



FCC AND ISCED CERTIFICATION TEST REPORT

Applicant	:	Corsair Memory, Inc.
Address of Applicant	:	115 North McCarthy Blvd, Milpitas, CA 95035, USA
Manufacturer	:	Corsair Memory, Inc.
Address of Manufacturer	:	115 North McCarthy Blvd, Milpitas, CA 95035, USA
Equipment under Test	:	Dongle
Model No.	:	RDA0048
FCC ID	:	2AAFMRDA0048
IC	:	10954A-RDA0048
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 3 August 2023, ANSI C63.10:2013, RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)
Report No.	:	DDT-RE24080827-2E03
Issue Date	:	2024/09/26
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd. Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

Table of Contents

1.	Summary of Test Results	6
2.	General Test Information	7
2.1.	Description of EUT	7
2.2.	Accessories of EUT	8
2.3.	Block diagram of EUT configuration for test.....	8
2.4.	Decision of final test mode	8
2.5.	Deviations of test standard	8
2.6.	Test environment conditions.....	8
2.7.	Test laboratory	9
2.8.	Measurement uncertainty	9
3.	Equipment Used During Conductive Test	10
4.	Maximum Peak Output Power	11
4.1.	Block diagram of test setup	11
4.2.	Limits.....	11
4.3.	Test procedure.....	11
4.4.	Test result	12
4.5.	Test graphs	13
5.	Band Edge Compliance (Conducted Method).....	14
5.1.	Block diagram of test setup	14
5.2.	Limits.....	14
5.3.	Test procedure.....	14
5.4.	Test result	15
5.5.	Test graphs	16
6.	RF Conducted Spurious Emissions.....	17
6.1.	Block diagram of test setup	17
6.2.	Limits.....	17
6.3.	Test procedure.....	17
6.4.	Test result	18
6.5.	Test graphs	19
7.	Duty Cycle.....	22
7.1.	Block diagram of test setup	22
7.2.	Limit.....	22
7.3.	Test procedure.....	22
7.4.	Test result	23
7.5.	Test graphs	24
8.	Antenna Requirements	25

8.1.	Limit.....	25
8.2.	Result.....	25
9.	Radiated Emission	26
9.1.	Test equipment	26
9.2.	Block diagram of test setup	27
9.3.	Limits.....	28
9.4.	Assistant equipment used for test	30
9.5.	Test procedure.....	30
9.6.	Test result	31
9.7.	Test data	32
10.	Band Edge Compliance	40
10.1.	Test equipment	40
10.2.	Block diagram of test setup	41
10.3.	Limits.....	41
10.4.	Assistant equipment used for test	41
10.5.	Test procedure.....	41
10.6.	Test result	41
10.7.	Test data	42
11.	Power Line Conducted Emissions.....	46
11.1.	Test equipment	46
11.2.	Block diagram of test setup	46
11.3.	Limits.....	46
11.4.	Assistant equipment used for test	46
11.5.	Test procedure.....	46
11.6.	Test result	47
12.	Test Setup Photograph.....	48
13.	Photos of the EUT	50

Test Report Declare

Applicant	:	Corsair Memory, Inc.
Address of Applicant	:	115 North McCarthy Blvd, Milpitas, CA 95035, USA
Equipment under Test	:	Dongle
Model No.	:	RDA0048
Manufacturer	:	Corsair Memory, Inc.
Address of Manufacturer	:	115 North McCarthy Blvd, Milpitas, CA 95035, USA

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C,
RSS-247 Issue 3 August 2023,
ANSI C63.10:2013,
RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)

We Declare:

The equipment described above is tested by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	DDT-RE24080827-2E03		
Date of Receipt:	2024/09/09	Date of Test:	2024/09/09 - 2024/09/26

Prepared By:**Johnson Huang/Engineer****Approved By:****Damon Hu/EMC Manager**

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	2024/09/26	

1. Summary of Test Results

No.	Test Parameter	Clause No.	Condition	Result
1	Peak Output Power	FCC Part 15: 15.247(b)(3), RSS-247 Issue 3 clause 5.4(d)	/	Pass
2	RF Conducted Spurious Emissions	FCC Part 15: 15.247(d), RSS- 247 Issue 3 clause 5.5	/	Pass
3	Radiated Emission	FCC Part 15: 15.205, FCC Part 15: 15.209, FCC Part 15: 15.247(d), RSS-247 Issue 3 clause 5.5, RSS-Gen Issue 5 clause 8.9, RSS-Gen Issue 5 clause 8.10	/	Pass
4	Band Edge Compliance	FCC Part 15: 15.205, FCC Part 15: 15.209, FCC Part 15: 15.247(d), RSS-247 Issue 3 clause 5.5, RSS-Gen Issue 5 clause 8.9, RSS-Gen Issue 5 clause 8.10	/	Pass
5	Antenna Requirement	FCC Part 15: 15.203, RSS- Gen Issue 5 clause 6.8	/	Pass

Note1: N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard.

Note2: This report reflects the The position of the PCB hole is changed, refer to DDT-R22121220-1E01. The items affected by the change have been retested, the original data and records refer to DDT-R22121220-1E01.

2. General Test Information

2.1. Description of EUT

EUT Name	: Dongle
Model Number	: RDA0048
EUT Function Description	: Please reference user manual of this device
Power Supply	: DC 5V from external PC or Laptop
Hardware Version	: V0.3
Software Version	: V0.12.94

Radio Specification	: 2.4GHz SRD
Operation Frequency	: 2404 MHz - 2478 MHz
Modulation	: GFSK

Antenna information	
Antenna Type	: Chip Antenna
Max Antenna Gain(dBi)	: -0.9

Channel information					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2404	15	2432	29	2460
2	2406	16	2434	30	2462
3	2408	17	2436	31	2464
4	2410	18	2438	32	2466
5	2412	19	2440	33	2468
6	2414	20	2442	34	2470
7	2416	21	2444	35	2472
8	2418	22	2446	36	2474
9	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452		
12	2426	26	2454		
13	2428	27	2456		
14	2430	28	2458		

Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

“☑” means to be chosen or applicable; “☐” means don't to be chosen or not applicable; This note applies to entire report.

2.2. Accessories of EUT

Accessories	Manufacturer	Model number	Description
USB cable	Corsair	N/A	Length: 1.9m, unshielded
Wireless Headset	Corsair	RDA0047	N/A

2.3. Block diagram of EUT configuration for test



2.4. Decision of final test mode

According pre-test, the worst test modes were reported as below:

Test software: AB1565_AB1568_Airoha_Tool_Kit(ATK)_v3.2.6.exe

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table:

The pathloss of external cable: 0.5dB (According to the manufacturer's claims)

Tested mode, channel, information			
Mode	Setting Tx Power	Channel	Frequency (MHz)
GFSK	58	CH1	2404
	58	CH19	2440
	58	CH38	2478

2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	+15°C to +35 °C
Humidity range:	20% to 75%
Pressure range:	86 kPa to106 kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808.

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2.8. Measurement uncertainty

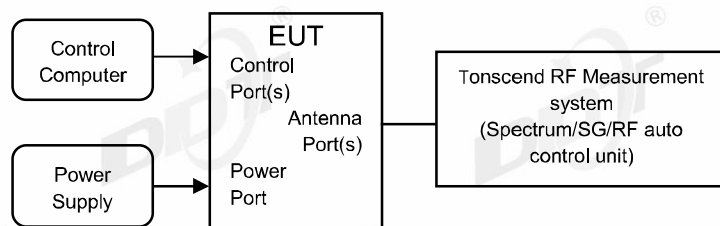
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 °C
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz)
	4.40 dB (6 GHz - 18 GHz)
	3.54 dB (18 GHz - 26 GHz)
	4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power line conduction emission test	3.34dB (150KHz-30MHz)
	3.72dB (9KHz-150KHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Equipment Used During Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☑RF Connected Test (RF Measurement System 4#)				
Signal &Spectrum Analyzer	R&S	FSV3044	101173	2025/03/31
Wideband Radio Communication Tester	R&S	CMW500	168801	2025/03/31
MXG Vector Signal Generator	Agilent	N5182A	MY48180737	2025/03/31
PSG Vector Signal Generator	Agilent	E8267D	US49060192	2025/08/25
RF Control Unit	Tonsend	JS0806-2	21I8060485	2025/03/31
TEMP&HUMI Programmable Chamber	ZHIXIANG	ZXGDJS-150L	ZX170110-A	2025/04/22
Test Software	Tonscend	JS1120-3	Ver.3.2.22	N/A

4. Maximum Peak Output Power

4.1. Block diagram of test setup



4.2. Limits

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. If transmitting antennas of directional gain greater than 6dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi, the e.i.r.p shall not exceed 4W.

4.3. Test procedure

- (1) The test according to ANSI C63.10-2013 clause 11.9.1.1.
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
- (3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
- (4) Use the following spectrum analyzer settings for the maximum peak output power measurement:

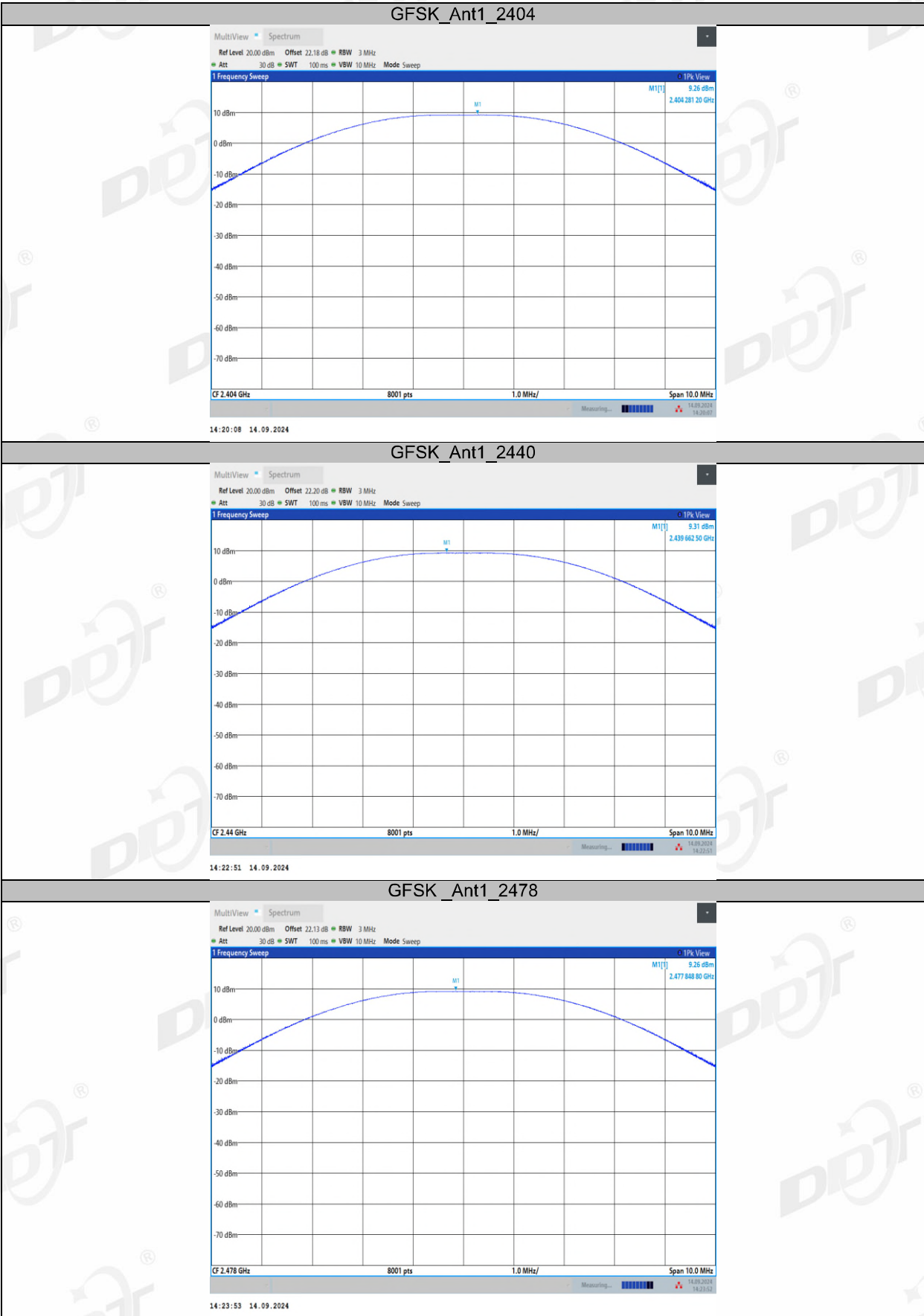
RBW:	≥DTS bandwidth
VBW:	≥3 x RBW
Span	≥3 x RBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold
- (5) Allow the trace to stabilize, use peak marker function to determine the peak amplitude level.

4.4. Test result

Test Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	23.6℃,48.2%RH	Test Date:	2024.09.14-2024.09.14
Test Power Supply:	DC 5V	Sample Number:	S24080827-002

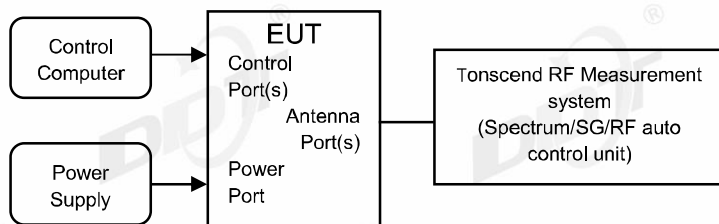
Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
GFSK	Ant1	2404	9.26	≤30	8.36	≤36	PASS
		2440	9.31	≤30	8.41	≤36	PASS
		2478	9.26	≤30	8.36	≤36	PASS

4.5. Test graphs



5. Band Edge Compliance (Conducted Method)

5.1. Block diagram of test setup



5.2. Limits

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

5.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Establish a reference level by using the following procedure:

RBW: 100 kHz

VBW: 300 kHz

Span Encompass frequency range to be measured

Detector Mode: Peak

Sweep time: Auto

Trace mode Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.

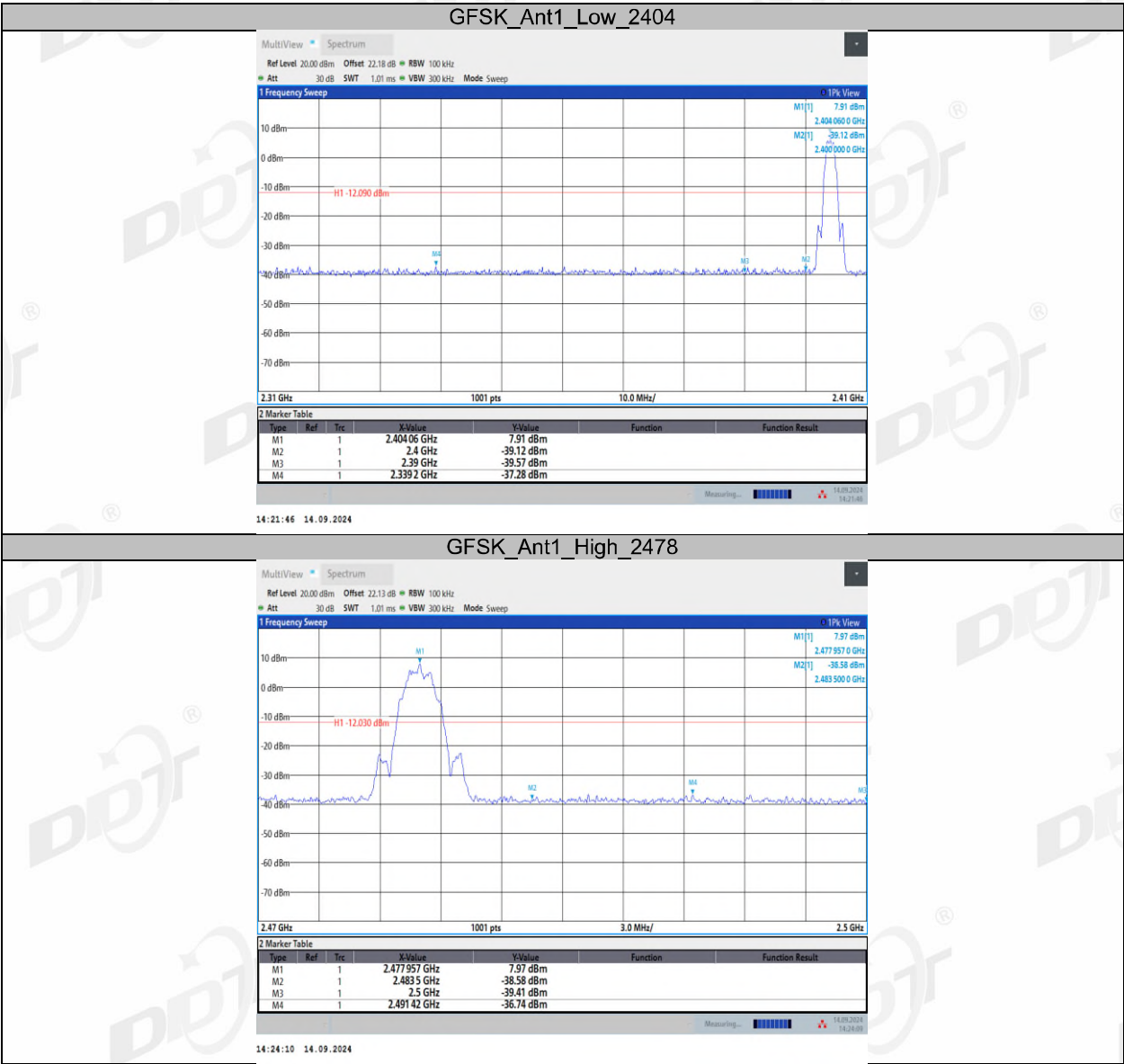
(4) Then mark the maximum amplitude of all unwanted emissions outside of the authorized frequency band.

5.4. Test result

Test Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	23.6℃,48.2%RH	Test Date:	2024.09.14-2024.09.14
Test Power Supply:	DC 5V	Sample Number:	S24080827-002

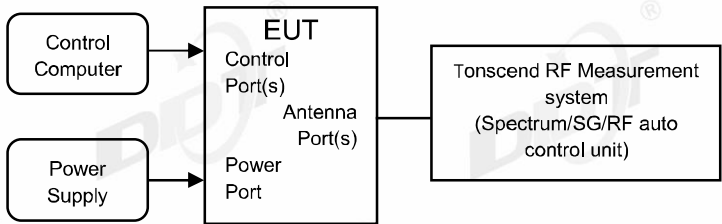
EUT Set Mode	CH or Frequency	Measured Range	Verdict
GFSK	2402	2.310 GHz - 2.410 GHz	Pass
	2480	2.470 GHz - 2.500 GHz	Pass

5.5. Test graphs



6. RF Conducted Spurious Emissions

6.1. Block diagram of test setup



6.2. Limits

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

6.3. Test procedure

- (1) Connect EUT's antenna output to spectrum analyzer by RF cable.
- (2) Establish a reference level by using the following procedure:

Center frequency	Test frequency
RBW:	100 kHz
VBW:	300 kHz
Span	Wide enough to capture the peak level of the in-band emission
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold
- (3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.
- (4) Set the spectrum analyzer as follows:

RBW:	100 kHz
VBW:	300 kHz
Span	Encompass frequency range to be measured
Number of measurement points	$\geq \text{Span}/\text{RBW}$
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

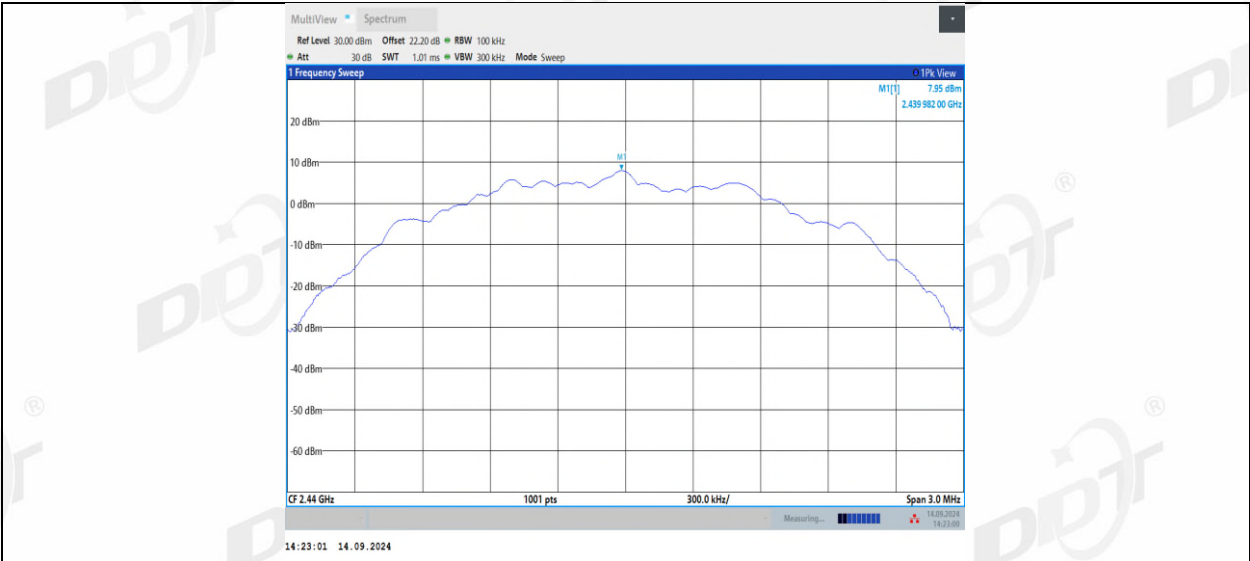
6.4. Test result

Test Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	23.6℃,48.2%RH	Test Date:	2024.09.14-2024.09.14
Test Power Supply:	DC 5V	Sample Number:	S24080827-002

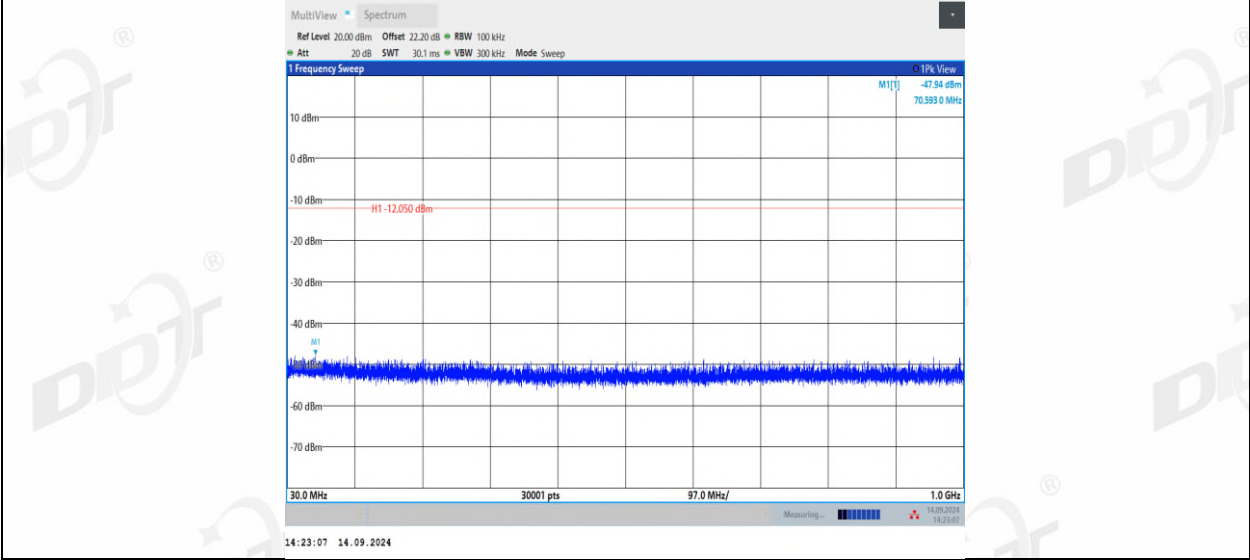
Mode	Freq. (MHz)	Verdict
GFSK	2402	Pass
	2440	Pass
	2480	Pass

6.5. Test graphs

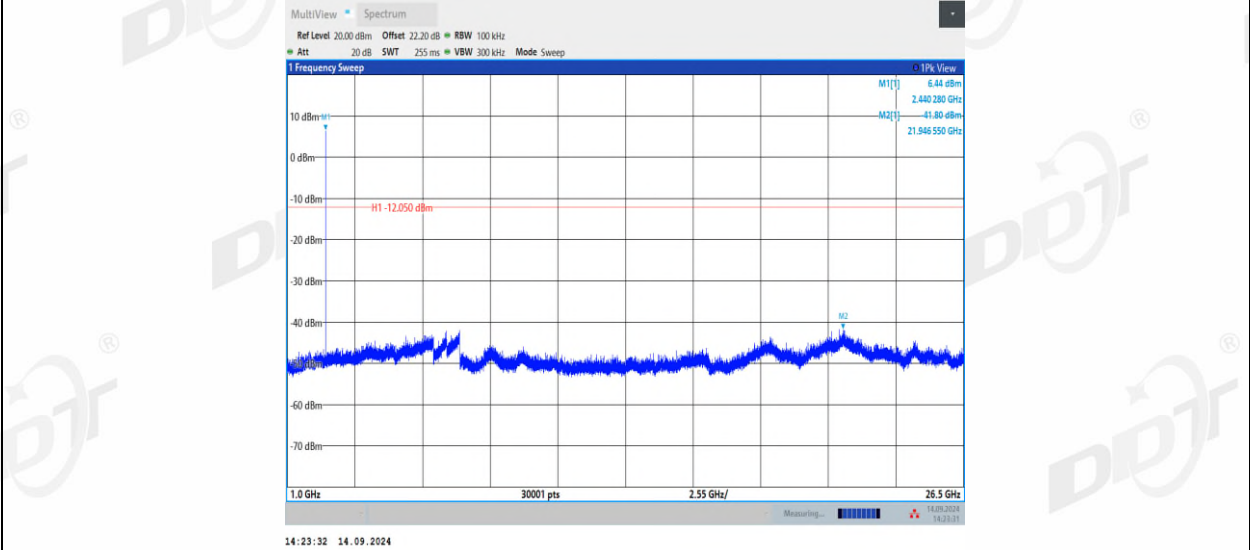




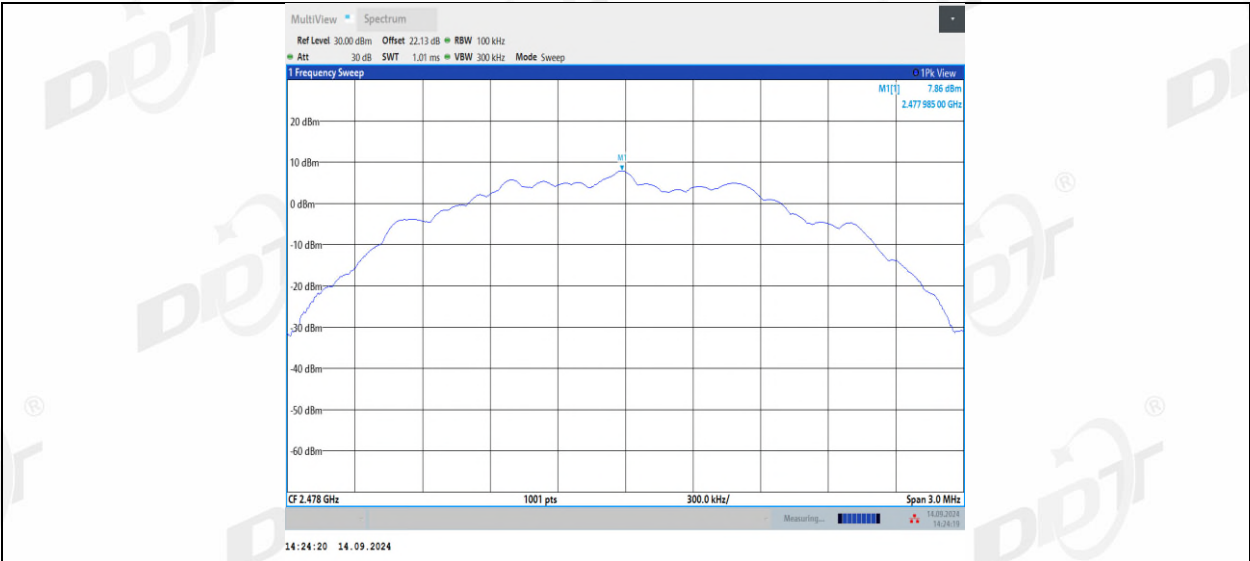
GFSK_Ant1_2440_30~1000



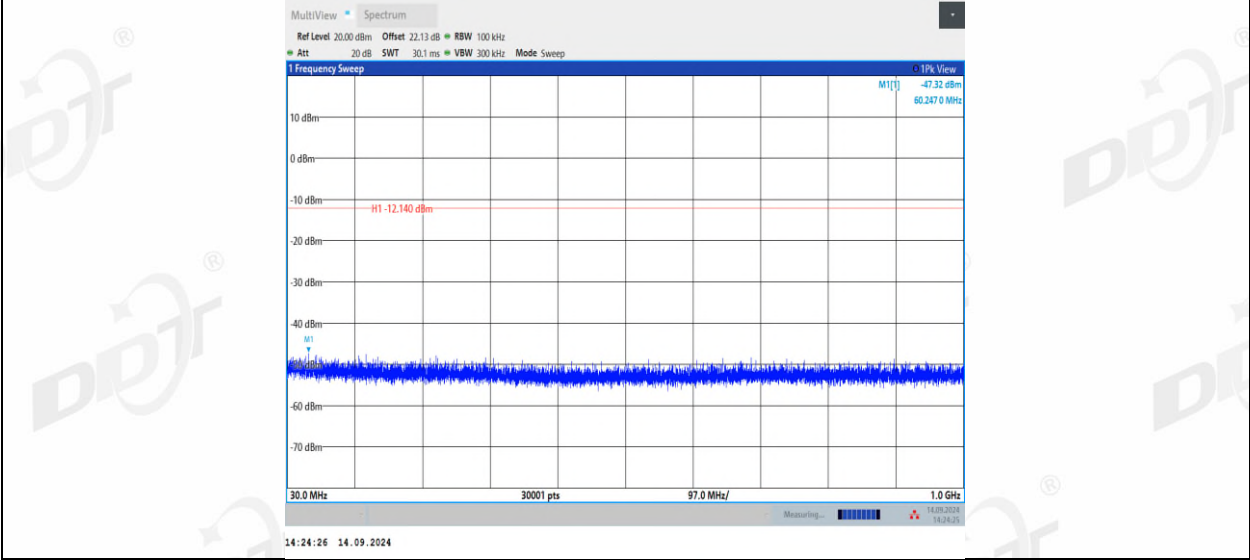
GFSK_Ant1_2440_1000~26500



GFSK_Ant1_2478_0~Reference



GFSK_Ant1_2478_30~1000



GFSK Ant1_2478_1000~26500

