

# RADIO PERFORMANCE TEST REPORT

Test Report No. : OT-218-RWD-030

Reception No. : 2107003324

Applicant : FCUNWIRED

Address : #1110, 11F, Byucksan Digital Valley 6-cha, 219, Gasan Digital 1-ro, Geumcheon-gu, Seoul, Korea

Manufacturer : FCUNWIRED

Address : #1110, 11F, Byucksan Digital Valley 6-cha, 219, Gasan Digital 1-ro, Geumcheon-gu, Seoul, Korea

Type of Equipment : Fall prevention Transmitter

FCC ID. : 2A2N3-GCST900

Model Name : GCST900

Multiple Model Name : N/A

Serial number : N/A

Total page of Report : 34 pages (including this page)

Date of Incoming : July 20, 2021

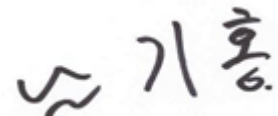
Date of issue : August 12, 2021

## SUMMARY

The equipment complies with the regulation; **FCC PART 15 SUBPART C Section 15.247**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.



Tested by  
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ONETECH Corp.

Reviewed by  
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ONETECH Corp.

Approved by  
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ONETECH Corp.

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ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

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**Revision History**

| Rev. No. | Issue Report No. | Issued Date     | Revisions       | Section Affected |
|----------|------------------|-----------------|-----------------|------------------|
| 0        | OT-218-RWD-030   | August 12, 2021 | Initial Release | All              |
|          |                  |                 |                 |                  |
|          |                  |                 |                 |                  |

## 1. VERIFICATION OF COMPLIANCE

Applicant : FCUNWIRED  
 Address : #1110, 11F, Byucksan Digital Valley 6-cha, 219, Gasan Digital 1-ro, Geumcheon-gu, Seoul, Korea  
 Contact Person : SEONHO NA / Engineering Manager  
 Telephone No. : 82-70-7825-0088  
 FCC ID : 2A2N3-GCST900  
 Model Name : GCST900  
 Brand Name : -  
 Serial Number : N/A  
 Date : August 12, 2021

|   |  |
|---|--|
| EQUIPMENT CLASS   | DTS – DIGITAL TRNSMISSION SYSTEM   |
| E.U.T. DESCRIPTION                                      | Fall prevention Transmitter  |
| THIS REPORT CONCERNS                                    | Original Grant   |
| MEASUREMENT PROCEDURES                                  | ANSI C63.10: 2020  |
| TYPE OF EQUIPMENT TESTED                                | Pre-Production   |
| KIND OF EQUIPMENT<br>AUTHORIZATION REQUESTED            | Certification  |
| EQUIPMENT WILL BE OPERATED<br>UNDER FCC RULES PART(S)   | FCC PART 15 SUBPART C Section 15.247<br>558074 D01 15.247 Meas Guidance v05r02 |
| Modifications on the Equipment to<br>Achieve Compliance | None   |
| Final Test was Conducted On                             | 3 m, Semi Anechoic Chamber   |

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

## 2. TEST SUMMARY

### 2.1 Test items and results

| SECTION        | TEST ITEMS  | RESULTS                |
|----------------|---|------------------------|
| 15.247 (a) (2) | Minimum 6 dB Bandwidth                              | Met the Limit / PASS   |
| 15.247 (b) (3) | Maximum Peak Conducted Output Power                 | Met the Limit / PASS   |
| 15.247 (d)     | 100 kHz Bandwidth Outside the Frequency Band        | Met the Limit / PASS   |
| 15.247 (d)     | Radiated Emission which fall in the Restricted Band | Met the Limit / PASS   |
| 15.247 (e)     | Peak Power Spectral Density                         | Met the Limit / PASS   |
| 15.209         | Radiated Emission Limits                            | Met the Limit / PASS   |
| 15.207         | Conducted Limits                                    | N/A / See Note         |
| 15.203         | Antenna Requirement                                 | Met requirement / PASS |

Note: This test item has not been performed as EUT uses DC battery.

### 2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

### 2.3 Related Submittal(s) / Grant(s)

Original submittal only

### 2.4 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in FCC PART 15 SUBPART C Section 15.247.

### 2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2020. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

### 2.6 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea.

-. Site Filing:

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ISED (Innovation, Science and Economic Development Canada) – Registration No. Site# 3736A-3

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation NO. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

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### 3. GENERAL INFORMATION

#### 3.1 Product Description

The FCUNWIRED, Model GCST900 (referred to as the EUT in this report) is an Fall prevention Transmitter, Product specification information described herein was obtained from product data sheet or user's manual.

|   |                             |
|---|-----------------------------|
| DEVICE TYPE   | Fall prevention Transmitter |
| Rated Supply Voltage                                  | DC 3.0 V                    |
| OPERATING FREQUENCY                                   | 920.5 MHz ~ 923.5 MHz       |
| MODULATION TYPE                                       | CSS                         |
| RF OUTPUT POWER                                       | 17.16 dBm                   |
| NUMBER OF CHANNEL                                     | 3 Channel                   |
| ANTENNA TYPE  | PCB Antenna                 |
| ANTENNA GAIN  | 3.61 dBi                    |
| List of each Osc. or crystal<br>Freq.(Freq. >= 1 MHz) | 32 MHz                      |

#### 3.2 Alternative type(s)/model(s); also covered by this test report.

-. None

### 4. EUT MODIFICATIONS

-. None

## 5. SYSTEM TEST CONFIGURATION

### 5.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

| DEVICE TYPE | MANUFACTURER | MODEL/PART NUMBER | FCC ID |
|-------------|--------------|-------------------|--------|
| Main Board  | FCUNWIRED    | N/A               | N/A    |
| DC Battery  | Panasonic    | CR2450            | N/A    |

### 5.2 Peripheral equipment

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

| Model   | Manufacturer | Description                       | Connected to |
|---------|--------------|-----------------------------------|--------------|
| GCST900 | FCUNWIRED    | Fall prevention Transmitter (EUT) | -            |

### 5.3 Mode of operation during the test

For the testing, software used to control the EUT for staying in continuous transmitting is programmed.

For final testing, the EUT was set at 920.5 MHz, 922.0 MHz, and 923.5 MHz to get a maximum emission levels from the EUT. The EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “XZ” axis, but the worst data was recorded in this report.



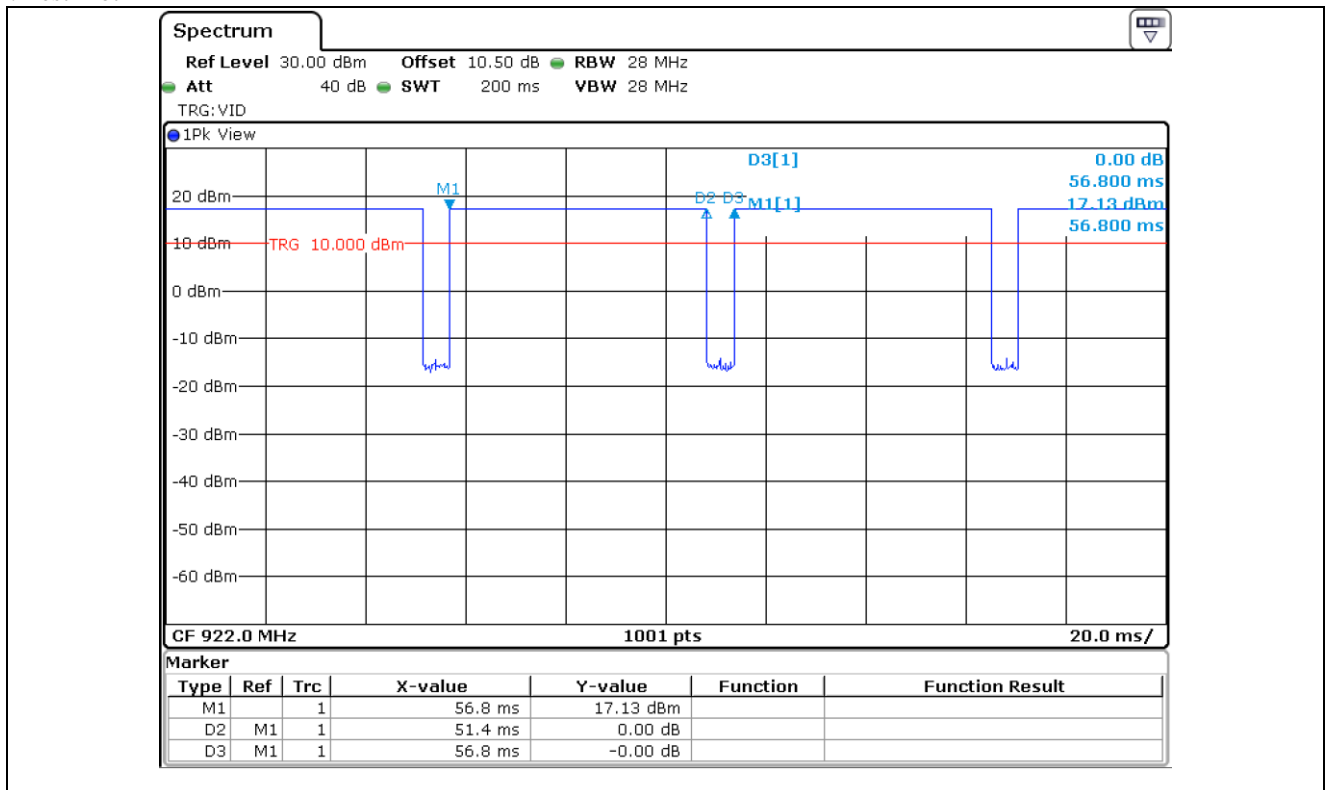
### -. Duty Cycle

| Mode    | Tx On Time<br>[ ms ] | Tx Off Time<br>[ ms ] | Duty Cycle<br>[ % ] | Correction Factor<br>[ dB ] |
|---------|----------------------|-----------------------|---------------------|-----------------------------|
| 900 MHz | 51.4                 | 5.4                   | 90.49               | 0.87                        |

Note – Duty Cycle : (Tx On Time / (Tx On Time + Tx Off Time)) \* 100

Correction Factor : 10 \* Log(1 / (Duty Cycle / 100))

### -. Test Plot



## -. Channel List

| 900 MHz |                    |
|---------|--------------------|
| Channel | Frequency<br>[MHz] |
| 1       | 920.5              |
| 2       | 922.0              |
| 3       | 923.5              |

## 5.4 Configuration of Test System

**Line Conducted Test:** As the EUT is operated by DC battery, this test item is not requirement to be performed.

**Radiated Emission Test:** Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2020 to determine the worse operating condtions. Final radiated emission tests were conducted at 3 meter Semi Anechoic Chamber.

The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.

## 5.5 Antenna Requirement

For intentional device, according to section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

**Antenna Construction:**

The antenna of the EUT is PCB Antenna on the main board in the EUT, so no consideration of replacement by the user.

## 6. PRELIMINARY TEST

### 6.1 AC Power line Conducted Emissions Tests

As the EUT is operated by DC battery, this test item is not requirement to be performed.

### 6.2 General Radiated Emissions Tests

During Preliminary Test, the following operating mode was investigated.

| Operation Mode    | The Worse operating condition (Please check one only) |
|-------------------|---|
| Transmitting Mode | X   |

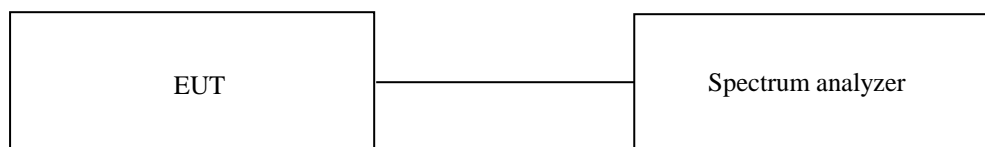
## 7. MINIMUM 6 dB BANDWIDTH

### 7.1 Operating environment

Temperature : 22 °C  
Relative humidity : 46 % R.H.

### 7.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz, and peak detection was used. The 6 dB bandwidth is defined as the total spectrum over which the power is higher than the peak power minus 6 dB.



### 7.3 Test Date

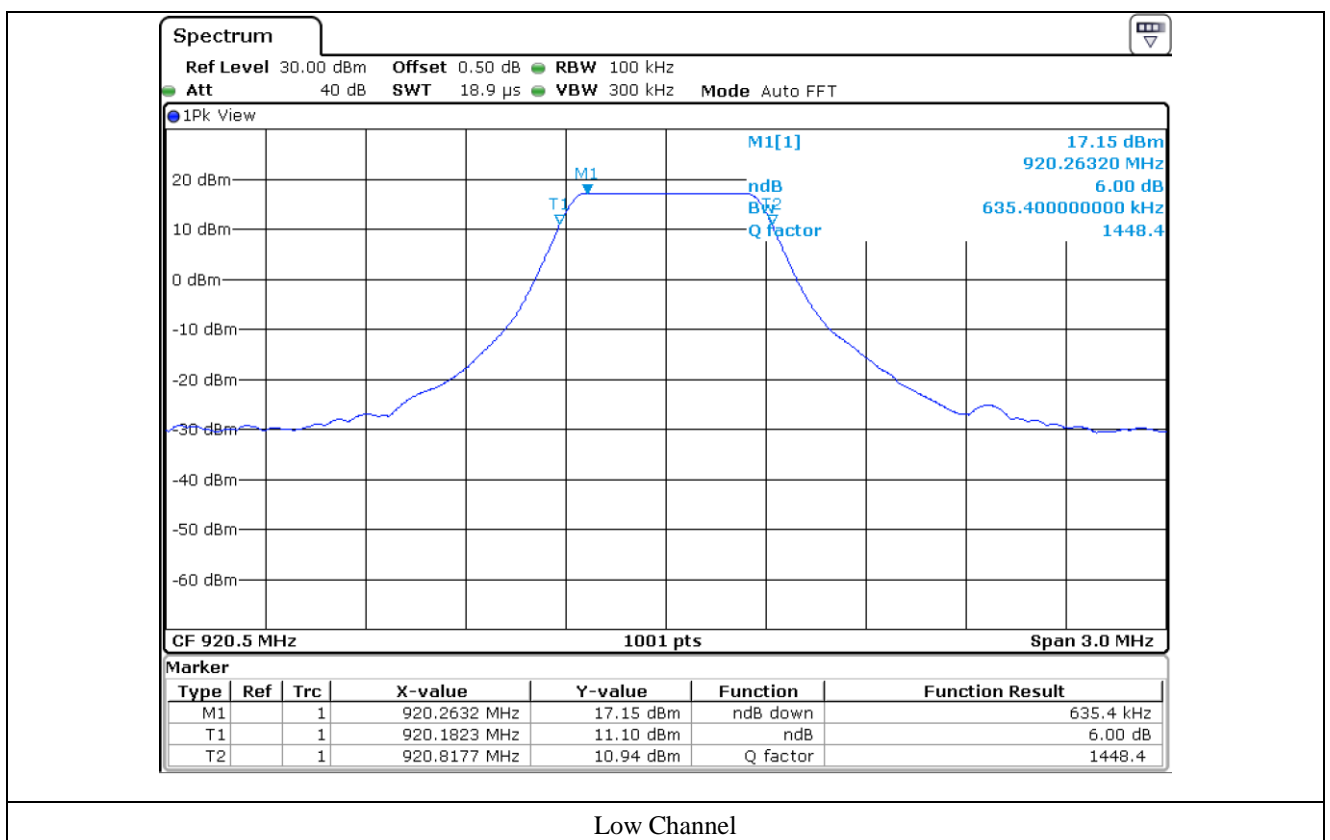
July 22, 2021 ~ August 03, 2021

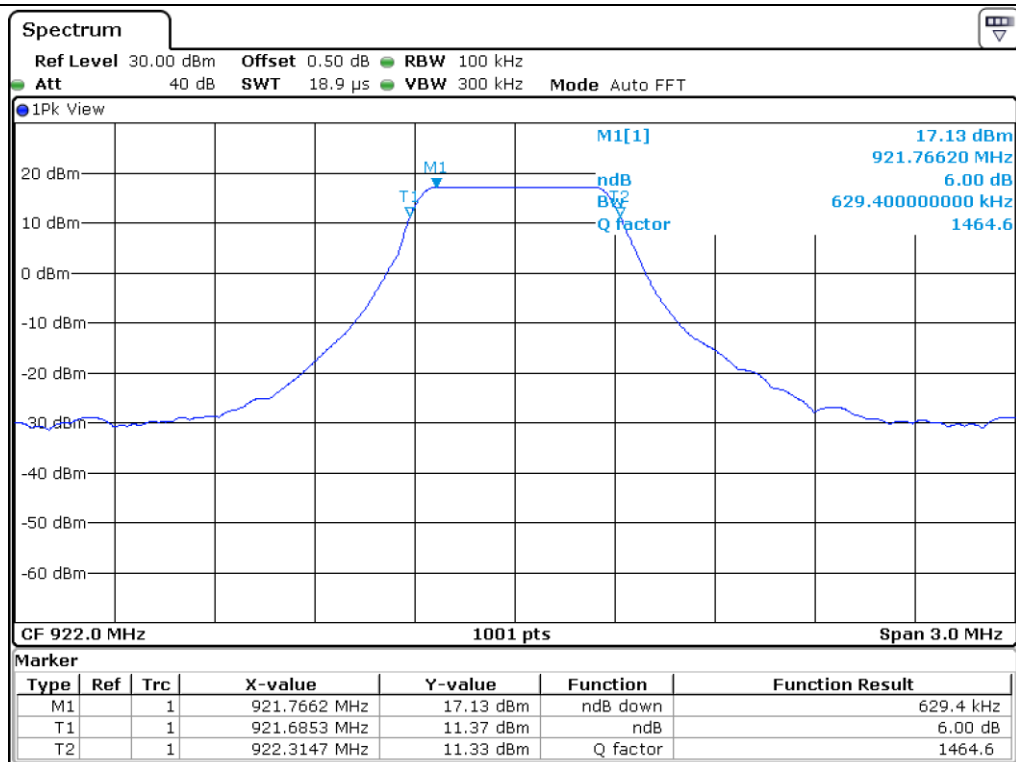
## 7.4 Test Data

-. Test Result : Pass

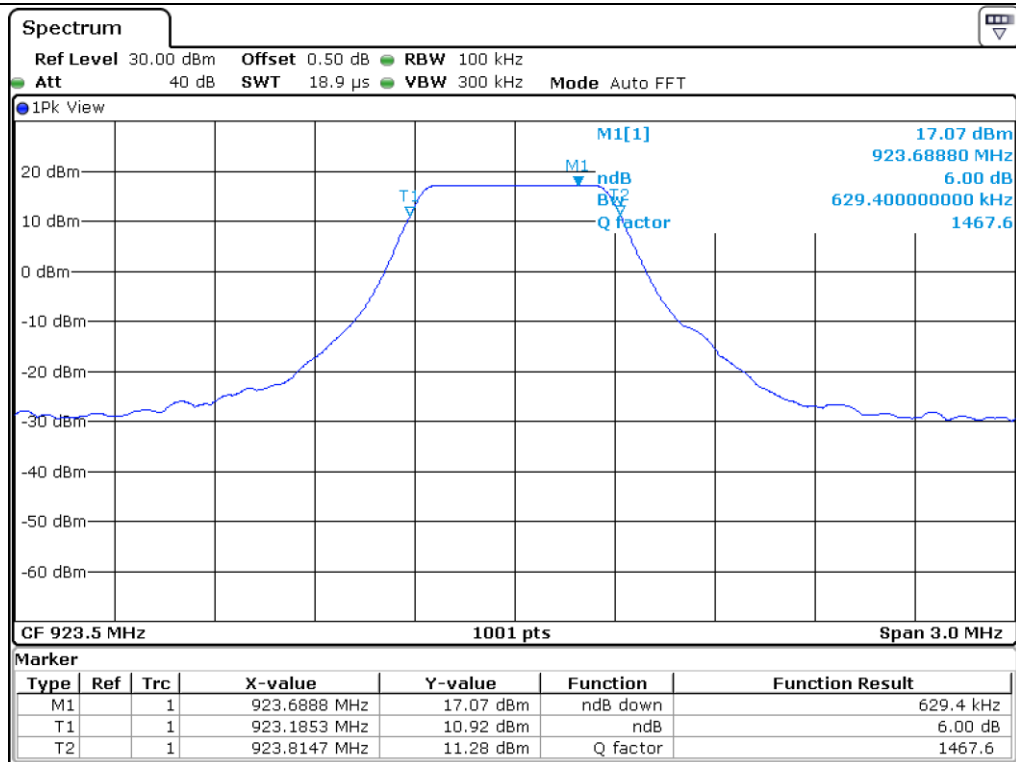
| CHANNEL | FREQUENCY<br>(MHz) | 6 dB Bandwidth<br>(kHz) | LIMIT<br>(kHz) | Margin<br>(kHz) |
|---------|--------------------|-------------------------|----------------|-----------------|
| Low     | 920.50             | 635.40                  | 500.00         | 135.40          |
| Middle  | 922.00             | 629.40                  | 500.00         | 129.40          |
| High    | 923.50             | 629.40                  | 500.00         | 129.40          |

Remark. Margin = Measured Value - Limit





### Middle Channel



### High Channel

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## 8. MAXIMUM PEAK OUTPUT POWER

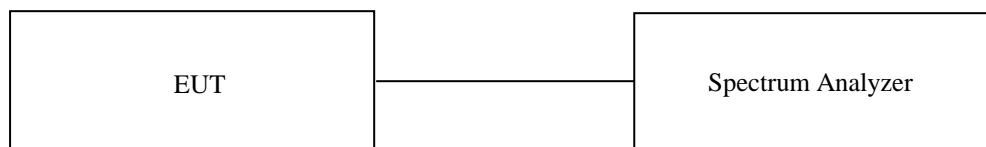
### 8.1 Operating environment

Temperature : 22 °C  
Relative humidity : 46 % R.H.

### 8.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to  $\geq$  DTS Bandwidth, the video bandwidth is set to 3 times the resolution bandwidth.



### 8.3 Test Date

July 22, 2021 ~ August 03, 2021

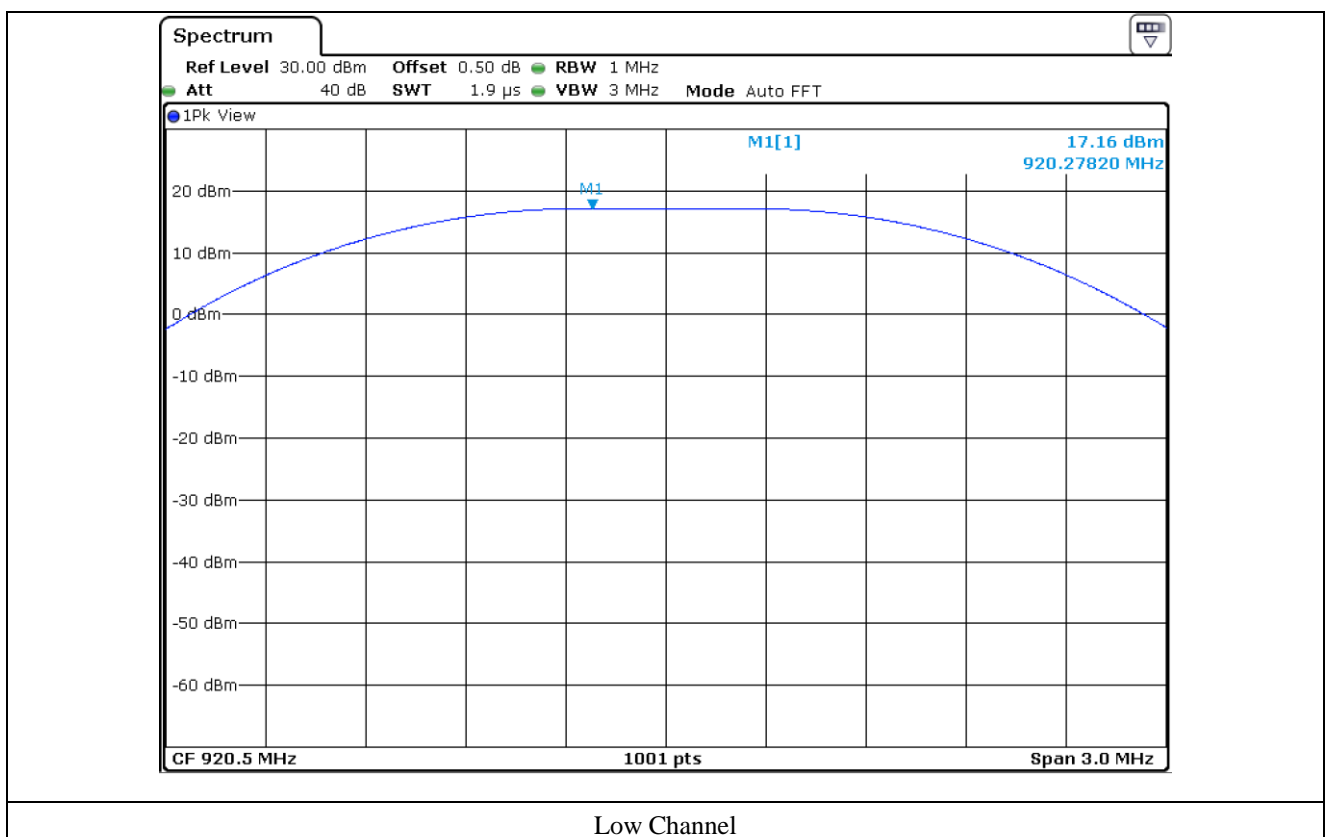


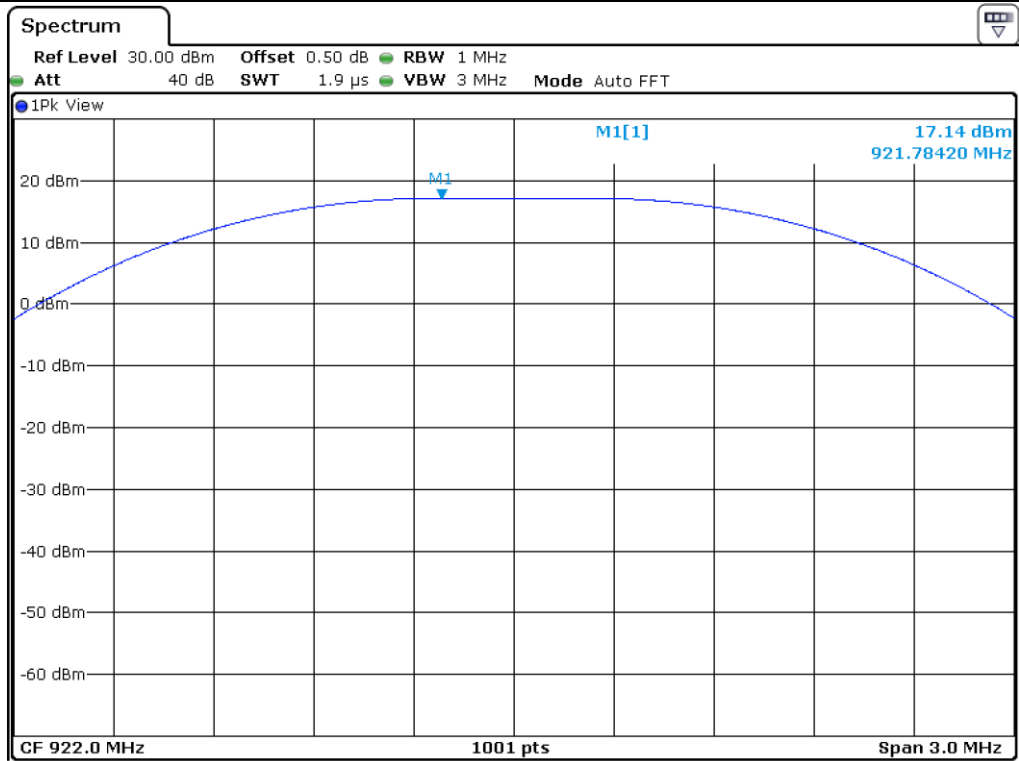
## 8.4 Test Data

-. Test Result : Pass

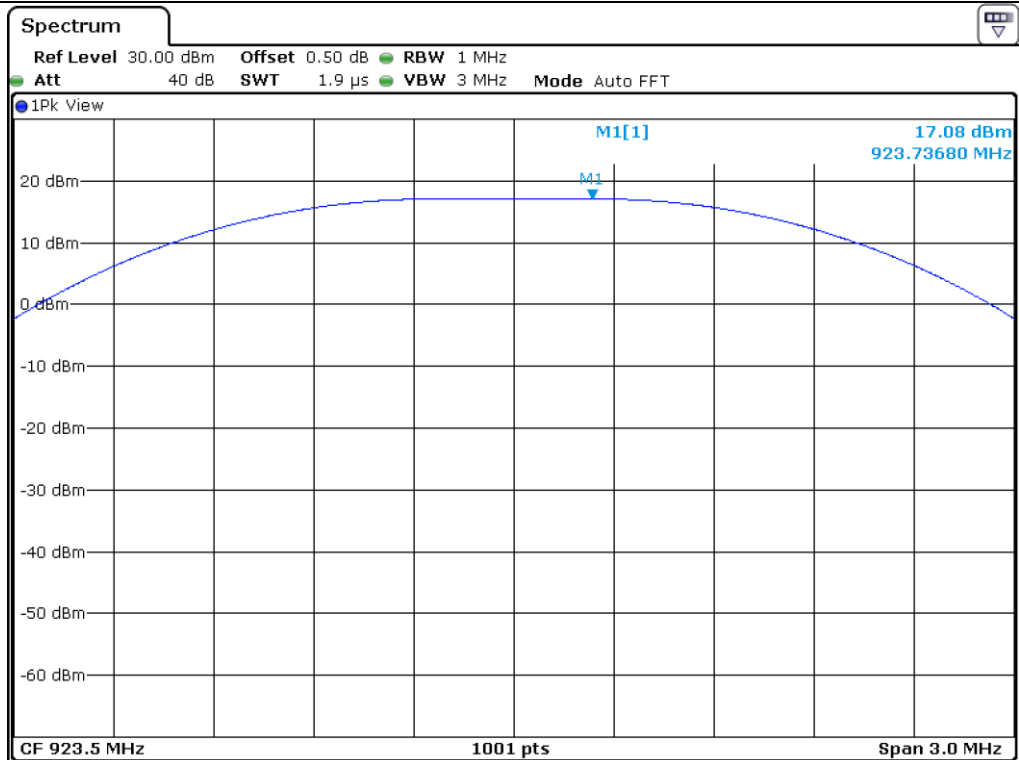
| CHANNEL | FREQUENCY<br>(MHz) | 6 dB Bandwidth<br>(kHz) | MEASURED VALUE<br>(dBm) | LIMIT<br>(dBm) | MARGIN<br>(dB) |
|---------|--------------------|-------------------------|-------------------------|----------------|----------------|
| Low     | 920.50             | 635.40                  | 17.16                   | 30.00          | 12.84          |
| Middle  | 922.00             | 629.40                  | 17.14                   | 30.00          | 12.86          |
| High    | 923.50             | 629.40                  | 17.08                   | 30.00          | 12.92          |

Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)





Middle Channel



High Channel

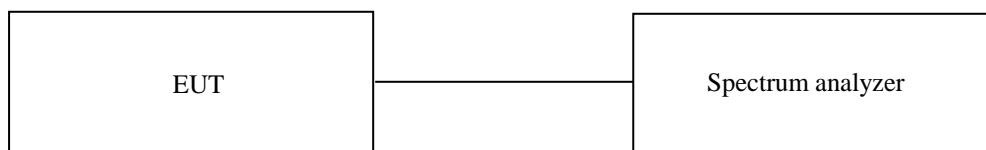
## 9. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

### 9.1 Operating environment

Temperature : 22 °C  
Relative humidity : 46 % R.H.

### 9.2 Test set-up for conducted measurement

The antenna output of the EUT was connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz, the video bandwidth is set to 3 times the resolution bandwidth and peak detection was used.



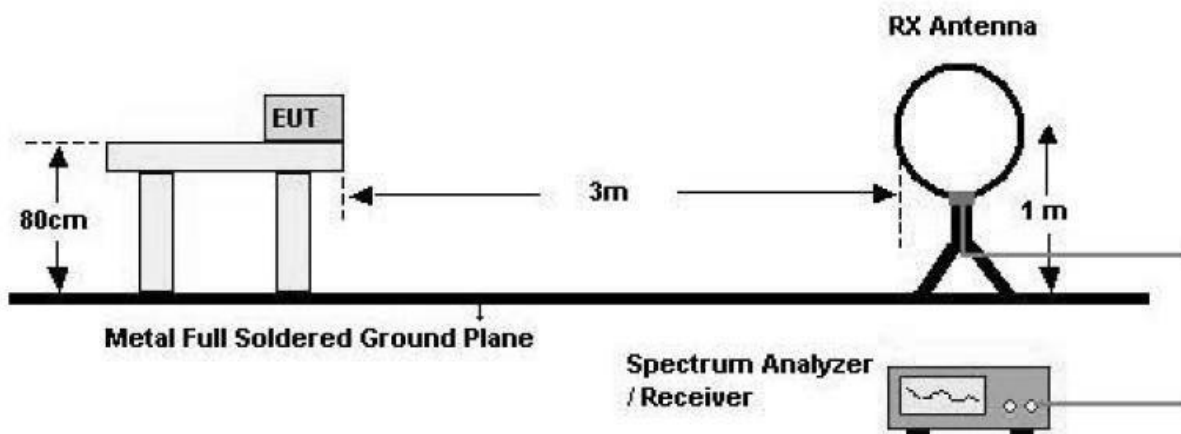
### 9.3 Test set-up for radiated measurement

The radiated emissions measurements were performed on the 3 m semi anechoic chamber. The EUT was placed on turntable approximately 1.5 m above the ground plane.

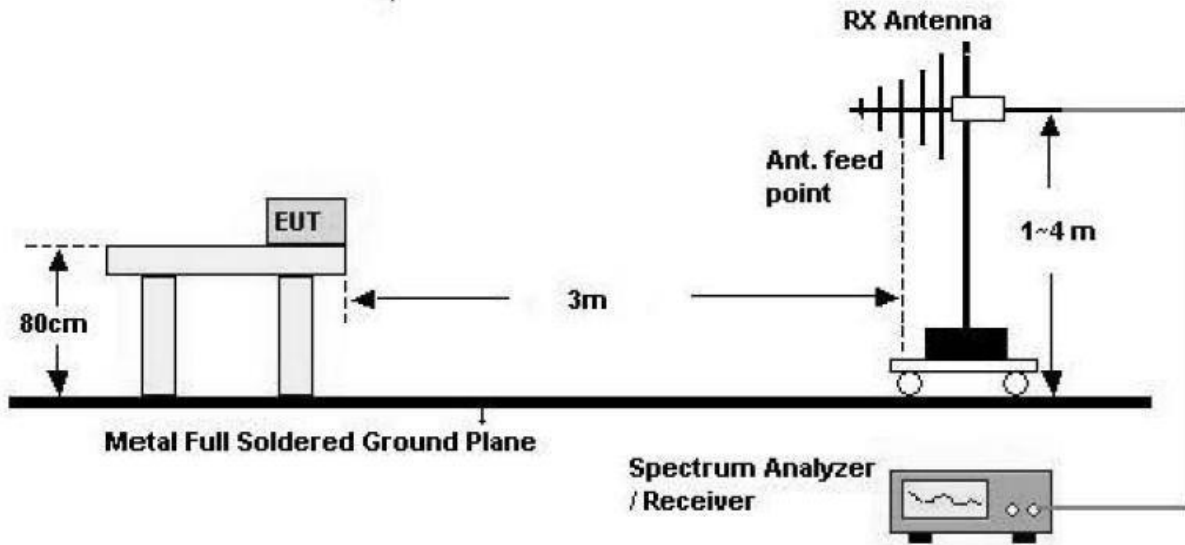
The frequency spectrum from 30 MHz to 10 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.

#### - Test Configuration

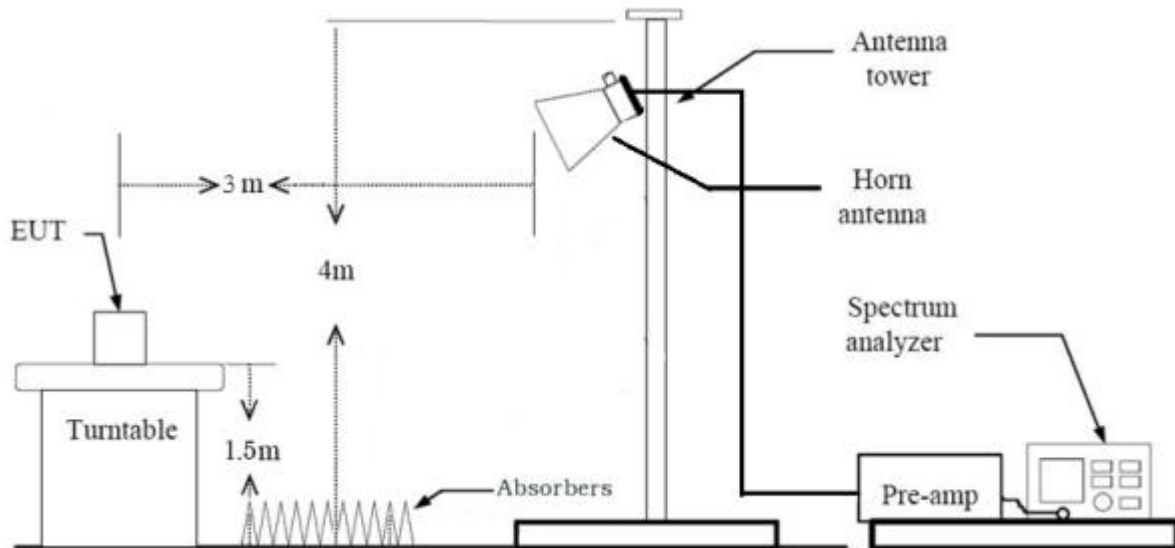
##### 1. Below 30 MHz



2. 30 MHz - 1 GHz



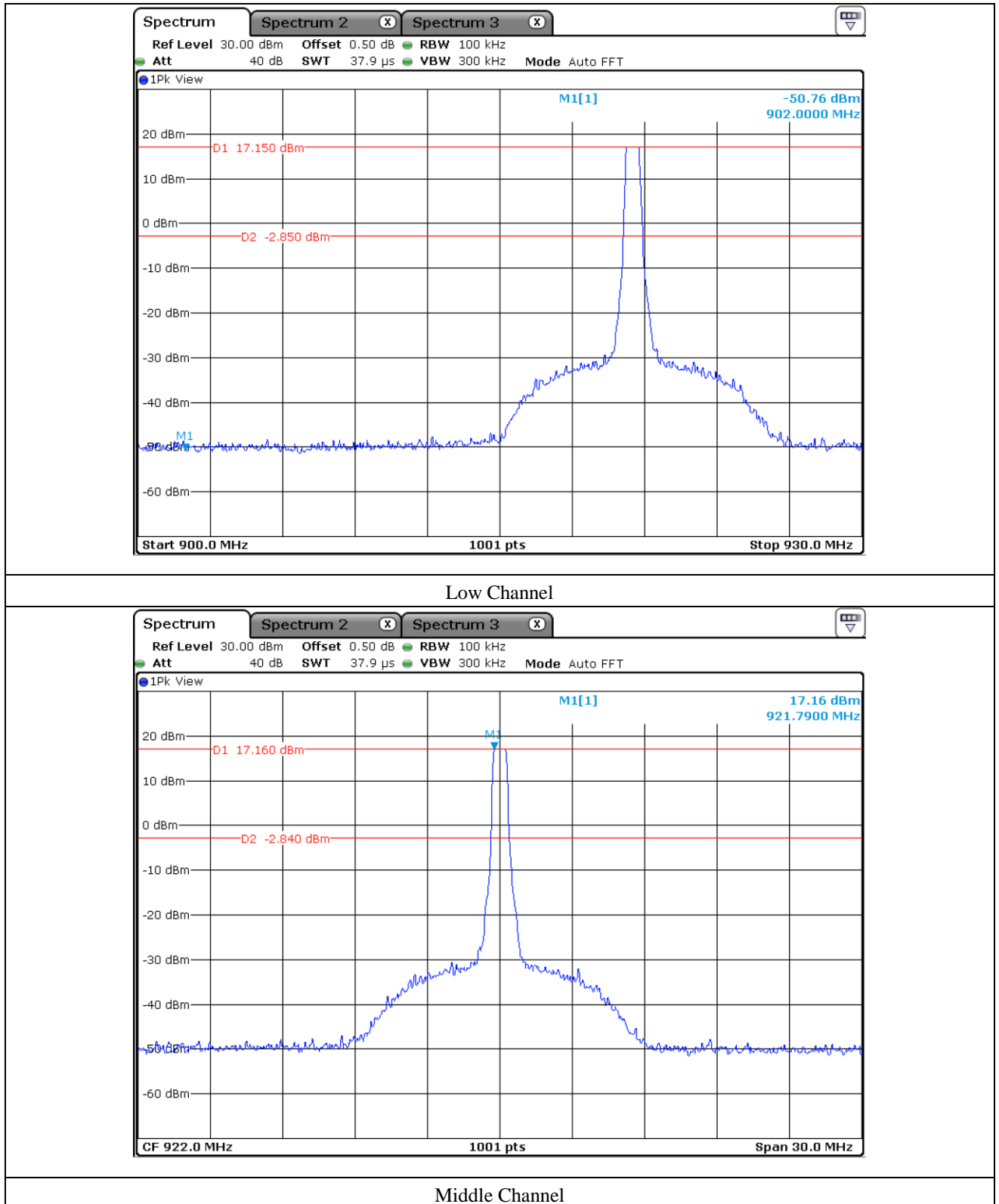
3. Above 1 GHz



**9.4 Test Date**

July 22, 2021 ~ August 03, 2021

## 9.5 Test Data for conducted emission

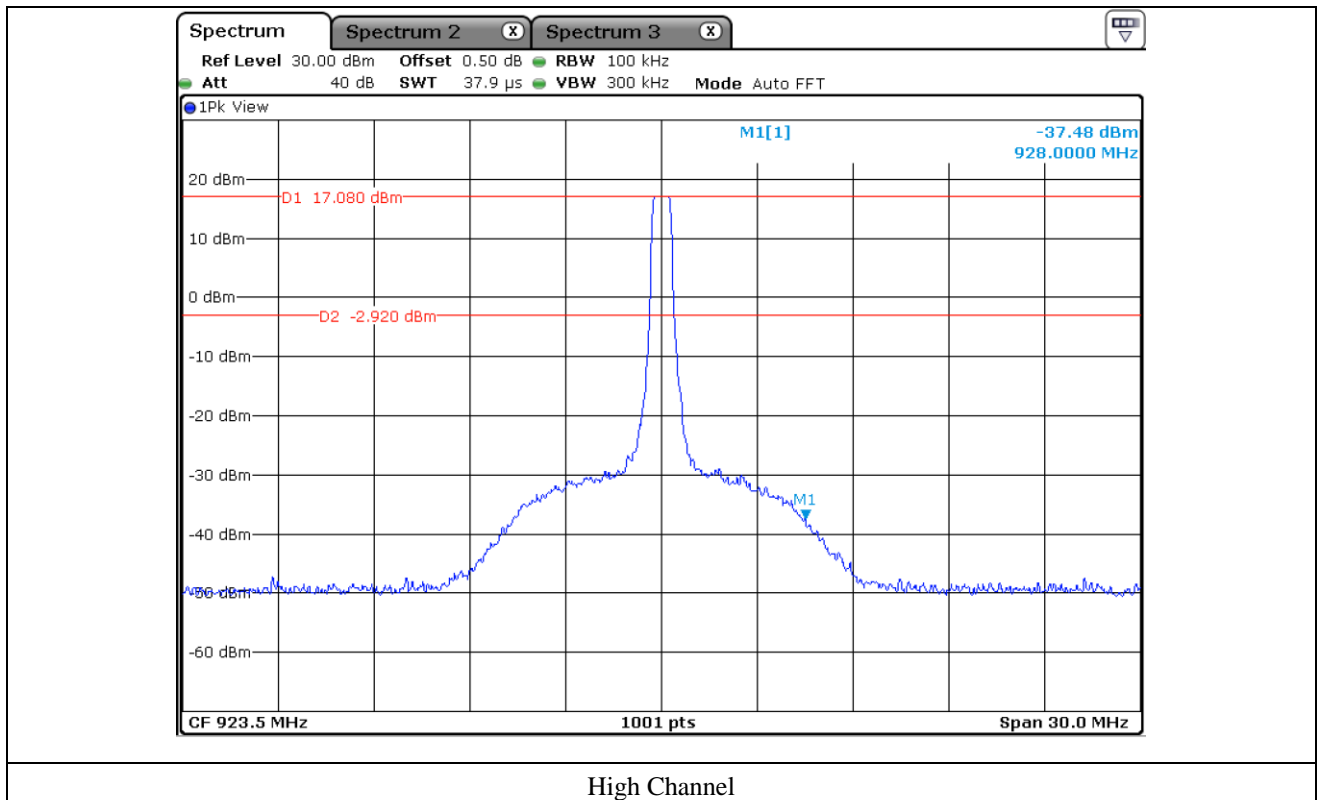


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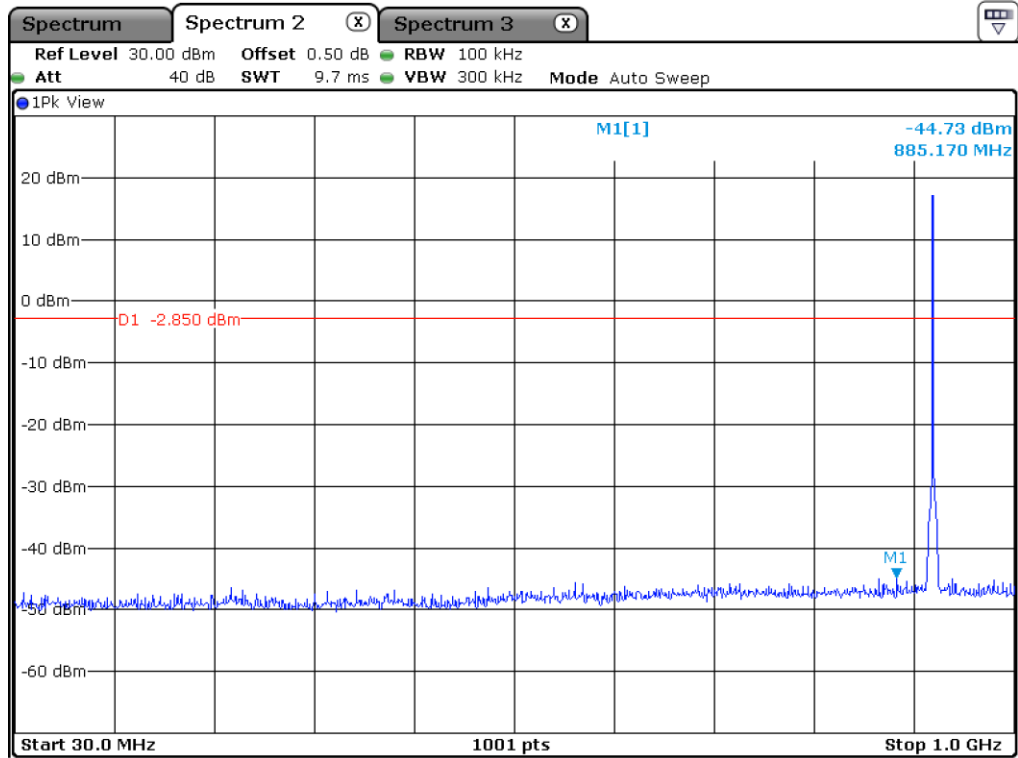
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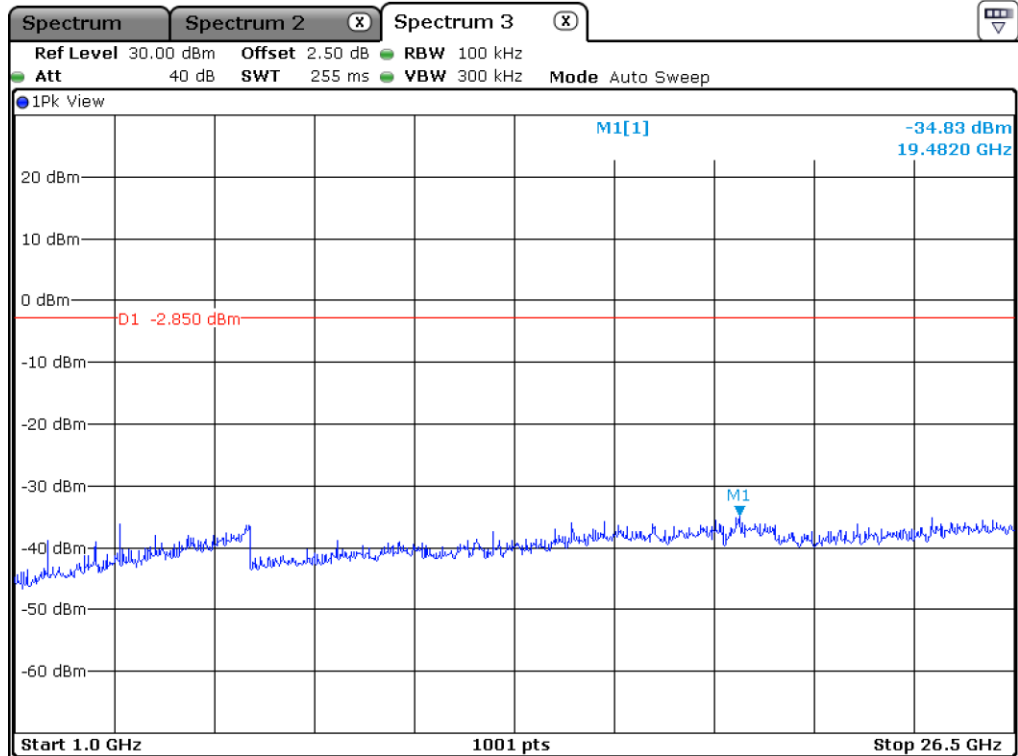
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High Channel



Low Channel



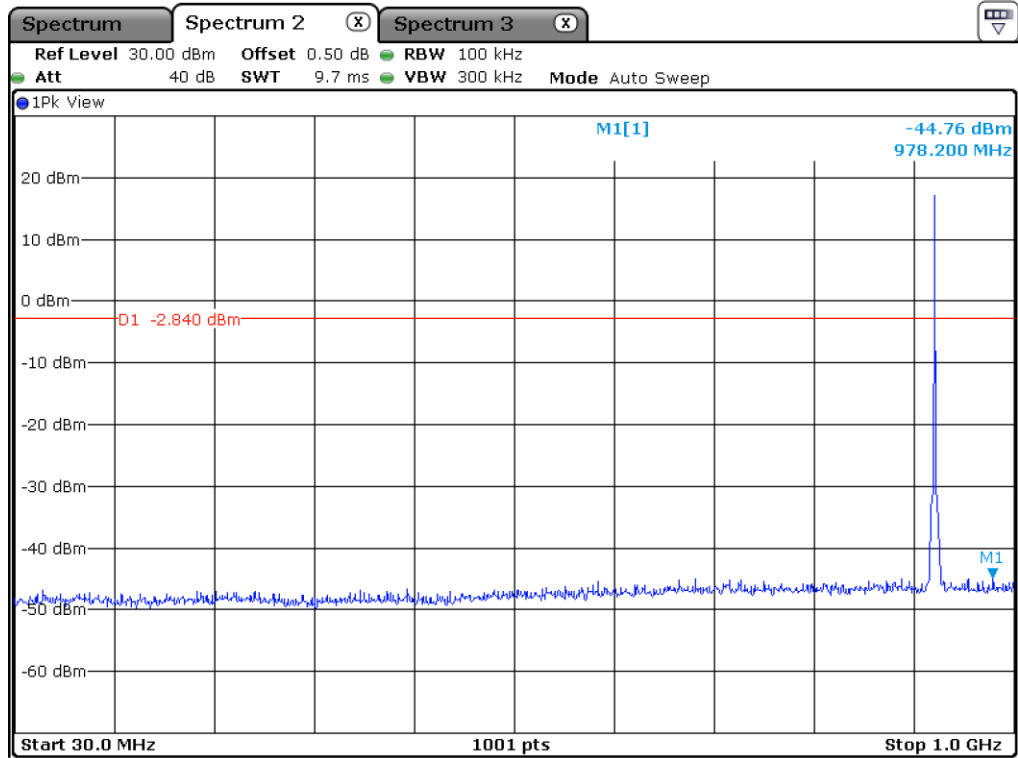
Low Channel

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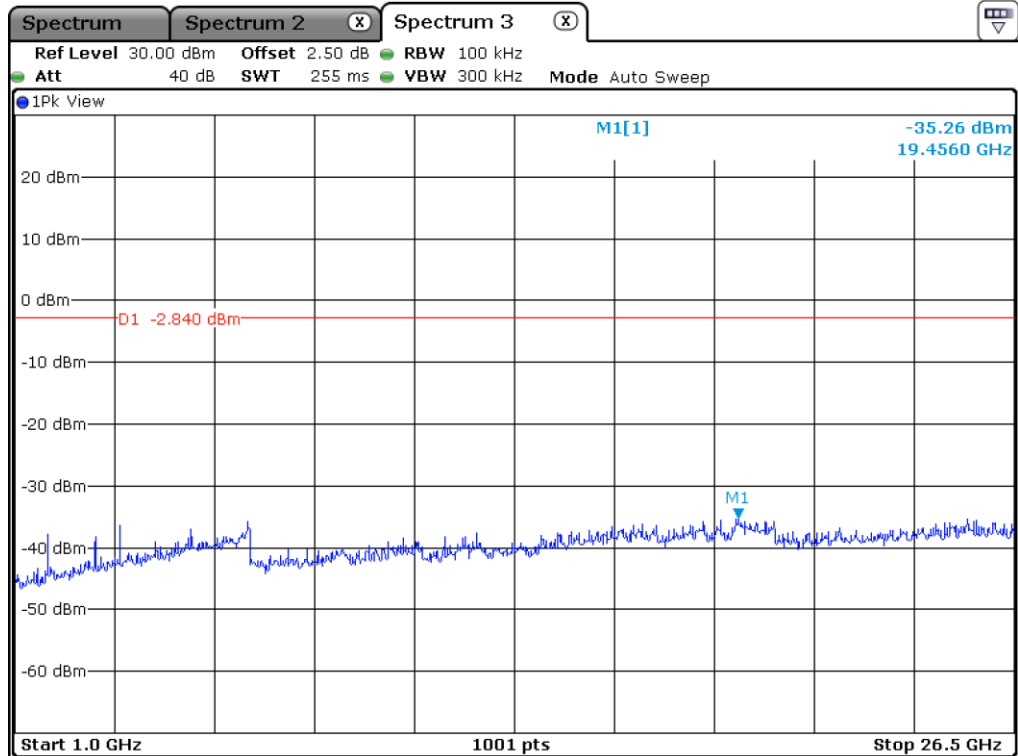
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Middle Channel



Middle Channel

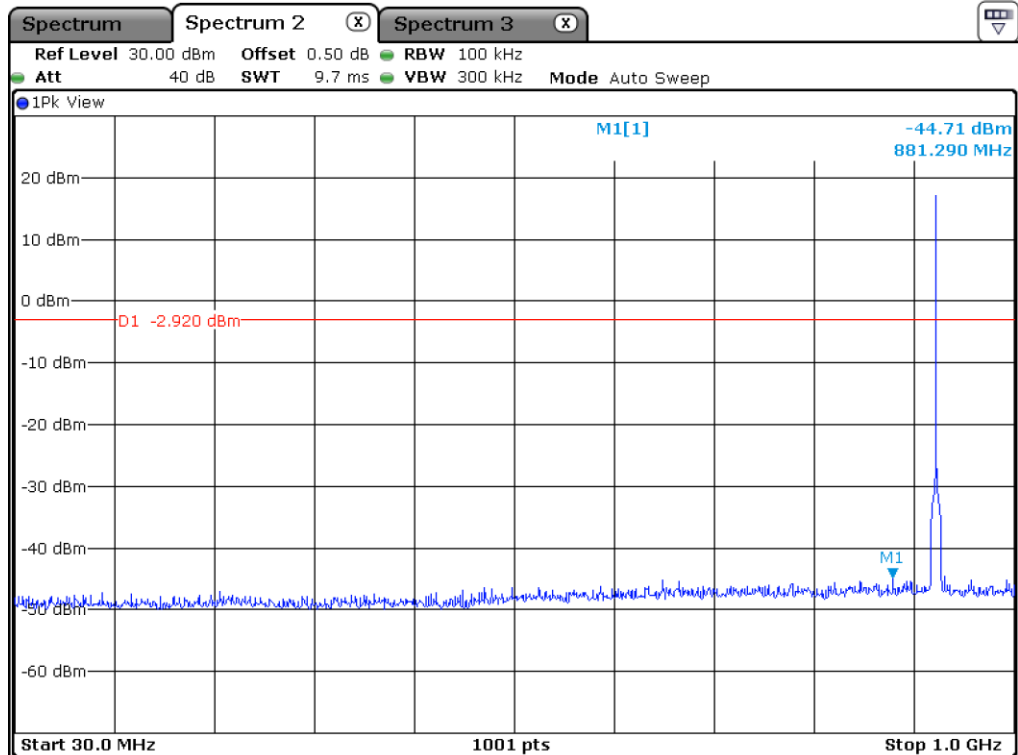
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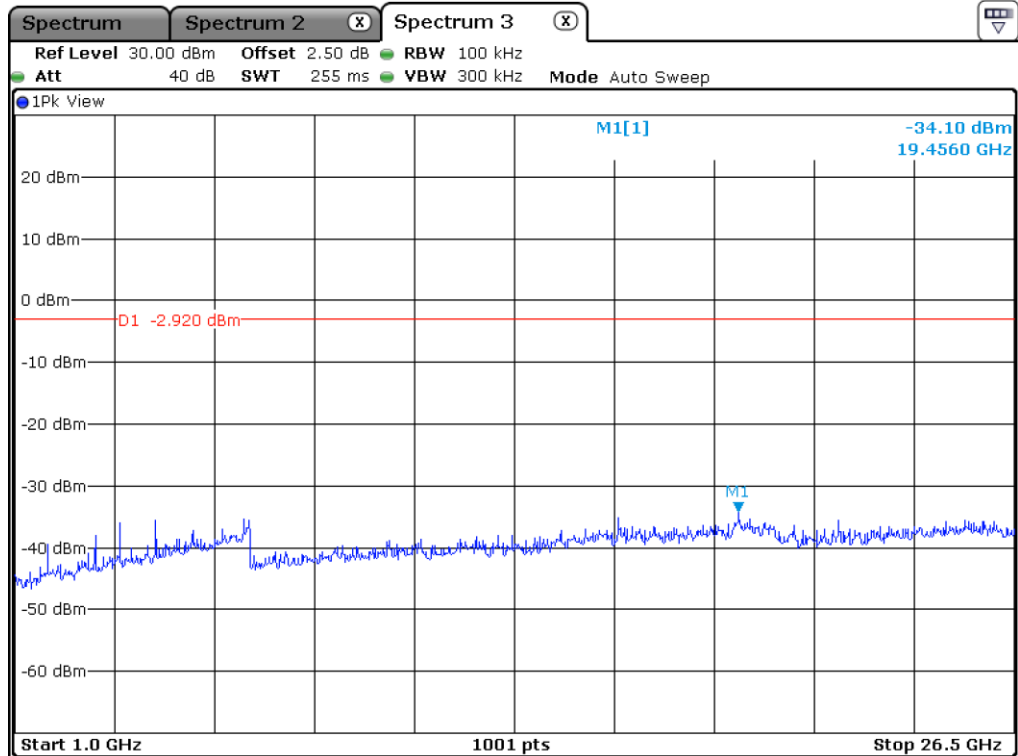
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#### High Channel



#### High Channel

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## 9.6 Test data for radiated emission

### 9.6.1 Spurious & Harmonic Radiated Emission

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode  
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 90.49 %
- Result : PASSED

| Frequency<br>(MHz) | Reading<br>(dBuV) | Detector<br>Mode | Ant. Pol.<br>(H/V) | Ant.<br>Factor | Cable<br>Loss | Amp<br>Gain | Duty<br>Factor(dB) | Total<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) |
|--------------------|-------------------|------------------|--------------------|----------------|---------------|-------------|--------------------|-------------------|--------------------|----------------|
| 1 841.00           | 64.84             | Peak             | H                  | 26.10          | 7.10          | 46.00       | -                  | 52.04             | 74.00              | 21.96          |
| 1 841.00           | 61.42             | Average          | H                  | 26.10          | 7.10          | 46.00       | 0.87               | 49.49             | 54.00              | 4.51           |
| 1 841.00           | 64.61             | Peak             | V                  | 26.10          | 7.10          | 46.00       | -                  | 51.81             | 74.00              | 22.19          |
| 1 841.00           | 61.24             | Average          | V                  | 26.10          | 7.10          | 46.00       | 0.87               | 49.31             | 54.00              | 4.69           |
| 1 844.00           | 64.72             | Peak             | H                  | 26.10          | 7.10          | 46.00       | -                  | 51.92             | 74.00              | 22.08          |
| 1 844.00           | 61.34             | Average          | H                  | 26.10          | 7.10          | 46.00       | 0.87               | 49.41             | 54.00              | 4.59           |
| 1 844.00           | 64.82             | Peak             | V                  | 26.10          | 7.10          | 46.00       | -                  | 52.02             | 74.00              | 21.98          |
| 1 844.00           | 61.64             | Average          | V                  | 26.10          | 7.10          | 46.00       | 0.87               | 49.71             | 54.00              | 4.29           |
| 1 847.00           | 65.29             | Peak             | H                  | 26.10          | 7.10          | 46.00       | -                  | 52.49             | 74.00              | 21.51          |
| 1 847.00           | 61.74             | Average          | H                  | 26.10          | 7.10          | 46.00       | 0.87               | 49.81             | 54.00              | 4.19           |
| 1 847.00           | 65.33             | Peak             | V                  | 26.10          | 7.10          | 46.00       | -                  | 52.53             | 74.00              | 21.47          |
| 1 847.00           | 62.02             | Average          | V                  | 26.10          | 7.10          | 46.00       | 0.87               | 50.09             | 54.00              | 3.91           |

Remark: "H": Horizontal, "V": Vertical

$$\text{Margin (dB)} = \text{Limits (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

$$\text{Total Level} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} + \text{Duty Factor} - \text{Amp Gain}$$

## 10. PEAK POWER SPECTRUL DENSITY

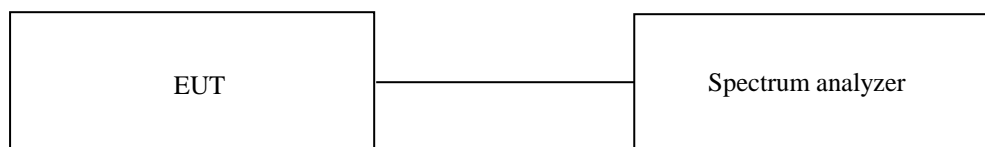
### 10.1 Operating environment

Temperature : 22 °C  
Relative humidity : 46 % R.H.

### 10.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ , the video bandwidth is set to 3 times the resolution bandwidth.



### 10.3 Test Date

July 22, 2021 ~ August 03, 2021

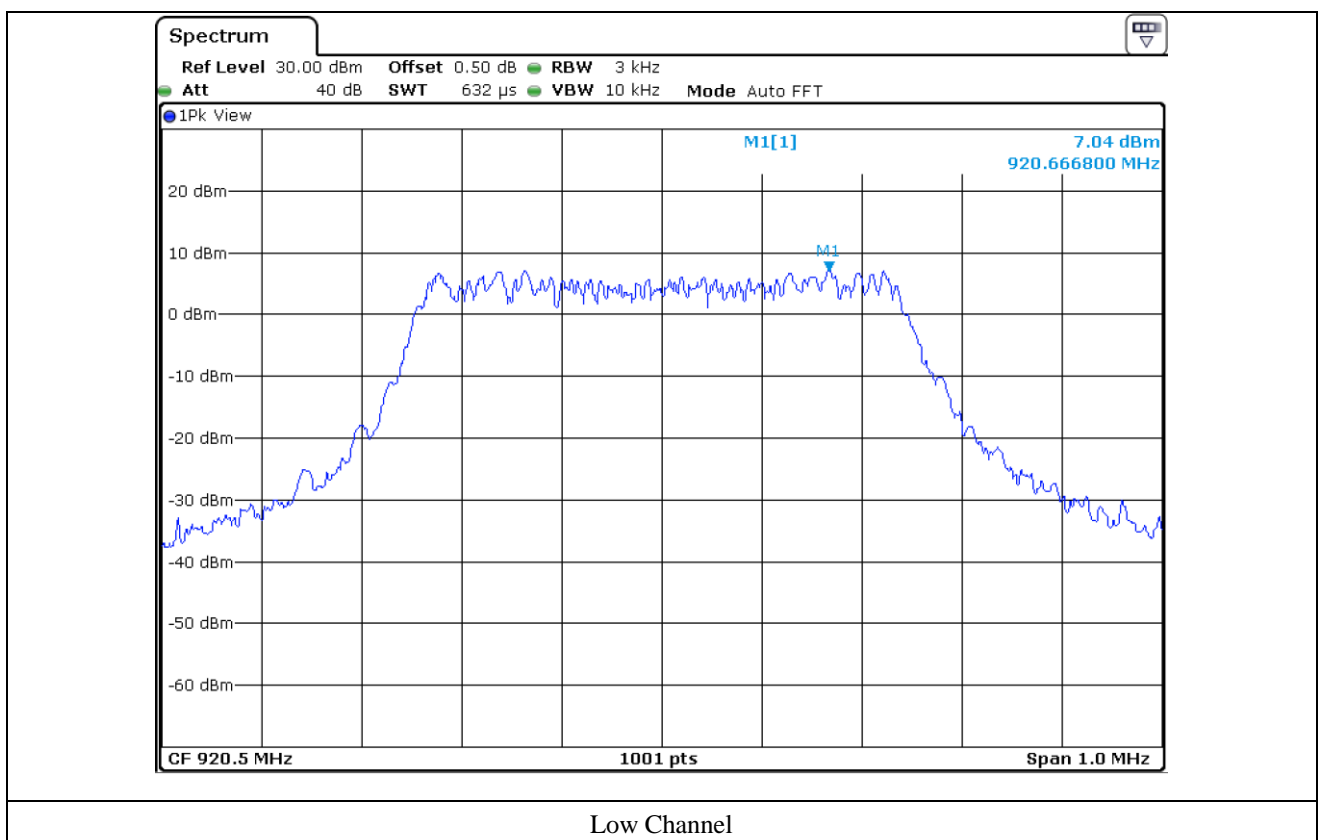
## 10.4 Test Data

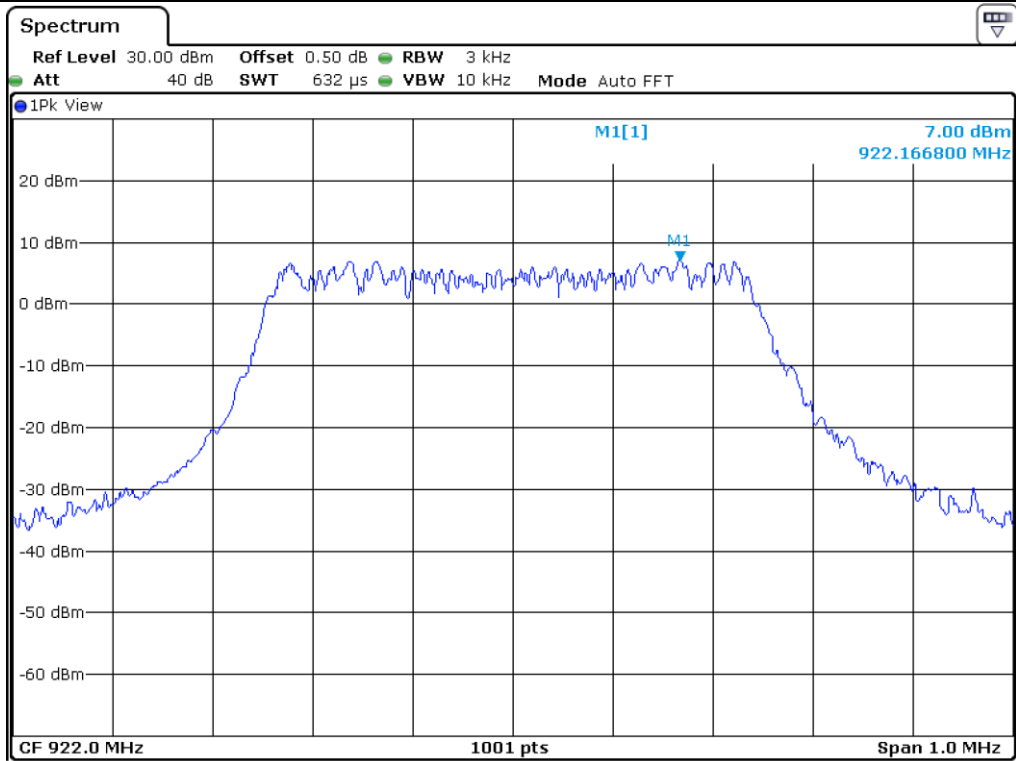
-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

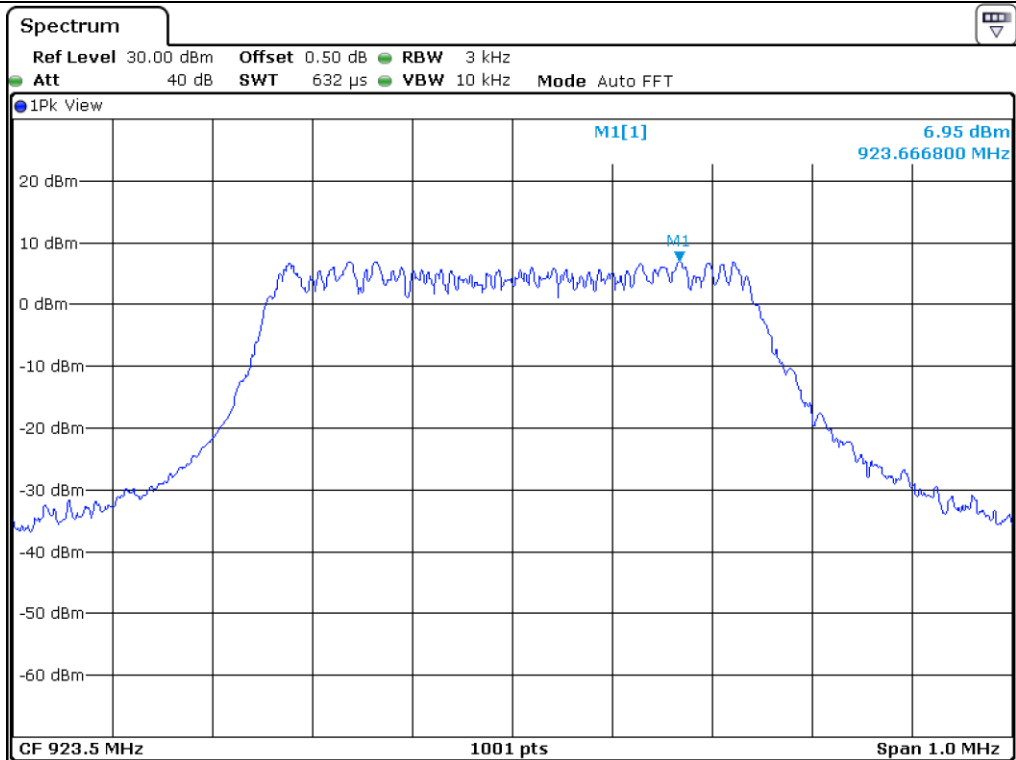
| CHANNEL | FREQUENCY(MHz) | MEASURED VLAUE (dBm) | LIMIT (dBm) | MARGIN (dB) |
|---------|----------------|----------------------|-------------|-------------|
| Low     | 920.50         | 7.04                 | 8.00        | 0.96        |
| Middle  | 922.00         | 7.00                 | 8.00        | 1.00        |
| High    | 923.50         | 6.95                 | 8.00        | 1.05        |

Remark. Margin = Limit – Measured value





Middle Channel



High Channel

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## 11. RADIATED EMISSION TEST

### 11.1 Operating environment

Temperature : 22 °C  
Relative humidity : 46 % R.H.

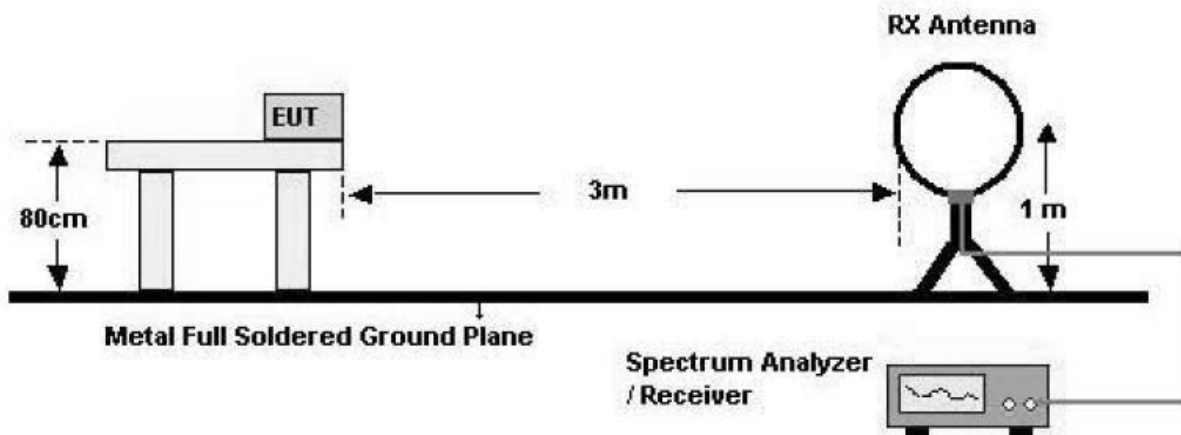
### 11.2 Test set-up

The radiated emissions measurements were on the 3 m semi anechoic chamber. The EUT and other support equipment were placed on a non-conductive turntable above the ground plane. The interconnecting cables from outside test site were inserted into ferrite clamps at the point where the cables reach the turntable.

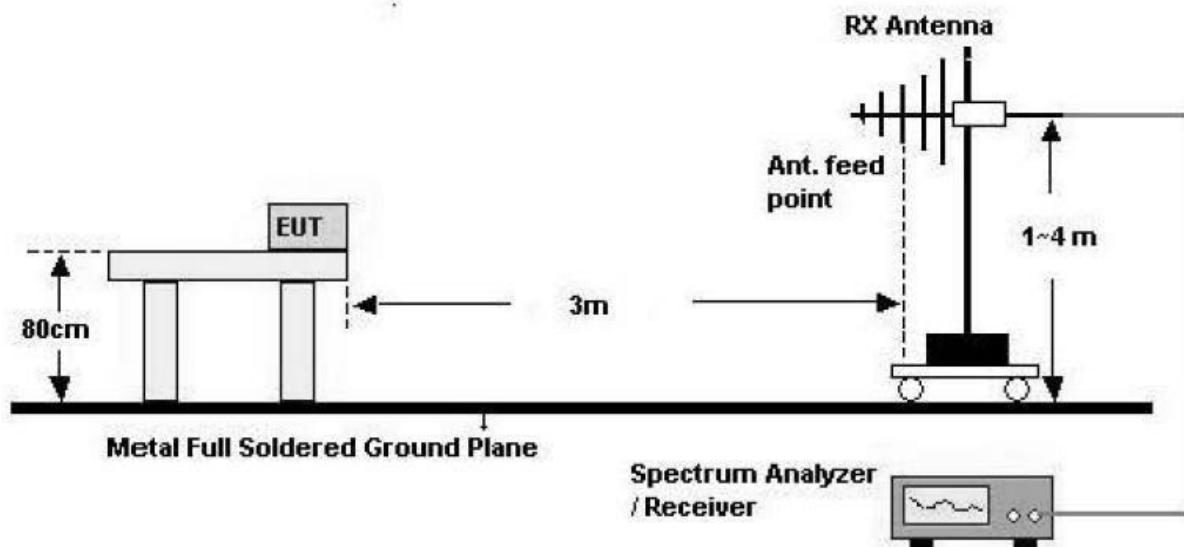
The frequency spectrum from 30 MHz to 10 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

#### - Test Configuration

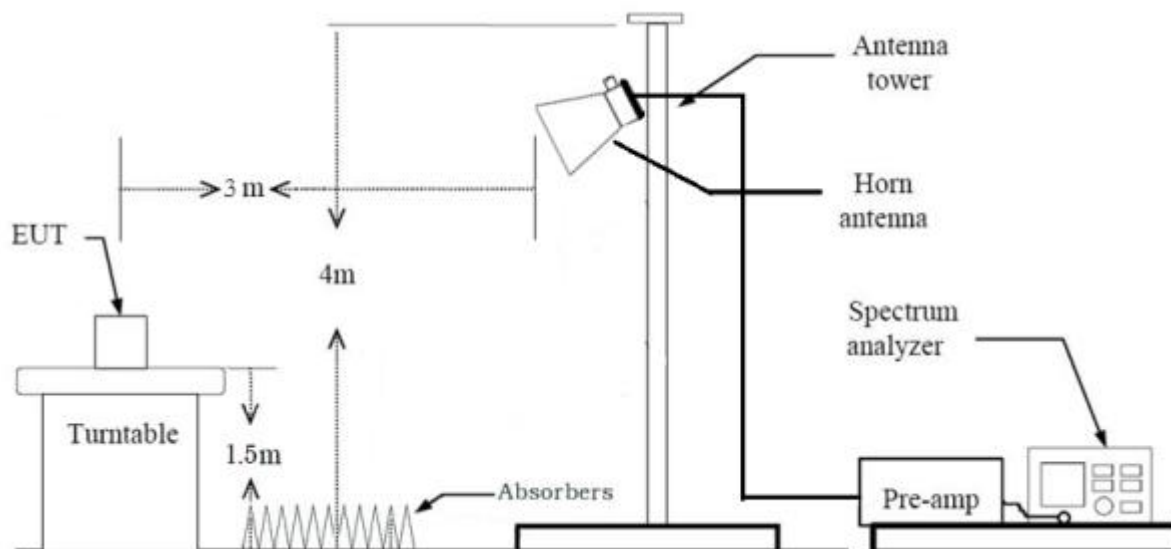
##### 1. Below 30 MHz



2. 30 MHz - 1 GHz



3. Above 1 GHz



**11.3 Test Date**

July 22, 2021 ~ August 03, 2021

## 11.4 Test Data

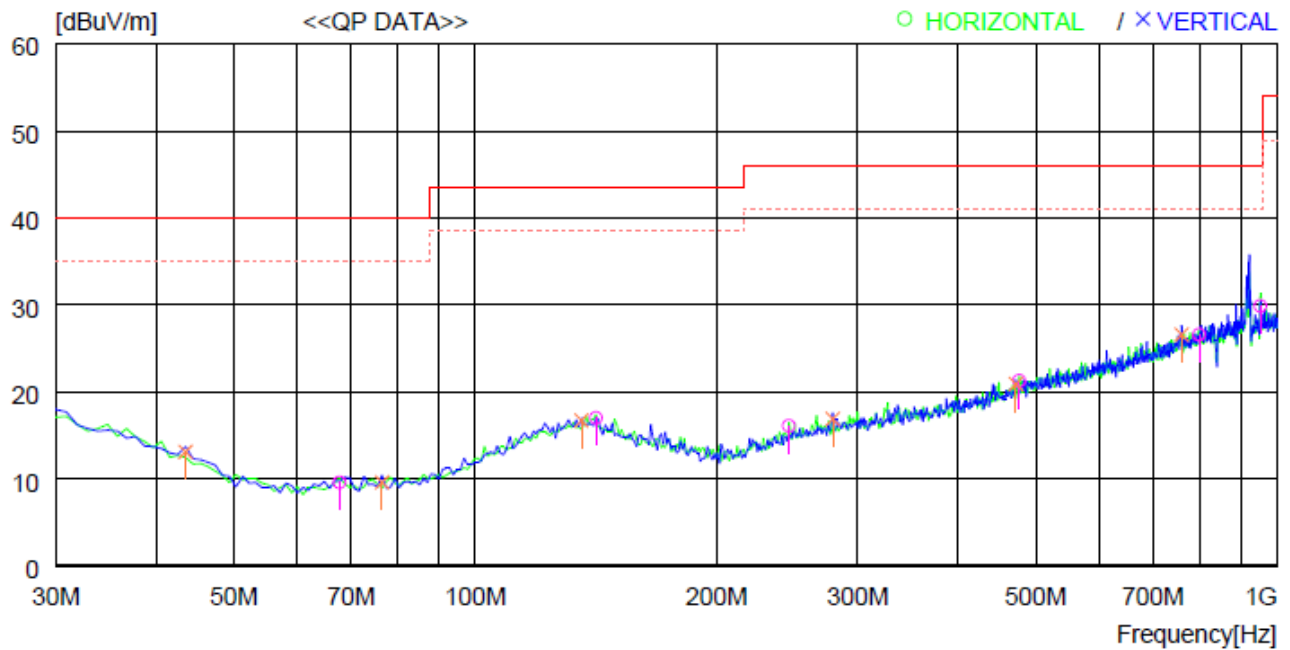
### 11.4.1 Test data for 30 MHz ~ 1 GHz

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Fall prevention Transmitter

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)



| No.                    | FREQ    | READING | ANT    | LOSS | GAIN | RESULT   | LIMIT    | MARGIN | ANTENNA | TABLE |
|------------------------|---------|---------|--------|------|------|----------|----------|--------|---------|-------|
|                        |         | QP      | FACTOR |      |      |          |          |        |         |       |
|                        | [MHz]   | [dBuV]  | [dB]   | [dB] | [dB] | [dBuV/m] | [dBuV/m] | [dB]   | [cm]    | [DEG] |
| ----- Horizontal ----- |         |         |        |      |      |          |          |        |         |       |
| 1                      | 67.830  | 27.4    | 12.7   | 1.6  | 32.1 | 9.6      | 40.0     | 30.4   | 100     | 0     |
| 2                      | 141.550 | 27.5    | 19.4   | 2.1  | 32.0 | 17.0     | 43.5     | 26.5   | 100     | 0     |
| 3                      | 246.310 | 27.8    | 17.6   | 2.7  | 32.0 | 16.1     | 46.0     | 29.9   | 100     | 0     |
| 4                      | 477.171 | 27.2    | 22.6   | 3.8  | 32.3 | 21.3     | 46.0     | 24.7   | 300     | 118   |
| 5                      | 799.202 | 26.5    | 27.1   | 5.0  | 32.0 | 26.6     | 46.0     | 19.4   | 100     | 271   |
| 6                      | 952.457 | 27.9    | 28.0   | 5.4  | 31.4 | 29.9     | 46.0     | 16.1   | 100     | 0     |
| ----- Vertical -----   |         |         |        |      |      |          |          |        |         |       |
| 7                      | 43.580  | 28.0    | 15.8   | 1.3  | 32.0 | 13.1     | 40.0     | 26.9   | 200     | 0     |
| 8                      | 76.560  | 27.1    | 12.9   | 1.6  | 32.0 | 9.6      | 40.0     | 30.4   | 100     | 359   |
| 9                      | 135.730 | 27.3    | 19.3   | 2.1  | 32.0 | 16.7     | 43.5     | 26.8   | 300     | 11    |
| 10                     | 279.290 | 27.4    | 18.6   | 2.9  | 32.0 | 16.9     | 46.0     | 29.1   | 400     | 289   |
| 11                     | 472.321 | 26.9    | 22.4   | 3.8  | 32.2 | 20.9     | 46.0     | 25.1   | 300     | 358   |
| 12                     | 760.403 | 27.4    | 26.5   | 4.8  | 32.1 | 26.6     | 46.0     | 19.4   | 200     | 0     |

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#### 11.4.2 Test Data for Below 30 MHz

- . Resolution bandwidth : 200 Hz (from 9 kHz to 0.15 MHz), 9 kHz (from 0.15 MHz to 30 MHz)
- . Frequency range : 9 kHz ~ 30 MHz
- . Measurement distance : 3 m
- . Operating mode : Transmitting mode

| Frequency<br>(MHz)   | Reading<br>(dBμV) | Ant. Pol.<br>(H/V) | Ant.<br>Height (m) | Angle<br>(°) | Ant. Factor<br>(dB/m) | Cable<br>Loss | Emission<br>Level(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) |
|--|-------------------|--------------------|--------------------|--------------|-----------------------|---------------|---------------------------|--------------------|----------------|
| Emission from the EUT more than 20 dB below the limit in each frequency range. |                   |                    |                    |              |                       |               |                           |                    |                |

#### 11.4.3 Test Data for above 1 GHz

- . Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,  
1 MHz for Peak Mode for the emissions outside restricted band
- . Video bandwidth : 3 MHz for Peak and Average Mode
- . Frequency range : 1 GHz ~ 10 GHz
- . Measurement distance : 3 m
- . Operating mode : Transmitting mode

| Frequency<br>(MHz)   | Reading<br>(dBμV) | Ant. Pol.<br>(H/V) | Ant.<br>Height (m) | Angle<br>(°) | Ant. Factor<br>(dB/m) | Cable<br>Loss | Emission<br>Level(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) |
|--|-------------------|--------------------|--------------------|--------------|-----------------------|---------------|---------------------------|--------------------|----------------|
| Emission from the EUT more than 20 dB below the limit in each frequency range. |                   |                    |                    |              |                       |               |                           |                    |                |

## 12. LIST OF TEST EQUIPMENT

| Model Number                 | Manufacturer                | Description              | Serial Number | Last Cal.(Interval) |
|------------------------------|-----------------------------|--------------------------|---------------|---------------------|
| FSV40-N                      | Rohde & Schwarz             | Signal Analyzer          | 101457        | Apr. 16, 2021 (1Y)  |
| ESW                          | Rohde & Schwarz             | EMI Test Receiver        | 101851        | Mar. 23, 2021 (1Y)  |
| 310N                         | Sonoma Instrument           | Pre-Amplifier            | 392756        | Oct. 16, 2020 (1Y)  |
| SCU18                        | Rohde & Schwarz             | Signal Conditioning unit | 102266        | Jul. 14, 2021 (1Y)  |
| DT3000-3t                    | Innco System                | Turn Table               | DT3000/093    | N/A                 |
| MA-4000XPET                  | Innco System                | Antenna Master           | MA4000/509    | N/A                 |
| HLP-2008                     | TDK RF Solutions            | Hybrid Antenna           | 131316        | Feb. 27, 2020 (2Y)  |
| AH-118                       | Com-Power                   | Horn Antenna             | 10050061      | Oct. 15, 2020 (1Y)  |
| FMZB 1513                    | Schwarzbeck                 | Loop Antenna             | 1513-235      | Mar. 24, 2020(2Y)   |
| ESR3                         | Rohde & Schwarz             | EMI Test Receiver        | 102602        | Mar. 15, 2021 (1Y)  |
| WRCGV10-860-880-915-935-70ST | Wainwright Instruments GmbH | Band Reject Filter       | 1             | Jul. 14, 2021 (1Y)  |