17.47		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1711.5	LTE B66/B4 3 MHz	QPSK	-19.69	13.68	10.04	2.06	H	< 1.00	0.147	21.66	1	14
		16-QAM	-20.41	12.96	10.04	2.06	H		0.124	20.94		
		64-QAM	-21.55	11.82	10.04	2.06	H		0.095	19.80		
		256-QAM	-24.77	8.60	10.04	2.06	H		0.045	16.58		
1745.0		QPSK	-18.83	14.63	10.18	2.07	H		0.188	22.74	1	14
		16-QAM	-19.54	13.92	10.18	2.07	H		0.160	22.03		
		64-QAM	-20.65	12.81	10.18	2.07	H		0.124	20.92		
		256-QAM	-23.86	9.60	10.18	2.07	H		0.059	17.71		
1778.5		QPSK	-19.36	14.46	10.26	2.09	H		0.183	22.63	1	0
		16-QAM	-20.12	13.70	10.26	2.09	H		0.154	21.87		
		64-QAM	-21.26	12.56	10.26	2.09	H		0.118	20.73		
		256-QAM	-24.37	9.45	10.26	2.09	H		0.058	17.62		

The report shall not be (partly) reproduced except in full without approval of the laboratory.

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1712.5	LTE B66/B4 5 MHz	QPSK	-19.66	13.73	10.06	2.06	H	< 1.00	0.149	21.73	1	24
		16-QAM	-20.48	12.91	10.06	2.06	H		0.123	20.91		
		64-QAM	-21.64	11.75	10.06	2.06	H		0.094	19.75		
		256-QAM	-24.73	8.66	10.06	2.06	H		0.046	16.66		
1745.0		QPSK	-18.82	14.64	10.18	2.07	H		0.188	22.75	1	24
		16-QAM	-19.62	13.84	10.18	2.07	H		0.157	21.95		
		64-QAM	-20.76	12.70	10.18	2.07	H		0.121	20.81		
		256-QAM	-23.86	9.60	10.18	2.07	H		0.059	17.71		
1777.5		QPSK	-19.33	14.49	10.26	2.09	H		0.185	22.66	1	0
		16-QAM	-20.06	13.76	10.26	2.09	H		0.156	21.93		
		64-QAM	-21.21	12.61	10.26	2.09	H		0.120	20.78		
		256-QAM	-24.39	9.43	10.26	2.09	H		0.058	17.60		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1715.0	LTE B66/B4 10 MHz	QPSK	-19.59	13.80	10.06	2.06	H	< 1.00	0.151	21.80	1	49
		16-QAM	-20.46	12.93	10.06	2.06	H		0.124	20.93		
		64-QAM	-21.60	11.79	10.06	2.06	H		0.095	19.79		
		256-QAM	-24.70	8.69	10.06	2.06	H		0.047	16.69		
1745.0		QPSK	-18.81	14.65	10.18	2.07	H		0.189	22.76	1	49
		16-QAM	-19.65	13.81	10.18	2.07	H		0.156	21.92		
		64-QAM	-20.79	12.67	10.18	2.07	H		0.120	20.78		
		256-QAM	-23.89	9.57	10.18	2.07	H		0.059	17.68		
1775.0		QPSK	-19.16	14.60	10.25	2.09	H		0.189	22.76	1	0
		16-QAM	-20.04	13.72	10.25	2.09	H		0.154	21.88		
		64-QAM	-21.20	12.56	10.25	2.09	H		0.118	20.72		
		256-QAM	-24.22	9.54	10.25	2.09	H		0.059	17.70		

The report shall not be (partly) reproduced except in full without approval of the laboratory.

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1717.5	LTE B66/B4 15 MHz	QPSK	-19.40	14.02	10.08	2.06	H	< 1.00	0.160	22.04	1	74
		16-QAM	-20.25	13.17	10.08	2.06	H		0.132	21.19		
		64-QAM	-21.39	12.03	10.08	2.06	H		0.101	20.05		
		256-QAM	-24.45	8.97	10.08	2.06	H		0.050	16.99		
1745.0		QPSK	-18.88	14.58	10.18	2.07	H		0.186	22.69	1	74
		16-QAM	-19.73	13.73	10.18	2.07	H		0.153	21.84		
		64-QAM	-20.87	12.59	10.18	2.07	H		0.117	20.70		
		256-QAM	-23.93	9.53	10.18	2.07	H		0.058	17.64		
1772.5		QPSK	-19.10	14.66	10.25	2.09	H		0.191	22.82	1	0
		16-QAM	-19.94	13.82	10.25	2.09	H		0.158	21.98		
		64-QAM	-21.07	12.69	10.25	2.09	H		0.122	20.85		
		256-QAM	-24.20	9.56	10.25	2.09	H		0.059	17.72		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1720.0	LTE B66/B4 20 MHz	QPSK	-19.15	14.27	10.08	2.06	H	< 1.00	0.169	22.29	1	99
		16-QAM	-19.97	13.45	10.08	2.06	H		0.140	21.47		
		64-QAM	-21.11	12.31	10.08	2.06	H		0.108	20.33		
		256-QAM	-24.23	9.19	10.08	2.06	H		0.053	17.21		
1745.0		QPSK	-18.87	14.59	10.18	2.07	H		0.186	22.70	1	99
		16-QAM	-19.71	13.75	10.18	2.07	H		0.153	21.86		
		64-QAM	-20.84	12.62	10.18	2.07	H		0.118	20.73		
		256-QAM	-23.97	9.49	10.18	2.07	H		0.058	17.60		
1770.0		QPSK	-19.07	14.63	10.24	2.09	H		0.190	22.78	1	0
		16-QAM	-19.92	13.78	10.24	2.09	H		0.156	21.93		
		64-QAM	-21.07	12.63	10.24	2.09	H		0.120	20.78		
		256-QAM	-24.13	9.57	10.24	2.09	H		0.059	17.72		

The report shall not be (partly) reproduced except in full without approval of the laboratory.

8.2 RADIATED SPURIOUS EMISSIONS

▣ MODE: LTE B66

▣ MODULATION SIGNAL: 15 MHz QPSK

▣ DISTANCE: 3 meters

▣ LIMIT: -13 dBm

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	RB	
								Size	Offset
132047 (1717.5)	3 435.00	-43.16	12.41	-61.92	3.03	V	-52.54	1	74
	5 152.50	-42.94	12.41	-55.60	3.76	H	-46.95		
	6 870.00	-43.55	11.85	-50.36	4.43	H	-42.94		
132322 (1745.0)	3 490.00	-39.77	12.34	-58.02	3.04	H	-48.72	1	74
	5 235.00	-45.00	12.84	-57.58	3.78	H	-48.52		
	6 980.00	-43.45	11.40	-49.77	4.48	H	-42.85		
132597 (1772.5)	3 545.00	-40.61	12.34	-58.32	3.07	H	-49.05	1	0
	5 317.50	-44.50	13.08	-58.01	3.79	H	-48.72		
	7 090.00	-44.00	10.91	-48.25	4.48	H	-41.82		

The report shall not be (partly) reproduced except in full without approval of the laboratory.

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
66/4	1.4 MHz	1745.0	QPSK	6	0	4.79
			16-QAM			5.62
			64-QAM			5.88
			256-QAM			5.70
	3 MHz		QPSK	15		5.08
			16-QAM			5.75
			64-QAM			5.95
			256-QAM			5.81
	5 MHz		QPSK	25		5.06
			16-QAM			5.80
			64-QAM			6.07
			256-QAM			5.91
	10 MHz		QPSK	50		5.12
			16-QAM			5.78
			64-QAM			6.05
			256-QAM			5.88
	15 MHz		QPSK	75		5.32
			16-QAM			6.02
			64-QAM			6.23
			256-QAM			5.90
	20 MHz		QPSK	100		5.28
			16-QAM			6.02
			64-QAM			6.25
			256-QAM			5.92

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 77 ~ 100.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
66/4	1.4 MHz	1745.0	QPSK	6	0	1.0991
			16-QAM			1.0991
			64-QAM			1.0981
			256-QAM			1.0952
	3 MHz		QPSK	15		2.7181
			16-QAM			2.7091
			64-QAM			2.7118
			256-QAM			2.7137
	5 MHz		QPSK	25		4.5338
			16-QAM			4.5220
			64-QAM			4.5218
			256-QAM			4.5406
	10 MHz		QPSK	50		9.0394
			16-QAM			9.0225
			64-QAM			9.0111
			256-QAM			9.0053
	15 MHz		QPSK	75		13.476
			16-QAM			13.477
			64-QAM			13.504
			256-QAM			13.488
	20 MHz		QPSK	100		17.963
			16-QAM			17.946
			64-QAM			17.904
			256-QAM			17.947

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 101 ~ 124.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

8.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
66/4	1.4	1710.7	3.7089	27.976	-66.470	-38.494	-13.00
		1745.0	3.6990	27.976	-65.899	-37.923	
		1779.3	3.5594	27.976	-65.724	-37.748	
	3	1711.5	7.1785	28.591	-66.079	-37.488	
		1745.0	3.3002	27.976	-66.115	-38.139	
		1778.5	3.7189	27.976	-65.679	-37.703	
	5	1712.5	3.4198	27.976	-65.983	-38.007	
		1745.0	3.4896	27.976	-66.328	-38.352	
		1777.5	3.7289	27.976	-65.120	-37.144	
	10	1715.0	2.5923	27.976	-65.304	-37.328	
		1745.0	3.4796	27.976	-65.930	-37.954	
		1775.0	3.6990	27.976	-66.364	-38.388	
	15	1717.5	1.6850	27.976	-62.496	-34.520	
		1745.0	3.4796	27.976	-65.212	-37.236	
		1772.5	3.7189	27.976	-66.098	-38.122	
	20	1720.0	3.7189	27.976	-65.478	-37.502	
		1745.0	6.9990	28.591	-65.798	-37.207	
		1770.0	3.2104	27.976	-65.816	-37.840	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 125 ~ 160.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor (dB) = Cable Loss + Attenuator + Power Splitter

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

8.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 161 ~ 196.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ MODE: LTE 66/4

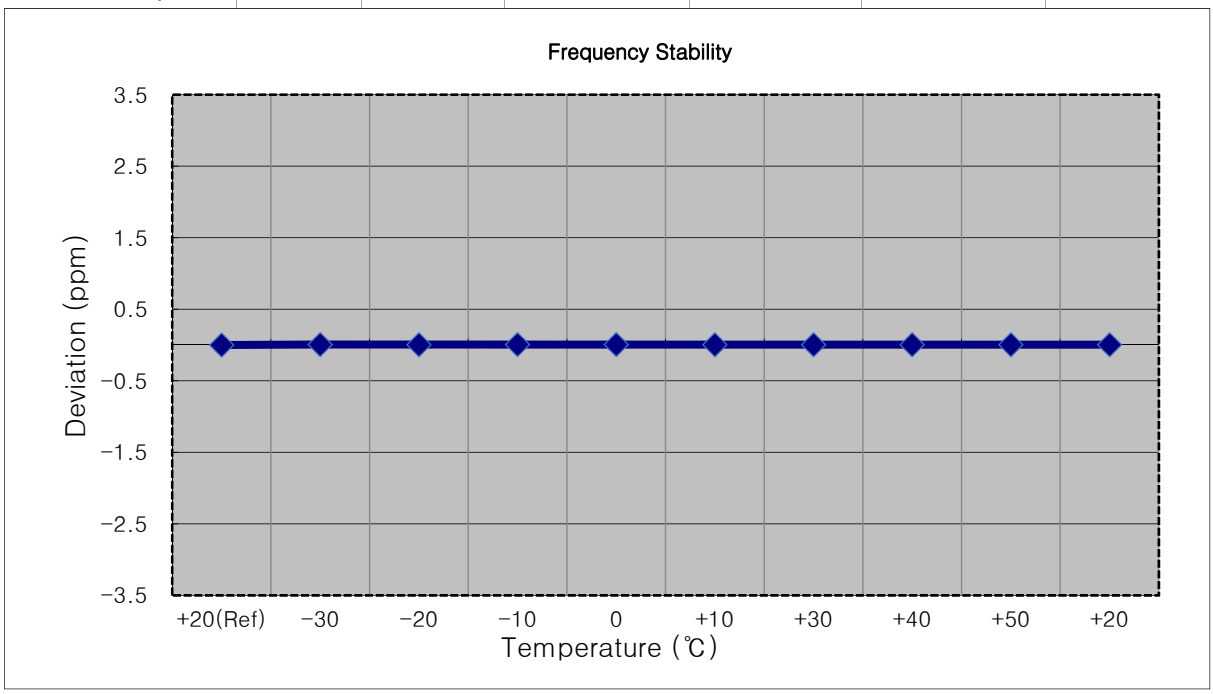
▣ OPERATING FREQUENCY: 1710,700,000 Hz

▣ CHANNEL: 131979 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1710 700 008	0.0	0.000 000	0.000
100 %		-30	1710 700 018	9.7	0.000 001	0.006
100 %		-20	1710 700 015	6.8	0.000 000	0.004
100 %		-10	1710 700 019	10.9	0.000 001	0.006
100 %		0	1710 700 018	10.2	0.000 001	0.006
100 %		+10	1710 700 016	8.2	0.000 000	0.005
100 %		+30	1710 700 016	7.6	0.000 000	0.004
100 %		+40	1710 700 013	5.3	0.000 000	0.003
100 %		+50	1710 700 017	8.8	0.000 001	0.005
Batt. Endpoint	3.300	+20	1710 700 016	8.5	0.000 000	0.005



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

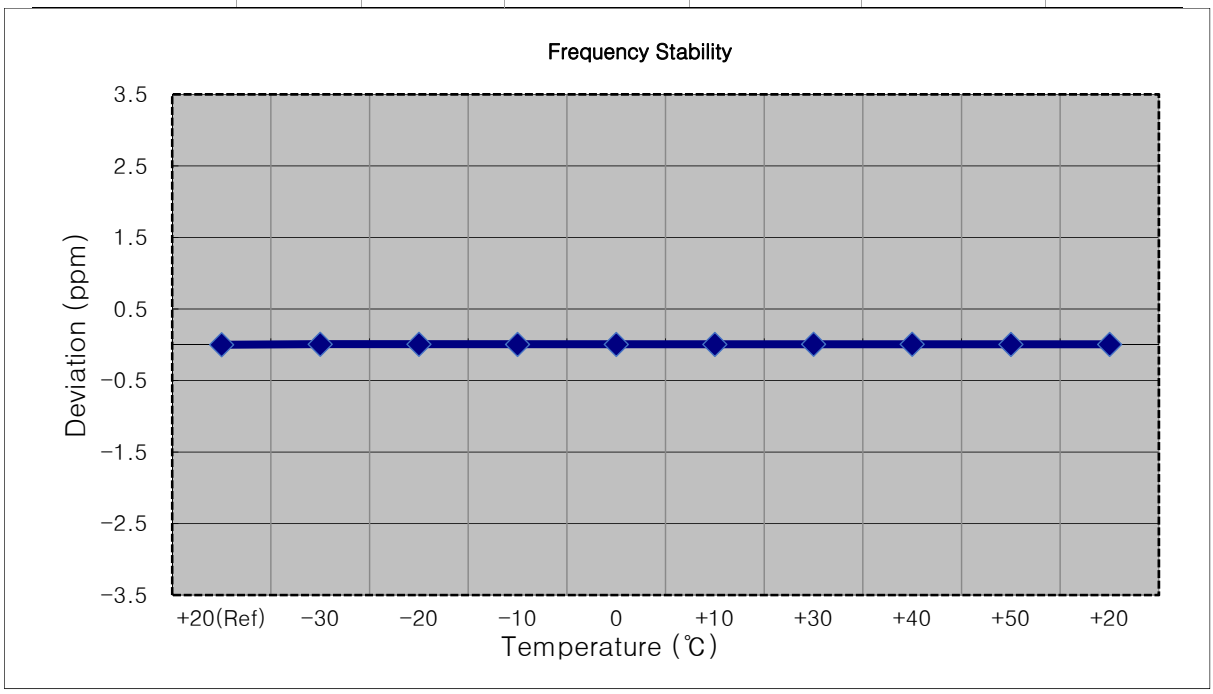
▣ OPERATING FREQUENCY: 1711,500,000 Hz

▣ CHANNEL: 131987 (3 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1711 500 010	0.0	0.000 000	0.000
100 %		-30	1711 500 021	10.4	0.000 001	0.006
100 %		-20	1711 500 021	10.5	0.000 001	0.006
100 %		-10	1711 500 019	8.7	0.000 001	0.005
100 %		0	1711 500 018	8.1	0.000 000	0.005
100 %		+10	1711 500 020	9.8	0.000 001	0.006
100 %		+30	1711 500 021	10.6	0.000 001	0.006
100 %		+40	1711 500 021	10.8	0.000 001	0.006
100 %		+50	1711 500 019	8.5	0.000 000	0.005
Batt. Endpoint	3.300	+20	1711 500 019	8.3	0.000 000	0.005



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

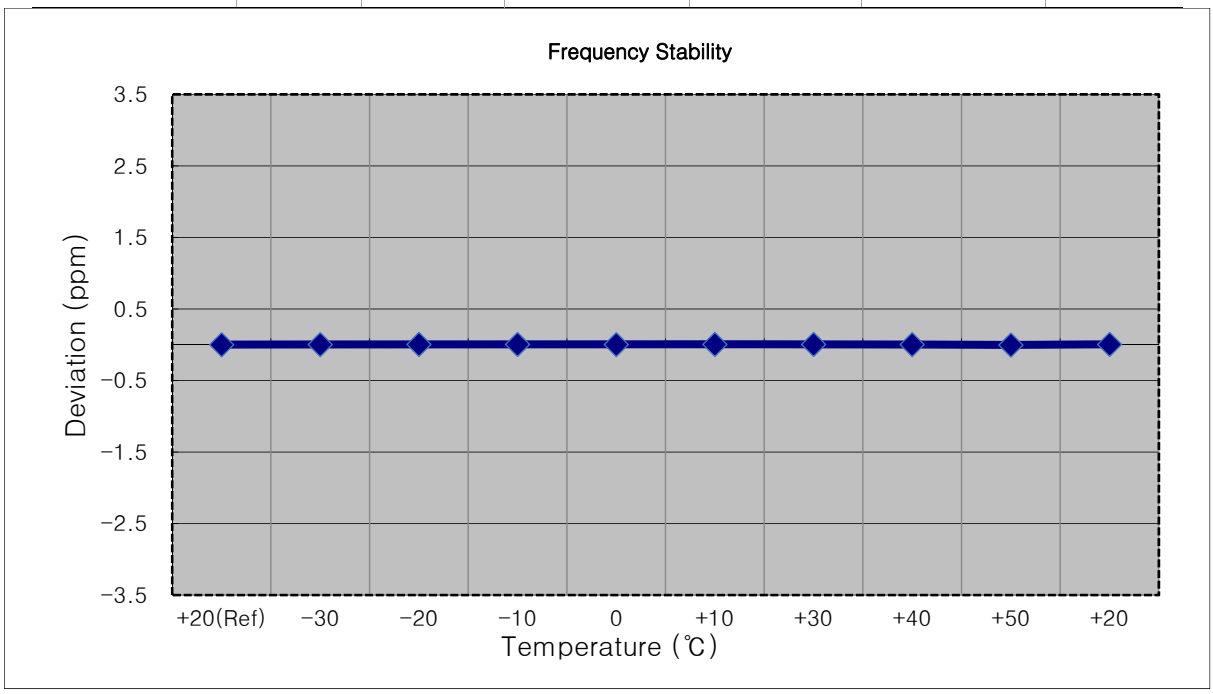
▣ OPERATING FREQUENCY: 1712,500,000 Hz

▣ CHANNEL: 131997 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1712 499 994	0.0	0.000 000	0.000
100 %		-30	1712 500 000	5.2	0.000 000	0.003
100 %		-20	1712 500 003	8.2	0.000 000	0.005
100 %		-10	1712 500 002	8.0	0.000 000	0.005
100 %		0	1712 500 000	5.8	0.000 000	0.003
100 %		+10	1712 500 002	7.3	0.000 000	0.004
100 %		+30	1712 500 003	8.1	0.000 000	0.005
100 %		+40	1712 500 001	6.1	0.000 000	0.004
100 %		+50	1712 499 989	-5.5	0.000 000	-0.003
Batt. Endpoint	3.300	+20	1712 500 001	6.8	0.000 000	0.004



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

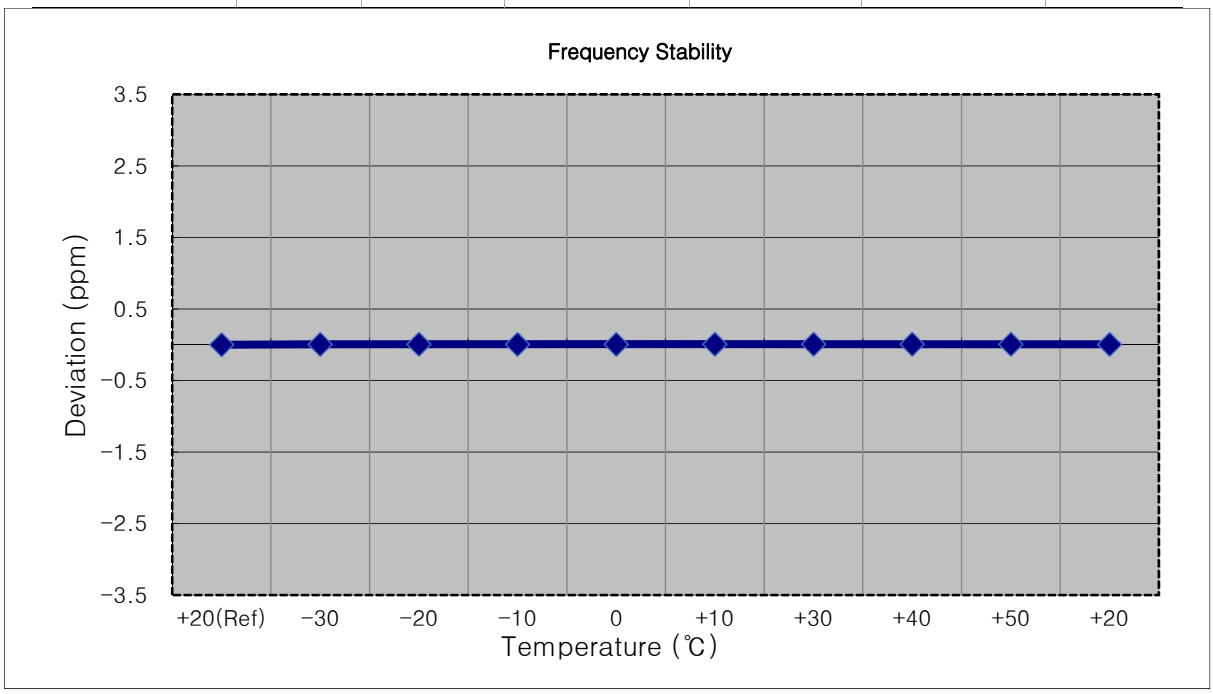
▣ OPERATING FREQUENCY: 1715,000,000 Hz

▣ CHANNEL: 132022 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1715 000 007	0.0	0.000 000	0.000
100 %		-30	1715 000 015	7.6	0.000 000	0.004
100 %		-20	1715 000 019	11.2	0.000 001	0.007
100 %		-10	1715 000 014	6.4	0.000 000	0.004
100 %		0	1715 000 015	7.9	0.000 000	0.005
100 %		+10	1715 000 019	11.3	0.000 001	0.007
100 %		+30	1715 000 019	11.1	0.000 001	0.006
100 %		+40	1715 000 018	10.7	0.000 001	0.006
100 %		+50	1715 000 019	11.4	0.000 001	0.007
Batt. Endpoint	3.300	+20	1715 000 015	7.4	0.000 000	0.004



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

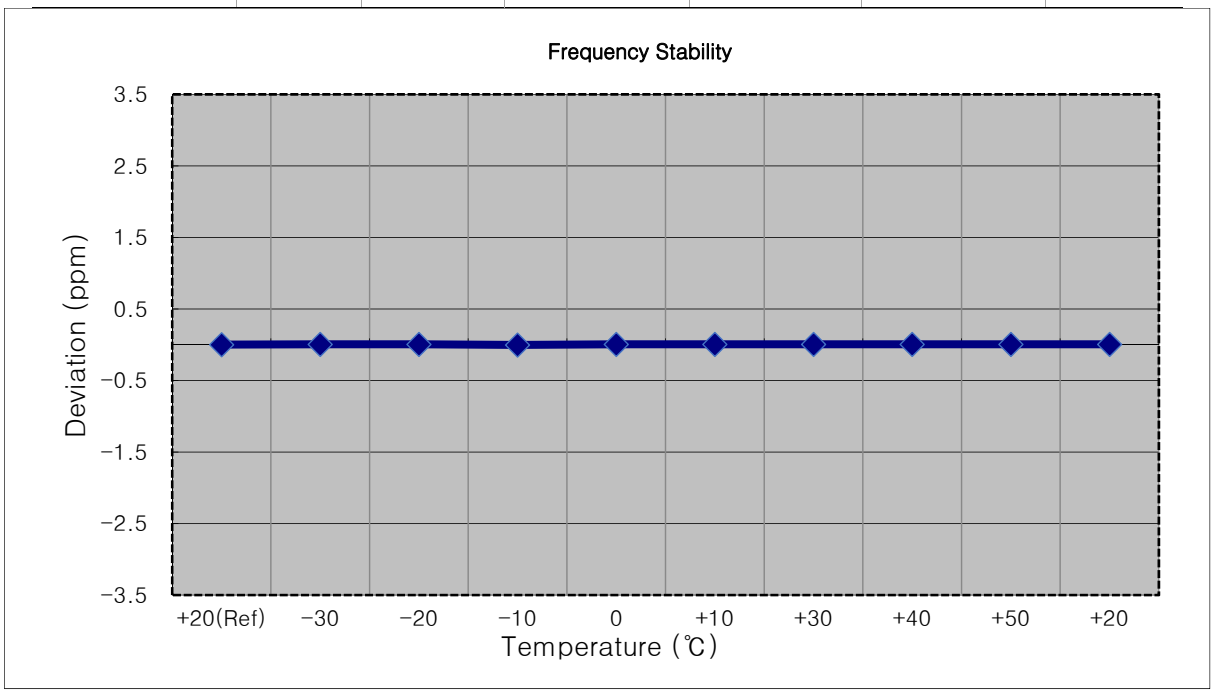
▣ OPERATING FREQUENCY: 1717,500,000 Hz

▣ CHANNEL: 132047 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1717 500 009	0.0	0.000 000	0.000
100 %		-30	1717 500 016	7.2	0.000 000	0.004
100 %		-20	1717 500 017	8.4	0.000 000	0.005
100 %		-10	1717 500 003	-5.9	0.000 000	-0.003
100 %		0	1717 500 015	6.5	0.000 000	0.004
100 %		+10	1717 500 018	8.9	0.000 001	0.005
100 %		+30	1717 500 018	8.8	0.000 001	0.005
100 %		+40	1717 500 018	8.9	0.000 001	0.005
100 %		+50	1717 500 017	8.6	0.000 001	0.005
Batt. Endpoint	3.300	+20	1717 500 016	7.5	0.000 000	0.004



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

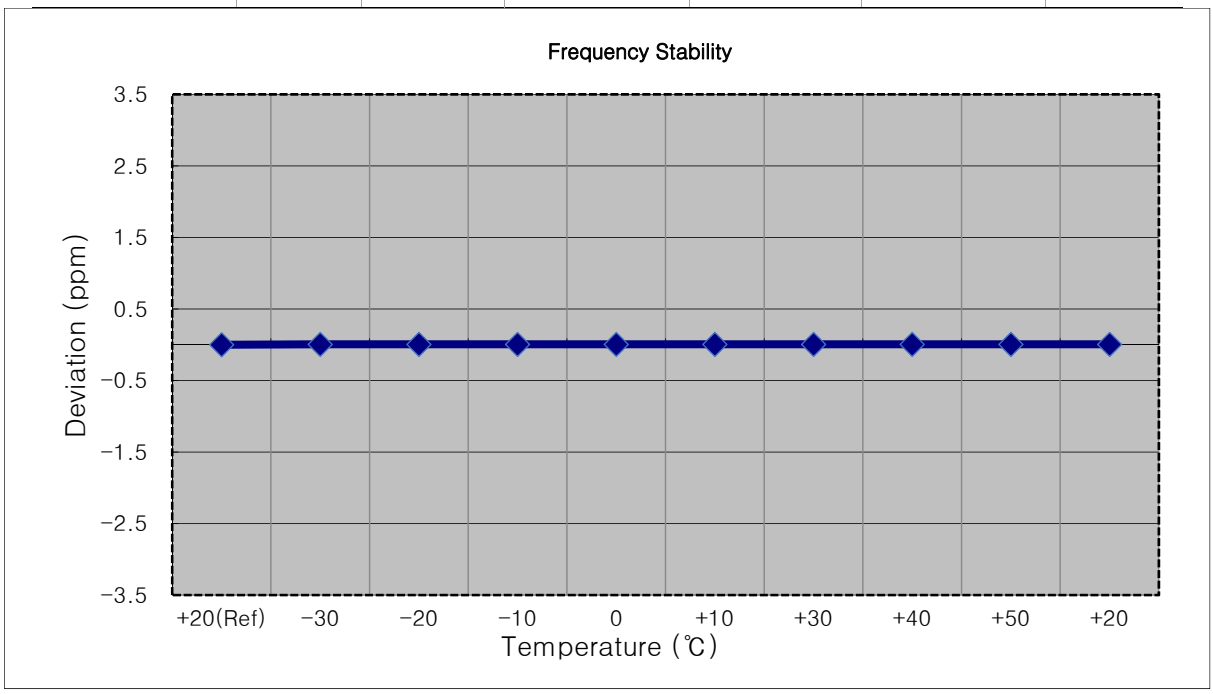
▣ OPERATING FREQUENCY: 1720,000,000 Hz

▣ CHANNEL: 132072 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1720 000 009	0.0	0.000 000	0.000
100 %		-30	1720 000 018	9.0	0.000 001	0.005
100 %		-20	1720 000 016	7.0	0.000 000	0.004
100 %		-10	1720 000 018	8.8	0.000 001	0.005
100 %		0	1720 000 018	8.6	0.000 000	0.005
100 %		+10	1720 000 017	7.6	0.000 000	0.004
100 %		+30	1720 000 016	7.2	0.000 000	0.004
100 %		+40	1720 000 019	9.4	0.000 001	0.005
100 %		+50	1720 000 019	10.1	0.000 001	0.006
Batt. Endpoint	3.300	+20	1720 000 016	6.9	0.000 000	0.004



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

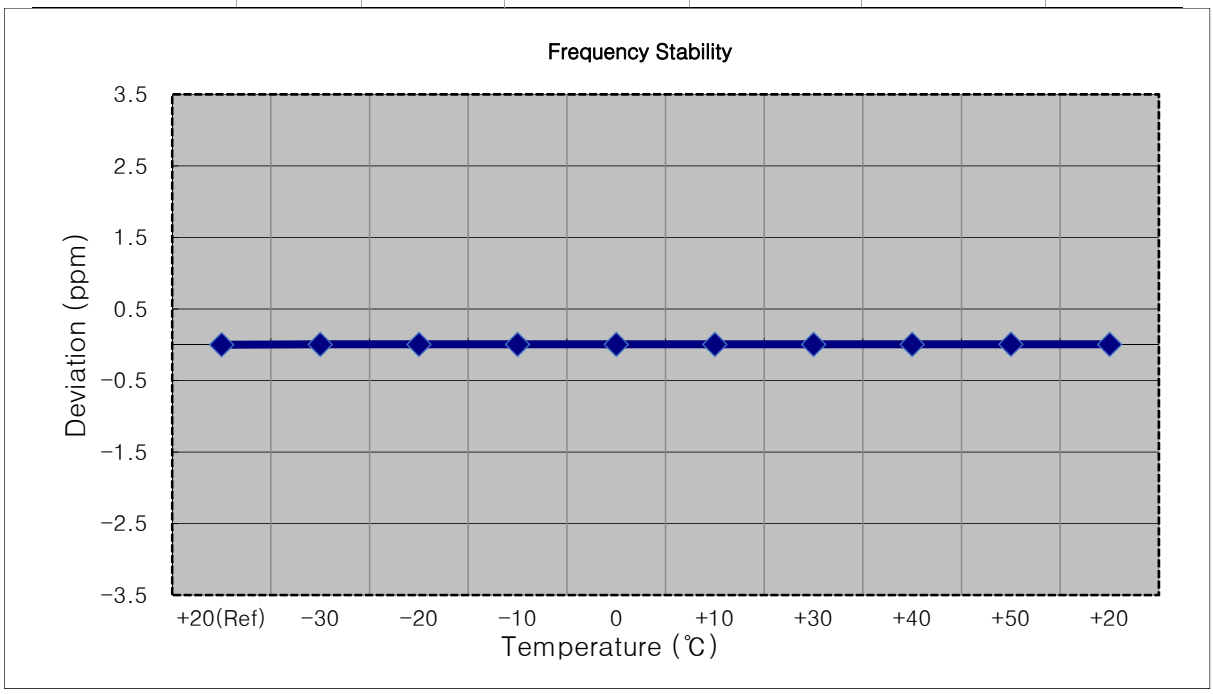
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 008	0.0	0.000 000	0.000
100 %		-30	1745 000 016	7.2	0.000 000	0.004
100 %		-20	1745 000 017	8.5	0.000 000	0.005
100 %		-10	1745 000 017	9.1	0.000 001	0.005
100 %		0	1745 000 018	9.3	0.000 001	0.005
100 %		+10	1745 000 017	8.7	0.000 000	0.005
100 %		+30	1745 000 018	9.5	0.000 001	0.005
100 %		+40	1745 000 017	8.5	0.000 000	0.005
100 %		+50	1745 000 019	10.4	0.000 001	0.006
Batt. Endpoint	3.300	+20	1745 000 018	9.7	0.000 001	0.006



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

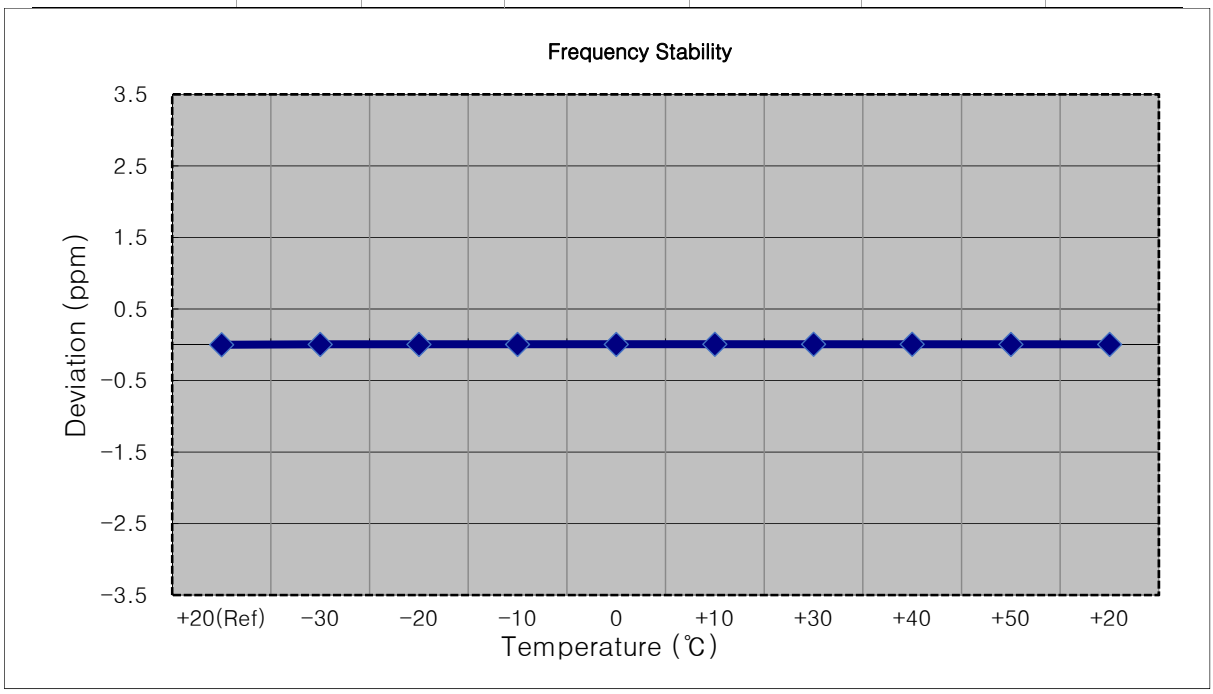
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (3 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 008	0.0	0.000 000	0.000
100 %		-30	1745 000 018	10.0	0.000 001	0.006
100 %		-20	1745 000 018	10.1	0.000 001	0.006
100 %		-10	1745 000 017	8.6	0.000 000	0.005
100 %		0	1745 000 016	7.5	0.000 000	0.004
100 %		+10	1745 000 020	11.6	0.000 001	0.007
100 %		+30	1745 000 020	11.7	0.000 001	0.007
100 %		+40	1745 000 019	10.7	0.000 001	0.006
100 %		+50	1745 000 017	9.1	0.000 001	0.005
Batt. Endpoint	3.300	+20	1745 000 017	8.9	0.000 001	0.005



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

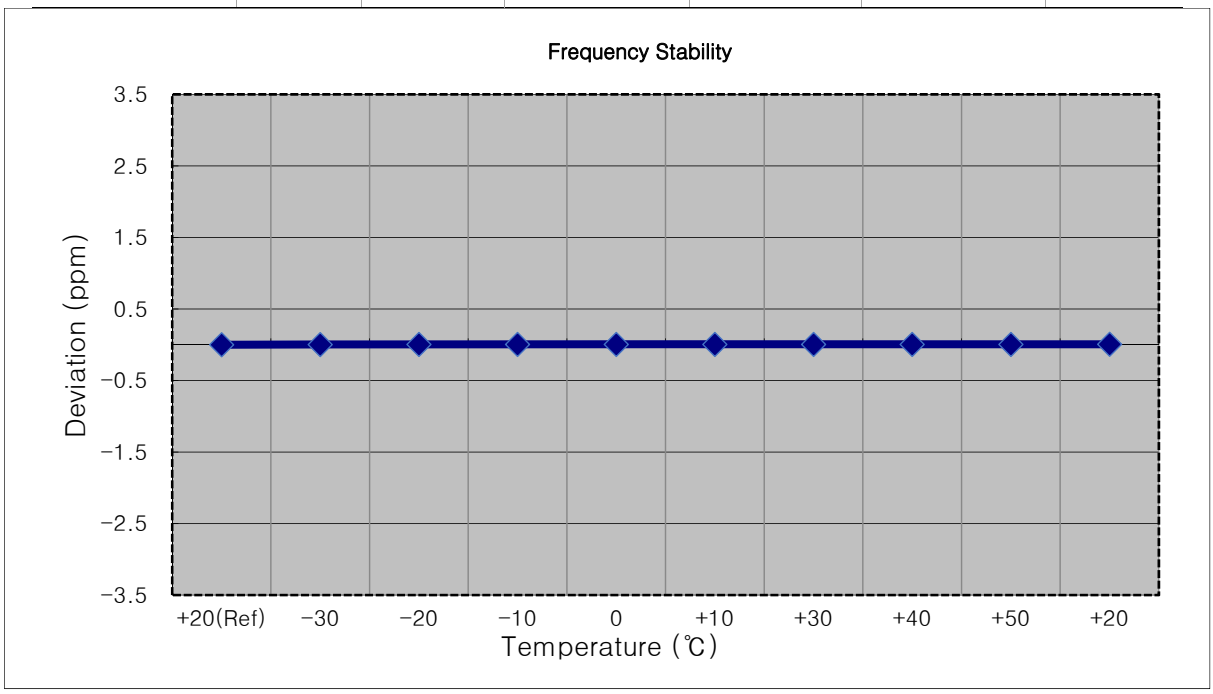
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 009	0.0	0.000 000	0.000
100 %		-30	1745 000 015	6.2	0.000 000	0.004
100 %		-20	1745 000 017	8.6	0.000 000	0.005
100 %		-10	1745 000 016	7.6	0.000 000	0.004
100 %		0	1745 000 018	9.4	0.000 001	0.005
100 %		+10	1745 000 017	8.4	0.000 000	0.005
100 %		+30	1745 000 018	9.4	0.000 001	0.005
100 %		+40	1745 000 017	8.1	0.000 000	0.005
100 %		+50	1745 000 016	7.3	0.000 000	0.004
Batt. Endpoint	3.300	+20	1745 000 019	10.5	0.000 001	0.006



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

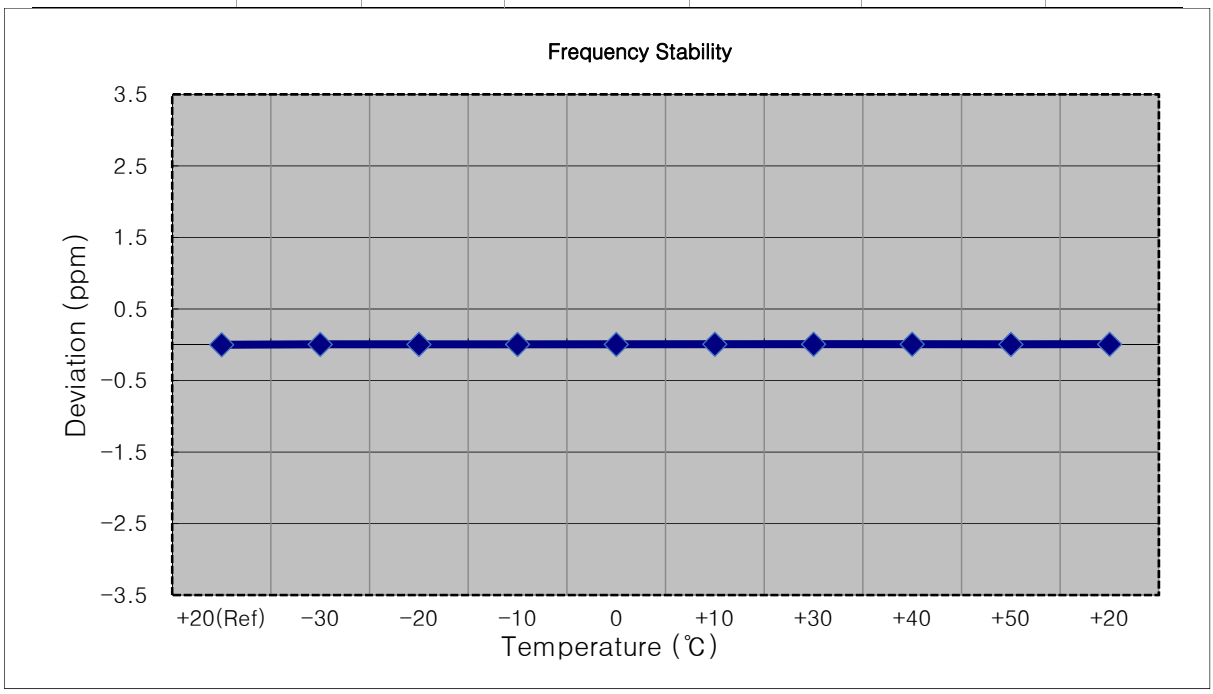
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 011	0.0	0.000 000	0.000
100 %		-30	1745 000 019	8.2	0.000 000	0.005
100 %		-20	1745 000 021	9.9	0.000 001	0.006
100 %		-10	1745 000 020	8.7	0.000 000	0.005
100 %		0	1745 000 021	9.8	0.000 001	0.006
100 %		+10	1745 000 023	11.8	0.000 001	0.007
100 %		+30	1745 000 022	10.9	0.000 001	0.006
100 %		+40	1745 000 021	10.4	0.000 001	0.006
100 %		+50	1745 000 020	9.1	0.000 001	0.005
Batt. Endpoint	3.300	+20	1745 000 022	10.7	0.000 001	0.006



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

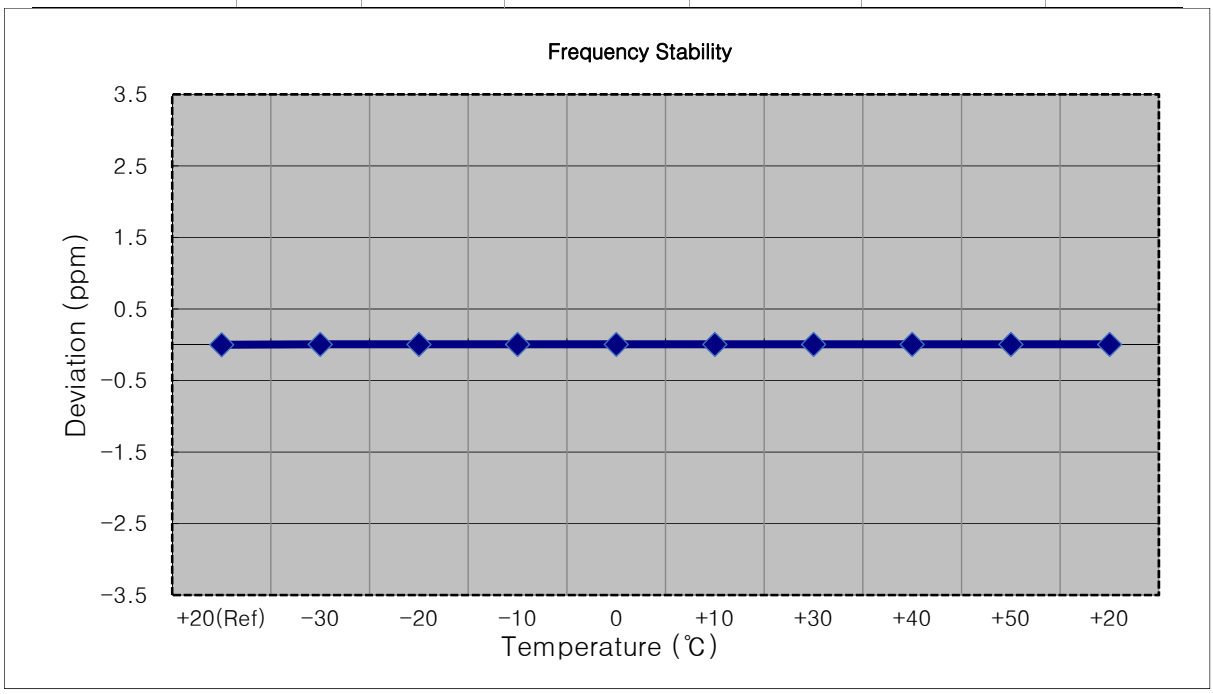
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 008	0.0	0.000 000	0.000
100 %		-30	1745 000 018	9.3	0.000 001	0.005
100 %		-20	1745 000 018	10.0	0.000 001	0.006
100 %		-10	1745 000 018	9.7	0.000 001	0.006
100 %		0	1745 000 017	8.9	0.000 001	0.005
100 %		+10	1745 000 017	8.7	0.000 000	0.005
100 %		+30	1745 000 018	9.7	0.000 001	0.006
100 %		+40	1745 000 017	8.3	0.000 000	0.005
100 %		+50	1745 000 018	9.5	0.000 001	0.005
Batt. Endpoint	3.300	+20	1745 000 017	8.8	0.000 001	0.005



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

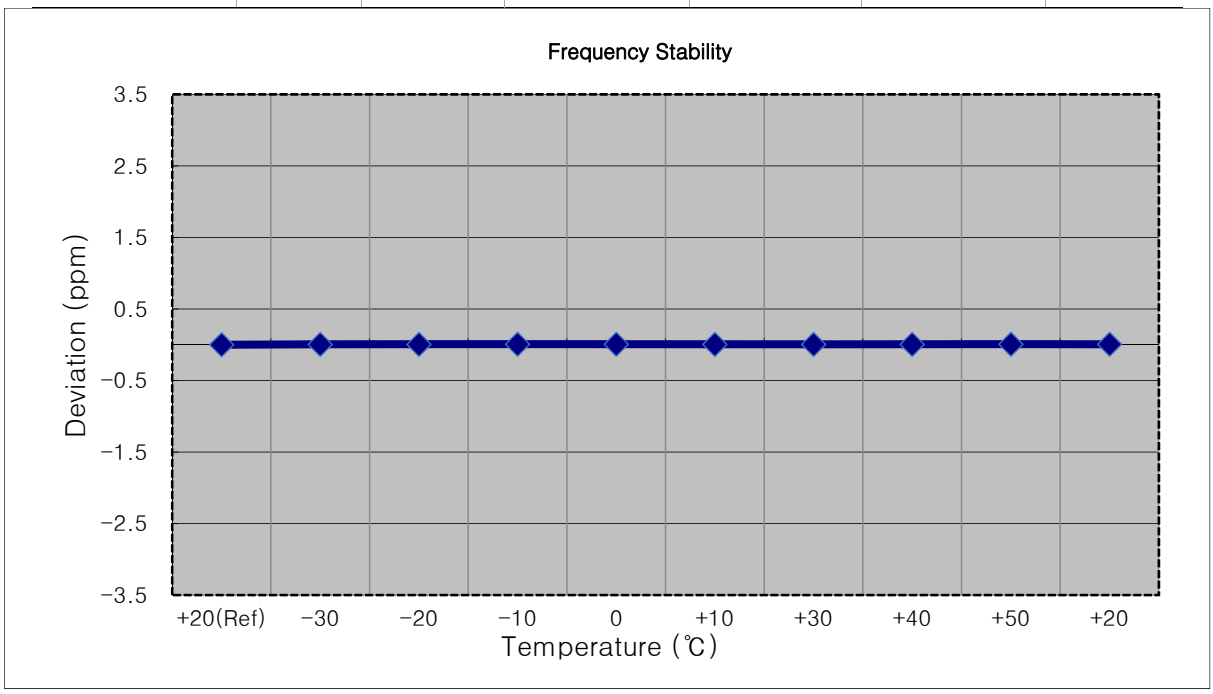
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 010	0.0	0.000 000	0.000
100 %		-30	1745 000 020	10.1	0.000 001	0.006
100 %		-20	1745 000 020	10.0	0.000 001	0.006
100 %		-10	1745 000 021	11.0	0.000 001	0.006
100 %		0	1745 000 021	10.9	0.000 001	0.006
100 %		+10	1745 000 020	9.9	0.000 001	0.006
100 %		+30	1745 000 020	9.6	0.000 001	0.006
100 %		+40	1745 000 020	10.1	0.000 001	0.006
100 %		+50	1745 000 021	10.8	0.000 001	0.006
Batt. Endpoint	3.300	+20	1745 000 021	11.2	0.000 001	0.006



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

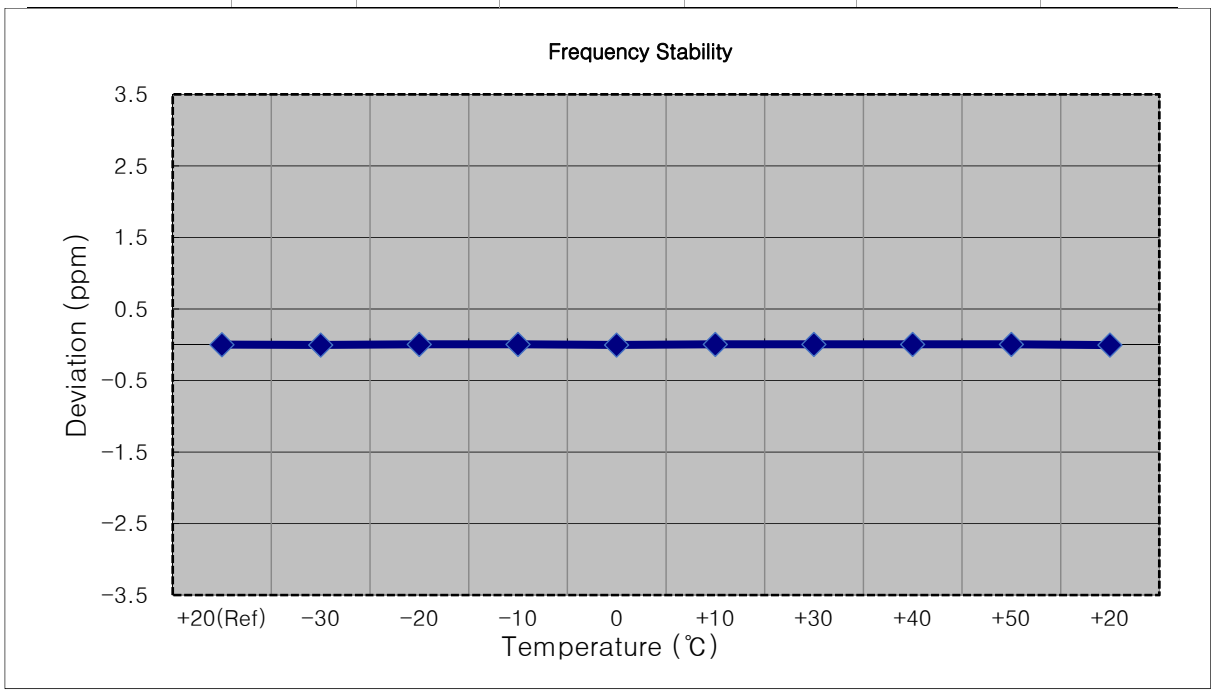
▣ OPERATING FREQUENCY: 1779,300,000 Hz

▣ CHANNEL: 132665 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1779 300 011	0.0	0.000 000	0.000
100 %		-30	1779 300 003	-7.7	0.000 000	-0.004
100 %		-20	1779 300 021	10.2	0.000 001	0.006
100 %		-10	1779 300 018	7.6	0.000 000	0.004
100 %		0	1779 300 003	-7.9	0.000 000	-0.004
100 %		+10	1779 300 021	10.1	0.000 001	0.006
100 %		+30	1779 300 019	8.2	0.000 000	0.005
100 %		+40	1779 300 019	8.4	0.000 000	0.005
100 %		+50	1779 300 018	7.0	0.000 000	0.004
Batt. Endpoint	3.300	+20	1779 300 002	-9.0	-0.000 001	-0.005



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

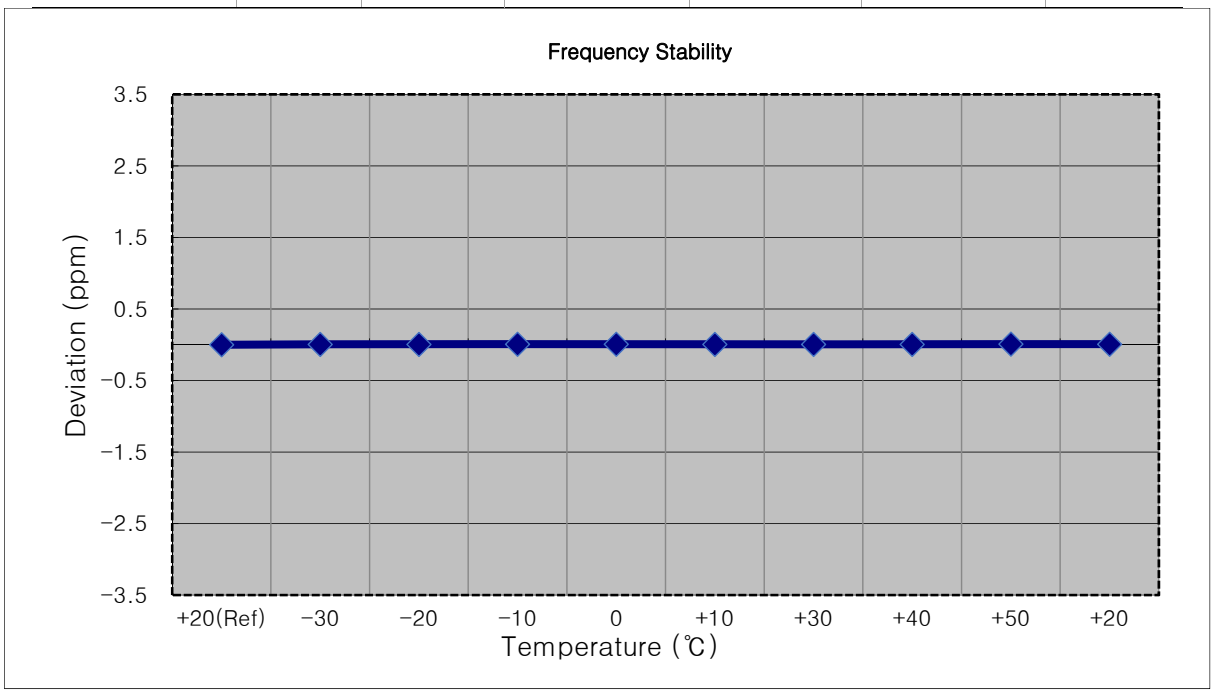
▣ OPERATING FREQUENCY: 1778,500,000 Hz

▣ CHANNEL: 132657 (3 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1778 500 009	0.0	0.000 000	0.000
100 %		-30	1778 500 017	8.2	0.000 000	0.005
100 %		-20	1778 500 016	7.2	0.000 000	0.004
100 %		-10	1778 500 023	13.9	0.000 001	0.008
100 %		0	1778 500 023	13.6	0.000 001	0.008
100 %		+10	1778 500 016	7.0	0.000 000	0.004
100 %		+30	1778 500 017	7.6	0.000 000	0.004
100 %		+40	1778 500 018	8.9	0.000 001	0.005
100 %		+50	1778 500 025	15.5	0.000 001	0.009
Batt. Endpoint	3.300	+20	1778 500 023	14.1	0.000 001	0.008



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

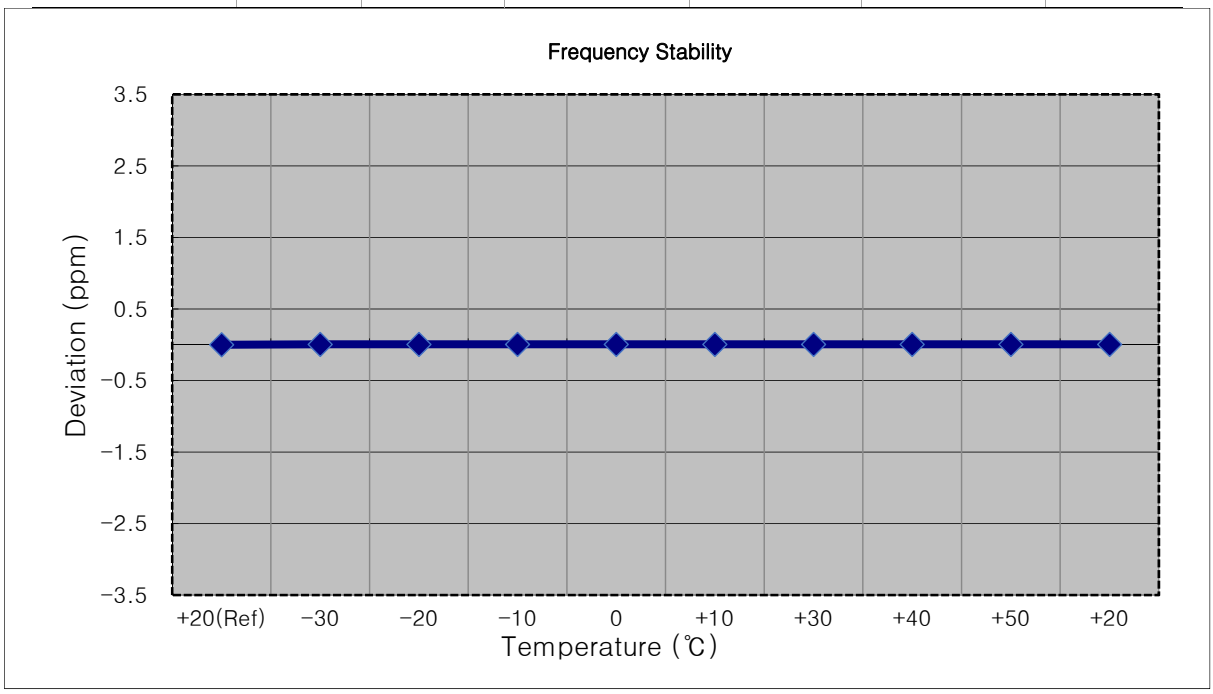
▣ OPERATING FREQUENCY: 1777,500,000 Hz

▣ CHANNEL: 132647 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1777 500 008	0.0	0.000 000	0.000
100 %		-30	1777 500 016	8.2	0.000 000	0.005
100 %		-20	1777 500 016	7.9	0.000 000	0.004
100 %		-10	1777 500 017	9.2	0.000 001	0.005
100 %		0	1777 500 017	8.9	0.000 001	0.005
100 %		+10	1777 500 017	8.4	0.000 000	0.005
100 %		+30	1777 500 018	9.5	0.000 001	0.005
100 %		+40	1777 500 018	9.7	0.000 001	0.005
100 %		+50	1777 500 016	8.1	0.000 000	0.005
Batt. Endpoint	3.300	+20	1777 500 017	8.9	0.000 001	0.005



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

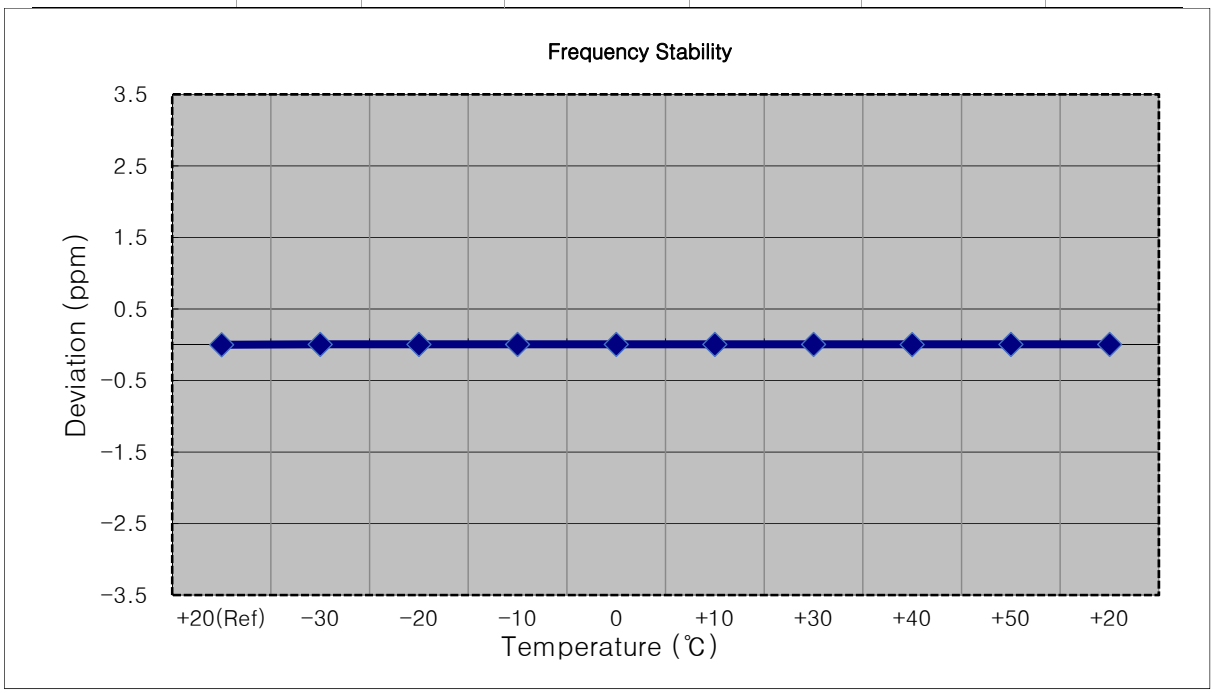
▣ OPERATING FREQUENCY: 1775,000,000 Hz

▣ CHANNEL: 132622 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1775 000 007	0.0	0.000 000	0.000
100 %		-30	1775 000 014	6.8	0.000 000	0.004
100 %		-20	1775 000 014	6.7	0.000 000	0.004
100 %		-10	1775 000 014	6.7	0.000 000	0.004
100 %		0	1775 000 015	7.2	0.000 000	0.004
100 %		+10	1775 000 016	8.8	0.000 000	0.005
100 %		+30	1775 000 014	7.0	0.000 000	0.004
100 %		+40	1775 000 014	6.3	0.000 000	0.004
100 %		+50	1775 000 016	8.2	0.000 000	0.005
Batt. Endpoint	3.300	+20	1775 000 015	7.7	0.000 000	0.004



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

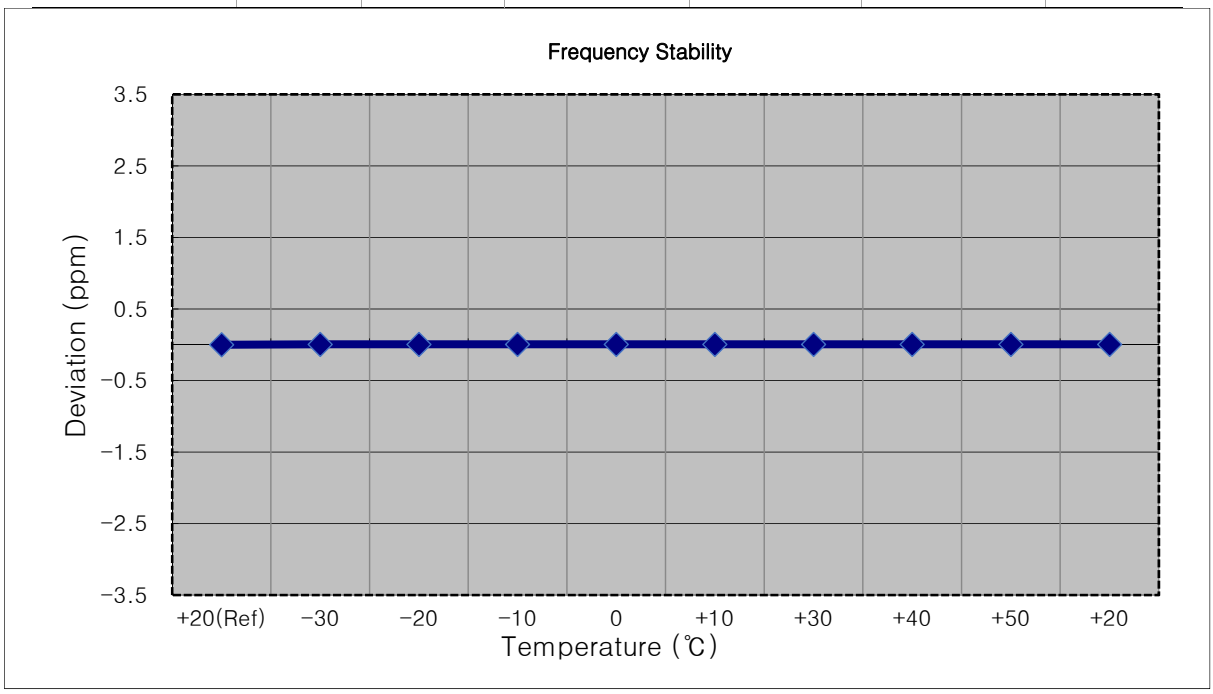
▣ OPERATING FREQUENCY: 1772,500,000 Hz

▣ CHANNEL: 132597 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1772 500 008	0.0	0.000 000	0.000
100 %		-30	1772 500 017	9.1	0.000 001	0.005
100 %		-20	1772 500 015	7.4	0.000 000	0.004
100 %		-10	1772 500 016	8.2	0.000 000	0.005
100 %		0	1772 500 015	7.7	0.000 000	0.004
100 %		+10	1772 500 015	7.7	0.000 000	0.004
100 %		+30	1772 500 016	8.3	0.000 000	0.005
100 %		+40	1772 500 016	7.9	0.000 000	0.004
100 %		+50	1772 500 015	7.4	0.000 000	0.004
Batt. Endpoint	3.300	+20	1772 500 016	7.8	0.000 000	0.004



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

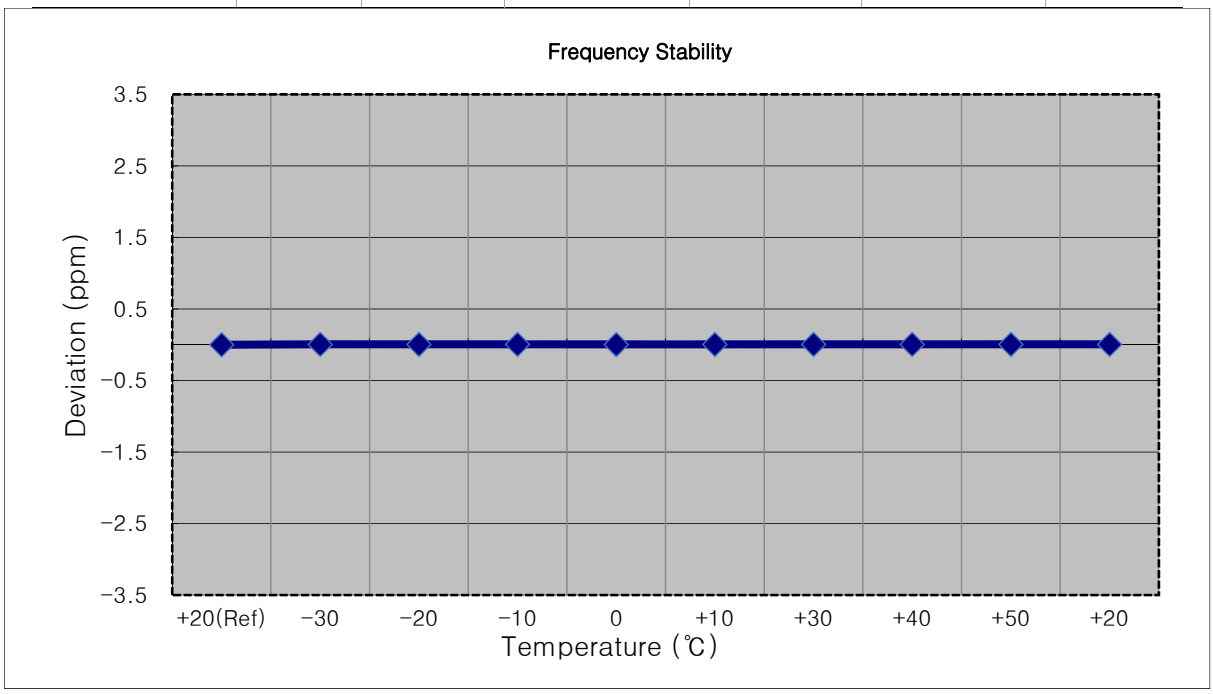
▣ OPERATING FREQUENCY: 1770,000,000 Hz

▣ CHANNEL: 132572 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1770 000 008	0.0	0.000 000	0.000
100 %		-30	1770 000 016	7.1	0.000 000	0.004
100 %		-20	1770 000 016	7.6	0.000 000	0.004
100 %		-10	1770 000 016	7.5	0.000 000	0.004
100 %		0	1770 000 014	6.0	0.000 000	0.003
100 %		+10	1770 000 015	6.7	0.000 000	0.004
100 %		+30	1770 000 015	6.6	0.000 000	0.004
100 %		+40	1770 000 016	8.0	0.000 000	0.005
100 %		+50	1770 000 015	7.0	0.000 000	0.004
Batt. Endpoint	3.300	+20	1770 000 015	6.8	0.000 000	0.004



The report shall not be (partly) reproduced except in full without approval of the laboratory.

9. TEST DATA(Sub 5 ANT)

9.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1710.7	LTE B66/B4 1.4 MHz	QPSK	-19.19	14.18	10.04	2.06	H	< 1.00	0.164	22.16	1	5
		16-QAM	-19.90	13.47	10.04	2.06	H		0.140	21.45		
		64-QAM	-21.03	12.34	10.04	2.06	H		0.108	20.32		
		256-QAM	-24.04	9.33	10.04	2.06	H		0.054	17.31		
1745.0		QPSK	-18.55	14.91	10.18	2.07	H		0.200	23.02	1	5
		16-QAM	-19.30	14.16	10.18	2.07	H		0.169	22.27		
		64-QAM	-20.44	13.02	10.18	2.07	H		0.130	21.13		
		256-QAM	-23.44	10.02	10.18	2.07	H		0.065	18.13		
1779.3		QPSK	-18.98	14.84	10.26	2.09	H		0.200	23.01	1	5
		16-QAM	-19.80	14.02	10.26	2.09	H		0.166	22.19		
		64-QAM	-20.95	12.87	10.26	2.09	H		0.127	21.04		
		256-QAM	-23.94	9.88	10.26	2.09	H		0.064	18.05		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1711.5	LTE B66/B4 3 MHz	QPSK	-19.34	14.03	10.04	2.06	H	< 1.00	0.159	22.01	1	14
		16-QAM	-20.02	13.35	10.04	2.06	H		0.136	21.33		
		64-QAM	-21.13	12.24	10.04	2.06	H		0.105	20.22		
		256-QAM	-24.23	9.14	10.04	2.06	H		0.052	17.12		
1745.0		QPSK	-18.48	14.98	10.18	2.07	H		0.204	23.09	1	0
		16-QAM	-19.25	14.21	10.18	2.07	H		0.171	22.32		
		64-QAM	-20.38	13.08	10.18	2.07	H		0.132	21.19		
		256-QAM	-23.38	10.08	10.18	2.07	H		0.066	18.19		
1778.5		QPSK	-18.89	14.93	10.26	2.09	H		0.204	23.10	1	0
		16-QAM	-19.67	14.15	10.26	2.09	H		0.171	22.32		
		64-QAM	-20.79	13.03	10.26	2.09	H		0.132	21.20		
		256-QAM	-23.78	10.04	10.26	2.09	H		0.066	18.21		

The report shall not be (partly) reproduced except in full without approval of the laboratory.

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1712.5	LTE B66/B4 5 MHz	QPSK	-19.04	14.35	10.06	2.06	H	< 1.00	0.172	22.35	1	24
		16-QAM	-19.84	13.55	10.06	2.06	H		0.143	21.55		
		64-QAM	-20.95	12.44	10.06	2.06	H		0.111	20.44		
		256-QAM	-23.93	9.46	10.06	2.06	H		0.056	17.46		
1745.0		QPSK	-18.43	15.03	10.18	2.07	H		0.206	23.14	1	24
		16-QAM	-19.23	14.23	10.18	2.07	H		0.171	22.34		
		64-QAM	-20.35	13.11	10.18	2.07	H		0.132	21.22		
		256-QAM	-23.33	10.13	10.18	2.07	H		0.067	18.24		
1777.5		QPSK	-18.88	14.94	10.26	2.09	H		0.205	23.11	1	0
		16-QAM	-19.65	14.17	10.26	2.09	H		0.171	22.34		
		64-QAM	-20.78	13.04	10.26	2.09	H		0.132	21.21		
		256-QAM	-23.82	10.00	10.26	2.09	H		0.066	18.17		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1715.0	LTE B66/B4 10 MHz	QPSK	-18.89	14.50	10.06	2.06	H	< 1.00	0.178	22.50	1	49
		16-QAM	-19.75	13.64	10.06	2.06	H		0.146	21.64		
		64-QAM	-20.86	12.53	10.06	2.06	H		0.113	20.53		
		256-QAM	-23.86	9.53	10.06	2.06	H		0.057	17.53		
1745.0		QPSK	-18.39	15.07	10.18	2.07	H		0.208	23.18	1	49
		16-QAM	-19.24	14.22	10.18	2.07	H		0.171	22.33		
		64-QAM	-20.36	13.10	10.18	2.07	H		0.132	21.21		
		256-QAM	-23.37	10.09	10.18	2.07	H		0.066	18.20		
1775.0		QPSK	-18.74	15.02	10.25	2.09	H		0.208	23.18	1	0
		16-QAM	-19.66	14.10	10.25	2.09	H		0.168	22.26		
		64-QAM	-20.80	12.96	10.25	2.09	H		0.129	21.12		
		256-QAM	-23.69	10.07	10.25	2.09	H		0.067	18.23		

The report shall not be (partly) reproduced except in full without approval of the laboratory.

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1717.5	LTE B66/B4 15 MHz	QPSK	-18.77	14.65	10.08	2.06	H	< 1.00	0.185	22.67	1	74
		16-QAM	-19.65	13.77	10.08	2.06	H		0.151	21.79		
		64-QAM	-20.76	12.66	10.08	2.06	H		0.117	20.68		
		256-QAM	-23.71	9.71	10.08	2.06	H		0.059	17.73		
1745.0		QPSK	-18.47	14.99	10.18	2.07	H		0.204	23.10	1	74
		16-QAM	-19.33	14.13	10.18	2.07	H		0.167	22.24		
		64-QAM	-20.44	13.02	10.18	2.07	H		0.130	21.13		
		256-QAM	-23.40	10.06	10.18	2.07	H		0.066	18.17		
1772.5		QPSK	-18.68	15.08	10.25	2.09	H		0.211	23.24	1	0
		16-QAM	-19.56	14.20	10.25	2.09	H		0.172	22.36		
		64-QAM	-20.66	13.10	10.25	2.09	H		0.134	21.26		
		256-QAM	-23.65	10.11	10.25	2.09	H		0.067	18.27		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1720.0	LTE B66/B4 20 MHz	QPSK	-18.70	14.72	10.08	2.06	H	< 1.00	0.188	22.74	1	99
		16-QAM	-19.57	13.85	10.08	2.06	H		0.154	21.87		
		64-QAM	-20.67	12.75	10.08	2.06	H		0.119	20.77		
		256-QAM	-23.68	9.74	10.08	2.06	H		0.060	17.76		
1745.0		QPSK	-18.54	14.92	10.18	2.07	H		0.201	23.03	1	99
		16-QAM	-19.42	14.04	10.18	2.07	H		0.164	22.15		
		64-QAM	-20.50	12.96	10.18	2.07	H		0.128	21.07		
		256-QAM	-23.40	10.06	10.18	2.07	H		0.066	18.17		
1770.0		QPSK	-18.55	15.15	10.24	2.09	H		0.214	23.30	1	0
		16-QAM	-19.51	14.19	10.24	2.09	H		0.171	22.34		
		64-QAM	-20.63	13.07	10.24	2.09	H		0.132	21.22		
		256-QAM	-23.55	10.15	10.24	2.09	H		0.068	18.30		

The report shall not be (partly) reproduced except in full without approval of the laboratory.

9.2 RADIATED SPURIOUS EMISSIONS

▣ MODE: LTE B66

▣ MODULATION SIGNAL: 20 MHz QPSK

▣ DISTANCE: 3 meters

▣ LIMIT: -13 dBm

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	RB	
								Size	Offset
132072 (1720.0)	3 440.00	-37.35	12.40	-56.05	3.04	H	-46.69	1	99
	5 160.00	-34.83	12.44	-47.47	3.76	V	-38.79		
	6 880.00	-43.53	11.82	-50.54	4.44	V	-43.16		
132322 (1745.0)	3 490.00	-38.90	12.34	-57.15	3.04	H	-47.85	1	99
	5 235.00	-37.23	12.84	-49.81	3.78	H	-40.75		
	6 980.00	-43.85	11.40	-50.17	4.48	H	-43.25		
132572 (1770.0)	3 540.00	-41.90	12.34	-59.65	3.06	H	-50.37	1	0
	5 310.00	-37.82	13.08	-51.20	3.82	H	-41.94		
	7 080.00	-42.95	10.93	-47.60	4.49	H	-41.16		

The report shall not be (partly) reproduced except in full without approval of the laboratory.

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
66/4	1.4 MHz	1745.0	QPSK	6	0	4.54
			16-QAM			5.36
			64-QAM			5.32
			256-QAM			6.42
	3 MHz		QPSK	15		4.63
			16-QAM			5.40
			64-QAM			5.43
			256-QAM			6.52
	5 MHz		QPSK	25		4.95
			16-QAM			5.72
			64-QAM			5.78
			256-QAM			6.62
	10 MHz		QPSK	50		4.93
			16-QAM			5.67
			64-QAM			5.71
			256-QAM			6.61
	15 MHz		QPSK	75		5.02
			16-QAM			5.83
			64-QAM			5.65
			256-QAM			6.60
	20 MHz		QPSK	100		4.99
			16-QAM			5.83
			64-QAM			5.65
			256-QAM			6.63

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 198 ~ 221.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
66/4	1.4 MHz	1745.0	QPSK	6	0	1.1002
			16-QAM			1.0969
			64-QAM			1.0958
			256-QAM			1.0914
	3 MHz		QPSK	15		2.7227
			16-QAM			2.7040
			64-QAM			2.7071
			256-QAM			2.7109
	5 MHz		QPSK	25		4.5252
			16-QAM			4.5113
			64-QAM			4.5177
			256-QAM			4.5209
	10 MHz		QPSK	50		9.0164
			16-QAM			9.0198
			64-QAM			9.0140
			256-QAM			9.0245
	15 MHz		QPSK	75		13.495
			16-QAM			13.474
			64-QAM			13.499
			256-QAM			13.470
	20 MHz		QPSK	100		18.017
			16-QAM			17.954
			64-QAM			17.932
			256-QAM			17.923

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 222 ~ 245.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

9.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
66/4	1.4	1710.7	3.9183	27.976	-63.463	-35.487	-13.00
		1745.0	4.7658	27.976	-64.175	-36.199	
		1779.3	3.7089	27.976	-62.584	-34.608	
	3	1711.5	6.7897	28.591	-64.001	-35.410	
		1745.0	4.0978	27.976	-64.046	-36.070	
		1778.5	5.2144	28.591	-64.370	-35.779	
	5	1712.5	9.0229	28.591	-63.642	-35.051	
		1745.0	4.7558	27.976	-63.822	-35.846	
		1777.5	9.0628	28.591	-63.005	-34.414	
	10	1715.0	7.9562	28.591	-63.783	-35.192	
		1745.0	9.6909	28.591	-62.232	-33.641	
		1775.0	3.9183	27.976	-64.357	-36.381	
	15	1717.5	8.1356	28.591	-63.728	-35.137	
		1745.0	7.0888	28.591	-64.173	-35.582	
		1772.5	6.8096	28.591	-64.117	-35.526	
	20	1720.0	3.9482	27.976	-62.976	-35.000	
		1745.0	4.1376	27.976	-63.224	-35.248	
		1770.0	3.9682	27.976	-64.036	-36.060	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 246 ~ 281.
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

9.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 282 ~ 317.

The report shall not be (partly) reproduced except in full without approval of the laboratory.

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ MODE: LTE 66/4

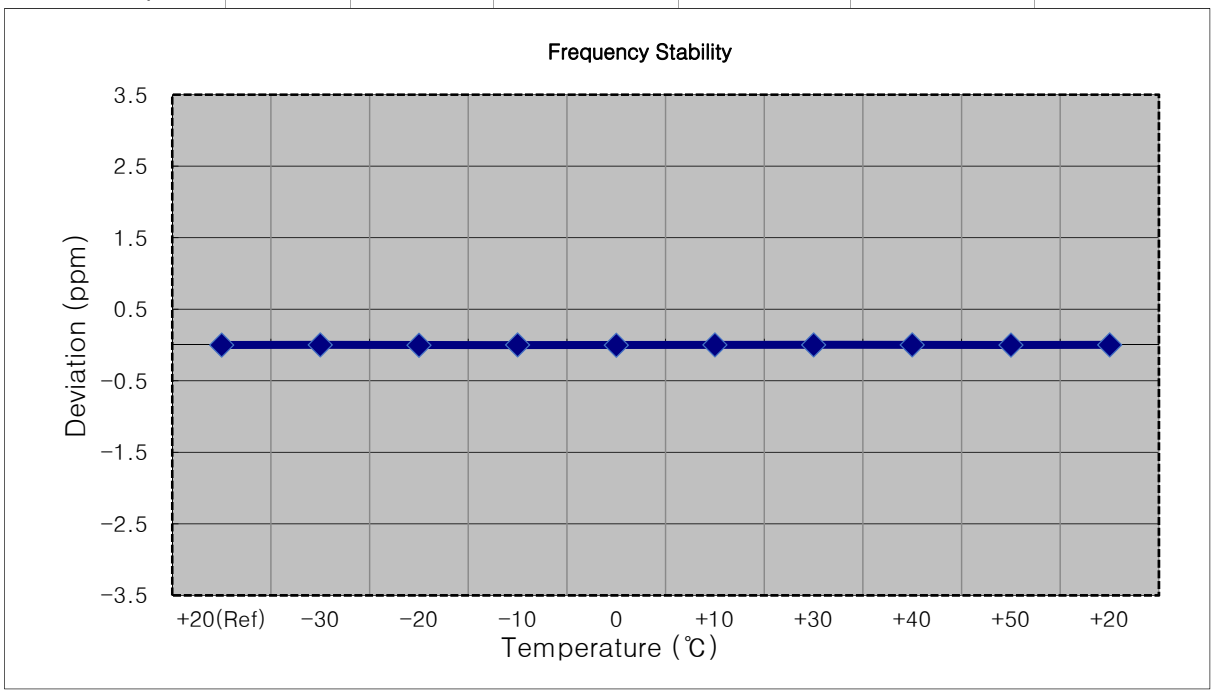
▣ OPERATING FREQUENCY: 1710,700,000 Hz

▣ CHANNEL: 131979 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1710 700 003	0.0	0.000 000	0.000
100 %		-30	1710 700 005	2.2	0.000 000	0.001
100 %		-20	1710 700 000	-3.0	0.000 000	-0.002
100 %		-10	1710 700 007	3.3	0.000 000	0.002
100 %		0	1710 700 000	-3.3	0.000 000	-0.002
100 %		+10	1710 700 006	3.0	0.000 000	0.002
100 %		+30	1710 700 007	3.7	0.000 000	0.002
100 %		+40	1710 700 006	3.1	0.000 000	0.002
100 %		+50	1710 700 002	-1.1	0.000 000	-0.001
Batt. Endpoint	3.300	+20	1710 700 006	3.2	0.000 000	0.002



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

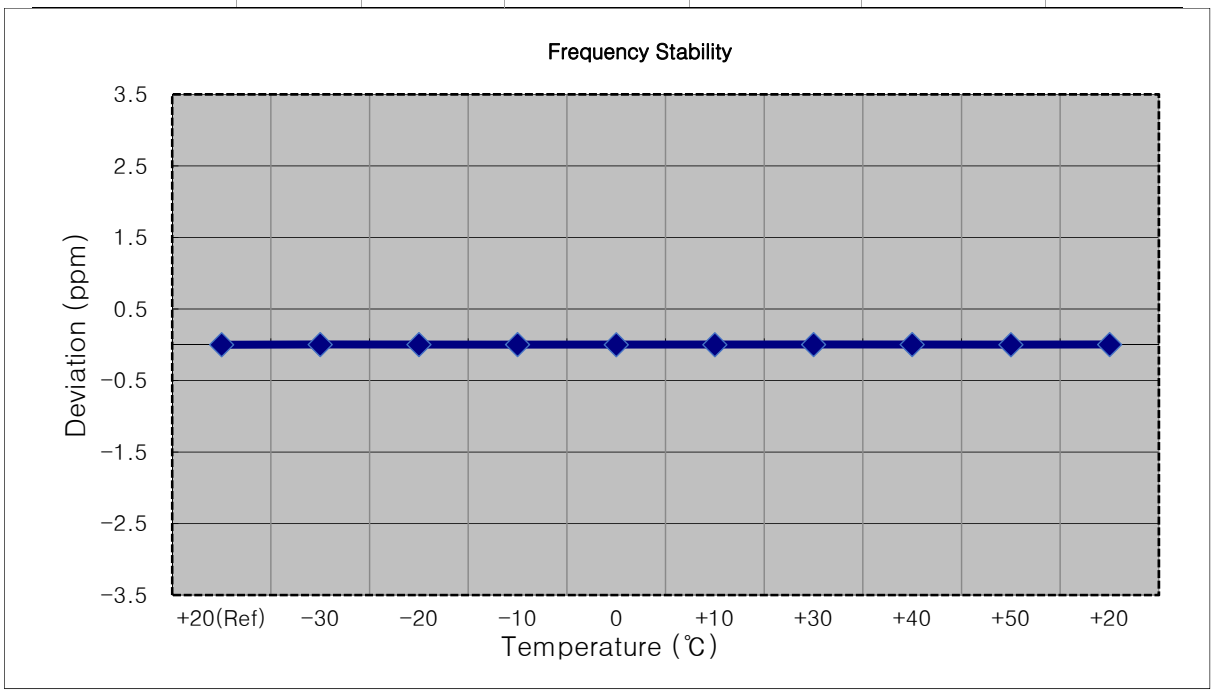
▣ OPERATING FREQUENCY: 1711,500,000 Hz

▣ CHANNEL: 131987 (3 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1711 500 003	0.0	0.000 000	0.000
100 %		-30	1711 500 007	3.7	0.000 000	0.002
100 %		-20	1711 500 006	3.2	0.000 000	0.002
100 %		-10	1711 500 007	3.8	0.000 000	0.002
100 %		0	1711 500 005	2.4	0.000 000	0.001
100 %		+10	1711 500 005	1.8	0.000 000	0.001
100 %		+30	1711 500 006	3.3	0.000 000	0.002
100 %		+40	1711 500 006	3.2	0.000 000	0.002
100 %		+50	1711 500 005	1.7	0.000 000	0.001
Batt. Endpoint	3.300	+20	1711 500 006	3.1	0.000 000	0.002



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

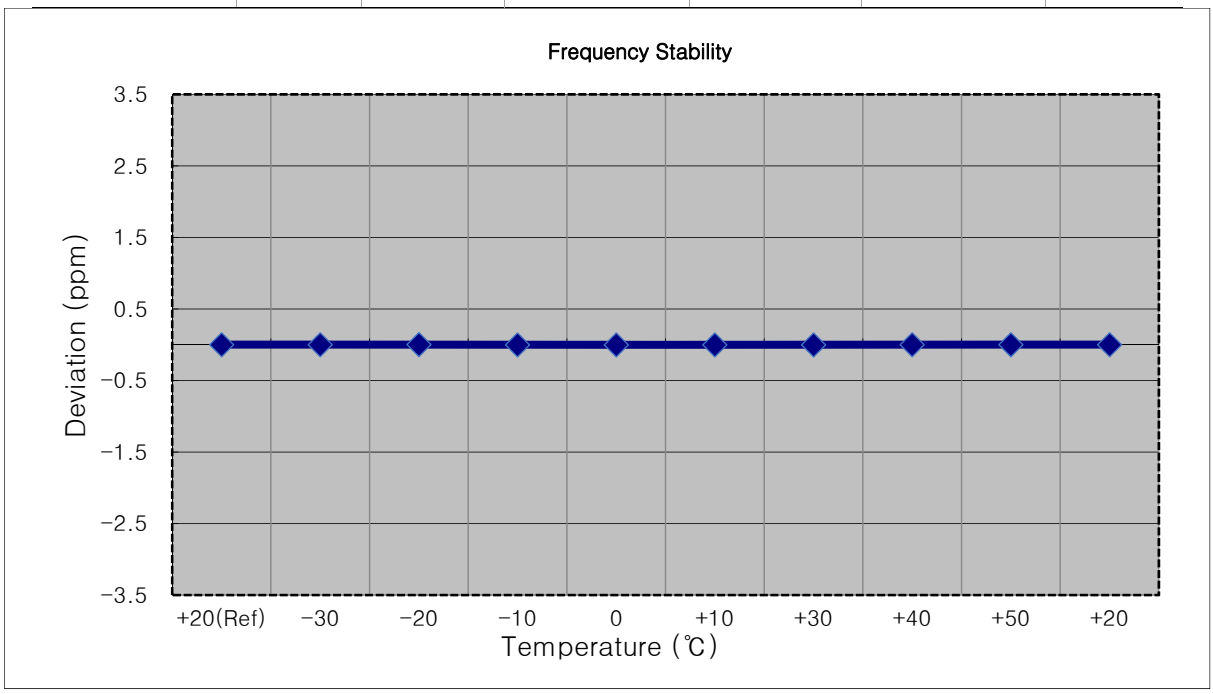
▣ OPERATING FREQUENCY: 1712,500,000 Hz

▣ CHANNEL: 131997 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1712 500 002	0.0	0.000 000	0.000
100 %		-30	1712 500 004	1.8	0.000 000	0.001
100 %		-20	1712 500 005	2.7	0.000 000	0.002
100 %		-10	1712 500 000	-2.3	0.000 000	-0.001
100 %		0	1712 499 999	-3.0	0.000 000	-0.002
100 %		+10	1712 500 000	-2.1	0.000 000	-0.001
100 %		+30	1712 500 000	-1.8	0.000 000	-0.001
100 %		+40	1712 500 004	1.9	0.000 000	0.001
100 %		+50	1712 500 004	2.4	0.000 000	0.001
Batt. Endpoint	3.300	+20	1712 500 004	2.3	0.000 000	0.001



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

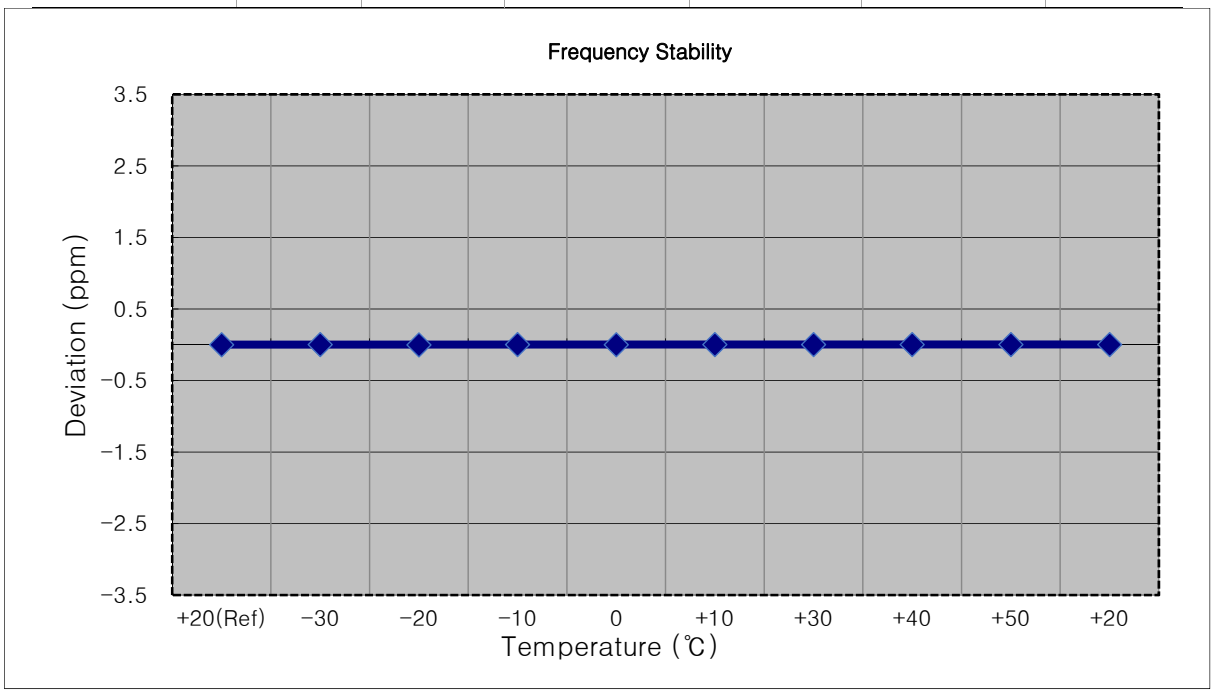
▣ OPERATING FREQUENCY: 1715,000,000 Hz

▣ CHANNEL: 132022 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1714 999 997	0.0	0.000 000	0.000
100 %		-30	1715 000 001	3.9	0.000 000	0.002
100 %		-20	1714 999 995	-2.2	0.000 000	-0.001
100 %		-10	1715 000 000	3.2	0.000 000	0.002
100 %		0	1714 999 999	2.5	0.000 000	0.001
100 %		+10	1715 000 000	3.2	0.000 000	0.002
100 %		+30	1715 000 000	3.5	0.000 000	0.002
100 %		+40	1715 000 001	3.8	0.000 000	0.002
100 %		+50	1715 000 000	3.5	0.000 000	0.002
Batt. Endpoint	3.300	+20	1715 000 000	3.6	0.000 000	0.002



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

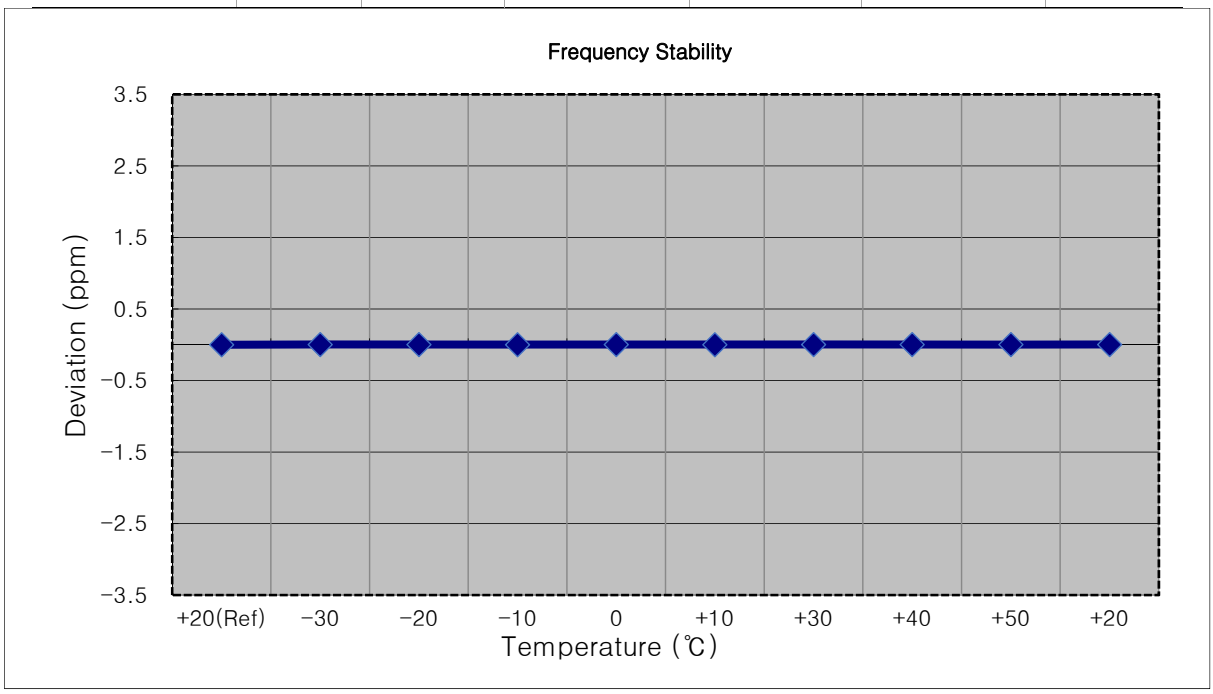
▣ OPERATING FREQUENCY: 1717,500,000 Hz

▣ CHANNEL: 132047 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1717 500 003	0.0	0.000 000	0.000
100 %		-30	1717 500 006	3.0	0.000 000	0.002
100 %		-20	1717 500 006	2.6	0.000 000	0.002
100 %		-10	1717 500 005	2.0	0.000 000	0.001
100 %		0	1717 500 007	3.3	0.000 000	0.002
100 %		+10	1717 500 005	2.1	0.000 000	0.001
100 %		+30	1717 500 006	3.1	0.000 000	0.002
100 %		+40	1717 500 007	3.8	0.000 000	0.002
100 %		+50	1717 500 007	4.0	0.000 000	0.002
Batt. Endpoint	3.300	+20	1717 500 007	3.2	0.000 000	0.002



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

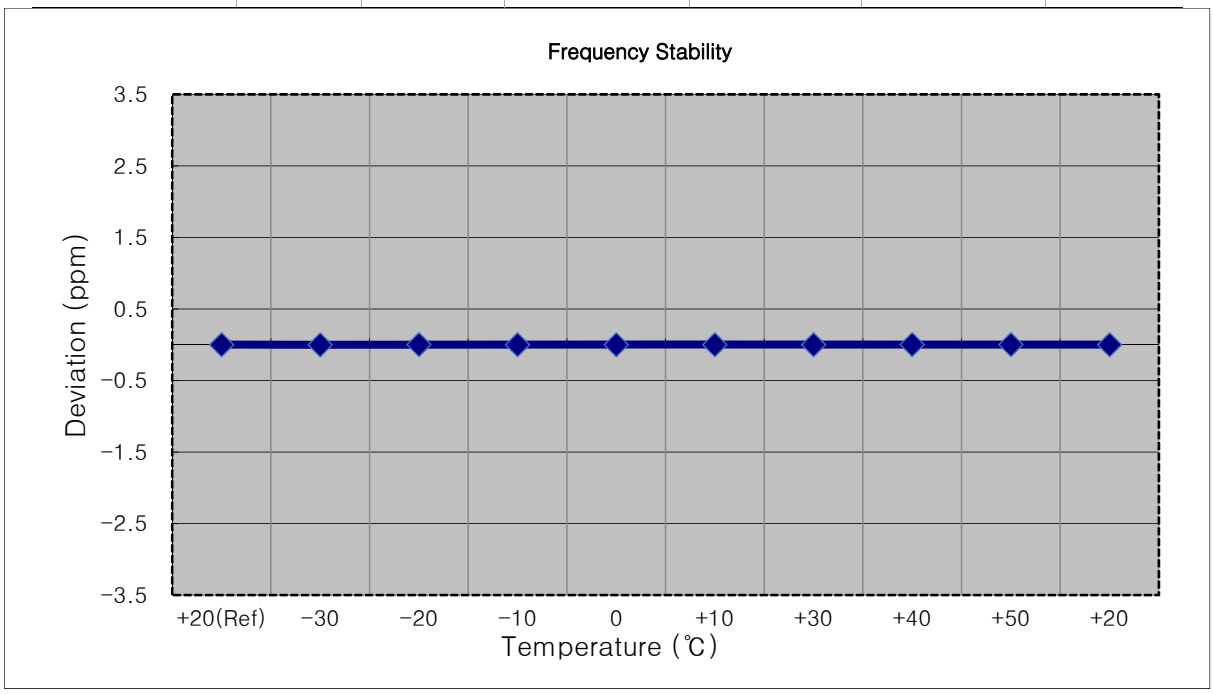
▣ OPERATING FREQUENCY: 1720,000,000 Hz

▣ CHANNEL: 132072 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1720 000 003	0.0	0.000 000	0.000
100 %		-30	1720 000 000	-3.0	0.000 000	-0.002
100 %		-20	1720 000 006	2.9	0.000 000	0.002
100 %		-10	1720 000 005	1.8	0.000 000	0.001
100 %		0	1720 000 005	2.5	0.000 000	0.001
100 %		+10	1720 000 005	2.1	0.000 000	0.001
100 %		+30	1720 000 005	2.4	0.000 000	0.001
100 %		+40	1720 000 006	3.0	0.000 000	0.002
100 %		+50	1720 000 006	3.5	0.000 000	0.002
Batt. Endpoint	3.300	+20	1720 000 005	1.9	0.000 000	0.001



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

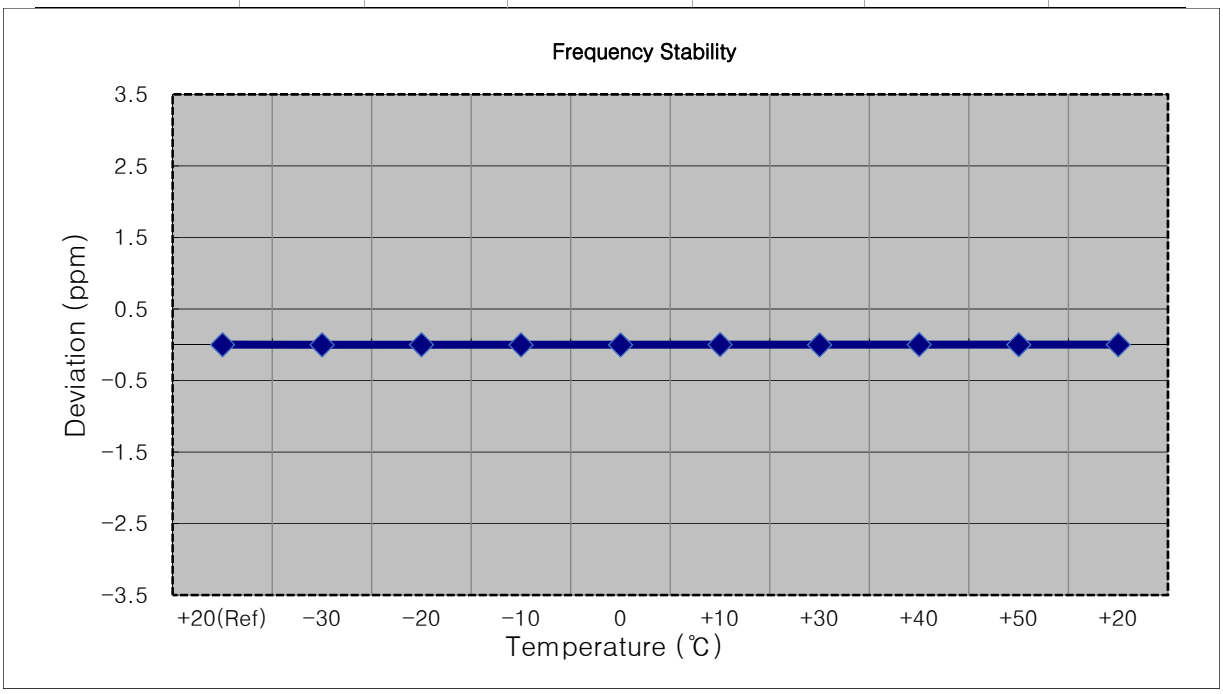
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 001	-2.0	0.000 000	-0.001
100 %		-20	1745 000 005	1.6	0.000 000	0.001
100 %		-10	1745 000 001	-2.1	0.000 000	-0.001
100 %		0	1745 000 001	-2.1	0.000 000	-0.001
100 %		+10	1745 000 007	3.8	0.000 000	0.002
100 %		+30	1745 000 001	-2.5	0.000 000	-0.001
100 %		+40	1745 000 006	2.8	0.000 000	0.002
100 %		+50	1745 000 005	1.6	0.000 000	0.001
Batt. Endpoint	3.300	+20	1745 000 004	1.0	0.000 000	0.001



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

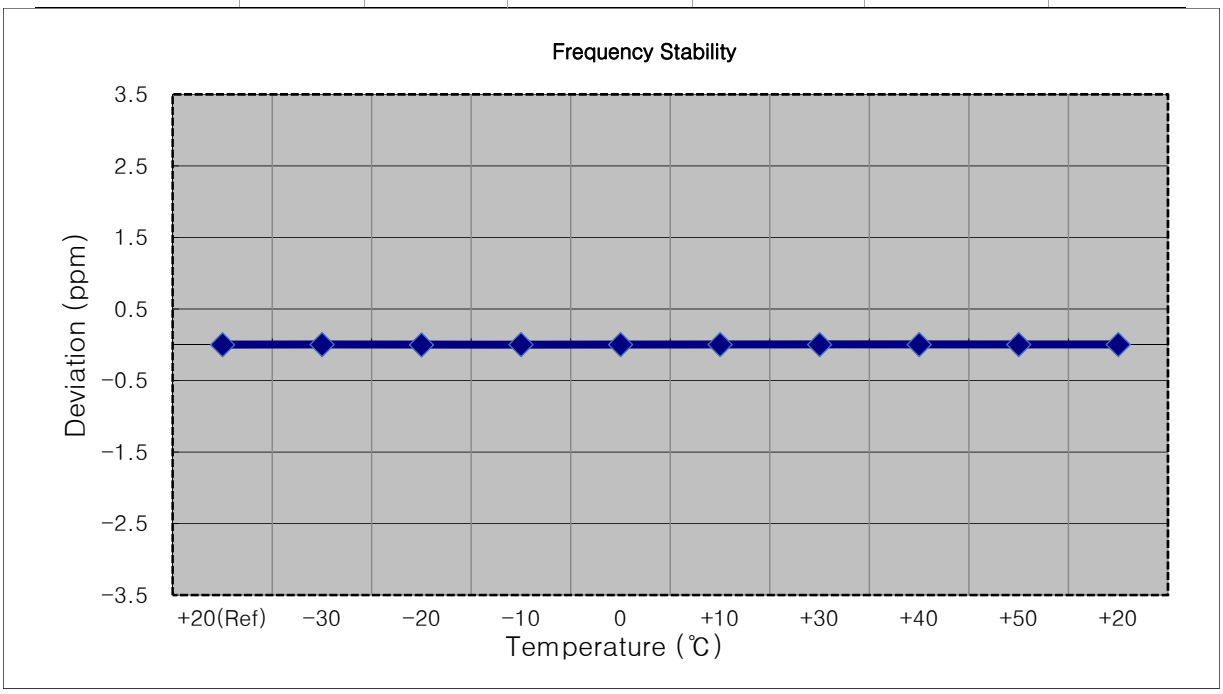
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (3 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 006	2.7	0.000 000	0.002
100 %		-20	1745 000 001	-1.5	0.000 000	-0.001
100 %		-10	1745 000 007	4.1	0.000 000	0.002
100 %		0	1745 000 006	2.9	0.000 000	0.002
100 %		+10	1745 000 007	3.8	0.000 000	0.002
100 %		+30	1745 000 007	3.6	0.000 000	0.002
100 %		+40	1745 000 006	3.5	0.000 000	0.002
100 %		+50	1745 000 006	3.3	0.000 000	0.002
Batt. Endpoint	3.300	+20	1745 000 007	3.8	0.000 000	0.002



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

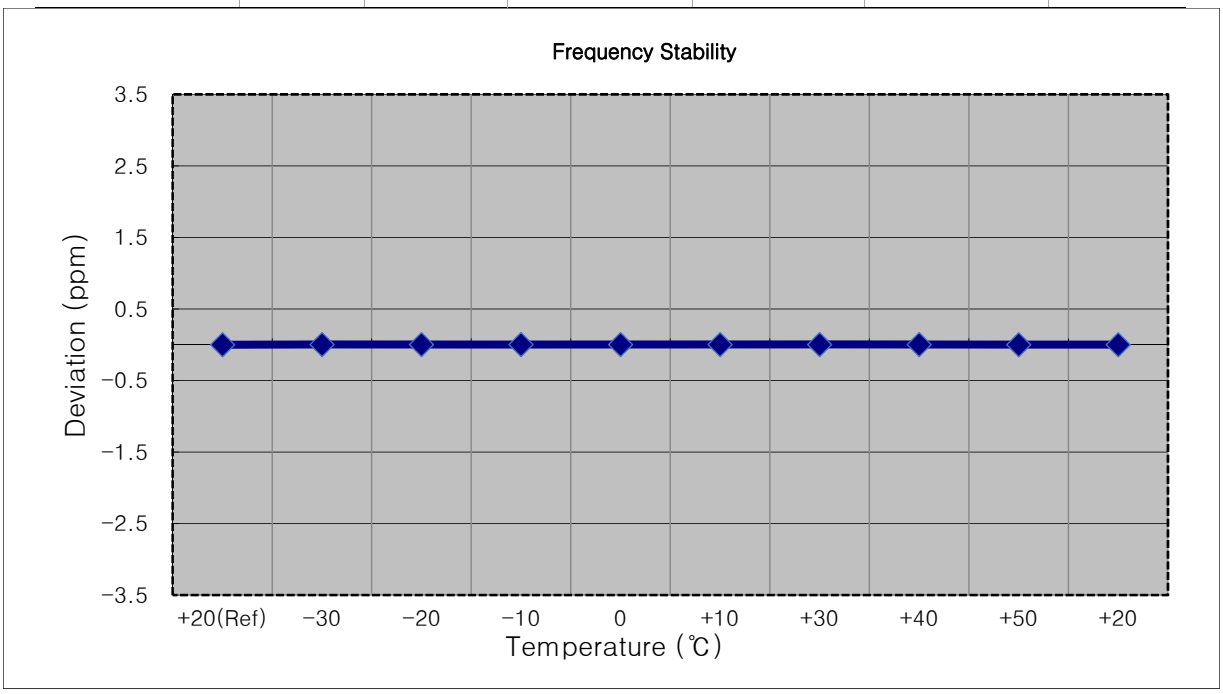
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 006	3.1	0.000 000	0.002
100 %		-20	1745 000 006	2.9	0.000 000	0.002
100 %		-10	1745 000 006	3.2	0.000 000	0.002
100 %		0	1745 000 005	2.7	0.000 000	0.002
100 %		+10	1745 000 006	3.1	0.000 000	0.002
100 %		+30	1745 000 006	2.8	0.000 000	0.002
100 %		+40	1745 000 006	3.1	0.000 000	0.002
100 %		+50	1745 000 005	2.2	0.000 000	0.001
Batt. Endpoint	3.300	+20	1745 000 005	2.5	0.000 000	0.001



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

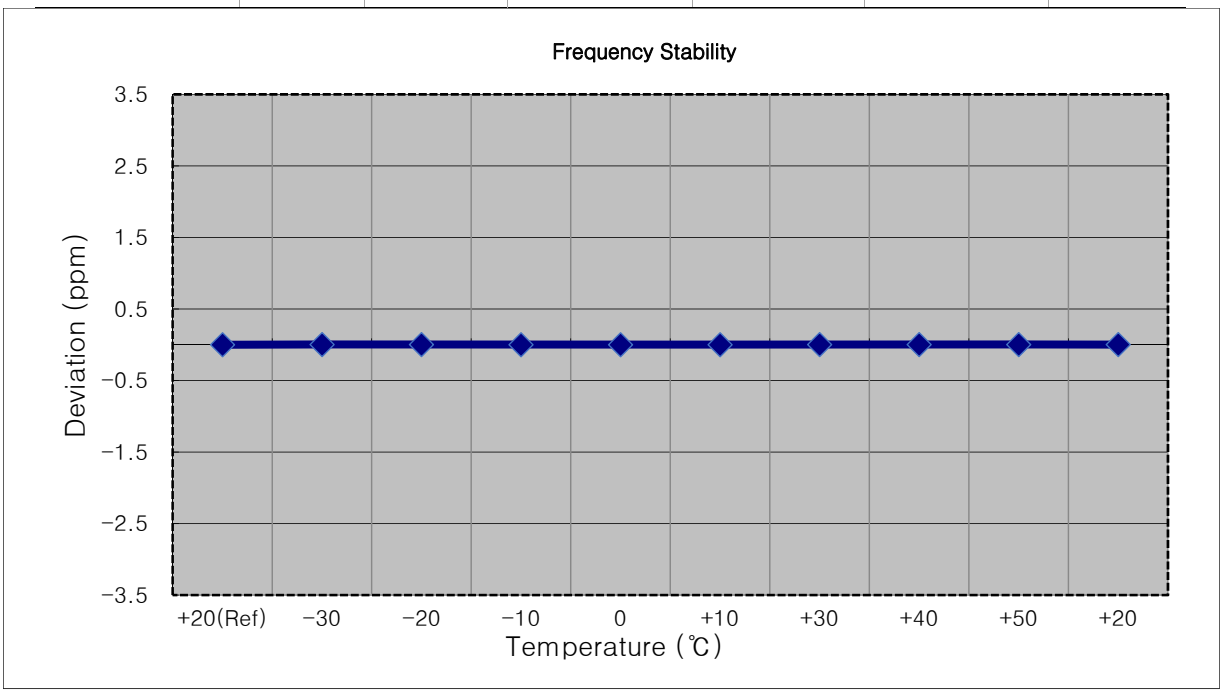
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 005	0.0	0.000 000	0.000
100 %		-30	1745 000 008	3.2	0.000 000	0.002
100 %		-20	1745 000 009	3.5	0.000 000	0.002
100 %		-10	1745 000 007	2.1	0.000 000	0.001
100 %		0	1745 000 007	2.2	0.000 000	0.001
100 %		+10	1745 000 007	2.2	0.000 000	0.001
100 %		+30	1745 000 008	2.8	0.000 000	0.002
100 %		+40	1745 000 009	3.5	0.000 000	0.002
100 %		+50	1745 000 008	2.6	0.000 000	0.001
Batt. Endpoint	3.300	+20	1745 000 009	4.2	0.000 000	0.002



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

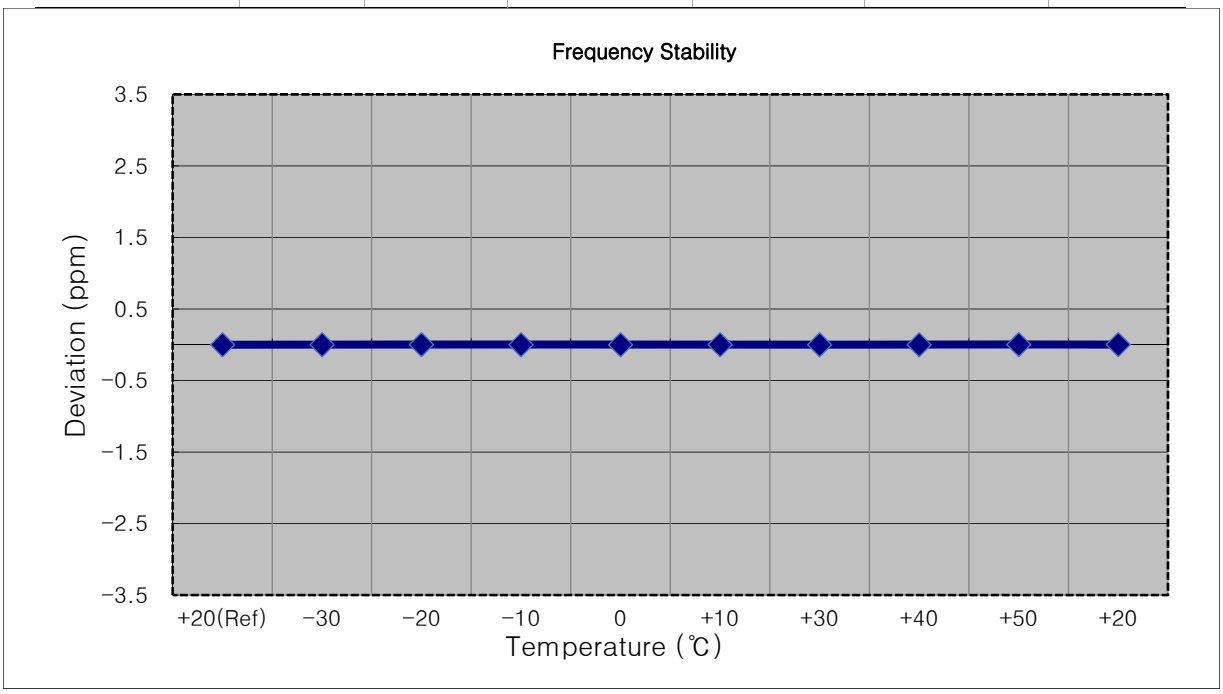
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 002	0.0	0.000 000	0.000
100 %		-30	1745 000 005	2.4	0.000 000	0.001
100 %		-20	1745 000 005	2.6	0.000 000	0.001
100 %		-10	1745 000 005	2.5	0.000 000	0.001
100 %		0	1745 000 005	2.3	0.000 000	0.001
100 %		+10	1745 000 004	1.6	0.000 000	0.001
100 %		+30	1745 000 004	2.1	0.000 000	0.001
100 %		+40	1745 000 004	2.1	0.000 000	0.001
100 %		+50	1745 000 005	2.7	0.000 000	0.002
Batt. Endpoint	3.300	+20	1745 000 005	2.9	0.000 000	0.002



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

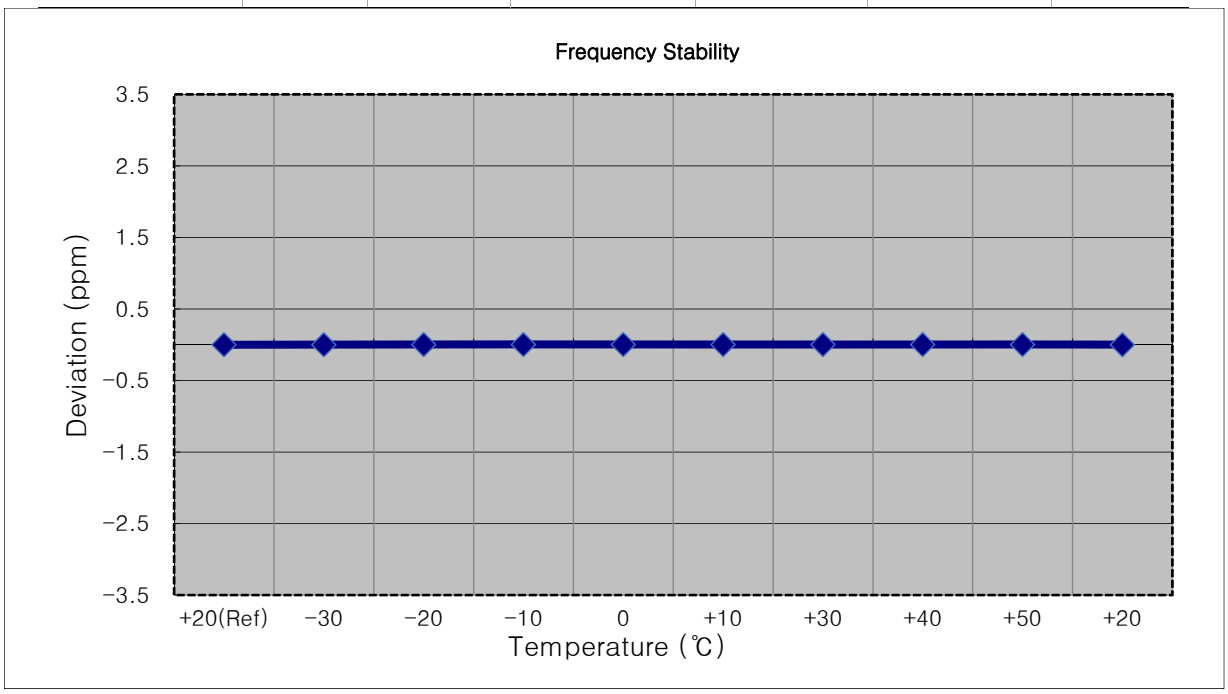
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 005	2.2	0.000 000	0.001
100 %		-20	1745 000 005	2.8	0.000 000	0.002
100 %		-10	1745 000 006	3.3	0.000 000	0.002
100 %		0	1745 000 005	2.6	0.000 000	0.001
100 %		+10	1745 000 005	2.6	0.000 000	0.001
100 %		+30	1745 000 006	2.9	0.000 000	0.002
100 %		+40	1745 000 006	3.4	0.000 000	0.002
100 %		+50	1745 000 006	3.3	0.000 000	0.002
Batt. Endpoint	3.300	+20	1745 000 005	2.3	0.000 000	0.001



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

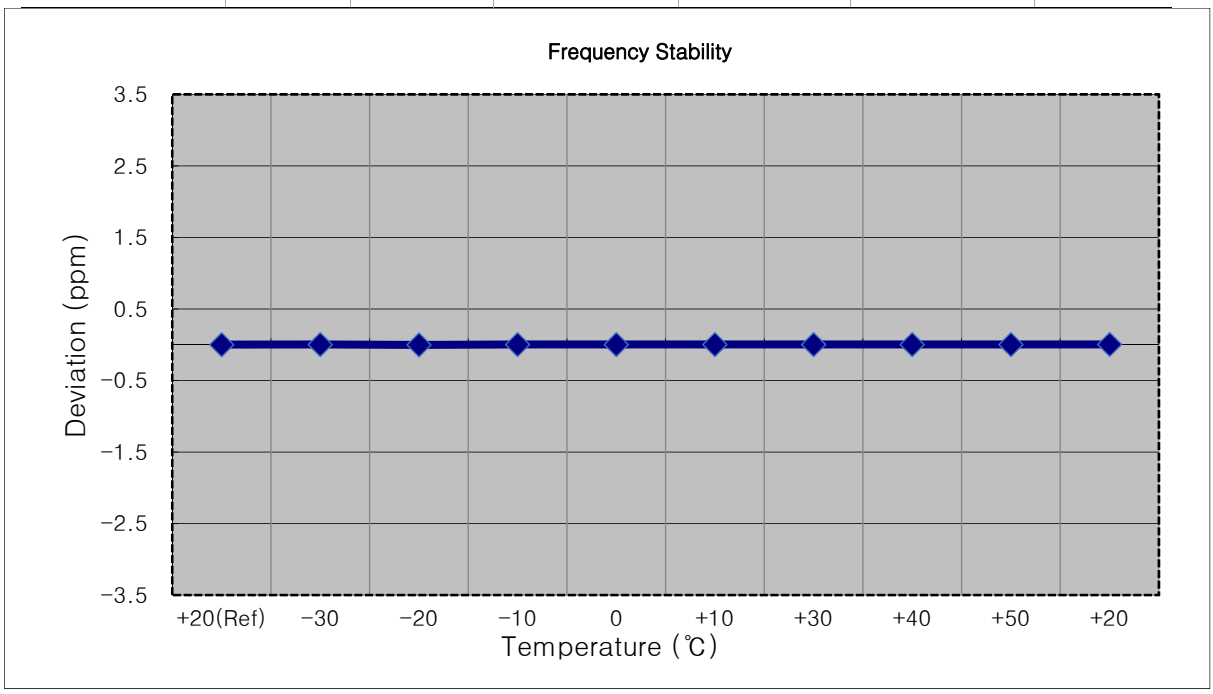
▣ OPERATING FREQUENCY: 1779,300,000 Hz

▣ CHANNEL: 132665 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1779 300 005	0.0	0.000 000	0.000
100 %		-30	1779 300 009	3.6	0.000 000	0.002
100 %		-20	1779 300 001	-4.5	0.000 000	-0.003
100 %		-10	1779 300 009	3.5	0.000 000	0.002
100 %		0	1779 300 009	4.1	0.000 000	0.002
100 %		+10	1779 300 010	4.6	0.000 000	0.003
100 %		+30	1779 300 010	4.5	0.000 000	0.003
100 %		+40	1779 300 010	4.4	0.000 000	0.002
100 %		+50	1779 300 012	6.2	0.000 000	0.003
Batt. Endpoint	3.300	+20	1779 300 012	6.7	0.000 000	0.004



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

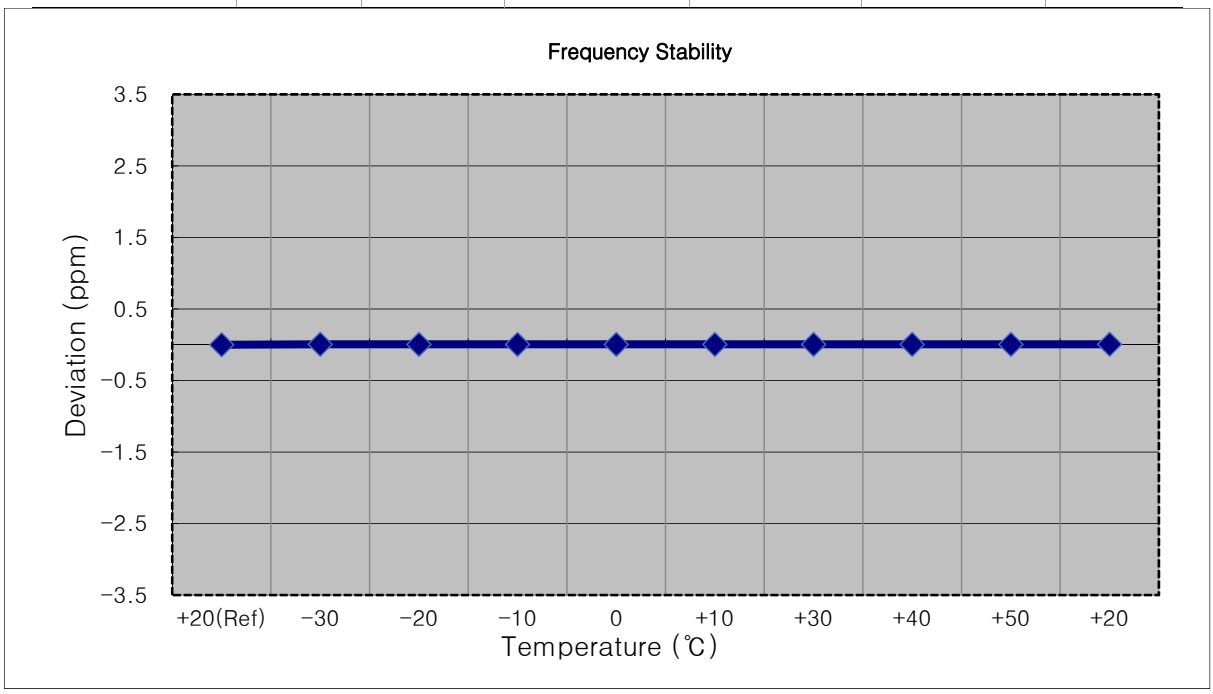
▣ OPERATING FREQUENCY: 1778,500,000 Hz

▣ CHANNEL: 132657 (3 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1778 500 009	0.0	0.000 000	0.000
100 %		-30	1778 500 019	10.8	0.000 001	0.006
100 %		-20	1778 500 017	8.9	0.000 001	0.005
100 %		-10	1778 500 018	9.3	0.000 001	0.005
100 %		0	1778 500 018	9.3	0.000 001	0.005
100 %		+10	1778 500 017	8.1	0.000 000	0.005
100 %		+30	1778 500 017	8.6	0.000 000	0.005
100 %		+40	1778 500 017	8.8	0.000 000	0.005
100 %		+50	1778 500 018	9.2	0.000 001	0.005
Batt. Endpoint	3.300	+20	1778 500 019	10.8	0.000 001	0.006



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

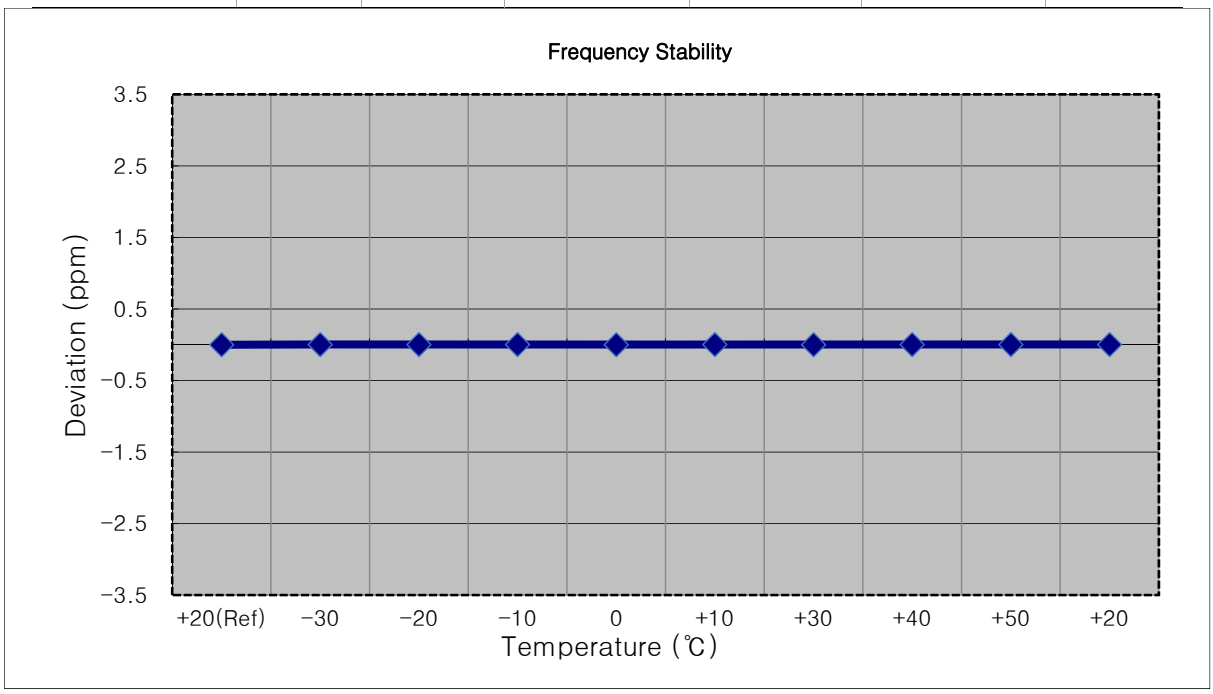
▣ OPERATING FREQUENCY: 1777,500,000 Hz

▣ CHANNEL: 132647 (5 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1777 499 999	0.0	0.000 000	0.000
100 %		-30	1777 500 003	4.1	0.000 000	0.002
100 %		-20	1777 500 003	4.9	0.000 000	0.003
100 %		-10	1777 500 002	3.2	0.000 000	0.002
100 %		0	1777 500 000	1.6	0.000 000	0.001
100 %		+10	1777 500 002	3.7	0.000 000	0.002
100 %		+30	1777 500 001	2.4	0.000 000	0.001
100 %		+40	1777 500 002	3.4	0.000 000	0.002
100 %		+50	1777 500 002	3.1	0.000 000	0.002
Batt. Endpoint	3.300	+20	1777 500 003	4.4	0.000 000	0.002



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

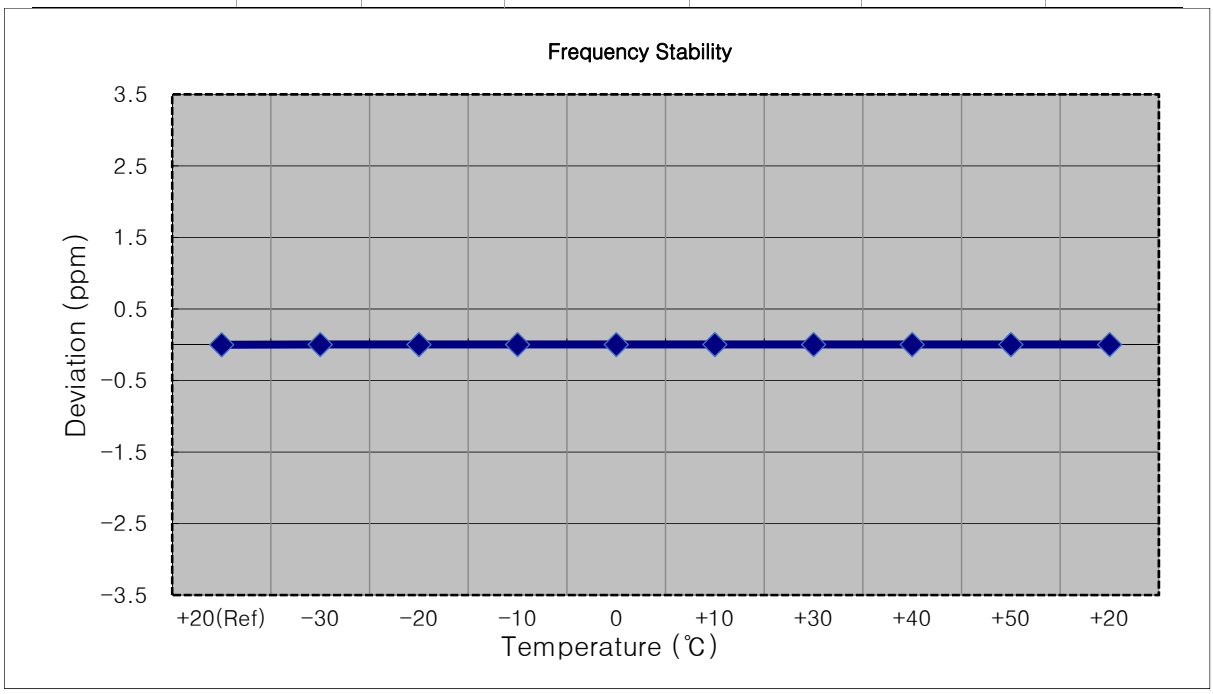
▣ OPERATING FREQUENCY: 1775,000,000 Hz

▣ CHANNEL: 132622 (10 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1775 000 005	0.0	0.000 000	0.000
100 %		-30	1775 000 009	4.0	0.000 000	0.002
100 %		-20	1775 000 011	5.6	0.000 000	0.003
100 %		-10	1775 000 010	5.0	0.000 000	0.003
100 %		0	1775 000 010	5.0	0.000 000	0.003
100 %		+10	1775 000 009	3.5	0.000 000	0.002
100 %		+30	1775 000 009	3.7	0.000 000	0.002
100 %		+40	1775 000 009	4.3	0.000 000	0.002
100 %		+50	1775 000 009	3.4	0.000 000	0.002
Batt. Endpoint	3.300	+20	1775 000 010	5.1	0.000 000	0.003



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

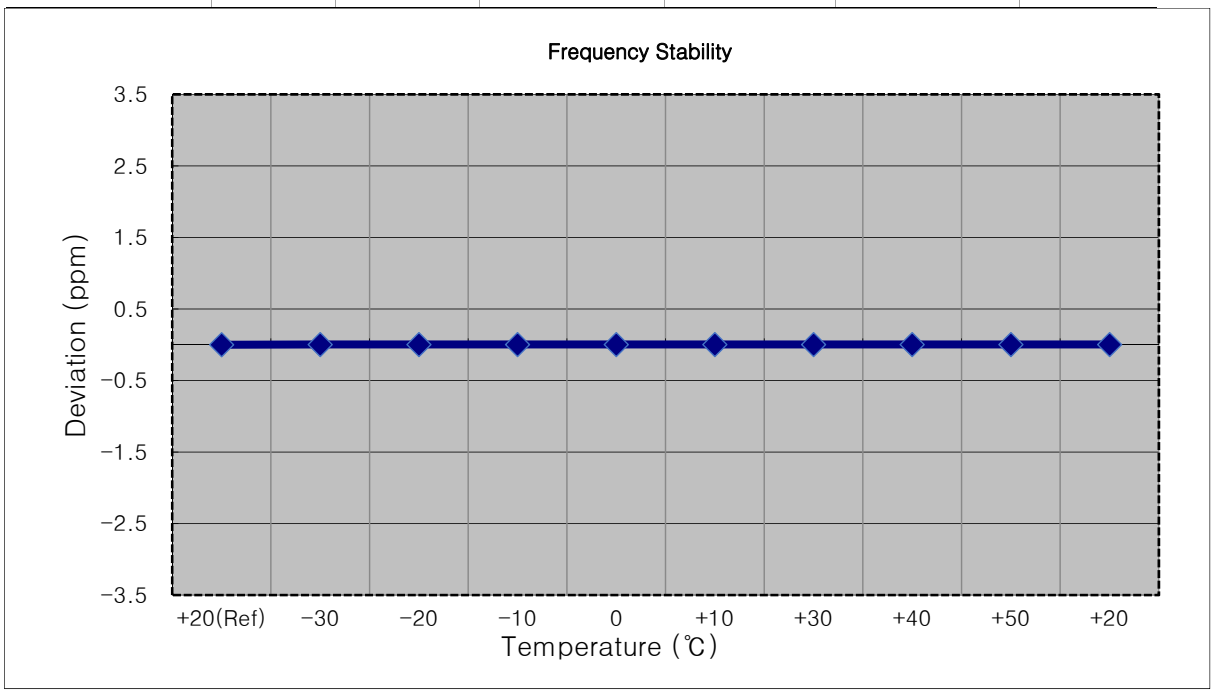
▣ OPERATING FREQUENCY: 1772,500,000 Hz

▣ CHANNEL: 132597 (15 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1772 500 004	0.0	0.000 000	0.000
100 %		-30	1772 500 007	3.1	0.000 000	0.002
100 %		-20	1772 500 008	3.6	0.000 000	0.002
100 %		-10	1772 500 007	3.2	0.000 000	0.002
100 %		0	1772 500 007	3.2	0.000 000	0.002
100 %		+10	1772 500 007	3.0	0.000 000	0.002
100 %		+30	1772 500 008	3.3	0.000 000	0.002
100 %		+40	1772 500 009	4.6	0.000 000	0.003
100 %		+50	1772 500 008	3.8	0.000 000	0.002
Batt. Endpoint	3.300	+20	1772 500 008	4.0	0.000 000	0.002



The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ MODE: LTE 66/4

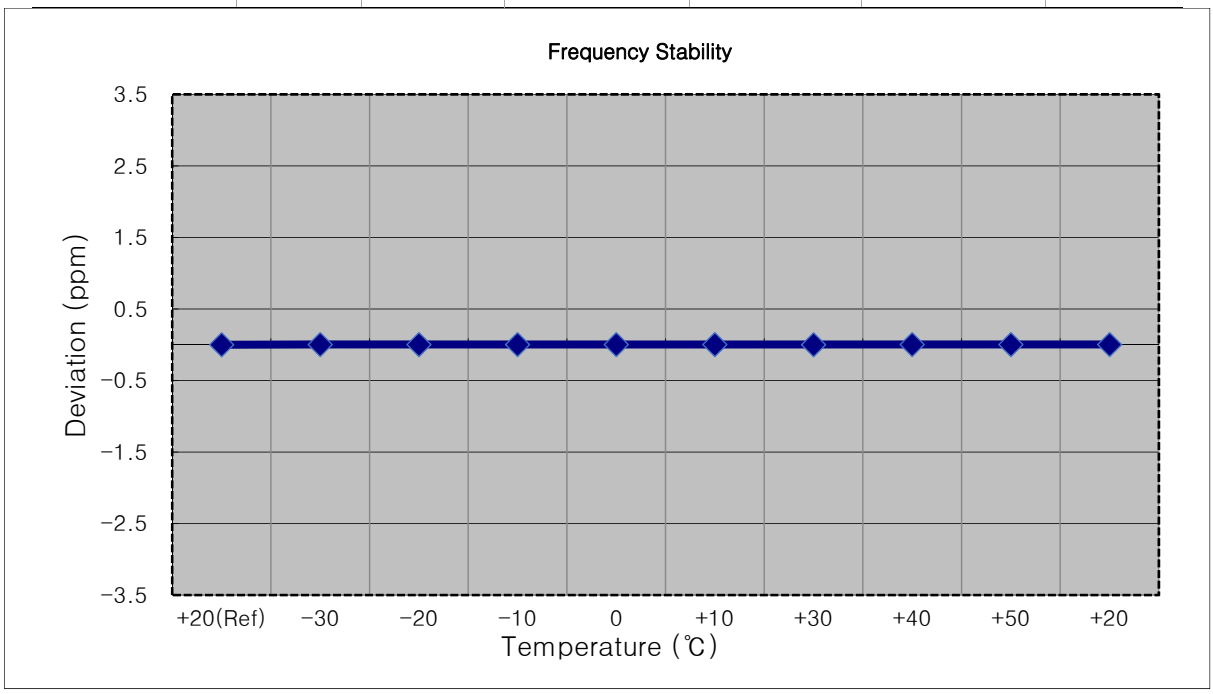
▣ OPERATING FREQUENCY: 1770,000,000 Hz

▣ CHANNEL: 132572 (20 MHz)

▣ REFERENCE VOLTAGE: 3.880 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1770 000 004	0.0	0.000 000	0.000
100 %		-30	1770 000 008	4.4	0.000 000	0.002
100 %		-20	1770 000 008	3.9	0.000 000	0.002
100 %		-10	1770 000 007	3.2	0.000 000	0.002
100 %		0	1770 000 008	4.5	0.000 000	0.003
100 %		+10	1770 000 007	2.8	0.000 000	0.002
100 %		+30	1770 000 006	2.1	0.000 000	0.001
100 %		+40	1770 000 007	3.5	0.000 000	0.002
100 %		+50	1770 000 007	3.2	0.000 000	0.002
Batt. Endpoint	3.300	+20	1770 000 008	4.5	0.000 000	0.003

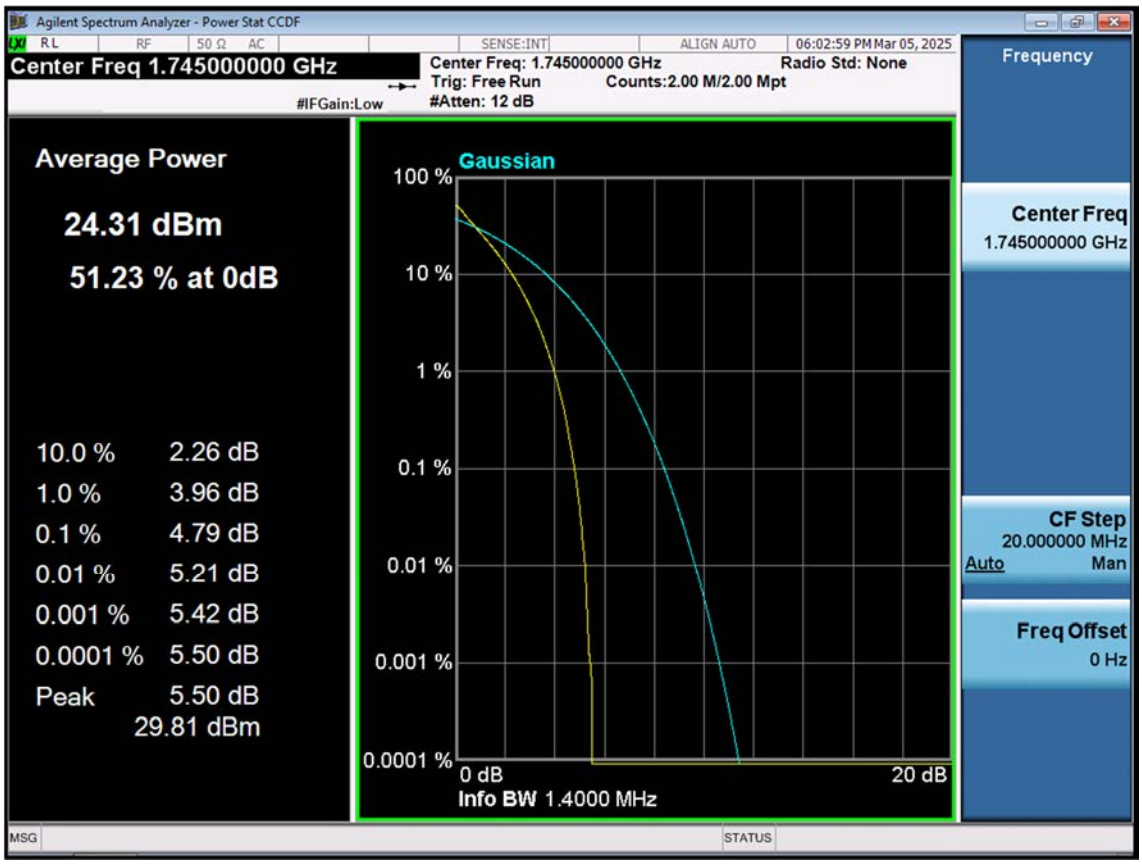


The report shall not be (partly) reproduced except in full without approval of the laboratory.

10. TEST PLOTS(Main 1 ANT)

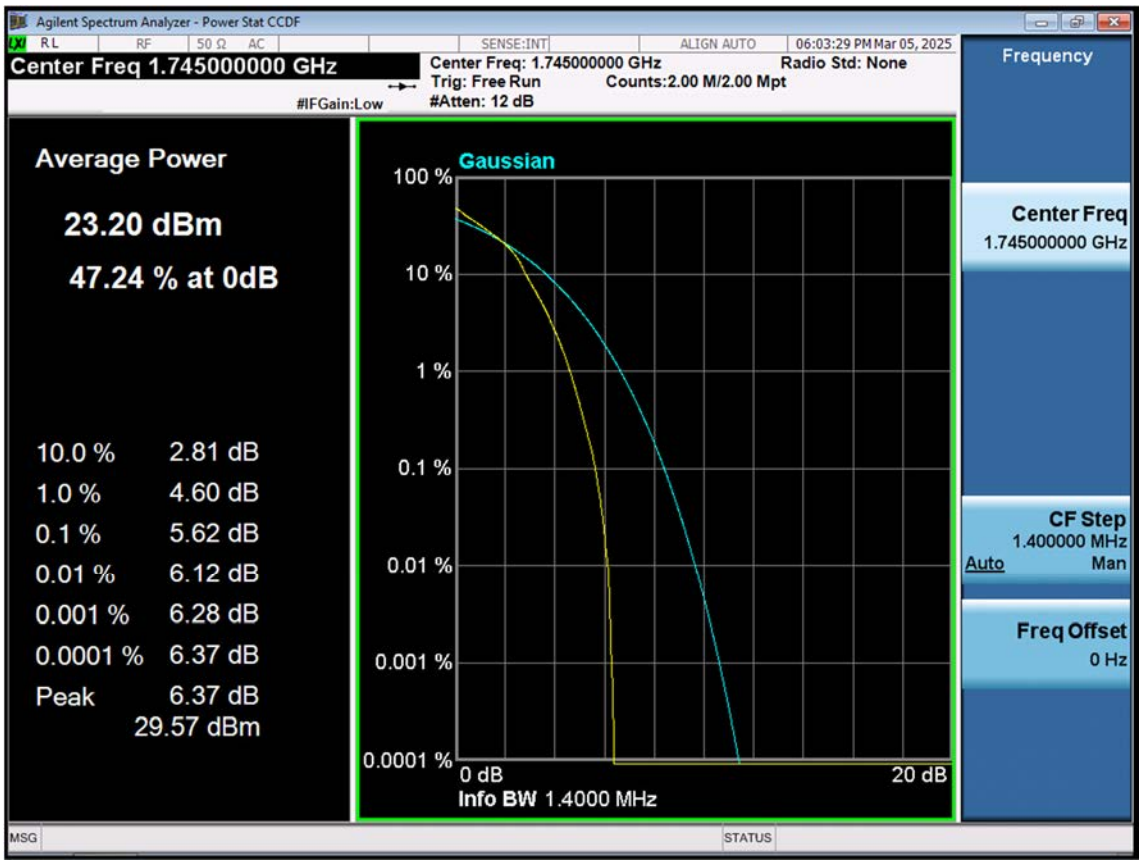
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_PAR_Mid_QPSK_FullRB



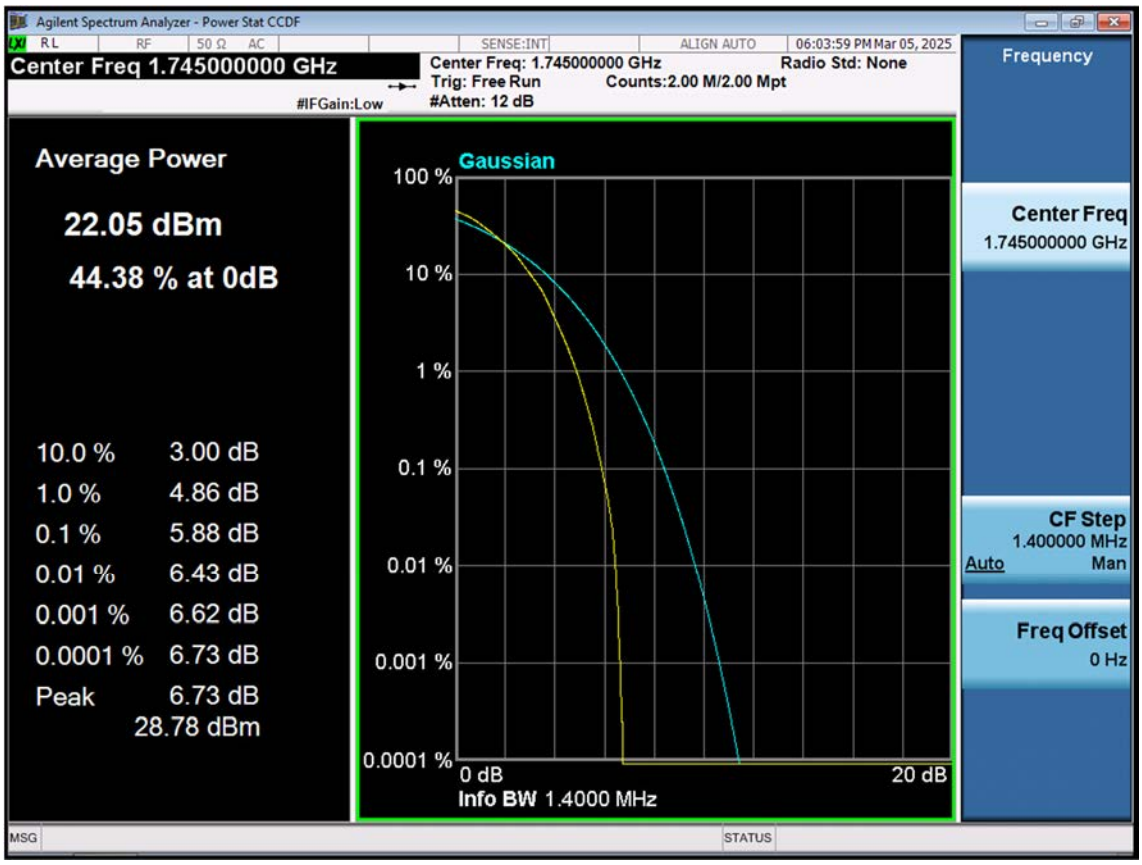
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_PAR_Mid_16QAM_FullRB



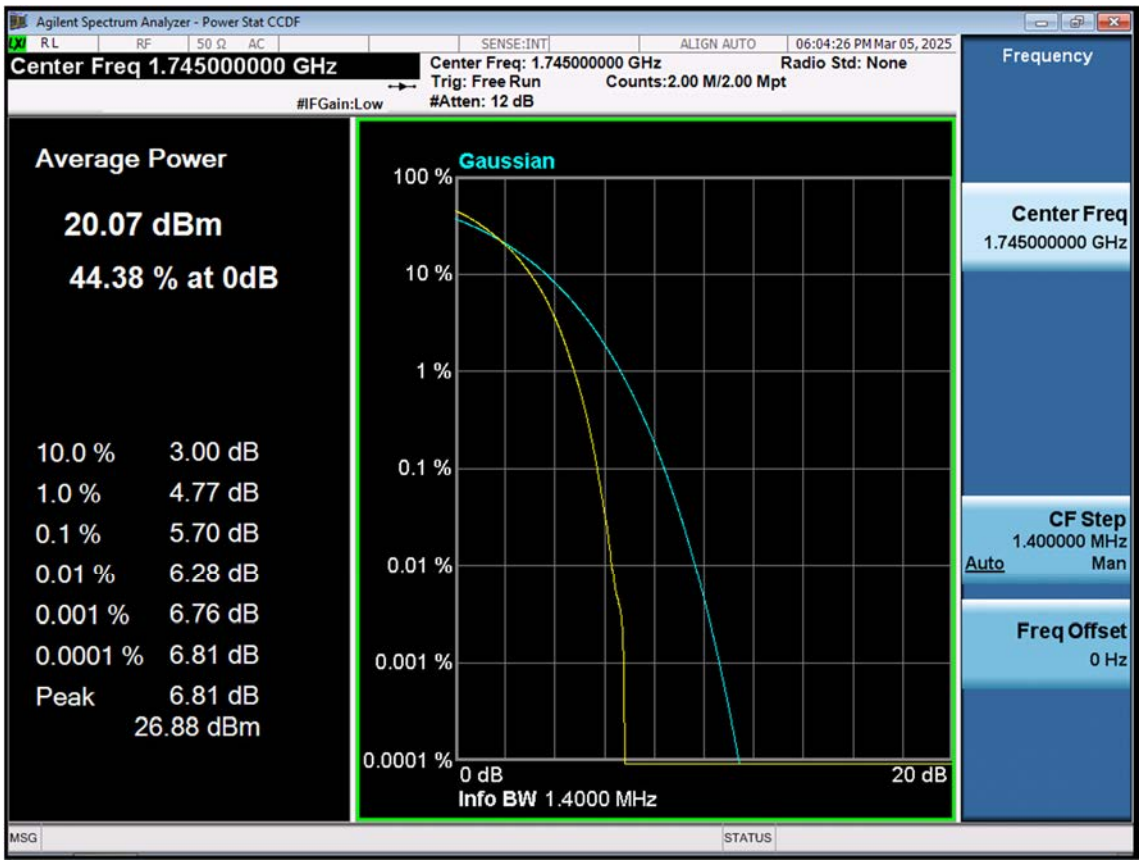
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_PAR_Mid_64QAM_FullRB



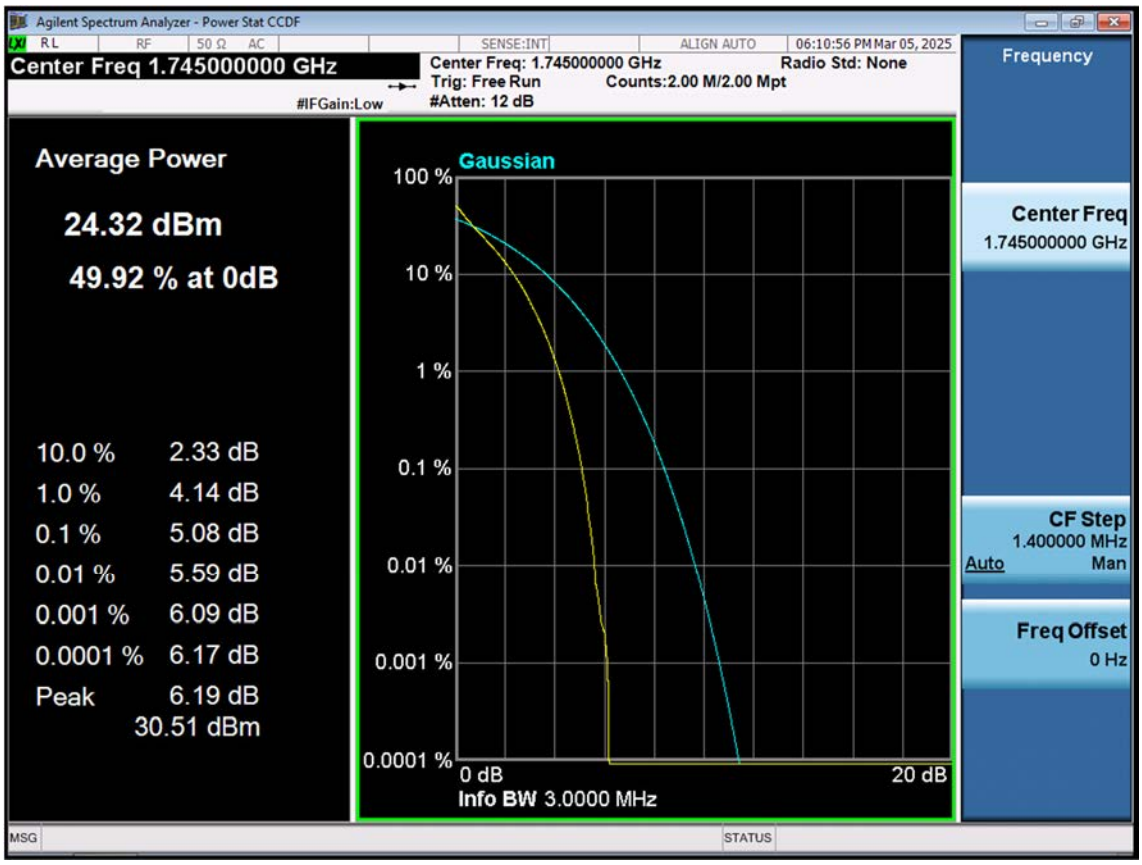
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_PAR_Mid_256QAM_FullRB



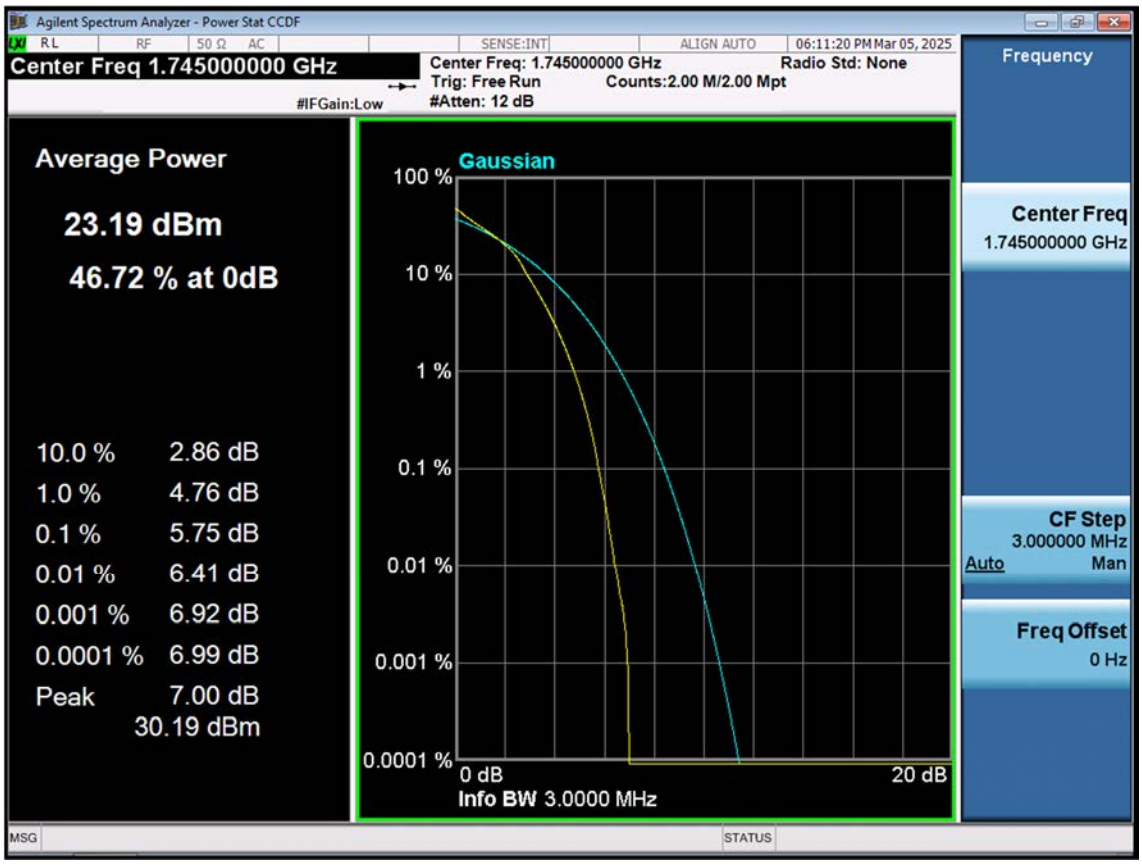
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_PAR_Mid_QPSK_FullRB



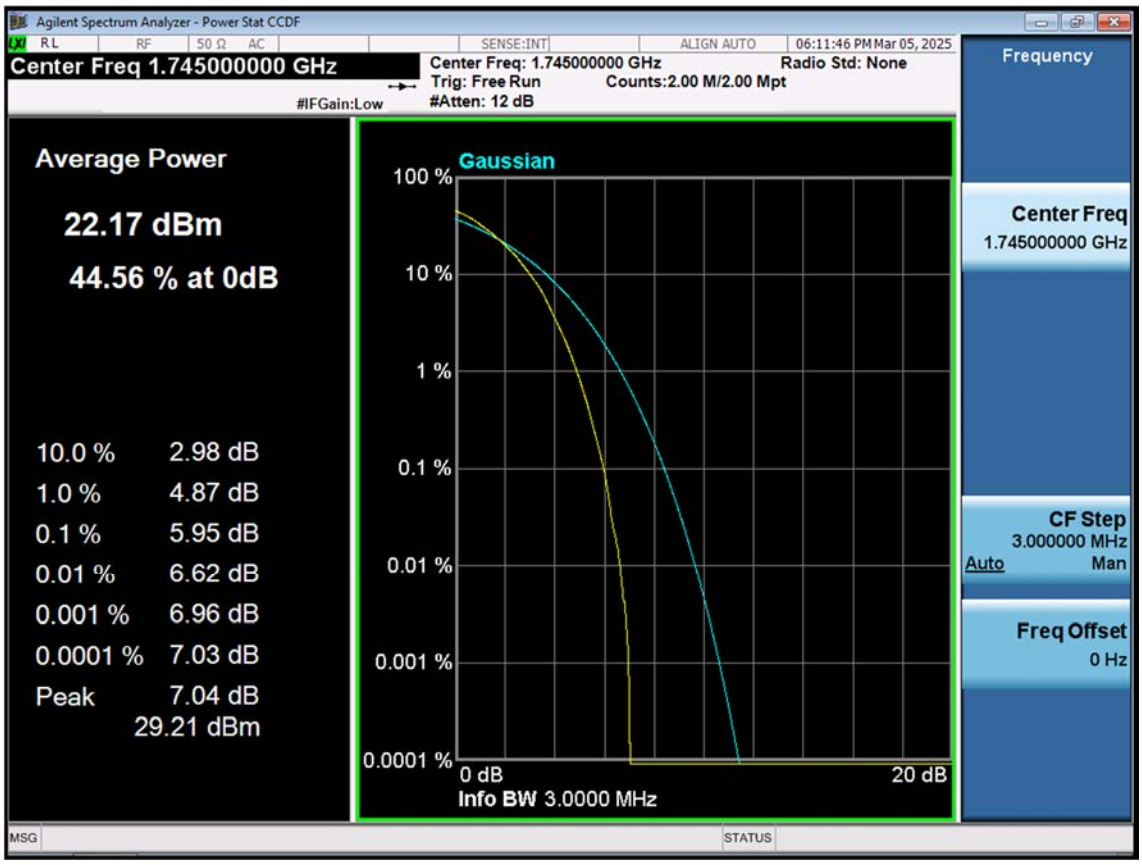
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_PAR_Mid_16QAM_FullRB



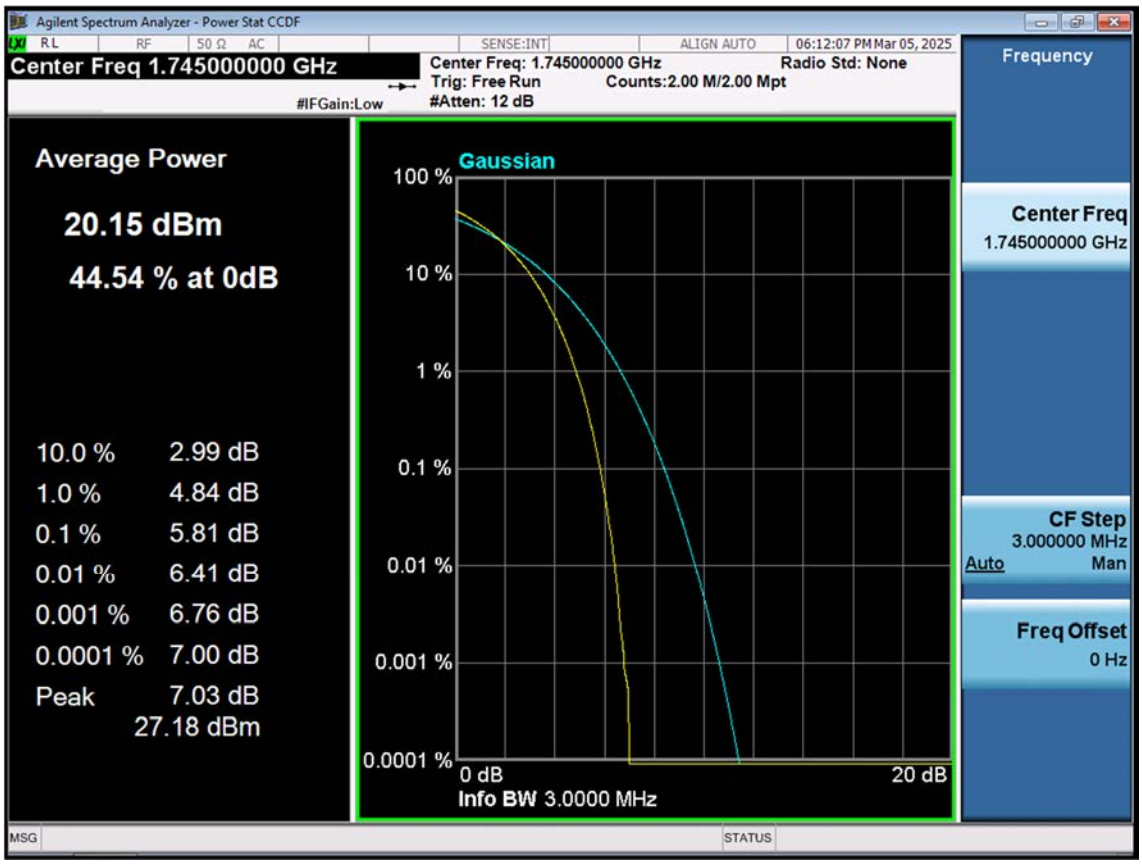
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_PAR_Mid_64QAM_FullRB



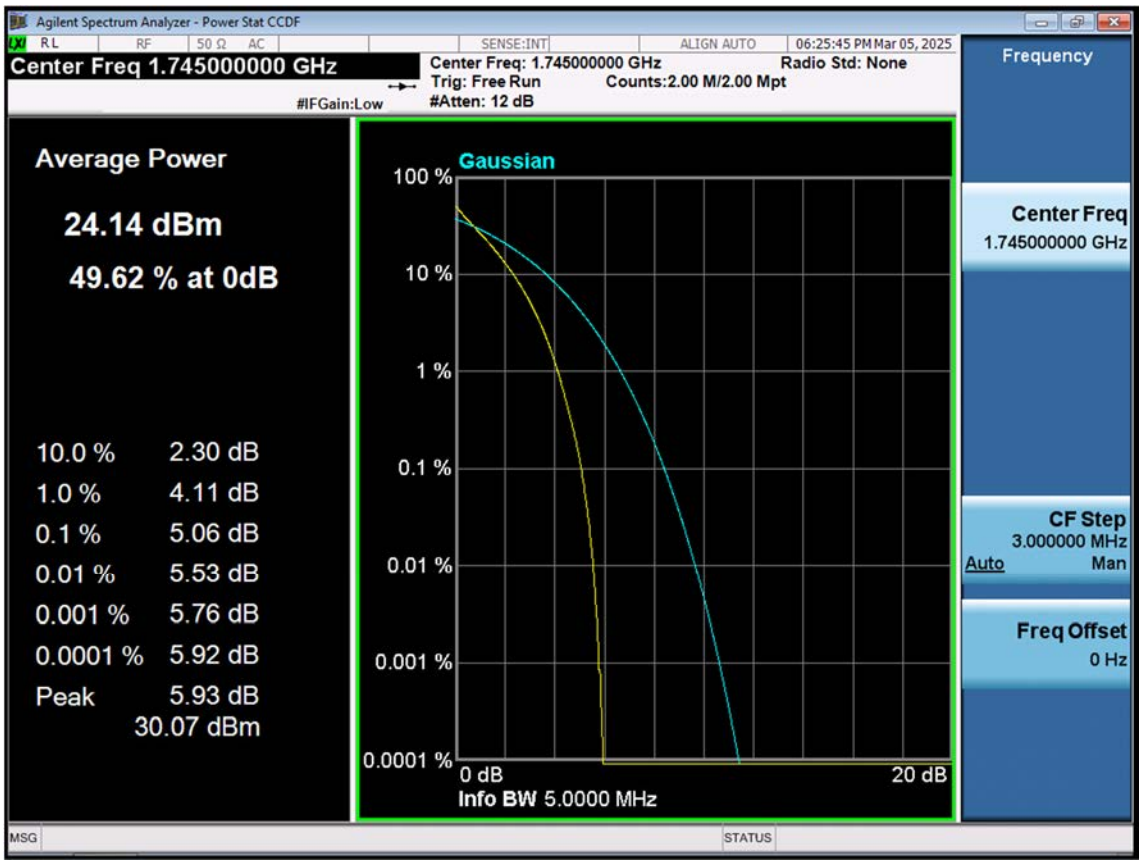
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_PAR_Mid_256QAM_FullRB



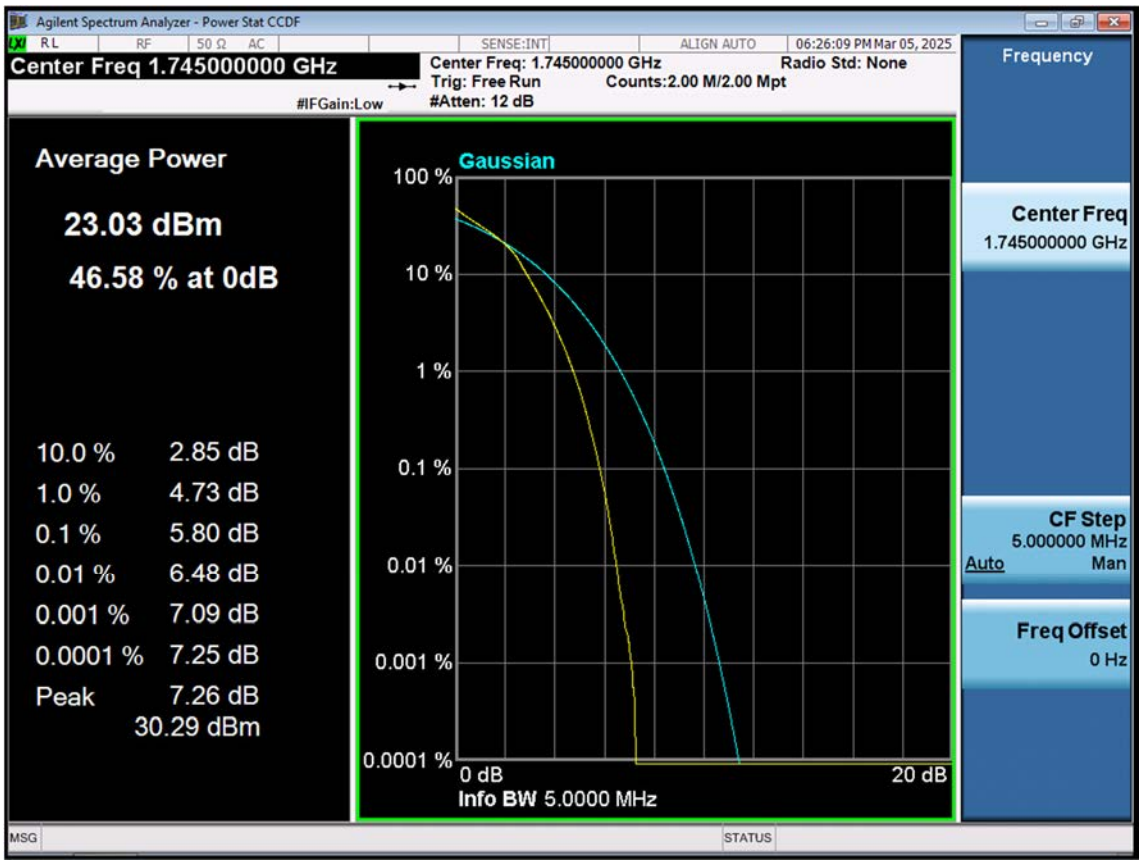
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_5 M_PAR_Mid_QPSK_FullRB



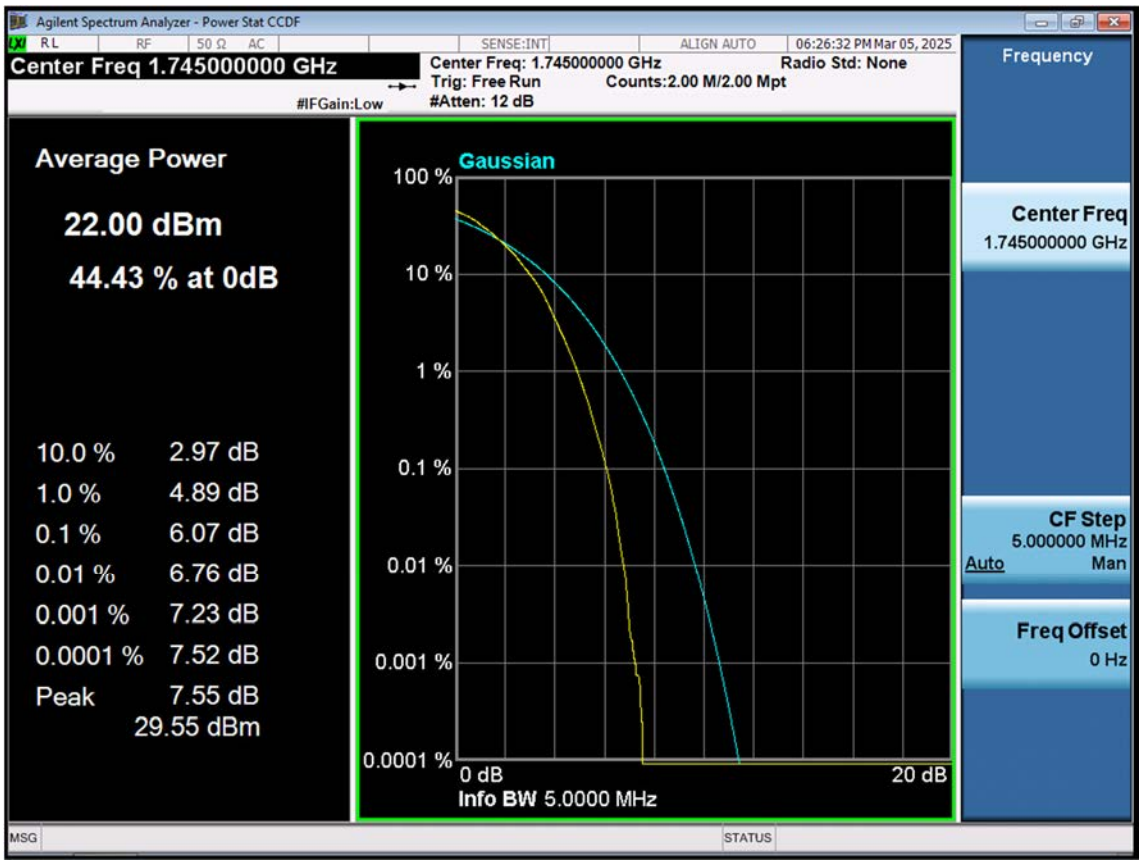
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_5 M_PAR_Mid_16QAM_FullRB



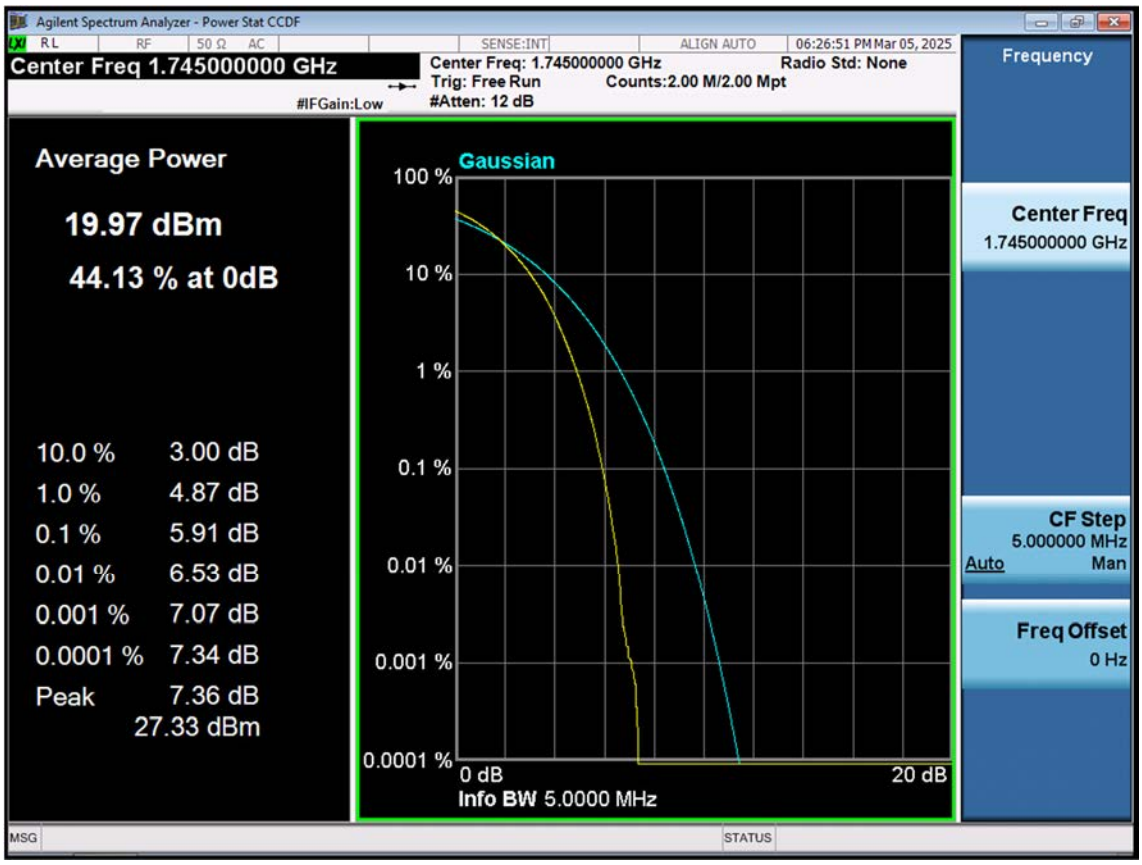
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_5 M_PAR_Mid_64QAM_FullRB



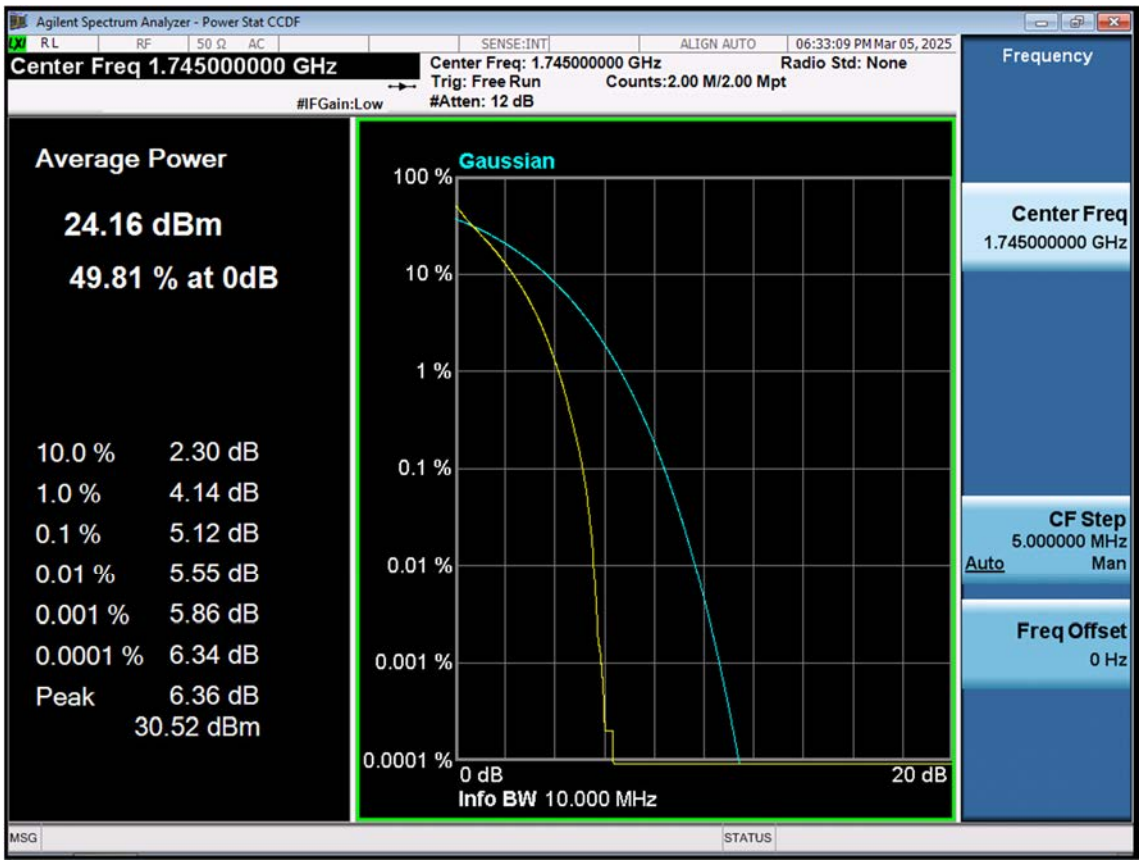
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_5 M_PAR_Mid_256QAM_FullRB



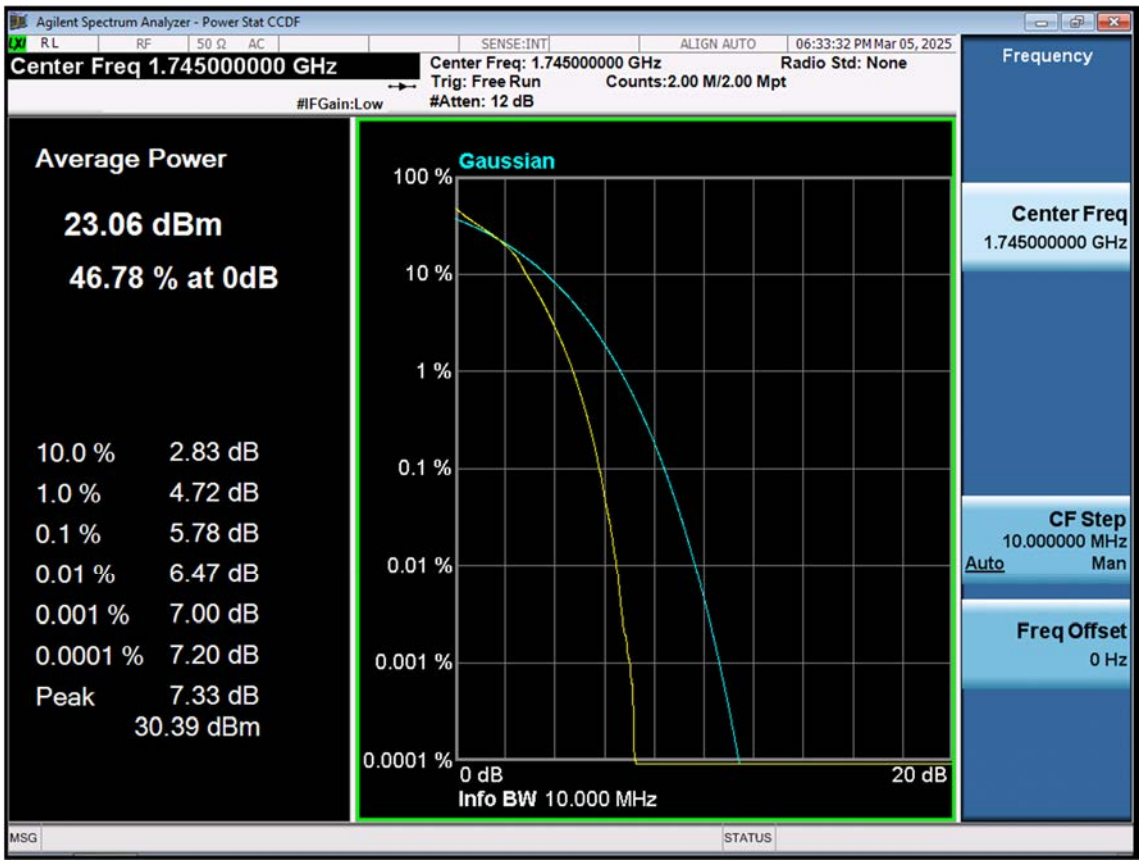
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_10 M_PAR_Mid_QPSK_FullRB



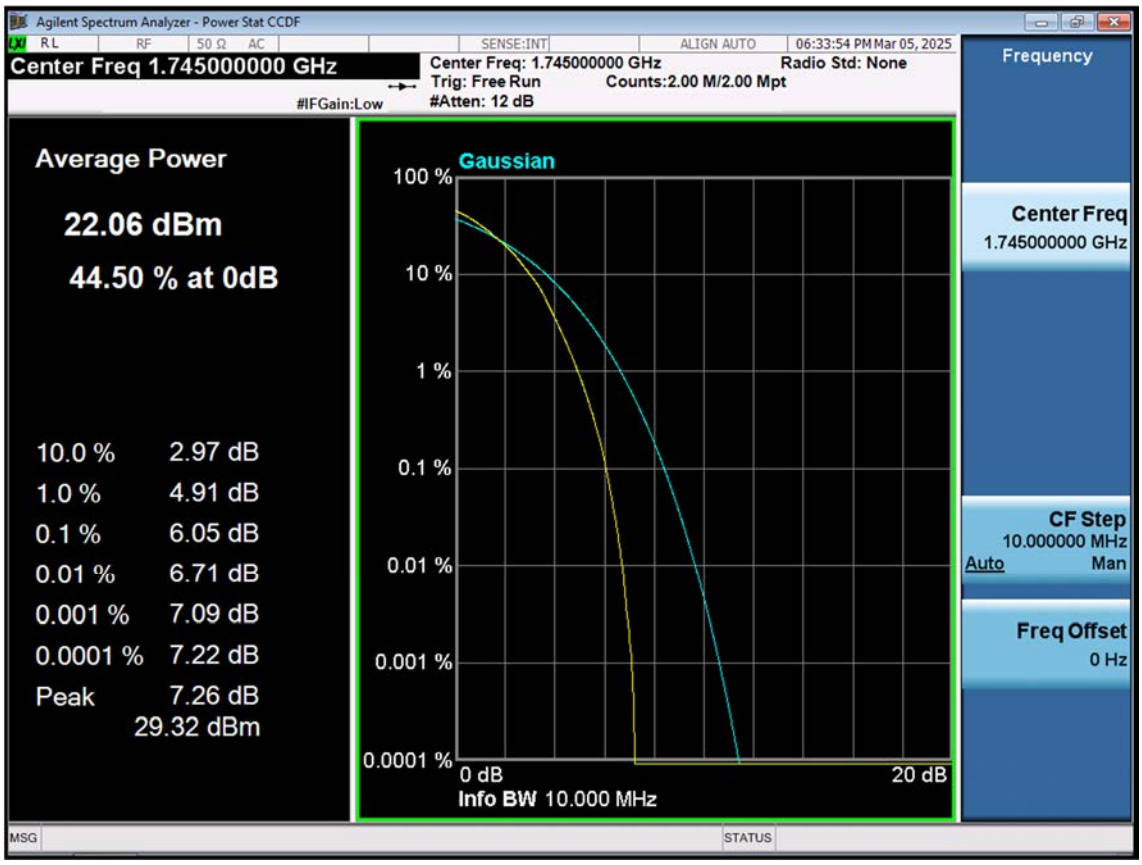
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_10 M_PAR_Mid_16QAM_FullRB



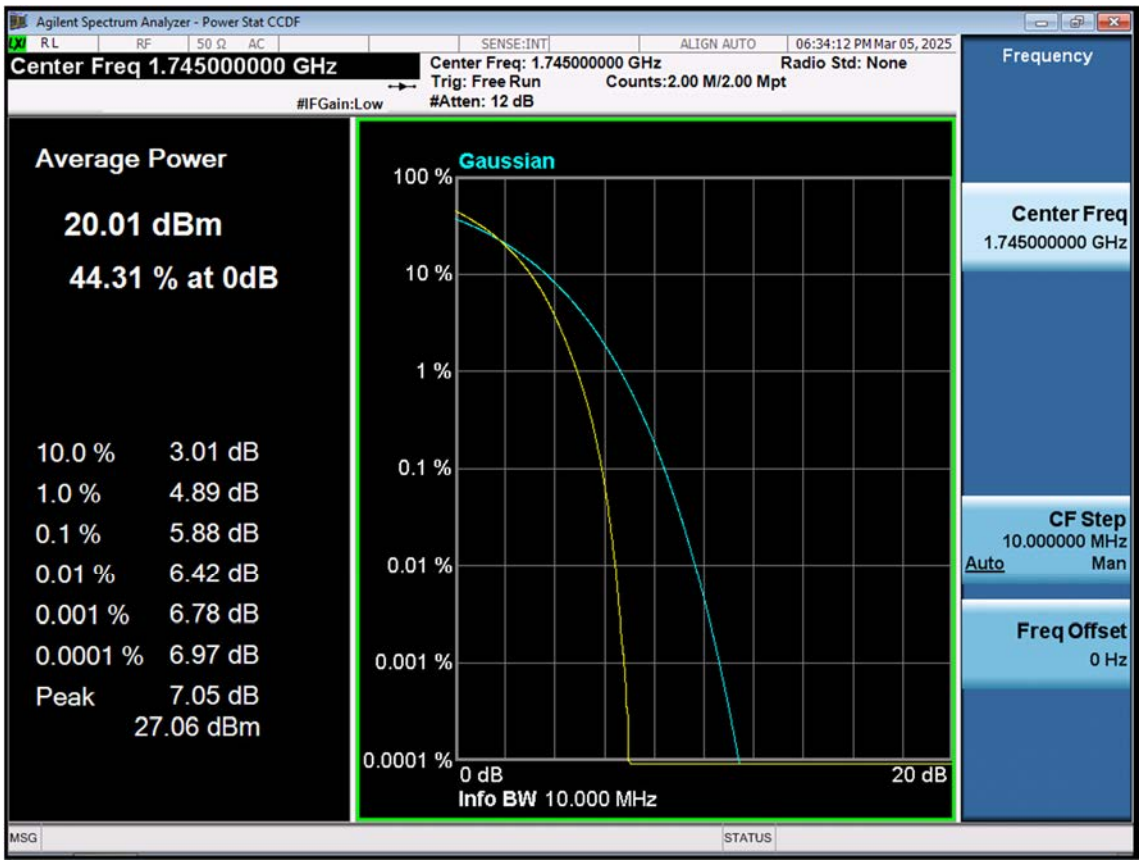
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_10 M_PAR_Mid_64QAM_FullRB



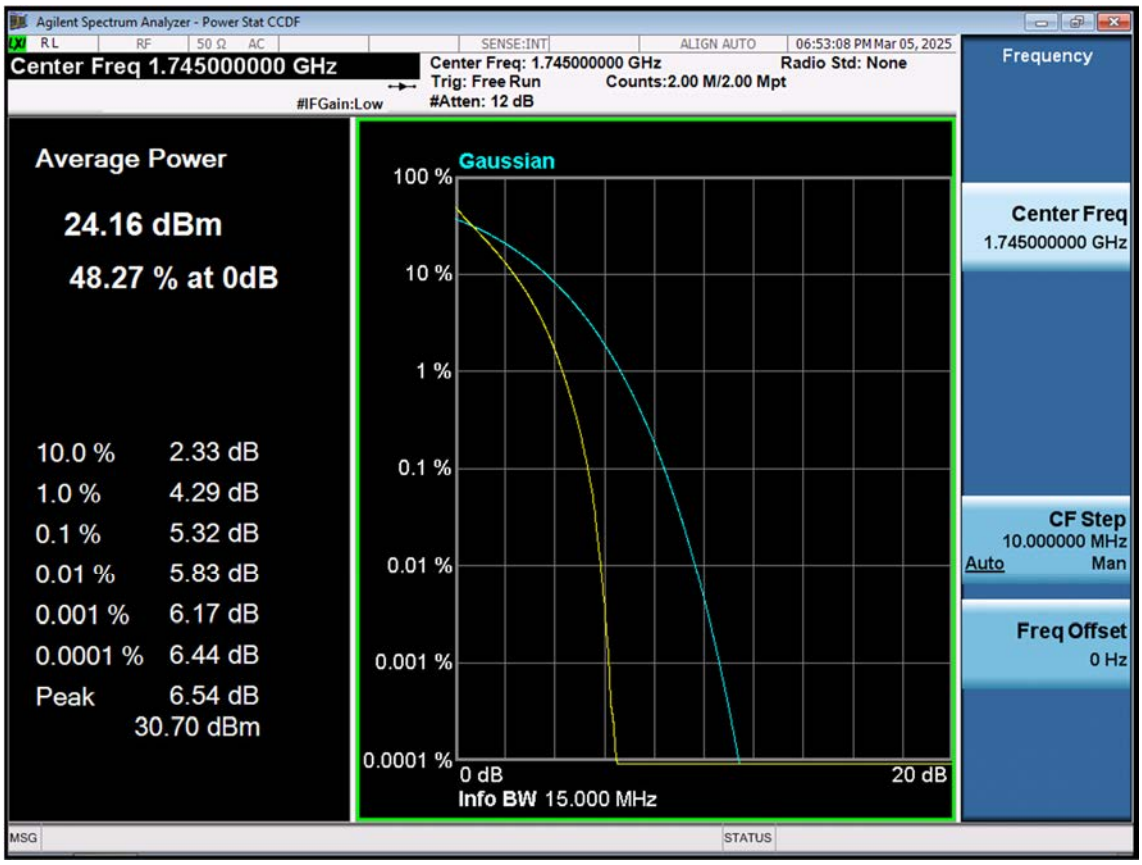
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_10 M_PAR_Mid_256QAM_FullRB



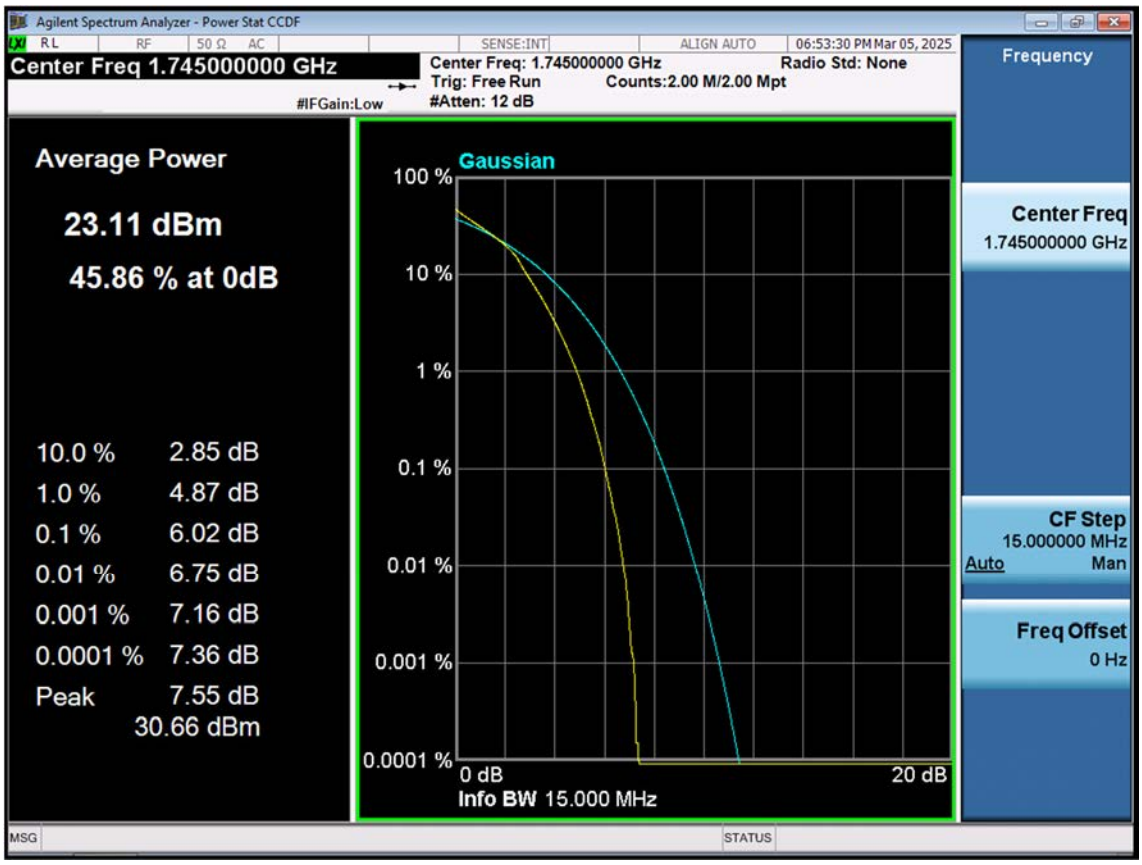
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_15 M_PAR_Mid_QPSK_FullRB



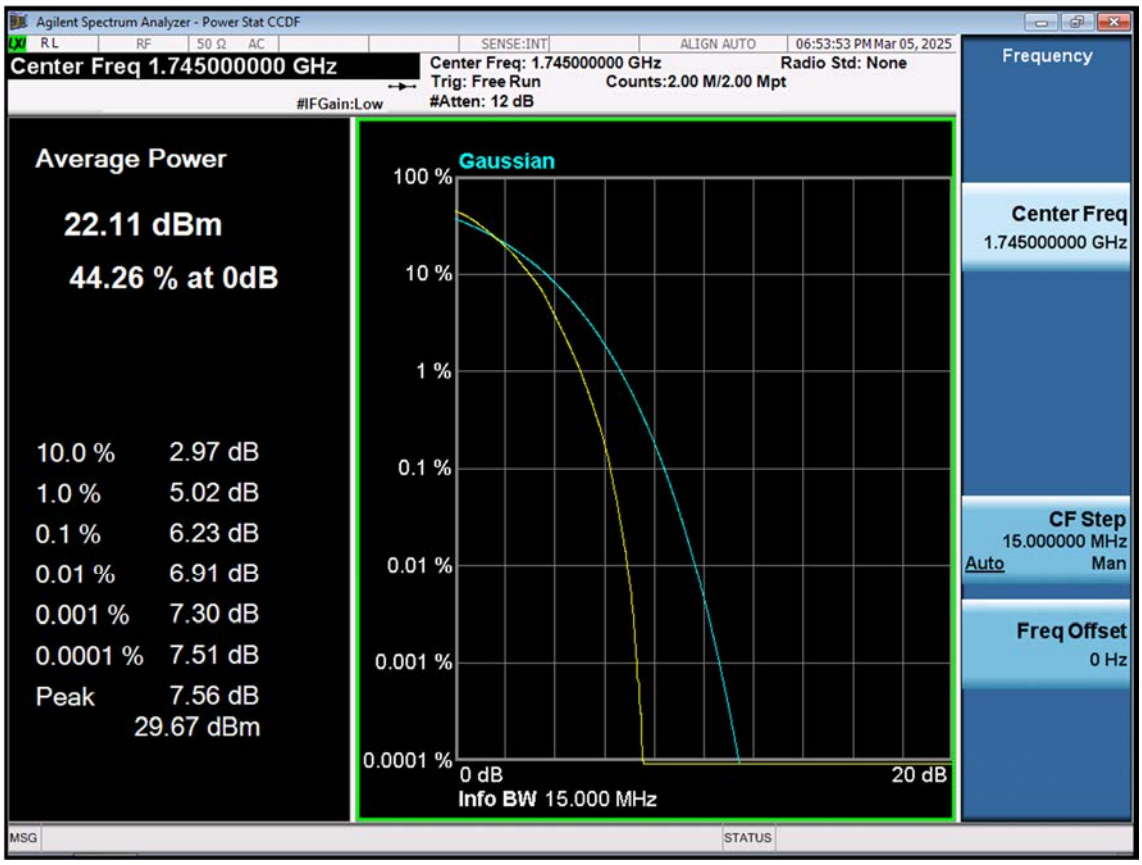
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_15 M_PAR_Mid_16QAM_FullRB



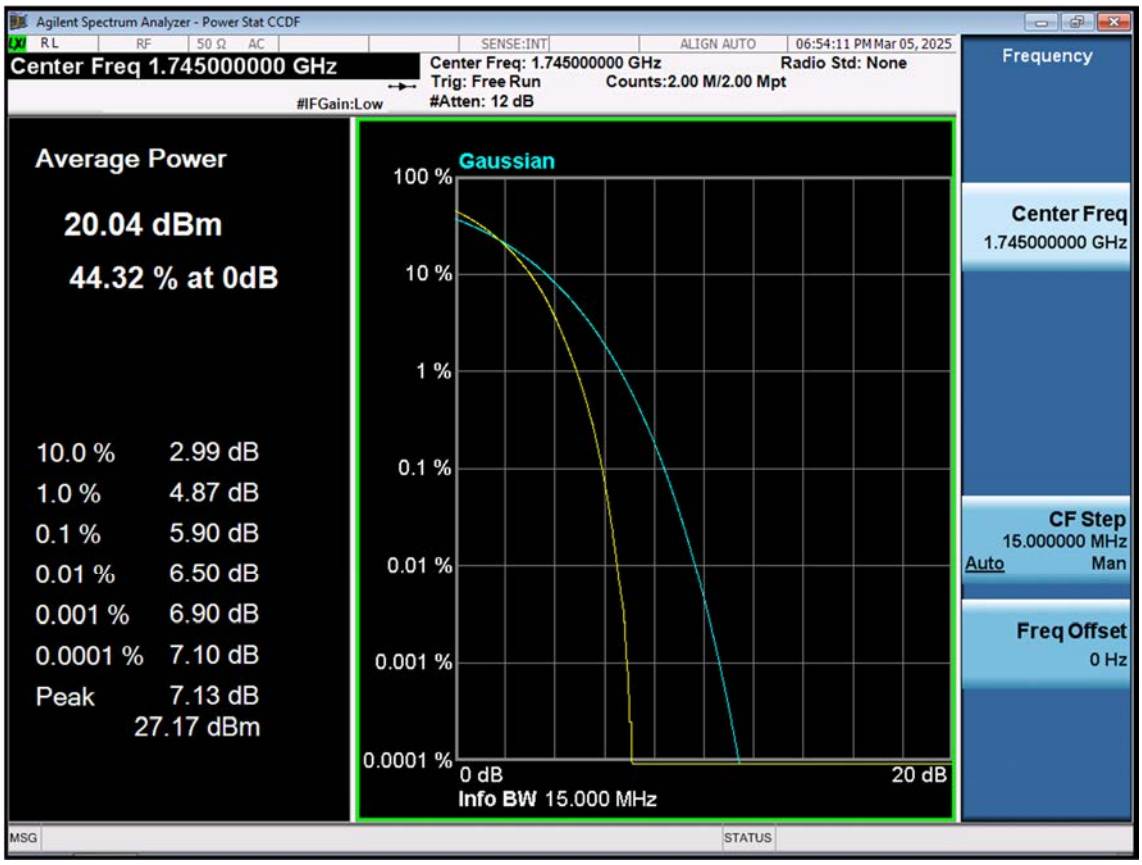
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_15 M_PAR_Mid_64QAM_FullRB



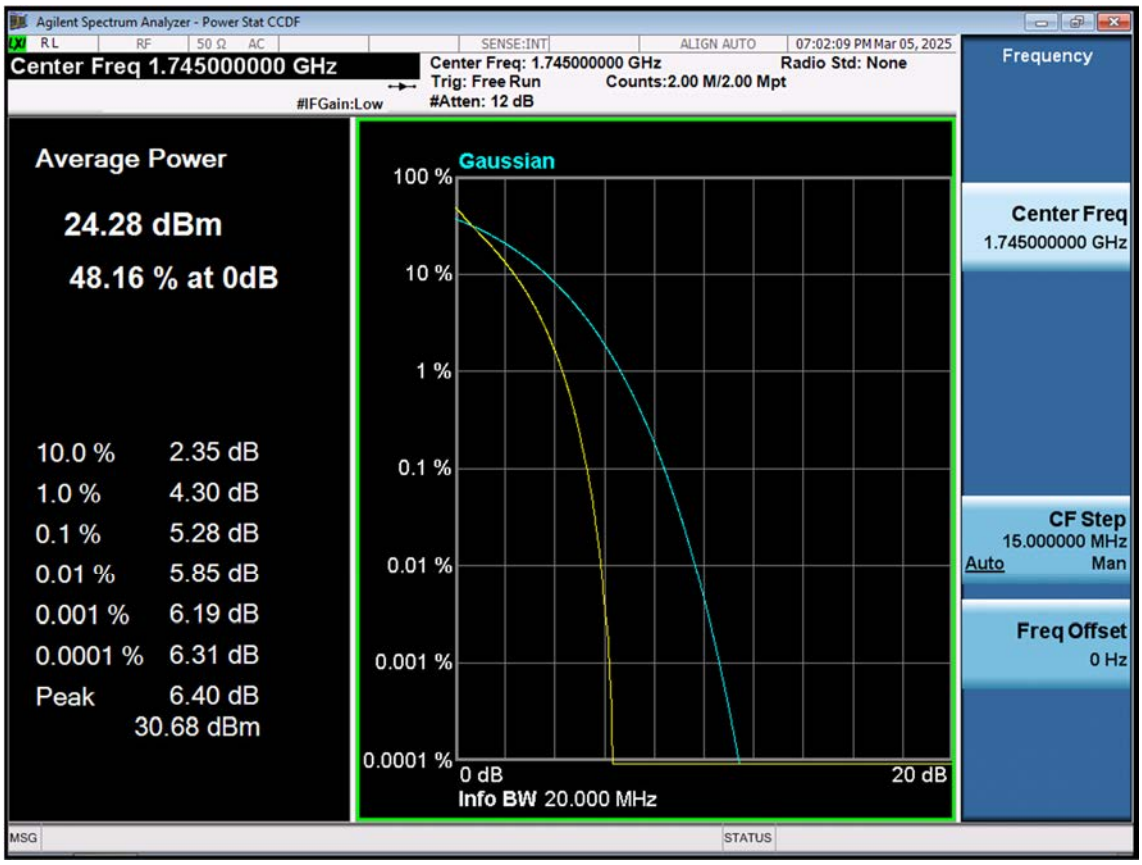
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_15 M_PAR_Mid_256QAM_FullRB



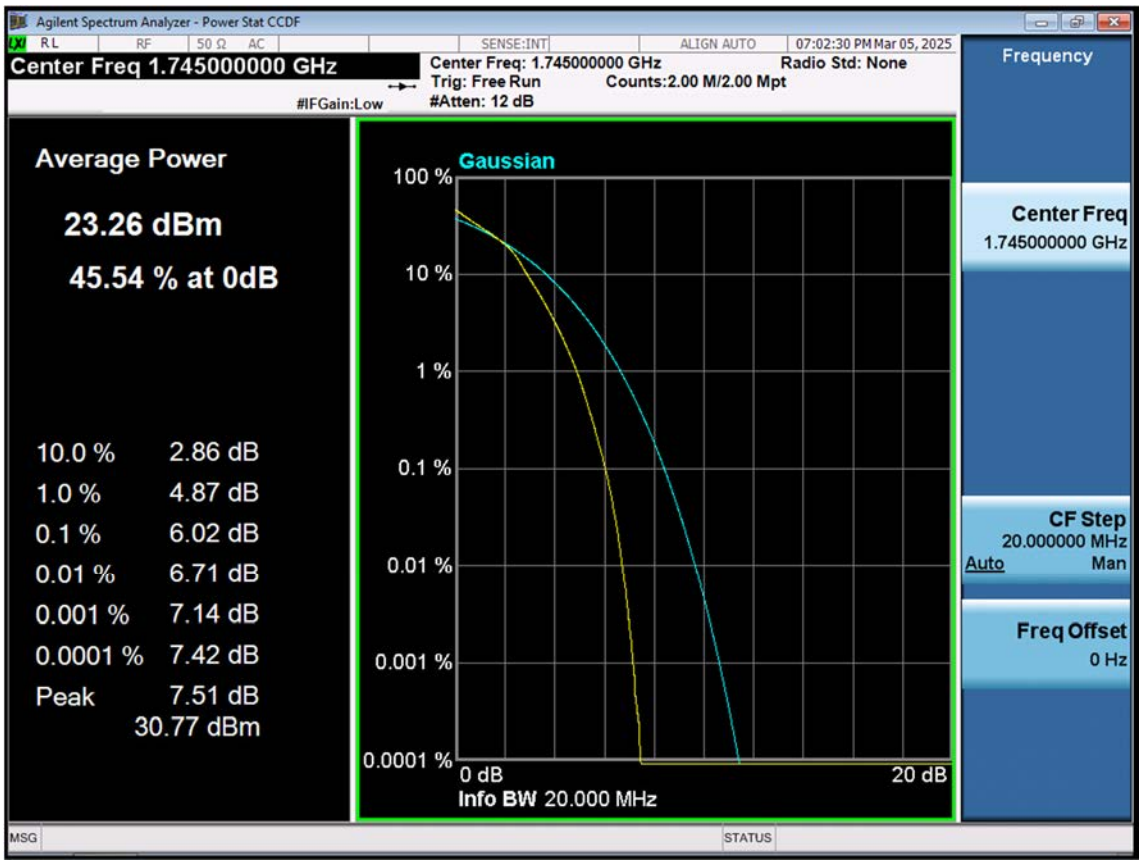
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_20 M_PAR_Mid_QPSK_FullRB



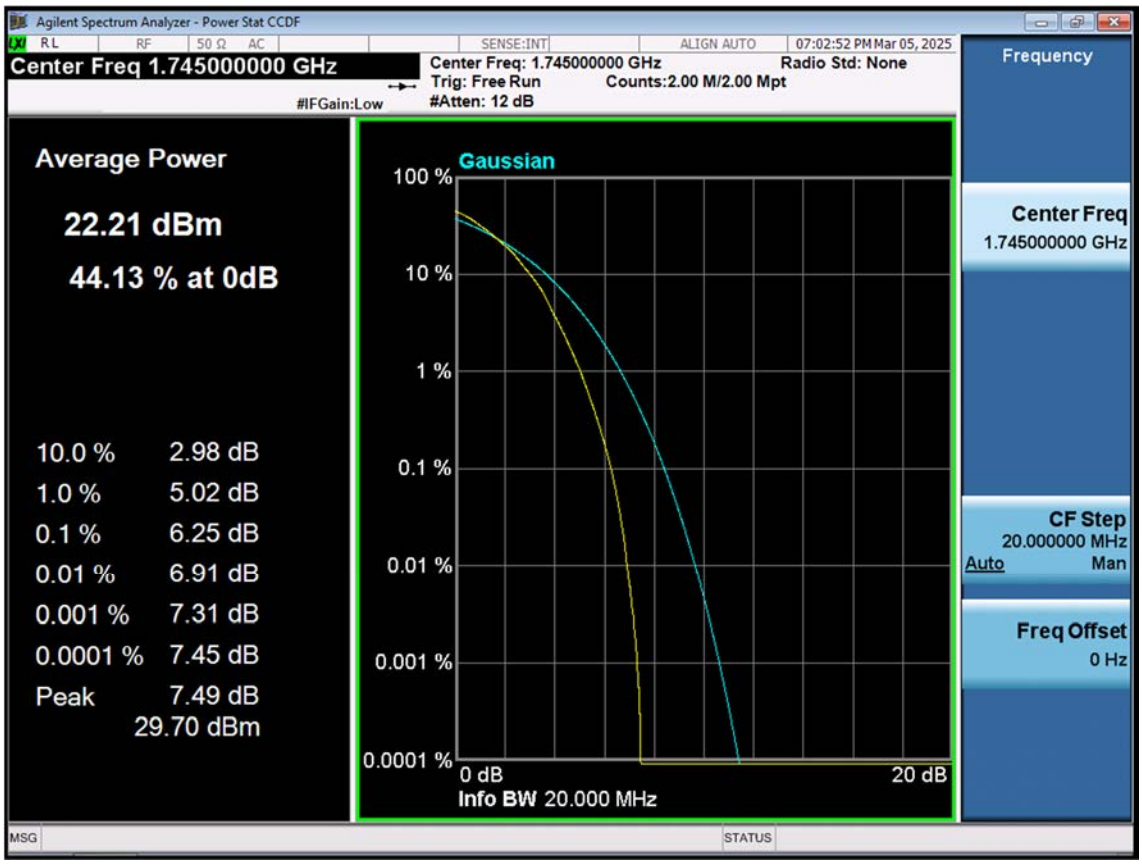
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_20 M_PAR_Mid_16QAM_FullRB



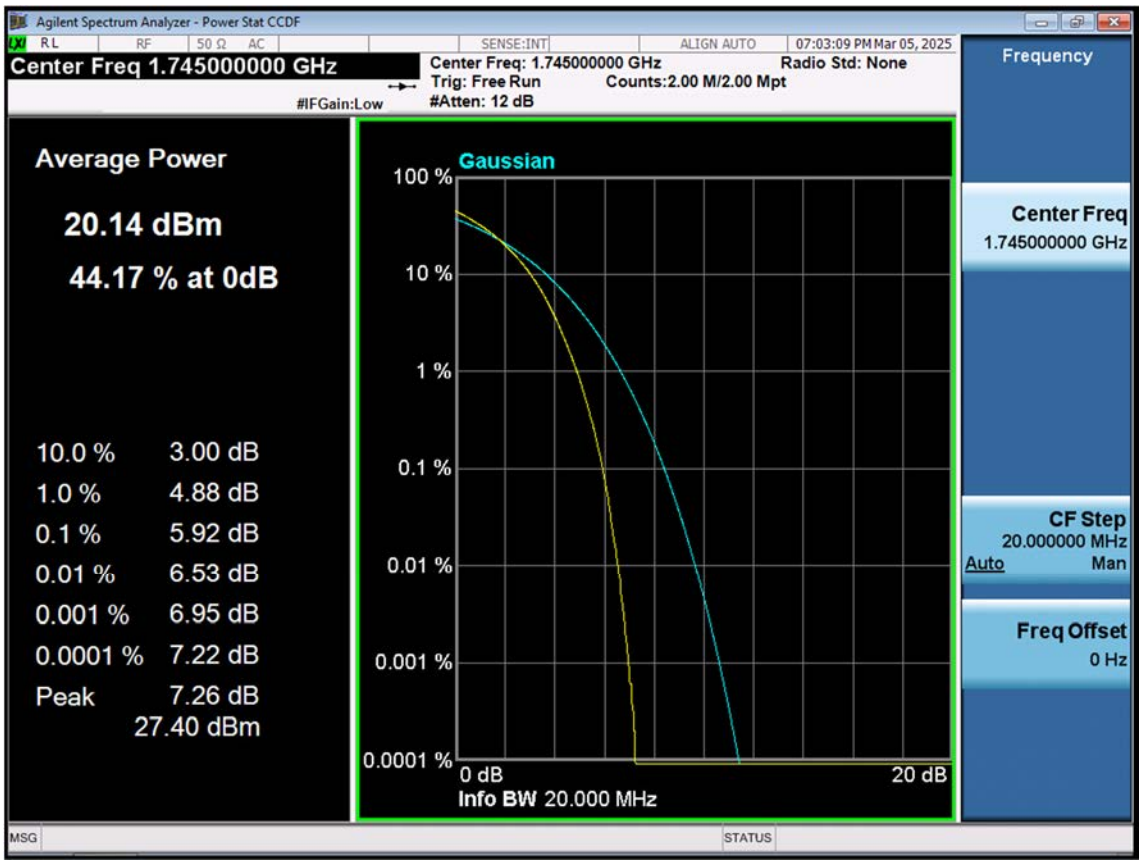
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_20 M_PAR_Mid_64QAM_FullRB



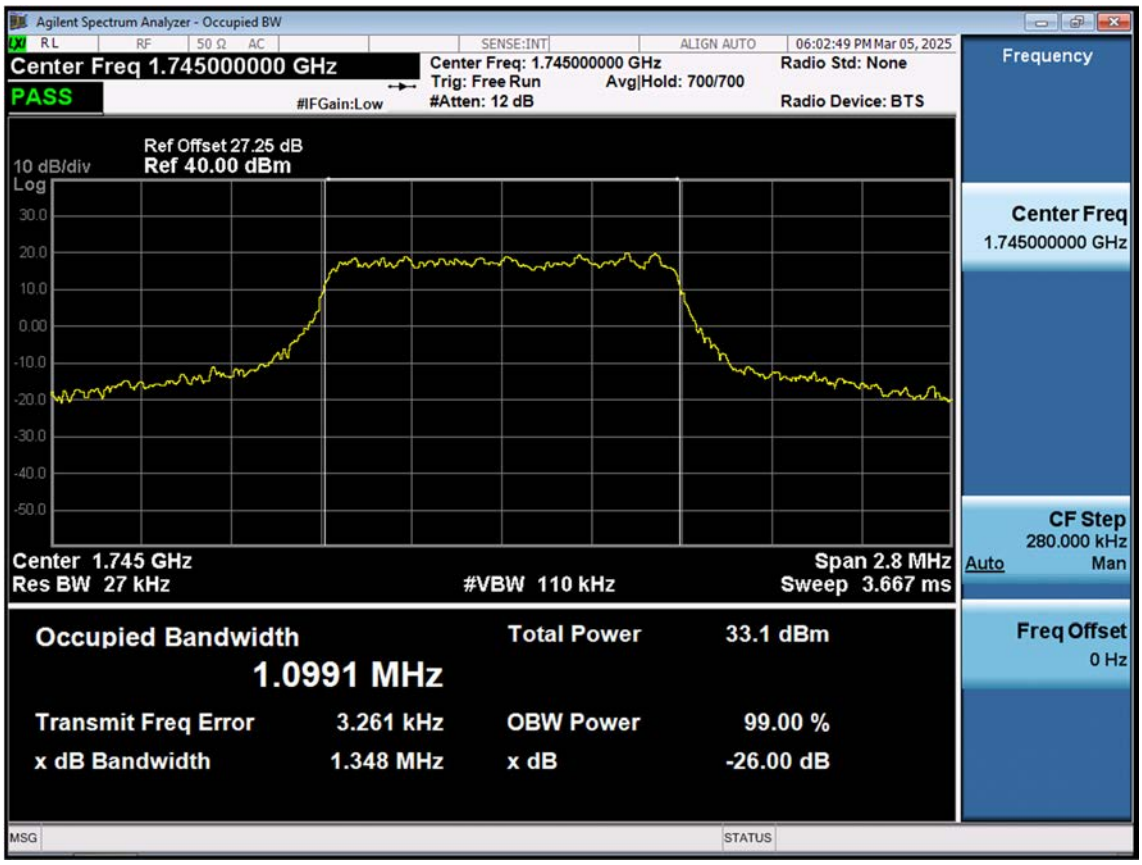
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_20 M_PAR_Mid_256QAM_FullRB



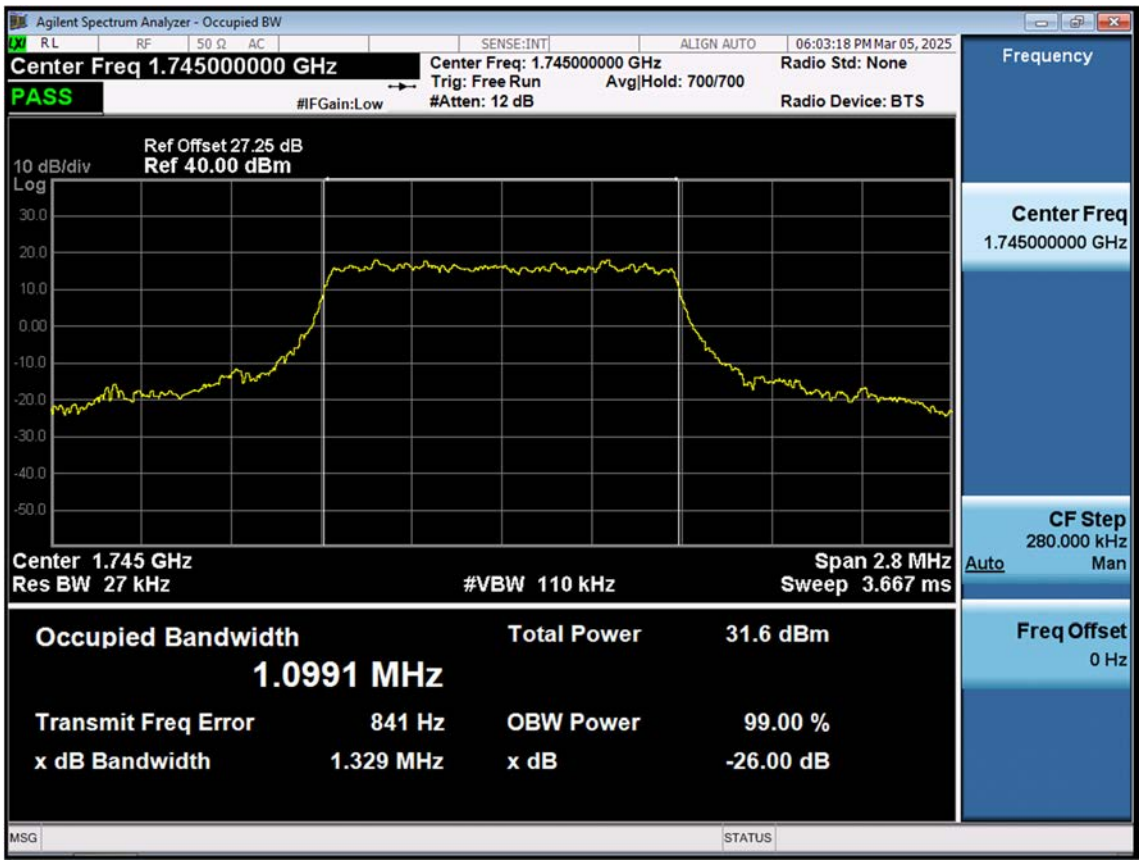
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_OBW_Mid_QPSK_FullRB



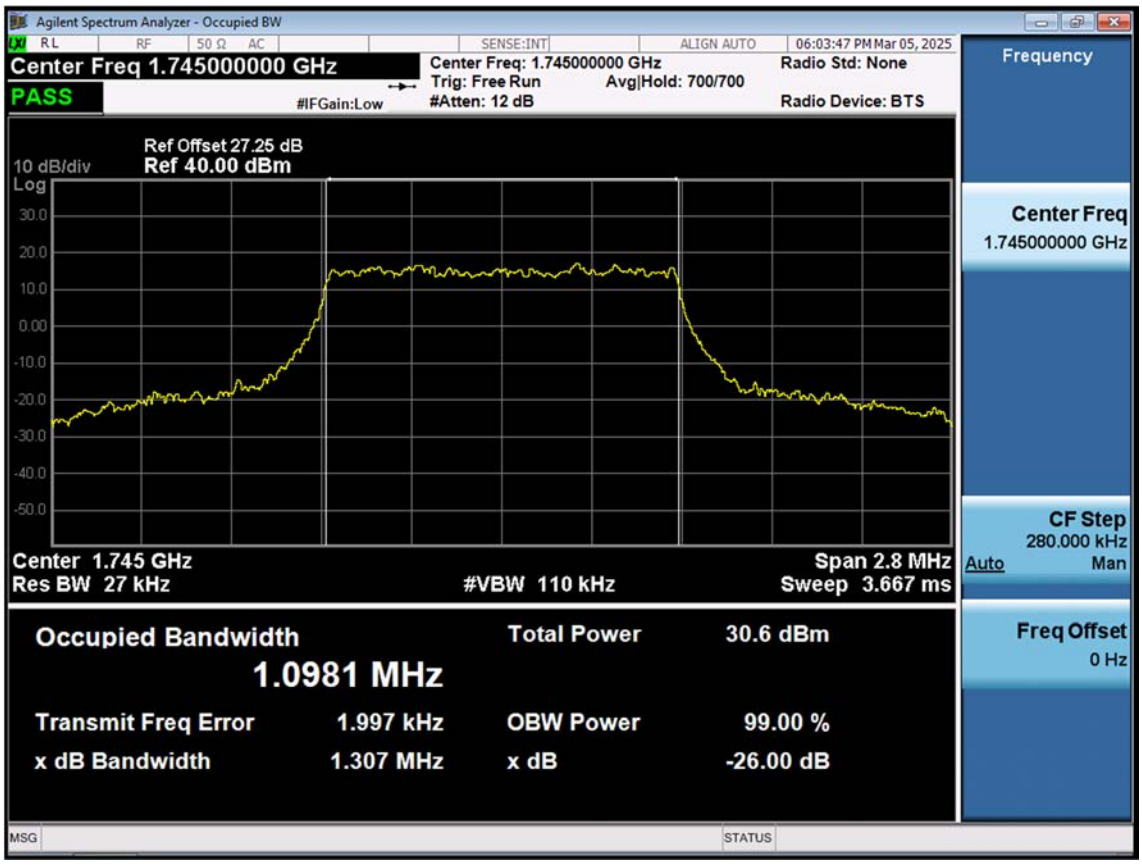
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_OBW_Mid_16QAM_FullRB



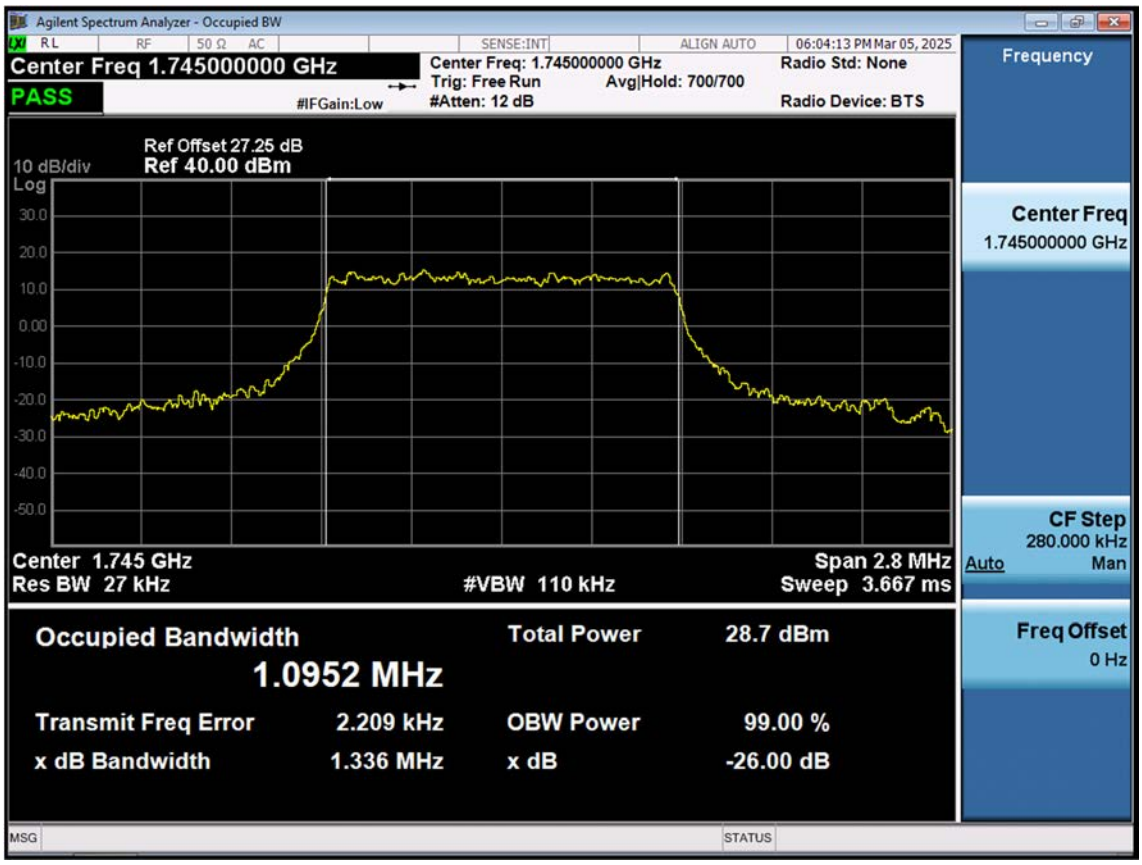
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_OBW_Mid_64QAM_FullRB



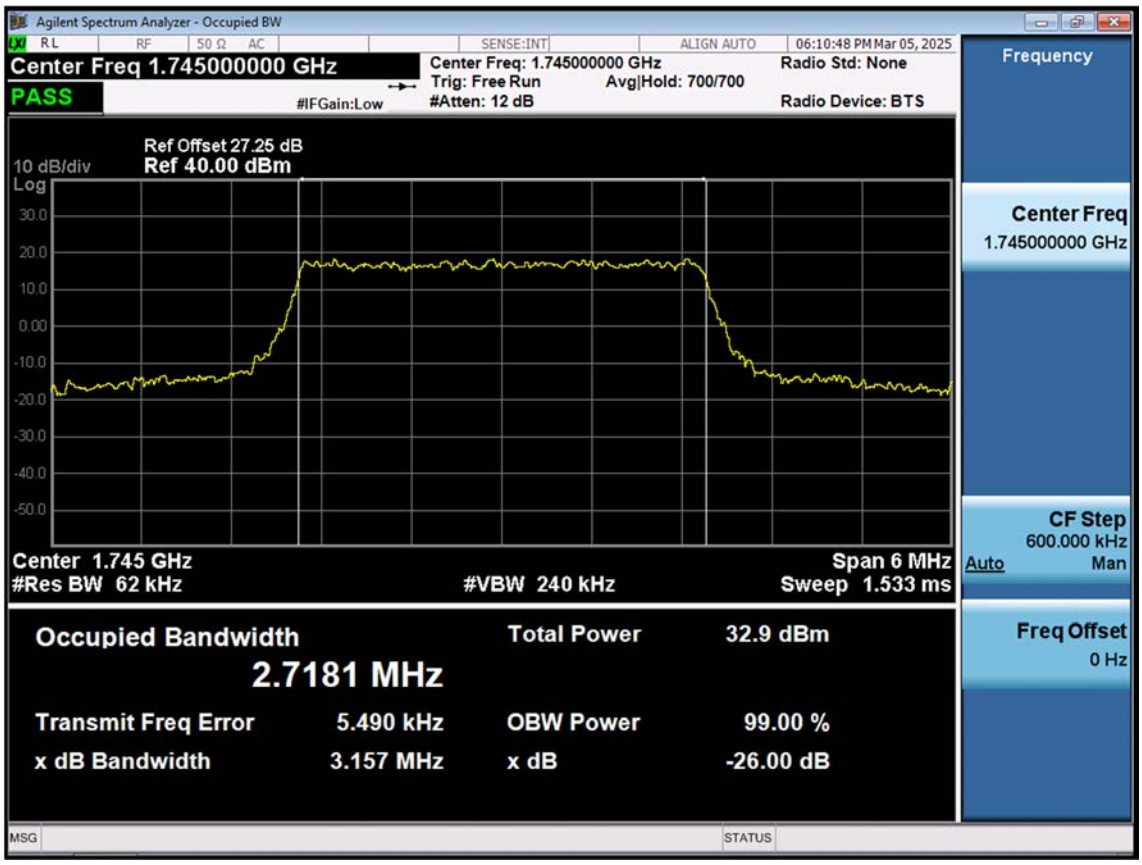
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_OBW_Mid_256QAM_FullRB



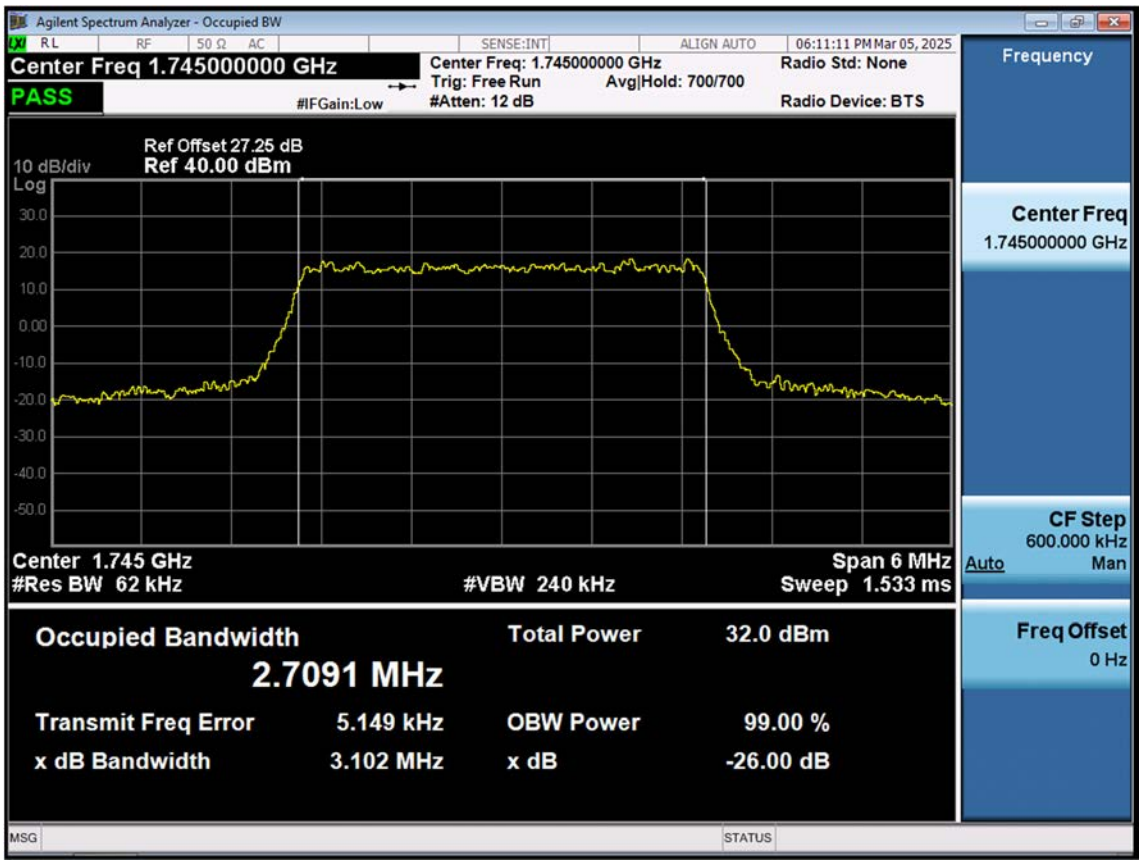
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_OBW_Mid_QPSK_FullRB



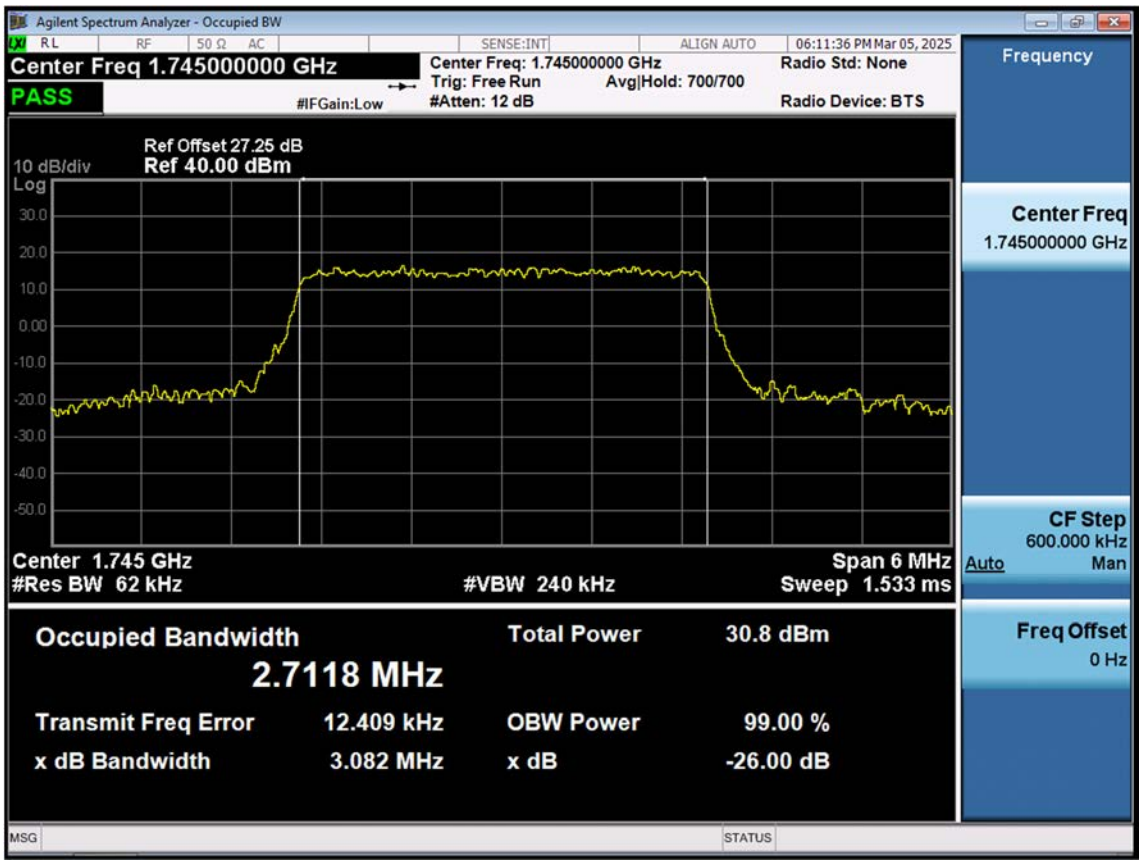
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_OBW_Mid_16QAM_FullRB



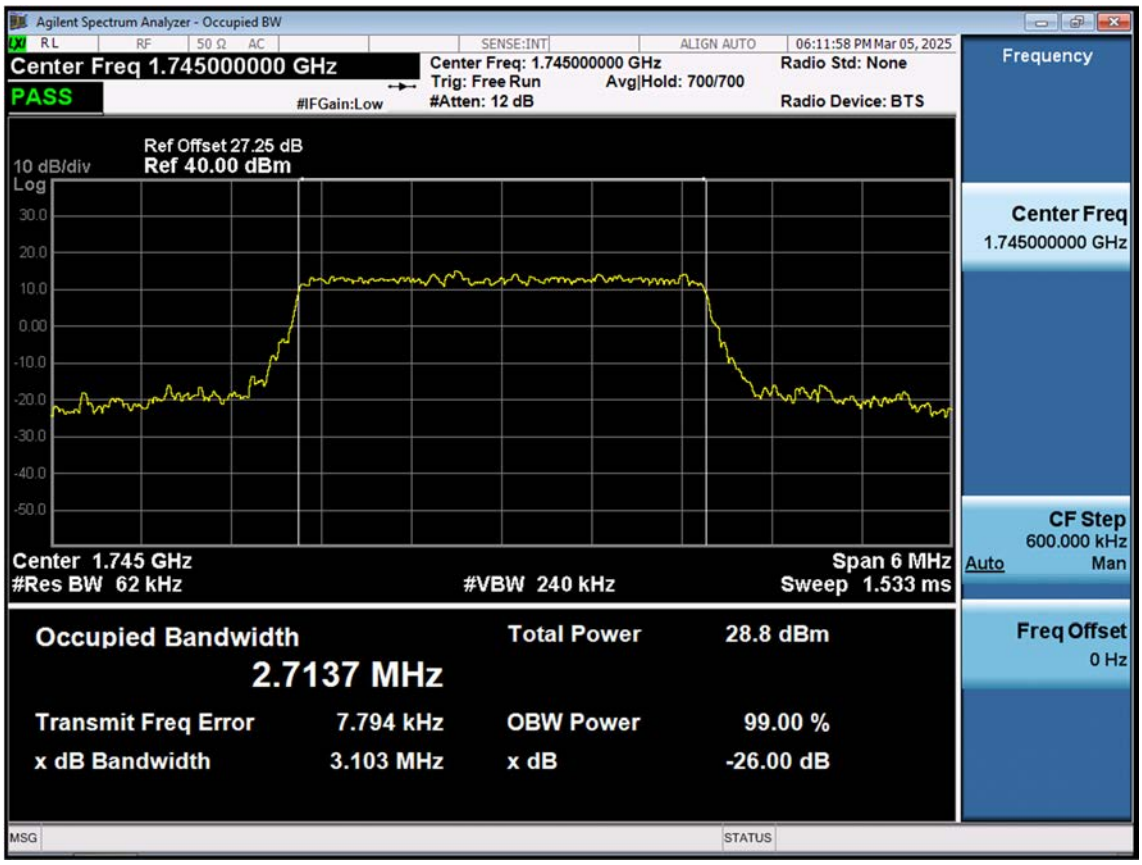
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_OBW_Mid_64QAM_FullRB



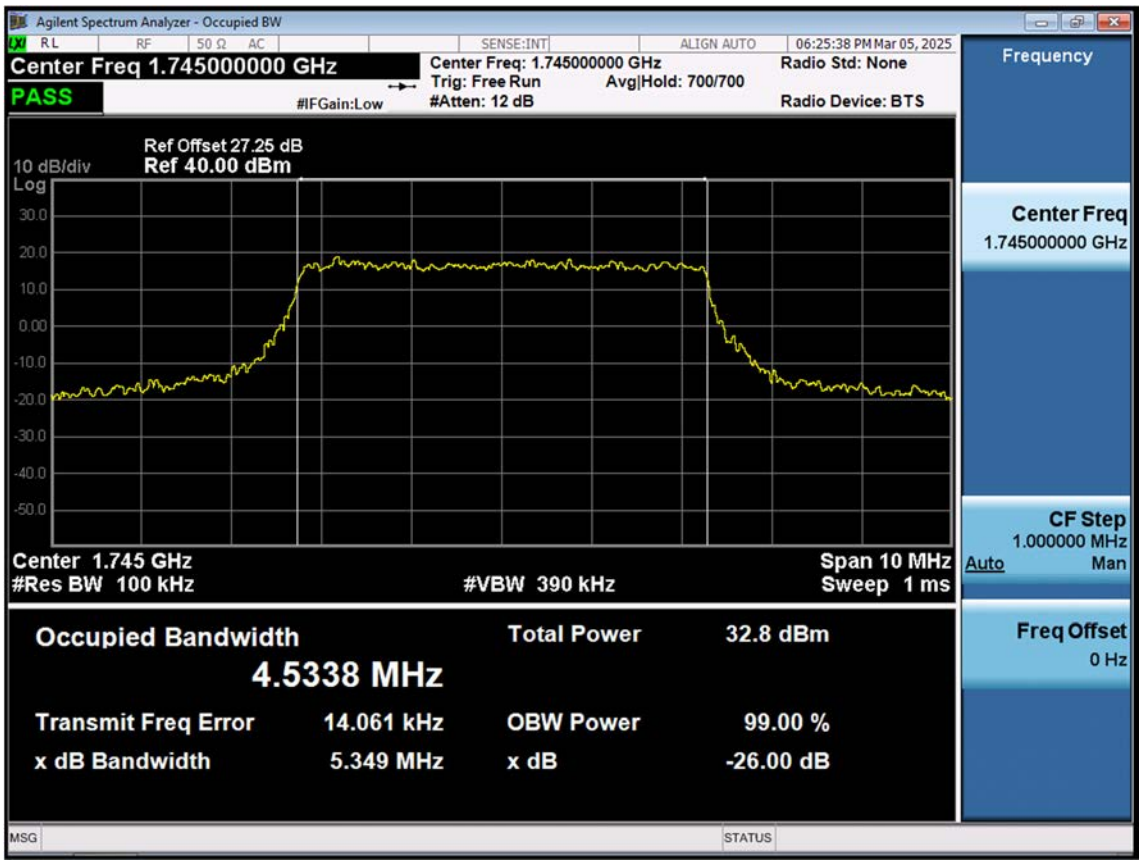
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_OBW_Mid_256QAM_FullRB



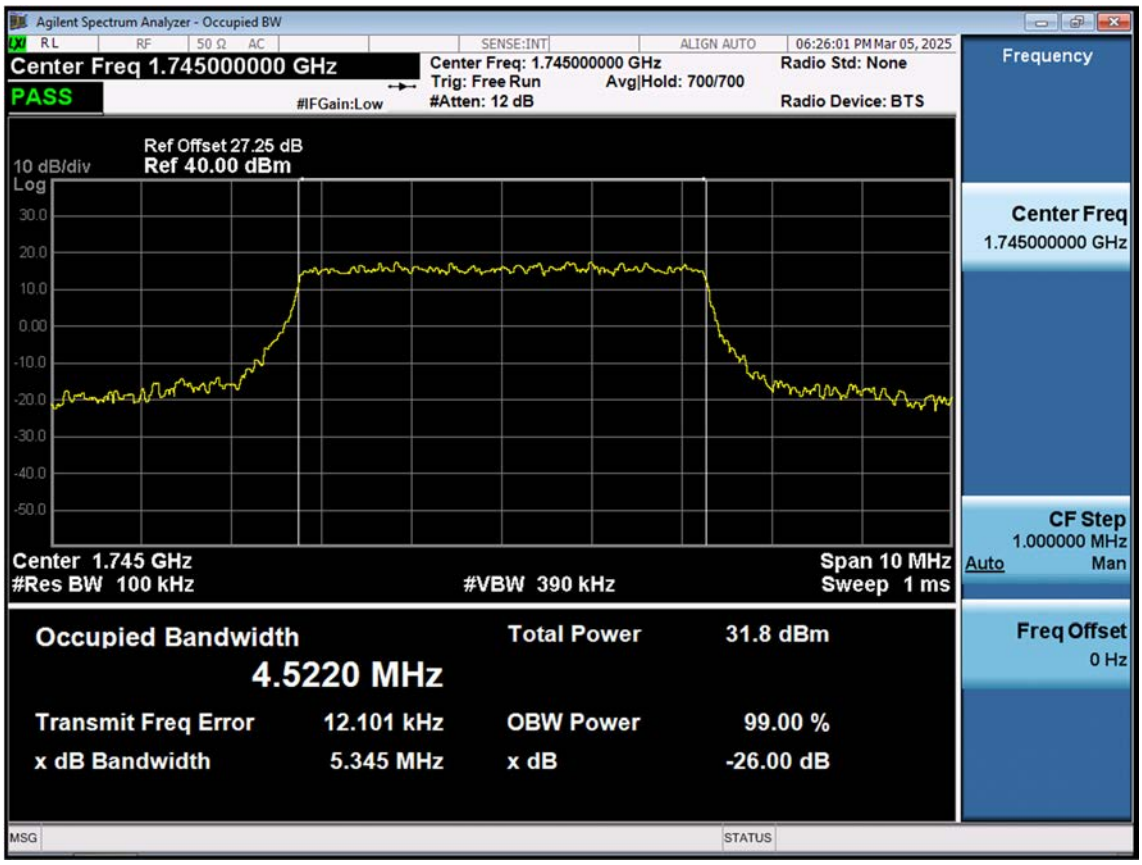
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_5 M_OBW_Mid_QPSK_FullRB



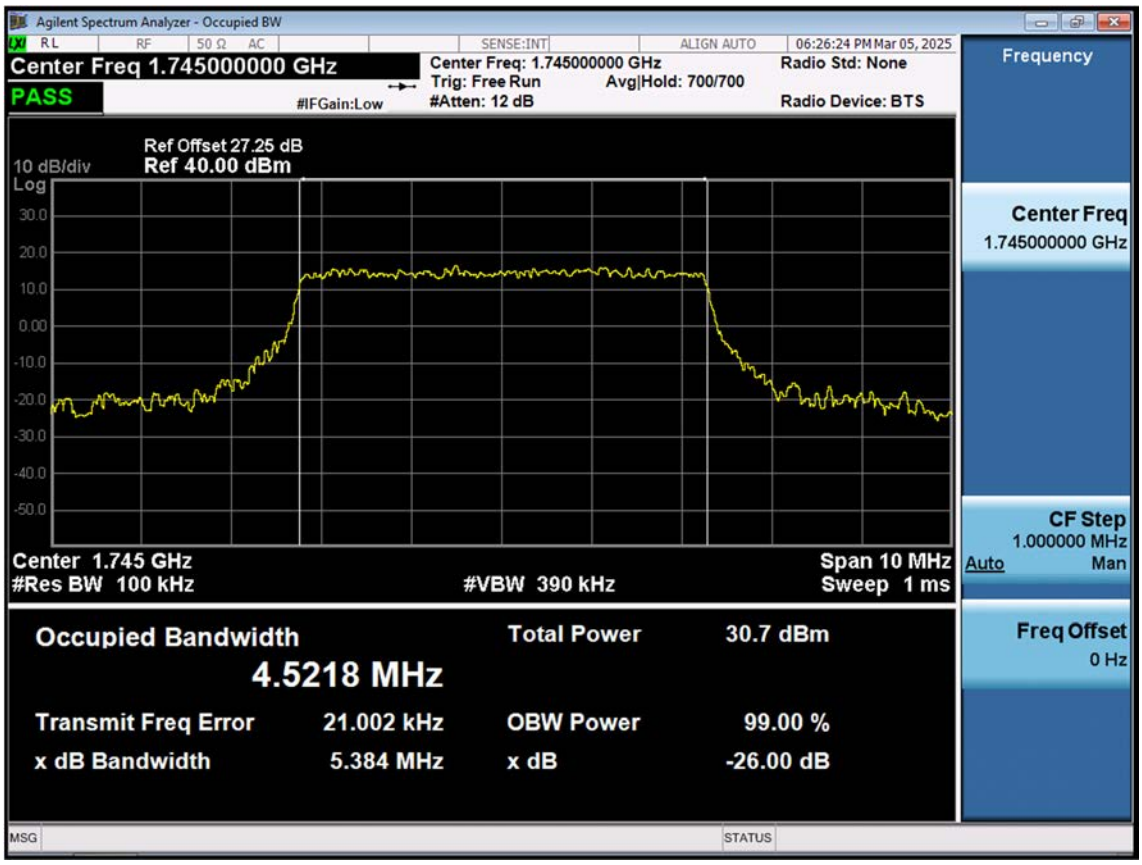
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_5 M_OBW_Mid_16QAM_FullRB



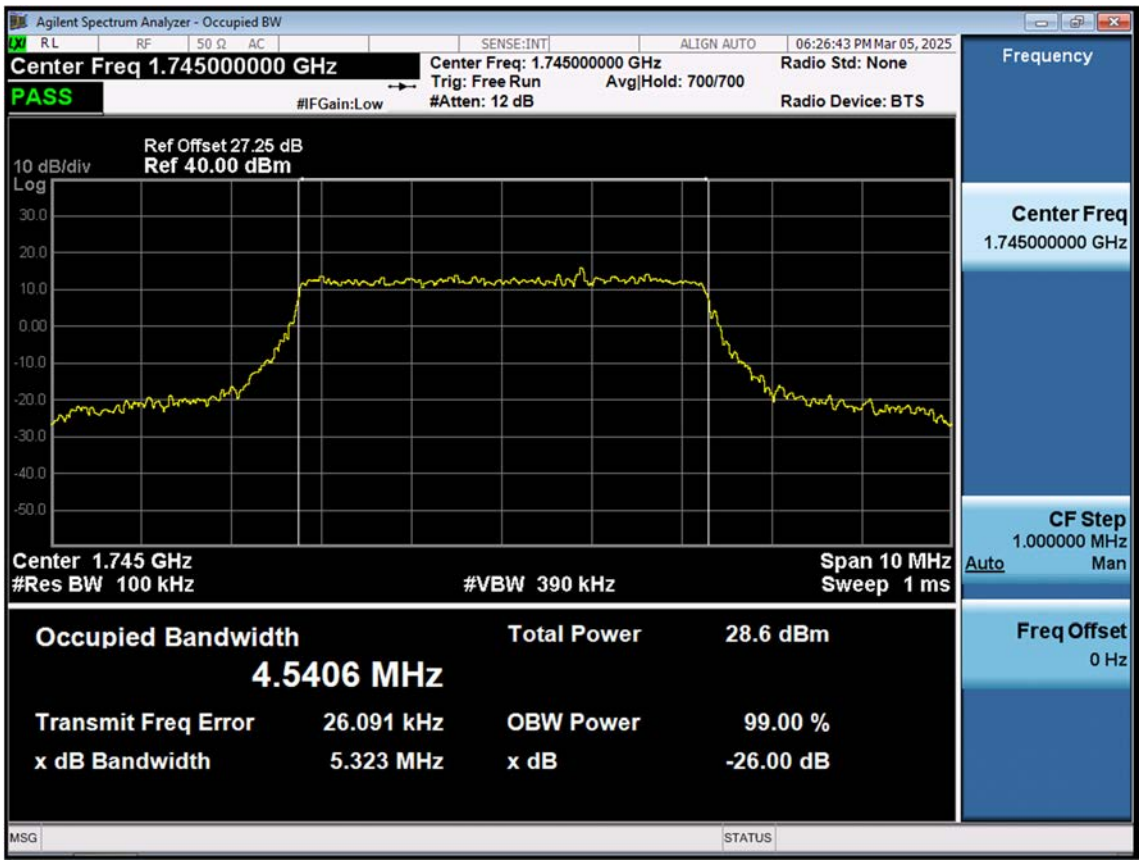
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_5 M_OBW_Mid_64QAM_FullRB



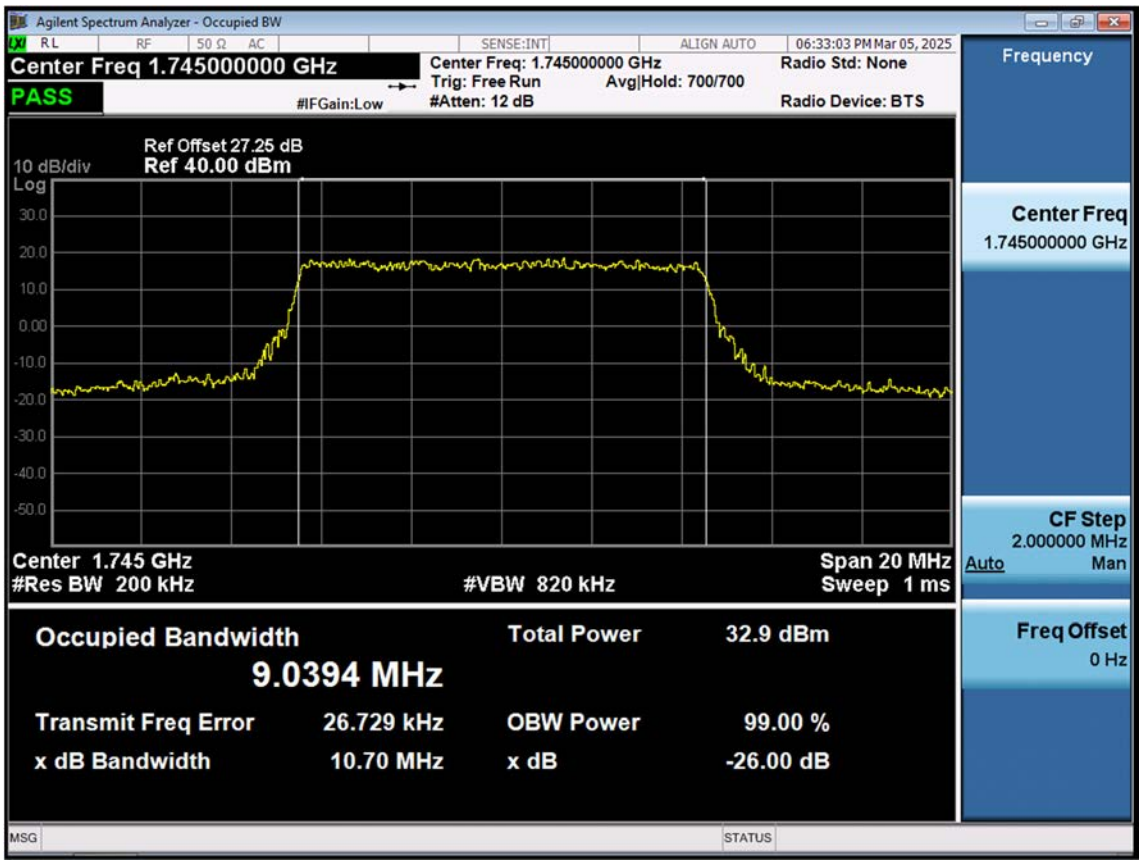
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_5 M_OBW_Mid_256QAM_FullRB



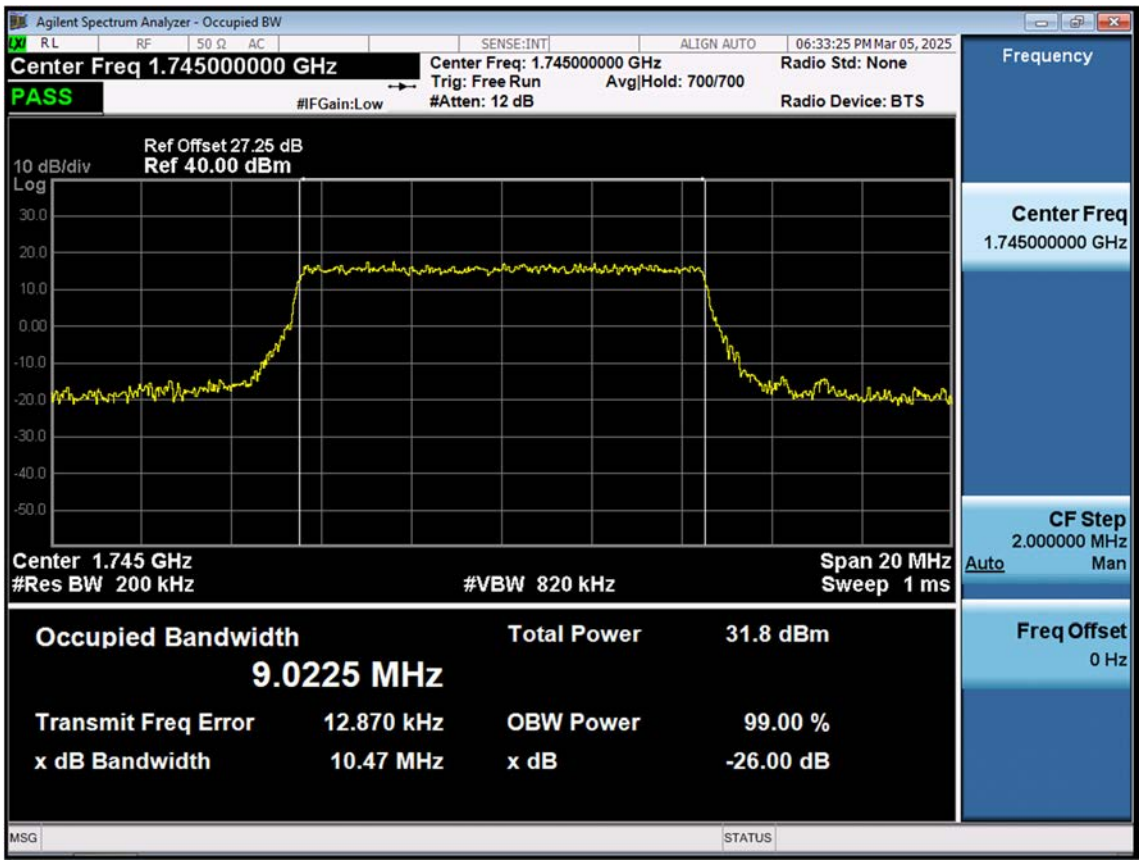
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_10 M_OBW_Mid_QPSK_FullRB



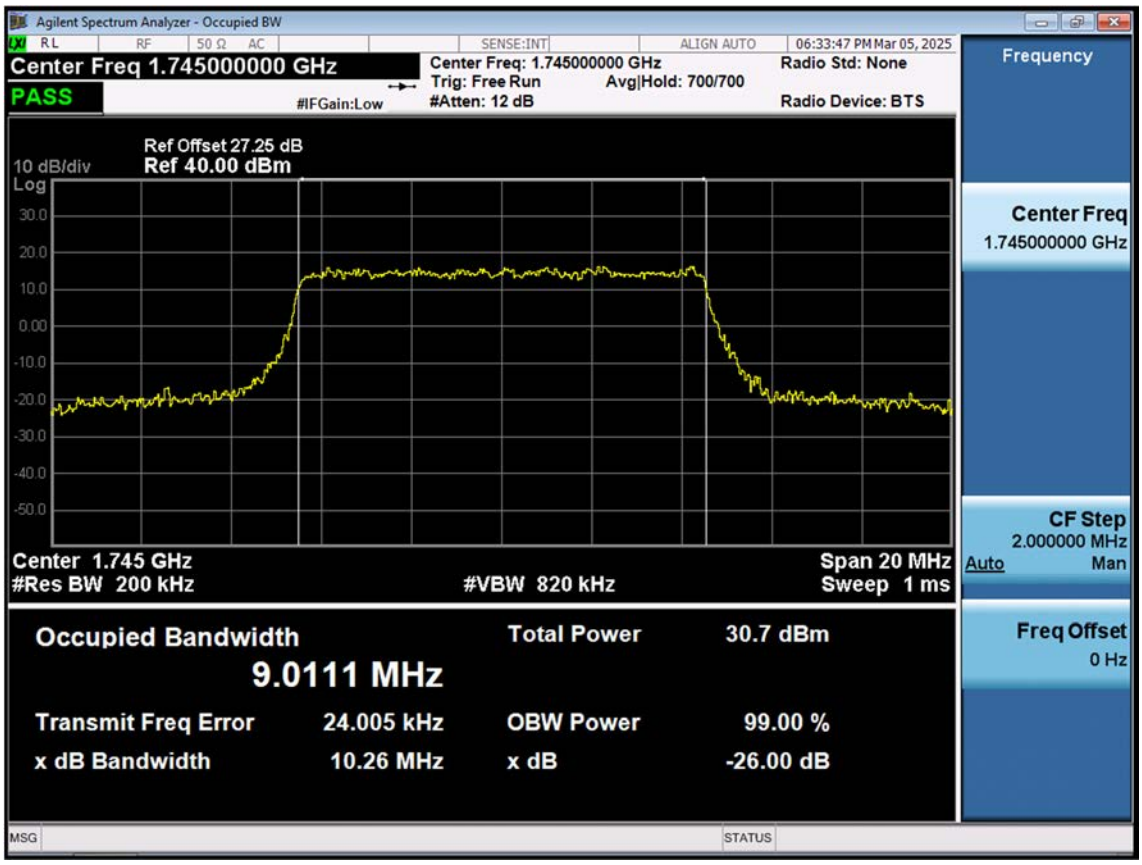
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_10 M_OBW_Mid_16QAM_FullRB



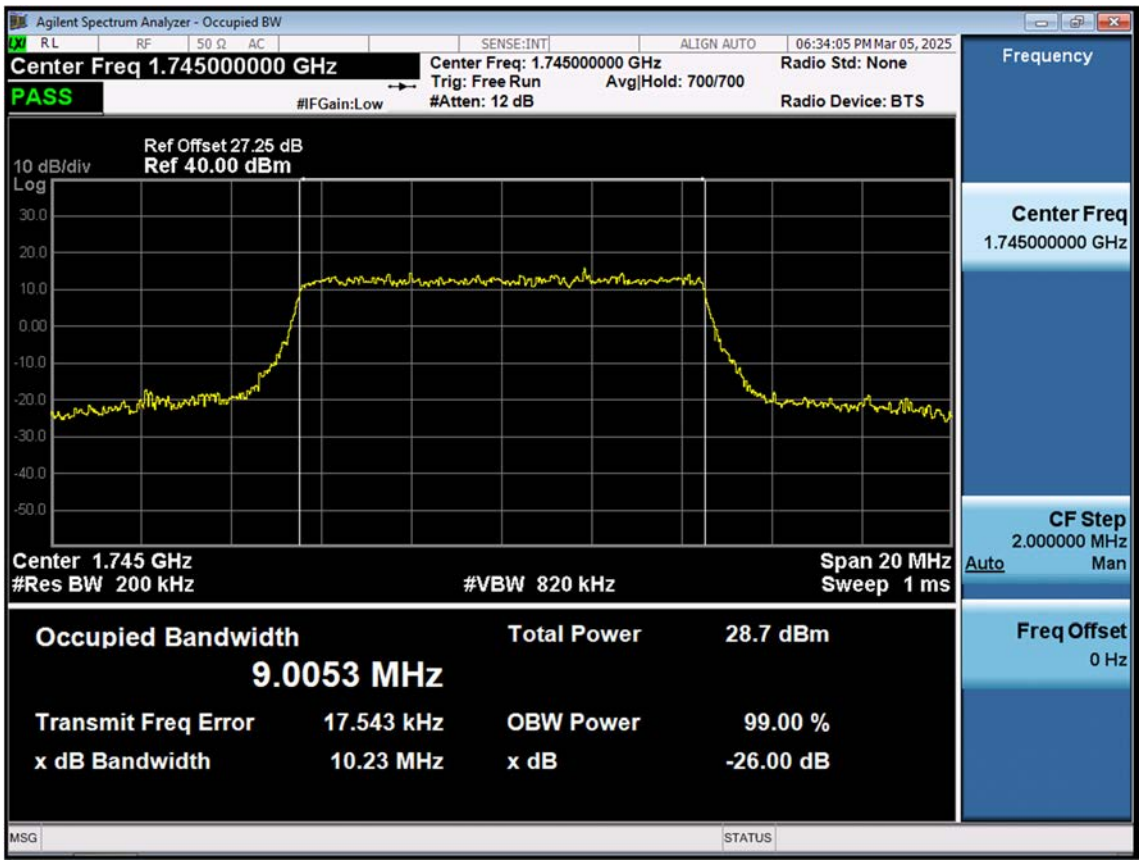
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_10 M_OBW_Mid_64QAM_FullRB



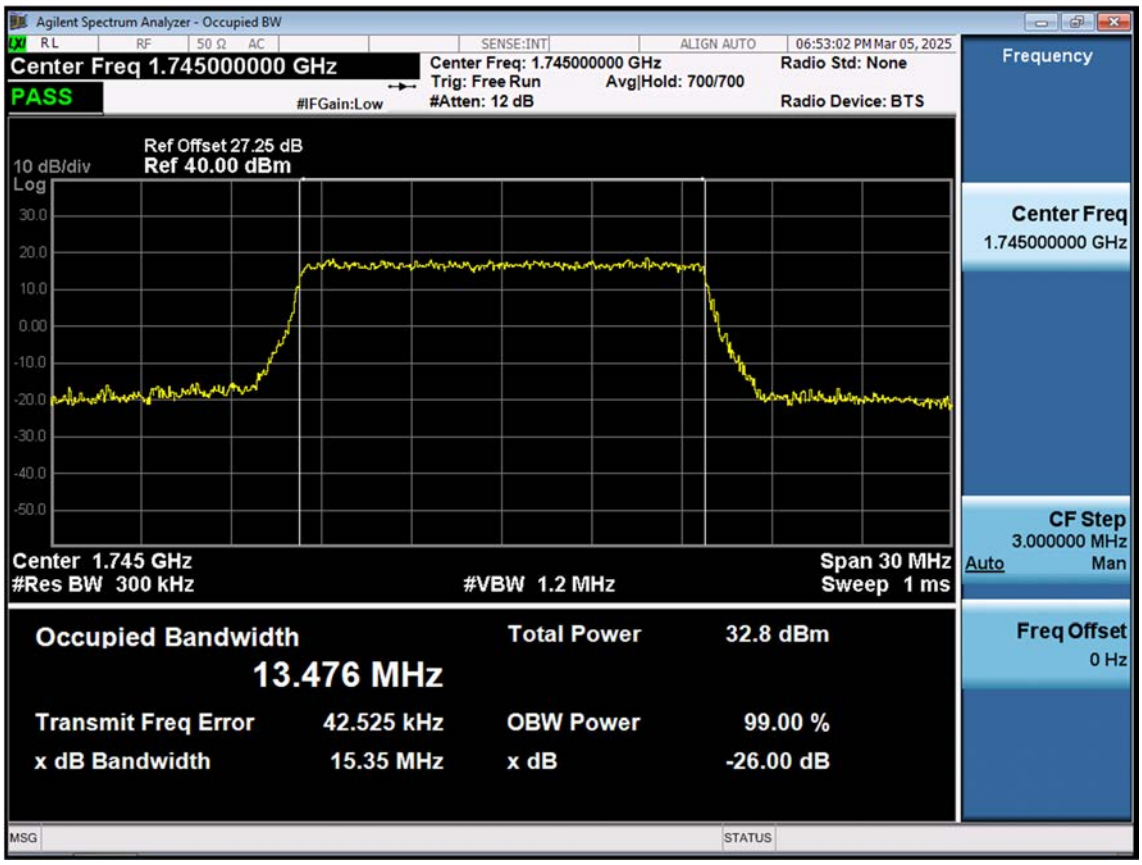
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_10 M_OBW_Mid_256QAM_FullRB



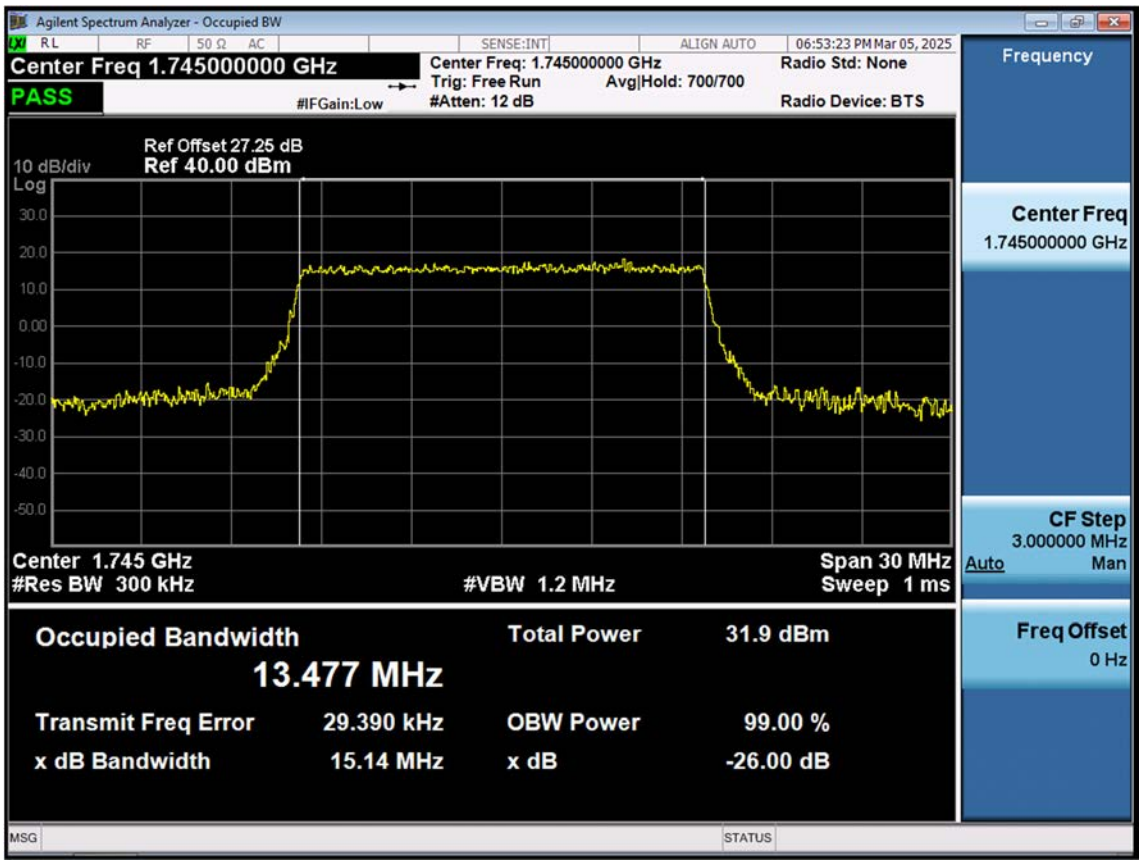
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_15 M_OBW_Mid_QPSK_FullRB



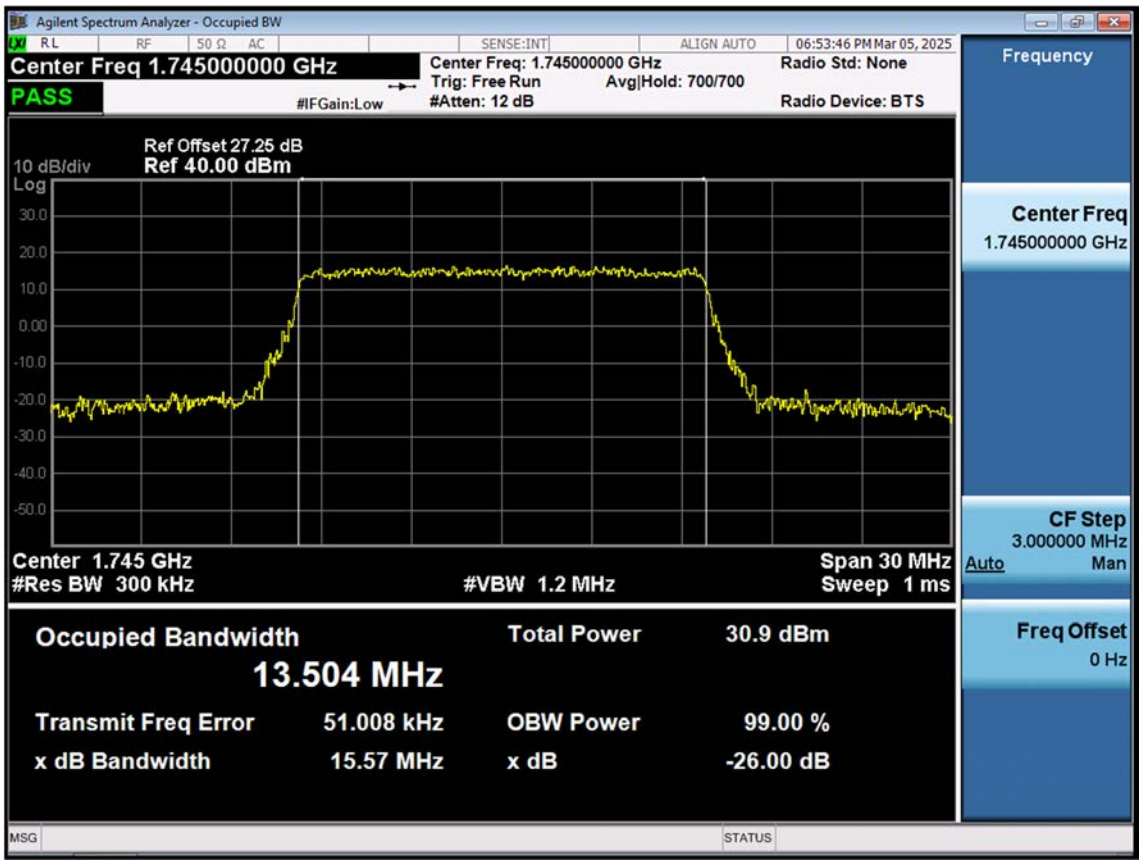
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_15 M_OBW_Mid_16QAM_FullRB



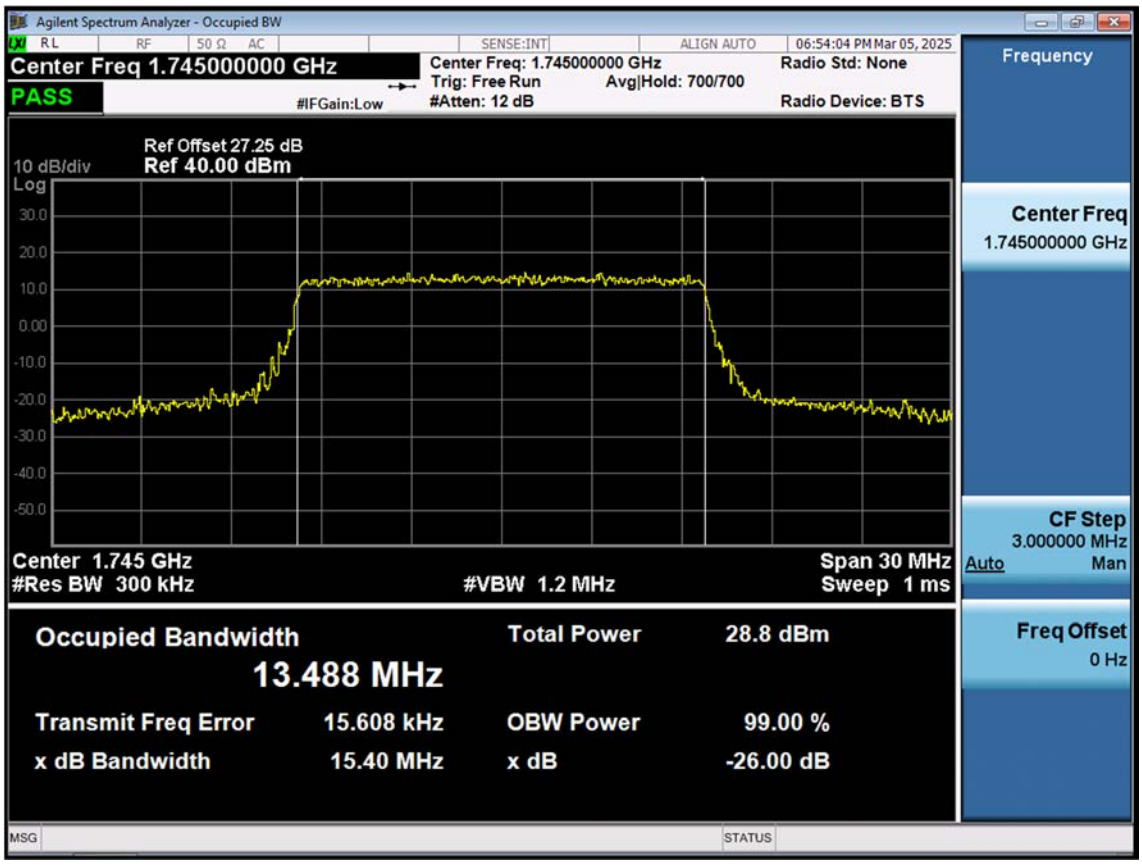
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_15 M_OBW_Mid_64QAM_FullRB



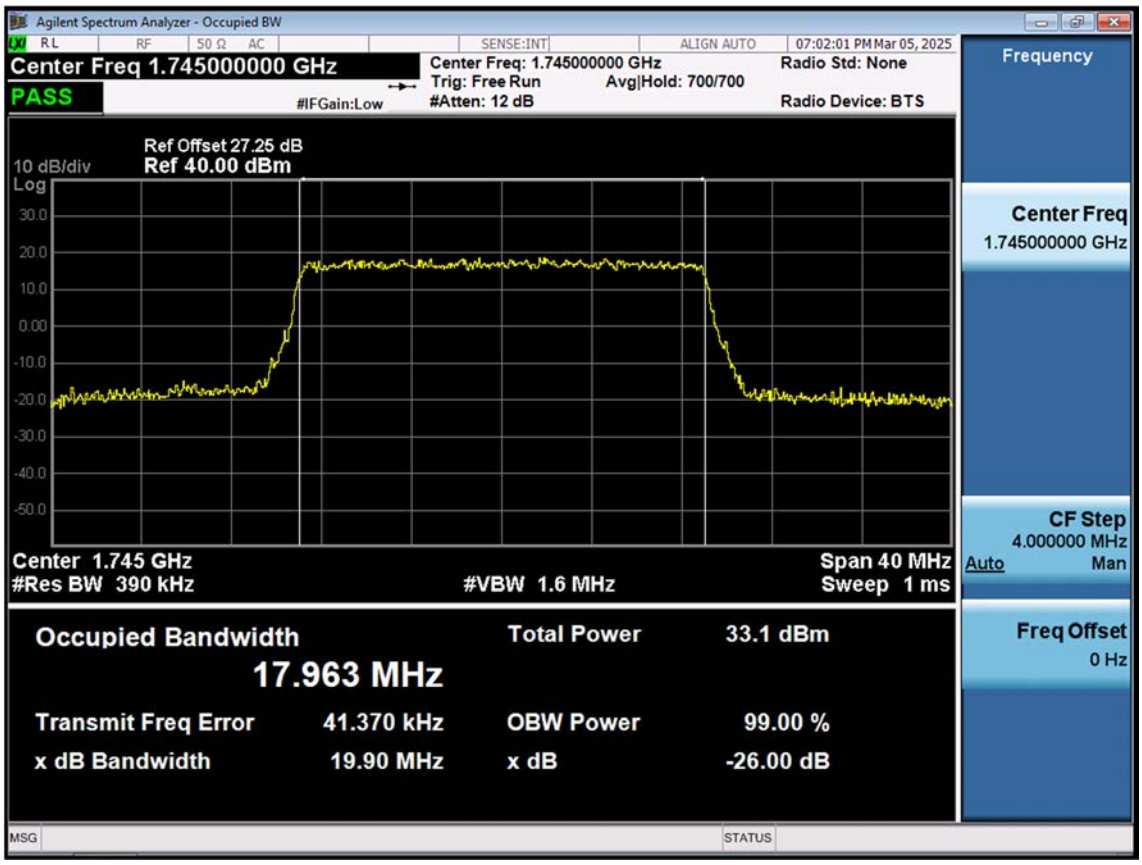
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_15 M_OBW_Mid_256QAM_FullRB



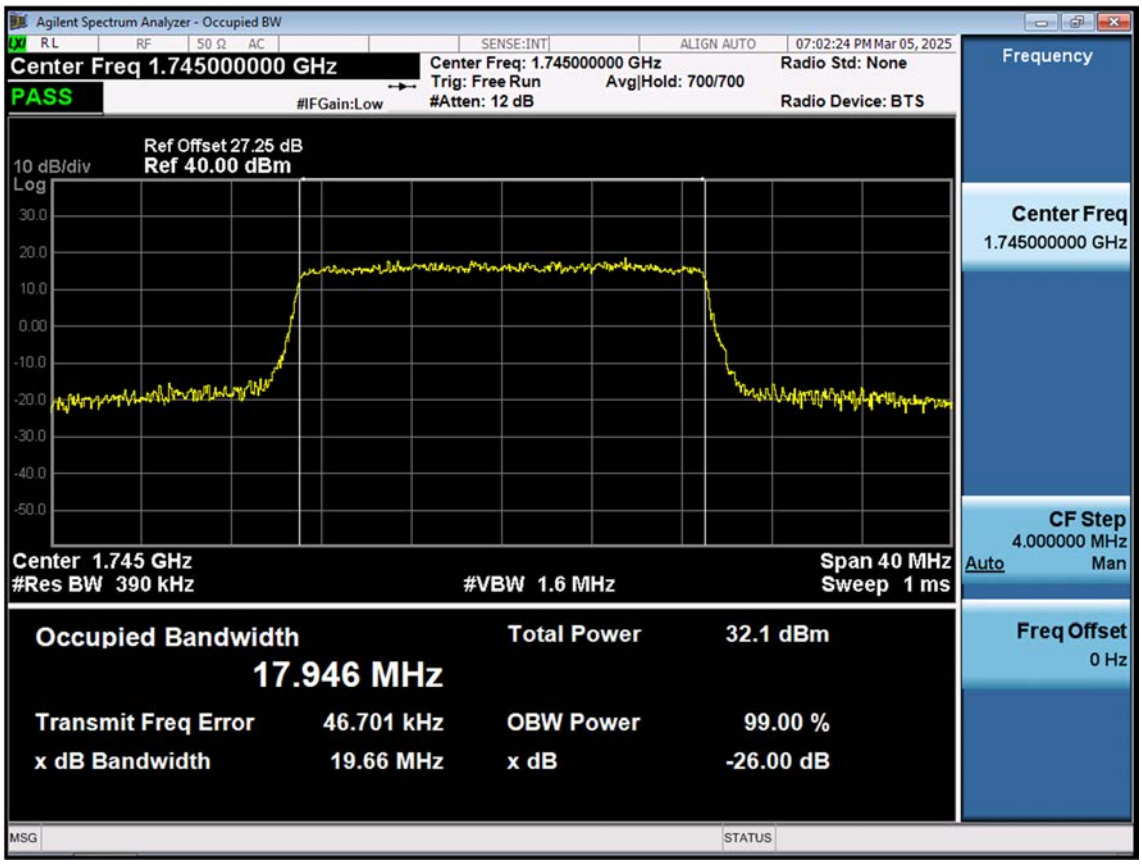
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_20 M_OBW_Mid_QPSK_FullRB



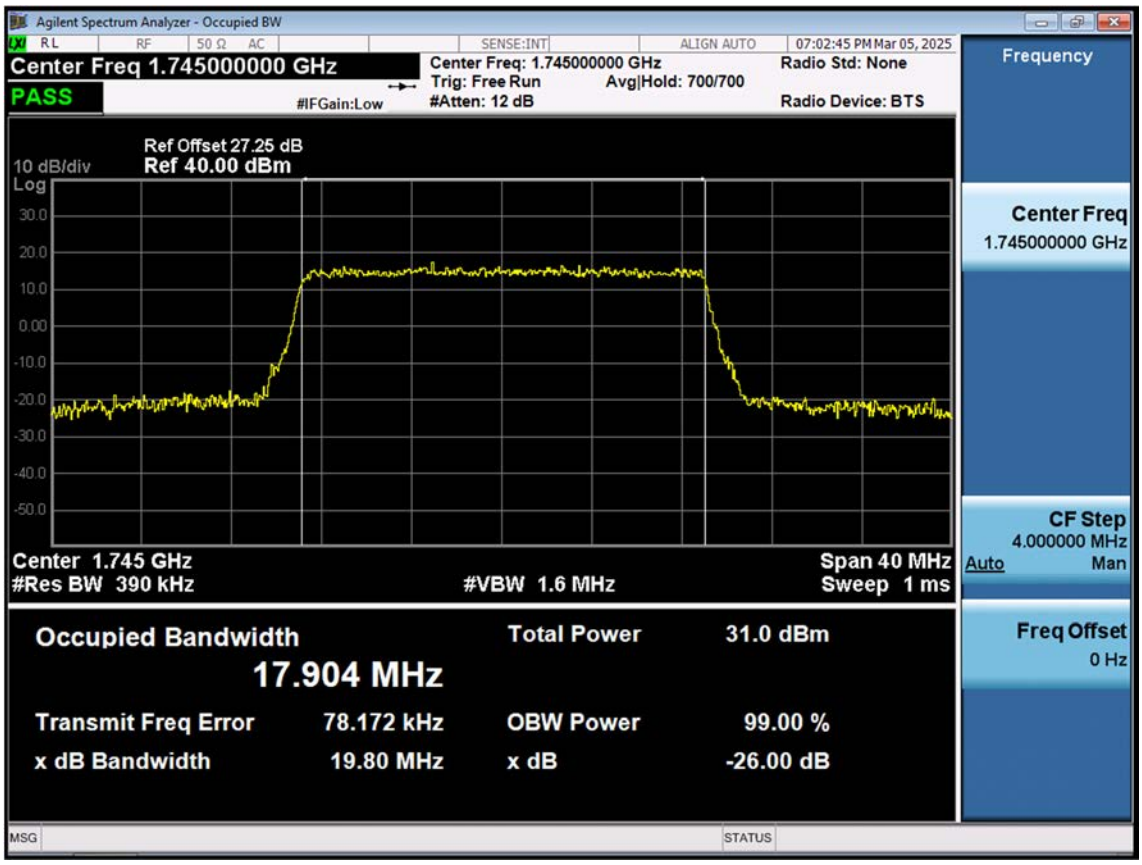
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_20 M_OBW_Mid_16QAM_FullRB



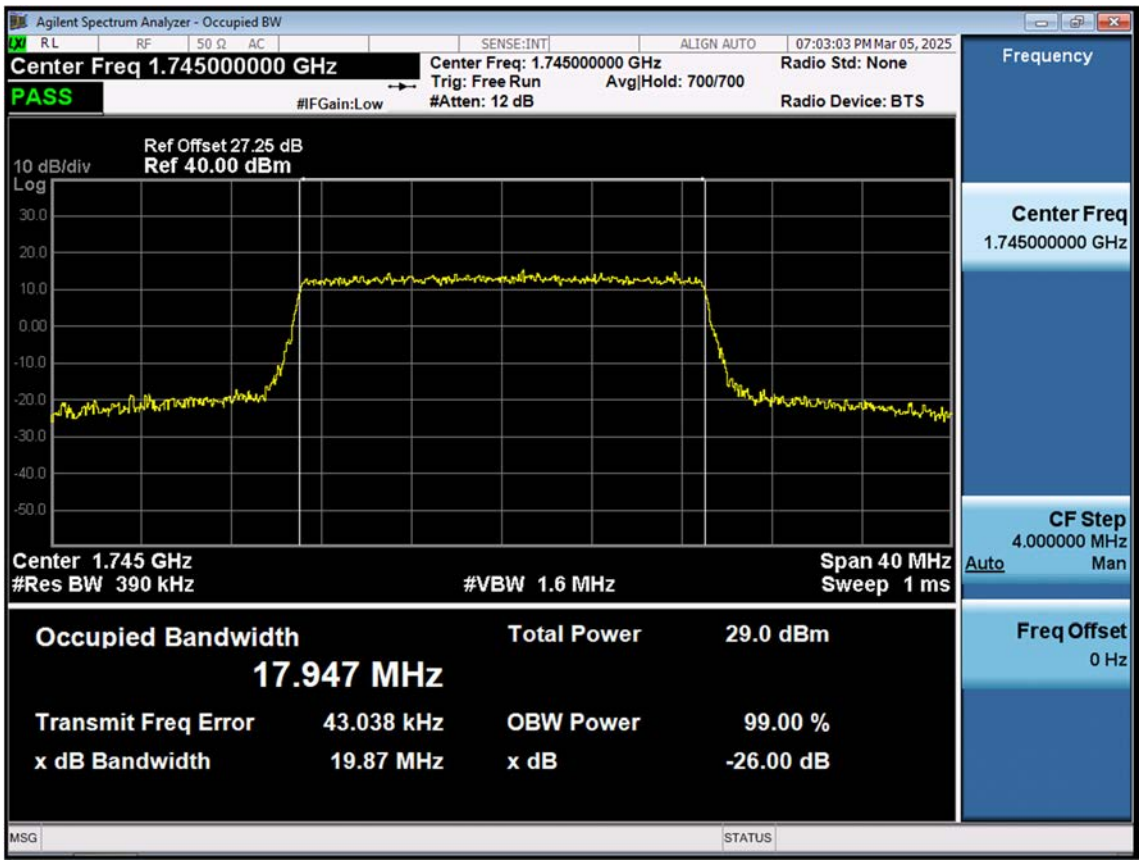
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_20 M_OBW_Mid_64QAM_FullRB



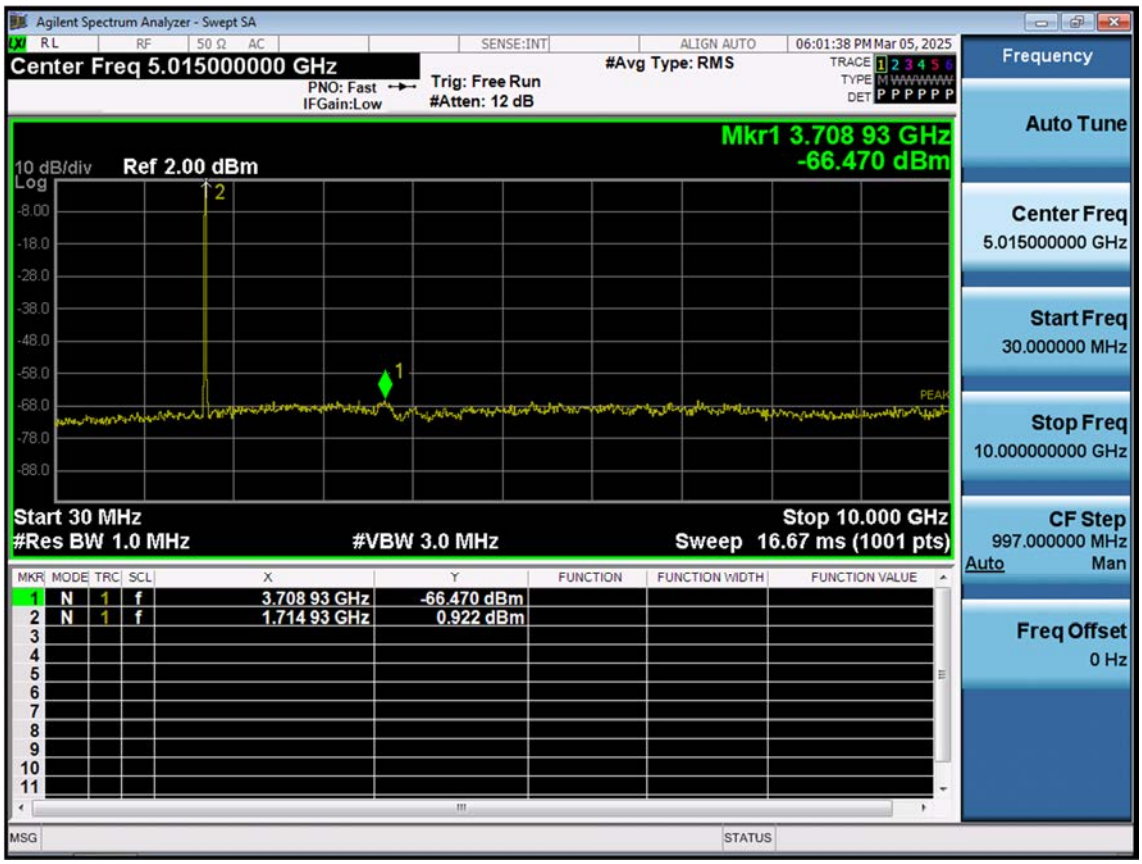
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_20 M_OBW_Mid_256QAM_FullRB



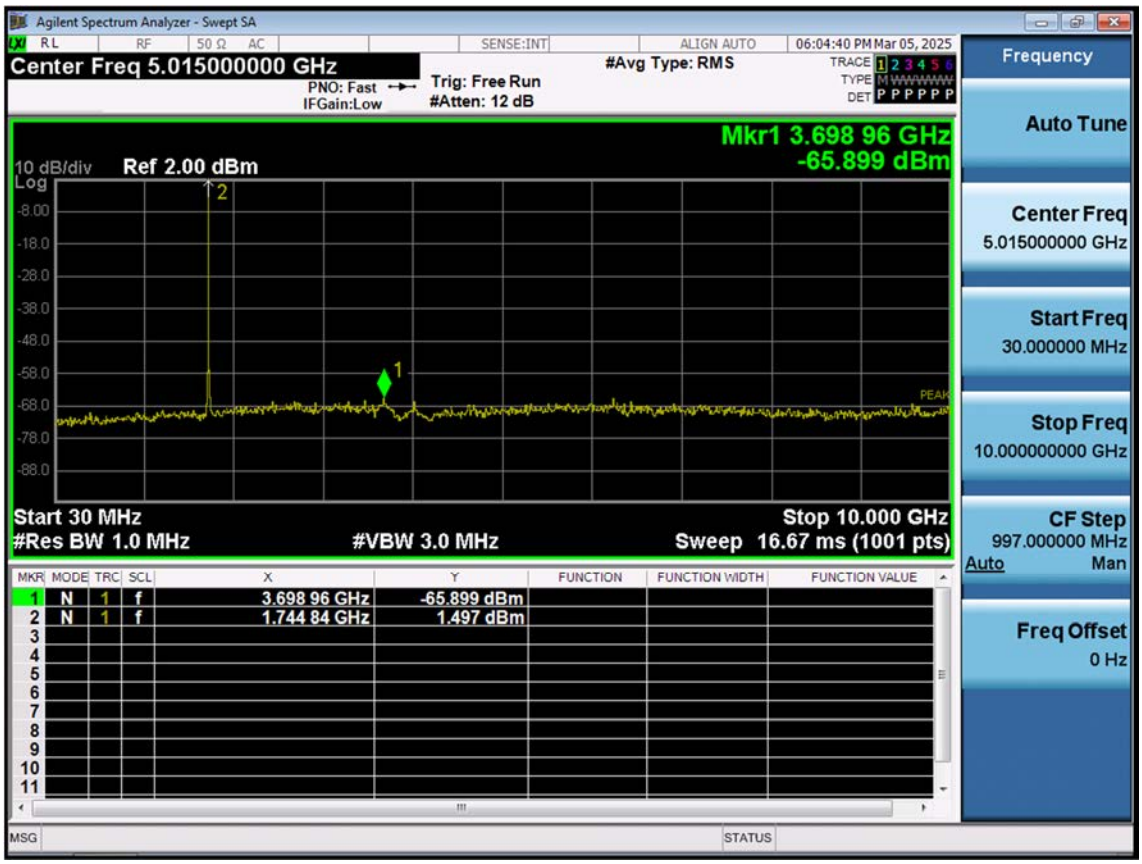
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_Conducted Spurious(30 M-10 G)_Low_QPSK_1RB



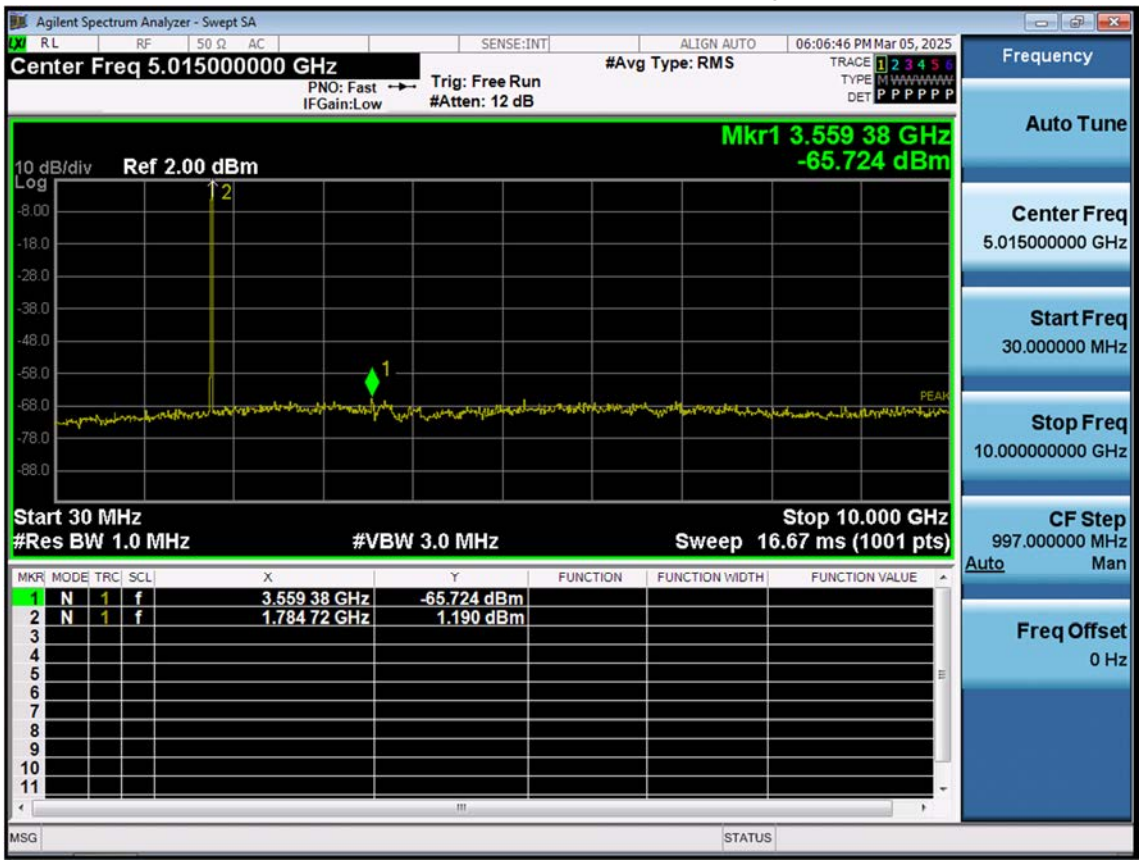
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_Conducted Spurious(30 M-10 G)_Mid_QPSK_1RB



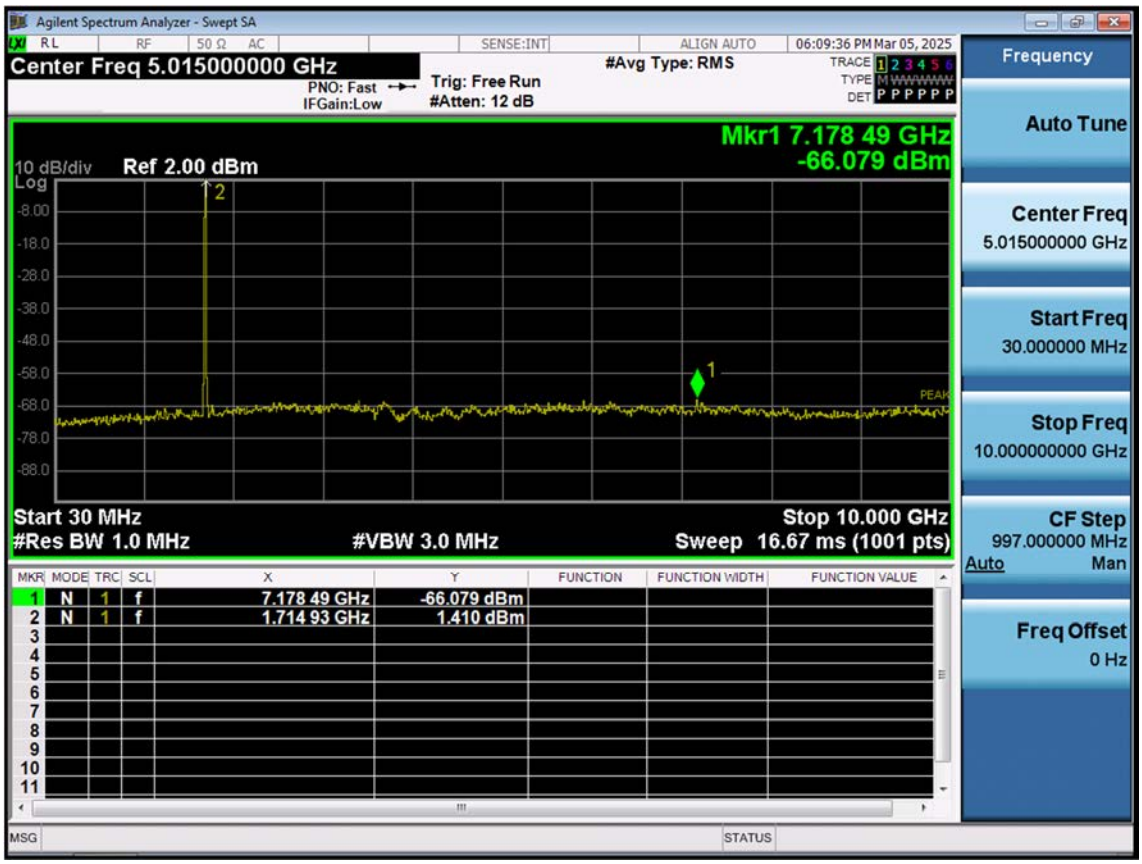
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_1.4M_Conducted Spurious(30 M-10 G)_High_QPSK_1RB



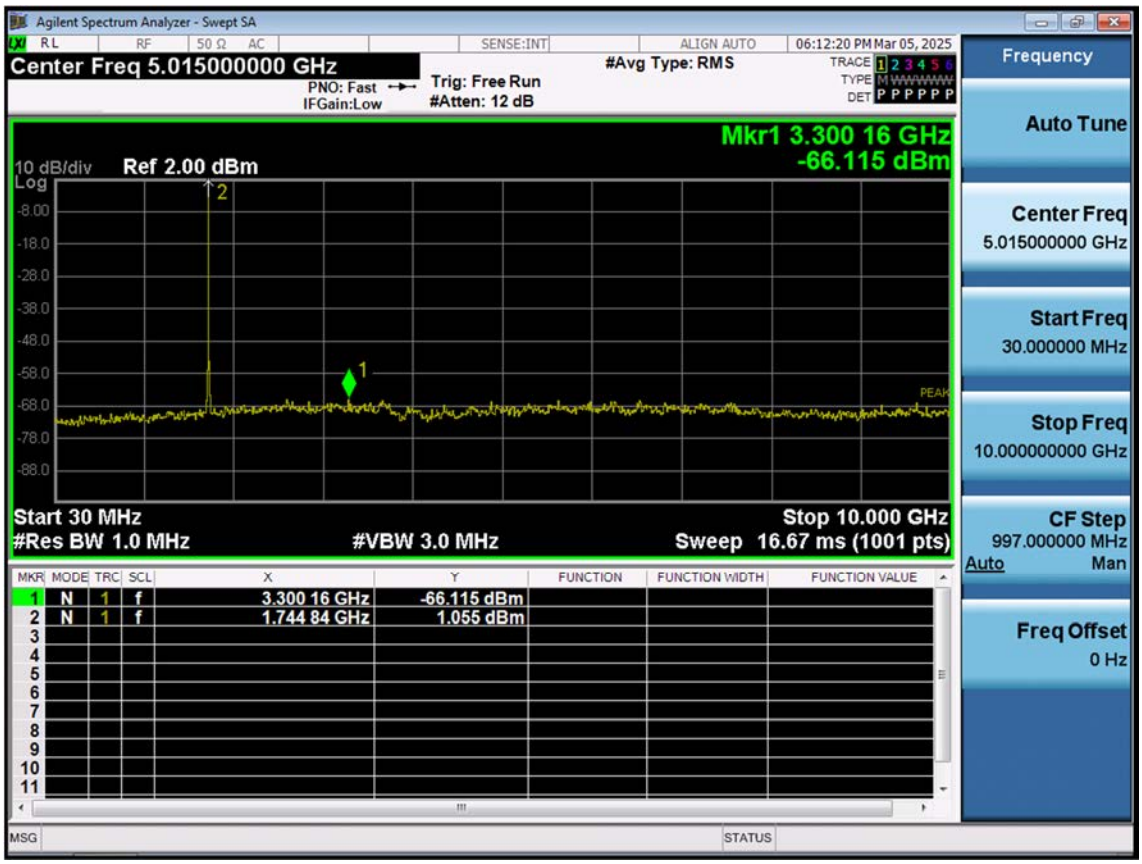
The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_Conducted Spurious(30 M-10 G)_Low_QPSK_1RB



The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B66_3 M_Conducted Spurious(30 M-10 G)_Mid_QPSK_1RB



The report shall not be (partly) reproduced except in full without approval of the laboratory.