

TEST REPORT

FCC LTE B25(2) Test for SM-A276U
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2604-FC018

DATE OF ISSUE
April 23, 2026

Tested by
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TEST REPORT

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April 23, 2026

Additional Model

SM-A276U1, SM-S276V

Applicant

SAMSUNG Electronics Co., Ltd.

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

Product Name

Mobile Phone

Model Name

SM-A276U

Date of Test

March 11, 2026 ~ April 22, 2026

FCC ID

A3LSMA276U

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: § 24

Test Results

PASS

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	April 23, 2026	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).

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MEASUREMENT REPORT

1. GENERAL INFORMATION

Model(s):	SM-A276U
Additional Model(s)	SM-A276U1, SM-S276V
Tx Frequency:	1850.7 MHz – 1914.3 MHz (LTE – Band25/2 (1.4 MHz)) 1851.5 MHz – 1913.5 MHz (LTE – Band25/2 (3 MHz)) 1852.5 MHz – 1912.5 MHz (LTE – Band25/2 (5 MHz)) 1855.0 MHz – 1910.0 MHz (LTE – Band25/2 (10 MHz)) 1857.5 MHz – 1907.5 MHz (LTE – Band25/2 (15 MHz)) 1860.0 MHz – 1905.0 MHz (LTE – Band25/2 (20 MHz))
Serial number:	Radiated : R37L300TJ6D Conducted : 9aece160ab127ece
Antenna Information	Please refer to the Antenna Specification document.

1.1. MAXIMUM OUTPUT POWER

Main 1 ANT

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band25/2 (1.4)	1850.7 - 1914.3	1M10G7D	QPSK	0.207	23.15
		1M10W7D	16QAM	0.176	22.45
		1M10W7D	64QAM	0.135	21.31
		1M10W7D	256QAM	0.067	18.28
LTE – Band25/2 (3)	1851.5 - 1913.5	2M72G7D	QPSK	0.209	23.20
		2M71W7D	16QAM	0.172	22.35
		2M72W7D	64QAM	0.139	21.42
		2M71W7D	256QAM	0.068	18.35
LTE – Band25/2 (5)	1852.5 - 1912.5	4M52G7D	QPSK	0.212	23.26
		4M53W7D	16QAM	0.169	22.28
		4M52W7D	64QAM	0.139	21.44
		4M52W7D	256QAM	0.065	18.14
LTE – Band25/2 (10)	1855.0 - 1910.0	9M02G7D	QPSK	0.206	23.14
		9M01W7D	16QAM	0.176	22.46
		8M99W7D	64QAM	0.132	21.21
		9M00W7D	256QAM	0.067	18.23
LTE – Band25/2 (15)	1857.5 - 1907.5	13M5G7D	QPSK	0.200	23.01
		13M5W7D	16QAM	0.169	22.27
		13M4W7D	64QAM	0.132	21.20
		13M5W7D	256QAM	0.064	18.05
LTE – Band25/2 (20)	1860.0 - 1905.0	17M9G7D	QPSK	0.204	23.10
		17M9W7D	16QAM	0.165	22.18
		17M9W7D	64QAM	0.124	20.94
		17M9W7D	256QAM	0.065	18.14

Sub2-2 ANT

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band25/2 (1.4)	1850.7 - 1914.3	1M09G7D	QPSK	0.207	23.15
		1M10W7D	16QAM	0.175	22.44
		1M10W7D	64QAM	0.145	21.60
		1M10W7D	256QAM	0.076	18.78
LTE – Band25/2 (3)	1851.5 - 1913.5	2M71G7D	QPSK	0.232	23.66
		2M71W7D	16QAM	0.203	23.07
		2M70W7D	64QAM	0.164	22.16
		2M71W7D	256QAM	0.081	19.11
LTE – Band25/2 (5)	1852.5 - 1912.5	4M51G7D	QPSK	0.220	23.43
		4M53W7D	16QAM	0.190	22.78
		4M52W7D	64QAM	0.160	22.05
		4M52W7D	256QAM	0.081	19.09
LTE – Band25/2 (10)	1855.0 - 1910.0	9M01G7D	QPSK	0.214	23.30
		9M00W7D	16QAM	0.188	22.74
		9M00W7D	64QAM	0.156	21.93
		8M99W7D	256QAM	0.077	18.86
LTE – Band25/2 (15)	1857.5 - 1907.5	13M5G7D	QPSK	0.198	22.96
		13M5W7D	16QAM	0.165	22.17
		13M5W7D	64QAM	0.131	21.16
		13M5W7D	256QAM	0.065	18.15
LTE – Band25/2 (20)	1860.0 - 1905.0	18M0G7D	QPSK	0.195	22.90
		18M0W7D	16QAM	0.161	22.06
		17M9W7D	64QAM	0.140	21.45
		18M0W7D	256QAM	0.066	18.22

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.

Detailed description of test facility was submitted to the Commission and accepted dated February 26, 2026 (Registration Number: KR0032).

2.4. EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to ANSI/USEMCSC C63.2-2023, "American National Standard for Specifications of Electromagnetic Interference and Field Strength Measuring Instrumentation in the Frequency Range 9 kHz to 40 GHz".

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	- KDB 971168 D01 v03r01 - Section 5.2.4 - ANSI C63.26-2015 - Section 5.2.1 & 5.2.4.2
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

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 $\geq$ 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;

$$P_d \text{ (dBm)} = P_g \text{ (dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

Where: P_d is the dipole equivalent power and P_g is the generator output power into the substitution antenna.

3. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value.

These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration

4. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
5. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

3.3 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method.

Test Settings

1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW $\geq 3 \times$ RBW
3. No. of sweep points $> 2 \times$ span / RBW
4. Detector = Peak
5. Trace mode = Max Hold
6. The trace was allowed to stabilize
7. Test channel : Low/ Middle/ High
8. 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;

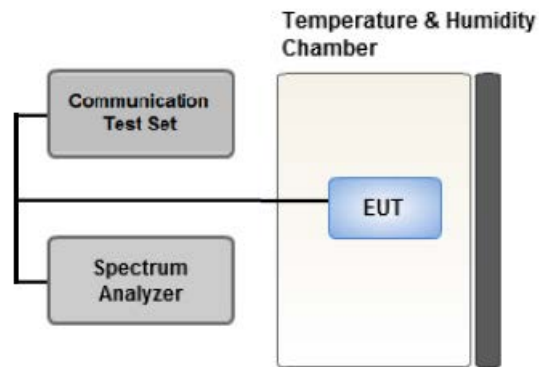
$$\text{Result}_{(\text{dBm})} = \text{Pg}_{(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

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.

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

3.4 PEAK- TO- AVERAGE RATIO



Test setup

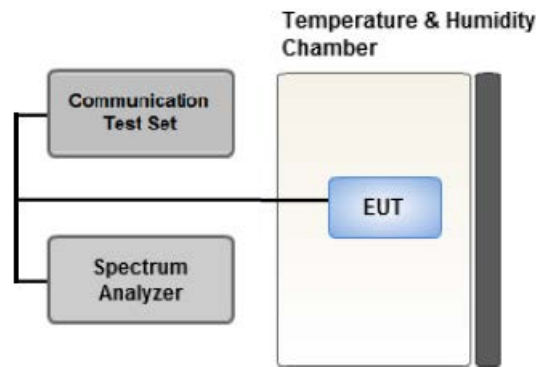
Test Settings

1. Set resolution/measurement bandwidth $\geq$ 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 %.

Test Notes

1. This test was performed using the spectrum analyzer's CCDF function.

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.

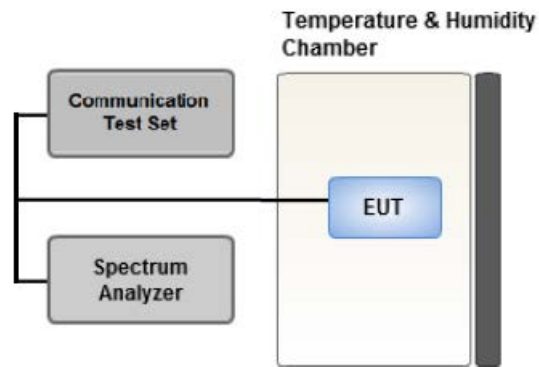
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

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 $\geq$ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5 % of the 99 % occupied bandwidth observed in Step 7

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

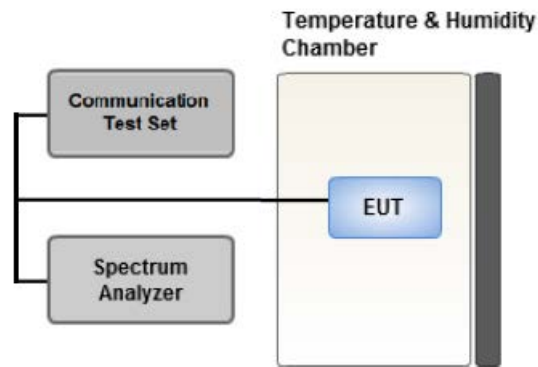
Test Overview

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

Test Settings

1. RBW = 1 MHz
2. VBW $\geq$ 3 MHz
3. Detector = Peak
4. Trace Mode = max hold
5. Sweep time = auto
6. Number of points in sweep = 1001

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 $\geq 2 \times \text{Span/RBW}$
7. Trace mode = trace average
8. Sweep time > (Number of Points) $\times$ (Symbol Period)
9. The trace was allowed to stabilize

Test Notes

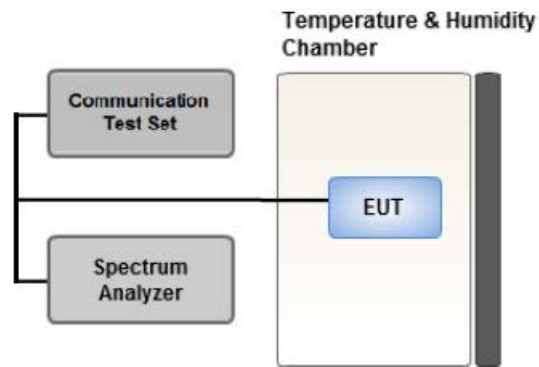
According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of The authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block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

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

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

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

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

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

The frequency stability of the transmitter is measured by:

1. Temperature:

The temperature is varied from -30 °C to +50 °C in 10 °C increments using an environmental chamber.

2. Primary Supply Voltage:

- . - Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.
- . - For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

Test Settings

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

3.9 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported. (Worst case : 5 MHz(Main 1 ANT), 3 MHz(Sub2-2 ANT))
- 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 25 (1850 – 1915 MHz) overlaps the entire frequency range of LTE BAND 2 (1850 - 1910 MHz) and they have the same Tune-up power.
Therefore, test data provided in this report covers BAND 2 as well as BAND 25.
- 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.
- SM-A276U & additional models were tested and the worst case results are reported.
(Worst case : SM-A276U)

[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

[Sub2-2 ANT Worst case]

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

3.10 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.
- LTE BAND 25 (1850 – 1915 MHz) overlaps the entire frequency range of LTE BAND 2 (1850 - 1910 MHz) and they have the same Tune-up power.
Therefore, test data provided in this report covers BAND 2 as well as BAND 25.
- SM-A276U & additional models were tested and the worst case results are reported.
(Worst case : SM-A276U)

[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

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	input 1 + 1.2G HPF+LNA	HCT CO., LTD.	F1L1	12/17/2026	Annual
RF Switching System	input 1 + 3.3 G HPF+LNA	HCT CO., LTD.	F1L2	12/17/2026	Annual
RF Switching System	input 1 + LNA	HCT CO., LTD.	F1L4	12/17/2026	Annual
RF Switching System	Input 2 + 6G HPF + LNA	HCT CO., LTD.	F1L7	12/17/2026	Annual
Broadband LNA	CBL18265035	CERNEX	22966	10/21/2026	Annual
Broadband LNA	CBL26405040	CERNEX	25956	02/09/2027	Annual
Power Splitter	11667B	Hewlett Packard	5001	04/01/2027	Annual
DC Power Supply	E3632A	Agilent	MY40010147	07/29/2026	Annual
Dipole Antenna	UHAP	Schwarzbeck	01274	03/05/2028	Biennial
Dipole Antenna	UHAP	Schwarzbeck	01288	08/07/2026	Biennial
Chamber	SU-642	ESPEC	93008124	02/04/2027	Annual
Horn Antenna	BBHA 9120D	Schwarzbeck	147	08/07/2027	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-1298	08/27/2027	Biennial
Horn Antenna	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Horn Antenna	BBHA 9170	Schwarzbeck	BBHA9170124	03/23/2027	Biennial
MXA SIGNAL ANALYZER	N9020A	Agilent	MY52090906	04/08/2027	Annual
20dB ATTENUATOR	8493C	HP	15233	12/10/2026	Annual
Spectrum Analyzer	FSV40	ROHDE & SCHWARZ	100931	07/28/2026	Annual
Wireless Communications Set	E5515C	Agilent	MY48360800	07/29/2026	Annual
Loop Antenna	FMZB1513	Schwarzbeck	1513-333	06/23/2027	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	00895	08/28/2026	Biennial
Trilog Broadband Antenna	VULB9168	SCHWARZBECK MESS-ELEKTRONIK	01135	08/19/2026	Biennial
Radio Communication Analyzer	MT8821C	Anritsu	6262094331	11/24/2026	Annual
Radio Communication Test Station	MT8000A	Anritsu	6272613402	08/18/2026	Annual
SIGNAL GENERATOR	SMB100A	ROHDE & SCHWARZ	177633	07/22/2026	Annual
Signal Analyzer	N9030B	KEYSIGHT	MY55480167	05/14/2026	Annual
SIGNAL ANALYZER	FSW67	ROHDE & SCHWARZ	101736	05/27/2026	Annual
Automation Software	FCC 2G/3G/4G Conducted	HCT CO., LTD	-	-	-
Automation Software	FCC NR Conducted	HCT CO., LTD	-	-	-
Automation Software	FCC LTE Radiated	HCT CO., LTD	-	-	-
Automation Software	FCC NR Radiated	HCT CO., LTD	-	-	-

Note:

- Equipment whose calibration due date was updated during the test period was not used between the previous due date and the update. All reported measurements were performed using equipment within valid calibration.
- Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014.

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

Parameter	Expanded Uncertainty ($\pm$ kHz)
Occupied Bandwidth	95 (Confidence level about 95 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

Parameter	Expanded Uncertainty ($\pm$ kHz)
Block Edge	0.70 (Confidence level about 95 %, $k=2$)
Conducted Spurious Emissions	1.11 (Confidence level about 95 %, $k=2$)
Peak- to- Average Ratio	0.73 (Confidence level about 95 %, $k=2$)
Radiated Power	4.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.54 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.80 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.86 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.44 (Confidence level about 95 %, $k=2$)

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, § 24.238(a)	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions	PASS
Conducted Output Power	§ 2.1046	N/A	PASS <u>Note1</u>
Peak- to- Average Ratio	§ 24.232(d)	< 13 dB	PASS
Frequency stability / variation of ambient temperature	§ 24.235	Emission must remain in band	PASS

Note:

1. Refer to the SAR report.

6.2 Test Condition: Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§ 24.232(c)	< 2 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§ 2.1053, § 24.238(a)	< 43 + 10log10 (P[Watts]) for all out-of band emissions	PASS

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

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

$$\text{ERP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 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

$$\text{EIRP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

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

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW
GSM BW = 249 kHz
G = Phase Modulation
X = Cases not otherwise covered
W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W
GSM BW = 249 kHz
G = Phase Modulation
7 = Quantized/Digital Info
W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W
WCDMA BW = 4.17 MHz
F = Frequency Modulation
9 = Composite Digital Info
W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D
LTE BW = 4.48 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data transmission; telemetry; telecommand

QAM Modulation

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

8. TEST DATA(Main 1 ANT)

8.1 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
1850.7	LTE B25/B2 1.4 MHz	QPSK	-19.05	14.82	10.40	2.07	H	< 2.00	0.207	23.15	1	3
		16-QAM	-19.75	14.12	10.40	2.07	H		0.176	22.45		
		64-QAM	-20.89	12.98	10.40	2.07	H		0.135	21.31		
		256-QAM	-23.92	9.95	10.40	2.07	H		0.067	18.28		
1882.5		QPSK	-20.50	13.73	10.40	2.21	2.33		0.156	21.92	1	0
		16-QAM	-21.19	13.04	10.40	2.21	2.33		0.133	21.23		
		64-QAM	-22.34	11.89	10.40	2.21	2.33		0.102	20.08		
		256-QAM	-25.38	8.85	10.40	2.21	2.33		0.051	17.04		
1914.3		QPSK	-20.49	13.85	10.40	2.17	H		0.161	22.08	1	0
		16-QAM	-21.07	13.27	10.40	2.17	H		0.141	21.50		
		64-QAM	-22.18	12.16	10.40	2.17	H		0.109	20.39		
		256-QAM	-25.30	9.04	10.40	2.17	H		0.053	17.27		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1851.5	LTE B25/B2 3 MHz	QPSK	-19.00	14.87	10.40	2.07	H	< 2.00	0.209	23.20	1	0
		16-QAM	-19.85	14.02	10.40	2.07	H		0.172	22.35		
		64-QAM	-20.78	13.09	10.40	2.07	H		0.139	21.42		
		256-QAM	-23.85	10.02	10.40	2.07	H		0.068	18.35		
1882.5		QPSK	-20.48	13.75	10.40	2.21	H		0.156	21.94	1	0
		16-QAM	-21.14	13.09	10.40	2.21	H		0.134	21.28		
		64-QAM	-22.32	11.91	10.40	2.21	H		0.102	20.10		
		256-QAM	-25.34	8.89	10.40	2.21	H		0.051	17.08		
1913.5		QPSK	-20.34	14.00	10.40	2.17	H		0.167	22.23	1	8
		16-QAM	-21.04	13.30	10.40	2.17	H		0.142	21.53		
		64-QAM	-22.03	12.31	10.40	2.17	H		0.113	20.54		
		256-QAM	-25.18	9.16	10.40	2.17	H		0.055	17.39		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1852.5	LTE B25/B2 5 MHz	QPSK	-18.97	14.94	10.40	2.08	H	< 2.00	0.212	23.26	1	13
		16-QAM	-19.95	13.96	10.40	2.08	H		0.169	22.28		
		64-QAM	-20.79	13.12	10.40	2.08	H		0.139	21.44		
		256-QAM	-24.09	9.82	10.40	2.08	H		0.065	18.14		
1882.5		QPSK	-20.52	13.71	10.40	2.21	H		0.155	21.90	1	13
		16-QAM	-21.25	12.98	10.40	2.21	H		0.131	21.17		
		64-QAM	-22.40	11.83	10.40	2.21	H		0.100	20.02		
		256-QAM	-25.51	8.72	10.40	2.21	H		0.049	16.91		
1912.5		QPSK	-20.36	13.98	10.40	2.17	H		0.166	22.21	1	13
		16-QAM	-20.96	13.38	10.40	2.17	H		0.145	21.61		
		64-QAM	-22.04	12.30	10.40	2.17	H		0.113	20.53		
		256-QAM	-25.13	9.21	10.40	2.17	H		0.055	17.44		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1855.0	LTE B25/B2 10 MHz	QPSK	-19.09	14.82	10.40	2.08	H	< 2.00	0.206	23.14	1	25
		16-QAM	-19.77	14.14	10.40	2.08	H		0.176	22.46		
		64-QAM	-21.02	12.89	10.40	2.08	H		0.132	21.21		
		256-QAM	-24.00	9.91	10.40	2.08	H		0.067	18.23		
QPSK		-20.59	13.64	10.40	2.21	H	0.152		21.83	1	49	
16-QAM		-21.17	13.06	10.40	2.21	H	0.133		21.25			
64-QAM		-22.26	11.97	10.40	2.21	H	0.104		20.16			
256-QAM		-25.37	8.86	10.40	2.21	H	0.051		17.05			
1910.0		QPSK	-20.32	13.94	10.40	2.17	H		0.165	22.17	1	0
		16-QAM	-21.12	13.14	10.40	2.17	H		0.137	21.37		
		64-QAM	-22.08	12.18	10.40	2.17	H		0.110	20.41		
		256-QAM	-25.35	8.91	10.40	2.17	H		0.052	17.14		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1857.5	LTE B25/B2 15 MHz	QPSK	-19.25	14.71	10.40	2.10	H	< 2.00	0.200	23.01	1	0
		16-QAM	-19.99	13.97	10.40	2.10	H		0.169	22.27		
		64-QAM	-21.06	12.90	10.40	2.10	H		0.132	21.20		
		256-QAM	-24.21	9.75	10.40	2.10	H		0.064	18.05		
1882.5		QPSK	-20.67	13.56	10.40	2.21	H		0.150	21.75	1	0
		16-QAM	-21.32	12.91	10.40	2.21	H		0.129	21.10		
		64-QAM	-22.39	11.84	10.40	2.21	H		0.101	20.03		
		256-QAM	-25.51	8.72	10.40	2.21	H		0.049	16.91		
1907.5		QPSK	-20.70	13.56	10.40	2.17	H		0.151	21.79	1	0
		16-QAM	-21.56	12.70	10.40	2.17	H		0.124	20.93		
		64-QAM	-22.41	11.85	10.40	2.17	H		0.102	20.08		
		256-QAM	-25.39	8.87	10.40	2.17	H		0.051	17.10		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1860.0	LTE B25/B2 20 MHz	QPSK	-19.16	14.80	10.40	2.10	H	< 2.00	0.204	23.10	1	0
		16-QAM	-20.08	13.88	10.40	2.10	H		0.165	22.18		
		64-QAM	-21.32	12.64	10.40	2.10	H		0.124	20.94		
		256-QAM	-24.12	9.84	10.40	2.10	H		0.065	18.14		
1882.5		QPSK	-20.65	13.58	10.40	2.21	H		0.150	21.77	1	0
		16-QAM	-21.09	13.14	10.40	2.21	H		0.136	21.33		
		64-QAM	-22.42	11.81	10.40	2.21	H		0.100	20.00		
		256-QAM	-25.49	8.74	10.40	2.21	H		0.049	16.93		
1905.0		QPSK	-20.53	13.70	10.40	2.19	H		0.155	21.91	1	50
		16-QAM	-21.02	13.21	10.40	2.19	H		0.139	21.42		
		64-QAM	-22.35	11.88	10.40	2.19	H		0.102	20.09		
		256-QAM	-25.59	8.64	10.40	2.19	H		0.048	16.85		

8.2 RADIATED SPURIOUS EMISSIONS

■ MODE: LTE B25/B2
 ■ MODULATION SIGNAL: 5 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
26065 (1852.5)	3 705.00	-41.74	12.28	-58.98	3.08	V	-49.78	1	13
		-42.55		-59.79		H	-50.59		
	5 557.50	-43.46	13.04	-55.82	3.88	V	-46.66		
		-43.36		-55.72		H	-46.56		
	7 410.00	-38.67	10.79	-42.02	4.57	V	-35.80		
		-38.22		-41.57		H	-35.35		
26365 (1882.5)	3 765.00	-43.63	12.22	-59.51	3.11	V	-50.40	1	13
		-43.24		-59.12		H	-50.01		
	5 647.50	-43.55	13.12	-56.11	3.96	V	-46.95		
		-43.59		-56.15		H	-46.99		
	7 530.00	-37.08	10.85	-40.28	4.60	V	-34.03		
		-37.17		-40.37		H	-34.12		
26665 (1912.5)	3 825.00	-42.05	12.16	-58.97	3.18	V	-49.99	1	13
		-42.98		-59.90		H	-50.92		
	5 737.50	-42.33	13.01	-54.73	3.99	V	-45.71		
		-43.53		-55.93		H	-46.91		
	7 650.00	-34.56	11.24	-38.62	4.68	V	-32.06		
		-34.88		-38.94		H	-32.38		

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)	Limit (dB)
LTE B25/2	1.4 MHz	1882.5	QPSK	6	0	5.12	13.00
			16-QAM			5.85	
			64-QAM			6.32	
			256-QAM			6.73	
	3 MHz		QPSK	15		5.10	
			16-QAM			5.95	
			64-QAM			6.38	
			256-QAM			6.71	
	5 MHz		QPSK	25		5.15	
			16-QAM			5.96	
			64-QAM			6.35	
			256-QAM			6.70	
	10 MHz		QPSK	50		5.23	
			16-QAM			5.96	
			64-QAM			6.37	
			256-QAM			6.70	
	15 MHz		QPSK	75		5.17	
			16-QAM			5.97	
			64-QAM			6.37	
			256-QAM			6.68	
	20 MHz		QPSK	100		5.11	
			16-QAM			5.95	
			64-QAM			6.39	
			256-QAM			6.64	

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
LTE B25/2	1.4 MHz	1882.5	QPSK	6	0	1.0978
			16-QAM			1.1009
			64-QAM			1.0999
			256-QAM			1.1013
	3 MHz		QPSK	15		2.7153
			16-QAM			2.7138
			64-QAM			2.7162
			256-QAM			2.7121
	5 MHz		QPSK	25		4.5168
			16-QAM			4.5300
			64-QAM			4.5169
			256-QAM			4.5240
	10 MHz		QPSK	50		9.0151
			16-QAM			9.0130
			64-QAM			8.9924
			256-QAM			9.0000
	15 MHz		QPSK	75		13.454
			16-QAM			13.465
			64-QAM			13.440
			256-QAM			13.451
	20 MHz		QPSK	100		17.903
			16-QAM			17.891
			64-QAM			17.898
			256-QAM			17.898

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)
LTE B25/2	1.4	1850.7	3.7588	27.976	-62.401	-34.425	-13.00
		1882.5	2.6322	27.976	-62.042	-34.066	
		1914.3	2.5724	27.976	-62.318	-34.342	
	3	1851.5	2.2832	27.976	-61.839	-33.863	
		1882.5	3.1905	27.976	-62.134	-34.158	
		1913.5	3.7289	27.976	-62.156	-34.180	
	5	1852.5	3.1905	27.976	-61.305	-33.329	
		1882.5	3.1107	27.976	-61.105	-33.129	
		1912.5	3.2603	27.976	-60.837	-32.861	
	10	1855.0	6.2214	28.591	-60.885	-32.294	
		1882.5	3.6790	27.976	-61.342	-33.366	
		1910.0	3.6790	27.976	-61.657	-33.681	
	15	1857.5	3.7388	27.976	-61.384	-33.408	
		1882.5	3.6691	27.976	-61.838	-33.862	
		1907.5	3.6691	27.976	-61.784	-33.808	
	20	1860.0	3.7189	27.976	-62.037	-34.061	
		1882.5	6.6601	28.591	-62.387	-33.796	
		1905.0	3.6591	27.976	-61.789	-33.813	

Note:

1. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Ext. 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

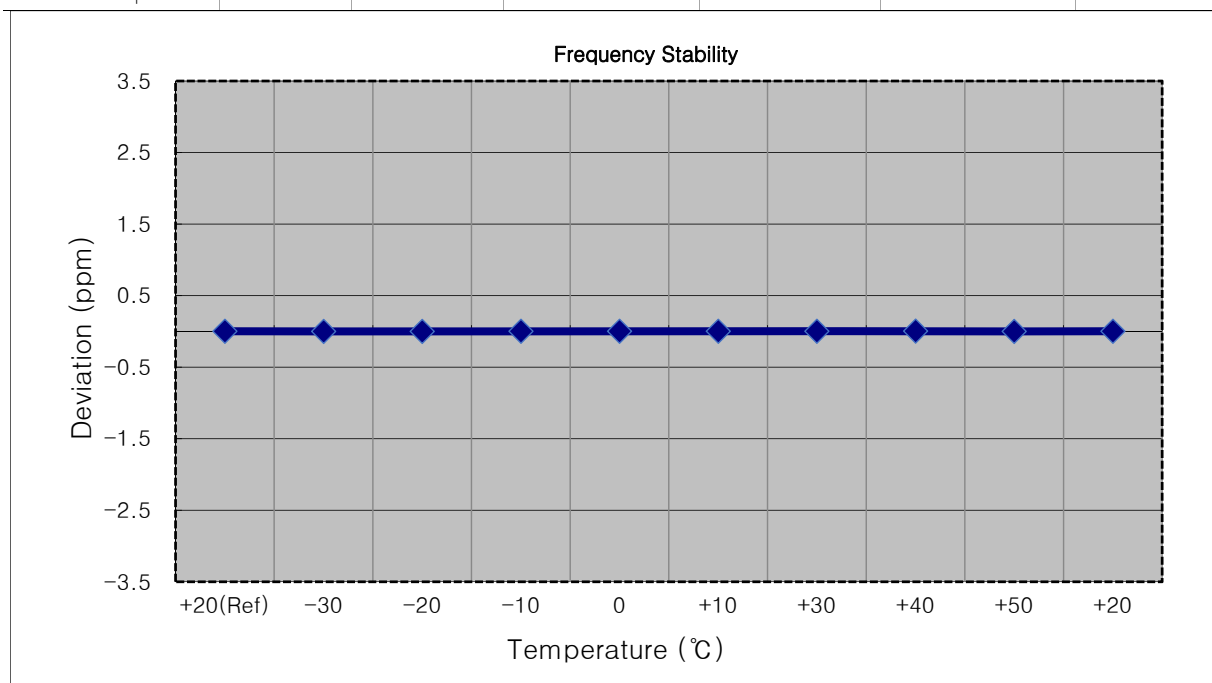
8.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Section 10.4.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

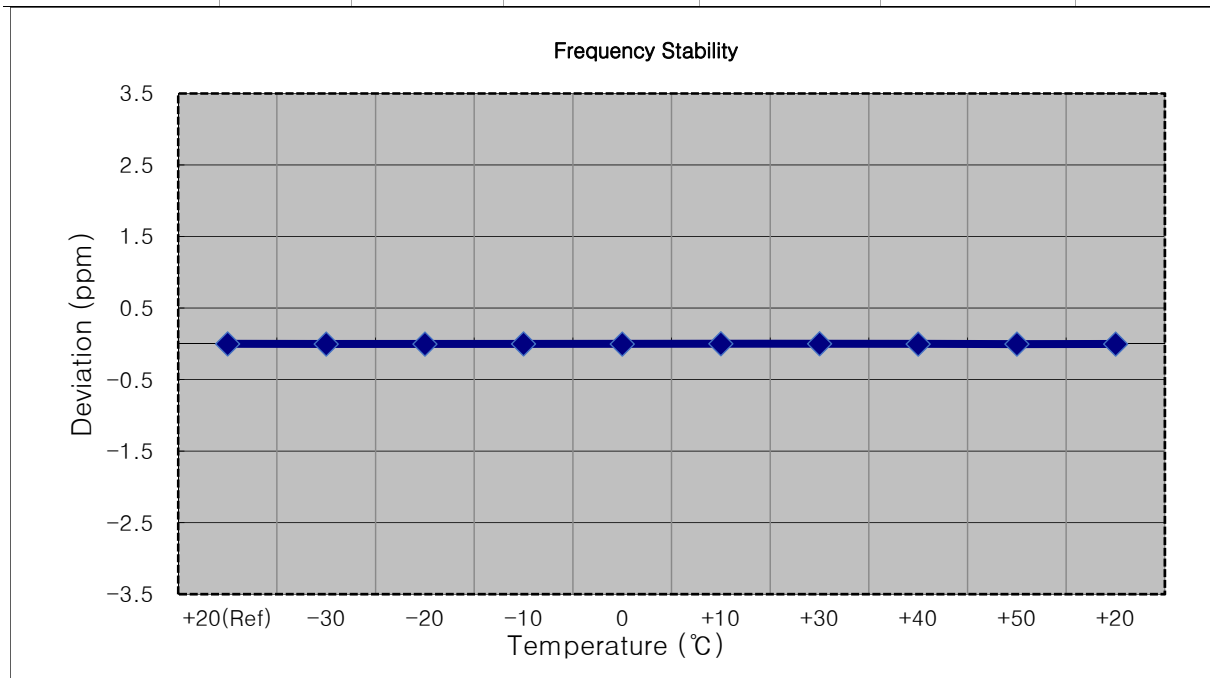
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1850,700,000 Hz
- ▣ CHANNEL: 26047 (1.4 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage	Power	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	
100 %	3.880	+20(Ref)	1850 700 003	0.0	0.000 000	0.000
100 %		-30	1850 700 000	-3.2	0.000 000	-0.002
100 %		-20	1850 700 000	-3.3	0.000 000	-0.002
100 %		-10	1850 700 005	2.5	0.000 000	0.001
100 %		0	1850 700 005	2.1	0.000 000	0.001
100 %		+10	1850 700 007	3.7	0.000 000	0.002
100 %		+30	1850 700 005	2.2	0.000 000	0.001
100 %		+40	1850 700 007	4.1	0.000 000	0.002
100 %		+50	1850 700 001	-2.2	0.000 000	-0.001
Batt. Endpoint	3.300	+20	1850 700 005	2.5	0.000 000	0.001



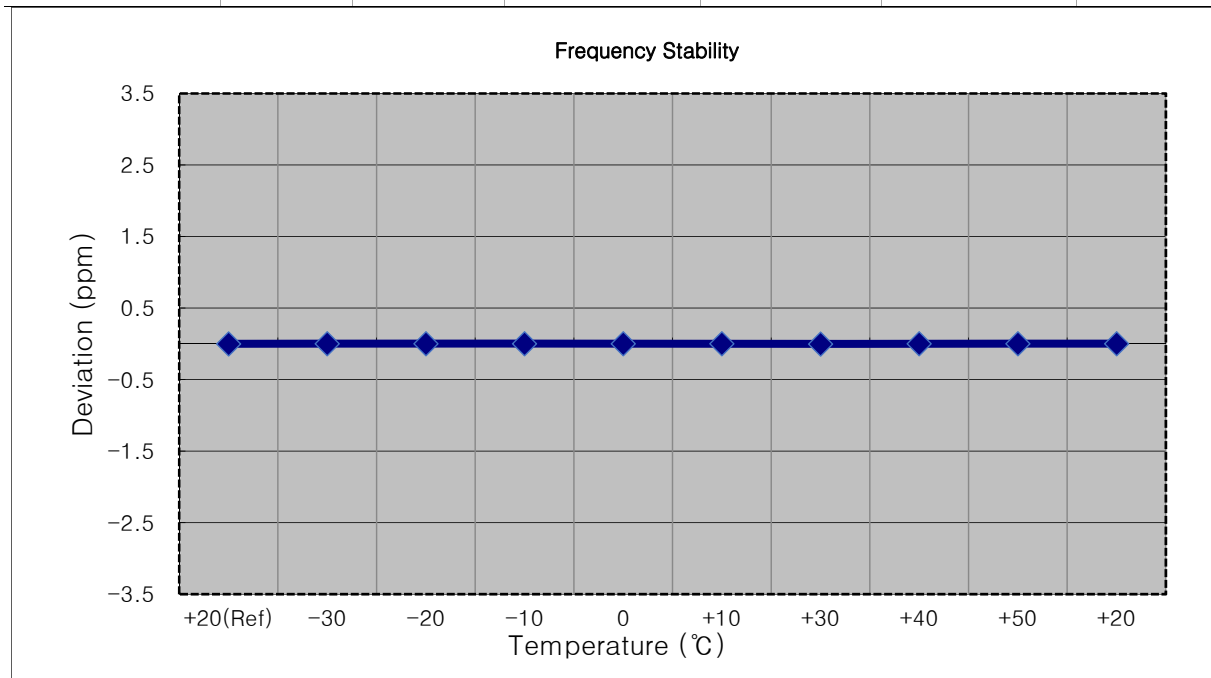
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1851,500,000 Hz
- ▣ CHANNEL: 26055 (3 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1851 499 995	0.0	0.000 000	0.000
100 %		-30	1851 499 990	-4.2	0.000 000	-0.002
100 %		-20	1851 499 992	-3.0	0.000 000	-0.002
100 %		-10	1851 499 992	-2.2	0.000 000	-0.001
100 %		0	1851 499 991	-3.4	0.000 000	-0.002
100 %		+10	1851 500 000	5.1	0.000 000	0.003
100 %		+30	1851 499 997	2.3	0.000 000	0.001
100 %		+40	1851 499 990	-4.5	0.000 000	-0.002
100 %		+50	1851 499 989	-6.0	0.000 000	-0.003
Batt. Endpoint	3.300	+20	1851 499 991	-3.8	0.000 000	-0.002



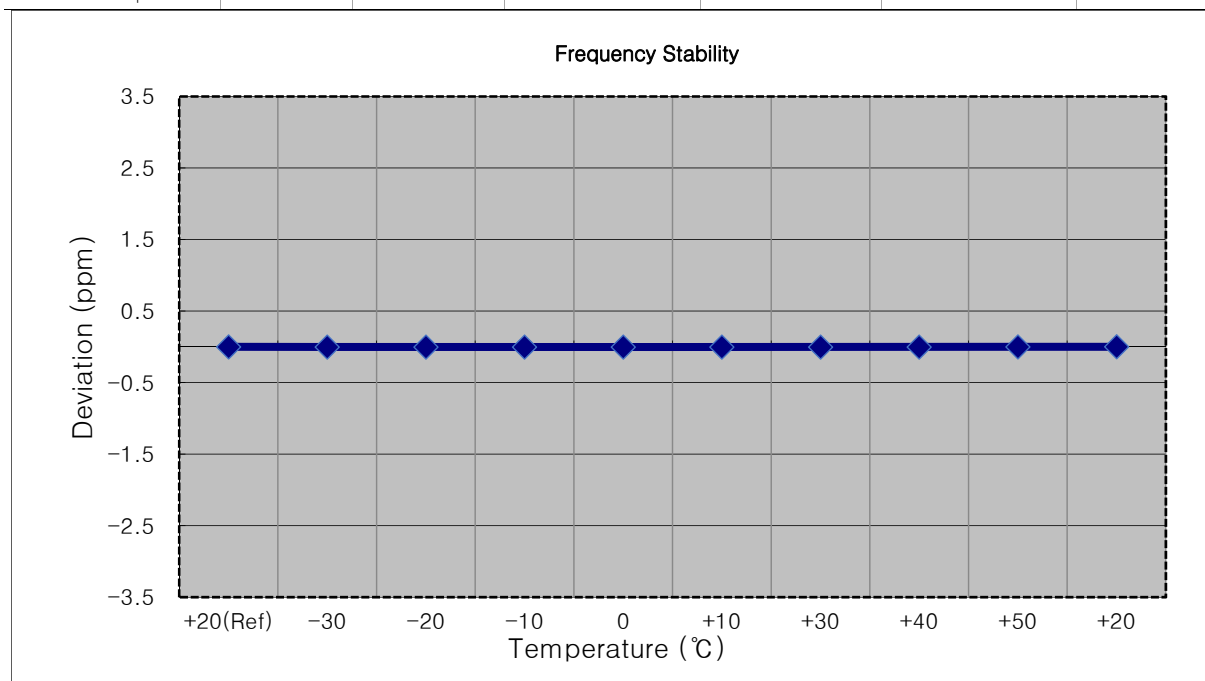
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1852,500,000 Hz
- ▣ CHANNEL: 26065 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1852 500 003	0.0	0.000 000	0.000
100 %		-30	1852 500 007	4.1	0.000 000	0.002
100 %		-20	1852 500 006	2.8	0.000 000	0.002
100 %		-10	1852 500 006	3.2	0.000 000	0.002
100 %		0	1852 500 006	2.9	0.000 000	0.002
100 %		+10	1852 500 005	2.2	0.000 000	0.001
100 %		+30	1852 499 998	-5.0	0.000 000	-0.003
100 %		+40	1852 500 007	3.7	0.000 000	0.002
100 %		+50	1852 500 005	2.2	0.000 000	0.001
Batt. Endpoint	3.300	+20	1852 500 006	3.5	0.000 000	0.002



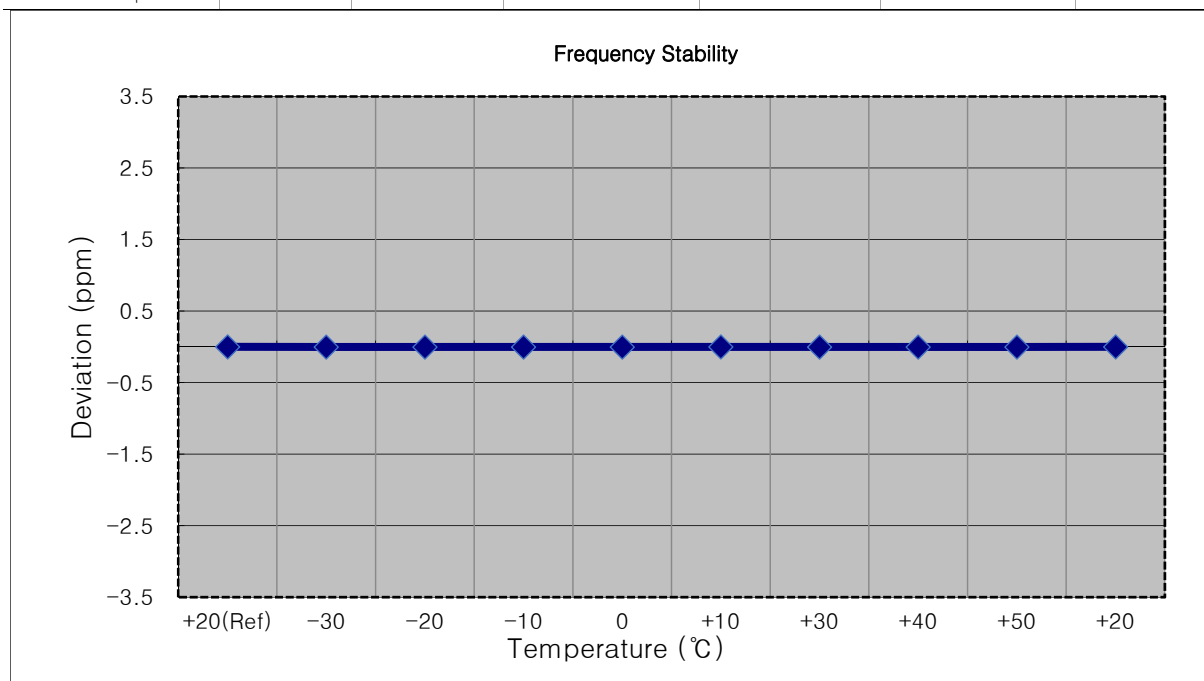
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1855,000,000 Hz</u>
CHANNEL:	<u>26090 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1854 999 996	0.0	0.000 000	0.000
100 %		-30	1854 999 993	-3.2	0.000 000	-0.002
100 %		-20	1854 999 993	-3.0	0.000 000	-0.002
100 %		-10	1854 999 994	-2.5	0.000 000	-0.001
100 %		0	1854 999 993	-3.7	0.000 000	-0.002
100 %		+10	1854 999 992	-4.5	0.000 000	-0.002
100 %		+30	1854 999 994	-2.8	0.000 000	-0.002
100 %		+40	1854 999 993	-3.3	0.000 000	-0.002
100 %		+50	1854 999 998	1.5	0.000 000	0.001
Batt. Endpoint	3.300	+20	1854 999 999	2.4	0.000 000	0.001



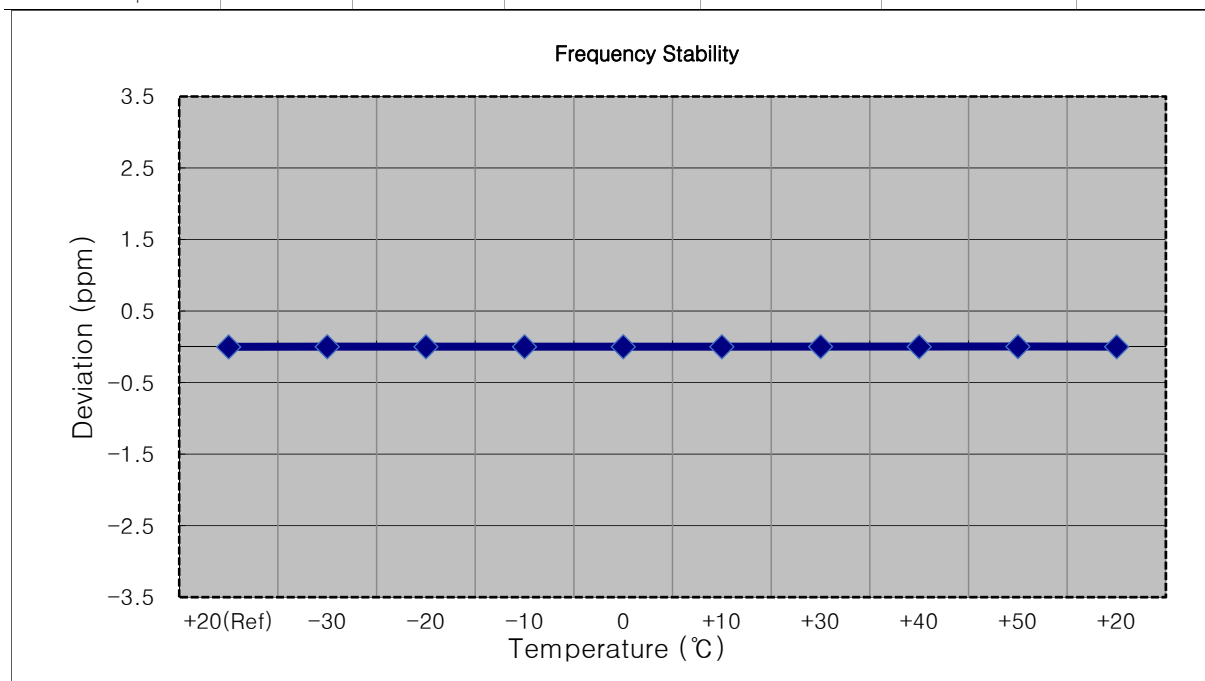
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1857,500,000 Hz</u>
CHANNEL:	<u>26115 (15 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1857 499 995	0.0	0.000 000	0.000
100 %		-30	1857 499 991	-4.0	0.000 000	-0.002
100 %		-20	1857 499 992	-3.4	0.000 000	-0.002
100 %		-10	1857 499 991	-4.3	0.000 000	-0.002
100 %		0	1857 499 992	-2.5	0.000 000	-0.001
100 %		+10	1857 499 993	-2.0	0.000 000	-0.001
100 %		+30	1857 499 991	-4.4	0.000 000	-0.002
100 %		+40	1857 499 991	-4.4	0.000 000	-0.002
100 %		+50	1857 499 991	-3.5	0.000 000	-0.002
Batt. Endpoint	3.300	+20	1857 499 993	-2.3	0.000 000	-0.001



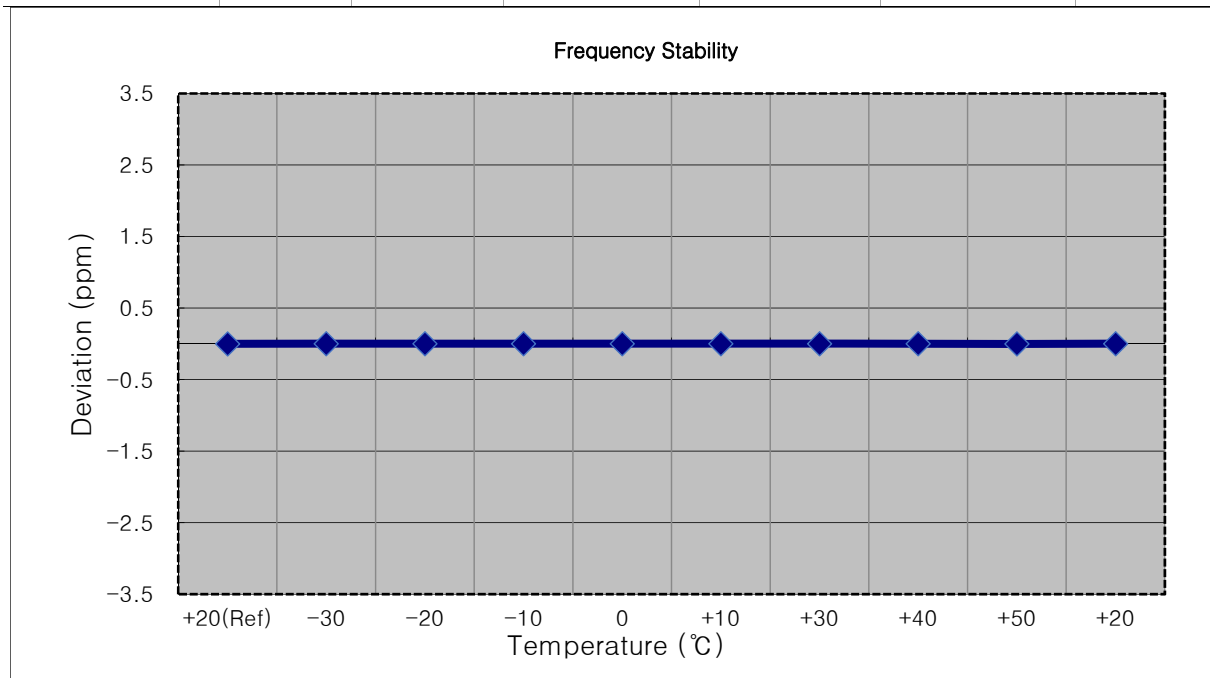
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1860,000,000 Hz</u>
CHANNEL:	<u>26140 (20 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1860 000 003	0.0	0.000 000	0.000
100 %		-30	1860 000 008	5.4	0.000 000	0.003
100 %		-20	1860 000 007	3.6	0.000 000	0.002
100 %		-10	1860 000 007	4.1	0.000 000	0.002
100 %		0	1860 000 007	4.3	0.000 000	0.002
100 %		+10	1860 000 008	4.8	0.000 000	0.003
100 %		+30	1860 000 010	7.1	0.000 000	0.004
100 %		+40	1860 000 007	4.0	0.000 000	0.002
100 %		+50	1860 000 010	6.6	0.000 000	0.004
Batt. Endpoint	3.300	+20	1860 000 009	5.8	0.000 000	0.003



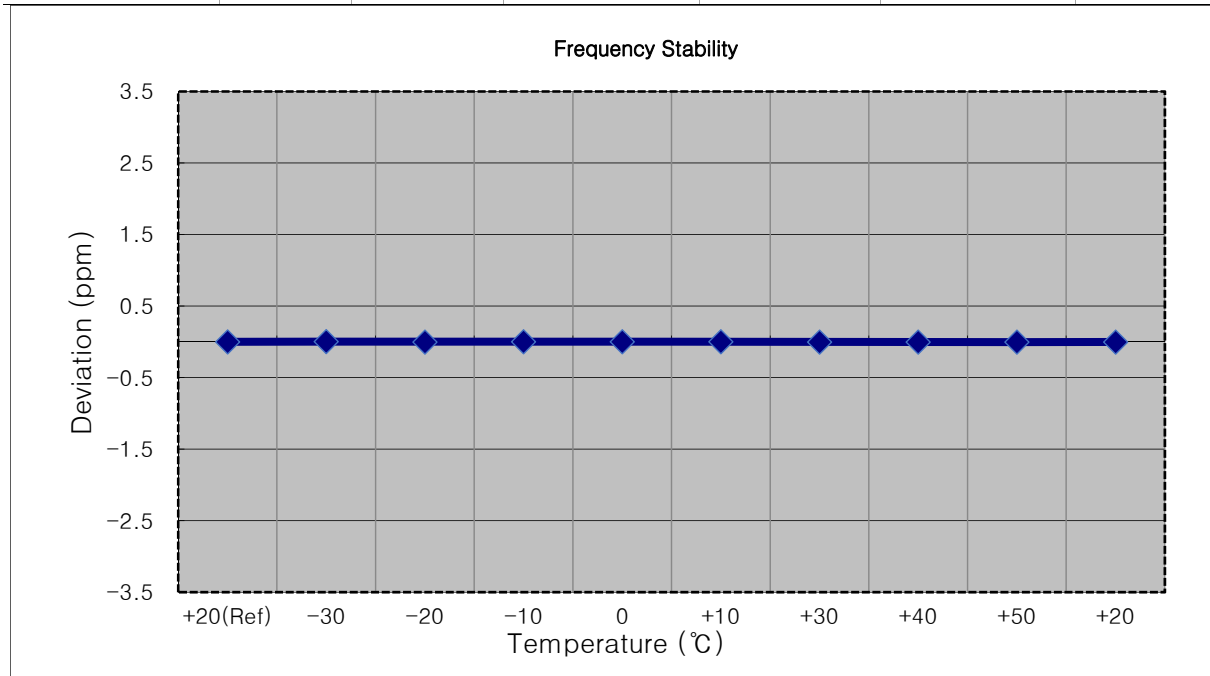
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1882,500,000 Hz</u>
CHANNEL:	<u>26365 (1.4 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 500 004	0.0	0.000 000	0.000
100 %		-30	1882 500 009	4.8	0.000 000	0.003
100 %		-20	1882 500 009	5.0	0.000 000	0.003
100 %		-10	1882 500 006	2.1	0.000 000	0.001
100 %		0	1882 500 008	3.9	0.000 000	0.002
100 %		+10	1882 500 008	4.5	0.000 000	0.002
100 %		+30	1882 500 008	3.9	0.000 000	0.002
100 %		+40	1882 500 007	3.2	0.000 000	0.002
100 %		+50	1882 500 002	-2.1	0.000 000	-0.001
Batt. Endpoint	3.300	+20	1882 500 006	2.7	0.000 000	0.001



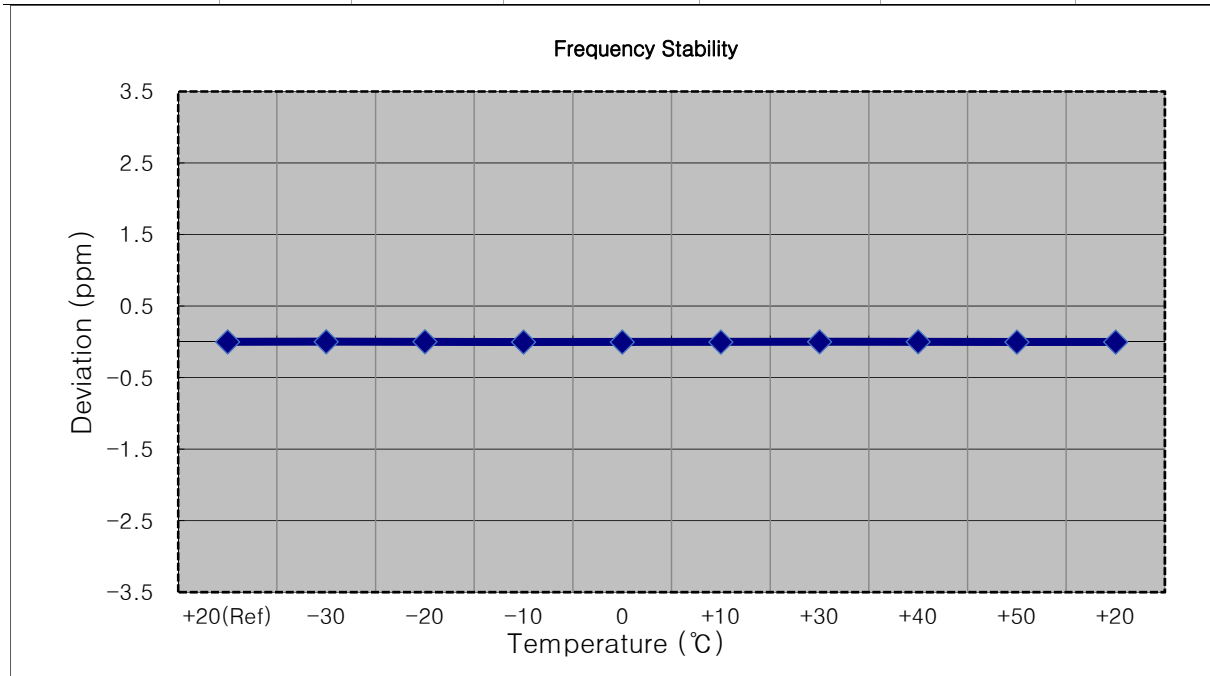
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1882,500,000 Hz
- ▣ CHANNEL: 26365 (3 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 499 996	0.0	0.000 000	0.000
100 %		-30	1882 500 002	6.5	0.000 000	0.003
100 %		-20	1882 499 993	-2.5	0.000 000	-0.001
100 %		-10	1882 499 999	3.5	0.000 000	0.002
100 %		0	1882 499 998	2.1	0.000 000	0.001
100 %		+10	1882 500 000	4.9	0.000 000	0.003
100 %		+30	1882 499 990	-5.1	0.000 000	-0.003
100 %		+40	1882 499 991	-4.4	0.000 000	-0.002
100 %		+50	1882 499 990	-5.5	0.000 000	-0.003
Batt. Endpoint	3.300	+20	1882 499 992	-3.7	0.000 000	-0.002



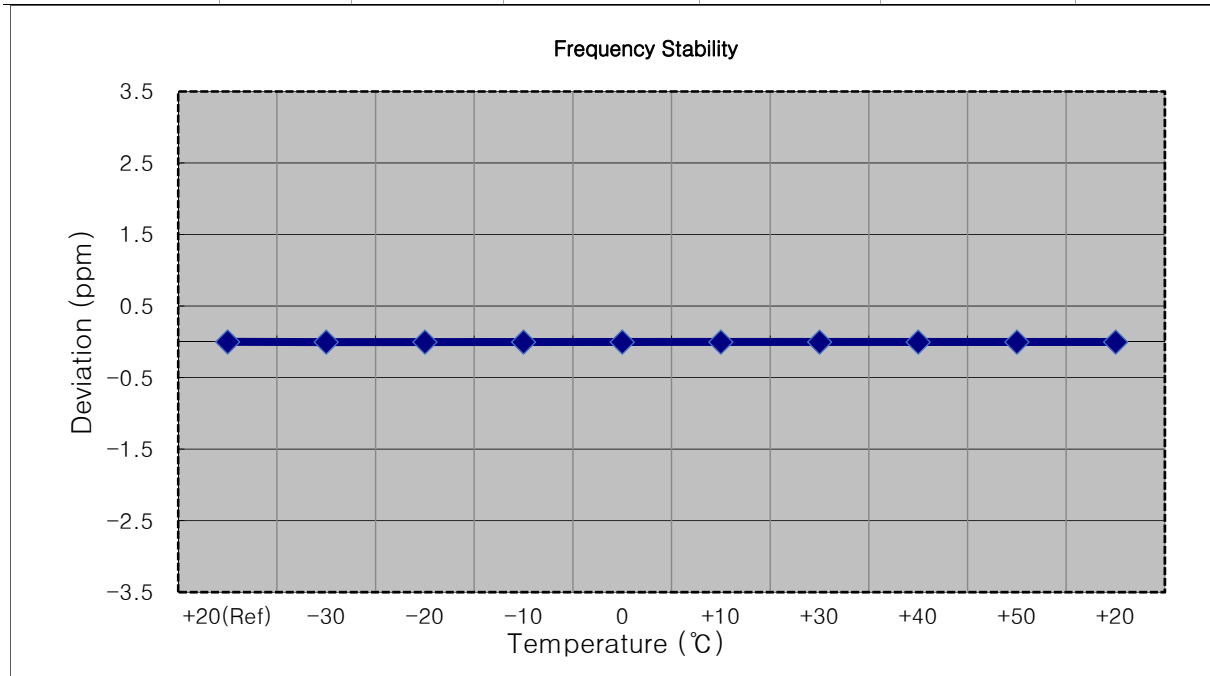
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1882,500,000 Hz
- ▣ CHANNEL: 26365 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 499 996	0.0	0.000 000	0.000
100 %		-30	1882 500 000	3.6	0.000 000	0.002
100 %		-20	1882 500 000	4.1	0.000 000	0.002
100 %		-10	1882 499 992	-3.7	0.000 000	-0.002
100 %		0	1882 499 993	-2.7	0.000 000	-0.001
100 %		+10	1882 499 991	-5.3	0.000 000	-0.003
100 %		+30	1882 499 998	2.0	0.000 000	0.001
100 %		+40	1882 500 001	4.6	0.000 000	0.002
100 %		+50	1882 499 992	-4.3	0.000 000	-0.002
Batt. Endpoint	3.300	+20	1882 499 993	-3.0	0.000 000	-0.002



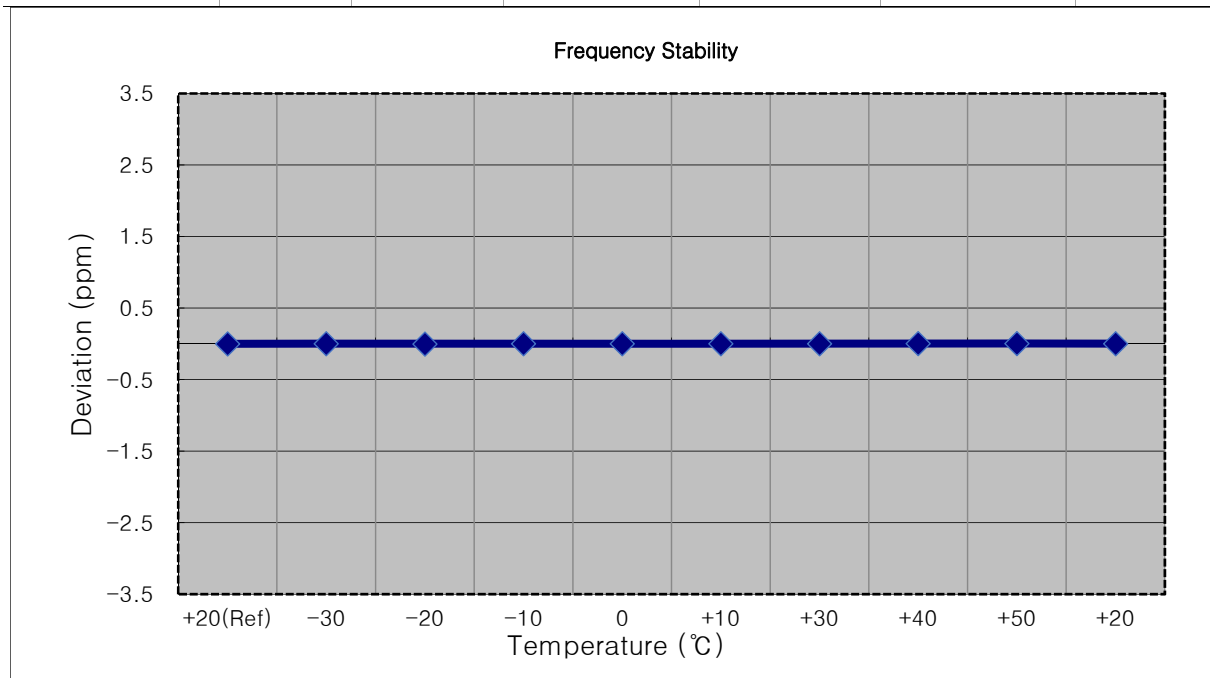
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1882,500,000 Hz</u>
CHANNEL:	<u>26365 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 499 993	0.0	0.000 000	0.000
100 %		-30	1882 499 988	-5.8	0.000 000	-0.003
100 %		-20	1882 499 988	-5.8	0.000 000	-0.003
100 %		-10	1882 499 990	-3.2	0.000 000	-0.002
100 %		0	1882 499 988	-5.2	0.000 000	-0.003
100 %		+10	1882 499 990	-3.4	0.000 000	-0.002
100 %		+30	1882 499 988	-5.1	0.000 000	-0.003
100 %		+40	1882 499 990	-3.6	0.000 000	-0.002
100 %		+50	1882 499 988	-5.5	0.000 000	-0.003
Batt. Endpoint	3.300	+20	1882 499 989	-4.3	0.000 000	-0.002



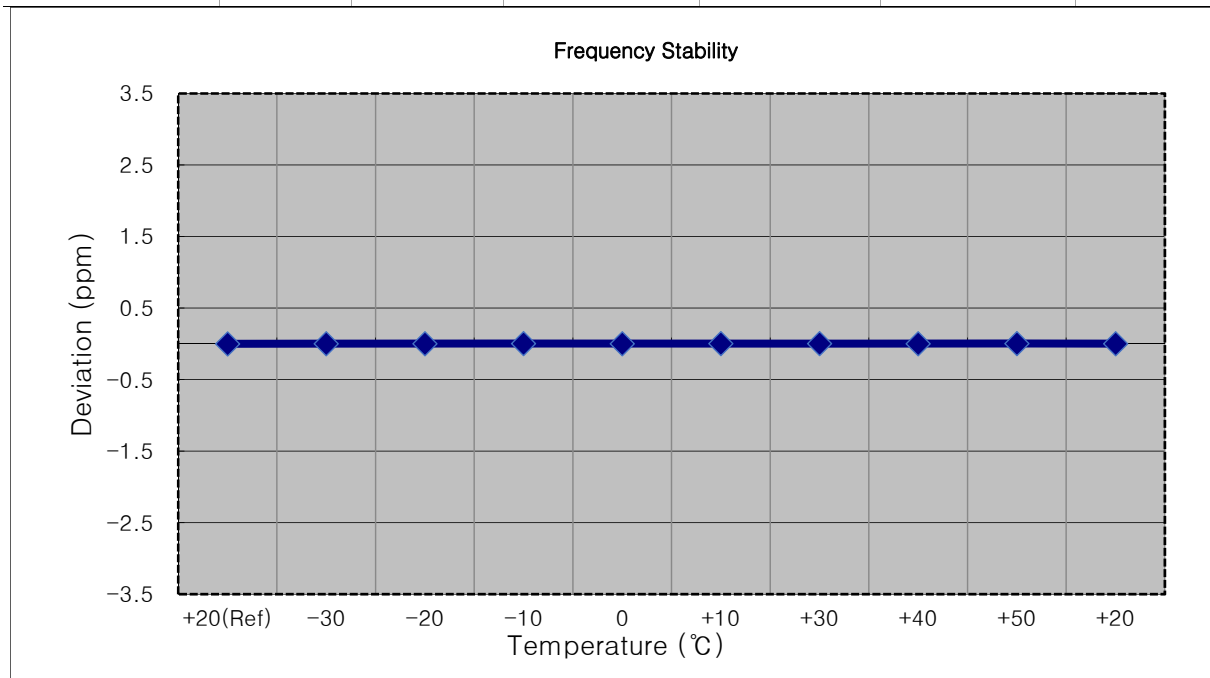
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1882,500,000 Hz
- ▣ CHANNEL: 26365 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 500 006	0.0	0.000 000	0.000
100 %		-30	1882 500 012	6.0	0.000 000	0.003
100 %		-20	1882 500 003	-2.9	0.000 000	-0.002
100 %		-10	1882 500 010	3.9	0.000 000	0.002
100 %		0	1882 500 009	2.7	0.000 000	0.001
100 %		+10	1882 500 011	5.1	0.000 000	0.003
100 %		+30	1882 500 009	2.9	0.000 000	0.002
100 %		+40	1882 500 013	7.5	0.000 000	0.004
100 %		+50	1882 500 012	6.6	0.000 000	0.004
Batt. Endpoint	3.300	+20	1882 500 012	5.8	0.000 000	0.003



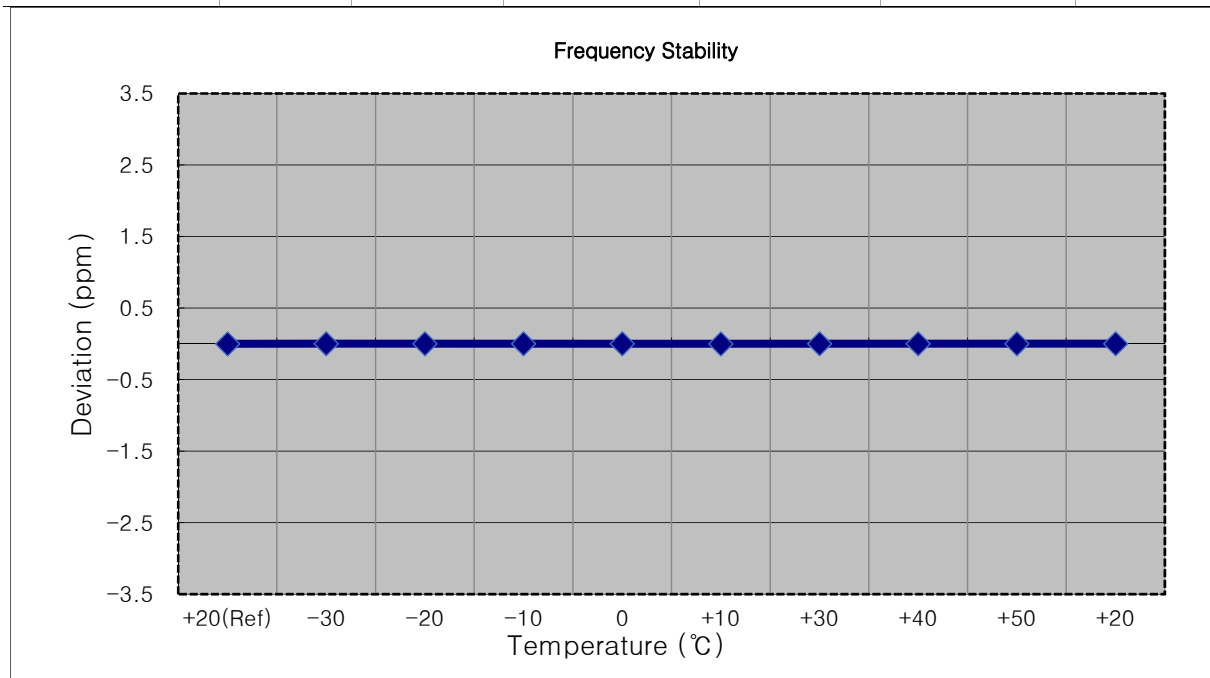
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1882,500,000 Hz
- ▣ CHANNEL: 26365 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 500 006	0.0	0.000 000	0.000
100 %		-30	1882 500 012	6.0	0.000 000	0.003
100 %		-20	1882 500 010	4.6	0.000 000	0.002
100 %		-10	1882 500 012	6.1	0.000 000	0.003
100 %		0	1882 500 008	2.6	0.000 000	0.001
100 %		+10	1882 500 013	7.2	0.000 000	0.004
100 %		+30	1882 500 013	7.6	0.000 000	0.004
100 %		+40	1882 500 009	3.9	0.000 000	0.002
100 %		+50	1882 500 012	6.3	0.000 000	0.003
Batt. Endpoint	3.300	+20	1882 500 011	5.4	0.000 000	0.003



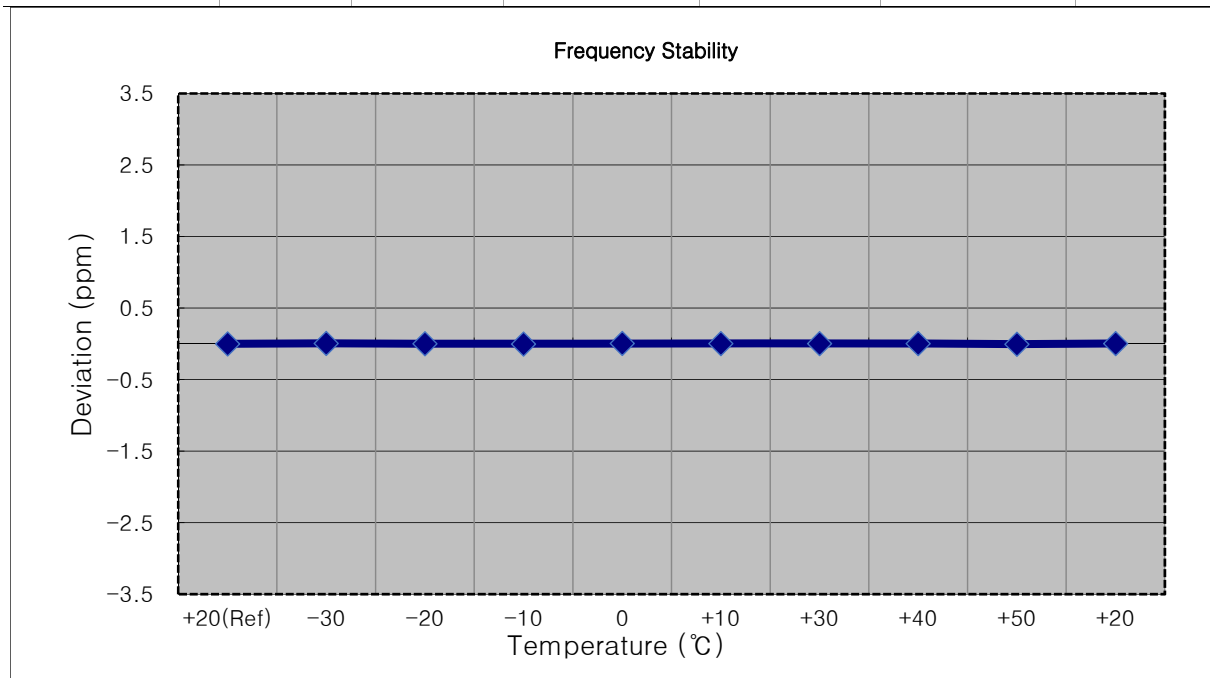
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1914,300,000 Hz
- ▣ CHANNEL: 26683 (1.4 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1914 299 996	0.0	0.000 000	0.000
100 %		-30	1914 300 000	4.5	0.000 000	0.002
100 %		-20	1914 299 999	3.1	0.000 000	0.002
100 %		-10	1914 300 000	4.5	0.000 000	0.002
100 %		0	1914 300 000	4.3	0.000 000	0.002
100 %		+10	1914 299 994	-1.7	0.000 000	-0.001
100 %		+30	1914 300 000	4.2	0.000 000	0.002
100 %		+40	1914 300 001	4.9	0.000 000	0.003
100 %		+50	1914 300 000	4.1	0.000 000	0.002
Batt. Endpoint	3.300	+20	1914 299 999	3.1	0.000 000	0.002



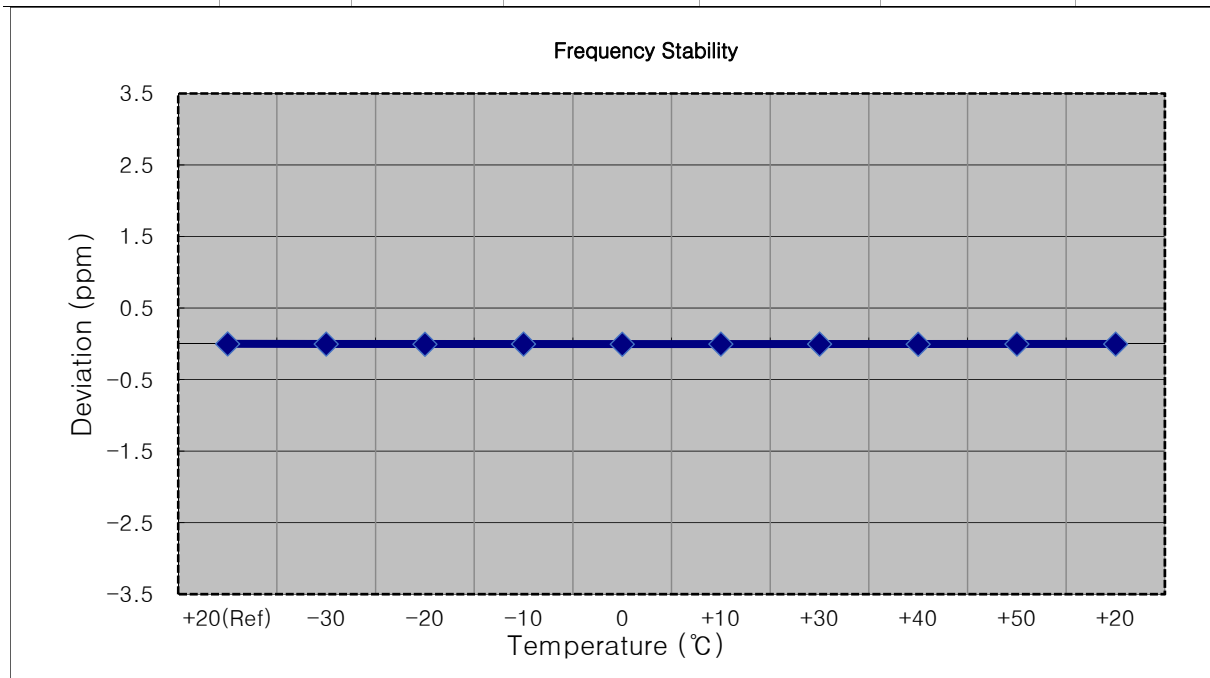
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1913,500,000 Hz
- ▣ CHANNEL: 26675 (3 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1913 499 993	0.0	0.000 000	0.000
100 %		-30	1913 500 005	11.2	0.000 001	0.006
100 %		-20	1913 499 999	5.9	0.000 000	0.003
100 %		-10	1913 499 989	-3.9	0.000 000	-0.002
100 %		0	1913 500 008	14.7	0.000 001	0.008
100 %		+10	1913 500 000	6.5	0.000 000	0.003
100 %		+30	1913 500 004	10.4	0.000 001	0.005
100 %		+40	1913 500 002	8.8	0.000 000	0.005
100 %		+50	1913 499 986	-7.2	0.000 000	-0.004
Batt. Endpoint	3.300	+20	1913 500 002	8.3	0.000 000	0.004



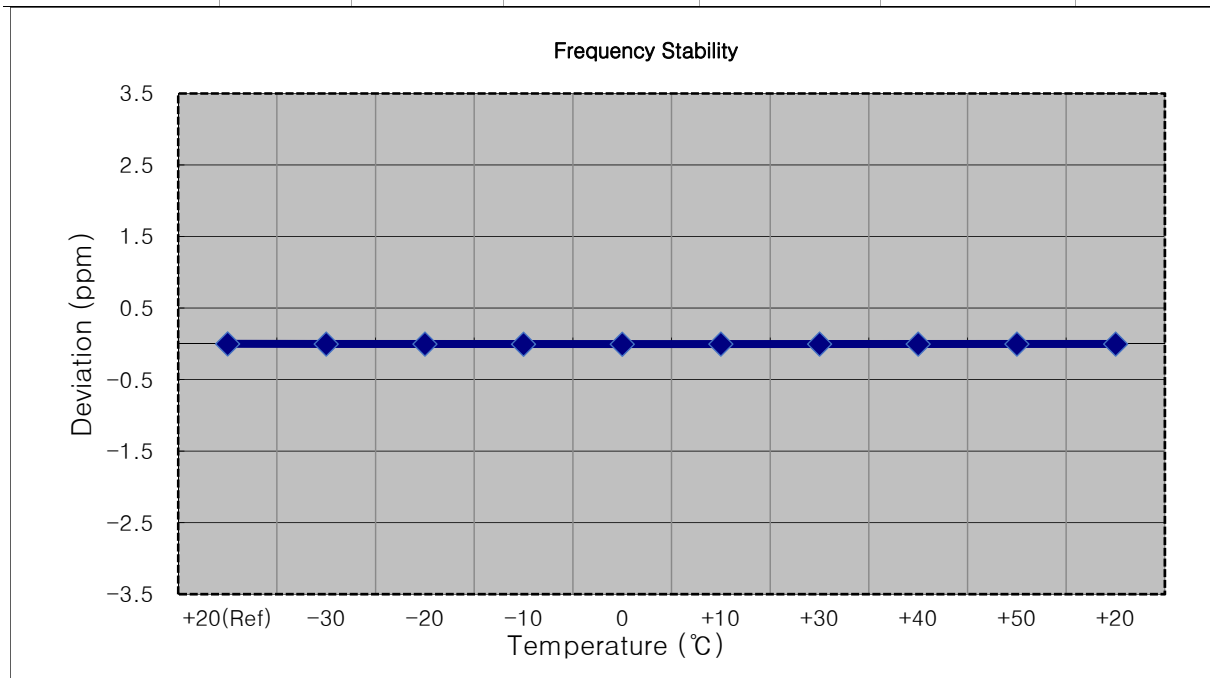
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1912,500,000 Hz
- ▣ CHANNEL: 26665 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1912 499 993	0.0	0.000 000	0.000
100 %		-30	1912 499 988	-5.4	0.000 000	-0.003
100 %		-20	1912 499 985	-7.8	0.000 000	-0.004
100 %		-10	1912 499 986	-6.6	0.000 000	-0.003
100 %		0	1912 499 986	-6.8	0.000 000	-0.004
100 %		+10	1912 499 987	-6.4	0.000 000	-0.003
100 %		+30	1912 499 987	-6.4	0.000 000	-0.003
100 %		+40	1912 499 985	-8.4	0.000 000	-0.004
100 %		+50	1912 499 988	-5.3	0.000 000	-0.003
Batt. Endpoint	3.300	+20	1912 499 987	-5.8	0.000 000	-0.003



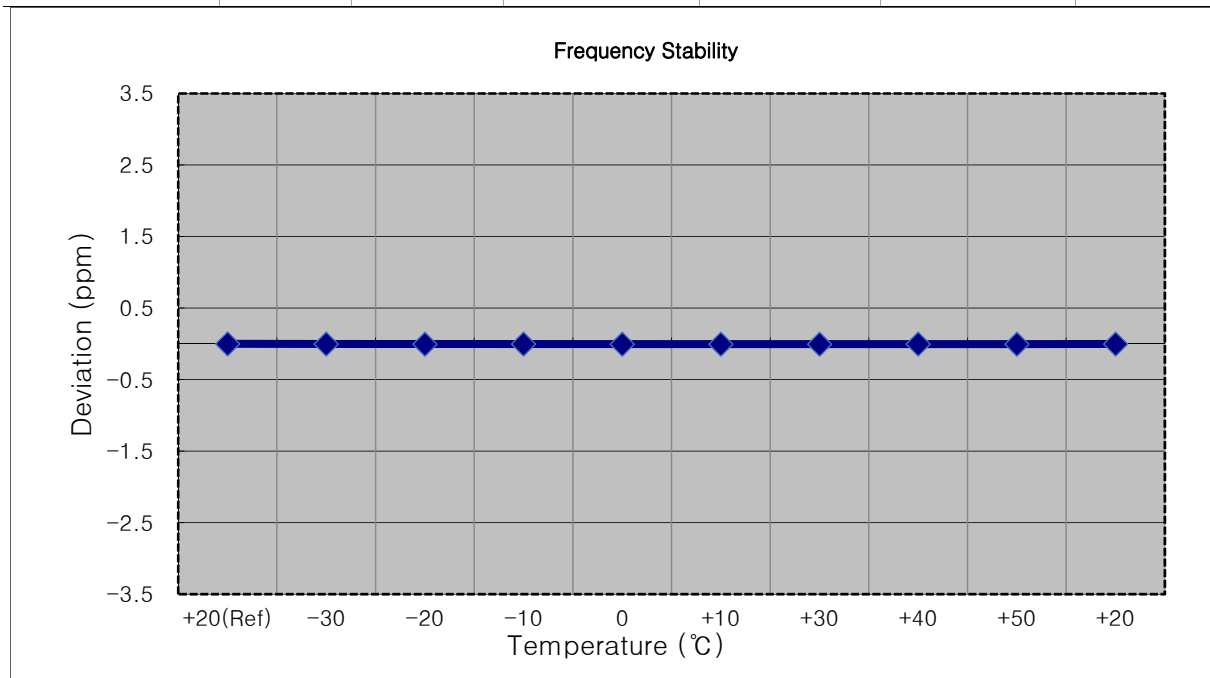
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1910,000,000 Hz</u>
CHANNEL:	<u>26640 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1909 999 996	0.0	0.000 000	0.000
100 %		-30	1909 999 992	-3.5	0.000 000	-0.002
100 %		-20	1909 999 990	-5.9	0.000 000	-0.003
100 %		-10	1909 999 988	-7.2	0.000 000	-0.004
100 %		0	1909 999 989	-7.0	0.000 000	-0.004
100 %		+10	1909 999 989	-6.1	0.000 000	-0.003
100 %		+30	1909 999 990	-5.4	0.000 000	-0.003
100 %		+40	1909 999 989	-6.2	0.000 000	-0.003
100 %		+50	1909 999 990	-5.1	0.000 000	-0.003
Batt. Endpoint	3.300	+20	1909 999 990	-5.1	0.000 000	-0.003



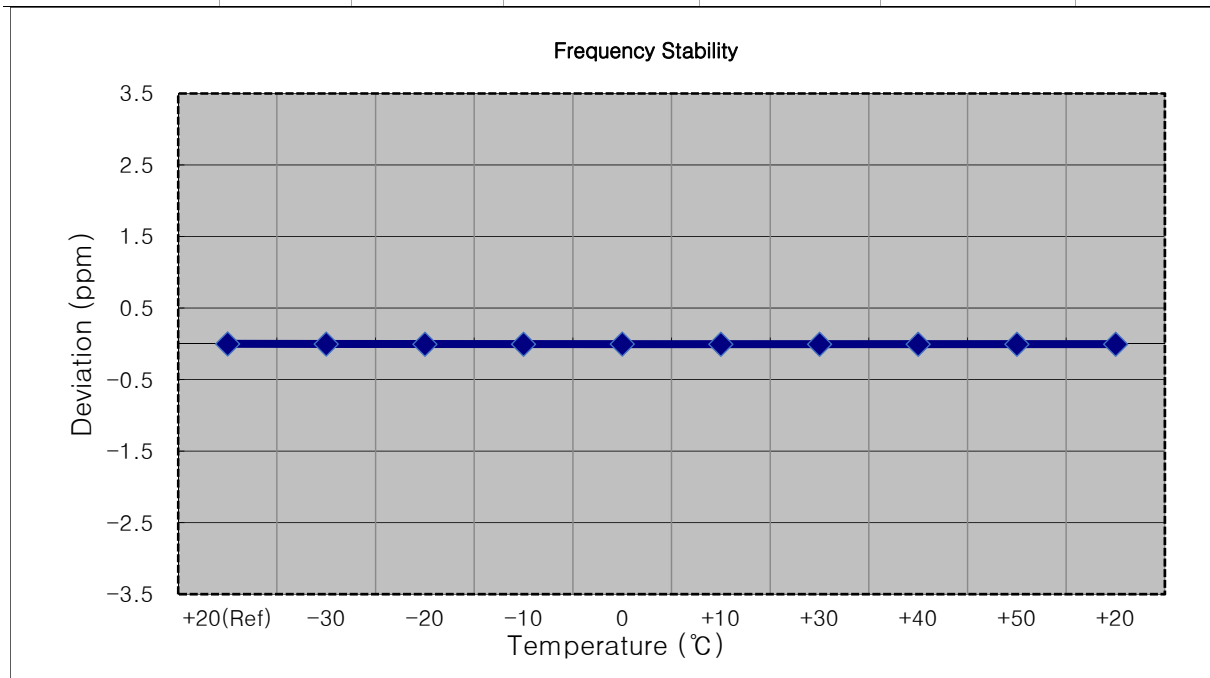
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1907,500,000 Hz
- ▣ CHANNEL: 26615 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1907 499 994	0.0	0.000 000	0.000
100 %		-30	1907 499 987	-6.5	0.000 000	-0.003
100 %		-20	1907 499 986	-8.0	0.000 000	-0.004
100 %		-10	1907 499 988	-6.0	0.000 000	-0.003
100 %		0	1907 499 986	-8.0	0.000 000	-0.004
100 %		+10	1907 499 986	-7.6	0.000 000	-0.004
100 %		+30	1907 499 985	-8.2	0.000 000	-0.004
100 %		+40	1907 499 989	-5.0	0.000 000	-0.003
100 %		+50	1907 499 986	-7.2	0.000 000	-0.004
Batt. Endpoint	3.300	+20	1907 499 988	-5.4	0.000 000	-0.003



MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1905,000,000 Hz</u>
CHANNEL:	<u>26590 (20 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1904 999 991	0.0	0.000 000	0.000
100 %		-30	1904 999 985	-6.5	0.000 000	-0.003
100 %		-20	1904 999 983	-8.4	0.000 000	-0.004
100 %		-10	1904 999 983	-8.6	0.000 000	-0.005
100 %		0	1904 999 985	-6.3	0.000 000	-0.003
100 %		+10	1904 999 981	-9.9	-0.000 001	-0.005
100 %		+30	1904 999 982	-9.2	0.000 000	-0.005
100 %		+40	1904 999 983	-8.4	0.000 000	-0.004
100 %		+50	1904 999 982	-8.9	0.000 000	-0.005
Batt. Endpoint	3.300	+20	1904 999 982	-8.7	0.000 000	-0.005



9. TEST DATA(Sub2-2 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
1850.7	LTE B25/B2 1.4 MHz	QPSK	-19.05	14.82	10.40	2.07	H	< 2.00	0.207	23.15	1	0
		16-QAM	-19.99	13.88	10.40	2.07	H		0.166	22.21		
		64-QAM	-21.09	12.78	10.40	2.07	H		0.129	21.11		
		256-QAM	-24.05	9.82	10.40	2.07	H		0.065	18.15		
1882.5		QPSK	-19.48	14.75	10.40	2.21	H		0.197	22.94	1	3
		16-QAM	-19.98	14.25	10.40	2.21	H		0.175	22.44		
		64-QAM	-21.21	13.02	10.40	2.21	H		0.132	21.21		
		256-QAM	-24.23	10.00	10.40	2.21	H		0.066	18.19		
1914.3		QPSK	-19.42	14.92	10.40	2.17	H		0.207	23.15	1	0
		16-QAM	-20.18	14.16	10.40	2.17	H		0.173	22.39		
		64-QAM	-20.97	13.37	10.40	2.17	H		0.145	21.60		
		256-QAM	-23.79	10.55	10.40	2.17	H		0.076	18.78		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1851.5	LTE B25/B2 3 MHz	QPSK	-19.10	14.77	10.40	2.07	H	< 2.00	0.204	23.10	1	8
		16-QAM	-19.69	14.18	10.40	2.07	H		0.178	22.51		
		64-QAM	-20.84	13.03	10.40	2.07	H		0.137	21.36		
		256-QAM	-24.04	9.83	10.40	2.07	H		0.065	18.16		
1882.5		QPSK	-19.57	14.66	10.40	2.21	H		0.193	22.85	1	14
		16-QAM	-20.34	13.89	10.40	2.21	H		0.161	22.08		
		64-QAM	-21.40	12.83	10.40	2.21	H		0.126	21.02		
		256-QAM	-24.58	9.65	10.40	2.21	H		0.061	17.84		
1913.5		QPSK	-18.91	15.43	10.40	2.17	H		0.232	23.66	1	0
		16-QAM	-19.50	14.84	10.40	2.17	H		0.203	23.07		
		64-QAM	-20.41	13.93	10.40	2.17	H		0.164	22.16		
		256-QAM	-23.46	10.88	10.40	2.17	H		0.081	19.11		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1852.5	LTE B25/B2 5 MHz	QPSK	-19.20	14.71	10.40	2.08	H	< 2.00	0.201	23.03	1	0
		16-QAM	-19.99	13.92	10.40	2.08	H		0.167	22.24		
		64-QAM	-21.15	12.76	10.40	2.08	H		0.128	21.08		
		256-QAM	-24.08	9.83	10.40	2.08	H		0.065	18.15		
1882.5		QPSK	-19.55	14.68	10.40	2.21	H		0.194	22.87	1	13
		16-QAM	-20.04	14.19	10.40	2.21	H		0.173	22.38		
		64-QAM	-21.25	12.98	10.40	2.21	H		0.131	21.17		
		256-QAM	-24.37	9.86	10.40	2.21	H		0.064	18.05		
1912.5		QPSK	-19.14	15.20	10.40	2.17	H		0.220	23.43	1	13
		16-QAM	-19.79	14.55	10.40	2.17	H		0.190	22.78		
		64-QAM	-20.52	13.82	10.40	2.17	H		0.160	22.05		
		256-QAM	-23.48	10.86	10.40	2.17	H		0.081	19.09		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1855.0	LTE B25/B2 10 MHz	QPSK	-19.15	14.76	10.40	2.08	H	< 2.00	0.203	23.08	1	49
		16-QAM	-20.09	13.82	10.40	2.08	H		0.164	22.14		
		64-QAM	-21.22	12.69	10.40	2.08	H		0.126	21.01		
		256-QAM	-24.08	9.83	10.40	2.08	H		0.065	18.15		
QPSK		-19.40	14.83	10.40	2.21	H	0.200		23.02	1	49	
16-QAM		-20.29	13.94	10.40	2.21	H	0.163		22.13			
64-QAM		-21.34	12.89	10.40	2.21	H	0.128		21.08			
256-QAM		-24.41	9.82	10.40	2.21	H	0.063		18.01			
1910.0		QPSK	-19.19	15.07	10.40	2.17	H		0.214	23.30	1	25
		16-QAM	-19.75	14.51	10.40	2.17	H		0.188	22.74		
		64-QAM	-20.56	13.70	10.40	2.17	H		0.156	21.93		
		256-QAM	-23.63	10.63	10.40	2.17	H		0.077	18.86		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1857.5	LTE B25/B2 15 MHz	QPSK	-19.30	14.66	10.40	2.10	H	< 2.00	0.198	22.96	1	0
		16-QAM	-20.09	13.87	10.40	2.10	H		0.165	22.17		
		64-QAM	-21.10	12.86	10.40	2.10	H		0.131	21.16		
		256-QAM	-24.55	9.41	10.40	2.10	H		0.059	17.71		
1882.5		QPSK	-19.68	14.55	10.40	2.21	H		0.188	22.74	1	38
		16-QAM	-20.37	13.86	10.40	2.21	H		0.160	22.05		
		64-QAM	-21.31	12.92	10.40	2.21	H		0.129	21.11		
		256-QAM	-24.54	9.69	10.40	2.21	H		0.061	17.88		
1907.5		QPSK	-19.95	14.31	10.40	2.17	H		0.179	22.54	1	74
		16-QAM	-20.61	13.65	10.40	2.17	H		0.154	21.88		
		64-QAM	-21.57	12.69	10.40	2.17	H		0.124	20.92		
		256-QAM	-24.34	9.92	10.40	2.17	H		0.065	18.15		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured	Substitute	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
1860.0	LTE B25/B2 20 MHz	QPSK	-19.36	14.60	10.40	2.10	H	< 2.00	0.195	22.90	1	0
		16-QAM	-20.20	13.76	10.40	2.10	H		0.161	22.06		
		64-QAM	-21.16	12.80	10.40	2.10	H		0.129	21.10		
		256-QAM	-24.41	9.55	10.40	2.10	H		0.061	17.85		
1882.5		QPSK	-19.69	14.54	10.40	2.21	H		0.187	22.73	1	50
		16-QAM	-20.37	13.86	10.40	2.21	H		0.160	22.05		
		64-QAM	-21.69	12.54	10.40	2.21	H		0.118	20.73		
		256-QAM	-24.54	9.69	10.40	2.21	H		0.061	17.88		
1905.0		QPSK	-19.59	14.64	10.40	2.19	H		0.193	22.85	1	99
		16-QAM	-20.48	13.75	10.40	2.19	H		0.157	21.96		
		64-QAM	-20.99	13.24	10.40	2.19	H		0.140	21.45		
		256-QAM	-24.22	10.01	10.40	2.19	H		0.066	18.22		

9.2 RADIATED SPURIOUS EMISSIONS

■ MODE: LTE B25/B2
 ■ MODULATION SIGNAL: 3 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
26055 (1851.5)	3 703.00	-40.42	12.28	-57.66	3.08	V	-48.46	1	8
		-40.64		-57.88		H	-48.68		
	5 554.50	-42.81	13.03	-55.25	3.88	V	-46.10		
		-43.19		-55.63		H	-46.48		
	7 406.00	-44.44	10.79	-47.81	4.57	V	-41.59		
		-45.19		-48.56		H	-42.34		
26365 (1882.5)	3 765.00	-40.91	12.22	-56.79	3.11	V	-47.68	1	14
		-41.27		-57.15		H	-48.04		
	5 647.50	-43.26	13.12	-55.82	3.96	V	-46.66		
		-43.24		-55.80		H	-46.64		
	7 530.00	-44.48	10.85	-47.68	4.60	V	-41.43		
		-44.51		-47.71		H	-41.46		
26675 (1913.5)	3 827.00	-41.83	12.16	-58.75	3.18	V	-49.77	1	0
		-41.67		-58.59		H	-49.61		
	5 740.50	-42.99	13.01	-55.39	3.99	V	-46.37		
		-41.88		-54.28		H	-45.26		
	7 654.00	-45.12	11.25	-49.21	4.69	V	-42.65		
		-44.09		-48.18		H	-41.62		

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)	Limit (dB)
LTE B25/2	1.4 MHz	1882.5	QPSK	6	0	5.66	13.00
			16-QAM			6.40	
			64-QAM			6.80	
			256-QAM			6.96	
	3 MHz		QPSK	15		5.54	
			16-QAM			6.45	
			64-QAM			6.79	
			256-QAM			6.90	
	5 MHz		QPSK	25		5.61	
			16-QAM			6.45	
			64-QAM			6.76	
			256-QAM			6.91	
	10 MHz		QPSK	50		5.70	
			16-QAM			6.46	
			64-QAM			6.75	
			256-QAM			6.88	
	15 MHz		QPSK	75		5.61	
			16-QAM			6.43	
			64-QAM			6.73	
			256-QAM			6.89	
	20 MHz		QPSK	100		5.57	
			16-QAM			6.41	
			64-QAM			6.75	
			256-QAM			6.88	

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
LTE B25/2	1.4 MHz	1882.5	QPSK	6	0	1.0940
			16-QAM			1.1033
			64-QAM			1.0972
			256-QAM			1.1009
	3 MHz		QPSK	15		2.7131
			16-QAM			2.7115
			64-QAM			2.7038
			256-QAM			2.7128
	5 MHz		QPSK	25		4.5130
			16-QAM			4.5268
			64-QAM			4.5220
			256-QAM			4.5194
	10 MHz		QPSK	50		9.0079
			16-QAM			9.0028
			64-QAM			8.9972
			256-QAM			8.9929
	15 MHz		QPSK	75		13.502
			16-QAM			13.519
			64-QAM			13.490
			256-QAM			13.495
	20 MHz		QPSK	100		17.953
			16-QAM			17.993
			64-QAM			17.929
			256-QAM			17.974

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)
LTE B25/2	1.4	1850.7	3.1606	27.976	-61.538	-33.562	-13.00
		1882.5	3.7488	27.976	-61.977	-34.001	
		1914.3	3.7289	27.976	-61.408	-33.432	
	3	1851.5	2.6820	27.976	-61.153	-33.177	
		1882.5	2.7020	27.976	-61.870	-33.894	
		1913.5	3.7089	27.976	-62.056	-34.080	
	5	1852.5	2.3530	27.976	-62.161	-34.185	
		1882.5	2.6820	27.976	-62.231	-34.255	
		1912.5	3.6491	27.976	-62.362	-34.386	
	10	1855.0	7.2782	28.591	-61.149	-32.558	
		1882.5	6.0619	28.591	-61.981	-33.390	
		1910.0	3.6691	27.976	-62.438	-34.462	
	15	1857.5	3.1406	27.976	-61.592	-33.616	
		1882.5	5.9622	28.591	-61.895	-33.304	
		1907.5	3.1706	27.976	-61.872	-33.896	
	20	1860.0	3.6790	27.976	-60.851	-32.875	
		1882.5	3.6890	27.976	-61.287	-33.311	
		1905.0	6.4906	28.591	-62.164	-33.573	

Note:

1. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Ext. 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

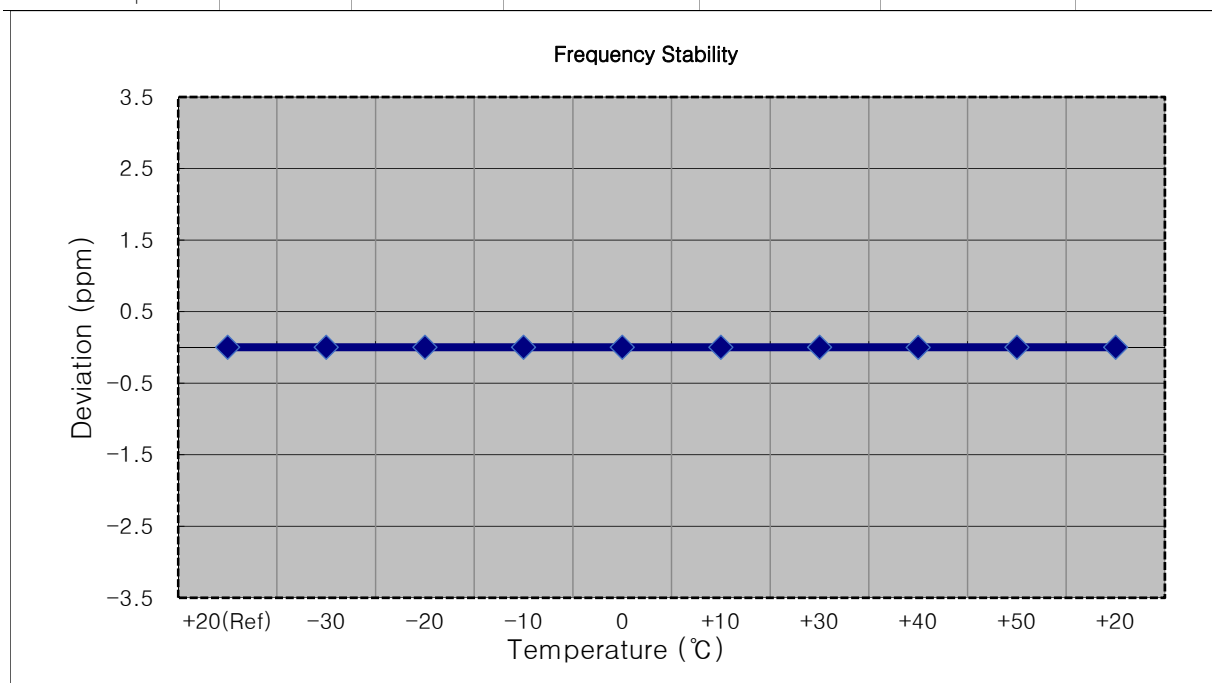
9.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Section 11.4.

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

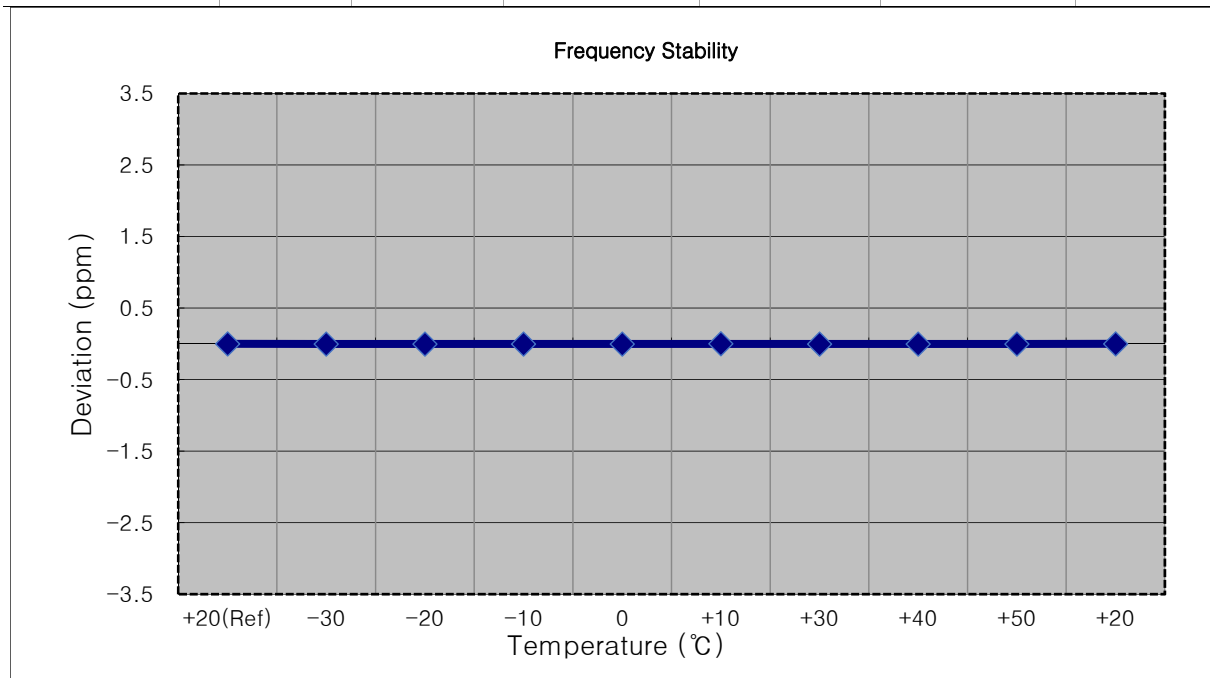
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1850,700,000 Hz
- ▣ CHANNEL: 26047 (1.4 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage	Power	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	
100 %	3.880	+20(Ref)	1850 700 002	0.0	0.000 000	0.000
100 %		-30	1850 700 004	1.8	0.000 000	0.001
100 %		-20	1850 700 004	2.3	0.000 000	0.001
100 %		-10	1850 700 004	2.6	0.000 000	0.001
100 %		0	1850 700 005	2.7	0.000 000	0.001
100 %		+10	1850 700 005	2.7	0.000 000	0.001
100 %		+30	1850 700 005	3.6	0.000 000	0.002
100 %		+40	1850 700 000	-2.1	0.000 000	-0.001
100 %		+50	1850 700 005	2.8	0.000 000	0.002
Batt. Endpoint	3.300	+20	1850 700 005	2.9	0.000 000	0.002



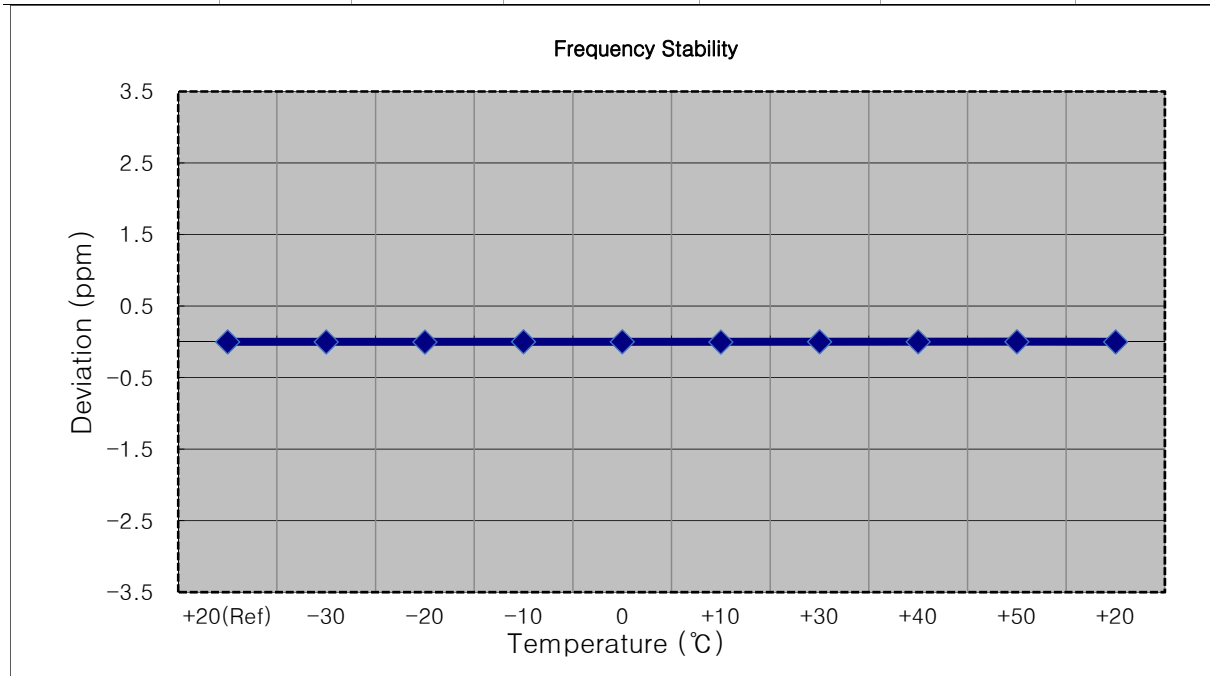
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1851,500,000 Hz
- ▣ CHANNEL: 26055 (3 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1851 499 995	0.0	0.000 000	0.000
100 %		-30	1851 499 991	-3.9	0.000 000	-0.002
100 %		-20	1851 499 990	-5.3	0.000 000	-0.003
100 %		-10	1851 499 991	-4.7	0.000 000	-0.003
100 %		0	1851 499 992	-3.6	0.000 000	-0.002
100 %		+10	1851 499 998	3.1	0.000 000	0.002
100 %		+30	1851 499 991	-4.4	0.000 000	-0.002
100 %		+40	1851 499 990	-5.7	0.000 000	-0.003
100 %		+50	1851 499 992	-3.3	0.000 000	-0.002
Batt. Endpoint	3.300	+20	1851 499 993	-2.2	0.000 000	-0.001



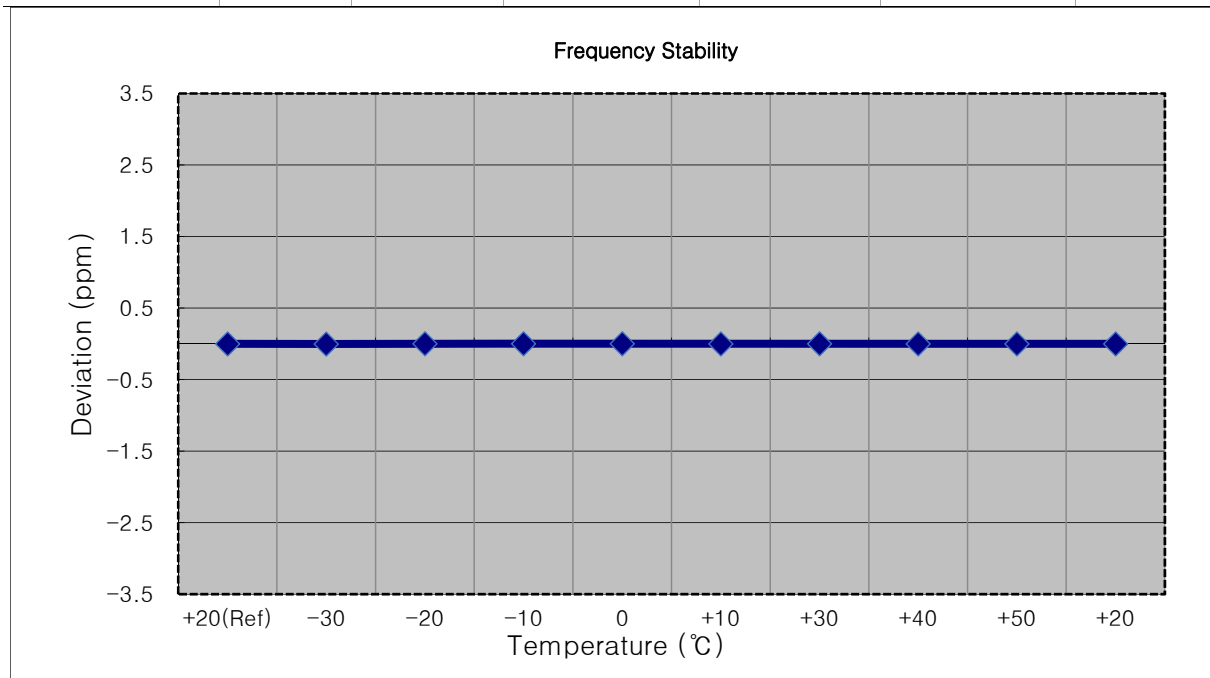
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1852,500,000 Hz
- ▣ CHANNEL: 26065 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1852 500 003	0.0	0.000 000	0.000
100 %		-30	1852 500 001	-1.7	0.000 000	-0.001
100 %		-20	1852 499 999	-4.3	0.000 000	-0.002
100 %		-10	1852 500 006	2.9	0.000 000	0.002
100 %		0	1852 500 005	1.9	0.000 000	0.001
100 %		+10	1852 499 999	-3.5	0.000 000	-0.002
100 %		+30	1852 500 006	3.2	0.000 000	0.002
100 %		+40	1852 500 006	2.6	0.000 000	0.001
100 %		+50	1852 500 006	2.6	0.000 000	0.001
Batt. Endpoint	3.300	+20	1852 500 001	-1.5	0.000 000	-0.001



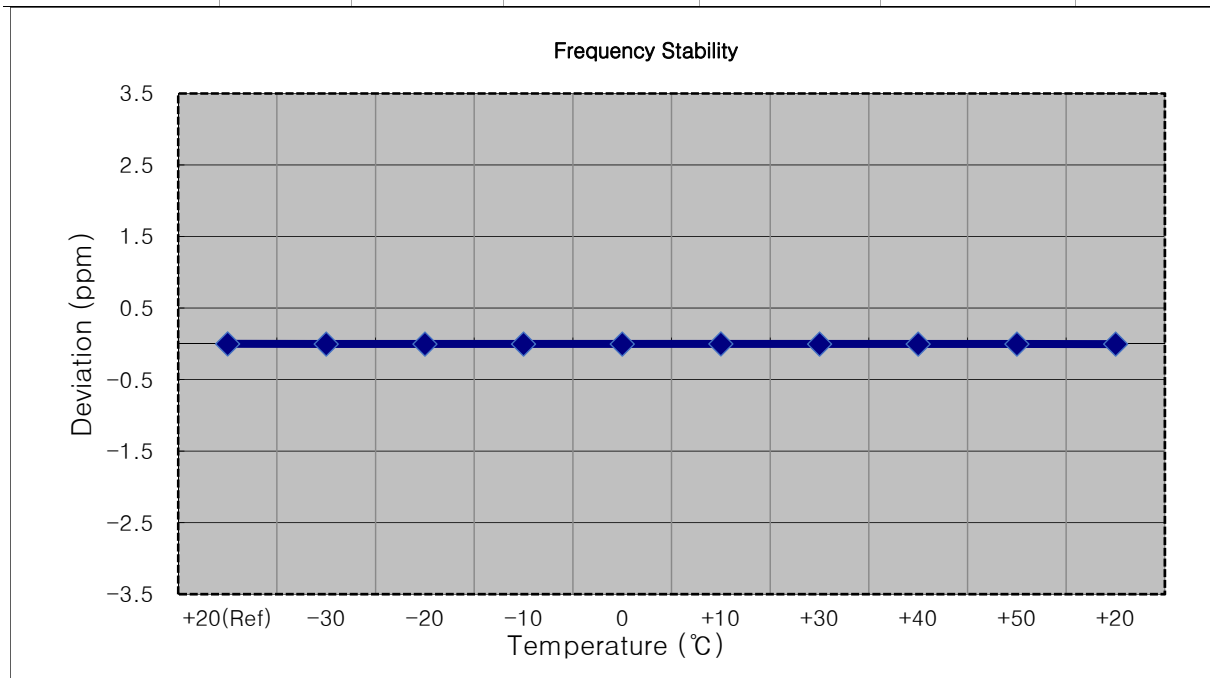
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1855,000,000 Hz</u>
CHANNEL:	<u>26090 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1855 000 002	0.0	0.000 000	0.000
100 %		-30	1855 000 000	-2.4	0.000 000	-0.001
100 %		-20	1855 000 005	2.5	0.000 000	0.001
100 %		-10	1855 000 005	2.6	0.000 000	0.001
100 %		0	1855 000 004	1.9	0.000 000	0.001
100 %		+10	1855 000 001	-1.5	0.000 000	-0.001
100 %		+30	1855 000 005	2.2	0.000 000	0.001
100 %		+40	1855 000 000	-2.0	0.000 000	-0.001
100 %		+50	1855 000 004	1.6	0.000 000	0.001
Batt. Endpoint	3.300	+20	1855 000 001	-1.5	0.000 000	-0.001



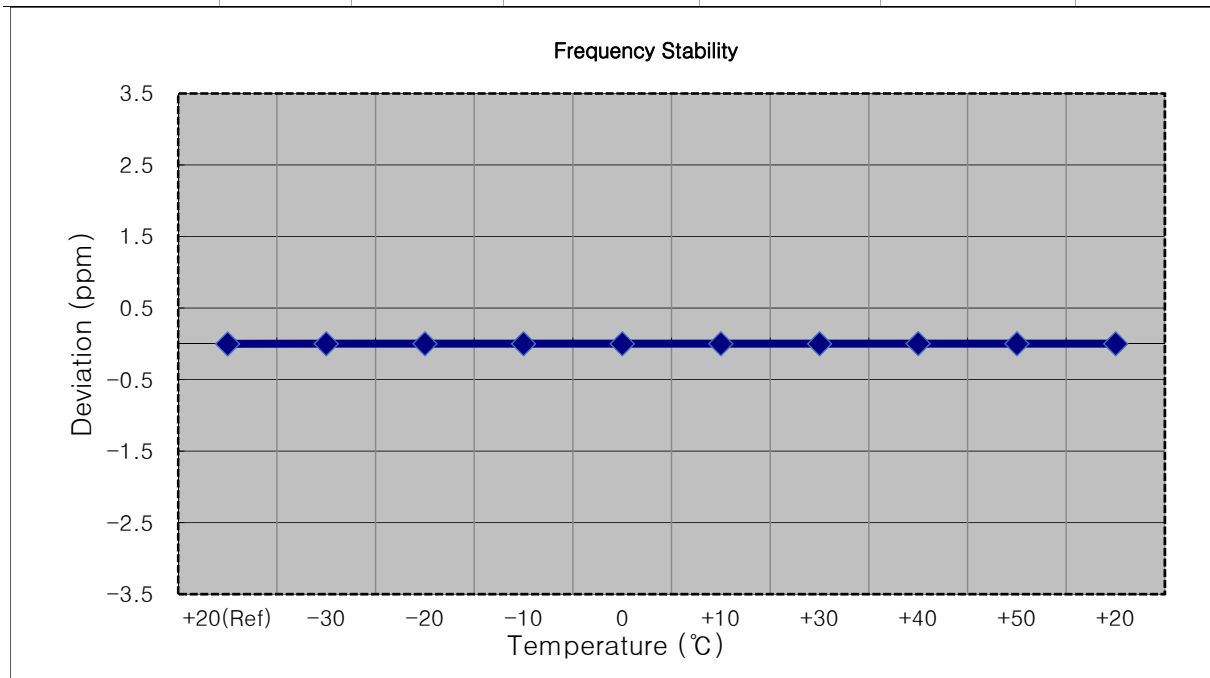
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1857,500,000 Hz
- ▣ CHANNEL: 26115 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1857 499 997	0.0	0.000 000	0.000
100 %		-30	1857 499 993	-3.5	0.000 000	-0.002
100 %		-20	1857 499 993	-4.0	0.000 000	-0.002
100 %		-10	1857 499 994	-2.6	0.000 000	-0.001
100 %		0	1857 499 992	-4.6	0.000 000	-0.002
100 %		+10	1857 499 998	1.0	0.000 000	0.001
100 %		+30	1857 499 994	-2.9	0.000 000	-0.002
100 %		+40	1857 499 993	-3.7	0.000 000	-0.002
100 %		+50	1857 499 994	-2.5	0.000 000	-0.001
Batt. Endpoint	3.300	+20	1857 499 991	-5.4	0.000 000	-0.003



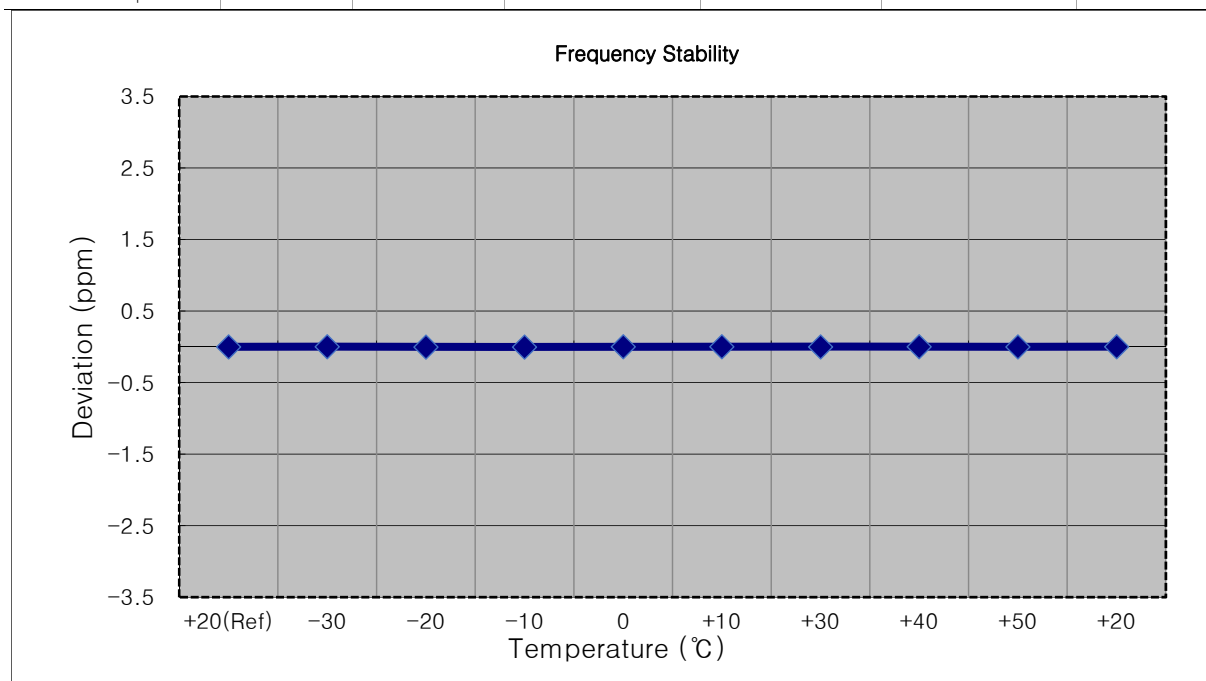
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1860,000,000 Hz
- ▣ CHANNEL: 26140 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1860 000 005	0.0	0.000 000	0.000
100 %		-30	1860 000 010	4.2	0.000 000	0.002
100 %		-20	1860 000 011	5.2	0.000 000	0.003
100 %		-10	1860 000 010	4.7	0.000 000	0.003
100 %		0	1860 000 009	3.4	0.000 000	0.002
100 %		+10	1860 000 011	5.2	0.000 000	0.003
100 %		+30	1860 000 010	4.8	0.000 000	0.003
100 %		+40	1860 000 012	6.2	0.000 000	0.003
100 %		+50	1860 000 009	3.2	0.000 000	0.002
Batt. Endpoint	3.300	+20	1860 000 010	4.4	0.000 000	0.002



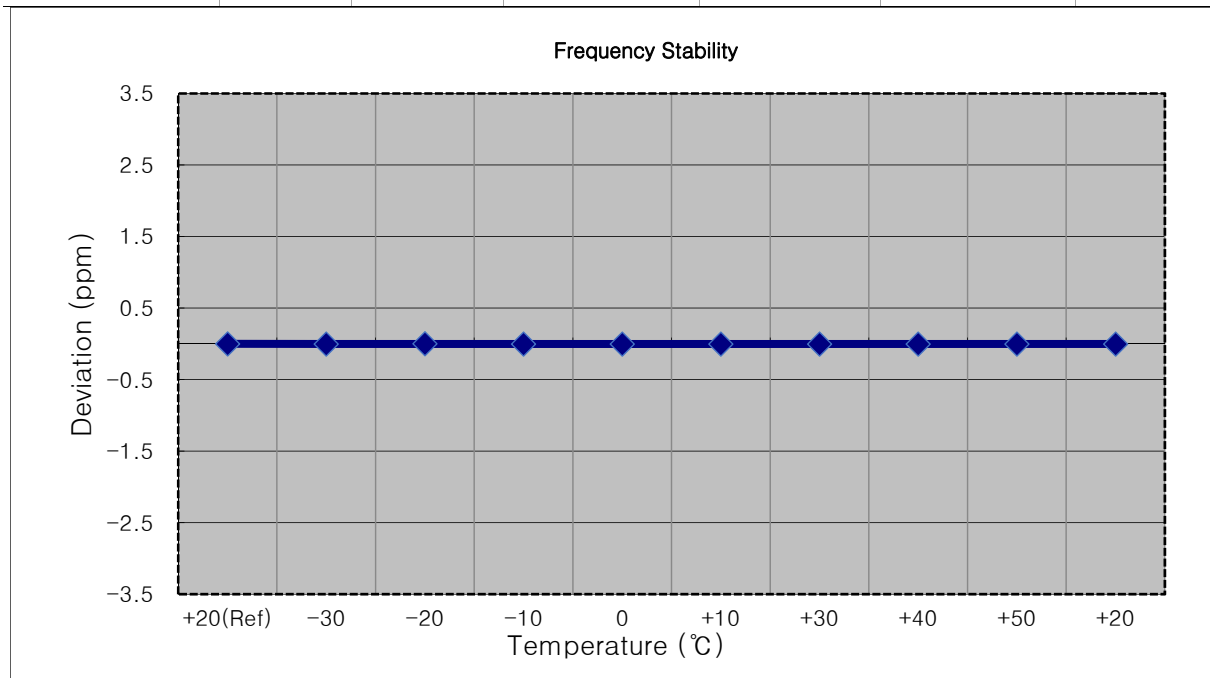
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1882,500,000 Hz</u>
CHANNEL:	<u>26365 (1.4 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 500 002	0.0	0.000 000	0.000
100 %		-30	1882 500 004	2.0	0.000 000	0.001
100 %		-20	1882 499 998	-3.9	0.000 000	-0.002
100 %		-10	1882 499 999	-2.5	0.000 000	-0.001
100 %		0	1882 500 005	3.9	0.000 000	0.002
100 %		+10	1882 500 006	4.1	0.000 000	0.002
100 %		+30	1882 500 003	1.8	0.000 000	0.001
100 %		+40	1882 500 005	3.0	0.000 000	0.002
100 %		+50	1882 500 003	1.7	0.000 000	0.001
Batt. Endpoint	3.300	+20	1882 500 004	2.2	0.000 000	0.001



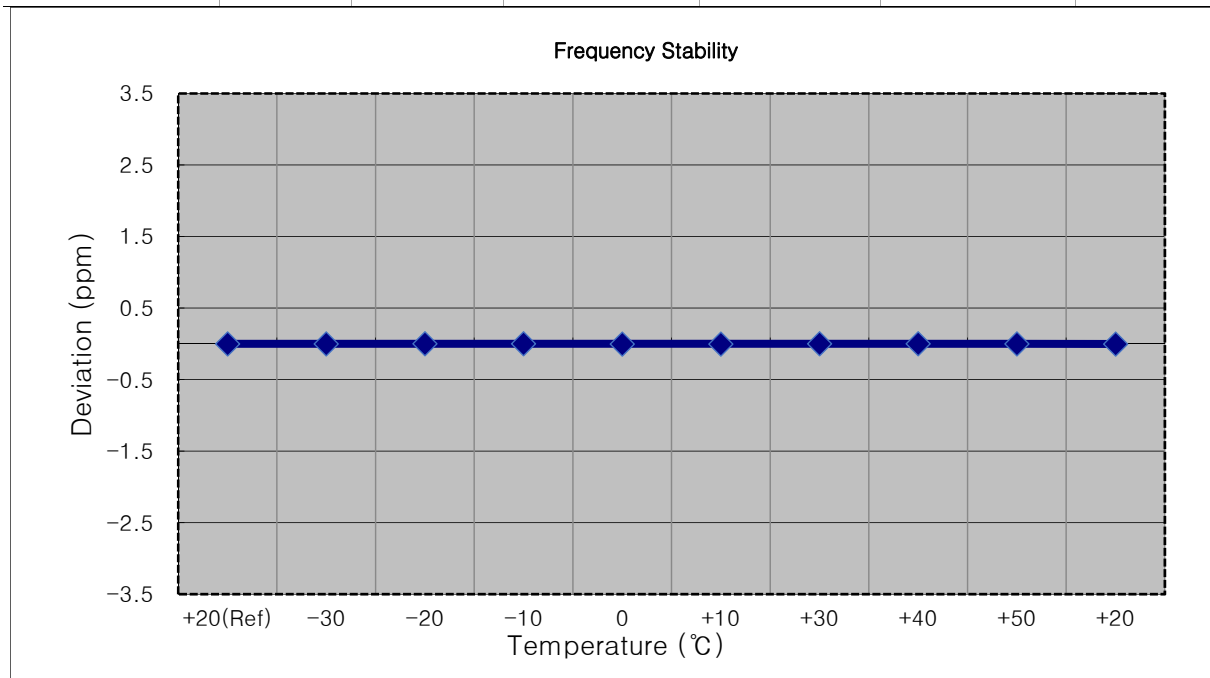
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1882,500,000 Hz
- ▣ CHANNEL: 26365 (3 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 500 002	0.0	0.000 000	0.000
100 %		-30	1882 499 999	-3.6	0.000 000	-0.002
100 %		-20	1882 500 005	2.6	0.000 000	0.001
100 %		-10	1882 499 998	-4.1	0.000 000	-0.002
100 %		0	1882 499 996	-6.1	0.000 000	-0.003
100 %		+10	1882 499 997	-4.7	0.000 000	-0.002
100 %		+30	1882 499 996	-5.9	0.000 000	-0.003
100 %		+40	1882 499 998	-3.8	0.000 000	-0.002
100 %		+50	1882 499 997	-4.9	0.000 000	-0.003
Batt. Endpoint	3.300	+20	1882 500 000	-2.4	0.000 000	-0.001



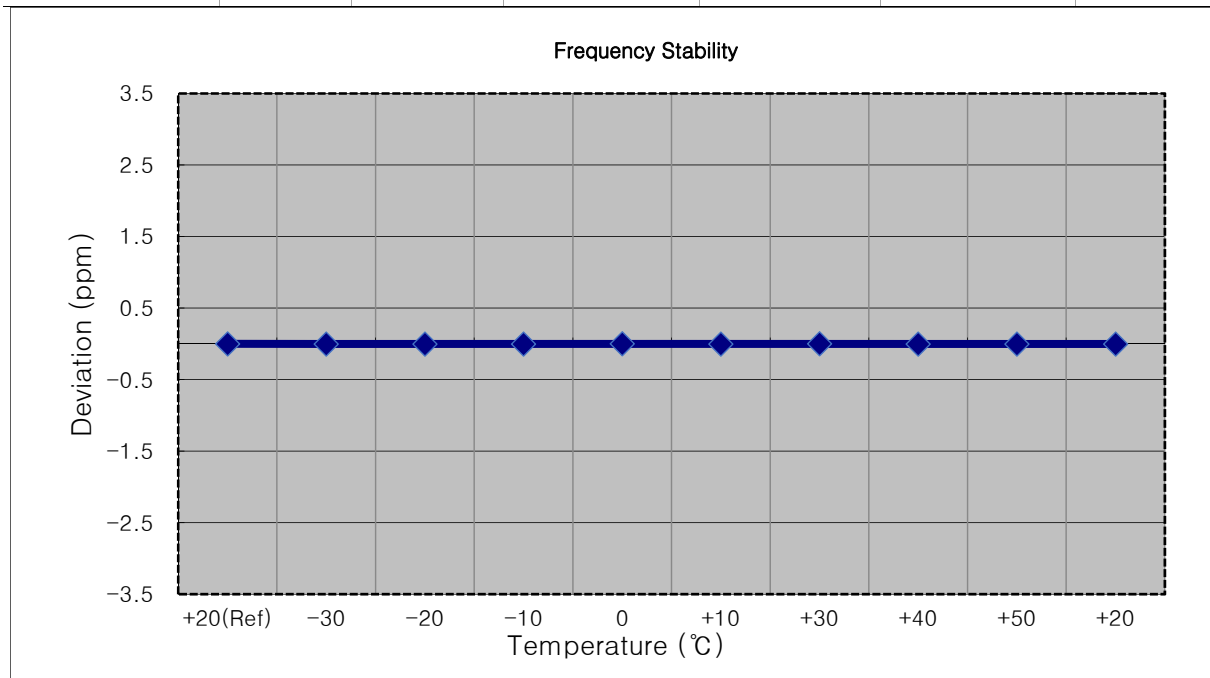
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1882,500,000 Hz
- ▣ CHANNEL: 26365 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 500 002	0.0	0.000 000	0.000
100 %		-30	1882 500 000	-2.3	0.000 000	-0.001
100 %		-20	1882 500 006	3.7	0.000 000	0.002
100 %		-10	1882 500 004	2.0	0.000 000	0.001
100 %		0	1882 499 999	-2.9	0.000 000	-0.002
100 %		+10	1882 499 998	-4.1	0.000 000	-0.002
100 %		+30	1882 500 007	4.2	0.000 000	0.002
100 %		+40	1882 500 007	4.8	0.000 000	0.003
100 %		+50	1882 500 000	-2.2	0.000 000	-0.001
Batt. Endpoint	3.300	+20	1882 499 998	-4.4	0.000 000	-0.002



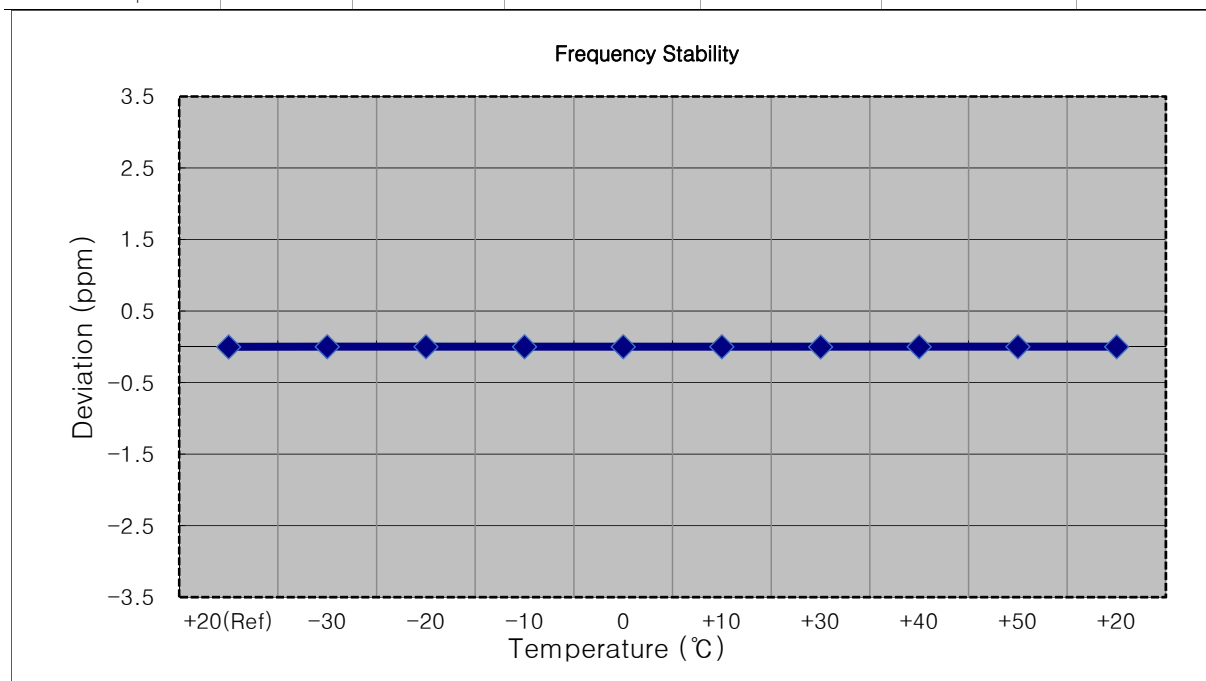
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1882,500,000 Hz
- ▣ CHANNEL: 26365 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 499 998	0.0	0.000 000	0.000
100 %		-30	1882 499 993	-4.6	0.000 000	-0.002
100 %		-20	1882 499 994	-4.0	0.000 000	-0.002
100 %		-10	1882 499 992	-5.8	0.000 000	-0.003
100 %		0	1882 500 000	2.0	0.000 000	0.001
100 %		+10	1882 499 995	-3.1	0.000 000	-0.002
100 %		+30	1882 500 000	2.0	0.000 000	0.001
100 %		+40	1882 499 994	-3.6	0.000 000	-0.002
100 %		+50	1882 499 994	-4.1	0.000 000	-0.002
Batt. Endpoint	3.300	+20	1882 499 994	-4.1	0.000 000	-0.002



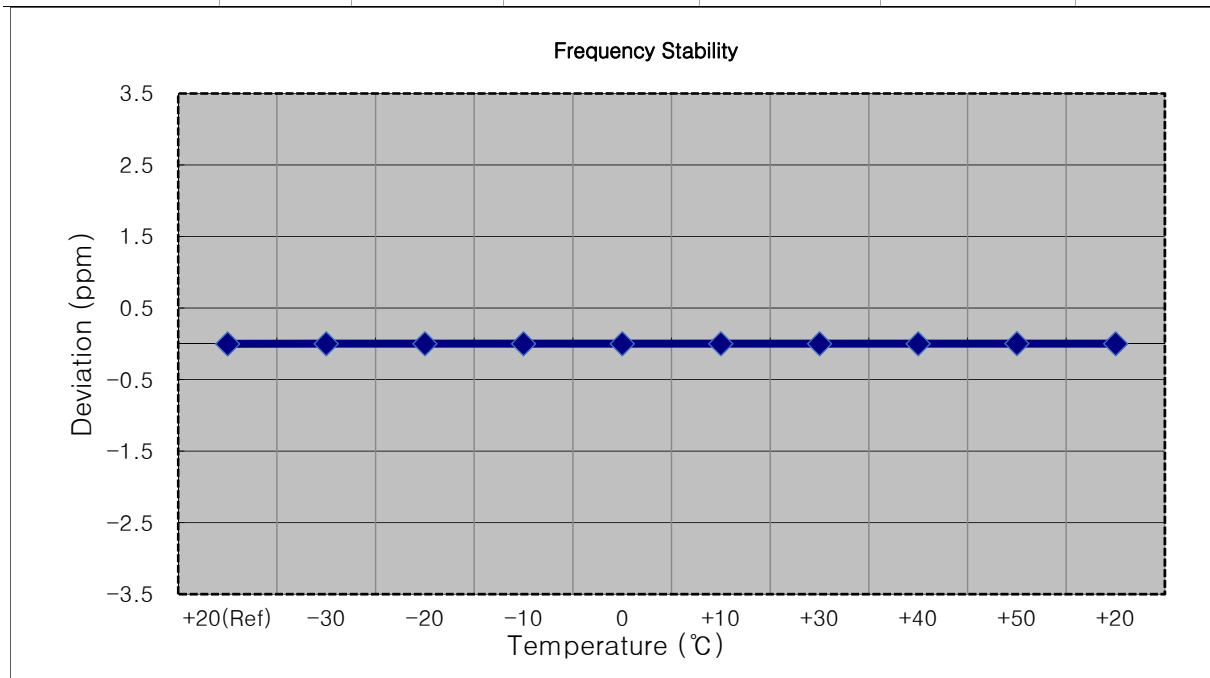
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1882,500,000 Hz</u>
CHANNEL:	<u>26365 (15 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 500 006	0.0	0.000 000	0.000
100 %		-30	1882 500 011	5.7	0.000 000	0.003
100 %		-20	1882 500 010	4.5	0.000 000	0.002
100 %		-10	1882 500 010	4.7	0.000 000	0.002
100 %		0	1882 500 009	3.2	0.000 000	0.002
100 %		+10	1882 500 008	2.5	0.000 000	0.001
100 %		+30	1882 500 007	1.7	0.000 000	0.001
100 %		+40	1882 500 010	4.3	0.000 000	0.002
100 %		+50	1882 500 009	3.3	0.000 000	0.002
Batt. Endpoint	3.300	+20	1882 500 008	2.8	0.000 000	0.001



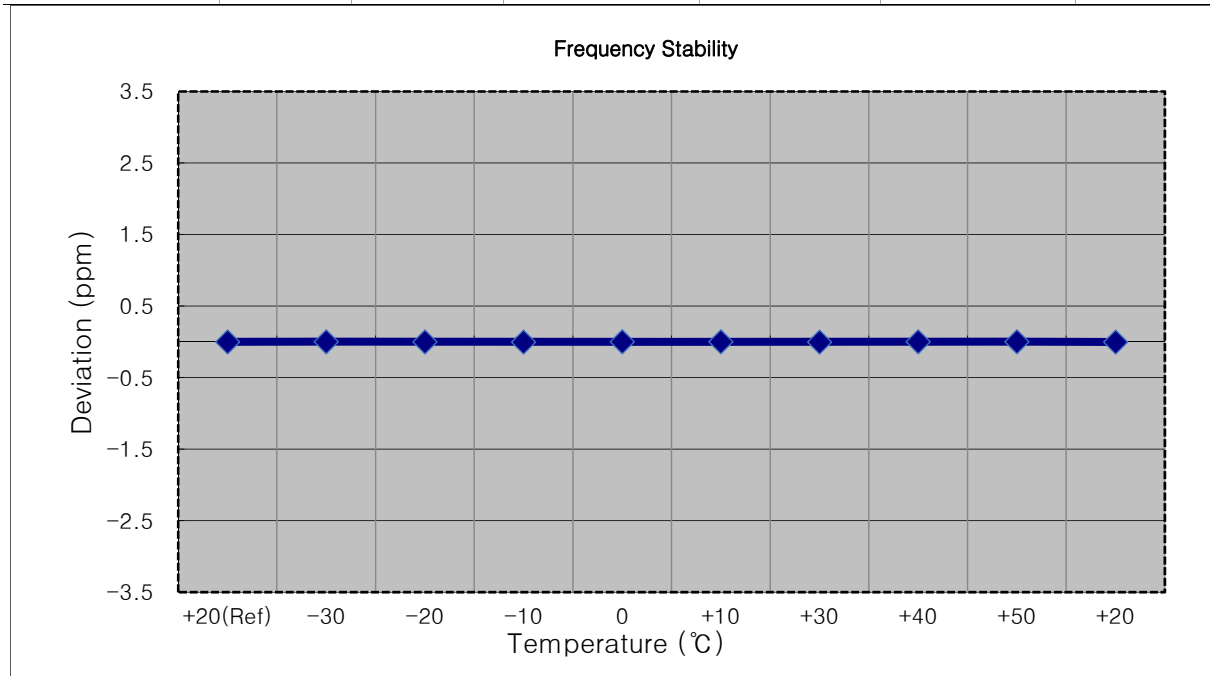
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1882,500,000 Hz
- ▣ CHANNEL: 26365 (20 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1882 500 004	0.0	0.000 000	0.000
100 %		-30	1882 500 009	5.2	0.000 000	0.003
100 %		-20	1882 500 007	3.0	0.000 000	0.002
100 %		-10	1882 500 007	2.7	0.000 000	0.001
100 %		0	1882 500 009	4.6	0.000 000	0.002
100 %		+10	1882 500 010	5.3	0.000 000	0.003
100 %		+30	1882 500 007	3.2	0.000 000	0.002
100 %		+40	1882 500 008	4.2	0.000 000	0.002
100 %		+50	1882 500 011	6.3	0.000 000	0.003
Batt. Endpoint	3.300	+20	1882 500 007	3.1	0.000 000	0.002



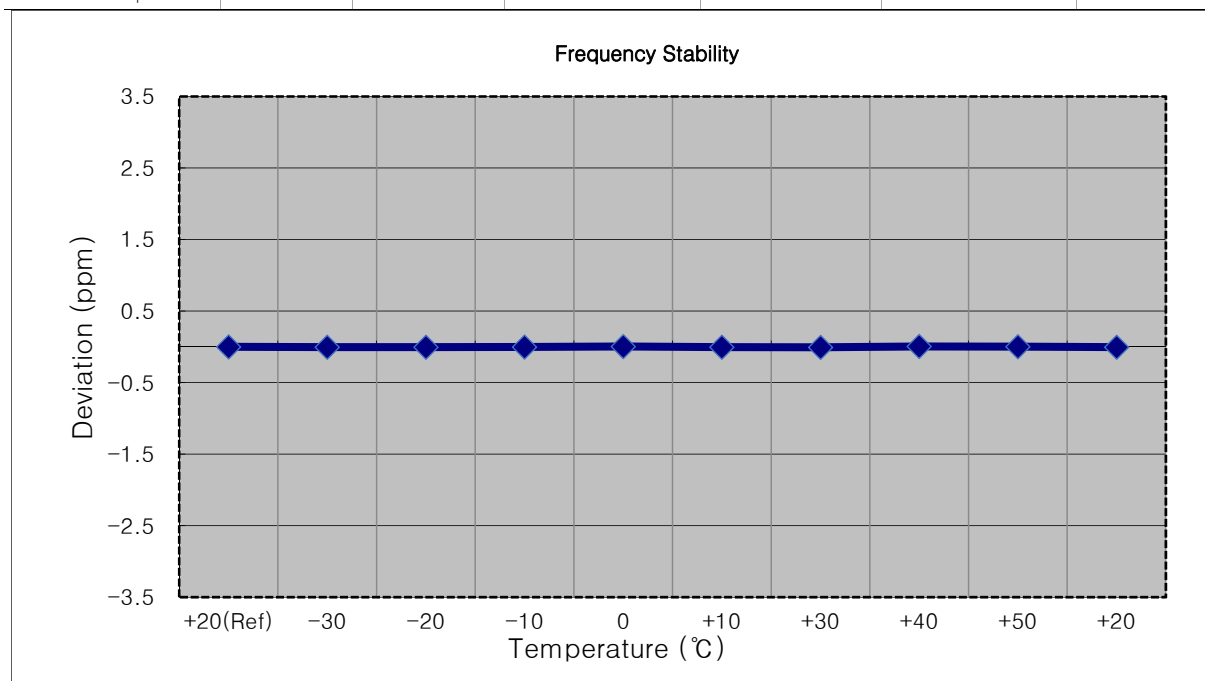
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1914,300,000 Hz
- ▣ CHANNEL: 26683 (1.4 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1914 299 999	0.0	0.000 000	0.000
100 %		-30	1914 300 003	4.5	0.000 000	0.002
100 %		-20	1914 299 997	-1.7	0.000 000	-0.001
100 %		-10	1914 299 996	-2.7	0.000 000	-0.001
100 %		0	1914 300 002	3.0	0.000 000	0.002
100 %		+10	1914 300 004	5.2	0.000 000	0.003
100 %		+30	1914 299 995	-3.5	0.000 000	-0.002
100 %		+40	1914 300 001	2.5	0.000 000	0.001
100 %		+50	1914 300 002	2.9	0.000 000	0.002
Batt. Endpoint	3.300	+20	1914 299 996	-2.5	0.000 000	-0.001



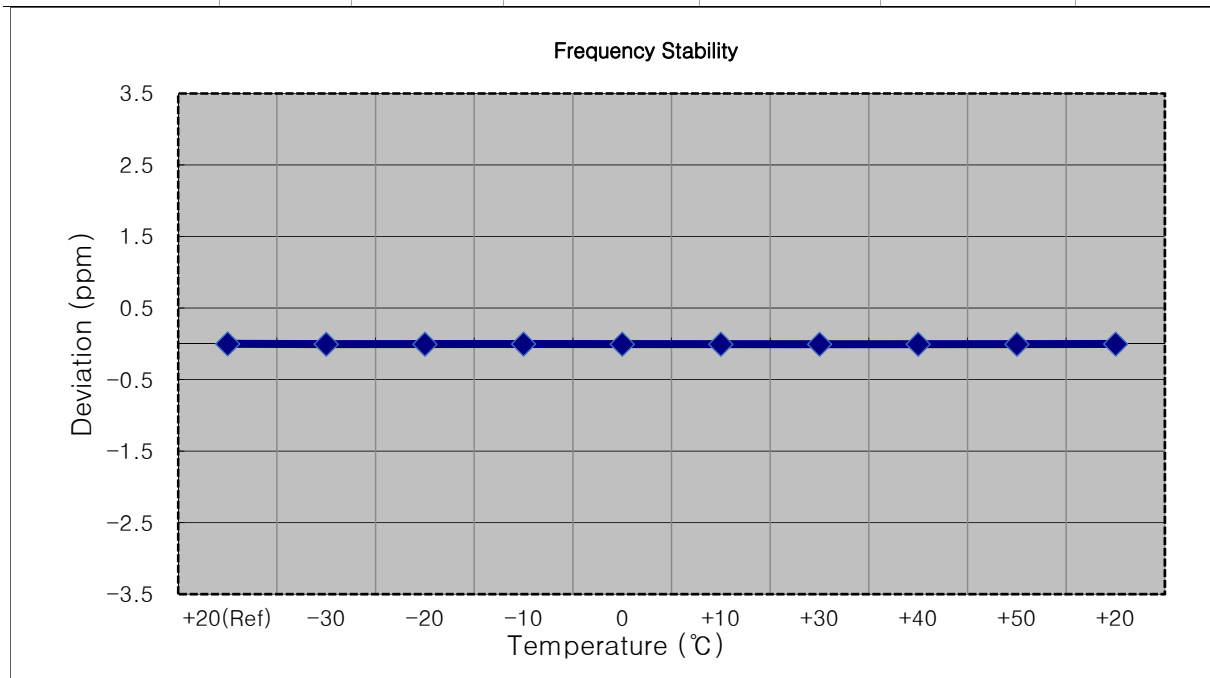
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1913,500,000 Hz</u>
CHANNEL:	<u>26675 (3 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1913 500 009	0.0	0.000 000	0.000
100 %		-30	1913 500 002	-7.2	0.000 000	-0.004
100 %		-20	1913 500 001	-7.8	0.000 000	-0.004
100 %		-10	1913 500 003	-6.3	0.000 000	-0.003
100 %		0	1913 500 017	8.0	0.000 000	0.004
100 %		+10	1913 500 000	-9.3	0.000 000	-0.005
100 %		+30	1913 499 998	-11.0	-0.000 001	-0.006
100 %		+40	1913 500 020	10.9	0.000 001	0.006
100 %		+50	1913 500 015	5.6	0.000 000	0.003
Batt. Endpoint	3.300	+20	1913 500 000	-9.4	0.000 000	-0.005



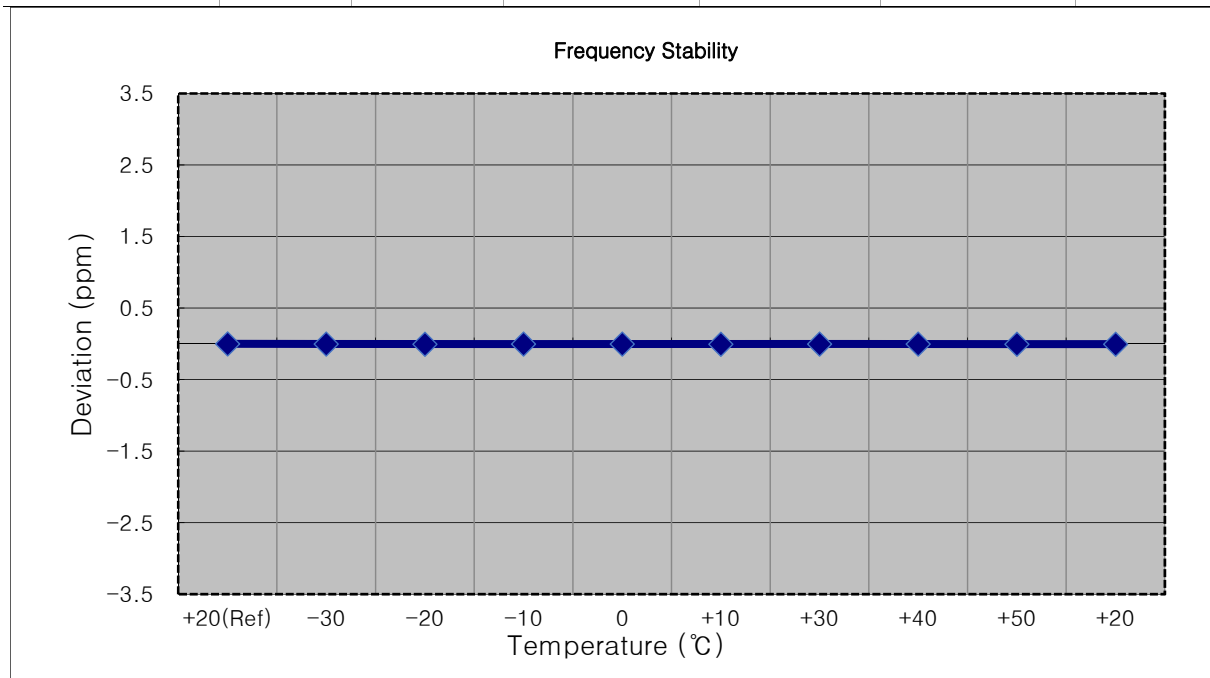
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1912,500,000 Hz
- ▣ CHANNEL: 26665 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1912 499 995	0.0	0.000 000	0.000
100 %		-30	1912 499 988	-6.7	0.000 000	-0.004
100 %		-20	1912 499 987	-7.7	0.000 000	-0.004
100 %		-10	1912 499 989	-5.9	0.000 000	-0.003
100 %		0	1912 499 987	-7.4	0.000 000	-0.004
100 %		+10	1912 499 987	-7.8	0.000 000	-0.004
100 %		+30	1912 499 987	-7.1	0.000 000	-0.004
100 %		+40	1912 499 985	-9.2	0.000 000	-0.005
100 %		+50	1912 499 988	-7.0	0.000 000	-0.004
Batt. Endpoint	3.300	+20	1912 499 990	-5.0	0.000 000	-0.003



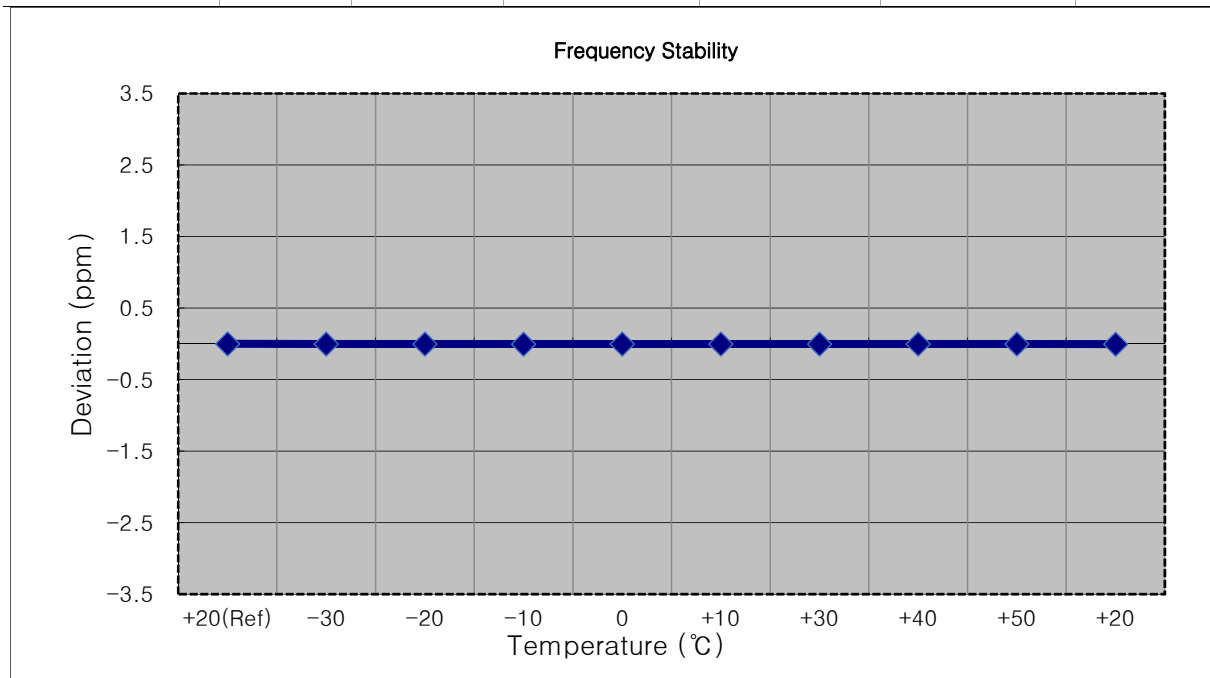
MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1910,000,000 Hz</u>
CHANNEL:	<u>26640 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1909 999 997	0.0	0.000 000	0.000
100 %		-30	1909 999 991	-6.0	0.000 000	-0.003
100 %		-20	1909 999 989	-7.9	0.000 000	-0.004
100 %		-10	1909 999 990	-6.4	0.000 000	-0.003
100 %		0	1909 999 990	-6.5	0.000 000	-0.003
100 %		+10	1909 999 989	-8.0	0.000 000	-0.004
100 %		+30	1909 999 991	-6.1	0.000 000	-0.003
100 %		+40	1909 999 991	-5.2	0.000 000	-0.003
100 %		+50	1909 999 989	-7.4	0.000 000	-0.004
Batt. Endpoint	3.300	+20	1909 999 989	-7.9	0.000 000	-0.004



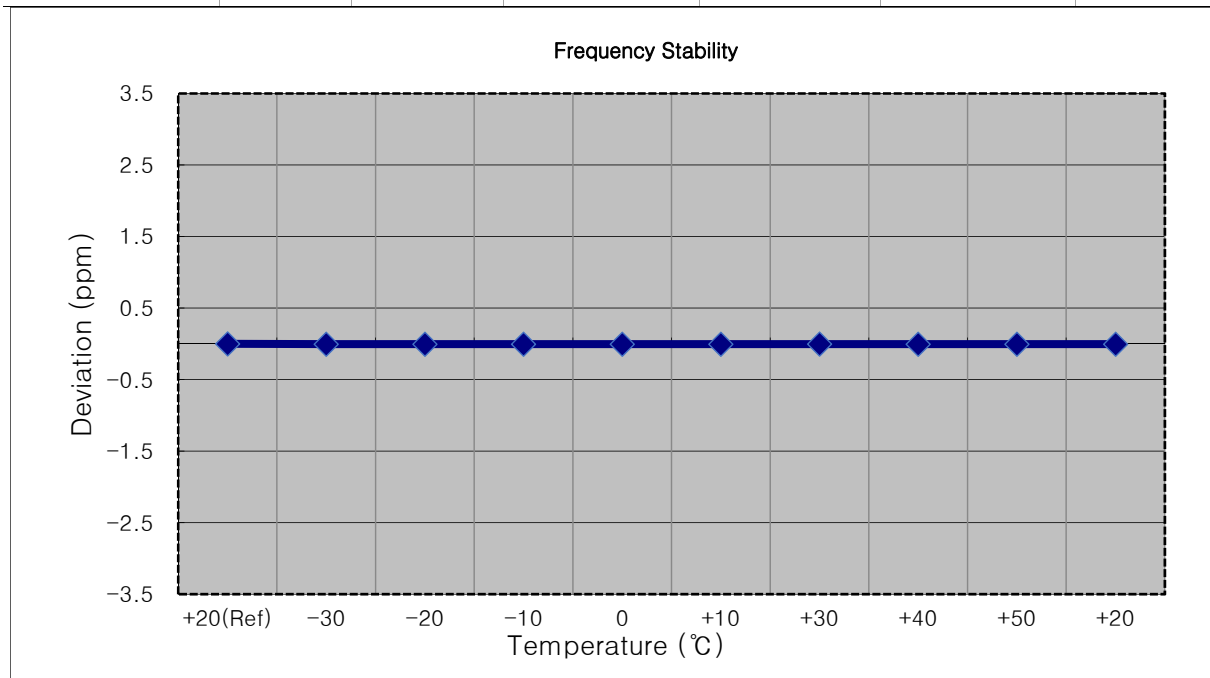
- ▣ MODE: LTE B25/B2
- ▣ OPERATING FREQUENCY: 1907,500,000 Hz
- ▣ CHANNEL: 26615 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1907 499 996	0.0	0.000 000	0.000
100 %		-30	1907 499 991	-4.8	0.000 000	-0.003
100 %		-20	1907 499 990	-6.1	0.000 000	-0.003
100 %		-10	1907 499 989	-6.8	0.000 000	-0.004
100 %		0	1907 499 991	-4.9	0.000 000	-0.003
100 %		+10	1907 499 990	-6.1	0.000 000	-0.003
100 %		+30	1907 499 990	-5.4	0.000 000	-0.003
100 %		+40	1907 499 990	-6.1	0.000 000	-0.003
100 %		+50	1907 499 990	-5.3	0.000 000	-0.003
Batt. Endpoint	3.300	+20	1907 499 988	-7.5	0.000 000	-0.004



MODE:	<u>LTE B25/B2</u>
OPERATING FREQUENCY:	<u>1905,000,000 Hz</u>
CHANNEL:	<u>26590 (20 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

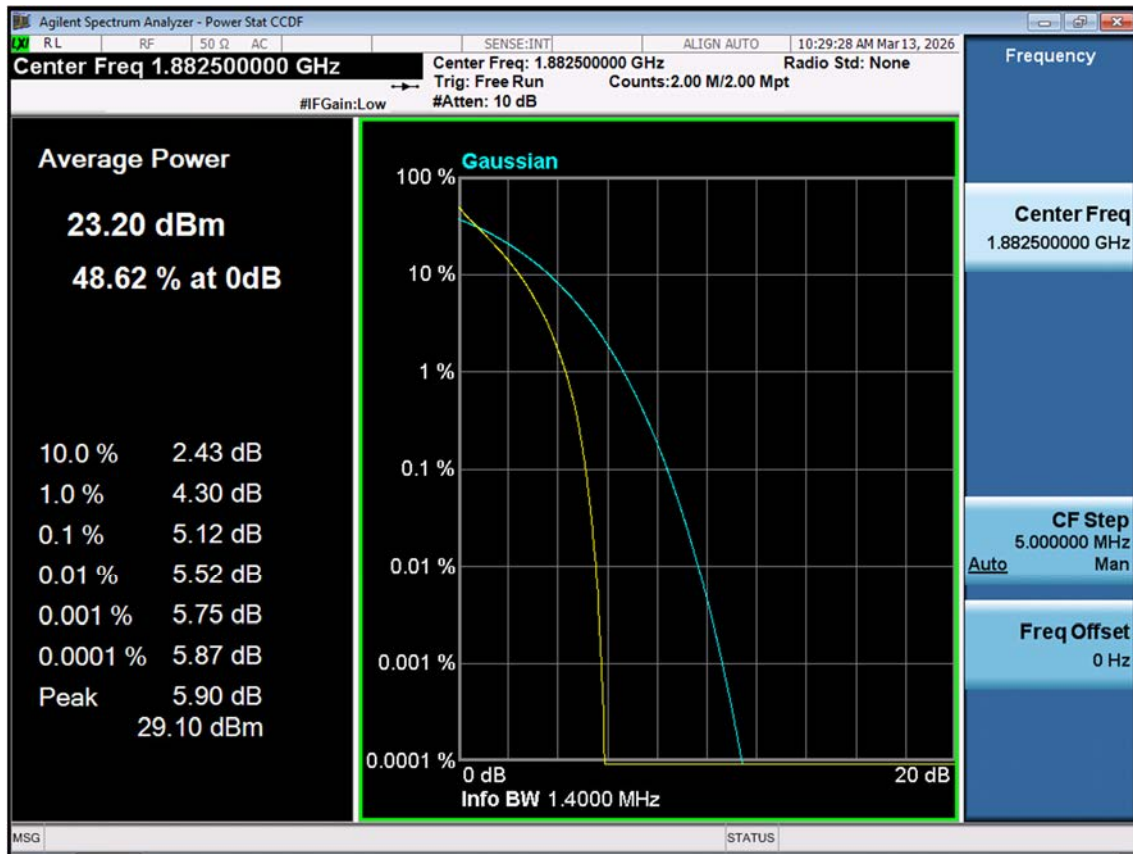
Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1904 999 992	0.0	0.000 000	0.000
100 %		-30	1904 999 985	-7.3	0.000 000	-0.004
100 %		-20	1904 999 983	-9.3	0.000 000	-0.005
100 %		-10	1904 999 986	-6.7	0.000 000	-0.004
100 %		0	1904 999 983	-9.0	0.000 000	-0.005
100 %		+10	1904 999 982	-10.3	-0.000 001	-0.005
100 %		+30	1904 999 986	-6.3	0.000 000	-0.003
100 %		+40	1904 999 985	-7.8	0.000 000	-0.004
100 %		+50	1904 999 984	-8.4	0.000 000	-0.004
Batt. Endpoint	3.300	+20	1904 999 982	-10.2	-0.000 001	-0.005



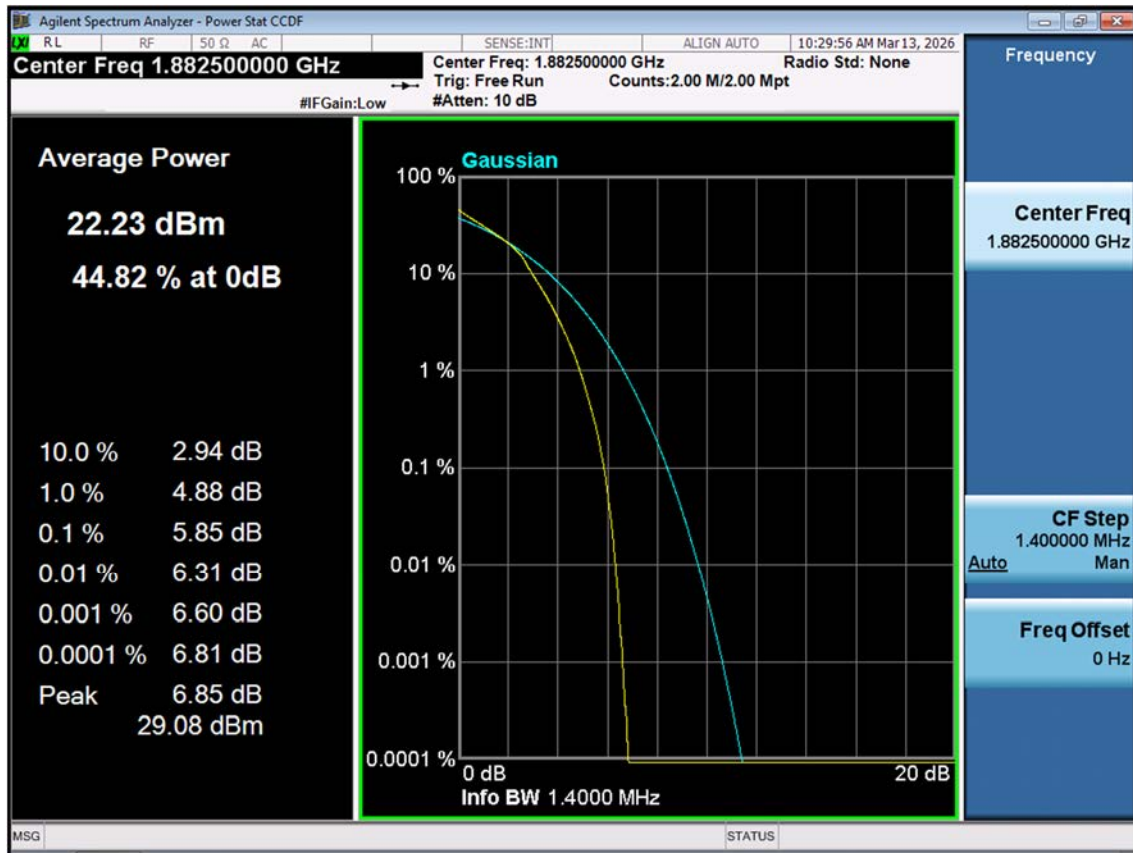
10. TEST PLOTS(Main 1 ANT)

10.1 PEAK-TO-AVERAGE RATIO

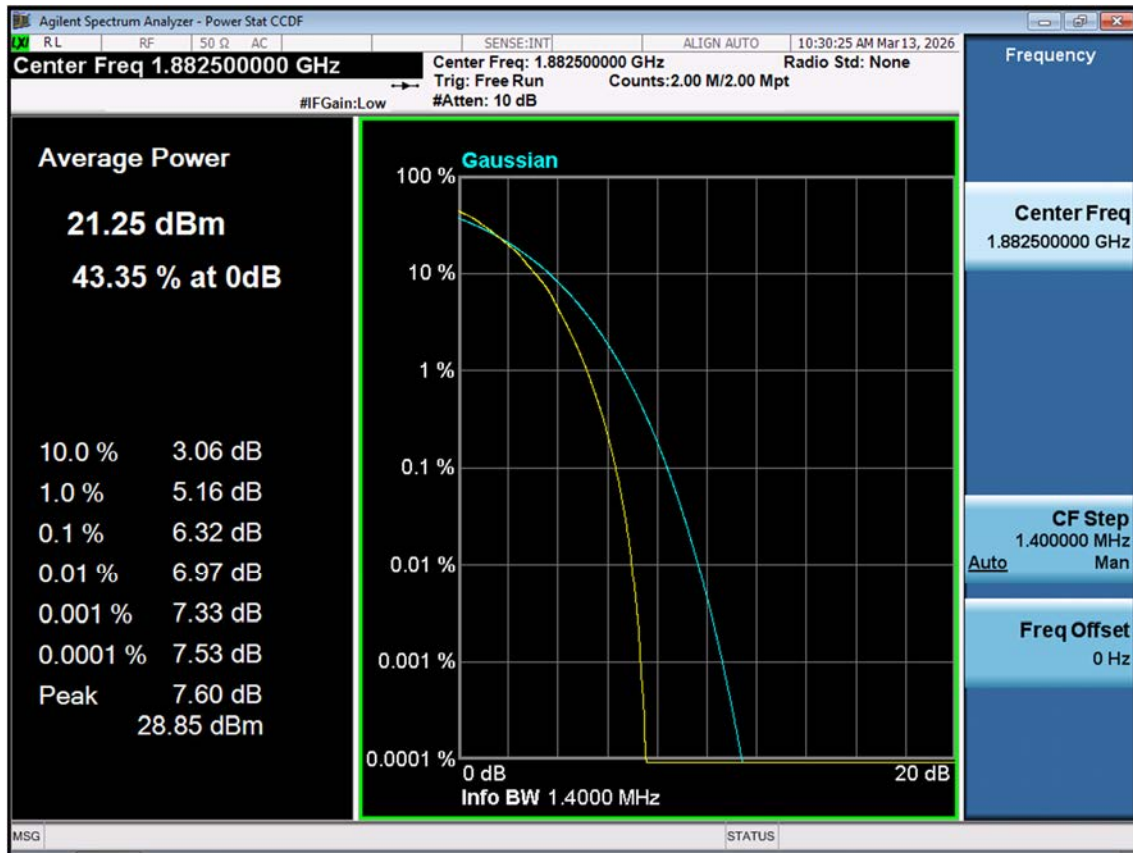
LTE B25(2)_1.4 M_PAR_Mid_QPSK_FullRB



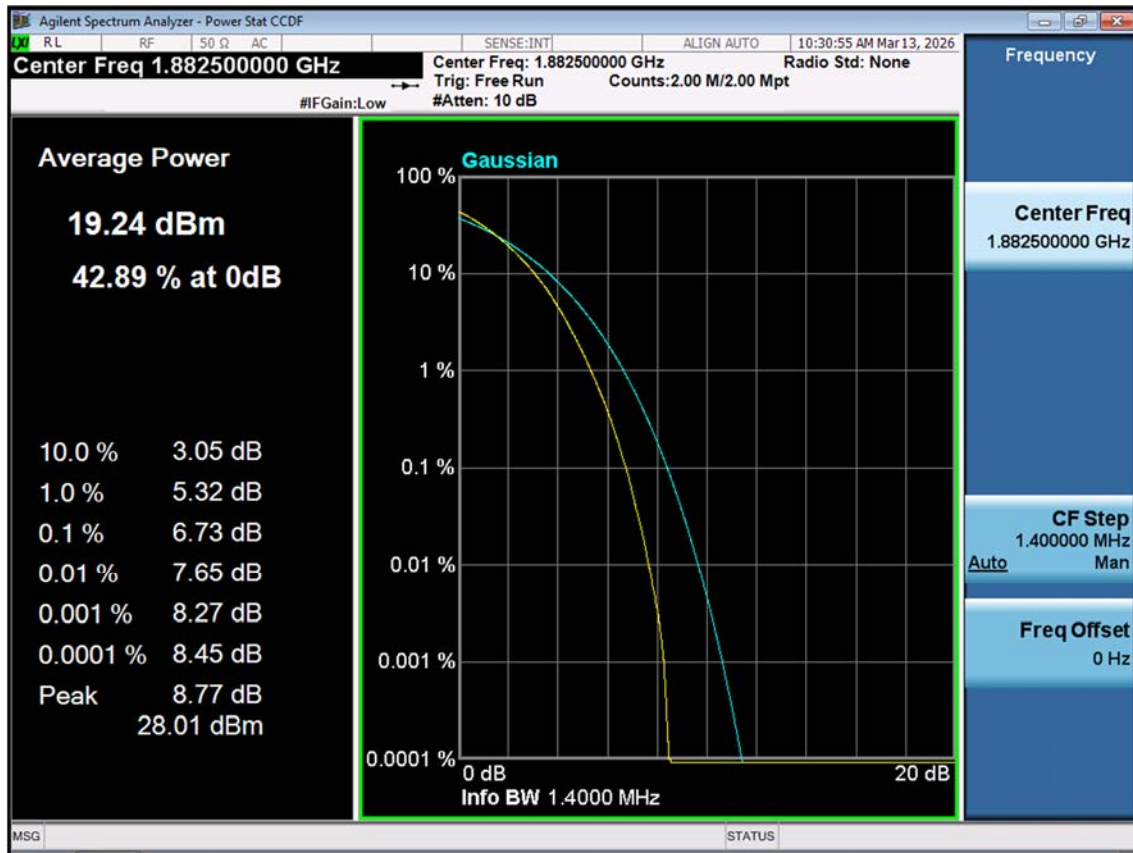
LTE B25(2)_1.4 M_PAR_Mid_16QAM_FullRB



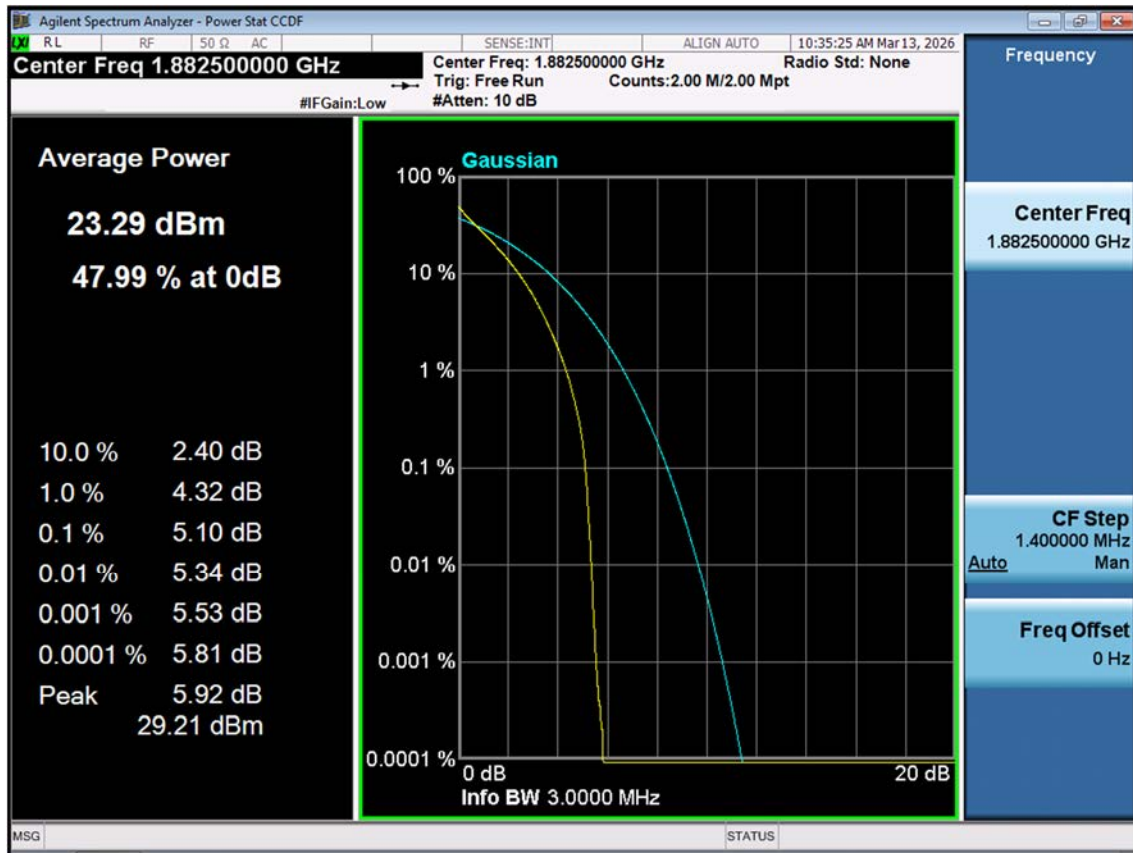
LTE B25(2)_1.4 M_PAR_Mid_64QAM_FullRB



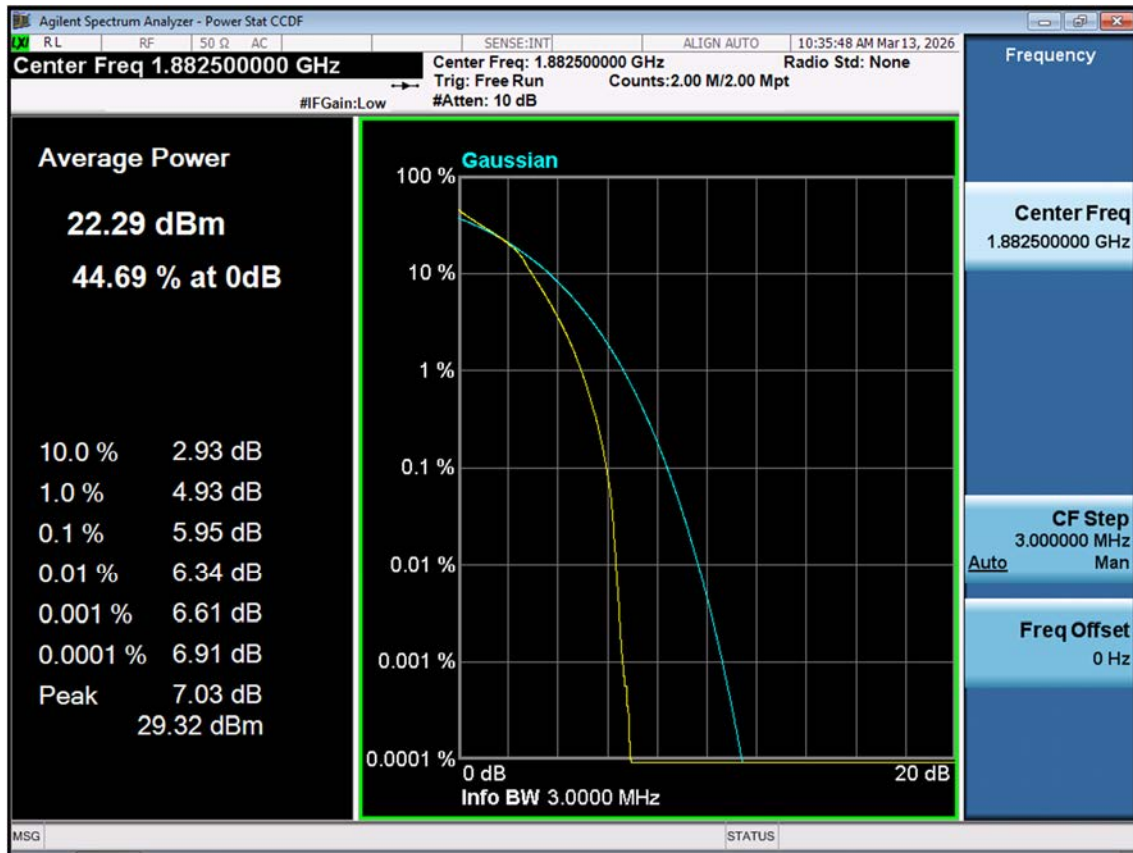
LTE B25(2)_1.4 M_PAR_Mid_256QAM_FullRB



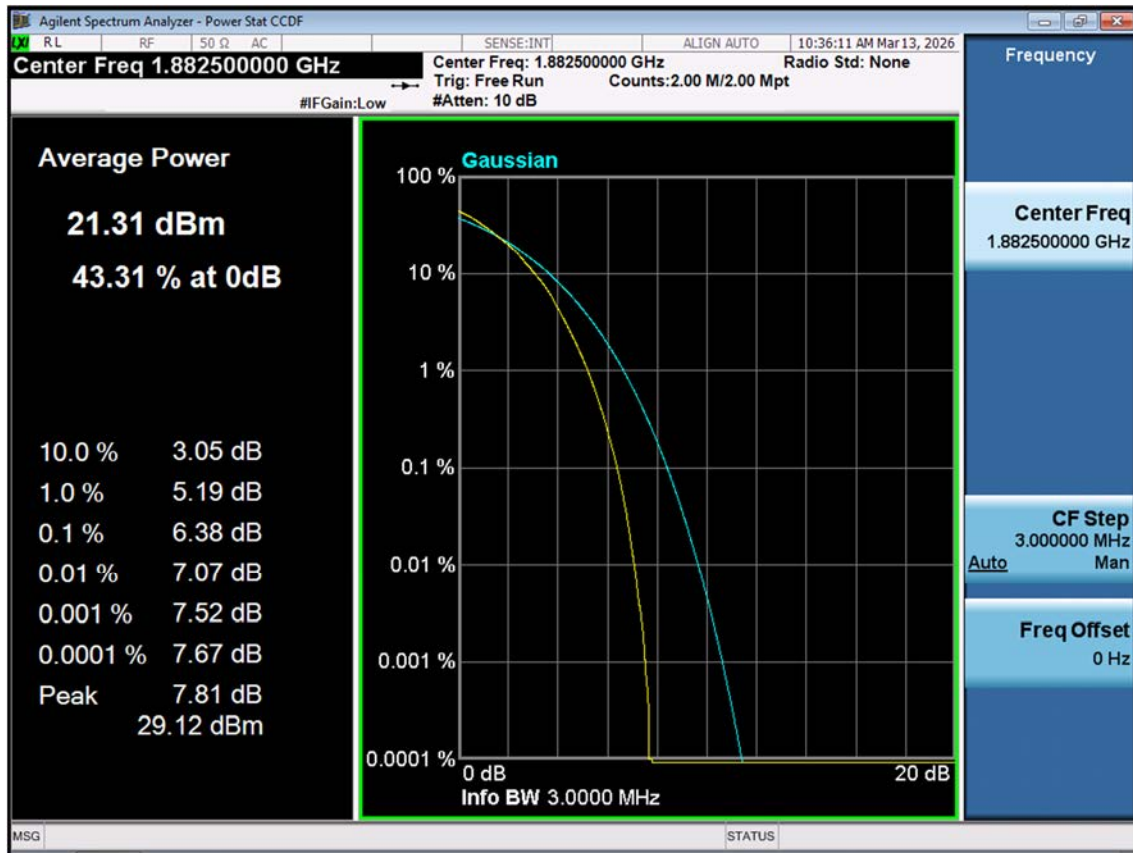
LTE B25(2)_3 M_PAR_Mid_QPSK_FullRB



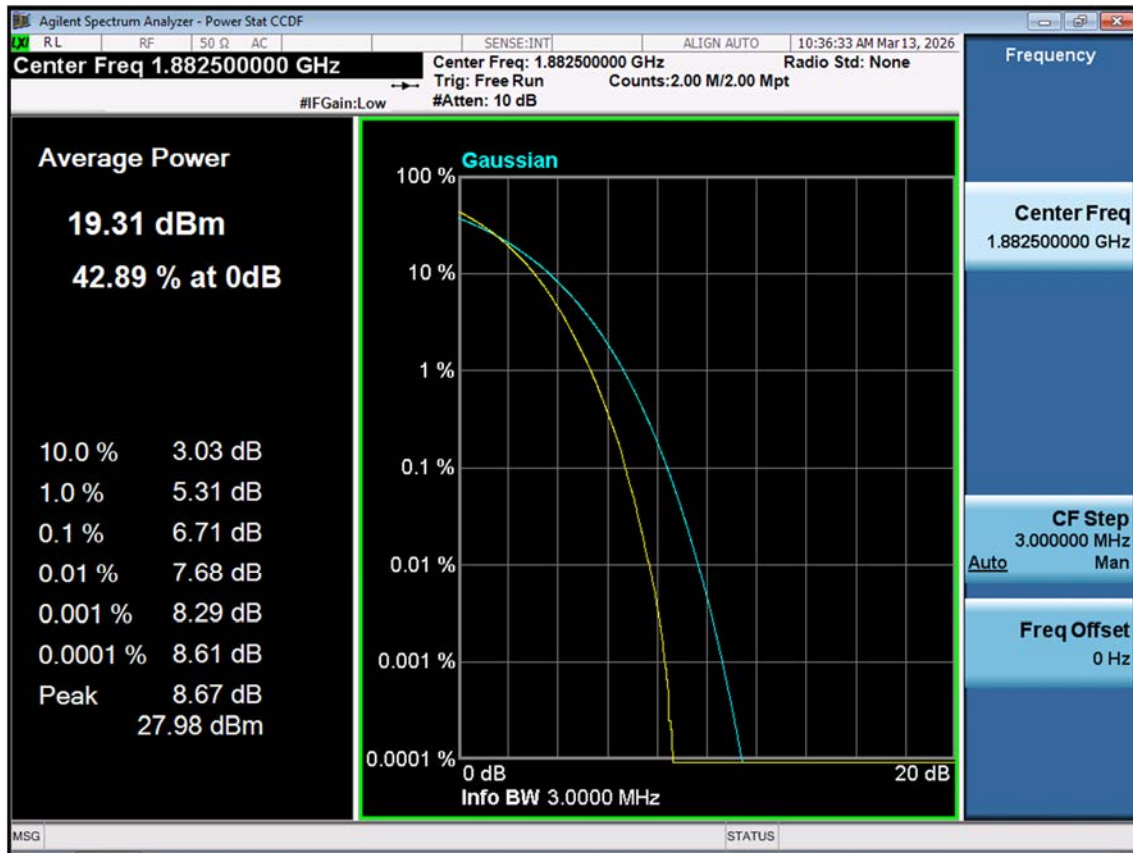
LTE B25(2)_3 M_PAR_Mid_16QAM_FullRB



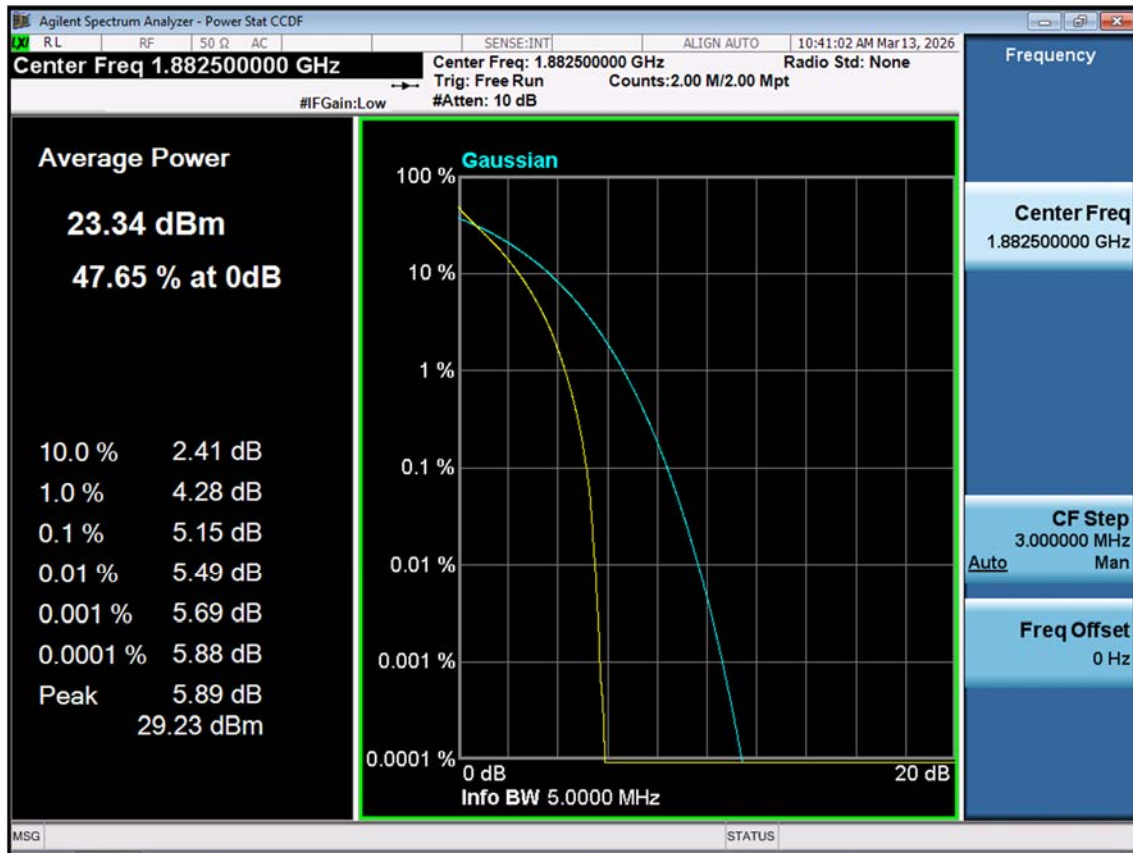
LTE B25(2)_3 M_PAR_Mid_64QAM_FullRB



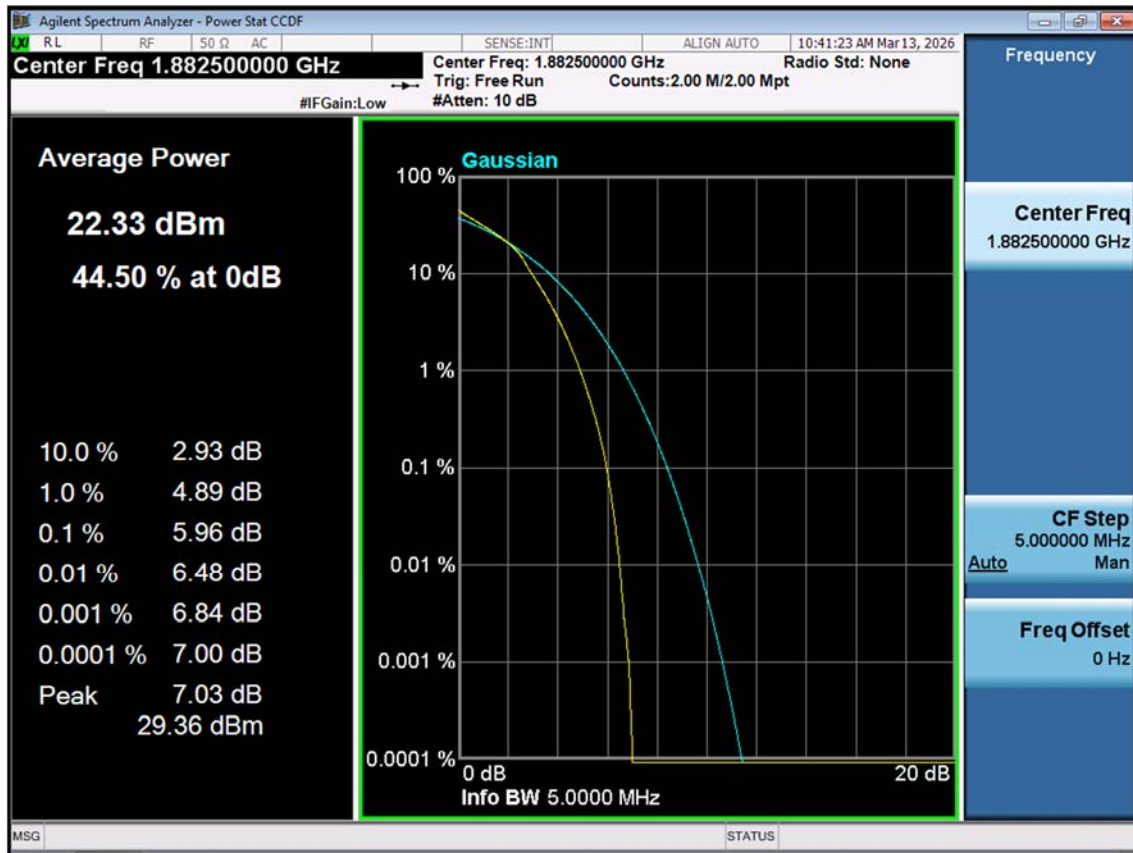
LTE B25(2)_3 M_PAR_Mid_256QAM_FullRB



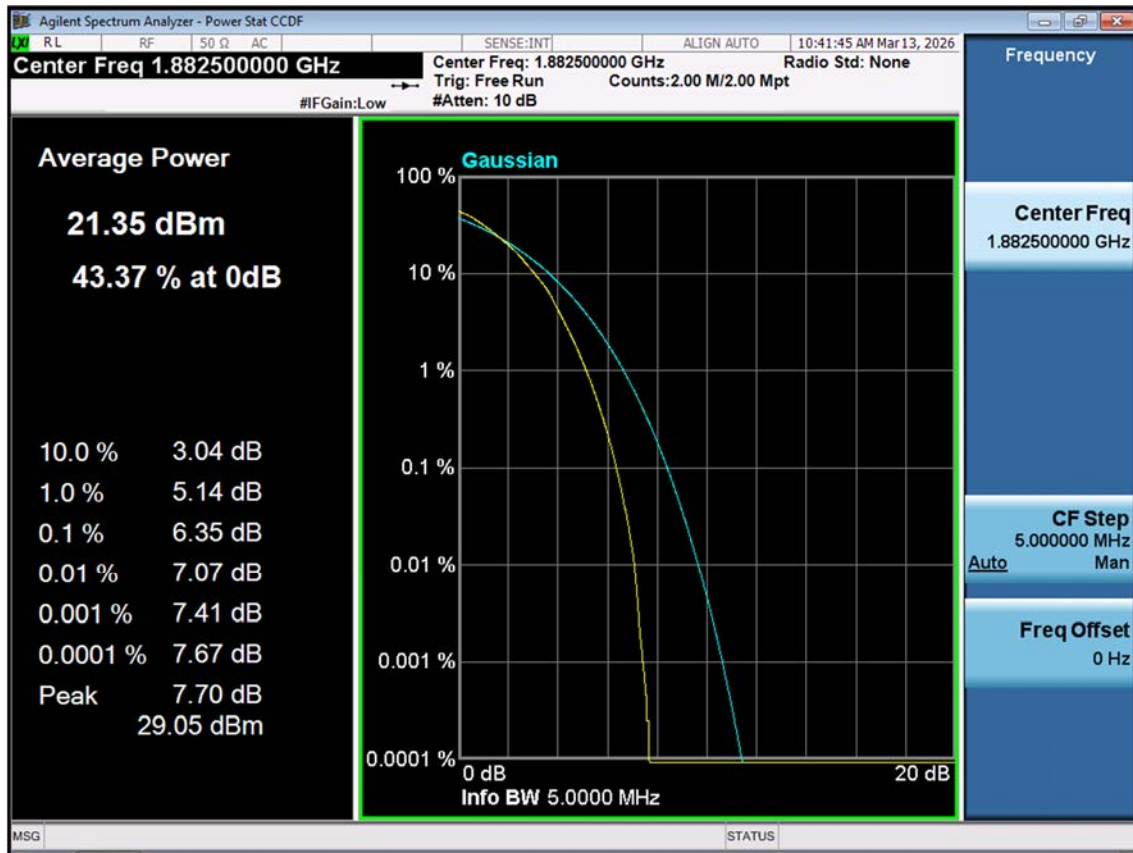
LTE B25(2)_5 M_PAR_Mid_QPSK_FullRB



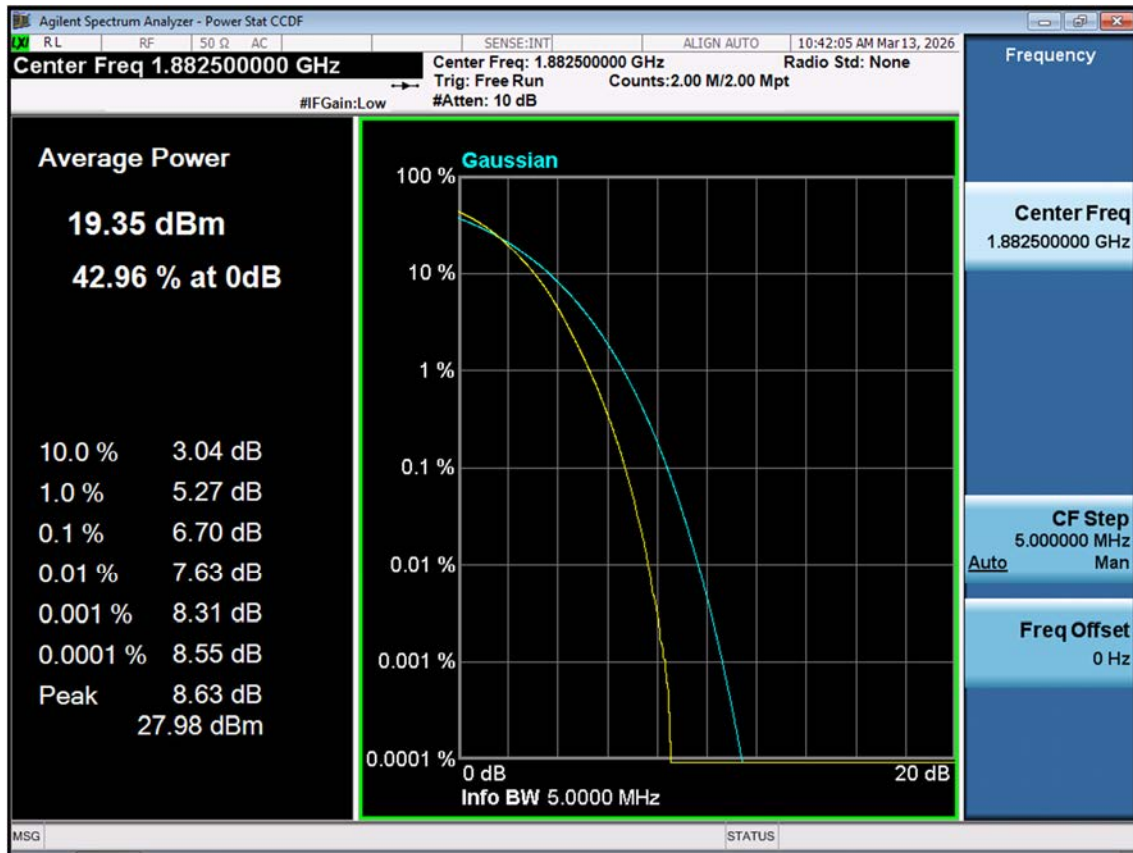
LTE B25(2)_5 M_PAR_Mid_16QAM_FullRB



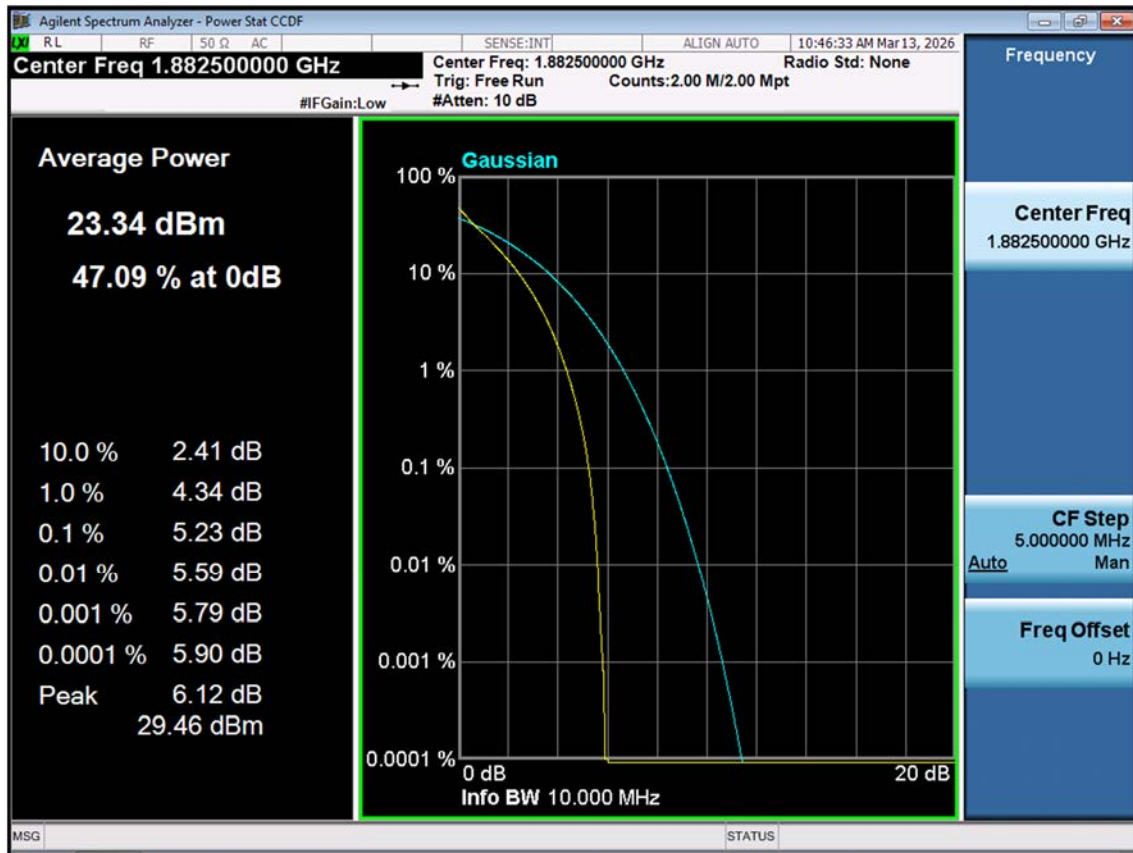
LTE B25(2)_5 M_PAR_Mid_64QAM_FullRB



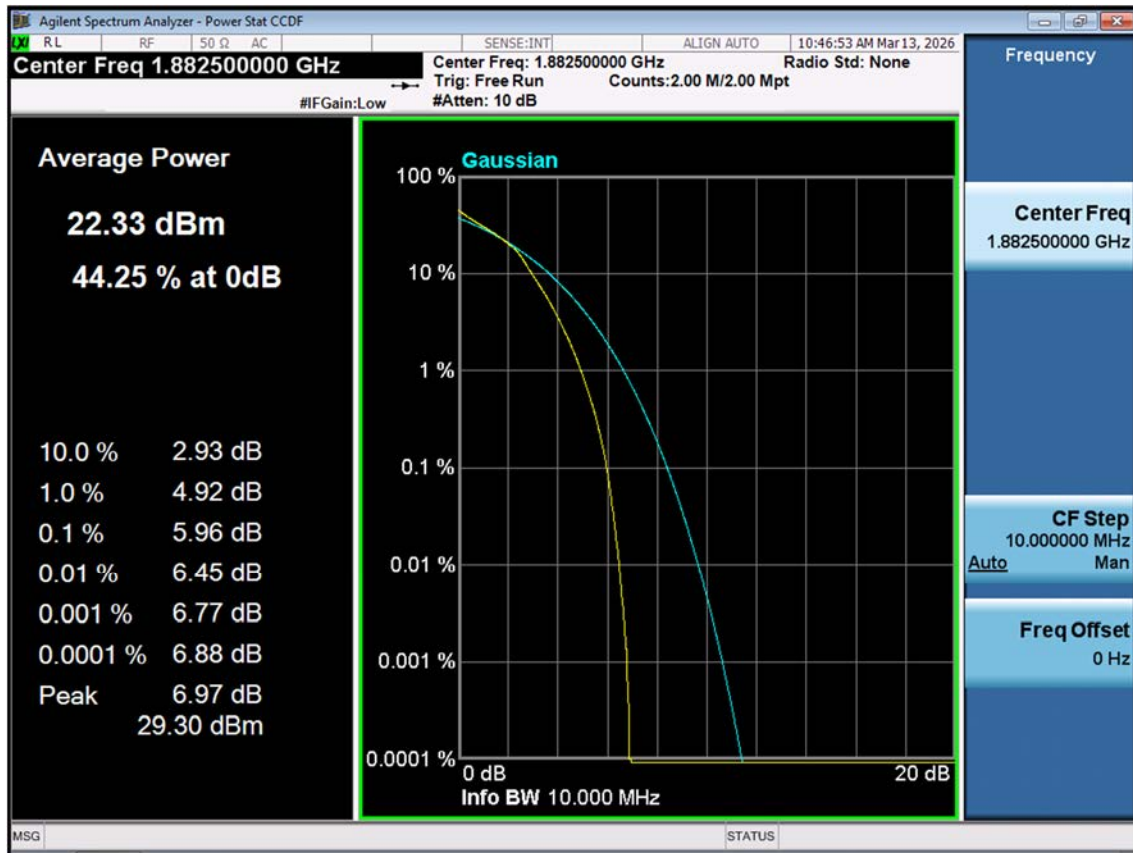
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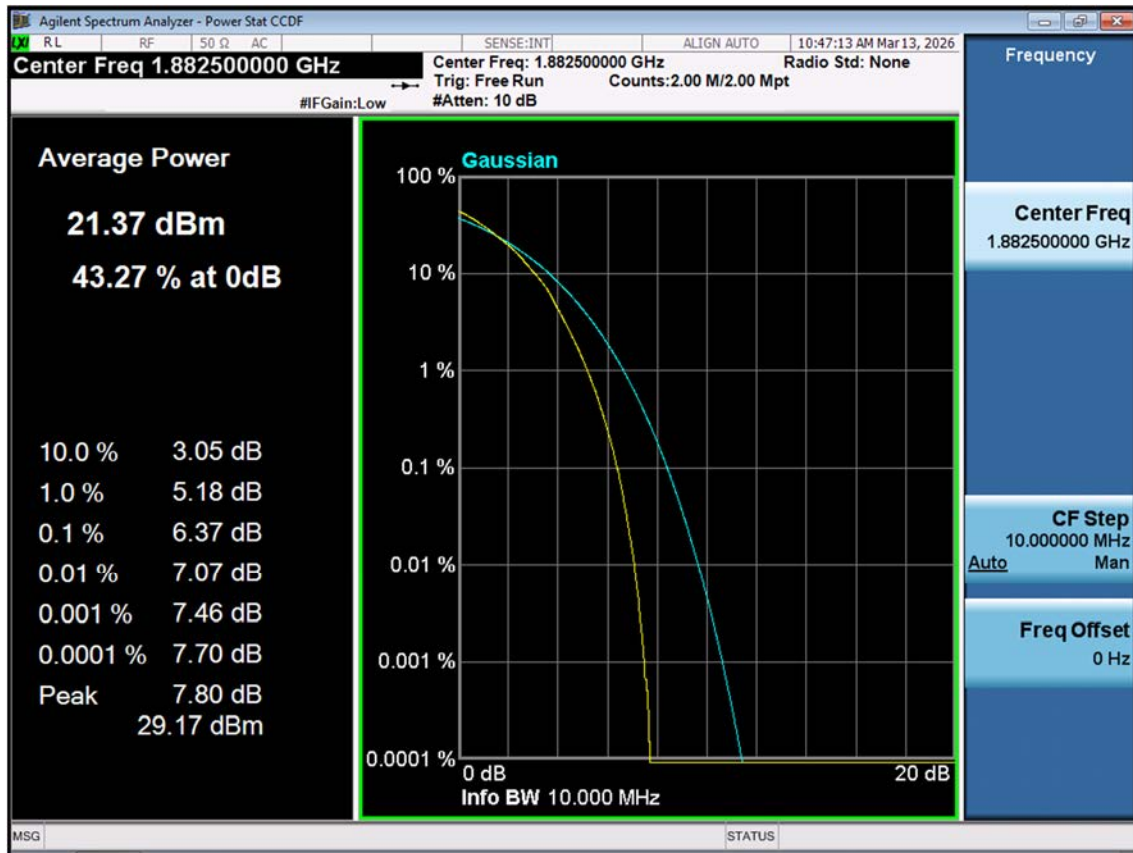
LTE B25(2)_10 M_PAR_Mid_QPSK_FullRB



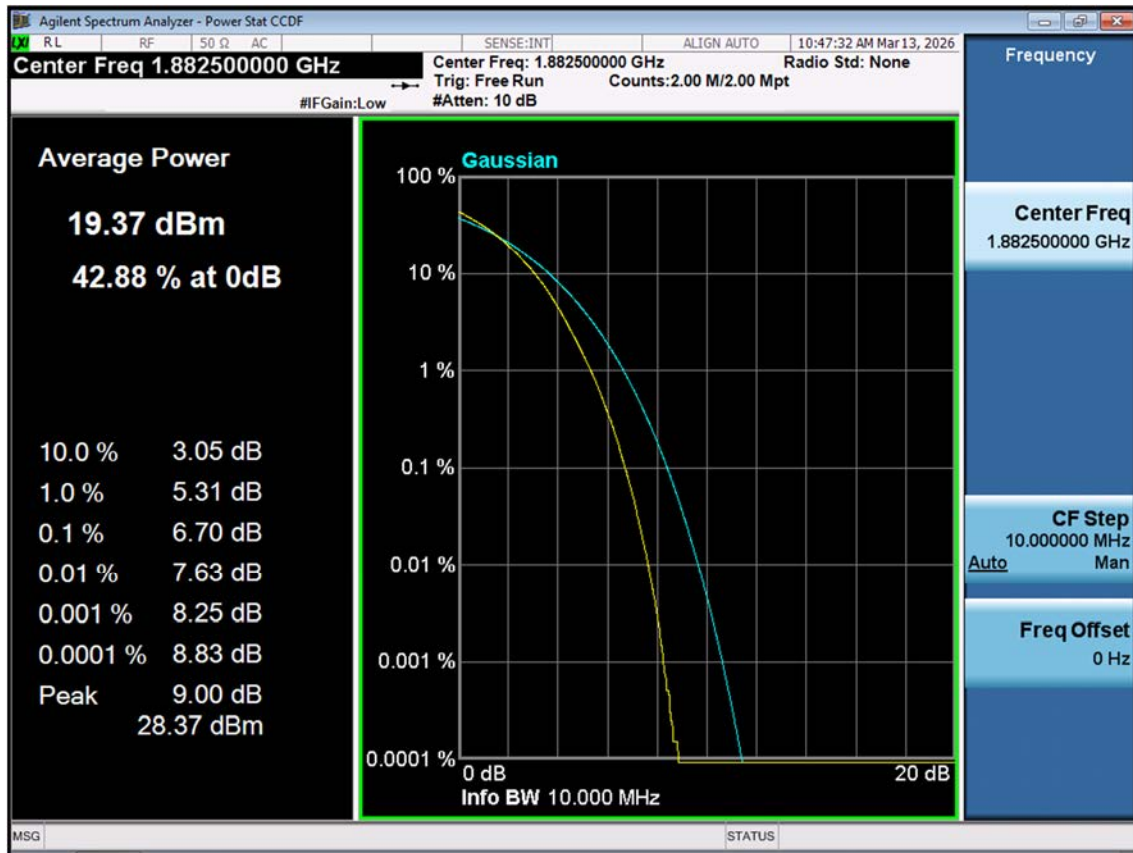
LTE B25(2)_10 M_PAR_Mid_16QAM_FullRB



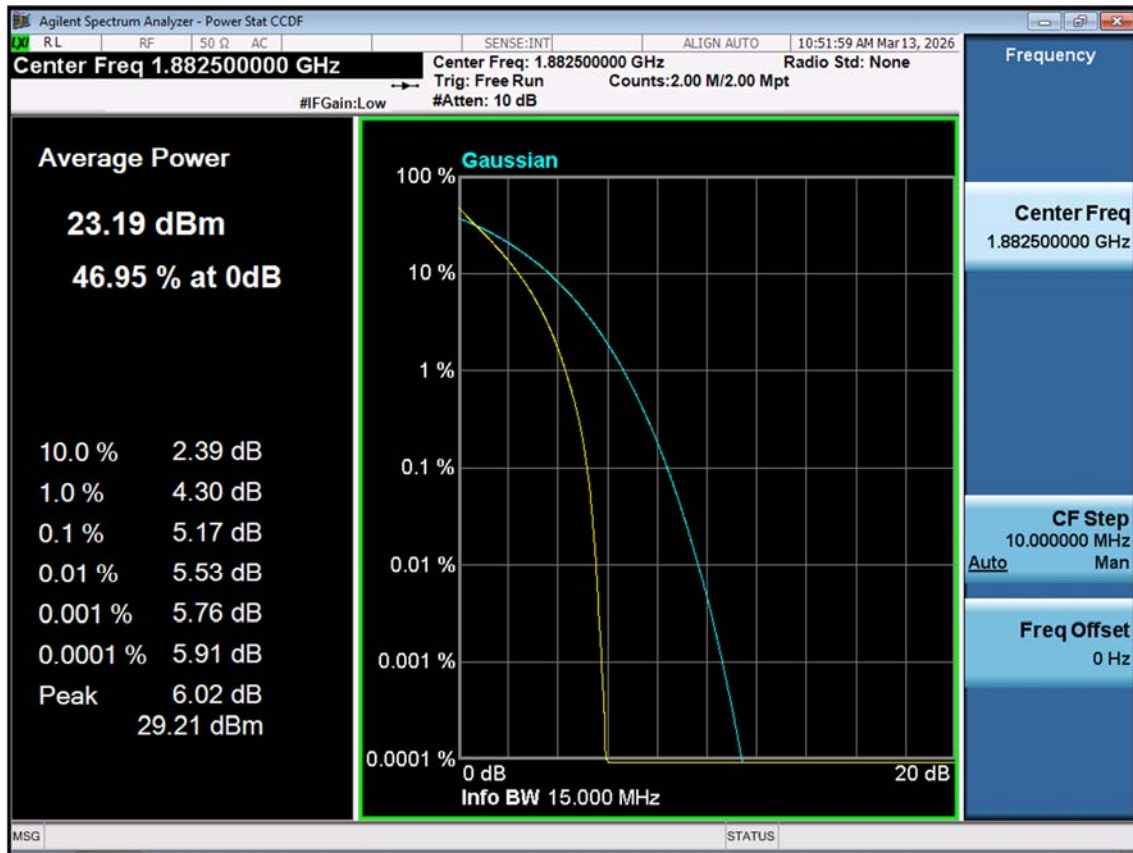
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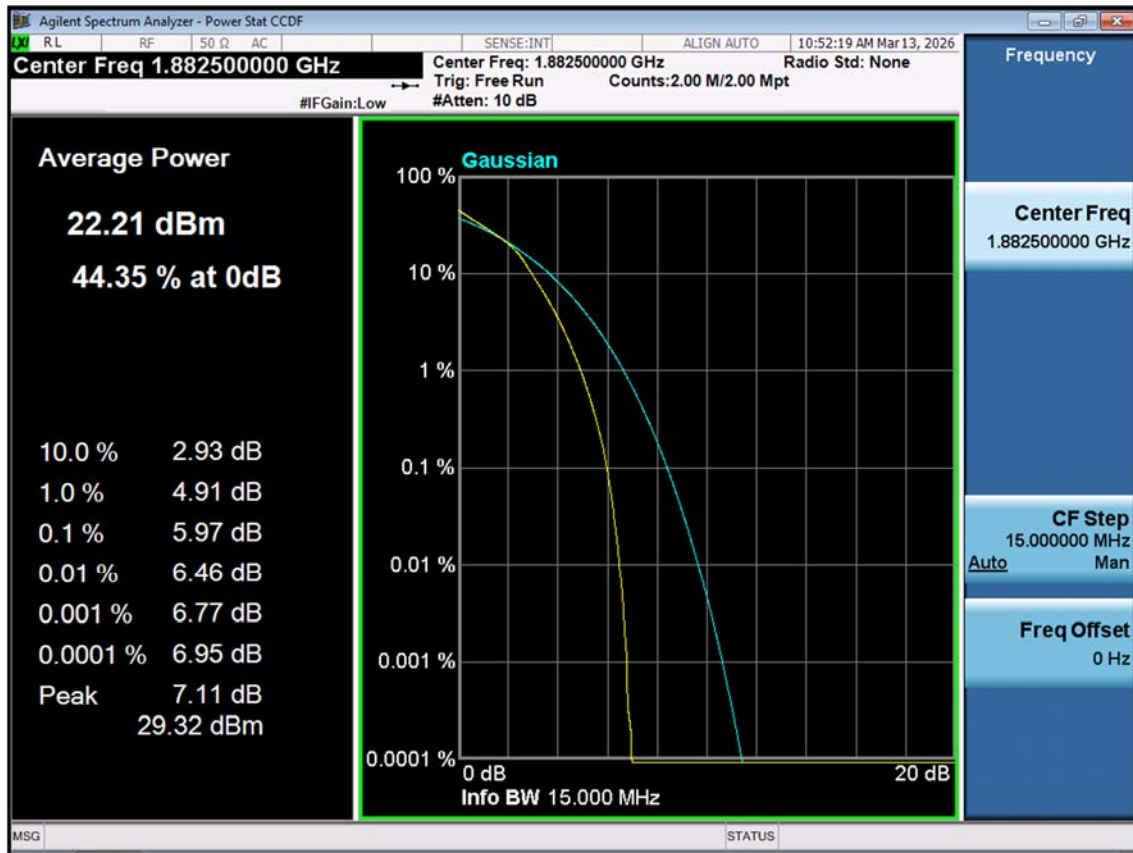
LTE B25(2)_10 M_PAR_Mid_256QAM_FullRB



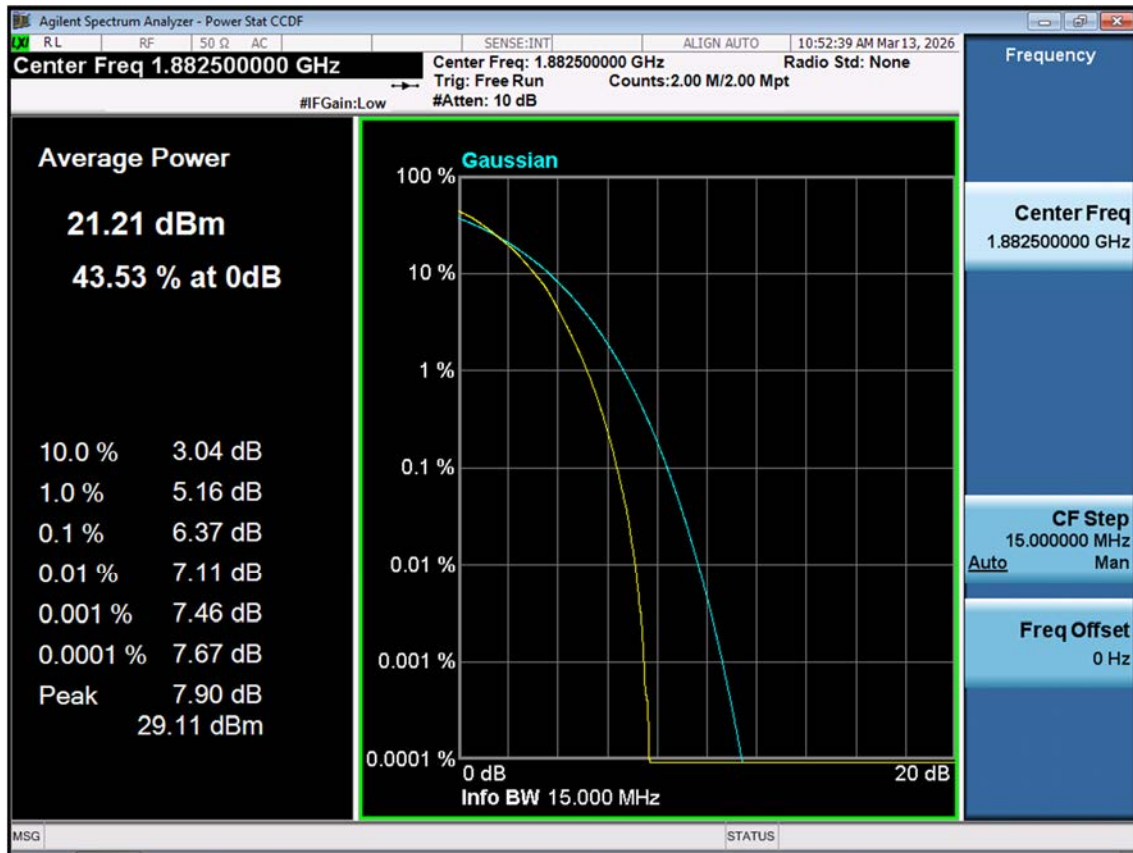
LTE B25(2)_15 M_PAR_Mid_QPSK_FullRB



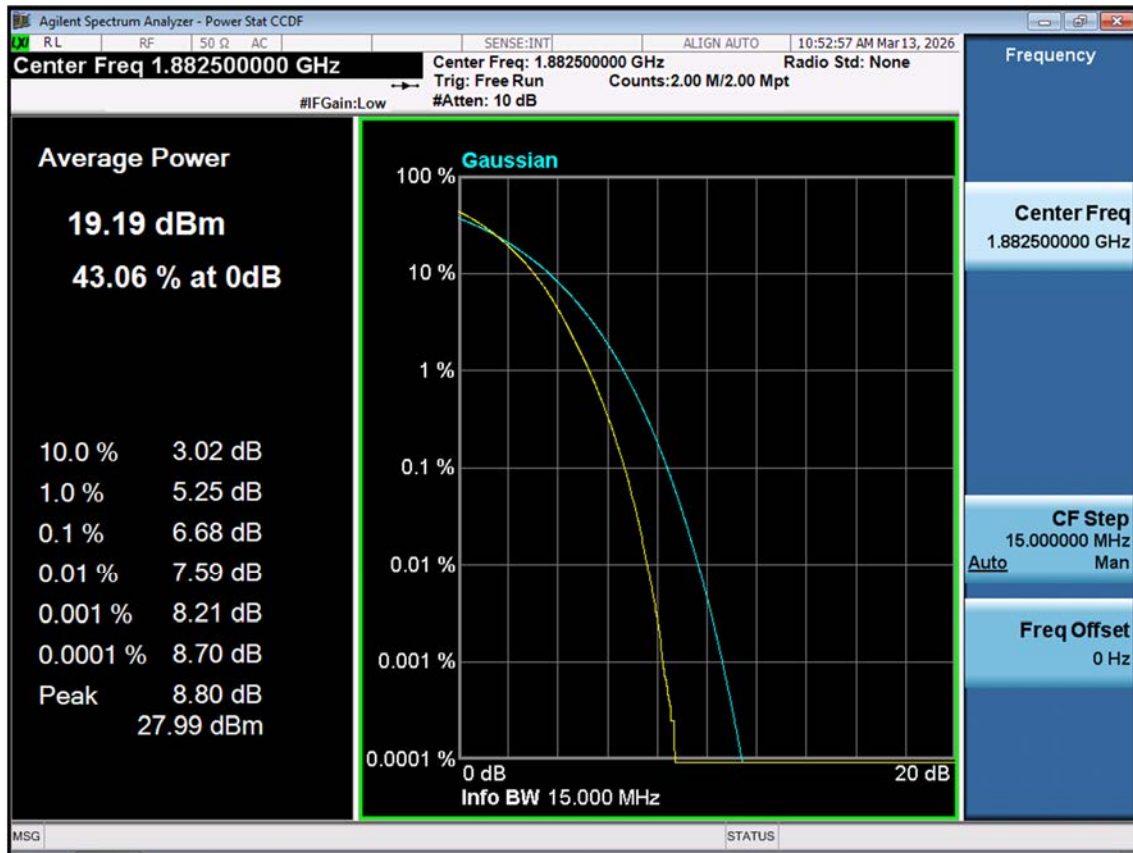
LTE B25(2)_15 M_PAR_Mid_16QAM_FullRB



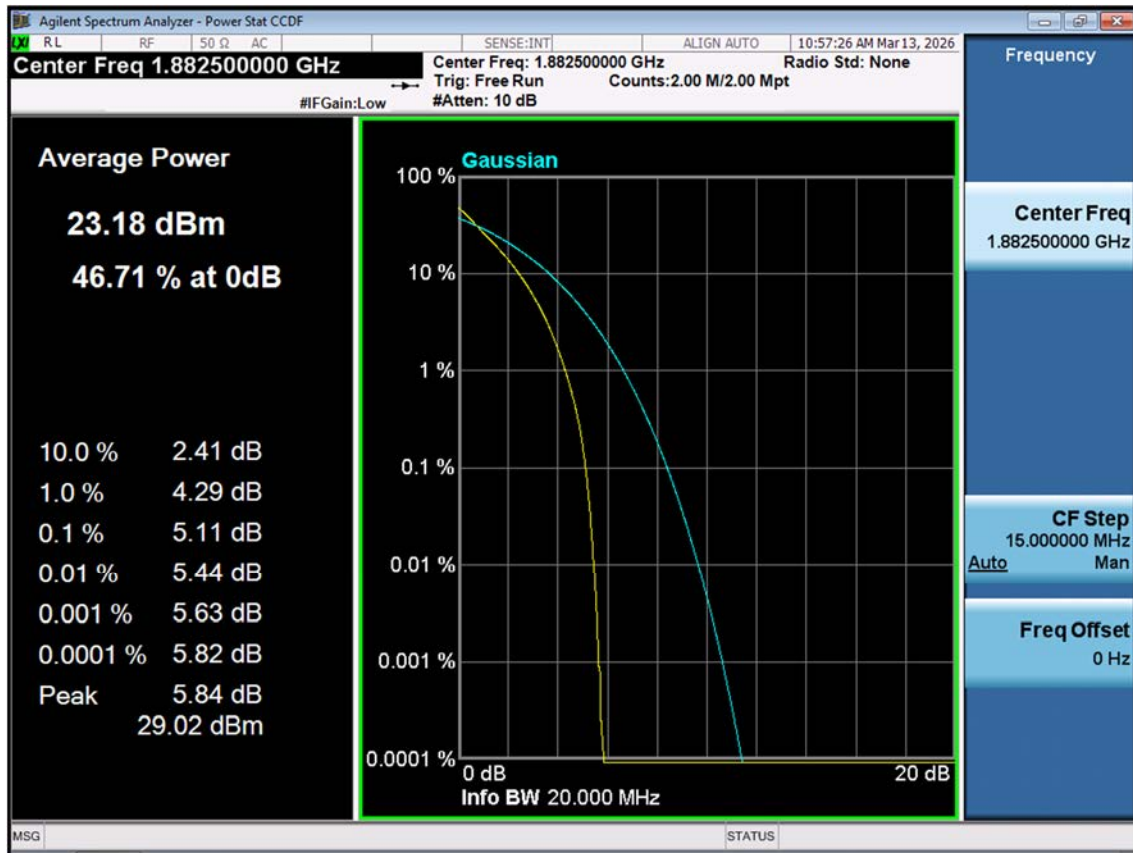
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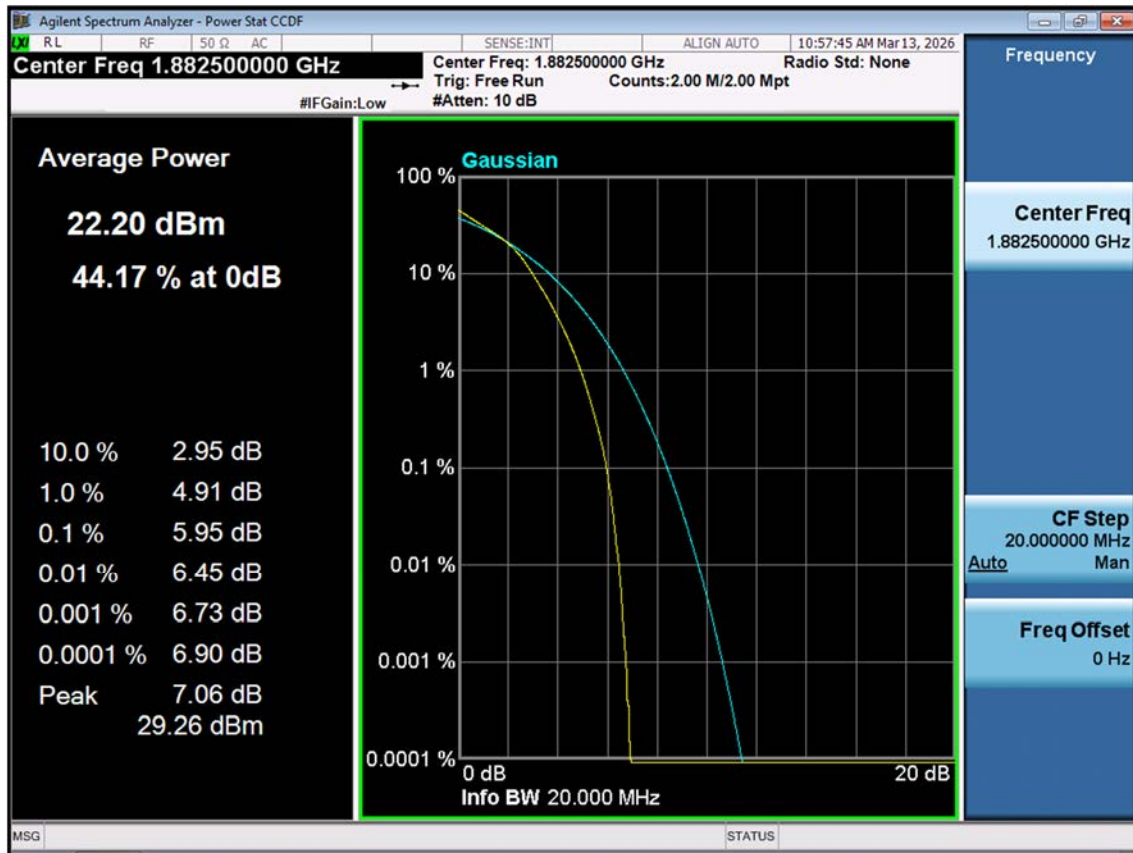
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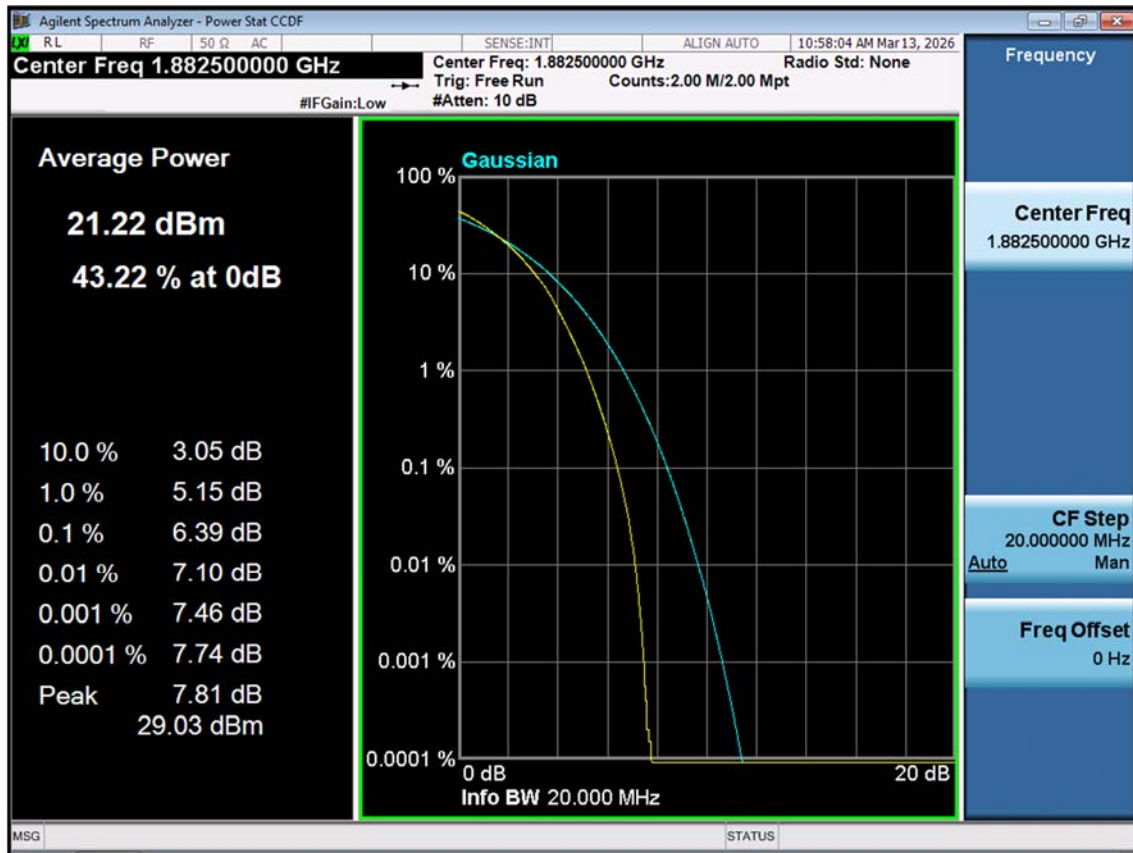
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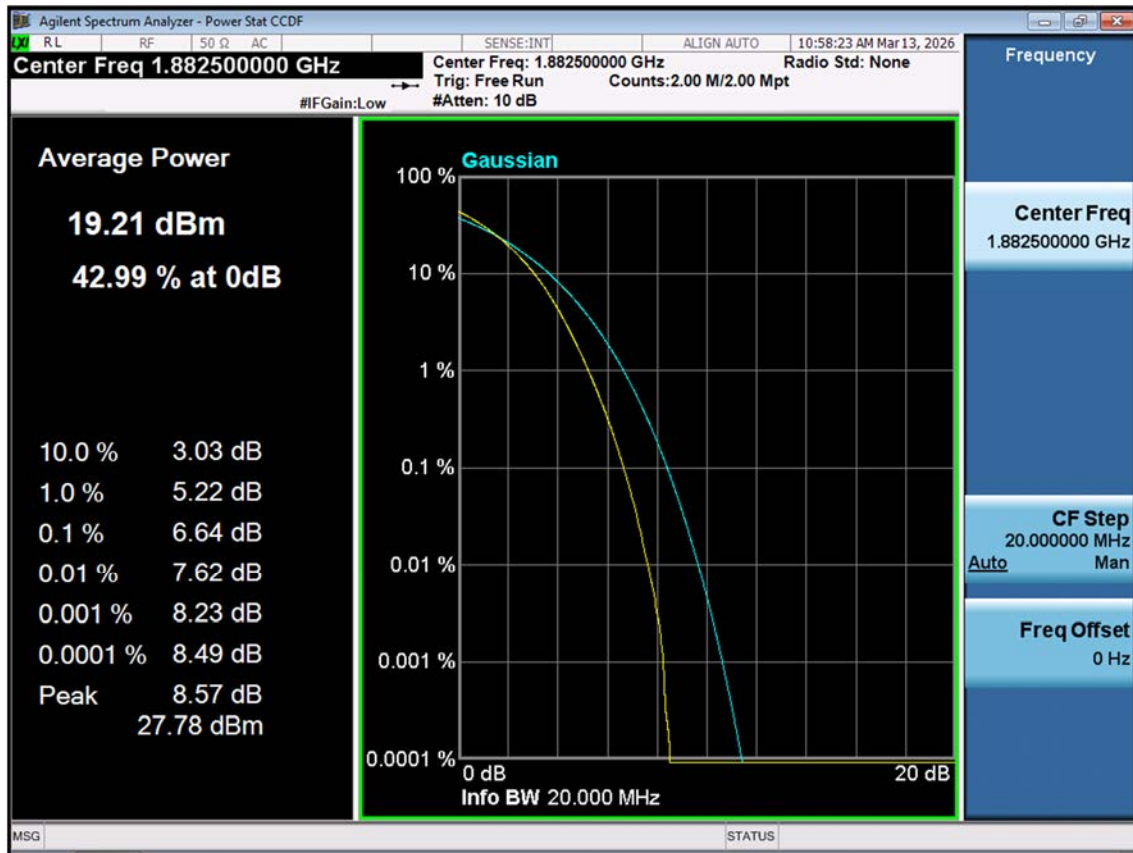
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LTE B25(2)_20 M_PAR_Mid_64QAM_FullRB

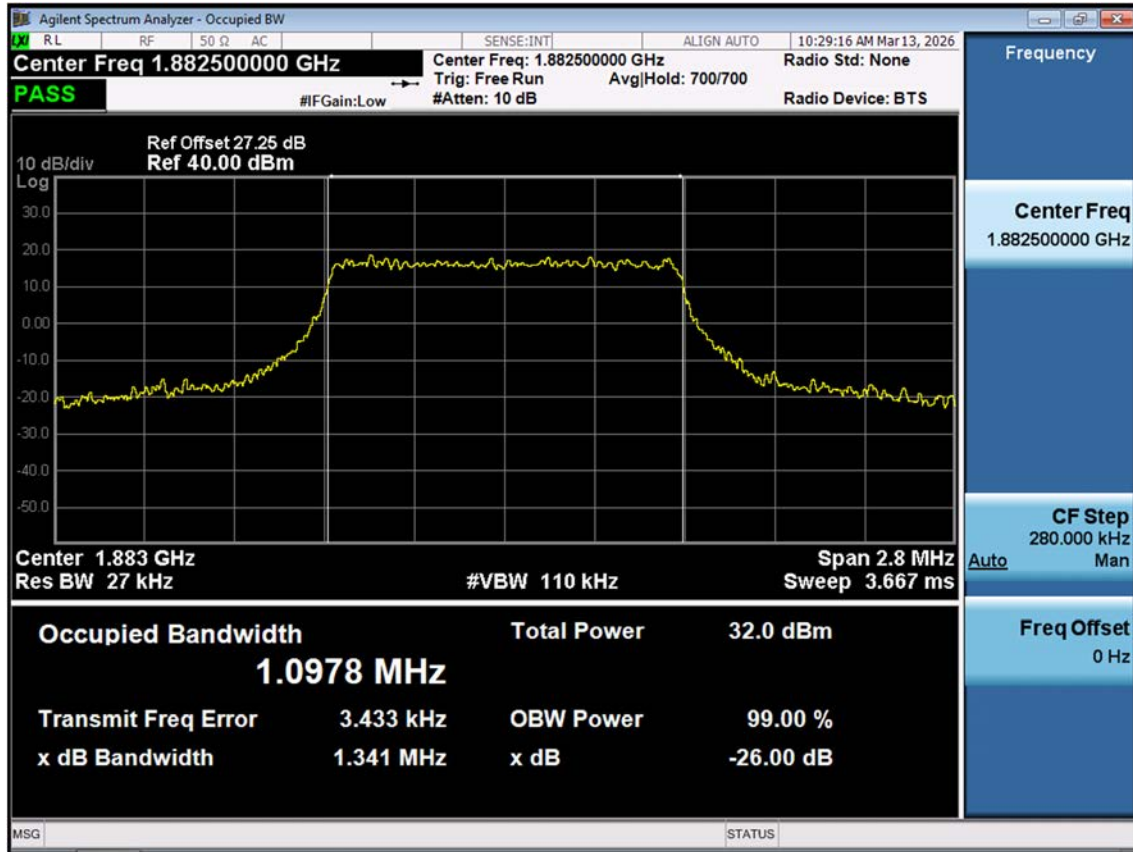


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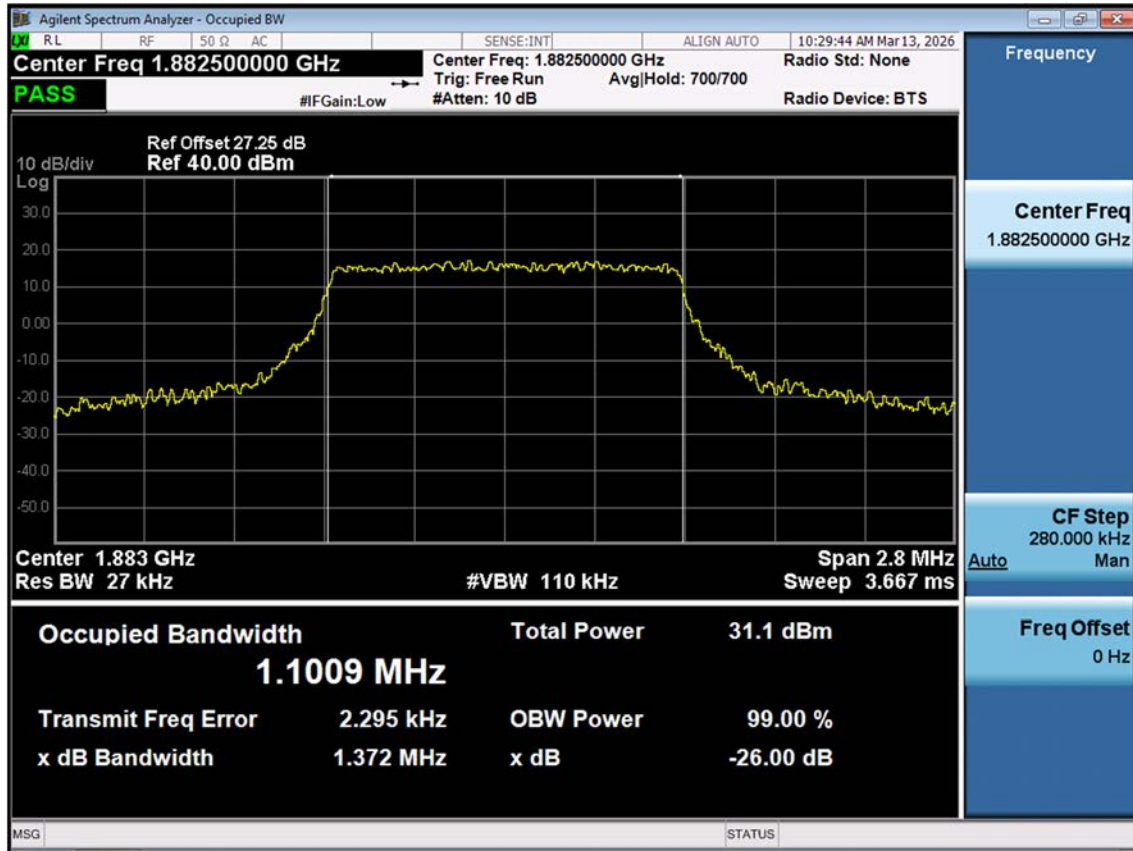


10.2 OCCUPIED BANDWIDTH

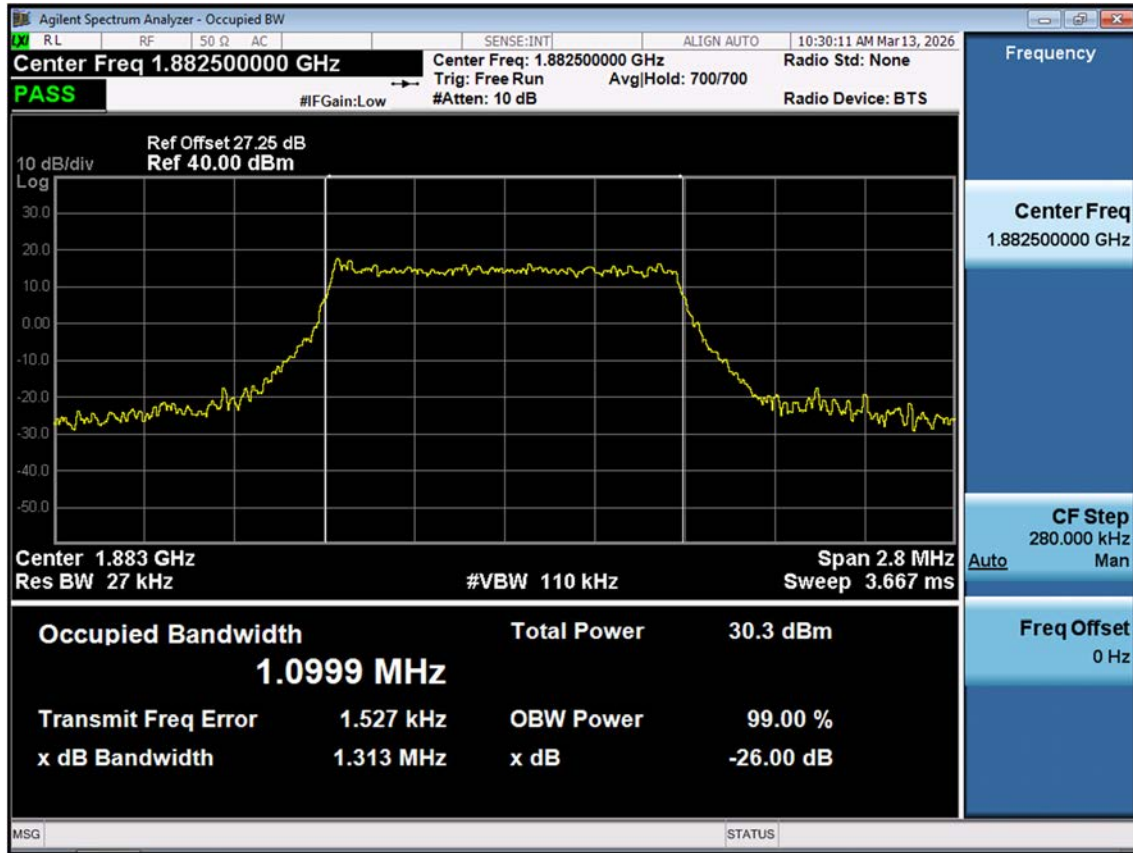
LTE B25(2)_1.4 M_OBW_Mid_QPSK_FullRB



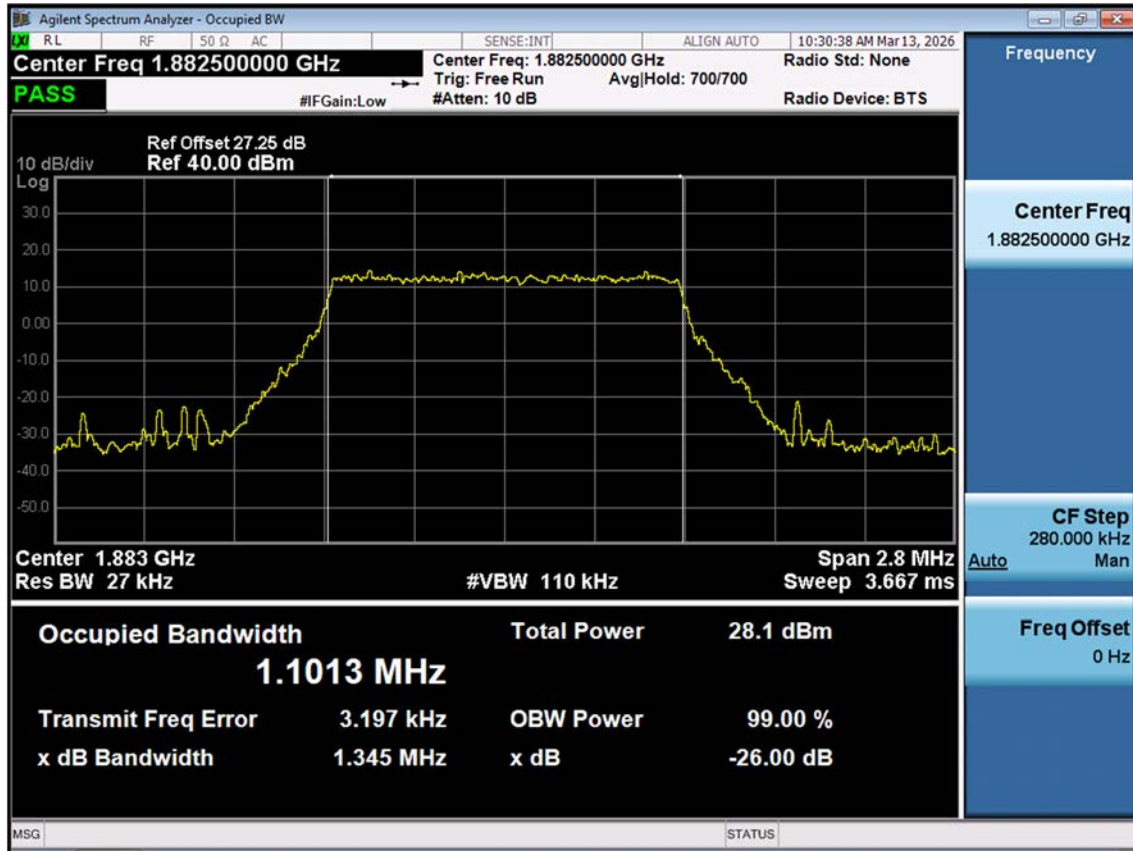
LTE B25(2)_1.4 M_OBW_Mid_16QAM_FullRB



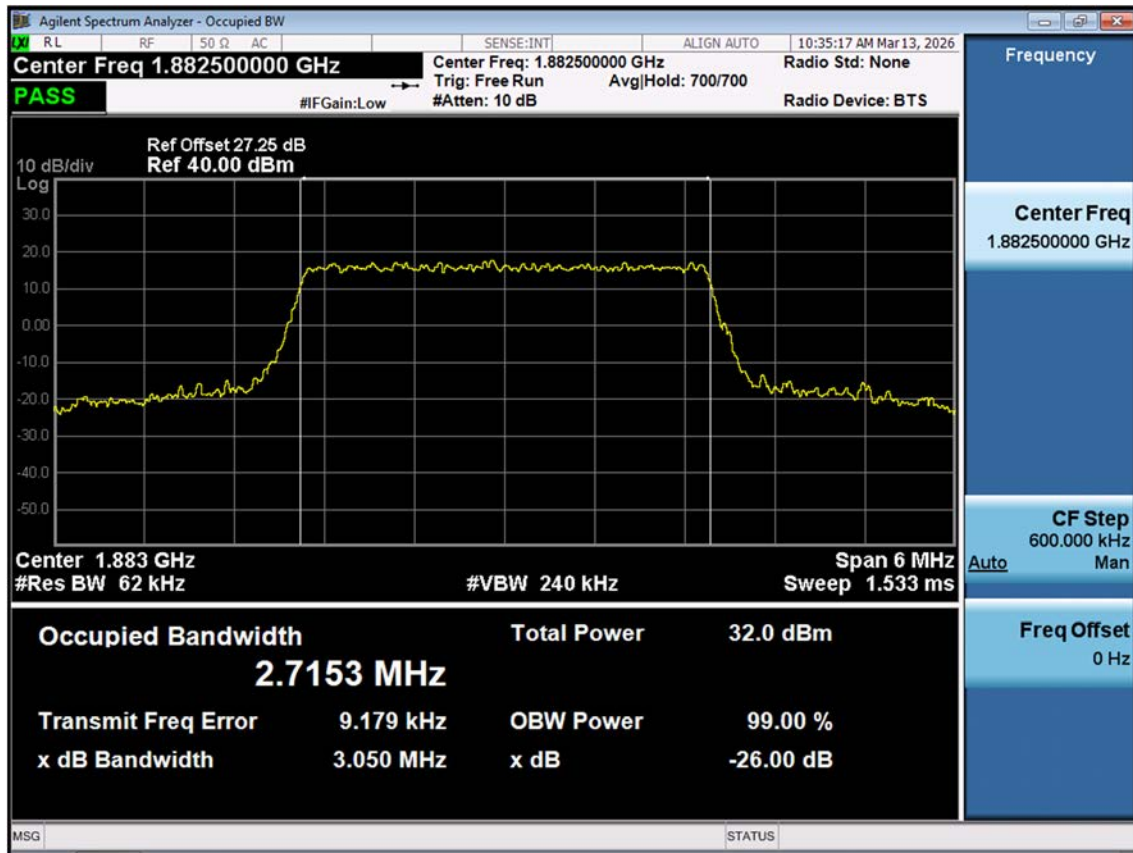
LTE B25(2)_1.4 M_OBW_Mid_64QAM_FullRB



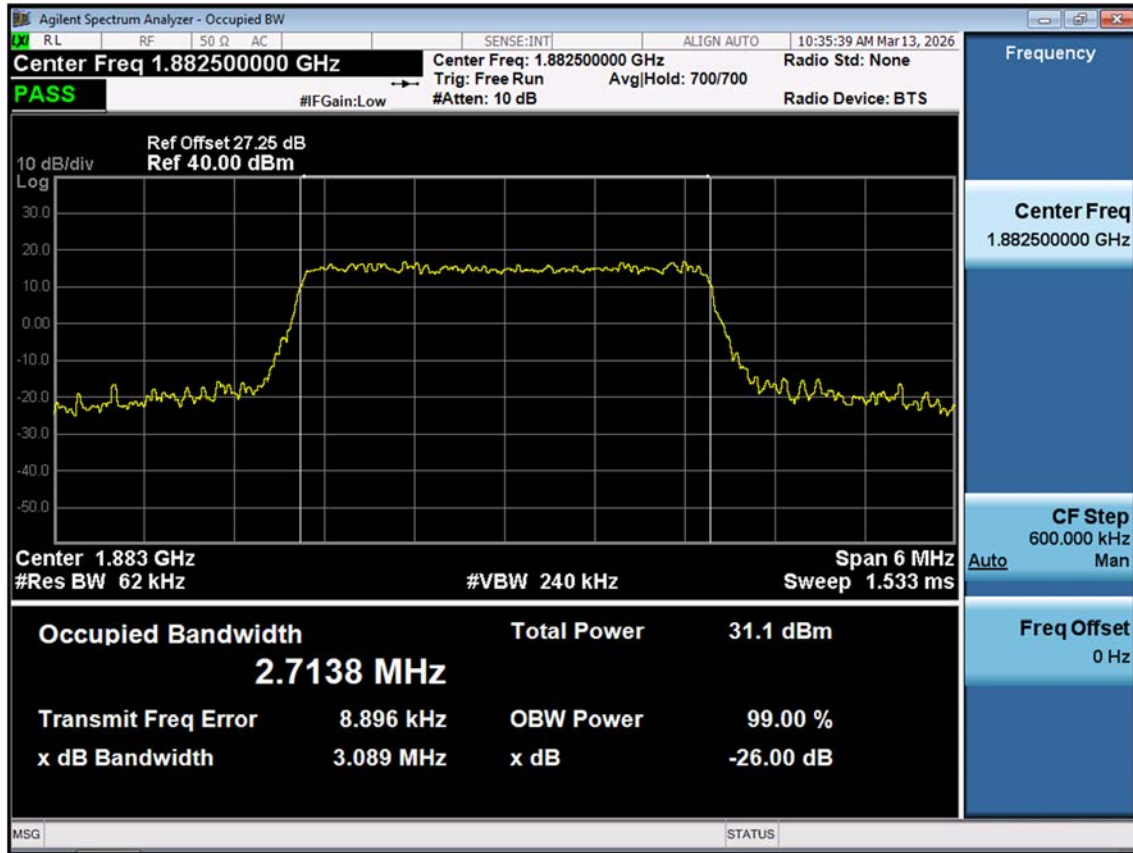
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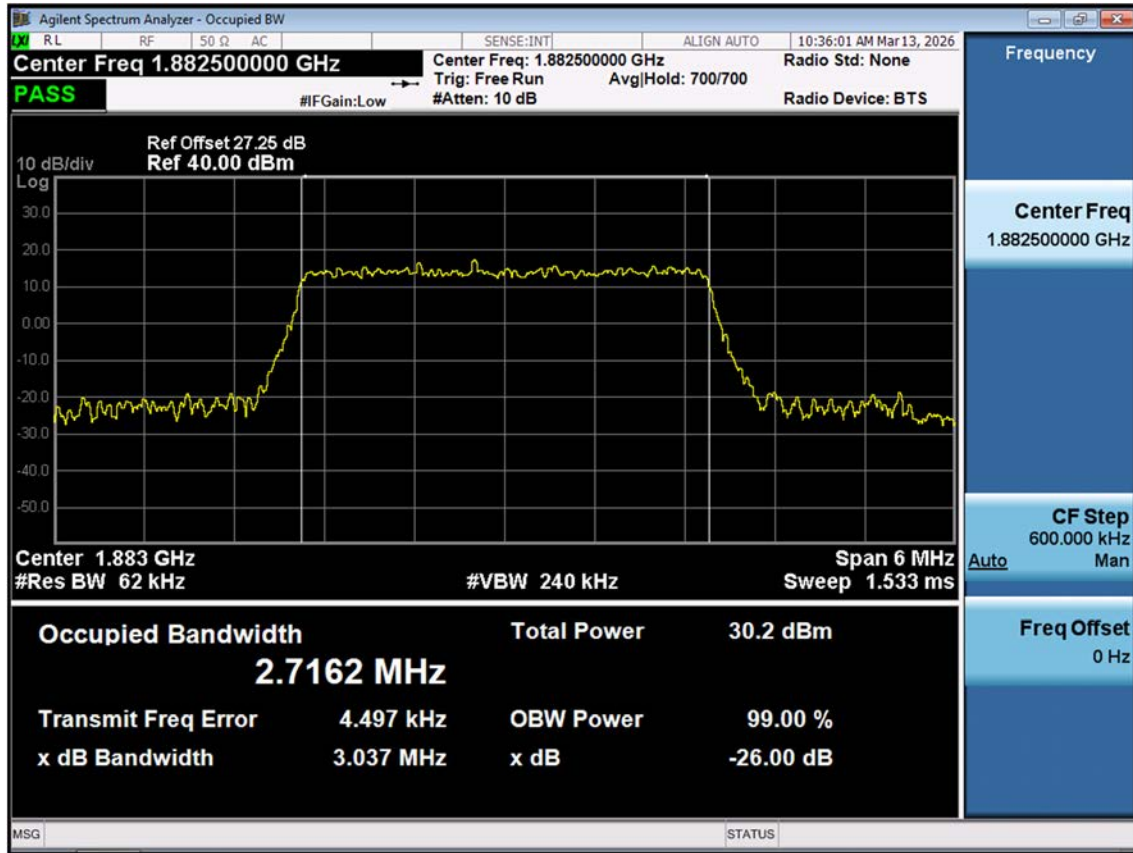
LTE B25(2)_3 M_OBW_Mid_QPSK_FullRB



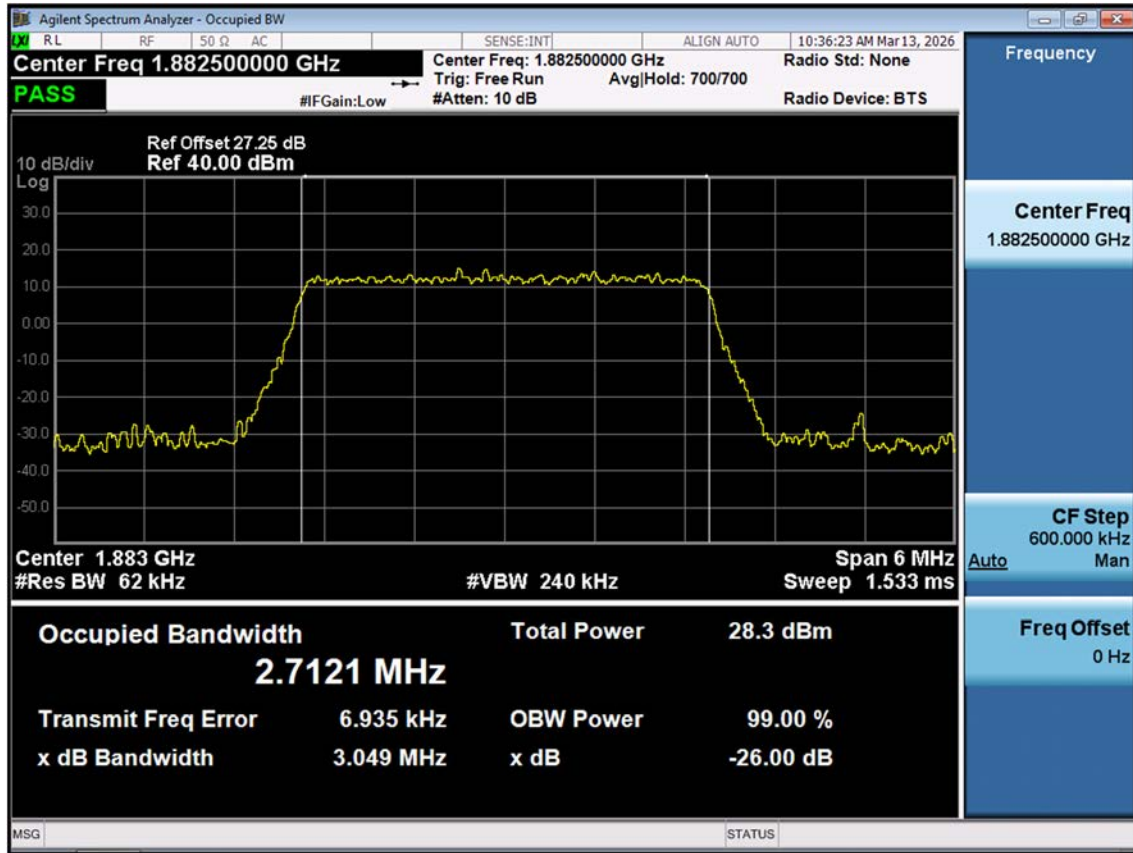
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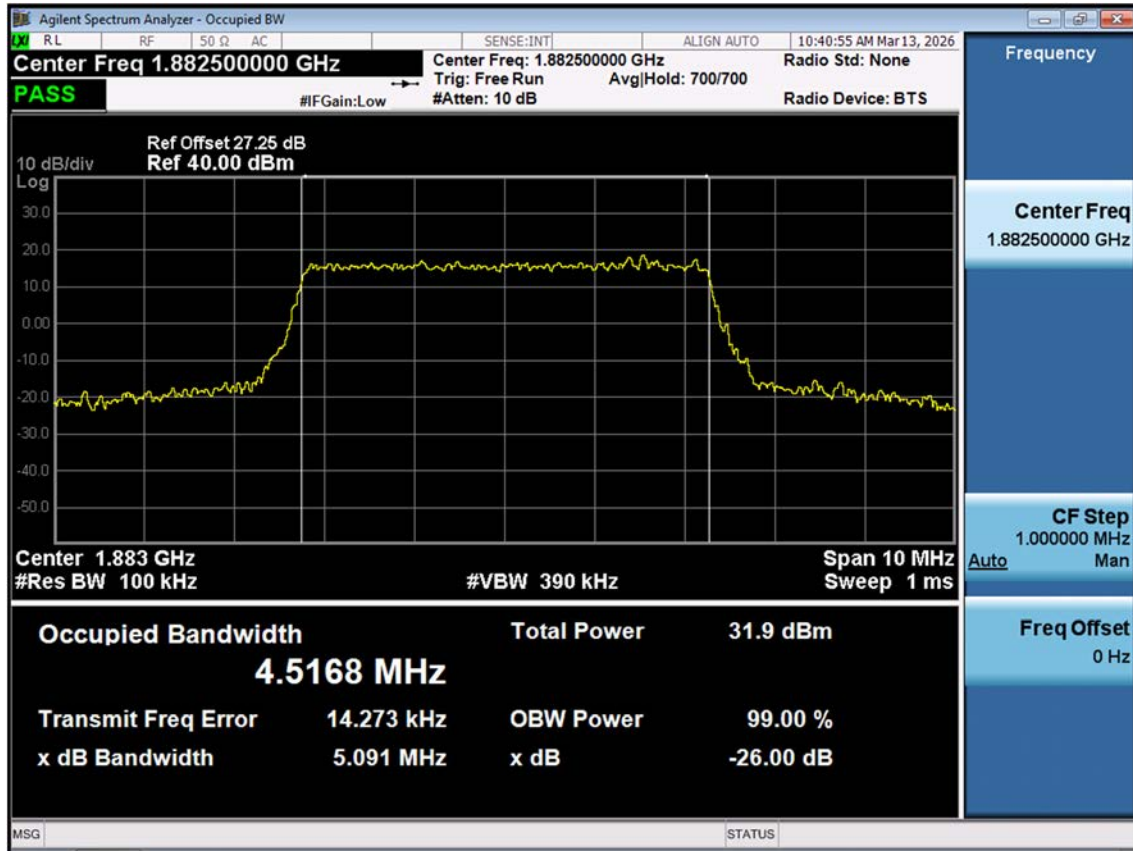
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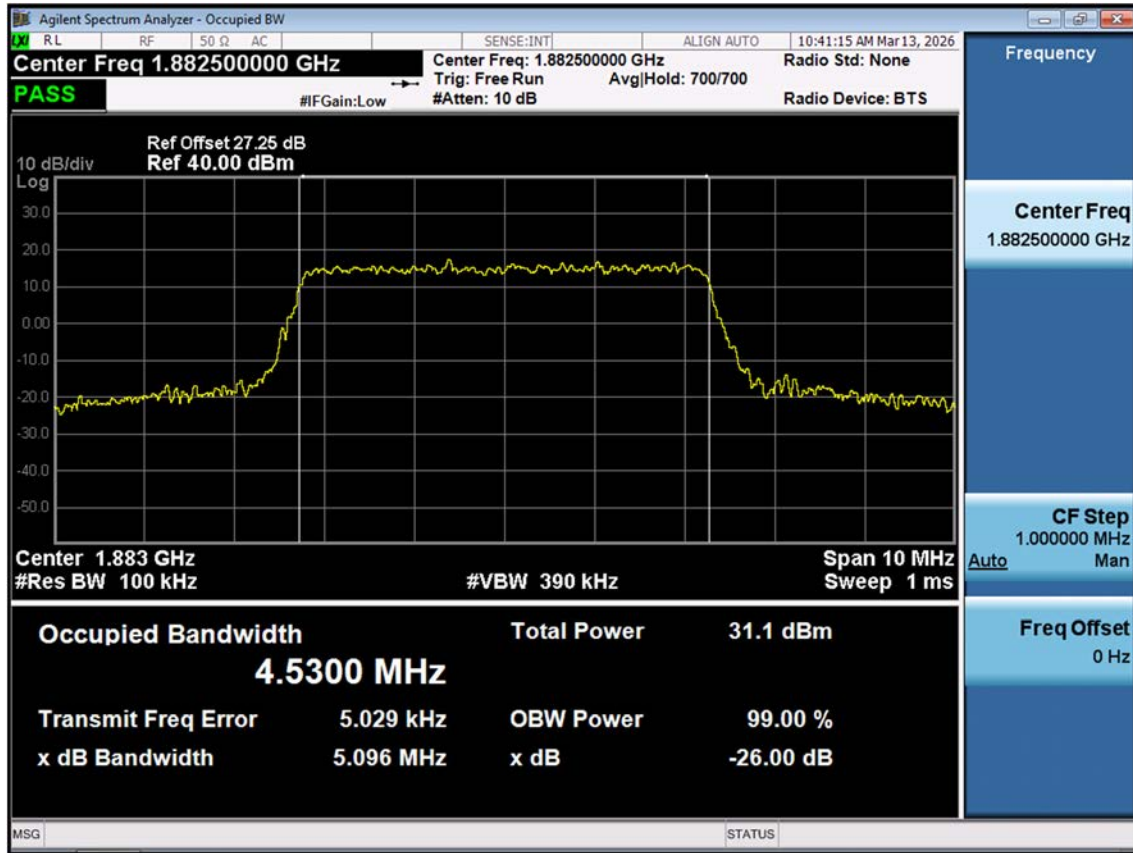
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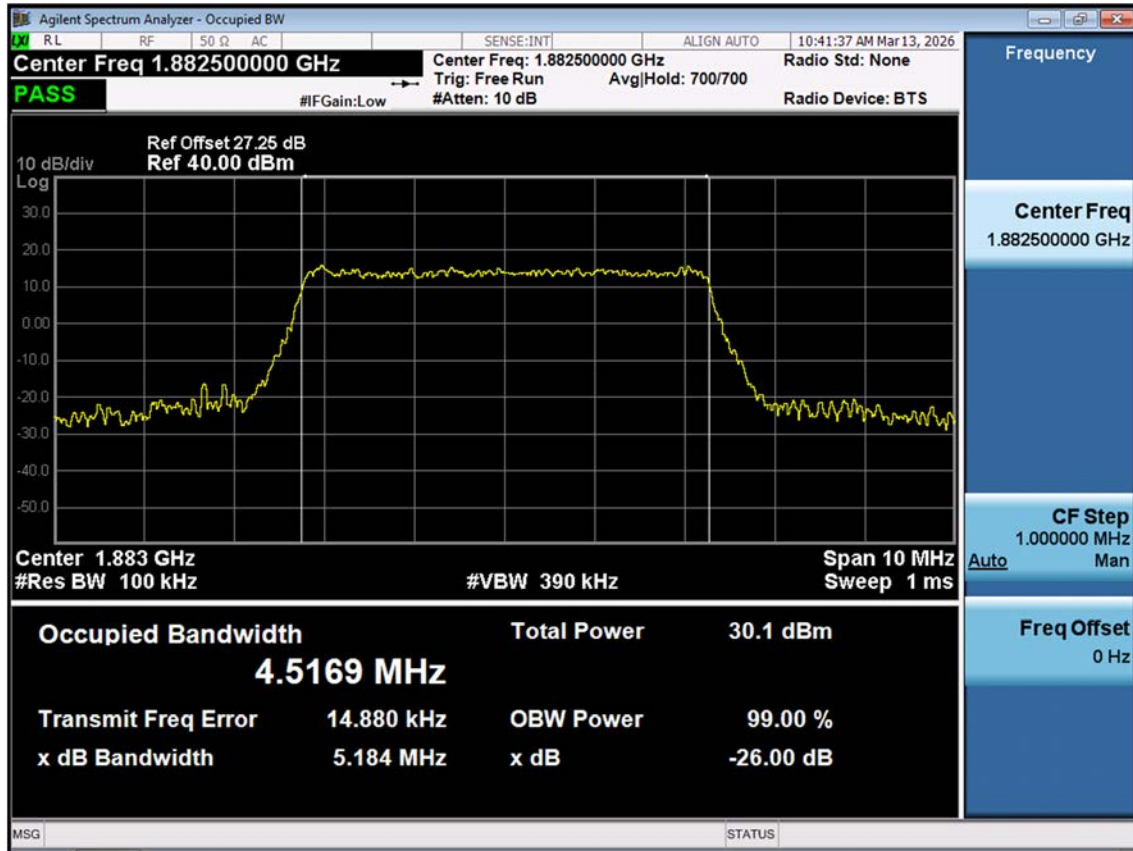
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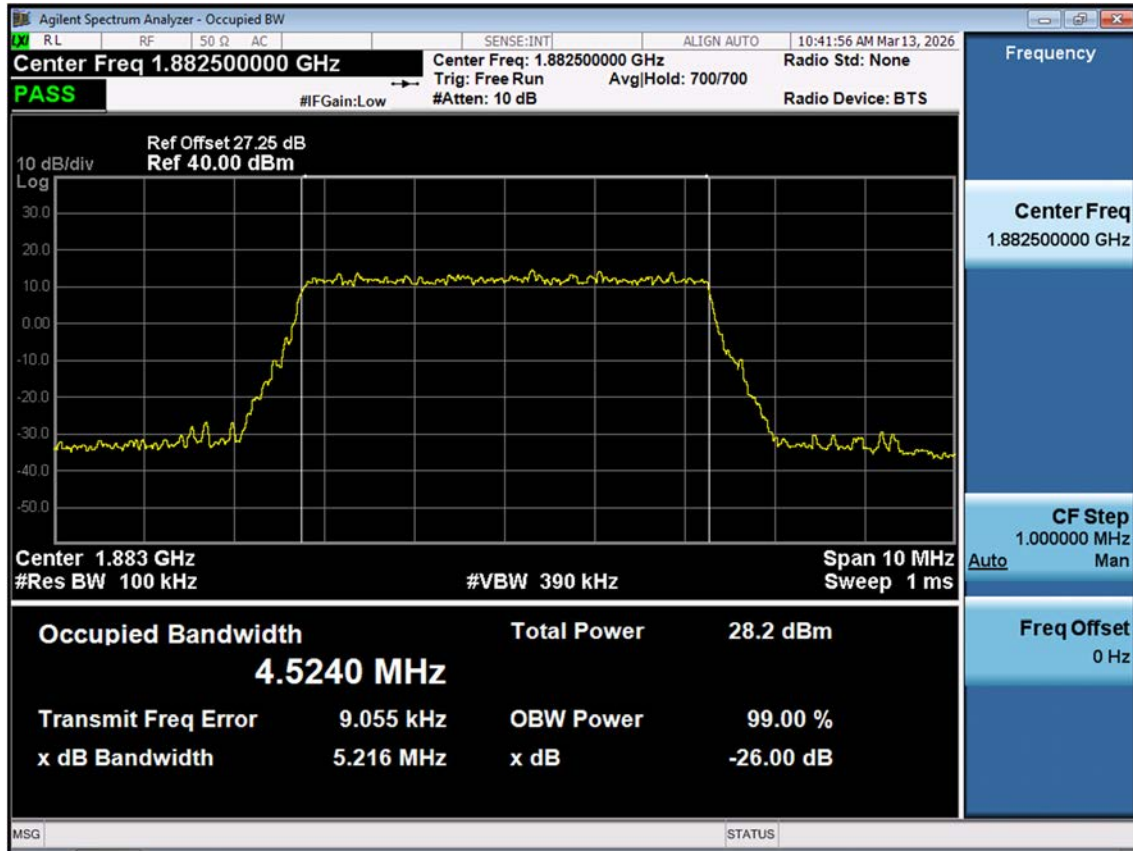
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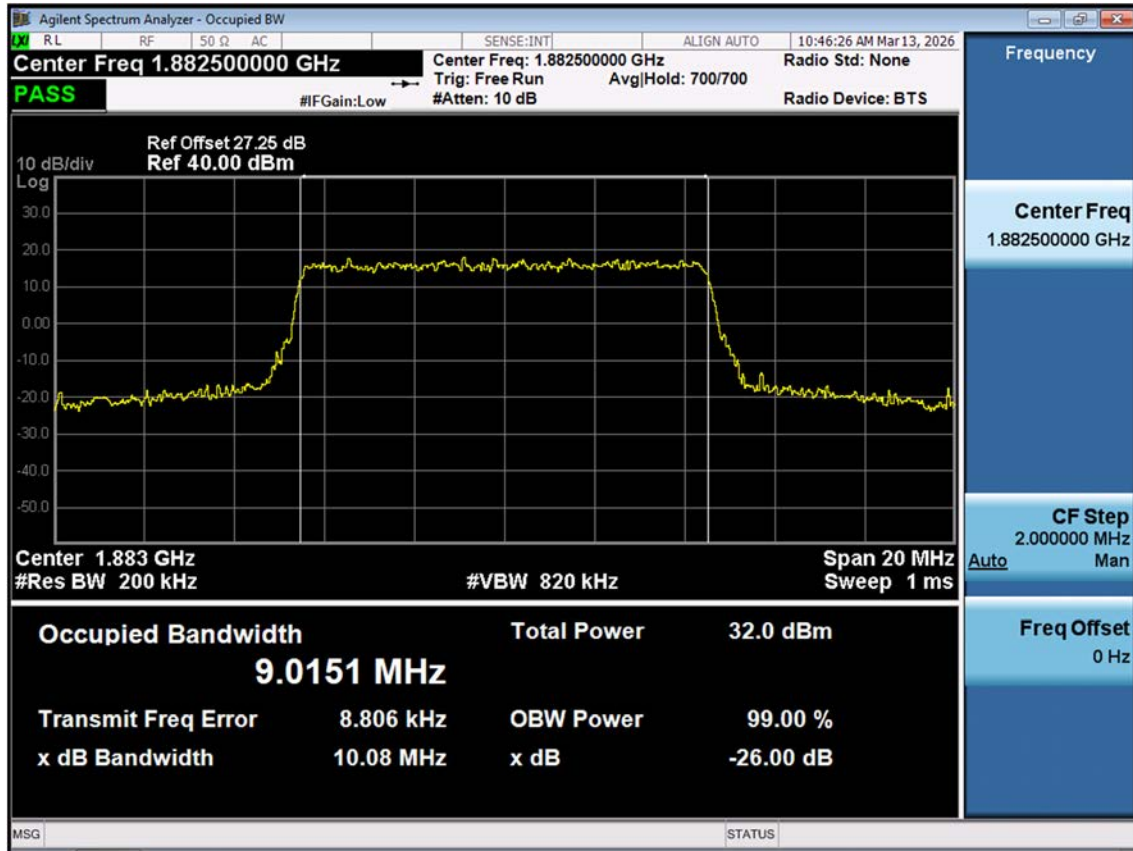
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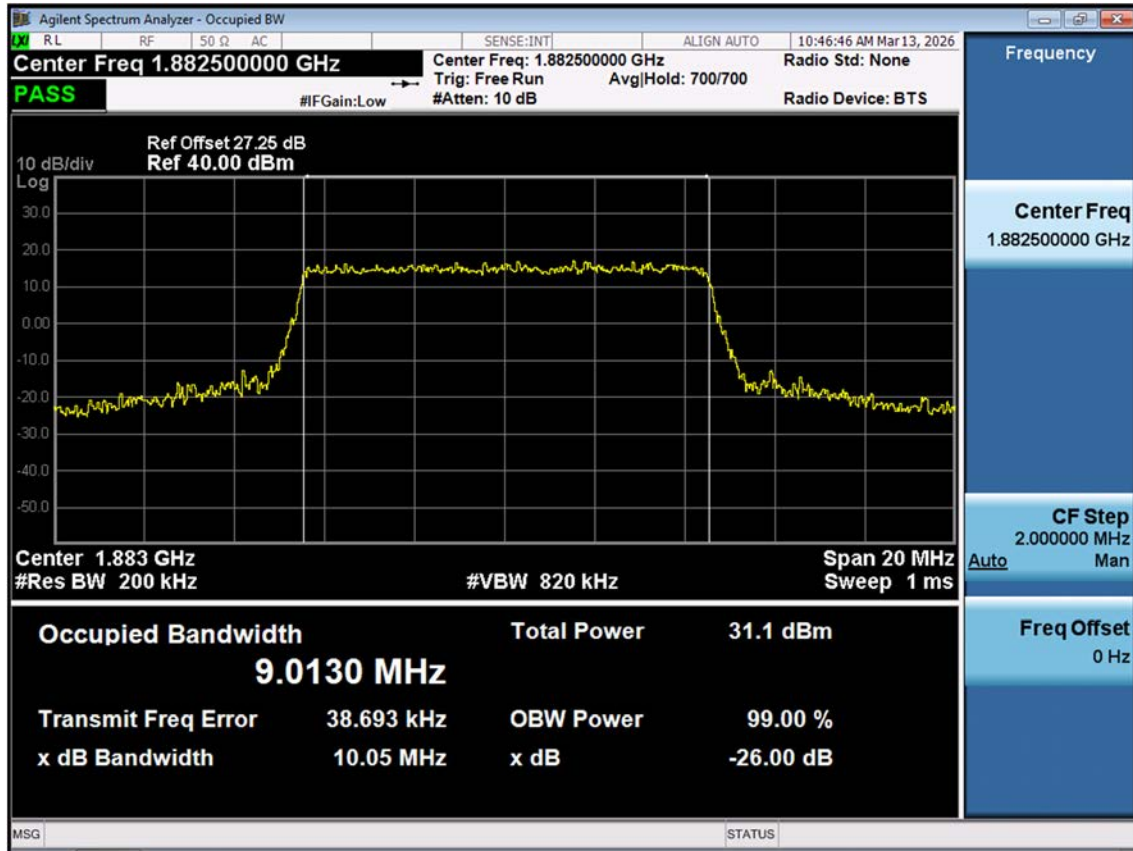
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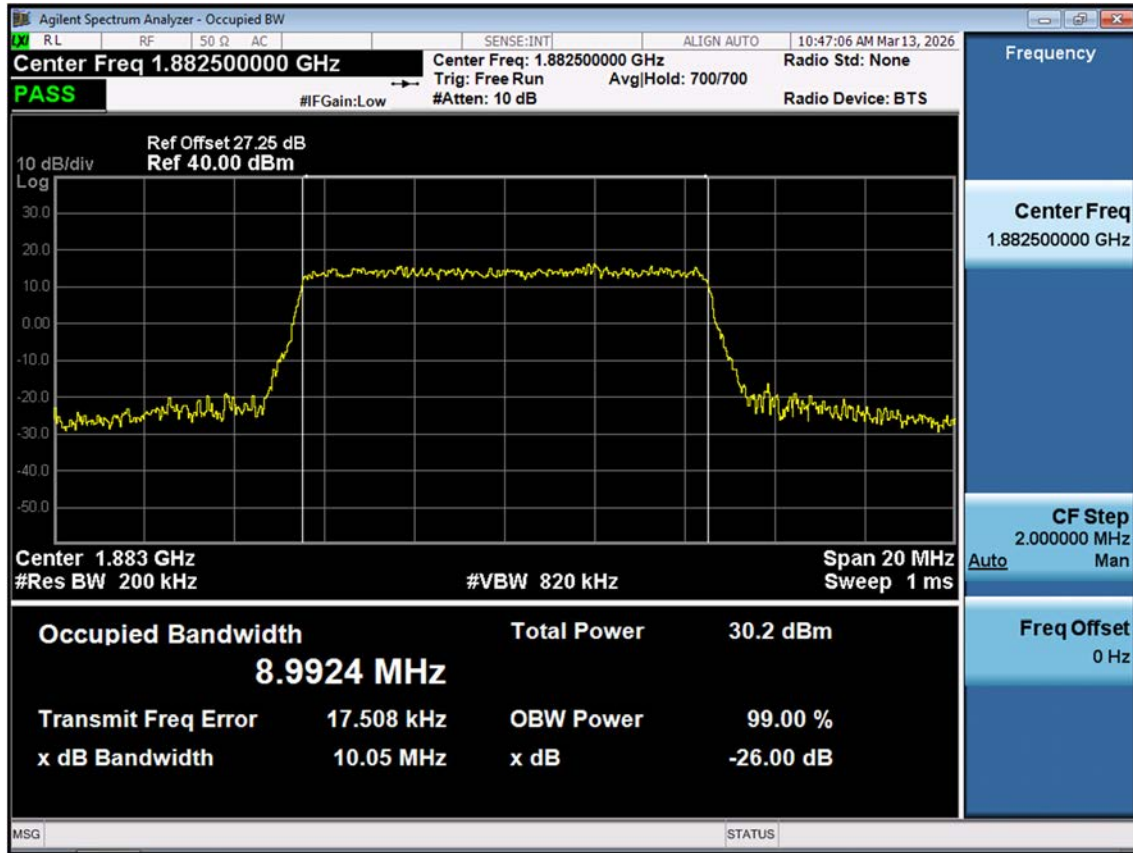
LTE B25(2)_10 M_OBW_Mid_QPSK_FullRB



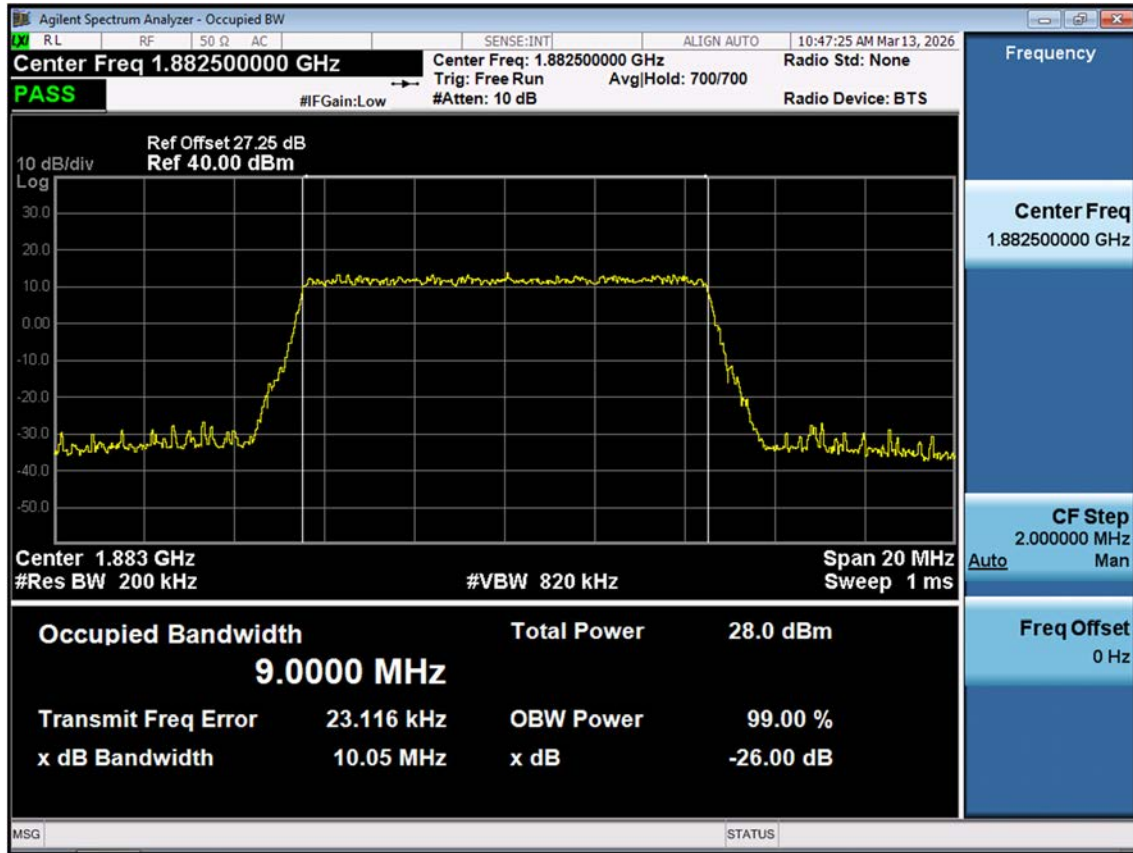
LTE B25(2)_10 M_OBW_Mid_16QAM_FullRB



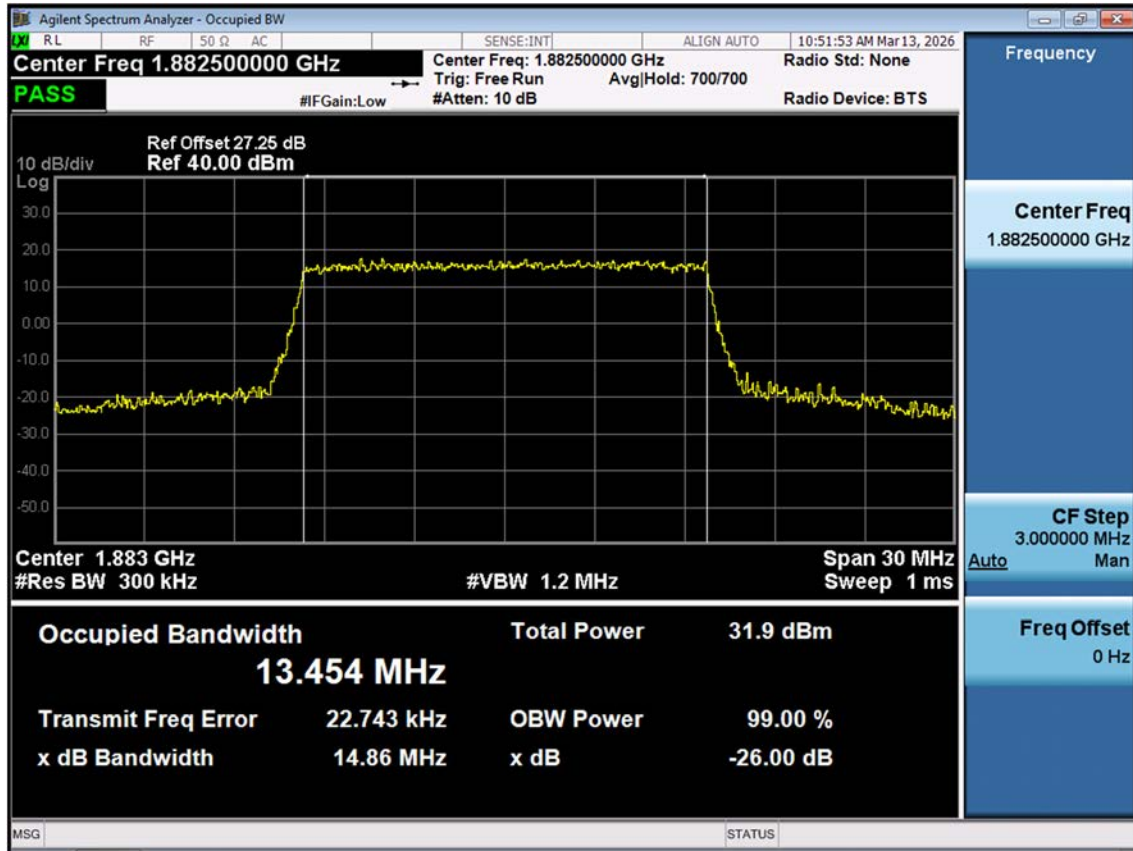
LTE B25(2)_10 M_OBW_Mid_64QAM_FullRB



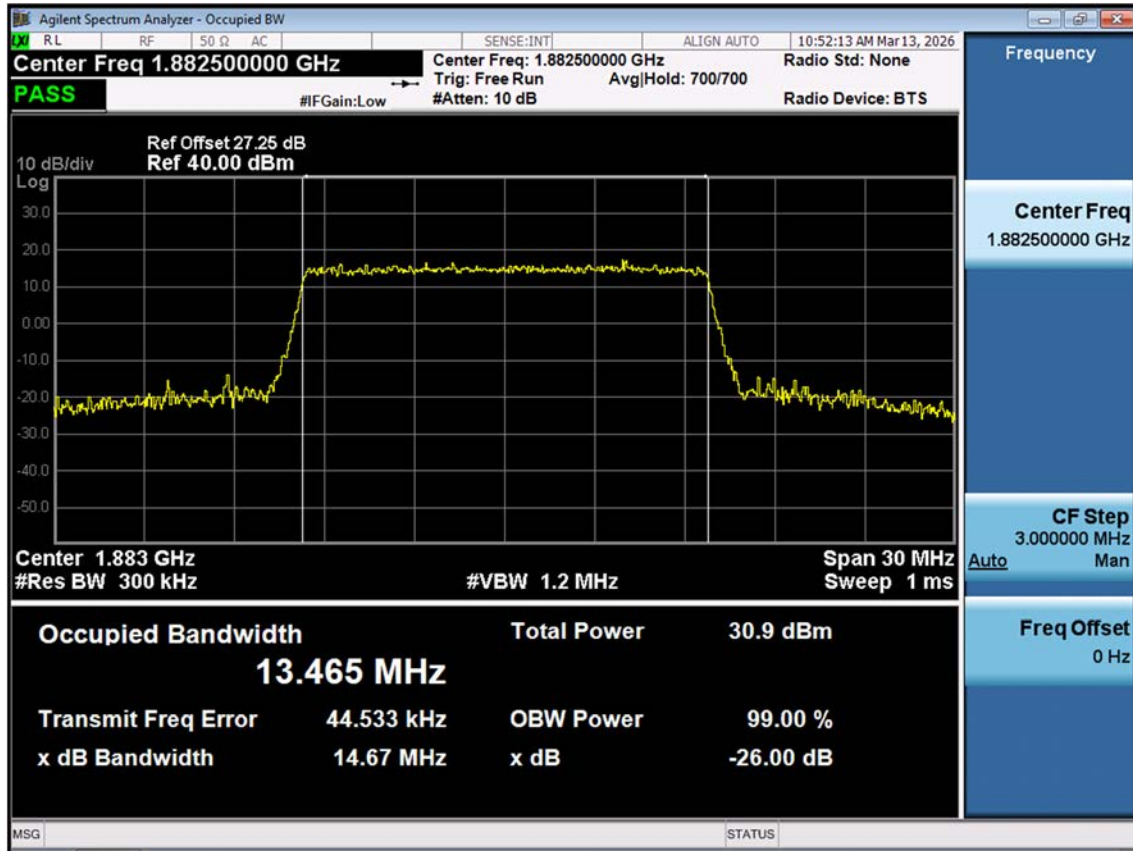
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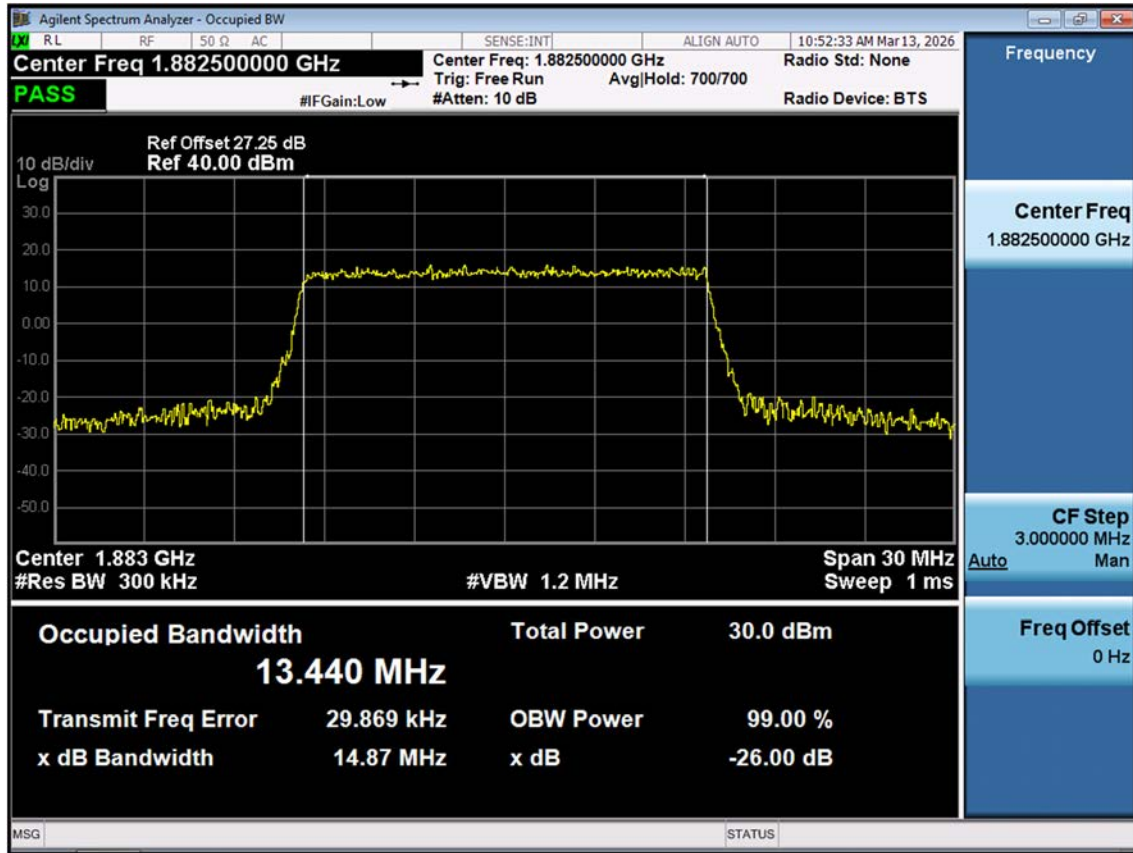
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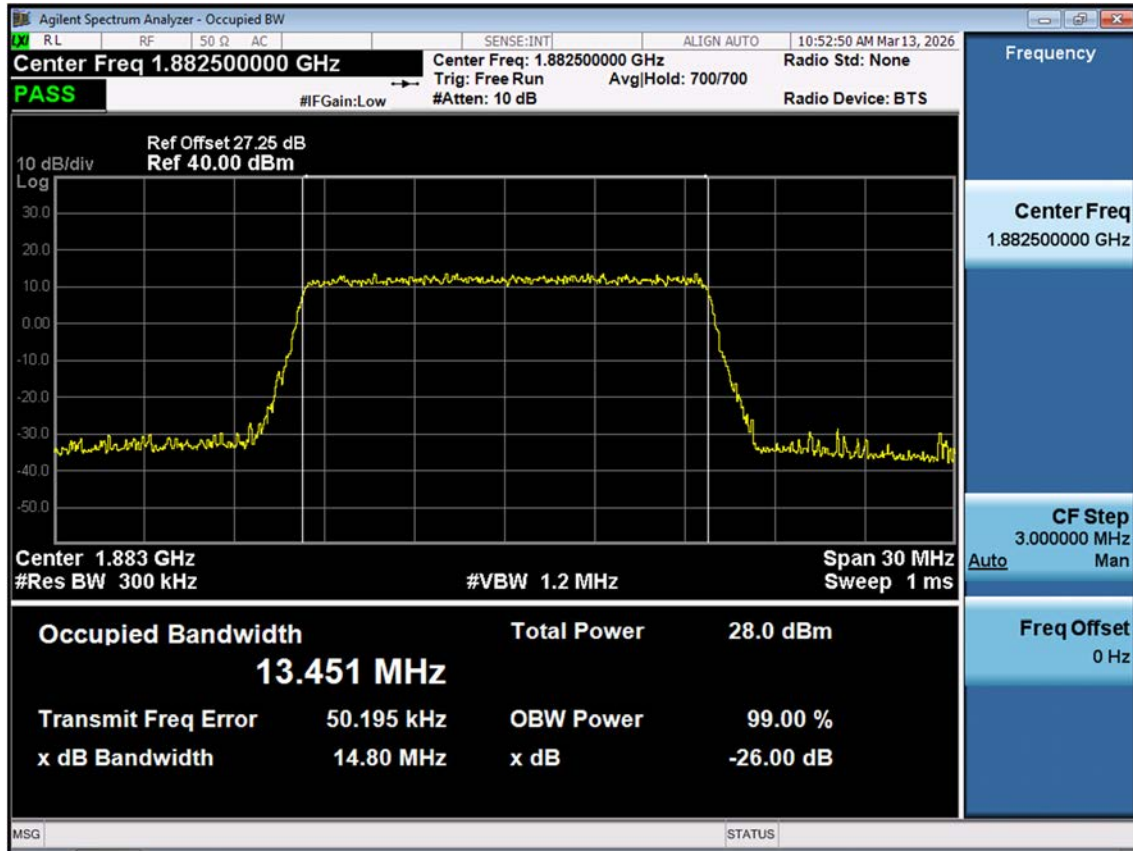
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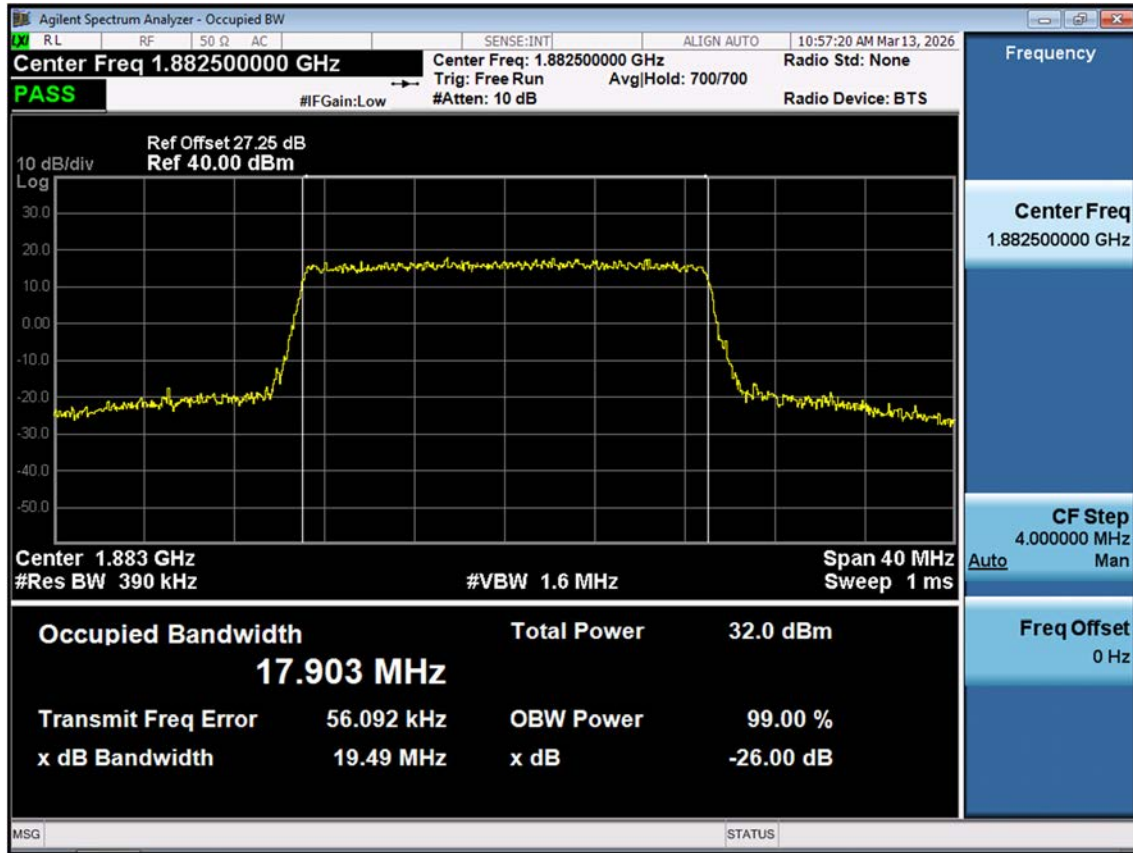
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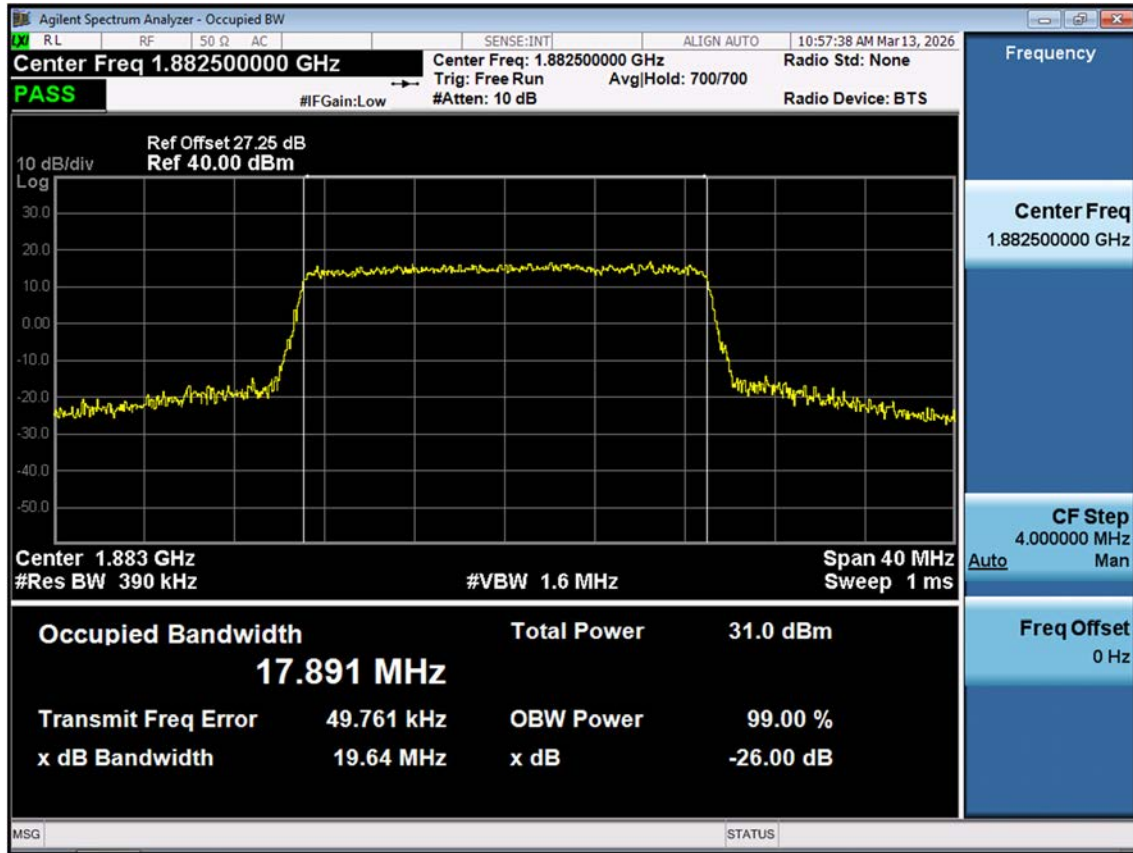
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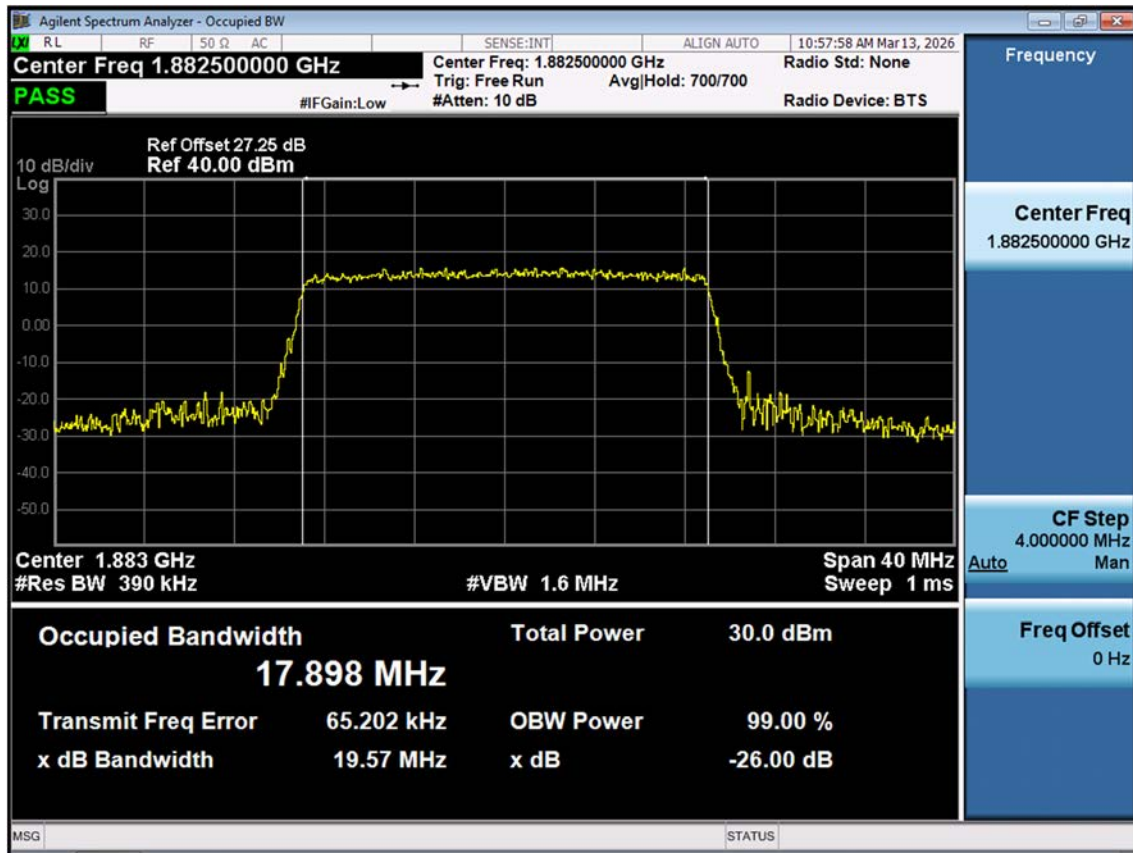
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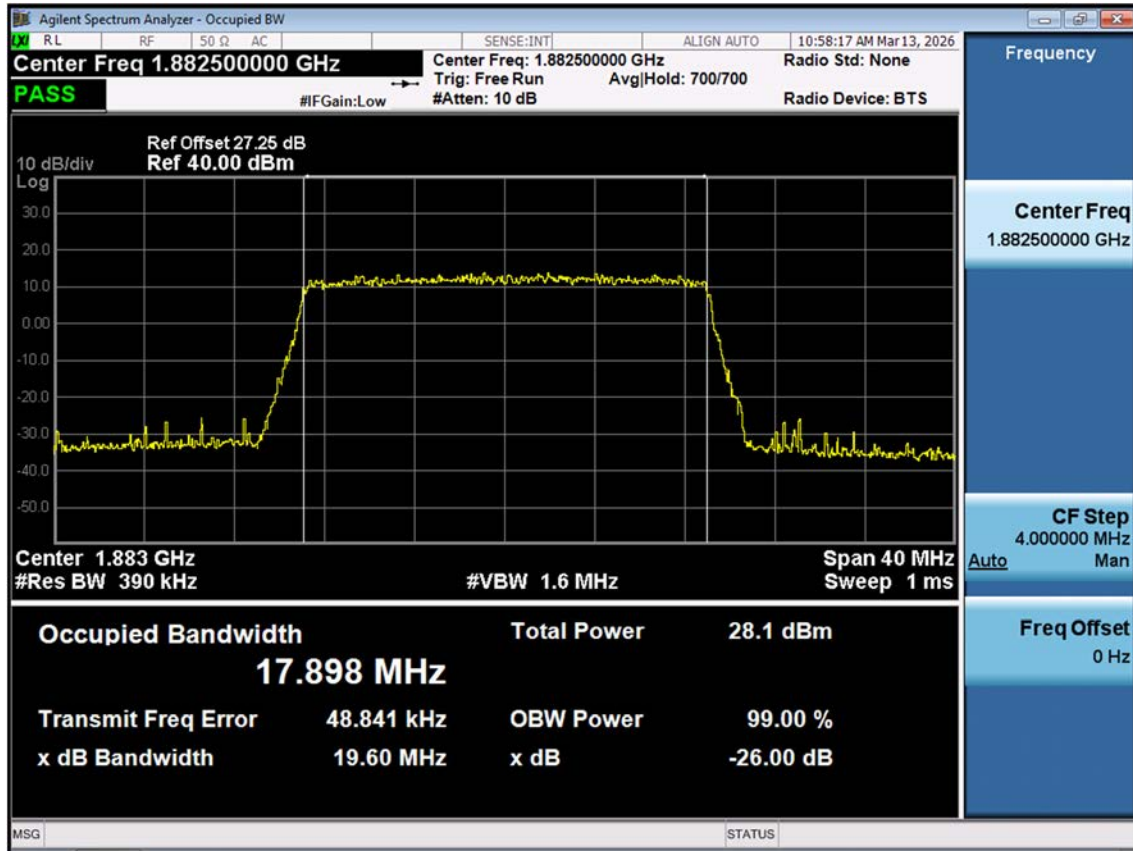
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LTE B25(2)_20 M_OBW_Mid_64QAM_FullRB

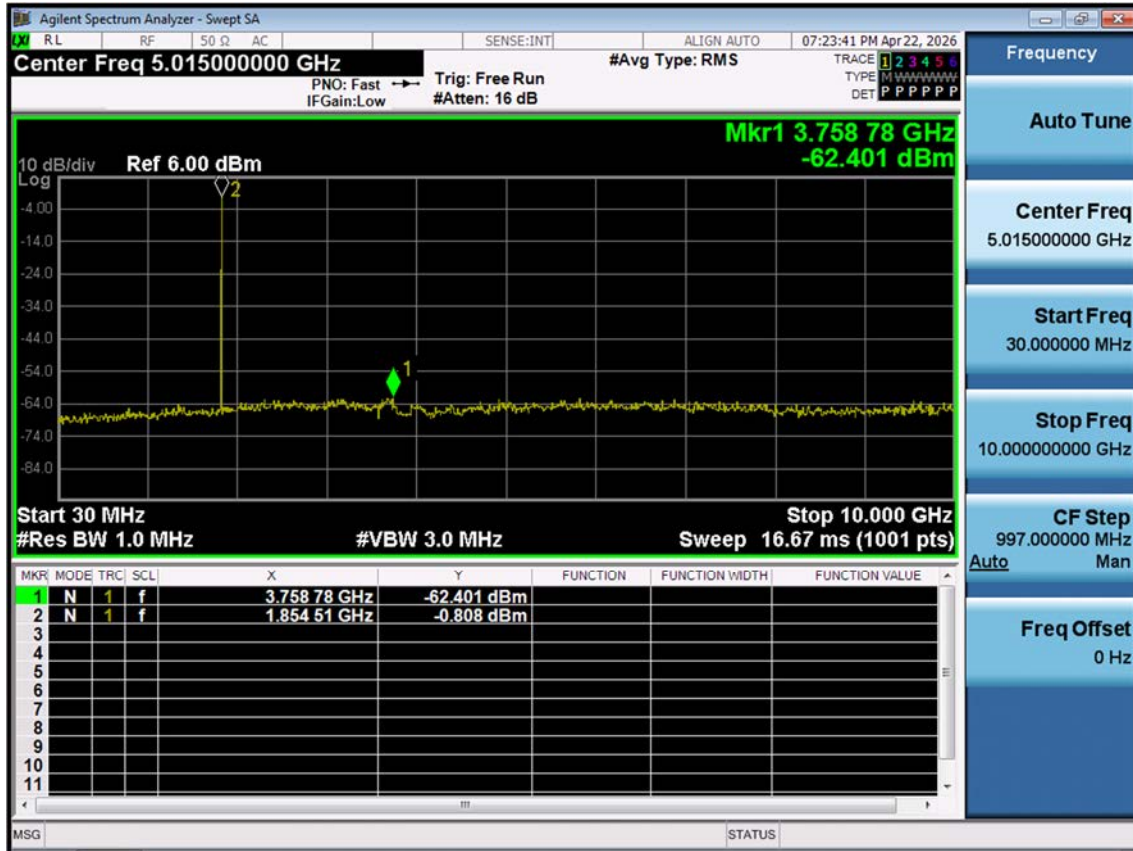


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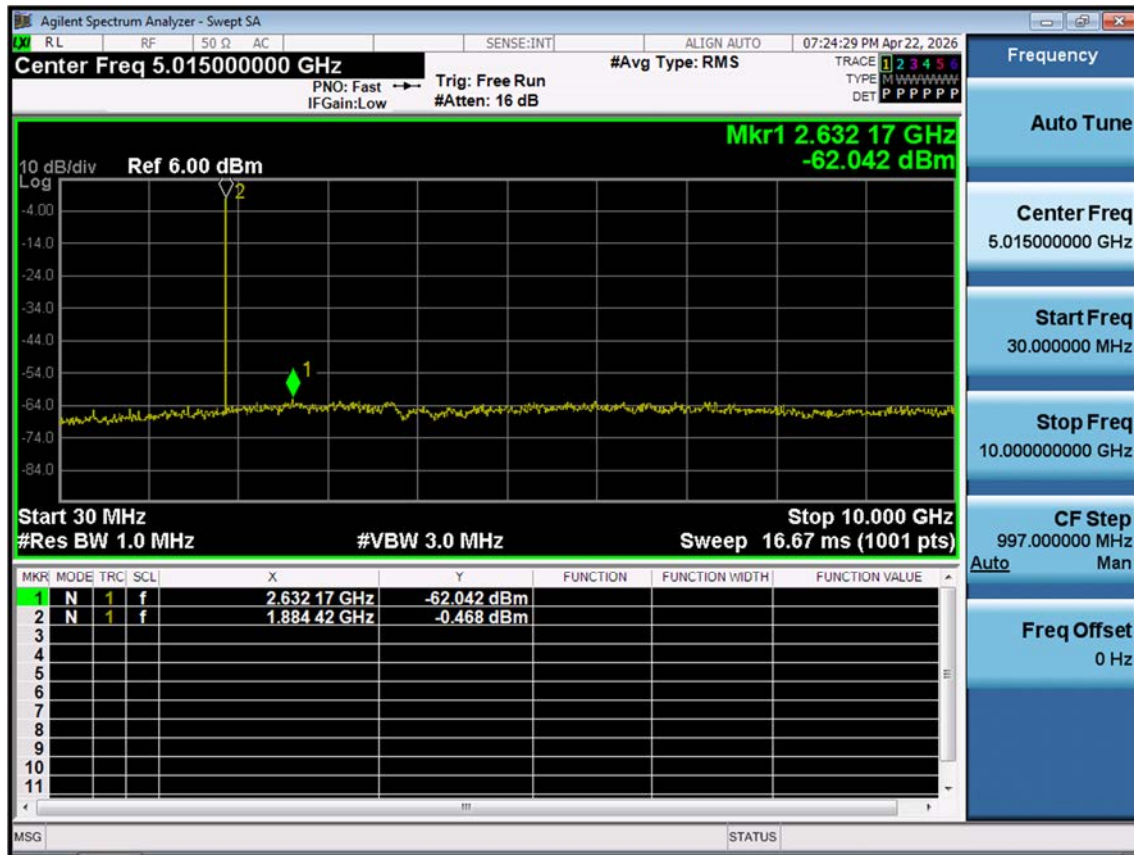


10.3 CONDUCTED SPURIOUS EMISSIONS

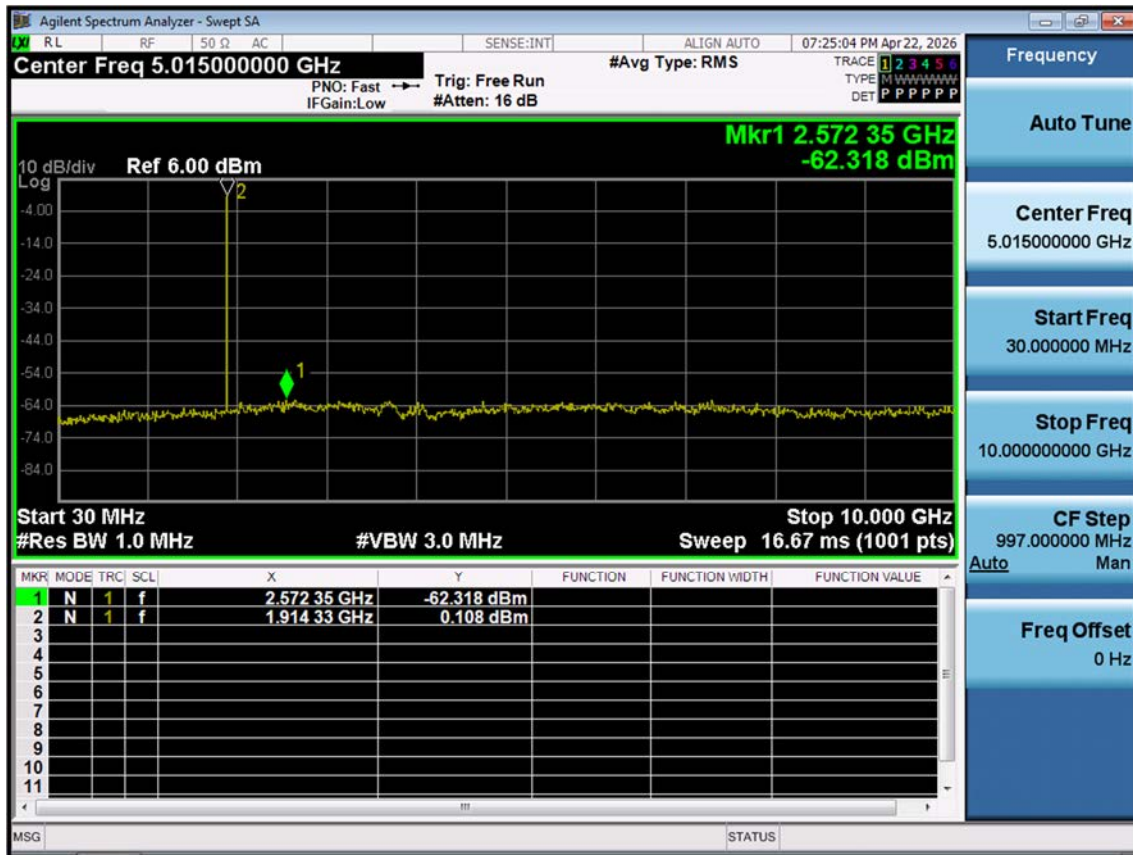
LTE B25(2)_1.4 M_Conducted Spurious Emissions(30 M-10 G)_Low_QPSK_1RB



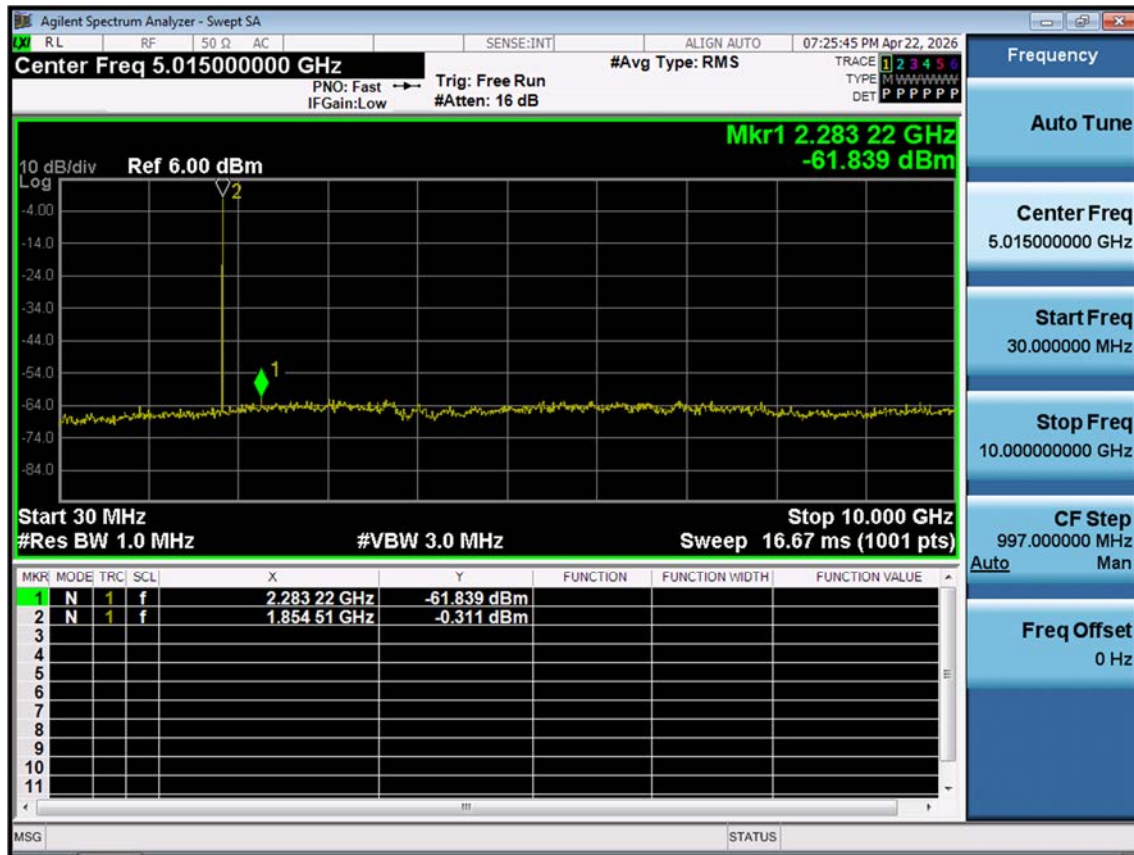
LTE B25(2)_1.4 M_Conducted Spurious Emissions(30 M-10 G)_Mid_QPSK_1RB



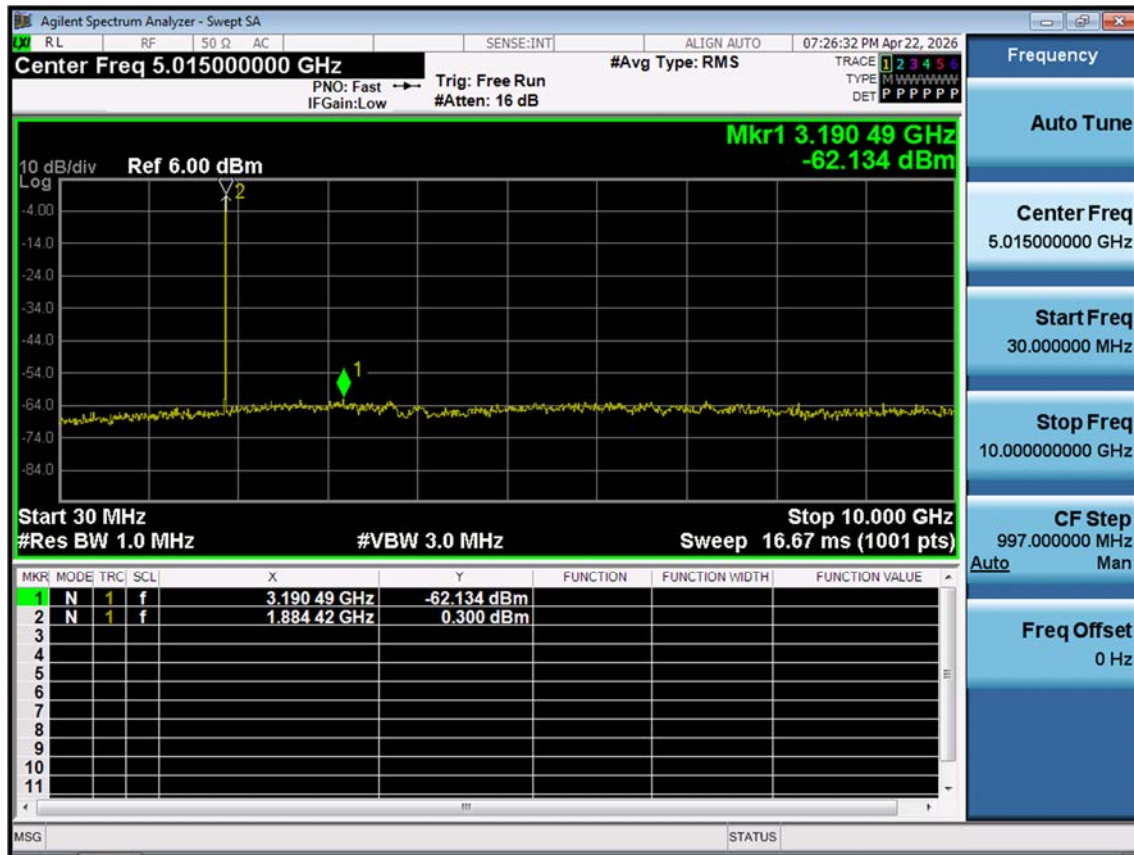
LTE B25(2)_1.4 M_Conducted Spurious Emissions(30 M-10 G)_High_QPSK_1RB



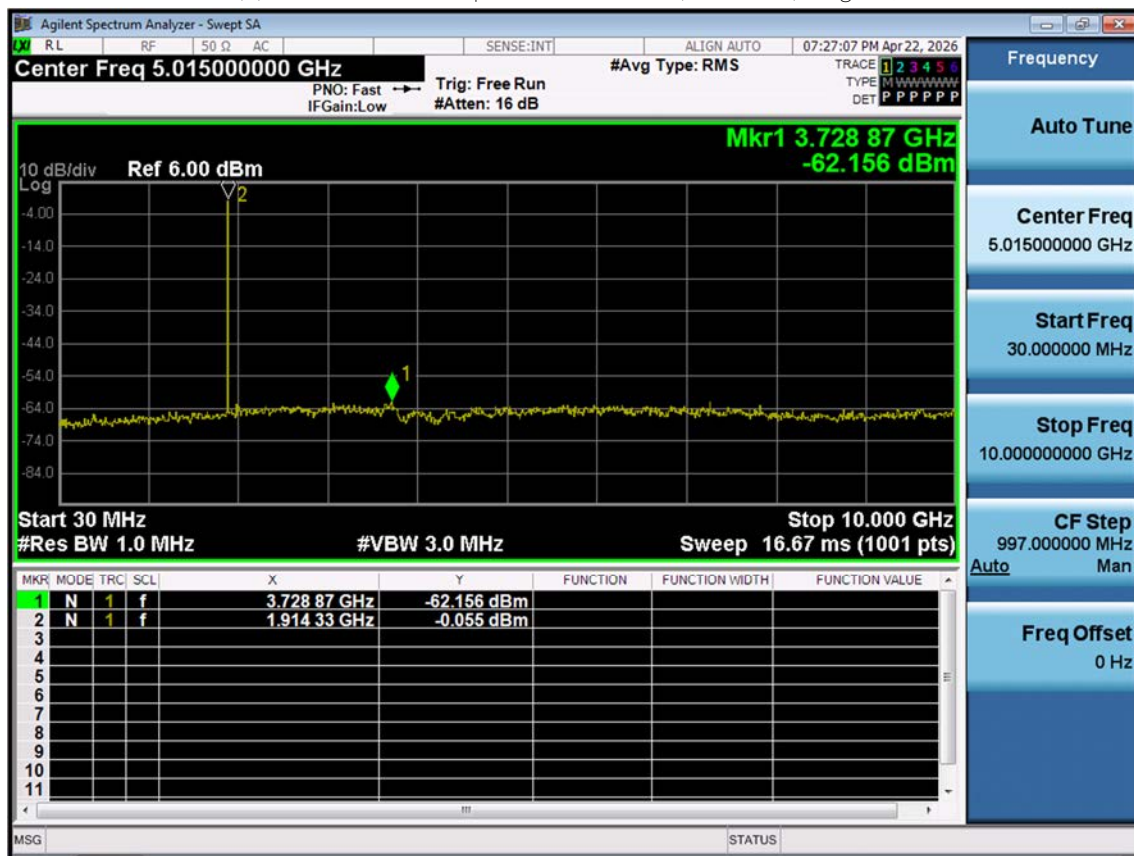
LTE B25(2)_3 M_Conducted Spurious Emissions(30 M-10 G)_Low_QPSK_1RB



LTE B25(2)_3 M_Conducted Spurious Emissions(30 M-10 G)_Mid_QPSK_1RB



LTE B25(2)_3 M_Conducted Spurious Emissions(30 M-10 G)_High_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 07:27:49 PM Apr 22, 2026

Center Freq 5.01500000 GHz #Avg Type: RMS PNO: Fast Trg: Free Run IFGain:Low #Atten: 16 dB TRACE 1 2 3 4 5 TYPE M W W W W W W DET P P P P P

10 dB/div Ref 6.00 dBm Log

Mkr1 3.190 49 GHz -61.305 dBm

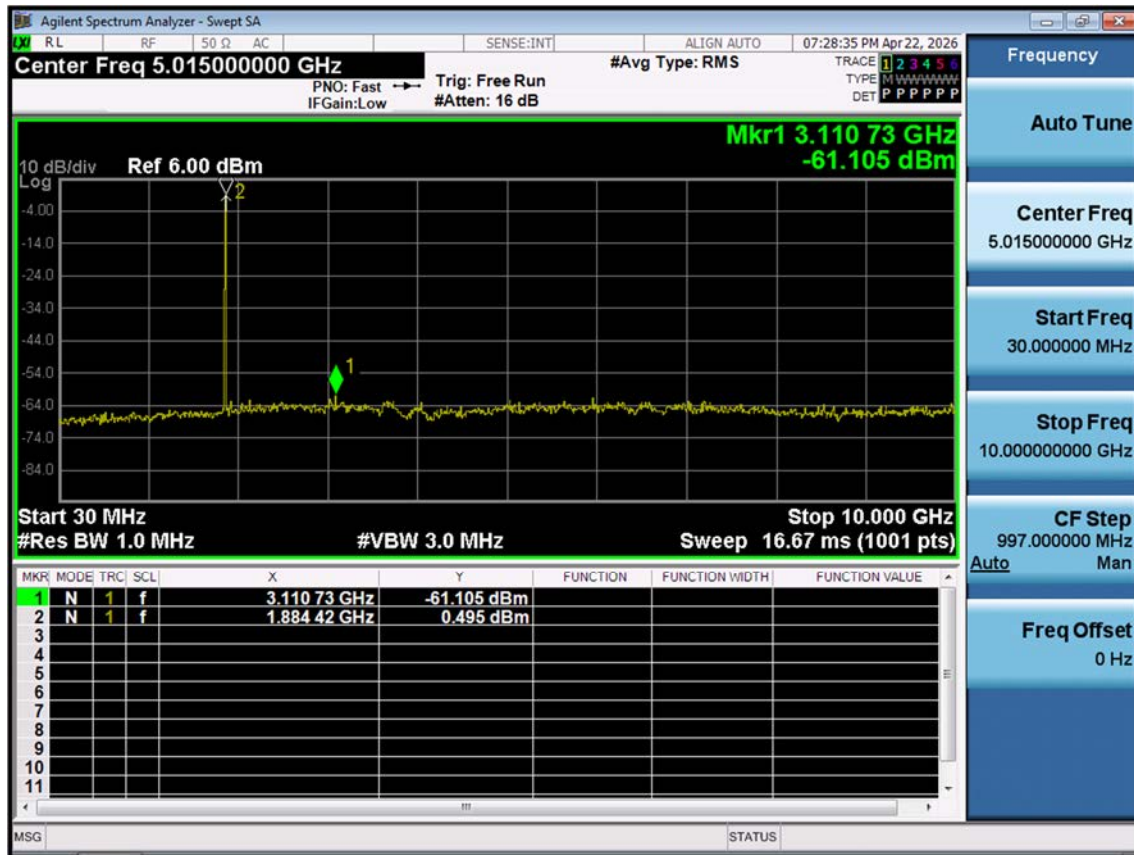
Start 30 MHz Stop 10.000 GHz
#Res BW 1.0 MHz #VBW 3.0 MHz Sweep 16.67 ms (1001 pts)

MRK	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	3.190 49 GHz	-61.305 dBm			
2	N	1	f	1.854 51 GHz	-0.503 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

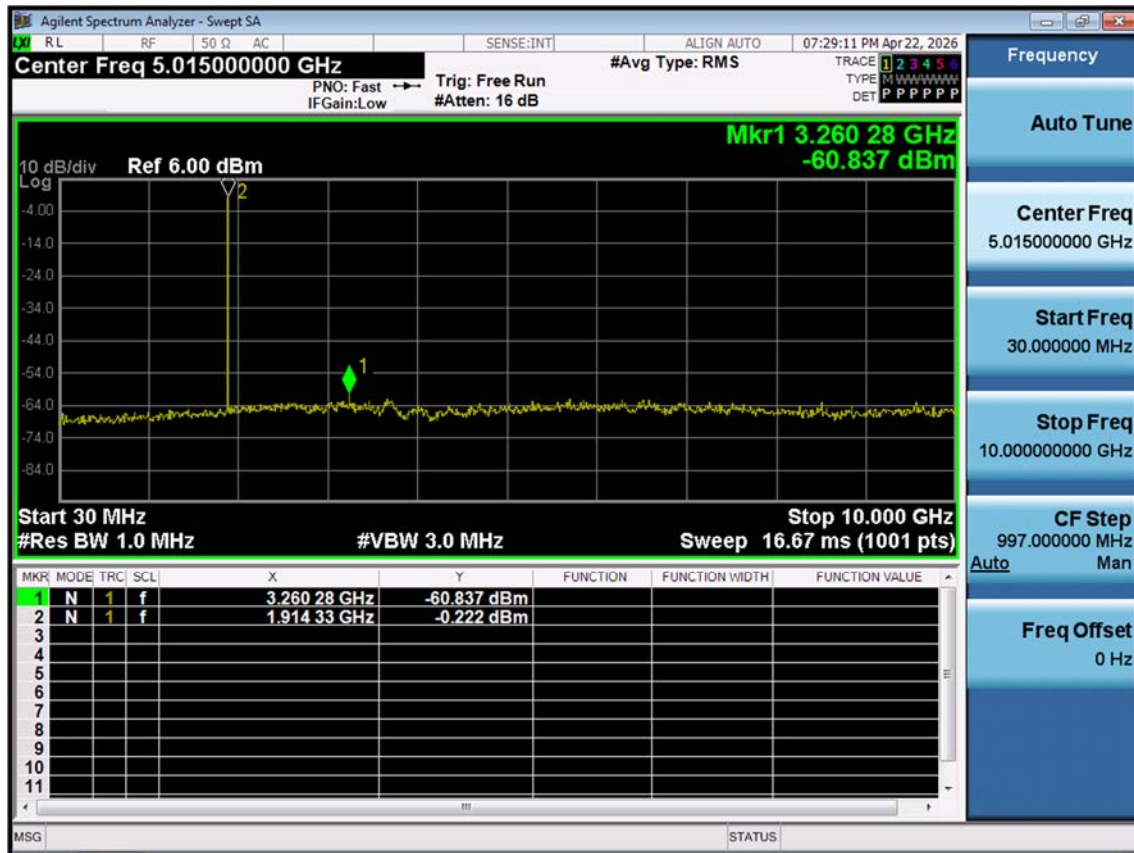
MSG STATUS

Frequency Auto Tune Center Freq 5.01500000 GHz Start Freq 30.000000 MHz Stop Freq 10.00000000 GHz CF Step 997.000000 MHz Man Auto Freq Offset 0 Hz

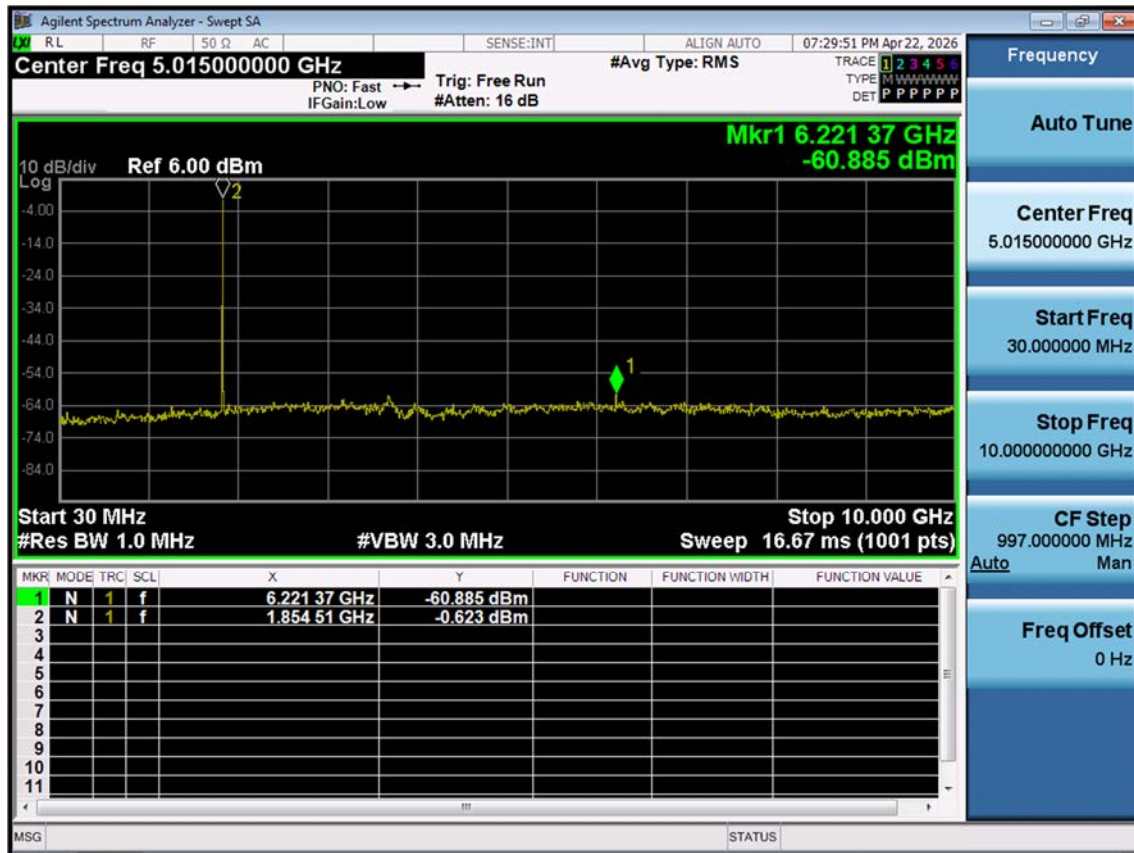
LTE B25(2)_5 M_Conducted Spurious Emissions(30 M-10 G)_Mid_QPSK_1RB



LTE B25(2)_5 M_Conducted Spurious Emissions(30 M-10 G)_High_QPSK_1RB



LTE B25(2)_10 M_Conducted Spurious Emissions(30 M-10 G)_Low_QPSK_1RB



LTE B25(2)_10 M_Conducted Spurious Emissions(30 M-10 G)_Mid_QPSK_1RB

