APPLICATION FOR CERTIFICATION
On Behalf of
GoodWe Technologies Co., Ltd.
Smart DataLogger

Model No.	:	EzLogger3000C
Brand	:	GOODWE
FCC ID	:	2AU7J-EZLOGGER3C

Prepared for

GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District, Suzhou, 215011, China

Prepared by

Audix Technology (Wujiang) Co., Ltd. EMC Dept.
No. 1289 Jiangxing East Road, the Part of Wujiang Economic Development Zone
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Report Number	:	ACWE-F2305019
Date of Test	:	May 19~Aug.09, 2023
Date of Report	:	Aug.14, 2023

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TEST REPORT CERTIFICATION

Applicant	:	GoodWe Technologies Co., Ltd.
Manufacturer	:	GoodWe Technologies Co., Ltd.
EUT Description	:	Smart DataLogger
FCC ID	:	2AU7J-EZLOGGER3C
(A) Model No.	:	EzLogger3000C
(B) Brand	:	GOODWE
(C) Test Voltage	:	AC 120V/60Hz

Applicable Standards:

Title 47 CFR FCC Part 15 Subpart C
ANSI C63.10:2020
KDB 558074 D01 DTS Meas Guidance v05r02

The device described above was tested by Audix Technology (Wujiang) Co., Ltd. EMC Dept.to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C section 15.247 limits.

The measurement results are contained in this test report and Audix Technology (Wujiang) Co., Ltd. EMC Dept. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Wujiang) Co., Ltd. EMC Dept.

Date of Test: May 19~Aug.09, 2023 Date of Report: Aug.14, 2023

Prepared by : Emma Hu
(Emma Hu/Assistant Administrator)

Approved & Authorized Signer : Ken Lu
(Ken Lu/Vice General Manager)

TESTING
NVLAP LAB CODE 200786-0

1. DESCRIPTION OF VERSION

Edition No.	Date of Rev.	Summary	Report No.
0	Aug.14, 2023	Original Report.	ACWE-F2305019

2. SUMMARY OF MEASUREMENTS AND RESULTS

The EUT have been tested according to the applicable standards as referenced below.

Rule	Description	Results
15.207	Conducted Emission	**PASS**
15.247(d)/ 15.205	Radiated Band Edge and Radiated Spurious Emission	**PASS**
15.247(a)(2)	6dB Bandwidth	**PASS**
15.247(b)(3)	Maximum Output Power	**PASS**
15.247(d)	Conducted Band Edges and Conducted Spurious Emission	**PASS**
15.247 (e)	Peak Power Spectral Density	**PASS**
15.203	Antenna Requirement	**Compliance**

3. GENERAL INFORMATION

3.1. Description of Device (EUT)

Description	:	Smart DataLogger
Model No.	:	EzLogger3000C
FCC ID	:	2AU7J-EZLOGGER3000C
Brand	:	GOODWE
Applicant	:	GoodWe Technologies Co., Ltd. No.90 Zijin Rd., New District, Suzhou, 215011, China
Manufacturer	:	GoodWe Technologies Co., Ltd. No.90 Zijin Rd., New District, Suzhou, 215011, China
Date of Receipt of Sample	:	Mar.28, 2023

3.2. Antenna Information

Type	Frequency (MHz)	Gain(dBi)
External PIFA	2400-2500	3.5

3.3. EUT Specification Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation
802.11b	2412-2462	11	DSSS (DBPSK/DQPSK/CCK)
802.11g	2412-2462	11	OFDM (BPSK/QPSK/16QAM/64QAM)
802.11n-HT20			
BLE-1M	2402-2480	40	GFSK
Remark: The information of test software, fixture and antenna gain is provided by customer.			

3.4. Duty Cycle

Mode	Duty Cycle	Duty Cycle Factor
2402	0.63	2.04
2440	0.62	2.07
2480	0.62	2.05

3.5. Tested Supporting System Details (AE)

3.5.1. Notebook

Manufacturer/Brand : DELL
Model Number : Vostro 14-5459
Serial Number : 8P9C4K2

3.6. Description of Test Facility

Name of Firm	:	**Audix Technology (Wujiang) Co., Ltd. EMC Dept.**
Site Location	:	No. 1289 Jiangxing East Road, the Eastern Part of Wujiang Economic Development Zone Jiangsu China 215200
Test Facilities	:	**No.2 Conducted Shielding Enclosure** **No.2 3m Semi-anechoic Chamber** **RF Fully Chamber**
NVLAP Lab Code	:	200786-0 Valid until on Sep.30, 2023 (NVLAP is a signatory member of ILAC MRA) Remark: This report shall not be imply endorsement, certification or approval by NVLAP, NIST, or any agency of the U.S. Federal Government.

3.7. Measurement Uncertainty

Test Item	Range Frequency	Uncertainty
No.2 Conducted Disturbance Measurement	0.15MHz ~ 30MHz	± 3.32dB
Radiated Disturbance Measurement (At 3m Chamber)	30MHz ~ 1GHz	± 4.89dB
	1GHz ~ 6GHz	± 4.85dB
	6GHz ~ 18GHz	± 4.94dB

Test items	Uncertainty
Unwanted Emission(Conducted measurement)	y(dBm/Hz) ±U=y(dBm/Hz) ±0.33dB
RF Output Power	y(dBm) ±U=y(dBm) ±0.98
RF Frequency	y(Volt) ±U=y(Volt) ±10.84x10(-3)Hz
Temperature and Humidity	y(℃)±U=y(℃) ±0.424℃ y(%)±U=y(%) ±2.00%
RF DC Voltage	y(Volt) ±U=y(Volt) ±0.026
Power Density	y(dBm/Hz) ±U=y(dBm/Hz) ±1.956dB
Radiated Spurious Emission(30MHz~1GHz)	y(dBm) ±U=y(dBm) ±4.42dB
Radiated Spurious Emission(1GHz~26.5GHz)	y(dBm) ±U=y(dBm) ±3.46dB

Remark: Uncertainty = $ku_c(y)$

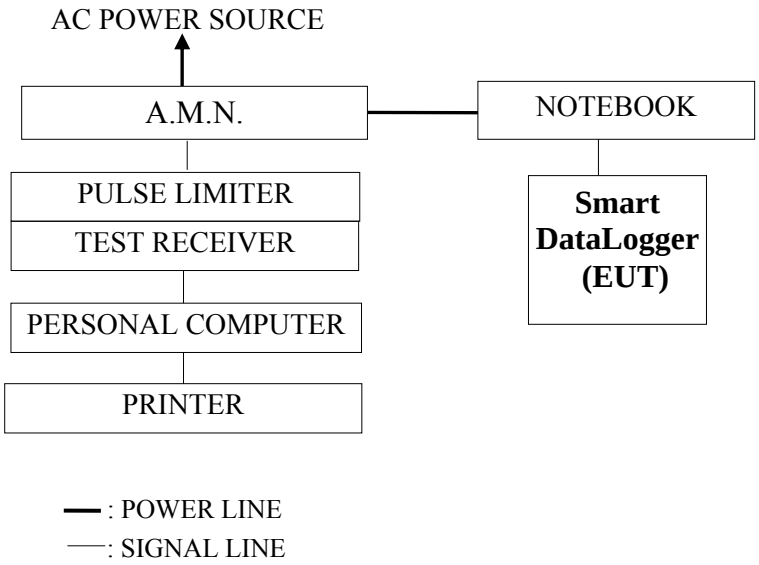
The standards listed in this report only require the uncertainty to be listed, and the measurement uncertainty is not required to be calculated in the measurement results. Therefore, the conformity judgment results are in accordance with the quality document TMC-205, and the test results in this report meet the requirements of the standards listed in this report.

4. CONDUCTED EMISSION MEASUREMET

4.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Test Receiver	R & S	ESCI	100839	2023-03-25	1 Year
2.	A.M.N.	Schwarzbeck	NNLK 8129	8129-164	2022-12-14	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1793-4	2023-03-25	1 Year
4.	I.S.N.	TESEQ	T800	58414	2023-03-25	1 Year
5.	Pulse Limiter	R&S	ESH3-Z2	101832	2022-12-14	1 Year
6.	50Ω Terminator	Tektronis	MS4630B	001-CON	2022-12-14	1 Year
7.	RF Cable	Shengxuan	ROS400	59/3	2022-12-14	1 Year
8.	Software	Audix /e3 (210616)				

4.2. Block Diagram of Test Setup



4.3. Power line Conducted Emission Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark1: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2: The lower limit applies at the band edges.

4.4. Test Procedure

The measuring process is according to ANSI C63.10-2020 and laboratory internal procedure TKC-301-004. (For FCC Part15 Subpart C)

In the conducted emission measurement, the EUT and all peripheral devices were set up on a non-metallic table which was 0.8 meter height above the ground plane, and 0.4 meter far away from the vertical plane. The mains cable of the EUT connected to one Artificial Main Network(AMN). All other unit of the EUT and AE connected to a second Line Impedance Stabilization Network(L.I.S.N.). The telecommunication cable connected to the AE through a Impedance Stabilization Network(ISN) which terminated a 50Ω resistor. For the measurement, the A.M.N measuring port was terminated by a 50Ω measuring equipment and the second L.I.S.N measuring port was terminated by a 50Ω terminator. All measurements were done between the phase lead and the reference ground, and between the neutral lead and the reference ground. All cables or wires placement were verified to find out the maximum emission.

The bandwidth of measuring receiver was set at 9 kHz.

The required frequency band (0.15 MHz ~ 30 MHz) was pre-scanned with peak detector; the final measurement was measured with quasi-peak detector and average detector. (If the average limit is met when using a quasi-peak detector, the average detector is unnecessary).

The emission level is calculated automatically by the test system which uses the following equation:

Emission level (dBμV) = Reading (dBμV) + A.M.N factor (dB) + Cable loss (dB).
(Cable loss includes Pulse Att+Cable+Switch)

4.5. Conducted Emission Measurement Results

For FCC Part15 Subpart C

PASSED.

EUT was performed during this section testing and all the test results are attached in next pages.

Test Date: Jun.01, 2023 Temperature: 19.2℃ Humidity: 43%

Mode	Test Condition	Reference Test Data No.	
		Neutral	Line
1	BLE Mode	# 4	# 3

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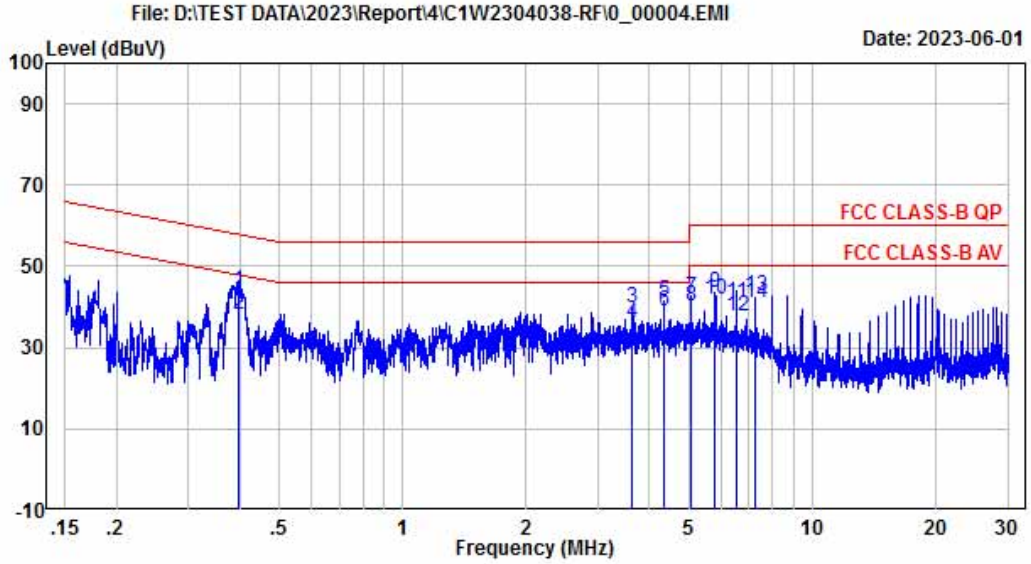

Site NO. : NO.2 shielded Room
Instrument 1 : Receiver ESCI (839)
Instrument 2 : NNLK 8129(164)|59/3|ESH3-Z2 (832)
Dis. / Ant. : NNLK8129-2212
Limit : FCC CLASS-B QP
Env. / Ins. : 19.2℃& 43 %
EUT : smart dataloggger
M/N : Ezlogger3000C
Power Rating : 120Vac/60Hz
Test Mode : BLE Mode
Memo :

Ant. pol.: Neutral Data NO.:4

Engineer : Shenyueqi

Freq. MHz	LISN Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.397	0.10	9.88	33.95	43.93	57.92	13.99	QP
0.397	0.10	9.88	27.99	37.97	47.92	9.95	Average
3.620	0.10	9.97	29.60	39.67	56.00	16.33	QP
3.620	0.10	9.97	26.20	36.27	46.00	9.73	Average
4.343	0.10	9.98	31.30	41.38	56.00	14.62	QP
4.343	0.10	9.98	29.06	39.14	46.00	6.86	Average
5.068	0.10	9.98	32.13	42.21	60.00	17.79	QP
5.068	0.10	9.98	30.02	40.10	50.00	9.90	Average
5.790	0.14	9.99	33.25	43.38	60.00	16.62	QP
5.790	0.14	9.99	31.55	41.68	50.00	8.32	Average
6.518	0.18	10.00	31.05	41.23	60.00	18.77	QP
6.518	0.18	10.00	27.62	37.80	50.00	12.20	Average
7.237	0.21	10.01	32.54	42.76	60.00	17.24	QP
7.237	0.21	10.01	31.04	41.26	50.00	8.74	Average

Remarks:Emisson Level = LISN factor+Cable loss(Cable+Pulse Att+Switch)+Reading

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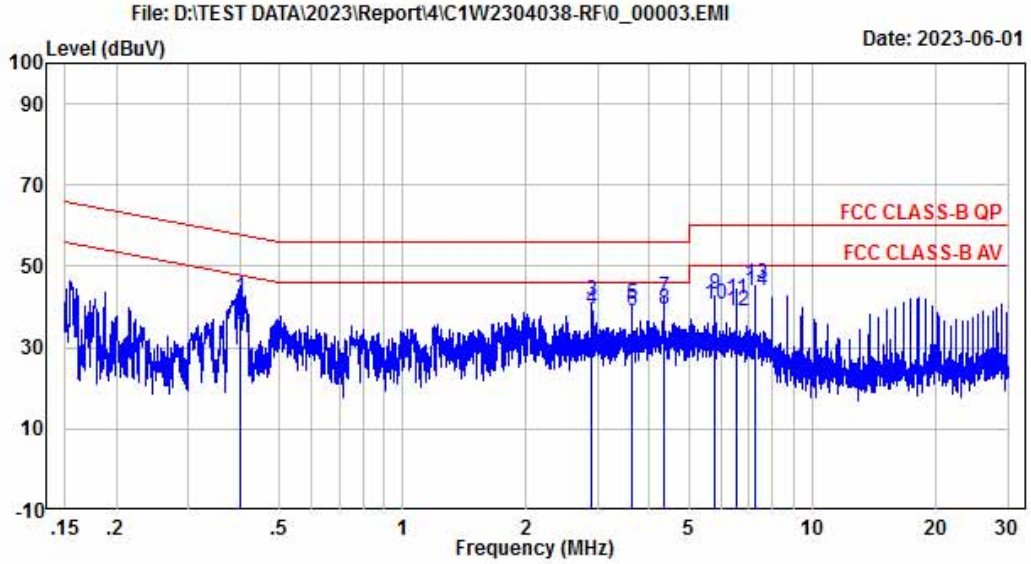


Site NO. : NO.2 shielded Room
Instrument 1 : Receiver ESCI (839)
Instrument 2 : NNLK 8129(164)|59/3|ESH3-Z2 (832)
Dis. / Ant. : NNLK8129-2212
Limit : FCC CLASS-B QP
Env. / Ins. : 19.2℃& 43 %
EUT : smart dataloggger
M/N : Ezlogger3000C
Power Rating : 120Vac/60Hz
Test Mode : BLE Mode
Memo :

Ant. pol.: Line1 Data NO.:3

Engineer : Shenyueqi

Freq. MHz	LISN Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.403	0.10	9.89	32.11	42.10	57.79	15.69	QP
0.403	0.10	9.89	25.59	35.58	47.79	12.21	Average
2.896	0.10	9.97	31.20	41.27	56.00	14.73	QP
2.896	0.10	9.97	29.43	39.50	46.00	6.50	Average
3.623	0.10	9.97	30.47	40.54	56.00	15.46	QP
3.623	0.10	9.97	28.72	38.79	46.00	7.21	Average
4.343	0.10	9.98	32.19	42.27	56.00	13.73	QP
4.343	0.10	9.98	29.23	39.31	46.00	6.69	Average
5.790	0.14	9.99	33.03	43.16	60.00	16.84	QP
5.790	0.14	9.99	30.35	40.48	50.00	9.52	Average
6.512	0.18	10.00	31.73	41.91	60.00	18.09	QP
6.512	0.18	10.00	28.74	38.92	50.00	11.08	Average
7.242	0.21	10.01	35.49	45.71	60.00	14.29	QP
7.242	0.21	10.01	33.77	43.99	50.00	6.01	Average

Remarks:Emisson Level = LISN factor+Cable loss(Cable+Pulse Att+Switch)+Reading

5. RADIATED EMISSION MEASUREMENT

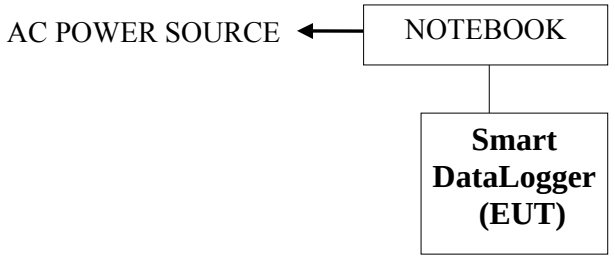
5.1. Test Equipment

The following test equipment was used during the radiated emission measurement:
At 3m Semi-Anechoic Chamber

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Preamplifier	Agilent	8447D	2944A10922	2023-03-25	1 Year
2.	PXA signal analyzer	Agilent	N9030A	MY53120367	2022-07-25	1 Year
3.	Bi-log Antenna	SCHWARZBECK	VULB 9168	706	2023-03-12	1 Year
4.	Horn Antenna	ETS	3117	00218586	2023-03-13	1 Year
5.	Microwave Preamplifier	Agilent	8449B	3008A02234	2023-03-25	1 Year
6.	EMI Test Receiver	R&S	ESR7	101956	2023-03-25	1 Year
7.	RF Cable	Chengyi+Shengxuan	NM500+ROS400	190945+6000+3000	2022-08-12	1 Year
8.	RF Cable	Chengyi	EMC104-SF-SM-8000/NM-1000	190938+190942	2022-08-12	1 Year
9.	Software	Audix /e3 (210616)				

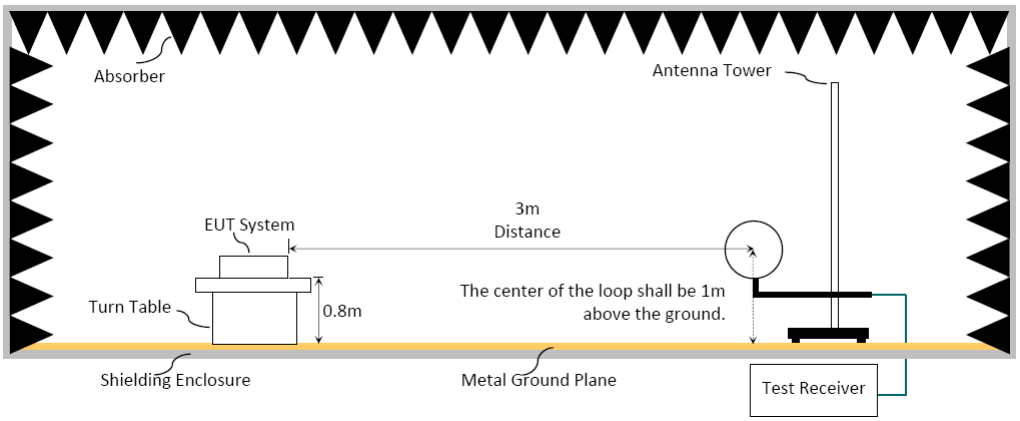
5.2. Block Diagram of Test Setup

5.2.1. Block Diagram of Test Setup between EUT and simulators

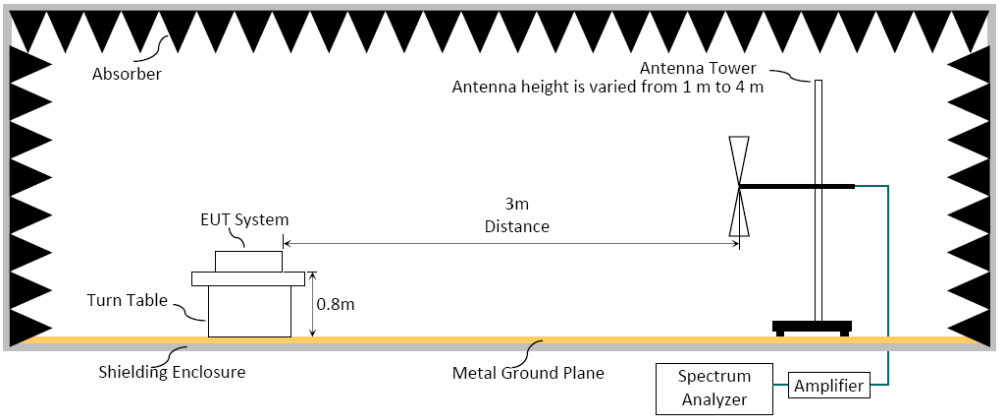


▬ : POWER LINE
─ : SIGNAL LINE

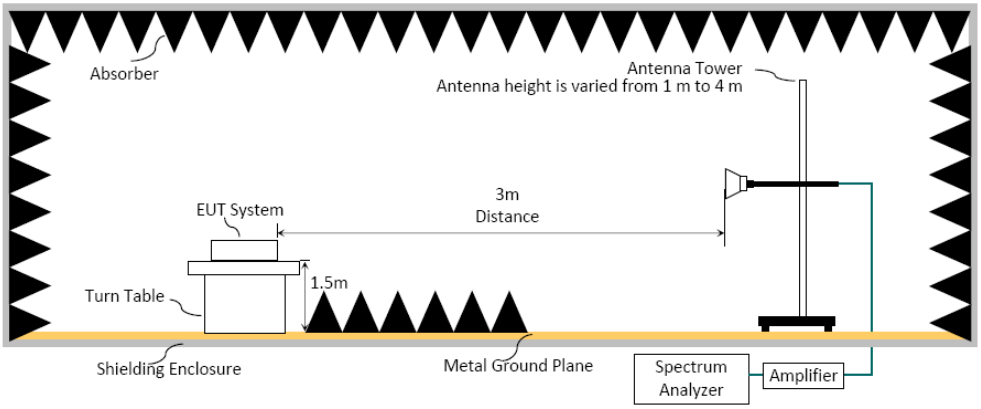
5.2.2. No. 2 3m Semi-Anechoic Chamber Setup Diagram (Test distance: 3m) for 9kHz-30MHz



5.2.3. No. 2 3m Semi-Anechoic Chamber Setup Diagram (Test distance: 3m) for 30MHz-1GHz



5.2.4. No. 2 3m Semi-Anechoic Chamber Setup Diagram (Test distance: 3m) for Above 1GHz



5.3. Radiated Emission Limits

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance (m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6-20 log f(kHz)	2400/f kHz
0.490 - 1.705	30	87.6-20 log f(kHz)	24000/f kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark: (1) dBμV/m = 20 log (μV/m)

(2)The tighter limit applies to the edge between two frequency bands.

(3)Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

(4)Fundamental and emission fall within operation band are exempted from this section.

(5)Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

5.4. Test Procedure

Frequency Range 9kHz~30MHz:
The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level.
In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

(1) RBW = 9kHz with peak and average detector.
(2) Detector: average and peak (9kHz-490kHz)
Q.P. (490kHz-30MHz)

Frequency Range 30MHz ~ 25GHz:
The EUT setup on the turn table which has 80 cm (for 30-1000 MHz) and 1.5m (for above 1GHz) height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

Frequency below 1 GHz:
Spectrum Analyzer is used for pre-testing with following setting:

(1)RBW = 120KHz
(2)VBW ≥ 3 x RBW.
(3)Detector = Peak.
(4)Sweep time = auto.
(5)Trace mode = max hold.
(6)Allow sweeps to continue until the trace stabilizes.
(7)When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required, otherwise using Q.P. for final measurement.

Frequency above 1GHz to 10th harmonic (up to 25GHz):
Peak Dector:

(1)RBW = 1MHz
(2)VBW ≥ 3 x RBW.
(3)Detector = Peak.
(4)Sweep time = auto.
(5)Trace mode = max hold.
(6)Allow sweeps to continue until the trace stabilizes.
(7)When peak-detected value is lower than limit that the measurement using the average detector is not required, otherwise using average detector for final measurement.

5.5. Measurement Results

PASSED

The EUT was tested in restricted bands and all the test results are listed in next page.
The frequency range from 9kHz to 10th harmonic(25GHz) are checked, and the emission (9kHz~30MHz,18GHz~25GHz)not reported for there is no emission be found.

5.5.1. Emission Measurement Results (For Below 1GHz)

```
Site NO.     : NO.2 3M Chamber                          Ant. pol.: Horizontal   Data NO.:72
Instrument 1 : Receiver ESR7 (956)
Instrument 2 : Preamplifier 8447D(922)|400
Dis. / Ant.  : 9168-706-2304-3M                         Engineer : Xuweifei
Limit        : FCC PART 15B QP
Env. / Ins.  : 21.3°C/54%
EUT          : Smart DataLogger
M/N          : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode    : BLE 2402MHz
Memo         :
```

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
174.240	18.30	0.96	32.58	28.08	23.76	43.50	19.74	QP
199.652	16.13	1.03	35.78	28.00	24.94	43.50	18.56	QP
251.684	17.85	1.16	37.97	27.90	29.08	46.00	16.92	QP
299.541	19.29	1.29	44.98	27.80	37.76	46.00	8.24	QP
318.548	19.71	1.32	35.48	27.87	28.64	46.00	17.36	QP
350.570	20.41	1.38	32.97	28.00	26.76	46.00	19.24	QP

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

```
Site NO.     : NO.2 3M Chamber                          Ant. pol.: Vertical     Data NO.:71
Instrument 1 : Receiver ESR7 (956)
Instrument 2 : Preamplifier 8447D(922)|400
Dis. / Ant.  : 9168-706-2304-3M                         Engineer : Xuweifei
Limit        : FCC PART 15B QP
Env. / Ins.  : 21.3°C/54%
EUT          : Smart DataLogger
M/N          : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode    : BLE 2402MHz
Memo         :
```

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
40.210	19.21	0.48	27.54	28.65	18.58	40.00	21.42	QP
251.210	17.84	1.16	40.22	27.90	31.32	46.00	14.68	QP
262.254	18.17	1.19	36.88	27.88	28.36	46.00	17.64	QP
299.470	19.28	1.29	42.70	27.80	35.47	46.00	10.53	QP
451.781	22.64	1.58	31.62	28.46	27.38	46.00	18.62	QP
549.781	24.60	1.76	27.49	28.85	25.00	46.00	21.00	QP

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

5.5.2. Emission Measurement Results (For Above 1GHz)

Mode	BLE	Frequency	2402MHz

```
Site NO.      : NO.2 3M Chamber                          Ant. pol.: Horizontal   Data NO.:74
Instrument 1  : Spectrum N9030A(367)
Instrument 2  : Preamplifier 8449B(231)|000
Dis. / Ant.   : 3117-586-2304                            Engineer : Xuweifei
Limit         : FCC Part15 C PK
Env. / Ins.   : 21.3°C/54%
EUT           : Smart DataLogger
M/N           : EzLogger3000C
Power Rating  : 120Vac/60Hz
Test Mode     : BLE 2402MHZ
Memo          :
```

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1119.000	29.12	2.76	53.99	33.86	52.01	74.00	21.99	Peak
1119.960	29.12	2.76	36.52	33.86	34.54	54.00	19.46	Average
1593.290	28.40	3.05	31.60	33.29	29.76	54.00	24.24	Average
1595.000	28.42	3.05	46.28	33.29	44.46	74.00	29.54	Peak
10333.000	37.37	8.85	35.92	32.60	49.54	74.00	24.46	Peak
10333.160	37.37	8.85	28.17	32.60	41.79	54.00	12.21	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

```
Site NO.     : NO.2 3M Chamber                          Ant. pol.: Vertical     Data NO.:75
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(231)|000
Dis. / Ant.  : 3117-586-2304                            Engineer : Xuweifei
Limit        : FCC Part15 C PK
Env. / Ins.  : 21.3°C/54%
EUT          : Smart DataLogger
M/N          : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode    : BLE 2402MHZ
Memo         :
```

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4808.000	33.92	5.79	38.43	32.24	45.90	74.00	28.10	Peak
4809.150	33.92	5.79	30.47	32.24	37.94	54.00	16.06	Average
8140.000	35.80	7.53	37.23	32.46	48.10	74.00	25.90	Peak
8141.430	35.80	7.53	30.68	32.46	41.55	54.00	12.45	Average
12356.000	38.77	8.85	34.26	31.72	50.16	74.00	23.84	Peak
12358.260	38.77	8.85	27.47	31.71	43.38	54.00	10.62	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

Mode	BLE	Frequency	2440MHz

```
Site NO.     : NO.2 3M Chamber                          Ant. pol.: Horizontal   Data NO.:77
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(231)|000
Dis. / Ant.  : 3117-586-2304                            Engineer : Xuweifei
Limit        : FCC Part15 C PK
Env. / Ins.  : 21.3°C/54%
EUT          : Smart DataLogger
M/N          : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode    : BLE 2440MHZ
Memo         :
```

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1000.000	29.60	2.70	52.35	34.00	50.65	74.00	23.35	Peak
1000.120	29.60	2.70	38.71	34.00	37.01	54.00	16.99	Average
1119.000	29.12	2.76	52.19	33.86	50.21	74.00	23.79	Peak
1120.370	29.12	2.76	38.62	33.86	36.64	54.00	17.36	Average
12407.000	38.78	8.88	34.81	31.67	50.80	74.00	23.20	Peak
12409.450	38.78	8.88	28.43	31.67	44.42	54.00	9.58	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(231)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C PK
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : BLE 2440MHZ
Memo :

Ant. pol.: Vertical Data NO.:76

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1119.000	29.12	2.76	46.43	33.86	44.45	74.00	29.55	Peak
1120.160	29.12	2.76	36.52	33.86	34.54	54.00	19.46	Average
10384.000	37.41	8.91	36.28	32.60	50.00	74.00	24.00	Peak
10386.240	37.41	8.92	28.54	32.60	42.27	54.00	11.73	Average
13954.000	38.61	9.14	34.38	31.01	51.12	74.00	22.88	Peak
13958.130	38.61	9.14	27.19	31.01	43.93	54.00	10.07	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

Mode	BLE	Frequency	2480MHz

```
Site NO.      : NO.2 3M Chamber                          Ant. pol.: Horizontal   Data NO.:78
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(231)|000
Dis. / Ant.  : 3117-586-2304                             Engineer : Xuweifei
Limit        : FCC Part15 C PK
Env. / Ins.  : 21.3°C/54%
EUT          : Smart DataLogger
M/N          : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode    : BLE 2480MHZ
Memo         :
```

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1000.000	29.60	2.70	50.44	34.00	48.74	74.00	25.26	Peak
1000.015	29.60	2.70	37.49	34.00	35.79	54.00	18.21	Average
1119.000	29.12	2.76	52.29	33.86	50.31	74.00	23.69	Peak
1121.031	29.12	2.76	38.71	33.85	36.74	54.00	17.26	Average
11744.000	38.39	8.46	35.37	32.15	50.07	74.00	23.93	Peak
11747.530	38.40	8.46	27.47	32.15	42.18	54.00	11.82	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(231)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C PK
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : BLE 2480MHZ
Memo :

Ant. pol.: Vertical Data NO.:79

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1765.000	29.88	3.24	46.85	33.08	46.89	74.00	27.11	Peak
1767.260	29.90	3.24	37.46	33.08	37.52	54.00	16.48	Average
10452.000	37.46	9.01	36.10	32.60	49.97	74.00	24.03	Peak
10455.130	37.46	9.01	28.49	32.60	42.36	54.00	11.64	Average
13699.000	38.66	8.85	35.08	31.06	51.53	74.00	22.47	Peak
13702.280	38.66	8.86	27.51	31.06	43.97	54.00	10.03	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

5.5.3. Spurious Emission Measurement Results in Band Edge Emission

Mode	BLE	Frequency	2402MHz

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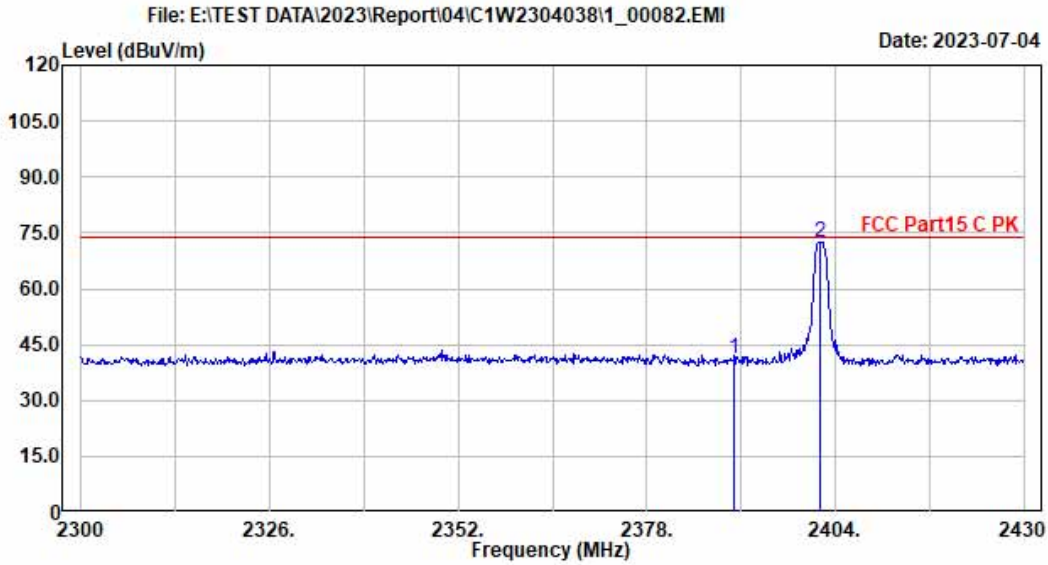
Tel : (0512)63403993 Fax:(0512)63403339



Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(234)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C PK
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : TX BLE 2402MHz
Memo :

Ant. pol.: Horizontal Data NO.:82

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2390.000	32.13	3.00	40.00	34.11	41.02	74.00	32.98	Peak
2401.790	32.14	3.00	71.46	34.11	72.49	74.00	1.51	Peak

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

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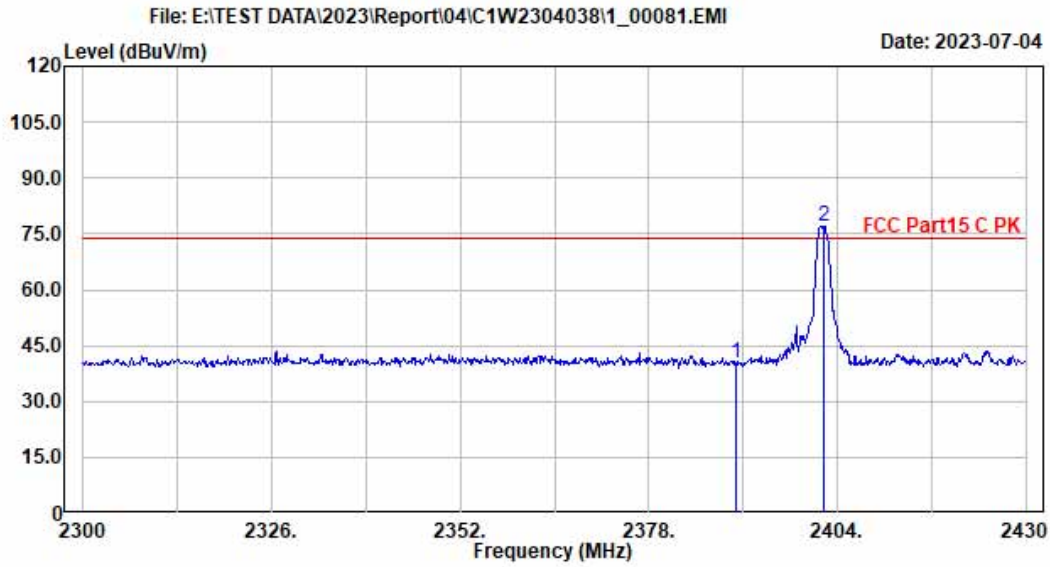

Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(234)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C PK
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : TX BLE 2402MHz
Memo :

Ant. pol.: Vertical Data NO.:81

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2390.000	32.13	3.00	39.35	34.11	40.37	74.00	33.63	Peak
2402.180	32.14	3.00	76.05	34.11	77.08	74.00	-3.08	Peak

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

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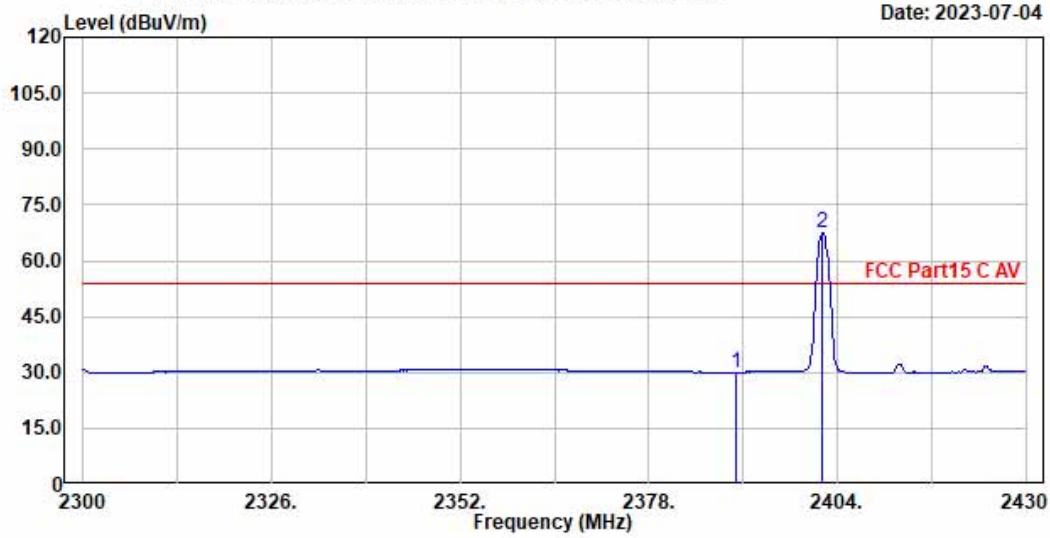
Date: 2023-07-04



Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(234)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C AV
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : TX BLE 2402MHz
Memo :

Ant. pol.: Horizontal Data NO.:83

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2390.000	32.13	3.00	29.05	34.11	30.07	54.00	23.93	Average
2401.920	32.14	3.00	66.56	34.11	67.59	54.00	-13.59	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

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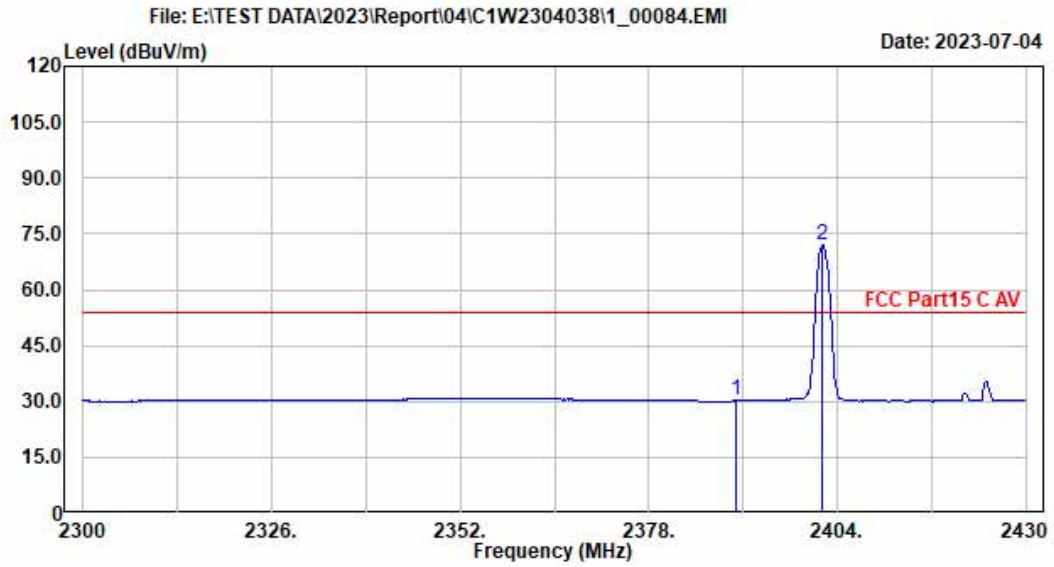

Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(234)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C AV
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : TX BLE 2402MHz
Memo :

Ant. pol.: Vertical Data NO.:84

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2390.000	32.13	3.00	29.12	34.11	30.14	54.00	23.86	Average
2401.920	32.14	3.00	71.03	34.11	72.06	54.00	-18.06	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

Mode	BLE	Frequency	2480MHz

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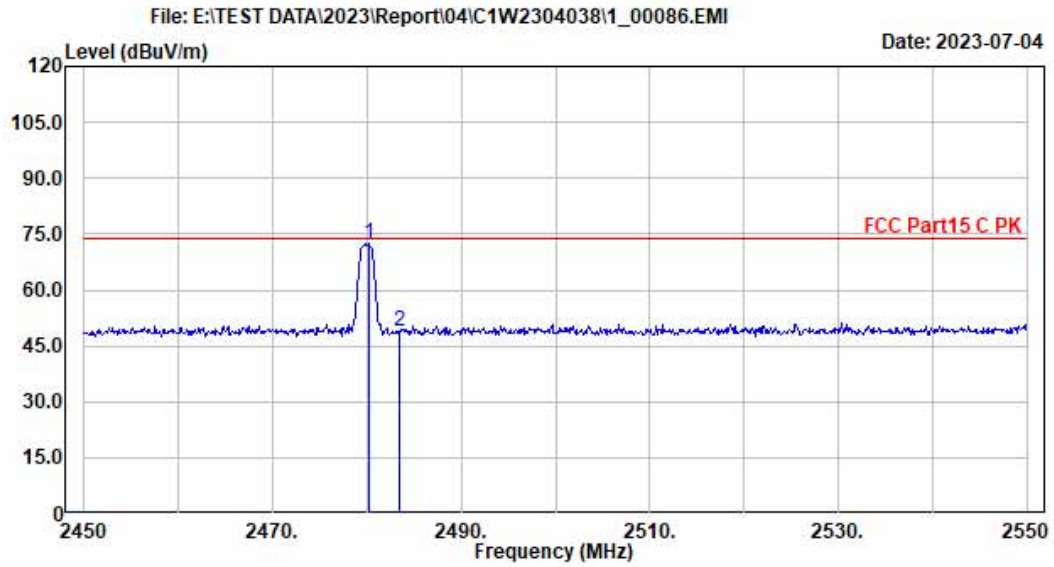
Tel : (0512)63403993 Fax:(0512)63403339



Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(234)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C PK
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : TX BLE 2480MHz
Memo :

Ant. pol.: Horizontal Data NO.:86

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2480.200	32.19	3.06	71.22	34.12	72.35	74.00	1.65	Peak
2483.500	32.19	3.06	47.62	34.12	48.75	74.00	25.25	Peak

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

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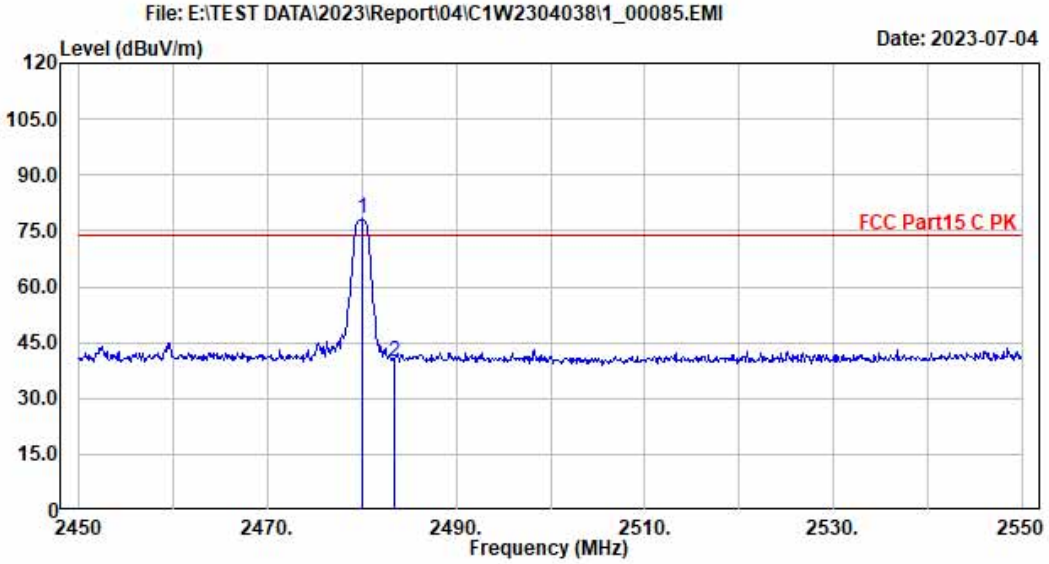

Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(234)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C PK
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : TX BLE 2480MHz
Memo :

Ant. pol.: Vertical Data NO.:85

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2480.100	32.19	3.06	77.00	34.12	78.13	74.00	-4.13	Peak
2483.500	32.19	3.06	38.84	34.12	39.97	74.00	34.03	Peak

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

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Tel : (0512)63403993 Fax:(0512)63403339

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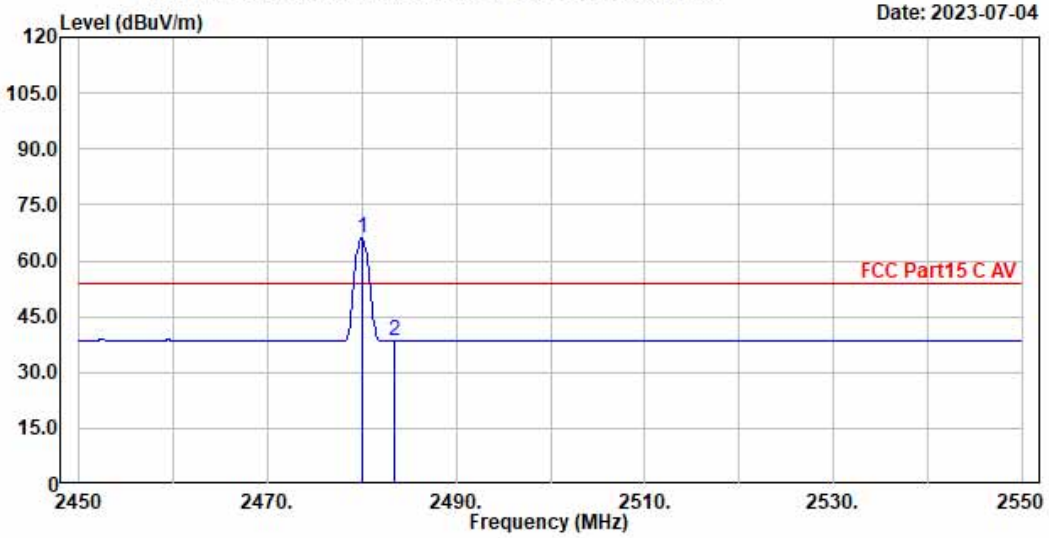
Date: 2023-07-04



Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(234)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C AV
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : TX BLE 2480MHz
Memo :

Ant. pol.: Horizontal Data NO.:87

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2480.000	32.19	3.06	64.80	34.12	65.93	54.00	-11.93	Average
2483.500	32.19	3.06	37.33	34.12	38.46	54.00	15.54	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

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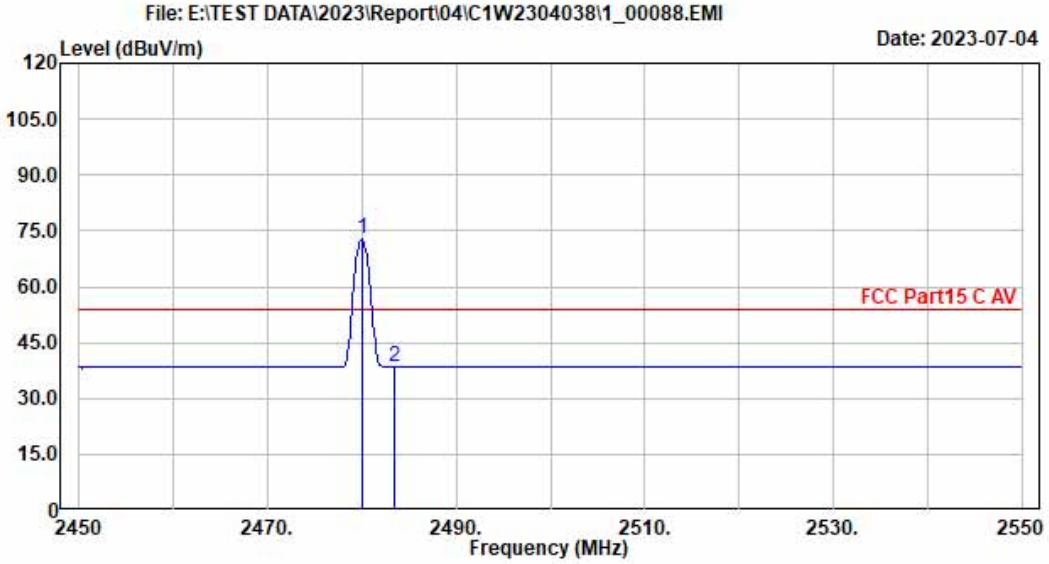


Site NO. : NO.2 3M Chamber
Instrument 1 : Spectrum N9030A(367)
Instrument 2 : Preamplifier 8449B(234)|000
Dis. / Ant. : 3117-586-2304
Limit : FCC Part15 C AV
Env. / Ins. : 21.3°C/54%
EUT : Smart DataLogger
M/N : EzLogger3000C
Power Rating : 120Vac/60Hz
Test Mode : TX BLE 2480MHz
Memo :

Ant. pol.: Vertical Data NO.:88

Engineer : Xuweifei

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2480.000	32.19	3.06	71.56	34.12	72.69	54.00	-18.69	Average
2483.500	32.19	3.06	37.32	34.12	38.45	54.00	15.55	Average

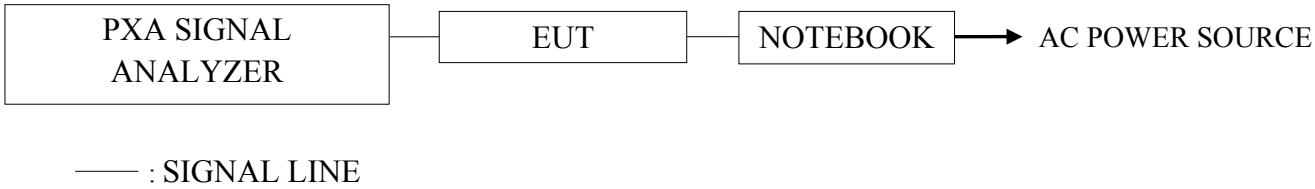
Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

6. 6dB BANDWIDTH MEASUREMENT

6.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	PXA signal analyzer	Agilent	N9030A	MY53120217	2023-03-25	1 Year

6.2. Block Diagram of Test Setup



6.3. Specification Limits

The minimum 6dB bandwidth shall be at least 500kHz.

6.4. Test Procedure

Following measurement procedure is reference to KDB 558074 D01 DTS Meas Guidance v05:

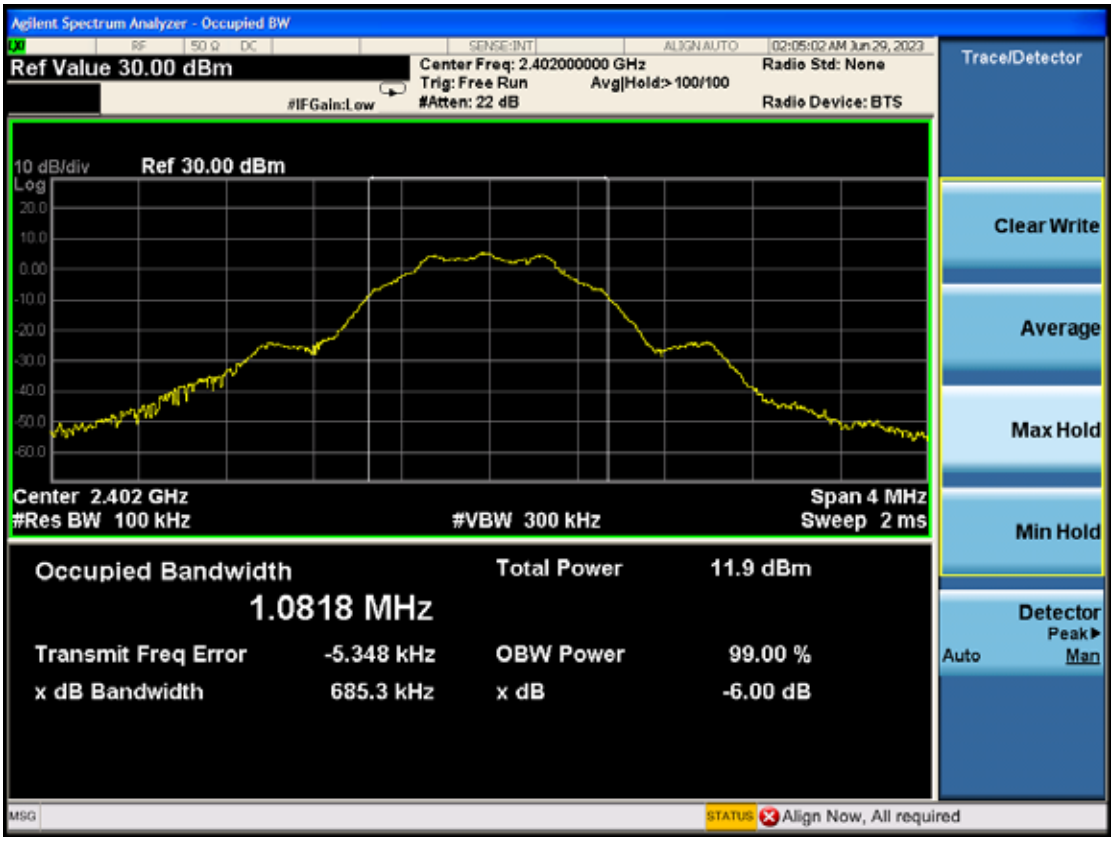
(1) Set RBW = 100 kHz.
(2) Set the video bandwidth (VBW) ≥ 3 × RBW.
(3) Detector = Peak.
(4) Trace mode = max hold.
(5) Sweep = auto couple.
(6) Allow the trace to stabilize.
(7) Setting channel bandwidth function x dB to -6 dB to record the final bandwidth.

6.5. Test Results

PASSED. All the test results are attached in next pages.

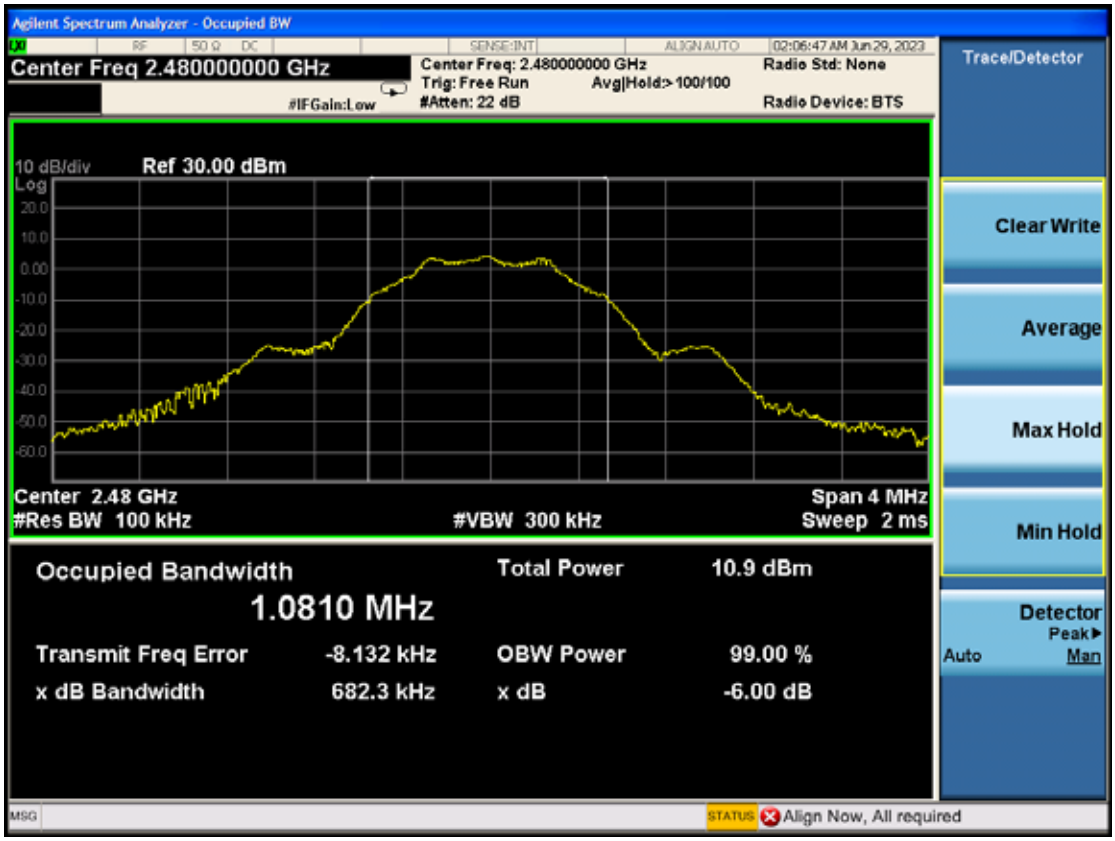
Item	Test Frequency (MHz)	6dB Bandwidth (kHz)
BLE	2402	685.3
	2440	698.1
	2480	682.3

BLE 2402MHz



BLE 2440MHz

BLE 2480MHz


Agilent Spectrum Analyzer - Occupied BW
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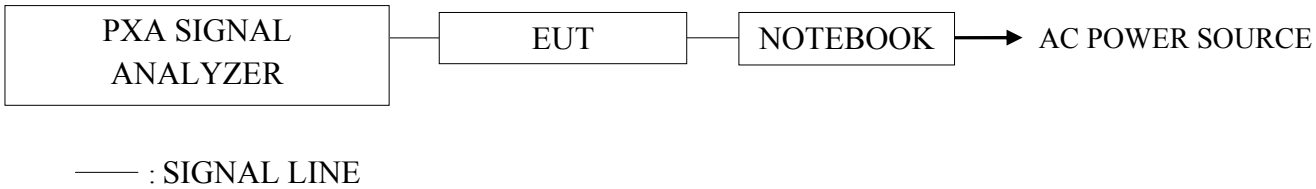
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 22 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Ref 30.00 dBm
Log
Clear Write
Average
Max Hold
Min Hold
Center 2.48 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 4 MHz
Sweep 2 ms
Occupied Bandwidth
1.0810 MHz
Total Power
10.9 dBm
Transmit Freq Error
-8.132 kHz
OBW Power
99.00 %
x dB Bandwidth
682.3 kHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS
Align Now, All required

7. OUTPUT POWER MEASUREMENT

7.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	PXA signal analyzer	Agilent	N9030A	MY53120217	2023-03-25	1 Year

7.2. Block Diagram of Test Setup



7.3. Specification Limits (§15.247(b)(3))

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5MHz is : 1Watt. (30dBm), and E.I.R.P.: 4Watt (36dBm)

7.4. Test Procedure

Following measurement procedure is reference to KDB 558074 D01 DTS Meas Guidance v05:

☐**Method AVGSA-2 (Spectrum channel power)**

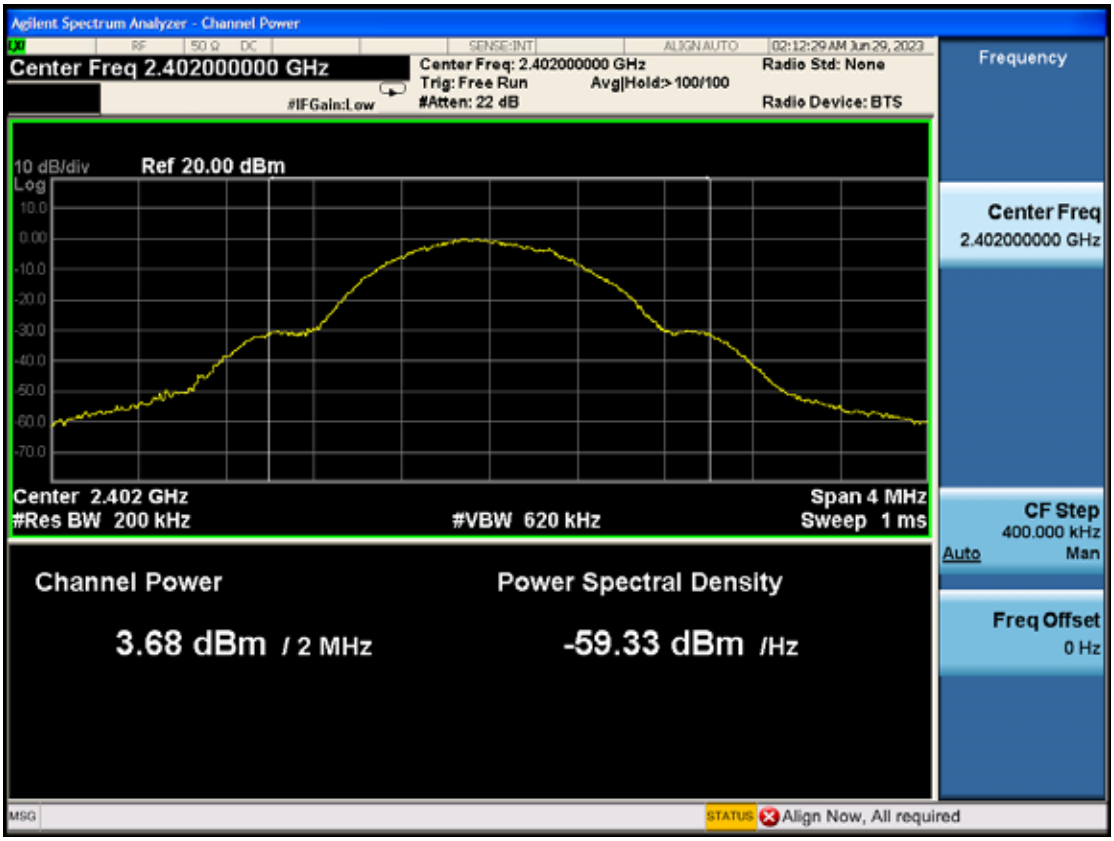
(1) Set span to at least 1.5 times the OBW
(2) Set RBW = 1 -5% of OBW
(3) Set the video bandwidth (VBW) ≥ 3 × RBW.
(4) Detector = RMS.
(5) Trace mode = trace average at least 100 traces
(6) Sweep = auto couple.
(7) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges.
(8) Duty cycle factor is added when duty cycle presented in chapter3.5 is < 98%.

7.5. Test Results

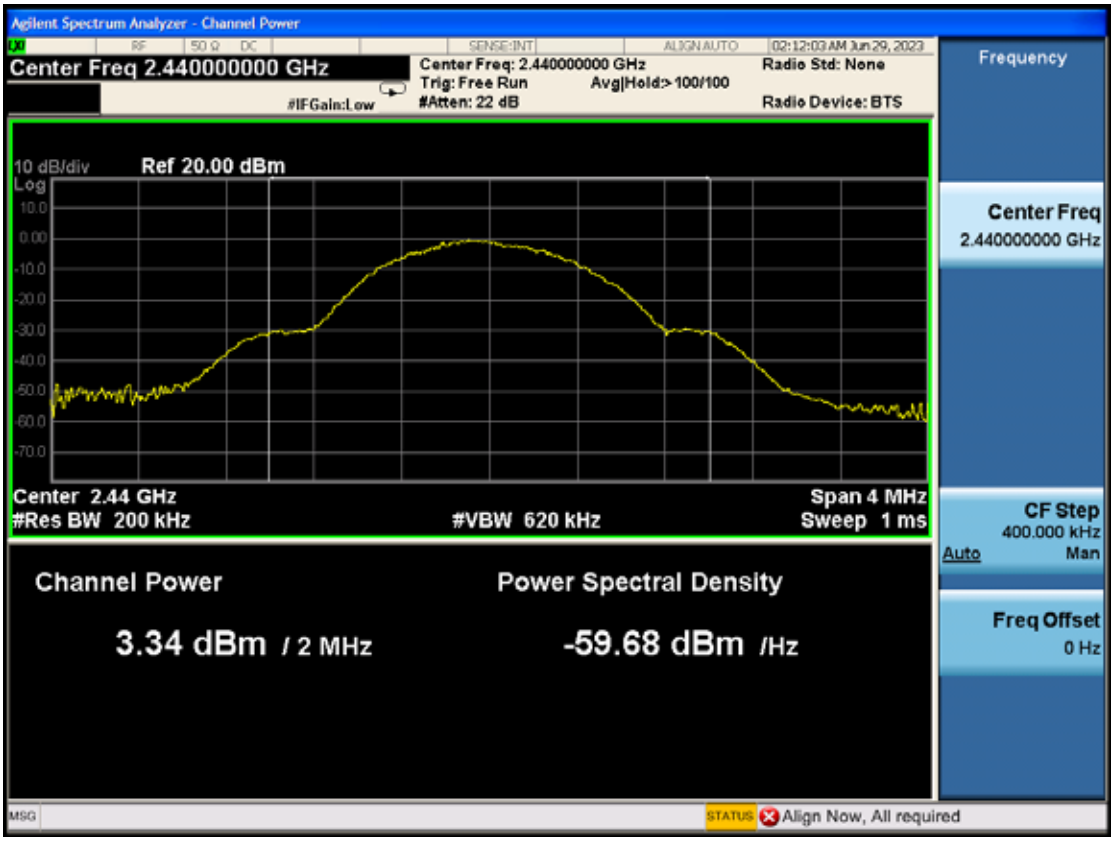
PASSED.

Mode	Frequency (MHz)	Duty Cycle Factor	Reading (dBm)	Average Output Power (dBm)	Limit (dBm)
BLE	2402	2.04	3.68	5.72	30
	2440	2.07	3.34	5.41	
	2480	2.05	3.38	5.43	

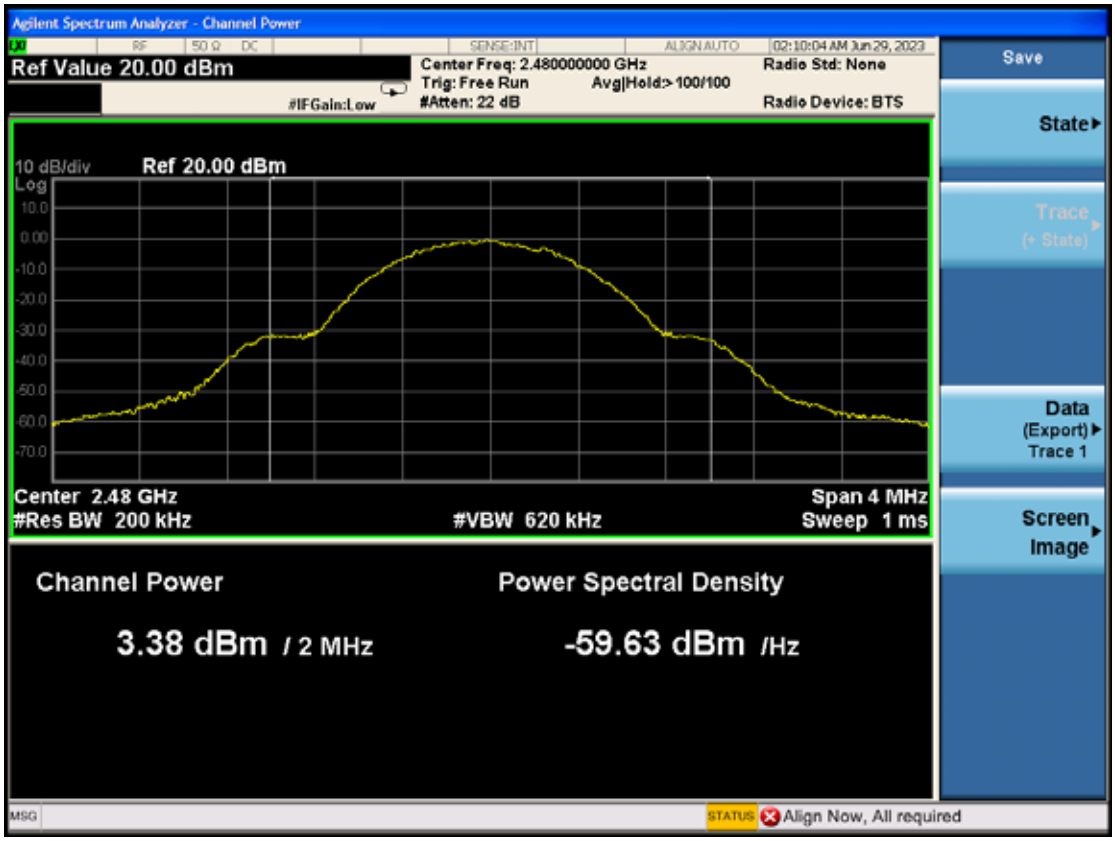
BLE 2402MHz



BLE 2440MHz



BLE 2480MHz


Agilent Spectrum Analyzer - Channel Power
Ref Value 20.00 dBm
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 22 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
02:10:04 AM Jun 29, 2023
Save
State
Trace
(+ State)
Data
(Export)
Trace 1
Screen
Image
10 dB/div
Ref 20.00 dBm
Log
Center 2.48 GHz
#Res BW 200 kHz
#VBW 620 kHz
Span 4 MHz
Sweep 1 ms
Channel Power
3.38 dBm / 2 MHz
Power Spectral Density
-59.63 dBm /Hz
MSG
STATUS
Align Now, All required

8. POWER SPECTRAL DENSITY MEASUREMENT

8.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	PXA signal analyzer	Agilent	N9030A	MY53120217	2023-03-25	1 Year

8.2. Block Diagram of Test Setup

The same as section 6.2.

8.3. Specification Limits

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band.

8.4. Test Procedure

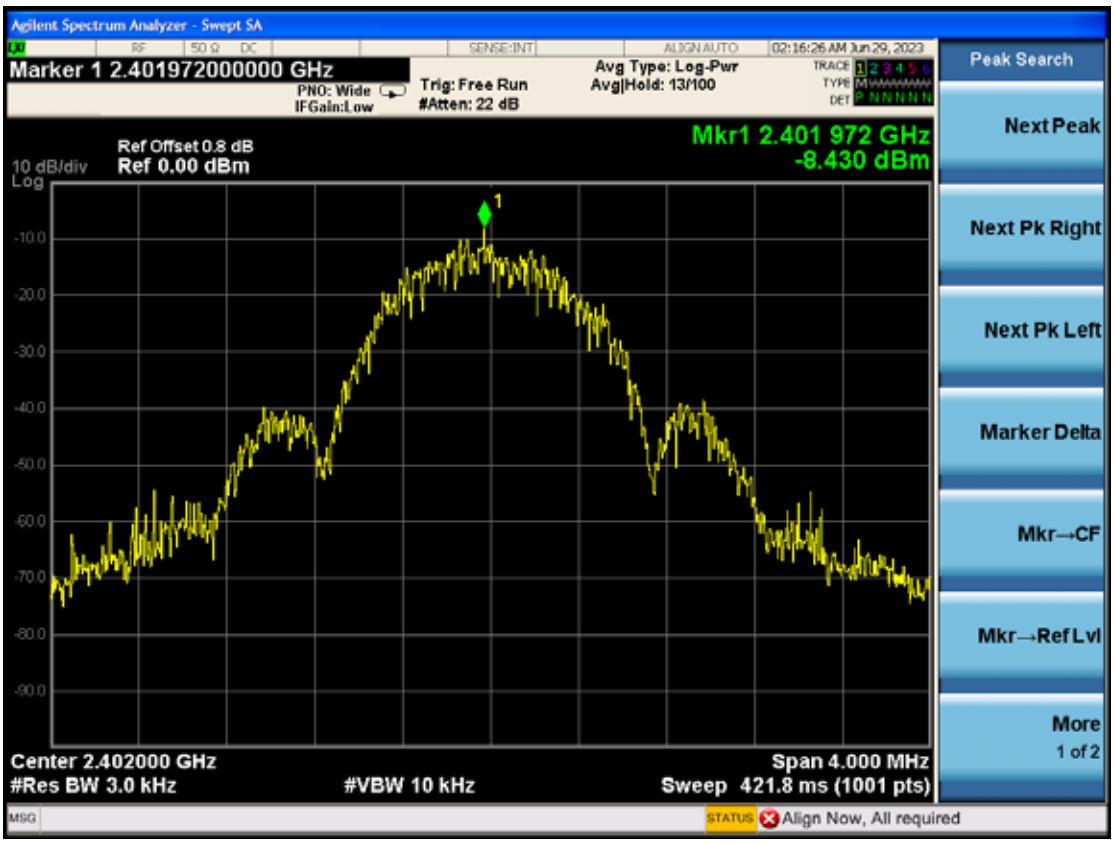
(1) Set analyzer center frequency to DTS channel center frequency.
(2) Set the span to 1.5 times the DTS bandwidth.
(3) Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
(4) Set the VBW ≥ 3 × RBW.
(5) Detector = peak.
(6) Sweep time = auto couple.
(7) Trace mode = max hold.
(8) Allow trace to fully stabilize.
(9) Use the peak marker function to determine the maximum amplitude level.

8.5. Test Results

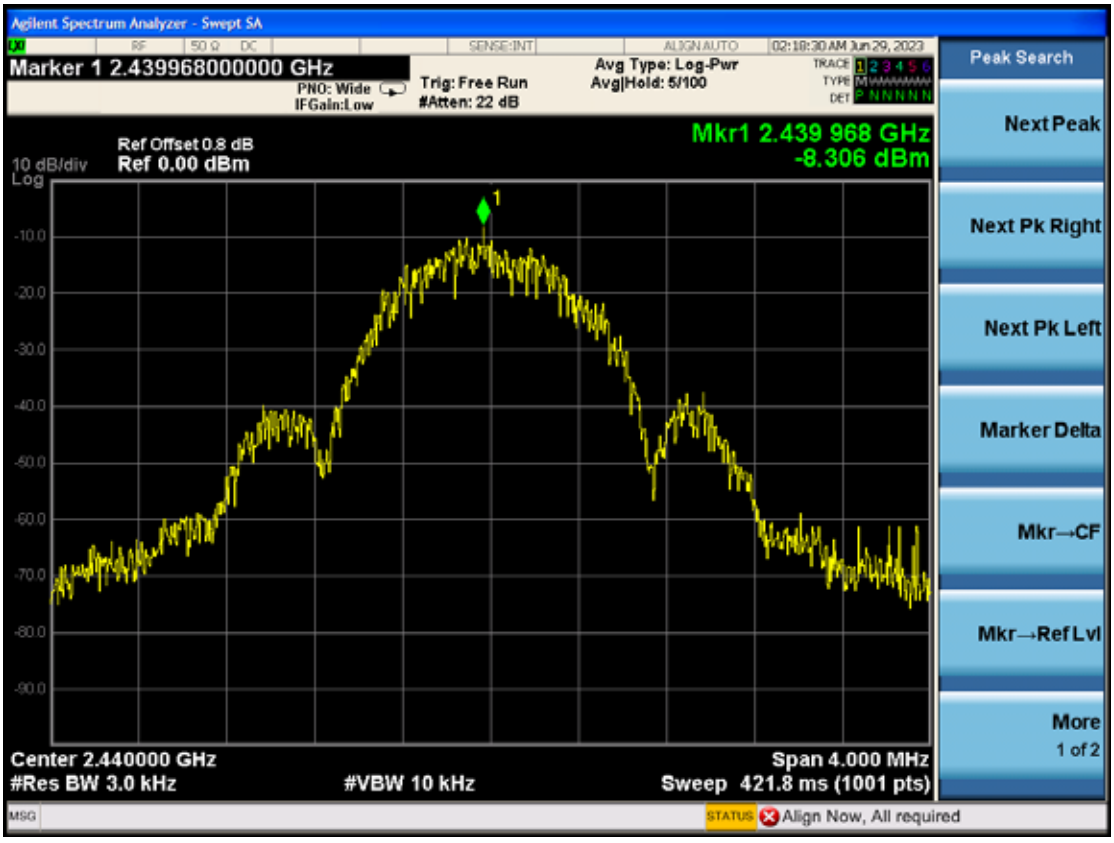
PASSED. All the test results are attached in next page.

Mode	Frequency (MHz)	Duty Cycle Factor	Reading (dBm)	Result (dBm)	Limit (dBm/3kHz)
BLE	2402	2.04	-8.430	-6.39	8
	2440	2.07	-8.306	-6.236	
	2480	2.05	-9.944	-7.894	

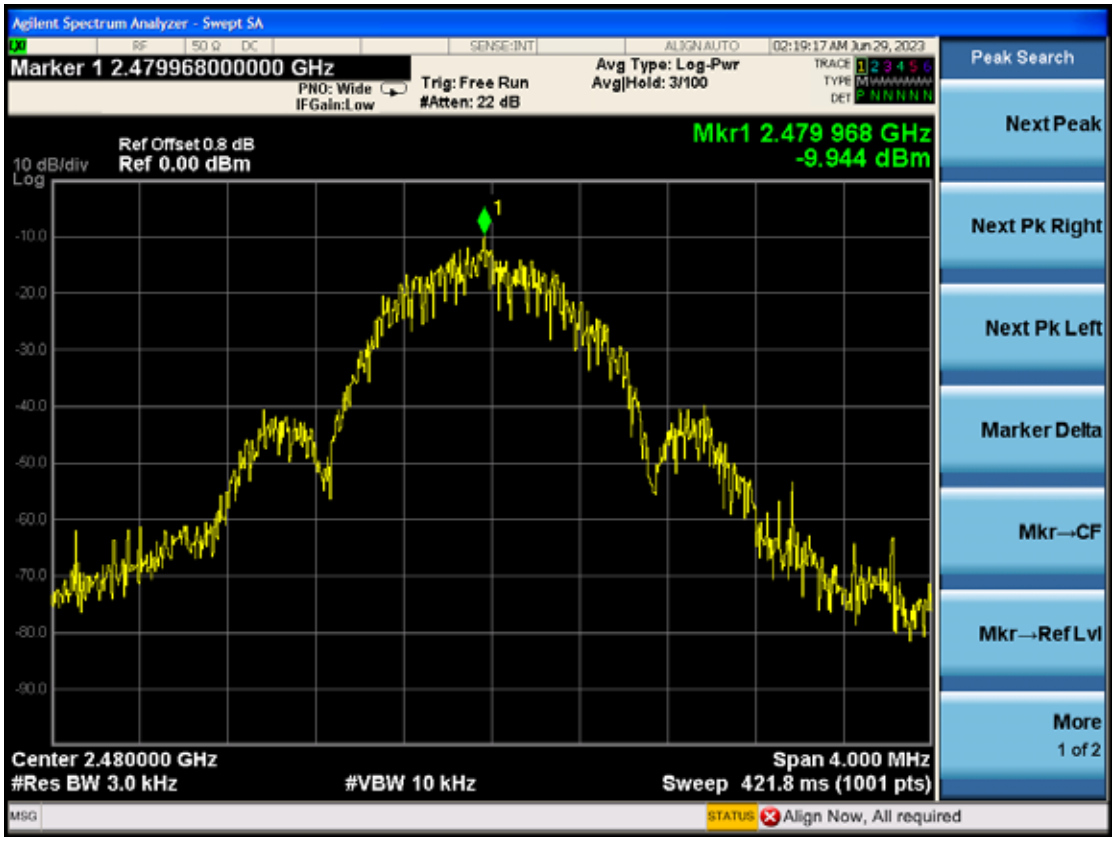
BLE 2402MHz



BLE 2440MHz



BLE 2480MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.479968000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 3/100
02:19:17 AM Jun 29, 2023
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Ref Offset 0.8 dB
10 dB/div
Ref 0.00 dBm
Log
Mkr1 2.479 968 GHz
-9.944 dBm
Center 2.480000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 4.000 MHz
Sweep 421.8 ms (1001 pts)
Align Now, All required

9. EMISSION LIMITATIONS MEASUREMENT

9.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	PXA signal analyzer	Agilent	N9030A	MY53120217	2023-03-25	1 Year

9.2. Block Diagram of Test Setup

The same as section 6.2.

9.3. Specification Limits

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, that the required attenuation shall be 30 dB instead of 20 dB.

9.4. Test Procedure

Following measurement procedure is reference to KDB 558074 D01 DTS Meas Guidance v05r02:

(1) Set analyzer center frequency to DTS channel center frequency.

(2) Set the span to 1.5 times the DTS bandwidth.

(3) Set the RBW to: 100 kHz.

(4) Set the VBW $\geq$ 3 × RBW.

(5) Detector = peak.

(6) Sweep time = auto couple.

(7) Trace mode = max hold.

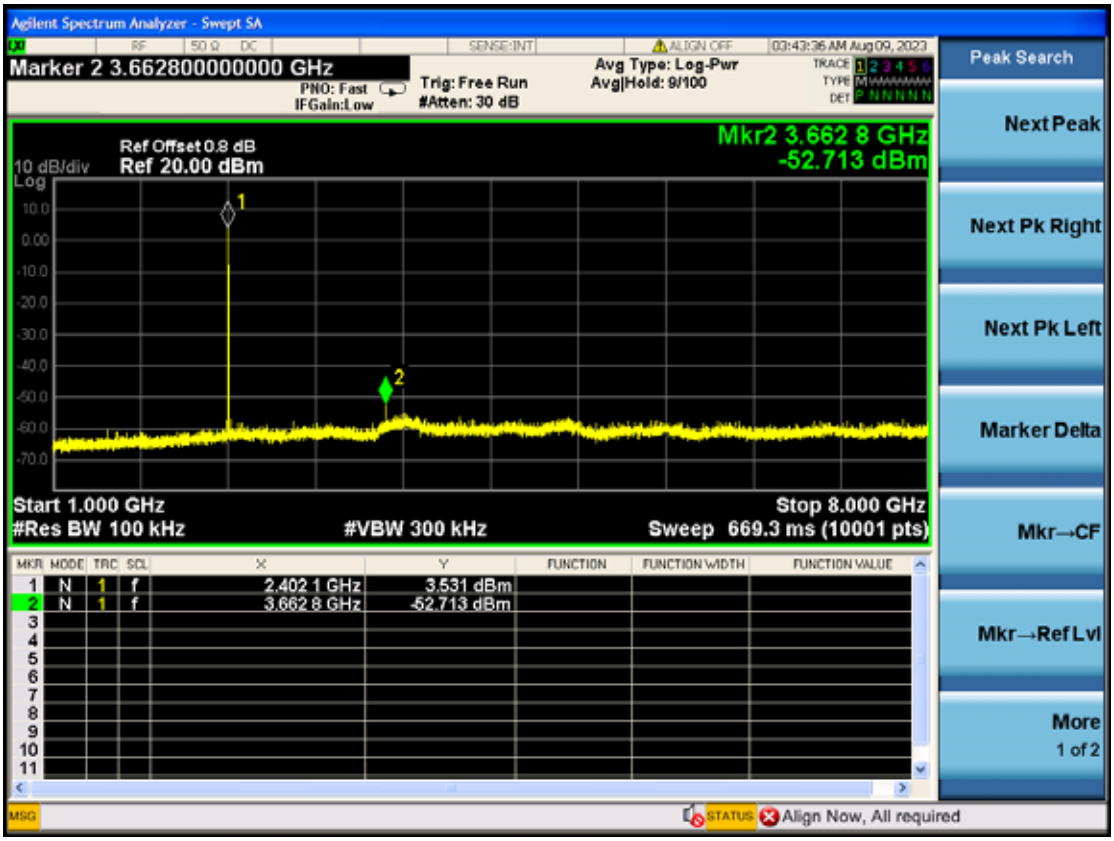
(8) Allow trace to fully stabilize to find the max level.

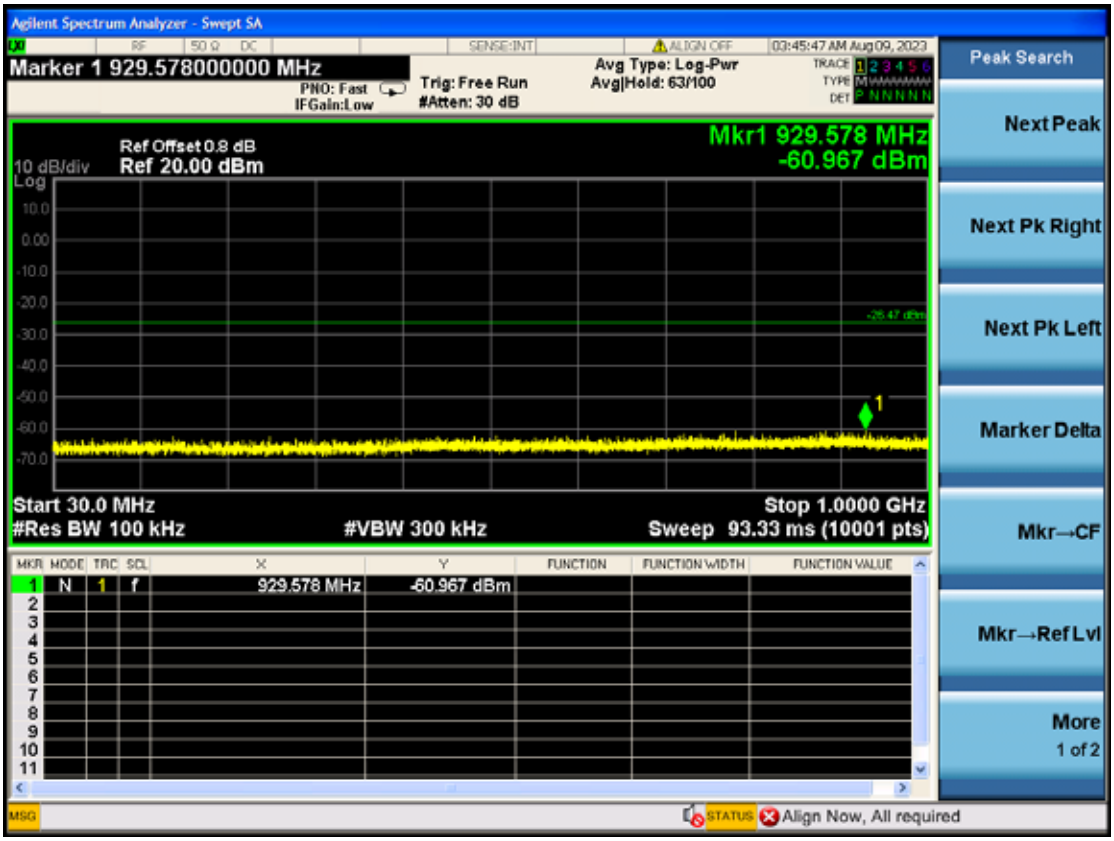
9.5. Test Results

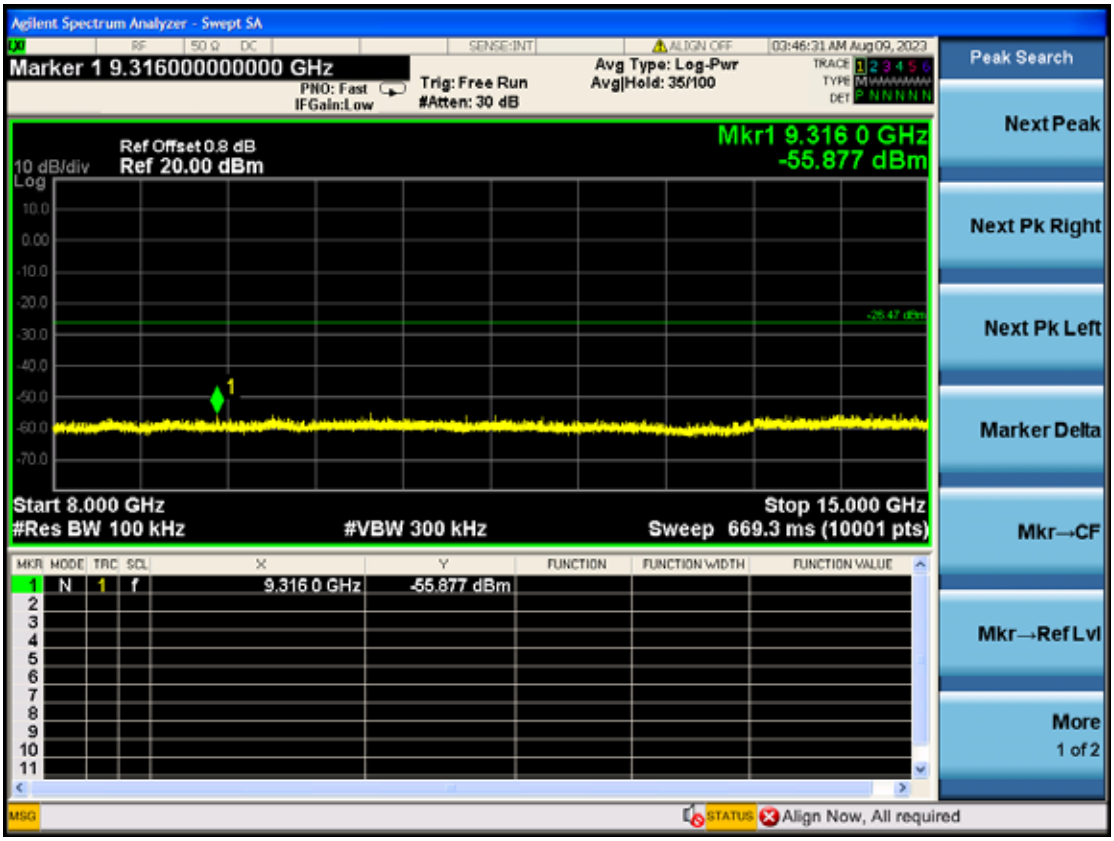
PASSED. All the test results are attached in next pages.

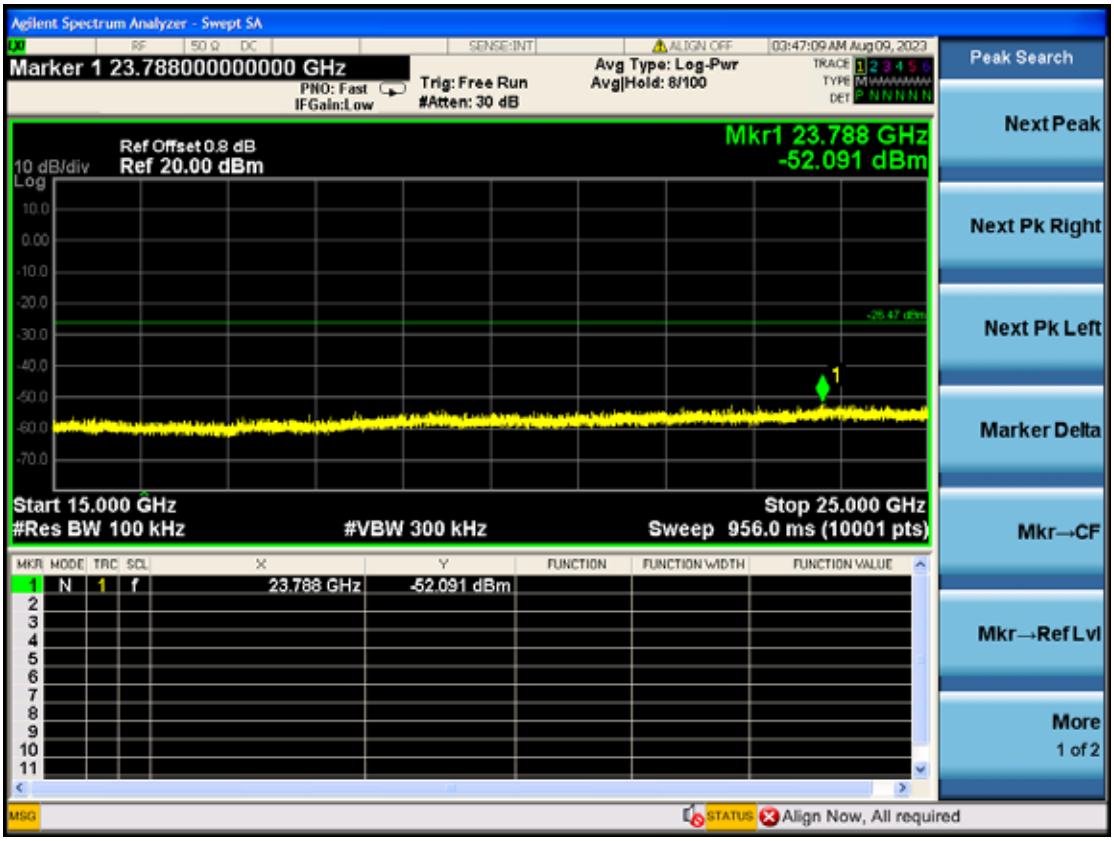
Item	Frequency (MHz)	Frequency (MHz)	Amplitude (dBm)
BLE	2402	2402.1	3.531
		3662.8	-52.713
		929.578	-60.967
		9316	-55.877
		23788	-52.091
		2390	-64.744
		2400	-52.903
	2440	2439.9	3.785
		3632.7	-53.670
		804.736	-60.381
		11103.1	-55.365
		23.876	-50.563
	2480	2479.8	4.555
		3618	-54.595
		803.187	-60.150
		13888.4	-54.888
		24256	-51.884
		2483.5	-60.650

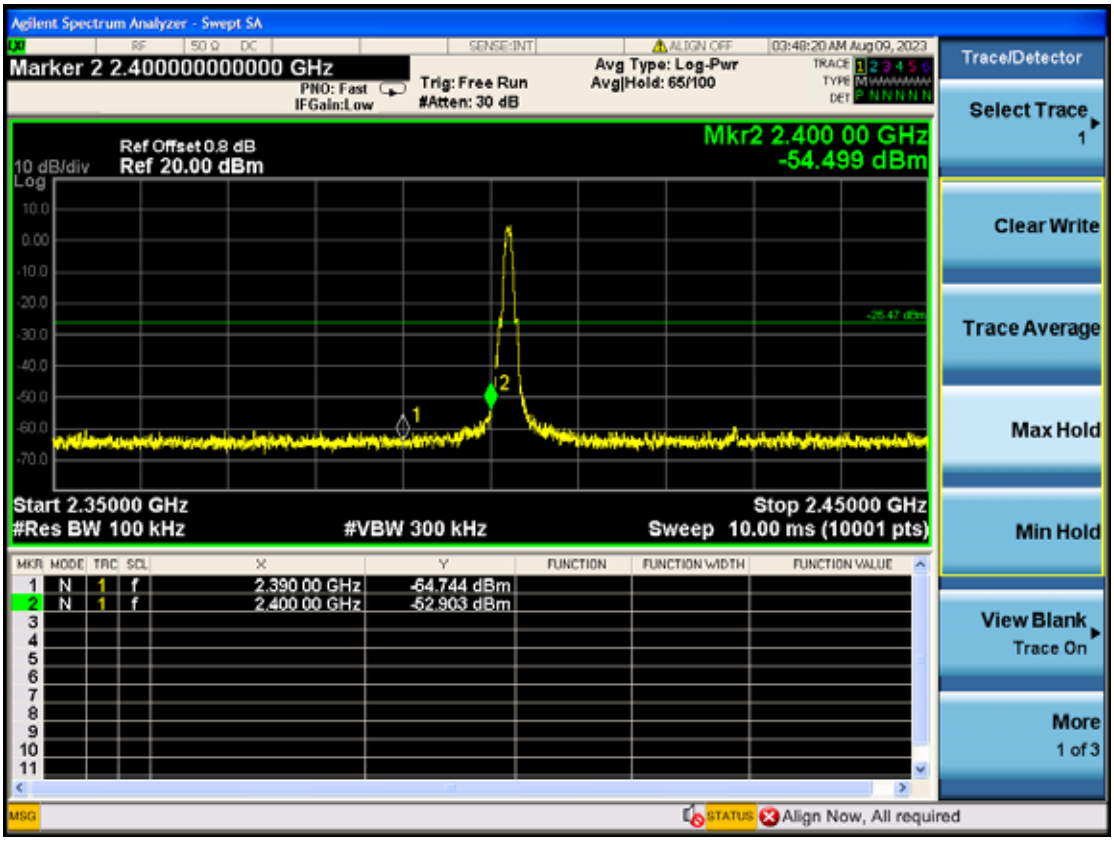
BLE 2402MHz


Agilent Spectrum Analyzer - Swept SA
Marker 2 3.662800000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 9/100
03:43:36 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr2 3.662 8 GHz
-52.713 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 8.000 GHz
Sweep 669.3 ms (10001 pts)
1 N 1 f 2.402 1 GHz 3.531 dBm
2 N 1 f 3.662 8 GHz -52.713 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required

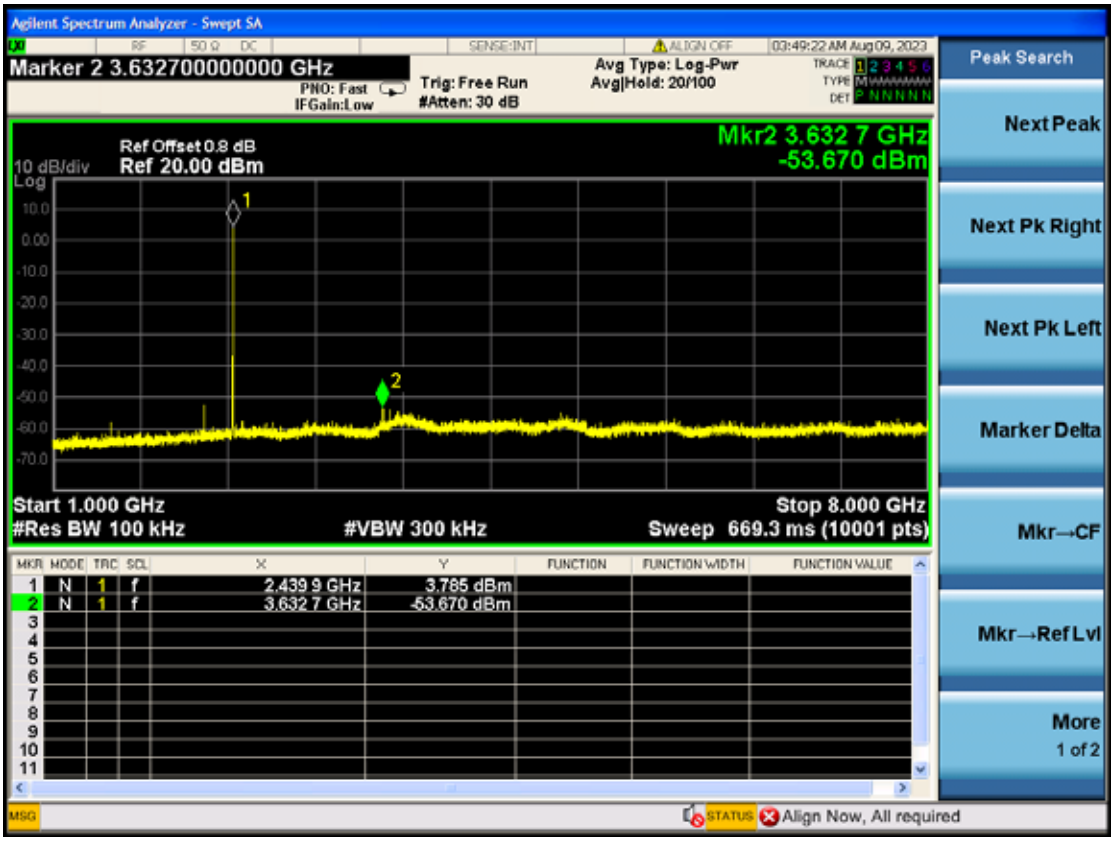

Agilent Spectrum Analyzer - Swept SA
Marker 1 929.578000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 63/100
03:45:47 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr1 929.578 MHz
-60.967 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.33 ms (10001 pts)
1 N 1 f 929.578 MHz -60.967 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required

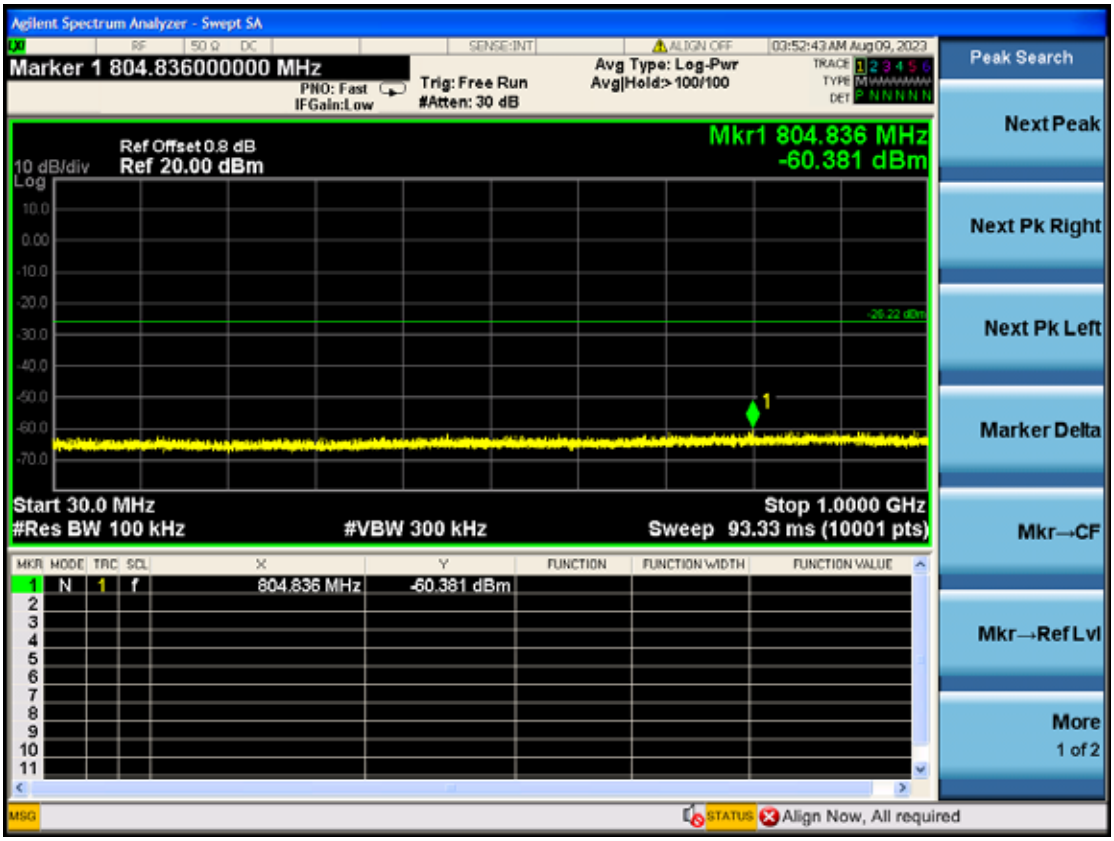

Agilent Spectrum Analyzer - Swept SA
Marker 1 9.316000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
03:46:31 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr1 9.316 0 GHz
-55.877 dBm
Start 8.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 669.3 ms (10001 pts)
1 N 1 f 9.316 0 GHz -55.877 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required

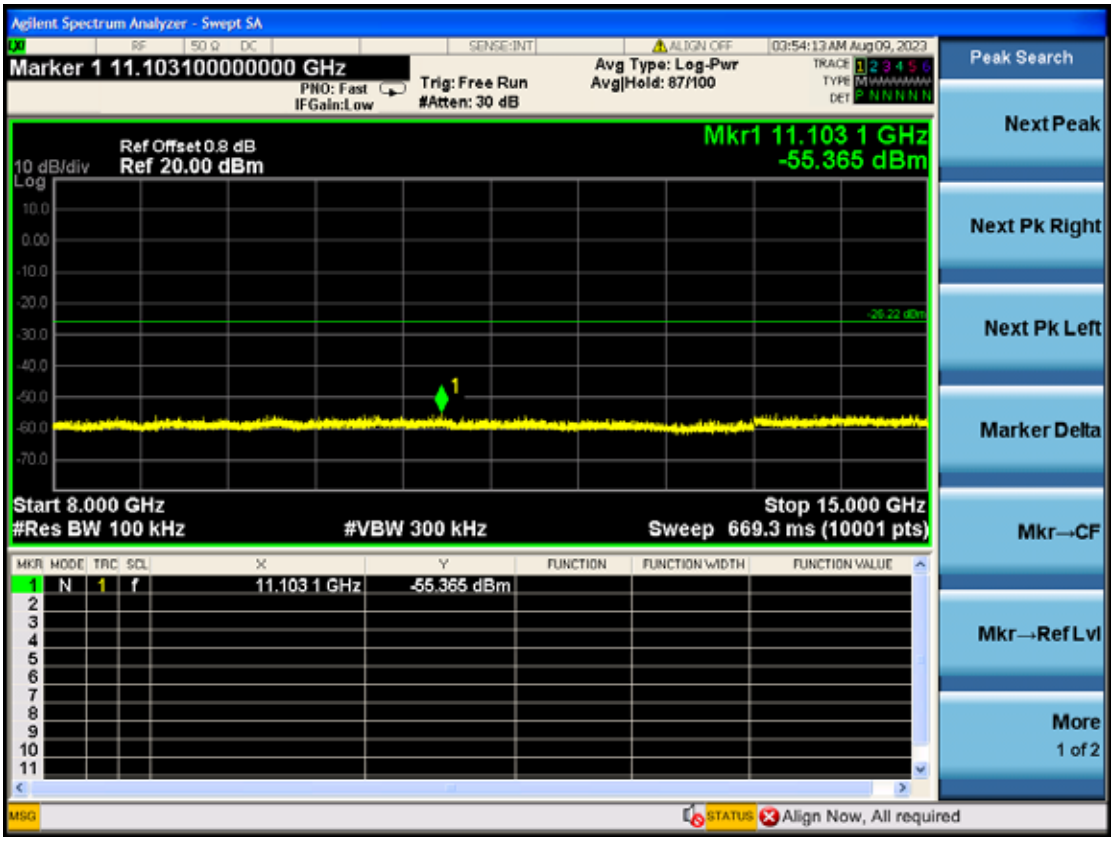

Agilent Spectrum Analyzer - Swept SA
Marker 1 23.788000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 8/100
03:47:09 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr1 23.788 GHz
-52.091 dBm
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 956.0 ms (10001 pts)
1 N 1 f 23.788 GHz -52.091 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required

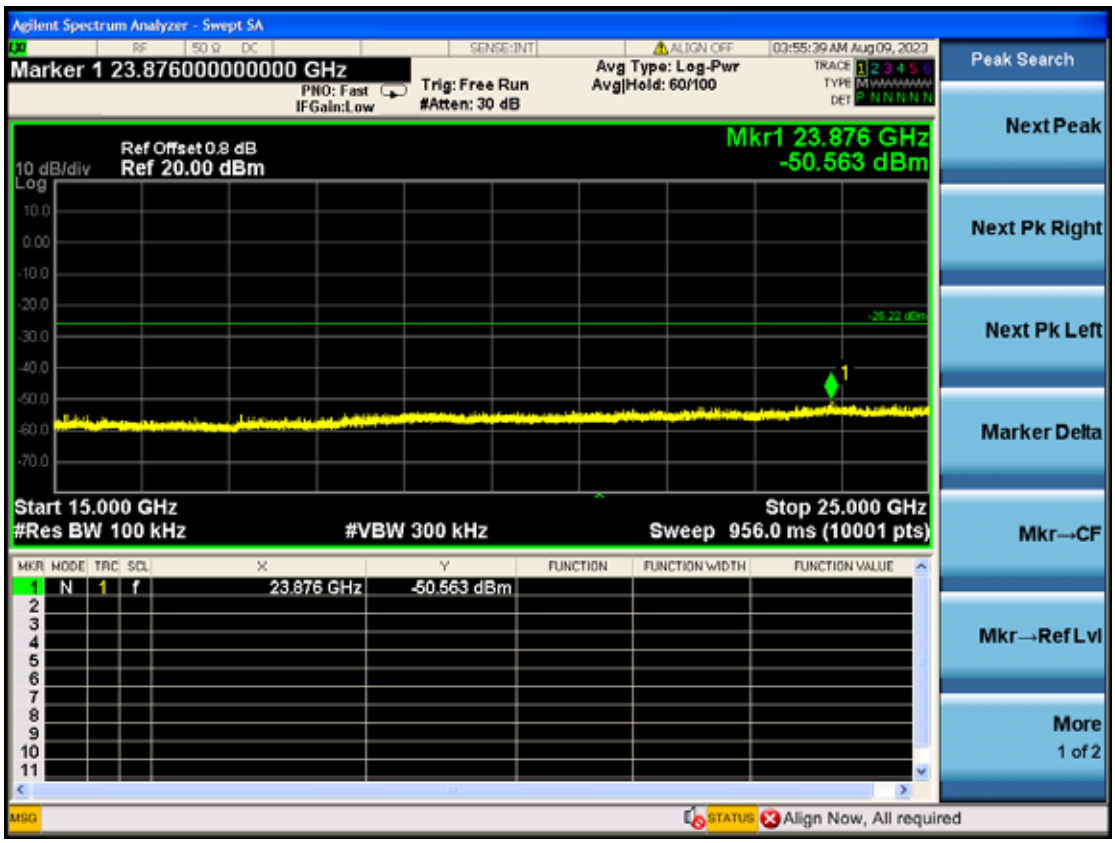

Agilent Spectrum Analyzer - Swept SA
Marker 2 2.400000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 65/100
03:49:20 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr2 2.400 00 GHz
-54.499 dBm
Start 2.35000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.45000 GHz
Sweep 10.00 ms (10001 pts)
1 N 1 f 2.390 00 GHz -64.744 dBm
2 N 1 f 2.400 00 GHz -52.903 dBm
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3
Align Now, All required

BLE 2440MHz

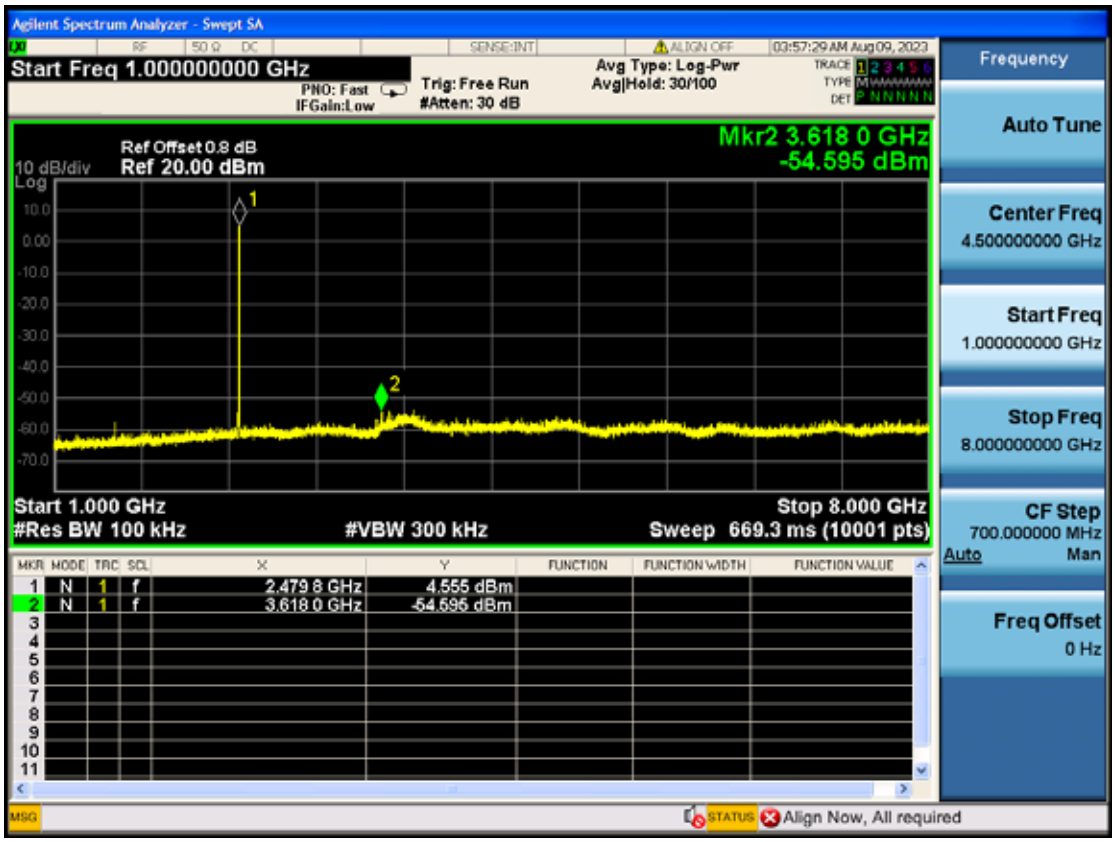

Agilent Spectrum Analyzer - Swept SA
Marker 2 3.632700000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 20/100
03:49:22 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr2 3.632 7 GHz
-53.670 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 8.000 GHz
Sweep 669.3 ms (10001 pts)
1 N 1 f 2.439 9 GHz 3.785 dBm
2 N 1 f 3.632 7 GHz -53.670 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required

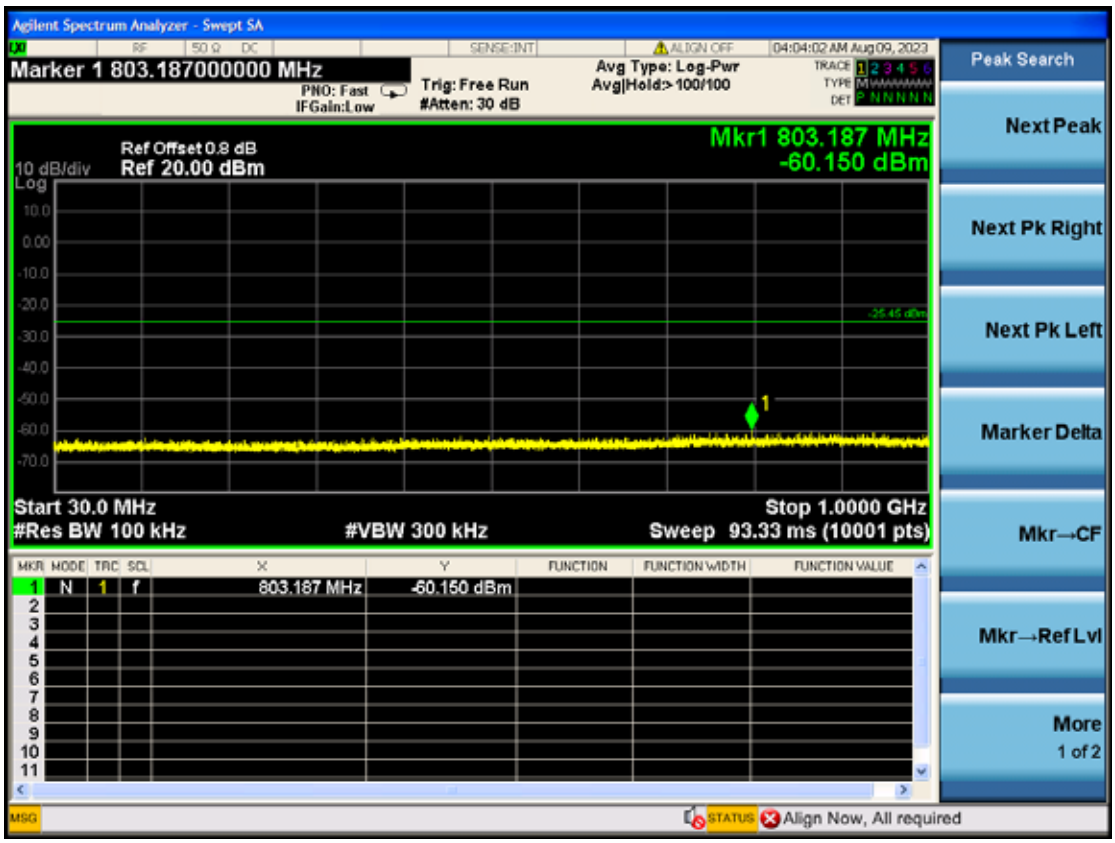

Agilent Spectrum Analyzer - Swept SA
Marker 1 804.836000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
03:52:43 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr1 804.836 MHz
-60.381 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.33 ms (10001 pts)
1 N 1 f 804.836 MHz -60.381 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required

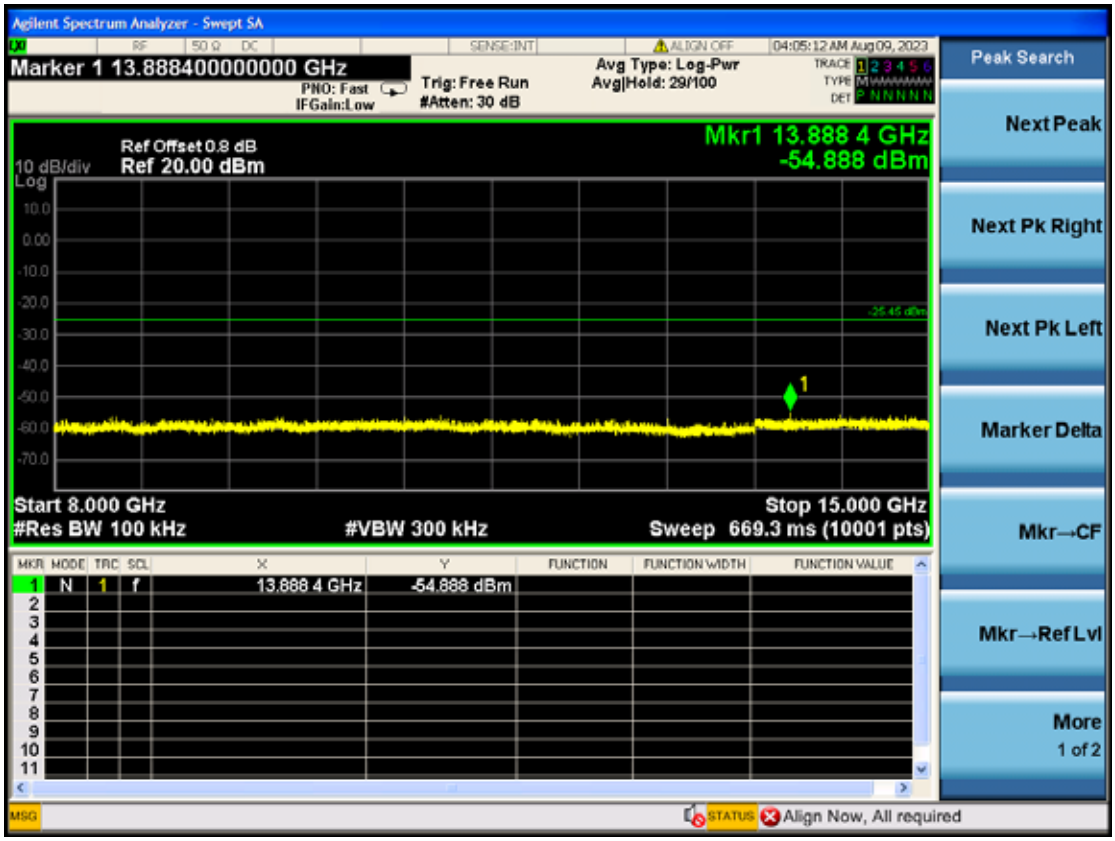

Agilent Spectrum Analyzer - Swept SA
Marker 1 11.103100000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 87/100
03:54:13 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr1 11.103 1 GHz
-55.365 dBm
Start 8.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 669.3 ms (10001 pts)
1 N 1 f 11.103 1 GHz -55.365 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required

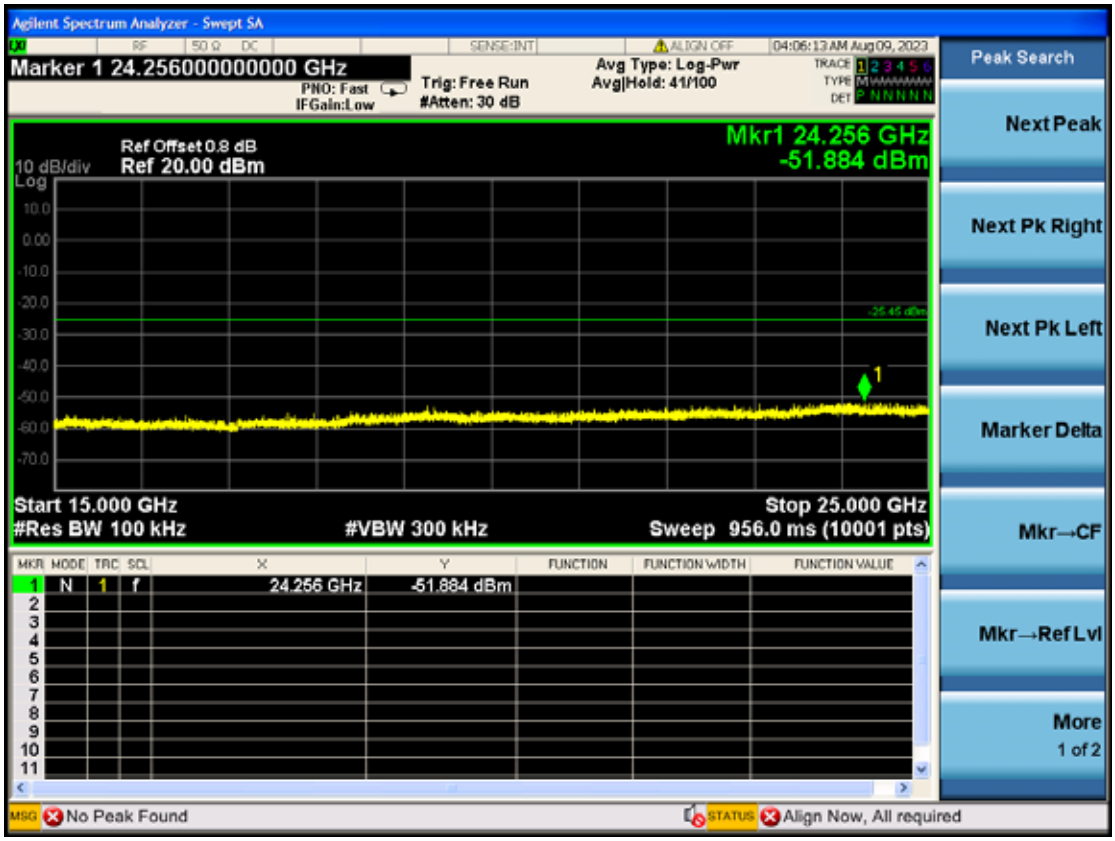

Agilent Spectrum Analyzer - Swept SA
Marker 1 23.876000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 60/100
03:55:39 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 23.876 GHz
-50.563 dBm
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 956.0 ms (10001 pts)
1 N 1 f 23.876 GHz -50.563 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required

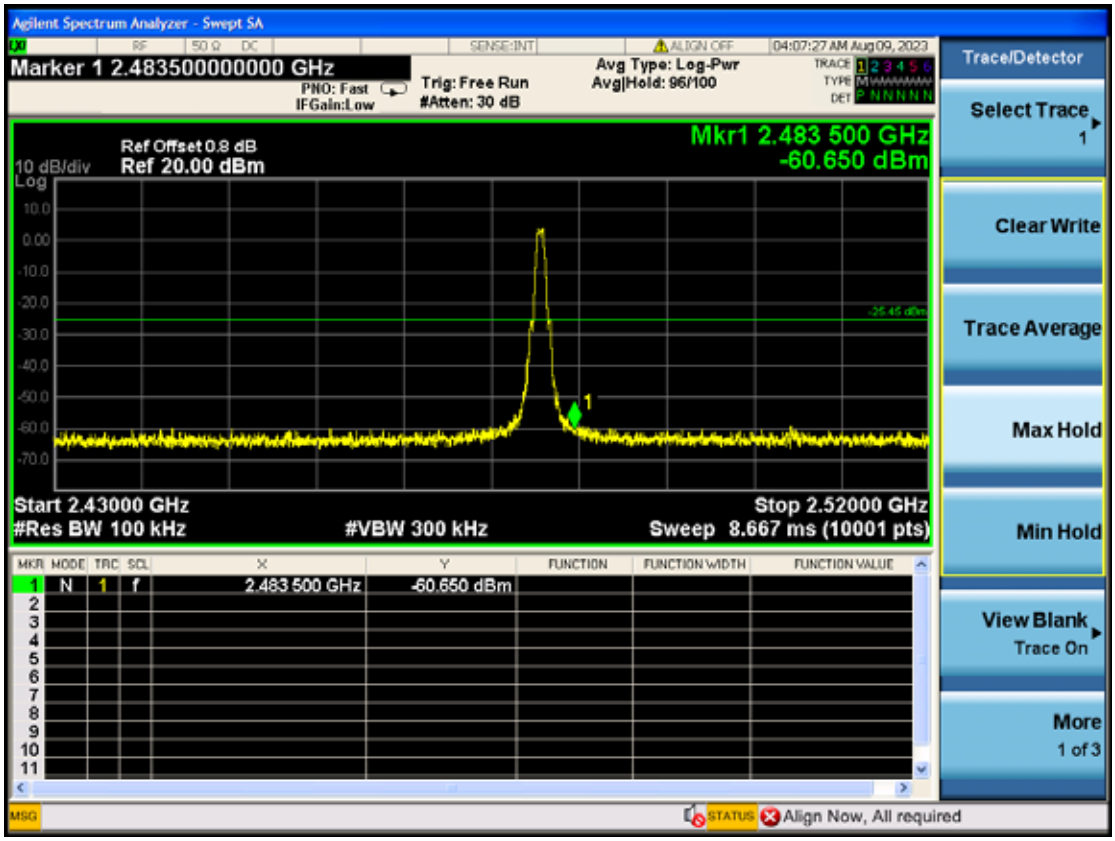
BLE 2480MHz


Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 30/100
03:57:29 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr2 3.618 0 GHz
-54.595 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 8.000 GHz
Sweep 669.3 ms (10001 pts)
1 N 1 f 2.479 8 GHz 4.555 dBm
2 N 1 f 3.618 0 GHz -54.595 dBm
Frequency
Auto Tune
Center Freq
4.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
8.000000000 GHz
CF Step
700.000000 MHz
Auto
Man
Freq Offset
0 Hz
Align Now, All required


Agilent Spectrum Analyzer - Swept SA
Marker 1 803.187000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
04:04:02 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 803.187 MHz
-60.150 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.33 ms (10001 pts)
1 N 1 f 803.187 MHz -60.150 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required


Agilent Spectrum Analyzer - Swept SA
Marker 1 13.888400000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 29/100
04:05:12 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 13.888 4 GHz
-54.888 dBm
Start 8.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 669.3 ms (10001 pts)
1 N 1 f 13.888 4 GHz -54.888 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Align Now, All required


Agilent Spectrum Analyzer - Swept SA
Marker 1 24.256000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 41/100
04:06:13 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr1 24.256 GHz
-51.884 dBm
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 956.0 ms (10001 pts)
1 N 1 f 24.256 GHz -51.884 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
No Peak Found
Align Now, All required


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.483500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 96/100
04:07:27 AM Aug 09, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 20.00 dBm
Mkr1 2.483 500 GHz
-60.650 dBm
Start 2.43000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.52000 GHz
Sweep 8.667 ms (10001 pts)
1 N 1 f 2.483 500 GHz -60.650 dBm
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3
Align Now, All required

10. DEVIATION TO TEST SPECIFICATIONS

【NONE】

----------The End----------