

FCC and ISED Test Report

Inmarsat Solutions B.V.
IsatPhone, Model: IsatPhone 2 (Model 2.1)

In accordance with FCC 47 CFR Part 15B and ICES-003

Prepared for: Inmarsat Global Ltd
99 City Road
London
EC1Y 1AX
UNITED KINGDOM



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FCC ID: YCT-ISATPHONE2W IC: 8944A-ISATPHONE2W

COMMERCIAL-IN-CONFIDENCE

Document 75948707-02 Issue 01

| SIGNATURE | | | |
|-------------|-----------------|----------------------|------------------|
| NAME | JOB TITLE | RESPONSIBLE FOR | ISSUE DATE |
| Andy Lawson | Senior Engineer | Authorised Signatory | 9 September 2020 |

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD 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 and ICES-003. The sample tested was found to comply with the requirements defined in the applied rules.

| RESPONSIBLE FOR | NAME | DATE | SIGNATURE |
|-----------------|---------------|------|-----------|
| Testing | Graeme Lawler | | |
| Testing | Colin McKean | | |

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

ISED Accreditation
12669A 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: 2019 and ICES-003: 2016 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 | 9 September 2020 |

Table 1

1.2 Introduction

| | |
|-------------------------------|---|
| Applicant | Inmarsat Global Ltd |
| Manufacturer | Inmarsat Solutions B.V. |
| Model Number(s) | IsatPhone 2 (Model 2.1) |
| Serial Number(s) | IMEI: 3540061100000259 |
| Hardware Version(s) | HW 2800 |
| Software Version(s) | Isat2.1-V01.00.11 |
| Number of Samples Tested | 1 |
| Test Specification/Issue/Date | FCC 47 CFR Part 15B: 2019 ICES-003: 2016 |
| Order Number | 146810 |
| Date | 30-March-2020 |
| Date of Receipt of EUT | 05-June-2020 |
| Start of Test | 08-July-2020 |
| Finish of Test | 10-July-2020 |
| Name of Engineer(s) | Graeme Lawler and Colin McKean |
| Related Document(s) | ANSI C63.4: 2014 |



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15B and ICES-003 is shown below.

| Section | Specification Clause | | Test Description | Result | Comments/Base Standard |
|---|----------------------|-----|--|--------|------------------------|
| Configuration and Mode: AC charger connected - Idle | | | | | |
| 2.1 | 15.107 | 6.1 | Conducted Disturbance at Mains Terminals | Pass | ANSI C63.4: 2014 |
| 2.2 | 15.109 | 6.2 | Radiated Disturbance | Pass | ANSI C63.4: 2014 |

Table 2



1.4 Customer Supplied Form

Equipment Description

| | | |
|--|--|--|
| Technical Description: <i>(Please provide a brief description of the intended use of the equipment including the technologies the product supports)</i> | Handheld Satellite phone for Inmarsat GMR2+ satellite network system | |
| Manufacturer: | Inmarsat Solutions B.V. | |
| Model: | IsatPhone 2 (Model 2.1) | |
| Part Number: | 10207791 | |
| Hardware Version: | HW 2800 | |
| Software Version: | Isat2.1-V01.00.11 | |
| FCC ID of the product under test – see guidance here | YCT-ISATPHONE2W | |
| IC ID of the product under test – see guidance here | 8944A-ISATPHONE2W | |

Intentional Radiators

| | |
|--|--|
| Technology | GMR2+ |
| Frequency Range (MHz to MHz) | Tx: GMR2+ 1626.5 – 1660.5 MHz, 1668 – 1675 MHz (ext band) Rx: GMR2+ 1525 – 1559 MHz, 1518 – 1525 MHz (ext band) |
| Conducted Declared Output Power (dBm) | +33.5 dBm (+31.0 dBm ext band) |
| Antenna Gain (dBi) | 2.8 |
| Supported Bandwidth(s) (MHz) (e.g 1 MHz, 20 MHz, 40 MHz) | 200 kHz |
| Modulation Scheme(s) (e.g GFSK, QPSK etc) | Tx: GMSK Rx: OQPSK |
| ITU Emission Designator (see guidance here) | 50K0G7W |
| Bottom Frequency (MHz) | 1626.675 (CH 0) |
| Middle Frequency (MHz) | 1643.675 (CH 85) |
| Top Frequency (MHz) | 1674.825 (CH 204) |

Un-intentional Radiators

| | |
|---|----------|
| Highest frequency generated or used in the device or on which the device operates or tunes | 3350 MHz |
| Lowest frequency generated or used in the device or on which the device operates or tunes | NA |
| Class A Digital Device (Use in commercial, industrial or business environment) <input type="checkbox"/> | |
| Class B Digital Device (Use in residential environment only) <input checked="" type="checkbox"/> | |

DC Power Source

| | | |
|------------------------|------|---|
| Nominal voltage: | 3.7 | V |
| Extreme upper voltage: | 4.2 | V |
| Extreme lower voltage: | 3.55 | V |
| Max current: | 4 | A |



Battery Power Source

| | | |
|---|----------------|---|
| Voltage: | 3.7 | V |
| End-point voltage: | 3.2 | V (Point at which the battery will terminate) |
| Alkaline <input type="checkbox"/> Leclanche <input checked="" type="checkbox"/> Lithium <input type="checkbox"/> Nickel Cadmium <input type="checkbox"/> Lead Acid* <input type="checkbox"/> *(Vehicle regulated) | | |
| Other <input type="checkbox"/> | Please detail: | |

Charging

| | |
|---|---|
| Can the EUT transmit whilst being charged | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

Temperature

| | | |
|----------------------|-----|----|
| Minimum temperature: | -20 | °C |
| Maximum temperature: | +55 | °C |

Antenna Characteristics

| | | | |
|---|-----------------|-------------------|------|
| Antenna connector <input checked="" type="checkbox"/> | State impedance | 50 | Ohm |
| Temporary antenna connector <input type="checkbox"/> | State impedance | | Ohm |
| Integral antenna <input checked="" type="checkbox"/> | Type: | Quadrifilar Helix | Gain |
| | | | 2.8 |
| | | | dBi |
| External antenna <input type="checkbox"/> | Type: | | Gain |
| | | | dBi |
| For external antenna only: Standard Antenna Jack <input type="checkbox"/> If yes, describe how user is prohibited from changing antenna (if not professional installed): Equipment is only ever professionally installed <input type="checkbox"/> Non-standard Antenna Jack <input type="checkbox"/> | | | |

Ancillaries (if applicable)

| ANCILLARIES (if applicable) | | | |
|-----------------------------|----------------------------------|--|--|
| MANUFACTURING DESCRIPTION | External power supply | | |
| MANUFACTURER | Shenzhen Honor Electronic Co Ltd | | |
| TYPE | ADS-6AE-06-05060E | | |
| PART NUMBER | - | | |
| SERIAL NUMBER | - | | |
| COUNTRY OF ORIGIN | China | | |

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

Name: Alison Horrocks
 Position held: Director
 Date: 03/09/2020



1.5 Product Information

1.5.1 Technical Description

The Equipment under test (EUT) was an Inmarsat, IsatPhone 2.1 Handset.

The primary function of the EUT is as a satellite communication device.

Additionally, the EUT has functionality to send E-mails and has SMS capabilities.

1.5.2 EUT Port/Cable Identification

| Port | Max Cable Length specified | Usage | Type | Screened |
|---|----------------------------|----------------------------|----------------------|----------|
| Configuration and Mode: AC charger connected - Idle | | | | |
| Signal Port | 1.15 m | Connection to Headphones | Audio Cable | No |
| AC Power Port Live Line | 1 m | Power for charging the EUT | 230 V AC/ DC Adaptor | No |
| AC Power Port Neutral Line | 1 m | Power for charging the EUT | 230 V AC/ DC Adaptor | No |
| AC Power Port | 1 m | Power for charging the EUT | 230 V AC/ DC Adaptor | No |

Table 3

1.5.3 Test Configuration

| Configuration | Description |
|----------------------|--|
| AC charger connected | The EUT was fitted with a discharged battery and powered from 117 V 60 Hz AC power supply. An earphone was connected to the EUTs audio output port. |

Table 4

1.5.4 Modes of Operation

| Mode | Description |
|------|---|
| Idle | The EUT was configured to receive on 1538.5 MHz. All transmitters were idle. |

Table 5

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 |
|--|---|------------------------|--------------------------|
| Model: IsatPhone 2 (Model 2.1), Serial Number: IMEI: 354006110000259 | | | |
| 0 | As supplied by the customer | Not Applicable | Not Applicable |

Table 6

1.8 Test Location

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

| Test Name | Name of Engineer(s) | Accreditation |
|---|---------------------|---------------|
| Configuration and Mode: AC charger connected - Idle | | |
| Radiated Disturbance | Graeme Lawler | UKAS |
| Conducted Disturbance at Mains Terminals | Colin McKean | UKAS |

Table 7

Office Address:

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



2 Test Details

2.1 Conducted Disturbance at Mains Terminals

2.1.1 Specification Reference

FCC 47 CFR Part 15B, Clause 15.107
ICES-003, Clause 6.1

2.1.2 Equipment Under Test and Modification State

IsatPhone 2 (Model 2.1), S/N: IMEI: 3540061100000259 - Modification State 0

2.1.3 Date of Test

10-July-2020

2.1.4 Test Method

The EUT was setup according to ANSI C63.4, clause 5.2.

The EUT was placed on a non-conductive table 0.8 m above a reference ground plane. A vertical coupling plane was placed 0.4 m from the EUT boundary.

A Line Impedance Stabilisation Network (LISN) was directly bonded to the ground-plane. The EUT was located so that the distance between the boundary of the EUT and the closest surface of the LISN was 0.8 m.

Interconnecting cables that hanged closer than 0.4 m to the ground plane were folded back and forth in the centre forming a bundle 0.3 m to 0.4 m long.

Input and output cables were terminated with equipment or loads representative of real usage conditions.

The EUT was configured to give the highest level of emissions within reason of a typical installation as described by the manufacturer.

2.1.5 Example Calculation

Quasi-Peak level (dB μ V) = Receiver level (dB μ V) + Correction Factor (dB)
Margin (dB) = Quasi-Peak level (dB μ V) - Limit (dB μ V)

CISPR Average level (dB μ V) = Receiver level (dB μ V) + Correction Factor (dB)
Margin (dB) = CISPR Average level (dB μ V) - Limit (dB μ V)

2.1.6 Example Test Setup Diagram

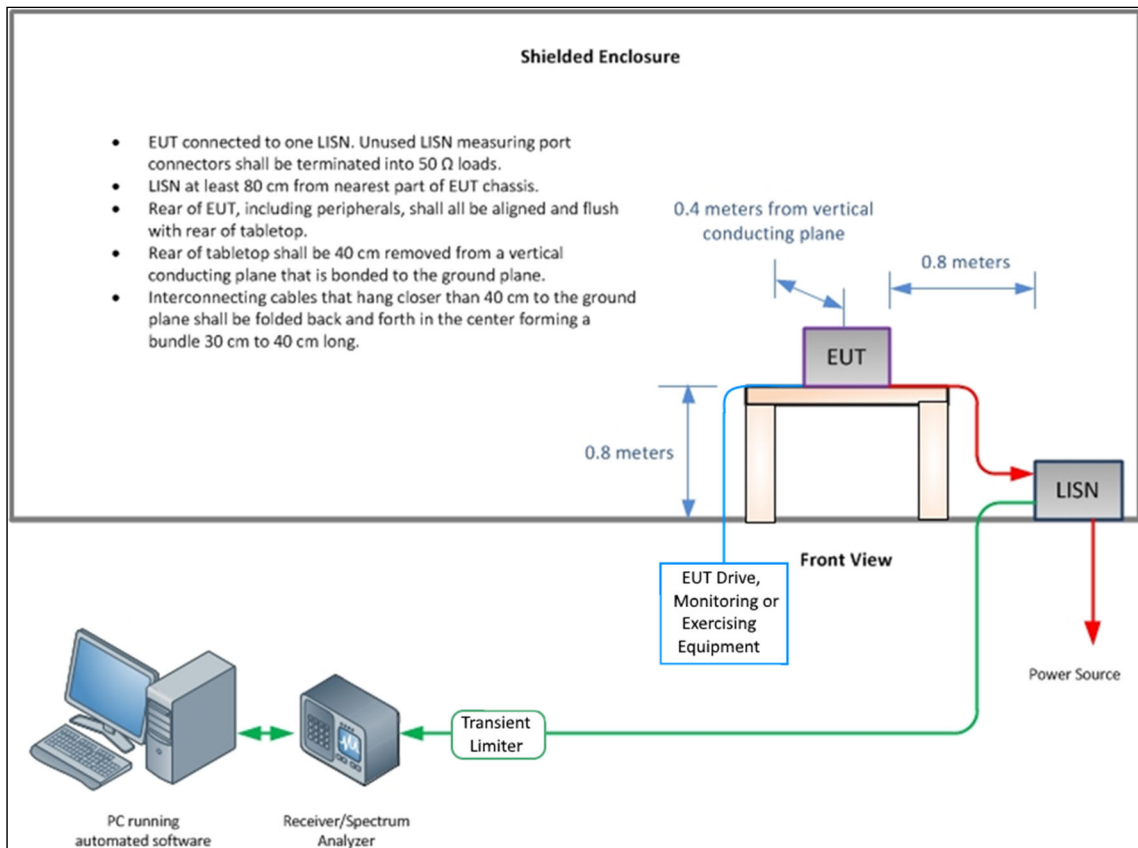


Figure 1 - Conducted Disturbance Example Test Setup

2.1.7 Environmental Conditions

Ambient Temperature 21.0 °C
 Relative Humidity 55.0 %

2.1.8 Specification Limits

| Required Specification Limits - Class B | | | |
|---|-----------------------|------------------------------|---------------------------------|
| Line Under Test | Frequency Range (MHz) | Quasi-Peak Test Limit (dBμV) | CISPR Average Test Limit (dBμV) |
| AC Power Port | 0.15 to 0.5 | 66 to 56 ⁽¹⁾ | 56 to 46 ⁽¹⁾ |
| | 0.5 to 5 | 56 | 46 |
| | 5 to 30 | 60 | 50 |

Supplementary information:
 Note 1. Decreases with the logarithm of the frequency.

Table 8



2.1.9 Test Results

Results for Configuration and Mode: AC charger connected - Idle.

This test was performed to the requirements of the Class B limits.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

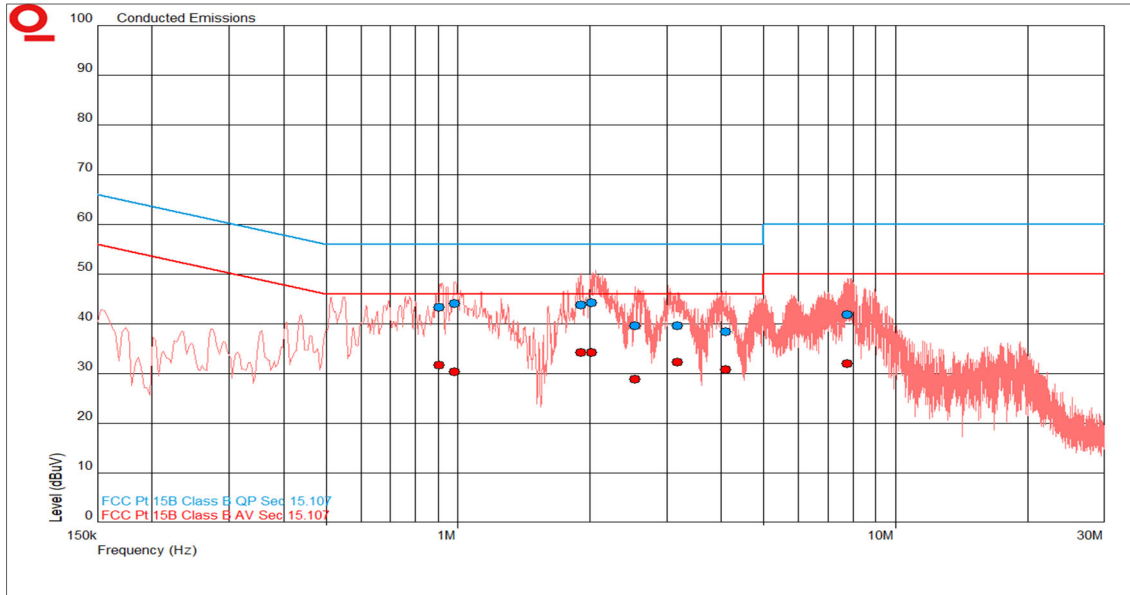


Figure 2 - Graphical Results - AC Power Port Live Line

| Frequency (MHz) | QP Level (dBµV) | QP Limit (dBµV) | QP Margin (dB) | CISPR Average Level (dBµV) | CISPR Average Limit (dBµV) | CISPR Average Margin (dB) |
|-----------------|-----------------|-----------------|----------------|----------------------------|----------------------------|---------------------------|
| 0.908 | 43.4 | 56.0 | -12.6 | 31.7 | 46.0 | -14.3 |
| 0.982 | 44.1 | 56.0 | -11.9 | 30.4 | 46.0 | -15.6 |
| 1.908 | 43.8 | 56.0 | -12.2 | 34.3 | 46.0 | -11.7 |
| 2.021 | 44.3 | 56.0 | -11.7 | 34.2 | 46.0 | -11.8 |
| 2.541 | 39.6 | 56.0 | -16.4 | 29.0 | 46.0 | -17.0 |
| 3.170 | 39.6 | 56.0 | -16.4 | 32.3 | 46.0 | -13.7 |
| 4.098 | 38.4 | 56.0 | -17.6 | 30.8 | 46.0 | -15.2 |
| 7.747 | 41.9 | 60.0 | -18.1 | 32.0 | 50.0 | -18.0 |

Table 9

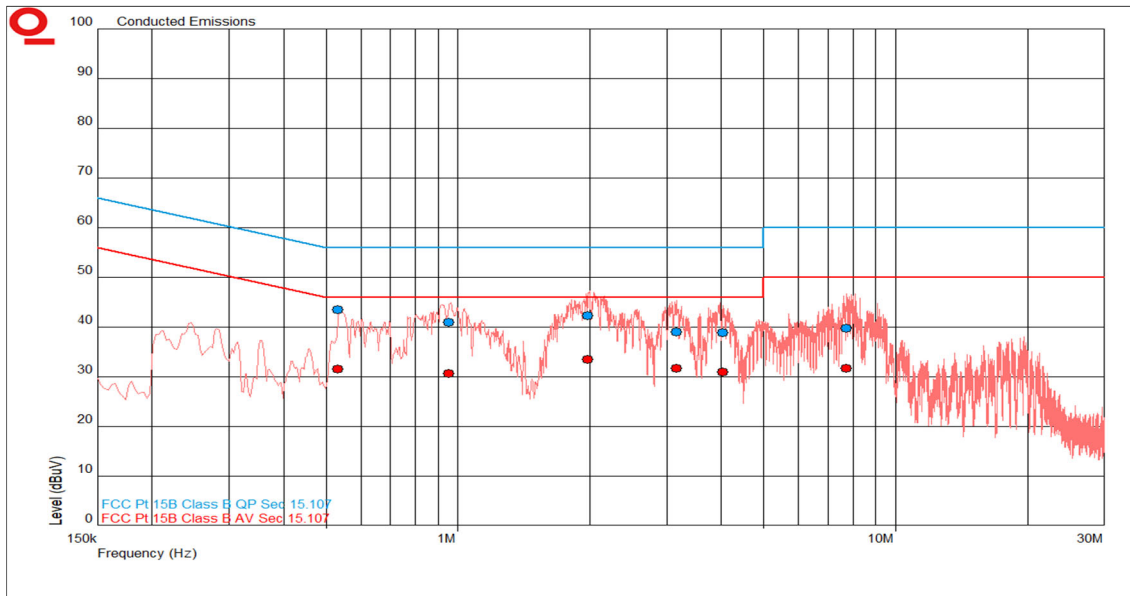


Figure 3 - Graphical Results - AC Power Port Neutral Line

| Frequency (MHz) | QP Level (dBµV) | QP Limit (dBµV) | QP Margin (dB) | CISPR Average Level (dBµV) | CISPR Average Limit (dBµV) | CISPR Average Margin (dB) |
|-----------------|-----------------|-----------------|----------------|----------------------------|----------------------------|---------------------------|
| 0.532 | 43.5 | 56.0 | -12.5 | 31.6 | 46.0 | -14.4 |
| 0.956 | 41.0 | 56.0 | -15.0 | 30.7 | 46.0 | -15.3 |
| 1.984 | 42.3 | 56.0 | -13.7 | 33.5 | 46.0 | -12.5 |
| 3.154 | 39.0 | 56.0 | -17.0 | 31.7 | 46.0 | -14.3 |
| 4.023 | 38.9 | 56.0 | -17.1 | 31.0 | 46.0 | -15.0 |
| 7.719 | 39.8 | 60.0 | -20.2 | 31.8 | 50.0 | -18.2 |

Table 10

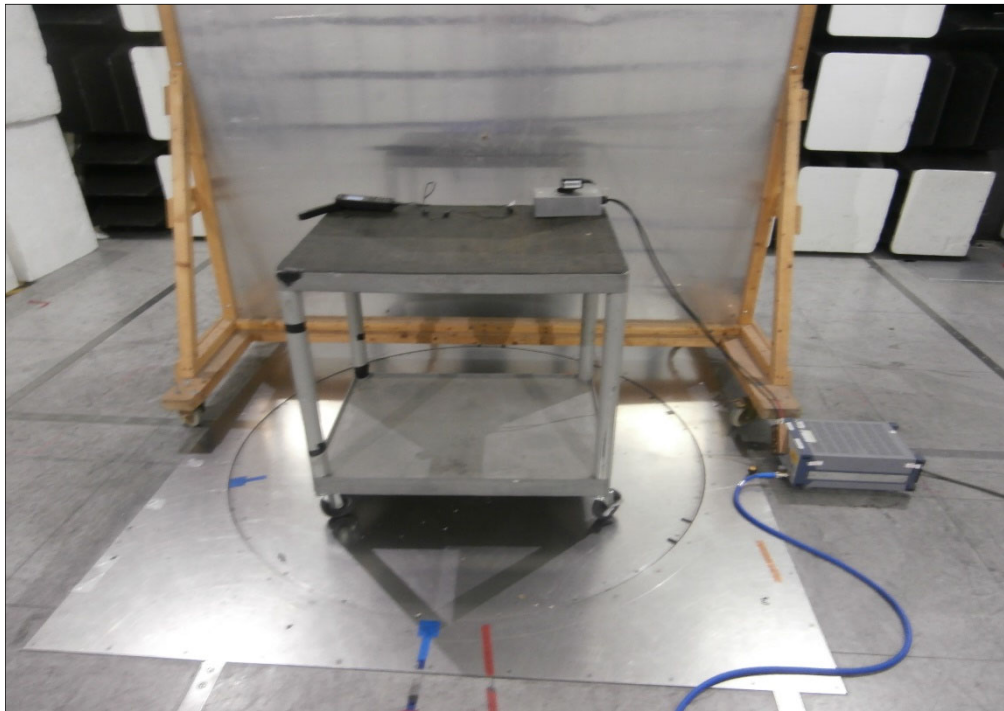


Figure 4 - Test Setup

2.1.10 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 |
|------------------------|-----------------|----------------------|--------|-----------------------------|-----------------|
| Screened Room (5) | Rainford | Rainford | 1545 | 36 | 23-Jan-2021 |
| Compliance 5 Emissions | Teseq | V5.26.51 | 3275 | - | N/A - Software |
| EMI Test Receiver | Rohde & Schwarz | ESU40 | 3506 | 12 | 3-Jan-2021 |
| Transient Limiter | Hewlett Packard | 11947A | 2378 | 12 | 4-Oct-2020 |
| 8m N Type Cable | Junkosha | MWX221-08000NMSNMS/B | 5519 | 12 | 24-Mar-2021 |
| Cable (18 GHz) | Rosenberger | LU7-036-2000 | 5039 | 12 | 6-Oct-2020 |
| LISN | Rohde & Schwarz | ESH3-Z5 | 1390 | 12 | 27-Jan-2021 |

Table 11



2.2 Radiated Disturbance

2.2.1 Specification Reference

FCC 47 CFR Part 15B, Clause 15.109
ICES-003, Clause 6.2

2.2.2 Equipment Under Test and Modification State

IsatPhone 2 (Model 2.1), S/N: IMEI: 3540061100000259 - Modification State 0

2.2.3 Date of Test

08-July-2020

2.2.4 Test Method

The EUT was set up on a non-conductive table 0.8 m above a reference ground plane within a semi-anechoic chamber on a remotely controlled turntable.

A pre-scan of the EUT emissions profile using a peak detector was made at a 3 m antenna distance whilst varying the antenna-to-EUT azimuth and polarisation.

For an EUT which could reasonable be used in multiple planes, pre-scans were performed with the EUT orientated in X, Y and Z planes with reference to the ground plane.

Using a list of the highest emissions detected during the pre-scan along with their bearing and associated antenna polarisation, the EUT was then formally measured using a Quasi-Peak, Peak or CISPR Average detector as appropriate.

The readings were maximised by adjusting the antenna height, polarisation and turntable azimuth, in accordance with the specification.

2.2.5 Example Calculation

Below 1 GHz:

$$\begin{aligned} \text{Quasi-Peak level (dB}\mu\text{V/m)} &= \text{Receiver level (dB}\mu\text{V)} + \text{Correction Factor (dB/m)} \\ \text{Margin (dB)} &= \text{Quasi-Peak level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)} \end{aligned}$$

Above 1 GHz:

$$\begin{aligned} \text{CISPR Average level (dB}\mu\text{V/m)} &= \text{Receiver level (dB}\mu\text{V)} + \text{Correction Factor (dB/m)} \\ \text{Margin (dB)} &= \text{CISPR Average level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)} \end{aligned}$$

$$\begin{aligned} \text{Peak level (dB}\mu\text{V/m)} &= \text{Receiver level (dB}\mu\text{V)} + \text{Correction Factor (dB/m)} \\ \text{Margin (dB)} &= \text{Peak level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)} \end{aligned}$$

2.2.6 Example Test Setup Diagram

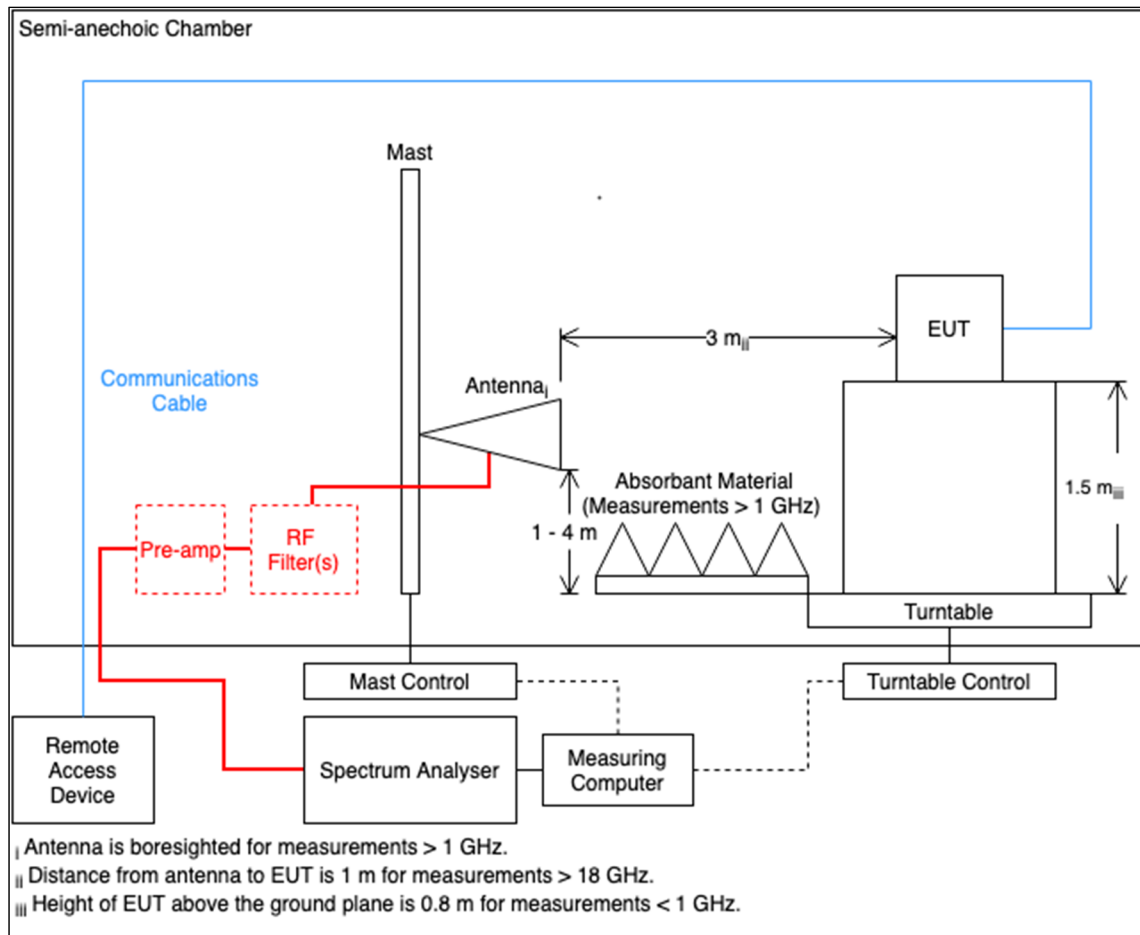


Figure 5

2.2.7 Environmental Conditions

Ambient Temperature 20.1 °C
 Relative Humidity 75.9 %

2.2.8 Specification Limits

| Required Specification Limits, Field Strength - Class B Test Limit at a 3 m Measurement Distance | | |
|--|-------------------|---------------------|
| Frequency Range (MHz) | Test Limit (µV/m) | Test Limit (dBµV/m) |
| 30 to 88 | 100 | 40.0 |
| 88 to 216 | 150 | 43.5 |
| 216 to 960 | 200 | 46.0 |
| Above 960 | 500 | 54.0 |

Supplementary information:
 Note 1. A Quasi-peak detector is to be used for measurements below 1 GHz.
 Note 2. A CISPR Average detector is to be used for measurements above 1 GHz.
 Note 3. The Peak test limit above 1 GHz is 20 dB higher than the CISPR Average test limit.

Table 12

2.2.9 Test Results

Results for Configuration and Mode: AC charger connected - Idle.

This test was performed to the requirements of the Class B limits.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Highest frequency generated or used within the EUT: 3350 MHz

Which necessitates an upper frequency test limit of: 18 GHz

The EUT is handheld, body-worn, or ceiling-mounted equipment and has therefore been tested in three different orientations in accordance with ANSI C63.4, Clause 6.3.2.1.

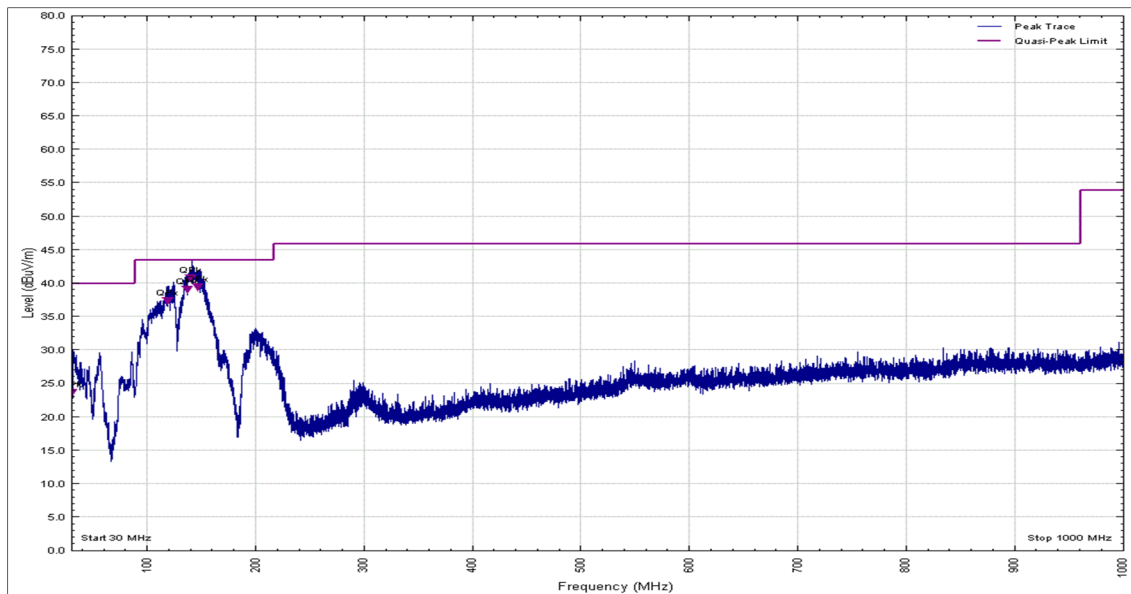


Figure 6 - 30 MHz to 1 GHz, Quasi-Peak, Vertical - X Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| 31.063 | 22.7 | 40.0 | -17.3 | Q-Peak | 267 | 399 | Vertical | X |
| 118.819 | 36.5 | 43.5 | -7.0 | Q-Peak | 326 | 100 | Vertical | X |
| 137.598 | 38.2 | 43.5 | -5.3 | Q-Peak | 196 | 100 | Vertical | X |
| 140.583 | 39.9 | 43.5 | -3.6 | Q-Peak | 218 | 102 | Vertical | X |
| 146.886 | 38.6 | 43.5 | -5.0 | Q-Peak | 227 | 101 | Vertical | X |

Table 13

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

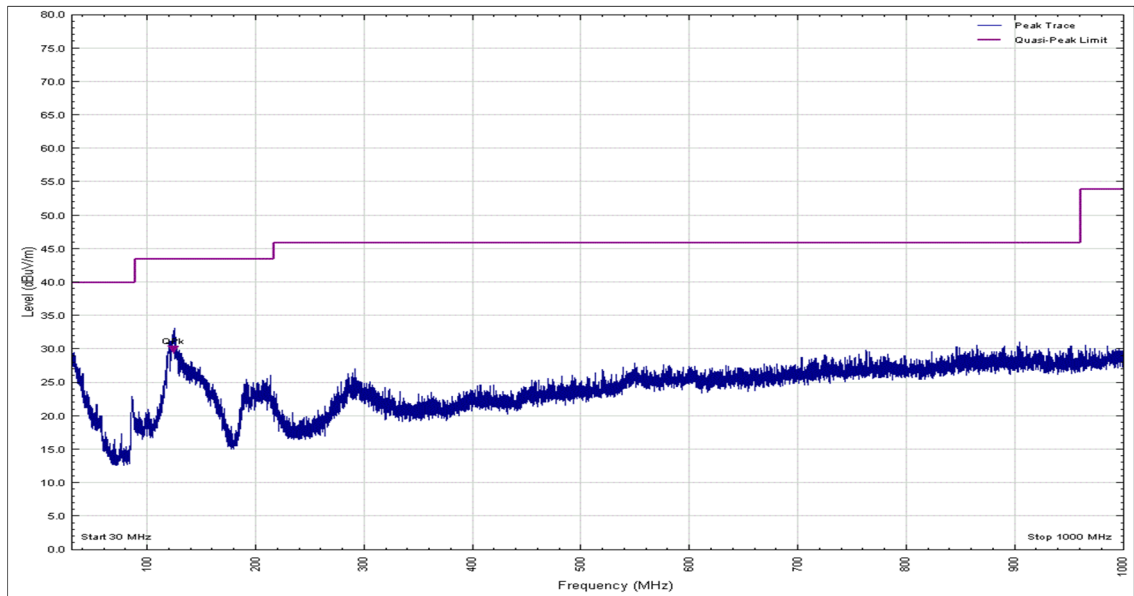


Figure 7 - 30 MHz to 1 GHz, Quasi-Peak, Horizontal - X Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| 124.653 | 29.1 | 43.5 | -14.4 | Q-Peak | 293 | 250 | Horizontal | X |

Table 14

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

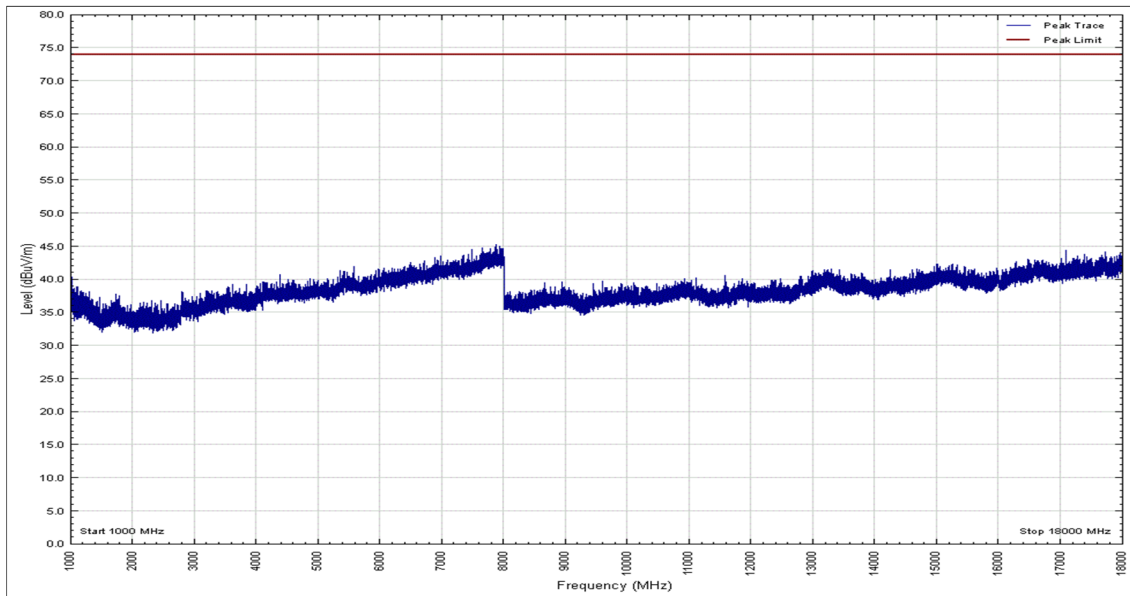


Figure 8 - 1 GHz to 18 GHz, Peak, Vertical - X Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 15

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

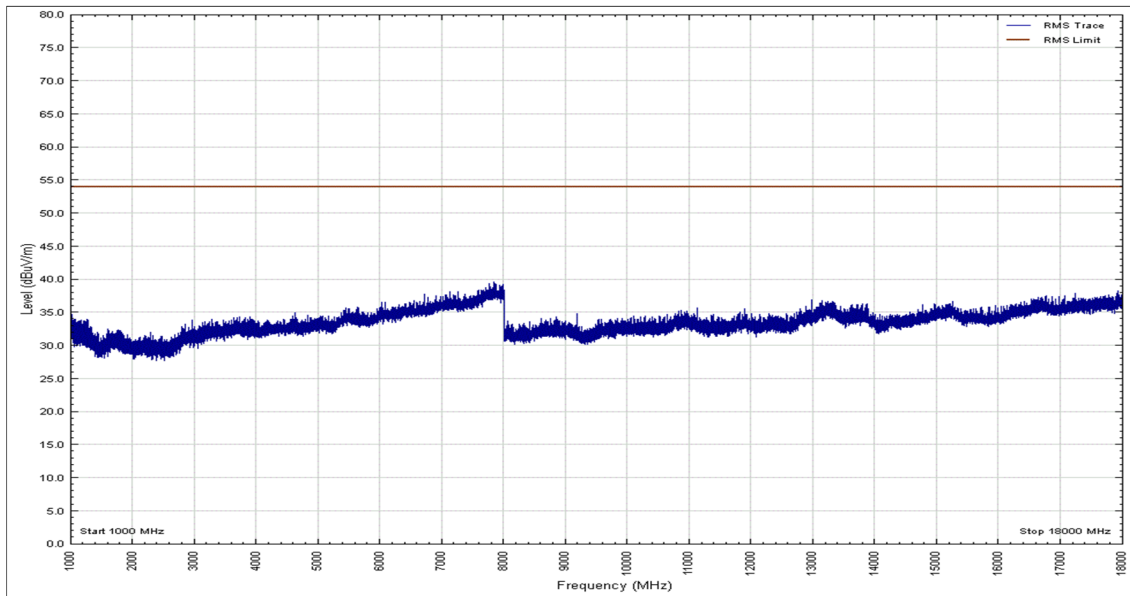


Figure 9 - 1 GHz to 18 GHz, CISPR Average, Vertical - X Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 16

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

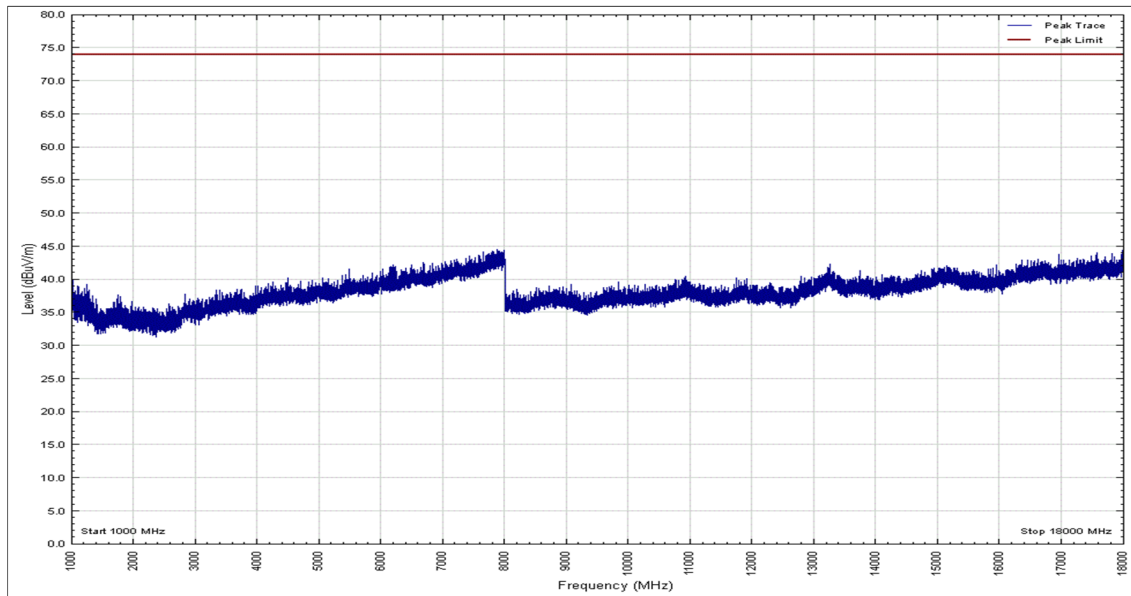


Figure 10 - 1 GHz to 18 GHz, Peak, Horizontal - X Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 17

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

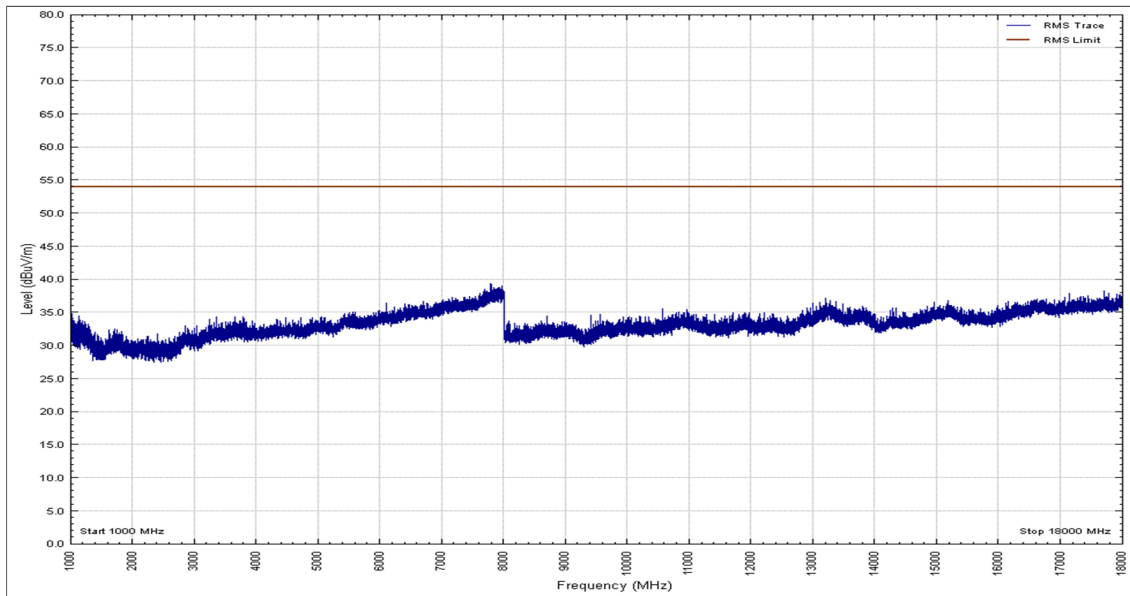


Figure 11 - 1 GHz to 18 GHz, CISPR Average, Horizontal - X Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 18

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

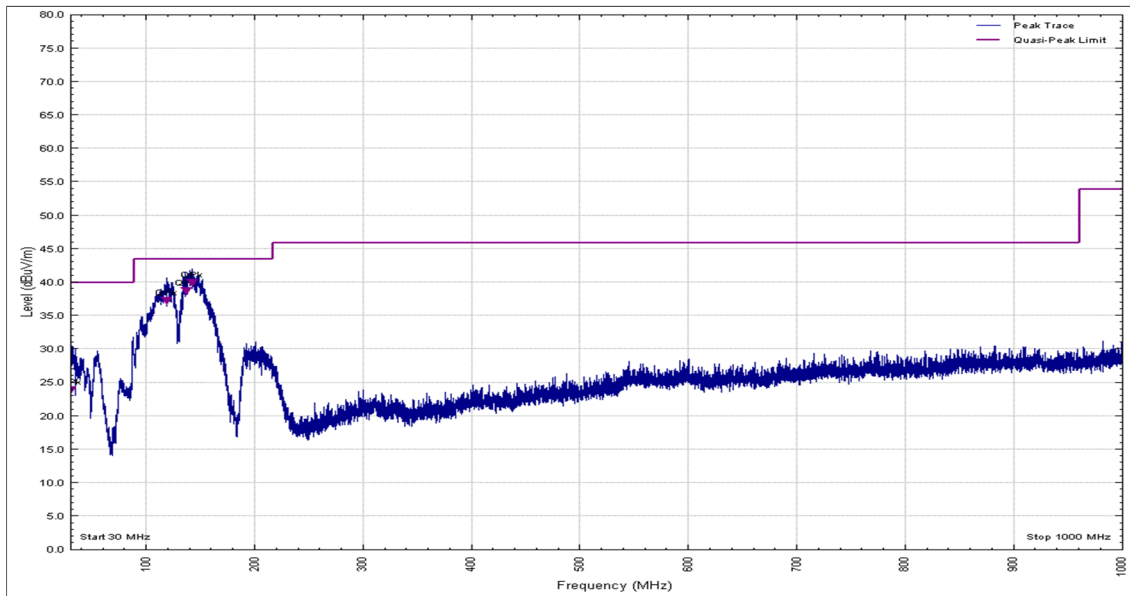


Figure 12 - 30 MHz to 1 GHz, Quasi-Peak, Vertical - Y Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| 30.184 | 23.0 | 40.0 | -17.0 | Q-Peak | 284 | 192 | Vertical | Y |
| 118.745 | 36.4 | 43.5 | -7.1 | Q-Peak | 360 | 100 | Vertical | Y |
| 136.719 | 37.9 | 43.5 | -5.6 | Q-Peak | 185 | 100 | Vertical | Y |
| 142.317 | 39.1 | 43.5 | -4.4 | Q-Peak | 229 | 101 | Vertical | Y |

Table 19

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

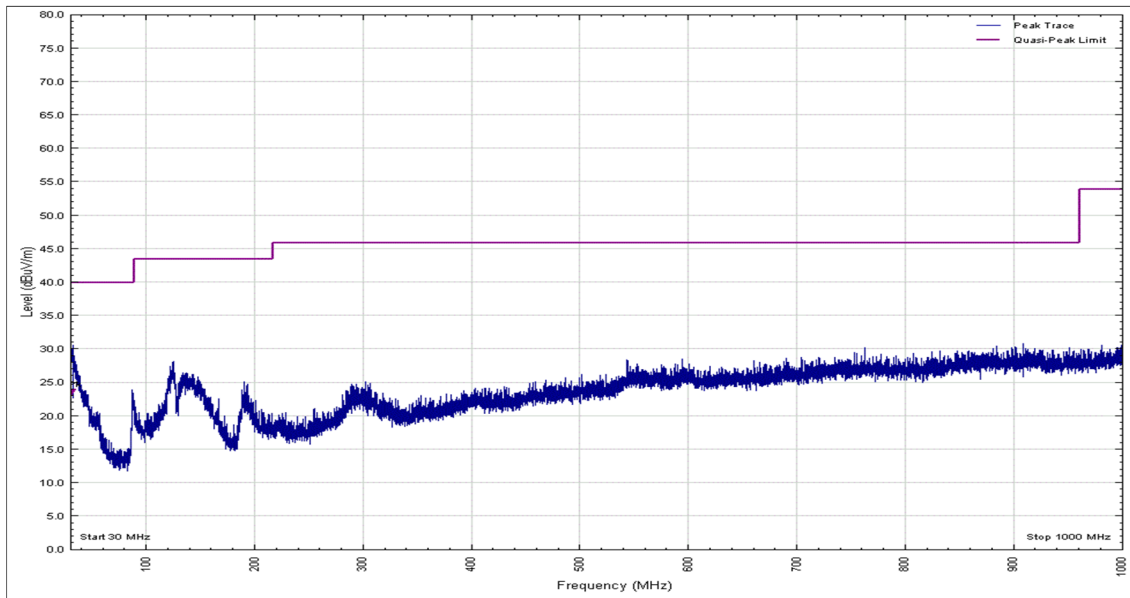


Figure 13 - 30 MHz to 1 GHz, Quasi-Peak, Horizontal - Y Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| 30.634 | 22.7 | 40.0 | -17.3 | Q-Peak | 324 | 162 | Horizontal | Y |

Table 20

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

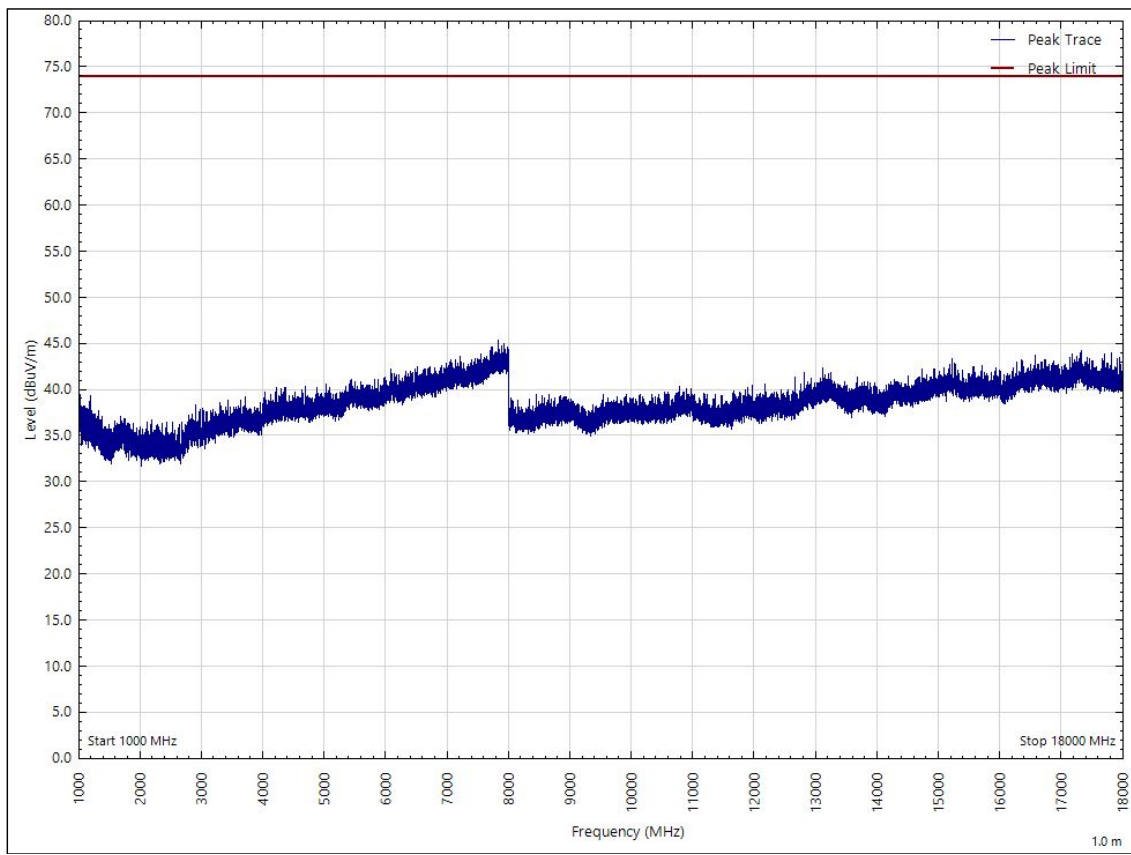


Figure 14 - 1 GHz to 18 GHz, Peak, Vertical - Y Orientation

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------------|----------------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 21

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

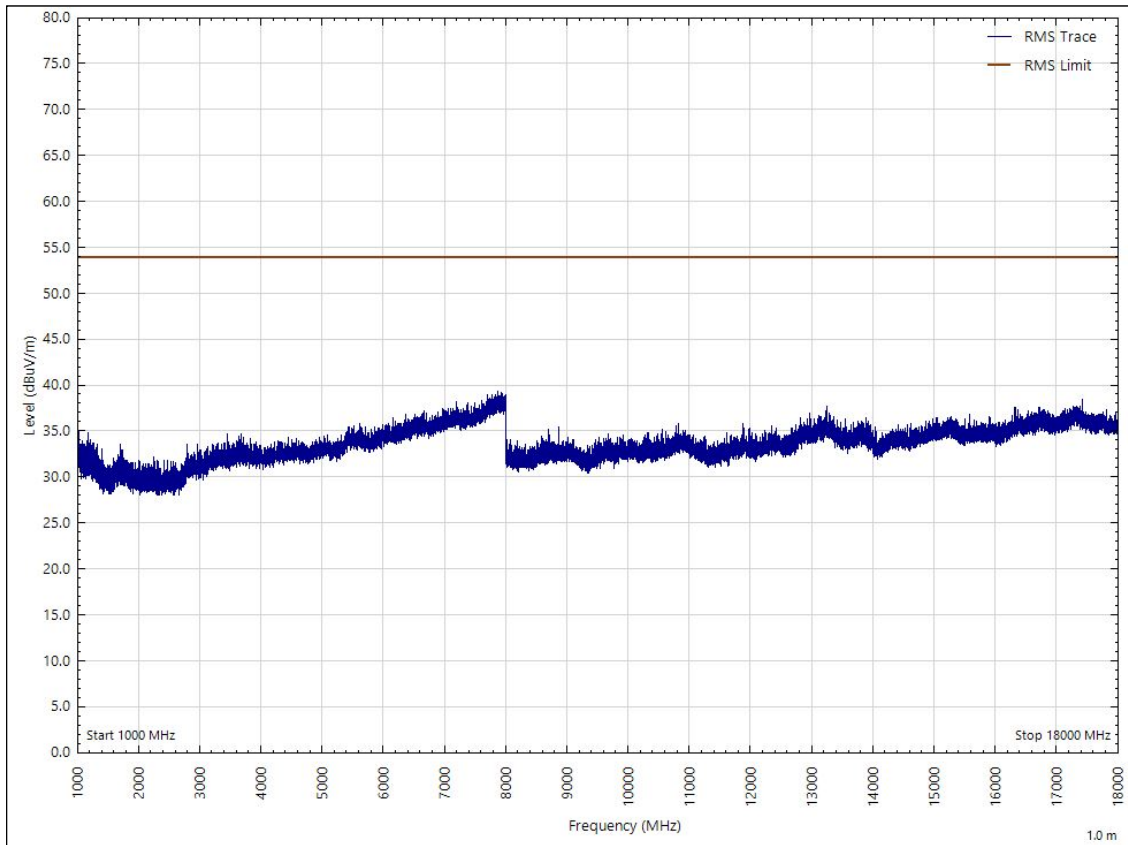


Figure 15 - 1 GHz to 18 GHz, CISPR Average, Vertical - Y Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 22

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

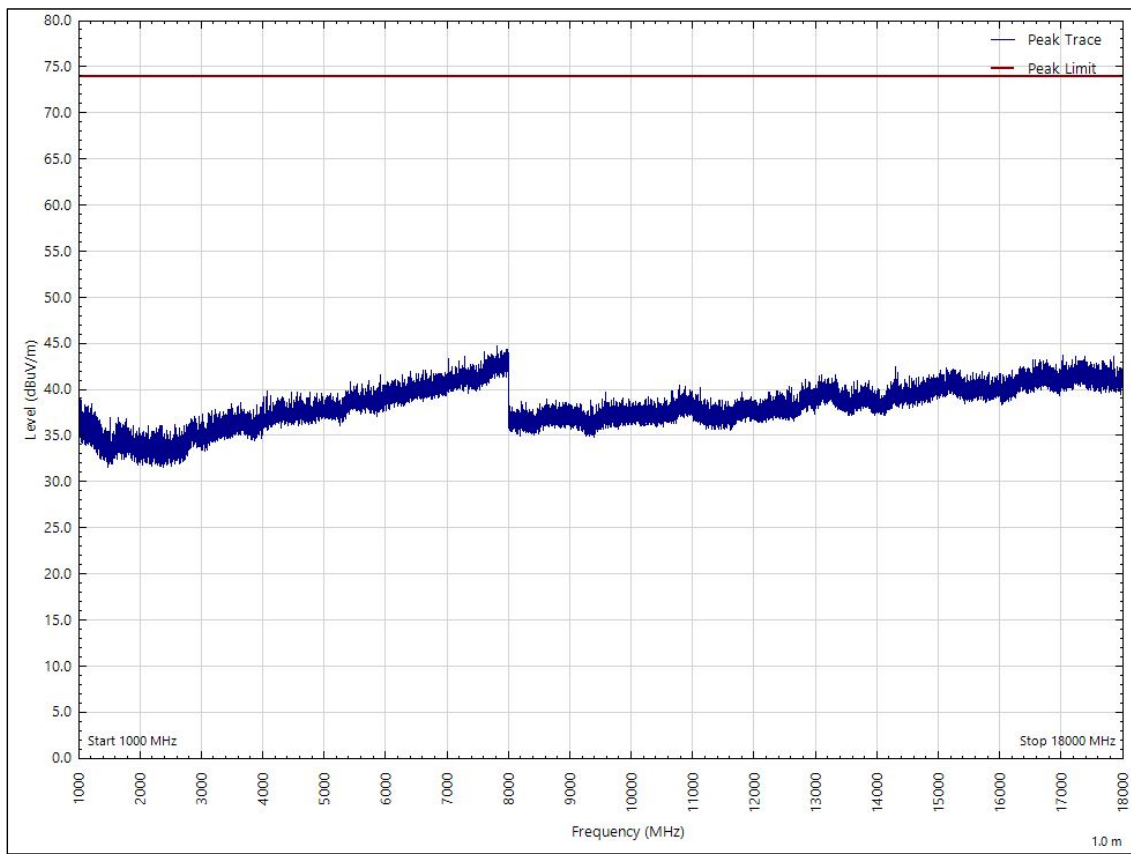


Figure 16 - 1 GHz to 18 GHz, Peak, Horizontal - Y Orientation

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------------|----------------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 23

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

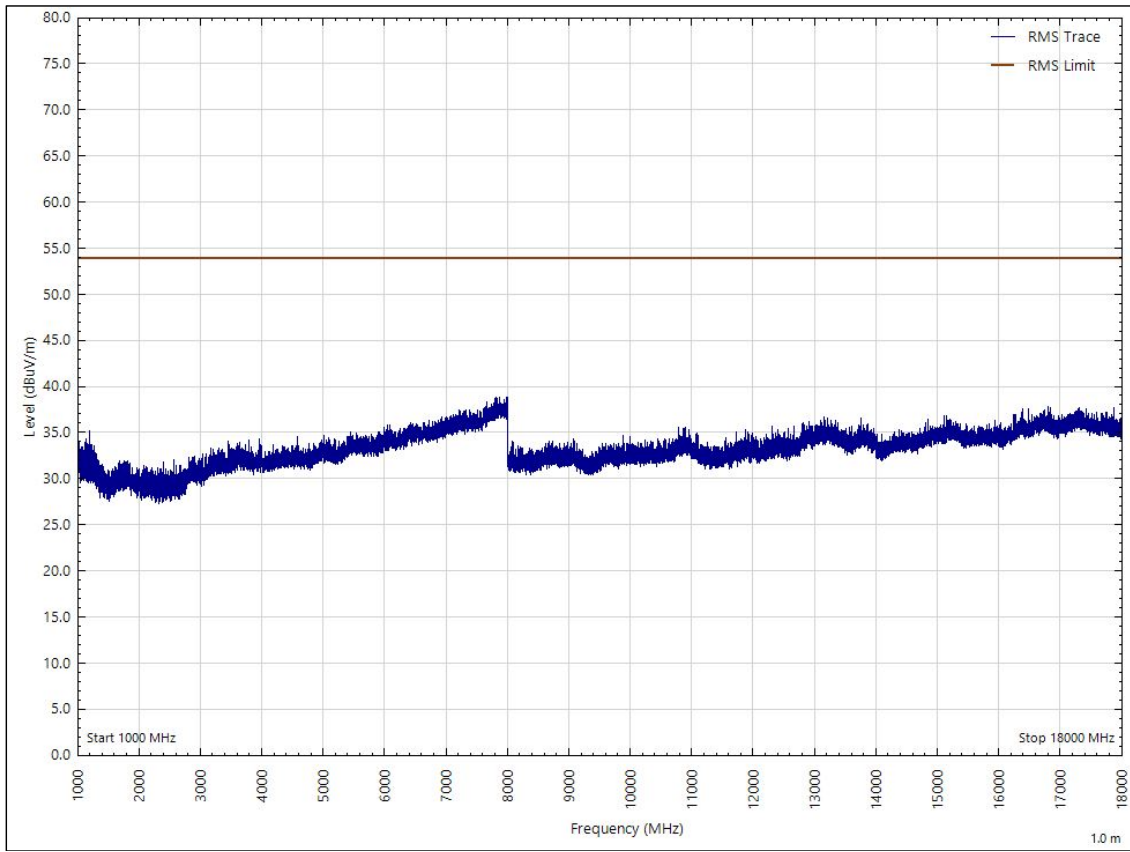


Figure 17 - 1 GHz to 18 GHz, CISPR Average, Horizontal - Y Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 24

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

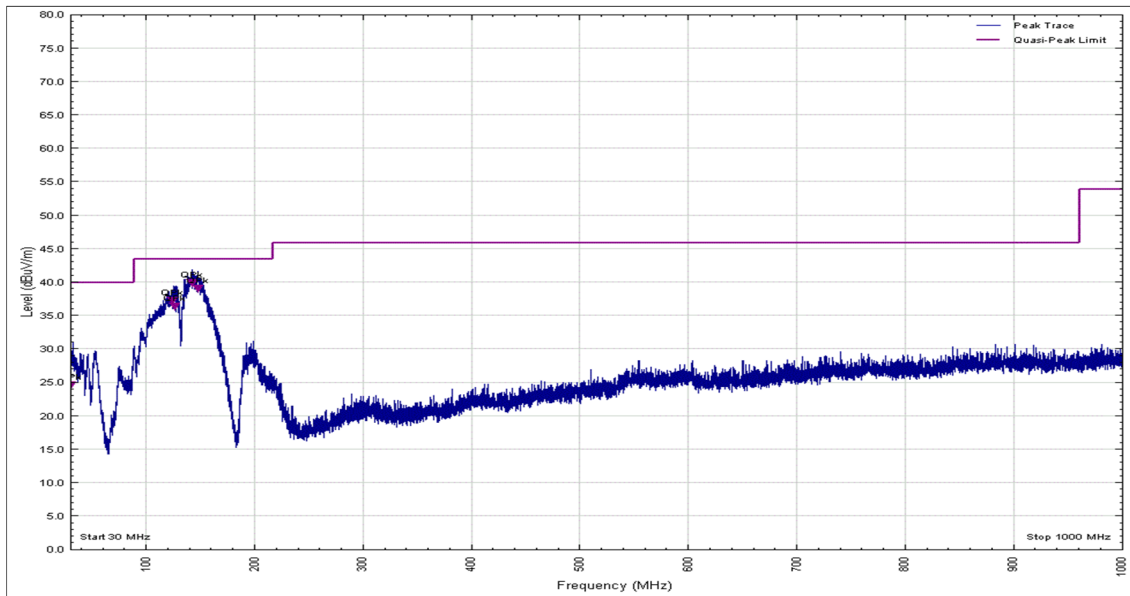


Figure 18 - 30 MHz to 1 GHz, Quasi-Peak, Vertical - Z Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| 30.350 | 23.7 | 40.0 | -16.3 | Q-Peak | 275 | 227 | Vertical | Z |
| 124.851 | 36.3 | 43.5 | -7.2 | Q-Peak | 259 | 101 | Vertical | Z |
| 126.981 | 35.5 | 43.5 | -8.0 | Q-Peak | 252 | 100 | Vertical | Z |
| 142.143 | 39.0 | 43.5 | -4.5 | Q-Peak | 216 | 100 | Vertical | Z |
| 147.262 | 38.1 | 43.5 | -5.4 | Q-Peak | 224 | 100 | Vertical | Z |

Table 25

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

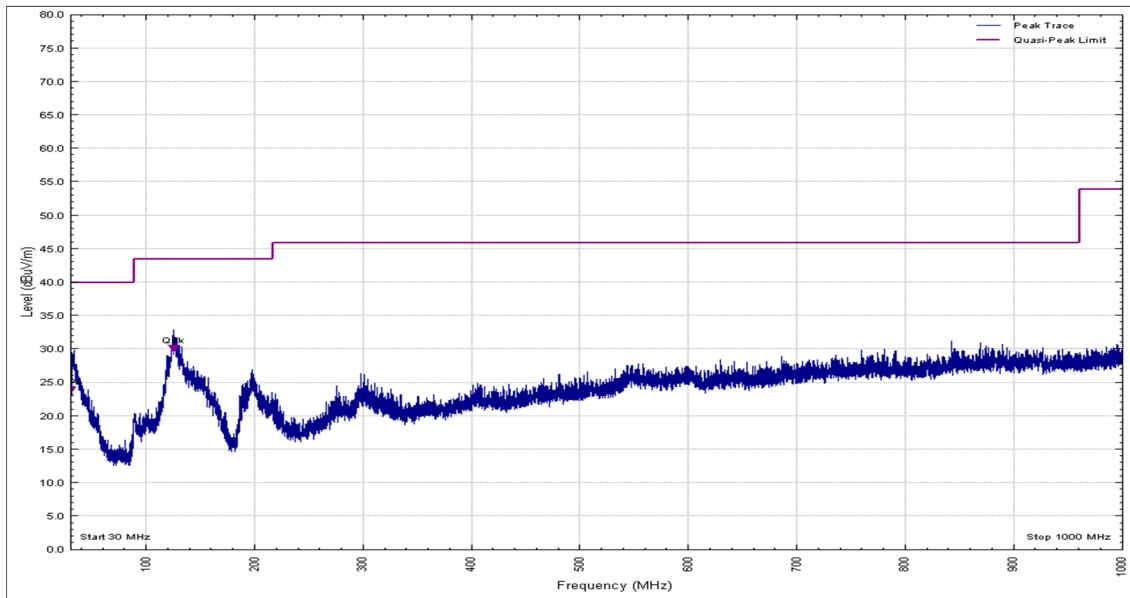


Figure 19 - 30 MHz to 1 GHz, Quasi-Peak, Horizontal - Z Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| 30.084 | 23.1 | 40.0 | -16.9 | Q-Peak | 236 | 357 | Horizontal | Z |

Table 26

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

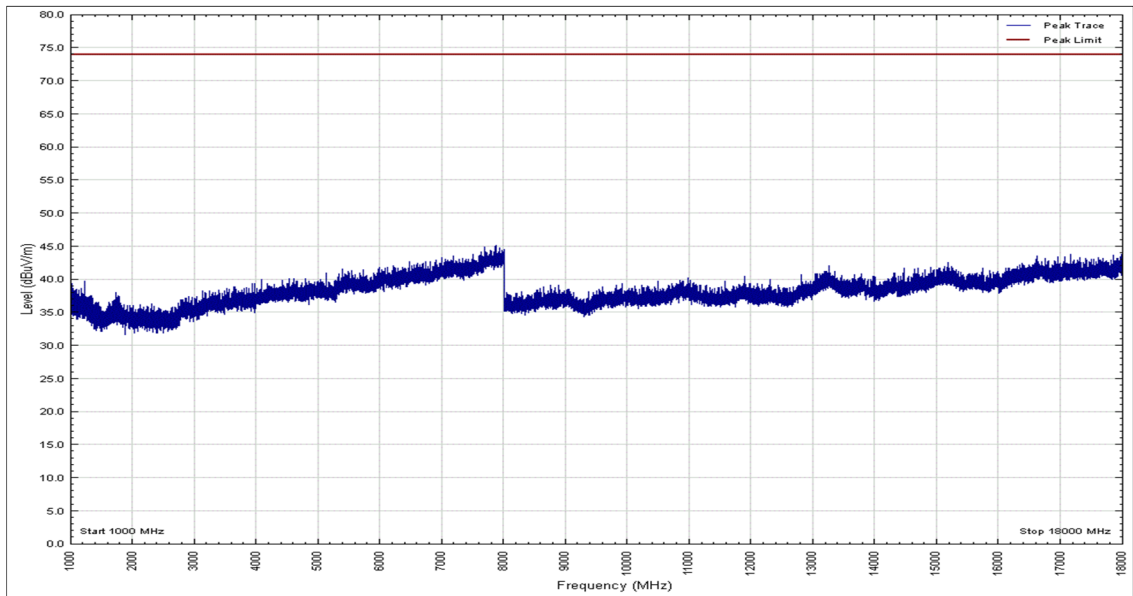


Figure 20 - 1 GHz to 18 GHz, Peak, Vertical - Z Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 27

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

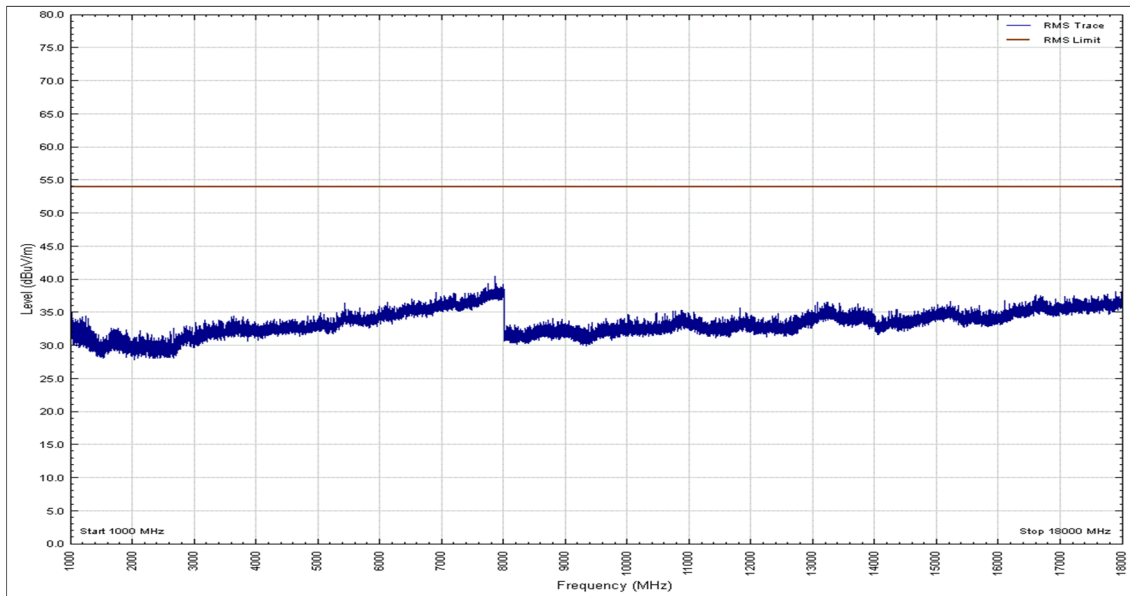


Figure 21 - 1 GHz to 18 GHz, CISPR Average, Vertical - Z Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 28

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

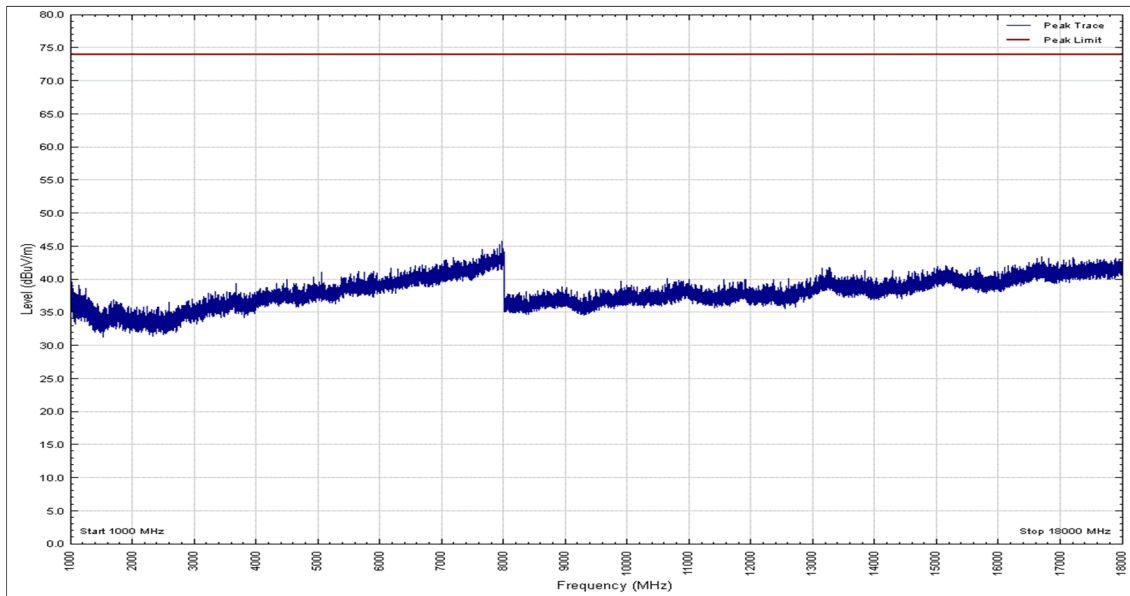


Figure 22 - 1 GHz to 18 GHz, Peak, Horizontal - Z Orientation

| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Detector | Angle (°) | Height (cm) | Polarisation | Orientation |
|-----------------|----------------|----------------|-------------|----------|-----------|-------------|--------------|-------------|
| * | | | | | | | | |

Table 29

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.