



# Test Report – FCC 15B Unintentional Radiator

## Applicant: Icom Incorporated

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 3/10/2022

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## 1. Customer Information

Applicant: Icom Incorporated  
Address: 1-1-32 Kamininami, Hirano-Ku  
Osaka, 547-0003, Japan

### 1.1 Test Result Summary

The following test procedure was used ANSI C63.4-2014. Full test results are available in this report.

No additions to the test methods were needed. There were no deviations, or exclusions from the test methods. No test results are from external providers or from the customer. The test results relate only to the items tested. Timco does not offer opinions and interpretations, only a pass/fail statement.

| Clauses                          | Description of the Requirements | Result<br>(Pass, Fail or<br>N/A) |
|----------------------------------|---------------------------------|----------------------------------|
| Applicable Clauses from FCC 15 B |                                 |                                  |
| 15.107                           | Conducted Emission Limits       | N/A                              |
| 15.111 (a)                       | Receiver Conducted Power        | N/A                              |
| 15.121                           | 38 dB Rejection                 | Pass                             |
| 15.109                           | Radiated Emission Limits        | Pass                             |

## 2. Location of Testing

### 2.1 Test Laboratory

Timco Engineering Inc. is a subsidiary of Industrial Inspection & Analysis, Inc. ("IIA"). Testing was performed at Timco's permanent laboratory located at 849 NW State Road 45, Newberry, Florida 32669

FCC test firm # 578780  
FCC Designation # US1070  
FCC site registration is under A2LA certificate # 0955.01  
ISED Canada test site registration # 2056A  
EU Notified Body # 1177  
For all designations see A2LA scope # 0955.01



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## 2.2 Testing was performed, reviewed by

Dates of Testing: 2/21/2022-2/22/2022

Signature:

Sr. EMC Engineer  
EMC-003838-NE



Name & Title:

Tim Royer, EMC Engineer

Date of Signature

3/10/2022

Signature:

Name & Title:

Kristoffer Costa, EMC Technician

Date of Signature

3/10/2022



### 3. Test Sample(s) (EUT/DUT)

The test sample was received: 2/21/2022

#### 3.1 Description of the EUT

A description as well as unambiguous identification of the EUT(s) tested. Where more than one sample is required for technical reasons (such as the use of connected units for the purpose of conducted output power testing where the product units will have integral antennas), each specific test shall identify which unit was tested.

| Identification    |                                 |
|-------------------|---------------------------------|
| FCC ID:           | AFJ432800                       |
| Brief Description | IC-T10 Analog Scanning Receiver |
| Model(s) #        | IC-T10                          |
| Firmware version  | n/a                             |
| Software version  | n/a                             |
| Serial Number     | n/a                             |

| Technical Characteristics    |                                           |
|------------------------------|-------------------------------------------|
| Technology                   | IC-T10 Analog Scanning Receiver           |
| Frequency Range              | 88-108 MHz, 136-174 MHz, 400-479 MHz      |
| Duty Cycle                   | 100%                                      |
| Antenna Connector            | n/a                                       |
| Voltage Rating (AC or Batt.) | Rechargeable Battery, BP-279 1570mAh 7.2V |

| Antenna Characteristics |                 |           |              |
|-------------------------|-----------------|-----------|--------------|
| Antenna                 | Frequency Range | Mode / BW | Antenna Gain |
| 1                       | n/a             | n/a       | 0 dBi        |

- Note: Information such as antenna gain, firmware/software numbers are provide by manufacturer and cannot be validated by the test lab.



### 3.2 Configuration of EUT

| Band (MHz)                           | Mode    | Number of Ant. |
|--------------------------------------|---------|----------------|
| 88-108 MHz, 136-174 MHz, 400-479 MHz | Receive | 1              |

#### Operating conditions during Testing:

No modifications of the device under test (including firmware, specific software settings, and input/output signal levels to the EUT).

#### Peripherals used during Testing:

No peripherals used.

### 3.3 Test Setup of EUT

Equipment, antenna, and cable arrangement. The setup of the equipment and cable or wire placement on the test site that produces the highest radiated and the highest ac power-line conducted emissions shall be shown clearly and described. Information on the orientation of portable equipment during testing shall be included. Drawings or photographs may be used for this purpose.

Test Setups are included in the test report.



#### 4. Test methods & Applicable Regulatory Limits

##### 4.1 Test methods/Standards/Guidance

The measurement was performed as per FCC 15B. Full test results are available in this report.

##### Limits and Regulatory Limits:

- 1) FCC 15B

#### 5. Measurement Uncertainty

| Parameter                                                                                                                                                                   | Uncertainty (dB) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Conducted Emissions                                                                                                                                                         | $\pm 3.14$ dB    |
| Radiated Emissions (9kHz – 30 MHz)                                                                                                                                          | $\pm 3.08$ dB    |
| Radiated Emissions (30 – 200 MHz)                                                                                                                                           | $\pm 2.16$ dB    |
| Radiated Emissions (200 – 1000 MHz)                                                                                                                                         | $\pm 2.15$ dB    |
| Radiated Emissions (1 GHz – 18 GHz)                                                                                                                                         | $\pm 2.14$ dB    |
| Radiated Emissions (18 GHz – 40 GHz)                                                                                                                                        | $\pm 2.31$ dB    |
| <b>Note:</b> The uncertainties provided in this table represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of K=2. |                  |

#### 6. Environmental Conditions

##### Temperature & Humidity

Measurements performed at the test site did not exceed the following:

| Parameter                                                                                                                       | Measurement |
|---------------------------------------------------------------------------------------------------------------------------------|-------------|
| Temperature                                                                                                                     | 23 C +/- 5% |
| Humidity                                                                                                                        | 55% +/- 5%  |
| Barometric Pressure                                                                                                             | 30.05 in Hg |
| <b>Note:</b> Specific environmental conditions that are applicable to a specific test are available in the test result section. |             |





## 7. List of Test Equipment and Test Facility

The test equipment used identified by type, manufacturer, serial number, or other identification and the date on which the next calibration or service check is due.

Description of the firmware or software used to operate EUT for testing purposes.

A complete list of all test equipment used shall be included with the test report. The manufacturer's model and serial numbers, and date of last calibration, and calibration interval shall be included. Measurement cable loss, measuring instrument bandwidth and detector function, video bandwidth, if appropriate, and antenna factors shall also be included where applicable.

### List of Test Equipment

| Test Equipment |                               |                 |             |          |             |            |
|----------------|-------------------------------|-----------------|-------------|----------|-------------|------------|
| Type           | Device                        | Manufacturer    | Model       | SN#      | Current Cal | Cal Due    |
| Antenna        | Biconical 1057                | Eaton           | 94455-1     | 1057     | 10/16/20    | 10/16/2023 |
| Antenna, NSA   | Log-Periodic 1243             | Eaton           | 96005       | 1243     | 5/4/21      | 5/3/2024   |
| Antenna        | Double-Ridged Horn/ETS Horn 1 | ETS-Lindgren    | 3117        | 00035923 | 2/25/20     | 2/24/2023  |
| CHAMBER        | CHAMBER                       | Panashield      | 3M          | N/A      | 3/12/19     | 3/11/2022  |
| Pre-amp        | Pre-amp                       | RF-LAMBDA       | RLNA00M45GA | NA       | 2/27/19     | 2/26/2022  |
| Receiver       | EMI Test Receiver R&S ESU 40  | Rohde & Schwarz | ESU 40      | 100320   | 5/27/21     | 5/26/2024  |

| Software       |                 |                          |               |
|----------------|-----------------|--------------------------|---------------|
| Software       | Author          | Version                  | Validation on |
| ESU Firmware   | Rohde & Schwarz | 4.43 SP3; BIOS v5.1-24-3 | 2018          |
| RSCcommander   | Rohde & Schwarz | 1.6.4                    | 2014          |
| ScopeExplorer  | LeCroy          | v2.25.0.0                | 2009          |
| Field Strength | Timco           | v4.10.7.0                | 2016          |



## 8. Test Results

The results of the test are usually indicated in the form of tables, spectrum analyzer plots, charts, sample calculations, as appropriate for each test procedure.

A description and/or a block diagram of the test setup is usually provided.

The measurement results, along with the appropriate limits for comparison, may be presented in tabular or graphical form. In addition, any variation in the measurement environment may be reported if applicable (e.g., a significant change of temperature that could affect the cable loss and amplifier response).

### Units of measurement

Unless noted otherwise in the referenced standard, the measurements of ac power-line conducted emissions and conducted power output will be reported in units of dB $\mu$ V. Unless noted otherwise in the referenced standard, the measurements of radiated emissions will be reported in units of decibels, referenced to one microvolt per meter (dB $\mu$ V/m) for electric fields, or to one ampere per meter (dBA/m) for magnetic fields, at the distance specified in the appropriate standards or requirements. The measurements of antenna-conducted power for receivers may be reported in units of dB $\mu$ V if the impedance of the measuring instrument is also reported. Otherwise, antenna-conducted power will be reported in units of decibels referenced to one milliwatt (dBm). All formulas for data conversions and conversion factors, if used, will be included in this measurement report.

#### Example:

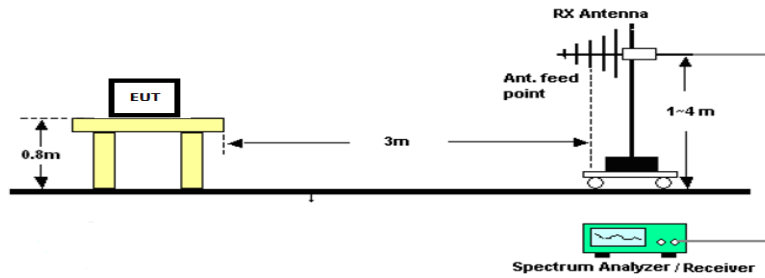
| Freq (MHz) | Meter Reading | + ACF        | +CL      | = FS                     |
|------------|---------------|--------------|----------|--------------------------|
| 33         | 20 dB $\mu$ V | + 10.36 dB/m | +0.40 dB | =30.36 dB $\mu$ V/m @ 3m |

$$\text{EIRP} = \text{Pcond (dBm)} + \text{dBi}$$

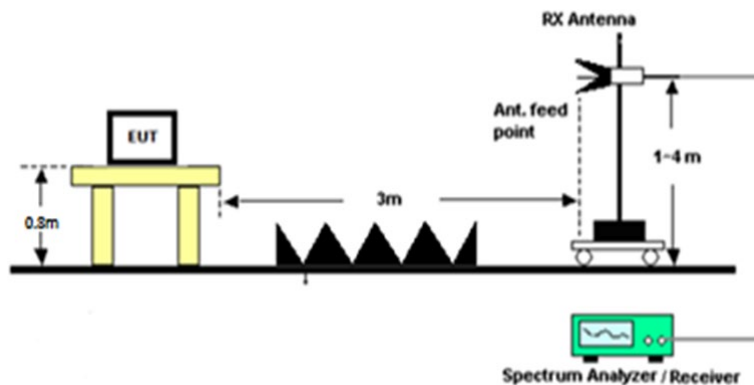
## 8.1 Radiated Emissions

Limits from FCC 15.109 and test procedure from ANSI C63.4-2014.

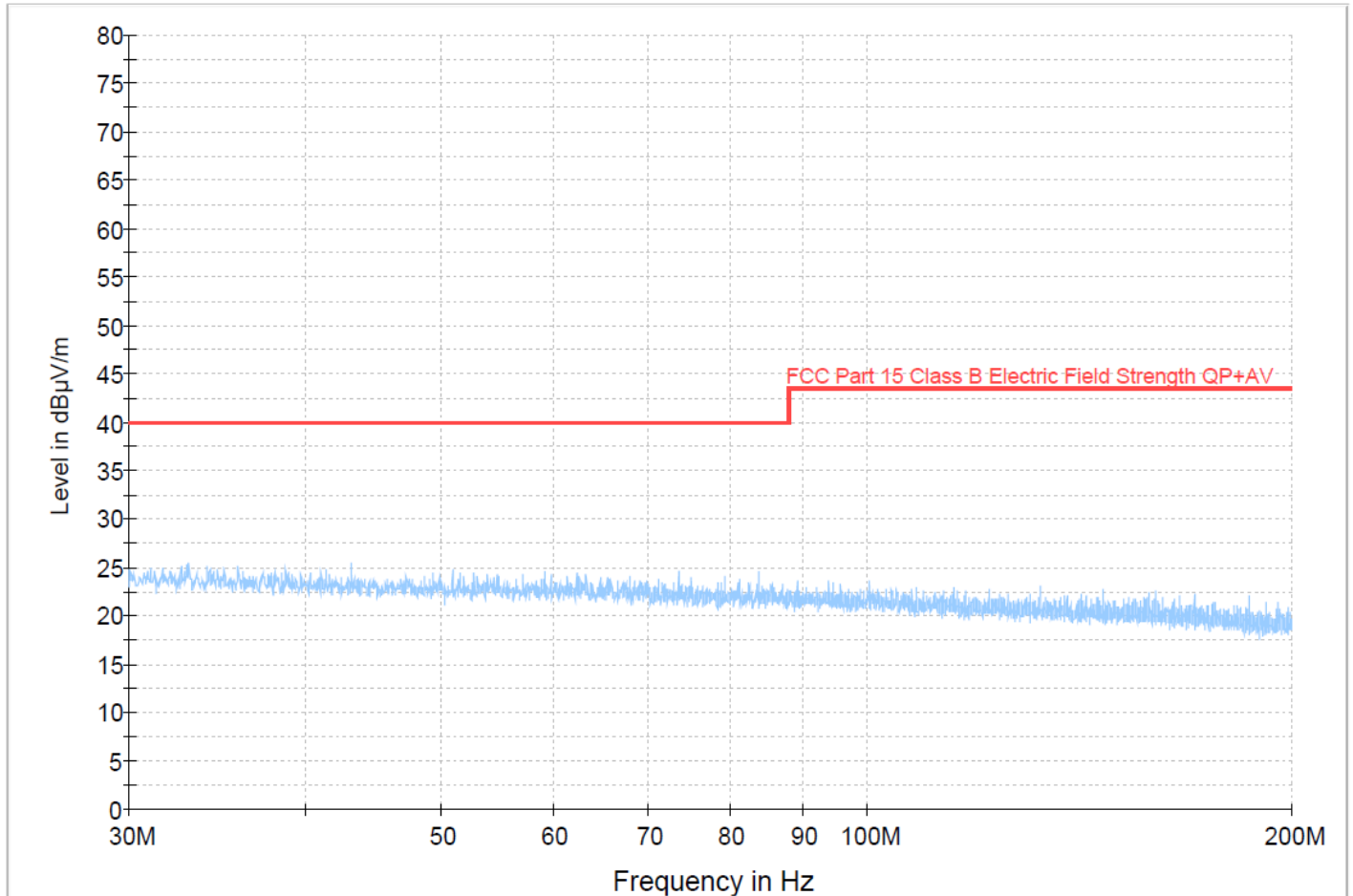
### Radiated Test Setup, 30 – 1000 MHz



### Radiated Test Setup, Above 1000 MHz



### 8.1.1 Scanning Receiver Function, 30 MHz to 200 MHz, Horizontal/ Vertical Polarity Plot





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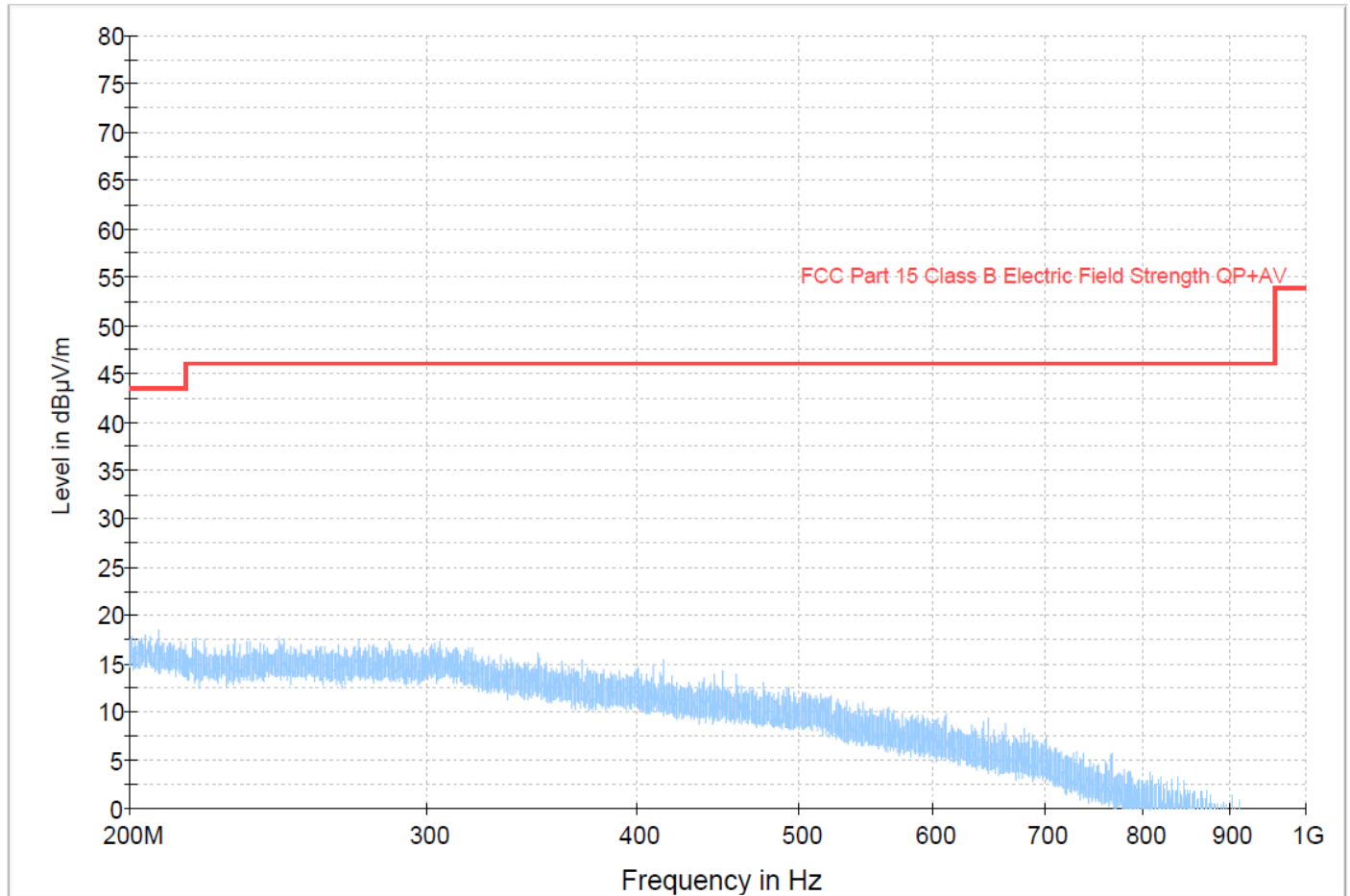
## 8.1.2 Scanning Receiver Function, 30 MHz to 200 MHz, Horizontal/ Vertical Polarity Table

EMI Auto Test(13)

### Final Result

| Frequency<br>(MHz) | QuasiPeak<br>(dBμV/m) | CAverage<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) | Comment |
|--------------------|-----------------------|----------------------|-------------------|----------------|--------------------|--------------------|----------------|-----|------------------|-----------------|---------|
| ---                | ---                   | ---                  | ---               | ---            | ---                | ---                | ---            |     | ---              | ---             |         |

### 8.1.3 Scanning Receiver Function, 200 MHz to 1000 MHz, Horizontal/ Vertical Polarity Plot





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#### 8.1.4 Scanning Receiver Function, 200 MHz to 1000 MHz, Horizontal/ Vertical Polarity Table

EMI Auto Test(13)

##### Final Result

| Frequency<br>(MHz) | QuasiPeak<br>(dBμV/m) | CAverage<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) | Comment |
|--------------------|-----------------------|----------------------|-------------------|----------------|--------------------|--------------------|----------------|-----|------------------|-----------------|---------|
| ---                | ---                   | ---                  | ---               | ---            | ---                | ---                | ---            |     | ---              | ---             |         |







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## 8.1.6 Scanning Receiver Function, above 1000 MHz, Horizontal Polarity Table

22.Feb 22 10:58

Test Spec CISPR 22 Radiated Disturbances

Polarity

Vertical

### Final Measurement

Meas Time: 500 ms

Margin: 40 dB

Subranges: 16

| Trace | Frequency        | Level (dBμV/m) | Detector     | Delta Limit/dB |
|-------|------------------|----------------|--------------|----------------|
| 2     | 1.192000000 GHz  | 50.49          | Max Peak     |                |
| 1     | 1.317600000 GHz  | 37.68          | CISPR Averag | -16.32         |
| 2     | 1.415600000 GHz  | 49.47          | Max Peak     |                |
| 1     | 1.426400000 GHz  | 36.76          | CISPR Averag | -17.24         |
| 2     | 1.884800000 GHz  | 49.31          | Max Peak     |                |
| 1     | 1.892800000 GHz  | 36.99          | CISPR Averag | -17.01         |
| 2     | 2.591600000 GHz  | 46.39          | Max Peak     |                |
| 1     | 3.130400000 GHz  | 33.45          | CISPR Averag | -20.55         |
| 1     | 3.594400000 GHz  | 33.26          | CISPR Averag | -20.74         |
| 2     | 3.595600000 GHz  | 45.80          | Max Peak     |                |
| 2     | 4.967200000 GHz  | 42.48          | Max Peak     |                |
| 1     | 4.970000000 GHz  | 30.27          | CISPR Averag | -23.73         |
| 1     | 7.026800000 GHz  | 29.58          | CISPR Averag | -24.42         |
| 2     | 7.034000000 GHz  | 41.77          | Max Peak     |                |
| 2     | 11.392400000 GHz | 42.73          | Max Peak     |                |
| 1     | 11.618000000 GHz | 29.68          | CISPR Averag | -24.32         |

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## 8.1.7 Scanning Receiver Function, above 1000 MHz, Vertical Polarity Plot



22.Feb 22 10:59

Test Spec CISPR 22 Radiated Disturbances

Polarity

Vertical

### Stepped Scan (1 Range)

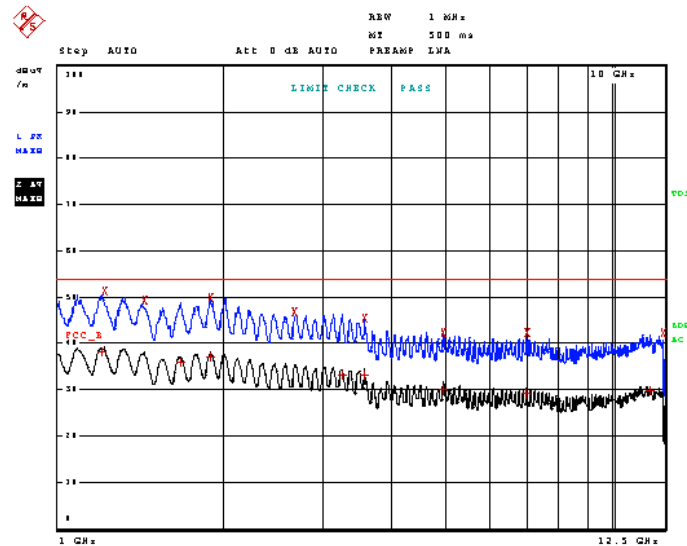
Scan Start: 1 GHz

Scan Stop: 12.5 GHz

Detector: Trace 1: MAX PEAK Trace 2: Average

Transducer: TDS\_05

| Start Frequency | Stop Frequency | Step Size  | Res BW   | Meas Time   | RF Atten | Preamp | Input  |
|-----------------|----------------|------------|----------|-------------|----------|--------|--------|
| 1.000000 GHz    | 12.500000 GHz  | 400.00 kHz | 1.00 MHz | 100 $\mu$ s | Auto     | 35 dB  | INPUT1 |





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## 8.1.8 Scanning Receiver Function, above 1000 MHz, Vertical Polarity Table

22.Feb 22 10:59

Test Spec CISPR 22 Radiated Disturbances

Polarity

Vertical

### Final Measurement

Meas Time: 500 ms

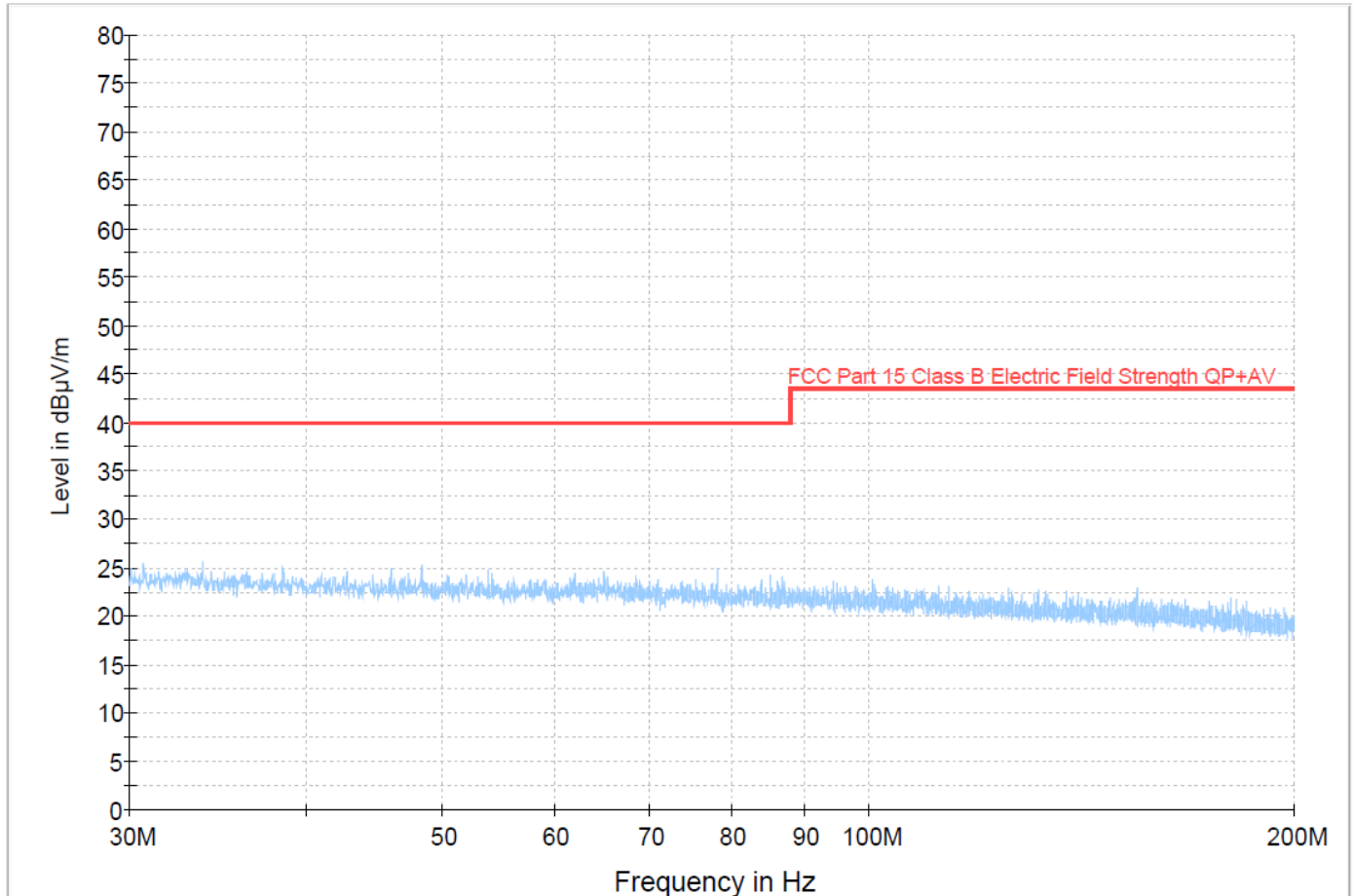
Margin: 40 dB

Subranges: 16

| Trace | Frequency        | Level (dBμV/m) | Detector     | Delta Limit/dB |
|-------|------------------|----------------|--------------|----------------|
| 1     | 1.198800000 GHz  | 38.12          | CISPR Averag | -15.88         |
| 2     | 1.211600000 GHz  | 51.26          | Max Peak     |                |
| 2     | 1.432800000 GHz  | 49.20          | Max Peak     |                |
| 1     | 1.662000000 GHz  | 36.10          | CISPR Averag | -17.90         |
| 1     | 1.887600000 GHz  | 37.10          | CISPR Averag | -16.90         |
| 2     | 1.889200000 GHz  | 49.82          | Max Peak     |                |
| 2     | 2.677200000 GHz  | 46.71          | Max Peak     |                |
| 1     | 3.265200000 GHz  | 33.12          | CISPR Averag | -20.88         |
| 1     | 3.591600000 GHz  | 33.19          | CISPR Averag | -20.81         |
| 2     | 3.594400000 GHz  | 45.47          | Max Peak     |                |
| 1     | 4.963600000 GHz  | 29.97          | CISPR Averag | -24.03         |
| 2     | 4.976000000 GHz  | 42.26          | Max Peak     |                |
| 1     | 7.014400000 GHz  | 29.10          | CISPR Averag | -24.90         |
| 2     | 7.033600000 GHz  | 42.32          | Max Peak     |                |
| 1     | 11.715200000 GHz | 29.70          | CISPR Averag | -24.30         |
| 2     | 12.397200000 GHz | 42.30          | Max Peak     |                |

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### 8.1.9 88-108 MHz, 30 MHz to 200 MHz, Horizontal/ Vertical Polarity Plot





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### 8.1.10 88-108 MHz, 30 MHz to 200 MHz, Horizontal/ Vertical Polarity Table

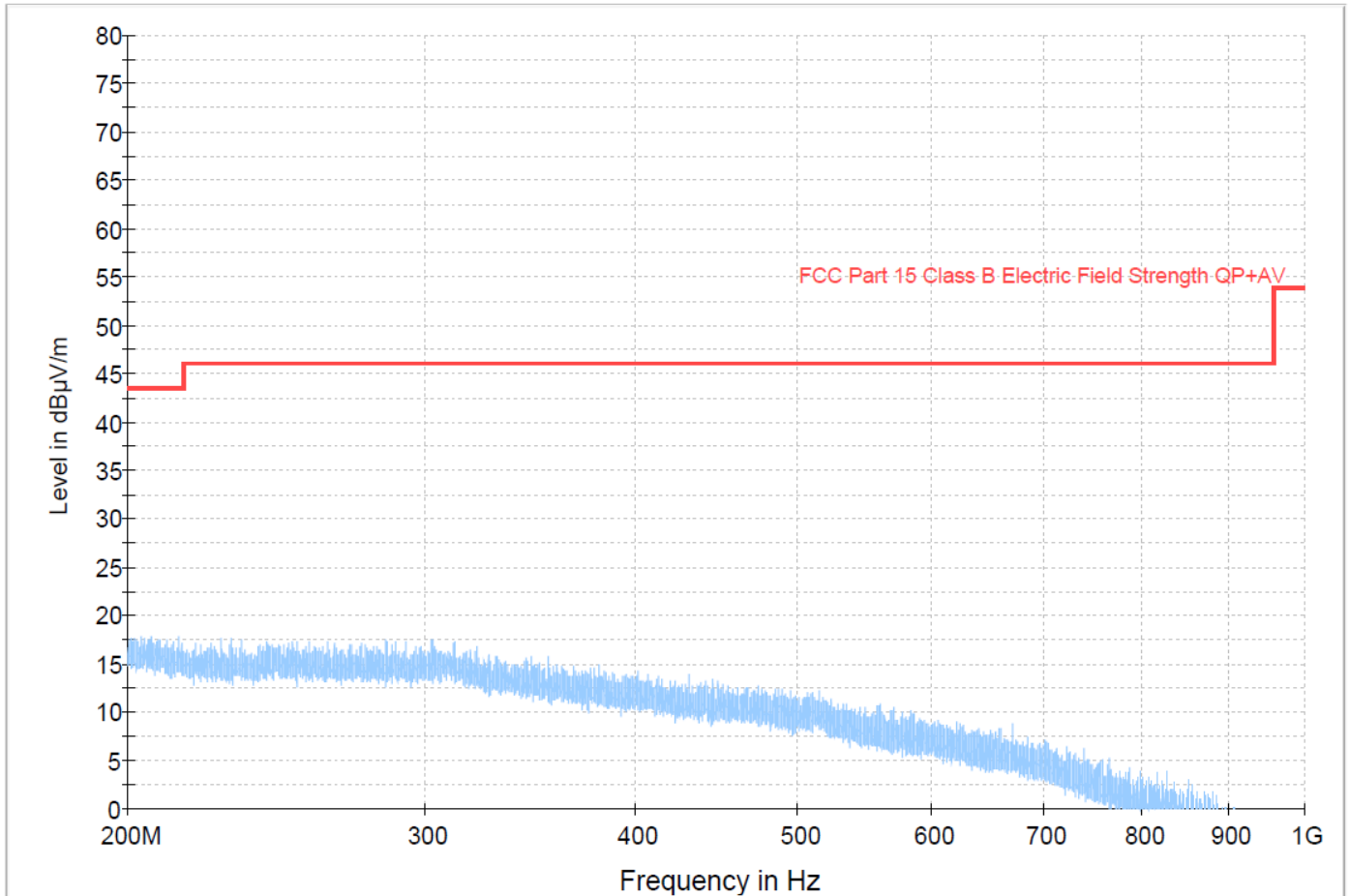
EMI Auto Test(13)

#### Final Result

| Frequency<br>(MHz) | QuasiPeak<br>(dBμV/m) | CAverage<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) | Comment |
|--------------------|-----------------------|----------------------|-------------------|----------------|--------------------|--------------------|----------------|-----|------------------|-----------------|---------|
| ---                | ---                   | ---                  | ---               | ---            | ---                | ---                | ---            |     | ---              | ---             |         |



### 8.1.11 88-108 MHz, 200 MHz to 1000 MHz, Horizontal/ Vertical Polarity Plot





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### 8.1.12 88-108 MHz, 200 MHz to 1000 MHz, Horizontal/ Vertical Polarity Table

EMI Auto Test(13)

#### Final\_Result

| Frequency<br>(MHz) | QuasiPeak<br>(dBμV/m) | CAverage<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) | Comment |
|--------------------|-----------------------|----------------------|-------------------|----------------|--------------------|--------------------|----------------|-----|------------------|-----------------|---------|
| ---                | ---                   | ---                  | ---               | ---            | ---                | ---                | ---            |     | ---              | ---             |         |

### 8.1.13 88-108 MHz, above 1000 MHz, Horizontal Polarity Plot



22.Feb 22 10:46

Test Spec CISPR 22 Radiated Disturbances

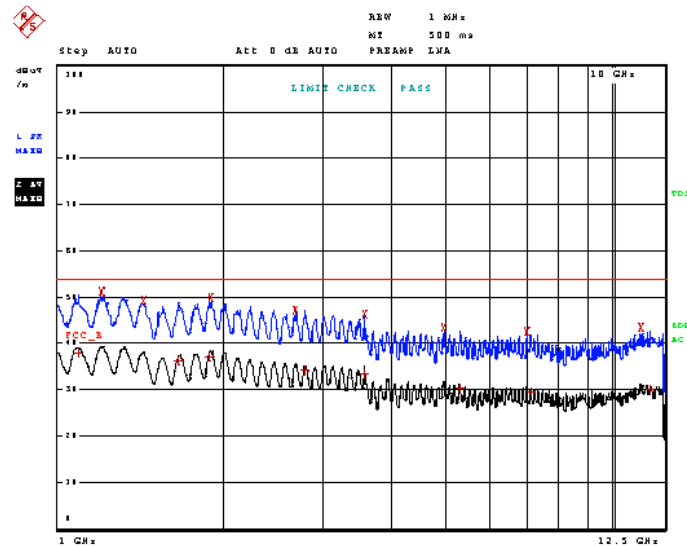
Polarity

Vertical

#### Stepped Scan (1 Range)

Scan Start: 1 GHz  
Scan Stop: 12.5 GHz  
Detector: Trace 1: MAX PEAK Trace 2: Average  
Transducer: TDS\_05

| Start Frequency | Stop Frequency | Step Size  | Res BW   | Meas Time   | RF Atten | Preamp | Input  |
|-----------------|----------------|------------|----------|-------------|----------|--------|--------|
| 1.000000 GHz    | 12.500000 GHz  | 400.00 kHz | 1.00 MHz | 100 $\mu$ s | Auto     | 35 dB  | INPUT1 |







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#### 8.1.14 88-108 MHz, above 1000 MHz, Horizontal Polarity Table

22.Feb 22 10:46

Test Spec CISPR 22 Radiated Disturbances

Polarity

Vertical

##### Final Measurement

Meas Time: 500 ms

Margin: 40 dB

Subranges: 16

| Trace | Frequency        | Level (dBμV/m) | Detector     | Delta Limit/dB |
|-------|------------------|----------------|--------------|----------------|
| 1     | 1.090000000 GHz  | 37.96          | CISPR Averag | -16.04         |
| 2     | 1.198800000 GHz  | 51.14          | Max Peak     |                |
| 2     | 1.428000000 GHz  | 49.32          | Max Peak     |                |
| 1     | 1.652800000 GHz  | 36.17          | CISPR Averag | -17.83         |
| 1     | 1.881600000 GHz  | 37.13          | CISPR Averag | -16.87         |
| 2     | 1.889200000 GHz  | 49.86          | Max Peak     |                |
| 2     | 2.686800000 GHz  | 47.23          | Max Peak     |                |
| 1     | 2.798800000 GHz  | 34.09          | CISPR Averag | -19.91         |
| 1     | 3.596000000 GHz  | 33.51          | CISPR Averag | -20.49         |
| 2     | 3.599200000 GHz  | 46.41          | Max Peak     |                |
| 2     | 4.971200000 GHz  | 43.48          | Max Peak     |                |
| 1     | 5.312000000 GHz  | 30.39          | CISPR Averag | -23.61         |
| 2     | 7.035200000 GHz  | 42.49          | Max Peak     |                |
| 1     | 7.142800000 GHz  | 29.57          | CISPR Averag | -24.43         |
| 2     | 11.281200000 GHz | 43.32          | Max Peak     |                |
| 1     | 11.713600000 GHz | 30.02          | CISPR Averag | -23.98         |

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## 8.1.15 88-108 MHz, above 1000 MHz, Vertical Polarity Plot



22.Feb 22 10:48

Test Spec CISPR 22 Radiated Disturbances

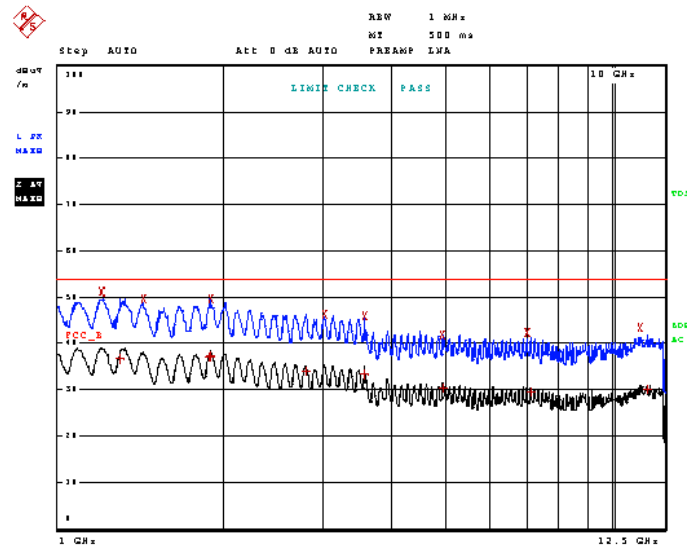
Polarity

Vertical

### Stepped Scan (1 Range)

Scan Start: 1 GHz  
Scan Stop: 12.5 GHz  
Detector: Trace 1: MAX PEAK Trace 2: Average  
Transducer: TDS\_05

| Start Frequency | Stop Frequency | Step Size  | Res BW   | Meas Time   | RF Atten | Preamp | Input  |
|-----------------|----------------|------------|----------|-------------|----------|--------|--------|
| 1.000000 GHz    | 12.500000 GHz  | 400.00 kHz | 1.00 MHz | 100 $\mu$ s | Auto     | 35 dB  | INPUT1 |





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## 8.1.16 88-108 MHz, above 1000 MHz, Vertical Polarity Table

22.Feb 22 10:48

Test Spec CISPR 22 Radiated Disturbances

Polarity

Vertical

### Final Measurement

Meas Time: 500 ms

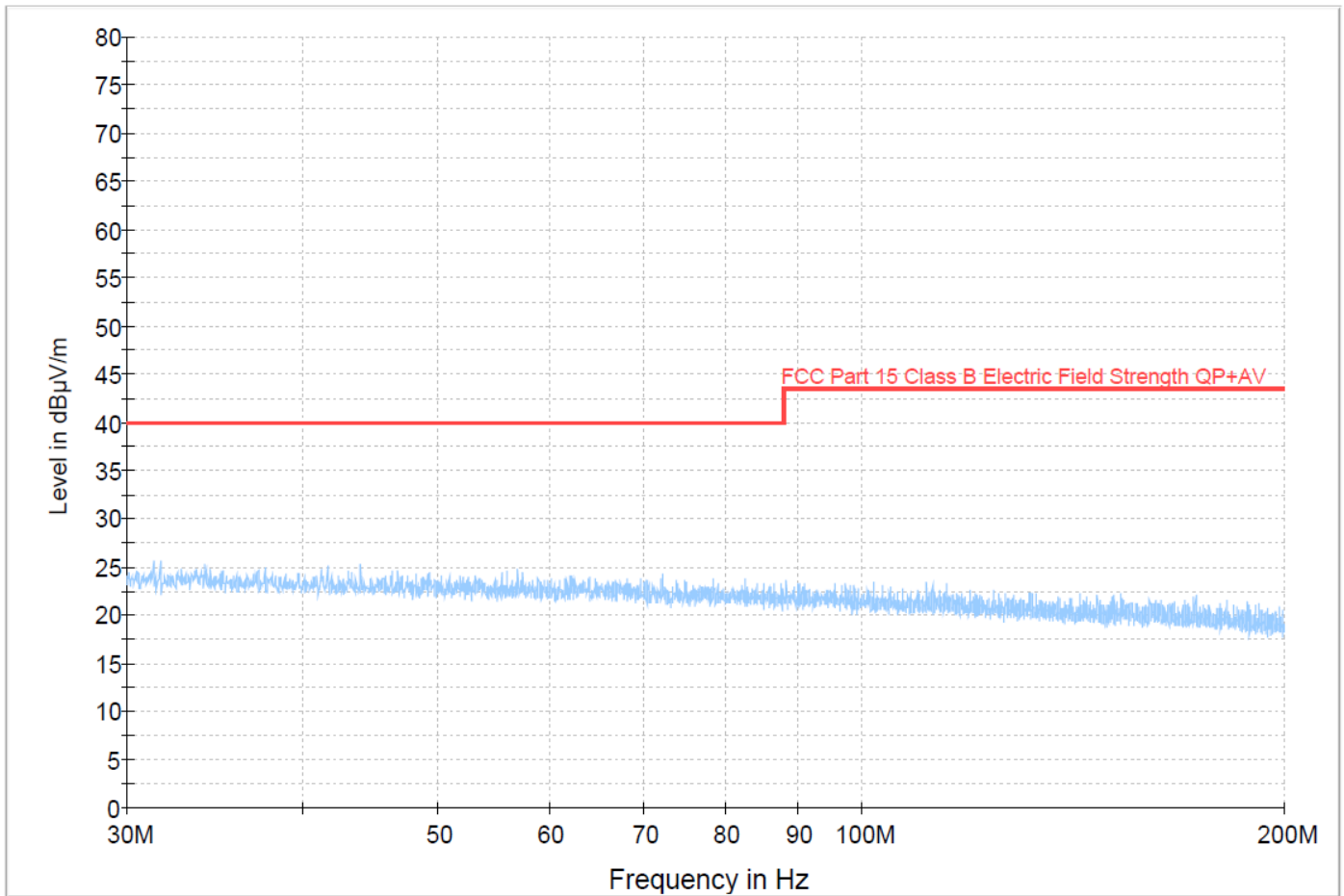
Margin: 40 dB

Subranges: 16

| Trace | Frequency        | Level (dBμV/m) | Detector     | Delta Limit/dB |
|-------|------------------|----------------|--------------|----------------|
| 2     | 1.197600000 GHz  | 51.18          | Max Peak     |                |
| 1     | 1.294400000 GHz  | 36.73          | CISPR Averag | -17.27         |
| 2     | 1.426800000 GHz  | 49.61          | Max Peak     |                |
| 1     | 1.878800000 GHz  | 36.98          | CISPR Averag | -17.02         |
| 2     | 1.888400000 GHz  | 49.73          | Max Peak     |                |
| 1     | 1.891200000 GHz  | 37.19          | CISPR Averag | -16.81         |
| 1     | 2.802400000 GHz  | 33.92          | CISPR Averag | -20.08         |
| 2     | 3.033200000 GHz  | 46.25          | Max Peak     |                |
| 1     | 3.591600000 GHz  | 33.36          | CISPR Averag | -20.64         |
| 2     | 3.594400000 GHz  | 45.91          | Max Peak     |                |
| 2     | 4.956800000 GHz  | 41.93          | Max Peak     |                |
| 1     | 4.971200000 GHz  | 30.40          | CISPR Averag | -23.60         |
| 2     | 7.038000000 GHz  | 42.27          | Max Peak     |                |
| 1     | 7.143600000 GHz  | 29.42          | CISPR Averag | -24.58         |
| 2     | 11.266000000 GHz | 43.32          | Max Peak     |                |
| 1     | 11.599200000 GHz | 30.08          | CISPR Averag | -23.92         |

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8.1.17 136-174 MHz, 30 MHz to 200 MHz, Horizontal/ Vertical Polarity Plot





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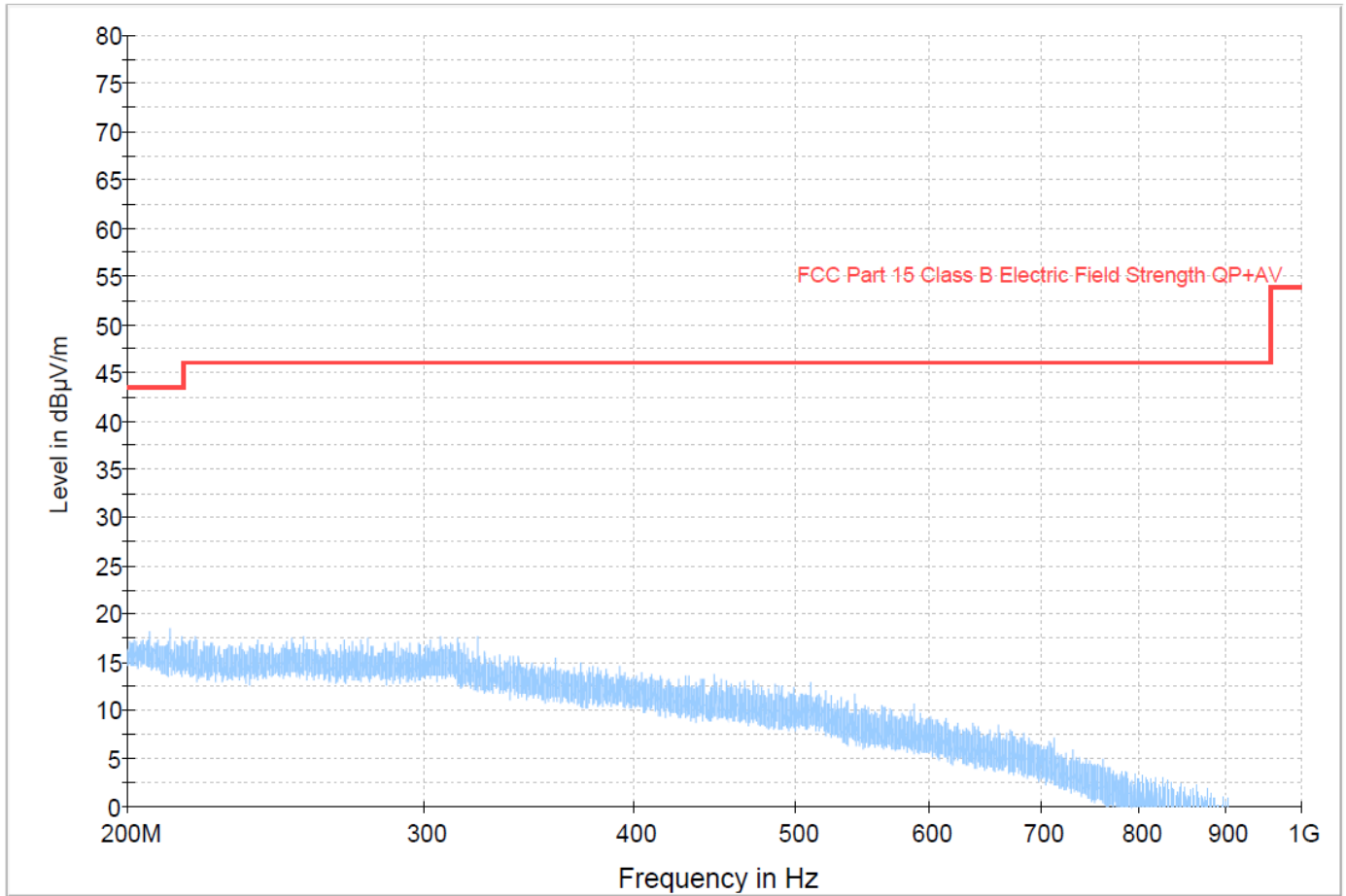
### 8.1.18 136-174 MHz, 30 MHz to 200 MHz, Horizontal/ Vertical Polarity Table

EMI Auto Test(13)

#### Final Result

| Frequency<br>(MHz) | QuasiPeak<br>(dB $\mu$ V/m) | CAverage<br>(dB $\mu$ V/m) | Limit<br>(dB $\mu$ V/m) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) | Comment |
|--------------------|-----------------------------|----------------------------|-------------------------|----------------|--------------------|--------------------|----------------|-----|------------------|-----------------|---------|
| ---                | ---                         | ---                        | ---                     | ---            | ---                | ---                | ---            |     | ---              | ---             |         |

### 8.1.19 136-174 MHz, 200 MHz to 1000 MHz, Horizontal/ Vertical Polarity Plot





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## 8.1.20 136-174 MHz, 200 MHz to 1000 MHz, Horizontal/ Vertical Polarity Table

EMI Auto Test(13)

### Final Result

| Frequency<br>(MHz) | QuasiPeak<br>(dB $\mu$ V/m) | CAverage<br>(dB $\mu$ V/m) | Limit<br>(dB $\mu$ V/m) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) | Comment |
|--------------------|-----------------------------|----------------------------|-------------------------|----------------|--------------------|--------------------|----------------|-----|------------------|-----------------|---------|
| ---                | ---                         | ---                        | ---                     | ---            | ---                | ---                | ---            |     | ---              | ---             |         |



Test Spec CISPR 22 Radiated Disturbances

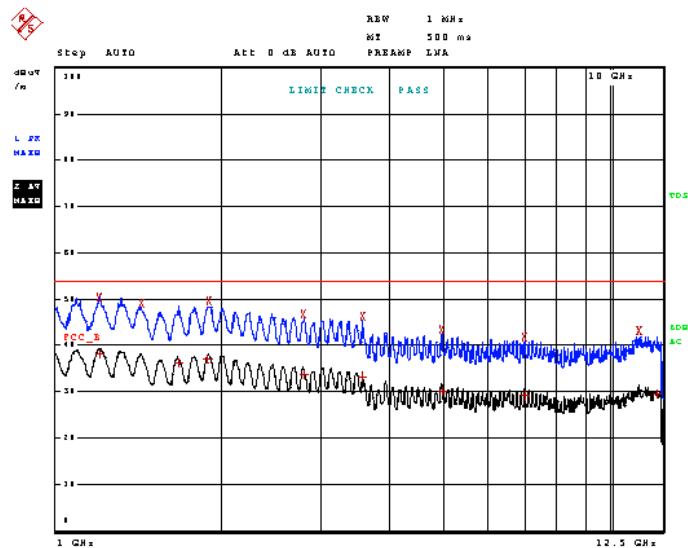
### Polarity

Vertical

### Stepped Scan (1 Range)

Scan Start: 1 GHz  
Scan Stop: 12.5 GHz  
Detector: Trace 1: MAX PEAK Trace 2: Average  
Transducer: TDS\_05

| Start Frequency | Stop Frequency | Step Size  | Res BW   | Meas Time | RF Atten | Preamp | Input  |
|-----------------|----------------|------------|----------|-----------|----------|--------|--------|
| 1.000000 GHz    | 12.500000 GHz  | 400.00 kHz | 1.00 MHz | 100 μs    | Auto     | 35 dB  | INPUT1 |







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## 8.1.22 136-174 MHz, above 1000 MHz, Horizontal Polarity Table

22.Feb 22 10:50

Test Spec CISPR 22 Radiated Disturbances

Polarity

Vertical

### Final Measurement

Meas Time: 500 ms

Margin: 40 dB

Subranges: 16

| Trace | Frequency        | Level (dBμV/m) | Detector     | Delta Limit/dB |
|-------|------------------|----------------|--------------|----------------|
| 2     | 1.192400000 GHz  | 50.31          | Max Peak     |                |
| 1     | 1.200400000 GHz  | 38.11          | CISPR Averag | -15.89         |
| 2     | 1.429600000 GHz  | 49.03          | Max Peak     |                |
| 1     | 1.664400000 GHz  | 36.14          | CISPR Averag | -17.86         |
| 1     | 1.883200000 GHz  | 36.98          | CISPR Averag | -17.02         |
| 2     | 1.889200000 GHz  | 49.74          | Max Peak     |                |
| 2     | 2.800800000 GHz  | 46.65          | Max Peak     |                |
| 1     | 2.804000000 GHz  | 33.80          | CISPR Averag | -20.20         |
| 1     | 3.586400000 GHz  | 32.98          | CISPR Averag | -21.02         |
| 2     | 3.591600000 GHz  | 46.36          | Max Peak     |                |
| 2     | 4.972000000 GHz  | 43.38          | Max Peak     |                |
| 1     | 4.982800000 GHz  | 30.07          | CISPR Averag | -23.93         |
| 2     | 7.019600000 GHz  | 42.01          | Max Peak     |                |
| 1     | 7.044400000 GHz  | 29.01          | CISPR Averag | -24.99         |
| 2     | 11.281200000 GHz | 43.12          | Max Peak     |                |
| 1     | 12.177200000 GHz | 29.51          | CISPR Averag | -24.49         |

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### 8.1.23 136-174 MHz, above 1000 MHz, Vertical Polarity Plot



22.Feb 22 10:52

Test Spec CISPR 22 Radiated Disturbances

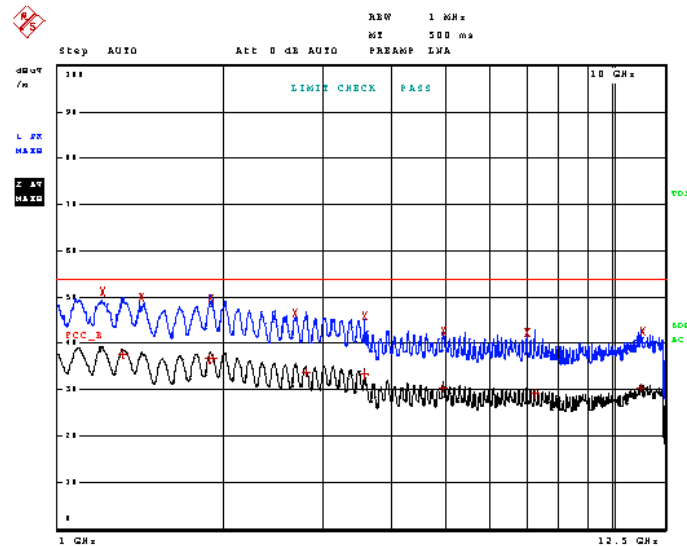
Polarity

Vertical

#### Stepped Scan (1 Range)

Scan Start: 1 GHz  
Scan Stop: 12.5 GHz  
Detector: Trace 1: MAX PEAK Trace 2: Average  
Transducer: TDS\_05

| Start Frequency | Stop Frequency | Step Size  | Res BW   | Meas Time   | RF Atten | Preamp | Input  |
|-----------------|----------------|------------|----------|-------------|----------|--------|--------|
| 1.000000 GHz    | 12.500000 GHz  | 400.00 kHz | 1.00 MHz | 100 $\mu$ s | Auto     | 35 dB  | INPUT1 |





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## 8.1.24 136-174 MHz, above 1000 MHz, Vertical Polarity Table

22.Feb 22 10:52

Test Spec CISPR 22 Radiated Disturbances

Polarity

Vertical

### Final Measurement

Meas Time: 500 ms

Margin: 40 dB

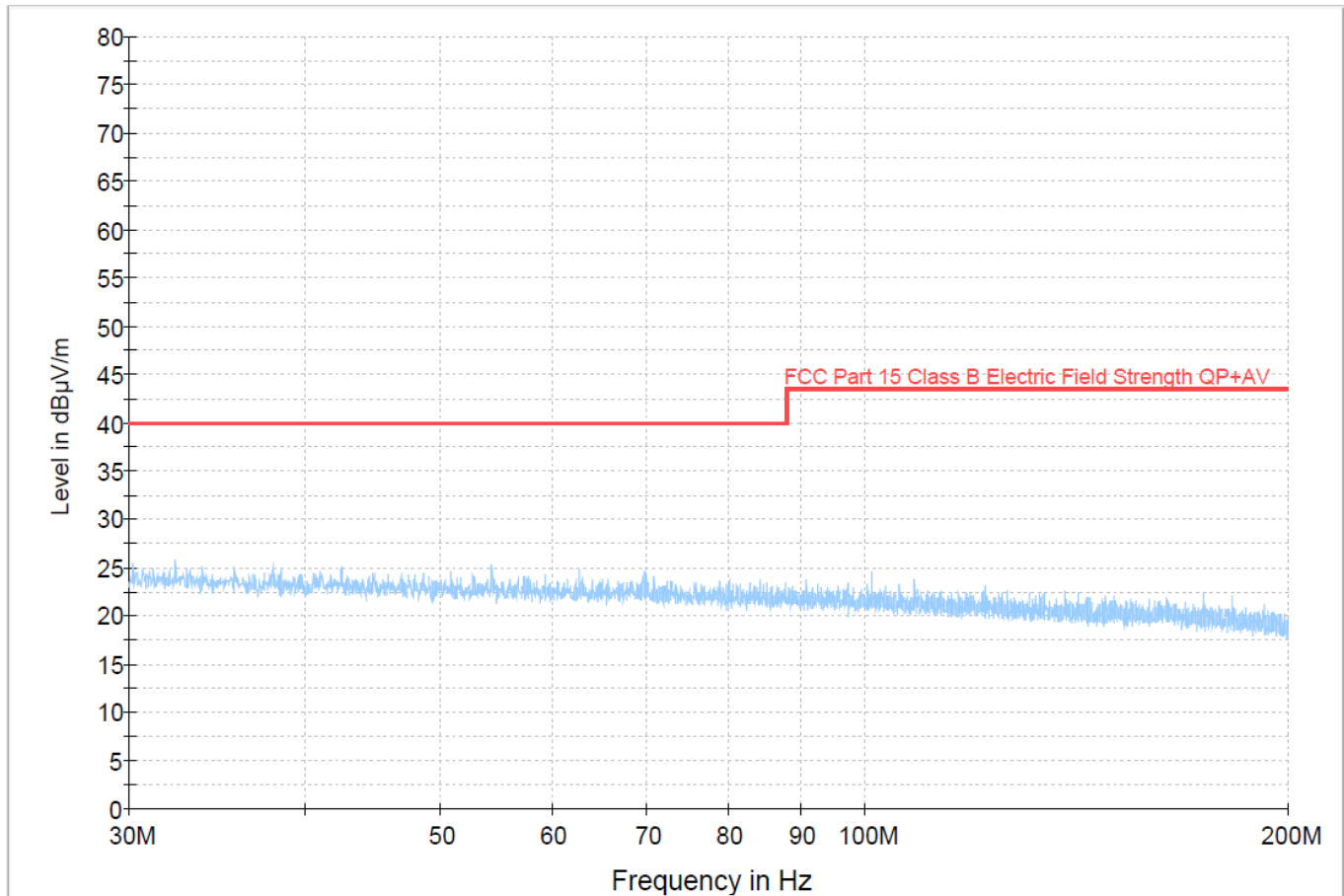
Subranges: 16

| Trace | Frequency        | Level (dBμV/m) | Detector     | Delta Limit/dB |
|-------|------------------|----------------|--------------|----------------|
| 2     | 1.203200000 GHz  | 51.06          | Max Peak     |                |
| 1     | 1.308800000 GHz  | 37.78          | CISPR Averag | -16.22         |
| 2     | 1.414400000 GHz  | 49.91          | Max Peak     |                |
| 1     | 1.876400000 GHz  | 36.68          | CISPR Averag | -17.32         |
| 2     | 1.887200000 GHz  | 49.77          | Max Peak     |                |
| 1     | 1.899600000 GHz  | 36.79          | CISPR Averag | -17.21         |
| 2     | 2.689600000 GHz  | 46.50          | Max Peak     |                |
| 1     | 2.806800000 GHz  | 33.76          | CISPR Averag | -20.24         |
| 2     | 3.593600000 GHz  | 45.85          | Max Peak     |                |
| 1     | 3.600000000 GHz  | 33.34          | CISPR Averag | -20.66         |
| 1     | 4.970400000 GHz  | 30.34          | CISPR Averag | -23.66         |
| 2     | 4.970400000 GHz  | 42.65          | Max Peak     |                |
| 2     | 7.035200000 GHz  | 42.35          | Max Peak     |                |
| 1     | 7.261600000 GHz  | 29.02          | CISPR Averag | -24.98         |
| 1     | 11.281600000 GHz | 30.34          | CISPR Averag | -23.66         |
| 2     | 11.384800000 GHz | 42.61          | Max Peak     |                |

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8.1.25 400-479 MHz, 30 MHz to 200 MHz, Horizontal/ Vertical Polarity Plot





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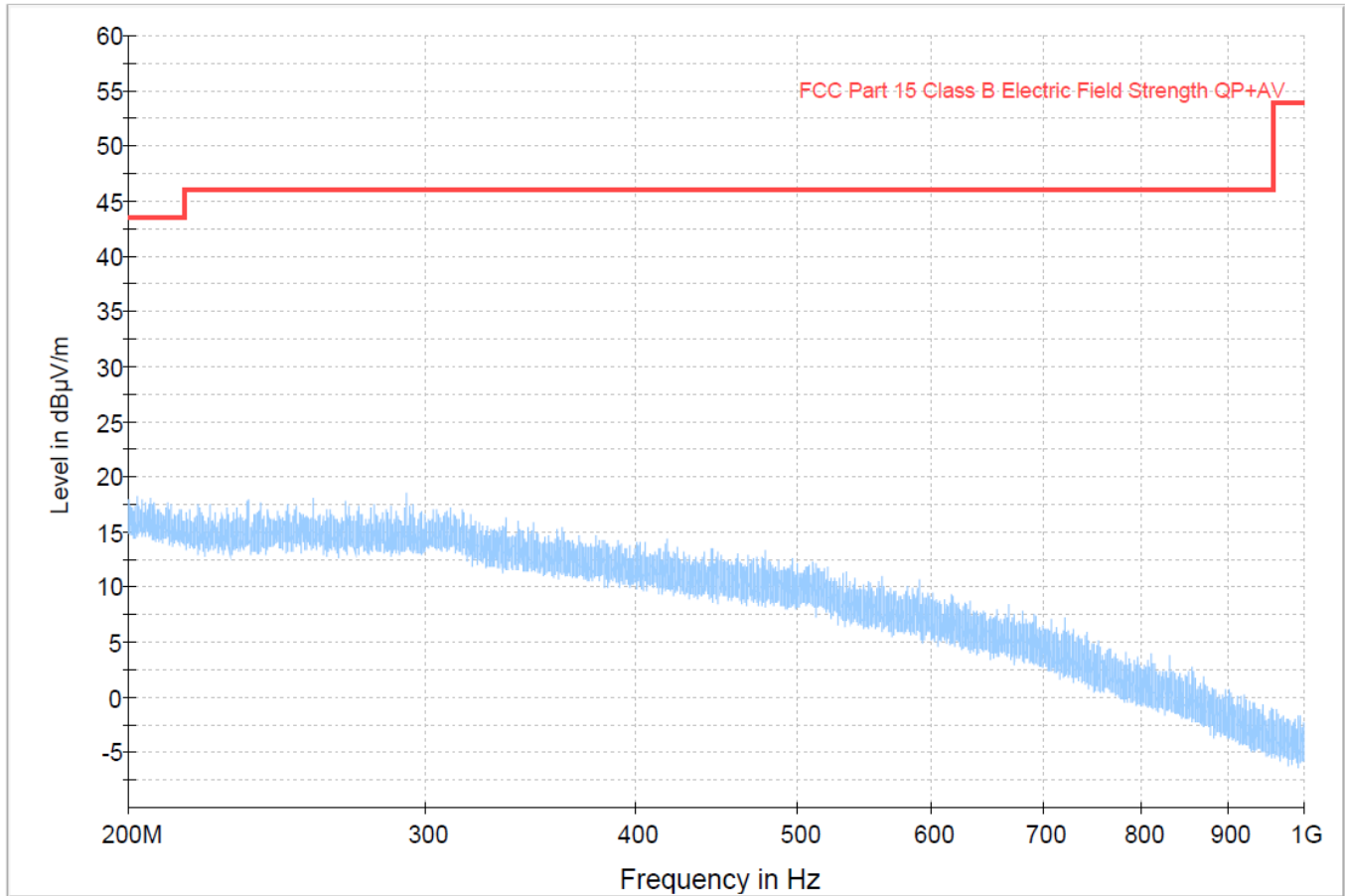
## 8.1.26 400-479 MHz, 30 MHz to 200 MHz, Horizontal/ Vertical Polarity Table

EMI Auto Test(13)

### Final Result

| Frequency<br>(MHz) | QuasiPeak<br>(dBμV/m) | CAverage<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) | Comment |
|--------------------|-----------------------|----------------------|-------------------|----------------|--------------------|--------------------|----------------|-----|------------------|-----------------|---------|
| ---                | ---                   | ---                  | ---               | ---            | ---                | ---                | ---            |     | ---              | ---             |         |

### 8.1.27 400-479 MHz, 200 MHz to 1000 MHz, Horizontal/ Vertical Polarity Plot





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## 8.1.28 400-479 MHz, 200 MHz to 1000 MHz, Horizontal/ Vertical Polarity Table

EMI Auto Test(13)

### Final Result

| Frequency<br>(MHz) | QuasiPeak<br>(dBμV/m) | CAverage<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB/m) | Comment |
|--------------------|-----------------------|----------------------|-------------------|----------------|--------------------|--------------------|----------------|-----|------------------|-----------------|---------|
| ---                | ---                   | ---                  | ---               | ---            | ---                | ---                | ---            |     | ---              | ---             |         |



Test Spec CISPR 22 Radiated Disturbances

### Polarity

Vertical

### Stepped Scan (1 Range)

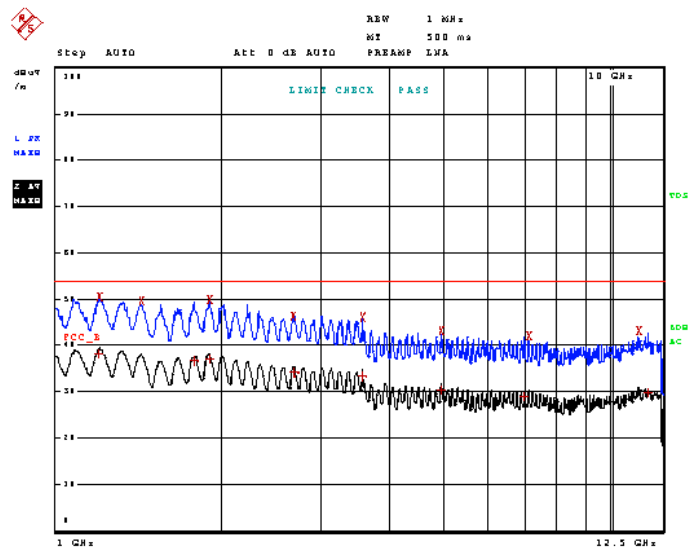
Scan Start: 1 GHz

Scan Stop: 12.5 GHz

Detector: Trace 1: MAX PEAK Trace 2: Average

Transducer: TDS\_05

| Start Frequency | Stop Frequency | Step Size  | Res BW   | Meas Time   | RF Atten | Preamp | Input  |
|-----------------|----------------|------------|----------|-------------|----------|--------|--------|
| 1.000000 GHz    | 12.500000 GHz  | 400.00 kHz | 1.00 MHz | 100 $\mu$ s | Auto     | 35 dB  | INPUT1 |







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### 8.1.30 400-479 MHz, above 1000 MHz, Horizontal Polarity Table

22.Feb 22 10:54

Test Spec CISPR 22 Radiated Disturbances

Polarity

Vertical

#### Final Measurement

Meas Time: 500 ms

Margin: 40 dB

Subranges: 16

| Trace | Frequency        | Level (dBµV/m) | Detector     | Delta Limit/dB |
|-------|------------------|----------------|--------------|----------------|
| 1     | 1.194000000 GHz  | 38.03          | CISPR Averag | -15.97         |
| 2     | 1.197600000 GHz  | 50.49          | Max Peak     |                |
| 2     | 1.429200000 GHz  | 49.62          | Max Peak     |                |
| 1     | 1.774000000 GHz  | 36.61          | CISPR Averag | -17.39         |
| 1     | 1.892800000 GHz  | 37.03          | CISPR Averag | -16.97         |
| 2     | 1.892800000 GHz  | 49.93          | Max Peak     |                |
| 2     | 2.685600000 GHz  | 46.29          | Max Peak     |                |
| 1     | 2.694400000 GHz  | 34.17          | CISPR Averag | -19.83         |
| 1     | 3.598400000 GHz  | 33.34          | CISPR Averag | -20.66         |
| 2     | 3.599600000 GHz  | 46.09          | Max Peak     |                |
| 2     | 4.968400000 GHz  | 43.20          | Max Peak     |                |
| 1     | 4.974000000 GHz  | 30.36          | CISPR Averag | -23.64         |
| 1     | 7.011600000 GHz  | 28.88          | CISPR Averag | -25.12         |
| 2     | 7.142400000 GHz  | 42.15          | Max Peak     |                |
| 2     | 11.278400000 GHz | 43.15          | Max Peak     |                |
| 1     | 11.715200000 GHz | 29.82          | CISPR Averag | -24.18         |

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### 8.1.31 400-479 MHz, above 1000 MHz, Vertical Polarity Plot



22.Feb 22 10:55

Test Spec CISPR 22 Radiated Disturbances

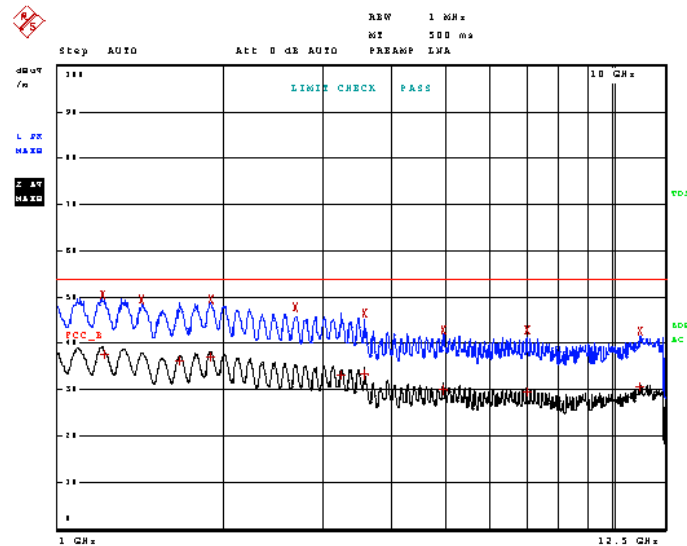
Polarity

Vertical

#### Stepped Scan (1 Range)

Scan Start: 1 GHz  
Scan Stop: 12.5 GHz  
Detector: Trace 1: MAX PEAK Trace 2: Average  
Transducer: TDS\_05

| Start Frequency | Stop Frequency | Step Size  | Res BW   | Meas Time   | RF Atten | Preamp | Input  |
|-----------------|----------------|------------|----------|-------------|----------|--------|--------|
| 1.000000 GHz    | 12.500000 GHz  | 400.00 kHz | 1.00 MHz | 100 $\mu$ s | Auto     | 35 dB  | INPUT1 |





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### 8.1.32 400-479 MHz, above 1000 MHz, Vertical Polarity Table

22.Feb 22 10:55

Test Spec CISPR 22 Radiated Disturbances

Polarity

Vertical

#### Final Measurement

Meas Time: 500 ms

Margin: 40 dB

Subranges: 16

| Trace | Frequency        | Level (dBμV/m) | Detector     | Delta Limit/dB |
|-------|------------------|----------------|--------------|----------------|
| 2     | 1.204400000 GHz  | 50.46          | Max Peak     |                |
| 1     | 1.214400000 GHz  | 37.62          | CISPR Averag | -16.38         |
| 2     | 1.415600000 GHz  | 49.46          | Max Peak     |                |
| 1     | 1.660400000 GHz  | 36.17          | CISPR Averag | -17.83         |
| 1     | 1.888400000 GHz  | 37.18          | CISPR Averag | -16.82         |
| 2     | 1.890400000 GHz  | 49.52          | Max Peak     |                |
| 2     | 2.687600000 GHz  | 47.80          | Max Peak     |                |
| 1     | 3.245600000 GHz  | 33.11          | CISPR Averag | -20.89         |
| 2     | 3.598800000 GHz  | 46.46          | Max Peak     |                |
| 1     | 3.599200000 GHz  | 33.34          | CISPR Averag | -20.66         |
| 1     | 4.964400000 GHz  | 30.03          | CISPR Averag | -23.97         |
| 2     | 4.974400000 GHz  | 42.94          | Max Peak     |                |
| 1     | 7.025200000 GHz  | 29.60          | CISPR Averag | -24.40         |
| 2     | 7.030400000 GHz  | 42.87          | Max Peak     |                |
| 2     | 11.262000000 GHz | 42.85          | Max Peak     |                |
| 1     | 11.270000000 GHz | 30.58          | CISPR Averag | -23.42         |

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## 9. ANNEX-A - Photographs of the EUT

Photographs of the EUT and any manufacturer supplied accessories to be used with the EUT are in a separate document.

## 10. ANNEX-B – Test Setup Photographs

Test setup photographs are located in a separate document.

## 11. History of Test Report Changes

| Test Report #                         | Revision # | Description                | Date of Issue |
|---------------------------------------|------------|----------------------------|---------------|
| TR_0847-22_FCC_15B_Scanning Receiver_ | 1          | Initial release            | 2/22/2022     |
|                                       | 2          | Updated model # Page 6, 11 | 3/9/2022      |
|                                       |            |                            |               |



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END OF TEST REPORT

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