

# Test Report

Verified code: 181556

Report No.: E20240827121501-4EN

Customer: GUANGZHOU RANTION TECHNOLOGY CO., LTD.

Address: Room 7002 and 7003, 7th Floor, Digital Entertainment Industrial Park, Greater Bay Area, No. 28 Huangpu Park West Road, Huangpu District, Guangzhou, China.

Sample Name: Donner OURA Piano

Sample Model: R300

Receive Sample Date: Sep.09,2024

Test Date: Sep.14,2024 ~ Nov.18,2024

Reference Document: 47 CFR, FCC Part 15 Subpart C  
RADIO FREQUENCY DEVICES: Subpart C—Intentional Radiators

Test Result: Pass

Prepared by: Wen Wenwen  
Wen Wenwen

Reviewed by: Jiang Tao  
Jiang Tao

Approved by: Xiao Liang  
Xiao Liang



GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date: 2024-12-02

GRG METROLOGY & TEST GROUP CO., LTD.

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## Statement

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4. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.
5. This testing report is only for scientific research, teaching, internal quality control, etc.

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REPORT ISSUED HISTORY

| Report Version | Report No.          | Description    | Compile Date |
|----------------|---------------------|----------------|--------------|
| 1.0            | E20240827121501-4EN | Original Issue | 2024-11-26   |

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**1. TEST RESULT SUMMARY**

| <b>47 CFR, FCC Part 15 Subpart C 15.247, ANSI C63.10-2020<br/>KDB 558074 D01 15.247 measurement guidance v05r02</b> |                                            |                             |                    |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------|--------------------|
| <b>Standard</b>                                                                                                     | <b>Item</b>                                | <b>Limit / Severity</b>     | <b>Result</b>      |
| 47 CFR, FCC Part 15 Subpart C (15.247)                                                                              | Antenna Requirement                        | Section 15.203              | PASS <sup>1)</sup> |
|                                                                                                                     | 20dB Bandwidth                             | Section 15.247(a)(1)        | PASS               |
|                                                                                                                     | Carrier Frequencies Separated              | Section 15.247(a)(1)        | PASS               |
|                                                                                                                     | Hopping Channel Number                     | Section 15.247(a)(1)(iii)   | PASS               |
|                                                                                                                     | Dwell Time                                 | Section 15.247(a)(1)(iii)   | PASS               |
|                                                                                                                     | Maximum Peak Output Power                  | Section 15.247(b)(1)        | PASS               |
|                                                                                                                     | Conducted Emission                         | Section 15.207              | PASS               |
|                                                                                                                     | Conducted band edges and Spurious Emission | Section 15.209 & 15.247(d)  | PASS               |
|                                                                                                                     | Radiated Spurious Emission                 | Section 15.209 & 15.247(d)  | PASS               |
|                                                                                                                     | Restricted bands of operation              | Section 15.247 (d) & 15.205 | PASS               |

Note:

- 1) The antenna is PCB printed antenna. The max gain of antenna is 1.9dBi, which accordance 15.203 is considered sufficient to comply with the provisions of this section.

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## 2. GENERAL DESCRIPTION OF EUT

### 2.1 APPLICANT

Name: GUANGZHOU RANTION TECHNOLOGY CO., LTD.  
Address: Room 7002 and 7003,7th Floor,Digital Entertainment Industrial Park,Greater Bay Area,No. 28 Huangpu Park West Road,Huangpu District,Guangzhou,China.

### 2.2 MANUFACTURER

Name: GUANGZHOU RANTION TECHNOLOGY CO., LTD.  
Address: Room 7002 and 7003,7th Floor,Digital Entertainment Industrial Park,Greater Bay Area,No. 28 Huangpu Park West Road,Huangpu District,Guangzhou,China.

### 2.3 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name: Donner OURA Piano  
Product Model: R300  
Trade Name: DONNER  
Additional Model: S100, R100, S200, R200, S300, S400, R400  
Model difference descriptions: The main model no. R300 and the family models no. S100, R100, S200, R200, S300, S400, R400 have the same technical construction-including circuit-diagram, PCB-LAYOUT, hardware version and software version identical, the model names are different, which does not affect electromagnetic compatibility and electrical safety performance.  
Power Supply: DC 12V by adapter  
Adapter: Model: GQ36-120300-AX  
Input: 100-240V~ 50/60Hz 1.0A Max, Output: 12V  $\overline{\text{---}}$  3.0A 36.0W  
FCC ID: 2AV7N-OURA  
Transmit Power: GFSK: -2.11dBm  
 $\pi/4$ -DQPSK: -0.52dBm  
8DPSK: -0.30dBm  
Type of Modulation: FHSS (GFSK for 1Mbps,  $\pi/4$ -DQPSK for 2Mbps,8DPSK for 3Mbps )  
Antenna Type: PCB printed antenna with 1.9dBi (Max.)  
Temperature Range: 0℃ ~ 38℃  
Hardware Version: V1.1  
Software Version: V1.1  
Sample No: E20240827121501-0001, E20240827121501-0002  
Note: The EUT antenna gain is provided by the applicant. This report is made solely on the basis of such data and/or information. We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions. After evaluated the difference descriptions of the

models, the test model is R300.

## 2.4 TEST OPERATION MODE

| Mode No. | Description of the modes                   |
|----------|--------------------------------------------|
| 1        | Bluetooth(BT) fixed frequency transmitting |

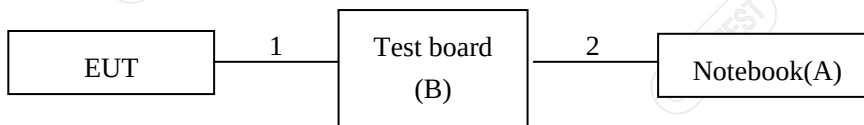
## 2.5 LOCAL SUPPORTIVE

| No. | Name of Equipment | Manufacturer | Model        | Serial Number |
|-----|-------------------|--------------|--------------|---------------|
| A   | Notebook          | DELL         | Latitude3300 | 2C6CFW2       |
| B   | Test board        | /            | /            | /             |

| No. | Cable Type   | Qty. | Shielded Type | Ferrite Core(Qty.) | Length |
|-----|--------------|------|---------------|--------------------|--------|
| 1   | Serial cable | 1    | No            | 0                  | 0.2m   |
| 2   | USB cable    | 1    | No            | 0                  | 1.0m   |

Note: The notebook is just used to produce fixed frequency transmitting.

## 2.6 CONFIGURATION OF SYSTEM UNDER TEST



### Test software:

| Software version | Test level |
|------------------|------------|
| FCC_V2.24        | 0          |



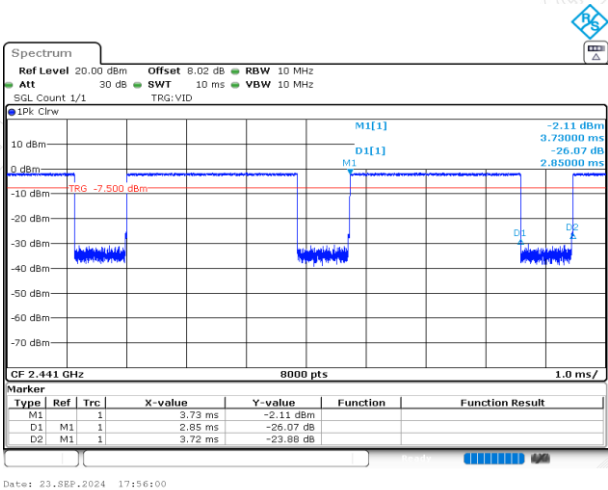
2.7 DUTY CYCLE

Environment: 20.1°C/68%RH/101.0kPa  
Tested By: Qin tingting

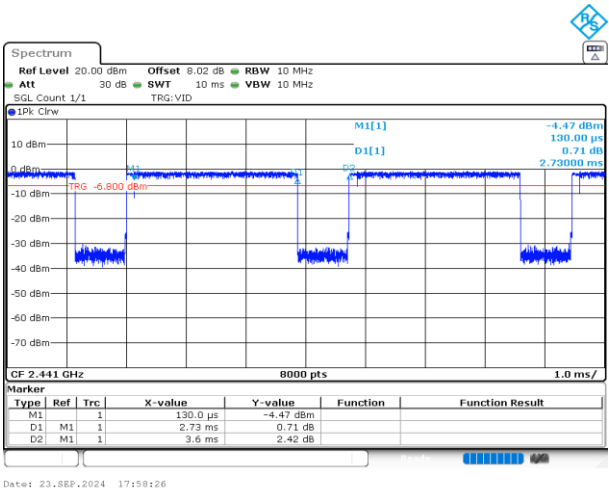
Voltage: AC 120V/60Hz  
Date: 2024-09-23

| TestMode | Antenna | Frequency [MHz] | ON Time [ms] | Period [ms] | DC [%] | T [s]   |
|----------|---------|-----------------|--------------|-------------|--------|---------|
| DH5      | Ant1    | 2441            | 2.85         | 3.72        | 76.61  | 0.00285 |
| 2DH5     | Ant1    | 2441            | 2.73         | 3.60        | 75.83  | 0.00273 |
| 3DH5     | Ant1    | 2441            | 2.73         | 3.59        | 76.04  | 0.00273 |

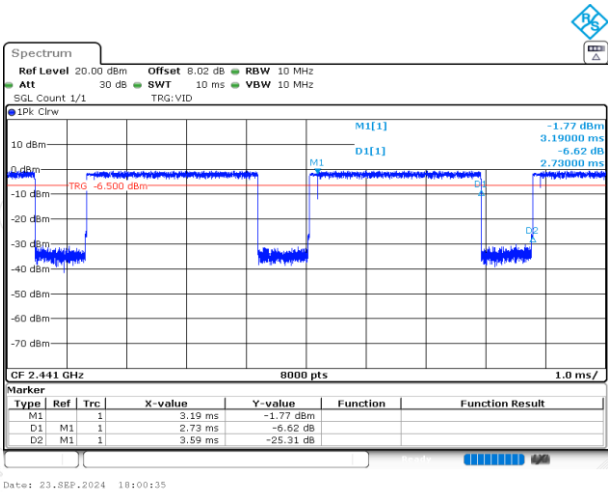
DH5\_2441MHz



2DH5\_2441MHz



3DH5\_2441MHz



### 3. LABORATORY AND ACCREDITATIONS

#### 3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of GRG METROLOGY & TEST GROUP CO., LTD.

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Shenzhen, 518110, People's Republic of China

P.C. : 518110

Tel : 0755-61180008

Fax : 0755-61180008

#### 3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to GB/T 27025(ISO/IEC 17025:2017)

**USA** A2LA(Certificate #2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

**Canada** ISED (Company Number: 24897, CAB identifier:CN0069)

**USA** FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,  
<http://www.grgtest.com>

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### 3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| Measurement         |            | Frequency           | Uncertainty         |
|---------------------|------------|---------------------|---------------------|
| Radiated Emission   | X          | 9kHz~30MHz          | 4.4dB <sup>1)</sup> |
|                     | Y          | 9kHz~30MHz          | 4.4dB <sup>1)</sup> |
|                     | Z          | 9kHz~30MHz          | 4.4dB <sup>1)</sup> |
|                     | Horizontal | 30MHz~200MHz        | 4.6dB <sup>1)</sup> |
|                     |            | 200MHz~1000MHz      | 4.8dB <sup>1)</sup> |
|                     |            | 1GHz~18GHz          | 5.0dB <sup>1)</sup> |
|                     |            | 18GHz~26.5GHz       | 5.2dB <sup>1)</sup> |
|                     | Vertical   | 30MHz~200MHz        | 4.7dB <sup>1)</sup> |
|                     |            | 200MHz~1000MHz      | 4.7dB <sup>1)</sup> |
|                     |            | 1GHz~18GHz          | 5.1dB <sup>1)</sup> |
| 18GHz~26.5GHz       |            | 5.4dB <sup>1)</sup> |                     |
| Conduction Emission |            | 150kHz~30MHz        | 3.3dB <sup>1)</sup> |

| Measurement                  | Uncertainty          |
|------------------------------|----------------------|
| RF frequency                 | $6.0 \times 10^{-6}$ |
| RF power conducted           | 0.78 dB              |
| Occupied channel bandwidth   | 0.40 dB              |
| Unwanted emission, conducted | 0.68 dB              |
| Humidity                     | 6.00 %               |
| Temperature                  | 2.0°C                |

Note:

<sup>1)</sup> This uncertainty represents an expanded uncertainty expressed at approximately the 95%.  
This uncertainty represents an expanded uncertainty factor of  $k=2$ .

**4. LIST OF USED TEST EQUIPMENT AT GRGT**

| Name of Equipment                                                                                                                                         | Manufacturer          | Model              | Serial Number              | Calibration Due |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------|----------------------------|-----------------|
| <b>Hopping Channel Number &amp; Dwell Time &amp; 20 dB Bandwidth &amp; Conducted band edges and Spurious Emission &amp; Carrier Frequencies Separated</b> |                       |                    |                            |                 |
| Spectrum Analyzer                                                                                                                                         | R&S                   | FSV30              | 1321.3008K30<br>-104381-rH | 2024-10-13      |
| Automatic control unit                                                                                                                                    | TONSCEND              | JS0806-2           | 2018060317                 | 2025-07-20      |
| BT/WIFI System                                                                                                                                            | Tonscend              | JS1120-3           |                            |                 |
| <b>Radiated Spurious Emission&amp;Restricted bands of operation</b>                                                                                       |                       |                    |                            |                 |
| Bi-log Antenna                                                                                                                                            | Schwarzbeck           | VULB9160           | VULB9160-3402              | 2025-09-11      |
| Loop Antenna                                                                                                                                              | Schwarzbeck           | FMZB 1513-60       | 1513-60-56                 | 2025-05-07      |
| Horn Antenna                                                                                                                                              | Schwarzbeck           | BBHA 9120D         | 02143                      | 2025-06-15      |
| Test Receiver                                                                                                                                             | R&S                   | ESR26              | 101758                     | 2025-09-10      |
| Board-Band<br>Horn Antenna                                                                                                                                | Schwarzbeck           | BBHA 9170          | BBHA 9170-497              | 2025-08-24      |
| Amplifier                                                                                                                                                 | SHIRONG<br>ELECTRONIC | DLNA-30M1G-<br>G40 | 20200928001                | 2025-01-30      |
| Amplifier                                                                                                                                                 | Tonscend              | TAP01018048        | AP20E8060075               | 2025-03-01      |
| Amplifier                                                                                                                                                 | Tonscend              | TAP184050          | AP20E806071                | 2025-03-01      |
| Amplifier                                                                                                                                                 | SHIRONG<br>ELECTRONIC | DLNA-1G18G-<br>G40 | 20200928005                | 2025-07-19      |
| Test S/W                                                                                                                                                  | Tonscend              | JS32-RE/5.0.0      | /                          | /               |
| <b>Maximum Peak Output Power</b>                                                                                                                          |                       |                    |                            |                 |
| Pulse power sensor                                                                                                                                        | Anristu               | MA2411B            | 1126150                    | 2025-01-11      |
| Power meter                                                                                                                                               | Anristu               | ML2495A            | 1204003                    | 2025-01-11      |
| <b>Conducted Emissions</b>                                                                                                                                |                       |                    |                            |                 |
| EMI TEST RECEIVER                                                                                                                                         | R&S                   | ESCI               | 100783                     | 2025-07-19      |
| LISN(EUT)                                                                                                                                                 | R&S                   | ENV216             | 101543                     | 2025-07-10      |
| Test S/W                                                                                                                                                  | EZ                    | CCS-3A1-CE         |                            |                 |

Note: The calibration interval of the above test instruments is 12 months.

## 5. TEST RESULTS

### 5.1 E.U.T. TEST CONDITIONS

Test frequencies:

According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

| Frequency range over which device operates | Number of frequencies | Location in the range of operation         |
|--------------------------------------------|-----------------------|--------------------------------------------|
| 1 MHz or less                              | 1                     | Middle                                     |
| 1 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 |

EUT channels and frequencies list:

| Channel  | Frequency (MHz) | Channel | Frequency (MHz) | Channel   | Frequency (MHz) |
|----------|-----------------|---------|-----------------|-----------|-----------------|
| <b>0</b> | <b>2402</b>     | 14      | 2416            | 28        | 2430            |
| 1        | 2403            | 15      | 2417            | 29        | 2431            |
| 2        | 2404            | 16      | 2418            | 30        | 2432            |
| 3        | 2405            | 17      | 2419            | 31        | 2433            |
| 4        | 2406            | 18      | 2420            | 32        | 2434            |
| 5        | 2407            | 19      | 2421            | 33        | 2435            |
| 6        | 2408            | 20      | 2422            | 34        | 2436            |
| 7        | 2409            | 21      | 2423            | 35        | 2437            |
| 8        | 2410            | 22      | 2424            | 36        | 2438            |
| 9        | 2411            | 23      | 2425            | 37        | 2439            |
| 10       | 2412            | 24      | 2426            | 38        | 2440            |
| 11       | 2413            | 25      | 2427            | <b>39</b> | <b>2441</b>     |
| 12       | 2414            | 26      | 2428            | 40        | 2442            |
| 13       | 2415            | 27      | 2429            | 41        | 2443            |

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|
| 42      | 2444            | 55      | 2457            | 68      | 2470            |
| 43      | 2445            | 56      | 2458            | 69      | 2471            |
| 44      | 2446            | 57      | 2459            | 70      | 2472            |
| 45      | 2447            | 58      | 2460            | 71      | 2473            |
| 46      | 2448            | 59      | 2461            | 72      | 2474            |
| 47      | 2449            | 60      | 2462            | 73      | 2475            |
| 48      | 2450            | 61      | 2463            | 74      | 2476            |
| 49      | 2451            | 62      | 2464            | 75      | 2477            |
| 50      | 2452            | 63      | 2465            | 76      | 2478            |
| 51      | 2453            | 64      | 2466            | 77      | 2479            |
| 52      | 2454            | 65      | 2467            | 78      | 2480            |
| 53      | 2455            | 66      | 2468            |         |                 |
| 54      | 2456            | 67      | 2469            |         |                 |

Test frequency is the lowest channel: 0 frequency(2402MHz), middle channel: 39 frequency (2441MHz) and highest channel: 78 frequency(2480MHz)

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6. 20dB BANDWIDTH

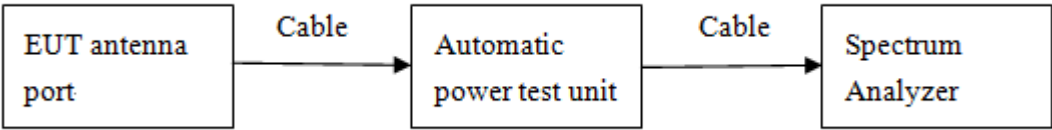
6.1 LIMITS

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

6.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Set the spectrum analyzer as RBW=30kHz, VBW=100kHz, Span=3MHz, Sweep = auto. Allow the trace to stabilize, record 20dB bandwidth value
- 3) Repeat until all the test channels are investigated.

6.3 TEST SETUP



6.4 TEST RESULTS

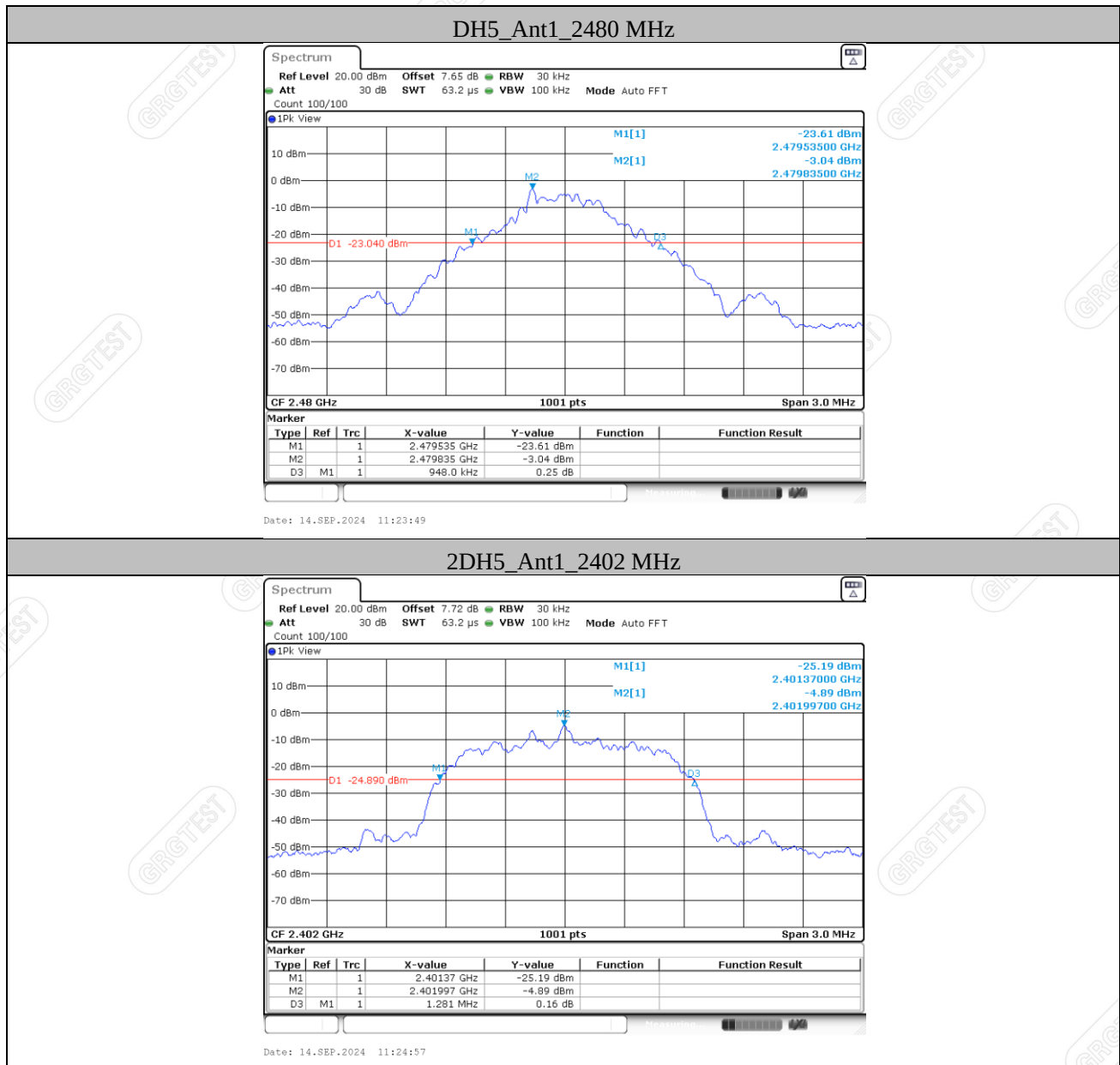
Environment: 25.3℃/59%RH/101.0kPa  
Tested By: Qin tingting

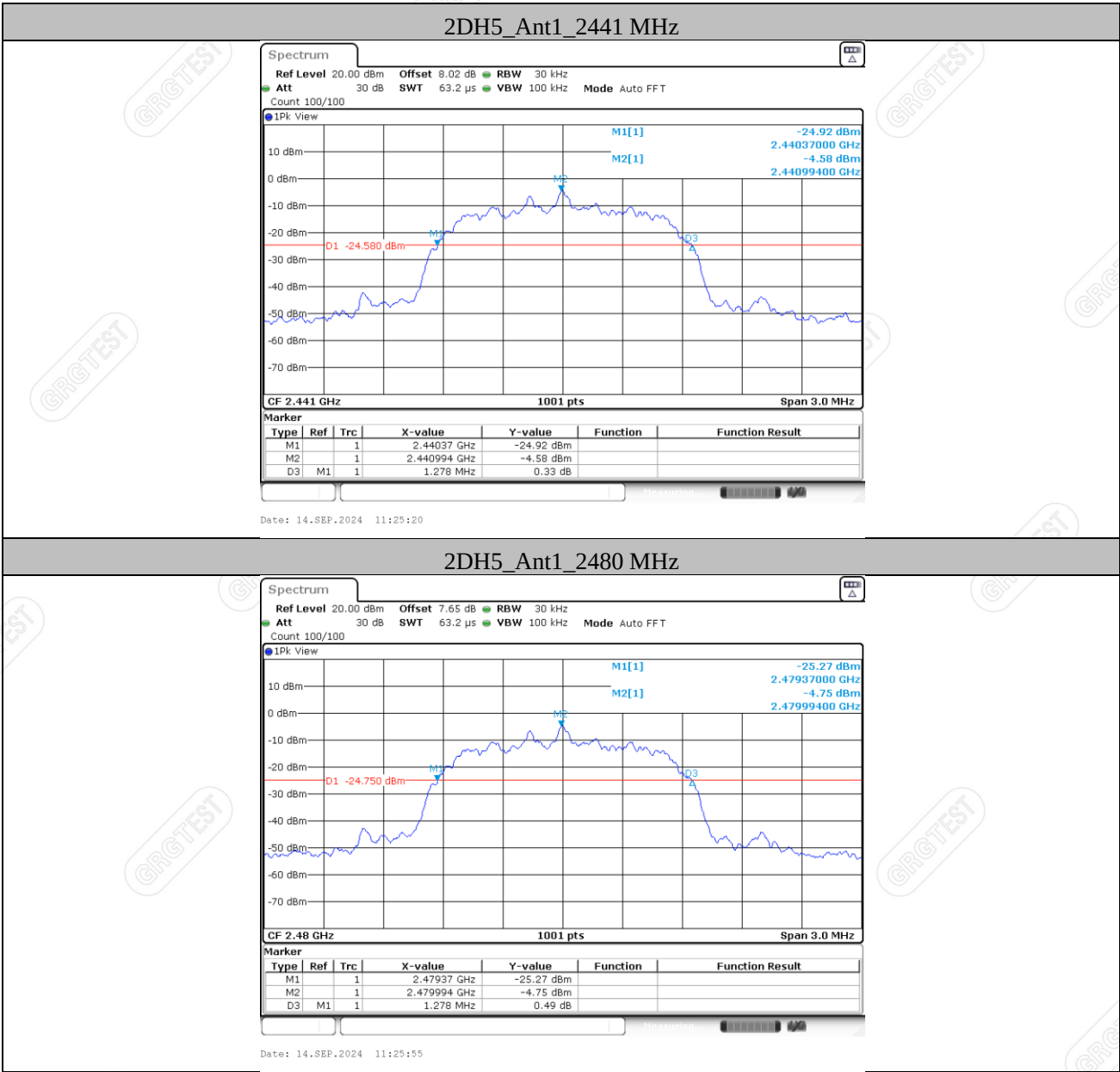
Voltage:AC 120V/60Hz  
Date: 2024-09-14

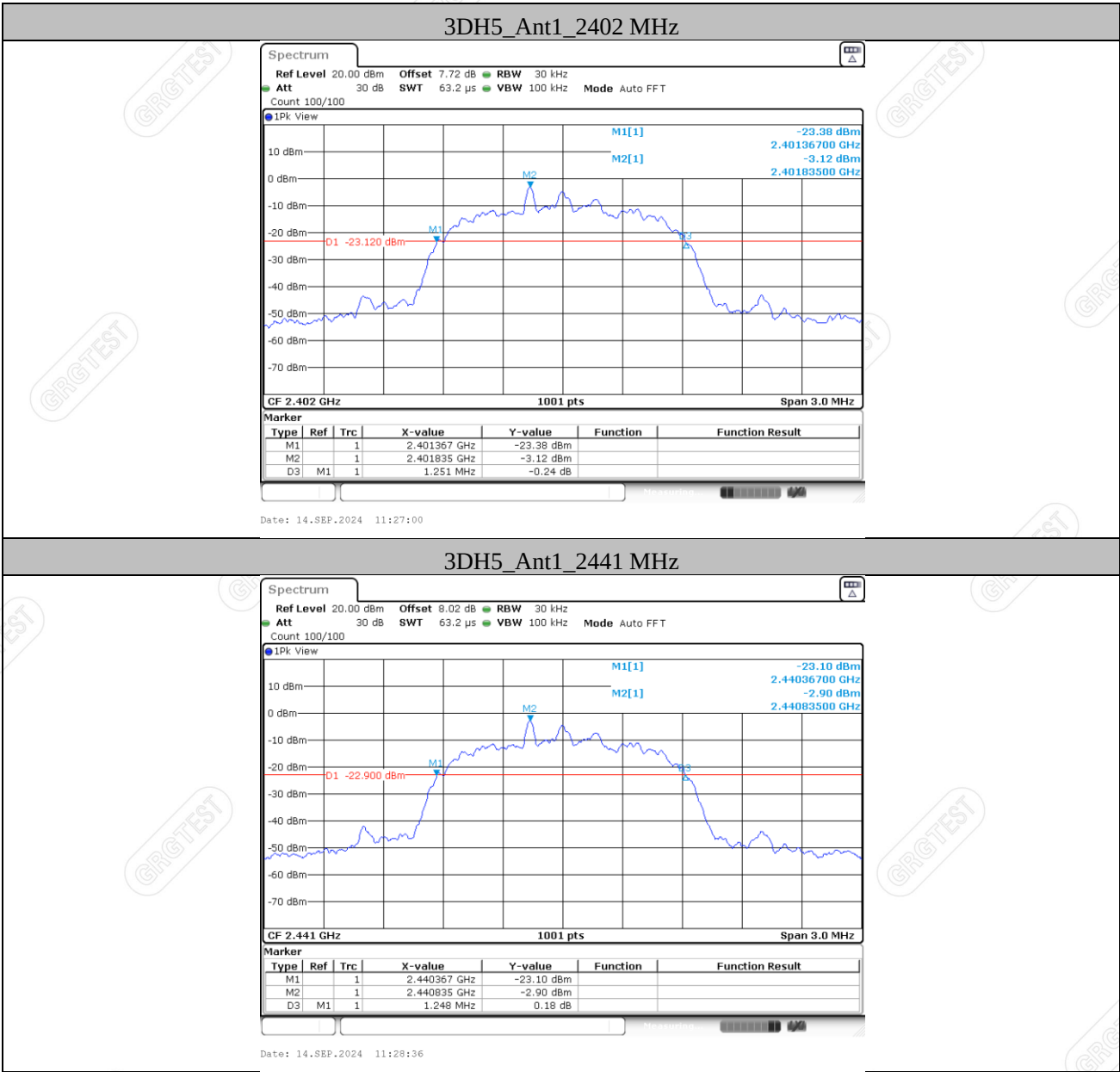
| Test mode | Channel | Frequency (MHz) | 20 dB Bandwidth (kHz) |
|-----------|---------|-----------------|-----------------------|
| DH5       | Lowest  | 2402            | 945                   |
|           | Middle  | 2441            | 948                   |
|           | Highest | 2480            | 948                   |
| Test mode | Channel | Frequency (MHz) | 20 dB Bandwidth (kHz) |
| 2DH5      | Lowest  | 2402            | 1281                  |
|           | Middle  | 2441            | 1278                  |
|           | Highest | 2480            | 1278                  |
| Test mode | Channel | Frequency (MHz) | 20 dB Bandwidth (kHz) |
| 3DH5      | Lowest  | 2402            | 1251                  |
|           | Middle  | 2441            | 1248                  |
|           | Highest | 2480            | 1248                  |

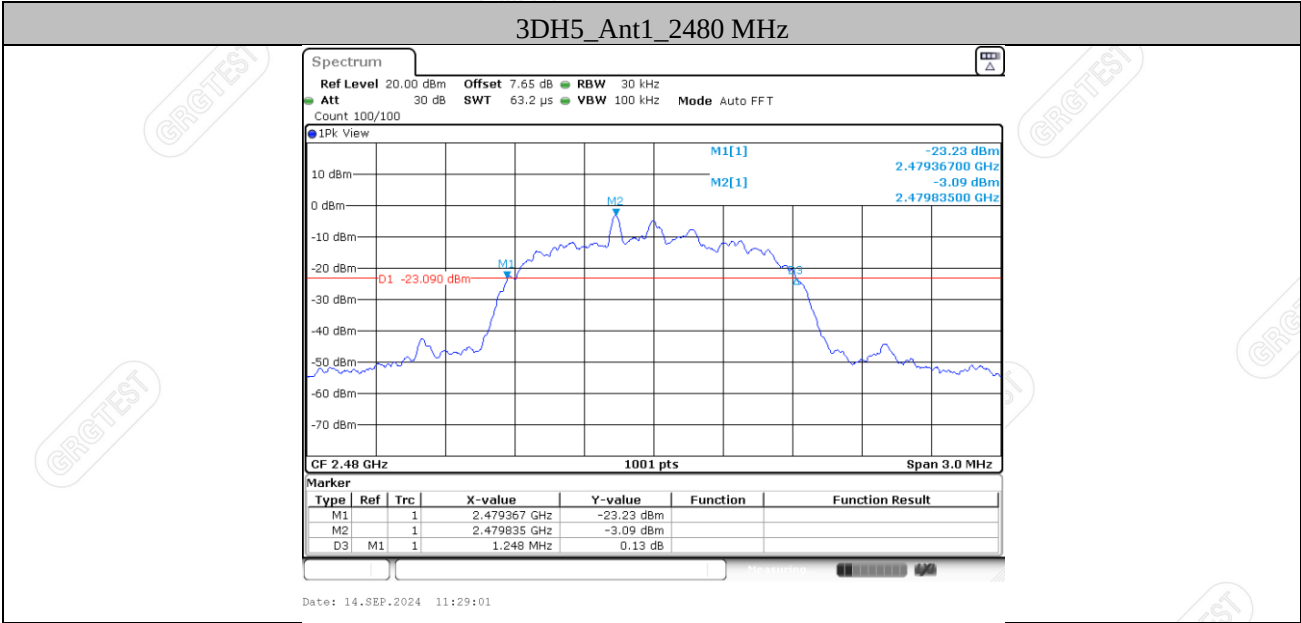
Result plot as follows:











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## 7. CARRIER FREQUENCIES SEPARATED

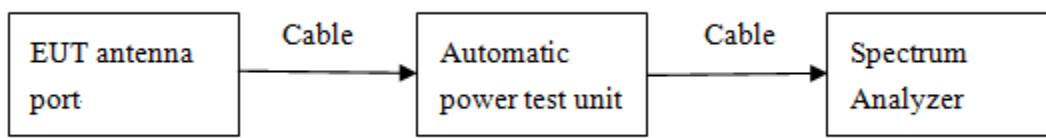
### 7.1 LIMITS

1) Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

### 7.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 2) Set center frequency of spectrum analyzer = middle of hopping channel.
- 3) Set the spectrum analyzer as RBW=100kHz, VBW=300kHz, Adjust Span to 2MHz, Sweep = auto
- 4) Use the marker-delta function to mark hopping channel carrier frequencies and record the channel separation.

### 7.3 TEST SETUP



### 7.4 TEST RESULTS

Environment: 25.3°C/59%RH/101.0kPa  
 Tested By: Qin tingting

Voltage: AC 120V/60Hz  
 Date: 2024-09-14

#### DH5

| Channel Separation (MHz) | Two-thirds of the 20 dB Bandwidth (kHz) | Channel Separation Limit            | Result |
|--------------------------|-----------------------------------------|-------------------------------------|--------|
| 1.003                    | 632                                     | > Two-thirds of the 20 dB Bandwidth | Pass   |

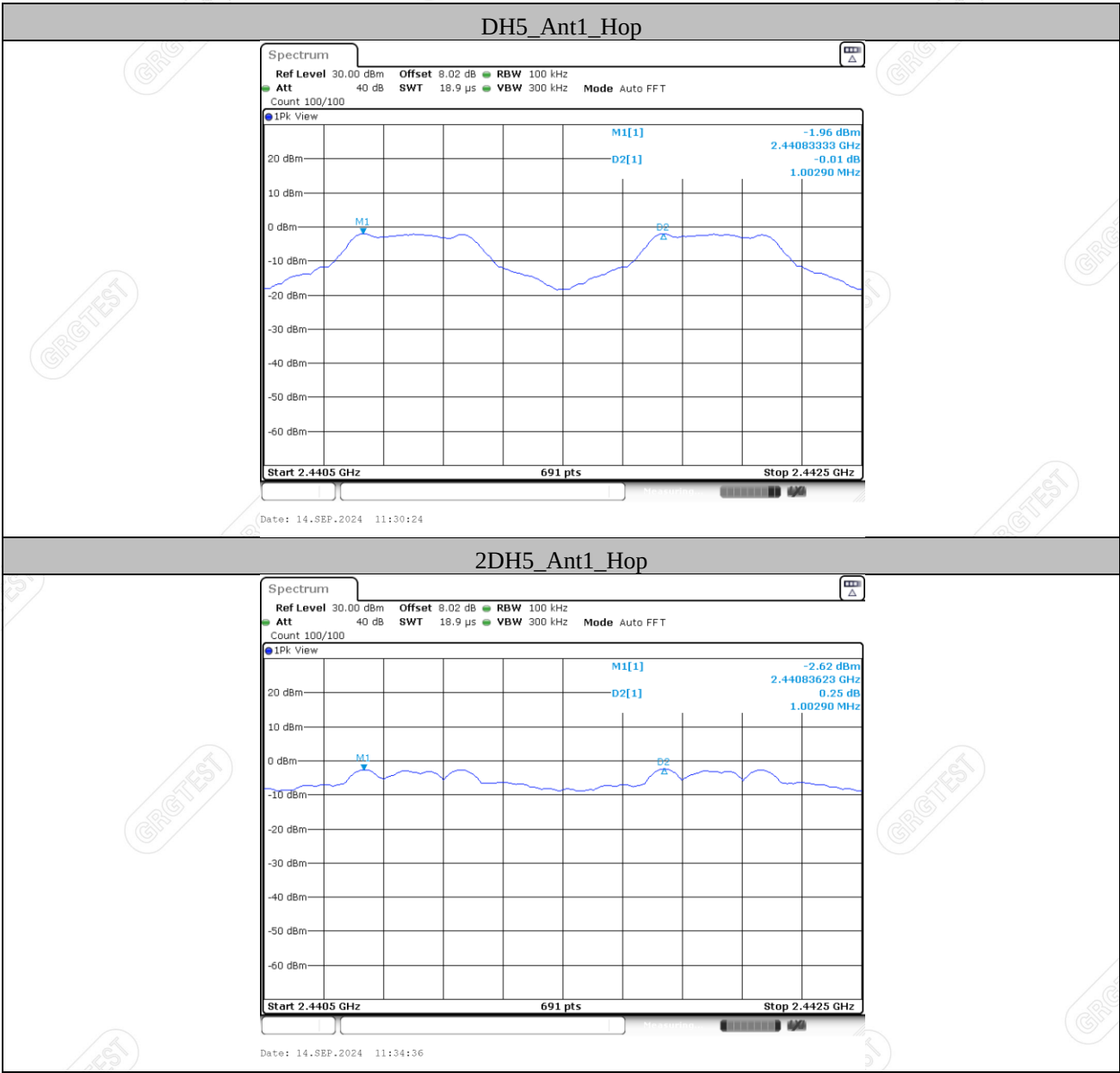
#### 2DH5

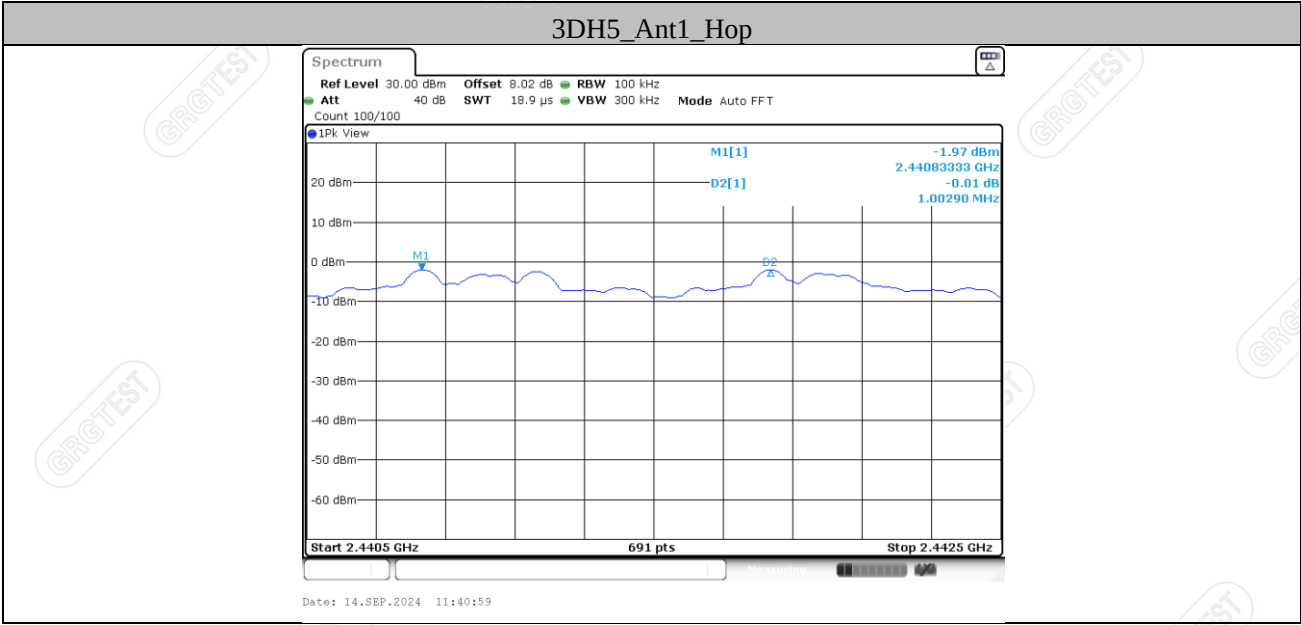
| Channel Separation (MHz) | Two-thirds of the 20 dB Bandwidth (kHz) | Channel Separation Limit            | Result |
|--------------------------|-----------------------------------------|-------------------------------------|--------|
| 1.003                    | 854                                     | > Two-thirds of the 20 dB Bandwidth | Pass   |

#### 3DH5

| Channel Separation (MHz) | Two-thirds of the 20 dB Bandwidth (kHz) | Channel Separation Limit            | Result |
|--------------------------|-----------------------------------------|-------------------------------------|--------|
| 1.003                    | 834                                     | > Two-thirds of the 20 dB Bandwidth | Pass   |

Result plot as follows:





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8. HOPPING CHANNEL NUMBER

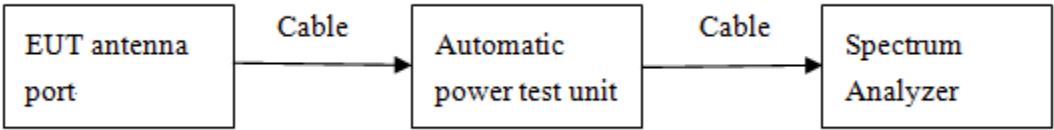
8.1 LIMITS

Regulation 15.247 (a) (1)(iii) Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

8.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 2) Set the spectrum analyzer as RBW=100kHz, VBW=300kHz.
- 3) Set the spectrum analyzer: start frequency = 2400MHz. stop frequency = 2483.5MHz. Submit the test result graph.

8.3 TEST SETUP

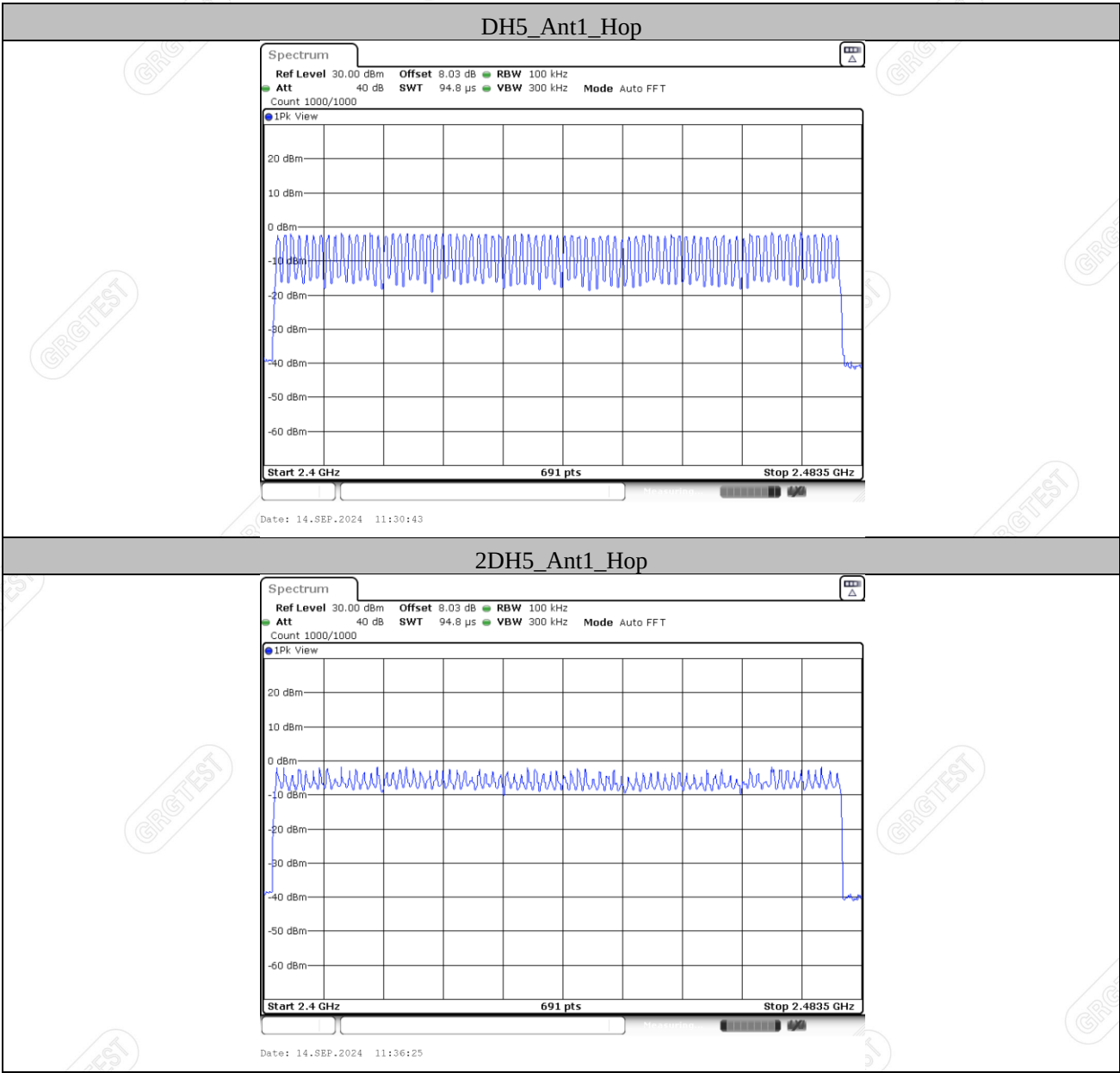


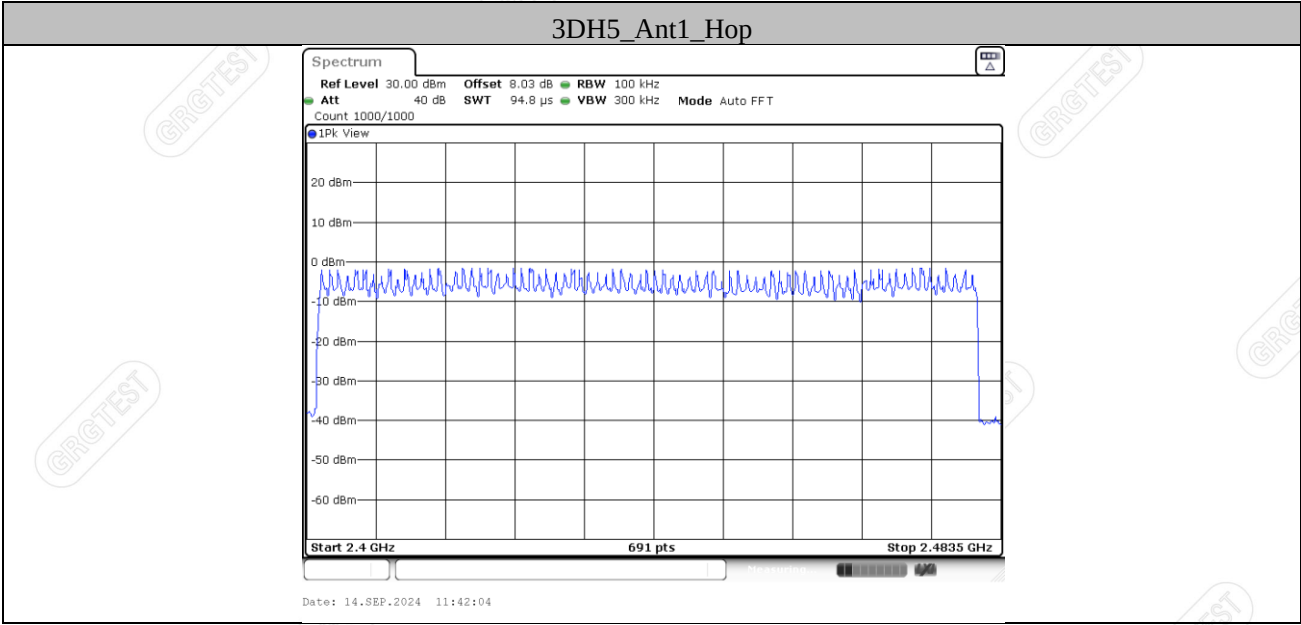
8.4 TEST RESULTS

Environment: 25.3°C/59%RH/101.0kPa  
Tested By: Qin tingting

Voltage:AC 120V/60Hz  
Date: 2024-09-14

| Test mode | Result (No. of CH) | Limit (No. of CH) | Result |
|-----------|--------------------|-------------------|--------|
| DH5       | 79                 | ≥15               | PASS   |
| 2DH5      | 79                 | ≥15               | PASS   |
| 3DH5      | 79                 | ≥15               | PASS   |





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## 9. DWELL TIME

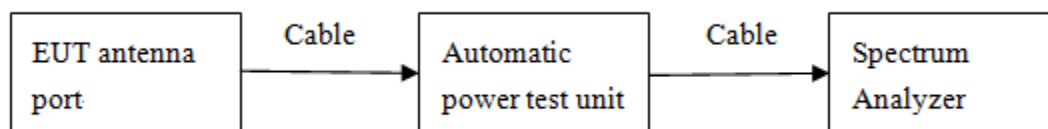
### 9.1 LIMITS

Regulation 15.247(a)(1)(iii) Frequency hopping systems in the 2400-2483.5MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

### 9.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
- 2) Set spectrum analyzer span = 0. centered on a hopping channel;
- 3) Set RBW = 1MHz and VBW = 3MHz. Sweep = as necessary to capture the entire dwell time per hopping channel. Detector Function = Peak. Trace = Max hold;
- 4) Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.). Repeat this test for each variation.
- 5) DH1 Packet permit maximum  $1600 / 79 / 2 = 10.12$  hops per second in each channel (1 time slot TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times  $10.12 \times 31.6 = 320$  within 31.6 seconds
- 6) DH3 Packet permit maximum  $1600 / 79 / 4 = 5.06$  hops per second in each channel (3 time slots TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times  $5.06 \times 31.6 = 160$  within 31.6 seconds
- 7) DH5 Packet permit maximum  $1600 / 79 / 6 = 3.37$  hops per second in each channel (5 time slots TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times  $3.37 \times 31.6 = 106.6$  within 31.6 seconds

### 9.3 TEST SETUP





9.4 TEST RESULTS

Environment: 25.3°C/59%RH/101.0kPa  
Tested By: Qin tingting

Voltage:AC 120V/60Hz  
Date: 2024-09-23

The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s

GFSK: Middle Channel (2.441GHz)

|     |            |       |       |               |   |      |   |     |    |
|-----|------------|-------|-------|---------------|---|------|---|-----|----|
| DH1 | time slot= | 0.368 | (ms)* | (1600/(2*79)) | * | 31.6 | = | 118 | ms |
| DH3 | time slot= | 1.608 | (ms)* | (1600/(4*79)) | * | 31.6 | = | 257 | ms |
| DH5 | time slot= | 2.849 | (ms)* | (1600/(6*79)) | * | 31.6 | = | 304 | ms |

π/4-DQPSK: Middle Channel (2.441GHz)

|      |            |       |       |               |   |      |   |     |    |
|------|------------|-------|-------|---------------|---|------|---|-----|----|
| 2DH1 | time slot= | 0.378 | (ms)* | (1600/(2*79)) | * | 31.6 | = | 121 | ms |
| 2DH3 | time slot= | 1.621 | (ms)* | (1600/(4*79)) | * | 31.6 | = | 259 | ms |
| 2DH5 | time slot= | 2.862 | (ms)* | (1600/(6*79)) | * | 31.6 | = | 305 | ms |

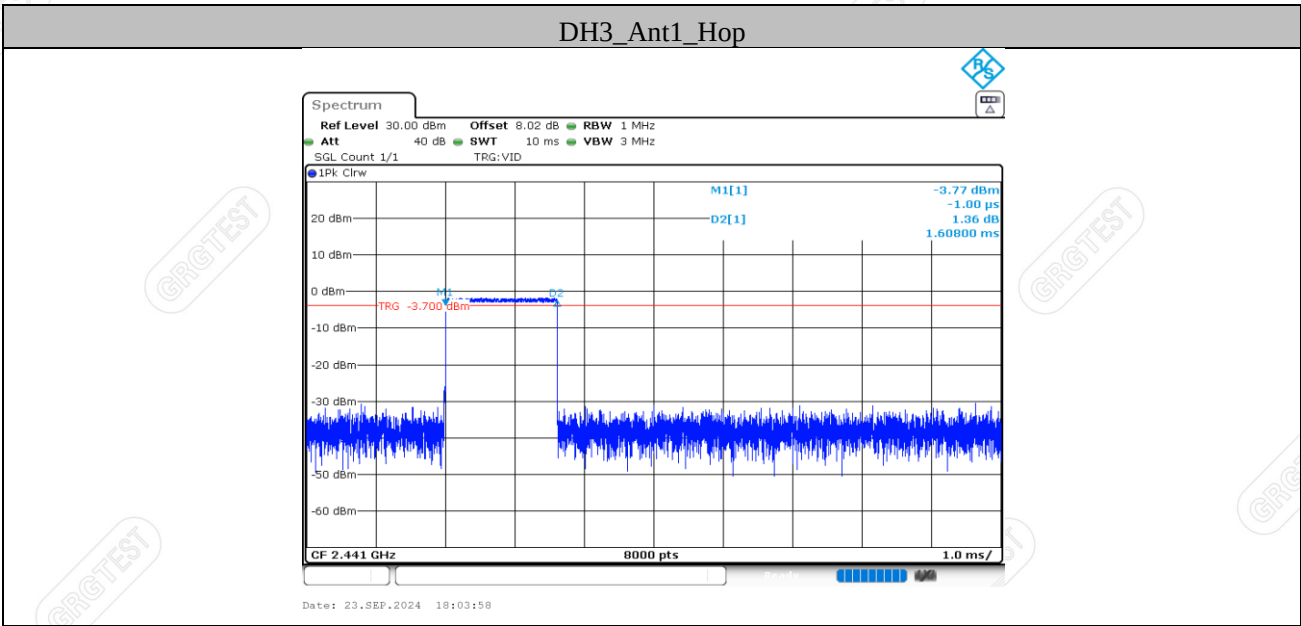
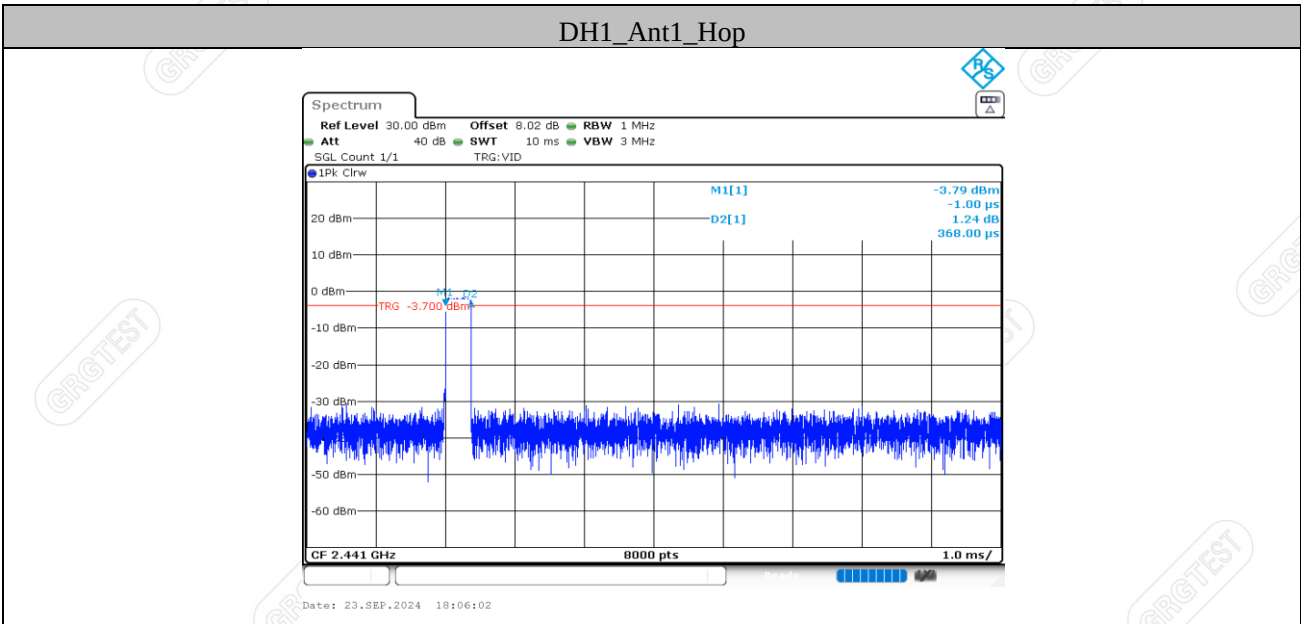
8DPSK: Middle Channel (2.441GHz)

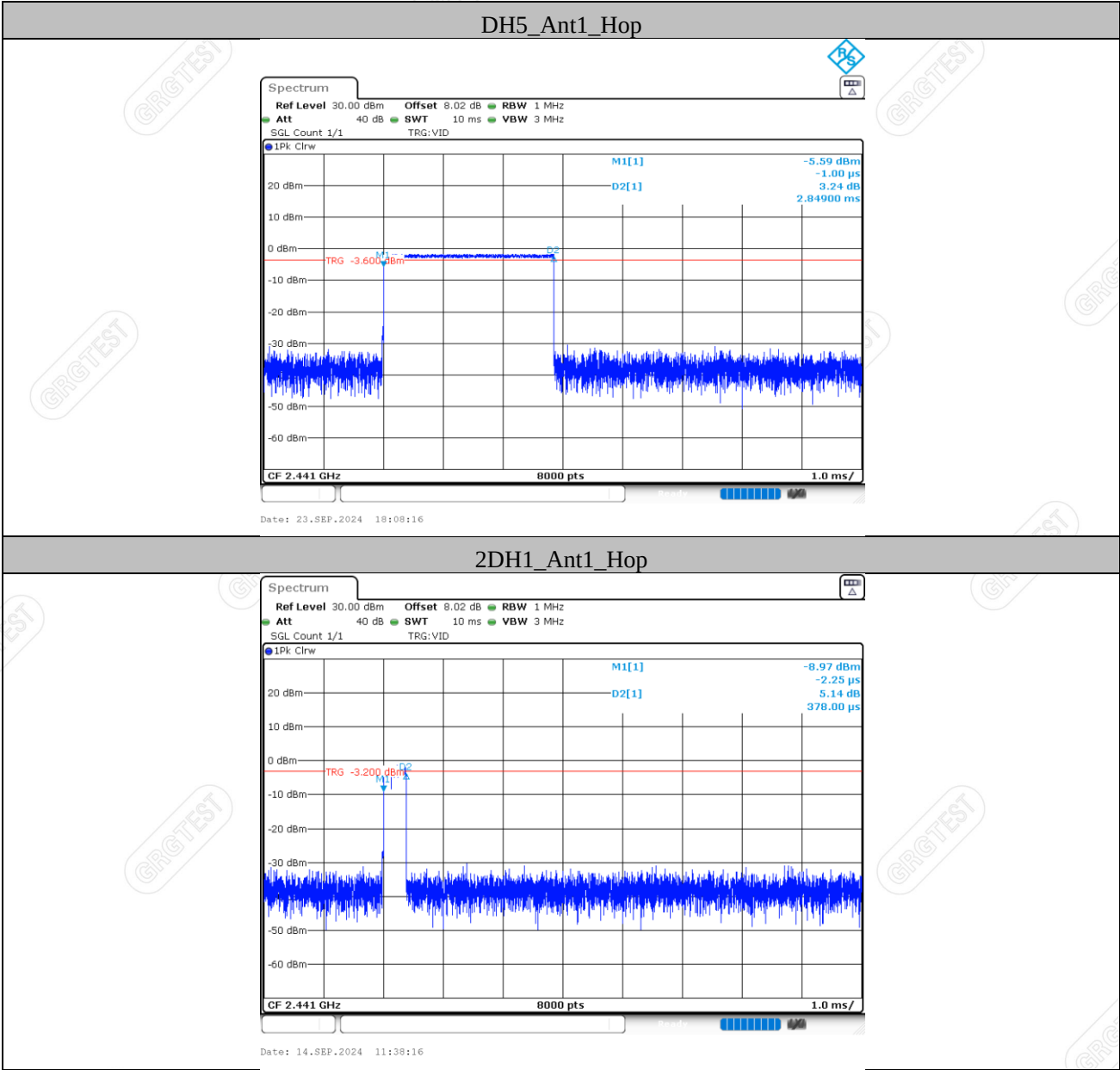
|      |            |       |       |               |   |      |   |     |    |
|------|------------|-------|-------|---------------|---|------|---|-----|----|
| 3DH1 | time slot= | 0.376 | (ms)* | (1600/(2*79)) | * | 31.6 | = | 120 | ms |
| 3DH3 | time slot= | 1.620 | (ms)* | (1600/(4*79)) | * | 31.6 | = | 259 | ms |
| 3DH5 | time slot= | 2.863 | (ms)* | (1600/(6*79)) | * | 31.6 | = | 305 | ms |

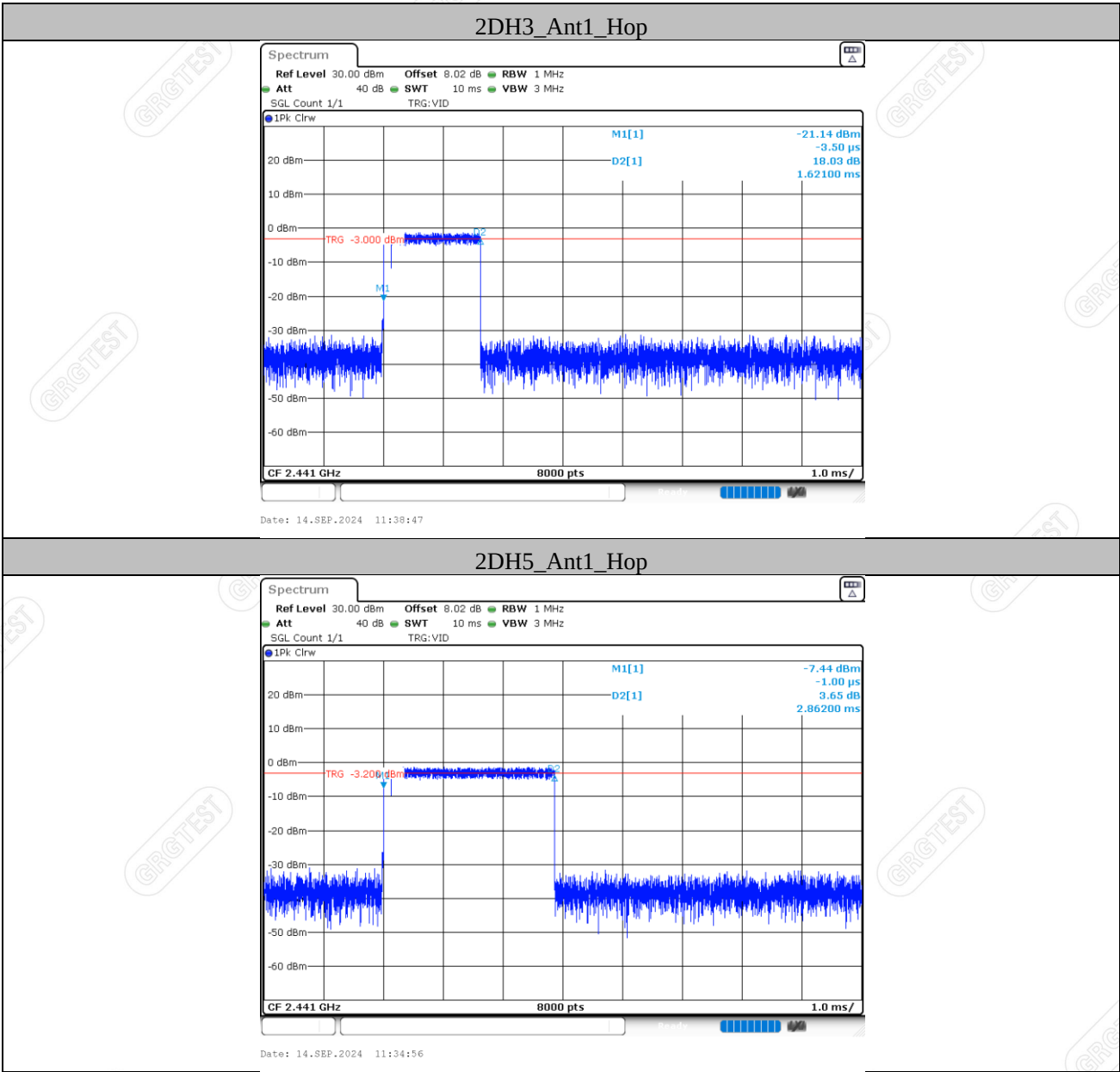
The results are not greater than 0.4 seconds.

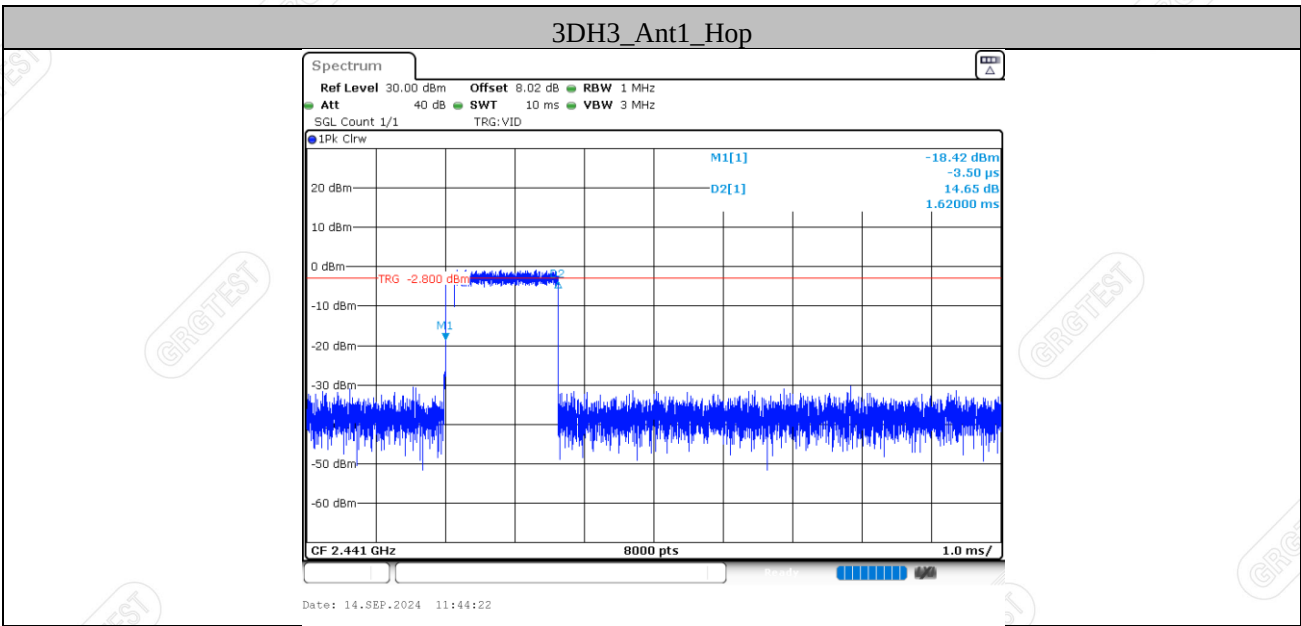
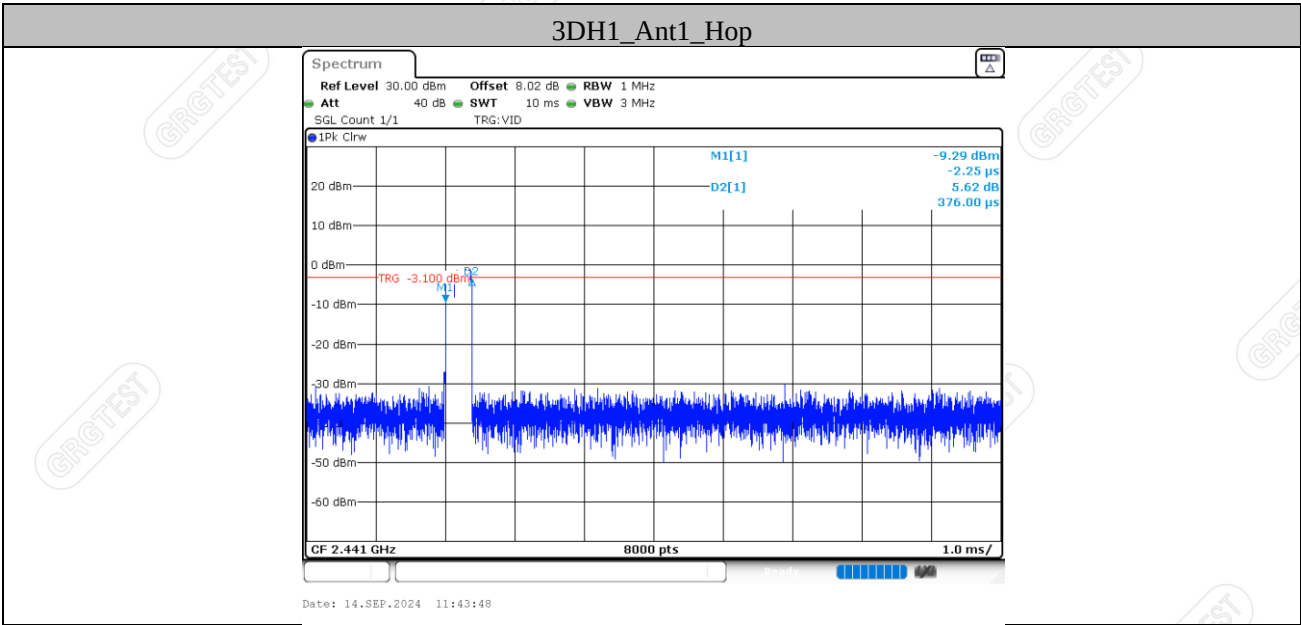
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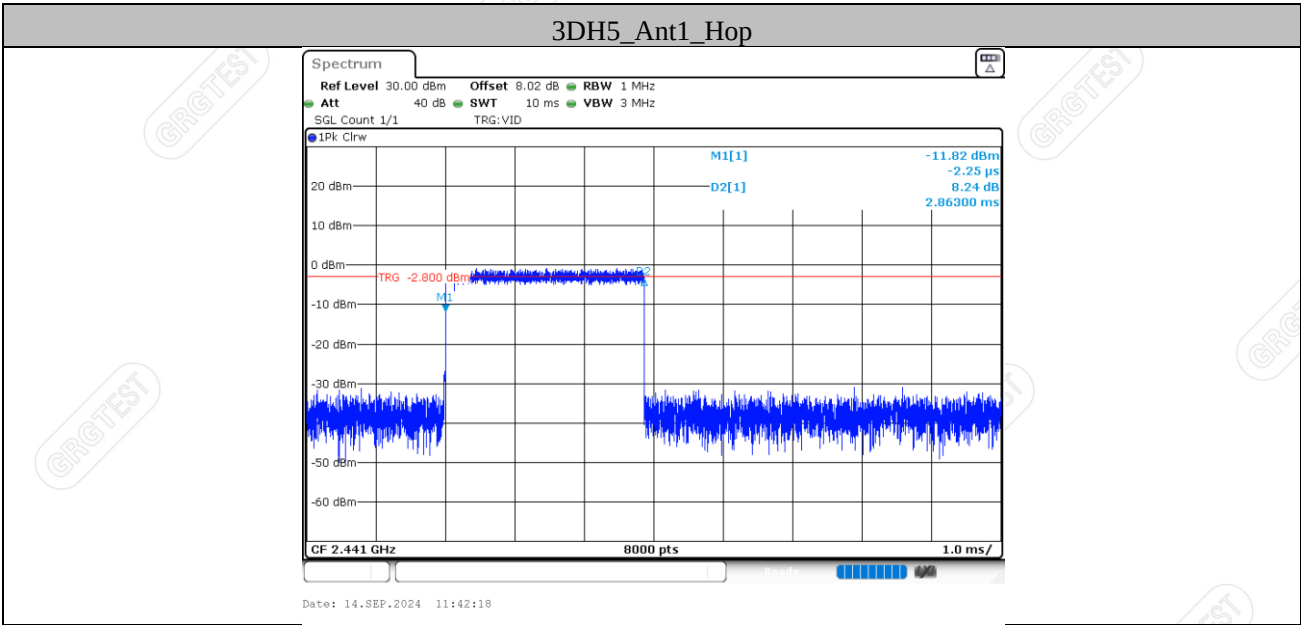
Please refer the graph as below:











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## 10. MAXIMUM PEAK OUTPUT POWER

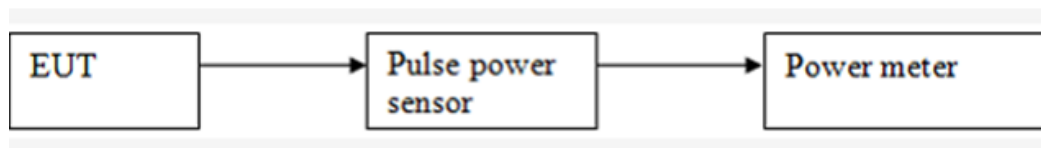
### 10.1 LIMITS

Regulation 15.247 (b)(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

### 10.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the power meter and enable the EUT transmit continuously.
- 2) Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

### 10.3 TEST SETUP



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10.4 TEST RESULTS

Environment: 25.3°C/59%RH/101.0kPa  
Tested By: Qin tingting

Voltage:AC 120V/60Hz  
Date: 2024-09-23

DH5

| Test Channel | Fundamental Frequency (GHz) | Max Output Power(dBm) | Limit (dBm) | Peak/ Average | Pass/Fail |
|--------------|-----------------------------|-----------------------|-------------|---------------|-----------|
| Lowest       | 2.402                       | -2.11                 | 20.97       | Peak          | Pass      |
| Middle       | 2.441                       | -2.37                 |             |               | Pass      |
| Highest      | 2.480                       | -2.72                 |             |               | Pass      |

2DH5

| Test Channel | Fundamental Frequency (GHz) | Max Output Power(dBm) | Limit (dBm) | Peak/ Average | Pass/Fail |
|--------------|-----------------------------|-----------------------|-------------|---------------|-----------|
| Lowest       | 2.402                       | -0.52                 | 20.97       | Peak          | Pass      |
| Middle       | 2.441                       | -0.78                 |             |               | Pass      |
| Highest      | 2.480                       | -1.14                 |             |               | Pass      |

3DH5

| Test Channel | Fundamental Frequency (GHz) | Max Output Power(dBm) | Limit (dBm) | Peak/ Average | Pass/Fail |
|--------------|-----------------------------|-----------------------|-------------|---------------|-----------|
| Lowest       | 2.402                       | -0.30                 | 20.97       | Peak          | Pass      |
| Middle       | 2.441                       | -0.56                 |             |               | Pass      |
| Highest      | 2.480                       | -0.88                 |             |               | Pass      |

## 11. CONDUCTED BAND EDGES AND SPURIOUS EMISSIONS

### 11.1 LIMITS

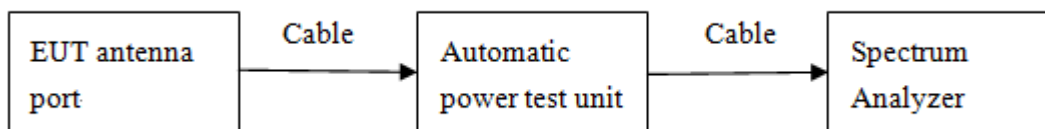
In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB.

### 11.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS Measurement Guidance v05r02.

- 1) Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.
- 2) Set the spectrum analyzer: RBW =100kHz; VBW =300kHz, Frequency range = 30MHz to 26.5GHz; Sweep = auto; Detector Function = Peak. Trace = Max, hold.
- 3) Measure and record the results in the test report.
- 4) The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

### 11.3 TEST SETUP



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11.4 TEST RESULTS

Environment: 25.3°C/59%RH/101.0kPa  
Tested By: Qin tingting

Voltage:AC 120V/60Hz  
Date: 2024-09-23

Band edge measurements

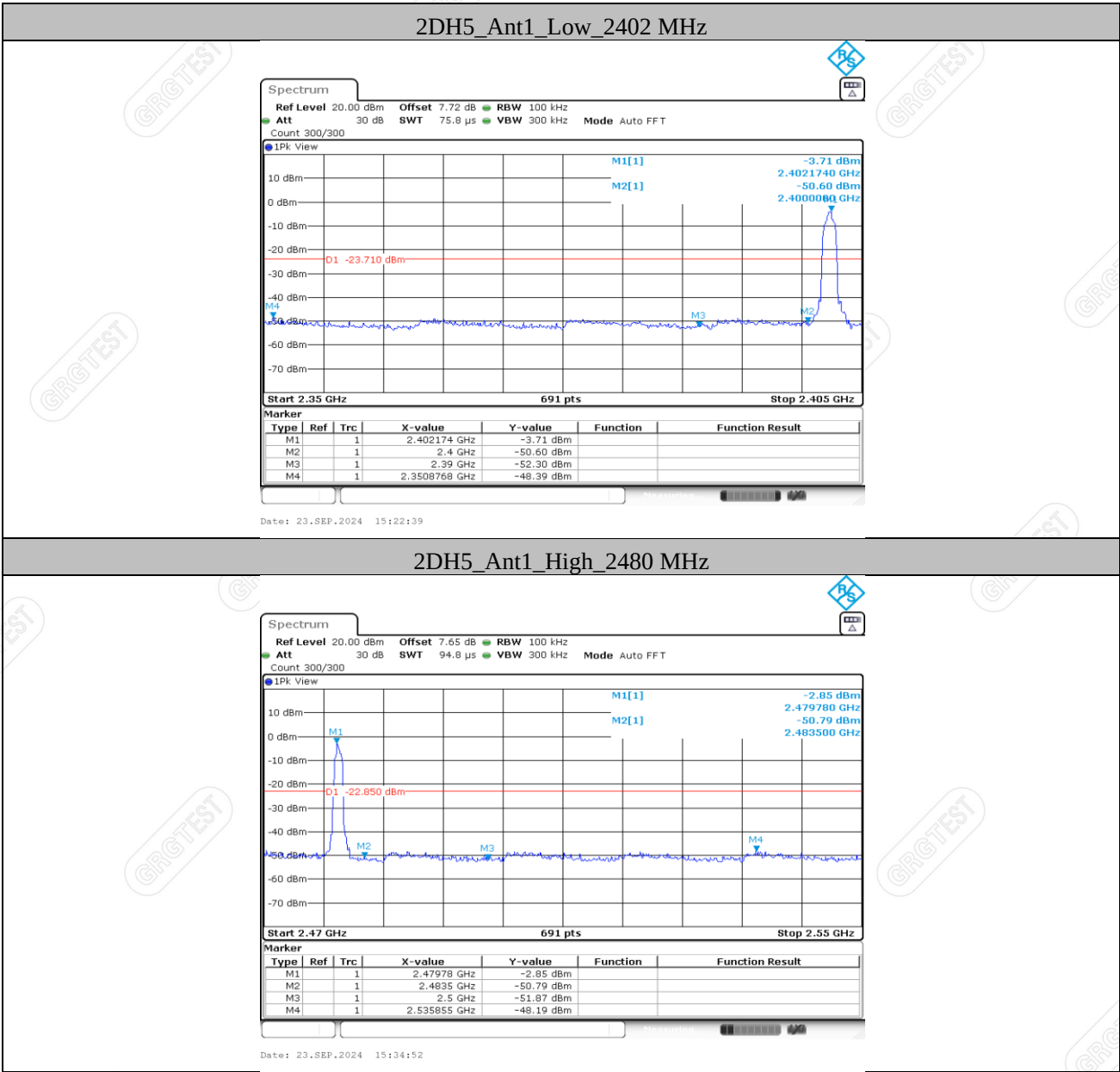
| TestMode | Antenna | ChName | Freq(MHz) | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|--------|-----------|---------------|-------------|------------|---------|
| DH5      | Ant1    | Low    | 2402      | -2.86         | -49.14      | ≤-22.86    | PASS    |
|          |         | High   | 2480      | -2.75         | -47.52      | ≤-22.75    | PASS    |
|          |         | Low    | Hop_2402  | -3.03         | -47.64      | ≤-23.03    | PASS    |
|          |         | High   | Hop_2480  | -3.54         | -47.63      | ≤-23.54    | PASS    |
| 2DH5     | Ant1    | Low    | 2402      | -3.71         | -48.39      | ≤-23.71    | PASS    |
|          |         | High   | 2480      | -2.85         | -48.19      | ≤-22.85    | PASS    |
|          |         | Low    | Hop_2402  | -2.93         | -47.13      | ≤-22.93    | PASS    |
|          |         | High   | Hop_2480  | -4.25         | -47.4       | ≤-24.25    | PASS    |
| 3DH5     | Ant1    | Low    | 2402      | -2.92         | -48.2       | ≤-22.92    | PASS    |
|          |         | High   | 2480      | -2.76         | -47.6       | ≤-22.76    | PASS    |
|          |         | Low    | Hop_2402  | -5.22         | -47.4       | ≤-25.22    | PASS    |
|          |         | High   | Hop_2480  | -3.31         | -48.8       | ≤-23.31    | PASS    |

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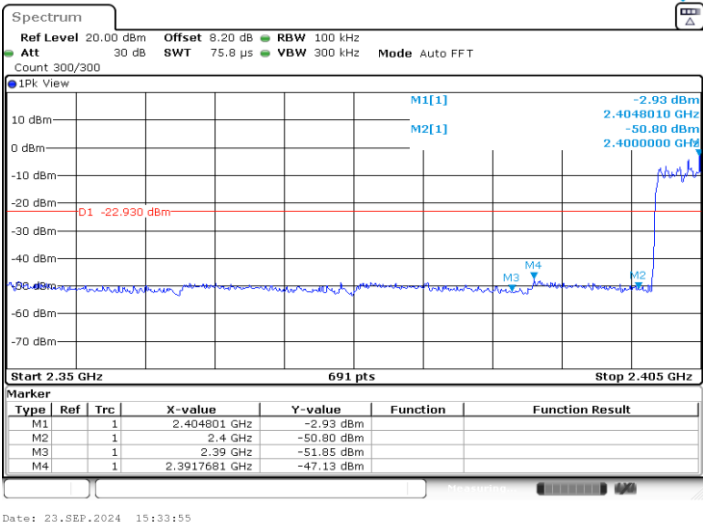
Test result plot as follows:



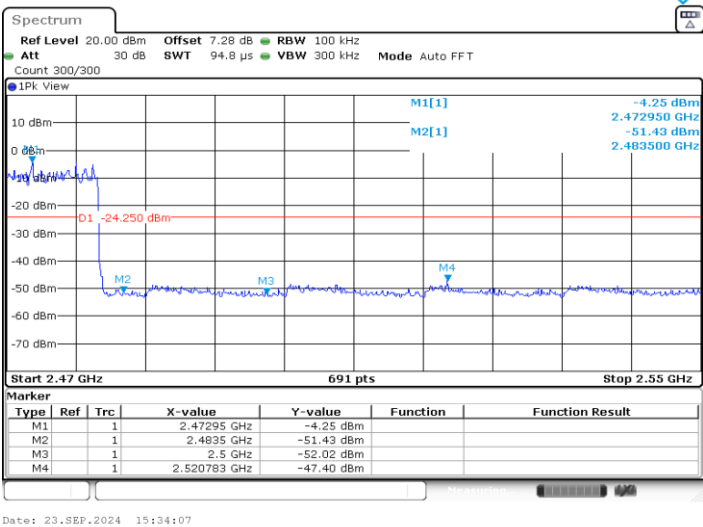




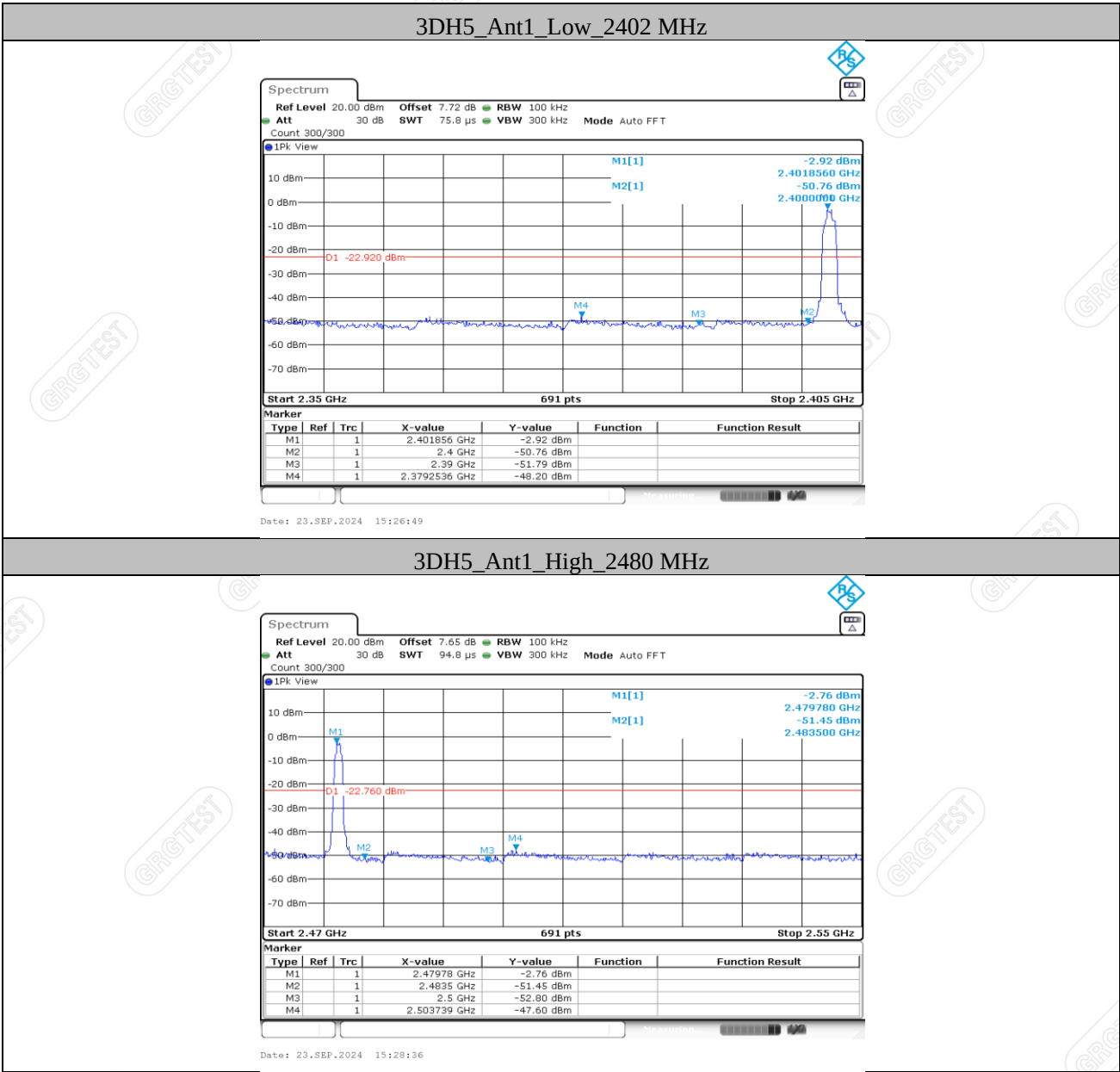
2DH5\_Ant1\_Low\_Hop\_2402 MHz

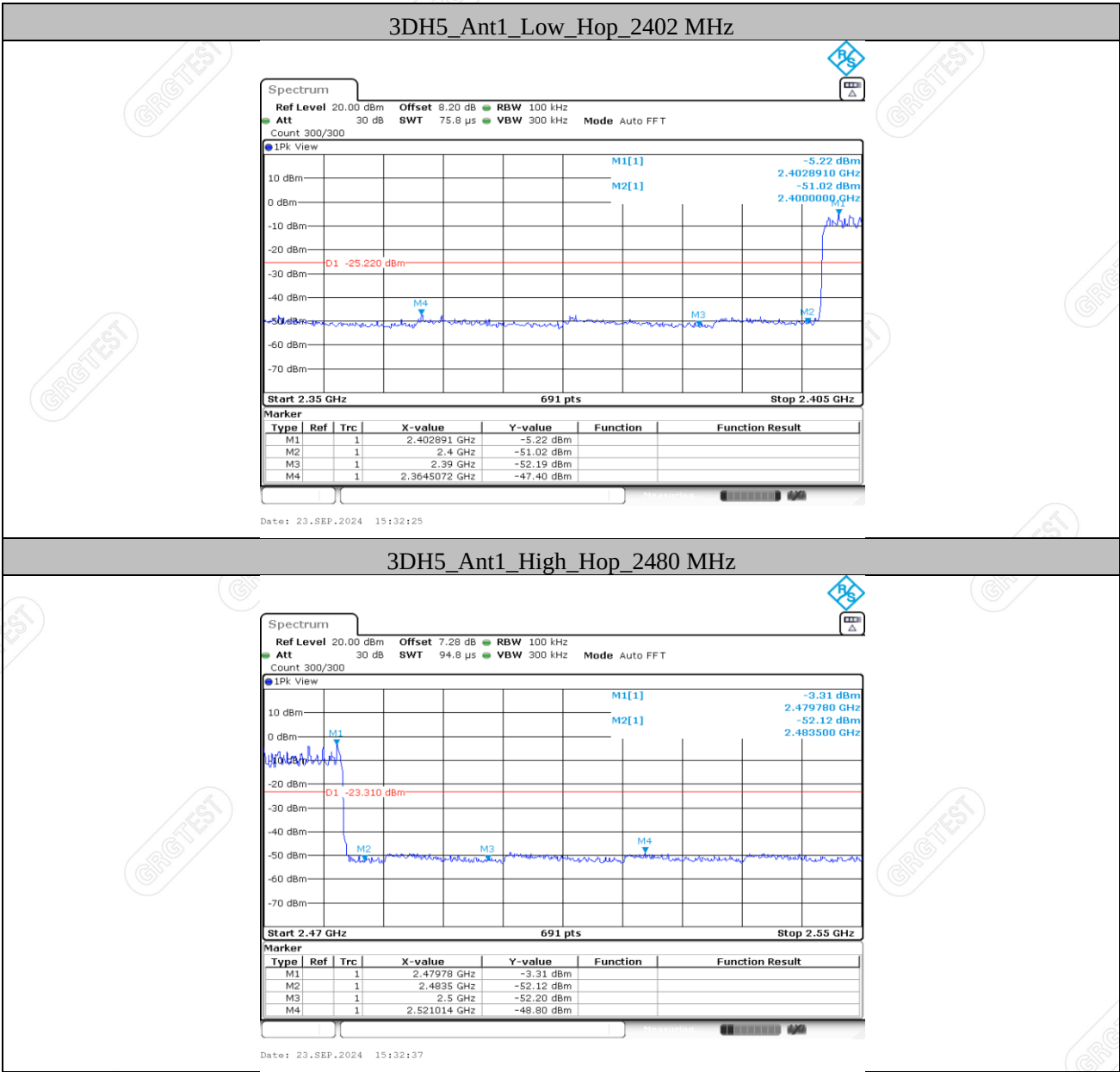


2DH5\_Ant1\_High\_Hop\_2480 MHz



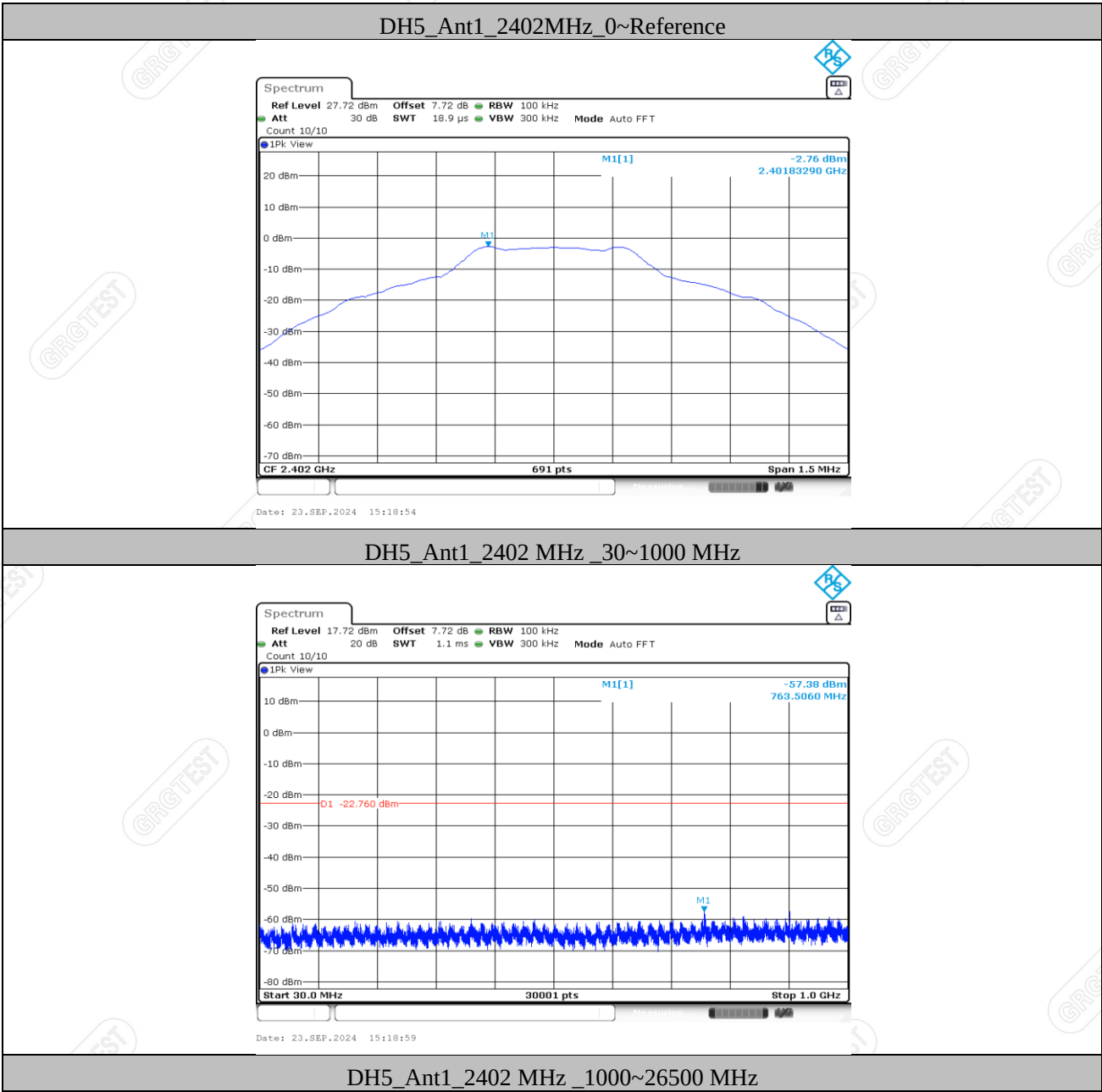


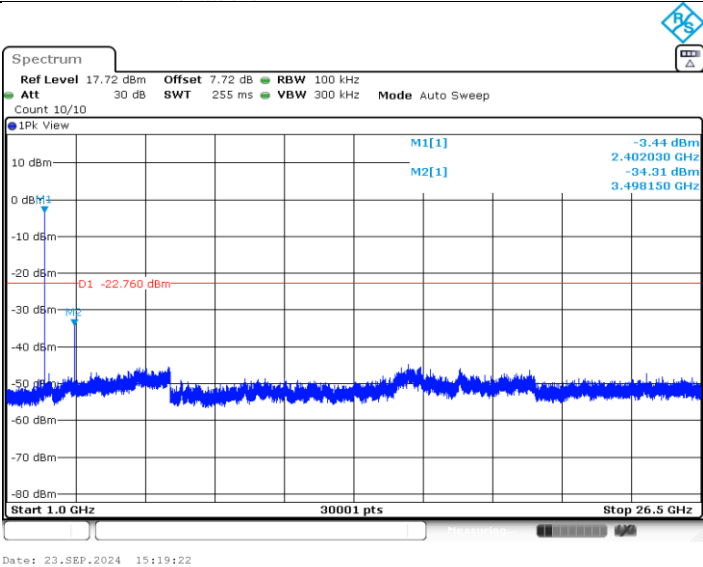




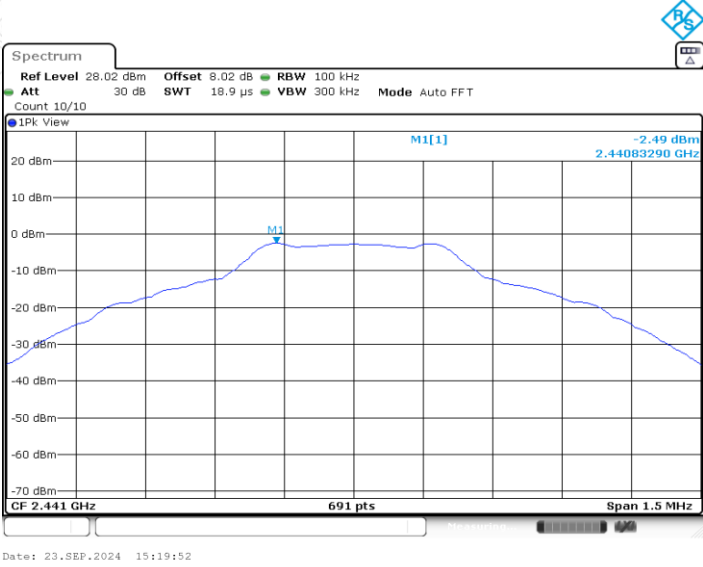
**Conducted Spurious Emission**

| TestMode | Antenna | Freq(MHz) | FreqRange<br>[MHz] | RefLevel<br>[dBm] | Result[dBm] | Limit[dBm]    | Verdict |
|----------|---------|-----------|--------------------|-------------------|-------------|---------------|---------|
| DH5      | Ant1    | 2402      | Reference          | -2.76             | -2.76       | ---           | PASS    |
|          |         |           | 30~1000            | -2.76             | -57.38      | $\leq -22.76$ | PASS    |
|          |         |           | 1000~26500         | -2.76             | -34.31      | $\leq -22.76$ | PASS    |
|          |         | 2441      | Reference          | -2.49             | -2.49       | ---           | PASS    |
|          |         |           | 30~1000            | -2.49             | -54.14      | $\leq -22.49$ | PASS    |
|          |         |           | 1000~26500         | -2.49             | -32.39      | $\leq -22.49$ | PASS    |
|          |         | 2480      | Reference          | -2.77             | -2.77       | ---           | PASS    |
|          |         |           | 30~1000            | -2.77             | -57.37      | $\leq -22.77$ | PASS    |
|          |         |           | 1000~26500         | -2.77             | -36.45      | $\leq -22.77$ | PASS    |
| 2DH5     | Ant1    | 2402      | Reference          | -2.96             | -2.96       | ---           | PASS    |
|          |         |           | 30~1000            | -2.96             | -57.01      | $\leq -22.96$ | PASS    |
|          |         |           | 1000~26500         | -2.96             | -44.92      | $\leq -22.96$ | PASS    |
|          |         | 2441      | Reference          | -2.67             | -2.67       | ---           | PASS    |
|          |         |           | 30~1000            | -2.67             | -55.17      | $\leq -22.67$ | PASS    |
|          |         |           | 1000~26500         | -2.67             | -44.52      | $\leq -22.67$ | PASS    |
|          |         | 2480      | Reference          | -2.88             | -2.88       | ---           | PASS    |
|          |         |           | 30~1000            | -2.88             | -59.13      | $\leq -22.88$ | PASS    |
|          |         |           | 1000~26500         | -2.88             | -43.73      | $\leq -22.88$ | PASS    |
| 3DH5     | Ant1    | 2402      | Reference          | -2.83             | -2.83       | ---           | PASS    |
|          |         |           | 30~1000            | -2.83             | -55.48      | $\leq -22.83$ | PASS    |
|          |         |           | 1000~26500         | -2.83             | -44.39      | $\leq -22.83$ | PASS    |
|          |         | 2441      | Reference          | -2.54             | -2.54       | ---           | PASS    |
|          |         |           | 30~1000            | -2.54             | -57.16      | $\leq -22.54$ | PASS    |
|          |         |           | 1000~26500         | -2.54             | -44.52      | $\leq -22.54$ | PASS    |
|          |         | 2480      | Reference          | -2.79             | -2.79       | ---           | PASS    |
|          |         |           | 30~1000            | -2.79             | -57.33      | $\leq -22.79$ | PASS    |
|          |         |           | 1000~26500         | -2.79             | -44.26      | $\leq -22.79$ | PASS    |

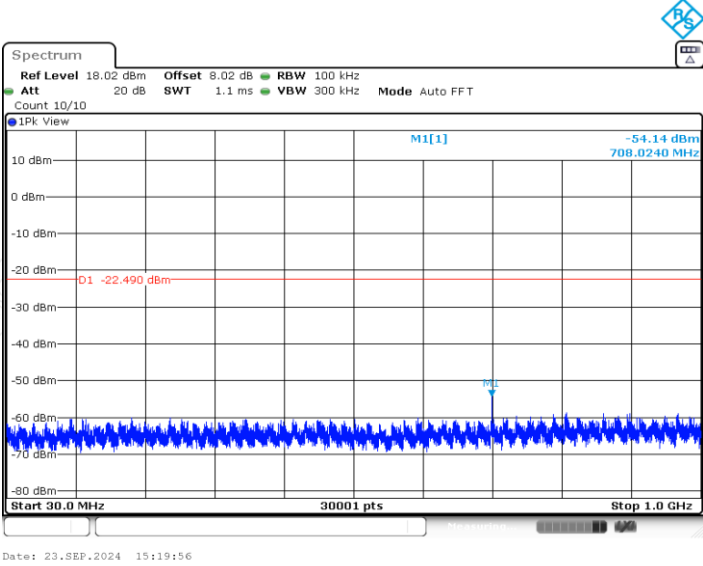




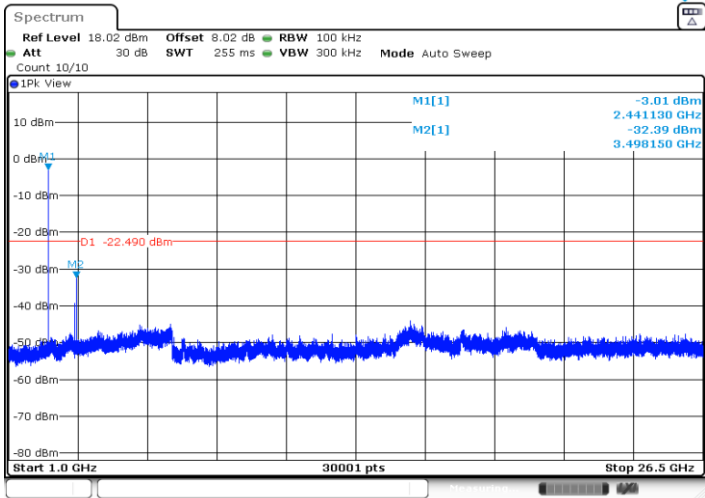
DH5\_Ant1\_2441 MHz\_0~Reference



DH5\_Ant1\_2441 MHz\_30~1000 MHz

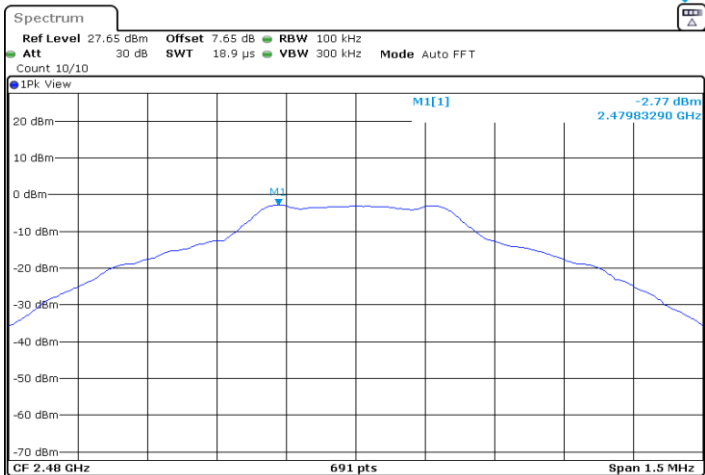


DH5\_Ant1\_2441 MHz\_1000~26500 MHz



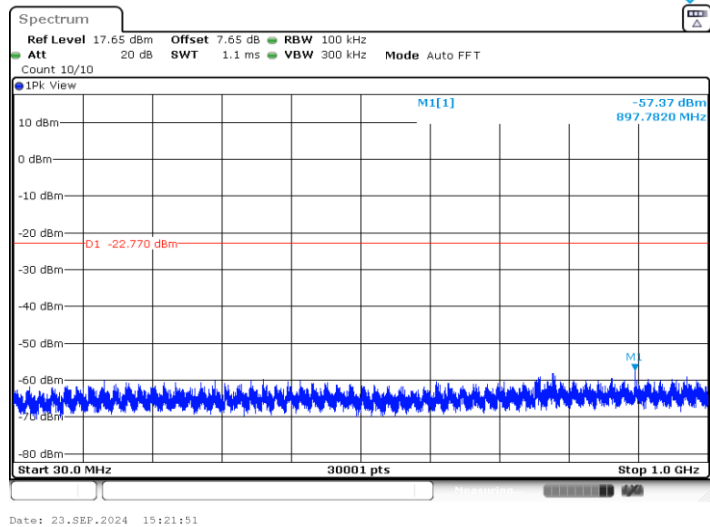
Date: 23.SEP.2024 15:20:20

DH5\_Ant1\_2480 MHz\_0~Reference

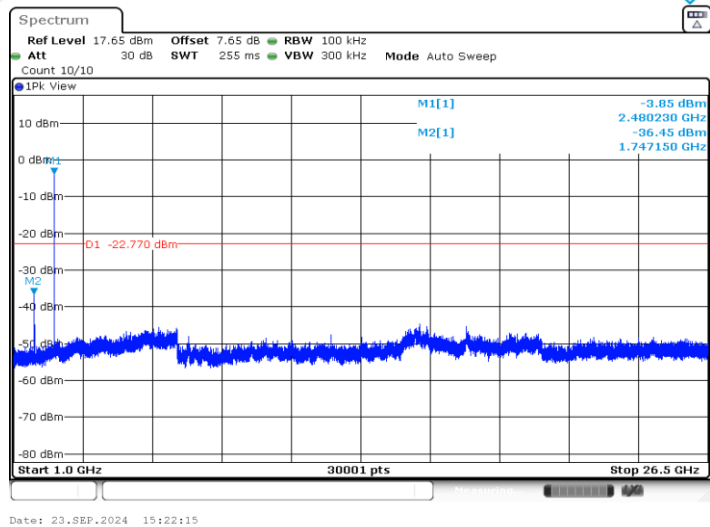


Date: 23.SEP.2024 15:21:47

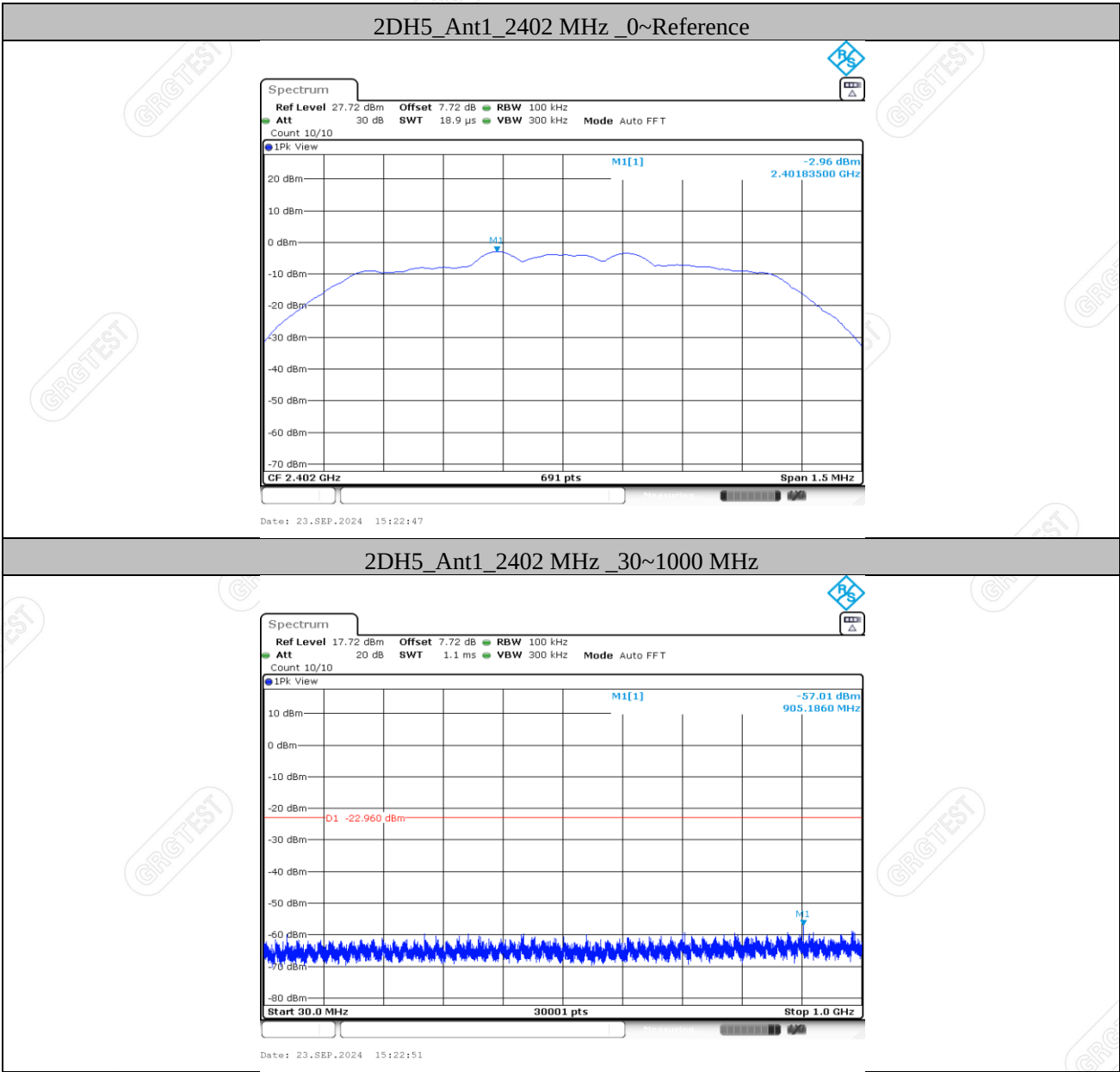
DH5\_Ant1\_2480 MHz\_30~1000 MHz



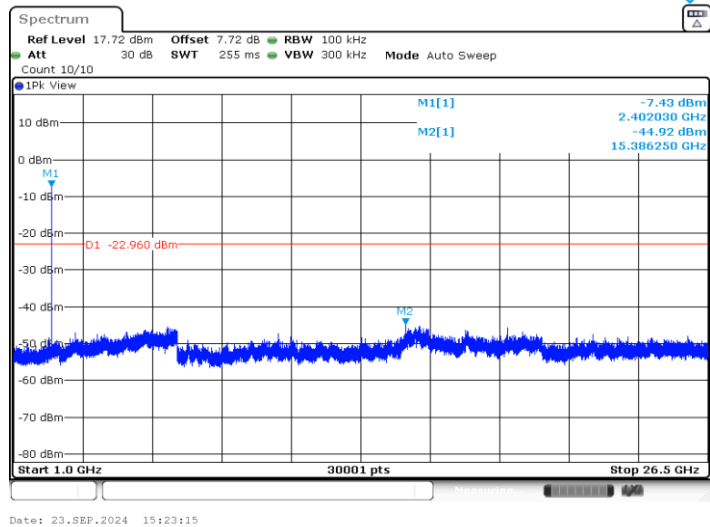
DH5\_Ant1\_2480 MHz\_1000~26500 MHz



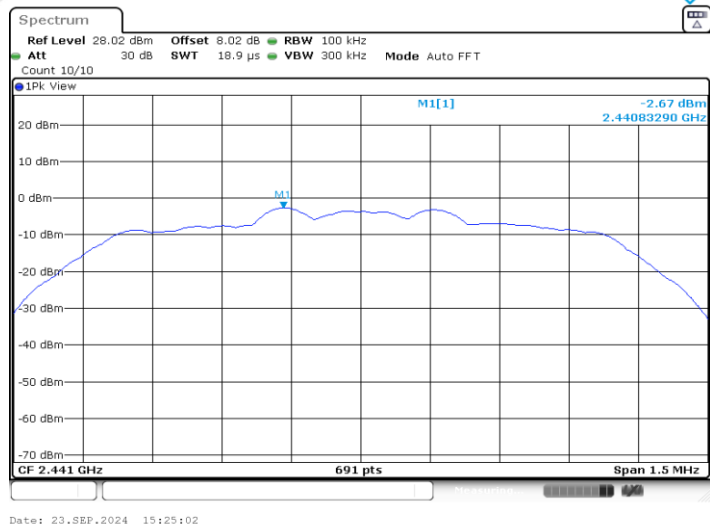




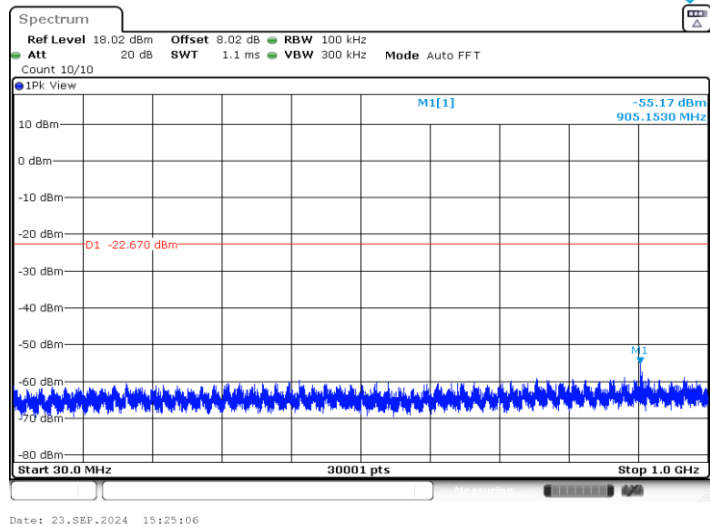
2DH5\_Ant1\_2402 MHz\_1000~26500 MHz



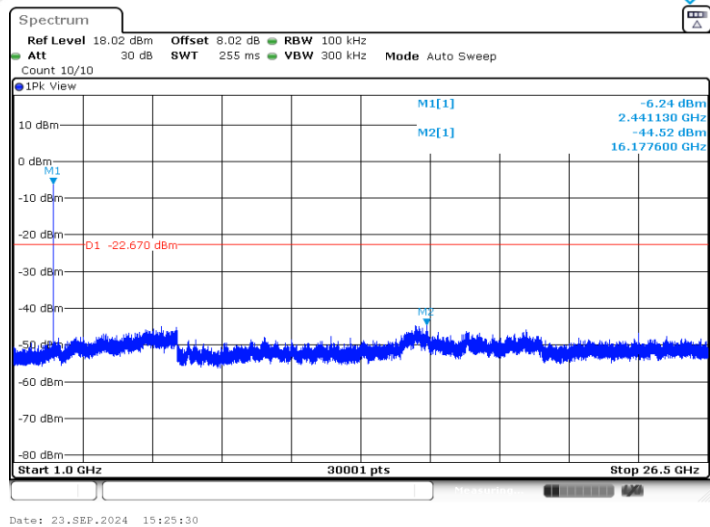
2DH5\_Ant1\_2441 MHz\_0~Reference

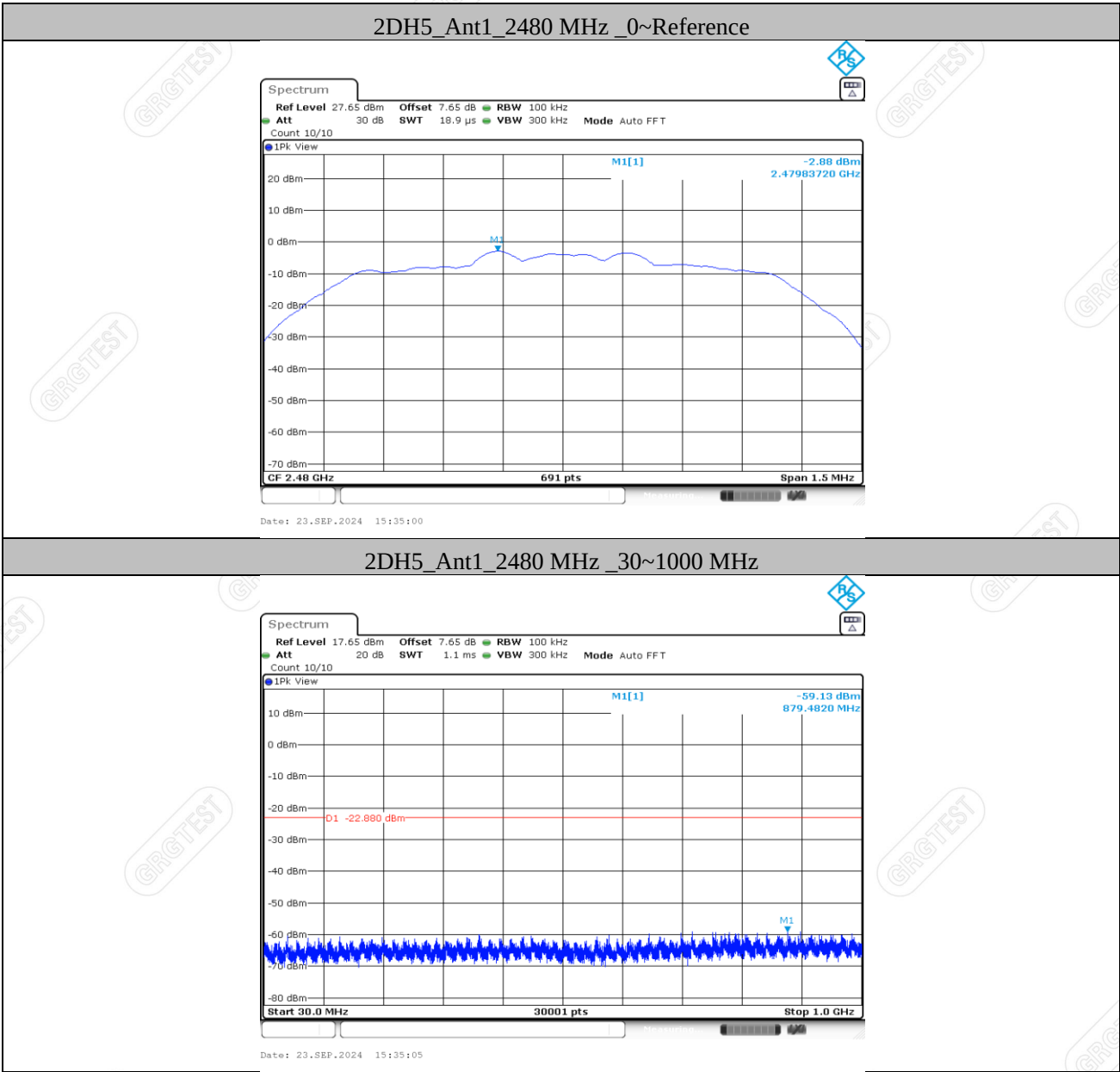


2DH5\_Ant1\_2441 MHz\_30~1000 MHz

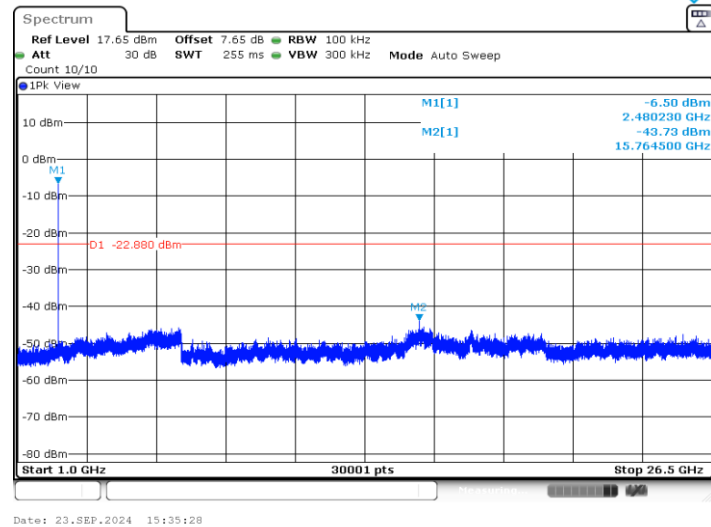


2DH5\_Ant1\_2441 MHz\_1000~26500 MHz

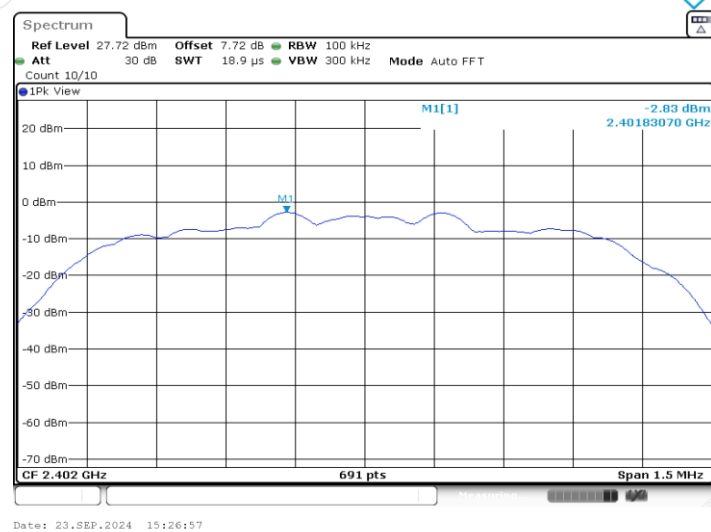


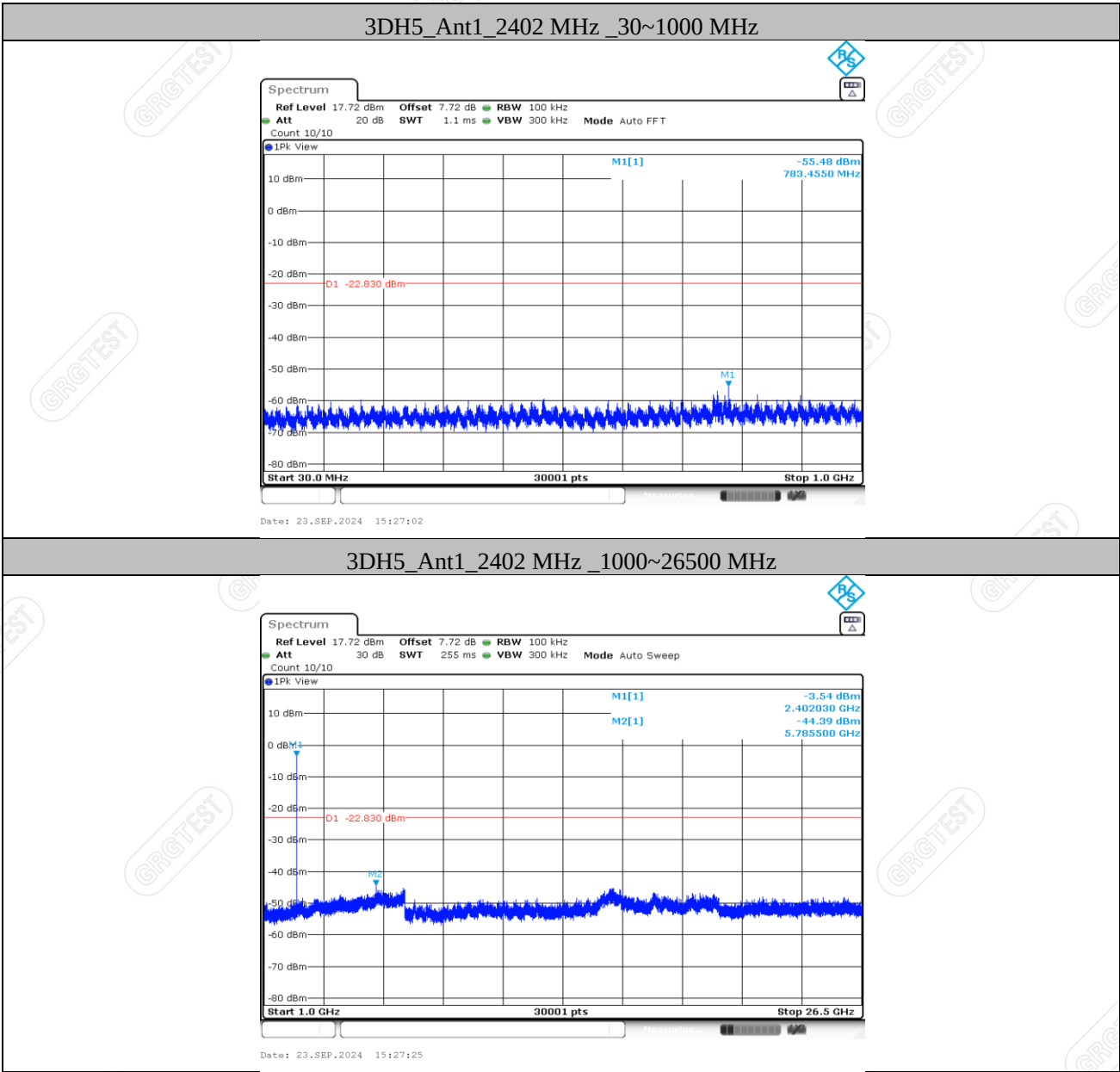


2DH5\_Ant1\_2480 MHz \_1000~26500 MHz

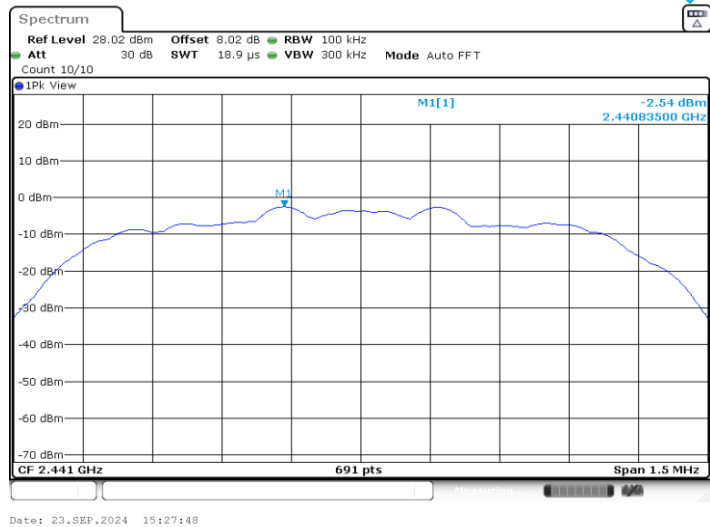


3DH5\_Ant1\_2402 MHz \_0~Reference

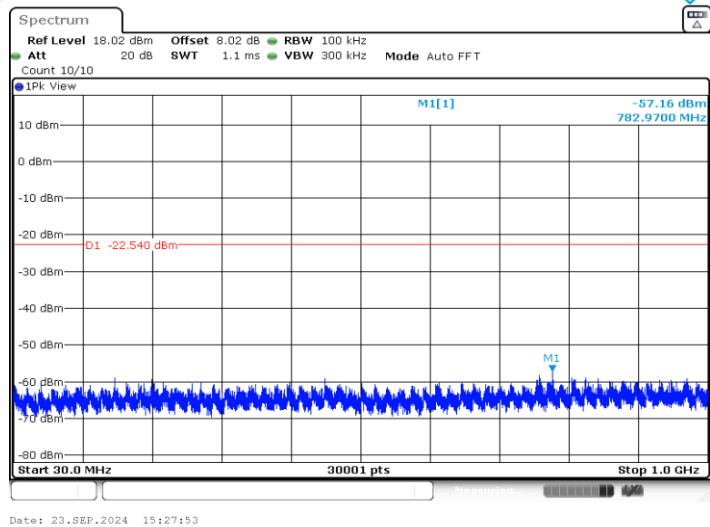




3DH5\_Ant1\_2441 MHz\_0~Reference

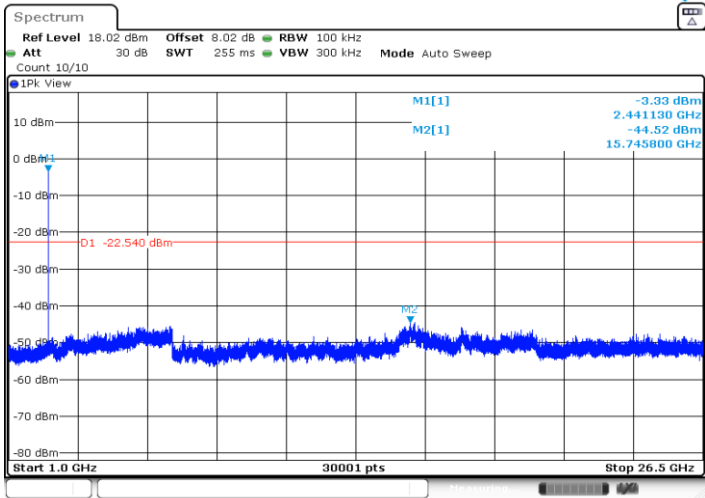


3DH5\_Ant1\_2441 MHz\_30~1000 MHz

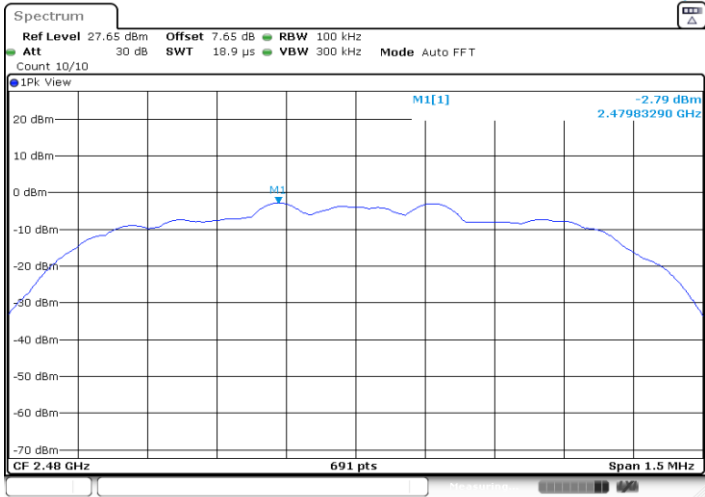


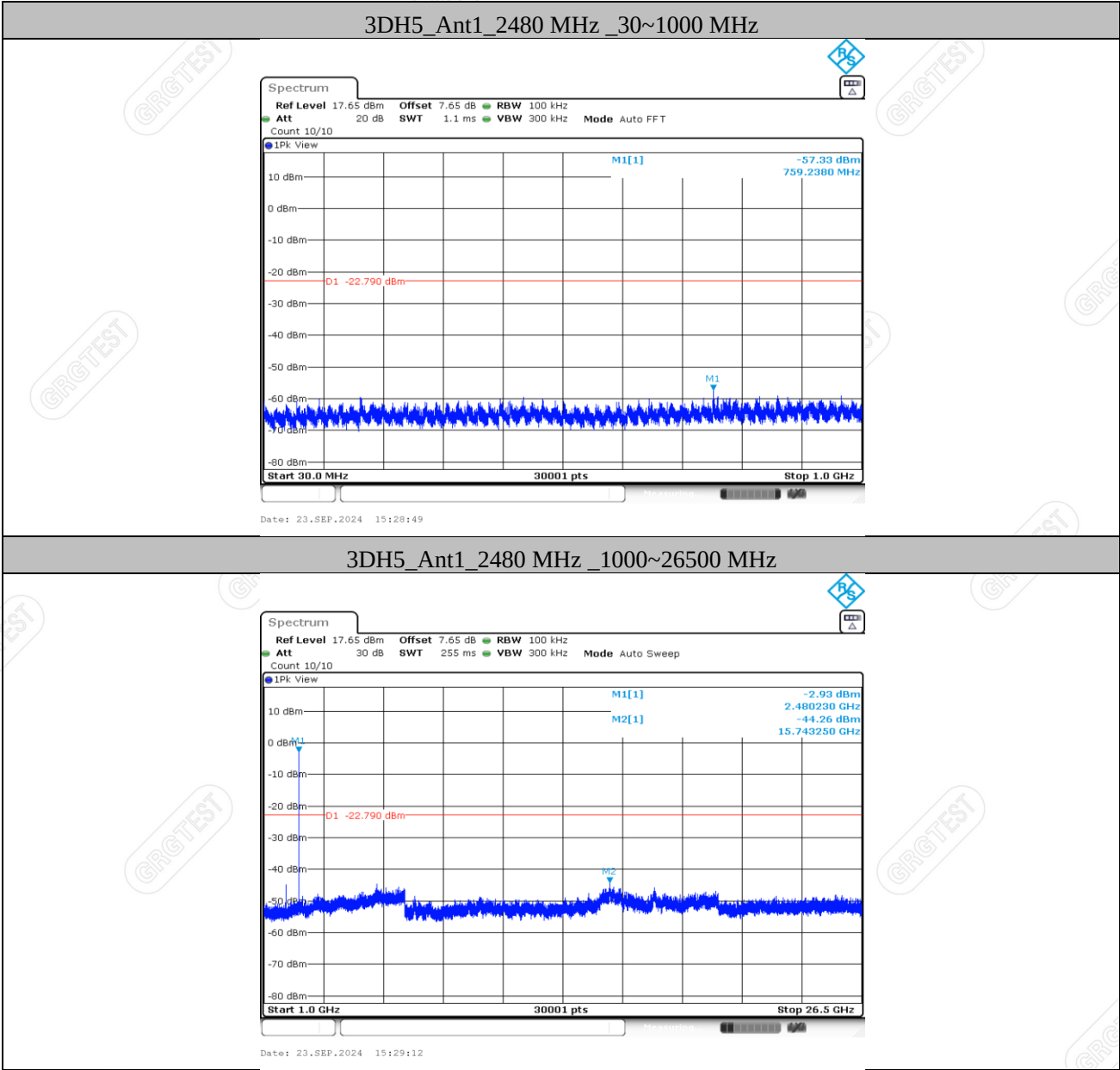


3DH5\_Ant1\_2441 MHz\_1000~26500 MHz



3DH5\_Ant1\_2480 MHz\_0~Reference





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## 12. RADIATED SPURIOUS EMISSIONS

### 12.1 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required.

| Frequency (MHz) | Quasi-peak( $\mu\text{V/m}$ ) | Measurement distance(m) | Quasi-peak(dB $\mu\text{V/m}$ )@distance 3m |
|-----------------|-------------------------------|-------------------------|---------------------------------------------|
| 0.009-0.490     | 2400/F(kHz)                   | 300                     | 128.5~93.8                                  |
| 0.490-1.705     | 24000/F(kHz)                  | 30                      | 73.8~63                                     |
| 1.705-30.0      | 30                            | 30                      | 69.5                                        |
| 30 ~ 88         | 100                           | 3                       | 40                                          |
| 88~216          | 150                           | 3                       | 43.5                                        |
| 216 ~ 960       | 200                           | 3                       | 46                                          |
| Above 960       | 500                           | 3                       | 54                                          |

**NOTE:**

- (1) The emission limits for the ranges 9-90kHz and 110-490kHz are based on measurements employing a linear average detector.
- (2) The lower limit shall apply at the transition frequencies.
- (3) Above 18GHz test distance is 1m, so the Peak Limit=74+20\*log(3/1)=83.54 (dB $\mu\text{V/m}$ ).  
The Avg Limit=54+20\*log(3/1)=63.54 (dB $\mu\text{V/m}$ ).

### 12.2 TEST PROCEDURES

#### 1) Sequence of testing 9kHz to 30MHz

**Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

**Pre measurement:**

- The turntable rotates from 0 ° to 360 °.
- The antenna height is 1.0 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

**Final measurement:**

--- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0 °to 360 °) and by rotating the elevation axes (0 °to 360 °).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

**2) Sequence of testing 30MHz to 1GHz****Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

**Pre measurement:**

--- The turntable rotates from 0 °to 360 °.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 4 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

**Final measurement:**

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

**3) Sequence of testing 1GHz to 18GHz****Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

**Pre measurement:**

- The turntable rotates from 0 °to 360 °.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 4 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

**Final measurement:**

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

**4) Sequence of testing above 18GHz****Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 1 meter.
- The EUT was set into operation.

**Pre measurement:**

- The antenna is moved spherical over the EUT in different polarisations of the antenna.

**Final measurement:**

- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

NOTE:

- (a).The frequency from 9kHz to 150kHz, Set RBW=300Hz(for Peak&AVG), RBW=300Hz(for Peak&AVG). the frequency from 150kHz to 30MHz, Set RBW=9kHz, RBW=9kHz, (for QP Detector).
- (b).The frequency from 30MHz to 1GHz, Set RBW=120kHz, RBW=300kHz, (for QP Detector).
- (c).The frequency above 1GHz, for Peak detector: Set RBW=1MHz, RBW=3MHz.
- (d).The frequency above 1GHz, for Avg detector: Set RBW=1MHz, if the EUT is configured to transmit with duty cycle  $\geq 98\%$ , set  $VBW \leq RBW/100$  (i.e., 10kHz) but not less than 10 Hz. if the EUT duty cycle is  $< 98\%$ , set  $VBW \geq 1/T$ , Where T is defined in section 2.7.

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### 12.3 TEST SETUP

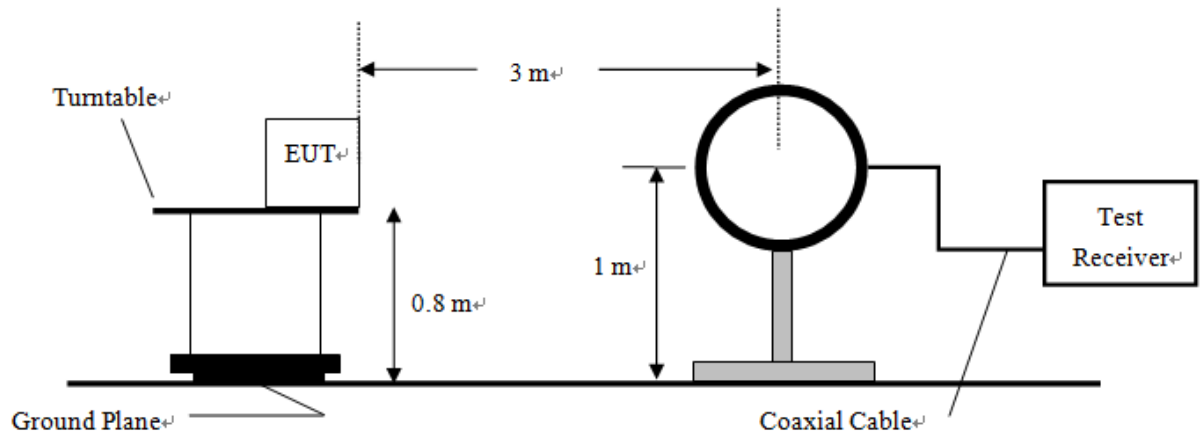


Figure 1. 9kHz to 30MHz radiated emissions test configuration

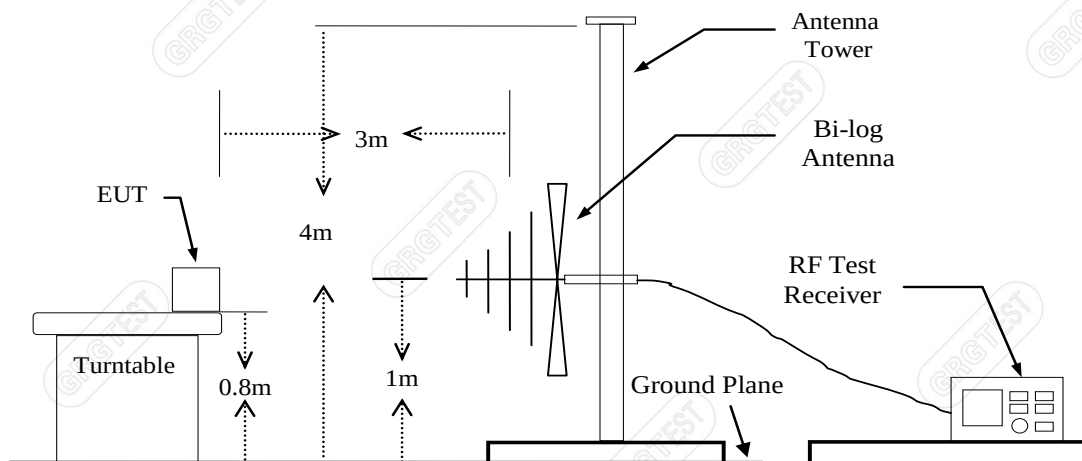


Figure 2. 30MHz to 1GHz radiated emissions test configuration

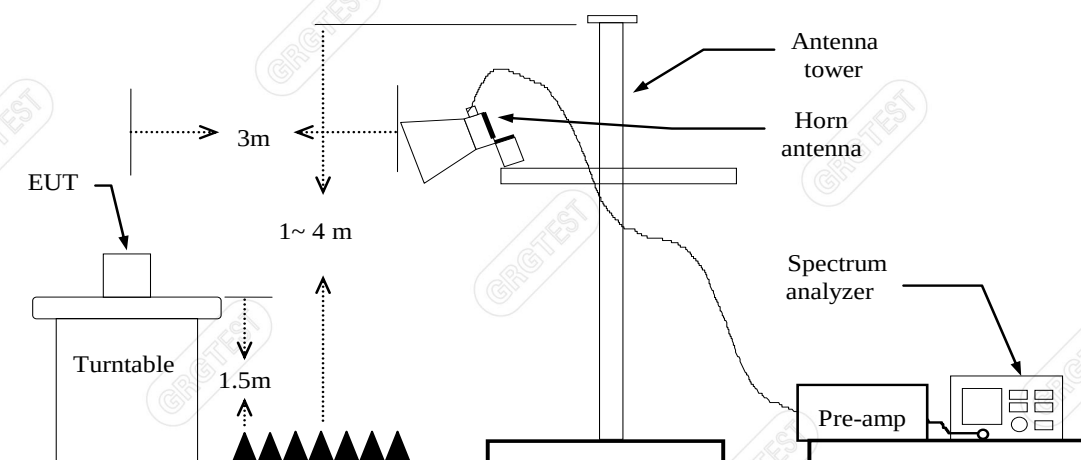


Figure 3. 1GH to 18GHz radiated emissions test configuration



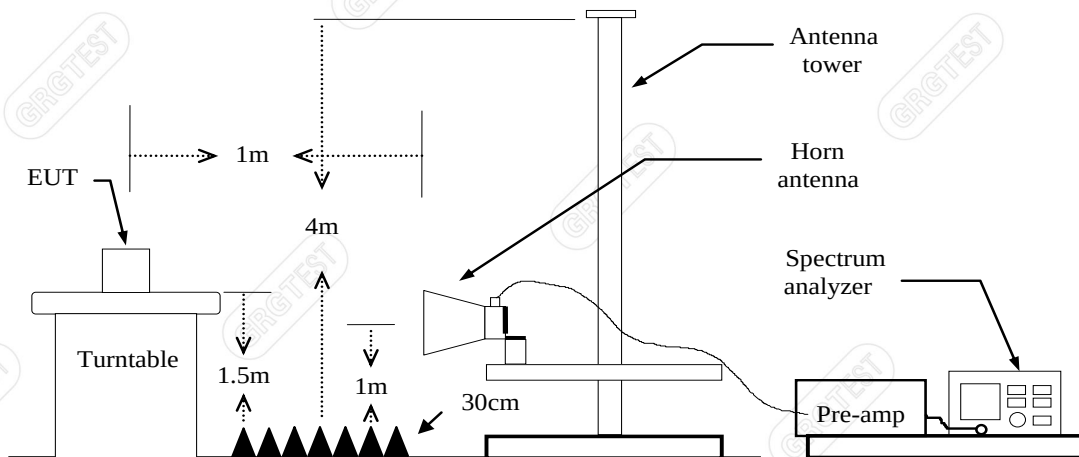


Figure 4. 18GHz to 26.5GHz radiated emissions test configuration

## 12.4 DATA SAMPLE

## 30MHz to 1GHz

| NO. | Freq. [MHz] | Reading [dBμV/m] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Trace | Height [cm] | Angle [°] | Polarity   | Verdict |
|-----|-------------|------------------|----------------|-------------|----------------|-------------|-------|-------------|-----------|------------|---------|
| xxx | 86.5096     | 67.55            | 33.83          | -33.72      | 40.00          | 6.17        | QP    | 200         | 118       | Horizontal | PASS    |

Frequency (MHz)

= Emission frequency in MHz

Reading (dBμV)

= Uncorrected Analyzer / Receiver reading

Factor (dB)

= Antenna factor + Cable loss – Amplifier gain

Level (dBμV/m)

= Reading (dBμV) + Factor (dB)

Limit (dBμV/m)

= Limit stated in standard

Margin (dB)

= Limit (dBμV/m) - Level (dBμV/m)

QP

= Quasi-peak Reading

## 1GHz-18GHz

| No. | Freq. [MHz] | Reading [dBμV/m] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   | Remark |
|-----|-------------|------------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|--------|
| xxx | xxxx        | 78.01            | 55.30          | -22.71      | 74.00          | 18.70       | 100         | 50        | Horizontal | Peak   |
| xxx | xxxx        | 66.37            | 43.66          | -22.71      | 54.00          | 10.34       | 100         | 50        | Horizontal | AVG    |

## Above 18GHz

| NO. | Freq. [MHz] | Reading [dBμV/m] | Level for 1m [dBμV/m] | Level for 3m [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   | Remark |
|-----|-------------|------------------|-----------------------|-----------------------|-------------|----------------|-------------|-------------|-----------|------------|--------|
| xxx | xxxx        | 54.49            | 42.38                 | 32.84                 | -12.11      | 74             | 41.16       | 100         | 211       | Horizontal | Peak   |
| xxx | xxxx        | 43.99            | 31.88                 | 22.34                 | -12.11      | 54             | 31.66       | 100         | 211       | Horizontal | AVG    |

Frequency (MHz)

= Emission frequency in MHz

Reading (dBμV/m)

= Uncorrected Analyzer / Receiver reading

|                       |                                                |
|-----------------------|------------------------------------------------|
| Factor (dB)           | = Antenna factor + Cable loss – Amplifier gain |
| Level for 1m (dBuV/m) | = Reading (dBuV/m) + Factor (dB)               |
| Level for 3m (dBuV/m) | = Level for 1m (dBuV/m) + 20*log(1/3)          |
| Limit (dBuV/m)        | = Limit stated in standard                     |
| Margin (dB)           | = Limit (dBuV/m) – Level (dBuV/m)              |
| Polarity              | = Antenna polarization                         |
| Peak                  | = Peak Reading                                 |
| AVG                   | = Average Reading                              |

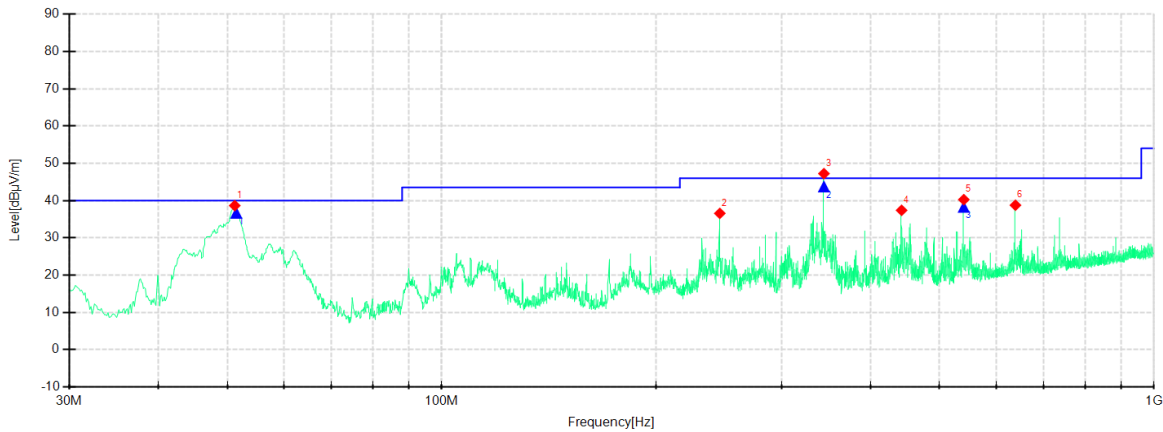
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12.5 TEST RESULTS

Below 1GHz:

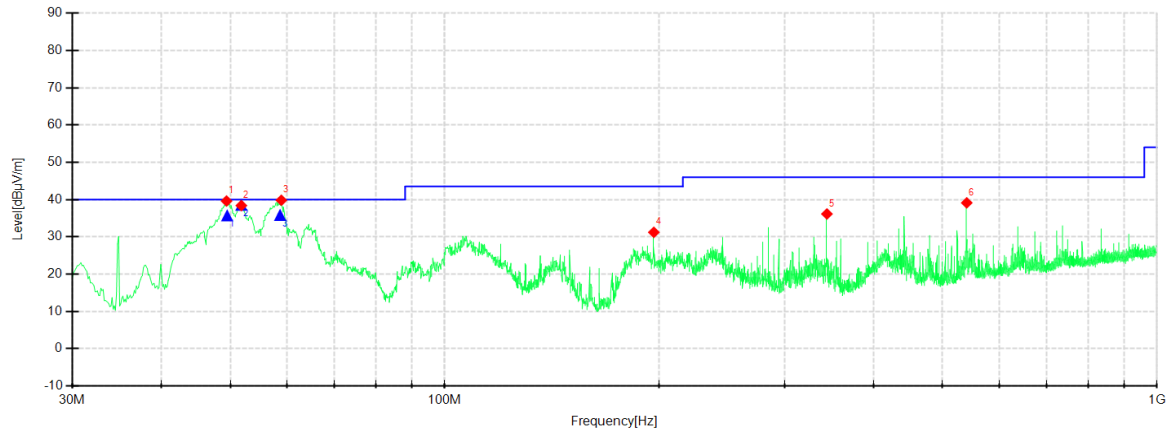
All models were pretested and only the worst modes and channels were recorded in this report (3DH5\_2402MHz).

|                |                      |                           |                       |
|----------------|----------------------|---------------------------|-----------------------|
| Product        | Donner OURA Piano    | Model No.                 | R300                  |
| Power supply:  | AC 120V/60Hz         | Environmental Conditions: | 25.5°C/53%RH/101.0kPa |
| Test Engineer: | Wen wenwen           | Test Date:                | 2024-10-27            |
| Sample No:     | E20240827121501-0002 | /                         | /                     |



| NO. | Freq. [MHz] | Reading [dBµV/m] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Trace | Height [cm] | Angle [°] | Polarity   | Verdict |
|-----|-------------|------------------|----------------|-------------|----------------|-------------|-------|-------------|-----------|------------|---------|
| 1   | 51.2214     | 67.56            | 38.64          | -28.92      | 40.00          | 1.36        | PK    | 200         | 339       | Horizontal | PASS    |
| 2   | 245.7307    | 66.03            | 36.56          | -29.47      | 46.00          | 9.44        | PK    | 100         | 360       | Horizontal | PASS    |
| 3   | 344.0768    | 73.26            | 47.22          | -26.04      | 46.00          | -1.22       | PK    | 100         | 357       | Horizontal | /       |
| 4   | 442.3015    | 60.02            | 37.38          | -22.64      | 46.00          | 8.62        | PK    | 100         | 101       | Horizontal | PASS    |
| 5   | 540.7688    | 60.85            | 40.25          | -20.60      | 46.00          | 5.75        | PK    | 100         | 344       | Horizontal | PASS    |
| 6   | 638.9936    | 57.67            | 38.74          | -18.93      | 46.00          | 7.26        | PK    | 200         | 0         | Horizontal | PASS    |

| Final Data List |             |             |                     |                |                   |                |             |           |            |         |  |
|-----------------|-------------|-------------|---------------------|----------------|-------------------|----------------|-------------|-----------|------------|---------|--|
| NO.             | Freq. [MHz] | Factor [dB] | QP Reading [dBµV/m] | Level [dBµV/m] | QP Limit [dBµV/m] | QP Margin [dB] | Height [cm] | Angle [°] | Polarity   | Verdict |  |
| 1               | 51.4764     | -28.92      | 65.55               | 36.63          | 40.00             | 3.37           | 200         | 358.9     | Horizontal | PASS    |  |
| 2               | 344.0618    | -26.04      | 69.71               | 43.67          | 46.00             | 2.33           | 120         | 336.1     | Horizontal | PASS    |  |
| 3               | 540.6828    | -20.60      | 58.80               | 38.20          | 46.00             | 7.80           | 103         | 338.6     | Horizontal | PASS    |  |



| NO. | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Trace | Height<br>[cm] | Angle<br>[°] | Polarity | Verdict |
|-----|----------------|---------------------|-------------------|----------------|-------------------|----------------|-------|----------------|--------------|----------|---------|
| 1   | 49.4024        | 68.46               | 39.61             | -28.85         | 40.00             | 0.39           | PK    | 100            | 178          | Vertical | PASS    |
| 2   | 51.8277        | 67.35               | 38.39             | -28.96         | 40.00             | 1.61           | PK    | 200            | 183          | Vertical | PASS    |
| 3   | 58.9824        | 69.26               | 39.81             | -29.45         | 40.00             | 0.19           | PK    | 100            | 150          | Vertical | PASS    |
| 4   | 196.6183       | 62.49               | 31.21             | -31.28         | 43.50             | 12.29          | PK    | 100            | 206          | Vertical | PASS    |
| 5   | 344.0768       | 62.17               | 36.13             | -26.04         | 46.00             | 9.87           | PK    | 100            | 150          | Vertical | PASS    |
| 6   | 540.6476       | 59.71               | 39.11             | -20.60         | 46.00             | 6.89           | PK    | 100            | 43           | Vertical | PASS    |

#### Final Data List

| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Reading<br>[dBμV/m] | Level<br>[dBμV/m] | QP Limit<br>[dBμV/m] | QP<br>Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity | Verdict |
|-----|----------------|----------------|---------------------------|-------------------|----------------------|----------------------|----------------|--------------|----------|---------|
| 1   | 49.4989        | -28.85         | 64.49                     | 35.64             | 40.00                | 4.36                 | 200            | 61.8         | Vertical | PASS    |
| 2   | 51.8232        | -28.96         | 67.43                     | 38.47             | 40.00                | 1.53                 | 200            | 348.7        | Vertical | PASS    |
| 3   | 58.7365        | -29.45         | 65.22                     | 35.77             | 40.00                | 4.23                 | 111            | 40.9         | Vertical | PASS    |

#### Remark:

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Pre-scan all mode and recorded the worst case results in this report (TX-Low Channel(3Mbps))
- 3 Measuring frequencies from 9kHz to the 1GHz.
- 4 Radiated emissions measured in frequency range from 30MHz to 1GHz were made with an instrument using Peak/Quasi-peak detector mode.
- 5 The IF bandwidth of SPA between 30MHz to 1GHz was 120kHz.
- 6 If the margin of the pre-test results is greater than 6dB, it meets the requirements of quasi peak or average values, and final testing is no longer required.

1GHz to 18GHz:

All models were pretested and only the worst modes were recorded in this report.

Mode: DH5  
Lowest Frequency (2402MHz)  
Environment:23.1℃/48%RH/101.0kPa  
Test Engineer: Jiang tao

Test Voltage:AC 120V/60Hz  
Date: 2024-11-18

| Suspected Data List |             |                  |                |             |                |             |             |           |            |
|---------------------|-------------|------------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1                   | 1318.4000   | 48.59            | 40.51          | -8.08       | 74.00          | 33.49       | 200         | 196       | Horizontal |
| 2                   | 2170.0000   | 50.07            | 46.08          | -3.99       | 74.00          | 27.92       | 200         | 33        | Horizontal |
| 3                   | 2498.2000   | 47.97            | 47.77          | -0.20       | 74.00          | 26.23       | 100         | 204       | Horizontal |
| 4                   | 5146.5000   | 48.61            | 42.63          | -5.98       | 74.00          | 31.37       | 200         | 188       | Horizontal |
| 5                   | 8745.0000   | 41.81            | 47.93          | 6.12        | 74.00          | 26.07       | 100         | 76        | Horizontal |
| 6                   | 14703.0000  | 36.60            | 51.40          | 14.80       | 74.00          | 22.60       | 200         | 356       | Horizontal |

| AV Final Data List |             |             |                     |                   |                   |                |             |            |
|--------------------|-------------|-------------|---------------------|-------------------|-------------------|----------------|-------------|------------|
| NO.                | Freq. [MHz] | Factor [dB] | AV Reading [dBμV/m] | AV Value [dBμV/m] | AV Limit [dBμV/m] | AV Margin [dB] | Height [cm] | Polarity   |
| 1                  | 14696.8200  | 14.71       | 25.37               | 40.08             | 54.00             | 13.92          | 100         | Horizontal |

| Suspected Data List |             |                  |                |             |                |             |             |           |          |
|---------------------|-------------|------------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1                   | 1498.4000   | 47.77            | 40.43          | -7.34       | 74.00          | 33.57       | 100         | 340       | Vertical |
| 2                   | 2501.4000   | 47.25            | 46.73          | -0.52       | 74.00          | 27.27       | 200         | 207       | Vertical |
| 3                   | 5115.0000   | 48.52            | 42.63          | -5.89       | 74.00          | 31.37       | 200         | 64        | Vertical |
| 4                   | 7279.5000   | 44.74            | 45.93          | 1.19        | 74.00          | 28.07       | 200         | 323       | Vertical |
| 5                   | 9607.5000   | 45.62            | 52.93          | 7.31        | 74.00          | 21.07       | 100         | 345       | Vertical |
| 6                   | 14713.5000  | 35.67            | 53.41          | 17.74       | 74.00          | 20.59       | 100         | 85        | Vertical |

| AV Final Data List |             |             |                     |                   |                   |                |             |           |          |
|--------------------|-------------|-------------|---------------------|-------------------|-------------------|----------------|-------------|-----------|----------|
| NO.                | Freq. [MHz] | Factor [dB] | AV Reading [dBμV/m] | AV Value [dBμV/m] | AV Limit [dBμV/m] | AV Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1                  | 9608.0525   | 7.31        | 43.32               | 50.63             | 54.00             | 3.37           | 100         | 337.2     | Vertical |
| 2                  | 14713.5000  | 17.74       | 25.67               | 43.41             | 54.00             | 10.59          | 100         | 85        | Vertical |

Mode: DH5  
Middle Frequency (2441MHz)  
Environment:23.1℃/48%RH/101.0kPa  
Test Engineer: Jiang tao

Test Voltage:AC 120V/60Hz  
Date: 2024-11-18

| Suspected Data List |                |                     |                   |                |                   |                |                |              |            |
|---------------------|----------------|---------------------|-------------------|----------------|-------------------|----------------|----------------|--------------|------------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity   |
| 1                   | 1884.8000      | 48.95               | 44.45             | -4.50          | 74.00             | 29.55          | 200            | 98           | Horizontal |
| 2                   | 2210.4000      | 50.97               | 47.54             | -3.43          | 74.00             | 26.46          | 100            | 247          | Horizontal |
| 3                   | 2960.0000      | 47.64               | 46.88             | -0.76          | 74.00             | 27.12          | 100            | 58           | Horizontal |
| 4                   | 4444.5000      | 50.02               | 41.39             | -8.63          | 74.00             | 32.61          | 100            | 245          | Horizontal |
| 5                   | 8748.0000      | 41.12               | 47.24             | 6.12           | 74.00             | 26.76          | 200            | 202          | Horizontal |
| 6                   | 13107.0000     | 35.23               | 51.25             | 16.02          | 74.00             | 22.75          | 200            | 268          | Horizontal |

| AV Final Data List |                |                |                           |                      |                      |                      |                |              |            |
|--------------------|----------------|----------------|---------------------------|----------------------|----------------------|----------------------|----------------|--------------|------------|
| NO.                | Freq.<br>[MHz] | Factor<br>[dB] | AV<br>Reading<br>[dBμV/m] | AV Value<br>[dBμV/m] | AV Limit<br>[dBμV/m] | AV<br>Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity   |
| 1                  | 13107.0100     | 15.97          | 26.53                     | 42.55                | 54.00                | 11.45                | 200            | 98           | Horizontal |

| Suspected Data List |                |                     |                   |                |                   |                |                |              |          |
|---------------------|----------------|---------------------|-------------------|----------------|-------------------|----------------|----------------|--------------|----------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                   | 1464.0000      | 48.79               | 41.28             | -7.51          | 74.00             | 32.72          | 200            | 136          | Vertical |
| 2                   | 2118.6000      | 48.69               | 43.84             | -4.85          | 74.00             | 30.16          | 100            | 314          | Vertical |
| 3                   | 5107.5000      | 49.25               | 43.33             | -5.92          | 74.00             | 30.67          | 200            | 87           | Vertical |
| 4                   | 6501.0000      | 46.15               | 45.33             | -0.82          | 74.00             | 28.67          | 100            | 102          | Vertical |
| 5                   | 9763.5000      | 46.16               | 54.98             | 8.82           | 74.00             | 19.02          | 100            | 168          | Vertical |
| 6                   | 14695.5000     | 36.57               | 54.54             | 17.97          | 74.00             | 19.46          | 100            | 182          | Vertical |

| AV Final Data List |                |                |                           |                      |                      |                      |                |              |          |
|--------------------|----------------|----------------|---------------------------|----------------------|----------------------|----------------------|----------------|--------------|----------|
| NO.                | Freq.<br>[MHz] | Factor<br>[dB] | AV<br>Reading<br>[dBμV/m] | AV Value<br>[dBμV/m] | AV Limit<br>[dBμV/m] | AV<br>Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                  | 9764.0625      | 8.82           | 41.62                     | 50.44                | 54.00                | 3.56                 | 100            | 193.7        | Vertical |
| 2                  | 14695.5000     | 17.97          | 25.45                     | 43.42                | 54.00                | 10.58                | 100            | 182          | Vertical |



Mode: DH5  
Highest Frequency (2480MHz)  
Environment:23.1℃/48%RH/101.0kPa  
Test Engineer: Jiang tao

Test Voltage:AC 120V/60Hz  
Date: 2024-11-18

| Suspected Data List |                |                     |                   |                |                   |                |                |              |            |
|---------------------|----------------|---------------------|-------------------|----------------|-------------------|----------------|----------------|--------------|------------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity   |
| 1                   | 1380.2000      | 48.23               | 40.36             | -7.87          | 74.00             | 33.64          | 100            | 192          | Horizontal |
| 2                   | 2248.2000      | 50.76               | 47.22             | -3.54          | 74.00             | 26.78          | 100            | 219          | Horizontal |
| 3                   | 5041.5000      | 49.20               | 43.05             | -6.15          | 74.00             | 30.95          | 100            | 19           | Horizontal |
| 4                   | 6717.0000      | 46.47               | 45.75             | -0.72          | 74.00             | 28.25          | 100            | 188          | Horizontal |
| 5                   | 8749.5000      | 41.76               | 47.87             | 6.11           | 74.00             | 26.13          | 200            | 340          | Horizontal |
| 6                   | 13093.5000     | 35.48               | 51.42             | 15.94          | 74.00             | 22.58          | 100            | 279          | Horizontal |

| AV Final Data List |                |                |                           |                      |                      |                      |                |              |            |
|--------------------|----------------|----------------|---------------------------|----------------------|----------------------|----------------------|----------------|--------------|------------|
| NO.                | Freq.<br>[MHz] | Factor<br>[dB] | AV<br>Reading<br>[dBμV/m] | AV Value<br>[dBμV/m] | AV Limit<br>[dBμV/m] | AV<br>Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity   |
| 1                  | 13093.5000     | 15.94          | 26.55                     | 42.49                | 54.00                | 11.51                | 100            | 279          | Horizontal |

| Suspected Data List |                |                     |                   |                |                   |                |                |              |          |
|---------------------|----------------|---------------------|-------------------|----------------|-------------------|----------------|----------------|--------------|----------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                   | 1209.0000      | 49.18               | 40.27             | -8.91          | 74.00             | 33.73          | 100            | 235          | Vertical |
| 2                   | 1908.2000      | 48.00               | 43.35             | -4.65          | 74.00             | 30.65          | 100            | 340          | Vertical |
| 3                   | 5035.5000      | 48.69               | 42.51             | -6.18          | 74.00             | 31.49          | 100            | 86           | Vertical |
| 4                   | 6535.5000      | 46.25               | 45.25             | -1.00          | 74.00             | 28.75          | 100            | 178          | Vertical |
| 5                   | 7935.0000      | 42.73               | 46.15             | 3.42           | 74.00             | 27.85          | 100            | 19           | Vertical |
| 6                   | 9919.5000      | 45.91               | 54.23             | 8.32           | 74.00             | 19.77          | 100            | 165          | Vertical |

| AV Final Data List |                |                |                           |                      |                      |                      |                |              |          |
|--------------------|----------------|----------------|---------------------------|----------------------|----------------------|----------------------|----------------|--------------|----------|
| NO.                | Freq.<br>[MHz] | Factor<br>[dB] | AV<br>Reading<br>[dBμV/m] | AV Value<br>[dBμV/m] | AV Limit<br>[dBμV/m] | AV<br>Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                  | 9920.0725      | 8.32           | 42.23                     | 50.55                | 54.00                | 3.45                 | 100            | 171.3        | Vertical |



Mode: 3DH5  
Lowest Frequency (2402MHz)  
Environment:23.1℃/48%RH/101.0kPa  
Test Engineer: Jiang tao

Test Voltage:AC 120V/60Hz  
Date: 2024-11-18

| Suspected Data List |                |                     |                   |                |                   |                |                |              |            |
|---------------------|----------------|---------------------|-------------------|----------------|-------------------|----------------|----------------|--------------|------------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity   |
| 1                   | 1603.4000      | 48.67               | 41.20             | -7.47          | 74.00             | 32.80          | 100            | 239          | Horizontal |
| 2                   | 2170.8000      | 49.15               | 45.17             | -3.98          | 74.00             | 28.83          | 100            | 86           | Horizontal |
| 3                   | 2469.4000      | 47.83               | 47.30             | -0.53          | 74.00             | 26.70          | 100            | 225          | Horizontal |
| 4                   | 5148.0000      | 48.25               | 42.27             | -5.98          | 74.00             | 31.73          | 200            | 135          | Horizontal |
| 5                   | 7090.5000      | 45.23               | 45.66             | 0.43           | 74.00             | 28.34          | 200            | 1            | Horizontal |
| 6                   | 13107.0000     | 35.51               | 51.53             | 16.02          | 74.00             | 22.47          | 200            | 121          | Horizontal |

| AV Final Data List |                |                |                           |                      |                      |                      |                |              |            |
|--------------------|----------------|----------------|---------------------------|----------------------|----------------------|----------------------|----------------|--------------|------------|
| NO.                | Freq.<br>[MHz] | Factor<br>[dB] | AV<br>Reading<br>[dBμV/m] | AV Value<br>[dBμV/m] | AV Limit<br>[dBμV/m] | AV<br>Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity   |
| 1                  | 13107.0000     | 16.02          | 26.43                     | 42.45                | 54.00                | 11.55                | 200            | 121          | Horizontal |

| Suspected Data List |                |                     |                   |                |                   |                |                |              |          |
|---------------------|----------------|---------------------|-------------------|----------------|-------------------|----------------|----------------|--------------|----------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                   | 1469.0000      | 48.51               | 41.03             | -7.48          | 74.00             | 32.97          | 200            | 246          | Vertical |
| 2                   | 2503.8000      | 47.22               | 46.60             | -0.62          | 74.00             | 27.40          | 100            | 268          | Vertical |
| 3                   | 4531.5000      | 49.77               | 41.48             | -8.29          | 74.00             | 32.52          | 100            | 117          | Vertical |
| 4                   | 7639.5000      | 44.34               | 45.88             | 1.54           | 74.00             | 28.12          | 200            | 301          | Vertical |
| 5                   | 9607.5000      | 45.17               | 52.48             | 7.31           | 74.00             | 21.52          | 100            | 339          | Vertical |
| 6                   | 14697.0000     | 35.64               | 53.74             | 18.10          | 74.00             | 20.26          | 200            | 33           | Vertical |

| AV Final Data List |                |                |                           |                      |                      |                      |                |              |          |
|--------------------|----------------|----------------|---------------------------|----------------------|----------------------|----------------------|----------------|--------------|----------|
| NO.                | Freq.<br>[MHz] | Factor<br>[dB] | AV<br>Reading<br>[dBμV/m] | AV Value<br>[dBμV/m] | AV Limit<br>[dBμV/m] | AV<br>Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                  | 9607.9125      | 7.31           | 43.97                     | 51.28                | 54.00                | 2.72                 | 100            | 166.1        | Vertical |
| 2                  | 14697.0000     | 18.10          | 25.46                     | 43.56                | 54.00                | 10.44                | 200            | 33           | Vertical |

Mode: 3DH5  
Middle Frequency (2441MHz)  
Environment:23.1℃/48%RH/101.0kPa  
Test Engineer: Jiang tao

Test Voltage:AC 120V/60Hz  
Date: 2024-11-18

| Suspected Data List |                |                     |                   |                |                   |                |                |              |            |
|---------------------|----------------|---------------------|-------------------|----------------|-------------------|----------------|----------------|--------------|------------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity   |
| 1                   | 1353.0000      | 48.01               | 40.21             | -7.80          | 74.00             | 33.79          | 200            | 360          | Horizontal |
| 2                   | 1893.0000      | 48.90               | 44.63             | -4.27          | 74.00             | 29.37          | 200            | 194          | Horizontal |
| 3                   | 2213.0000      | 49.73               | 46.29             | -3.44          | 74.00             | 27.71          | 200            | 88           | Horizontal |
| 4                   | 4393.5000      | 49.75               | 40.90             | -8.85          | 74.00             | 33.10          | 200            | 1            | Horizontal |
| 5                   | 5698.5000      | 48.54               | 43.16             | -5.38          | 74.00             | 30.84          | 100            | 301          | Horizontal |
| 6                   | 13092.0000     | 35.49               | 51.37             | 15.88          | 74.00             | 22.63          | 200            | 340          | Horizontal |

| AV Final Data List |                |                |                        |                      |                      |                   |                |            |
|--------------------|----------------|----------------|------------------------|----------------------|----------------------|-------------------|----------------|------------|
| NO.                | Freq.<br>[MHz] | Factor<br>[dB] | AV Reading<br>[dBμV/m] | AV Value<br>[dBμV/m] | AV Limit<br>[dBμV/m] | AV Margin<br>[dB] | Height<br>[cm] | Polarity   |
| 1                  | 13092.0000     | 15.88          | 26.51                  | 42.39                | 54.00                | 11.61             | 200            | Horizontal |

| Suspected Data List |                |                     |                   |                |                   |                |                |              |          |
|---------------------|----------------|---------------------|-------------------|----------------|-------------------|----------------|----------------|--------------|----------|
| NO.                 | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                   | 1901.2000      | 48.25               | 43.66             | -4.59          | 74.00             | 30.34          | 200            | 152          | Vertical |
| 2                   | 2451.2000      | 48.74               | 47.22             | -1.52          | 74.00             | 26.78          | 200            | 231          | Vertical |
| 3                   | 4794.0000      | 48.86               | 41.71             | -7.15          | 74.00             | 32.29          | 100            | 155          | Vertical |
| 4                   | 6727.5000      | 46.20               | 45.54             | -0.66          | 74.00             | 28.46          | 200            | 181          | Vertical |
| 5                   | 9768.0000      | 46.05               | 54.92             | 8.87           | 74.00             | 19.08          | 100            | 340          | Vertical |
| 6                   | 14701.5000     | 36.38               | 54.66             | 18.28          | 74.00             | 19.34          | 100            | 286          | Vertical |

| AV Final Data List |                |                |                           |                      |                      |                      |                |              |          |
|--------------------|----------------|----------------|---------------------------|----------------------|----------------------|----------------------|----------------|--------------|----------|
| NO.                | Freq.<br>[MHz] | Factor<br>[dB] | AV<br>Reading<br>[dBμV/m] | AV Value<br>[dBμV/m] | AV Limit<br>[dBμV/m] | AV<br>Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] | Polarity |
| 1                  | 9763.7600      | 8.87           | 42.64                     | 51.51                | 54.00                | 2.49                 | 100            | 157.2        | Vertical |
| 2                  | 14701.5000     | 18.28          | 25.42                     | 43.70                | 54.00                | 10.30                | 100            | 286          | Vertical |

Mode: 3DH5  
 Highest Frequency (2480MHz)  
 Environment: 23.1 °C / 48% RH / 101.0 kPa  
 Test Engineer: Jiang tao

Test Voltage: AC 120V/60Hz  
 Date: 2024-11-18

| Suspected Data List |             |                  |                |             |                |             |             |           |            |
|---------------------|-------------|------------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1                   | 1315.2000   | 48.24            | 40.13          | -8.11       | 74.00          | 33.87       | 100         | 117       | Horizontal |
| 2                   | 2249.2000   | 50.30            | 46.75          | -3.55       | 74.00          | 27.25       | 200         | 62        | Horizontal |
| 3                   | 2994.6000   | 47.46            | 47.00          | -0.46       | 74.00          | 27.00       | 100         | 197       | Horizontal |
| 4                   | 5214.0000   | 48.06            | 41.64          | -6.42       | 74.00          | 32.36       | 100         | 112       | Horizontal |
| 5                   | 8707.5000   | 41.15            | 47.36          | 6.21        | 74.00          | 26.64       | 100         | 112       | Horizontal |
| 6                   | 13104.0000  | 35.28            | 51.38          | 16.10       | 74.00          | 22.62       | 200         | 258       | Horizontal |

| AV Final Data List |             |             |                     |                   |                   |                |             |           |            |
|--------------------|-------------|-------------|---------------------|-------------------|-------------------|----------------|-------------|-----------|------------|
| NO.                | Freq. [MHz] | Factor [dB] | AV Reading [dBμV/m] | AV Value [dBμV/m] | AV Limit [dBμV/m] | AV Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1                  | 13104.0000  | 16.10       | 26.43               | 42.53             | 54.00             | 11.47          | 200         | 258       | Horizontal |

| Suspected Data List |             |                  |                |             |                |             |             |           |          |
|---------------------|-------------|------------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.                 | Freq. [MHz] | Reading [dBμV/m] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1                   | 1409.4000   | 49.34            | 41.24          | -8.10       | 74.00          | 32.76       | 100         | 210       | Vertical |
| 2                   | 2294.2000   | 48.82            | 45.18          | -3.64       | 74.00          | 28.82       | 100         | 36        | Vertical |
| 3                   | 2654.0000   | 49.19            | 46.87          | -2.32       | 74.00          | 27.13       | 200         | 340       | Vertical |
| 4                   | 5865.0000   | 47.85            | 43.43          | -4.42       | 74.00          | 30.57       | 100         | 60        | Vertical |
| 5                   | 9919.5000   | 44.12            | 52.44          | 8.32        | 74.00          | 21.56       | 100         | 335       | Vertical |
| 6                   | 14703.0000  | 36.00            | 54.22          | 18.22       | 74.00          | 19.78       | 100         | 33        | Vertical |

| AV Final Data List |             |             |                     |                   |                   |                |             |           |          |
|--------------------|-------------|-------------|---------------------|-------------------|-------------------|----------------|-------------|-----------|----------|
| NO.                | Freq. [MHz] | Factor [dB] | AV Reading [dBμV/m] | AV Value [dBμV/m] | AV Limit [dBμV/m] | AV Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1                  | 9920.0725   | 8.32        | 43.40               | 51.72             | 54.00             | 2.28           | 100         | 338.7     | Vertical |
| 2                  | 14703.0000  | 18.22       | 25.31               | 43.53             | 54.00             | 10.47          | 100         | 33        | Vertical |

**Remark:**

- Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
- Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.

- 4 Spectrum setting:
- a. Peak Setting 1GHz–26.5GHz, RBW = 1MHz, VBW = 1MHz, Sweep time = auto.
  - b. AV Setting 1GHz–26.5GHz, Set RBW=1MHz, if the EUT is configured to transmit with duty cycle  $\geq 98\%$ , set  $\text{VBW} \leq \text{RBW}/100$  (i.e., 10kHz) but not less than 10 Hz. if the EUT duty cycle is  $< 98\%$ , set  $\text{VBW} \geq 1/T$ , Where T is defined in section 2.7.

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**Above 18GHz:**

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

All models were pretested and only the worst modes were recorded in this report(3DH5\_2402MHz).

Environment: 25.5°C/53%RH/101.0kPa  
Tested By: Wen wenwen

Voltage:AC 120V/60Hz  
Date: 2024-10-27

**Suspected Data List**

| NO. | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level for 1m<br>[dBμV/m] | Level for 3m<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[ °] | Polarity   |
|-----|----------------|---------------------|--------------------------|--------------------------|----------------|-------------------|----------------|----------------|---------------|------------|
| 1   | 18495.125      | 48.46               | 51.15                    | 41.61                    | 2.69           | 74                | 32.39          | 100            | 254           | Horizontal |
| 2   | 19211.675      | 49.39               | 52.5                     | 42.96                    | 3.11           | 74                | 31.04          | 150            | 77            | Horizontal |
| 3   | 20036.175      | 48.35               | 52.08                    | 42.54                    | 3.73           | 74                | 31.46          | 100            | 338           | Horizontal |
| 4   | 20948.225      | 48.46               | 52.52                    | 42.98                    | 4.06           | 74                | 31.02          | 100            | 310           | Horizontal |
| 5   | 21797.375      | 48.54               | 52.35                    | 42.81                    | 3.81           | 74                | 31.19          | 150            | 77            | Horizontal |
| 6   | 24728.6        | 45.18               | 50.69                    | 41.15                    | 5.51           | 74                | 32.85          | 100            | 77            | Horizontal |

**Suspected Data List**

| NO. | Freq.<br>[MHz] | Reading<br>[dBμV/m] | Level for 1m<br>[dBμV/m] | Level for 3m<br>[dBμV/m] | Factor<br>[dB] | Limit<br>[dBμV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[ °] | Polarity |
|-----|----------------|---------------------|--------------------------|--------------------------|----------------|-------------------|----------------|----------------|---------------|----------|
| 1   | 18902.7        | 48.93               | 52.09                    | 42.55                    | 3.16           | 74                | 31.45          | 100            | 195           | Vertical |
| 2   | 19163.65       | 48.8                | 52.31                    | 42.77                    | 3.51           | 74                | 31.23          | 150            | 77            | Vertical |
| 3   | 20125.425      | 47.93               | 52.22                    | 42.68                    | 4.29           | 74                | 31.32          | 100            | 340           | Vertical |
| 4   | 21665.625      | 47.74               | 51.92                    | 42.38                    | 4.18           | 74                | 31.62          | 100            | 310           | Vertical |
| 5   | 23274.675      | 46.41               | 51.41                    | 41.87                    | 5.00           | 74                | 32.13          | 150            | 106           | Vertical |
| 6   | 24742.625      | 45.96               | 52                       | 42.46                    | 6.04           | 74                | 31.54          | 100            | 310           | Vertical |

**Remark:**

- 1 Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2 Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Above 18G test distance is 1m, so the Level for 3m= Level for 1m + 20\*log(1/3)