

TEST REPORT

FCC LTE B2 Test for SM-S731B/DS
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2507-FC058

DATE OF ISSUE
July 15, 2025

Tested by
Jae Ryang Do



Technical Manager
Jong Seok Lee



HCT CO., LTD.
BongJai Huh
BongJai Huh / CEO

**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-2507-FC058

DATE OF ISSUE

July 15, 2025

Additional Model

SM-S731B

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-S731B/DS

Date of Test

June 05, 2025 ~ July 11, 2025

FCC ID

A3LSMS731B

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)

FCC Rule Part(s):

§ 24

Test Results

PASS

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	July 17, 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).

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MEASUREMENT REPORT

1. GENERAL INFORMATION

Model(s):	SM-S731B/DS
Additional Model(s)	SM-S731B
Tx Frequency:	1850.7 MHz – 1909.3 MHz (LTE – Band2 (1.4 MHz)) 1851.5 MHz – 1908.5 MHz (LTE – Band2 (3 MHz)) 1852.5 MHz – 1907.5 MHz (LTE – Band2 (5 MHz)) 1855.0 MHz – 1905.0 MHz (LTE – Band2 (10 MHz)) 1857.5 MHz – 1902.5 MHz (LTE – Band2 (15 MHz)) 1860.0 MHz – 1900.0 MHz (LTE – Band2 (20 MHz))
Serial number:	Radiated : R3CY40QLLEZ Conducted : R3CY40QLBND Uplink Carrier Aggregation : R3CY40QLLEZ
Antenna Information	Please refer to the Antenna Specification document.

MAXIMUM OUTPUT POWER

Main 1 ANT

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band2 (1.4)	1850.7 - 1909.3	1M10G7D	QPSK	0.272	24.35
		1M10W7D	16QAM	0.234	23.70
		1M10W7D	64QAM	0.184	22.64
		1M10W7D	256QAM	0.089	19.51
LTE – Band2 (3)	1851.5 - 1908.5	2M72G7D	QPSK	0.276	24.41
		2M70W7D	16QAM	0.233	23.67
		2M70W7D	64QAM	0.185	22.68
		2M71W7D	256QAM	0.089	19.49
LTE – Band2 (5)	1852.5 - 1907.5	4M53G7D	QPSK	0.280	24.47
		4M52W7D	16QAM	0.243	23.85
		4M53W7D	64QAM	0.188	22.75
		4M53W7D	256QAM	0.095	19.79
LTE – Band2 (10)	1855.0 - 1905.0	9M04G7D	QPSK	0.280	24.47
		9M03W7D	16QAM	0.242	23.83
		9M02W7D	64QAM	0.185	22.68
		9M03W7D	256QAM	0.093	19.69
LTE – Band2 (15)	1857.5 - 1902.5	13M5G7D	QPSK	0.281	24.48
		13M5W7D	16QAM	0.249	23.97
		13M5W7D	64QAM	0.187	22.73
		13M5W7D	256QAM	0.094	19.72
LTE – Band2 (20)	1860.0 - 1900.0	18M0G7D	QPSK	0.279	24.46
		17M9W7D	16QAM	0.236	23.72
		17M9W7D	64QAM	0.179	22.53
		18M0W7D	256QAM	0.095	19.76

Sub 2 ANT

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band2 (1.4)	1850.7 - 1909.3	1M11G7D	QPSK	0.089	19.49
		1M10W7D	16QAM	0.079	18.95
		1M10W7D	64QAM	0.060	17.78
		1M10W7D	256QAM	0.030	14.75
LTE – Band2 (3)	1851.5 - 1908.5	2M72G7D	QPSK	0.087	19.40
		2M71W7D	16QAM	0.076	18.82
		2M71W7D	64QAM	0.060	17.77
		2M71W7D	256QAM	0.030	14.75
LTE – Band2 (5)	1852.5 - 1907.5	4M53G7D	QPSK	0.089	19.51
		4M51W7D	16QAM	0.078	18.93
		4M52W7D	64QAM	0.061	17.82
		4M54W7D	256QAM	0.029	14.66
LTE – Band2 (10)	1855.0 - 1905.0	9M03G7D	QPSK	0.092	19.63
		9M03W7D	16QAM	0.081	19.06
		9M04W7D	64QAM	0.063	17.98
		9M02W7D	256QAM	0.031	14.95
LTE – Band2 (15)	1857.5 - 1902.5	13M5G7D	QPSK	0.092	19.66
		13M5W7D	16QAM	0.077	18.89
		13M5W7D	64QAM	0.060	17.81
		13M5W7D	256QAM	0.031	14.88
LTE – Band2 (20)	1860.0 - 1900.0	18M0G7D	QPSK	0.092	19.64
		17M9W7D	16QAM	0.078	18.90
		17M9W7D	64QAM	0.059	17.72
		18M0W7D	256QAM	0.030	14.75

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 March 11, 2024 (Registration Number: KR0032).

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

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. Span = 1.5 times the OBW
4. No. of sweep points $> 2 \times$ 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;

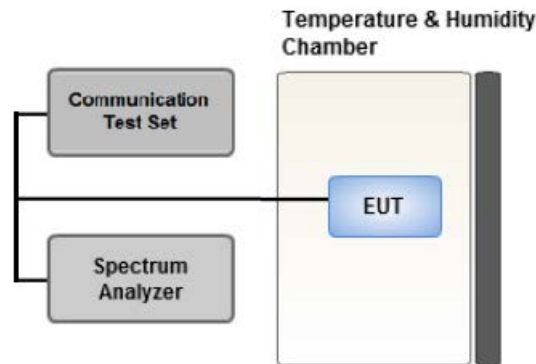
$$\text{Result}_{(\text{dBm})} = P_g_{(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

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

① CCDF Procedure for PAPR

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 %.

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 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:

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

Test Settings(Peak Power)

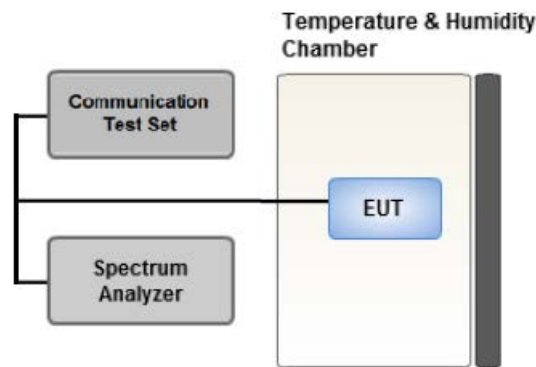
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW $\geq 3 \times$ RBW.

1. Set the RBW $\geq$ OBW.
2. Set VBW $\geq 3 \times$ RBW.
3. Set span $\geq 2 \times$ OBW.
4. Sweep time $\geq 10 \times$ (number of points in sweep) $\times$ (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 $2 \times$ to $3 \times$ the OBW.
2. Set RBW $\geq$ OBW.
3. Set VBW $\geq 3 \times$ RBW.
4. Set number of measurement points in sweep $\geq 2 \times$ span / RBW.
5. Sweep time:
Set $\geq [10 \times (\text{number of points in sweep}) \times (\text{transmission period})]$ 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 $[10 \log (1/\text{duty cycle})]$ to the measured maximum power level to compute the average power during continuous transmission. For example, add $[10 \log (1/0.25)] = 6 \text{ dB}$ if the duty cycle is a constant 25 %.

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.

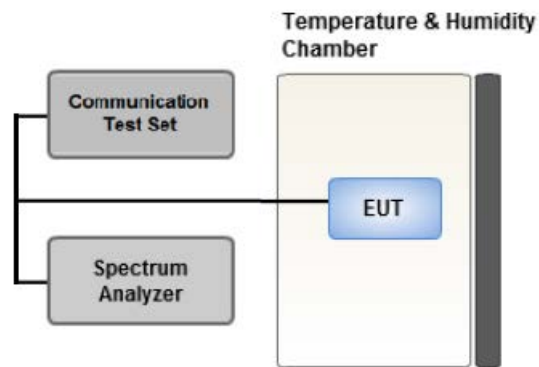
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

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

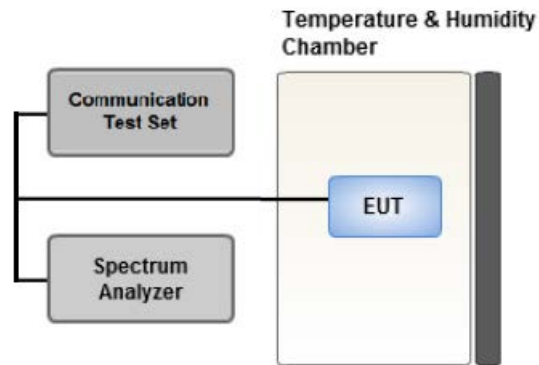
Test Overview

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 $\geq 2 \times \text{Span} / \text{RBW}$

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

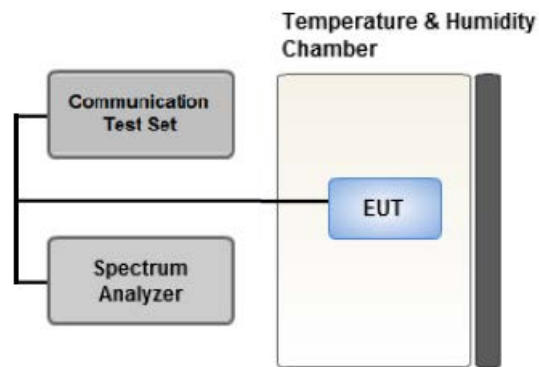
the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

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 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.

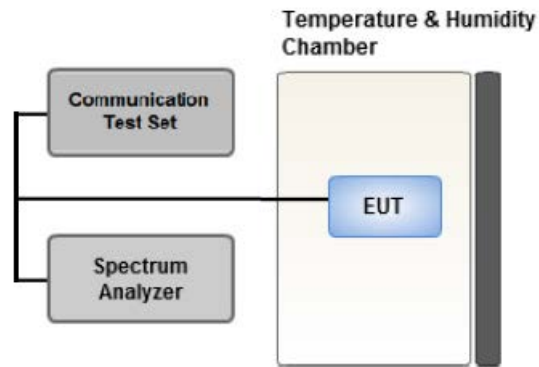
2. Primary Supply Voltage:

- 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.

3.8 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.
- All modes of operation were investigated and the worst case configuration results are reported.
Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc.)
Worst case : Stand alone
- We were performed the RSE test in condition of co-location.
Mode : Stand alone, Simultaneous transmission scenarios
Worst case : Stand alone
- In the case of radiated spurious emissions, all bandwidth of operation was investigated and the worst case bandwidth results are reported. (Worst case : 15 MHz)
- The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data.
- Please refer to the table below.
- SM-S731B/DS & additional models were tested and the worst case results are reported.
(Worst case : SM-S731B/DS)

[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		Z
Radiated Spurious and Harmonic Emissions	QPSK	See Section 8.2		Y

[Sub 2 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

3.10 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.

- SM-S731B/DS & additional models were tested and the worst case results are reported.

(Worst case : SM-S731B/DS)

[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	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
Base Station	8960 (E5515C)	Agilent	MY48360800	08/05/2025	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	05/14/2026	Annual
Signal Analyzer(2 Hz ~ 50.0 GHz)	N9040B	KEYSIGHT	US55230216	12/09/2025	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 listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
- Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. MEASUREMENT UNCERTAINTY

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

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

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

Parameter	Expanded Uncertainty ($\pm$ 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 %, $k=2$)

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)	$< 43 + 10\log_{10}(P[\text{Watts}])$ at Band Edge and for all out-of-band emissions	PASS
Conducted Output Power	§ 2.1046	N/A	<u>Note1</u>
Peak- to- Average Ratio	§ 24.232(d)	$< 13 \text{ dB}$	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)	$< 2 \text{ Watts max. EIRP}$	PASS
Radiated Spurious and Harmonic Emissions	§ 2.1053, § 24.238(a)	$< 43 + 10\log_{10}(P[\text{Watts}])$ 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 B2/ 1.4 MHz	QPSK	-18.50	16.02	10.40	2.07	V	<2.00	0.272	24.35	1	0
		16-QAM	-19.15	15.37	10.40	2.07	V		0.234	23.70		
		64-QAM	-20.21	14.31	10.40	2.07	V		0.184	22.64		
		256-QAM	-23.34	11.18	10.40	2.07	V		0.089	19.51		
1880.0		QPSK	-18.87	16.08	10.40	2.21	V		0.267	24.27	1	0
		16-QAM	-19.58	15.37	10.40	2.21	V		0.227	23.56		
		64-QAM	-20.64	14.31	10.40	2.21	V		0.178	22.50		
		256-QAM	-23.76	11.19	10.40	2.21	V		0.087	19.38		
1909.3		QPSK	-20.18	14.76	10.40	2.17	V		0.199	22.99	1	5
		16-QAM	-20.78	14.16	10.40	2.17	V		0.173	22.39		
		64-QAM	-21.98	12.96	10.40	2.17	V		0.132	21.19		
		256-QAM	-25.02	9.92	10.40	2.17	V		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
1851.5	LTE B2/ 3 MHz	QPSK	-18.44	16.08	10.40	2.07	V	<2.00	0.276	24.41	1	0
		16-QAM	-19.18	15.34	10.40	2.07	V		0.233	23.67		
		64-QAM	-20.24	14.28	10.40	2.07	V		0.182	22.61		
		256-QAM	-23.39	11.13	10.40	2.07	V		0.088	19.46		
1880.0		QPSK	-18.74	16.21	10.40	2.21	V		0.275	24.40	1	8
		16-QAM	-19.51	15.44	10.40	2.21	V		0.231	23.63		
		64-QAM	-20.46	14.49	10.40	2.21	V		0.185	22.68		
		256-QAM	-23.65	11.30	10.40	2.21	V		0.089	19.49		
1908.5		QPSK	-19.86	15.08	10.40	2.17	V		0.214	23.31	1	0
		16-QAM	-20.49	14.45	10.40	2.17	V		0.185	22.68		
		64-QAM	-21.69	13.25	10.40	2.17	V		0.141	21.48		
		256-QAM	-24.94	10.00	10.40	2.17	V		0.067	18.23		

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 B2/ 5 MHz	QPSK	-18.42	16.15	10.40	2.08	V	< 2.00	0.280	24.47	1	24
		16-QAM	-19.04	15.53	10.40	2.08	V		0.243	23.85		
		64-QAM	-20.14	14.43	10.40	2.08	V		0.188	22.75		
		256-QAM	-23.10	11.47	10.40	2.08	V		0.095	19.79		
1880.0		QPSK	-18.77	16.18	10.40	2.21	V		0.274	24.37	1	13
		16-QAM	-19.69	15.26	10.40	2.21	V		0.221	23.45		
		64-QAM	-20.83	14.12	10.40	2.21	V		0.170	22.31		
		256-QAM	-23.74	11.21	10.40	2.21	V		0.087	19.40		
1907.5		QPSK	-19.66	15.28	10.40	2.17	V		0.224	23.51	1	0
		16-QAM	-20.55	14.39	10.40	2.17	V		0.183	22.62		
		64-QAM	-21.56	13.38	10.40	2.17	V		0.145	21.61		
		256-QAM	-24.80	10.14	10.40	2.17	V		0.069	18.37		

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 B2/ 10 MHz	QPSK	-18.42	16.15	10.40	2.08	V	<2.00	0.280	24.47	1	49
		16-QAM	-19.23	15.34	10.40	2.08	V		0.232	23.66		
		64-QAM	-20.38	14.19	10.40	2.08	V		0.178	22.51		
		256-QAM	-23.27	11.30	10.40	2.08	V		0.092	19.62		
1880.0		QPSK	-18.69	16.26	10.40	2.21	V		0.279	24.45	1	0
		16-QAM	-19.31	15.64	10.40	2.21	V		0.242	23.83		
		64-QAM	-20.46	14.49	10.40	2.21	V		0.185	22.68		
		256-QAM	-23.45	11.50	10.40	2.21	V		0.093	19.69		
1905.0		QPSK	-19.39	15.53	10.40	2.19	V		0.237	23.74	1	0
		16-QAM	-20.31	14.61	10.40	2.19	V		0.191	22.82		
		64-QAM	-21.37	13.55	10.40	2.19	V		0.150	21.76		
		256-QAM	-24.27	10.65	10.40	2.19	V		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 B2/ 15 MHz	QPSK	-18.46	16.18	10.40	2.10	V	< 2.00	0.281	24.48	1	0
		16-QAM	-19.30	15.34	10.40	2.10	V		0.231	23.64		
		64-QAM	-20.26	14.38	10.40	2.10	V		0.185	22.68		
		256-QAM	-23.28	11.36	10.40	2.10	V		0.092	19.66		
1880.0		QPSK	-18.71	16.24	10.40	2.21	V		0.277	24.43	1	0
		16-QAM	-19.17	15.78	10.40	2.21	V		0.249	23.97		
		64-QAM	-20.41	14.54	10.40	2.21	V		0.187	22.73		
		256-QAM	-23.42	11.53	10.40	2.21	V		0.094	19.72		
1902.5		QPSK	-19.39	15.53	10.40	2.19	V		0.237	23.74	1	0
		16-QAM	-20.43	14.49	10.40	2.19	V		0.186	22.70		
		64-QAM	-21.30	13.62	10.40	2.19	V		0.152	21.83		
		256-QAM	-24.42	10.50	10.40	2.19	V		0.074	18.71		

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
1860.0	LTE B2/ 20 MHz	QPSK	-18.48	16.16	10.40	2.10	V	<2.00	0.279	24.46	1	0
		16-QAM	-19.29	15.35	10.40	2.10	V		0.232	23.65		
		64-QAM	-20.41	14.23	10.40	2.10	V		0.179	22.53		
		256-QAM	-23.18	11.46	10.40	2.10	V		0.095	19.76		
1880.0		QPSK	-18.68	16.27	10.40	2.21	V		0.279	24.46	1	0
		16-QAM	-19.42	15.53	10.40	2.21	V		0.236	23.72		
		64-QAM	-20.72	14.23	10.40	2.21	V		0.175	22.42		
		256-QAM	-23.56	11.39	10.40	2.21	V		0.091	19.58		
1900.0		QPSK	-19.29	15.59	10.40	2.20	V		0.239	23.79	1	0
		16-QAM	-20.28	14.60	10.40	2.20	V		0.191	22.80		
		64-QAM	-21.21	13.67	10.40	2.20	V		0.154	21.87		
		256-QAM	-24.32	10.56	10.40	2.20	V		0.075	18.76		

8.2 RADIATED SPURIOUS EMISSIONS

■ MODE:	<u>LTE B2</u>
■ MODULATION SIGNAL:	<u>15 MHz QPSK</u>
■ DISTANCE:	<u>3 meters</u>
■ LIMIT:	<u>-13 dBm</u>

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	RB	
								Size	Offset
18675 (1857.5)	3 715.00	-42.73	12.28	-59.82	3.11	V	-50.65	1	0
	5 572.50	-44.39	13.06	-56.54	3.89	V	-47.37		
	7 430.00	-43.86	10.78	-46.87	4.56	H	-40.65		
18900 (1880.0)	3 760.00	-42.39	12.22	-58.00	3.12	H	-48.90	1	0
	5 640.00	-43.68	13.12	-56.12	3.92	H	-46.92		
	7 520.00	-44.94	10.82	-47.59	4.61	V	-41.38		
19125 (1902.5)	3 805.00	-43.30	12.16	-59.58	3.21	H	-50.63	1	0
	5 707.50	-42.21	13.09	-54.60	4.02	H	-45.53		
	7 610.00	-44.56	11.11	-47.54	4.64	H	-41.07		

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)	Limit (dB)
2	1.4 MHz	1880.0	QPSK	6	0	5.01	13.00
			16-QAM			5.80	
			64-QAM			5.92	
			256-QAM			5.80	
	3 MHz		QPSK	15		5.17	
			16-QAM			5.86	
			64-QAM			5.97	
			256-QAM			5.91	
	5 MHz		QPSK	25		5.21	
			16-QAM			5.93	
			64-QAM			6.01	
			256-QAM			5.95	
	10 MHz		QPSK	50		5.30	
			16-QAM			5.94	
			64-QAM			6.04	
			256-QAM			5.97	
	15 MHz		QPSK	75		5.27	
			16-QAM			6.00	
			64-QAM			6.07	
			256-QAM			5.94	
	20 MHz		QPSK	100		5.25	
			16-QAM			5.99	
			64-QAM			6.09	
			256-QAM			5.98	

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 79 ~ 102.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
2	1.4 MHz	1880.0	QPSK	6	0	1.1004
			16-QAM			1.0973
			64-QAM			1.0987
			256-QAM			1.0968
	3 MHz		QPSK	15		2.7199
			16-QAM			2.7025
			64-QAM			2.7023
			256-QAM			2.7132
	5 MHz		QPSK	25		4.5296
			16-QAM			4.5177
			64-QAM			4.5297
			256-QAM			4.5262
	10 MHz		QPSK	50		9.0353
			16-QAM			9.0312
			64-QAM			9.0147
			256-QAM			9.0270
	15 MHz		QPSK	75		13.450
			16-QAM			13.482
			64-QAM			13.503
			256-QAM			13.523
	20 MHz		QPSK	100		17.986
			16-QAM			17.926
			64-QAM			17.925
			256-QAM			17.949

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 103 ~ 126.

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)
2	1.4	1850.7	6.1915	28.591	-66.358	-37.767	-13.00
		1880.0	3.3101	27.976	-65.784	-37.808	
		1909.3	3.1805	27.976	-66.318	-38.342	
	3	1851.5	6.2413	28.591	-66.029	-37.438	
		1880.0	2.5923	27.976	-66.426	-38.450	
		1908.5	5.6331	28.591	-66.209	-37.618	
	5	1852.5	5.0649	28.591	-65.433	-36.842	
		1880.0	3.7488	27.976	-65.178	-37.202	
		1907.5	3.2005	27.976	-66.727	-38.751	
	10	1855.0	2.6421	27.976	-66.325	-38.349	
		1880.0	3.7189	27.976	-65.792	-37.816	
		1905.0	2.6621	27.976	-65.607	-37.631	
	15	1857.5	3.7089	27.976	-65.555	-37.579	
		1880.0	3.0310	27.976	-65.925	-37.949	
		1902.5	3.7089	27.976	-65.759	-37.783	
	20	1860.0	2.4228	27.976	-66.270	-38.294	
		1880.0	5.3739	28.591	-65.954	-37.363	
		1900.0	6.5404	28.591	-66.212	-37.621	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 127 ~ 162.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor (dB) = Cable Loss + Attenuator + Power Splitter

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

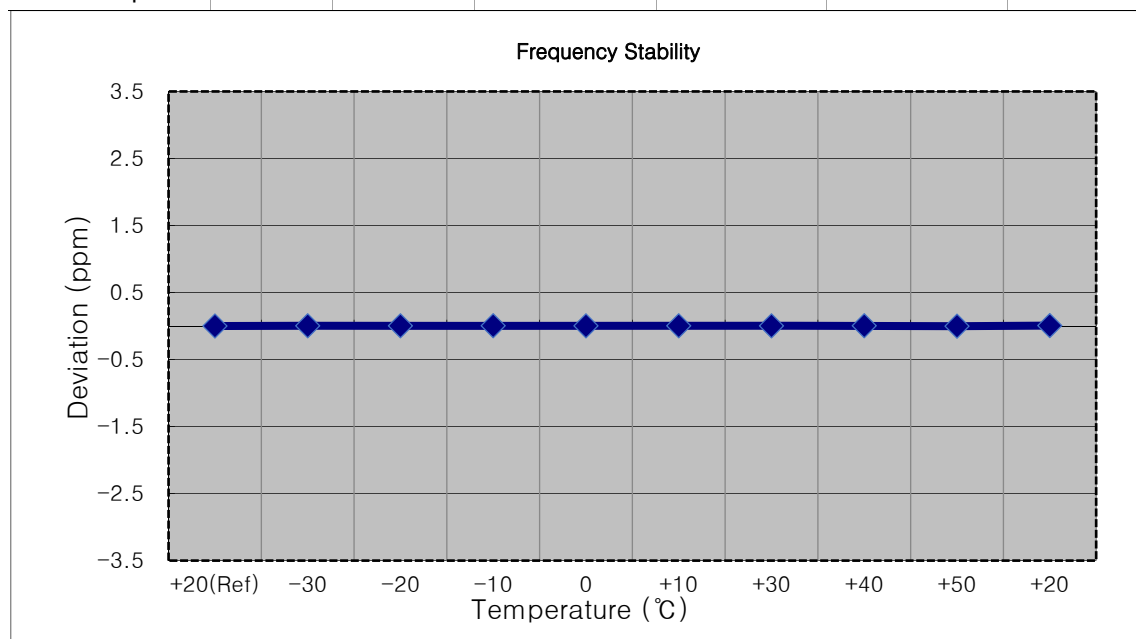
8.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 163 ~ 198.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

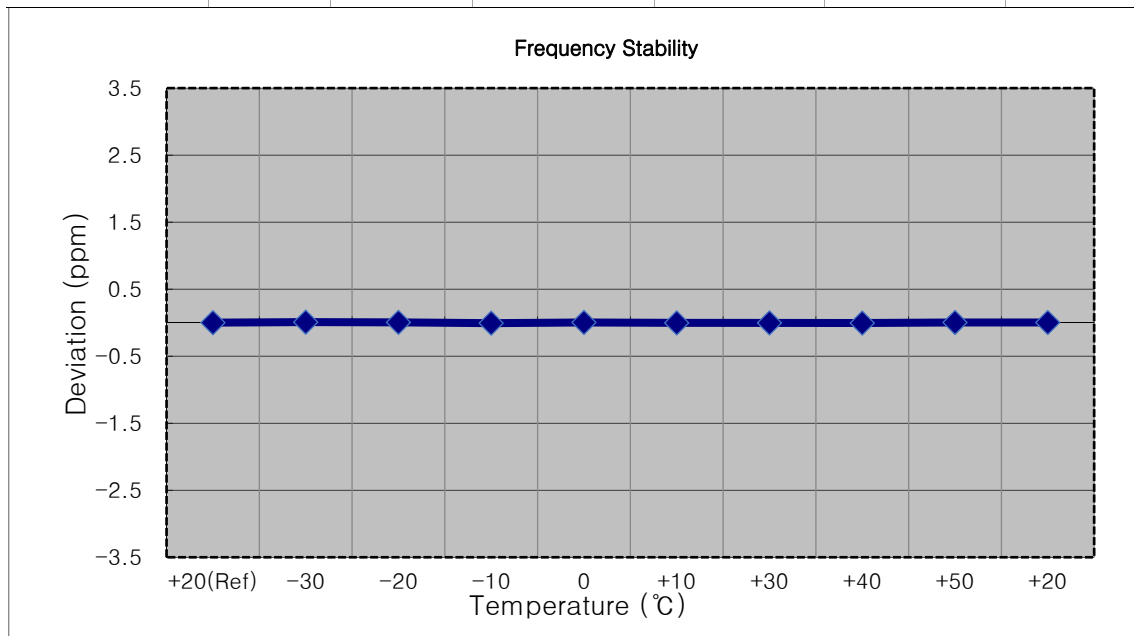
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1850,700,000 Hz</u>
CHANNEL:	<u>18607 (1.4 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1850 700 004	0.0	0.000 000	0.000
100 %		-30	1850 700 010	6.0	0.000 000	0.003
100 %		-20	1850 700 010	5.9	0.000 000	0.003
100 %		-10	1850 700 011	7.0	0.000 000	0.004
100 %		0	1850 700 008	4.0	0.000 000	0.002
100 %		+10	1850 700 010	6.2	0.000 000	0.003
100 %		+30	1850 700 009	4.4	0.000 000	0.002
100 %		+40	1850 700 011	6.9	0.000 000	0.004
100 %		+50	1850 700 000	-4.5	0.000 000	-0.002
Batt. Endpoint	3.300	+20	1850 700 017	12.4	0.000 001	0.007



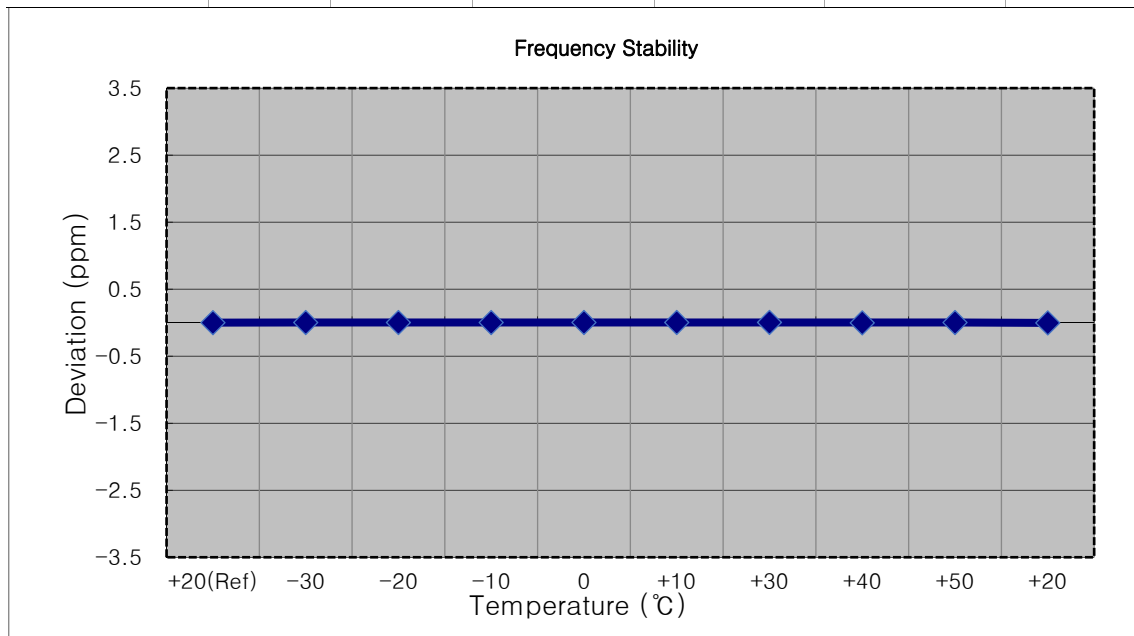
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1851,500,000 Hz</u>
CHANNEL:	<u>18615 (3 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1851 499 996	0.0	0.000 000	0.000
100 %		-30	1851 500 011	15.2	0.000 001	0.008
100 %		-20	1851 500 005	8.4	0.000 000	0.005
100 %		-10	1851 499 983	-13.1	-0.000 001	-0.007
100 %		0	1851 500 001	5.3	0.000 000	0.003
100 %		+10	1851 499 990	-5.9	0.000 000	-0.003
100 %		+30	1851 499 990	-6.3	0.000 000	-0.003
100 %		+40	1851 499 986	-10.5	-0.000 001	-0.006
100 %		+50	1851 500 001	5.2	0.000 000	0.003
Batt. Endpoint	3.300	+20	1851 500 001	4.6	0.000 000	0.002



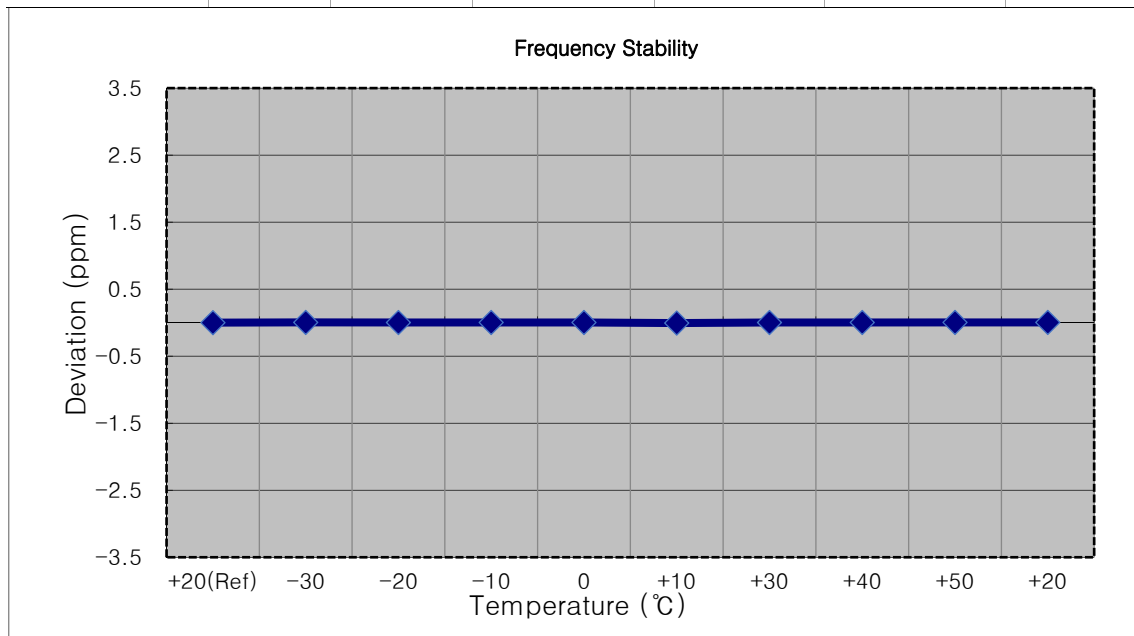
- MODE: LTE B2
- OPERATING FREQUENCY: 1852,500,000 Hz
- CHANNEL: 18625 (5 MHz)
- REFERENCE VOLTAGE: 3.880 VDC
- DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1852 500 006	0.0	0.000 000	0.000
100 %		-30	1852 500 010	4.7	0.000 000	0.003
100 %		-20	1852 500 011	4.8	0.000 000	0.003
100 %		-10	1852 500 010	4.5	0.000 000	0.002
100 %		0	1852 500 012	5.9	0.000 000	0.003
100 %		+10	1852 500 012	5.9	0.000 000	0.003
100 %		+30	1852 500 012	6.4	0.000 000	0.003
100 %		+40	1852 500 002	-4.0	0.000 000	-0.002
100 %		+50	1852 500 010	4.7	0.000 000	0.003
Batt. Endpoint	3.300	+20	1852 500 000	-5.5	0.000 000	-0.003



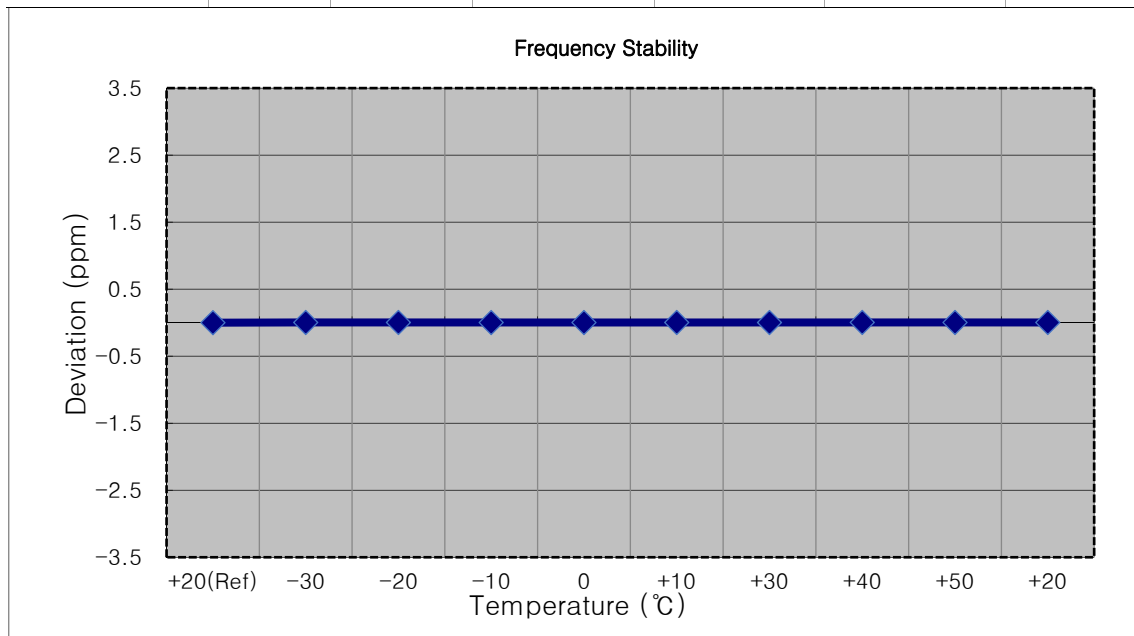
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1855,000,000 Hz</u>
CHANNEL:	<u>18650 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1855 000 007	0.0	0.000 000	0.000
100 %		-30	1855 000 015	7.2	0.000 000	0.004
100 %		-20	1855 000 012	4.9	0.000 000	0.003
100 %		-10	1855 000 013	5.3	0.000 000	0.003
100 %		0	1855 000 012	5.0	0.000 000	0.003
100 %		+10	1854 999 997	-10.1	-0.000 001	-0.005
100 %		+30	1855 000 012	4.9	0.000 000	0.003
100 %		+40	1855 000 013	5.6	0.000 000	0.003
100 %		+50	1855 000 015	7.3	0.000 000	0.004
Batt. Endpoint	3.300	+20	1855 000 014	6.8	0.000 000	0.004



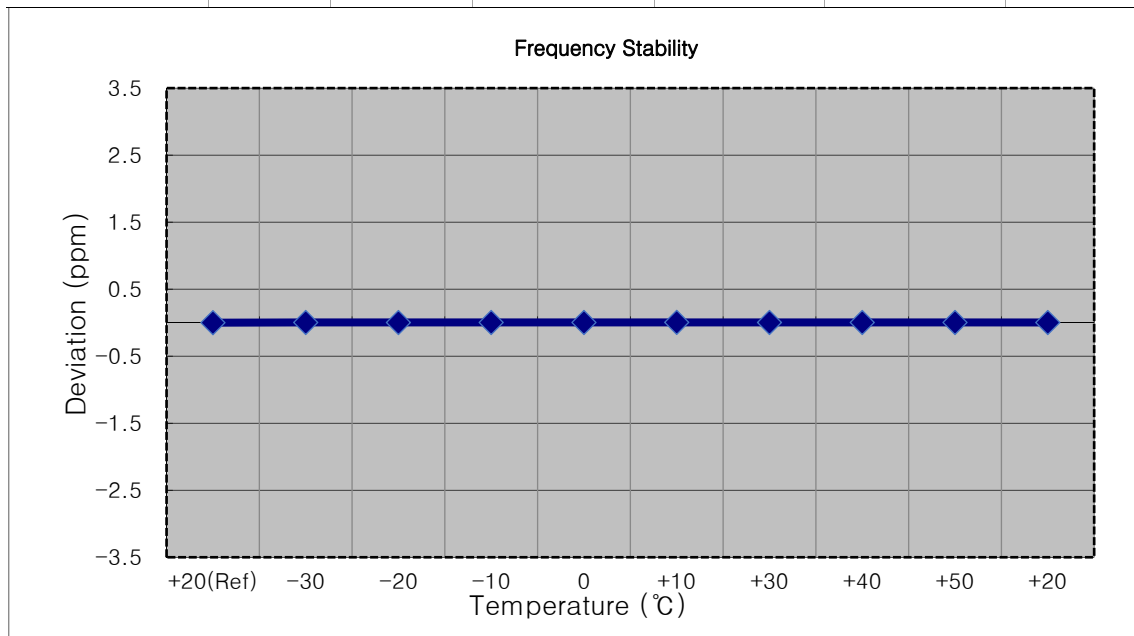
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1857,500,000 Hz</u>
CHANNEL:	<u>18675 (15 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1857 500 004	0.0	0.000 000	0.000
100 %		-30	1857 500 010	6.3	0.000 000	0.003
100 %		-20	1857 500 010	5.7	0.000 000	0.003
100 %		-10	1857 500 009	4.7	0.000 000	0.003
100 %		0	1857 500 009	4.6	0.000 000	0.002
100 %		+10	1857 500 009	5.2	0.000 000	0.003
100 %		+30	1857 500 009	4.9	0.000 000	0.003
100 %		+40	1857 500 011	6.8	0.000 000	0.004
100 %		+50	1857 500 010	6.2	0.000 000	0.003
Batt. Endpoint	3.300	+20	1857 500 010	5.5	0.000 000	0.003



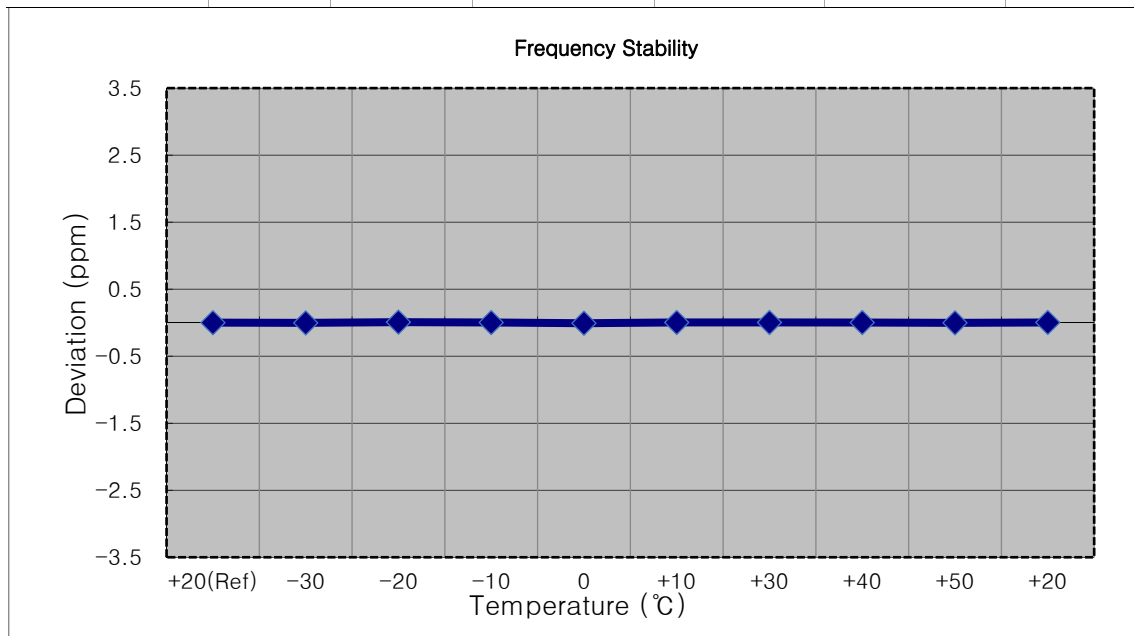
- MODE: LTE B2
- OPERATING FREQUENCY: 1860,000,000 Hz
- CHANNEL: 18700 (20 MHz)
- REFERENCE VOLTAGE: 3.880 VDC
- DEVIATION LIMIT: Emission must remain in band

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 000 011	5.8	0.000 000	0.003
100 %		-20	1860 000 010	4.6	0.000 000	0.002
100 %		-10	1860 000 012	6.1	0.000 000	0.003
100 %		0	1860 000 012	6.3	0.000 000	0.003
100 %		+10	1860 000 015	9.1	0.000 000	0.005
100 %		+30	1860 000 011	5.7	0.000 000	0.003
100 %		+40	1860 000 012	6.4	0.000 000	0.003
100 %		+50	1860 000 011	5.7	0.000 000	0.003
Batt. Endpoint	3.300	+20	1860 000 010	4.9	0.000 000	0.003



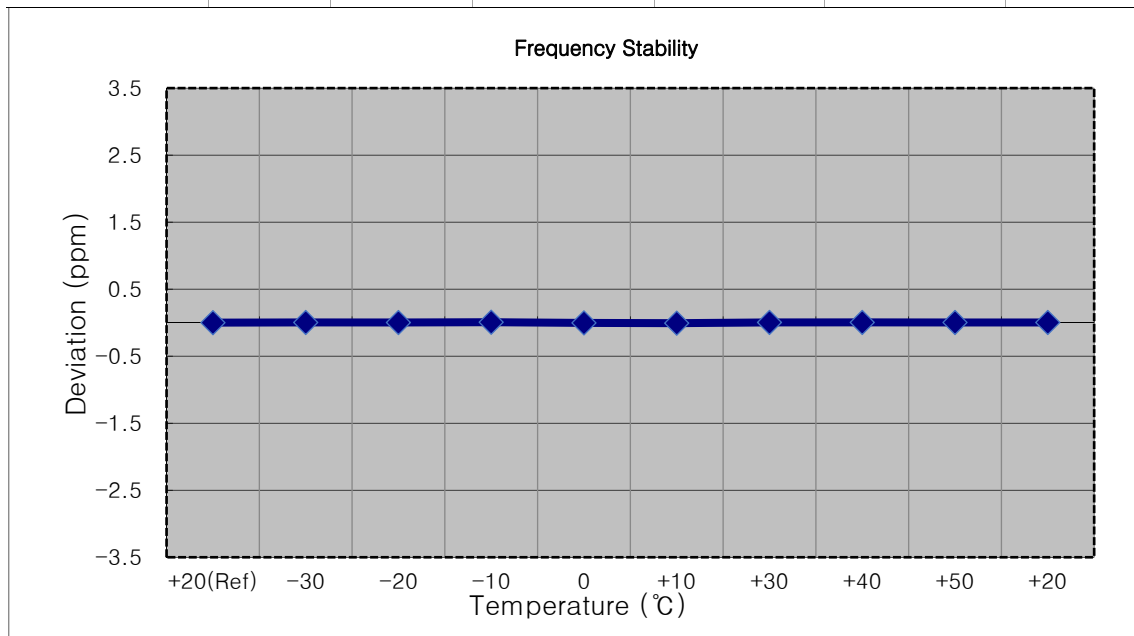
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1880,000,000 Hz</u>
CHANNEL:	<u>18900 (1.4 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1879 999 992	0.0	0.000 000	0.000
100 %		-30	1879 999 986	-5.5	0.000 000	-0.003
100 %		-20	1880 000 006	14.4	0.000 001	0.008
100 %		-10	1879 999 997	4.9	0.000 000	0.003
100 %		0	1879 999 977	-14.7	-0.000 001	-0.008
100 %		+10	1879 999 998	5.8	0.000 000	0.003
100 %		+30	1879 999 998	6.0	0.000 000	0.003
100 %		+40	1879 999 996	4.1	0.000 000	0.002
100 %		+50	1879 999 987	-5.3	0.000 000	-0.003
Batt. Endpoint	3.300	+20	1879 999 997	5.3	0.000 000	0.003



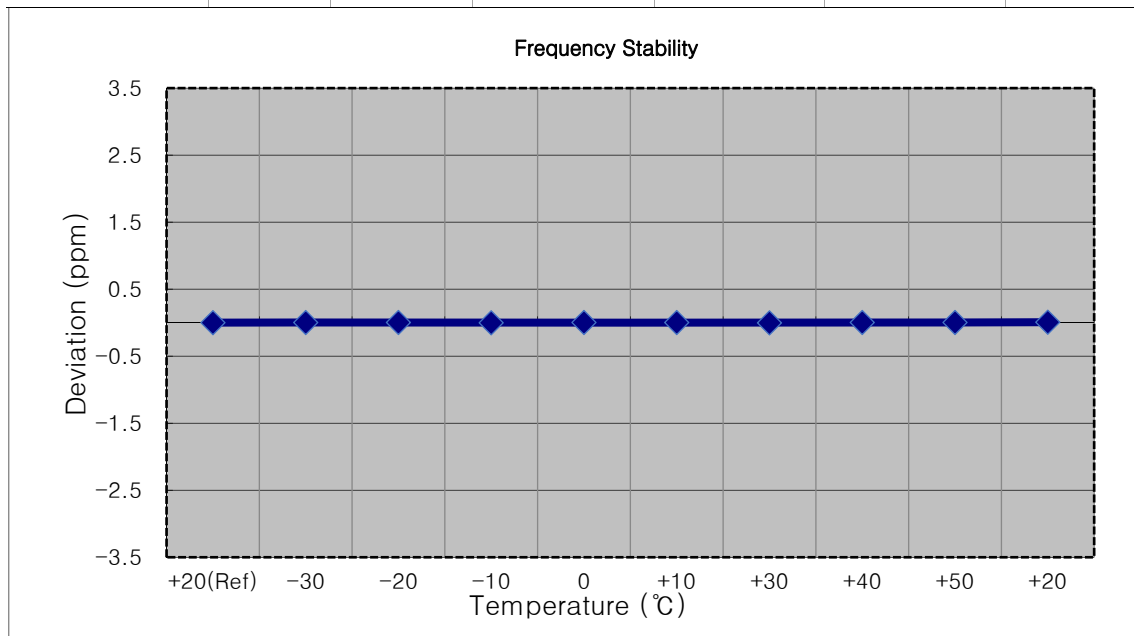
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1880,000,000 Hz</u>
CHANNEL:	<u>18900 (3 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1880 000 007	0.0	0.000 000	0.000
100 %		-30	1880 000 013	6.2	0.000 000	0.003
100 %		-20	1880 000 012	4.6	0.000 000	0.002
100 %		-10	1880 000 020	12.7	0.000 001	0.007
100 %		0	1880 000 001	-6.3	0.000 000	-0.003
100 %		+10	1879 999 993	-13.9	-0.000 001	-0.007
100 %		+30	1880 000 014	7.0	0.000 000	0.004
100 %		+40	1880 000 014	7.4	0.000 000	0.004
100 %		+50	1880 000 012	5.2	0.000 000	0.003
Batt. Endpoint	3.300	+20	1880 000 013	5.5	0.000 000	0.003



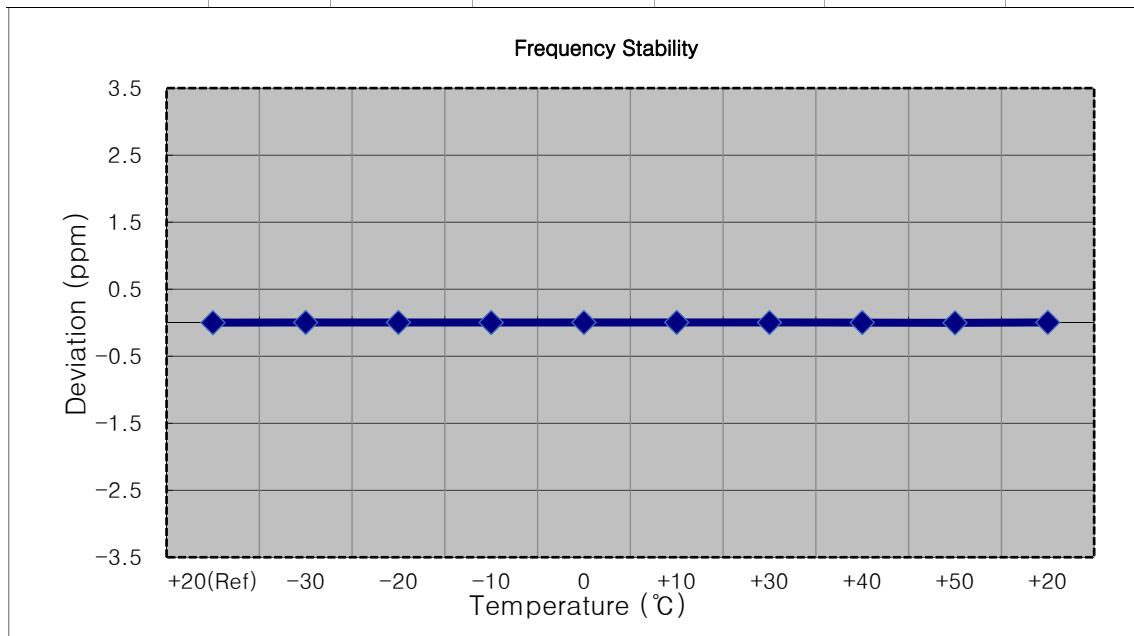
- MODE: LTE B2
- OPERATING FREQUENCY: 1880,000,000 Hz
- CHANNEL: 18900 (5 MHz)
- REFERENCE VOLTAGE: 3.880 VDC
- DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1880 000 004	0.0	0.000 000	0.000
100 %		-30	1880 000 008	4.3	0.000 000	0.002
100 %		-20	1880 000 009	5.6	0.000 000	0.003
100 %		-10	1880 000 000	-3.6	0.000 000	-0.002
100 %		0	1880 000 010	5.8	0.000 000	0.003
100 %		+10	1880 000 009	4.8	0.000 000	0.003
100 %		+30	1879 999 999	-4.5	0.000 000	-0.002
100 %		+40	1880 000 009	5.1	0.000 000	0.003
100 %		+50	1880 000 009	5.2	0.000 000	0.003
Batt. Endpoint	3.300	+20	1880 000 018	13.8	0.000 001	0.007



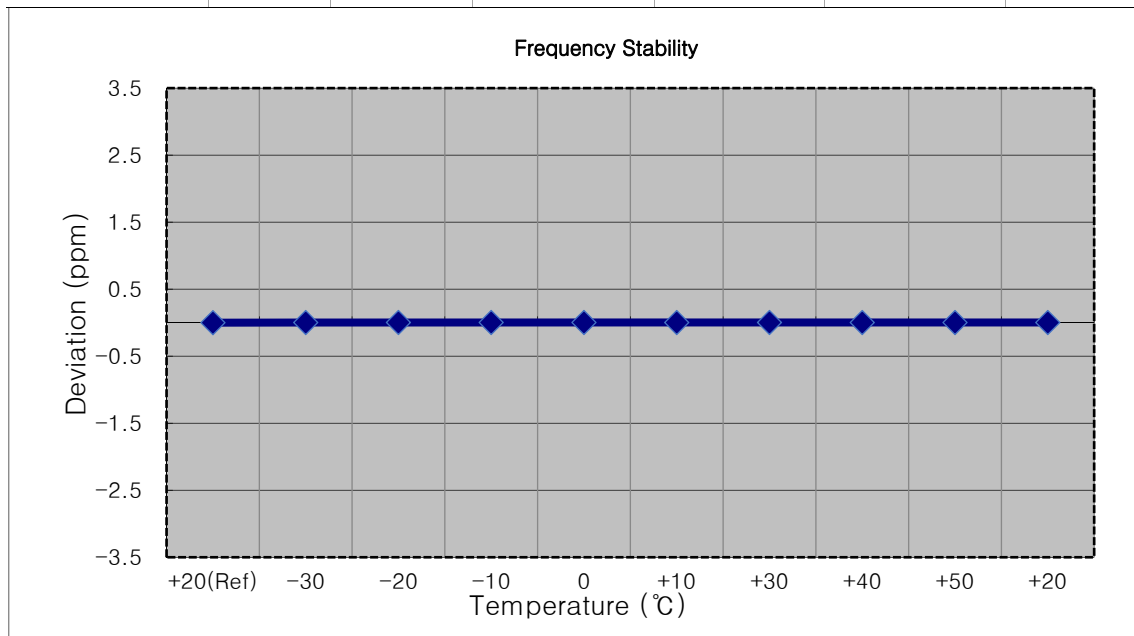
- MODE: LTE B2
- OPERATING FREQUENCY: 1880,000,000 Hz
- CHANNEL: 18900 (10 MHz)
- REFERENCE VOLTAGE: 3.880 VDC
- DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1880 000 006	0.0	0.000 000	0.000
100 %		-30	1880 000 011	5.1	0.000 000	0.003
100 %		-20	1880 000 012	6.6	0.000 000	0.004
100 %		-10	1880 000 010	4.7	0.000 000	0.002
100 %		0	1880 000 011	5.1	0.000 000	0.003
100 %		+10	1880 000 012	6.5	0.000 000	0.003
100 %		+30	1880 000 010	4.0	0.000 000	0.002
100 %		+40	1880 000 010	4.5	0.000 000	0.002
100 %		+50	1880 000 001	-4.7	0.000 000	-0.002
Batt. Endpoint	3.300	+20	1880 000 013	7.1	0.000 000	0.004



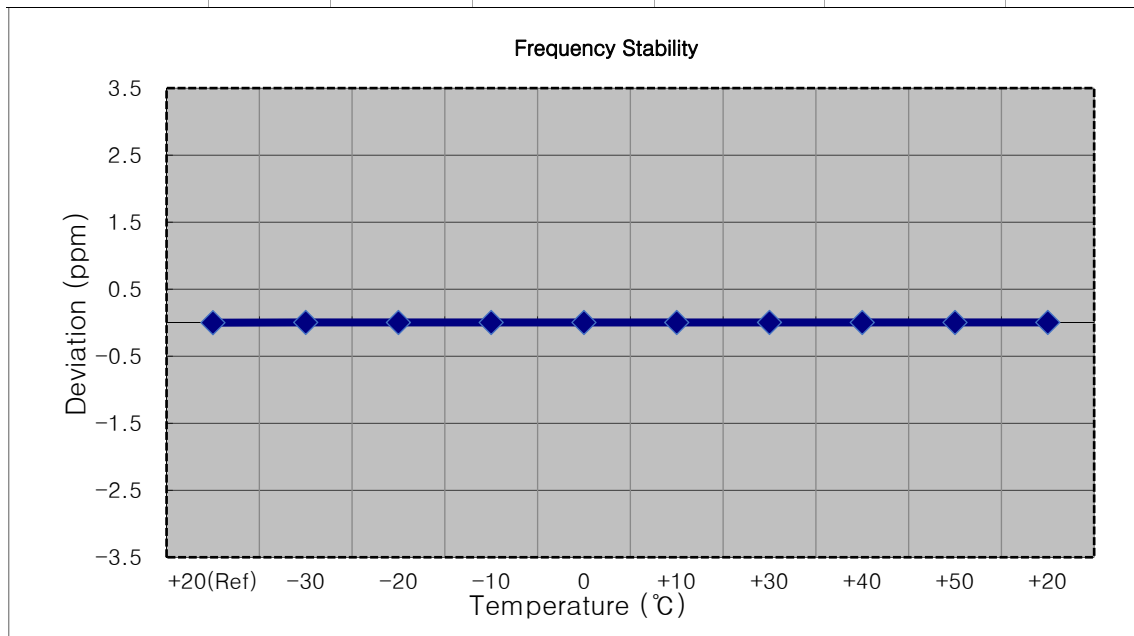
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1880,000,000 Hz</u>
CHANNEL:	<u>18900 (15 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1880 000 005	0.0	0.000 000	0.000
100 %		-30	1880 000 009	4.1	0.000 000	0.002
100 %		-20	1880 000 010	5.0	0.000 000	0.003
100 %		-10	1880 000 010	5.1	0.000 000	0.003
100 %		0	1880 000 010	5.0	0.000 000	0.003
100 %		+10	1880 000 009	4.4	0.000 000	0.002
100 %		+30	1880 000 010	5.0	0.000 000	0.003
100 %		+40	1880 000 009	4.4	0.000 000	0.002
100 %		+50	1880 000 009	4.7	0.000 000	0.002
Batt. Endpoint	3.300	+20	1880 000 009	4.7	0.000 000	0.002



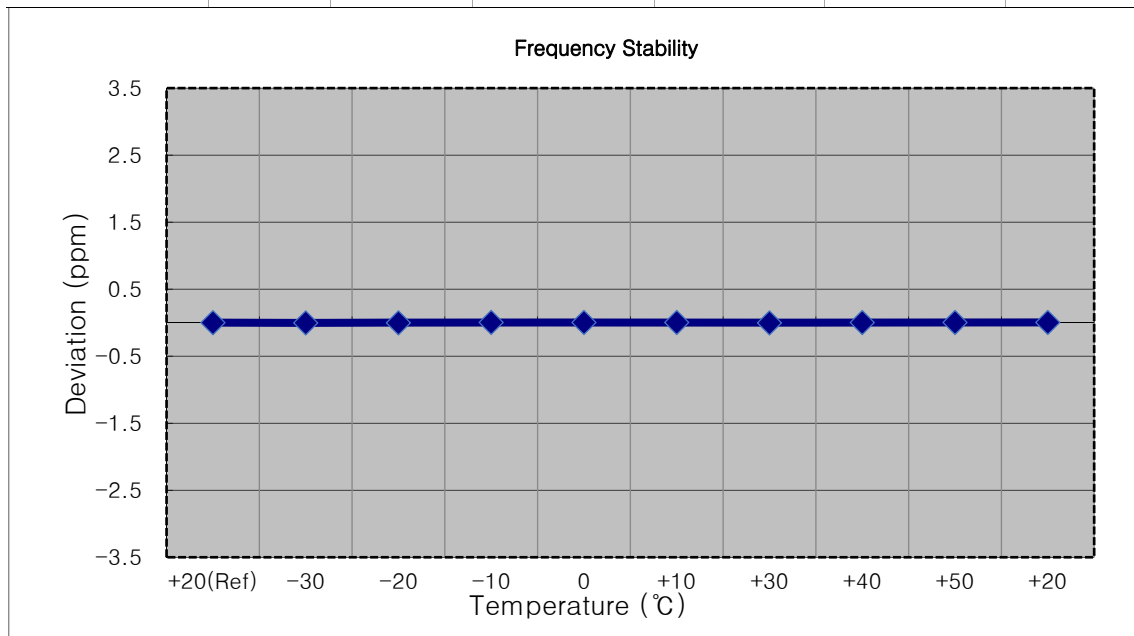
- MODE: LTE B2
- OPERATING FREQUENCY: 1880,000,000 Hz
- CHANNEL: 18900 (20 MHz)
- REFERENCE VOLTAGE: 3.880 VDC
- DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1880 000 005	0.0	0.000 000	0.000
100 %		-30	1880 000 012	6.5	0.000 000	0.003
100 %		-20	1880 000 011	5.7	0.000 000	0.003
100 %		-10	1880 000 011	5.6	0.000 000	0.003
100 %		0	1880 000 011	5.6	0.000 000	0.003
100 %		+10	1880 000 011	5.9	0.000 000	0.003
100 %		+30	1880 000 012	6.8	0.000 000	0.004
100 %		+40	1880 000 010	5.1	0.000 000	0.003
100 %		+50	1880 000 012	6.2	0.000 000	0.003
Batt. Endpoint	3.300	+20	1880 000 012	6.7	0.000 000	0.004



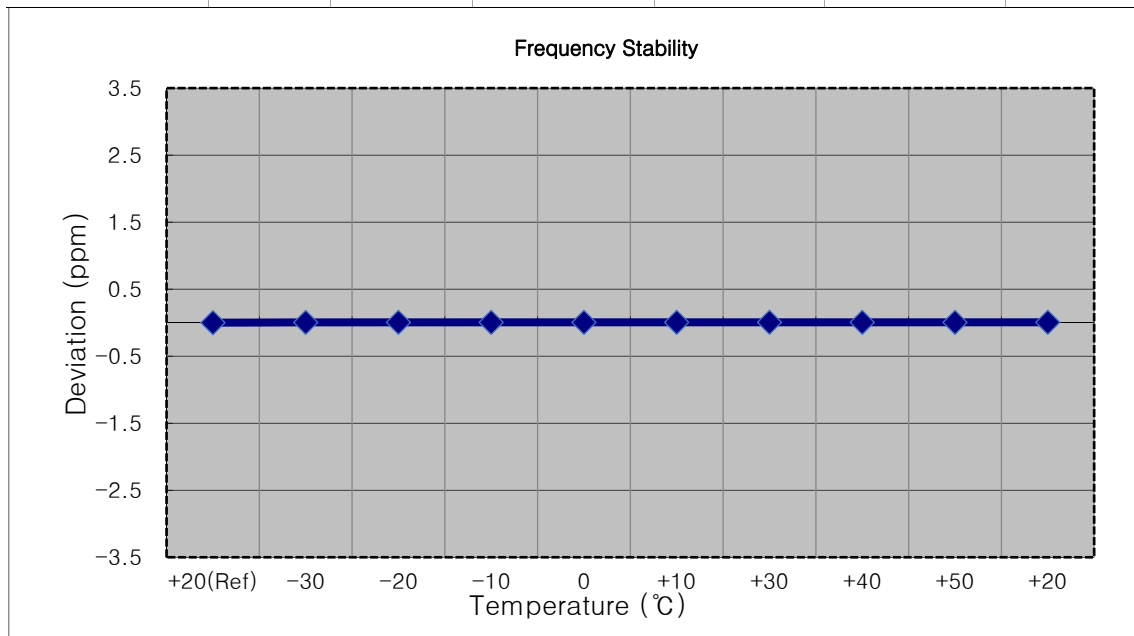
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1909,300,000 Hz</u>
CHANNEL:	<u>19193 (1.4 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1909 300 005	0.0	0.000 000	0.000
100 %		-30	1909 299 998	-6.3	0.000 000	-0.003
100 %		-20	1909 300 001	-4.1	0.000 000	-0.002
100 %		-10	1909 300 011	6.7	0.000 000	0.004
100 %		0	1909 300 010	5.6	0.000 000	0.003
100 %		+10	1909 300 011	6.0	0.000 000	0.003
100 %		+30	1909 299 999	-6.0	0.000 000	-0.003
100 %		+40	1909 300 010	4.8	0.000 000	0.003
100 %		+50	1909 300 010	5.2	0.000 000	0.003
Batt. Endpoint	3.300	+20	1909 300 011	5.9	0.000 000	0.003



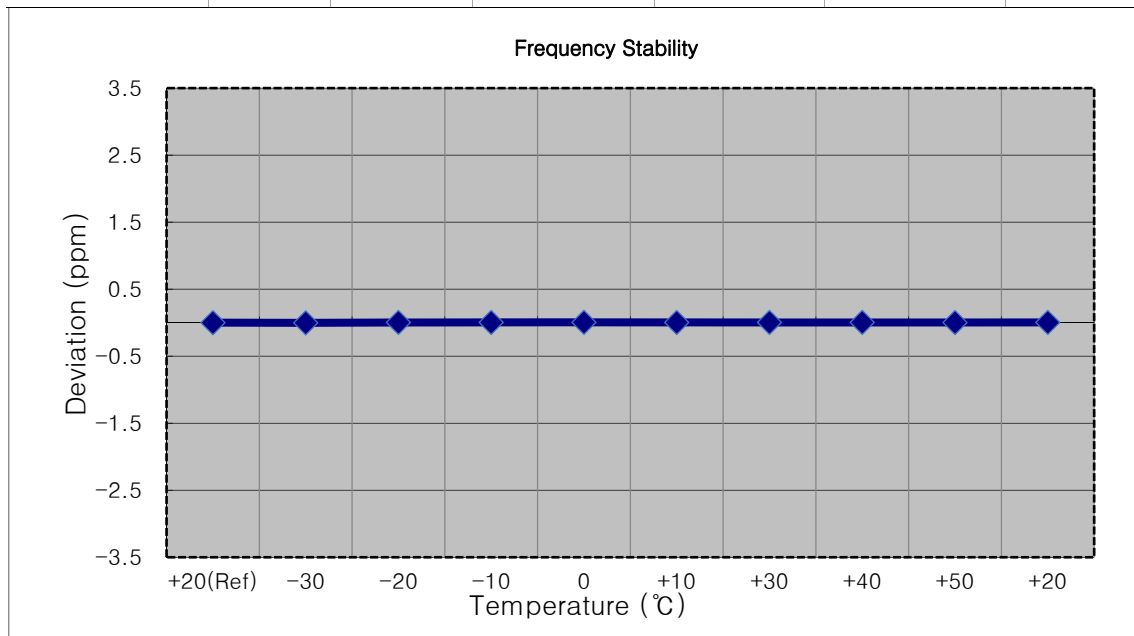
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1908,500,000 Hz</u>
CHANNEL:	<u>19185 (3 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1908 500 011	0.0	0.000 000	0.000
100 %		-30	1908 500 018	7.8	0.000 000	0.004
100 %		-20	1908 500 019	8.7	0.000 000	0.005
100 %		-10	1908 500 019	8.7	0.000 000	0.005
100 %		0	1908 500 019	8.9	0.000 000	0.005
100 %		+10	1908 500 021	10.5	0.000 001	0.006
100 %		+30	1908 500 021	10.4	0.000 001	0.005
100 %		+40	1908 500 019	8.6	0.000 000	0.005
100 %		+50	1908 500 020	9.3	0.000 000	0.005
Batt. Endpoint	3.300	+20	1908 500 021	10.1	0.000 001	0.005



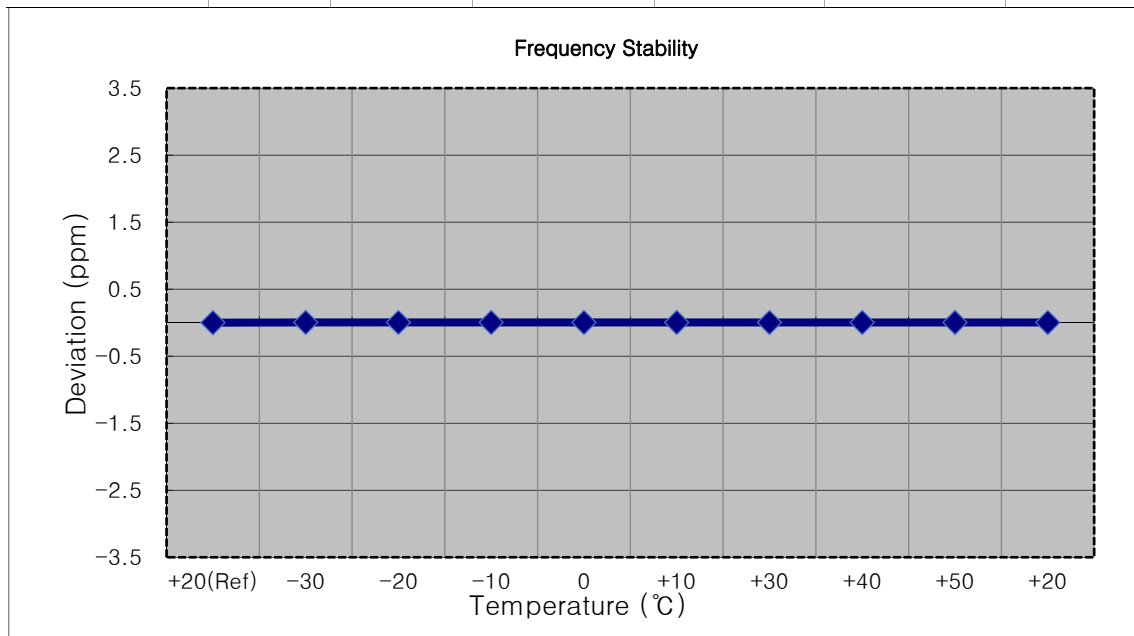
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1907,500,000 Hz</u>
CHANNEL:	<u>19175 (5 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1907 500 009	0.0	0.000 000	0.000
100 %		-30	1907 500 004	-5.1	0.000 000	-0.003
100 %		-20	1907 500 016	7.0	0.000 000	0.004
100 %		-10	1907 500 017	7.9	0.000 000	0.004
100 %		0	1907 500 018	9.2	0.000 000	0.005
100 %		+10	1907 500 015	6.2	0.000 000	0.003
100 %		+30	1907 500 016	7.2	0.000 000	0.004
100 %		+40	1907 500 016	7.2	0.000 000	0.004
100 %		+50	1907 500 014	5.0	0.000 000	0.003
Batt. Endpoint	3.300	+20	1907 500 016	6.6	0.000 000	0.003



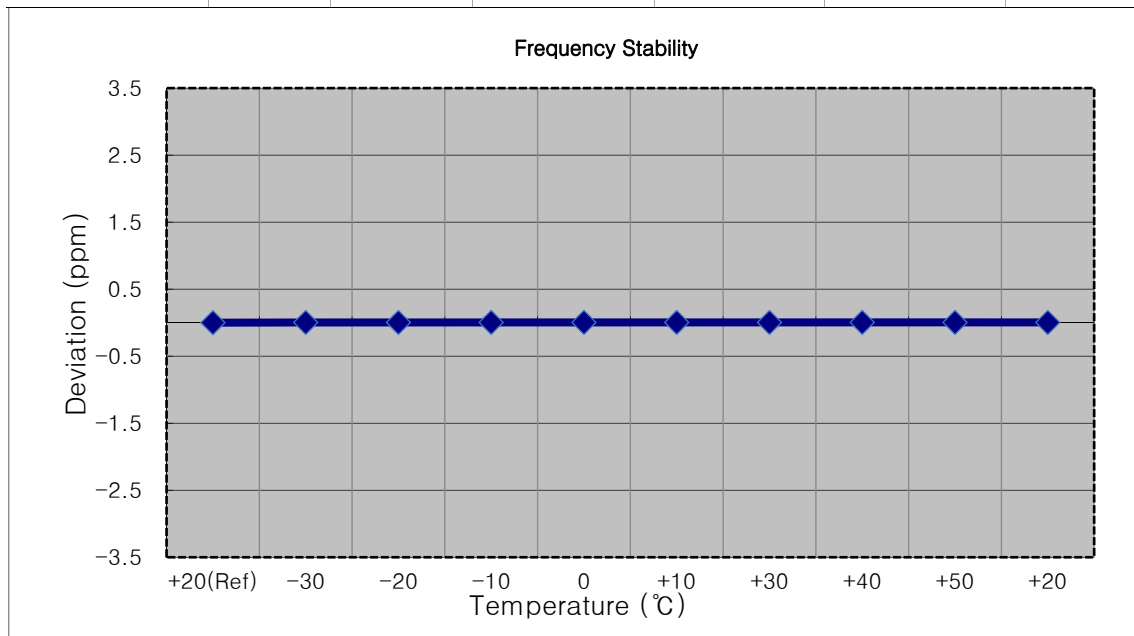
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1905,000,000 Hz</u>
CHANNEL:	<u>19150 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1905 000 006	0.0	0.000 000	0.000
100 %		-30	1905 000 013	7.1	0.000 000	0.004
100 %		-20	1905 000 012	6.0	0.000 000	0.003
100 %		-10	1905 000 012	6.1	0.000 000	0.003
100 %		0	1905 000 012	5.6	0.000 000	0.003
100 %		+10	1905 000 012	5.6	0.000 000	0.003
100 %		+30	1905 000 012	6.0	0.000 000	0.003
100 %		+40	1905 000 012	6.0	0.000 000	0.003
100 %		+50	1905 000 011	5.1	0.000 000	0.003
Batt. Endpoint	3.300	+20	1905 000 011	5.0	0.000 000	0.003



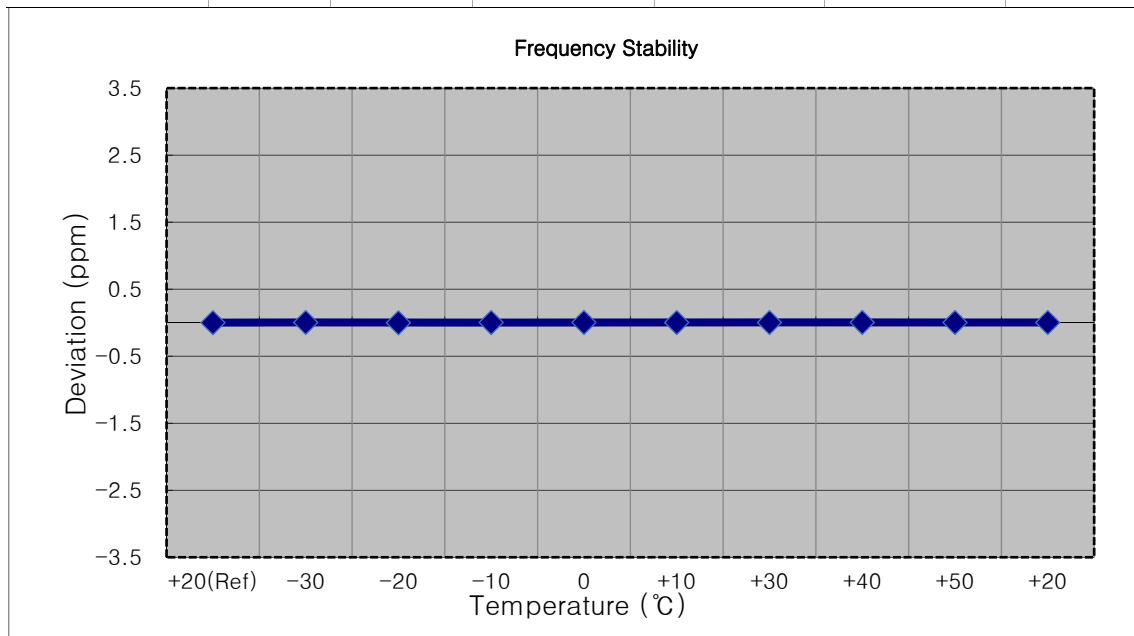
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1902,500,000 Hz</u>
CHANNEL:	<u>19125 (15 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1902 500 007	0.0	0.000 000	0.000
100 %		-30	1902 500 012	5.3	0.000 000	0.003
100 %		-20	1902 500 012	5.8	0.000 000	0.003
100 %		-10	1902 500 014	7.6	0.000 000	0.004
100 %		0	1902 500 014	7.0	0.000 000	0.004
100 %		+10	1902 500 013	6.9	0.000 000	0.004
100 %		+30	1902 500 013	6.4	0.000 000	0.003
100 %		+40	1902 500 015	8.0	0.000 000	0.004
100 %		+50	1902 500 014	7.5	0.000 000	0.004
Batt. Endpoint	3.300	+20	1902 500 013	6.1	0.000 000	0.003



- MODE: LTE B2
- OPERATING FREQUENCY: 1900,000,000 Hz
- CHANNEL: 19100 (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)	1900 000 005	0.0	0.000 000	0.000
100 %		-30	1900 000 012	6.2	0.000 000	0.003
100 %		-20	1900 000 002	-3.2	0.000 000	-0.002
100 %		-10	1900 000 012	6.3	0.000 000	0.003
100 %		0	1900 000 012	6.4	0.000 000	0.003
100 %		+10	1900 000 010	4.5	0.000 000	0.002
100 %		+30	1900 000 010	4.9	0.000 000	0.003
100 %		+40	1900 000 013	7.4	0.000 000	0.004
100 %		+50	1900 000 011	5.3	0.000 000	0.003
Batt. Endpoint	3.300	+20	1900 000 010	5.0	0.000 000	0.003



8.8 UPLINK CARRIER AGGREGATION

Test Note

1. All tests were evaluated for the two bands using various combinations of RB size, RB offset, modulation, and channel bandwidth.
2. All modes of operation were investigated and the worst case configuration results are reported in this section.

Please refer to the table below.

3. The worst case is reported with the modulations, RB sizes and offsets.

- 2A(Main)-4A(Sub)

(PCC - Modulation: QPSK, RB: 1, RB Offset: 0, SCC - Modulation: QPSK, RB: 1, RB Offset: 0)

Radiated Spurious Emissions

PCC	SCC	PCC		SCC	
		BW(MHz)	Channel	BW(MHz)	Channel
2A(Main)	4A(Sub)	15	18675	15	20175

8.8.1 RADIATED SPURIOUS EMISSIONS

2A(Main)(PCC)- 4A(Sub)(SCC)

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)	Limit (dBm)
3 715.00	-43.61	12.28	-60.70	3.11	V	-51.53	-13.00
5 572.50	-39.54	13.06	-51.69	3.89	V	-42.52	-13.00
7 430.00	-44.48	10.78	-47.49	4.56	V	-41.27	-13.00

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)	Limit (dBm)
3 465.00	-41.81	12.34	-60.26	3.02	V	-50.94	-13.00
5 197.50	-42.88	12.63	-55.72	3.78	V	-46.87	-13.00
6 930.00	-42.32	11.65	-49.14	4.40	V	-41.89	-13.00

9. TEST DATA(Sub 2 ANT)

9.1 EQUIVALENT ISOTROPIC RADIATED POWER

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
1850.7	LTE B2/ 1.4 MHz	QPSK	-23.68	10.84	10.40	2.07	H	< 2.00	0.083	19.17	1	5
		16-QAM	-24.25	10.27	10.40	2.07	H		0.072	18.60		
		64-QAM	-25.32	9.20	10.40	2.07	H		0.057	17.53		
		256-QAM	-28.35	6.17	10.40	2.07	H		0.028	14.50		
1880.0		QPSK	-23.65	11.30	10.40	2.21	H		0.089	19.49	1	0
		16-QAM	-24.19	10.76	10.40	2.21	H		0.079	18.95		
		64-QAM	-25.36	9.59	10.40	2.21	H		0.060	17.78		
		256-QAM	-28.39	6.56	10.40	2.21	H		0.030	14.75		
1909.3		QPSK	-24.06	10.88	10.40	2.17	H		0.081	19.11	1	0
		16-QAM	-24.71	10.23	10.40	2.17	H		0.070	18.46		
		64-QAM	-25.82	9.12	10.40	2.17	H		0.054	17.35		
		256-QAM	-28.93	6.01	10.40	2.17	H		0.027	14.24		

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 B2/ 3 MHz	QPSK	-23.64	10.88	10.40	2.07	H	<2.00	0.083	19.21	1	14
		16-QAM	-24.29	10.23	10.40	2.07	H		0.072	18.56		
		64-QAM	-25.44	9.08	10.40	2.07	H		0.055	17.41		
		256-QAM	-28.41	6.11	10.40	2.07	H		0.028	14.44		
1880.0		QPSK	-23.74	11.21	10.40	2.21	H		0.087	19.40	1	0
		16-QAM	-24.32	10.63	10.40	2.21	H		0.076	18.82		
		64-QAM	-25.37	9.58	10.40	2.21	H		0.060	17.77		
		256-QAM	-28.39	6.56	10.40	2.21	H		0.030	14.75		
1908.5		QPSK	-24.00	10.94	10.40	2.17	H		0.083	19.17	1	0
		16-QAM	-24.71	10.23	10.40	2.17	H		0.070	18.46		
		64-QAM	-25.75	9.19	10.40	2.17	H		0.055	17.42		
		256-QAM	-28.83	6.11	10.40	2.17	H		0.027	14.34		

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 B2/ 5 MHz	QPSK	-23.55	11.02	10.40	2.08	H	<2.00	0.086	19.34	1	24
		16-QAM	-24.27	10.30	10.40	2.08	H		0.073	18.62		
		64-QAM	-25.33	9.24	10.40	2.08	H		0.057	17.56		
		256-QAM	-28.32	6.25	10.40	2.08	H		0.029	14.57		
1880.0		QPSK	-23.63	11.32	10.40	2.21	H		0.089	19.51	1	0
		16-QAM	-24.21	10.74	10.40	2.21	H		0.078	18.93		
		64-QAM	-25.32	9.63	10.40	2.21	H		0.061	17.82		
		256-QAM	-28.48	6.47	10.40	2.21	H		0.029	14.66		
1907.5		QPSK	-23.99	10.95	10.40	2.17	H		0.083	19.18	1	0
		16-QAM	-24.55	10.39	10.40	2.17	H		0.073	18.62		
		64-QAM	-25.66	9.28	10.40	2.17	H		0.056	17.51		
		256-QAM	-28.70	6.24	10.40	2.17	H		0.028	14.47		

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
1855.0	LTE B2/ 10 MHz	QPSK	-23.54	11.03	10.40	2.08	H	<2.00	0.086	19.35	1	49
		16-QAM	-24.40	10.17	10.40	2.08	H		0.071	18.49		
		64-QAM	-25.52	9.05	10.40	2.08	H		0.055	17.37		
		256-QAM	-28.50	6.07	10.40	2.08	H		0.027	14.39		
1880.0		QPSK	-23.51	11.44	10.40	2.21	H		0.092	19.63	1	0
		16-QAM	-24.08	10.87	10.40	2.21	H		0.081	19.06		
		64-QAM	-25.16	9.79	10.40	2.21	H		0.063	17.98		
		256-QAM	-28.19	6.76	10.40	2.21	H		0.031	14.95		
1905.0		QPSK	-23.90	11.02	10.40	2.19	H		0.084	19.23	1	0
		16-QAM	-24.58	10.34	10.40	2.19	H		0.072	18.55		
		64-QAM	-25.63	9.29	10.40	2.19	H		0.056	17.50		
		256-QAM	-28.63	6.29	10.40	2.19	H		0.028	14.50		

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 B2/ 15 MHz	QPSK	-23.40	11.24	10.40	2.10	H	<2.00	0.090	19.54	1	74
		16-QAM	-24.23	10.41	10.40	2.10	H		0.074	18.71		
		64-QAM	-25.36	9.28	10.40	2.10	H		0.057	17.58		
		256-QAM	-28.34	6.30	10.40	2.10	H		0.029	14.60		
1880.0		QPSK	-23.48	11.47	10.40	2.21	H		0.092	19.66	1	0
		16-QAM	-24.25	10.70	10.40	2.21	H		0.077	18.89		
		64-QAM	-25.33	9.62	10.40	2.21	H		0.060	17.81		
		256-QAM	-28.26	6.69	10.40	2.21	H		0.031	14.88		
1902.5		QPSK	-23.99	10.93	10.40	2.19	H		0.082	19.14	1	0
		16-QAM	-24.83	10.09	10.40	2.19	H		0.068	18.30		
		64-QAM	-25.92	9.00	10.40	2.19	H		0.053	17.21		
		256-QAM	-28.85	6.07	10.40	2.19	H		0.027	14.28		

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
1860.0	LTE B2/ 20 MHz	QPSK	-23.30	11.34	10.40	2.10	H	<2.00	0.092	19.64	1	99
		16-QAM	-24.04	10.60	10.40	2.10	H		0.078	18.90		
		64-QAM	-25.22	9.42	10.40	2.10	H		0.059	17.72		
		256-QAM	-28.33	6.31	10.40	2.10	H		0.029	14.61		
1880.0		QPSK	-23.56	11.39	10.40	2.21	H		0.091	19.58	1	0
		16-QAM	-24.30	10.65	10.40	2.21	H		0.077	18.84		
		64-QAM	-25.45	9.50	10.40	2.21	H		0.059	17.69		
		256-QAM	-28.39	6.56	10.40	2.21	H		0.030	14.75		
1900.0		QPSK	-23.92	10.96	10.40	2.20	H		0.082	19.16	1	50
		16-QAM	-24.58	10.30	10.40	2.20	H		0.071	18.50		
		64-QAM	-25.69	9.19	10.40	2.20	H		0.055	17.39		
		256-QAM	-28.72	6.16	10.40	2.20	H		0.027	14.36		

9.2 RADIATED SPURIOUS EMISSIONS

■ MODE:	<u>LTE B2</u>
■ MODULATION SIGNAL:	<u>15 MHz QPSK</u>
■ DISTANCE:	<u>3 meters</u>
■ LIMIT:	<u>-13 dBm</u>

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	RB	
								Size	Offset
18675 (1857.5)	3 715.00	-42.68	12.28	-59.77	3.11	V	-50.60	1	74
	5 572.50	-43.41	13.06	-55.56	3.89	V	-46.39		
	7 430.00	-44.45	10.78	-47.46	4.56	V	-41.24		
18900 (1880.0)	3 760.00	-43.59	12.22	-59.20	3.12	H	-50.10	1	0
	5 640.00	-43.60	13.12	-56.04	3.92	V	-46.84		
	7 520.00	-43.37	10.82	-46.02	4.61	H	-39.81		
19125 (1902.5)	3 805.00	-43.26	12.16	-59.54	3.21	V	-50.59	1	0
	5 707.50	-43.72	13.09	-56.11	4.02	V	-47.04		
	7 610.00	-43.03	11.11	-46.01	4.64	V	-39.54		

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)	Limit (dB)
2	1.4 MHz	1880.0	QPSK	6	0	5.84	13.00
			16-QAM			6.58	
			64-QAM			6.85	
			256-QAM			6.28	
	3 MHz		QPSK	15		5.85	
			16-QAM			6.54	
			64-QAM			6.78	
			256-QAM			6.38	
	5 MHz		QPSK	25		5.84	
			16-QAM			6.60	
			64-QAM			6.79	
			256-QAM			6.42	
	10 MHz		QPSK	50		6.00	
			16-QAM			6.65	
			64-QAM			6.88	
			256-QAM			6.43	
	15 MHz		QPSK	75		5.88	
			16-QAM			6.57	
			64-QAM			6.71	
			256-QAM			6.41	
	20 MHz		QPSK	100		5.88	
			16-QAM			6.62	
			64-QAM			6.75	
			256-QAM			6.44	

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 200 ~ 223.

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
2	1.4 MHz	1880.0	QPSK	6	0	1.1047
			16-QAM			1.0948
			64-QAM			1.0967
			256-QAM			1.0964
	3 MHz		QPSK	15		2.7229
			16-QAM			2.7068
			64-QAM			2.7085
			256-QAM			2.7105
	5 MHz		QPSK	25		4.5305
			16-QAM			4.5088
			64-QAM			4.5240
			256-QAM			4.5357
	10 MHz		QPSK	50		9.0306
			16-QAM			9.0284
			64-QAM			9.0404
			256-QAM			9.0223
	15 MHz		QPSK	75		13.479
			16-QAM			13.486
			64-QAM			13.521
			256-QAM			13.490
	20 MHz		QPSK	100		17.995
			16-QAM			17.914
			64-QAM			17.942
			256-QAM			17.965

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 224 ~ 247.

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)
2	1.4	1850.7	2.6521	27.976	-66.081	-38.105	-13.00
		1880.0	3.6990	27.976	-66.685	-38.709	
		1909.3	2.5923	27.976	-66.136	-38.160	
	3	1851.5	3.7787	27.976	-65.729	-37.753	
		1880.0	3.6890	27.976	-65.749	-37.773	
		1908.5	6.2812	28.591	-65.632	-37.041	
	5	1852.5	3.6990	27.976	-65.472	-37.496	
		1880.0	6.1616	28.591	-66.359	-37.768	
		1907.5	3.6591	27.976	-66.507	-38.531	
	10	1855.0	3.7089	27.976	-66.305	-38.329	
		1880.0	7.2583	28.591	-66.048	-37.457	
		1905.0	6.2712	28.591	-66.065	-37.474	
	15	1857.5	5.6331	28.591	-65.824	-37.233	
		1880.0	3.0709	27.976	-65.820	-37.844	
		1902.5	3.7189	27.976	-66.300	-38.324	
	20	1860.0	3.2703	27.976	-65.889	-37.913	
		1880.0	2.6222	27.976	-66.048	-38.072	
		1900.0	3.6890	27.976	-66.096	-38.120	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 248 ~ 283.
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

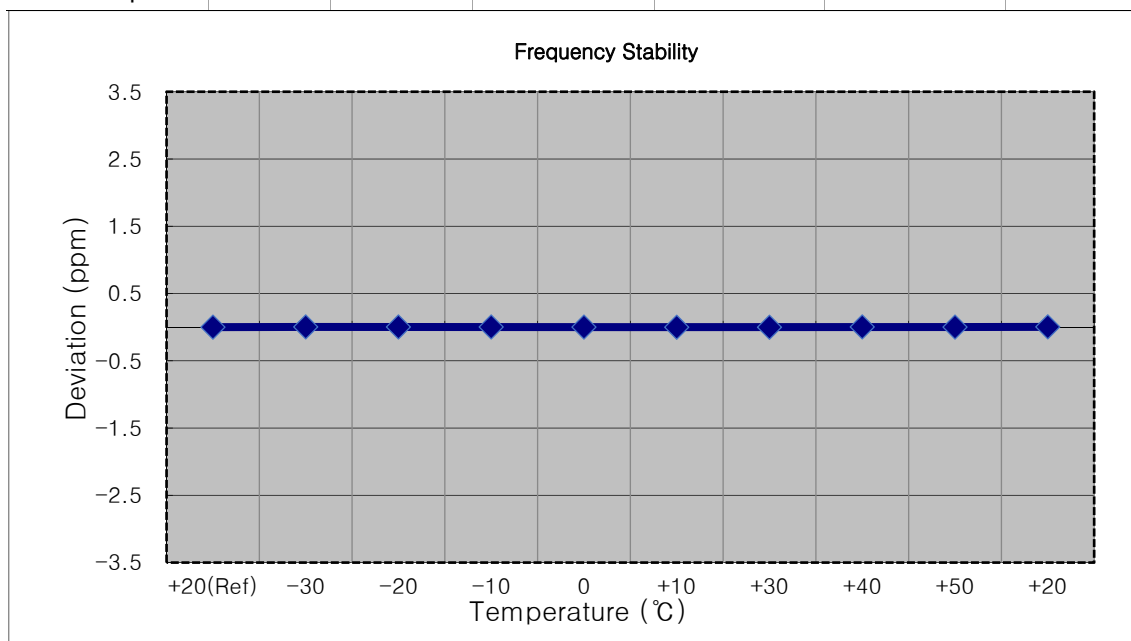
9.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 284 ~ 319.

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

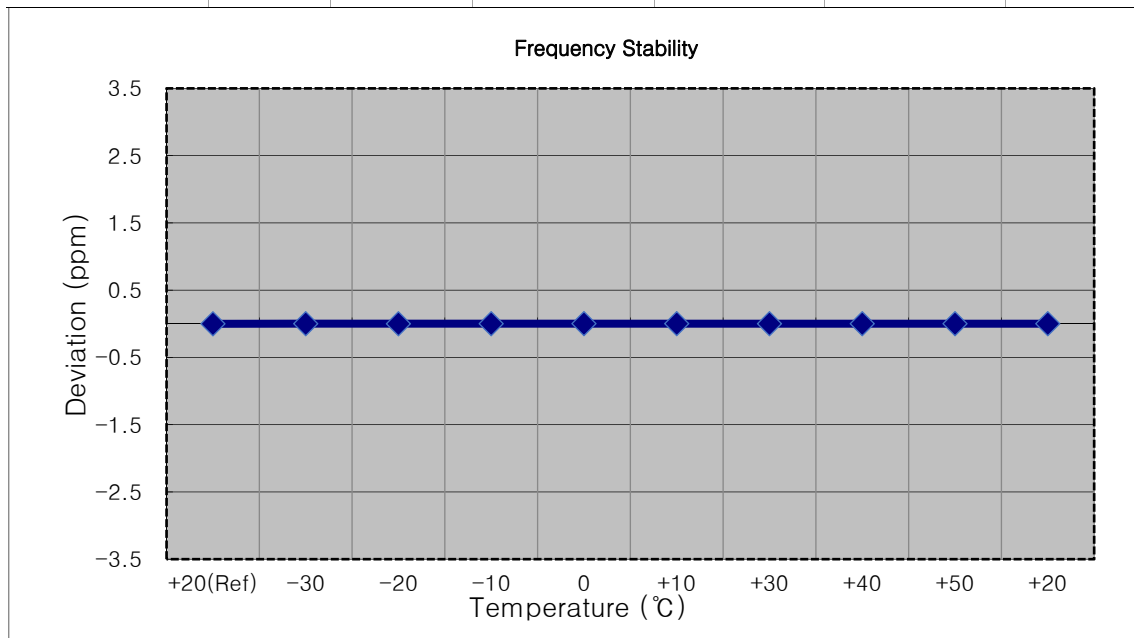
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1850,700,000 Hz</u>
CHANNEL:	<u>18607 (1.4 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1850 700 003	0.0	0.000 000	0.000
100 %		-30	1850 700 008	5.6	0.000 000	0.003
100 %		-20	1850 700 007	4.2	0.000 000	0.002
100 %		-10	1850 700 007	4.6	0.000 000	0.002
100 %		0	1850 700 005	2.1	0.000 000	0.001
100 %		+10	1850 700 000	-2.4	0.000 000	-0.001
100 %		+30	1850 699 999	-3.5	0.000 000	-0.002
100 %		+40	1850 700 008	5.8	0.000 000	0.003
100 %		+50	1850 700 005	2.2	0.000 000	0.001
Batt. Endpoint	3.300	+20	1850 700 010	7.2	0.000 000	0.004



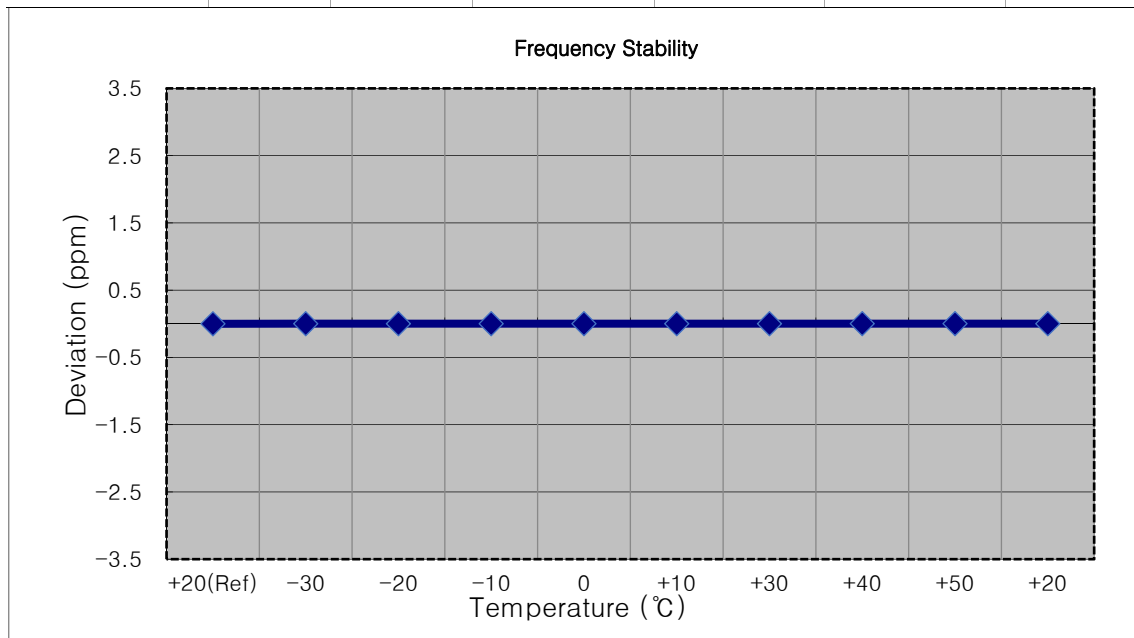
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1851,500,000 Hz</u>
CHANNEL:	<u>18615 (3 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1851 500 002	0.0	0.000 000	0.000
100 %		-30	1851 500 004	2.8	0.000 000	0.002
100 %		-20	1851 500 003	1.5	0.000 000	0.001
100 %		-10	1851 500 004	2.7	0.000 000	0.001
100 %		0	1851 500 005	3.8	0.000 000	0.002
100 %		+10	1851 500 006	4.1	0.000 000	0.002
100 %		+30	1851 500 004	2.2	0.000 000	0.001
100 %		+40	1851 500 004	2.5	0.000 000	0.001
100 %		+50	1851 500 004	2.7	0.000 000	0.001
100 %	3.880	+20(Ref)	1851 500 004	2.4	0.000 000	0.001



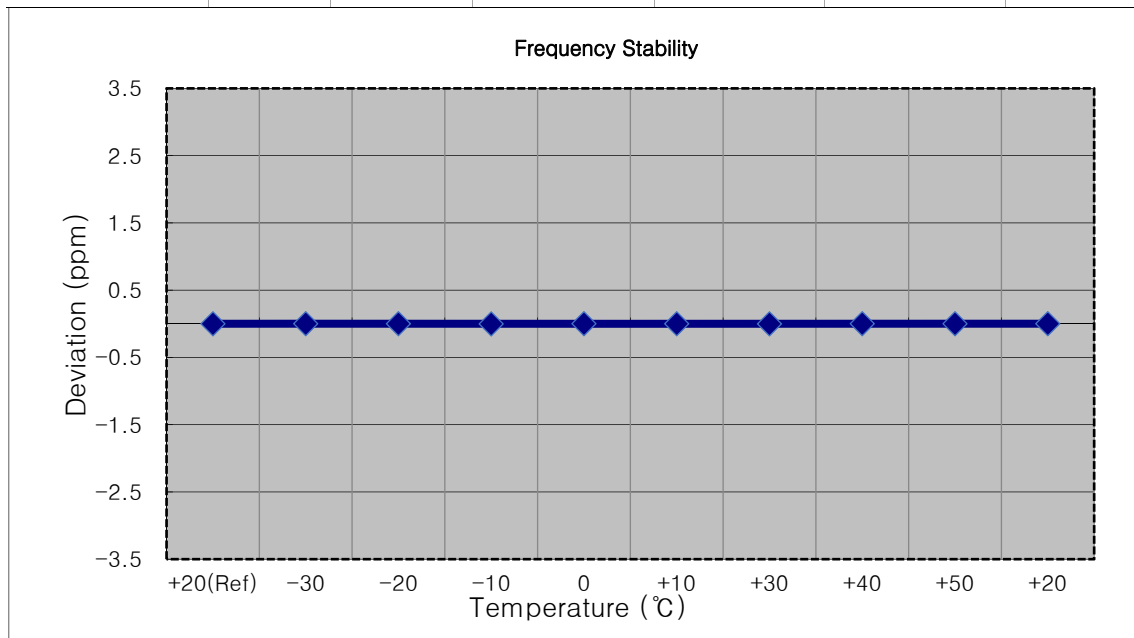
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1852,500,000 Hz</u>
CHANNEL:	<u>18625 (5 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1852 500 003	0.0	0.000 000	0.000
100 %		-30	1852 500 006	3.2	0.000 000	0.002
100 %		-20	1852 500 005	2.2	0.000 000	0.001
100 %		-10	1852 500 006	2.5	0.000 000	0.001
100 %		0	1852 500 006	3.0	0.000 000	0.002
100 %		+10	1852 500 006	3.3	0.000 000	0.002
100 %		+30	1852 500 006	3.2	0.000 000	0.002
100 %		+40	1852 500 007	3.8	0.000 000	0.002
100 %		+50	1852 500 007	3.6	0.000 000	0.002
Batt. Endpoint	3.300	+20	1852 500 006	2.9	0.000 000	0.002



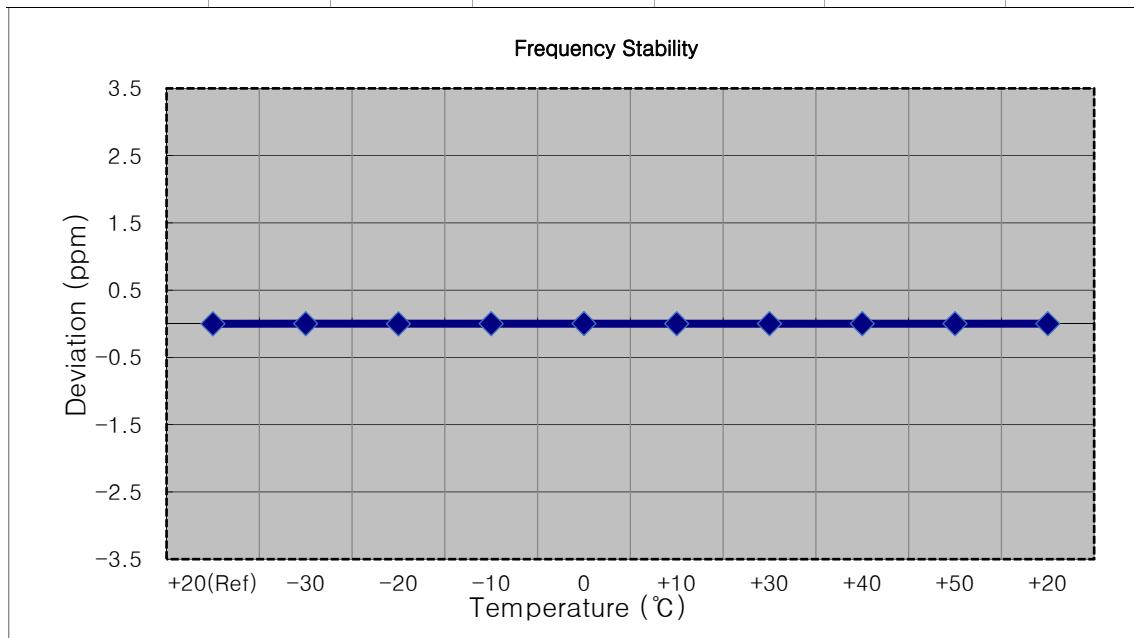
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1855,000,000 Hz</u>
CHANNEL:	<u>18650 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1855 000 003	0.0	0.000 000	0.000
100 %		-30	1855 000 006	2.9	0.000 000	0.002
100 %		-20	1855 000 006	2.8	0.000 000	0.002
100 %		-10	1855 000 000	-3.1	0.000 000	-0.002
100 %		0	1855 000 006	2.5	0.000 000	0.001
100 %		+10	1855 000 005	1.9	0.000 000	0.001
100 %		+30	1855 000 001	-2.4	0.000 000	-0.001
100 %		+40	1855 000 006	2.8	0.000 000	0.002
100 %		+50	1855 000 005	1.6	0.000 000	0.001
Batt. Endpoint	3.300	+20	1855 000 006	2.3	0.000 000	0.001



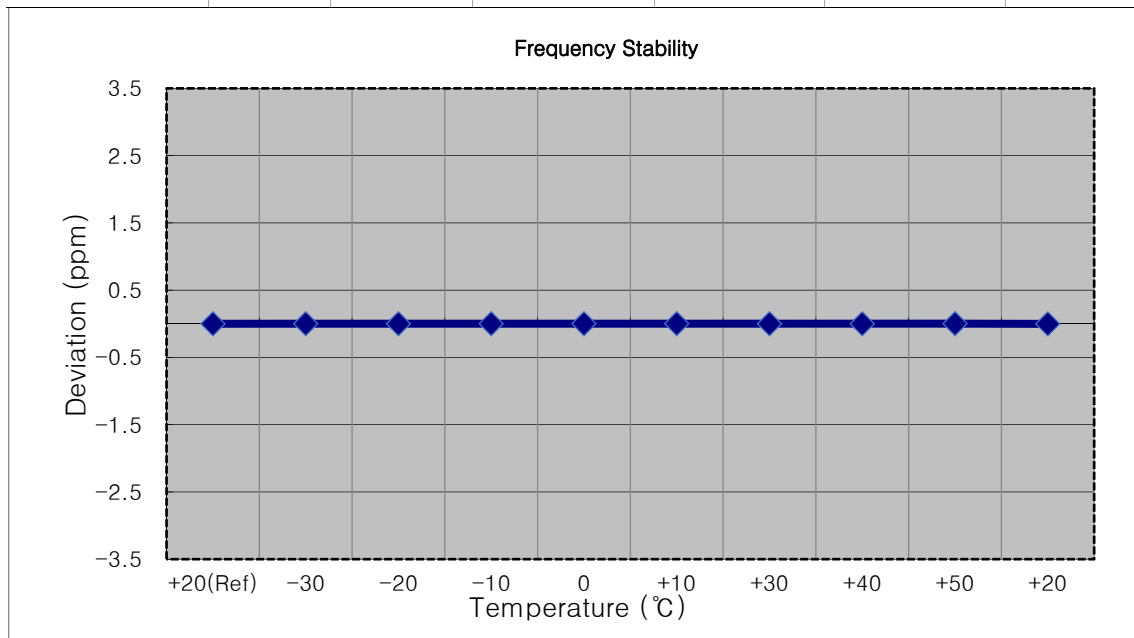
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1857,500,000 Hz</u>
CHANNEL:	<u>18675 (15 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1857 500 002	0.0	0.000 000	0.000
100 %		-30	1857 500 005	2.9	0.000 000	0.002
100 %		-20	1857 500 000	-2.1	0.000 000	-0.001
100 %		-10	1857 500 004	2.4	0.000 000	0.001
100 %		0	1857 500 007	5.5	0.000 000	0.003
100 %		+10	1857 500 004	2.1	0.000 000	0.001
100 %		+30	1857 500 004	2.5	0.000 000	0.001
100 %		+40	1857 500 005	2.7	0.000 000	0.001
100 %		+50	1857 500 005	2.7	0.000 000	0.001
Batt. Endpoint	3.300	+20	1857 500 005	2.9	0.000 000	0.002



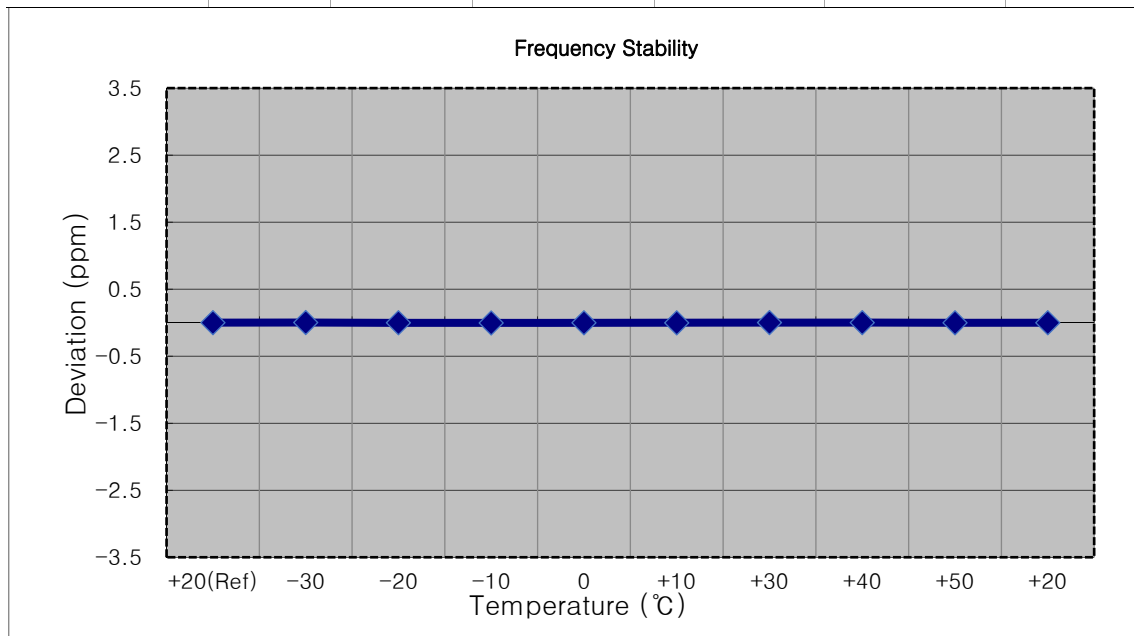
■ MODE:	<u>LTE B2</u>
■ OPERATING FREQUENCY:	<u>1860,000,000 Hz</u>
■ CHANNEL:	<u>18700 (20 MHz)</u>
■ REFERENCE VOLTAGE:	<u>3.880 VDC</u>
■ DEVIATION LIMIT:	<u>Emission must remain in band</u>

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 000 005	2.5	0.000 000	0.001
100 %		-20	1860 000 006	2.6	0.000 000	0.001
100 %		-10	1860 000 005	2.4	0.000 000	0.001
100 %		0	1860 000 006	3.2	0.000 000	0.002
100 %		+10	1860 000 006	3.5	0.000 000	0.002
100 %		+30	1860 000 005	1.8	0.000 000	0.001
100 %		+40	1860 000 004	1.5	0.000 000	0.001
100 %		+50	1860 000 007	4.2	0.000 000	0.002
Batt. Endpoint	3.300	+20	1860 000 001	-2.1	0.000 000	-0.001



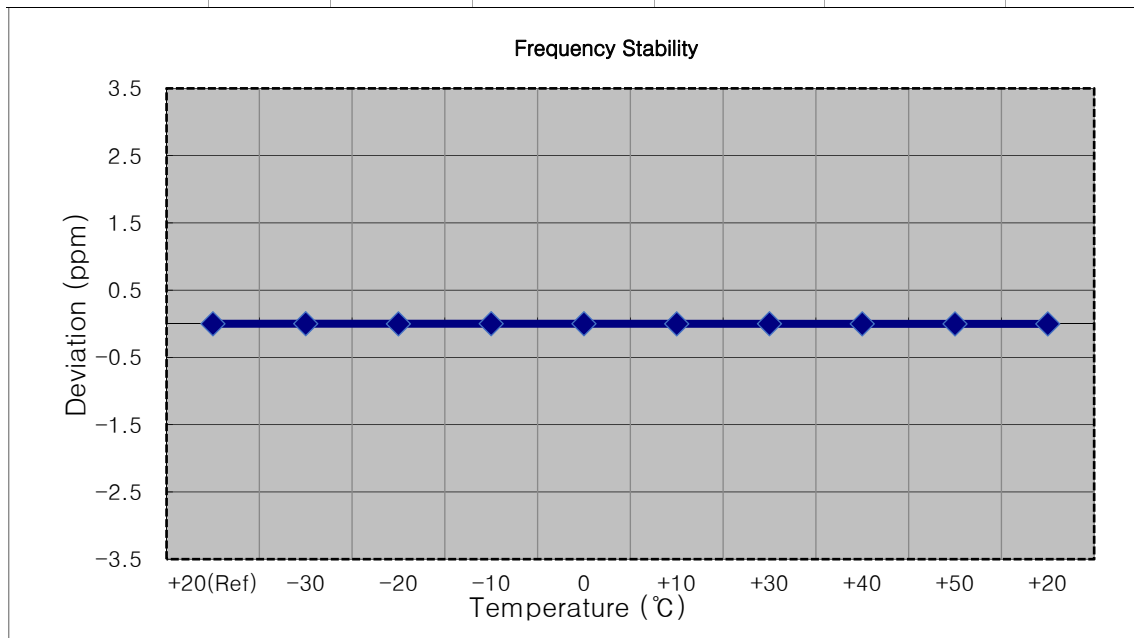
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1880,000,000 Hz</u>
CHANNEL:	<u>18900 (1.4 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1879 999 995	0.0	0.000 000	0.000
100 %		-30	1879 999 998	3.7	0.000 000	0.002
100 %		-20	1879 999 992	-2.3	0.000 000	-0.001
100 %		-10	1879 999 987	-7.7	0.000 000	-0.004
100 %		0	1879 999 991	-3.4	0.000 000	-0.002
100 %		+10	1879 999 990	-4.7	0.000 000	-0.003
100 %		+30	1879 999 997	2.8	0.000 000	0.001
100 %		+40	1879 999 996	1.5	0.000 000	0.001
100 %		+50	1879 999 991	-3.4	0.000 000	-0.002
Batt. Endpoint	3.300	+20	1879 999 992	-2.2	0.000 000	-0.001



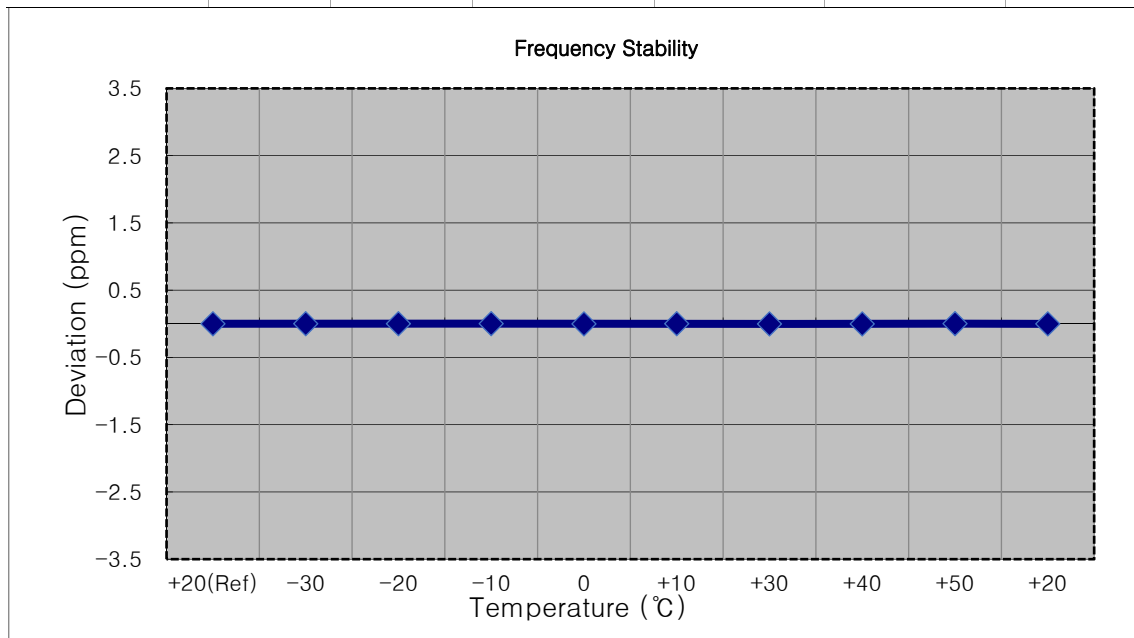
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1880,000,000 Hz</u>
CHANNEL:	<u>18900 (3 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1879 999 999	0.0	0.000 000	0.000
100 %		-30	1880 000 001	2.3	0.000 000	0.001
100 %		-20	1879 999 997	-2.0	0.000 000	-0.001
100 %		-10	1880 000 001	2.5	0.000 000	0.001
100 %		0	1880 000 000	1.4	0.000 000	0.001
100 %		+10	1879 999 997	-1.9	0.000 000	-0.001
100 %		+30	1880 000 000	1.6	0.000 000	0.001
100 %		+40	1879 999 997	-1.7	0.000 000	-0.001
100 %		+50	1879 999 996	-2.5	0.000 000	-0.001
Batt. Endpoint	3.300	+20	1879 999 996	-2.5	0.000 000	-0.001



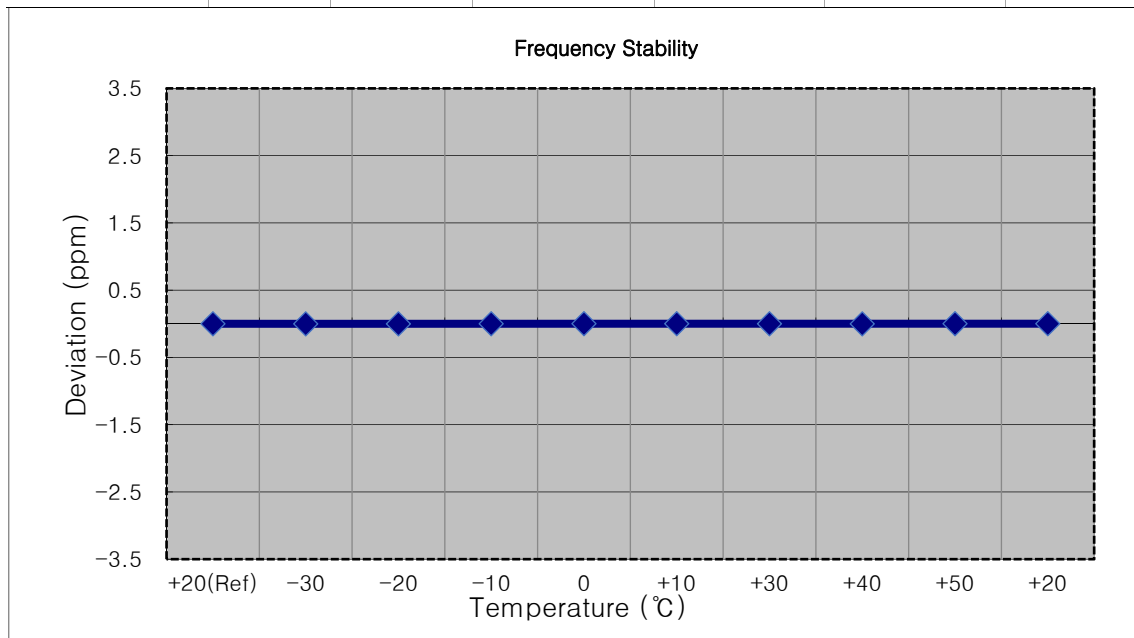
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1880,000,000 Hz</u>
CHANNEL:	<u>18900 (5 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1879 999 997	0.0	0.000 000	0.000
100 %		-30	1879 999 999	2.3	0.000 000	0.001
100 %		-20	1879 999 999	2.9	0.000 000	0.002
100 %		-10	1880 000 001	4.0	0.000 000	0.002
100 %		0	1879 999 994	-2.9	0.000 000	-0.002
100 %		+10	1879 999 999	2.7	0.000 000	0.001
100 %		+30	1879 999 994	-2.7	0.000 000	-0.001
100 %		+40	1879 999 993	-3.4	0.000 000	-0.002
100 %		+50	1880 000 000	3.7	0.000 000	0.002
Batt. Endpoint	3.300	+20	1879 999 994	-2.2	0.000 000	-0.001



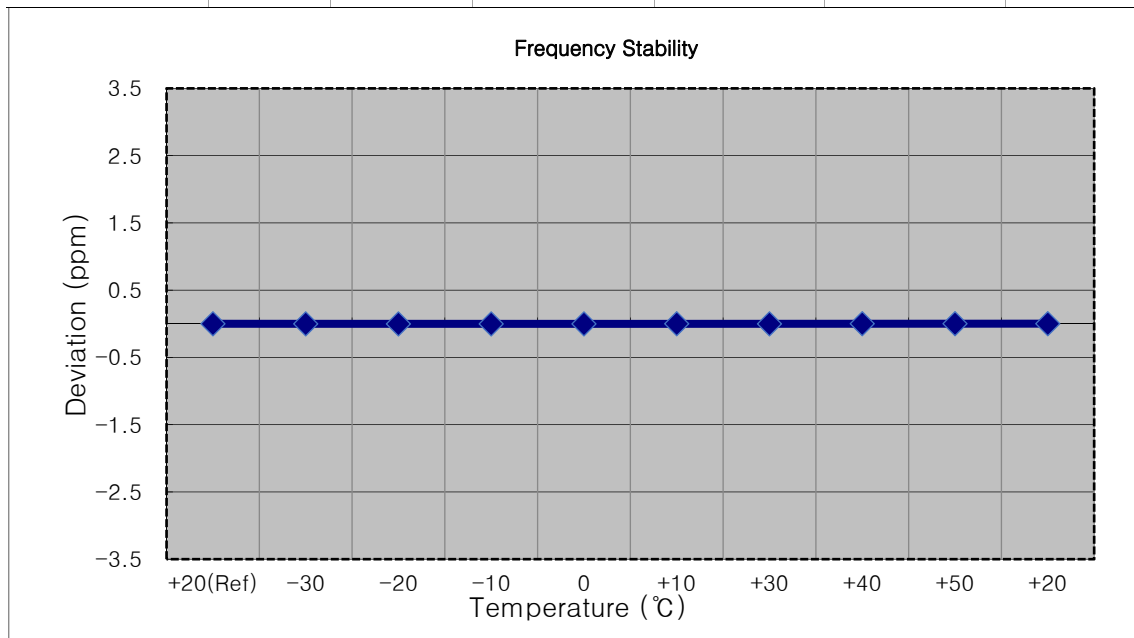
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1880,000,000 Hz</u>
CHANNEL:	<u>18900 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1880 000 002	0.0	0.000 000	0.000
100 %		-30	1880 000 001	-1.6	0.000 000	-0.001
100 %		-20	1880 000 000	-2.3	0.000 000	-0.001
100 %		-10	1880 000 004	1.9	0.000 000	0.001
100 %		0	1880 000 005	2.2	0.000 000	0.001
100 %		+10	1880 000 005	2.3	0.000 000	0.001
100 %		+30	1880 000 004	1.8	0.000 000	0.001
100 %		+40	1880 000 000	-2.4	0.000 000	-0.001
100 %		+50	1880 000 005	2.1	0.000 000	0.001
Batt. Endpoint	3.300	+20	1880 000 005	2.4	0.000 000	0.001



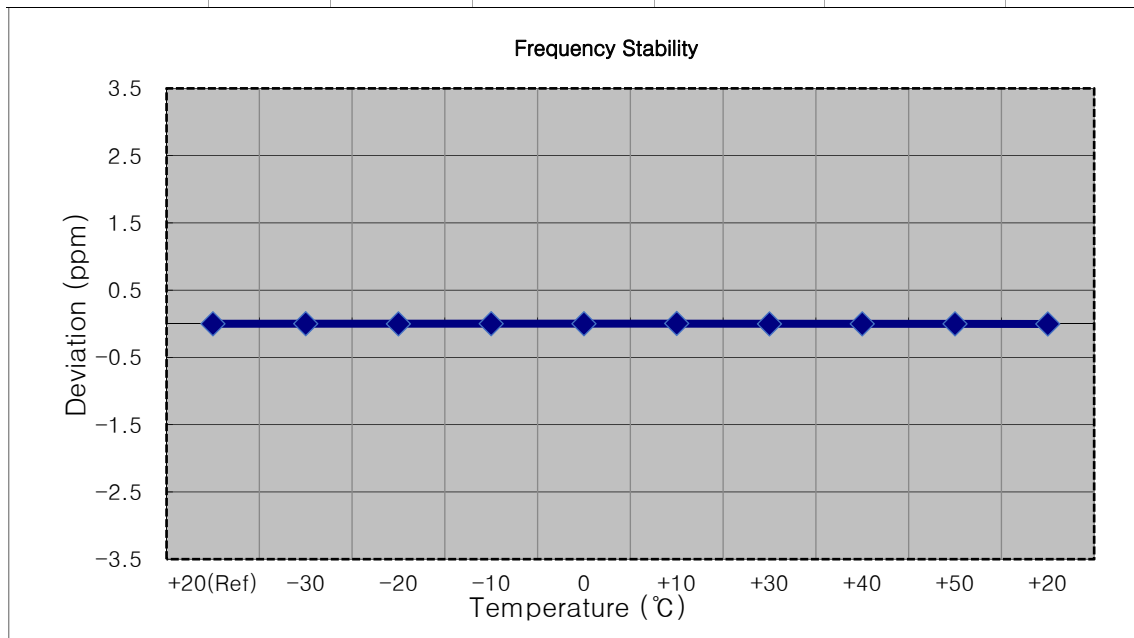
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1880,000,000 Hz</u>
CHANNEL:	<u>18900 (15 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1879 999 998	0.0	0.000 000	0.000
100 %		-30	1879 999 996	-1.6	0.000 000	-0.001
100 %		-20	1879 999 995	-2.7	0.000 000	-0.001
100 %		-10	1879 999 995	-3.0	0.000 000	-0.002
100 %		0	1879 999 995	-2.8	0.000 000	-0.001
100 %		+10	1879 999 999	1.5	0.000 000	0.001
100 %		+30	1879 999 995	-2.4	0.000 000	-0.001
100 %		+40	1880 000 001	3.4	0.000 000	0.002
100 %		+50	1880 000 000	2.1	0.000 000	0.001
Batt. Endpoint	3.300	+20	1880 000 001	3.2	0.000 000	0.002



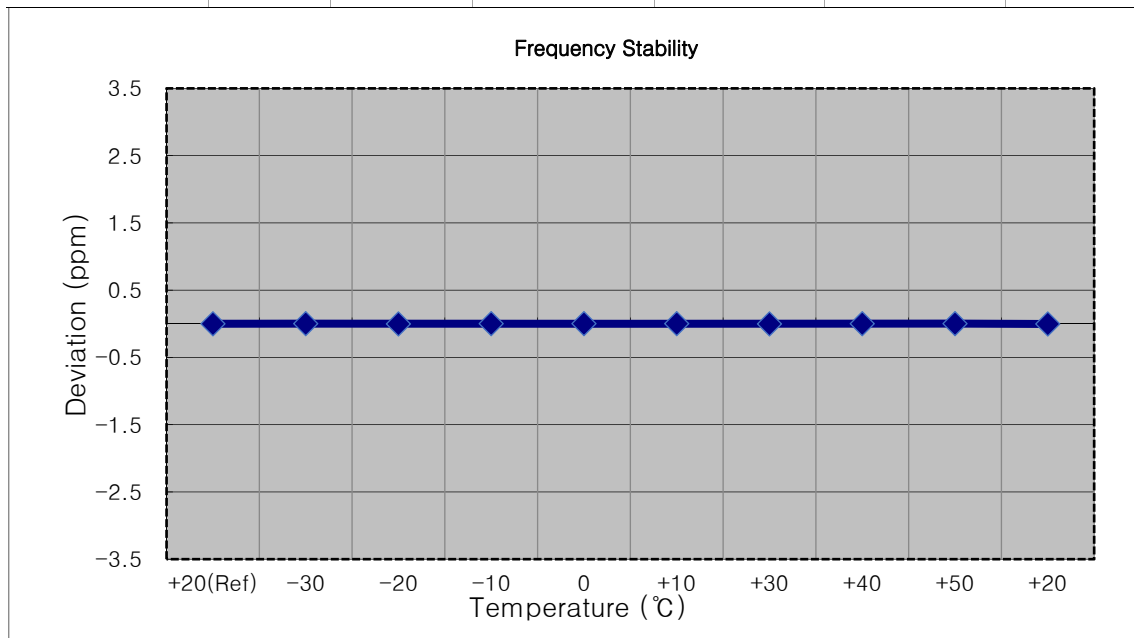
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1880,000,000 Hz</u>
CHANNEL:	<u>18900 (20 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1880 000 004	0.0	0.000 000	0.000
100 %		-30	1880 000 006	2.5	0.000 000	0.001
100 %		-20	1880 000 002	-1.9	0.000 000	-0.001
100 %		-10	1880 000 007	3.2	0.000 000	0.002
100 %		0	1880 000 005	1.7	0.000 000	0.001
100 %		+10	1880 000 014	10.2	0.000 001	0.005
100 %		+30	1880 000 001	-2.9	0.000 000	-0.002
100 %		+40	1880 000 002	-1.7	0.000 000	-0.001
100 %		+50	1880 000 002	-2.1	0.000 000	-0.001
Batt. Endpoint	3.300	+20	1879 999 999	-4.6	0.000 000	-0.002



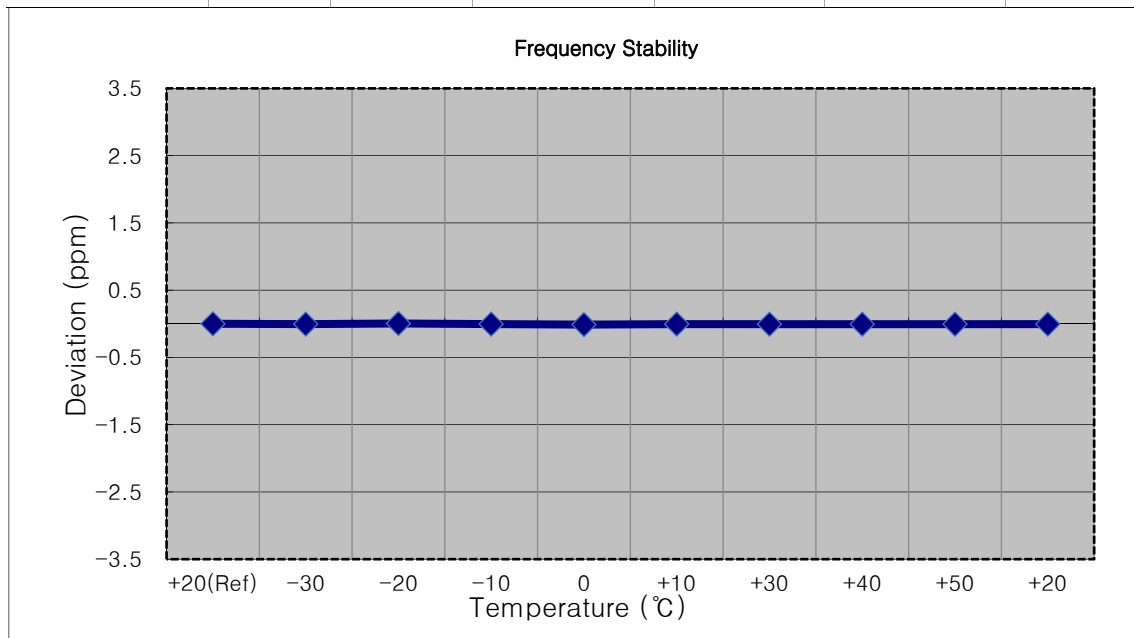
■ MODE:	<u>LTE B2</u>
■ OPERATING FREQUENCY:	<u>1909,300,000 Hz</u>
■ CHANNEL:	<u>19193 (1.4 MHz)</u>
■ REFERENCE VOLTAGE:	<u>3.880 VDC</u>
■ DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1909 299 995	0.0	0.000 000	0.000
100 %		-30	1909 299 999	3.9	0.000 000	0.002
100 %		-20	1909 299 992	-3.1	0.000 000	-0.002
100 %		-10	1909 300 000	4.5	0.000 000	0.002
100 %		0	1909 299 999	4.1	0.000 000	0.002
100 %		+10	1909 299 999	3.6	0.000 000	0.002
100 %		+30	1909 299 992	-3.5	0.000 000	-0.002
100 %		+40	1909 299 998	3.1	0.000 000	0.002
100 %		+50	1909 300 000	4.4	0.000 000	0.002
Batt. Endpoint	3.300	+20	1909 299 990	-4.9	0.000 000	-0.003



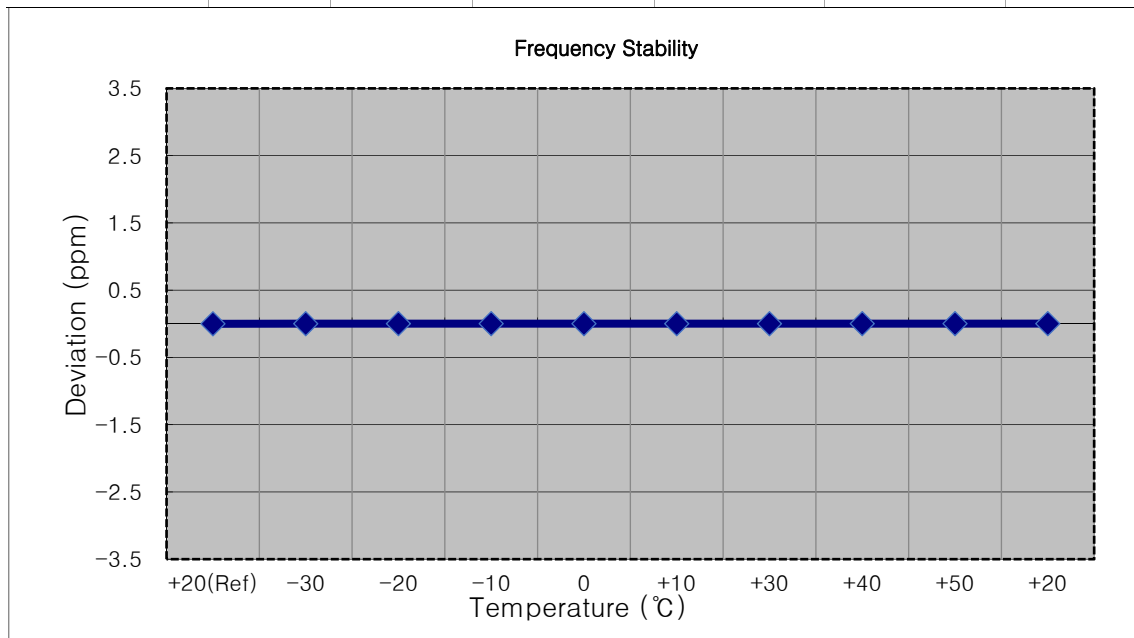
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1908,500,000 Hz</u>
CHANNEL:	<u>19185 (3 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1908 500 011	0.0	0.000 000	0.000
100 %		-30	1908 500 001	-9.5	0.000 000	-0.005
100 %		-20	1908 500 020	8.9	0.000 000	0.005
100 %		-10	1908 500 002	-9.2	0.000 000	-0.005
100 %		0	1908 499 987	-23.6	-0.000 001	-0.012
100 %		+10	1908 500 001	-9.5	0.000 000	-0.005
100 %		+30	1908 500 000	-10.9	-0.000 001	-0.006
100 %		+40	1908 499 999	-12.0	-0.000 001	-0.006
100 %		+50	1908 500 000	-11.1	-0.000 001	-0.006
Batt. Endpoint	3.300	+20	1908 500 001	-9.9	-0.000 001	-0.005



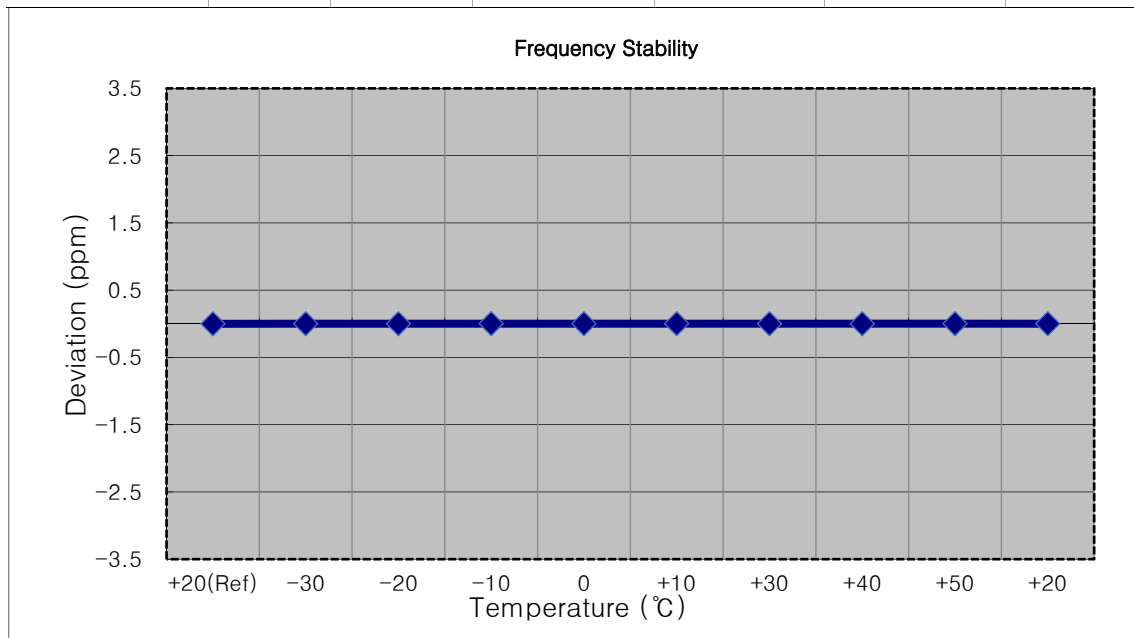
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1907,500,000 Hz</u>
CHANNEL:	<u>19175 (5 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1907 500 004	0.0	0.000 000	0.000
100 %		-30	1907 500 007	3.2	0.000 000	0.002
100 %		-20	1907 500 008	4.8	0.000 000	0.003
100 %		-10	1907 500 008	4.7	0.000 000	0.002
100 %		0	1907 500 006	2.5	0.000 000	0.001
100 %		+10	1907 500 007	3.4	0.000 000	0.002
100 %		+30	1907 500 007	3.2	0.000 000	0.002
100 %		+40	1907 500 008	4.2	0.000 000	0.002
100 %		+50	1907 500 008	4.1	0.000 000	0.002
Batt. Endpoint	3.300	+20	1907 500 008	4.6	0.000 000	0.002



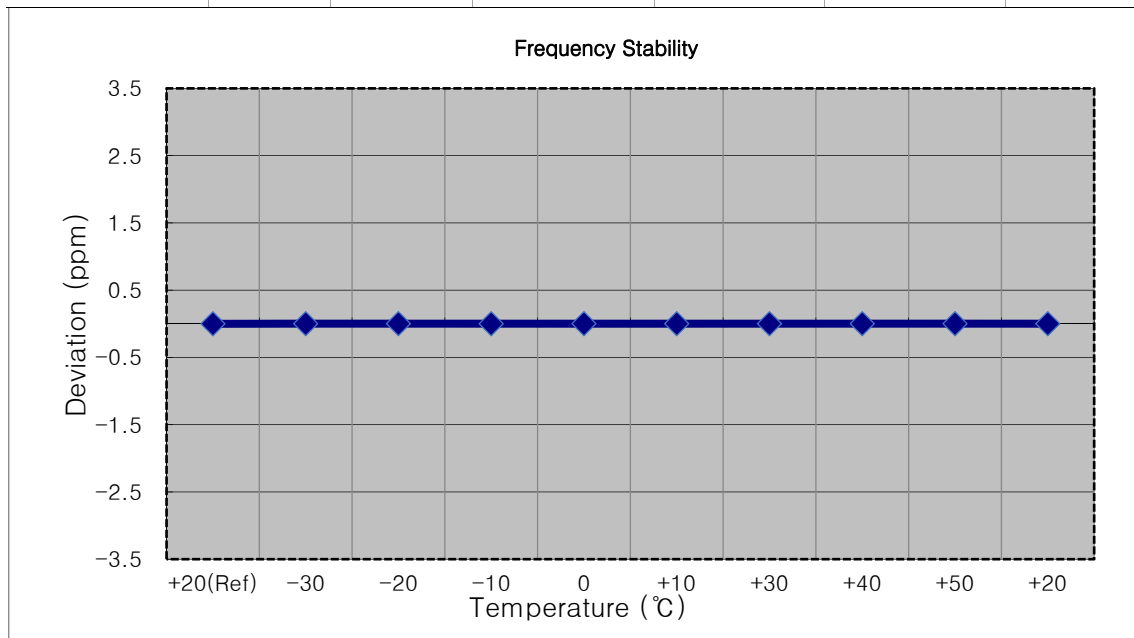
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1905,000,000 Hz</u>
CHANNEL:	<u>19150 (10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1905 000 003	0.0	0.000 000	0.000
100 %		-30	1905 000 005	2.2	0.000 000	0.001
100 %		-20	1905 000 006	2.9	0.000 000	0.002
100 %		-10	1905 000 007	4.0	0.000 000	0.002
100 %		0	1905 000 006	3.5	0.000 000	0.002
100 %		+10	1905 000 006	2.7	0.000 000	0.001
100 %		+30	1905 000 005	2.3	0.000 000	0.001
100 %		+40	1905 000 005	2.0	0.000 000	0.001
100 %		+50	1905 000 006	3.2	0.000 000	0.002
Batt. Endpoint	3.300	+20	1905 000 005	2.4	0.000 000	0.001



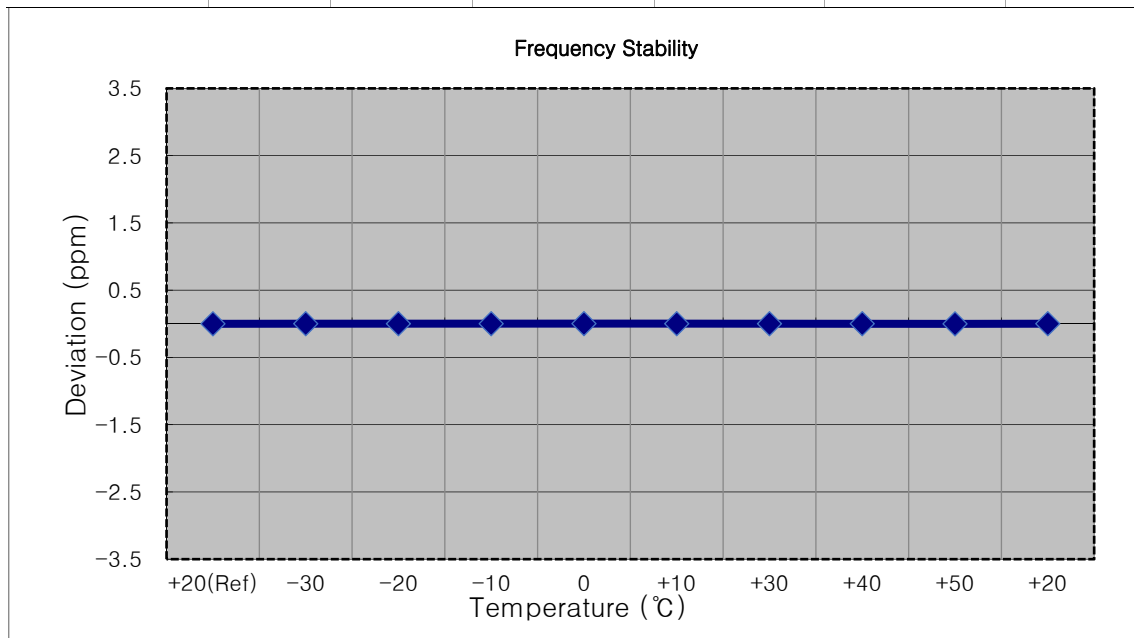
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1902,500,000 Hz</u>
CHANNEL:	<u>19125 (15 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1902 500 003	0.0	0.000 000	0.000
100 %		-30	1902 500 006	3.5	0.000 000	0.002
100 %		-20	1902 500 006	3.9	0.000 000	0.002
100 %		-10	1902 500 005	2.0	0.000 000	0.001
100 %		0	1902 500 005	2.5	0.000 000	0.001
100 %		+10	1902 500 006	3.0	0.000 000	0.002
100 %		+30	1902 500 005	2.4	0.000 000	0.001
100 %		+40	1902 500 006	3.3	0.000 000	0.002
100 %		+50	1902 500 006	3.1	0.000 000	0.002
Batt. Endpoint	3.300	+20	1902 500 005	2.2	0.000 000	0.001



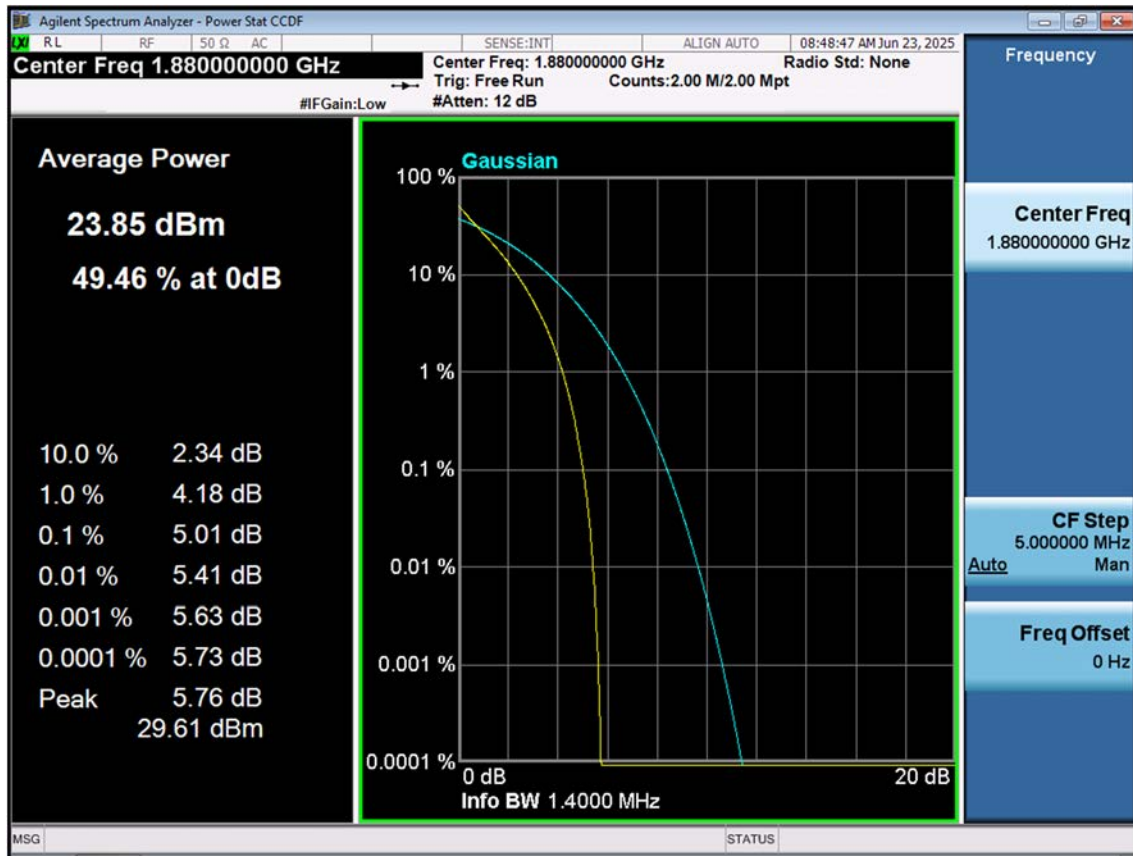
MODE:	<u>LTE B2</u>
OPERATING FREQUENCY:	<u>1900,000,000 Hz</u>
CHANNEL:	<u>19100 (20 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>Emission must remain in band</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	1899 999 998	0.0	0.000 000	0.000
100 %		-30	1900 000 001	2.6	0.000 000	0.001
100 %		-20	1900 000 001	2.9	0.000 000	0.002
100 %		-10	1900 000 001	2.5	0.000 000	0.001
100 %		0	1900 000 003	4.5	0.000 000	0.002
100 %		+10	1900 000 001	2.6	0.000 000	0.001
100 %		+30	1900 000 001	3.0	0.000 000	0.002
100 %		+40	1900 000 001	2.9	0.000 000	0.002
100 %		+50	1899 999 997	-1.5	0.000 000	-0.001
Batt. Endpoint	3.300	+20	1900 000 001	2.5	0.000 000	0.001

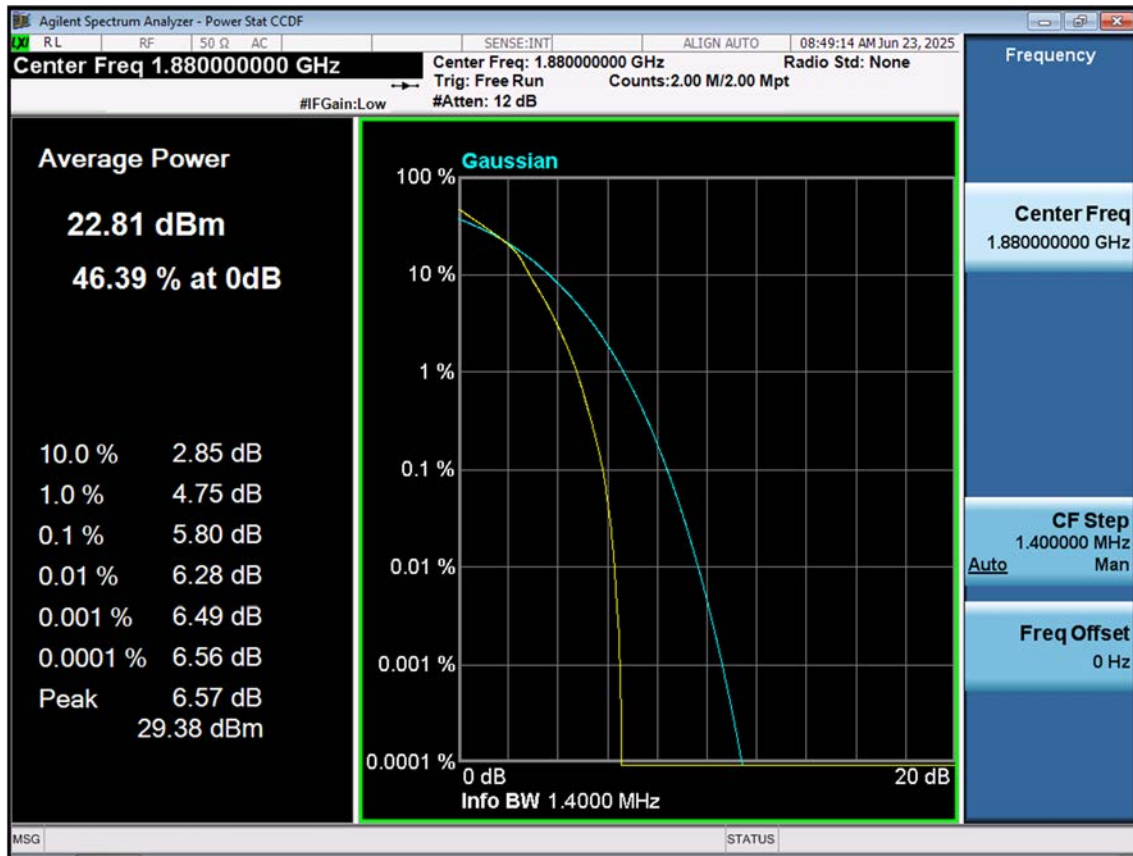


10. TEST PLOTS(Main 1 ANT)

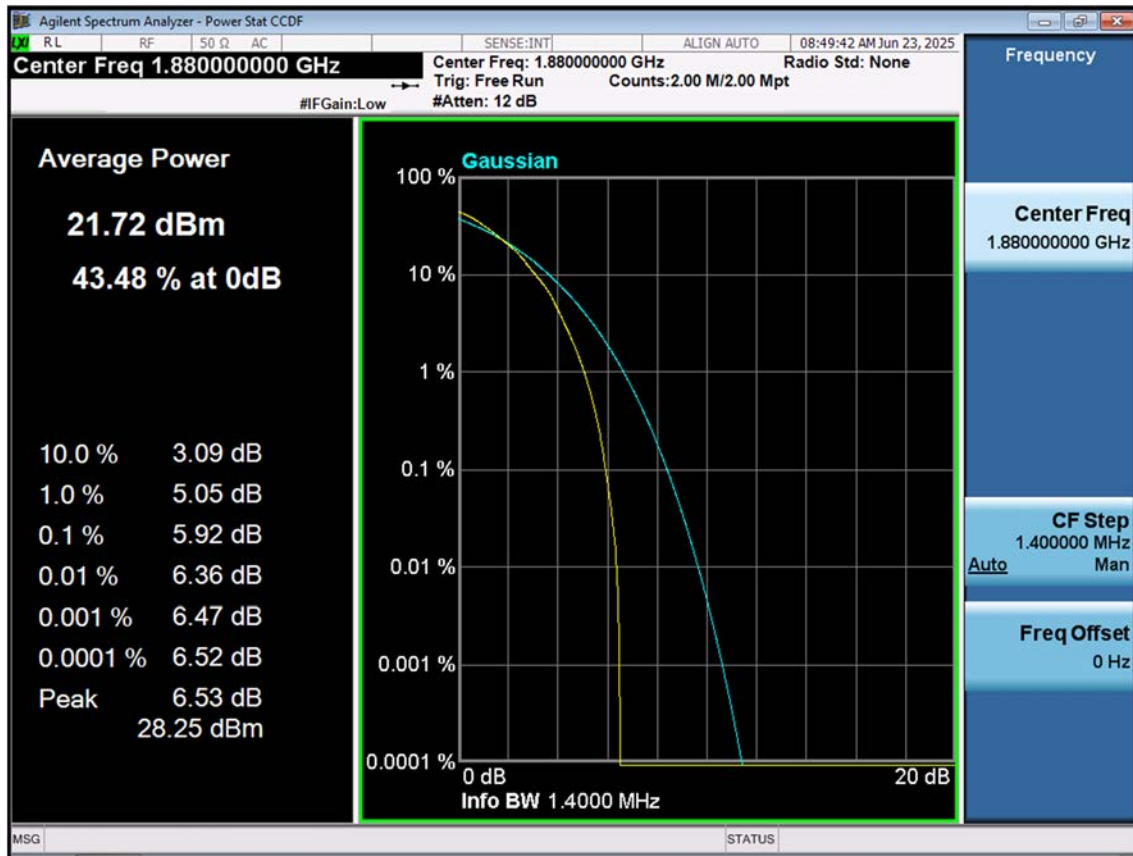
LTE B2_1.4M_PAR_Mid_QPSK_FullRB



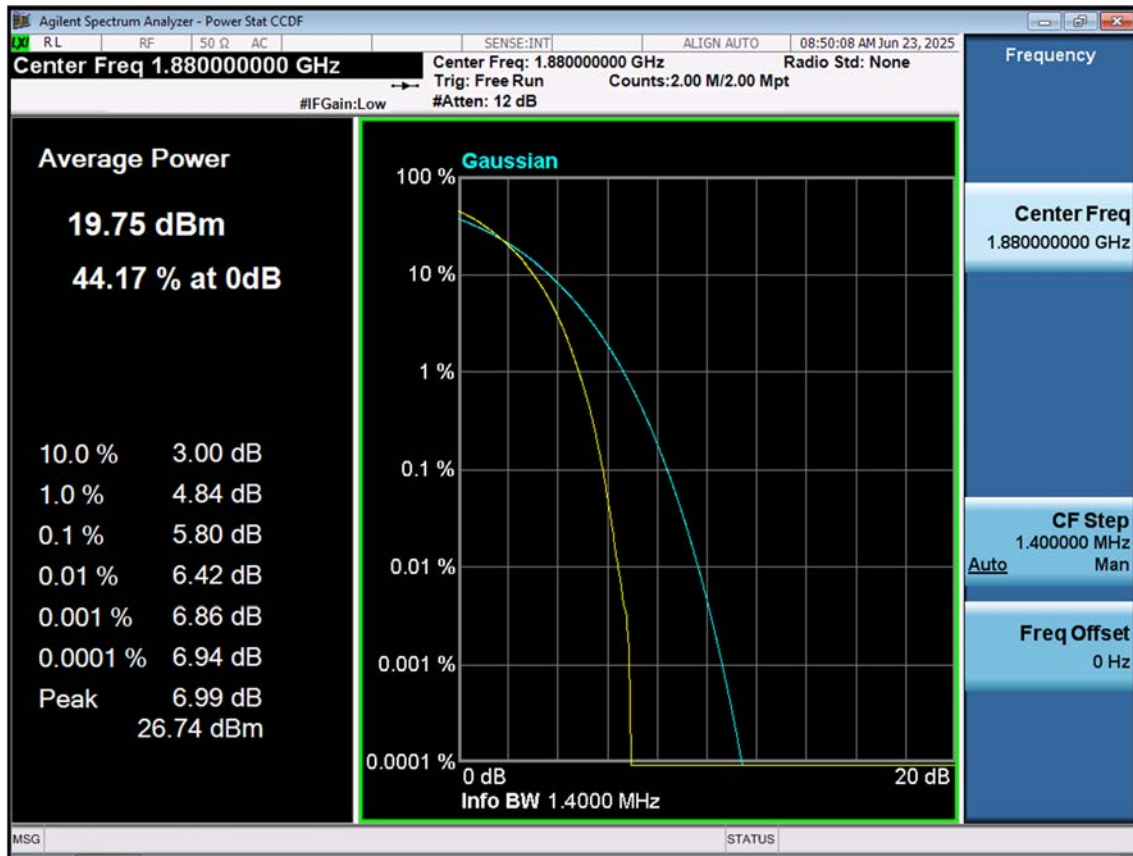
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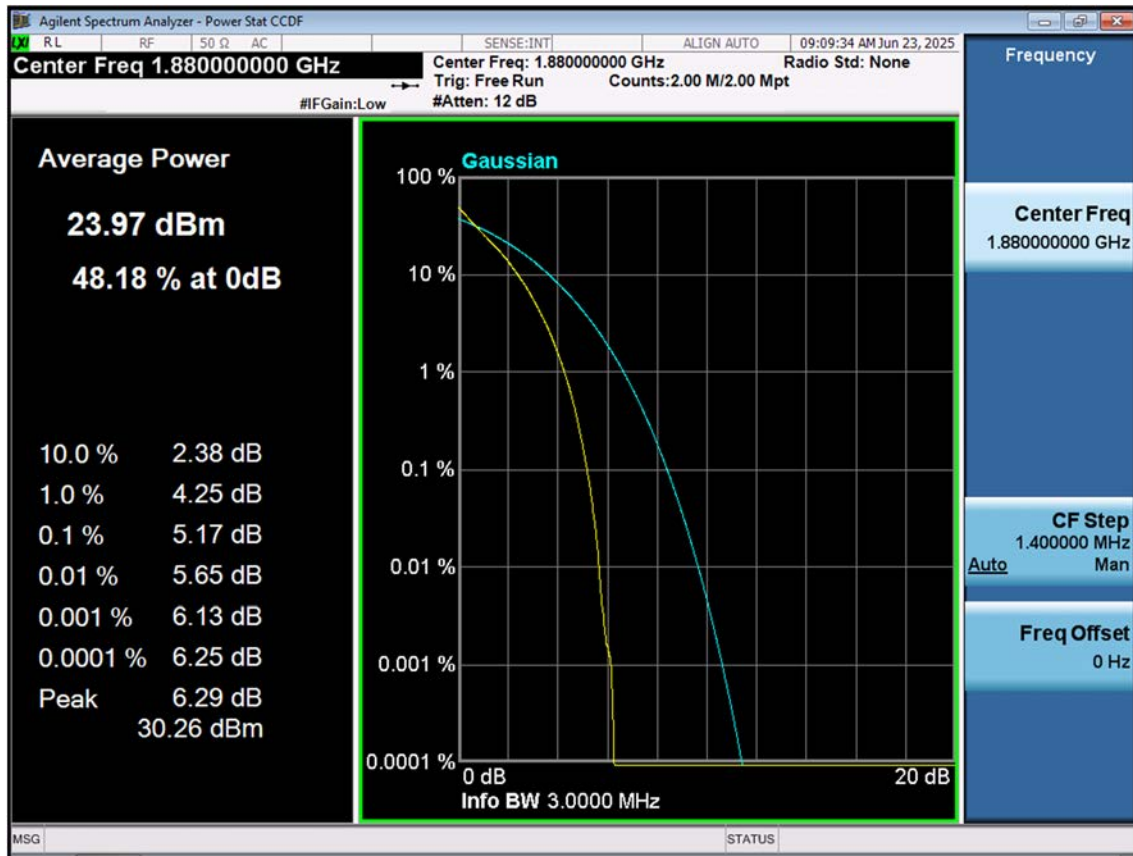
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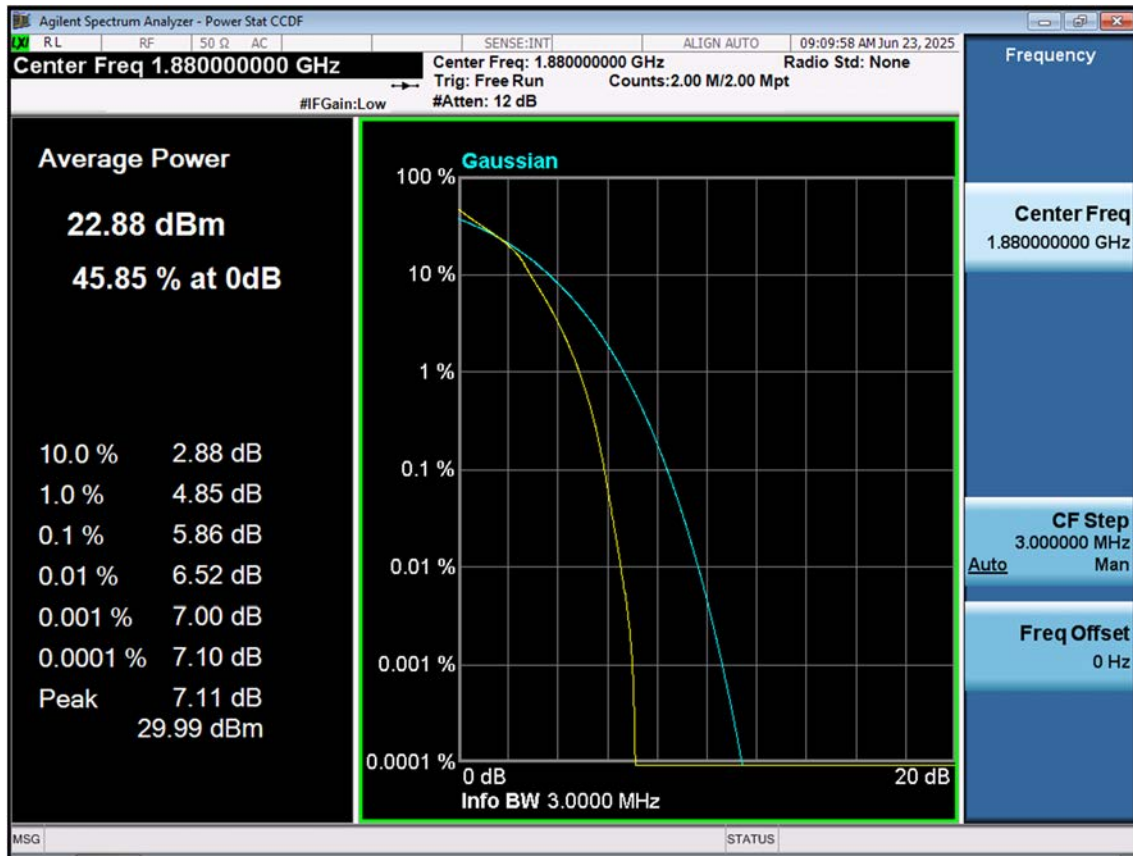
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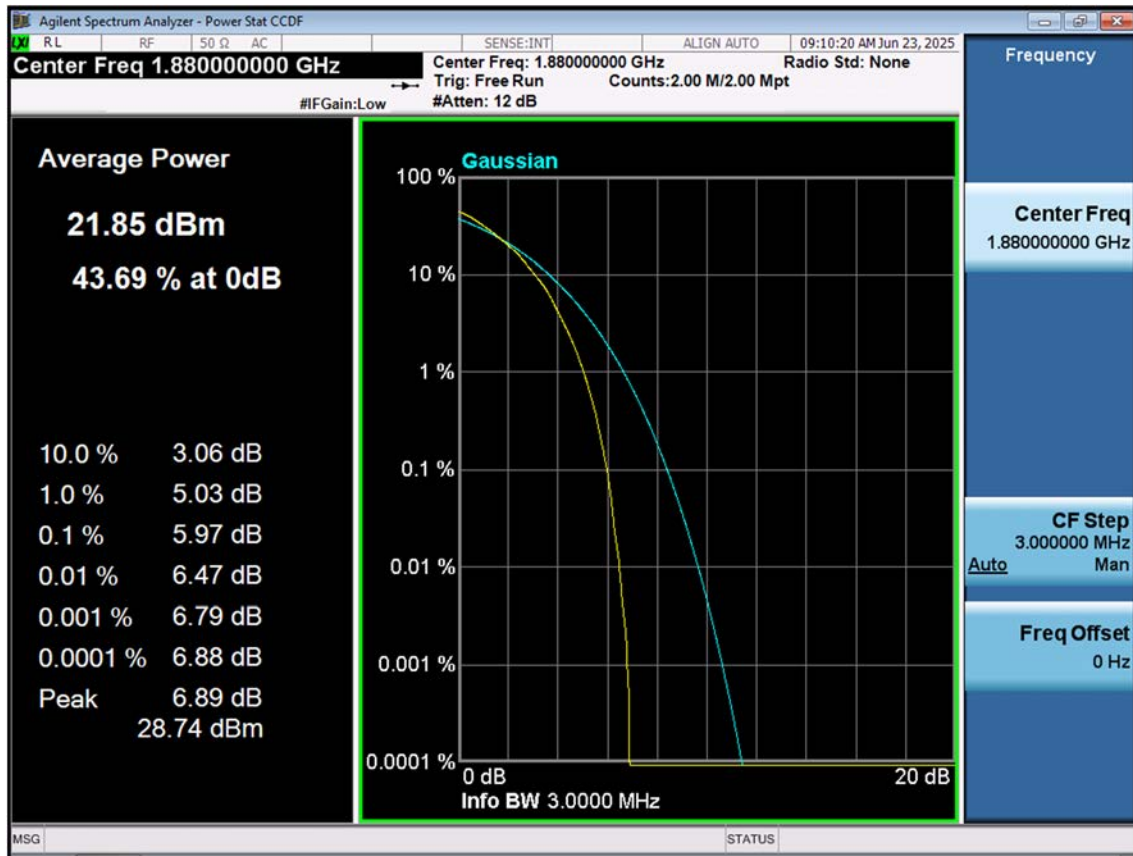
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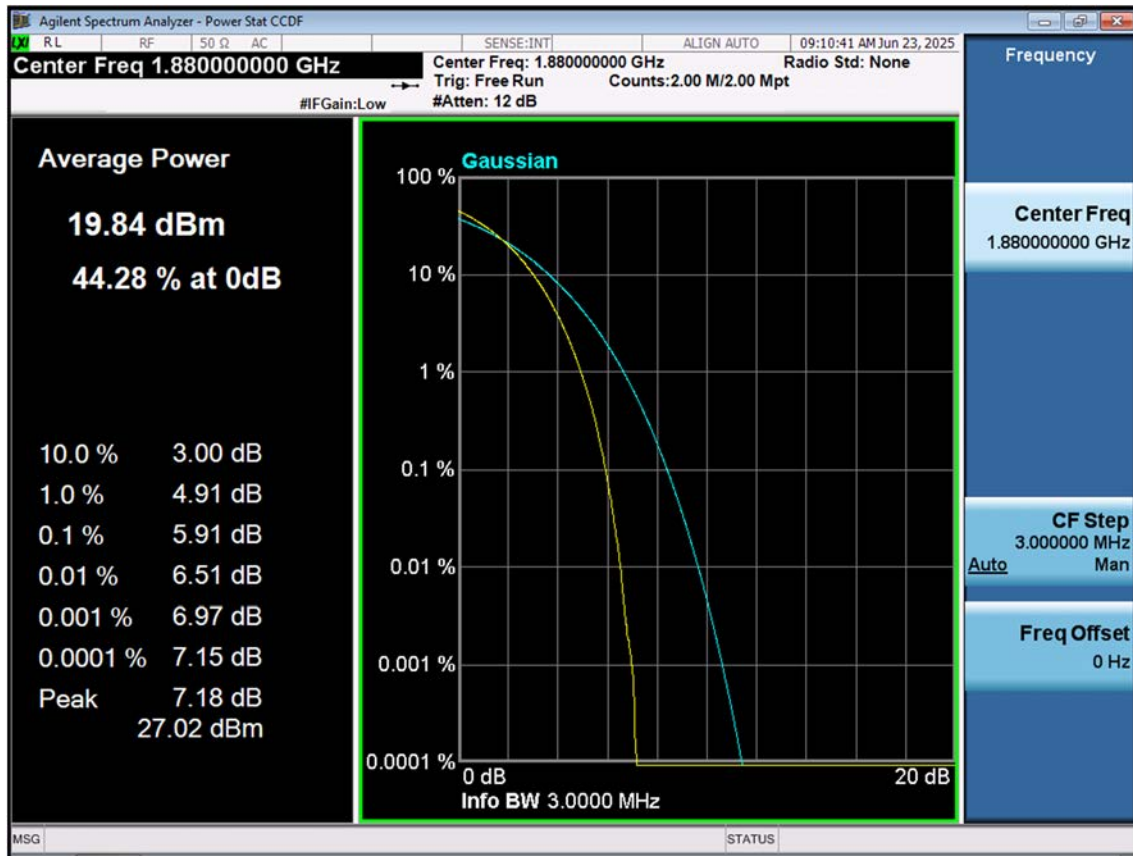
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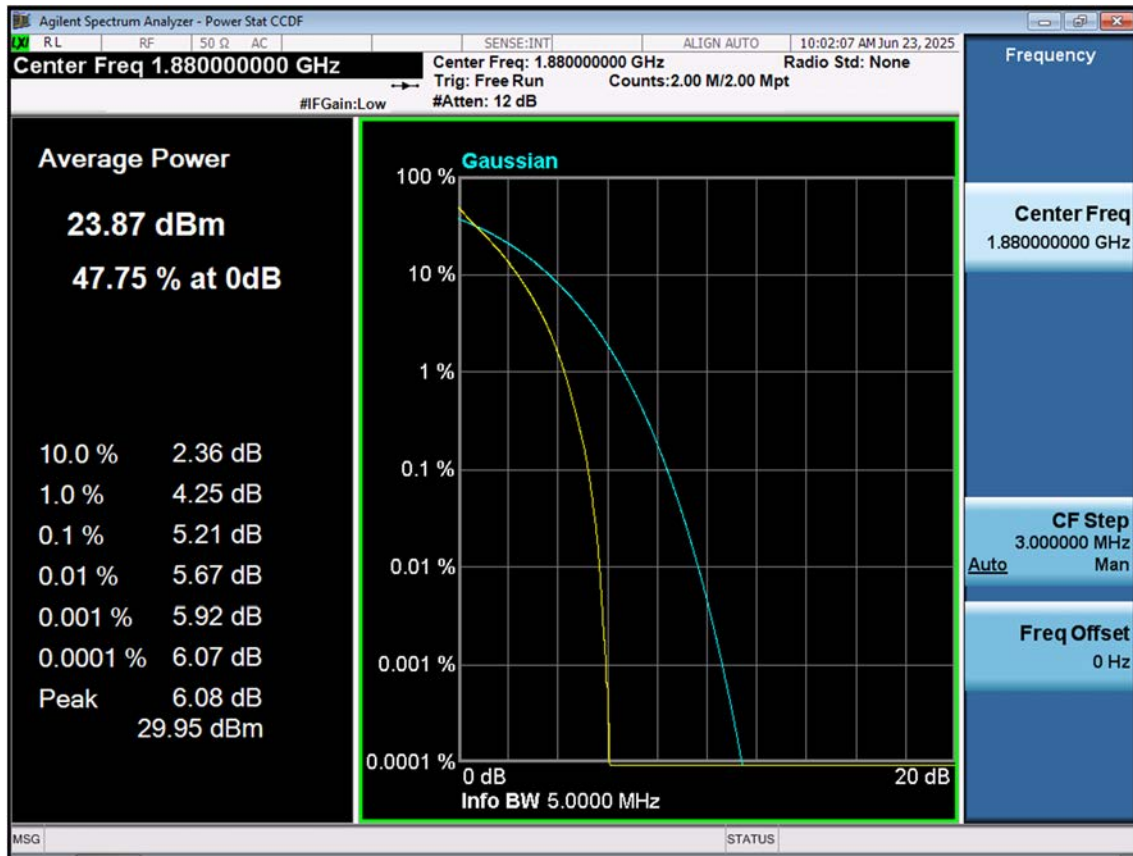
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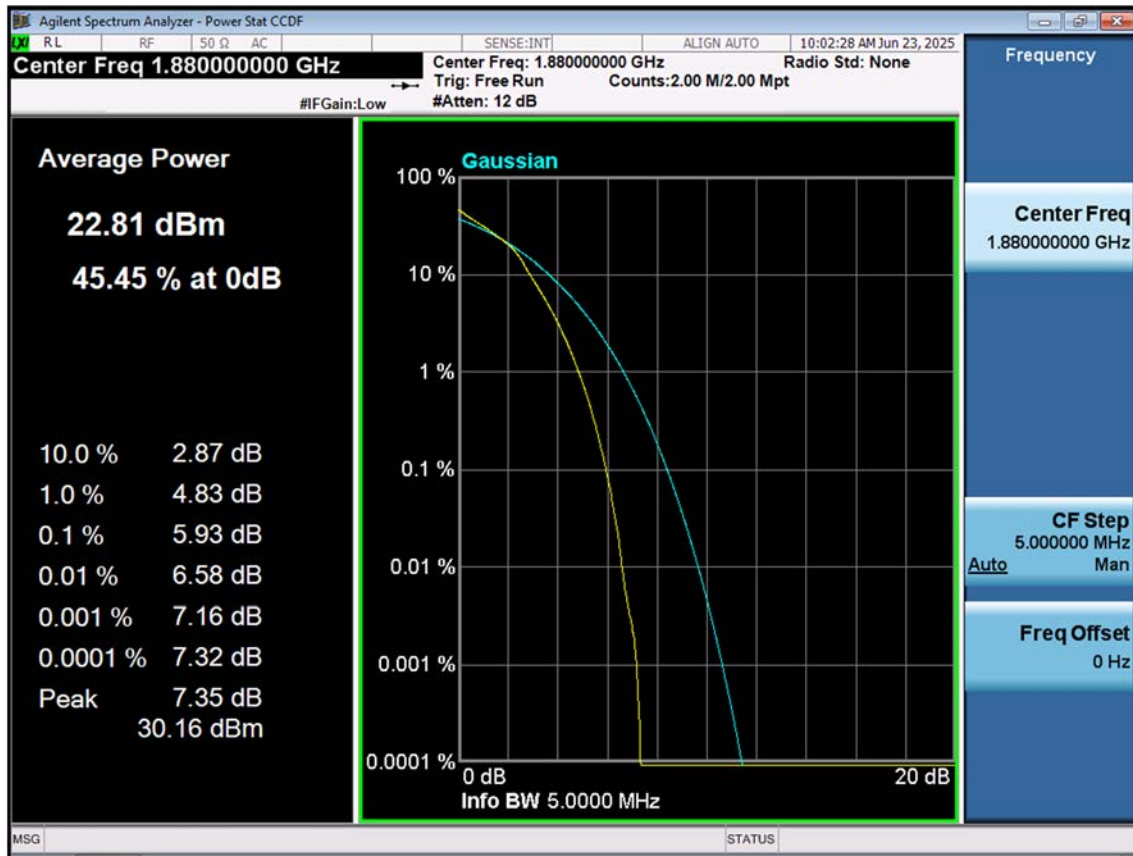
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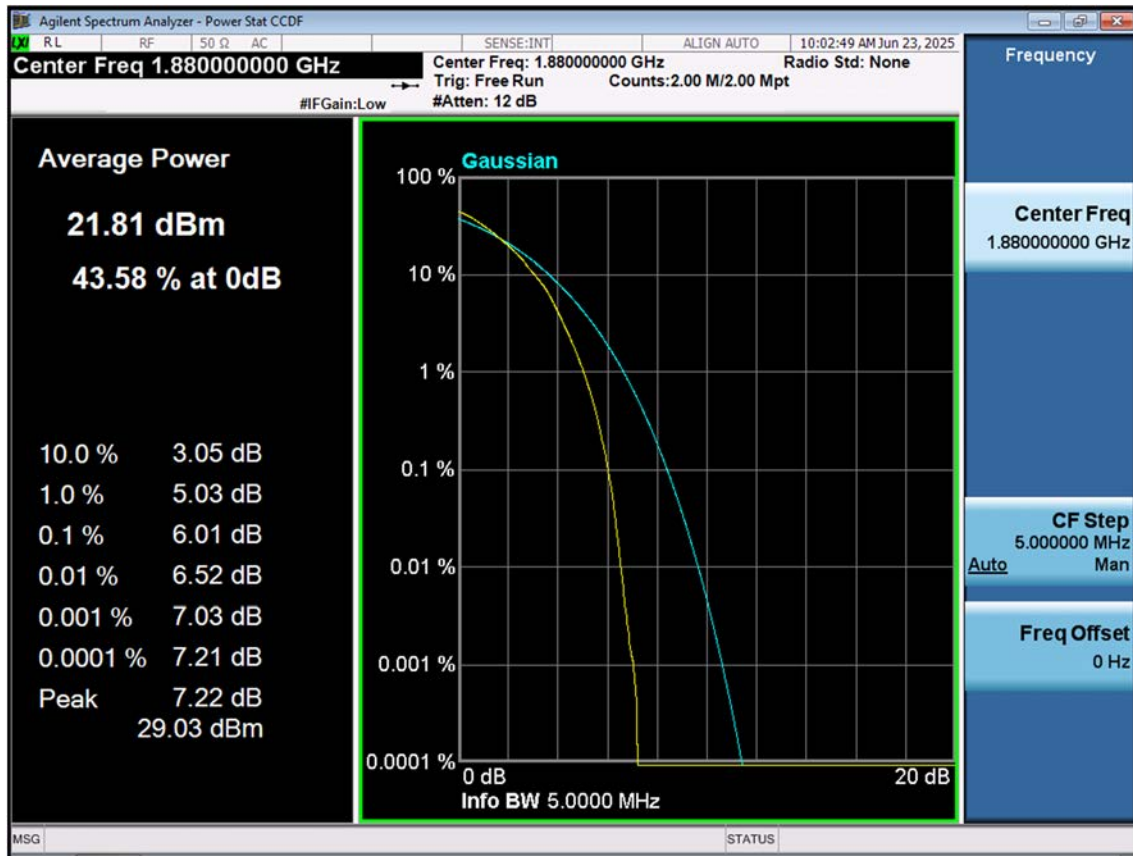
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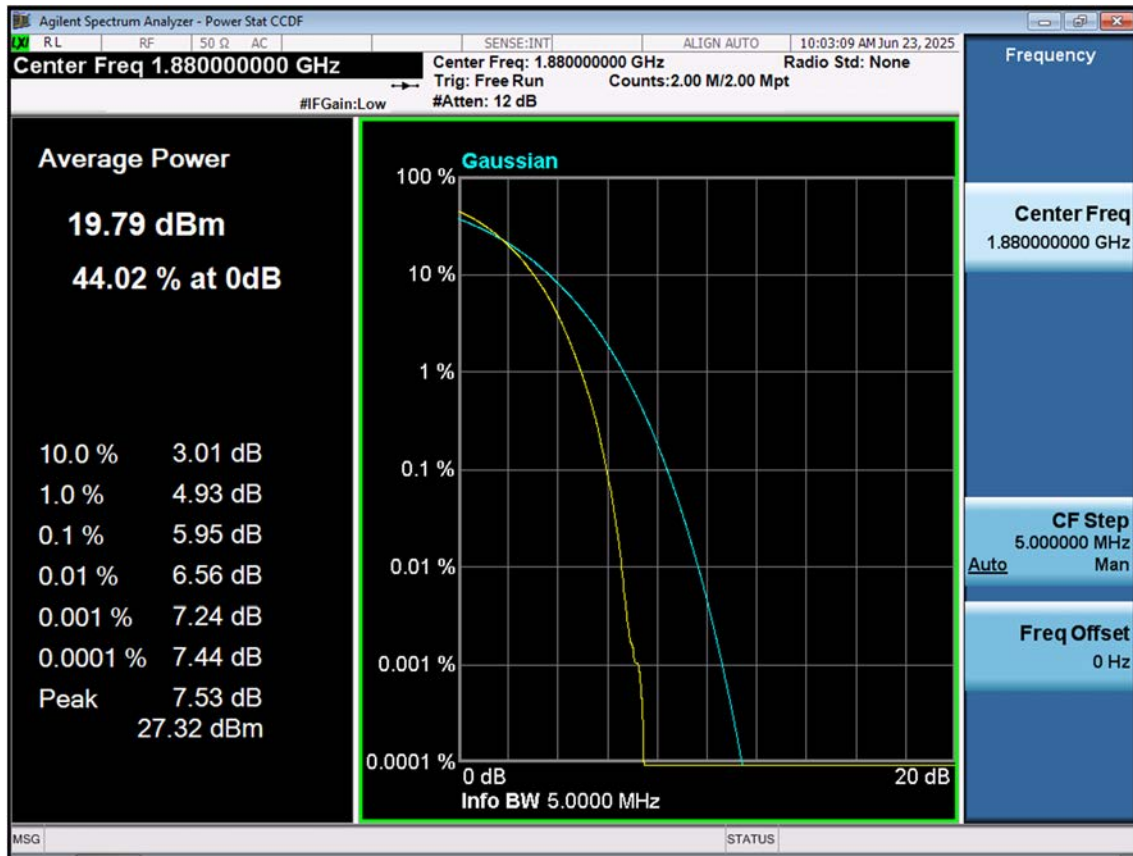
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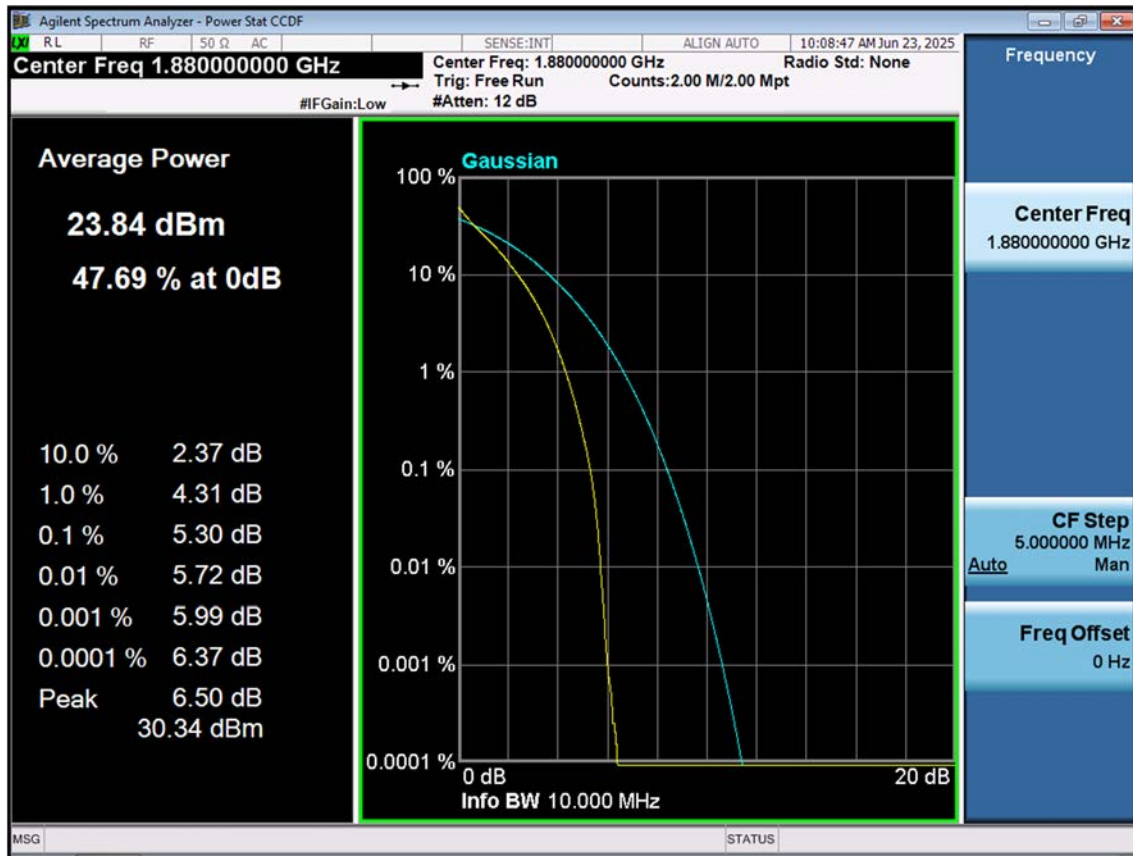
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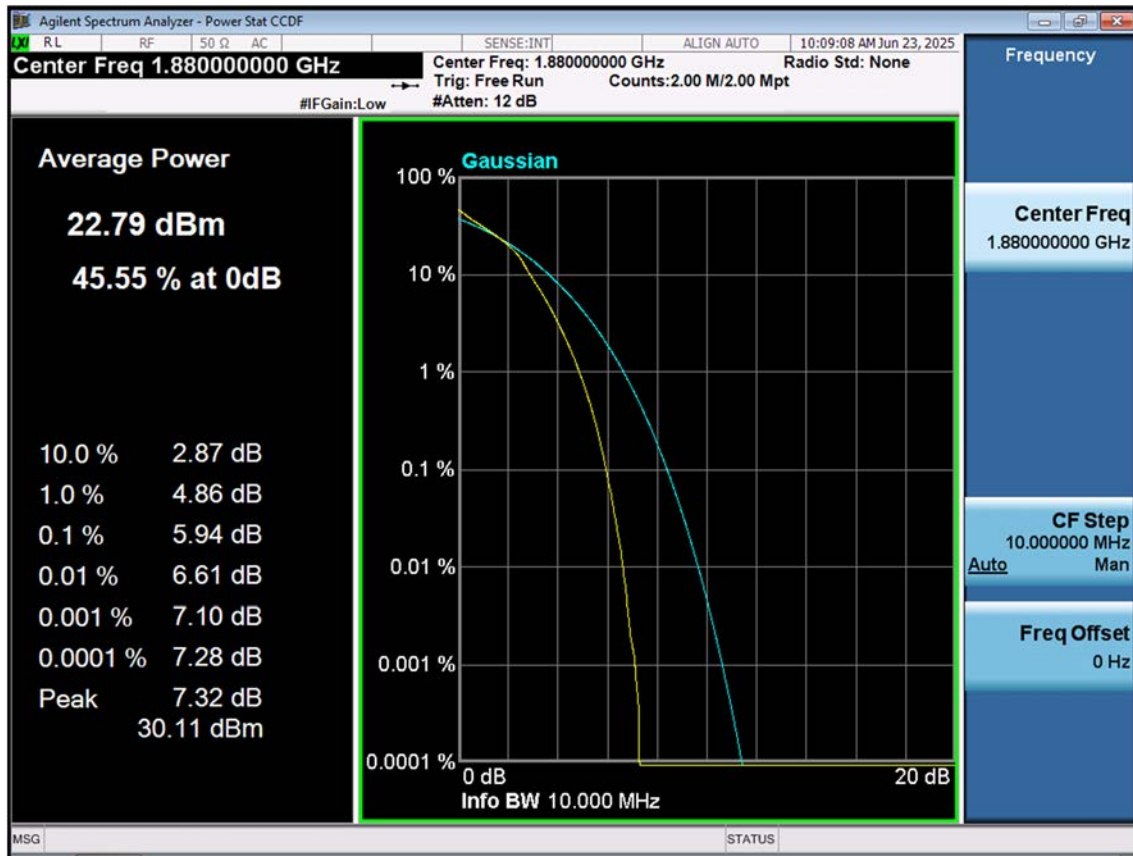
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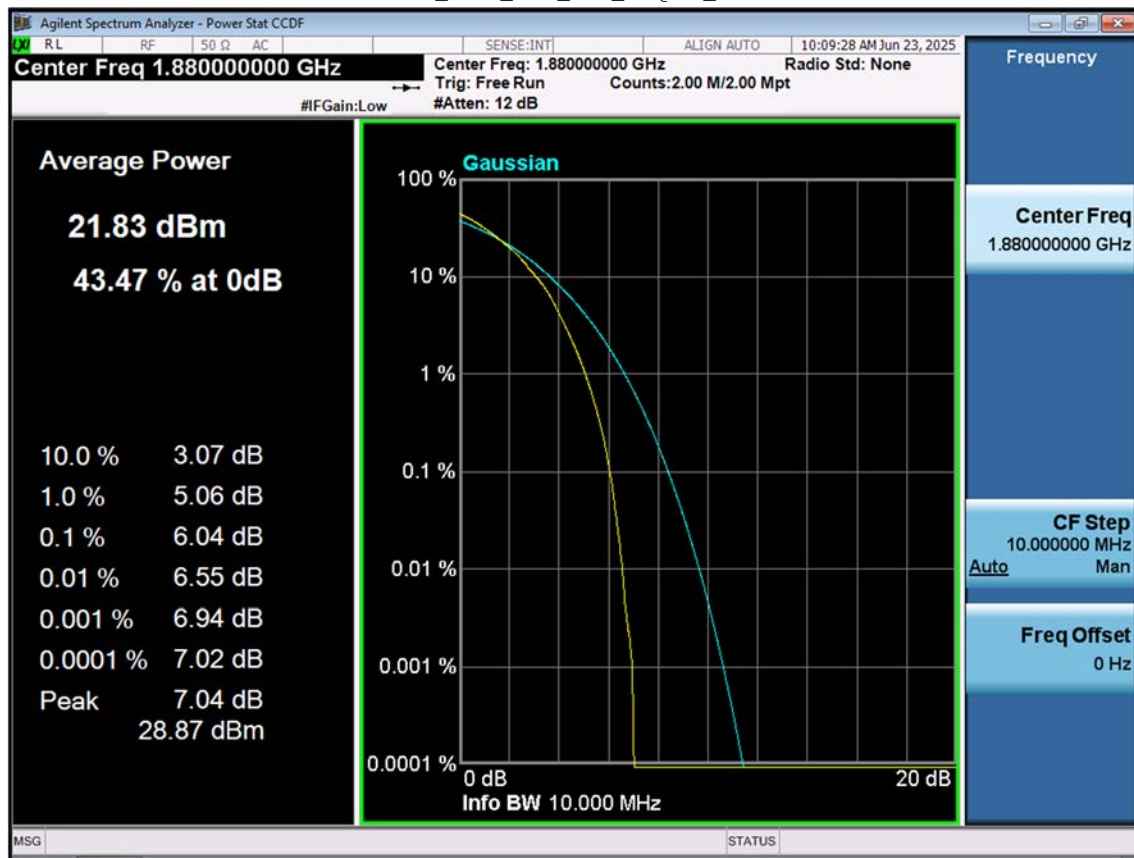
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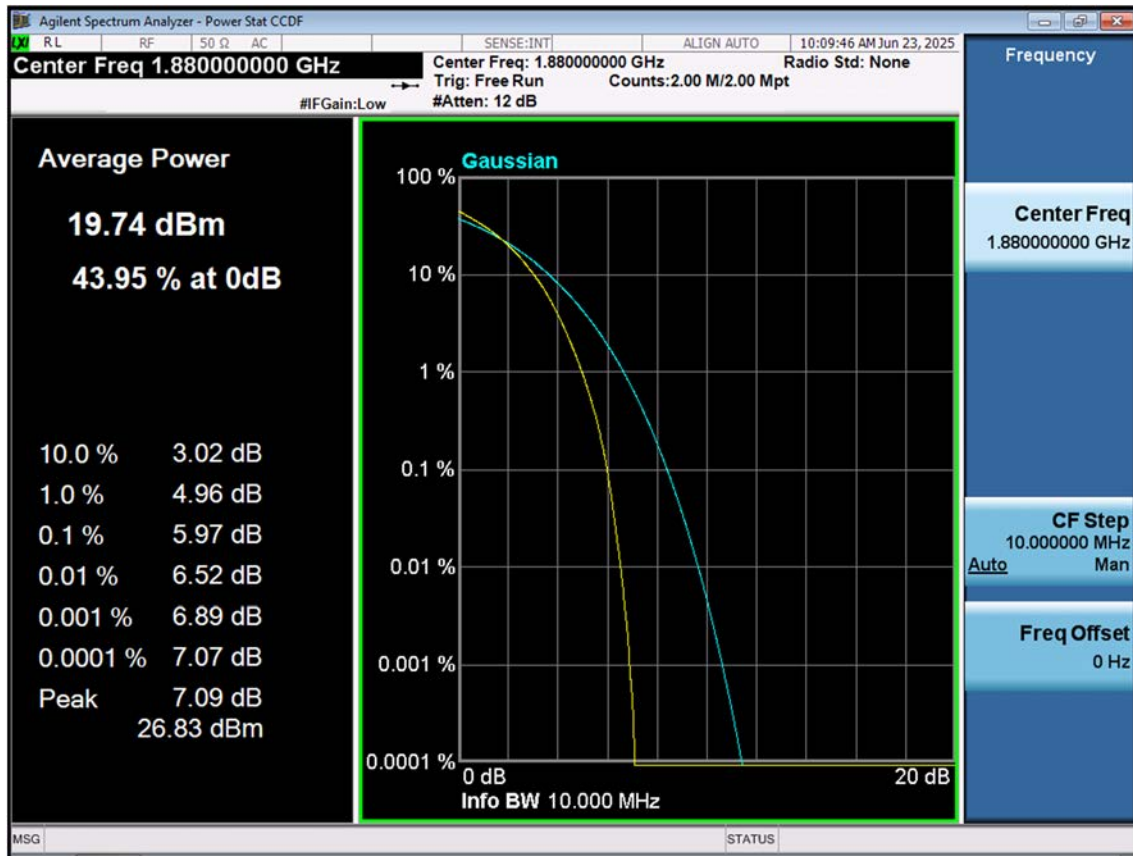
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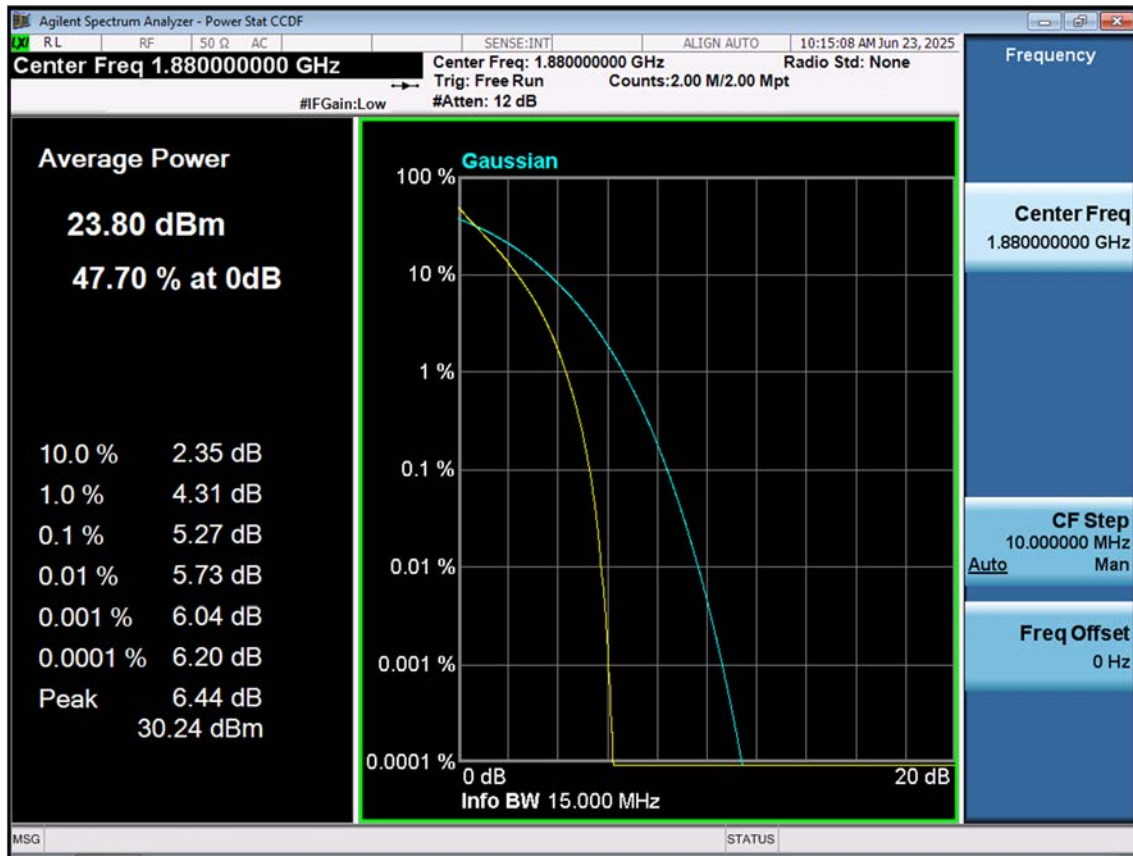
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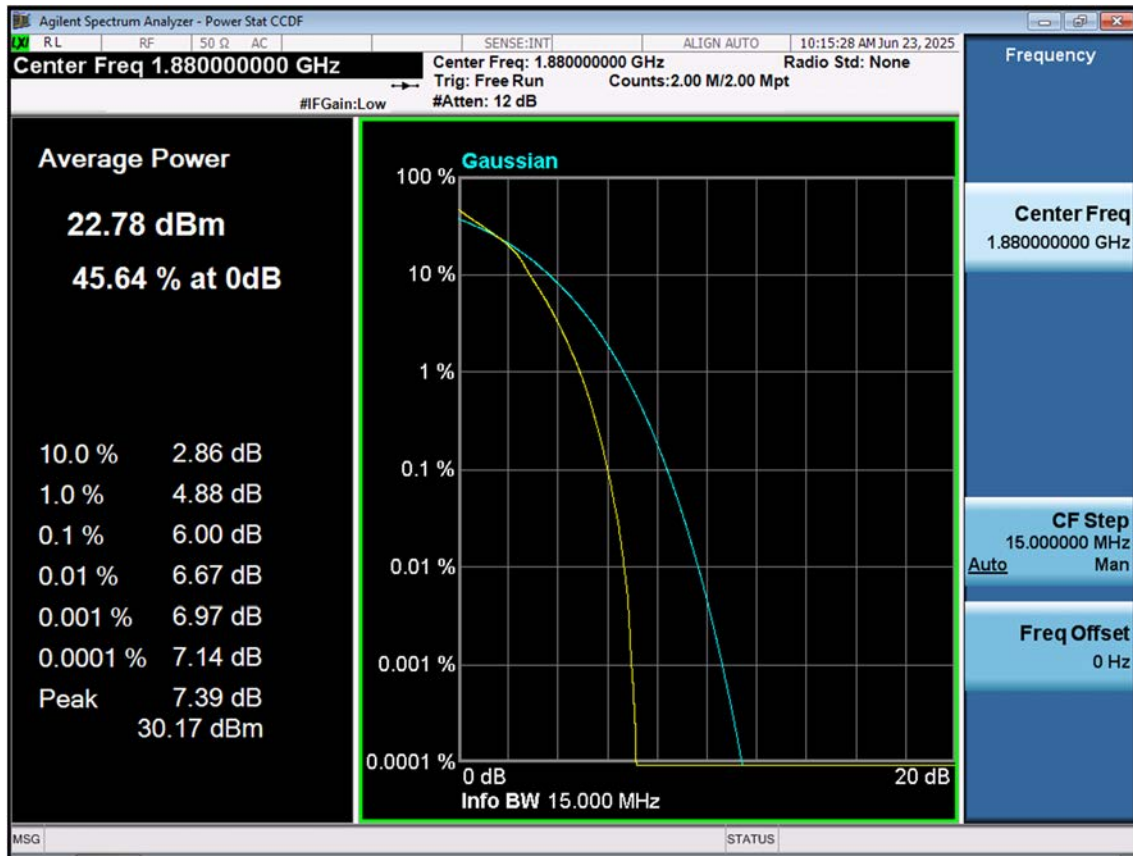
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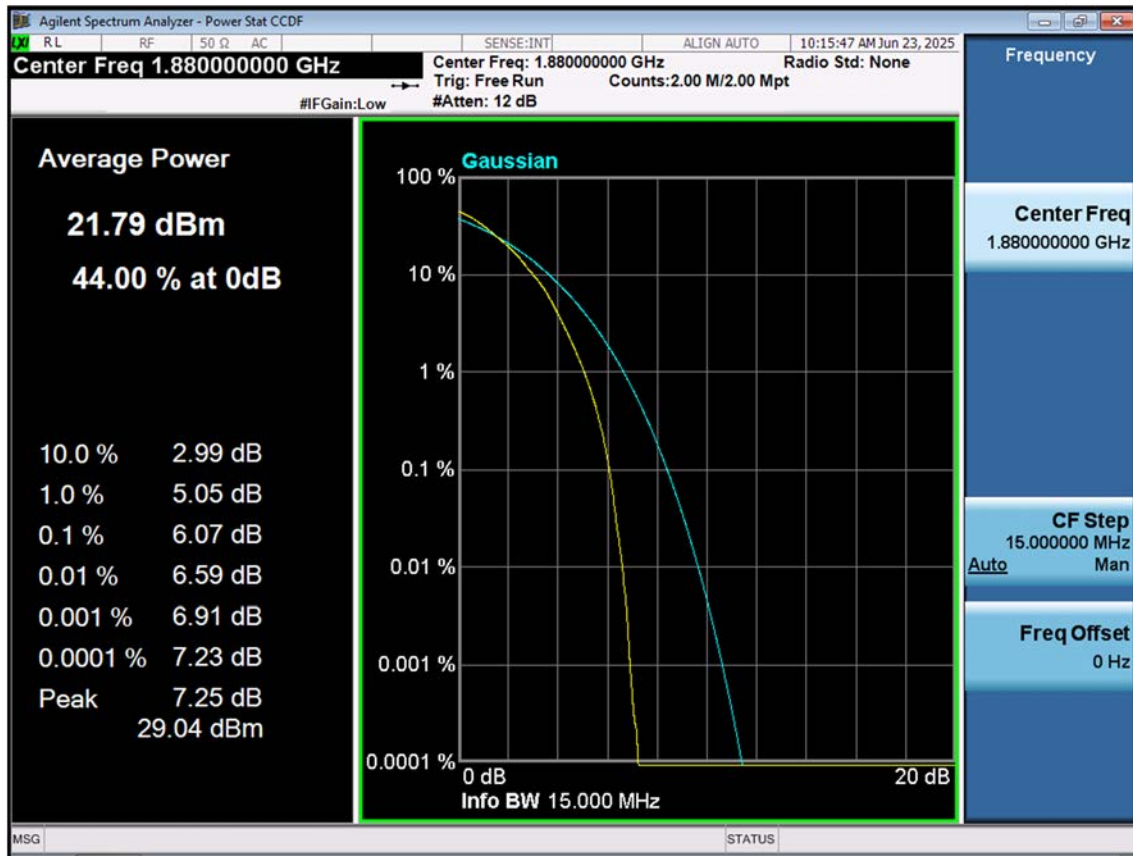
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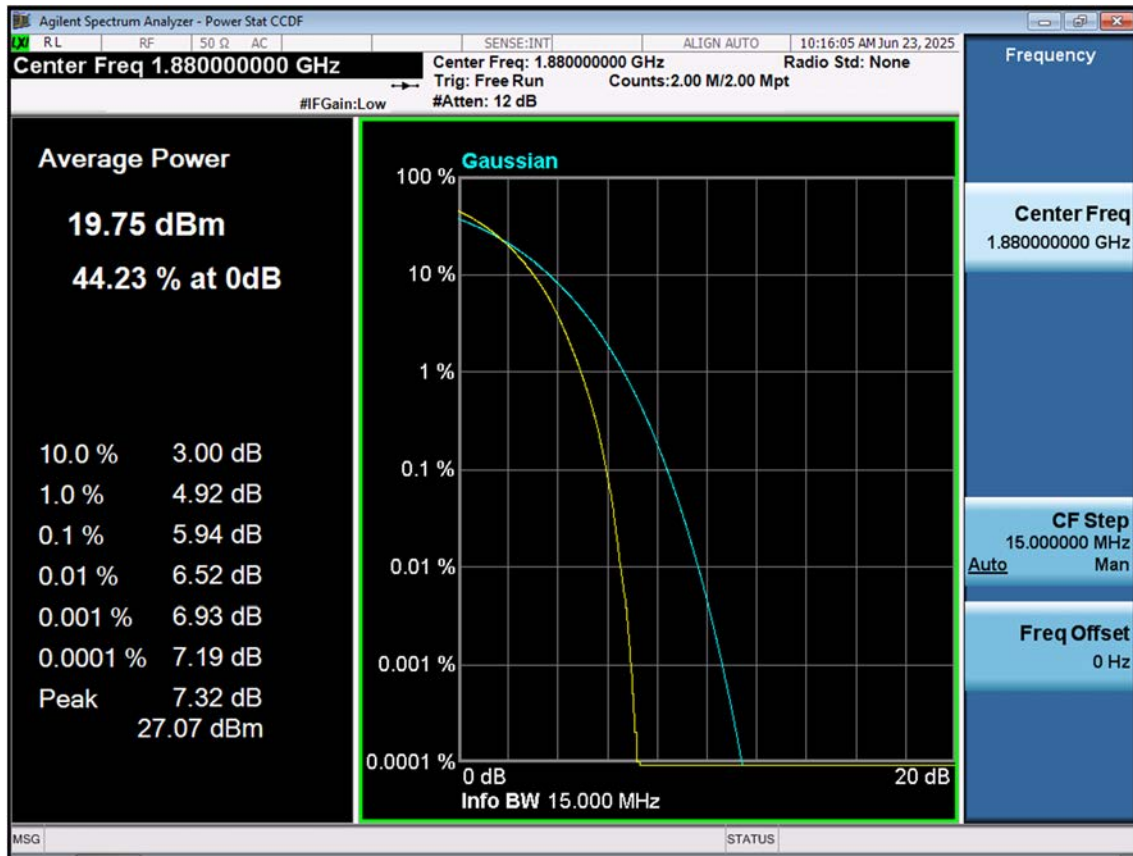
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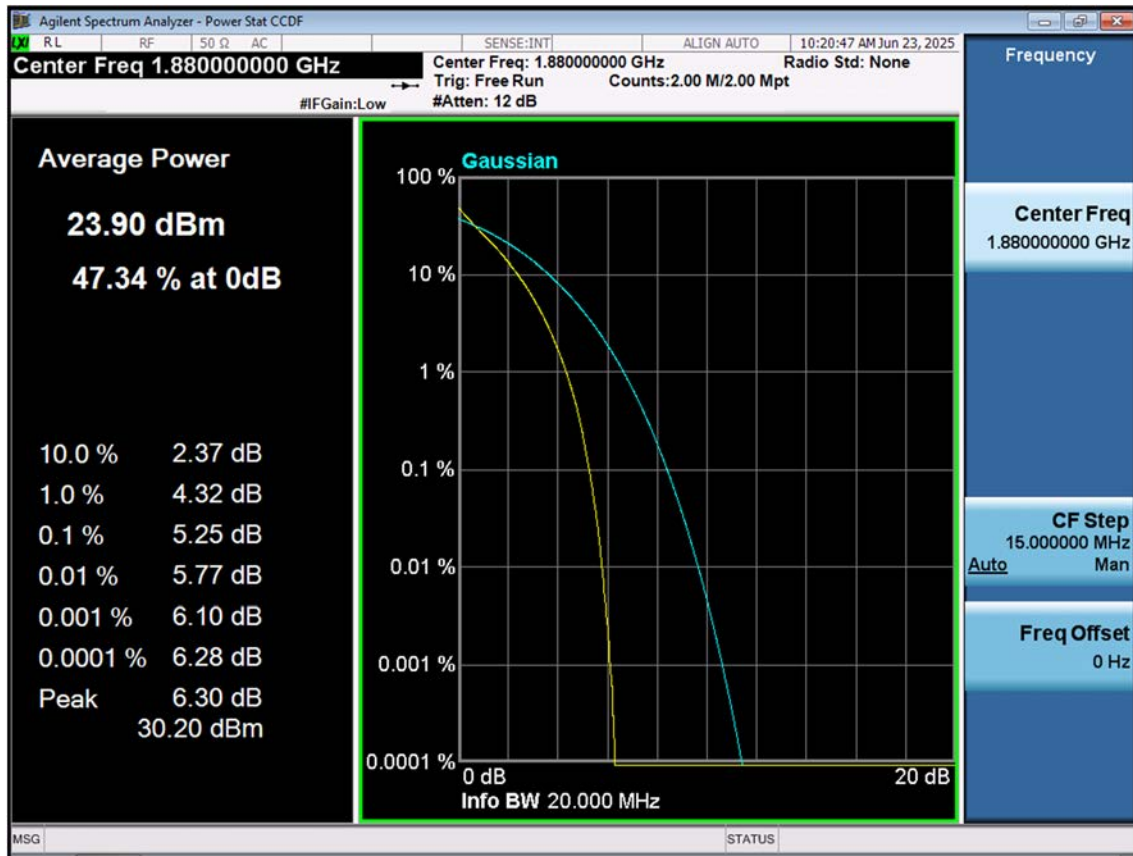
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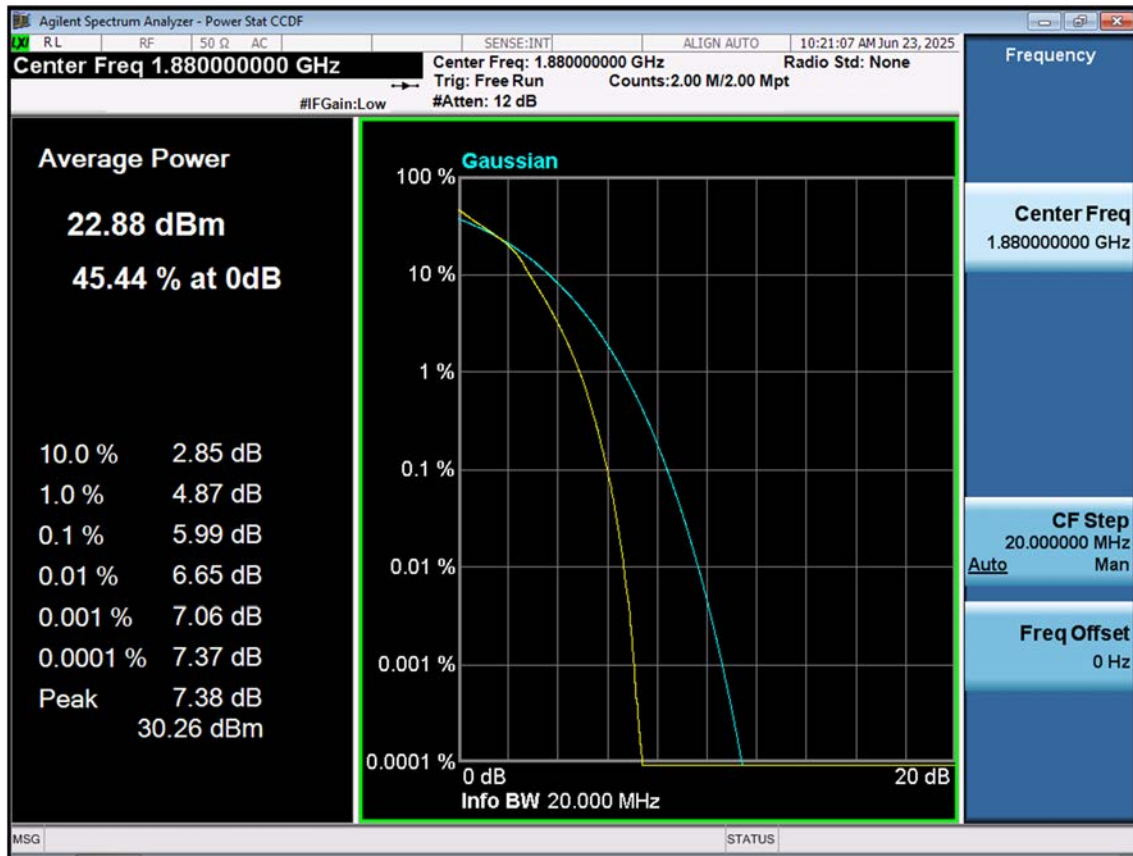
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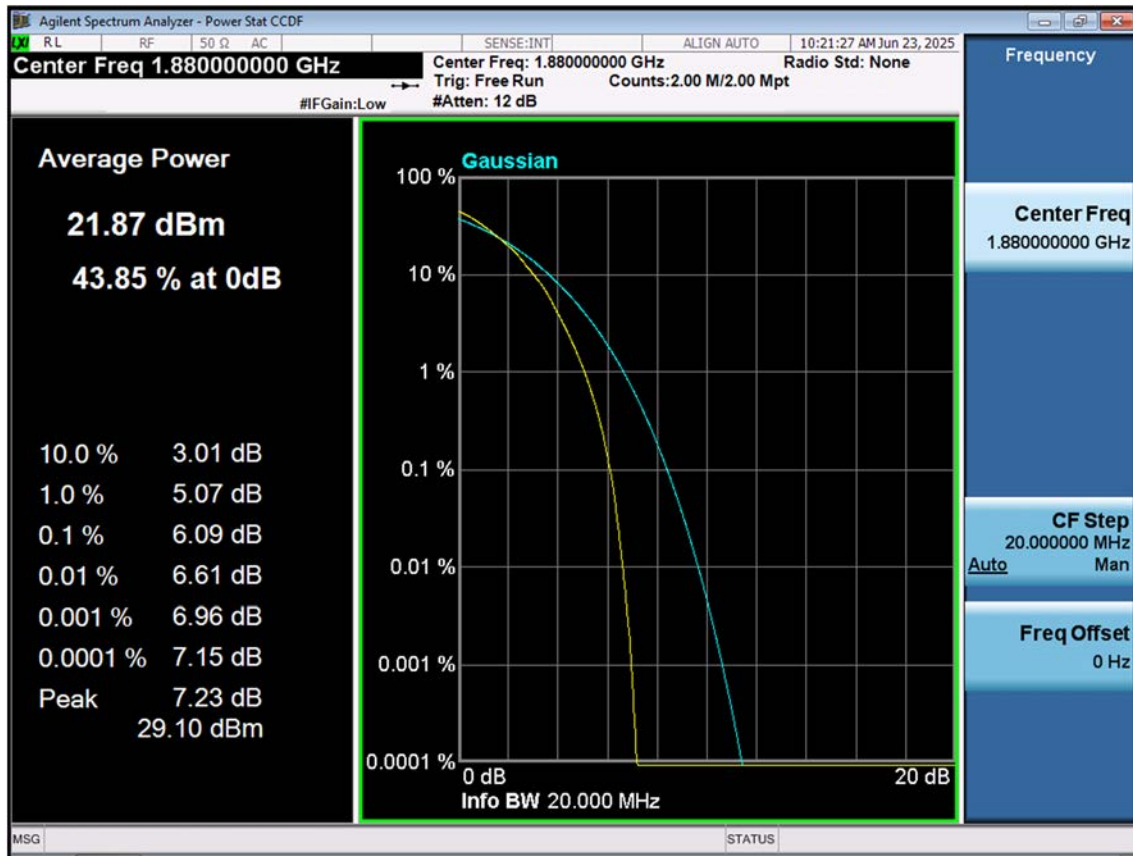
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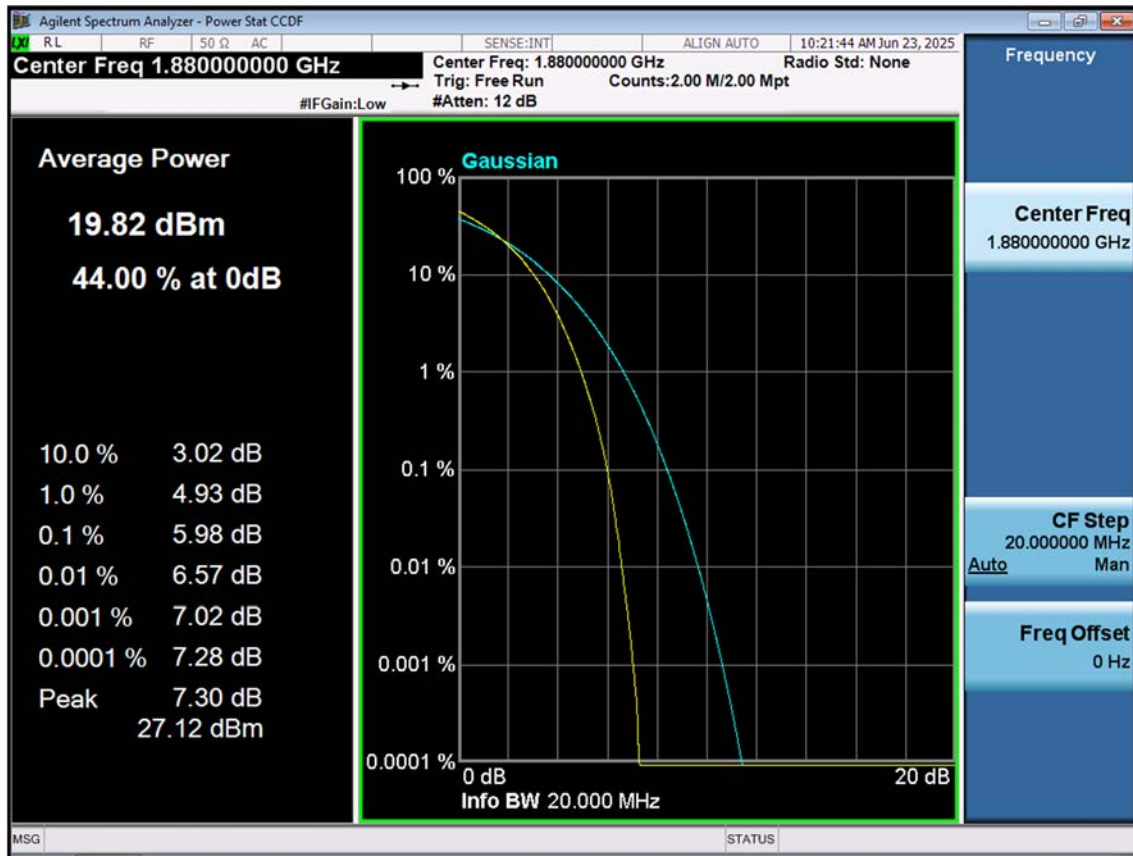
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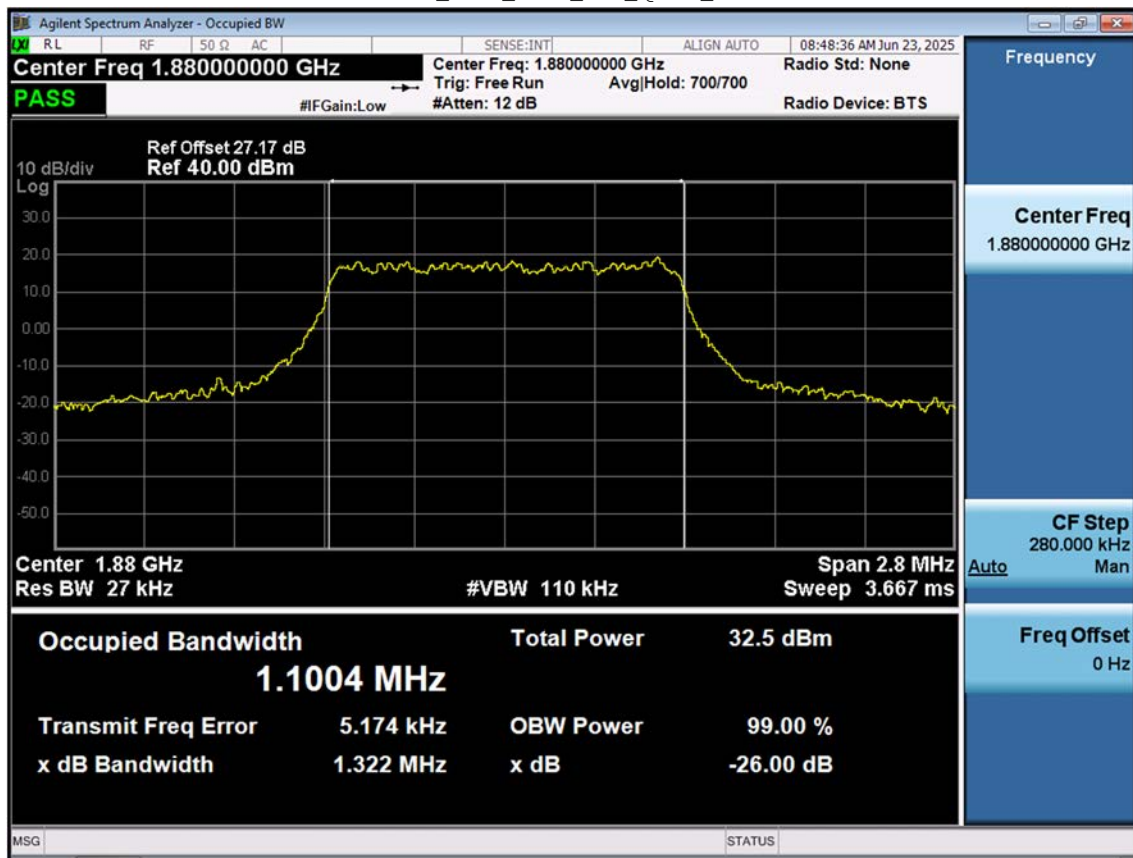
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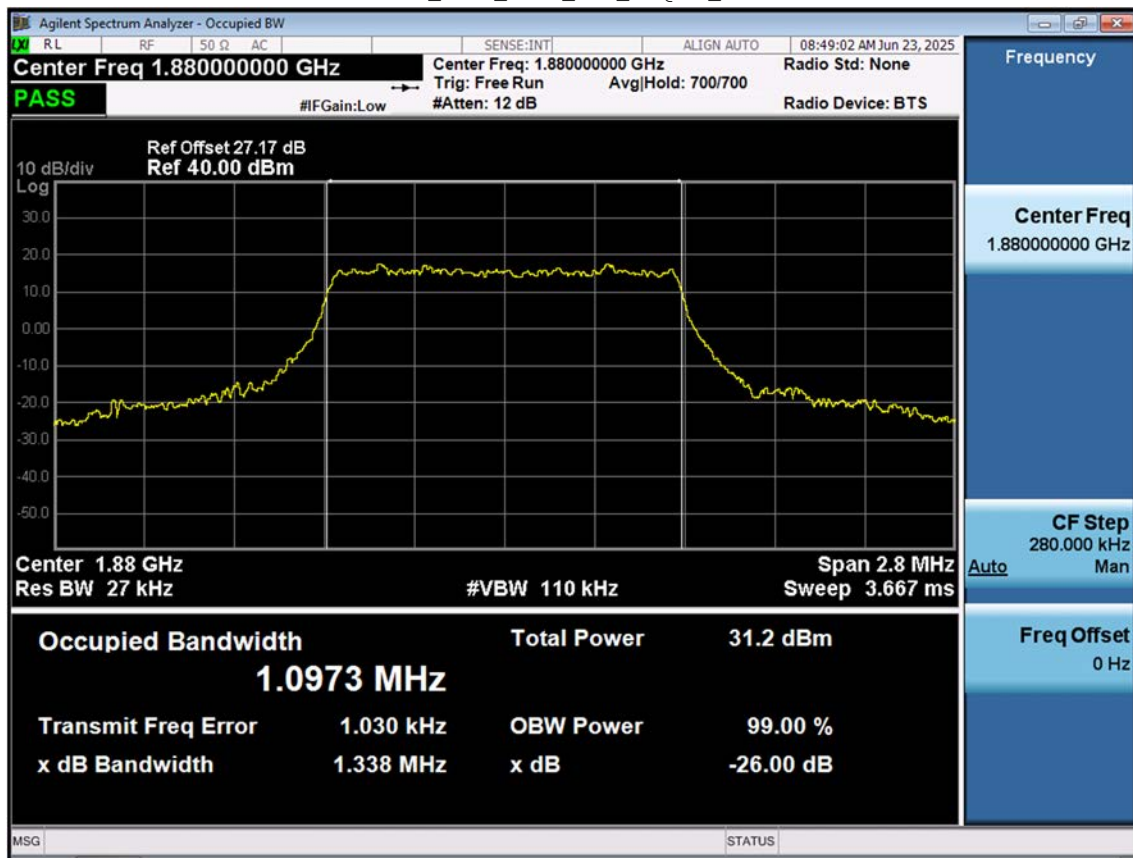
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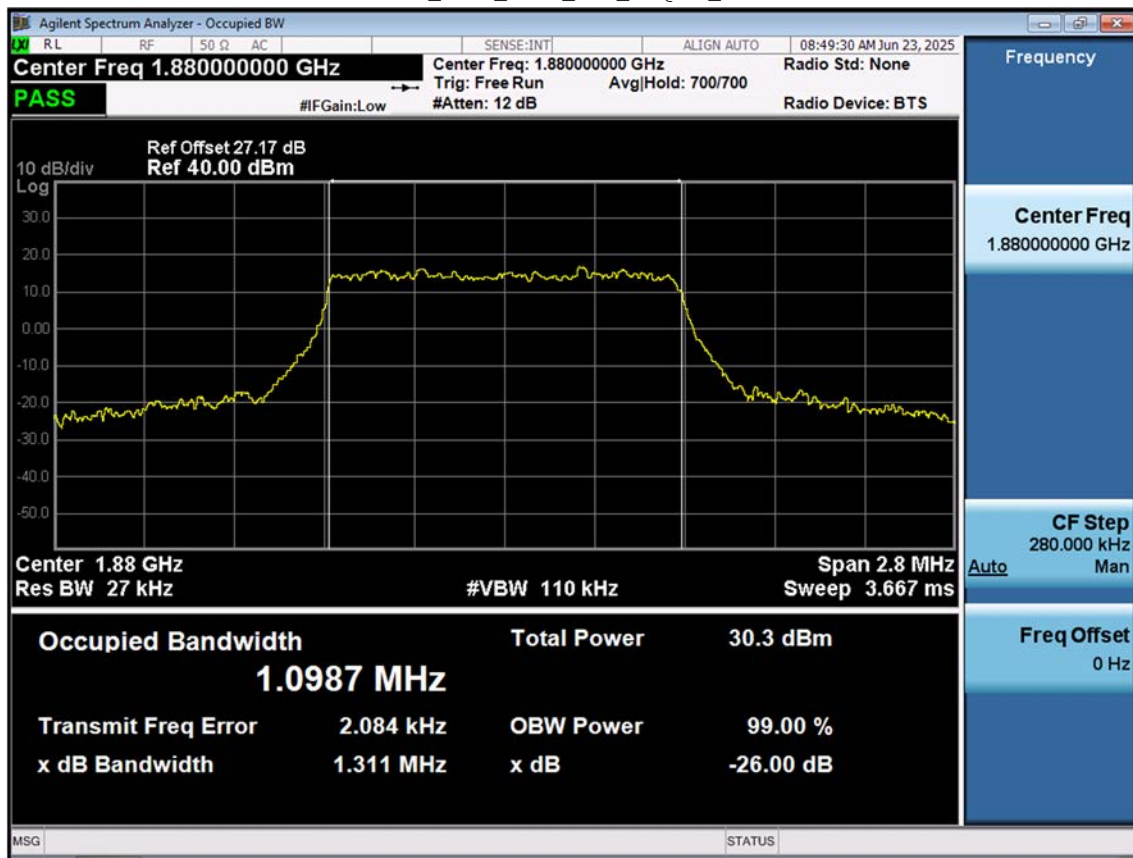
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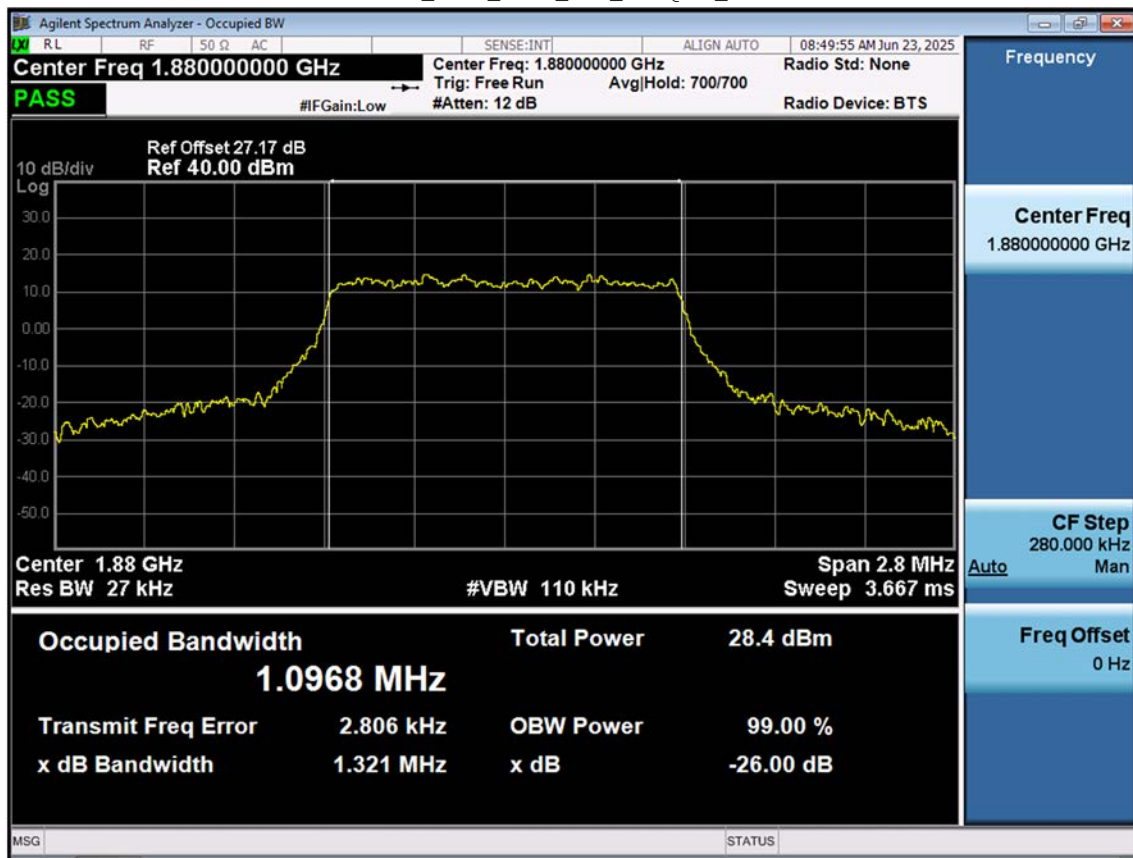
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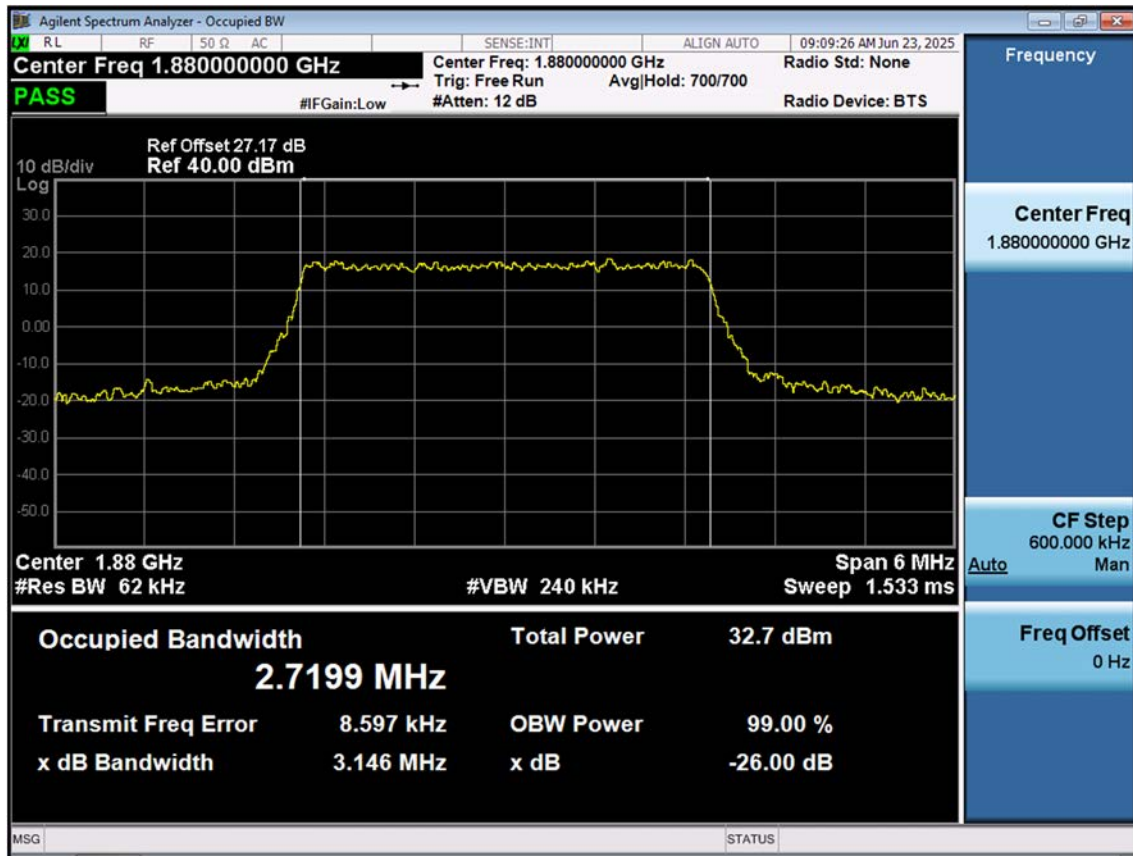
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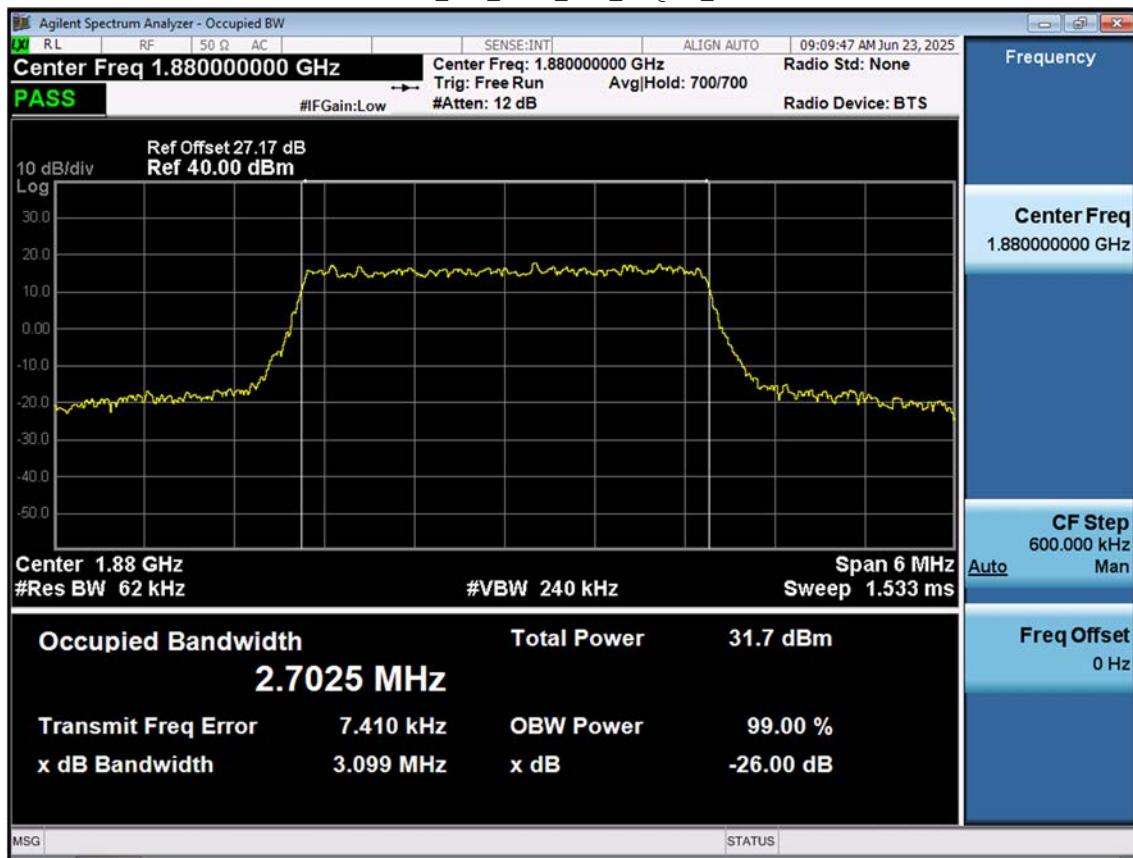
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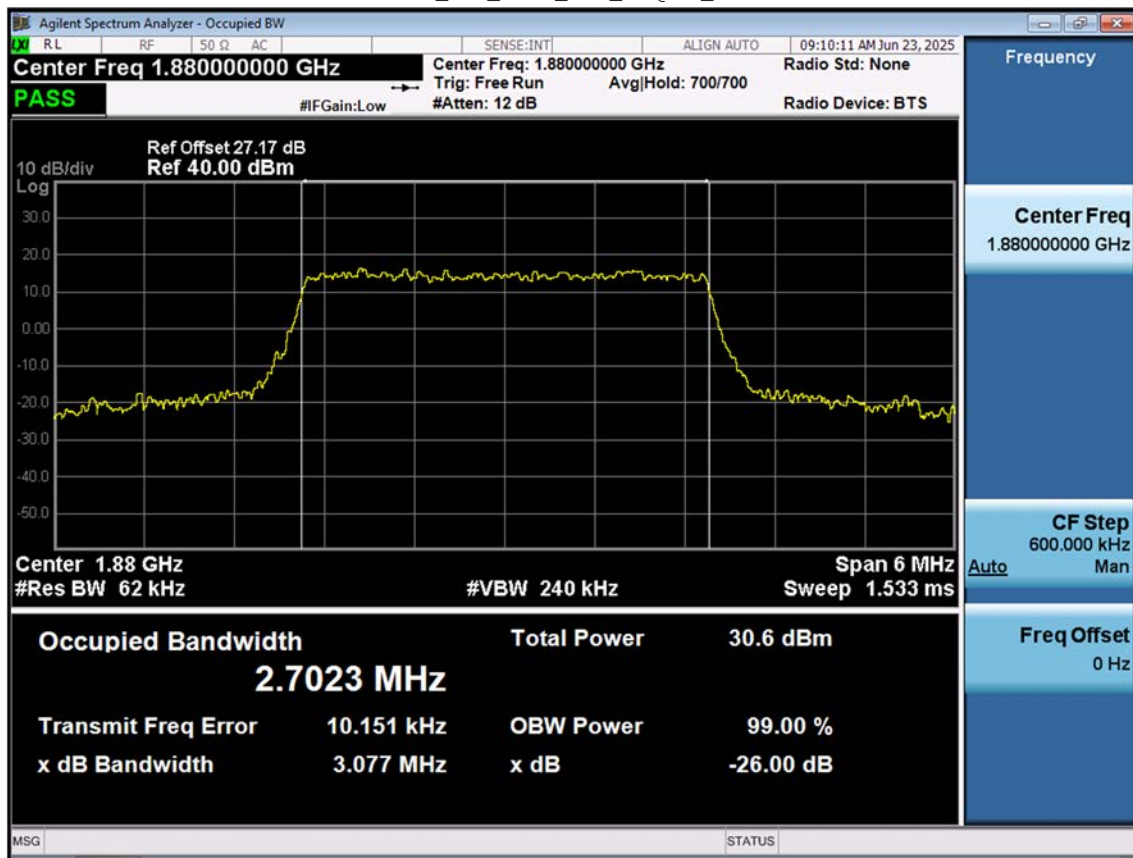
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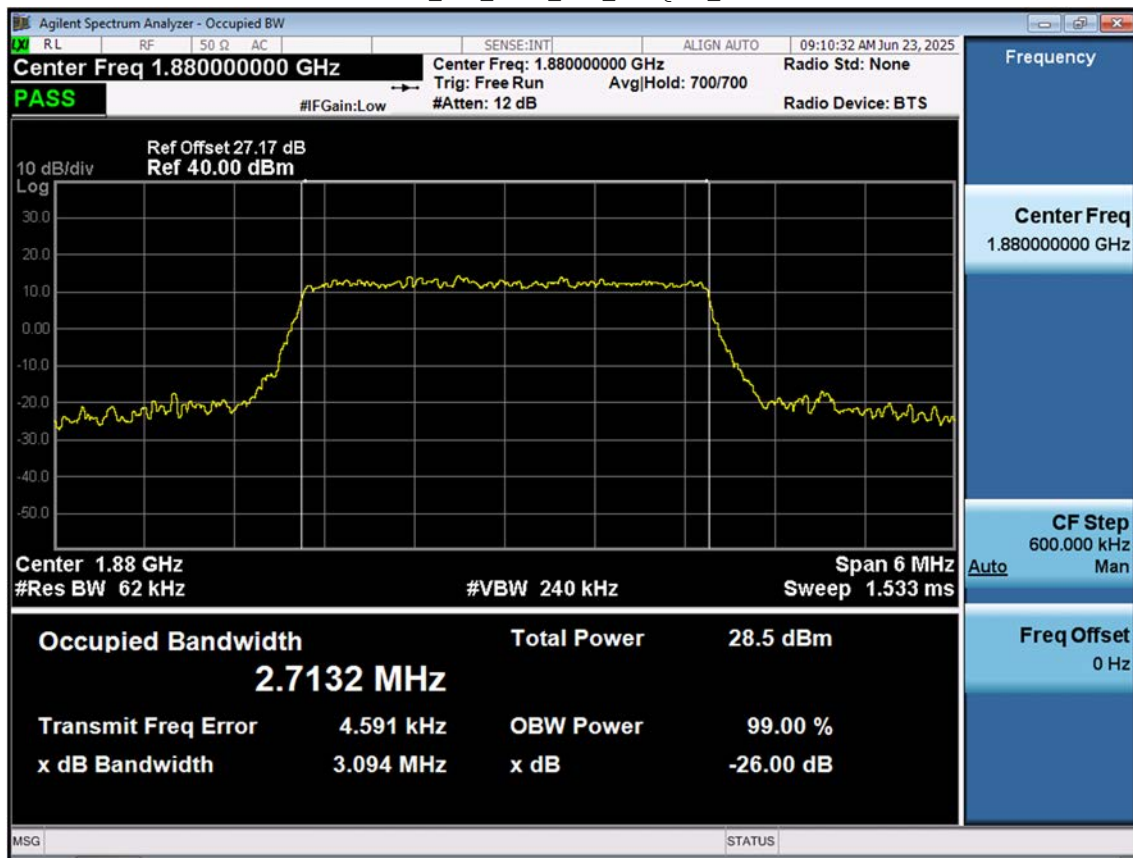
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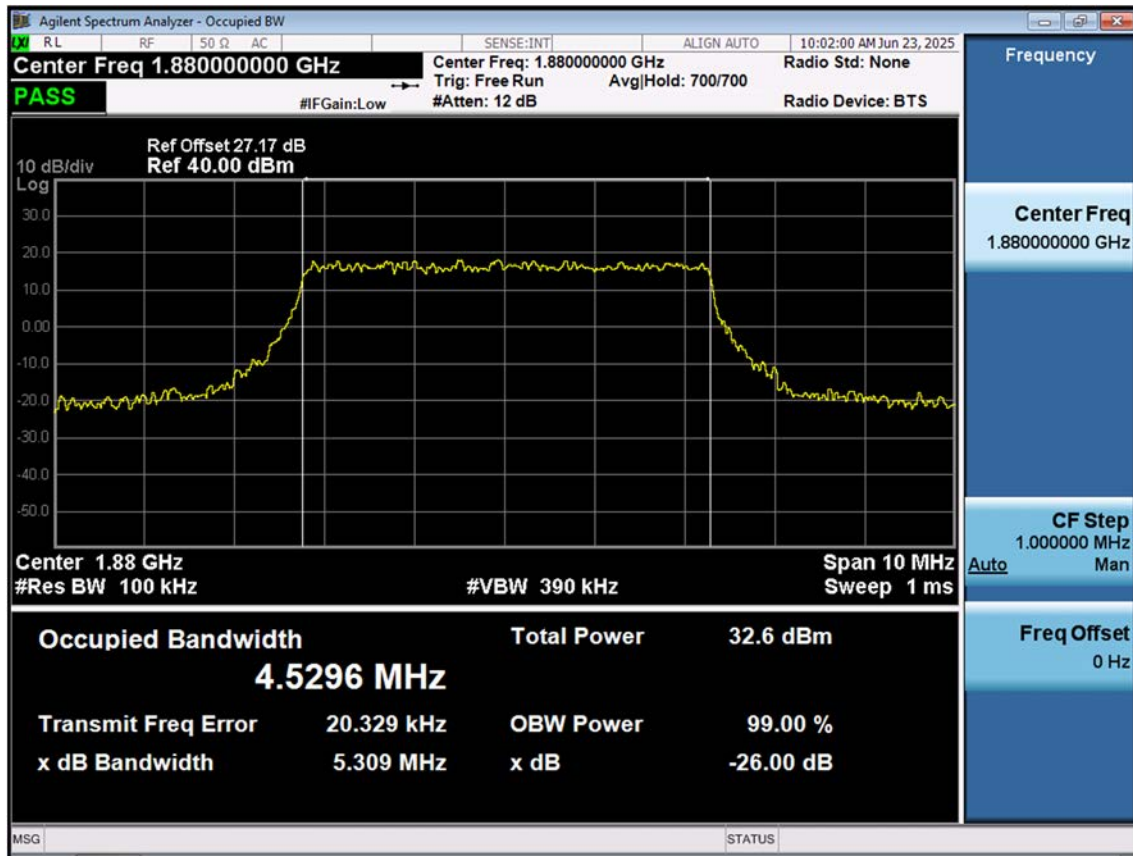
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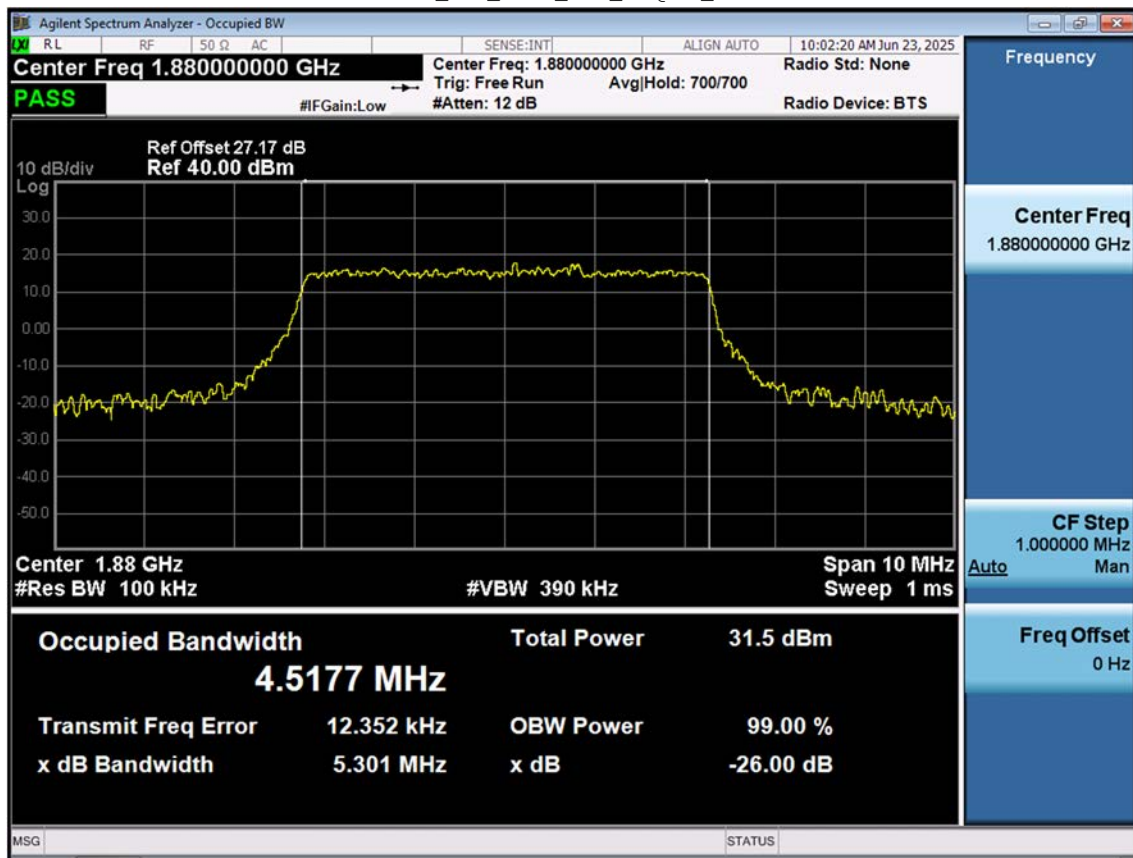
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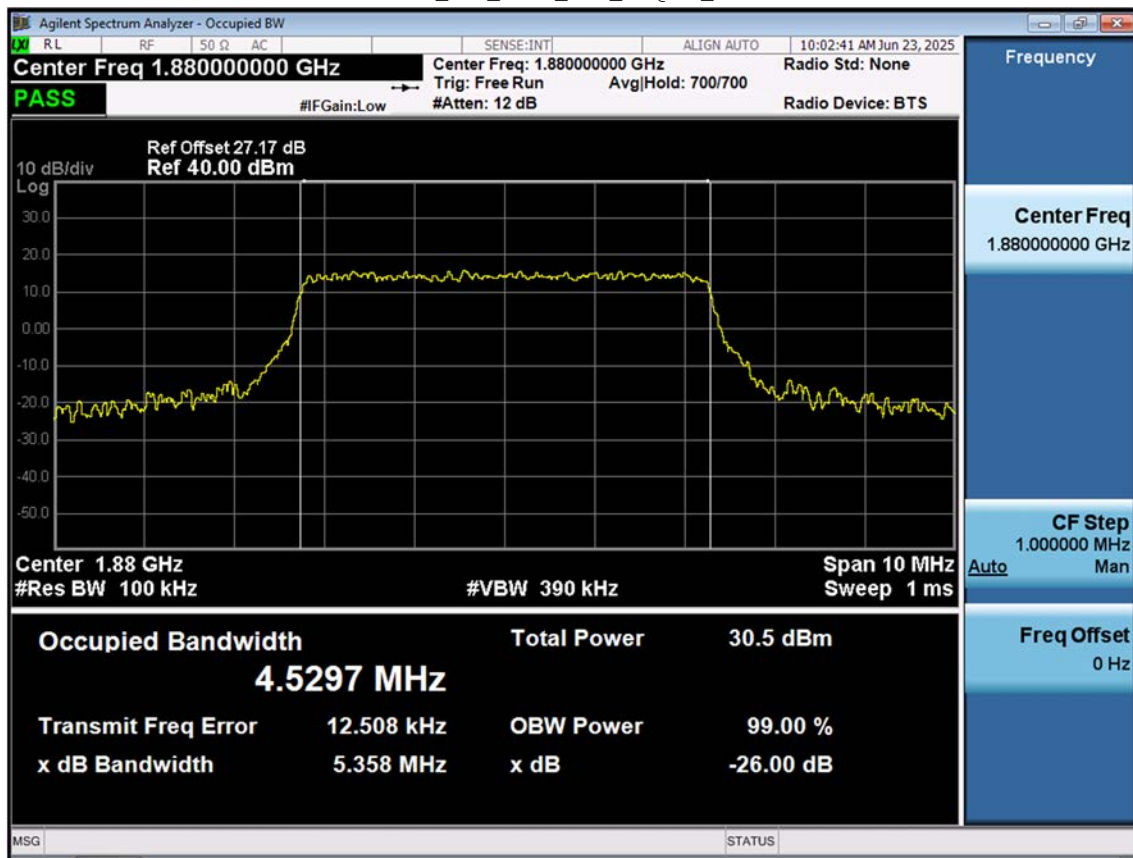
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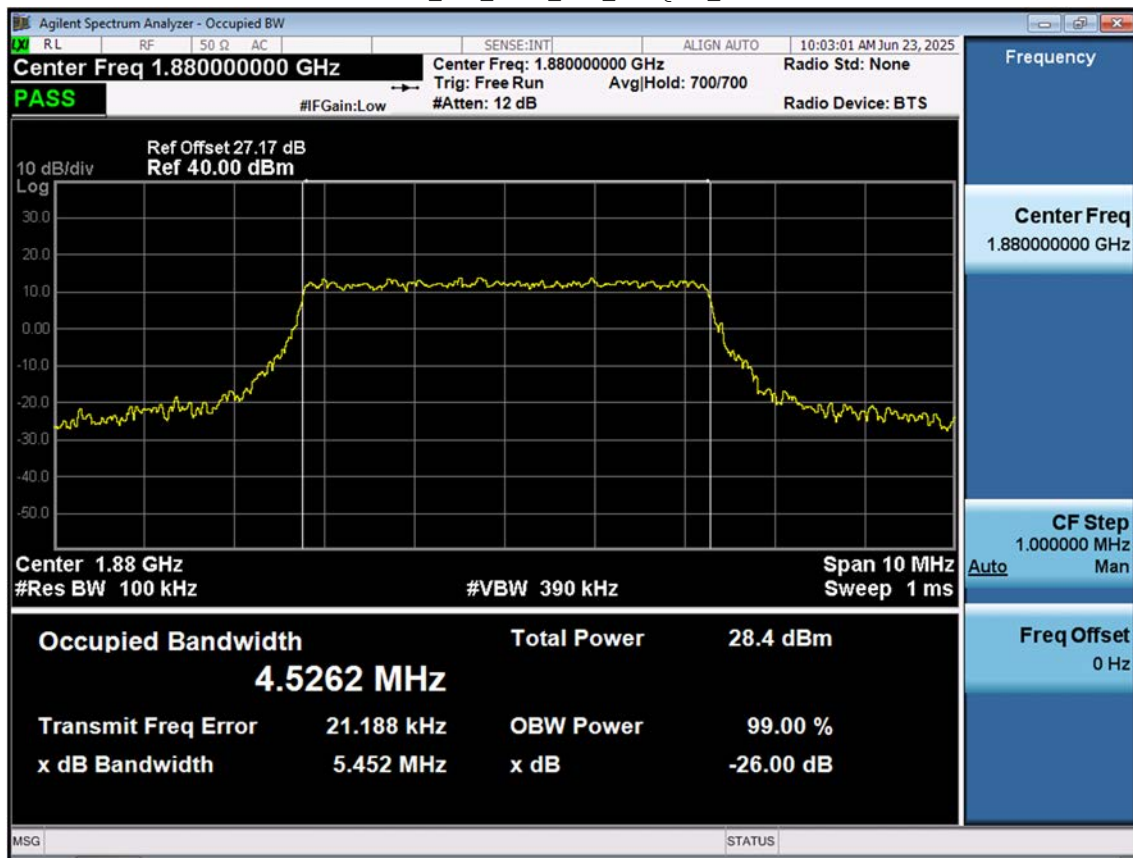
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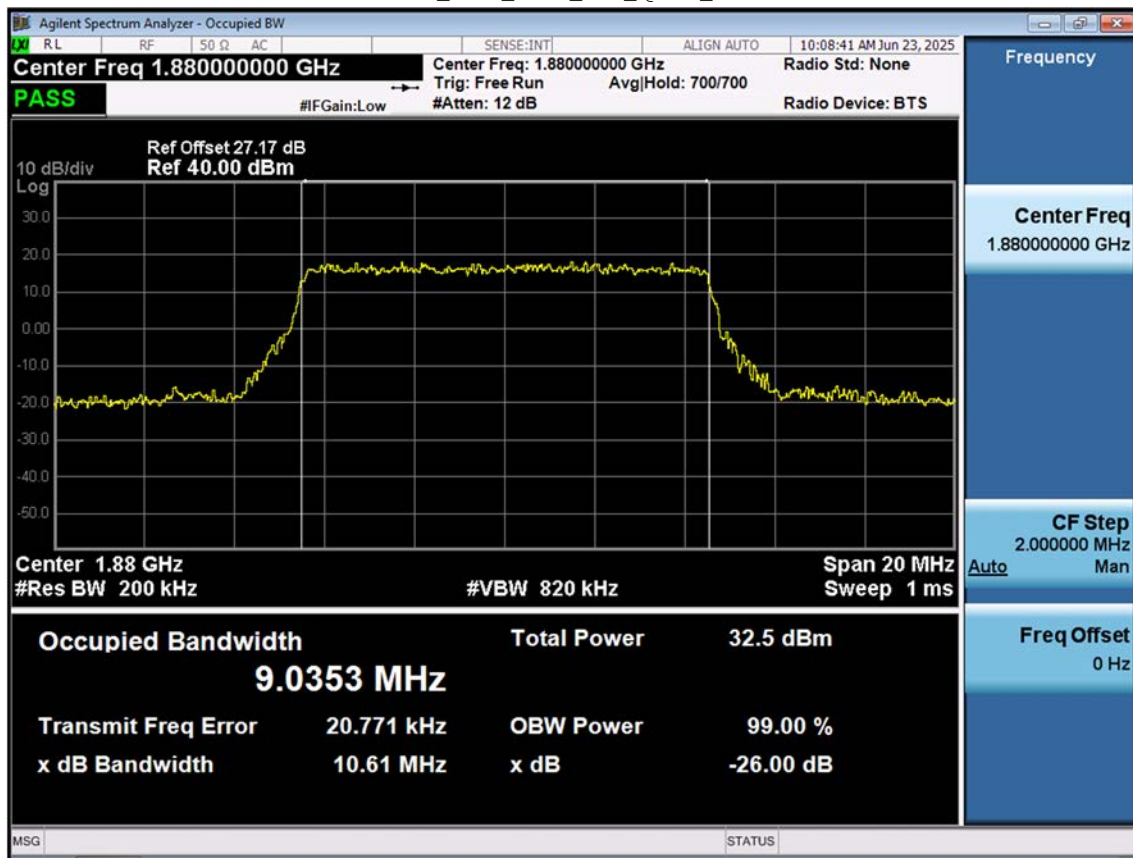
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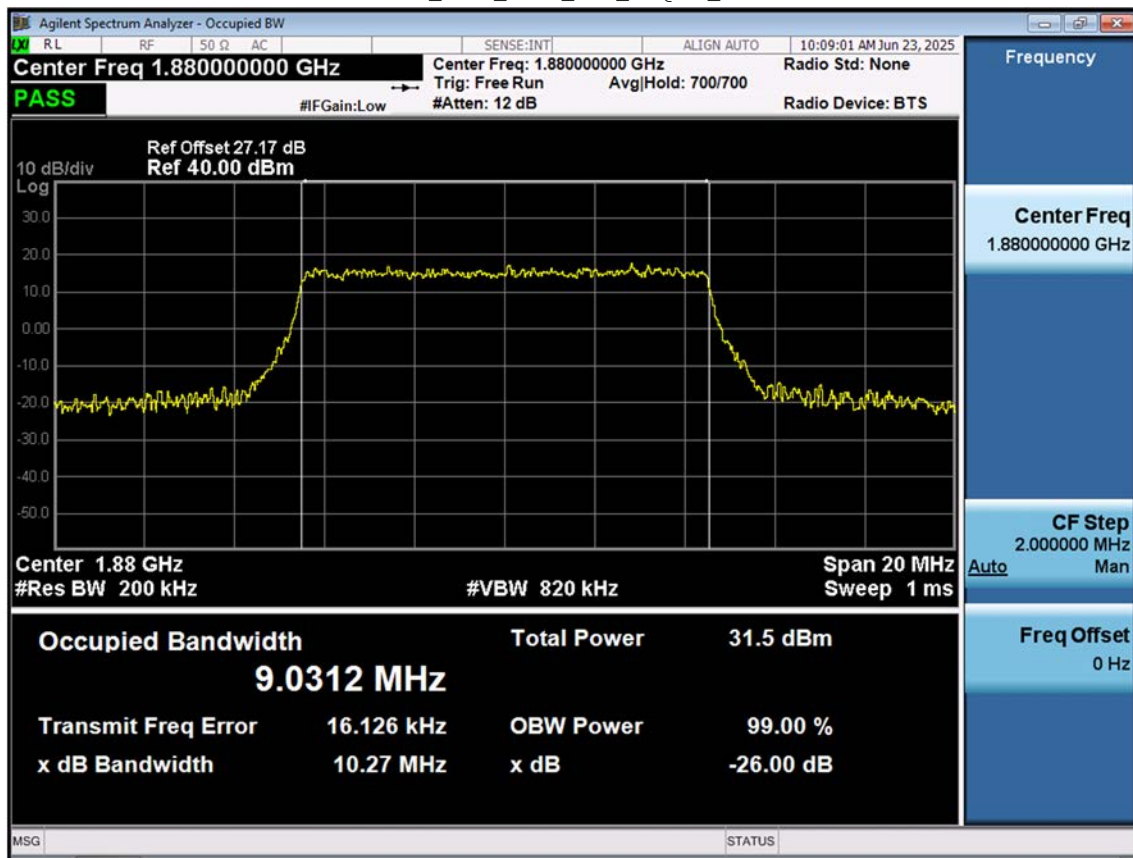
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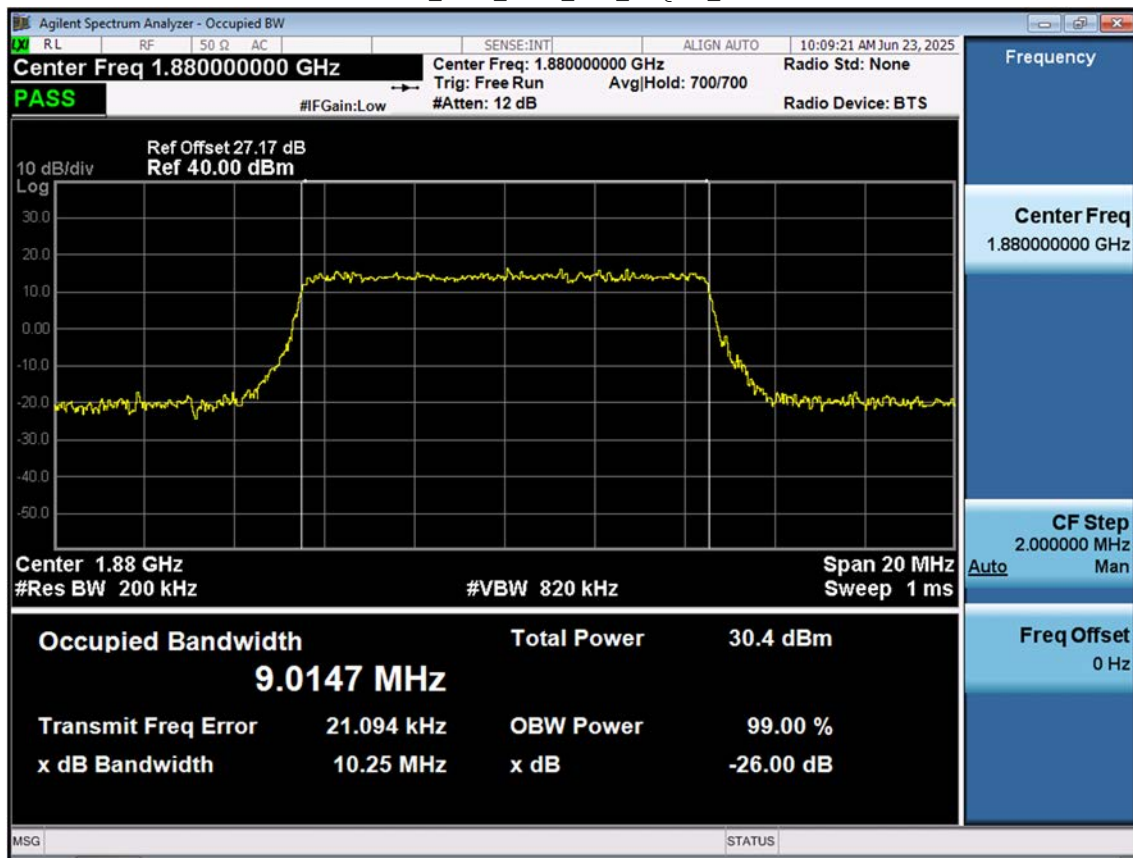
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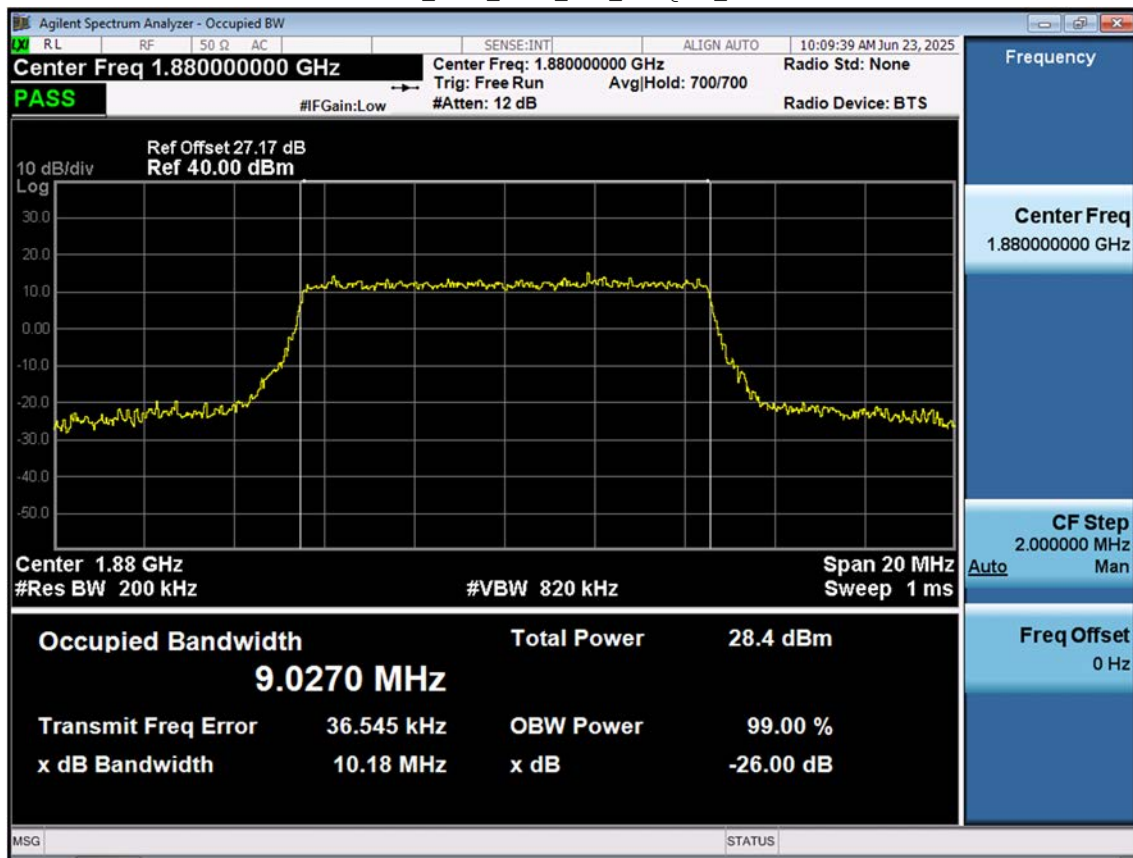
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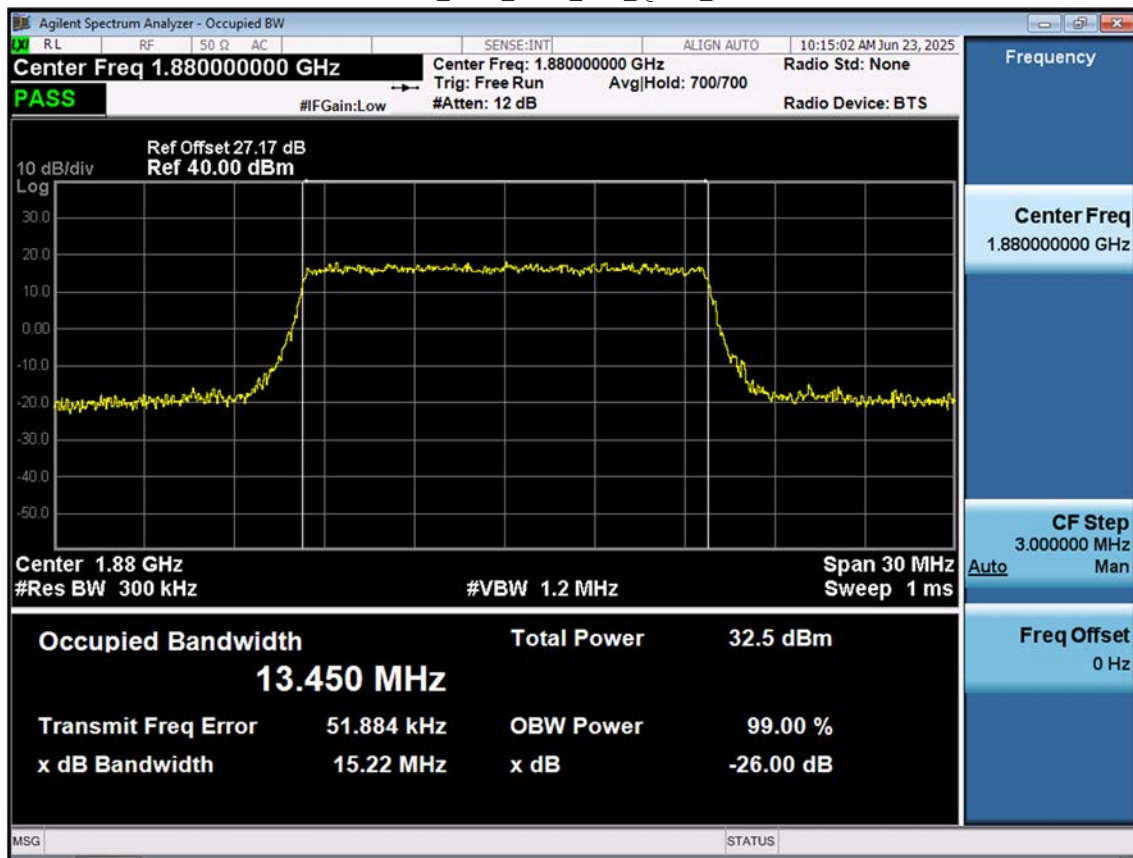
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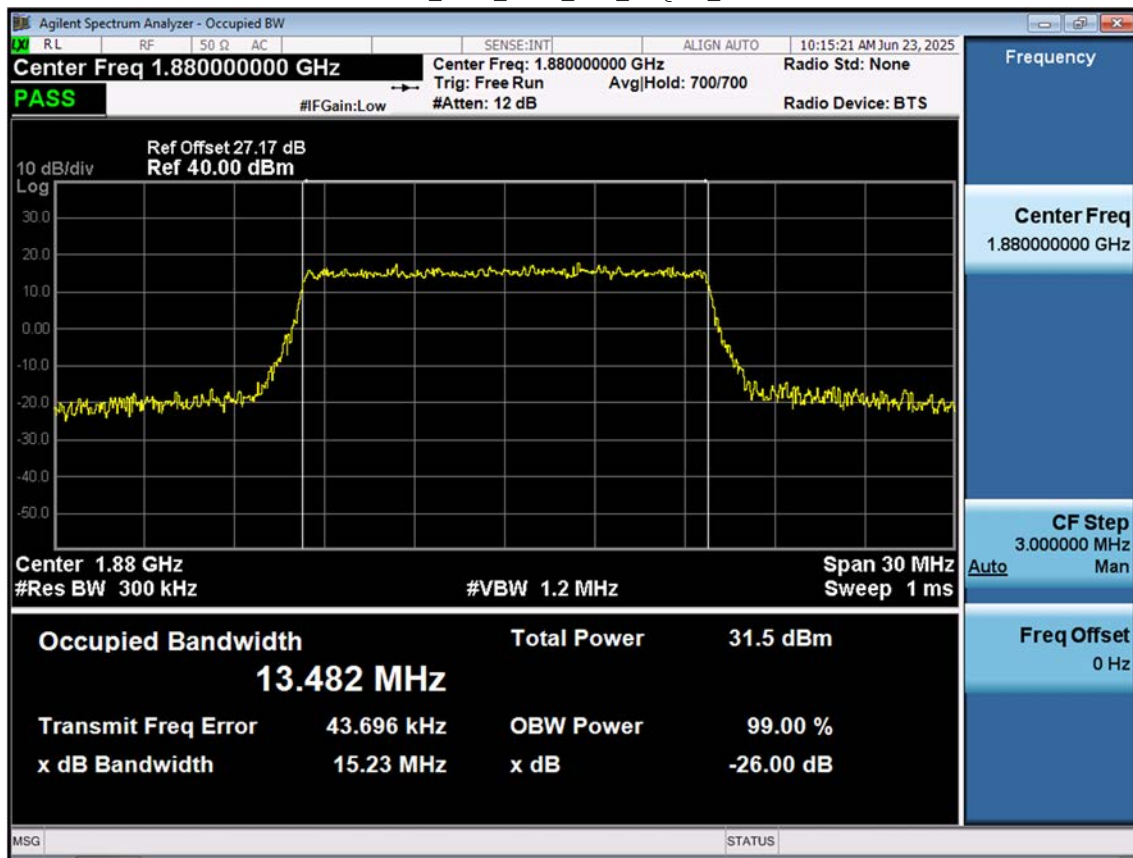
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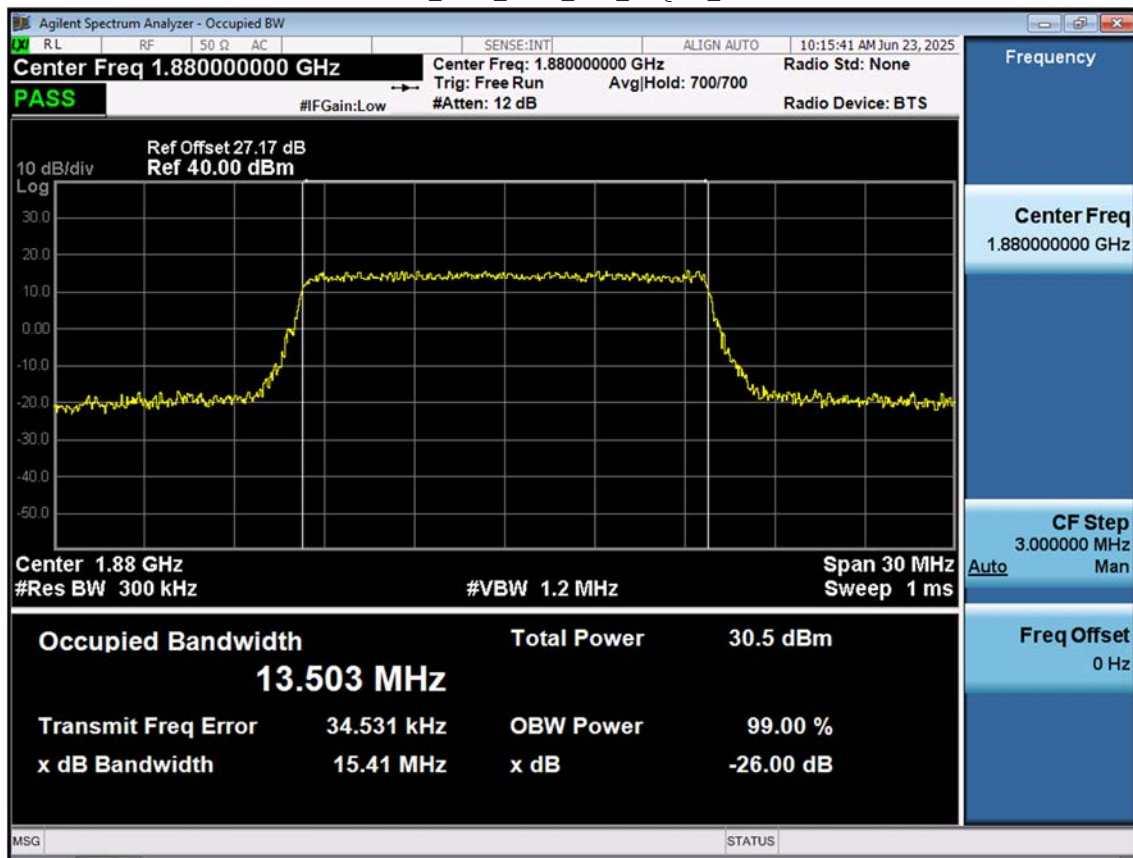
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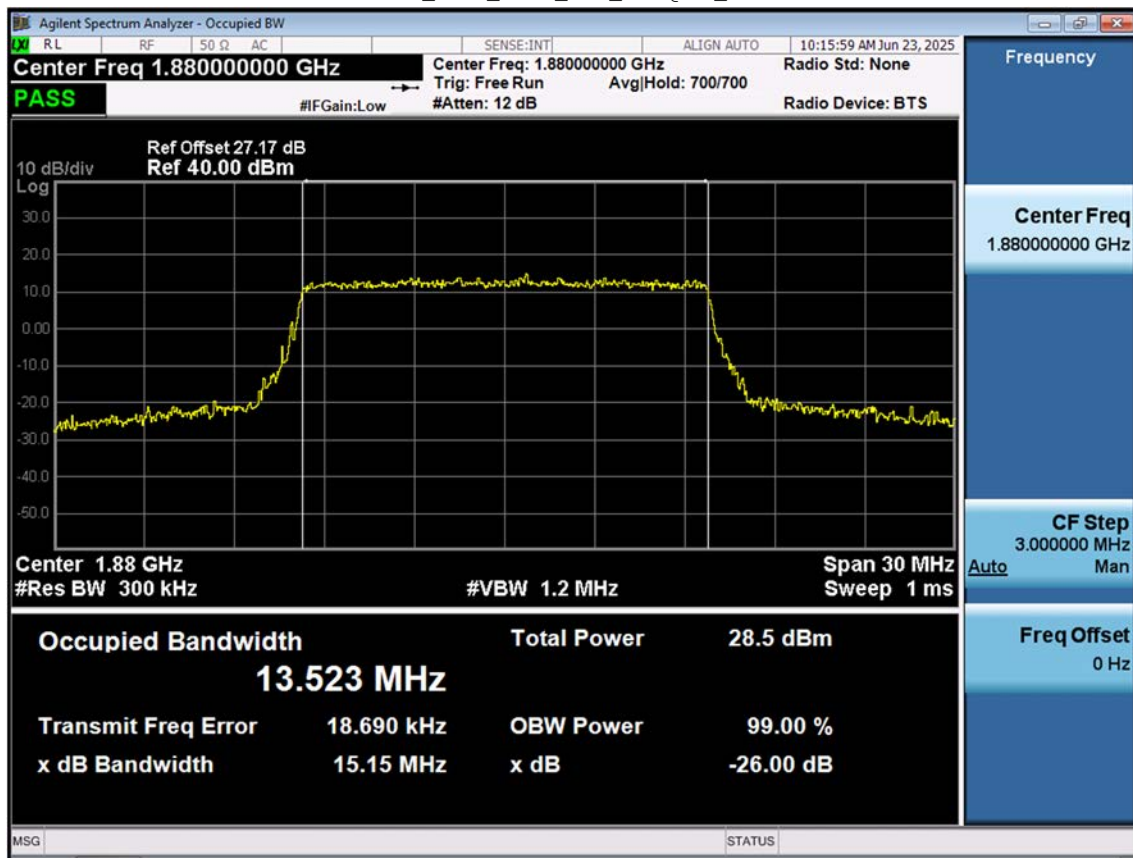
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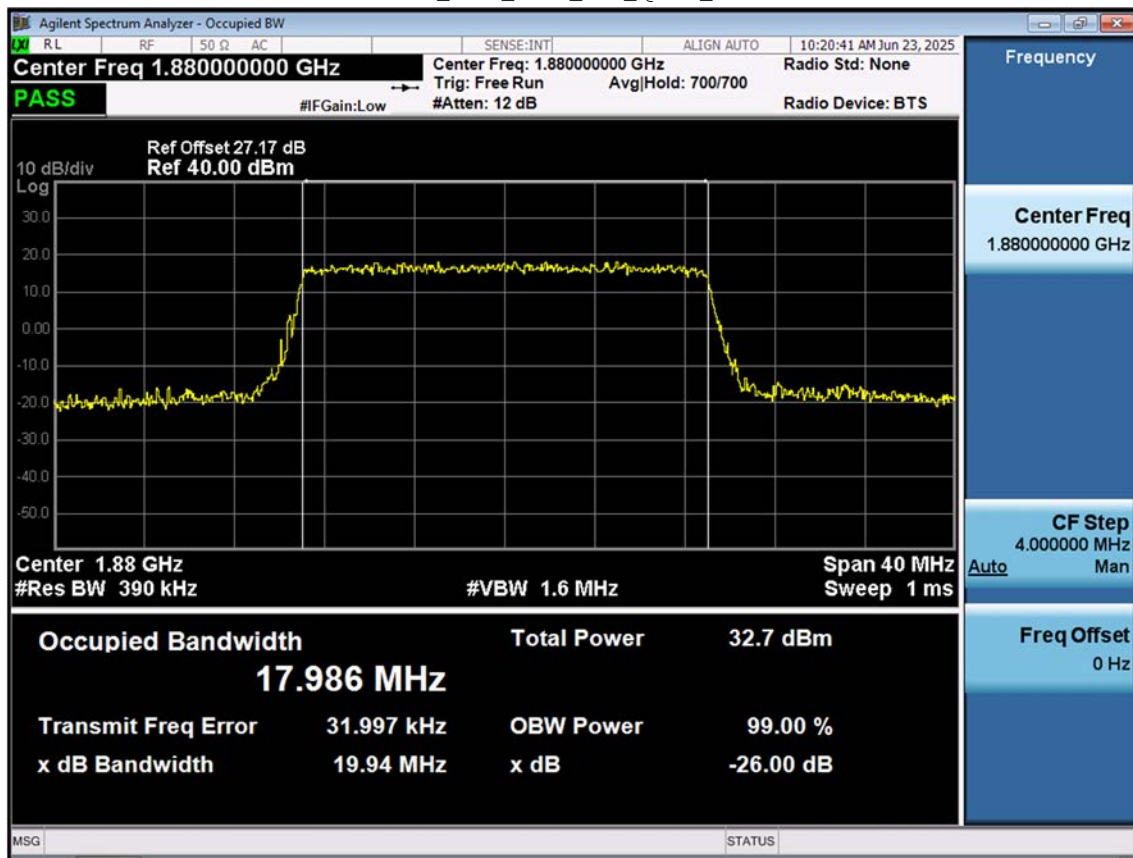
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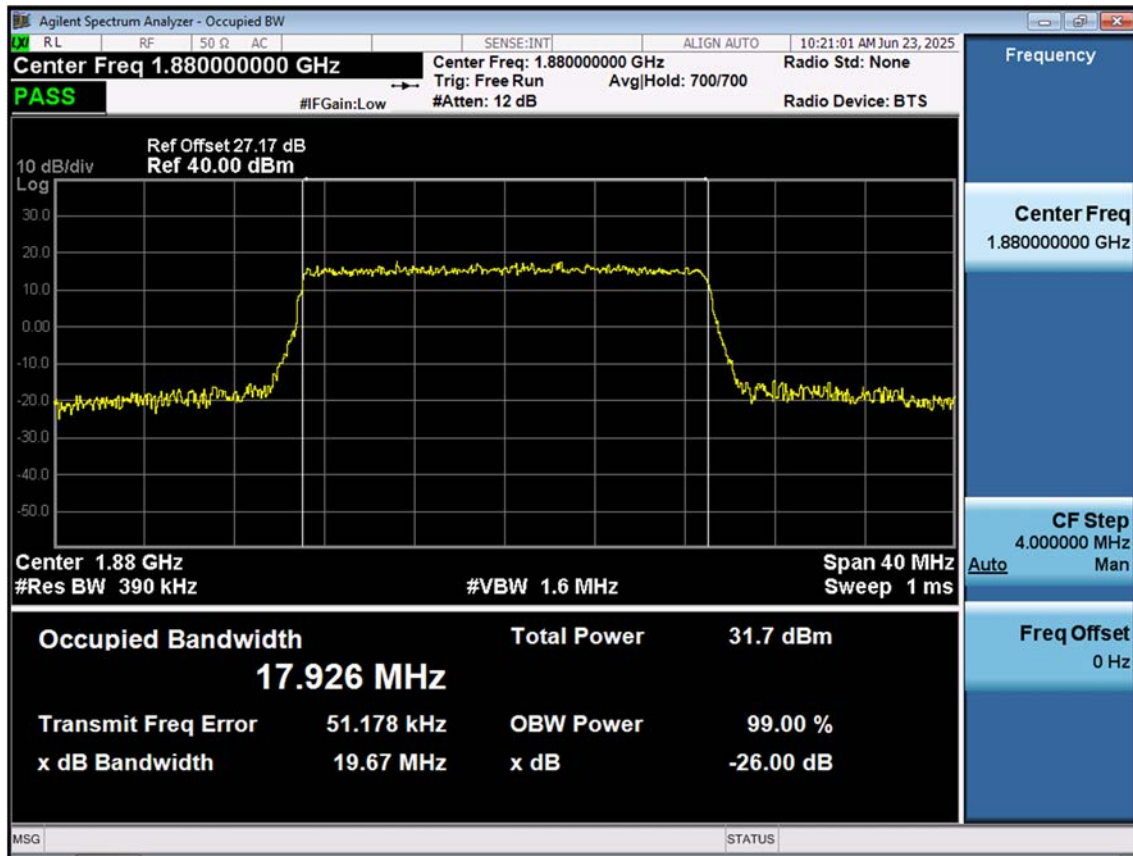
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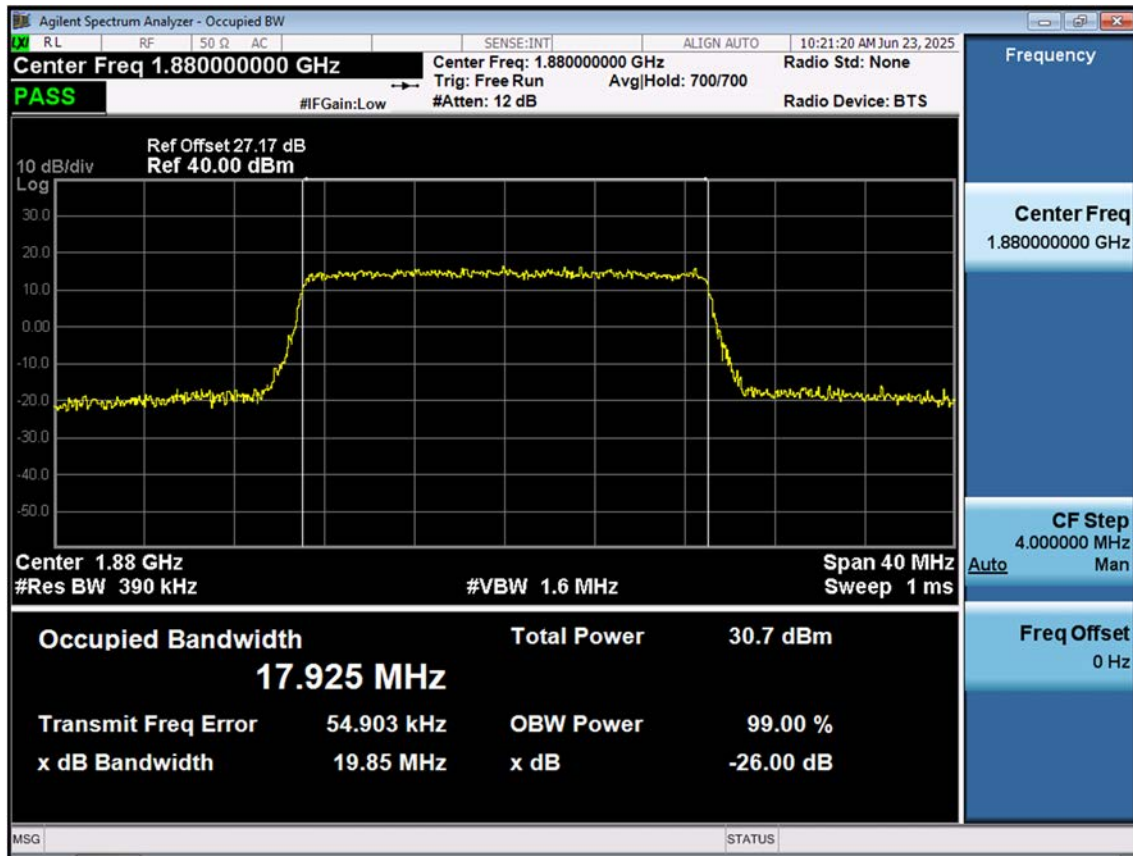
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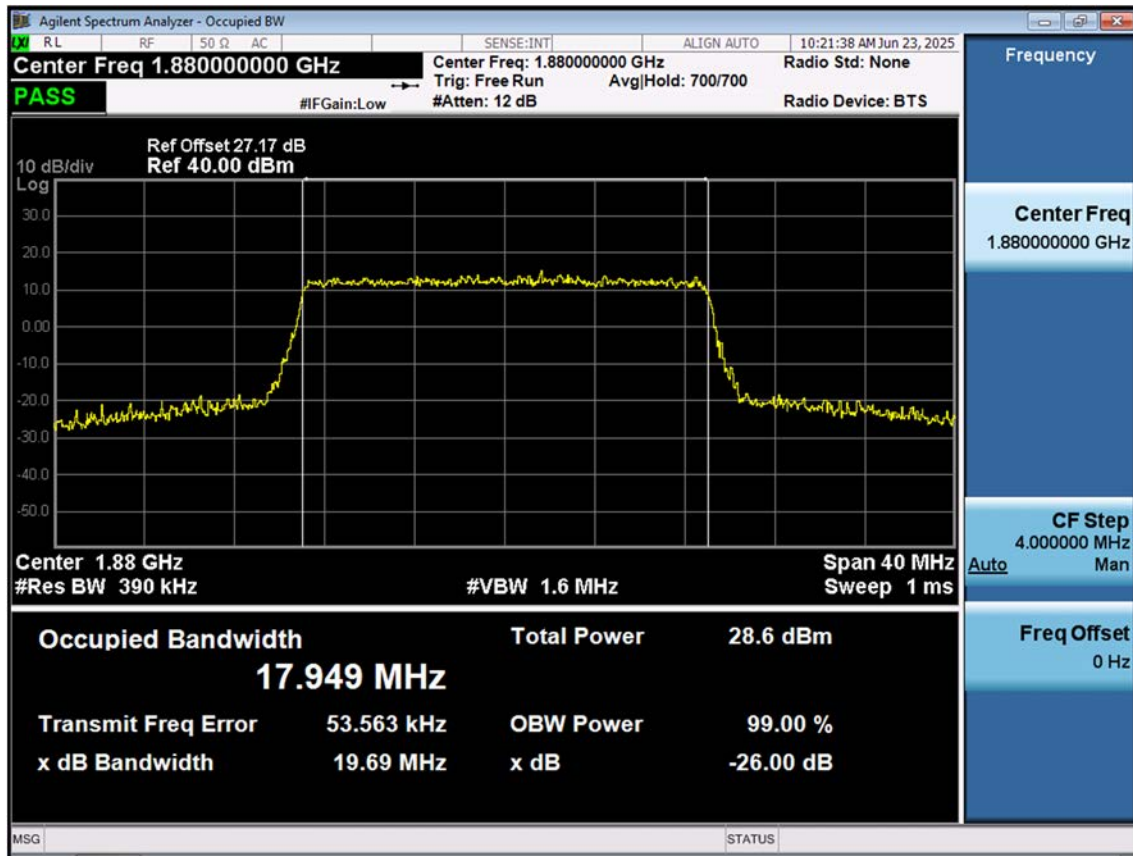
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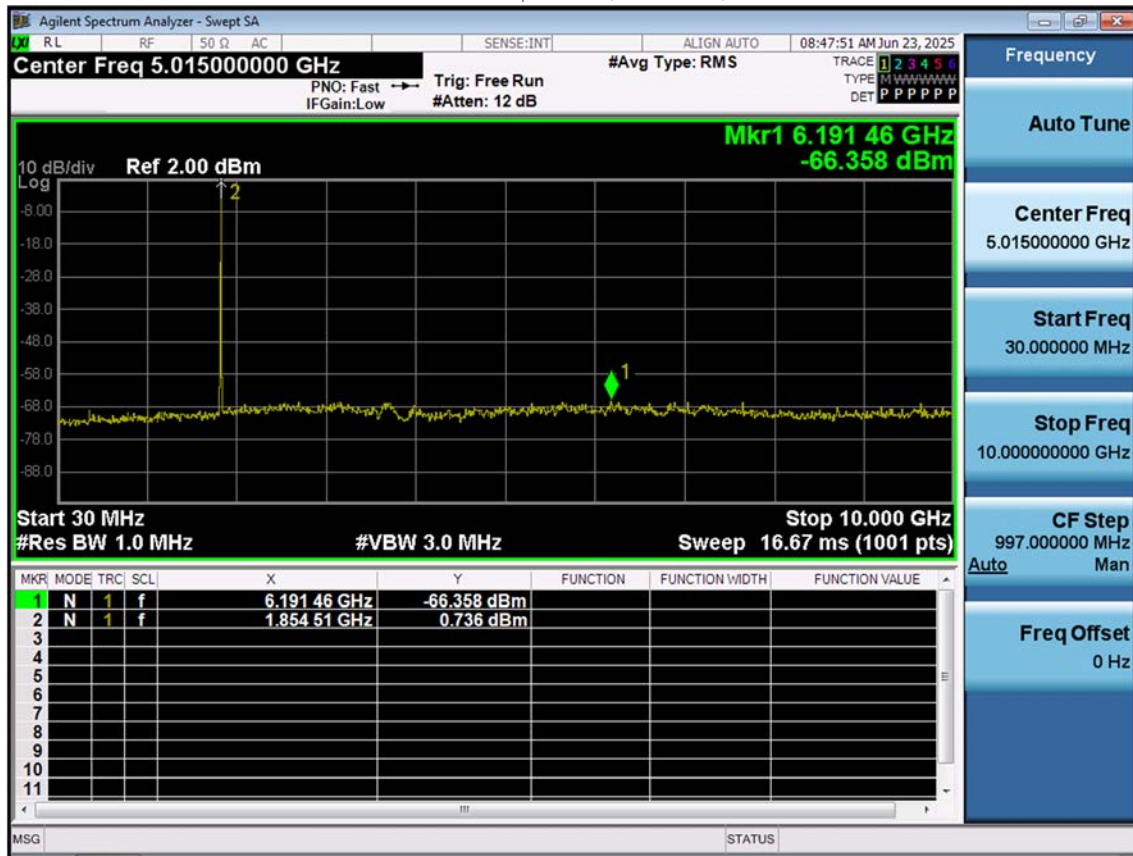
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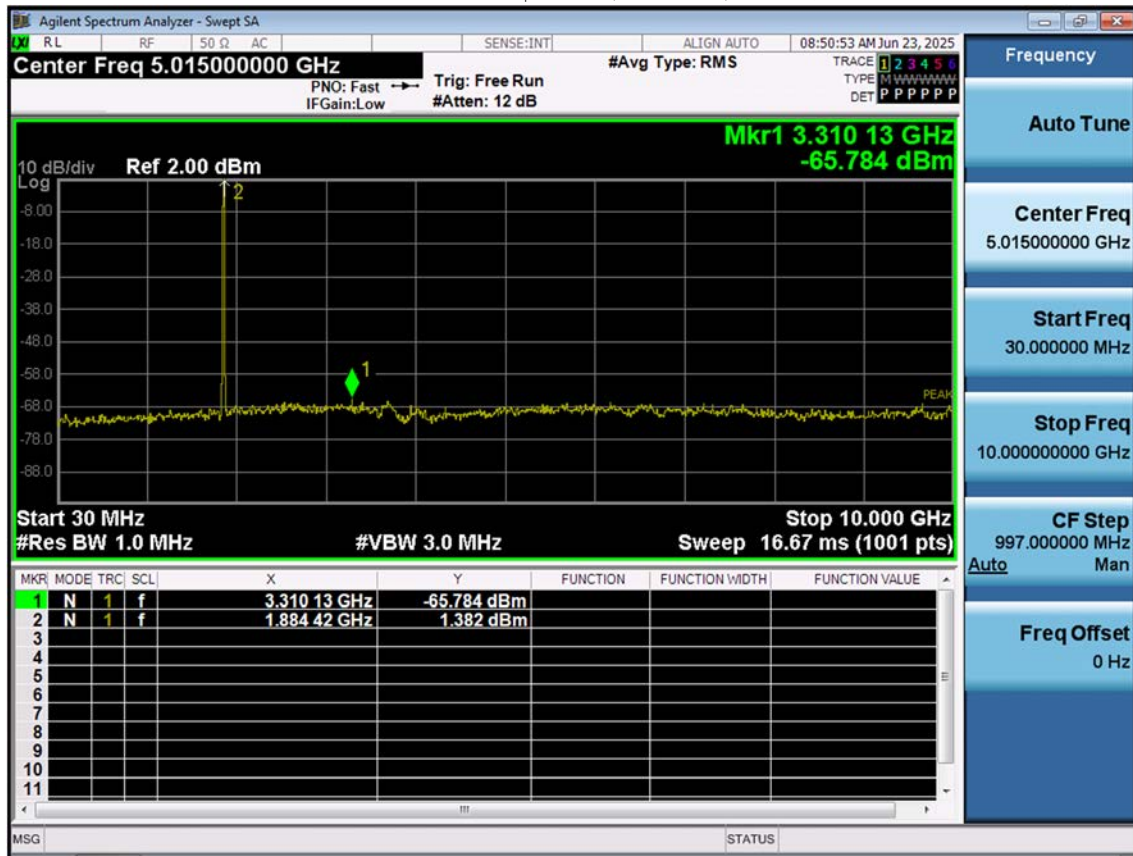
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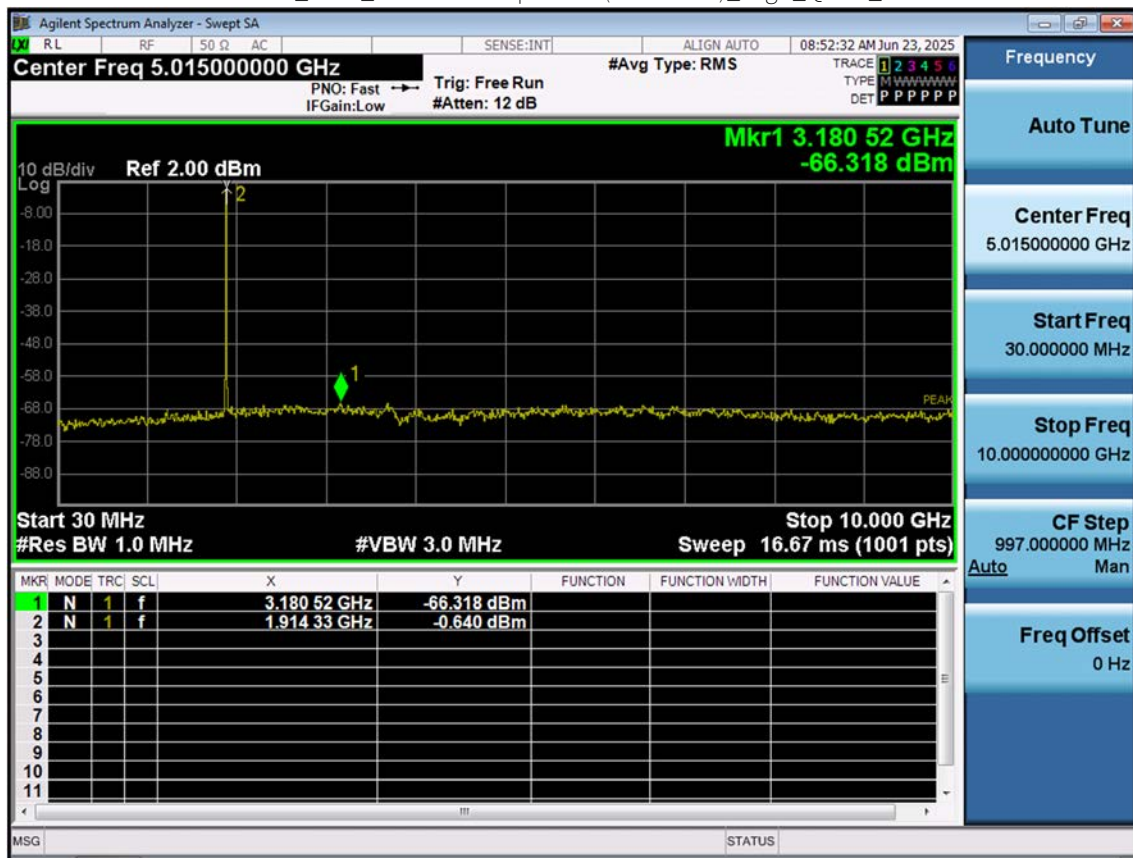
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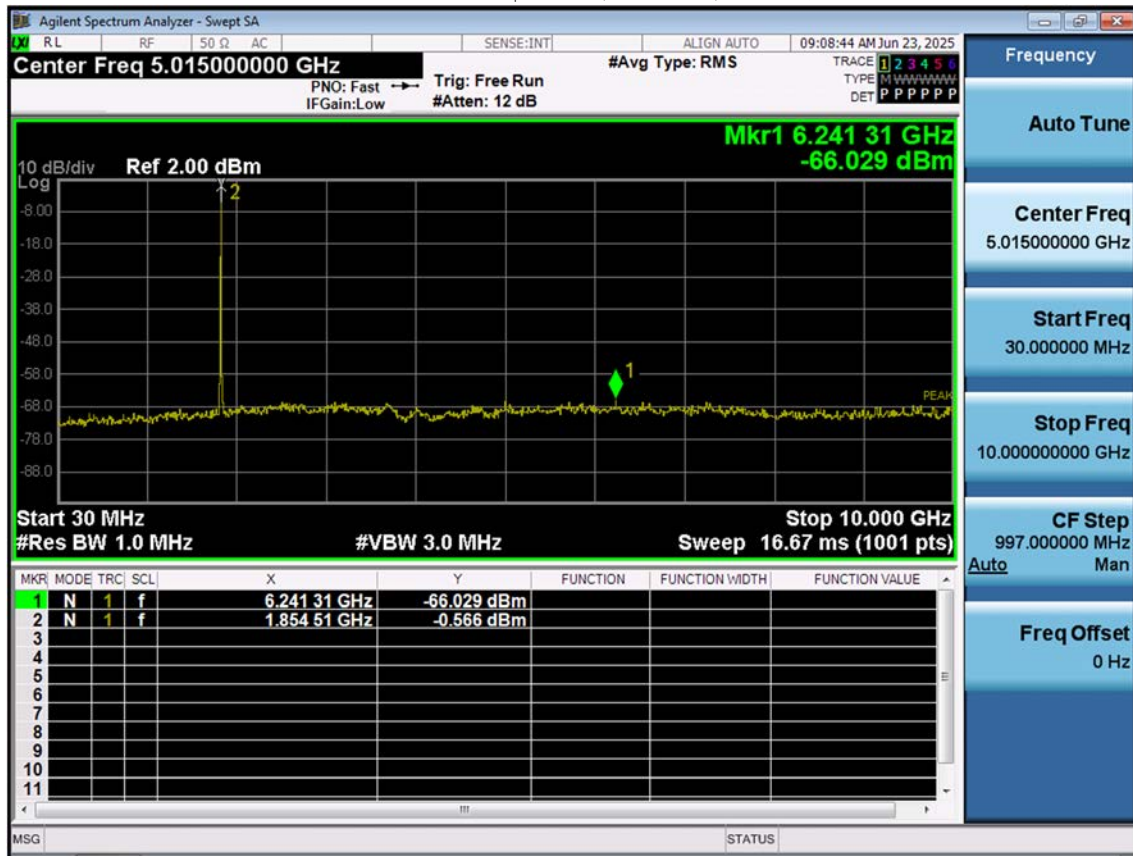
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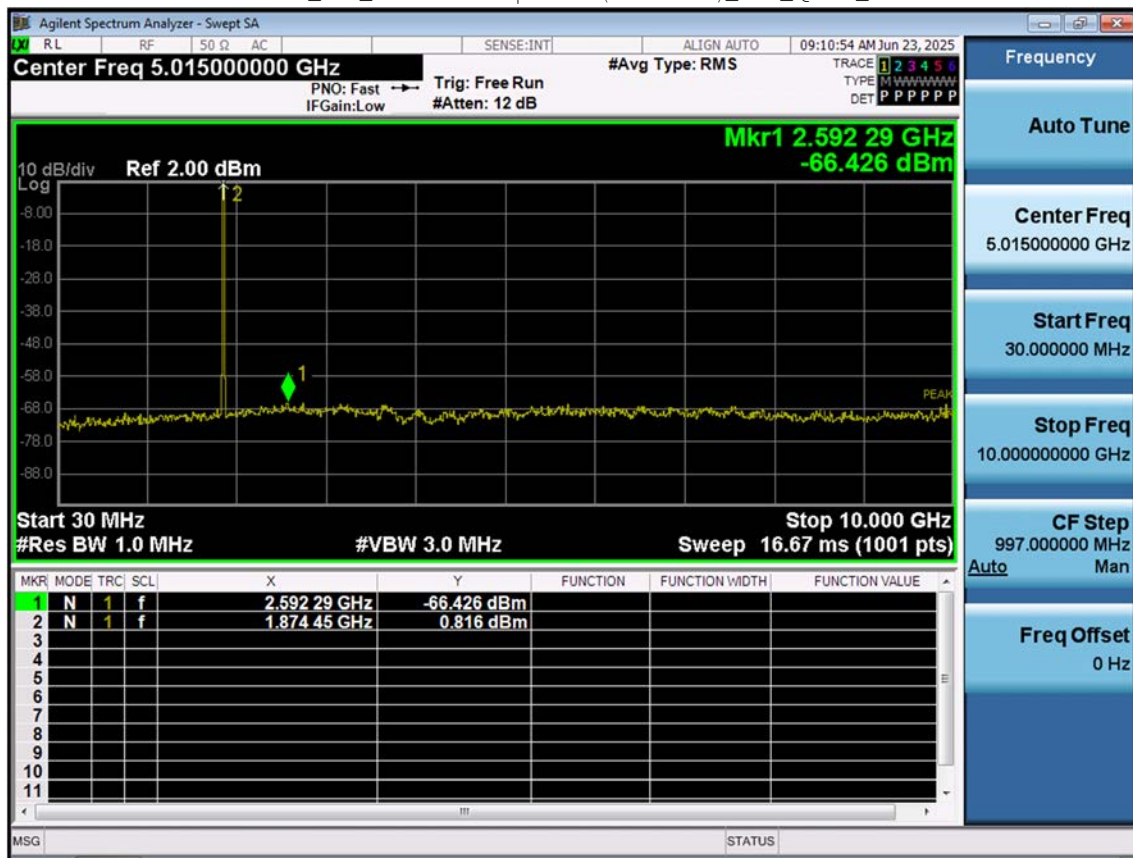
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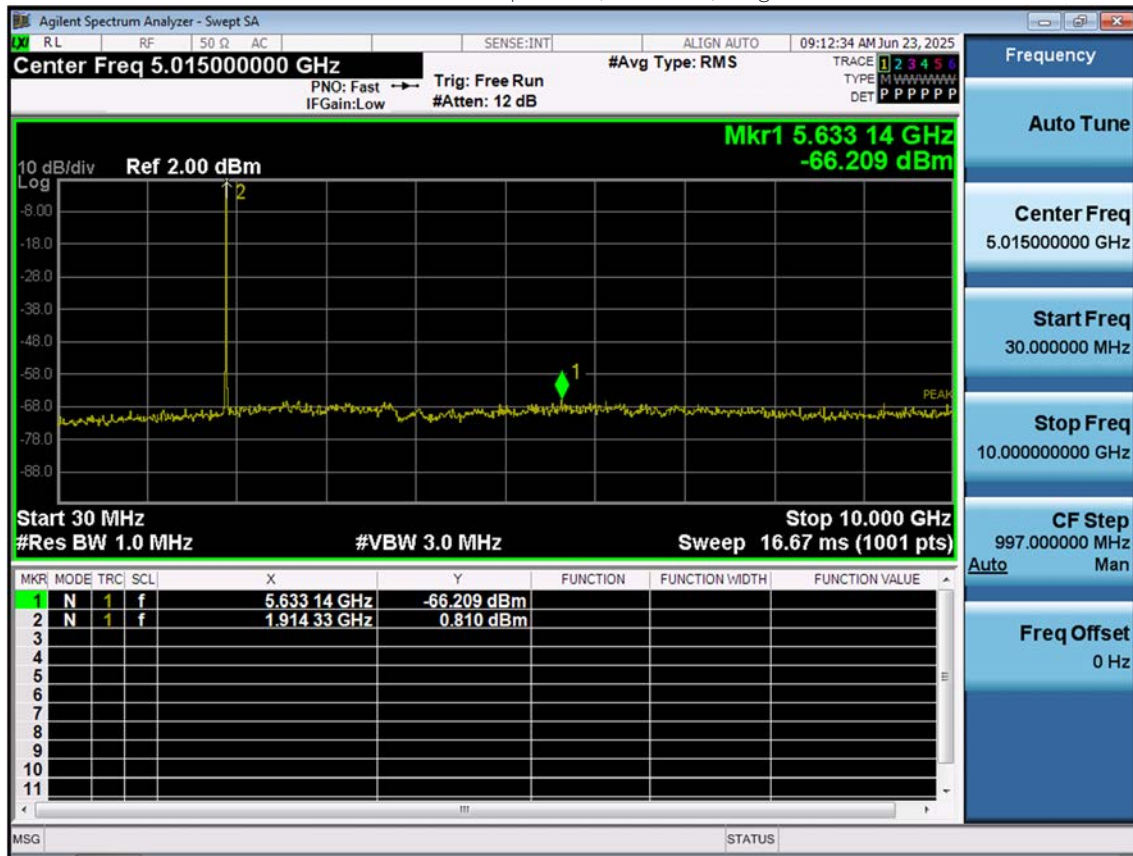
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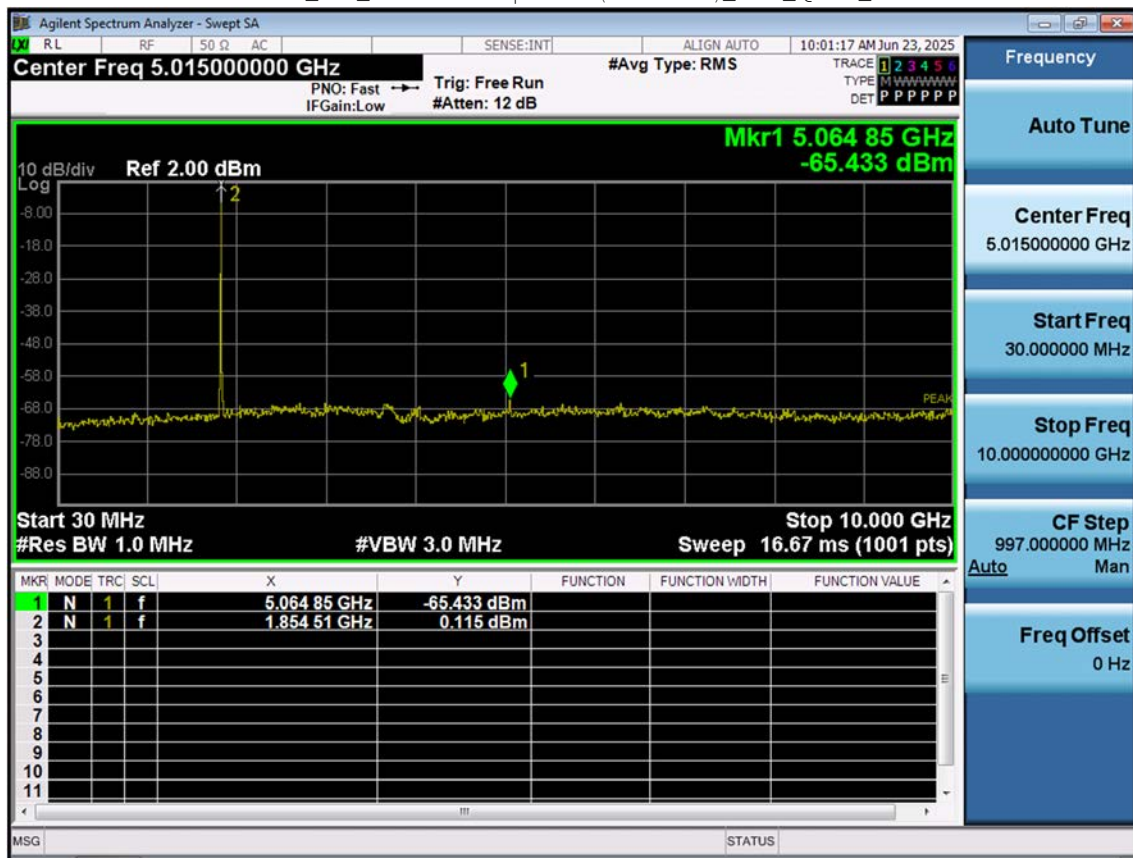
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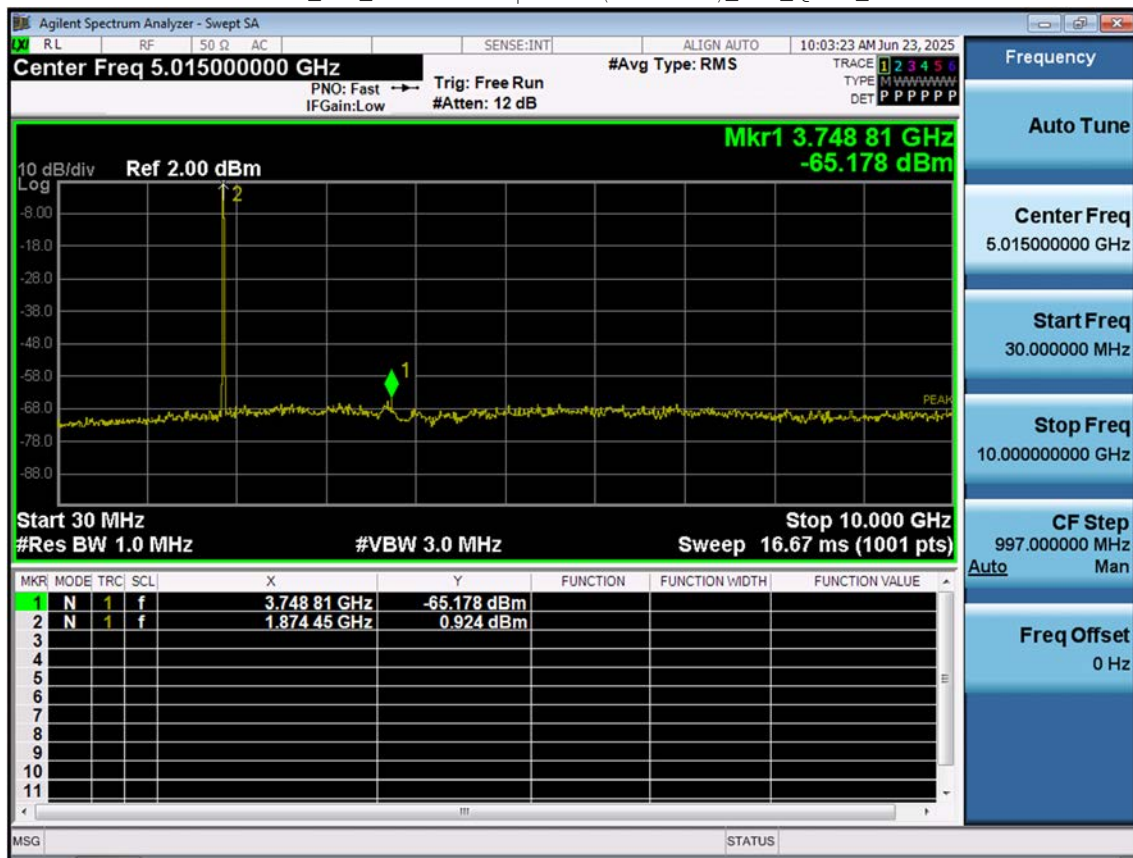
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LTE B2_5 M_Conducted Spurious(30 M-10 G)_Low_QPSK_1RB



LTE B2_5 M_Conducted Spurious(30 M-10 G)_Mid_QPSK_1RB



LTE B2_5 M_Conducted Spurious(30 M-10 G)_High_QPSK_1RB

