

Project No: TM-2605000412P
Report No.: TMWK2605002356KR

FCC ID: SW8SD42300N1

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RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C

Test Standard	FCC Part 15.247
Brand Name	allto
Product name	Fall Detection Sensor
Model No.	SD42300N1
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10-2020 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc.(Wugu Laboratory)

Approved by:



Kevin Tsai
Deputy Manager

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	September 02, 2026	Initial Issue	ALL	Allison Chen
01	October 05, 2026	See the following Note Rev.(01)	ALL	Allison Chen

Note:

Rev.(01)

1. Modify test data for data rate 125Kbps and 500Kbps.



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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Good Way Technology Co., Ltd. 3F, No. 135, Ln. 235, Baociao Rd., Sindian Dist., New Taipei City 231, Taiwan
Manufacturer	Good Way Technology Co., Ltd. 3F, No. 135, Ln. 235, Baociao Rd., Sindian Dist., New Taipei City 231, Taiwan
Equipment	Fall Detection Sensor
Model No.	SD42300N1
Model Discrepancy	N/A
Trade Name	allto
Received Date	May 28, 2026
Date of Test	June 08 ~ October 02, 2026
Power Operation	Power from Adapter. (Optional) Brand / Model: Xiaomi / MDY-19-EM I/P: 100-240Vac, 50/60Hz, 2A O/P (Rating): USB C1/C2: 5V/3A, 9V/3A, 15V/3A, 11V/6.1A, 20V/4.5A, 90W
HW Version	A1.1
SW Version	1.1.7

Remark:

1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.



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1.2 EUT CHANNEL INFORMATION

Frequency Range	2402MHz-2480MHz
Modulation Type	GFSK for BLE 125 Kbps GFSK for BLE 500 Kbps GFSK for BLE 1 Mbps GFSK for BLE 2 Mbps
Number of channel	40 Channels

Remark:

Refer as ANSI C63.10-2020 for test channels.

Number of frequencies to be tested		
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☐ PIFA ☒ PCB ☐ Dipole ☐ FPC Antenna
Antenna Gain	Brand / Model: ESPRESSIF / ESP-ANT E Gain: 2.7 dBi
Antenna Connector	IPEX

Notes:

1. The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203.

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	±2.654dB
Channel Bandwidth	±0.216dB
RF output power (Spectrum)	±0.884dB
RF output power (Power Meter + Power sensor)	±0.442dB
Power Spectral density	±2.105dB
Conducted Bandedge	±2.104dB
Conducted Spurious Emission	±2.104dB
Radiated Emission_9kHz-30MHz	± 2.998 dB
Radiated Emission_30MHz-200MHz	± 3.308 dB
Radiated Emission_200MHz-1GHz	± 3.506 dB
Radiated Emission_1GHz-6GHz	± 4.068 dB
Radiated Emission_6GHz-18GHz	± 4.120 dB
Radiated Emission_18GHz-26GHz	± 3.411 dB
Radiated Emission_26GHz-40GHz	± 3.410 dB

Remark:

- 1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	Tony Chao	-
Radiation	Tony Chao, Ben Yang	-
RF Conducted	Jerry Chang	-

Remark: The lab has been recognized as the FCC accredited lab. under the KDB 974614 D01 and is listed in the FCC pubic Access Link (PAL) database, FCC Registration No. :444940, the FCC Designation No.:TW1309

1.6 INSTRUMENT CALIBRATION

Conducted_FCC/IC/NCC (All)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EXA Signal Analyzer	Agilent Technologies	N9001A	MY53400256	2025-11-26	2026-11-25
PXA Signal Analyzer	Keysight	N9030B	MY62291089	2025-09-24 2026-09-15	2026-09-23 2027-09-14
Power Sensor	Anritsu	MA2411B	1911387	2025-08-21 2026-08-14	2026-08-20 2027-08-13
Power Sensor	Anritsu	MA2411B	1911386	2025-07-07 2026-06-23	2026-07-06 2027-06-22
Power Meter	Anritsu	ML2496A	2136002	2025-07-07 2026-06-23	2026-07-06 2027-06-22
DC Blocks	Marvelous Microwave	MVE6411	MVE-001	2025-08-06 2026-08-05	2026-08-05 2027-08-04
Attenuator	Marvelous Microwave Inc	MVE2213-10	08	2025-11-06	2026-11-05
Software	Radio Test Software Ver. 21				

AC Mains Conduction					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI	100064	2026-05-21	2027-05-20
LISN	TESEQ	LN2-16N	22012	2026-02-04	2027-02-03
Cable	Woken	RFC-SMA-100-NMR-084SFL402	MFR-2Y194	2026-03-20	2027-03-19
Software	e3 V9-210616c				

Remark:

- Each piece of equipment is scheduled for calibration once a year.
- N.C.R. = No Calibration Required.



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966A_Radiated					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Signal Analyzer	Agilent	N9010A	MY52220817	2026-03-13	2027-03-12
Active Loop Antenna	COM-POWER	AL-130	121051	2026-02-04	2027-02-03
Thermo-Hygro Meter	HTC	HTC-1	HTC-D06	2026-05-19	2027-05-18
Bi-Log Antenna	Sunol Sciences	JB1	A052609	2025-12-17	2026-12-16
Bi-Log Antenna	Sunol Sciences	JB3	A030105&532	2026-02-13	2027-02-12
Preamplifier	EMEC	EM330	060609	2026-02-13	2027-02-12
Cable	Huber+Suhner	104PEA	20995+21000+ 182330	2025-08-06 2026-08-05	2026-08-05 2027-08-04
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2025-12-19	2026-12-18
Preamplifier	HP	8449B	3008A00965	2025-12-17	2026-12-16
Cable	EMCI	EMC101G	1508S0193+23 0205+250412	2026-01-14	2027-01-13
Attenuator	Mini-Circuits	BW-S9W5	BWS9W5-09- 966A-01	2026-02-05	2027-02-04
High Pass Filters	Titan Microwave	T04H30001800 070S01	22011402-4	2026-06-01	2027-05-31
Pre-Amplifier	EMC	EMC184045SE	980860	2025-11-19	2026-11-18
Horn Antenna	SCHWARZBEC K	BBHA9170	1047	2025-12-09	2026-12-08
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Software	e3 V9-210616c				

Remark:

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.



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1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

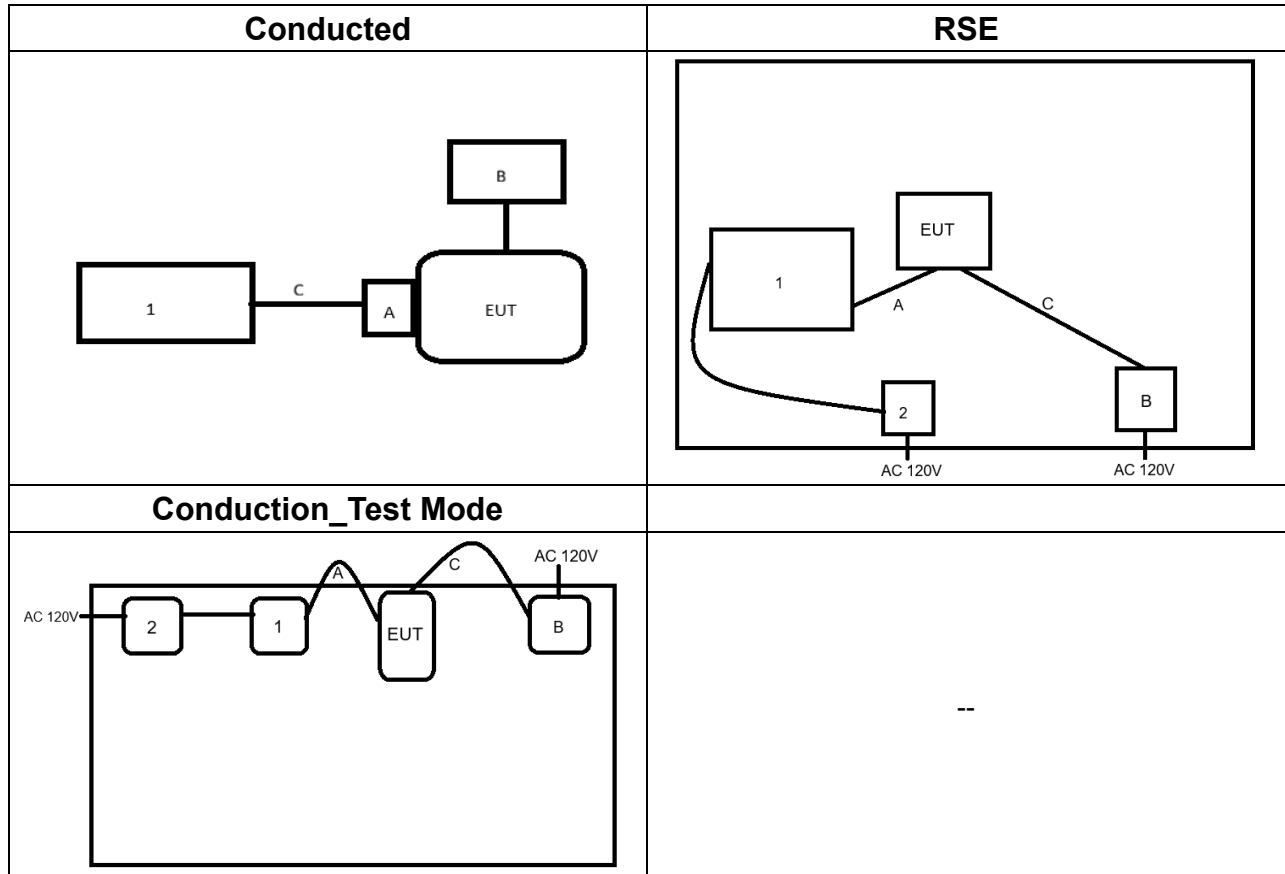
EUT Accessories Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
	N/A				

Support Equipment (Conducted)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(B)	Lenovo	T470	N/A	N/A
A	UART to USB Cable	N/A	N/A	N/A	N/A
B	Adapter (Optional)	XIAOMI	MDY-19-EM	N/A	N/A
C	TypeC Cable (Optional)	N/A	N/A	N/A	N/A

Support Equipment (RSE)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A
2	Adapter	Lenovo	ADLX45DLC3A	N/A	N/A
A	UART to USB Cable	N/A	N/A	N/A	N/A
B	Adapter (Optional)	XIAOMI	MDY-19-EM	N/A	N/A
C	TypeC Cable (Optional)	N/A	N/A	N/A	N/A

Support Equipment (Conduction)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A
2	Adapter	Lenovo	ADLX45DLC3A	N/A	N/A
A	UART to USB Cable	N/A	N/A	N/A	N/A
B	Adapter (Optional)	XIAOMI	MDY-19-EM	N/A	N/A
C	TypeC Cable (Optional)	N/A	N/A	N/A	N/A

1.8 TEST SET UP DIAGRAM



1.9 TEST PROGRAM

This EUT use "EspRFTTestTool" software to set the frequency, modulation and power to allow continuous transmission of the sample.

EspRFTTestTool_v3.6

1.10 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10-2020, FCC Part 2, FCC Part 15.247 and KDB 558074.



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2. TEST SUMMARY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	Pass
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Band Edge	Pass
15.247(d)	4.5	Conducted Spurious Emission	Pass
15.247(d) 15.205, 15.209	4.6	Radiation Band Edge	Pass
15.247(d) 15.205, 15.209	4.6	Radiation Spurious Emission	Pass



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3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	BLE Mode (125 Kbps) BLE Mode (500 Kbps) BLE Mode (1Mbps) BLE Mode (2Mbps)
Test Channel Frequencies	1.Lowest Channel : 2402MHz 2.Middle Channel : 2442MHz 3.Highest Channel : 2480MHz

Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conduction Emission	
Test Condition	AC Power line conduction emission for line and neutral
Power supply Mode	Mode 1: EUT power by Adapter
Worst Mode	☒ Mode 1

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT power by Adapter
Worst Mode	☒ Mode 1
Worst Position	☐ Placed in fixed position. ☐ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☒ Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by Adapter
Worst Mode	☒ Mode 1

Remark:

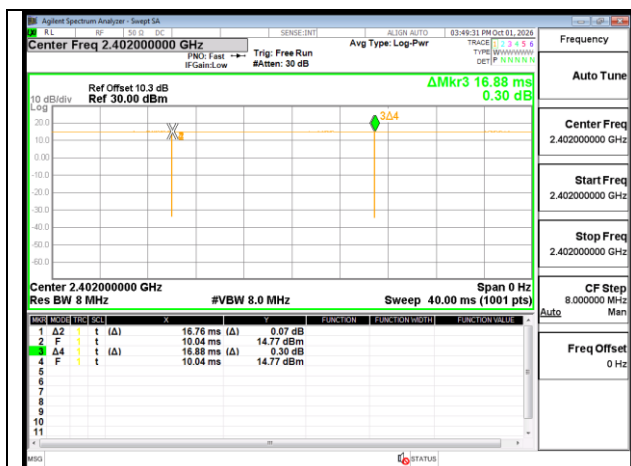
1. The worst mode was record in this test report.
2. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the minimum margin for radiated emission(Bandedge & Harmonic) as worse case.
3. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Z-Plane) were recorded in this report.

3.3 EUT DUTY CYCLE

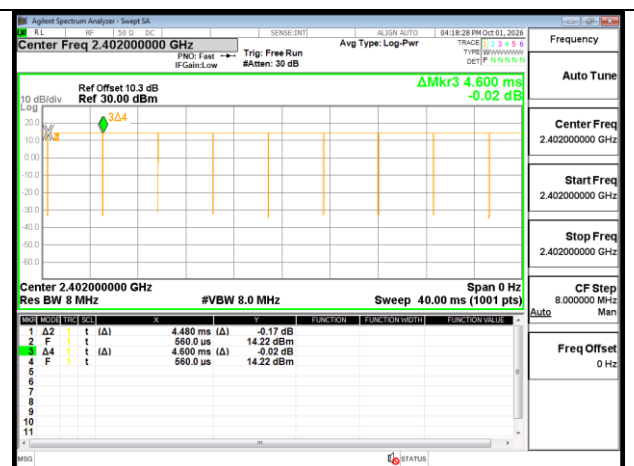
Temperature: 20.7~26.3°C
Humidity: 53~66% RH

Test Date: June 08~October 02, 2026
Tested by: Jerry Chang

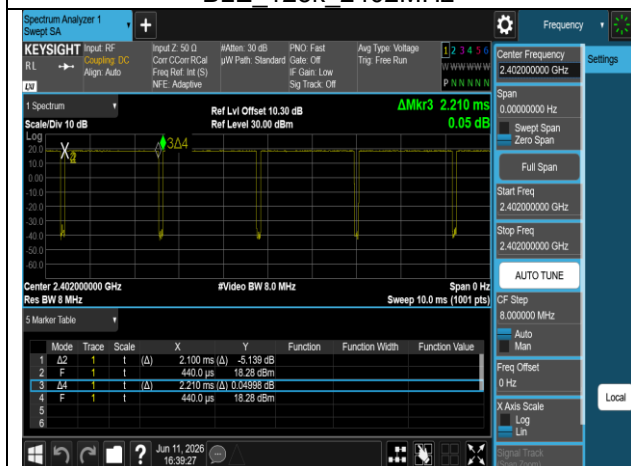
Mode	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
BLE 125k	99.29	0.03	0.06	0.01
BLE 500k	97.39	0.11	0.22	1.00
BLE 1M	95.02	0.22	0.48	1.00
BLE 2M	90.60	0.43	0.94	1.00



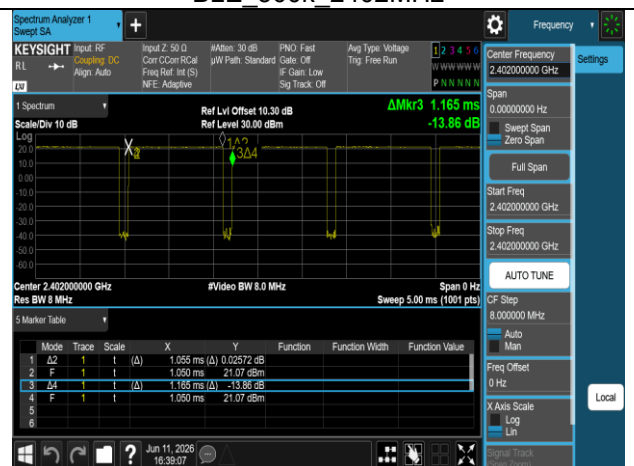
BLE 125k 2402MHz



BLE 500k 2402MHz



BLE 1M 2402MHz



BLE 2M 2402MHz

4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a),

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

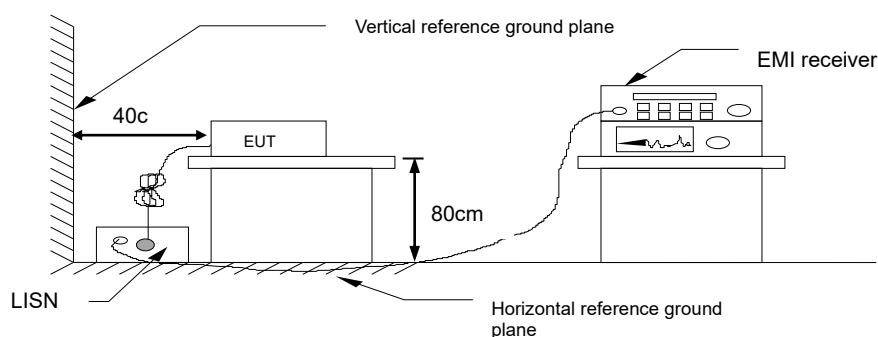
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI C63.10-2020,

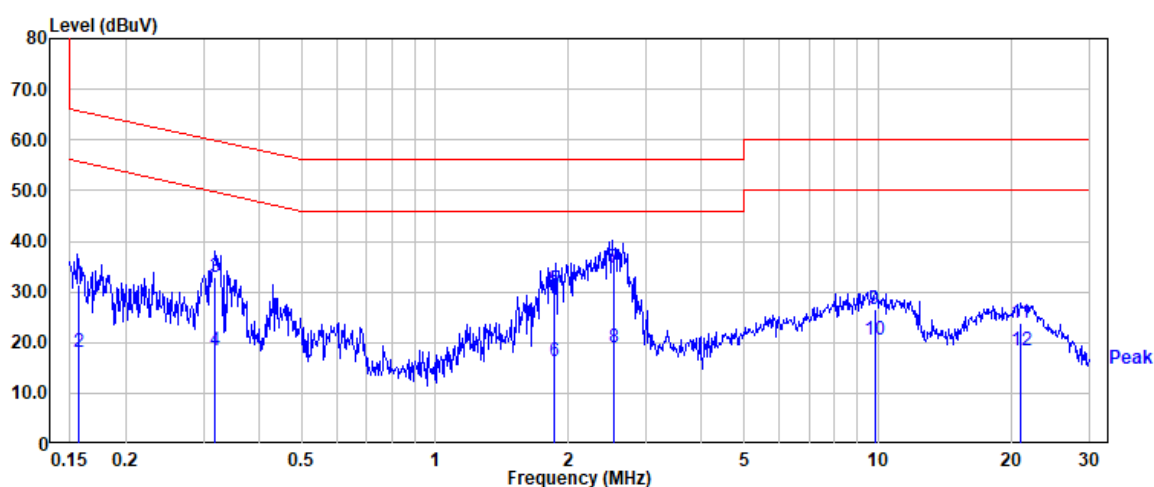
1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup



4.1.4 Test Result

Project No : TM-2605000412P Test Date : 2026-06-24
Operation Band : BLE Temp./Humi. : 25°C / 65%
Test Chamber : Conduction Engineer : Tony.Chao
Probe : Line Test Voltage : AC 120V/60Hz
Note :



Freq	Read Level	Factor	Actual FS	Limit	Margin	Detector Mode
-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB	dBuV	dBuV	dB	PK/QP/AV
0.156	31.29	0.11	31.40	65.65	-34.25	QP
0.156	18.10	0.11	18.21	55.65	-37.44	Average
0.319	32.94	0.08	33.02	59.73	-26.71	QP
0.319	18.45	0.08	18.53	49.73	-31.20	Average
1.861	30.43	0.12	30.55	56.00	-25.45	QP
1.861	16.32	0.12	16.44	46.00	-29.56	Average
2.529	34.68	0.13	34.81	56.00	-21.19	QP
2.529	18.88	0.13	19.01	46.00	-26.99	Average
9.844	26.38	0.25	26.63	60.00	-33.37	QP
9.844	20.30	0.25	20.55	50.00	-29.45	Average
21.006	23.51	0.38	23.89	60.00	-36.11	QP
21.006	17.97	0.38	18.35	50.00	-31.65	Average

Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS – Limit



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Operation Band : BLE

Test Chamber : Conduction

Probe : Neutral

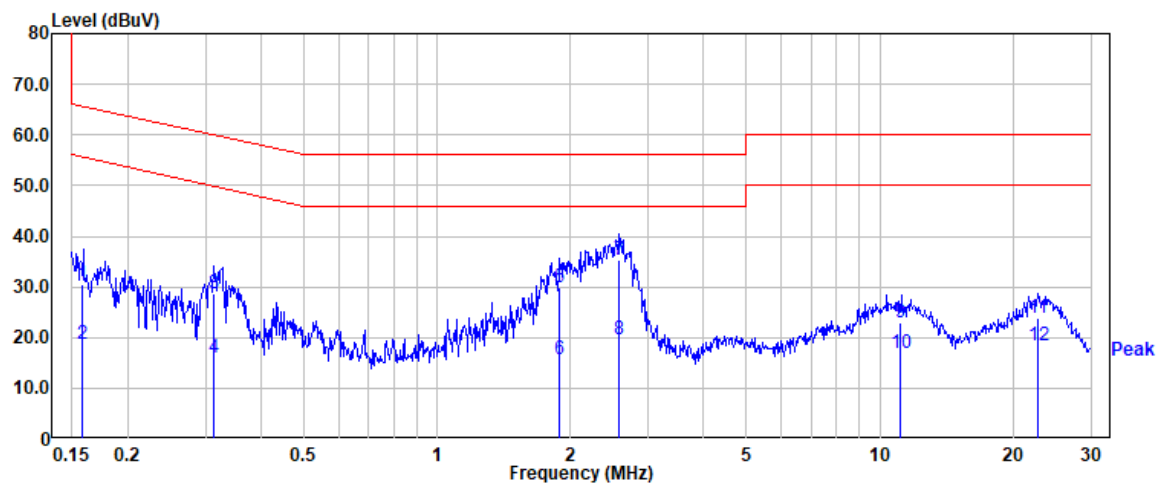
Note :

Test Date : 2026-06-24

Temp./Humi. : 25°C / 65%

Engineer : Tony.Chao

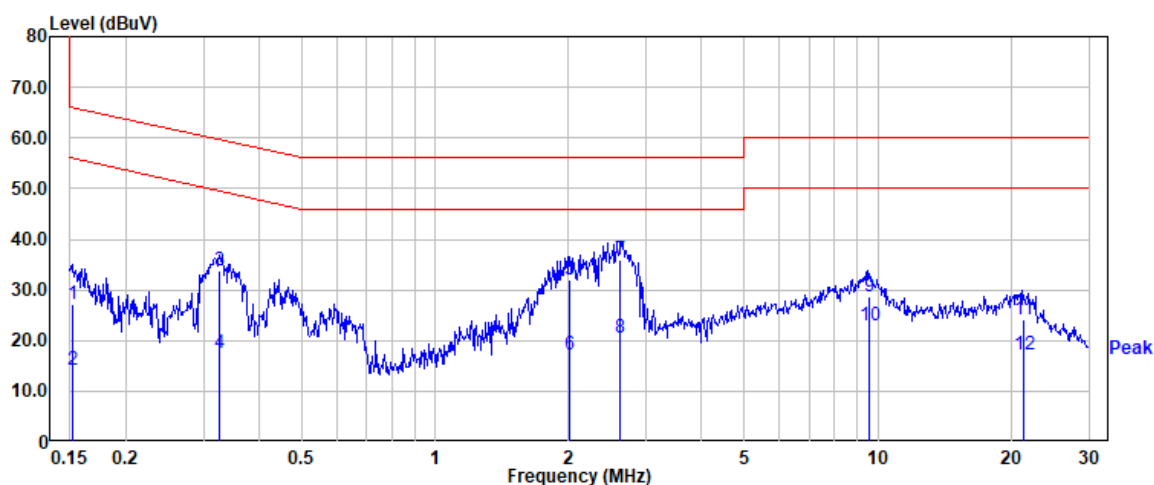
Test Voltage : AC 120V/60Hz



Freq	Read Level	Factor	Actual FS	Limit	Margin	Detector Mode
-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB	dBuV	dBuV	dB	PK/QP/AV
0.159	30.24	0.12	30.36	65.53	-35.17	QP
0.159	18.57	0.12	18.69	55.53	-36.84	Average
0.313	28.57	0.10	28.67	59.88	-31.21	QP
0.313	15.94	0.10	16.04	49.88	-33.84	Average
1.895	29.89	0.14	30.03	56.00	-25.97	QP
1.895	15.66	0.14	15.80	46.00	-30.20	Average
2.581	35.12	0.15	35.27	56.00	-20.73	QP
2.581	19.42	0.15	19.57	46.00	-26.43	Average
11.158	22.61	0.26	22.87	60.00	-37.13	QP
11.158	16.65	0.26	16.91	50.00	-33.09	Average
22.738	23.53	0.39	23.92	60.00	-36.08	QP
22.738	18.10	0.39	18.49	50.00	-31.51	Average

Note: 1. Actual FS= Spectrum Read Level + Factor
Note: 2. Margin= Actual FS – Limit

Project No : TM-2605000412P Test Date : 2026-06-24
Operation Band : BLE Temp./Humi. : 25°C / 65%
Test Chamber : Conduction Engineer : Tony.Chao
Probe : Line Test Voltage : AC 230V/60Hz
Note :



Freq	Read Level	Factor	Actual FS	Limit	Margin	Detector Mode
-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB	dBuV	dBuV	dB	PK/QP/AV
0.152	27.16	0.11	27.27	65.90	-38.63	QP
0.152	14.05	0.11	14.16	55.90	-41.74	Average
0.326	33.64	0.08	33.72	59.56	-25.84	QP
0.326	17.55	0.08	17.63	49.56	-31.93	Average
2.018	31.84	0.12	31.96	56.00	-24.04	QP
2.018	17.18	0.12	17.30	46.00	-28.70	Average
2.617	35.68	0.13	35.81	56.00	-20.19	QP
2.617	20.47	0.13	20.60	46.00	-25.40	Average
9.558	28.57	0.24	28.81	60.00	-31.19	QP
9.558	22.76	0.24	23.00	50.00	-27.00	Average
21.323	23.91	0.38	24.29	60.00	-35.71	QP
21.323	16.92	0.38	17.30	50.00	-32.70	Average

Note: 1. Actual FS= Spectrum Read Level + Factor

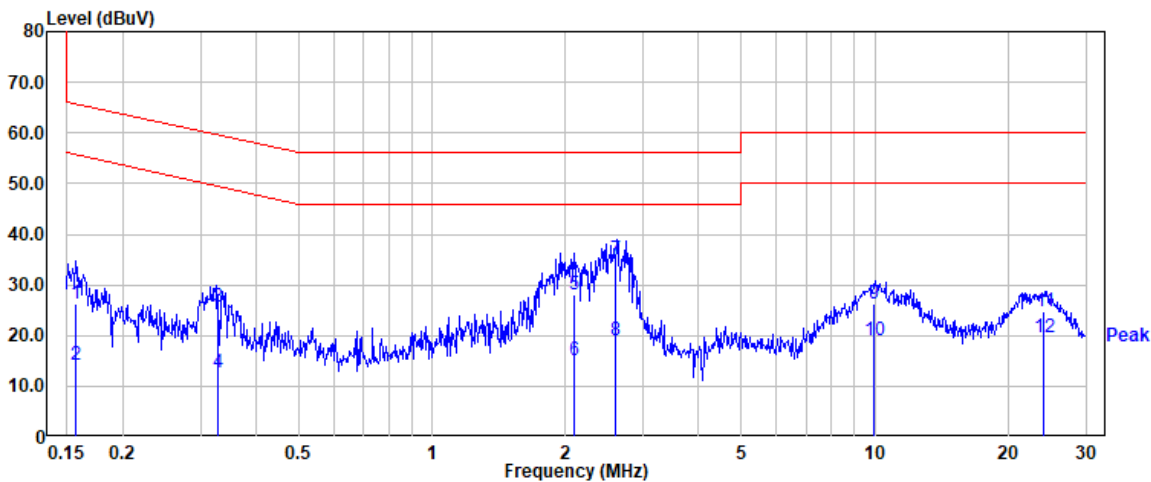
Note: 2. Margin= Actual FS – Limit



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Project No	: TM-2605000412P	Test Date	: 2026-06-24
Operation Band	: BLE	Temp./Humi.	: 25°C / 65%
Test Chamber	: Conduction	Engineer	: Tony.Chao
Probe	: Neutral	Test Voltage	: AC 230V/60Hz
Note	:		



Freq	Read Level	Factor	Actual FS	Limit	Margin	Detector Mode
-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB	dBuV	dBuV	dB	PK/QP/AV
0.156	26.26	0.12	26.38	65.65	-39.27	QP
0.156	14.20	0.12	14.32	55.65	-41.33	Average
0.328	25.71	0.10	25.81	59.51	-33.70	QP
0.328	12.60	0.10	12.70	49.51	-36.81	Average
2.099	27.92	0.14	28.06	56.00	-27.94	QP
2.099	15.08	0.14	15.22	46.00	-30.78	Average
2.607	34.77	0.15	34.92	56.00	-21.08	QP
2.607	18.76	0.15	18.91	46.00	-27.09	Average
9.994	25.99	0.25	26.24	60.00	-33.76	QP
9.994	18.81	0.25	19.06	50.00	-30.94	Average
24.120	24.45	0.40	24.85	60.00	-35.15	QP
24.120	19.26	0.40	19.66	50.00	-30.34	Average

Note: 1. Actual FS= Spectrum Read Level + Factor
Note: 2. Margin= Actual FS – Limit



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4.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

4.2.1 Test Limit

According to §15.247(a)(2),

6 dB Bandwidth :

Limit	Shall be at least 500kHz
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Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

FCC

Test method Refer as KDB 558074 D01 and ANSI C63.10-2020,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup

Refer to section 1.8.

4.2.4 Test Result

Temperature: 20.7~26.3°C Test Date: June 08~October 02, 2026
Humidity: 53~66% RH Tested by: Jerry Chang

6dB BANDWIDTH

BLE 125k mode(Payload S=8)

Frequency (MHz)	6dB BW (MHz)	Required BW (MHz)	Result
2402	0.609	≥ 0.5	PASS
2442	0.6015	≥ 0.5	PASS
2480	0.6084	≥ 0.5	PASS

BLE 500k mode(Payload S=2)

Frequency (MHz)	6dB BW (MHz)	Required BW (MHz)	Result
2402	0.6597	≥ 0.5	PASS
2442	0.6575	≥ 0.5	PASS
2480	0.6607	≥ 0.5	PASS

BLE 1M mode

Frequency (MHz)	6dB BW (MHz)	Required BW (MHz)	Result
2402	0.6557	≥ 0.5	PASS
2442	0.6549	≥ 0.5	PASS
2480	0.6524	≥ 0.5	PASS

BLE 2M mode

Frequency (MHz)	6dB BW (MHz)	Required BW (MHz)	Result
2402	1.121	≥ 0.5	PASS
2442	1.119	≥ 0.5	PASS
2480	1.122	≥ 0.5	PASS

BANDWIDTH 99%

BLE 125k mode(Payload S=8)

Frequency (MHz)	99%Bandwidth (MHz)
2402	1.0964
2442	1.0963
2480	1.0976

BLE 500k mode(Payload S=2)

Frequency (MHz)	99%Bandwidth (MHz)
2402	1.077
2442	1.0783
2480	1.0785

BLE 1M mode

Frequency (MHz)	99%Bandwidth (MHz)
2402	1.0822
2442	1.0823
2480	1.0822

BLE 2M mode

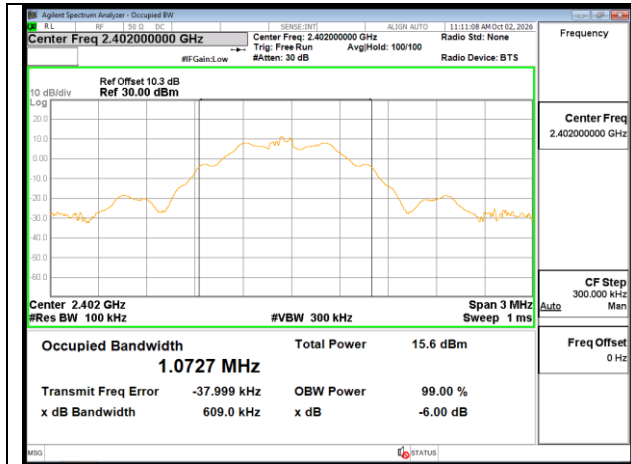
Frequency (MHz)	99%Bandwidth (MHz)
2402	2.0712
2442	2.0702
2480	2.071

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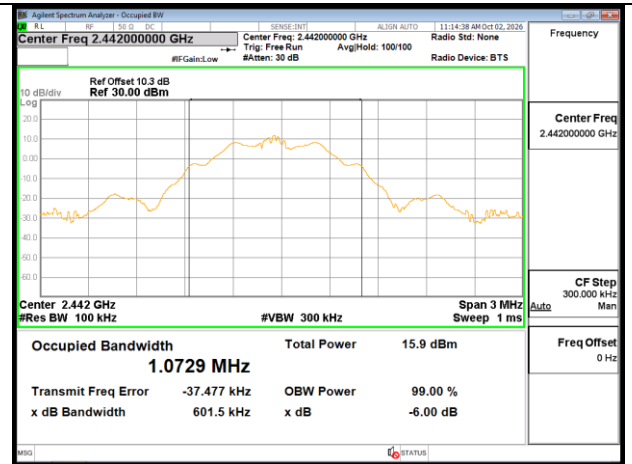
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Test Data

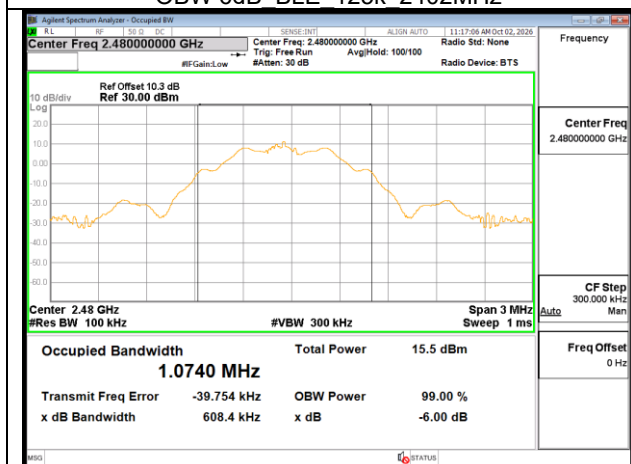
6dB BANDWIDTH



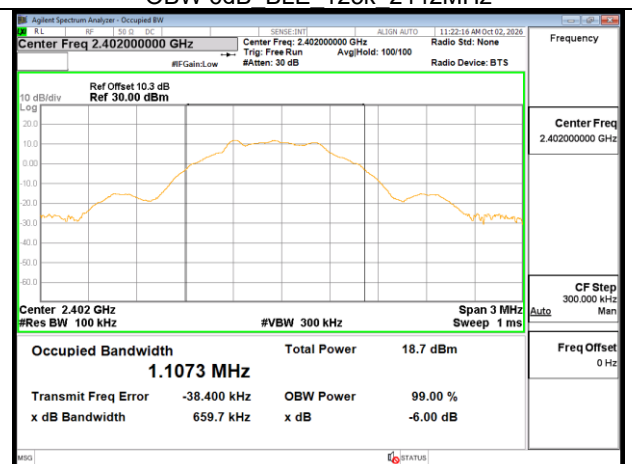
OBW 6dB BLE 125k 2402MHz



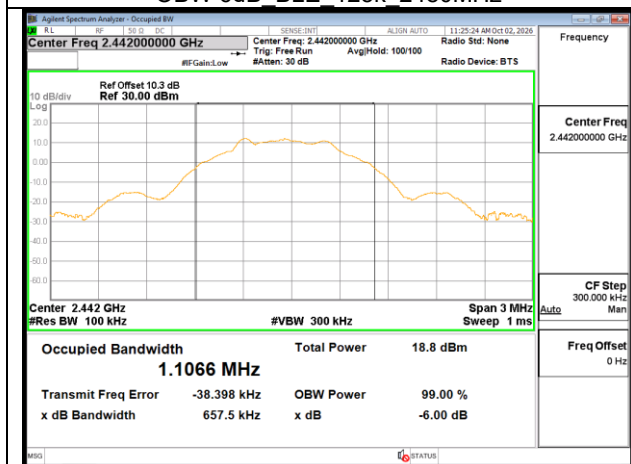
OBW 6dB BLE 125k 2442MHz



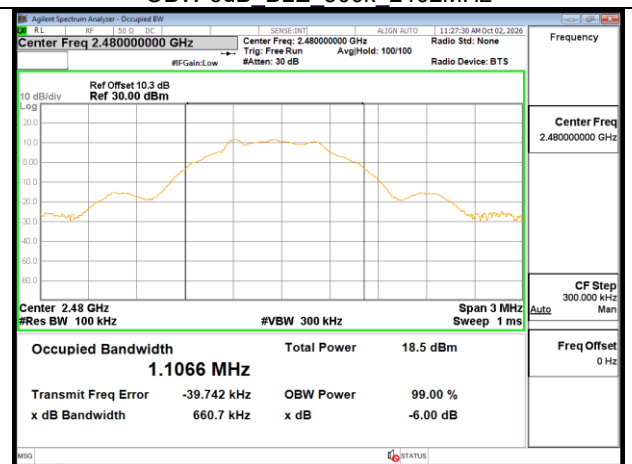
OBW 6dB BLE 125k 2480MHz



OBW 6dB BLE 500k 2402MHz



OBW 6dB BLE 500k 2442MHz



OBW 6dB BLE 500k 2480MHz



OBW 6dB BLE 1M 2402MHz



OBW 6dB BLE 1M 2442MHz



OBW 6dB BLE 1M 2480MHz



OBW 6dB BLE 2M 2402MHz



OBW 6dB BLE 2M 2442MHz



OBW 6dB BLE 2M 2480MHz

Test Data

BANDWIDTH 99%





OBW 99% BLE 1M 2402MHz



OBW 99% BLE 1M 2442MHz



OBW 99% BLE 1M 2480MHz



OBW 99% BLE 2M 2402MHz



OBW 99% BLE 2M 2442MHz



OBW 99% BLE 2M 2480MHz



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4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b)(3),

Peak output power :

FCC

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

Limit	☒ Antenna not exceed 6 dBi : 30dBm ☐ Antenna with DG greater than 6 dBi [Limit = 30 – (DG – 6)] ☐ Point-to-point operation
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Average output power : For reporting purposes only.

4.3.2 Test Procedure

Test method Refer as KDB 558074 D01

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup

Refer to section 1.8.

4.3.4 Test Result

Temperature: 20.7~26.3°C Test Date: June 08~October 02, 2026
Humidity: 53~66% RH Tested by: Jerry Chang

Peak & Average output power :

BLE 125k mode(Payload S=8):

CH	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	Required Limit (dBm)
0	2402	12	12.78	30
20	2442	12	12.05	30
39	2480	12	12.18	30
CH	Frequency (MHz)	Power Setting	Avg. Output Power (dBm)	Required Limit (dBm)
0	2402	12	12.07	30
20	2442	12	11.44	30
39	2480	12	11.54	30

***Note:**

1.Measured by power meter, path loss 10.3 dB + Duty cycle factor has been offseted to the power meter for Avg. power and path loss has been offseted for Peak power measurement.

BLE 500k mode(Payload S=2):

CH	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	Required Limit (dBm)
0	2402	12	12.77	30
20	2442	12	12.05	30
39	2480	12	12.23	30
CH	Frequency (MHz)	Power Setting	Avg. Output Power (dBm)	Required Limit (dBm)
0	2402	12	12.08	30
20	2442	12	11.43	30
39	2480	12	11.59	30

***Note:**

1.Measured by power meter, path loss 10.3 dB + Duty cycle factor has been offseted to the power meter for Avg. power and path loss has been offseted for Peak power measurement.

BLE 1M mode:

CH	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	Required Limit (dBm)
0	2402	14	18.74	30
20	2442	14	19.01	30
39	2480	12	12.91	30
CH	Frequency (MHz)	Power Setting	Avg. Output Power (dBm)	Required Limit (dBm)
0	2402	14	18.08	30
20	2442	14	18.46	30
39	2480	12	12.28	30

***Note:**

1.Measured by power meter, path loss 10.3 dB + Duty cycle factor has been offseted to the power meter for Avg. power and path loss has been offseted for Peak power measurement.

BLE 2M mode:

CH	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	Required Limit (dBm)
0	2402	14	18.55	30
20	2442	14	19.44	30
39	2480	12	13.20	30
CH	Frequency (MHz)	Power Setting	Avg. Output Power (dBm)	Required Limit (dBm)
0	2402	14	17.47	30
20	2442	14	18.03	30
39	2480	12	12.13	30

***Note:**

1.Measured by power meter, path loss 10.3 dB + Duty cycle factor has been offseted to the power meter for Avg. power and path loss has been offseted for Peak power measurement.

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.247(e),

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Limit	☒ Antenna not exceed 6 dBi : 8dBm ☐ Antenna with DG greater than 6 dBi [Limit = 8 – (DG – 6)] ☐ Point-to-point operation :
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4.4.2 Test Procedure

Test method Refer as KDB 558074 D01

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 10kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss was compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup

Refer to section 1.8.

4.4.4 Test Result

Temperature: 20.7~26.3°C Test Date: June 08~October 02, 2026
Humidity: 53~66% RH Tested by: Jerry Chang

BLE 125k mode(Payload S=8)

Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	5.83	8	PASS
2442	5.95	8	PASS
2480	5.58	8	PASS

***Note:**

1.path loss as 10.3 dB that offsets in the spectrum

BLE 500k mode(Payload S=2)

Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	5.56	8	PASS
2442	5.65	8	PASS
2480	5.31	8	PASS

***Note:**

1.path loss as 10.3 dB that offsets in the spectrum

BLE 1M mode

Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	5.51	8	PASS
2442	6.05	8	PASS
2480	-0.33	8	PASS

***Note:**

1.path loss as 10.3 dB that offsets in the spectrum

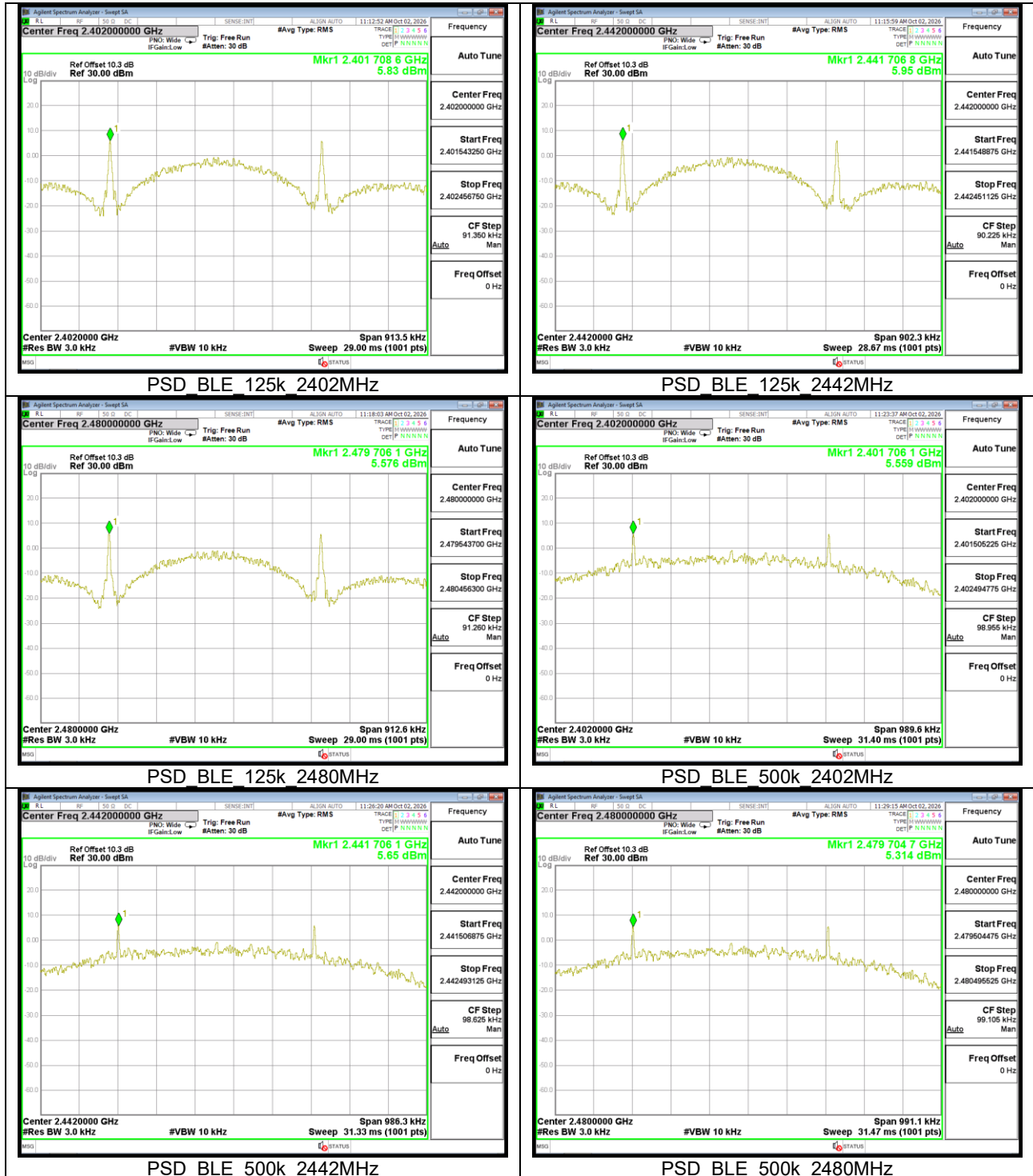
BLE 2M mode

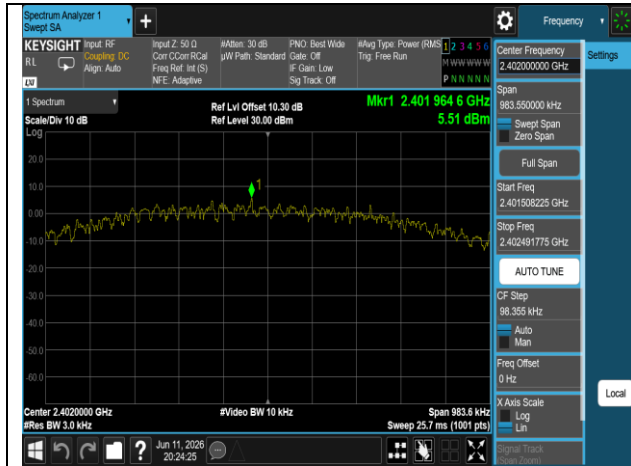
Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	1.91	8	PASS
2442	2.65	8	PASS
2480	-2.90	8	PASS

***Note:**

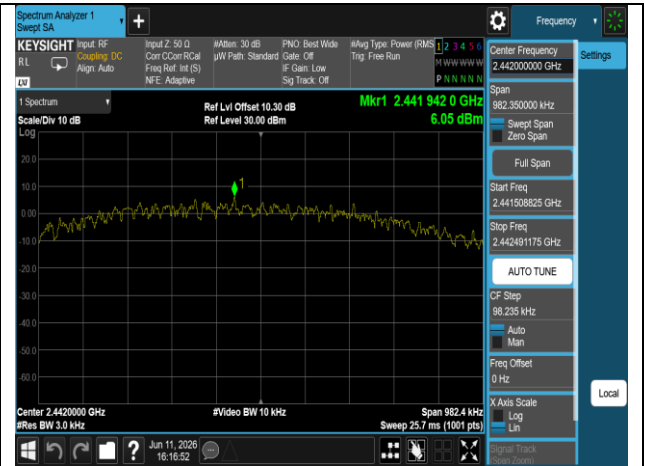
1.path loss as 10.3 dB that offsets in the spectrum

Test Data Power Density

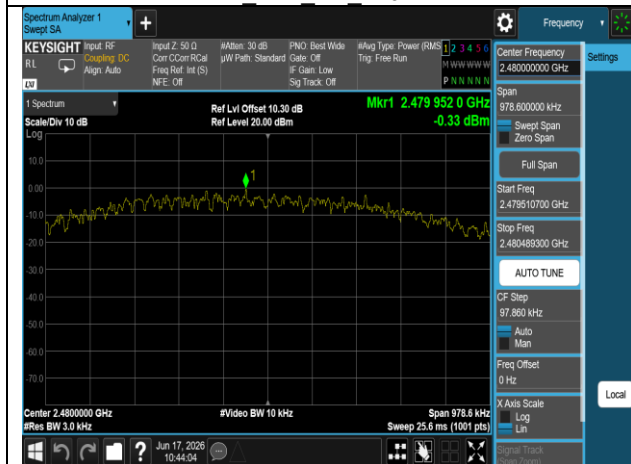




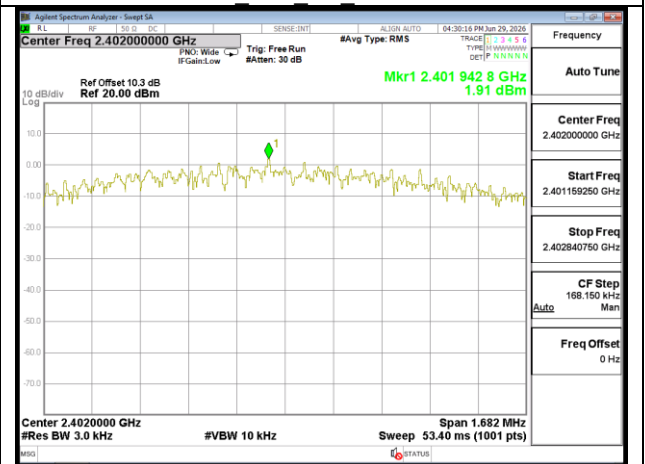
PSD BLE 1M 2402MHz



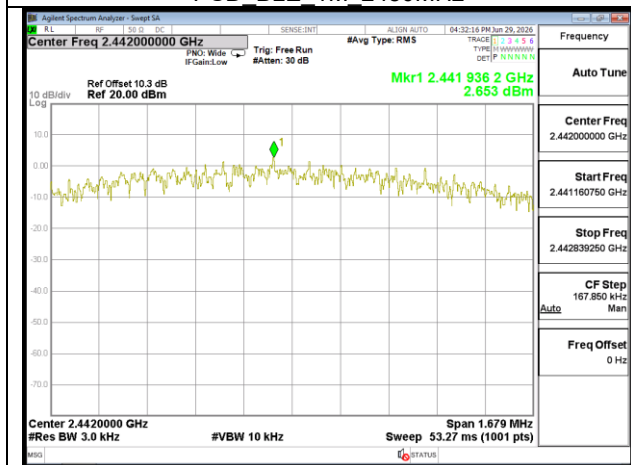
PSD BLE 1M 2442MHz



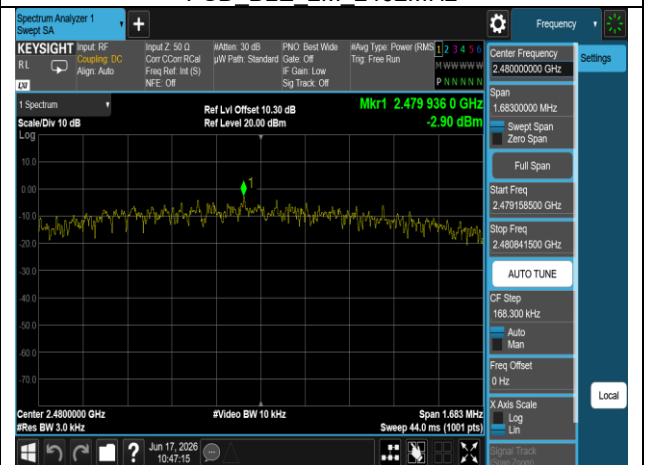
PSD BLE 1M 2480MHz



PSD BLE 2M 2402MHz



PSD BLE 2M 2442MHz



PSD BLE 2M 2480MHz



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4.5 CONDUCTED BAND EDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

According to §15.247(d),

FCC: In any 100 kHz bandwidth outside the authorized frequency band, Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

4.5.2 Test Procedure

Test method Refer as KDB 558074 D01

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.
2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.
3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

4.5.3 Test Setup

Refer to section 1.8.

4.5.4 Test Result

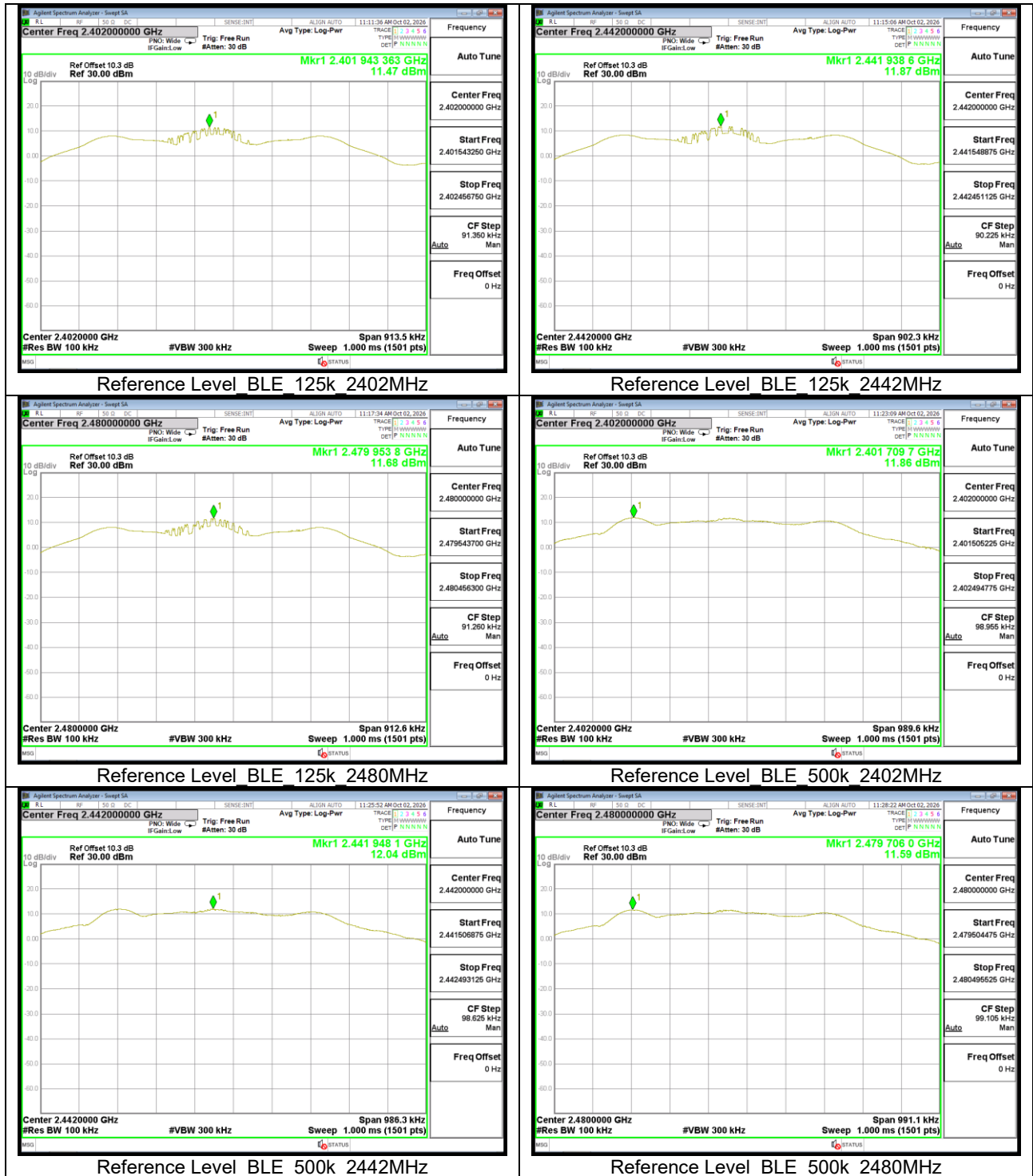
Temperature:	20.7~26.3°C	Test Date:	June 08~October 02, 2026
Humidity:	53~66% RH	Tested by:	Jerry Chang

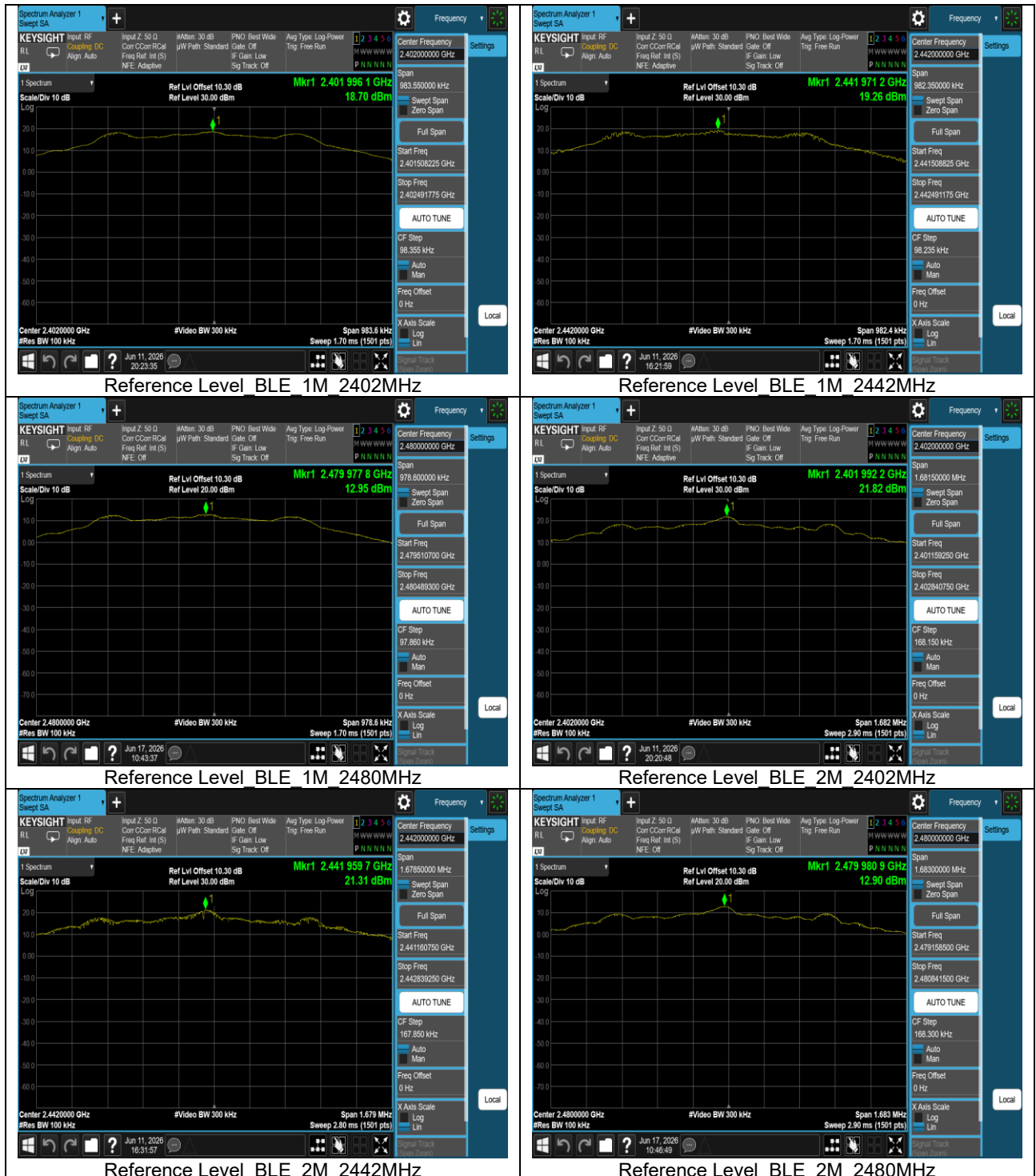


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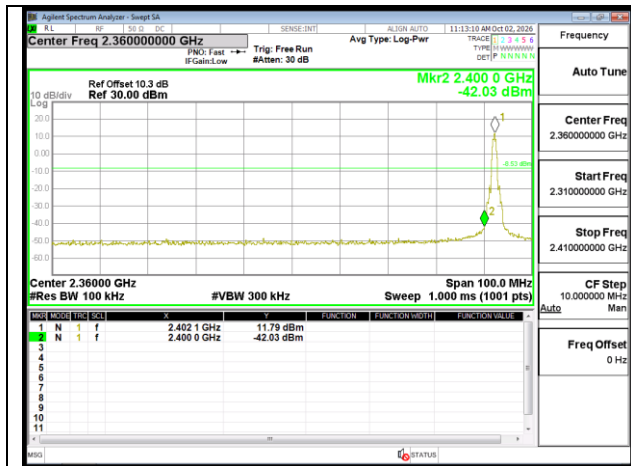
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Test Data Reference Level

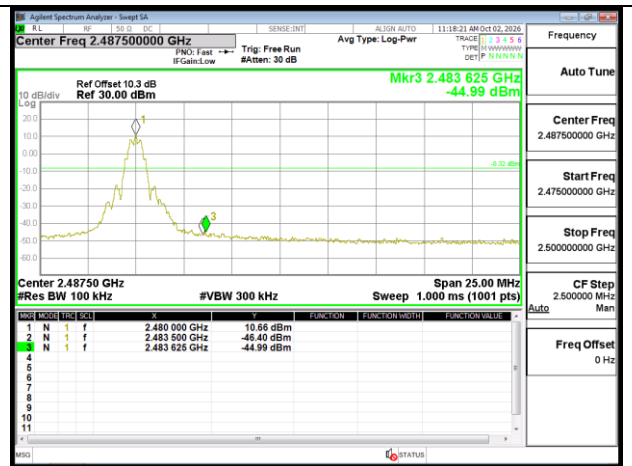




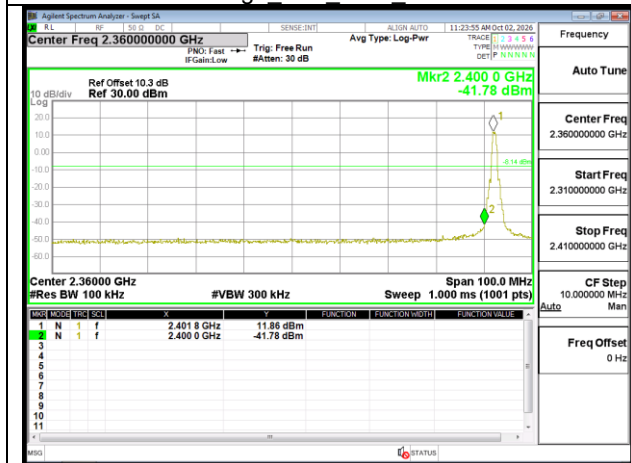
Band Edge



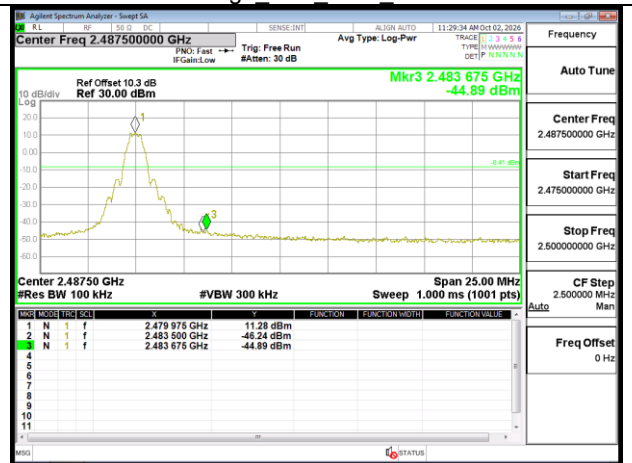
Band Edge BLE 125k 2402MHz



Band Edge BLE 125k 2480MHz



Band Edge BLE 500k 2402MHz



Band Edge BLE 500k 2480MHz