

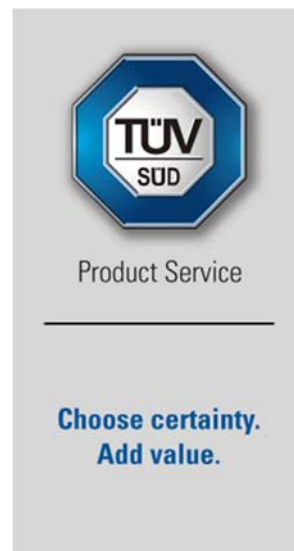
FCC and Industry Canada Testing of the
EDTracker Ltd
Computer peripheral for motion tracking of user's
head, Model: EDTracker Pro Wireless
In accordance with FCC 47 CFR Part 15C,
Industry Canada RSS-210 and
Industry Canada RSS-GEN

Prepared for: EDTracker Ltd
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Wokingham
Berkshire
RG41 1JQ
UNITED KINGDOM

FCC ID: 2AKV8-000001
IC: 22431-000001

COMMERCIAL-IN-CONFIDENCE

Date: June 2017
Document Number: 75938172-04 | Issue: 01



| RESPONSIBLE FOR | NAME | DATE | SIGNATURE |
|----------------------|-----------------|--------------|------------------------|
| Project Management | Steven White | 21 June 2017 | <i>Steven White</i> |
| Authorised Signatory | Matthew Russell | 21 June 2017 | <i>Matthew Russell</i> |

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 15C and Industry Canada RSS-210 and Industry Canada RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

| RESPONSIBLE FOR | NAME | DATE | SIGNATURE |
|-----------------|---------------|--------------|----------------------|
| Testing | Graeme Lawler | 21 June 2017 | <i>Graeme Lawler</i> |
| Testing | Dan Ralley | 21 June 2017 | <i>D. Ralley</i> |

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

Industry Canada Accreditation
IC2932B-1 Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be in compliance with FCC 47 CFR Part 15C: 2015, Industry Canada RSS-210 Issue 09 (08-2016) and Industry Canada RSS-GEN: Issue 04 (11-2014).



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ACCREDITATION

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation. Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

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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 | 21 June 2017 |

Table 1

1.2 Introduction

| | |
|-------------------------------|---|
| Applicant | EDTracker Ltd |
| Manufacturer | EDTracker Ltd |
| Model Number(s) | EDTracker Pro Wireless |
| Serial Number(s) | #002 #005 |
| Hardware Version(s) | 3.0 |
| Software Version(s) | 0.1 |
| Number of Samples Tested | 2 |
| Test Specification/Issue/Date | FCC 47 CFR Part 15C: 2015 Industry Canada RSS-210: Issue 09 (08-2016) Industry Canada RSS-GEN: Issue 04 (11-2014) |
| Test Plan/Issue/Date | Not Applicable |
| Order Number | PO-0033 |
| Date | 07-March-2017 |
| Date of Receipt of EUT | 13-March-2017 and 14-March-2017 |
| Start of Test | 15-March-2017 |
| Finish of Test | 19-March-2017 |
| Name of Engineer(s) | Graeme Lawler and Dan Ralley |
| Related Document(s) | ANSI C63.10 (2013) |



Product Service

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C, Industry Canada RSS-210 and Industry Canada RSS-GEN is shown below.

| Section | Specification Clause | | | Test Description | Result | Comments/Base Standard |
|---|----------------------|----------|---------|--|--------|------------------------|
| | Part 15C | RSS-210 | RSS-GEN | | | |
| Configuration: Pro Wireless - 2.4 GHz SRD | | | | | | |
| 2.1 | 15.249 (a) | B.10 (a) | - | Field Strength of Fundamental | Pass | ANSI C63.10 |
| 2.2 | 15.249 (a) | B.10 (b) | - | Authorised Band Edges | Pass | ANSI C63.10 |
| 2.3 | 15.249 (a)(d) | B.10 | - | Field Strength of Emissions | Pass | ANSI C63.10 |
| 2.4 | 15.249 (b)(2) | - | 6.11 | Frequency Tolerance Under Temperature Variations | Pass | ANSI C63.10 |

Table 2



1.4 Application Form

| EQUIPMENT DESCRIPTION | |
|---|--|
| Model Name/Number | EDTracker Pro Wireless |
| Part Number | EDTPWL001 |
| Hardware Version | 3.0 |
| Software Version | 0.1 |
| FCC ID (if applicable) | 2AKV8-000001 |
| Industry Canada ID (if applicable) | 22431-000001 |
| Technical Description (Please provide a brief description of the intended use of the equipment) | Computer peripheral for motion tracking of user's head |

| Types of Modulations used by the Equipment | |
|--|---|
| <input type="checkbox"/> | FHSS |
| <input checked="" type="checkbox"/> | Other forms of modulation |
| In case of FHSS Modulation | |
| In case of non-Adaptive Frequency Hopping equipment: | |
| Number of Hopping Frequencies: | |
| In case of Adaptive Frequency Hopping Equipment: | |
| Maximum number of Hopping Frequencies: | |
| Minimum number of Hopping Frequencies: | |
| Dwell Time: | |
| Adaptive / non-adaptive equipment: | |
| <input checked="" type="checkbox"/> | non-adaptive Equipment |
| <input type="checkbox"/> | adaptive Equipment without the possibility to switch to a non-adaptive mode |
| <input type="checkbox"/> | adaptive Equipment which can also operate in a non-adaptive mode |
| In case of adaptive equipment: | |
| The maximum Channel Occupancy Time implemented by the equipment: ms | |
| <input type="checkbox"/> | The equipment has implemented an LBT based DAA mechanism |
| In case of equipment using modulation different from FHSS: | |
| <input type="checkbox"/> | The equipment is Frame Based equipment |
| <input type="checkbox"/> | The equipment is Load Based equipment |
| <input type="checkbox"/> | The equipment can switch dynamically between Frame Based and Load Based equipment |
| The CCA time implemented by the equipment: μs | |
| <input type="checkbox"/> | The equipment has implemented an non-LBT based DAA mechanism |
| <input type="checkbox"/> | The equipment can operate in more than one adaptive mode |



| | |
|--|--|
| In case of non-adaptive Equipment: | |
| The maximum RF Output Power (e.i.r.p.): -6dBm | |
| The maximum (corresponding) Duty Cycle: 20 % | |
| Equipment with dynamic behaviour, that behaviour is described here. (e.g. the different combinations of duty cycle and corresponding power levels to be declared): | |
| | |
| The worst case operational mode for each of the following tests: | |
| RF Output Power: -6 dBm (verify with test results) | |
| Power Spectral Density: verify with test results | |
| Duty cycle, Tx-Sequence, Tx-gap: 20%, 20ms, 80ms | |
| Accumulated Transmit Time, Frequency Occupation & Hopping Sequence (only for FHSS equipment): | |
| Hopping Frequency Separation (only for FHSS equipment): | |
| Medium Utilisation: see test results | |
| Adaptivity & Receiver Blocking: see test results | |
| Nominal Channel Bandwidth: 1 MHz | |
| Transmitter unwanted emissions in the OOB domain: see test results | |
| Transmitter unwanted emissions in the spurious domain: see test results | |
| Receiver spurious emissions: see test results | |
| The different transmit operating modes (tick all that apply): | |
| <input checked="" type="checkbox"/> | Operating mode 1: Single Antenna Equipment |
| <input checked="" type="checkbox"/> | Equipment with only 1 antenna |
| <input type="checkbox"/> | Equipment with 2 diversity antennas but only 1 antenna active at any moment in time |
| <input type="checkbox"/> | Smart Antenna Systems with 2 or more antennas, but operating in a (legacy) mode where only 1 antenna is used. (e.g. IEEE 802.11™ [i.3] legacy mode in smart antenna systems) |
| <input type="checkbox"/> | Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming |
| <input type="checkbox"/> | Single spatial stream / Standard throughput / (e.g. IEEE 802.11™ [i.3] legacy mode) |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1 |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2 |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 3 |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 4 |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 5 |
| <i>NOTE: Add more lines if more channel bandwidths are supported.</i> | |
| <input type="checkbox"/> | Operating mode 3: Smart Antenna Systems - Multiple Antennas with beam forming |
| <input type="checkbox"/> | Single spatial stream / Standard throughput (e.g. IEEE 802.11™ [i.3] legacy mode) |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1 |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2 |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 3 |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 4 |
| <input type="checkbox"/> | High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 5 |
| <i>NOTE: Add more lines if more channel bandwidths are supported.</i> | |



| In case of Smart Antenna Systems: | | | |
|--|--|-----|--|
| The number of Receive chains: | | | |
| The number of Transmit chains: | | | |
| <input type="checkbox"/> | symmetrical power distribution | | |
| <input type="checkbox"/> | asymmetrical power distribution | | |
| In case of beam forming, the maximum (additional) beam forming gain: dB | | | |
| <i>NOTE: The additional beam forming gain does not include the basic gain of a single antenna.</i> | | | |
| Operating Frequency Range(s) of the equipment: | | | |
| Operating Frequency Range 1: 2403 MHz to 2481 MHz | | | |
| Operating Frequency Range 2: | MHz to | MHz | |
| Operating Frequency Range 3: | MHz to | MHz | |
| <i>NOTE: Add more lines if more Frequency Ranges are supported.</i> | | | |
| Nominal Channel Bandwidth(s): | | | |
| Nominal Channel Bandwidth1: 1 MHz | | | |
| Nominal Channel Bandwidth2: | MHz | | |
| Nominal Channel Bandwidth3: | MHz | | |
| Nominal Channel Bandwidth4: | MHz | | |
| Nominal Channel Bandwidth5: | MHz | | |
| <i>NOTE: Add more lines if more channel bandwidths are supported.</i> | | | |
| Type of Equipment (stand-alone, combined, plug-in radio device, etc.): | | | |
| <input checked="" type="checkbox"/> | Stand-alone | | |
| <input type="checkbox"/> | Combined Equipment (Equipment where the radio part is fully integrated within another type of equipment) | | |
| <input type="checkbox"/> | Plug-in radio device (Equipment intended for a variety of host systems) | | |
| <input type="checkbox"/> | Other | | |
| The normal and extreme operating conditions that apply to the equipment: | | | |
| Normal operating conditions (if applicable): | | | |
| Operating temperature: -20 to 60 °C | | | |
| Other (please specify if applicable): | | | |
| Extreme operating conditions: | | | |
| Operating temperature range: Minimum °C to Maximum °C | | | |
| Other (please specify if applicable): Minimum °C to Maximum °C | | | |
| Details provided are for the: | | | |
| <input checked="" type="checkbox"/> | stand-alone equipment | | |
| <input type="checkbox"/> | combined (or host) equipment | | |
| <input type="checkbox"/> | test jig | | |

| The intended combination(s) of the radio equipment power settings and one or more antenna assemblies and their corresponding e.i.r.p levels: | | | |
|--|--|----------------------|------------------------------------|
| Antenna Type: | | | |
| <input checked="" type="checkbox"/> | Integral Antenna (information to be provided in case of conducted measurements) | | |
| | Antenna Gain: -0.5 typical dBi | | |
| | If applicable, additional beamforming gain (excluding basic antenna gain): dB | | |
| <input checked="" type="checkbox"/> | Temporary RF connector provided | | |
| <input type="checkbox"/> | No temporary RF connector provided | | |
| <input type="checkbox"/> | Dedicated Antennas (equipment with antenna connector) | | |
| <input type="checkbox"/> | Single power level with corresponding antenna(s) | | |
| <input type="checkbox"/> | Multiple power settings and corresponding antenna(s) | | |
| Number of different Power Levels: | | | |
| | Power Level 1: | dBm | |
| | Power Level 2: | dBm | |
| | Power Level 3: | dBm | |
| <i>NOTE 1: Add more lines in case the equipment has more power levels.</i> | | | |
| <i>NOTE 2: These power levels are conducted power levels (at antenna connector).</i> | | | |
| For each of the Power Levels, provide the intended antenna assemblies, their corresponding gains (G) and the resulting e.i.r.p. levels also taking into account the beamforming gain (Y) if applicable | | | |
| Power Level 1: dBm | | | |
| Number of antenna assemblies provided for this power level: | | | |
| Assembly # | Gain (dBi) | e.i.r.p (dBm) | Part number or model number |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| <i>NOTE: Add more rows in case more antenna assemblies are supported for this power level.</i> | | | |
| Power Level 2: dBm | | | |
| Number of antenna assemblies provided for this power level: | | | |
| Assembly # | Gain (dBi) | e.i.r.p (dBm) | Part number or model number |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| <i>NOTE: Add more rows in case more antenna assemblies are supported for this power level.</i> | | | |
| Power Level 3: dBm | | | |
| Number of antenna assemblies provided for this power level: | | | |
| Assembly # | Gain (dBi) | e.i.r.p (dBm) | Part number or model number |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| <i>NOTE: Add more rows in case more antenna assemblies are supported for this power level.</i> | | | |



| | |
|---|---|
| The nominal voltages of the stand-alone radio equipment or the nominal voltages of the combined (host) equipment or test jig in case of plug-in devices: | |
| Details provided are for the: | |
| <input checked="" type="checkbox"/> | stand-alone equipment |
| <input type="checkbox"/> | combined (or host) equipment |
| <input type="checkbox"/> | test jig |
| Supply Voltage | <input type="checkbox"/> AC mains State AC voltage V |
| | <input checked="" type="checkbox"/> DC State DC voltage 5 V |
| In case of DC, indicate the type of power source | |
| <input type="checkbox"/> | Internal Power Supply |
| <input checked="" type="checkbox"/> | External Power Supply or AC/DC adapter |
| <input type="checkbox"/> | Battery |
| <input checked="" type="checkbox"/> | Other: When unplugged, internal battery provides power supply |
| Describe the test modes available which can facilitate testing: | |
| 1. Normal operation 2. RX only 3. High-duty (not indicative of real-world use) 4. Centre-carrier transmitter test (low-level RF chipset implementation only - does not pass application traffic) | |
| The equipment type (e.g. Bluetooth®, IEEE 802.11™ [i.3] IEEE 802.15.4™ [i.4], proprietary, etc.): | |
| 2.4GHz ISM (proprietary Nordic GFSK modulation) | |
| If applicable, the statistical analysis referred in clause 5.4.1 q) | |
| To be provided as separate attachment | |
| If applicable, the statistical analysis referred in clause 5.4.1 r) | |
| To be provided as separate attachment | |
| Geo-location capability supported by the equipment: | |
| <input type="checkbox"/> | Yes |
| <input type="checkbox"/> | The geographical location determined by the equipment as defined in clause 4.3.1.13.2 or clause 4.3.2.12.2 is not accessible to the user. |
| <input checked="" type="checkbox"/> | No |
| Describe the minimum performance criteria that apply to the equipment (see clause 4.3.1.12.3 or 4.3.2.11.3) | |
| The standard criteria of 10% PER (packet error rate) is acceptable | |
| Combination for testing (see clause 5.3.2.3 of EN 300 328 V21.1) | |
| From all combinations of conducted power settings and intended antenna assembly(ies) specified in clause 5.4.1 m), specify the combination resulting in the highest e.i.r.p. for the radio equipment. | |
| Unless otherwise specified in ETSI EN 300 328, this power setting is to be used for testing against the requirements of ETSI EN 300 328. In case there is more than one such conducted power setting resulting in the same (highest) e.i.r.p. level, the highest power setting is to be used for testing. See also ETS EN 300 328, clause 5.3.2.3 | |
| Highest overall e.i.r.p. value: dBm | |
| Corresponding Antenna assembly gain: dBi | Antenna Assembly #: |
| Corresponding conducted power setting: dBm (also the power level to be used for testing) | Listed as Power Setting #: |
| Additional information provided by the applicant | |
| Modulation | |
| ITU Class(es) of emission: 2K56 G1D | |
| Can the transmitter operate unmodulated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |



| Duty Cycle | |
|---|---|
| The transmitter is intended for: | |
| <input type="checkbox"/> | Continuous duty |
| <input checked="" type="checkbox"/> | Intermittent duty |
| <input checked="" type="checkbox"/> | Continuous operation possible for testing purposes |
| About the UUT | |
| <input type="checkbox"/> | The equipment submitted are representative production models |
| <input checked="" type="checkbox"/> | If not, the equipment submitted are pre-production models? |
| <input checked="" type="checkbox"/> | If pre-production equipment are submitted, the final production equipment will be identical in all respects with the equipment tested |
| <input type="checkbox"/> | If not, supply full details |
| <input type="checkbox"/> | The equipment submitted is CE marked |
| Additional items and/or supporting equipment provided | |
| <input type="checkbox"/> | Spare batteries (e.g. for portable equipment) |
| <input type="checkbox"/> | Battery charging device |
| <input type="checkbox"/> | External Power Supply or AC/DC adapter |
| <input type="checkbox"/> | Test Jig or interface box |
| <input type="checkbox"/> | RF test fixture (for equipment with integrated antennas) |
| <input type="checkbox"/> | Host System |
| Manufacturer | |
| Model | |
| Model Name | |
| <input type="checkbox"/> | Combined equipment |
| Manufacturer | |
| Model | |
| Model Name | |
| <input checked="" type="checkbox"/> | User Manual |
| <input type="checkbox"/> | Technical documentation (Handbook and circuit diagrams) |

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

Name: Daniel Howell

Position held: Director

Date: 27/02/2017

1.5 Product Information

1.5.1 Technical Description

Computer peripheral for motion tracking of user's head.

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: #002 | | | |
| 0 | As supplied by the customer | Not Applicable | Not Applicable |
| Serial Number: #005 | | | |
| 0 | As supplied by the customer | Not Applicable | Not Applicable |

Table 3

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: Pro Wireless - 2.4 GHz SRD | | |
| Authorised Band Edges | Graeme Lawler | UKAS |
| Field Strength of Emissions | Graeme Lawler | UKAS |
| Frequency Tolerance Under Temperature Variations | Dan Ralley | UKAS |
| Field Strength of Fundamental | Graeme Lawler | UKAS |

Table 4

Office Address:

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



2 Test Details

2.1 Field Strength of Fundamental

2.1.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.249 (a)
Industry Canada RSS-210, Clause B.10(a)

2.1.2 Equipment Under Test and Modification State

EDTracker Pro Wireless, S/N: #005 - Modification State 0

2.1.3 Date of Test

19-March-2017

2.1.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.3 and 6.6.

2.1.5 Environmental Conditions

Ambient Temperature 17.8 °C
Relative Humidity 47.0 %

2.1.6 Test Results

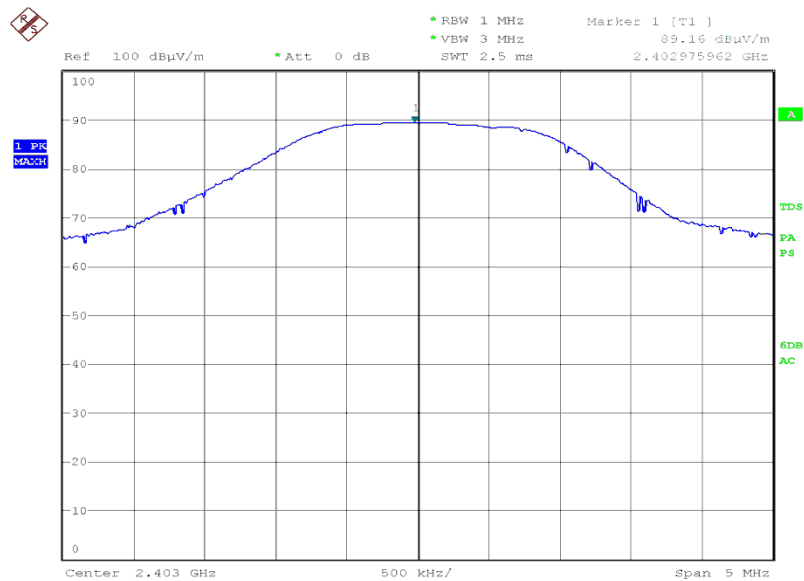
Pro Wireless - 2.4 GHz SRD

| |
|-------------------------|
| Field Strength (dBµv/m) |
| 89.16 |

Table 5 - 2403 MHz



Product Service

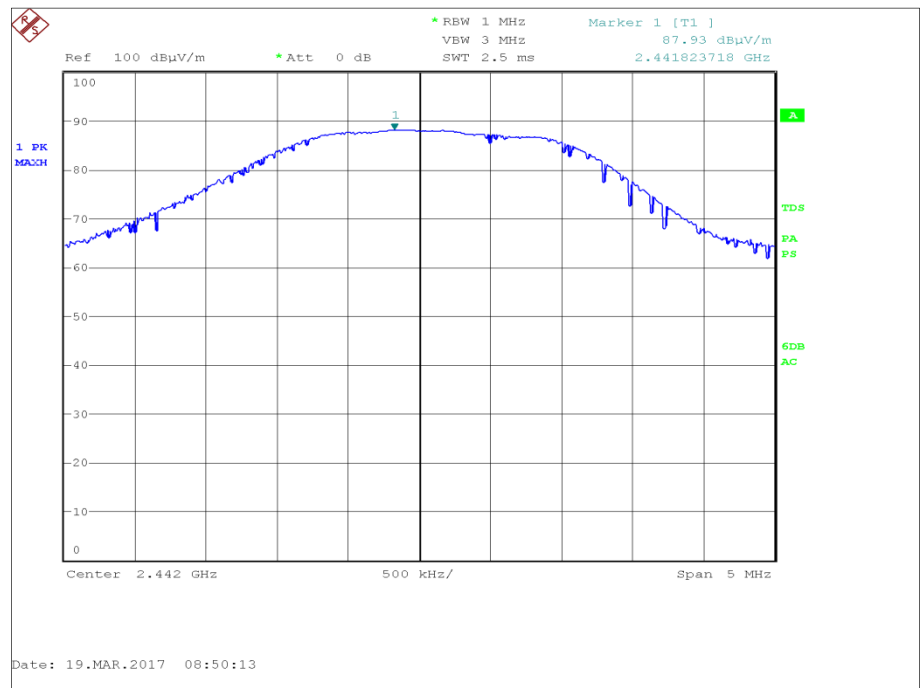


Date: 19.MAR.2017 09:52:49

Figure 1 - 2403 MHz

| Field Strength (dBμv/m) |
|-------------------------|
| 87.93 |

Table 6 - 2442 MHz



Date: 19.MAR.2017 08:50:13

Figure 2 - 2442 MHz



| |
|-------------------------|
| Field Strength (dBuV/m) |
| 86.60 |

Table 7 - 2481 MHz

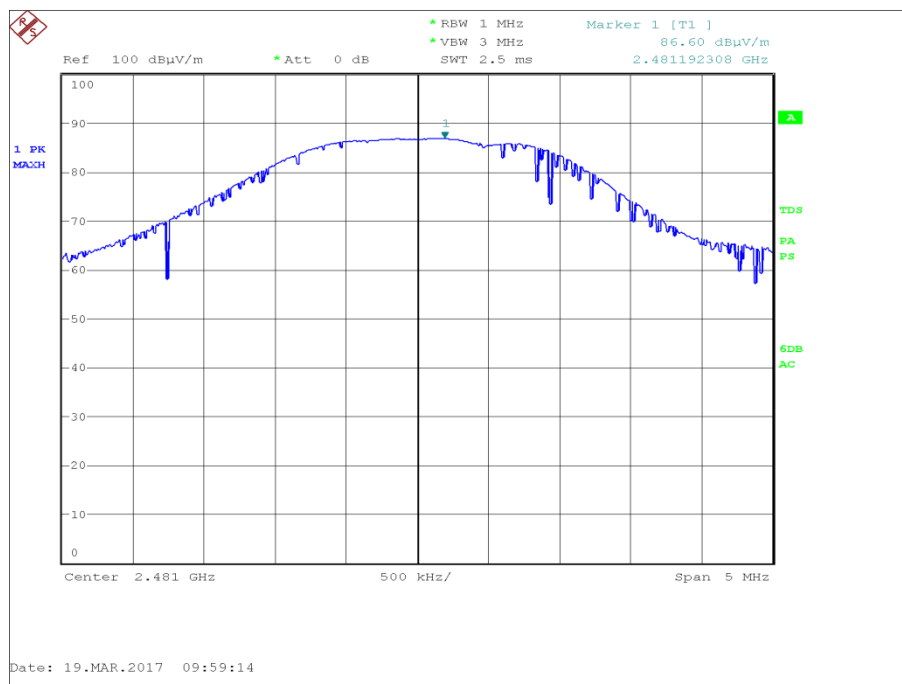


Figure 3 - 2481 MHz

FCC 47 CFR Part 15, Limit Clause 15.249 (a)

| Fundamental Frequency (MHz) | Field Strength of Fundamental (mV/m) |
|-----------------------------|--------------------------------------|
| 902 to 928 | 50 |
| 2400 to 2483.5 | 50 |
| 5725 to 5875 | 50 |
| 24000 to 24250 | 250 |

Table 8

FCC 47 CFR Part 15, Limit Clause 15.35 (b)

The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Industry Canada RSS-210, Limit Clause B.10 (a)

The field strength of fundamental and harmonic emissions, measured at 3 m, shall not exceed 50 mV/m and 0.5 mV/m respectively.

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 |
|-------------------------------------|-----------------|-------------------|-------|-----------------------------|-----------------|
| Hygrometer | Rotronic | A1 | 1388 | 12 | 13-Apr-2017 |
| Screened Room (5) | Rainford | Rainford | 1545 | 36 | 20-Dec-2017 |
| Turntable Controller | Inn-Co GmbH | CO 1000 | 1606 | - | TU |
| Cable (N-N, 8m) | Rhophase | NPS-2302-8000-NPS | 3248 | - | O/P Mon |
| EMI Test Receiver | Rohde & Schwarz | ESU40 | 3506 | 12 | 12-Nov-2017 |
| Tilt Antenna Mast | maturo GmbH | TAM 4.0-P | 3916 | - | TU |
| Mast Controller | maturo GmbH | NCD | 3917 | - | TU |
| Cable (Yellow, Rx, Km-Km 2m) | Scott Cables | KPS-1501-2000-KPS | 4527 | - | O/P Mon |
| Double Ridge Broadband Horn Antenna | Schwarzbeck | BBHA 9120 B | 4848 | 12 | 17-Feb-2018 |

Table 9

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment

2.2 Authorised Band Edges

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.249 (a)
Industry Canada RSS-210, Clause B.10 (b)

2.2.2 Equipment Under Test and Modification State

EDTracker Pro Wireless, S/N: #005 - Modification State 0

2.2.3 Date of Test

19-March-2017

2.2.4 Test Method

The test was performed in accordance with ANSI C63.10, clauses 6.3 and 6.6.

2.2.5 Environmental Conditions

| | |
|---------------------|---------|
| Ambient Temperature | 17.8 °C |
| Relative Humidity | 47.0 % |

2.2.6 Test Results

Pro Wireless - 2.4 GHz SRD

| Frequency (MHz) | Measured Frequency (MHz) | Peak Level (dBμV/m) | Average Level (dBμV/m) |
|-----------------|--------------------------|---------------------|------------------------|
| 2403 | 2400.0 | 62.99 | 29.01 |

Table 10 – 2403 MHz - Authorised Band Edge Results

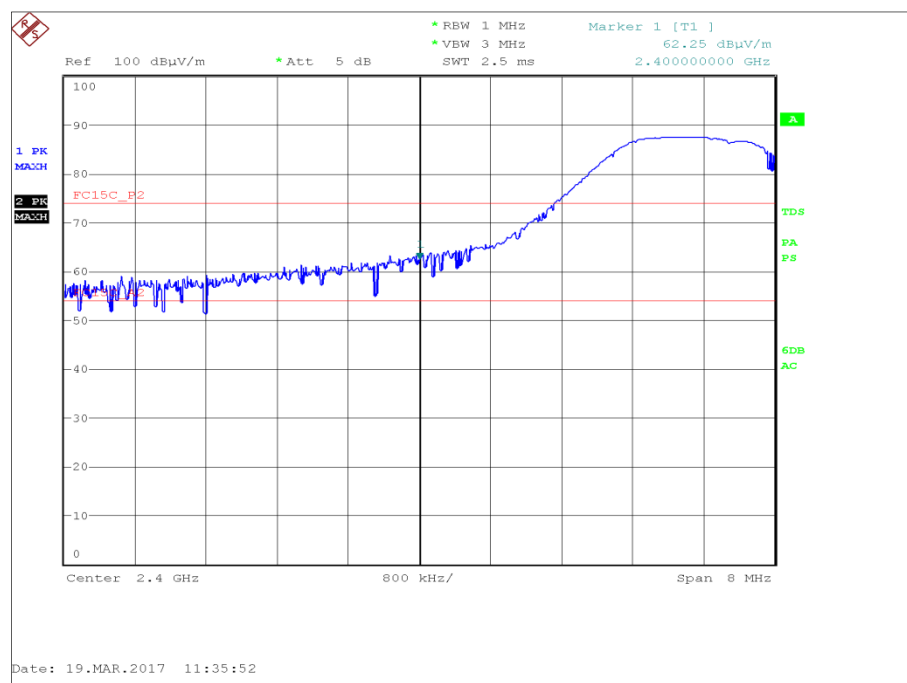


Figure 4 - 2403 MHz, Measured Frequency 2400 MHz



| Frequency (MHz) | Measured Frequency (MHz) | Peak Level (dBµV/m) | Average Level (dBµV/m) |
|-----------------|--------------------------|---------------------|------------------------|
| 2481 | 2483.5 | 63.94 | 29.96 |

Table 11 – 2481 MHz - Authorised Band Edge Results

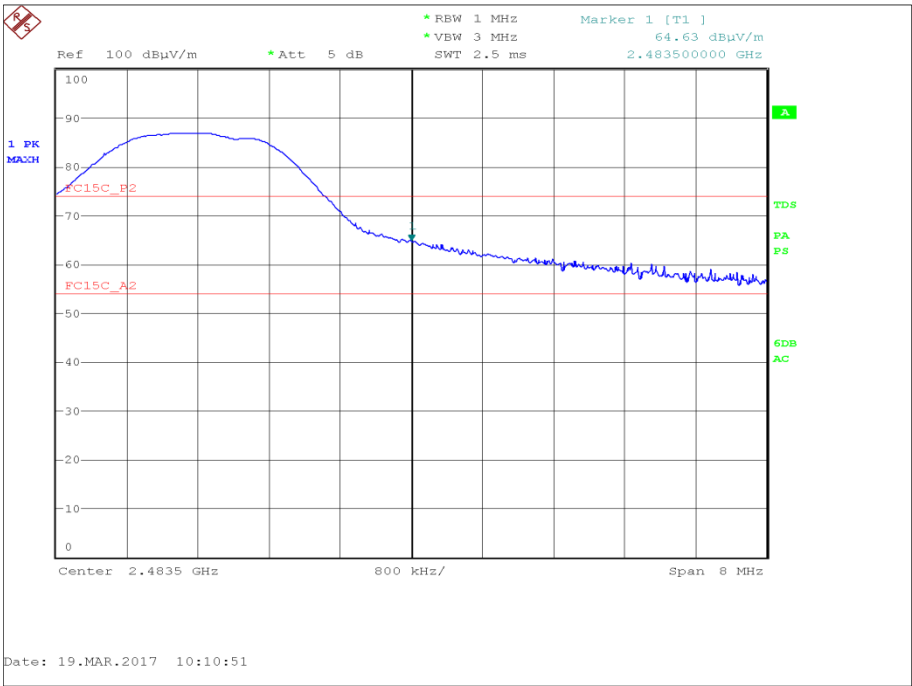


Figure 5 - 2481 MHz, Measured Frequency 2483.5 MHz

Remarks

The customer has declared an operational duty cycle of 2%. To obtain the average level, a duty cycle correction factor was subtracted from the peak level in accordance with ANSI C63.10 clause 7.5.

Duty correction (dB) = $20\log(0.2) = -33.98\text{dB}$

FCC 47 CFR Part 15, Limit Clause 15.249 (d)

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

FCC 47 CFR Part 15, Limit Clause 15.209

| Frequency (MHz) | Field Strength ($\mu\text{V/m}$ at 3 m) |
|-----------------|--|
| 30 to 88 | 50 |
| 88 to 216 | 50 |
| 216 to 960 | 50 |
| Above 960 | 250 |

Table 12

Industry Canada RSS-210, Limit Clause B.10 (b)

Emissions radiated outside of the specified frequency bands, except for harmonic emissions, shall be attenuated by at least 50 dB below the level of the fundamental emissions or to the general field strength limits listed in RSS-Gen, whichever is less stringent.

Industry Canada RSS-GEN, Limit Clause 8.9

| Frequency (MHz) | Field Strength ($\mu\text{V/m}$ at 3 m) |
|-----------------|--|
| 30 to 88 | 50 |
| 88 to 216 | 50 |
| 216 to 960 | 50 |
| Above 960 | 250 |

Table 13

2.2.7 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 |
|-------------------------------------|-----------------|-------------------|-------|-----------------------------|-----------------|
| Hygrometer | Rotronic | A1 | 1388 | 12 | 13-Apr-2017 |
| Screened Room (5) | Rainford | Rainford | 1545 | 36 | 20-Dec-2017 |
| Turntable Controller | Inn-Co GmbH | CO 1000 | 1606 | - | TU |
| Cable (N-N, 8m) | Rhophase | NPS-2302-8000-NPS | 3248 | - | O/P Mon |
| EMI Test Receiver | Rohde & Schwarz | ESU40 | 3506 | 12 | 12-Nov-2017 |
| Tilt Antenna Mast | maturo GmbH | TAM 4.0-P | 3916 | - | TU |
| Mast Controller | maturo GmbH | NCD | 3917 | - | TU |
| Cable (Yellow, Rx, Km-Km 2m) | Scott Cables | KPS-1501-2000-KPS | 4527 | - | O/P Mon |
| Double Ridge Broadband Horn Antenna | Schwarzbeck | BBHA 9120 B | 4848 | 12 | 17-Feb-2018 |

Table 14

TU - Traceability Unscheduled

2.3 Field Strength of Emissions

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.249 (a)(d)
Industry Canada RSS-210, Clause B.10

2.3.2 Equipment Under Test and Modification State

EDTracker Pro Wireless, S/N: #005 - Modification State 0

2.3.3 Date of Test

19-March-2017

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.3, 6.5 and 6.6.

2.3.5 Environmental Conditions

Ambient Temperature 17.8 °C
Relative Humidity 47.0 %

2.3.6 Test Results

Pro Wireless - 2.4 GHz SRD

| Frequency (MHz) | QP Level (dBuV/m) | QP Limit (dBuV/m) | QP Margin (dBuV/m) | Angle(Deg) | Height(m) | Polarity |
|-----------------|-------------------|-------------------|--------------------|------------|-----------|----------|
| 30.185 | 30.5 | 40.0 | -9.5 | 0 | 1.00 | Vertical |
| 31.614 | 29.5 | 40.0 | -10.5 | 0 | 1.00 | Vertical |
| 33.200 | 29.0 | 40.0 | -11.0 | 0 | 1.00 | Vertical |
| 847.803 | 33.0 | 46.0 | -13.0 | 0 | 1.00 | Vertical |
| 884.320 | 33.4 | 46.0 | -12.6 | 0 | 1.00 | Vertical |
| 960.000 | 33.9 | 46.0 | -12.1 | 0 | 1.00 | Vertical |

Table 15 - 2403 MHz - 30 MHz to 1 GHz

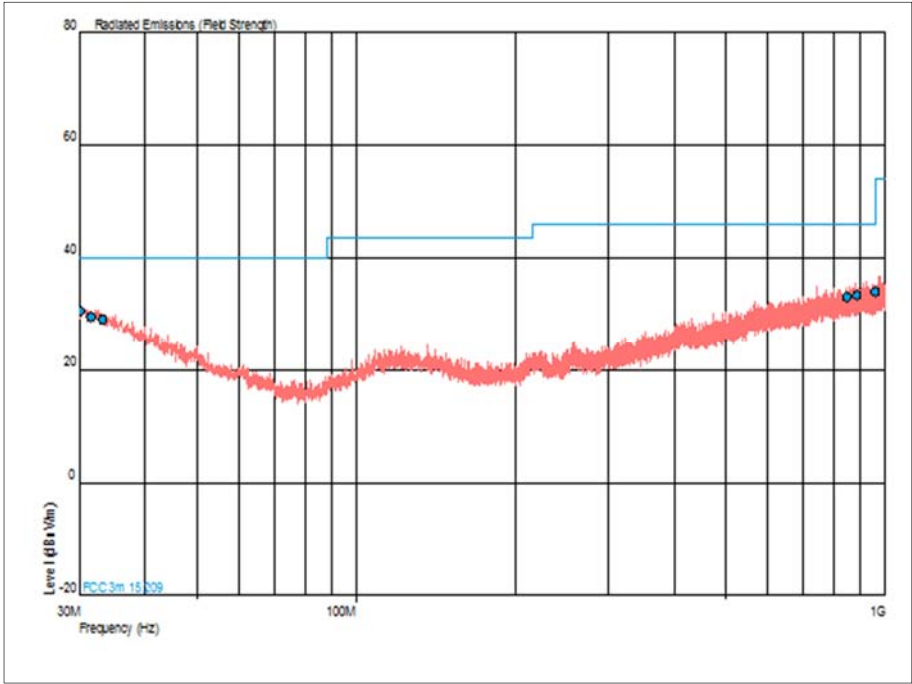


Figure 6 - 2403 MHz - 30 MHz to 1 GHz

| Frequency (MHz) | Final Peak (dBµV/m) | Final Average (dBµV/m) | Final Peak (µV/m) | Final Average (µV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| * | | | | | | | |

Table 16 – 2403 MHz – 1 GHz to 25 GHz

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



Product Service

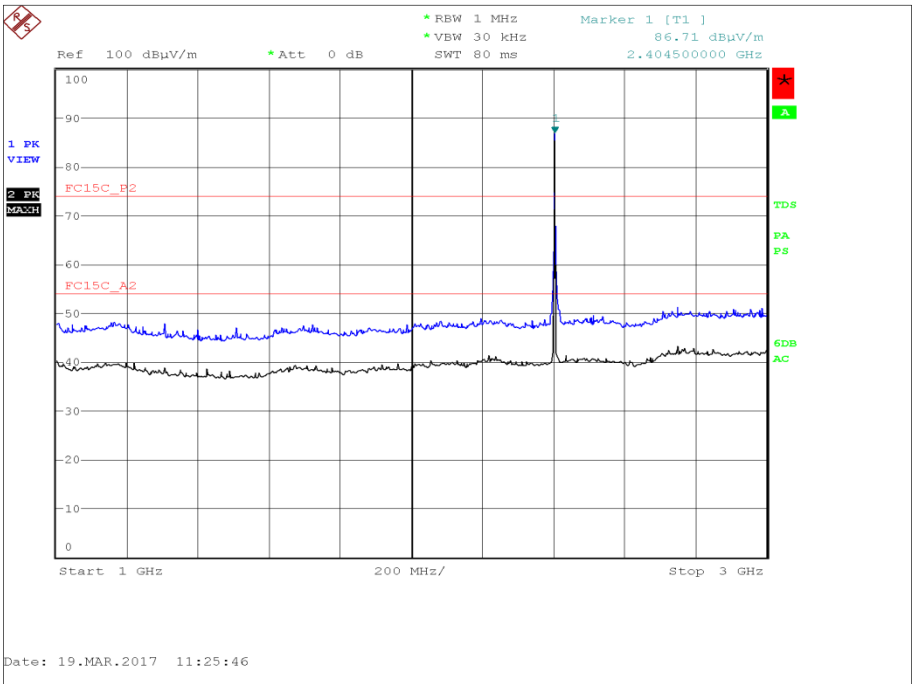


Figure 7 – 2403 MHz – 1 GHz to 3 GHz

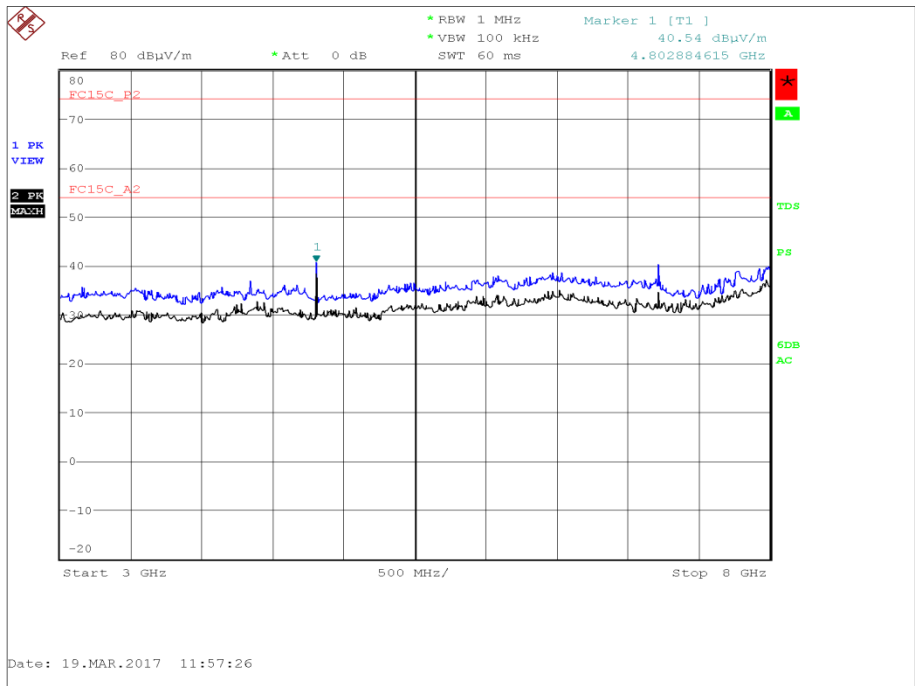


Figure 8 – 2403 MHz – 3 GHz to 8 GHz



Product Service

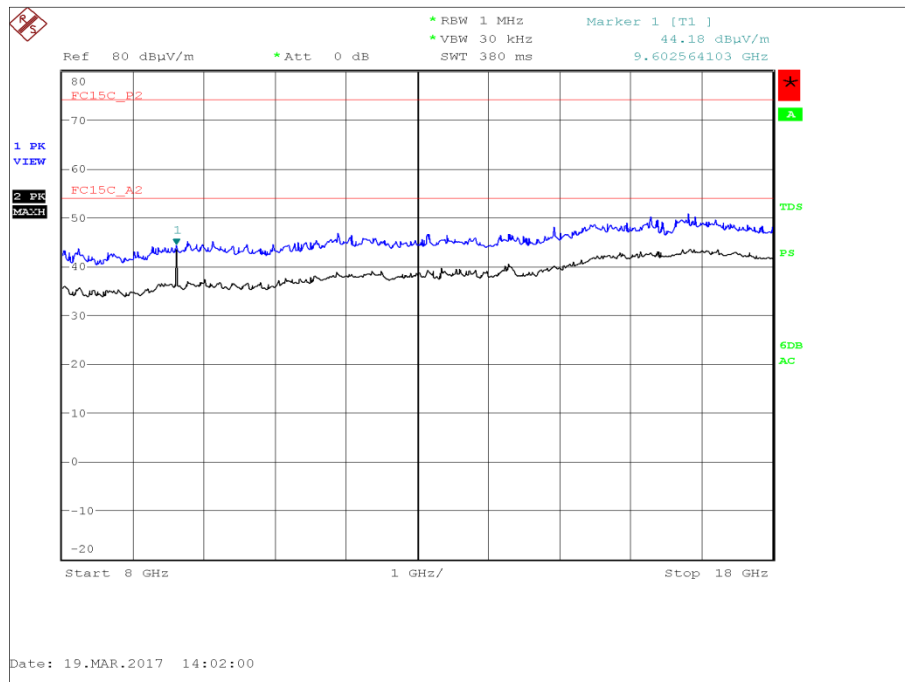


Figure 9 – 2403 MHz – 8 GHz to 18 GHz

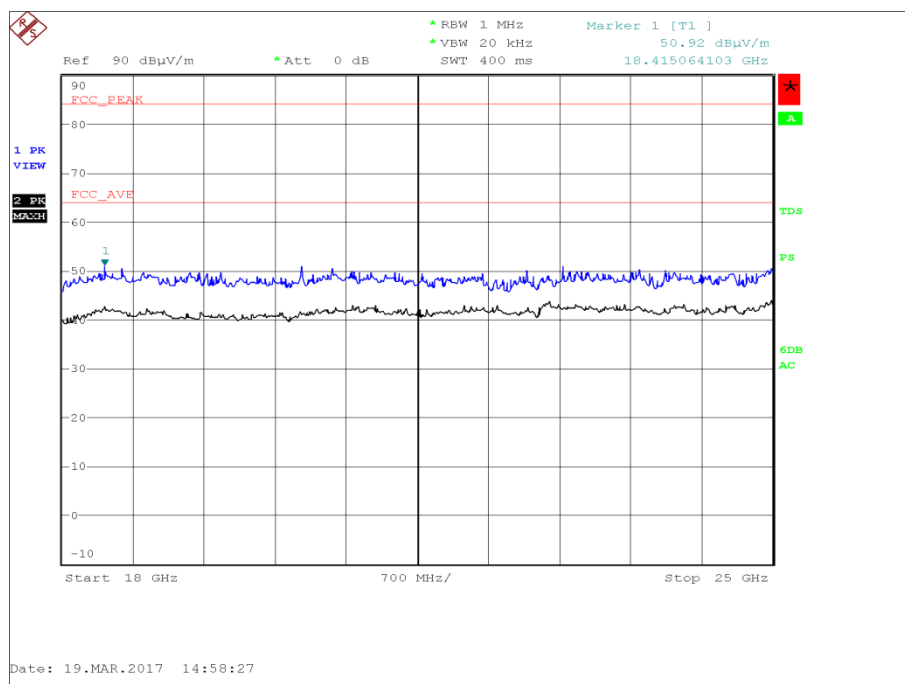


Figure 10 – 2403 MHz – 18 GHz to 25 GHz



| Frequency (MHz) | QP Level (dBuV/m) | QP Limit (dBuV/m) | QP Margin (dBuV/m) | Angle(Deg) | Height(m) | Polarity |
|-----------------|-------------------|-------------------|--------------------|------------|-----------|------------|
| 30.135 | 30.3 | 40.0 | -9.7 | 0 | 1.00 | Horizontal |
| 30.636 | 29.9 | 40.0 | -10.1 | 0 | 1.00 | Vertical |
| 32.825 | 28.9 | 40.0 | -11.1 | 0 | 1.00 | Vertical |
| 880.193 | 33.2 | 46.0 | -12.8 | 0 | 1.00 | Vertical |
| 928.217 | 33.4 | 46.0 | -12.6 | 0 | 1.00 | Vertical |
| 960.000 | 33.9 | 46.0 | -12.1 | 0 | 1.00 | Vertical |

Table 17 - 2442 MHz - 30 MHz to 1 GHz

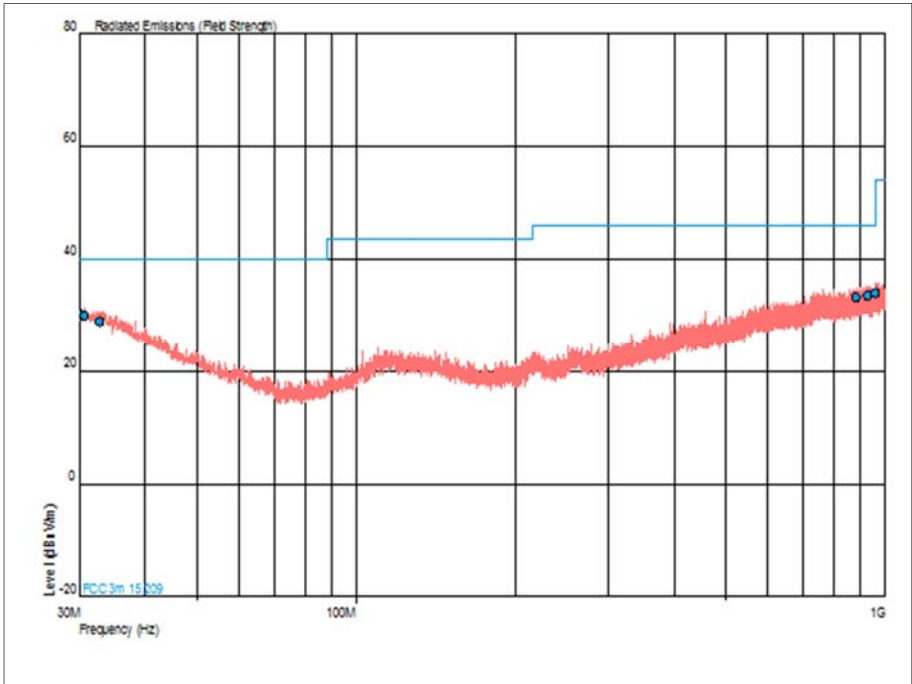


Figure 11 - 2442 MHz - 30 MHz to 1 GHz

| Frequency (MHz) | Final Peak (dBuV/m) | Final Average (dBuV/m) | Final Peak (uV/m) | Final Average (uV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| * | | | | | | | |

Table 18 – 2442 MHz – 1 GHz to 25 GHz

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



Product Service

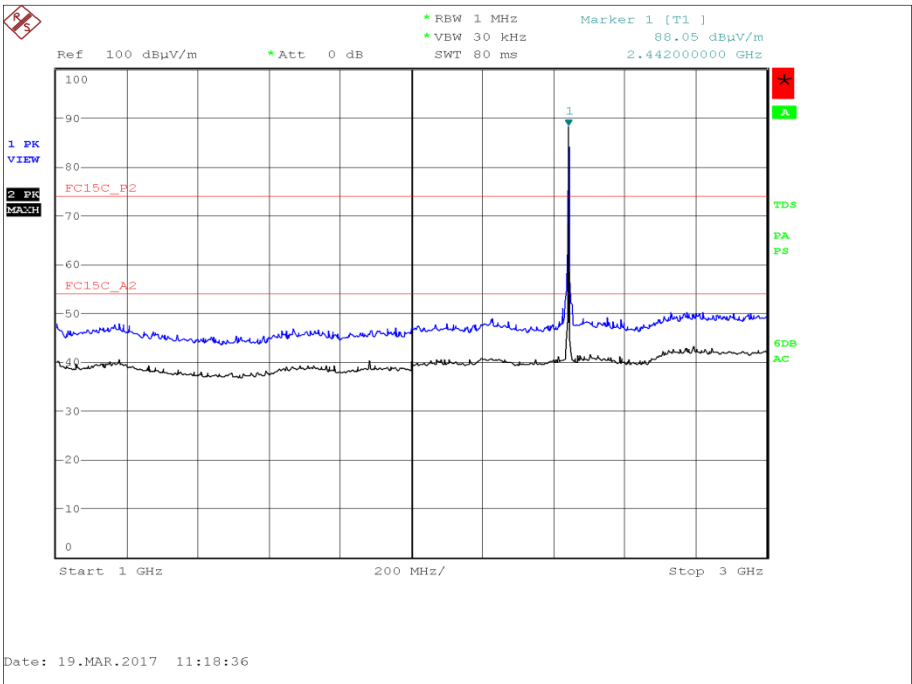


Figure 12 – 2442 MHz – 1 GHz to 3 GHz

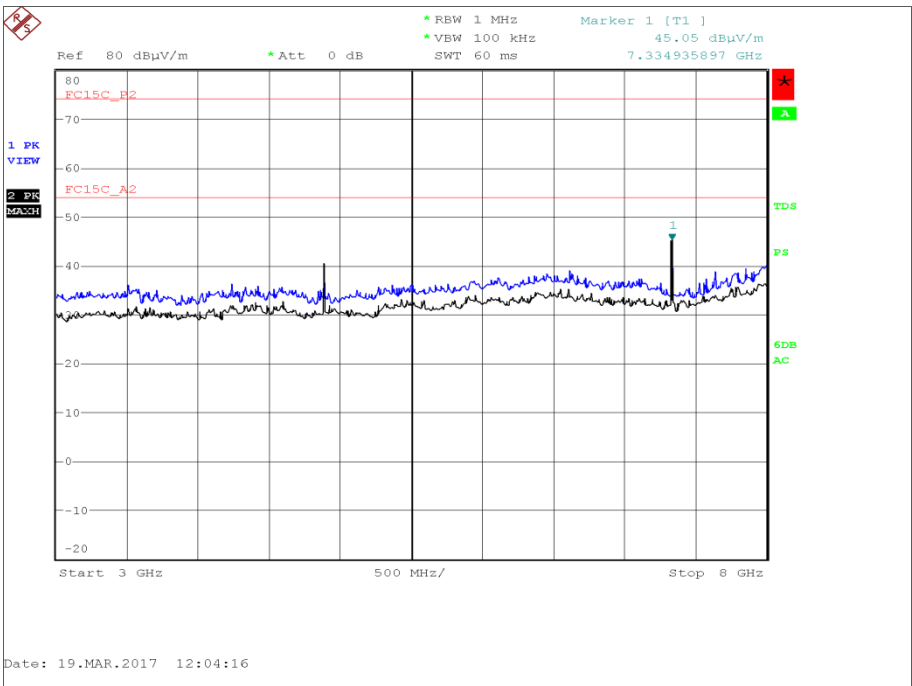


Figure 13 – 2442 MHz – 3 GHz to 8 GHz

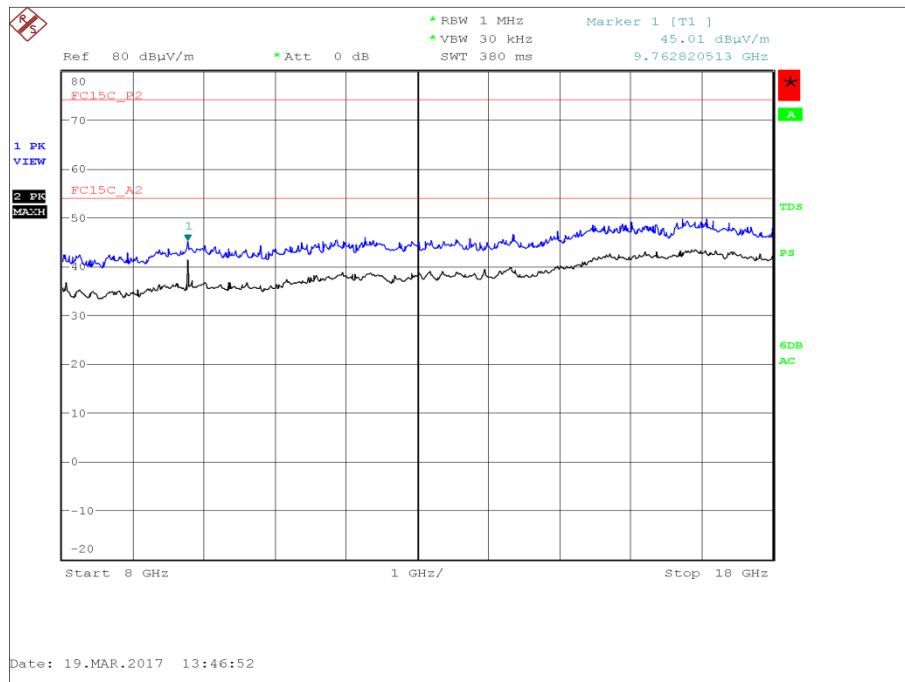


Figure 14– 2442 MHz – 8 GHz to 18 GHz

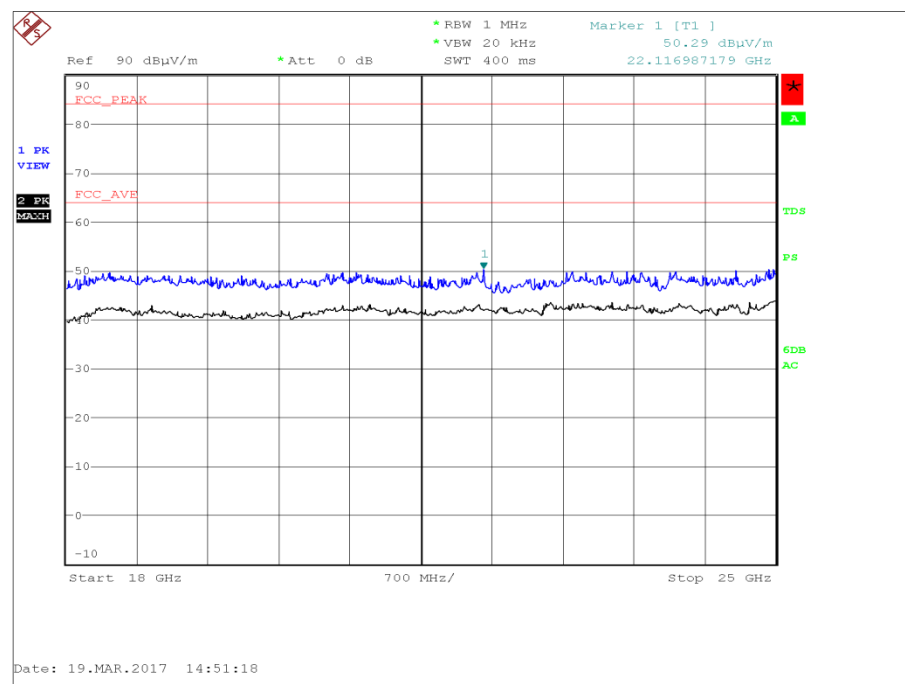


Figure 15 – 2442 MHz – 18 GHz to 25 GHz

| Frequency (MHz) | QP Level (dBuV/m) | QP Limit (dBuV/m) | QP Margin (dBuV/m) | Angle(Deg) | Height(m) | Polarity |
|-----------------|-------------------|-------------------|--------------------|------------|-----------|----------|
| 30.007 | 30.3 | 40.0 | -9.7 | 0 | 1.00 | Vertical |
| 31.170 | 30.0 | 40.0 | -10.0 | 0 | 1.00 | Vertical |
| 32.920 | 28.8 | 40.0 | -11.2 | 0 | 1.00 | Vertical |
| 784.555 | 32.4 | 46.0 | -13.6 | 0 | 1.00 | Vertical |
| 886.896 | 33.5 | 46.0 | -12.5 | 0 | 1.00 | Vertical |
| 960.000 | 33.9 | 46.0 | -12.1 | 0 | 1.00 | Vertical |

Table 19 - 2481 MHz - 30 MHz to 1 GHz

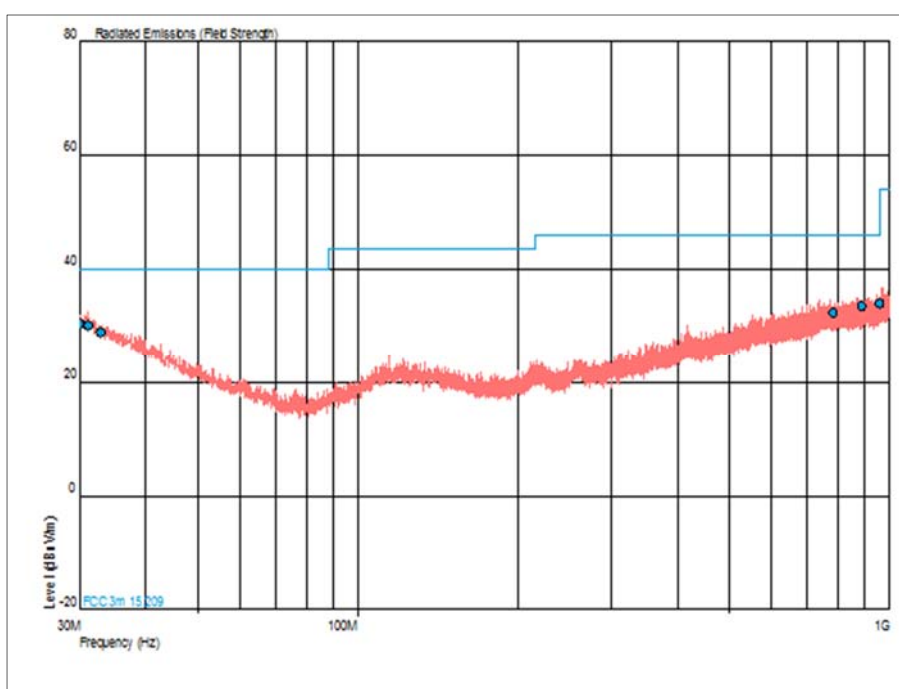


Figure 16 - 2481 MHz - 30 MHz to 1 GHz

| Frequency (MHz) | Final Peak (dBuV/m) | Final Average (dBuV/m) | Final Peak (uV/m) | Final Average (uV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| * | | | | | | | |

Table 20 – 2481 MHz – 1 GHz to 25 GHz

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

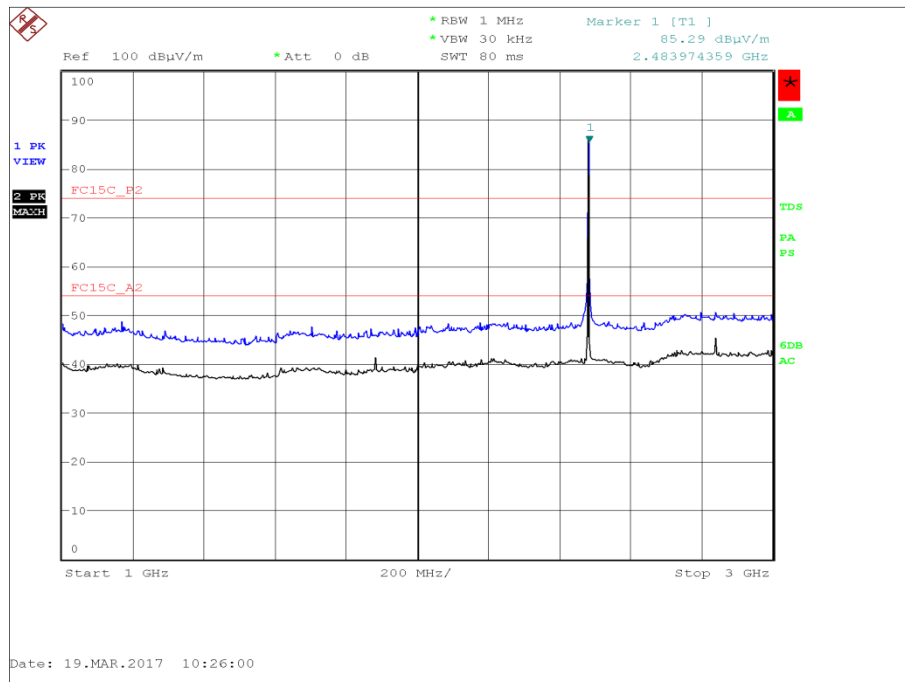


Figure 17 – 2481 MHz – 1 GHz to 3 GHz

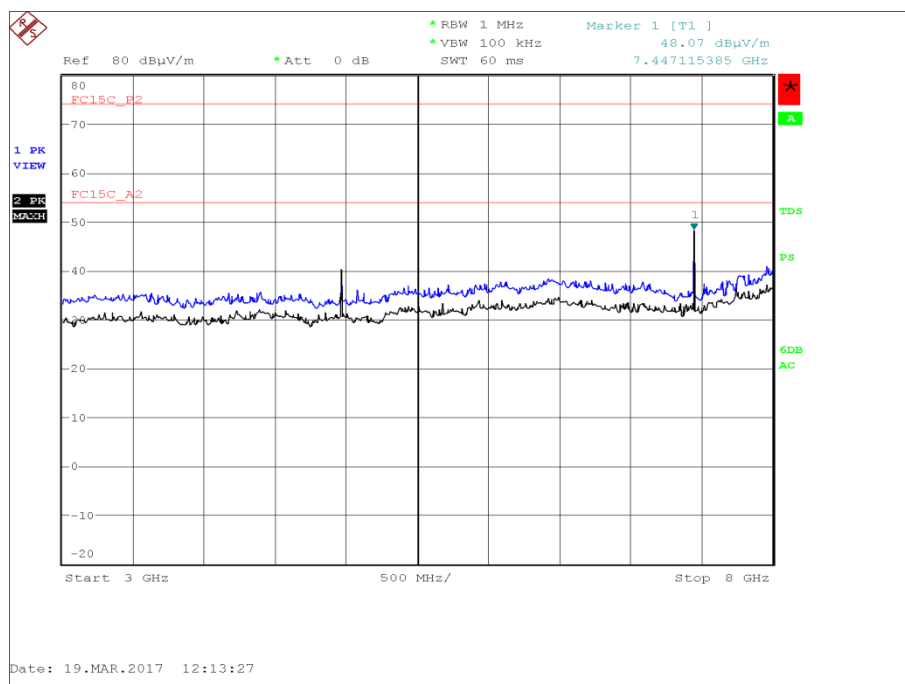


Figure 18 – 2481 MHz – 3 GHz to 8 GHz

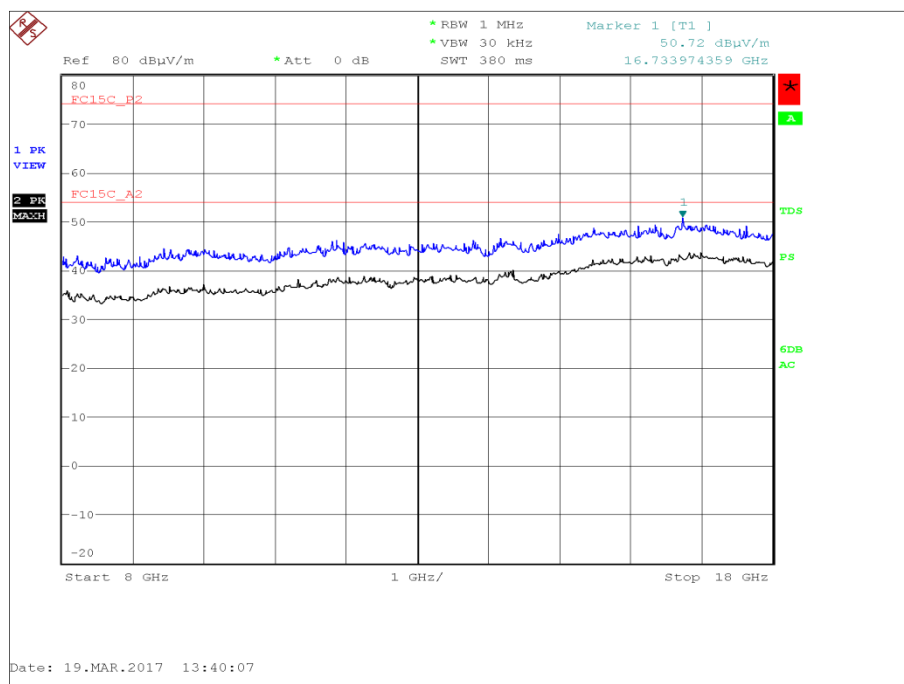


Figure 19 – 2481 MHz – 8 GHz to 18 GHz

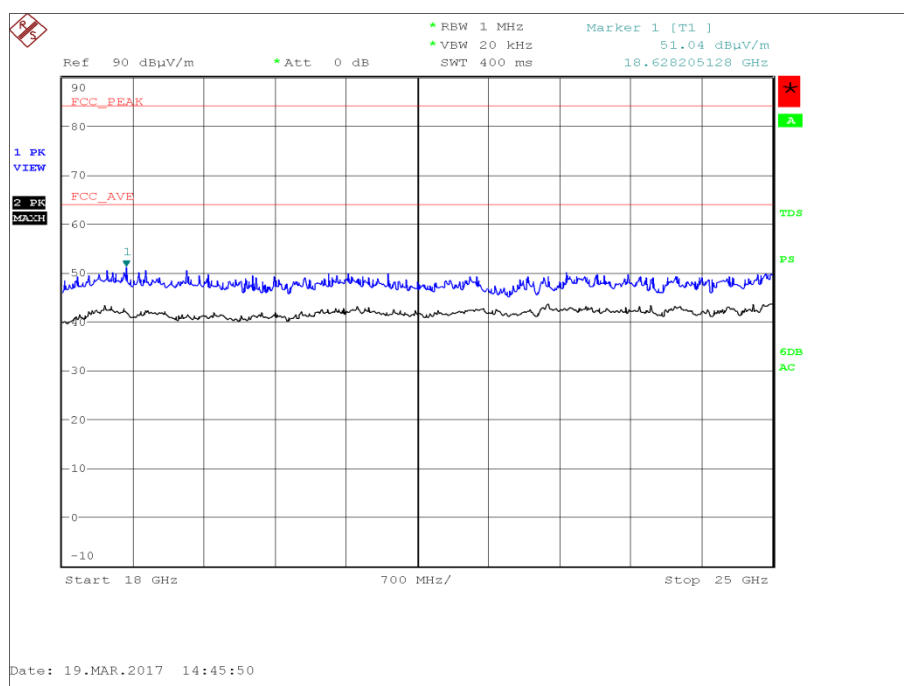


Figure 20 – 2481 MHz – 10 GHz to 25 GHz

FCC 47 CFR Part 15, Limit Clause 15.249 (d)

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

FCC 47 CFR Part 15, Limit Clause 15.209

| Frequency (MHz) | Field Strength ($\mu\text{V}/\text{m}$ at 3 m) |
|-----------------|---|
| 30 to 88 | 50 |
| 88 to 216 | 50 |
| 216 to 960 | 50 |
| Above 960 | 250 |

Table 21

Industry Canada RSS-210, Limit Clause B.10

The field strength of fundamental and harmonic emissions, measured at 3 m, shall not exceed 50 mV/m and 0.5 mV/m respectively.

The field strength limits shall be measured using an average detector, except for the fundamental emission in the frequency band 902-928 MHz, which is based on measurements using an International Special Committee on Radio Interference (CISPR) quasi-peak detector.

Emissions radiated outside of the specified frequency bands, except for harmonic emissions, shall be attenuated by at least 50 dB below the level of the fundamental emissions or to the general field strength limits listed in RSS-Gen, whichever is less stringent.

Industry Canada RSS-GEN, Limit Clause 8.9

| Frequency (MHz) | Field Strength ($\mu\text{V}/\text{m}$ at 3 m) |
|-----------------|---|
| 30 to 88 | 50 |
| 88 to 216 | 50 |
| 216 to 960 | 50 |
| Above 960 | 250 |

Table 22

2.3.7 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 |
|---------------------------------------|--------------------------|------------------------|-------|-----------------------------|-----------------|
| Antenna 18-40GHz (Double Ridge Guide) | Link Microtek Ltd | AM180HA-K-TU2 | 230 | 24 | 12-Feb-2018 |
| Hygrometer | Rotronic | A1 | 1388 | 12 | 13-Apr-2017 |
| Pre-Amplifier | Phase One | PS04-0086 | 1533 | 12 | 29-Jul-2017 |
| 18GHz - 40GHz Pre-Amplifier | Phase One | PS04-0087 | 1534 | 12 | 23-Jan-2018 |
| Screened Room (5) | Rainford | Rainford | 1545 | 36 | 20-Dec-2017 |
| Turntable Controller | Inn-Co GmbH | CO 1000 | 1606 | - | TU |
| Antenna (Bilog) | Chase | CBL6143 | 2904 | 24 | 11-Jun-2017 |
| Cable (N-N, 8m) | Rhophase | NPS-2302-8000-NPS | 3248 | - | O/P Mon |
| Tilt Antenna Mast | mature GmbH | TAM 4.0-P | 3916 | - | TU |
| Mast Controller | mature GmbH | NCD | 3917 | - | TU |
| 1GHz to 8GHz Low Noise Amplifier | Wright Technologies | APS04-0085 | 4365 | 12 | 17-Oct-2017 |
| Suspended Substrate Highpass Filter | Advance Power Components | 11SH10-3000/X18000-O/O | 4412 | 12 | 23-Mar-2017 |
| Cable (Yellow, Rx, Km-Km 2m) | Scott Cables | KPS-1501-2000-KPS | 4527 | - | O/P Mon |
| Cable (Rx, SMAm-SMAm 0.5m) | Scott Cables | SLSLL18-SMSM-00.50M | 4528 | - | O/P Mon |
| Double Ridged Waveguide Horn Antenna | ETS-Lindgren | 3117 | 4722 | 12 | 17-Feb-2018 |
| Double Ridge Broadband Horn Antenna | Schwarzbeck | BBHA 9120 B | 4848 | 12 | 17-Feb-2018 |

Table 23

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment

2.4 Frequency Tolerance Under Temperature Variations

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.249 (b)(2)
Industry Canada RSS-GEN, Clause 6.11

2.4.2 Equipment Under Test and Modification State

EDTracker Pro Wireless, S/N: #002 - Modification State 0

2.4.3 Date of Test

15-March-2017 to 16-March-2017

2.4.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.8. The EUT was set to transmit on maximum power, constant carrier. The signal count marker function, of the spectrum analyser, was used to measure the frequency error. The temperature was adjusted between -20°C and +50°C in 10° steps as per 15.249 (b)(2).

A new battery was used.

2.4.5 Environmental Conditions

Ambient Temperature 23.2 - 24.3 °C
Relative Humidity 38.0 - 40.0 %

2.4.6 Test Results

Pro Wireless - 2.4 GHz SRD

| Temperature | Voltage | Frequency Deviation (%) |
|-------------|-----------|-------------------------|
| | | 2442 MHz |
| -20.0 °C | 3.70 V DC | -0.00097 |
| -10.0 °C | 3.70 V DC | -0.00060 |
| 0 °C | 3.70 V DC | -0.00047 |
| +10.0 °C | 3.70 V DC | -0.00054 |
| +20.0 °C | 2.75 V DC | N/A |
| +20.0 °C | 3.70 V DC | 0.00031 |
| +20.0 °C | 4.10 V DC | N/A |
| +30.0 °C | 3.70 V DC | -0.00089 |
| +40.0 °C | 3.70 V DC | 0.00056 |
| +50.0 °C | 3.70 V DC | -0.00062 |

Table 24

FCC 47 CFR Part 15, Limit Clause 15.249 (b)(2)

± 0.001%

Industry Canada RSS-GEN, Clause 6.8

None Specified

2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

| Instrument | Manufacturer | Type No | TE No | Calibration Period (months) | Calibration Due |
|--------------------------------|-----------------------|----------------------------|-------|-----------------------------|-----------------|
| Climatic Chamber | Votsch | VT4002 | 161 | - | O/P Mon |
| Thermocouple Thermometer | Fluke | 51 | 3174 | 12 | 22-Dec-2017 |
| Signal Analyser | Rohde & Schwarz | FSQ 26 | 3545 | 12 | 09-Sep-2017 |
| 'N' - 'N' RF Cable (1m) | Rhophase | NPS-1803-1000-NPS | 3700 | 12 | 26-Jan-2018 |
| Combiner/Splitter | Weinschel | 1506A | 3877 | 12 | 30-Mar-2017 |
| DC - 12.4 GHz 10 dB Attenuator | Suhner | 6810.17.A | 3965 | 12 | 25-Oct-2017 |
| 1 Metre K Type Cable | Rhophase | KPS-1501A-1000-KPS | 4106 | 12 | 14-Dec-2017 |
| Frequency Standard | Spectracom | Secure Sync 1200-0408-0601 | 4393 | 6 | 09-Sep-2017 |
| 1 metre N-Type Cable | Florida Labs | NMS-235SP-39.4-NMS | 4510 | 12 | 26-May-2017 |
| PXA Signal Analyser | Keysight Technologies | N9030A | 4654 | 12 | 06-Oct-2017 |

Table 25

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 |
|--|--|
| Authorised Band Edges | Conducted: ± 3.08 dB Radiated: 30 MHz to 1 GHz: ± 5.1 dB Radiated: 1 GHz to 40 GHz: ± 6.3 dB |
| Field Strength of Emissions | 30 MHz to 1 GHz: ± 5.1 dB 1 GHz to 40 GHz: ± 6.3 dB |
| Frequency Tolerance Under Temperature Variations | ± 3.54 Hz |
| Field Strength of Fundamental | 30 MHz to 1 GHz: ± 5.1 dB 1 GHz to 40 GHz: ± 6.3 dB |

Table 26