

# Report on the FCC Testing of the

Domo Tactical Communications (DTC) Ltd.  
Digital Video Transceiver,  
Model: SOL8SDR CONCEALMENT MODULE - SOL8SDR-  
C-470043

## In accordance with FCC 47 CFR Part 15B

Prepared for: Domo Tactical Communications (DTC) Ltd.  
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United Kingdom

FCC ID: XRF SOL8SDRC470043

## COMMERCIAL-IN-CONFIDENCE

Document Number: 75942063-03 | Issue: 05



Product Service

Choose certainty.  
Add value.

| RESPONSIBLE FOR      | NAME            | DATE            | SIGNATURE |
|----------------------|-----------------|-----------------|-----------|
| Project Management   | Natalie Bennett | 18 January 2019 |           |
| Authorised Signatory | Kim Archer      | 18 January 2019 |           |

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

### ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15B. The sample tested was found to comply with the requirements defined in the applied rules.

| RESPONSIBLE FOR | NAME           | DATE            | SIGNATURE |
|-----------------|----------------|-----------------|-----------|
| Testing         | Graeme Lawler  | 18 January 2019 |           |
| Testing         | Mohammed Malik | 18 January 2019 |           |

FCC Accreditation  
90987 Octagon House, Fareham Test Laboratory

### EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15B: 2017 for the tests detailed in section 1.3.



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## 1 Report Summary

### 1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

| Issue | Description of Change                                                | Date of Issue    |
|-------|----------------------------------------------------------------------|------------------|
| 1     | First Issue                                                          | 28 June 2018     |
| 2     | To amend the address in the 'Prepared for' section on the front page | 04 July 2018     |
| 3     | To amend the FCC ID.                                                 | 14 December 2018 |
| 4     | To amend the application form.                                       | 07 January 2019  |
| 5     | To amend the FCC ID.                                                 | 18 January 2019  |

### 1.2 Introduction

|                               |                                               |
|-------------------------------|-----------------------------------------------|
| Applicant                     | Domo Tactical Communications (DTC) Ltd        |
| Manufacturer                  | Domo Tactical Communications (DTC) Ltd        |
| Model Number(s)               | SOL8SDR CONCEALMENT MODULE - SOL8SDR-C-470043 |
| Serial Number(s)              | 108873                                        |
| Hardware Version(s)           | 4                                             |
| Software Version(s)           | 4.02                                          |
| Number of Samples Tested      | 1                                             |
| Test Specification/Issue/Date | FCC 47 CFR Part 15B: 2017                     |
| Order Number                  | PO-047375-1                                   |
| Date                          | 26-February-2018                              |
| Date of Receipt of EUT        | 06-June-2018                                  |
| Start of Test                 | 07-June-2018                                  |
| Finish of Test                | 10-June-2018                                  |
| Name of Engineer(s)           | Graeme Lawler<br>Mohammed Malik               |
| Related Document(s)           | ANSI C63.4: 2014                              |



Product Service

**1.3 Brief Summary of Results**

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15B is shown below.

| Section                      | Specification Clause | Test Description               | Result | Comments/Base Standard |
|------------------------------|----------------------|--------------------------------|--------|------------------------|
| Configuration and Mode: Idle |                      |                                |        |                        |
| 2.1                          | 15.109               | Radiated Disturbance – Class A | Pass   | ANSI C63.4: 2014       |

**Table 1**



## 1.4 Application Form

| EQUIPMENT DESCRIPTION                                                                           |                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model Name/Number                                                                               | SOL8SDR CONCEALMENT MODULE- SOL8SDR-C-470043                                                                                                                                                                                                                                                                      |
| Part Number                                                                                     | SOL8SDR-C-470043 (MODULE)                                                                                                                                                                                                                                                                                         |
| Hardware Version                                                                                | 4                                                                                                                                                                                                                                                                                                                 |
| Software Version                                                                                | 4.0.2                                                                                                                                                                                                                                                                                                             |
| FCC ID (if applicable)                                                                          | XRFSOL8SDRC470043                                                                                                                                                                                                                                                                                                 |
| Industry Canada ID (if applicable)                                                              | 8638A-SOL8SDR-C                                                                                                                                                                                                                                                                                                   |
| Technical Description (Please provide a brief description of the intended use of the equipment) | SOL8 software defined radio is an ultra-miniature COFDM digital video transceiver. The Concealment -C is an ultra-miniature package ideal for integration into small concealment solutions. Capable of Video and IP transmission providing greater than 25mb/s over a selectable bandwidth of between 2.5-10 MHz. |

| INTENTIONAL RADIATORS |                                       |                    |                              |                      |                         |                     |        |         |
|-----------------------|---------------------------------------|--------------------|------------------------------|----------------------|-------------------------|---------------------|--------|---------|
| Technology            | Conducted Declared Output Power (dBm) | Antenna Gain (dBi) | Supported Bandwidth(s) (MHz) | Modulation Scheme(s) | ITU Emission Designator | Test Channels (MHz) |        |         |
|                       |                                       |                    |                              |                      |                         | Bottom              | Middle | Top     |
| COFDM                 | 20                                    | 2                  | 2.5                          | 16QAM-BPSK           | 10M00D1W                | 4941.25             | 4965.0 | 4988.75 |
| COFDM                 | 20                                    | 2                  | 3                            | 16QAM-BPSK           | 10M00D1W                | 4941.5              | 4965.0 | 4988.5  |
| COFDM                 | 20                                    | 2                  | 3.5                          | 16QAM-BPSK           | 10M00D1W                | 4941.75             | 4965.0 | 4988.25 |
| COFDM                 | 20                                    | 2                  | 5                            | 16QAM-BPSK           | 10M00D1W                | 4942.5              | 4965.0 | 4987.5  |
| COFDM                 | 20                                    | 2                  | 6                            | 16QAM-BPSK           | 10M00D1W                | 4943.0              | 4965.0 | 4987.0  |
| COFDM                 | 20                                    | 2                  | 7                            | 16QAM-BPSK           | 10M00D1W                | 4943.5              | 4965.0 | 4986.5  |
| COFDM                 | 20                                    | 2                  | 8                            | 16QAM-BPSK           | 10M00D1W                | 4944.0              | 4965.0 | 4986.0  |
| COFDM                 | 20                                    | 2                  | 10                           | 16QAM-BPSK           | 10M00D1W                | 4945.0              | 4965.0 | 4985.0  |

| UN-INTENTIONAL RADIATOR                                                                                            |             |
|--------------------------------------------------------------------------------------------------------------------|-------------|
| Highest frequency generated or used in the device or on which the device operates or tunes                         | 5000.0 MHz  |
| Lowest frequency generated or used in the device or on which the device operates or tunes                          | 4941.25 MHz |
| Class A Digital Device (Use in commercial, industrial or business environment) <input checked="" type="checkbox"/> |             |
| Class B Digital Device (Use in residential environment only) <input type="checkbox"/>                              |             |



| Power Source                           |                 |             |                                                                     |
|----------------------------------------|-----------------|-------------|---------------------------------------------------------------------|
| AC                                     | Single Phase    | Three Phase | Nominal Voltage                                                     |
|                                        |                 |             |                                                                     |
| External DC                            | Nominal Voltage |             | Maximum Current                                                     |
|                                        | 12V             |             | 1.5A                                                                |
| Battery                                | Nominal Voltage |             | Battery Operating End Point Voltage                                 |
|                                        | 12V             |             | 9V                                                                  |
| Can EUT transmit whilst being charged? |                 |             | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |

| EXTREME CONDITIONS  |     |    |                            |
|---------------------|-----|----|----------------------------|
| Maximum temperature | +60 | °C | Minimum temperature -10 °C |

| Ancillaries                                                     |
|-----------------------------------------------------------------|
| Please list all ancillaries which will be used with the device. |
| 12v LEAD AND RJ 45                                              |

| ANTENNA CHARACTERISTICS                               |                 |    |     |
|-------------------------------------------------------|-----------------|----|-----|
| <input checked="" type="checkbox"/> Antenna connector | State impedance | 50 | Ohm |
| <input type="checkbox"/> Temporary antenna connector  | State impedance |    | Ohm |
| <input type="checkbox"/> Integral antenna             | Type            |    |     |
| <input checked="" type="checkbox"/> External antenna  | Type            |    |     |

I hereby declare that the information supplied is correct and complete.

Name: Stuart Doe

Position held: Head of Engineering Date: 30/04/18



## 1.5 Product Information

### 1.5.1 Technical Description

SOL8 software defined radio is an ultra-miniature COFDM digital video transceiver. The Concealment-C is an ultra-miniature package ideal for integration into small concealment solutions. Capable of Video and IP transmission providing greater than 25Mb/s over a selectable bandwidth of between 2.5-10 MHz.

### 1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

### 1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme. The modifications incorporated during each test are recorded on the appropriate test pages.

| Modification State    | Description of Modification still fitted to EUT | Modification Fitted By | Date Modification Fitted |
|-----------------------|-------------------------------------------------|------------------------|--------------------------|
| Serial Number: 108873 |                                                 |                        |                          |
| 0                     | As supplied by the customer                     | Not Applicable         | Not Applicable           |

**Table 2**

### 1.8 Test Location

TÜV SÜD Product Service conducted the following tests at our Fareham Test Laboratory.

| Test Name                    | Name of Engineer(s)             | Accreditation |
|------------------------------|---------------------------------|---------------|
| Configuration and Mode: Idle |                                 |               |
| Radiated Disturbance         | Graeme Lawler<br>Mohammed Malik | UKAS          |

**Table 3**

Office Address:

Octagon House  
Concorde Way  
Segensworth North  
Fareham  
Hampshire  
PO15 5RL  
United Kingdom



## 2 Test Details

### 2.1 Radiated Disturbance

#### 2.1.1 Specification Reference

FCC 47 CFR Part 15B, Clause 15.109

#### 2.1.2 Equipment Under Test and Modification State

SOL8SDR CONCEALMENT MODULE- SOL8SDR-C-470043, S/N: 108873 – Modification State 0

#### 2.1.3 Date of Test

07-June-2018 to 10-June-2018

#### 2.1.4 Test Method

The EUT was set up in a semi-anechoic chamber on a remotely controlled turntable and placed on a non-conductive in accordance with ANSI C63.4, clause 8.

A pre-scan of the EUT emissions profile was made while varying the antenna-to-EUT azimuth and antenna-to-EUT polarisation using a peak detector; measurements were taken at a 3m distance. Using the pre-scan list of the highest emissions detected, their bearing and associated antenna polarisation, the EUT was then formally measured using a Quasi-Peak, Peak, Average detector as appropriate. The readings were maximised by adjusting the antenna height, polarisation and turntable azimuth, in accordance with the specification.

#### 2.1.5 Environmental Conditions

|                     |              |
|---------------------|--------------|
| Ambient Temperature | 20.1°C       |
| Relative Humidity   | 38.0 - 50.1% |

## 2.1.6 Test Results

Results for Configuration and Mode : Idle.

Performance assessment of the EUT made during this test: Pass

Detailed results are shown below.

Highest frequency generated or used within the EUT: 5 GHz  
Which necessitates an upper frequency test limit of: 30 GHz

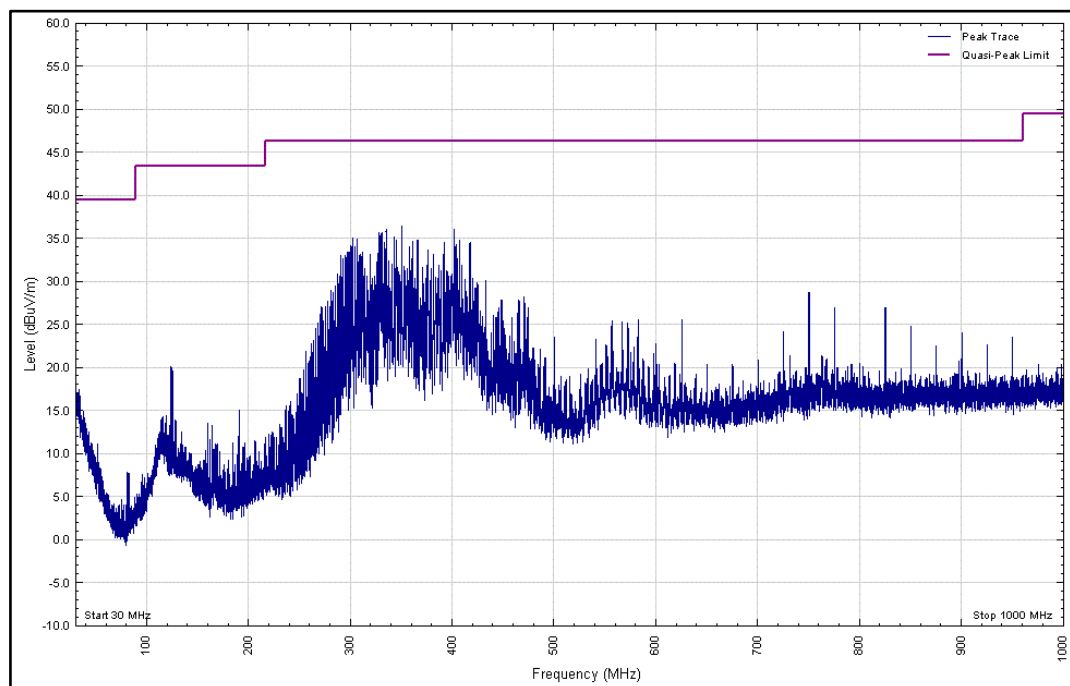


Figure 1 - 30 MHz to 1 GHz – Polarity: Horizontal, EUT Orientation: X

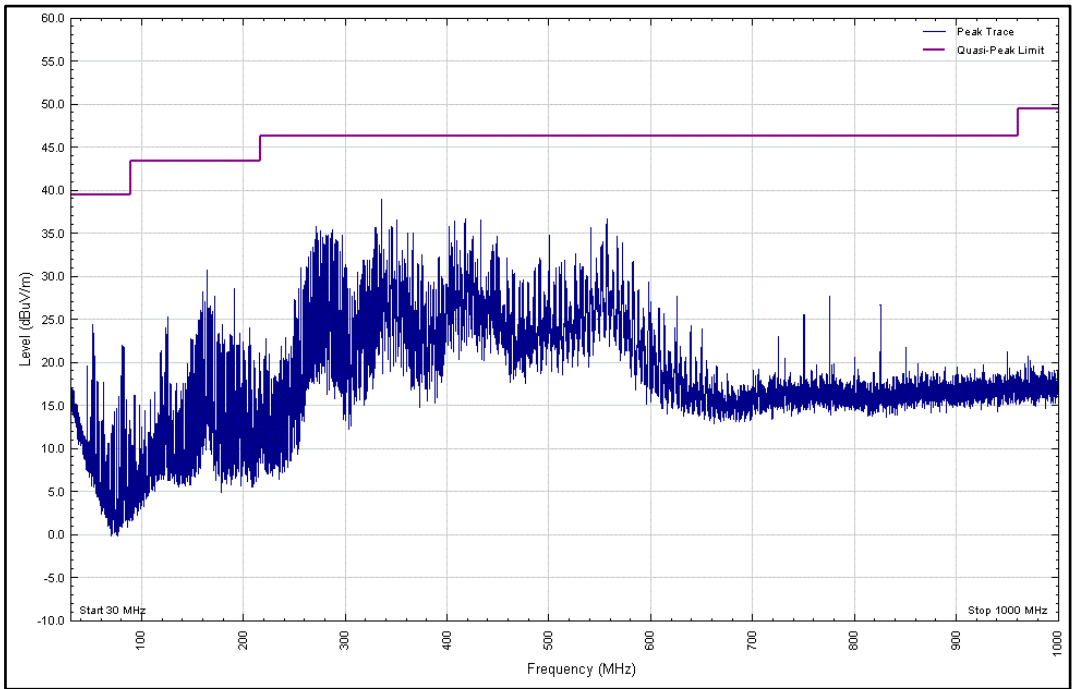


Figure 2 - 30 MHz to 1 GHz - Polarity: Vertical, EUT Orientation: X

| Frequency (MHz) | QP Level (dBuV/m) | QP Limit (dBuV/m) | QP Margin (dBuV/m) | Angle(Deg) | Height(m) | Polarity |
|-----------------|-------------------|-------------------|--------------------|------------|-----------|----------|
| *               |                   |                   |                    |            |           |          |

Table 4 - 30 MHz to 1 GHz - EUT Orientation: X

\*No emissions were detected within 10 dB of the limit.

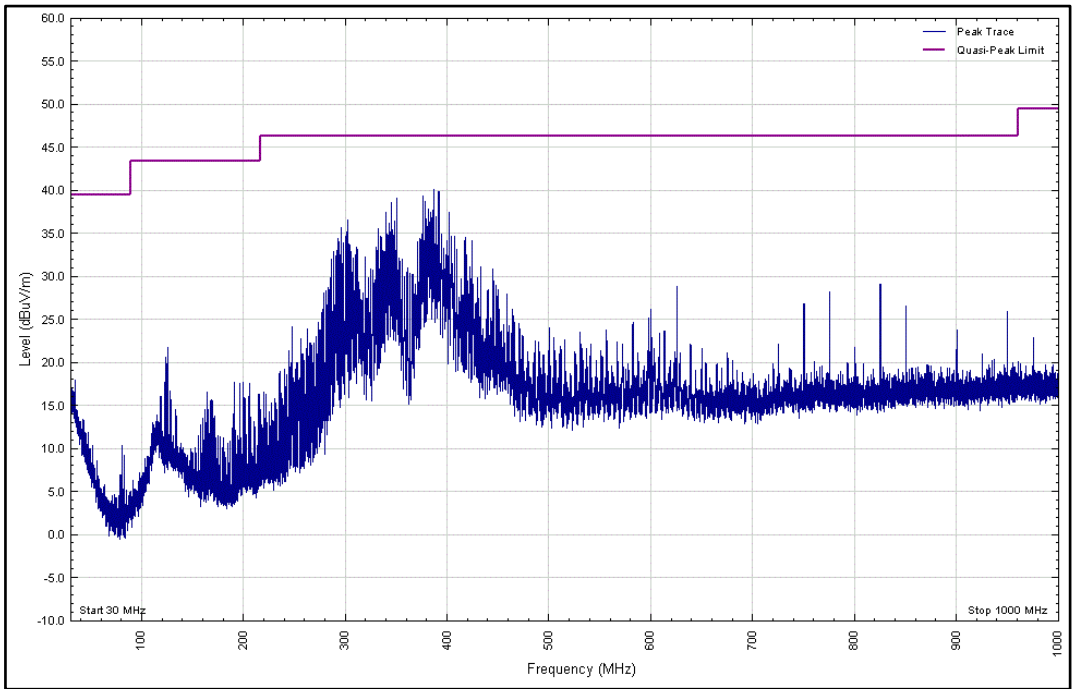


Figure 3 - 30 MHz to 1 GHz - Polarity: Horizontal, EUT Orientation: Y

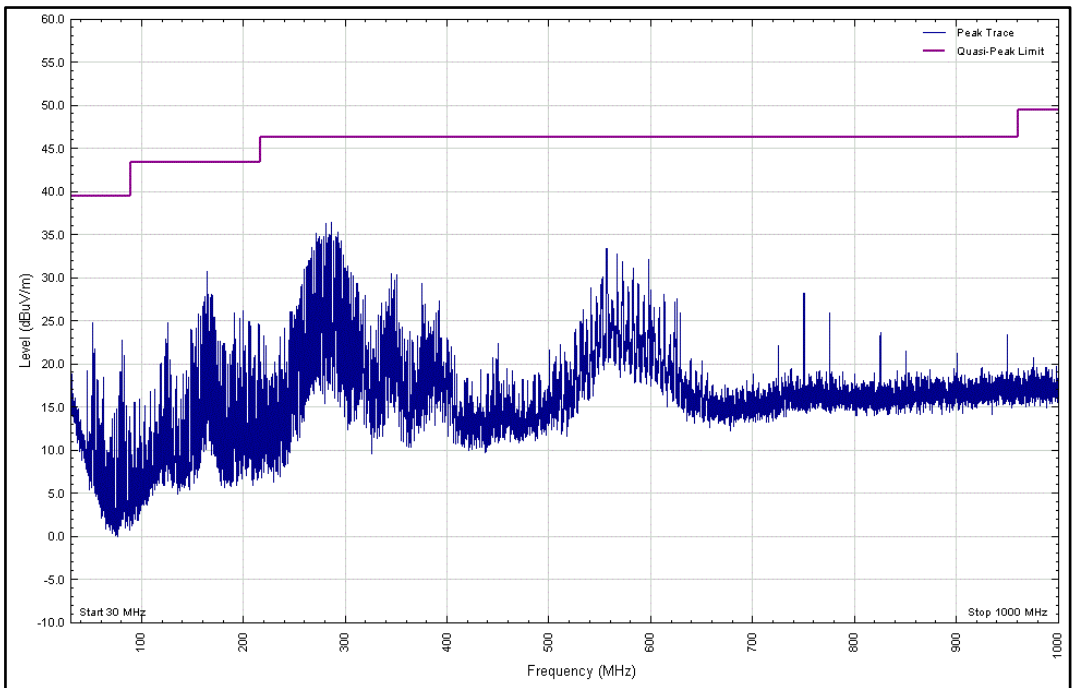


Figure 4 - 30 MHz to 1 GHz - Polarity: Vertical, EUT Orientation: Y



Product Service

| Frequency<br>(MHz) | QP Level<br>(dBuV/m) | QP Limit<br>(dBuV/m) | QP Margin<br>(dBuV/m) | Angle(Deg) | Height(m) | Polarity |
|--------------------|----------------------|----------------------|-----------------------|------------|-----------|----------|
| *                  |                      |                      |                       |            |           |          |

Table 5 - 30 MHz to 1 GHz - EUT Orientation: Y

\*No emissions were detected within 10 dB of the limit.

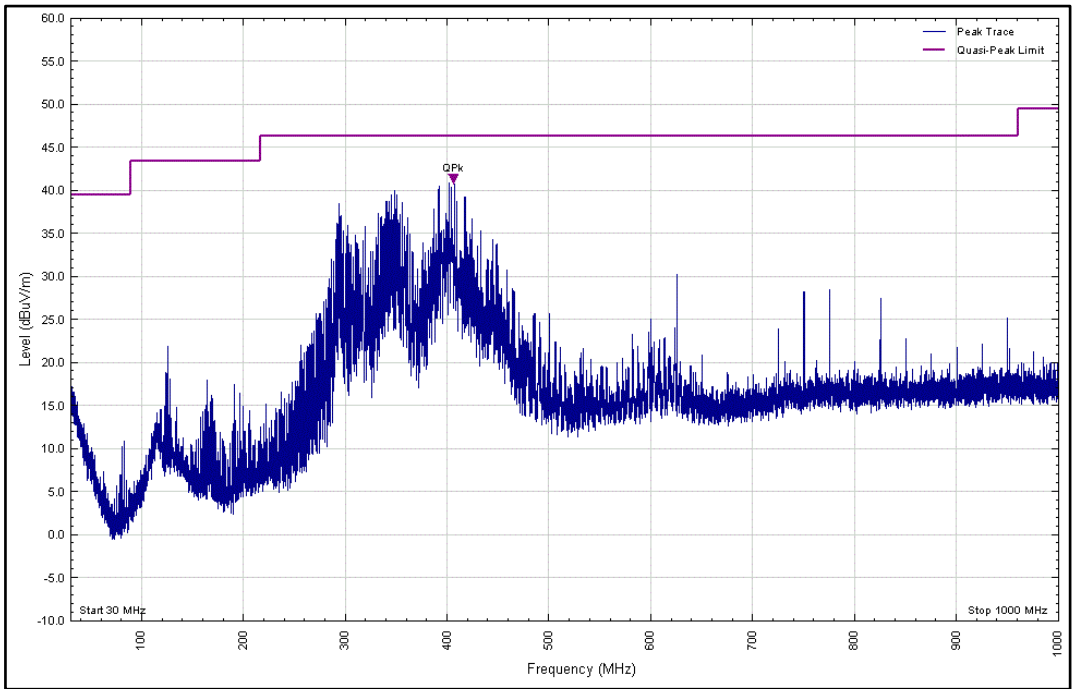


Figure 5 - 30 MHz to 1 GHz- Polarity: Horizontal, EUT Orientation: Z

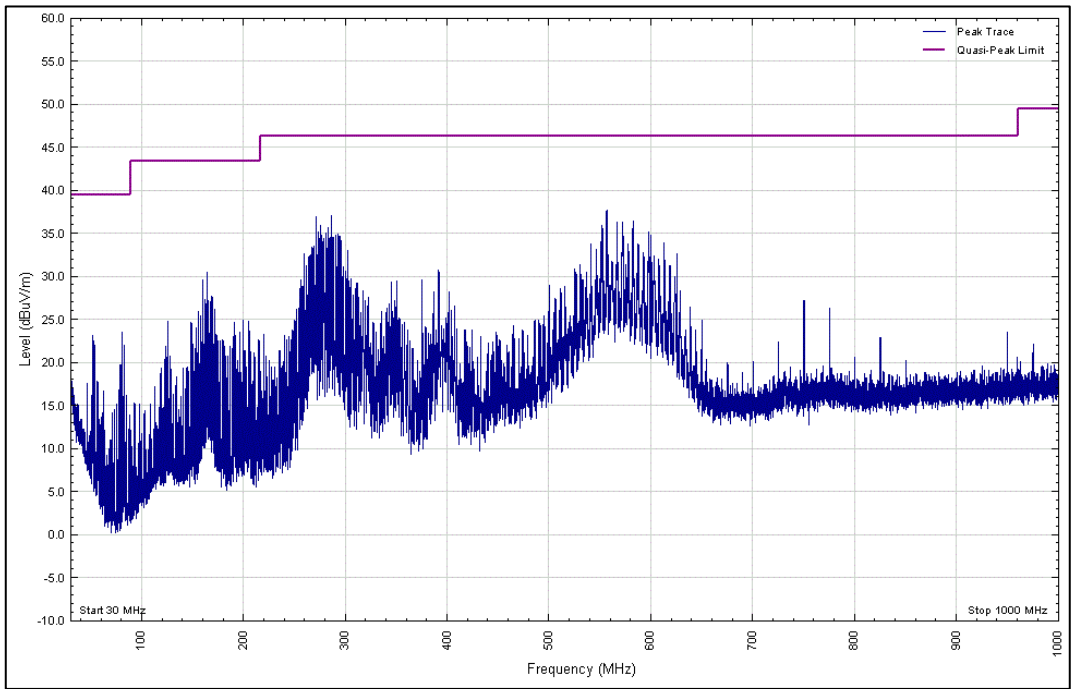


Figure 6 - 30 MHz to 1 GHz - Polarity: Vertical, EUT Orientation: Z



Product Service

| Frequency (MHz) | QP Level (dBuV/m) | QP Limit (dBuV/m) | QP Margin (dBuV/m) | Angle(Deg) | Height(m) | Polarity   |
|-----------------|-------------------|-------------------|--------------------|------------|-----------|------------|
| 406.779         | 40.5              | 46.4              | -5.9               | 110        | 100       | Horizontal |

**Table 6 - 30 MHz to 1 GHz - EUT Orientation: Z**

No other emissions were detected within 10 dB of the limit.

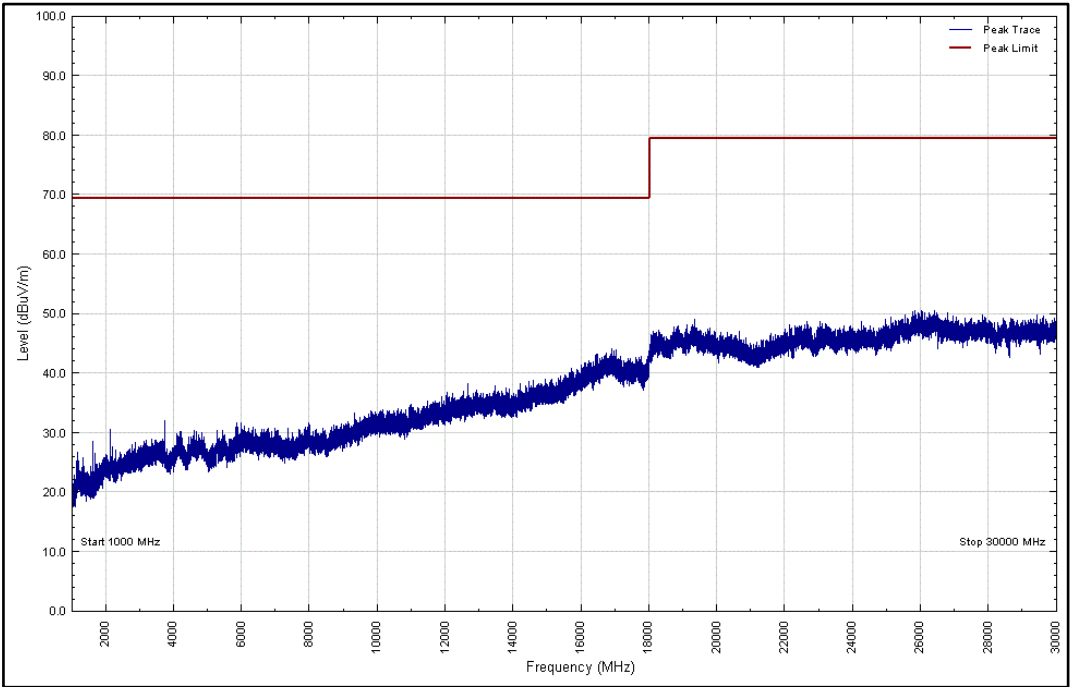


Figure 7 - 1 GHz to 30 GHz – Polarity: Horizontal, EUT Orientation: X - Peak

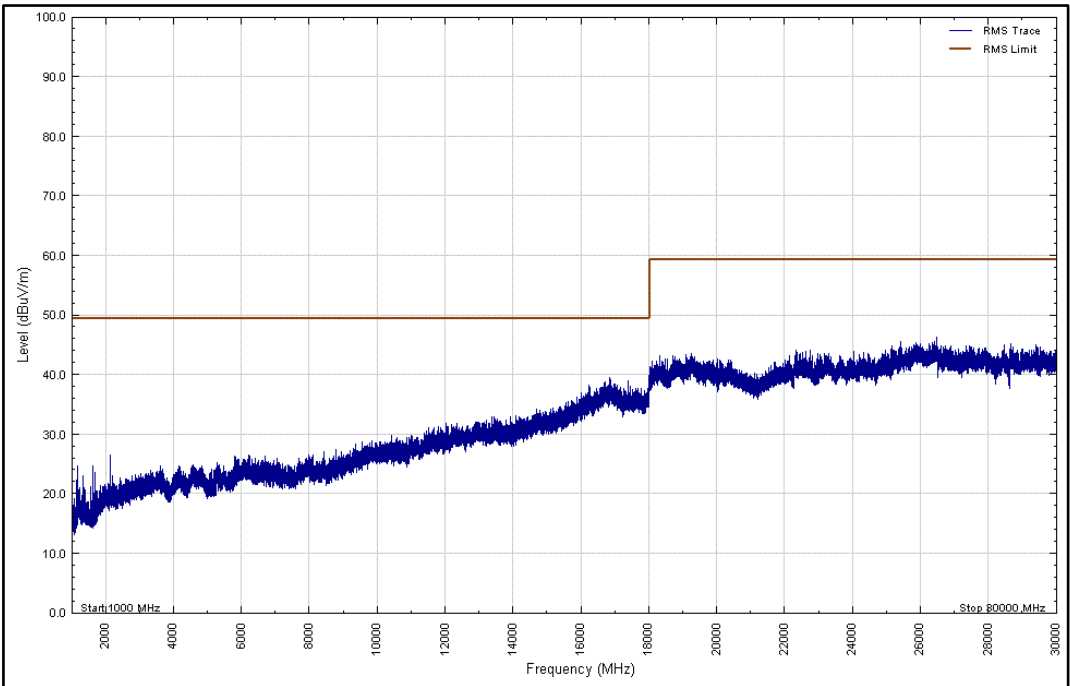


Figure 8 - 1 GHz to 30 GHz – Polarity: Horizontal, EUT Orientation: X - Average

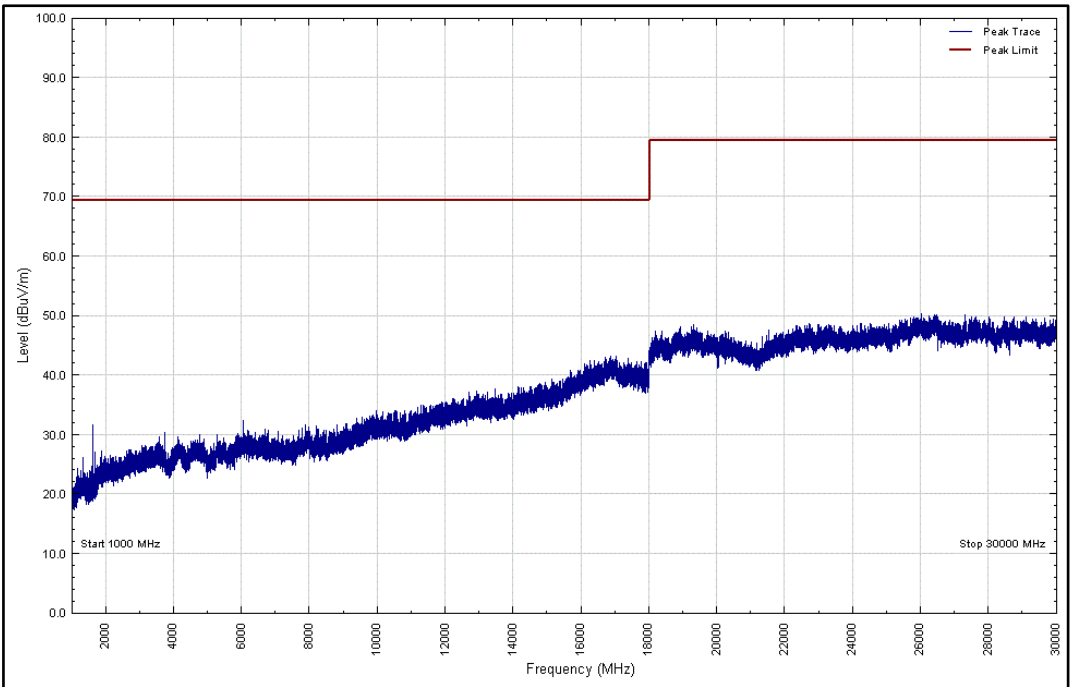


Figure 9 - 1 GHz to 30 GHz – Polarity: Vertical, EUT Orientation: X - Peak

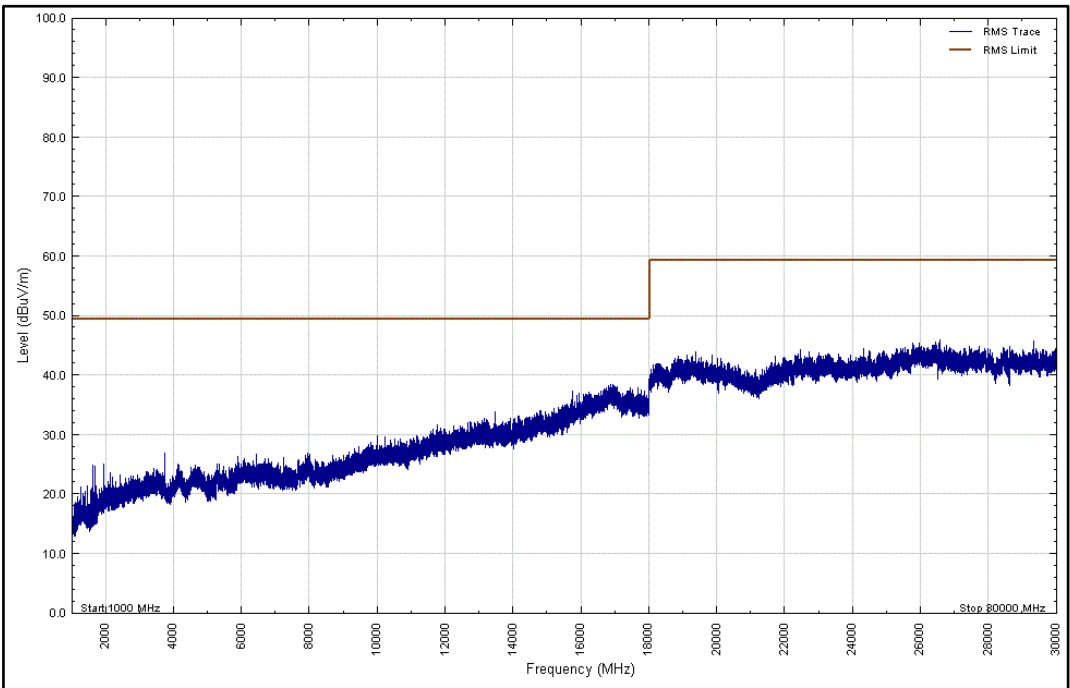


Figure 10 - 1 GHz to 30 GHz – Polarity: Vertical, EUT Orientation: X - Average



Product Service

| Frequency<br>(GHz) | Result (dBµV/m) |         | Limit (dBµV/m) |         | Margin (dBµV/m) |         |
|--------------------|-----------------|---------|----------------|---------|-----------------|---------|
|                    | Peak            | Average | Peak           | Average | Peak            | Average |
| *                  |                 |         |                |         |                 |         |

Table 7 - 1 GHz to 30 GHz - EUT Orientation: X

\*No emissions were detected within 10 dB of the limit.

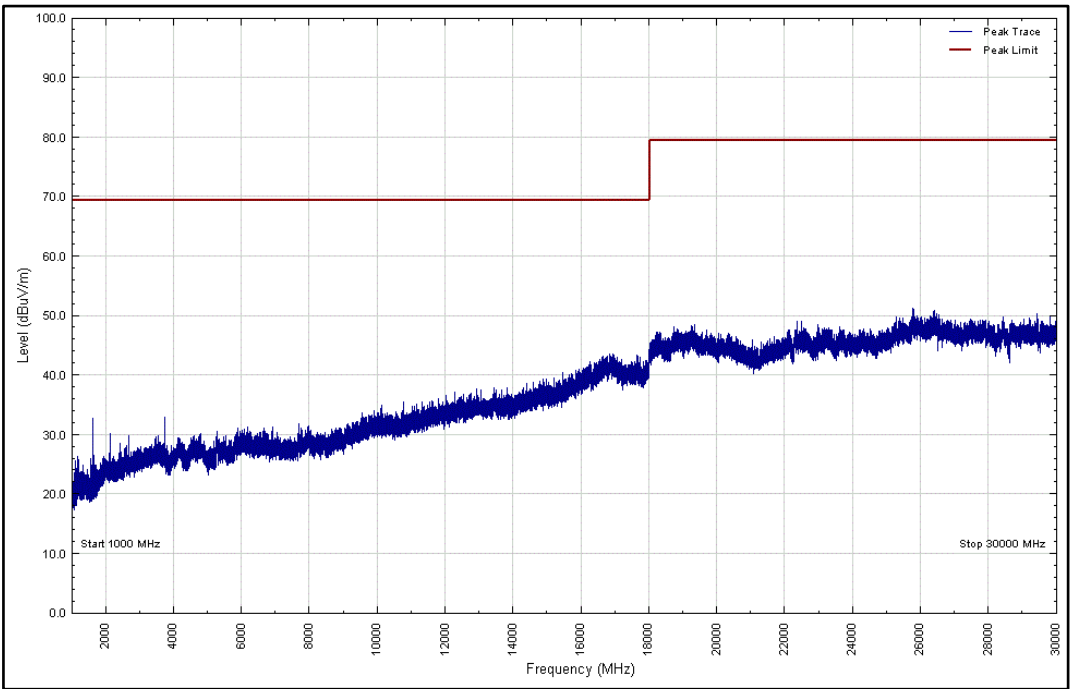


Figure 11 - 1 GHz to 30 GHz – Polarity: Horizontal, EUT Orientation: Y - Peak

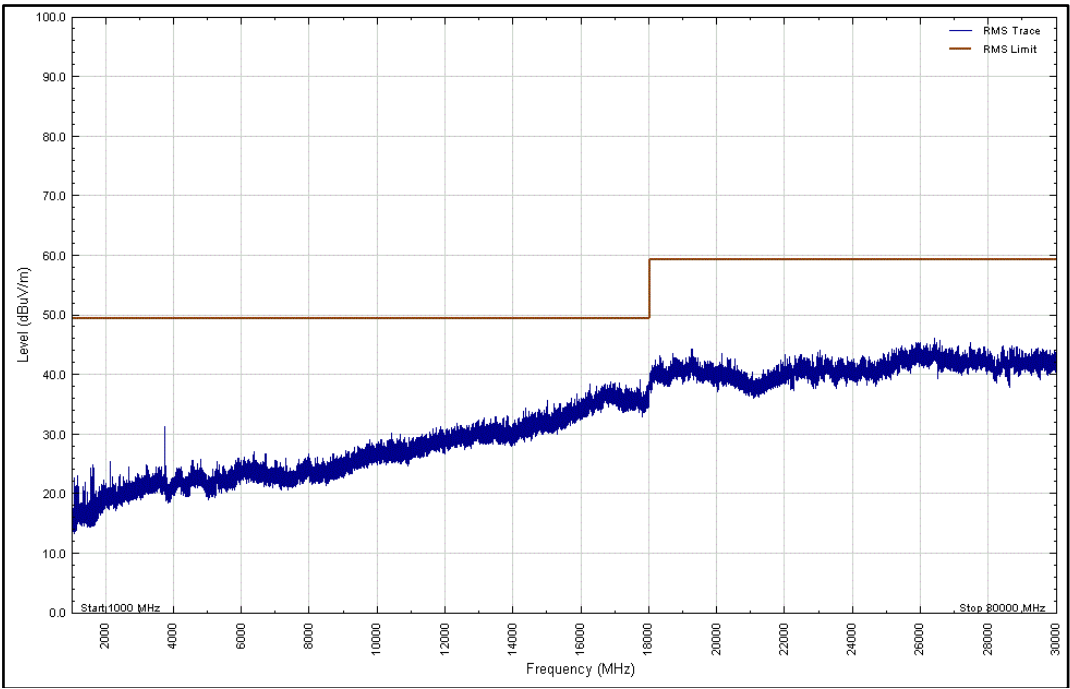


Figure 12 - 1 GHz to 30 GHz – Polarity: Horizontal, EUT Orientation: Y - Average

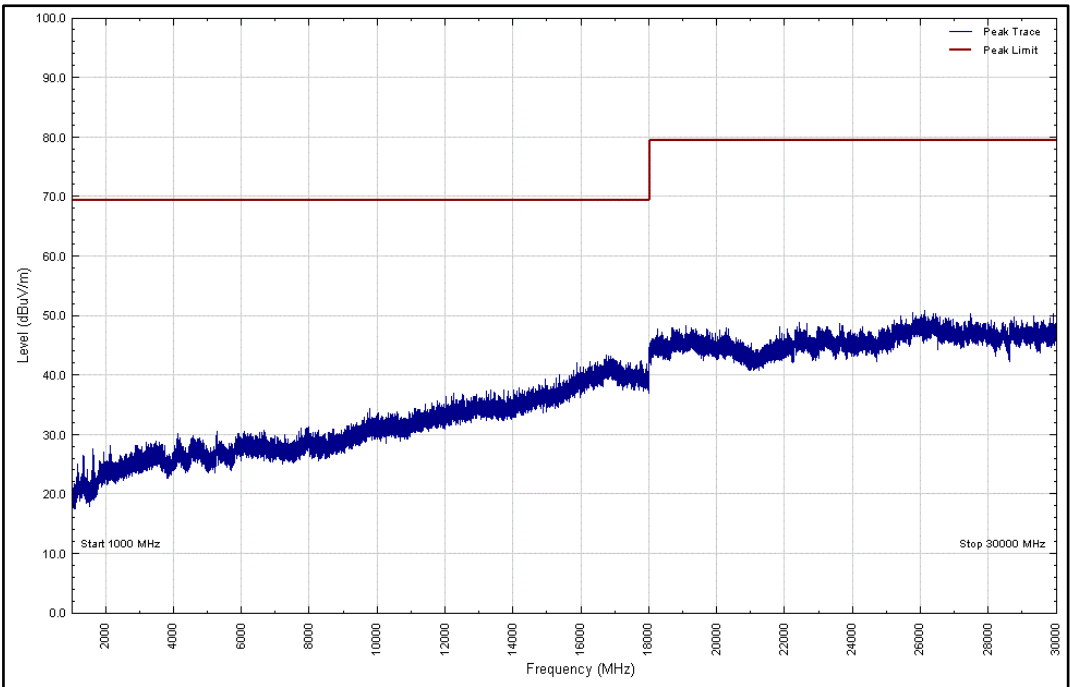


Figure 13 - 1 GHz to 30 GHz – Polarity: Vertical, EUT Orientation: Y - Peak

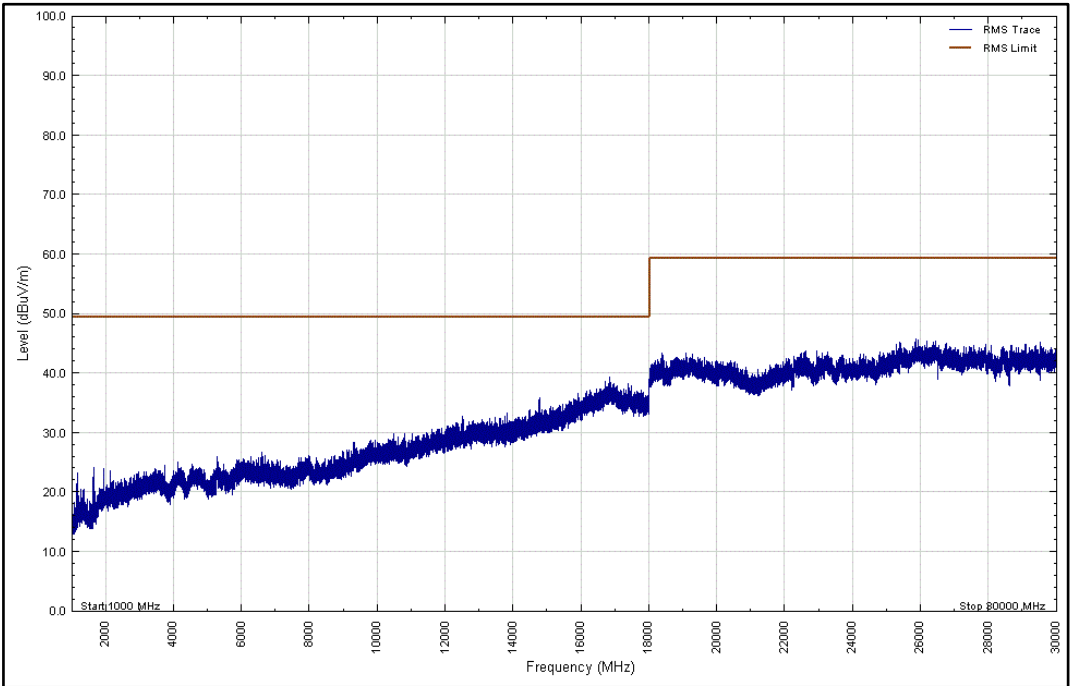


Figure 14 - 1 GHz to 30 GHz – Polarity: Vertical, EUT Orientation: Y – Average



Product Service

| Frequency<br>(GHz) | Result (dBµV/m) |         | Limit (dBµV/m) |         | Margin (dBµV/m) |         |
|--------------------|-----------------|---------|----------------|---------|-----------------|---------|
|                    | Peak            | Average | Peak           | Average | Peak            | Average |
| *                  |                 |         |                |         |                 |         |

Table 8 - 1 GHz to 30 GHz - EUT Orientation: Y

\*No emissions were detected within 10 dB of the limit.

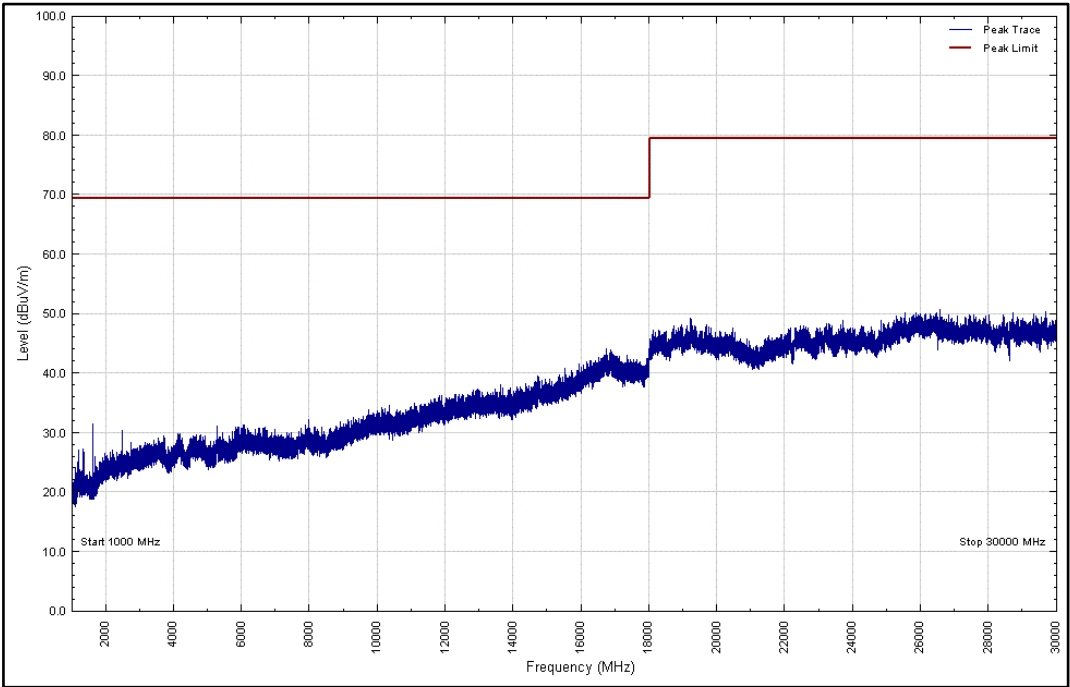


Figure 15 - 1 GHz to 30 GHz – Polarity: Horizontal, EUT Orientation: Z - Peak

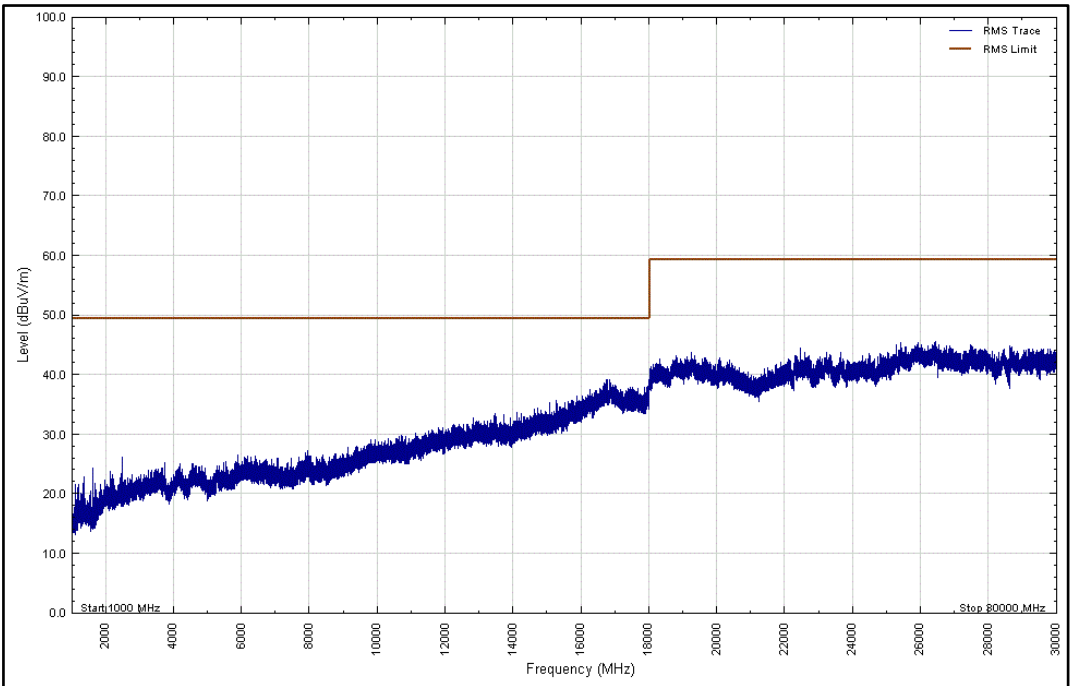


Figure 16 - 1 GHz to 30 GHz – Polarity: Horizontal, EUT Orientation: Z - Average

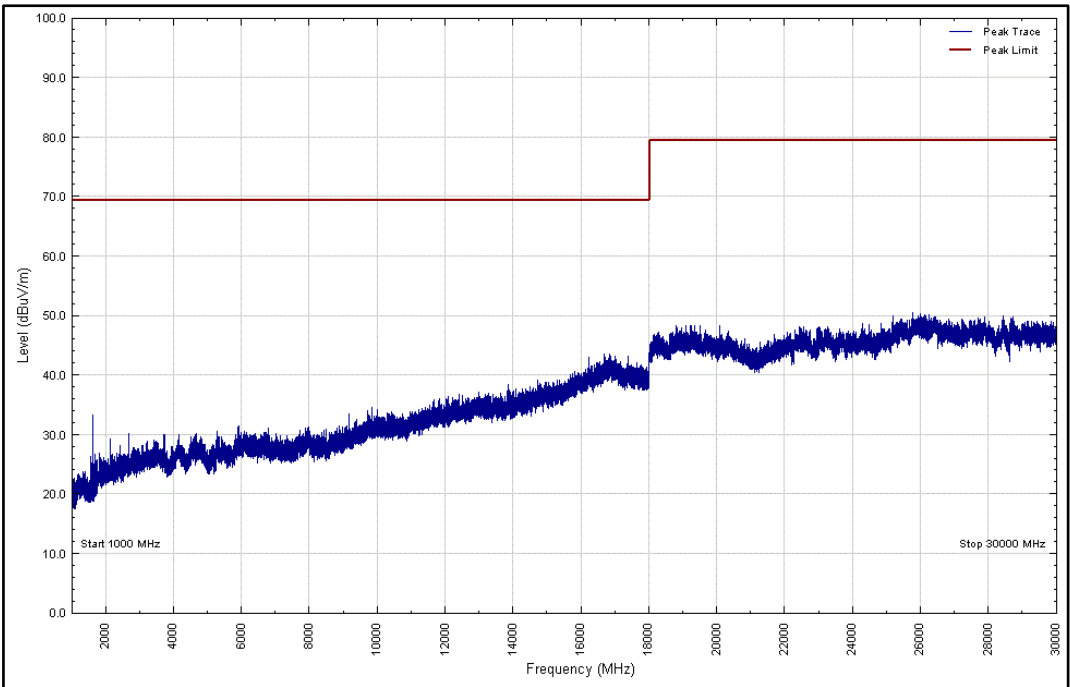


Figure 17 - 1 GHz to 30 GHz – Polarity: Vertical, EUT Orientation: Z - Peak

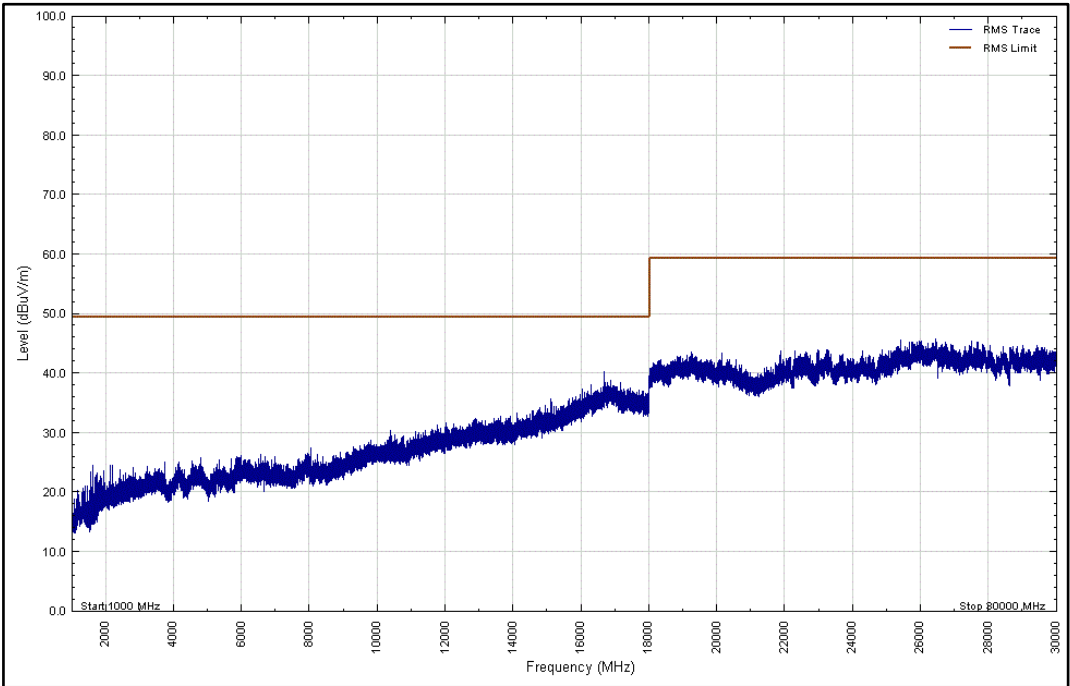


Figure 18 - 1 GHz to 30 GHz – Polarity: Vertical, EUT Orientation: Z - Average



| Frequency (GHz) | Result (dBµV/m) |         | Limit (dBµV/m) |         | Margin (dBµV/m) |         |
|-----------------|-----------------|---------|----------------|---------|-----------------|---------|
|                 | Peak            | Average | Peak           | Average | Peak            | Average |
| *               |                 |         |                |         |                 |         |

Table 9 - 1 GHz to 30 GHz - EUT Orientation: Z

\*No emissions were detected within 10 dB of the limit.

FCC 47 CFR Part 15, Limit Clause 15.109

| Frequency of Emission (MHz) | Field Strength (µV/m) |
|-----------------------------|-----------------------|
| 30 to 88                    | 100.0                 |
| 88 to 216                   | 150.0                 |
| 216 to 960                  | 200.0                 |
| Above 960                   | 500.0                 |

Table 10



## 2.1.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

| Instrument                           | Manufacturer        | Type No             | TE No | Calibration Period (months) | Calibration Due |
|--------------------------------------|---------------------|---------------------|-------|-----------------------------|-----------------|
| Pre-Amplifier                        | Phase One           | PS04-0086           | 1533  | 12                          | 12-Jan-2019     |
| Screened Room (5)                    | Rainford            | Rainford            | 1545  | 36                          | 18-Jul-2019     |
| Turntable Controller                 | Inn-Co GmbH         | CO 1000             | 1606  | -                           | TU              |
| Multimeter                           | Iso-tech            | IDM101              | 2417  | 12                          | 02-Oct-2018     |
| Antenna (Bilog)                      | Chase               | CBL6143             | 2904  | 24                          | 08-Aug-2019     |
| EMI Test Receiver                    | Rohde & Schwarz     | ESU40               | 3506  | 12                          | 22-Nov-2018     |
| Termination (50ohm)                  | Meca                | 405-1               | 3512  | 12                          | 01-Nov-2018     |
| Termination (50ohm)                  | Meca                | 405-1               | 3516  | 12                          | 01-Nov-2018     |
| 1GHz to 8GHz Low Noise Amplifier     | Wright Technologies | APS04-0085          | 4365  | 12                          | 18-Oct-2018     |
| Cable (Rx, Nm-Nm, 7m)                | Scott Cables        | SLU18-NMNM-07.00M   | 4498  | 6                           | 19-Jun-2018     |
| Cable (Rx, Km-Km 2m)                 | Scott Cables        | KPS-1501-2000-KPS   | 4526  | 6                           | 02-Jul-2018     |
| Cable (Rx, SMAM-SMAM 0.5m)           | Scott Cables        | SLSLL18-SMSM-00.50M | 4528  | 6                           | 15-Aug-2018     |
| Double Ridged Waveguide Horn Antenna | ETS-Lindgren        | 3117                | 4722  | 12                          | 01-Mar-2019     |
| Mast Controller                      | Maturo GmbH         | NCD                 | 4810  | -                           | TU              |
| Tilt Antenna Mast                    | Maturo GmbH         | TAM 4.0-P           | 4811  | -                           | TU              |
| Double Ridge Broadband Horn Antenna  | Schwarzbeck         | BBHA 9120 B         | 4848  | 12                          | 12-Feb-2019     |
| 4dB Attenuator                       | Pasternack          | PE7047-4            | 4935  | 12                          | 28-Nov-2018     |
| Quad Power Supply                    | Rohde & Schwarz     | HMP4040             | 4955  | -                           | O/P Mon         |
| Hygrometer                           | Rotronic            | HP21                | 4989  | 12                          | 26-Apr-2019     |

**Table 11**

TU – Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment



### 3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

| Test Name            | Measurement Uncertainty                                                                     |
|----------------------|---------------------------------------------------------------------------------------------|
| Radiated Disturbance | 30 MHz to 1 GHz, Bilog Antenna, $\pm 5.2$ dB<br>1 GHz to 40 GHz, Horn Antenna, $\pm 6.3$ dB |

Table 12