

FCC and Industry Canada Testing of the
DAQRI International Limited
Model: DAQRI Compute Pack
In accordance with FCC 47 CFR Part 15C,
Industry Canada RSS-247 and Industry Canada
RSS-GEN

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FCC ID: 2AEWMDQR002001
IC: 22854-DQR002001



COMMERCIAL-IN-CONFIDENCE

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| RESPONSIBLE FOR | NAME | DATE | SIGNATURE |
|----------------------|-----------------|----------------|-----------|
| Project Management | Steven White | 22 August 2017 | |
| Authorised Signatory | Matthew Russell | 22 August 2017 | |

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, Industry Canada RSS-247 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 | 22 August 2017 | |

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: 2016, Industry Canada RSS-247: Issue 2 (2017-02) and Industry Canada RSS-GEN: Issue 4 (2014-11) for the tests detailed in section 1.3.

| | |
|---|---|
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Contents

| | | |
|----------|--------------------------------------|-----------|
| 1 | Report Summary | 2 |
| 1.1 | Report Modification Record..... | 2 |
| 1.2 | Introduction..... | 2 |
| 1.3 | Brief Summary of Results | 3 |
| 1.2 | Product Information | 10 |
| 1.3 | Deviations from the Standard..... | 10 |
| 1.4 | EUT Modification Record | 10 |
| 1.5 | Test Location..... | 10 |
| 2 | Test Details | 11 |
| 2.1 | Authorised Band Edges | 11 |
| 2.2 | Restricted Band Edges | 14 |
| 2.3 | Spurious Radiated Emissions | 19 |
| 3 | Measurement Uncertainty | 22 |

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 | 22 August 2017 |

Table 1

1.2 Introduction

| | |
|-------------------------------|---|
| Applicant | DAQRI LLC |
| Manufacturer | DAQRI International Limited |
| Model Number(s) | DAQRI Compute Pack |
| Serial Number(s) | OA565-7DF-94TC48EA8Y |
| Hardware Version(s) | DCP 2017 |
| Software Version(s) | V16 |
| Number of Samples Tested | 1 |
| Test Specification/Issue/Date | FCC 47 CFR Part 15C: 2016 Industry Canada RSS-247: Issue 2 (2017-02) Industry Canada RSS-GEN: Issue 4 (2014-11) |
| Order Number | PO-UK3931 |
| Date | 06-July-2017 |
| Date of Receipt of EUT | 26-July-2017 |
| Start of Test | 26-July-2017 |
| Finish of Test | 26-July-2017 |
| Name of Engineer(s) | Graeme Lawler |
| Related Document(s) | ANSI C63.10 (2013) |



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-247 and Industry Canada RSS-GEN is shown below.

| Section | Specification Clause | | | Test Description | Result | Comments/Base Standard |
|--------------------------|-----------------------|---------|---------|-----------------------------|--------|------------------------|
| | Part 15C | RSS-247 | RSS-GEN | | | |
| Configuration: Bluetooth | | | | | | |
| 2.1 | 15.247 (d) | 5.5 | - | Authorised Band Edges | Pass | ANSI C63.10 |
| 2.2 | 15.205 | - | 8.10 | Restricted Band Edges | Pass | ANSI C63.10 |
| 2.3 | 15.247 (d) and 15.205 | 5.5 | 6.13 | Spurious Radiated Emissions | Pass | ANSI C63.10 |

Table 2

Limited testing of worst case modes / modulation schemes has been performed on the DAQRI Compute Pack, to verify the effects of the metal outer top plate being changed to plastic.

Full testing having previously been performed and detailed within report RP75936979-06

1.1 Application Form

| EQUIPMENT DESCRIPTION | |
|---|---|
| Model Name/Number | DAQRI Compute Pack |
| Part Number | 870-00163 |
| Hardware Version | DCP 2017 |
| Software Version | V16 |
| FCC ID (if applicable) | 2AEWMDQR002001 |
| Industry Canada ID (if applicable) | 22854-DQR002001 |
| Technical Description (Please provide a brief description of the intended use of the equipment) | DAQRI Compute Pack is a mobile computer that powers a lightweight wearable human-machine interface that connects workers in a variety of industries and environments to real time information and augmented work instruction. |

| Types of Modulations used by the Equipment | |
|---|--|
| <input checked="" 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: 79 | |
| Minimum number of Hopping Frequencies: 20 | |
| Dwell Time: Up to 3.2 ms for Bluetooth | |
| Adaptive / non-adaptive equipment: | |
| <input type="checkbox"/> non-adaptive Equipment | |
| <input checked="" 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 checked="" 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: μ s | |
| <input checked="" 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.): 19 dBm | |
| The maximum (corresponding) Duty Cycle: 100 % | |
| 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: | |
| Power Spectral Density: | |
| Duty cycle, Tx-Sequence, Tx-gap: | |
| Accumulated Transmit Time, Frequency Occupation & Hopping Sequence (only for FHSS equipment): | |
| Hopping Frequency Separation (only for FHSS equipment): | |
| Medium Utilisation: | |
| Adaptivity & Receiver Blocking: | |
| Nominal Channel Bandwidth: | |
| Transmitter unwanted emissions in the OOB domain: | |
| Transmitter unwanted emissions in the spurious domain: | |
| Receiver spurious emissions: | |
| 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 checked="" 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 checked="" type="checkbox"/> Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming | |
| <input checked="" type="checkbox"/> Single spatial stream / Standard throughput / (e.g. IEEE 802.11™ [i.3] legacy mode) | |
| <input checked="" type="checkbox"/> High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1 | |
| <input checked="" 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: 2 | |
| The number of Transmit chains: 2 | |
| <input checked="" 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: 2400 MHz to 2483.5 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: 20 MHz | |
| Nominal Channel Bandwidth2: 40 MHz | |
| Nominal Channel Bandwidth3: Bluetooth 1 MHz | |
| Nominal Channel Bandwidth4: BLE 2 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: °C | |
| Other (please specify if applicable): | |
| Extreme operating conditions: | |
| Operating temperature range: Minimum 0 °C to Maximum 30 °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: 2 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: 19 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 | 19 | Taoglas FXP840 |
| 2 | 2 | 19 | Taoglas FXP840 |
| 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 type="checkbox"/> DC | State DC voltage | V |
| In case of DC, indicate the type of power source | | | |
| <input type="checkbox"/> Internal Power Supply | | | |
| <input type="checkbox"/> External Power Supply or AC/DC adapter | | | |
| <input type="checkbox"/> Battery | | | |
| <input checked="" type="checkbox"/> Other: Li-ion | | | |
| Describe the test modes available which can facilitate testing: | | | |
| The equipment type (e.g. Bluetooth®, IEEE 802.11™ [i.3] IEEE 802.15.4™ [i.4], proprietary, etc.): | | | |
| 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 checked="" type="checkbox"/> Yes | | | |
| <input checked="" 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 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) | | | |
| 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: 20M0 G1D, 40M0 G1D, 2M00 G1D, 1M00 G1D | | | |
| Can the transmitter operate unmodulated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |

| | |
|--|---|
| Duty Cycle | |
| The transmitter is intended for: | |
| <input checked="" type="checkbox"/> | Continuous duty |
| <input type="checkbox"/> | Intermittent duty |
| <input type="checkbox"/> | Continuous operation possible for testing purposes |
| About the UUT | |
| <input type="checkbox"/> | The equipment submitted are representative production models |
| <input 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 checked="" type="checkbox"/> | Spare batteries (e.g. for portable equipment) |
| <input checked="" type="checkbox"/> | Battery charging device |
| <input checked="" 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 the information supplied is correct and complete.

Name: Dave Williams
Date: 26th May 2017

Position held: Certification Test Manager

1.2 Product Information

1.2.1 Technical Description

DAQRI Compute Pack is a mobile computer that powers a lightweight wearable human-machine interface that connects workers in a variety of industries and environments to real time information and augmented work instruction.

1.3 Deviations from the Standard

Limited testing of worst case modes / modulation schemes was been performed with the new case on the DAQRI Compute Pack to verify previous results. No deviations from the applicable test methods were made during testing.

1.4 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: OA565-7DF-94TC48EA8Y | | | |
| 0 | As supplied by the customer | Not Applicable | Not Applicable |

Table 3

1.5 Test Location

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

| Test Name | Name of Engineer(s) | Accreditation |
|-----------------------------|---------------------|---------------|
| Configuration: Bluetooth | | |
| Authorised Band Edges | Graeme Lawler | UKAS |
| Restricted Band Edges | Graeme Lawler | UKAS |
| Spurious Radiated Emissions | Graeme Lawler | UKAS |

Table 4

Office Address:

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

2 Test Details

2.1 Authorised Band Edges

2.1.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d)
Industry Canada RSS-247, Clause 5.5

2.1.2 Equipment Under Test and Modification State

DAQRI Compute Pack, S/N: OA565-7DF-94TC48EA8Y - Modification State 0

2.1.3 Date of Test

26-July-2017

2.1.4 Test Method

Bluetooth

Testing was performed in accordance with ANSI C63.10-2013 clause 6.10.4

Measurements are reported in dB μ V/m. The following conversion can be applied to convert from dB μ V/m to μ V/m: $10^{\frac{Field\ Strength\ in\ dB\mu V/m}{20}}$.

2.1.5 Environmental Conditions

Ambient Temperature 20.8 °C
Relative Humidity 67.0 %

2.1.6 Test Results

Bluetooth

| Mode | Modulation | Packet Type | Frequency (MHz) | Measured Frequency (MHz) | Peak Level (dB μ V/m) |
|--------|---------------|-------------|-----------------|--------------------------|---------------------------|
| Static | $\pi/4$ DQPSK | 2DH5 | 2402 | 2400.0 | 51.91 |
| Static | $\pi/4$ DQPSK | 2DH5 | 2480 | 2483.5 | 47.94 |

Table 5

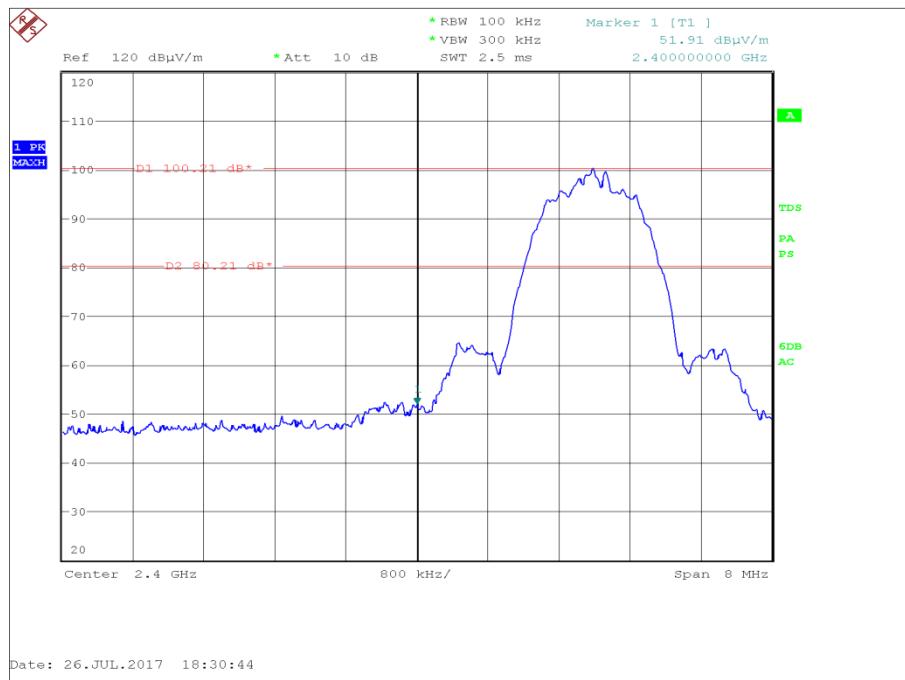


Figure 1 - Static - $\pi/4$ DQPSK/2DH5 - 2402 MHz - Measured Frequency 2400.0 MHz

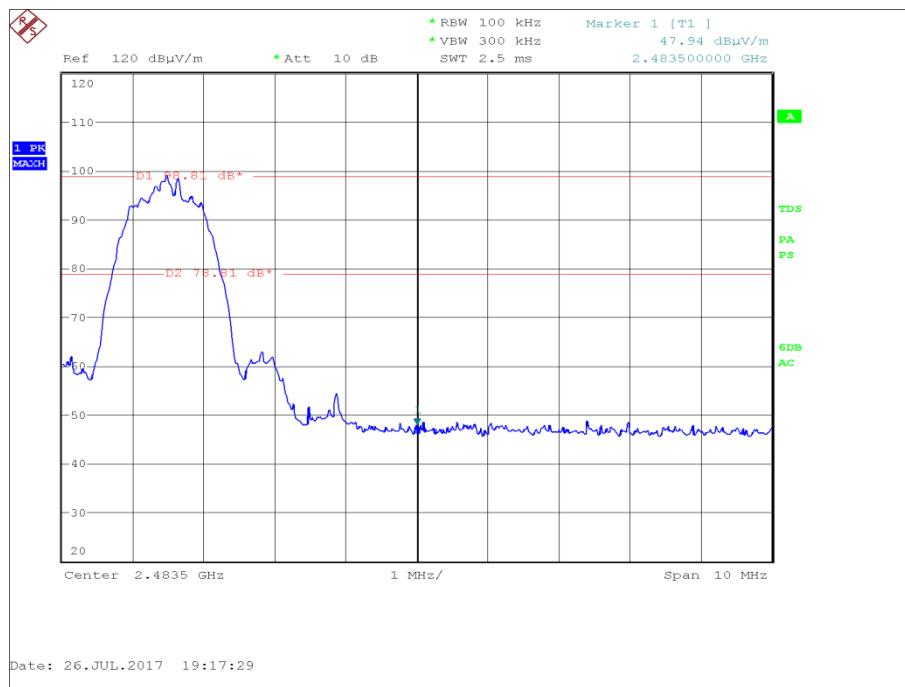


Figure 2 - Static - $\pi/4$ DQPSK/2DH5 - 2480 MHz - Measured Frequency 2483.5 MHz

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

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 |
|-------------------------------------|-----------------|-------------------|-------|-----------------------------|-----------------|
| Screened Room (5) | Rainford | Rainford | 1545 | 36 | 20-Dec-2017 |
| Turntable Controller | Inn-Co GmbH | CO 1000 | 1606 | - | TU |
| Hygrometer | Rotronic | A1 | 2138 | 12 | 02-Feb-2018 |
| Cable (N-N, 8m) | Rhophase | NPS-2302-8000-NPS | 3248 | 12 | 02-May-2018 |
| 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 (Rx, Km-Km 2m) | Scott Cables | KPS-1501-2000-KPS | 4526 | 6 | 17-Sep-2017 |
| Double Ridge Broadband Horn Antenna | Schwarzbeck | BBHA 9120 B | 4848 | 12 | 17-Feb-2018 |

Table 6

TU - Traceability Unscheduled

2.2 Restricted Band Edges

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.205
Industry Canada RSS-GEN, Clause 8.10

2.2.2 Equipment Under Test and Modification State

DAQRI Compute Pack, S/N: OA565-7DF-94TC48EA8Y - Modification State 0

2.2.3 Date of Test

26-July-2017

2.2.4 Test Method

Bluetooth

This test was performed in accordance with ANSI C63.10, clause 6.10.5.

Plots for average measurements were taken in accordance with ANSI C63.10 clause 4.1.4.2.3. These are shown for information purposes and were used to determine the worst case measurement point. Final average measurements were then taken in accordance with ANSI C63.10 clause 4.1.4.2.2. to obtain the measurement result recorded in the test results tables.

Measurements are reported in dB μ V/m. The following conversion can be applied to convert from dB μ V/m to μ V/m: $10^{\frac{1}{2}}(\text{Field Strength in dB}\mu\text{V/m}/20)$.

2.2.5 Environmental Conditions

Ambient Temperature 20.8 °C
Relative Humidity 67.0 %

2.2.6 Test Results

Bluetooth

| Mode | Modulation | Packet Type | Frequency (MHz) | Measured Frequency (MHz) | Peak Level (dB μ V/m) | Average Level (dB μ V/m) |
|--------|---------------|-------------|-----------------|--------------------------|---------------------------|------------------------------|
| Static | $\pi/4$ DQPSK | 2DH5 | 2402 | 2390.0 | 57.22 | 46.21 |
| Static | $\pi/4$ DQPSK | 2DH5 | 2480 | 2483.5 | 58.08 | 46.33 |

Table 7

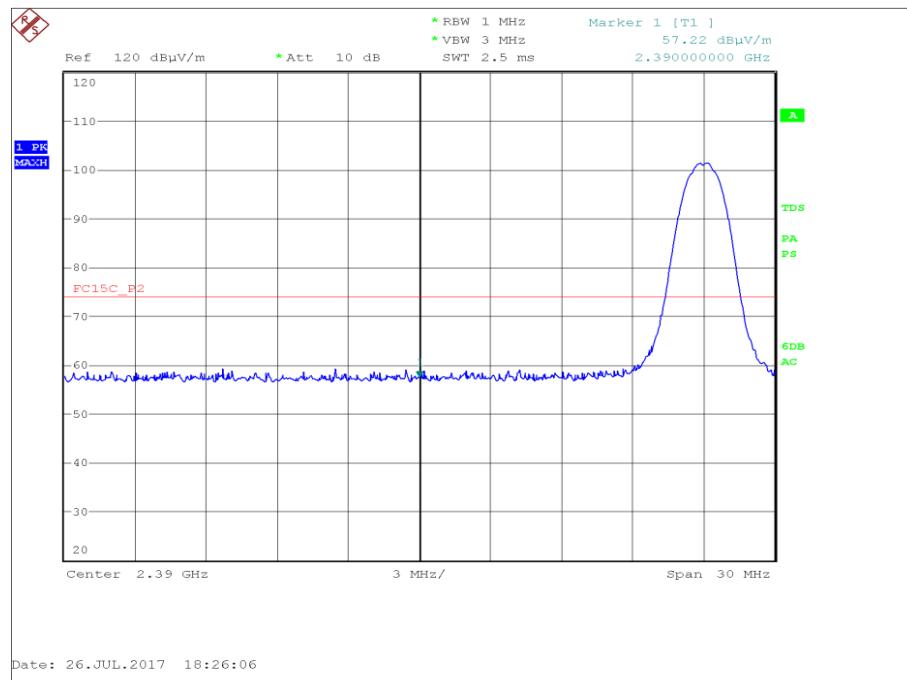


Figure 3 - Static - $\pi/4$ DQPSK/2DH5 - 2402 MHz - Measured Frequency 2390.0 MHz - Peak

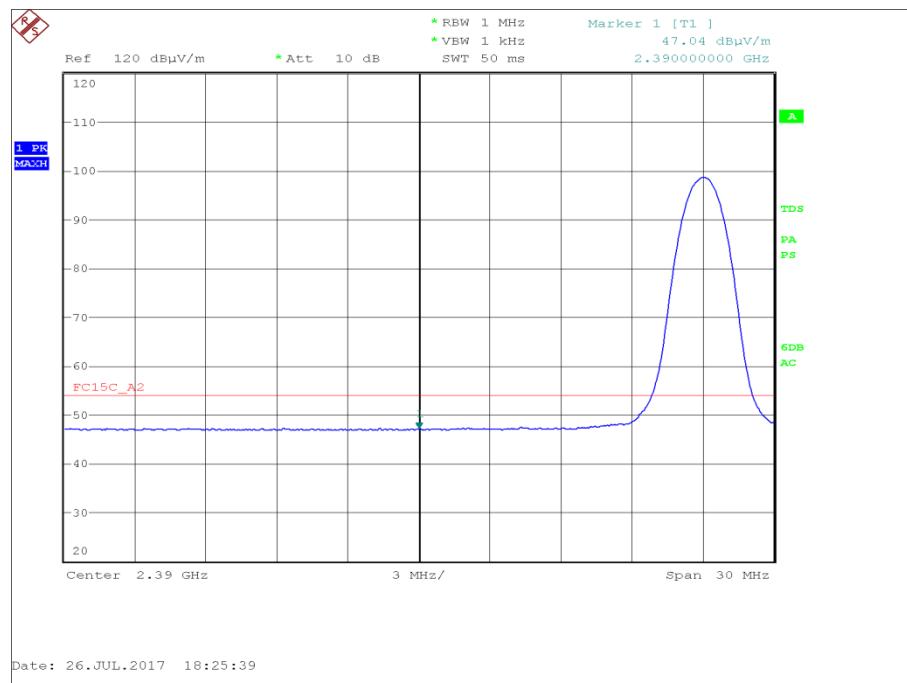


Figure 4 - Static - $\pi/4$ DQPSK/2DH5 - 2402 MHz - Measured Frequency 2390.0 MHz - Average

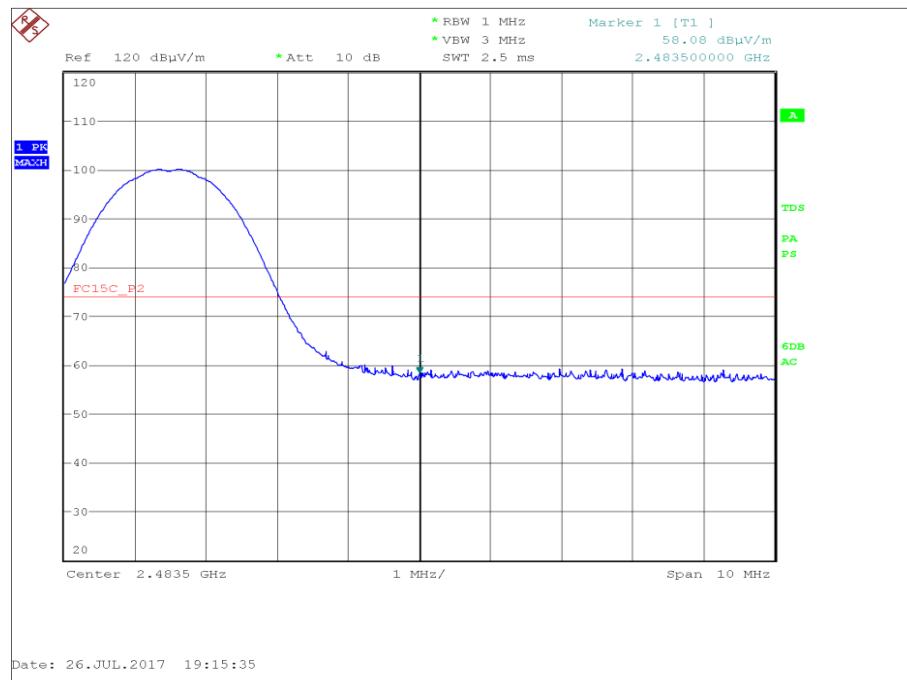


Figure 5 - Static - $\pi/4$ DQPSK/2DH5 - 2480 MHz - Measured Frequency 2483.5 MHz - Peak

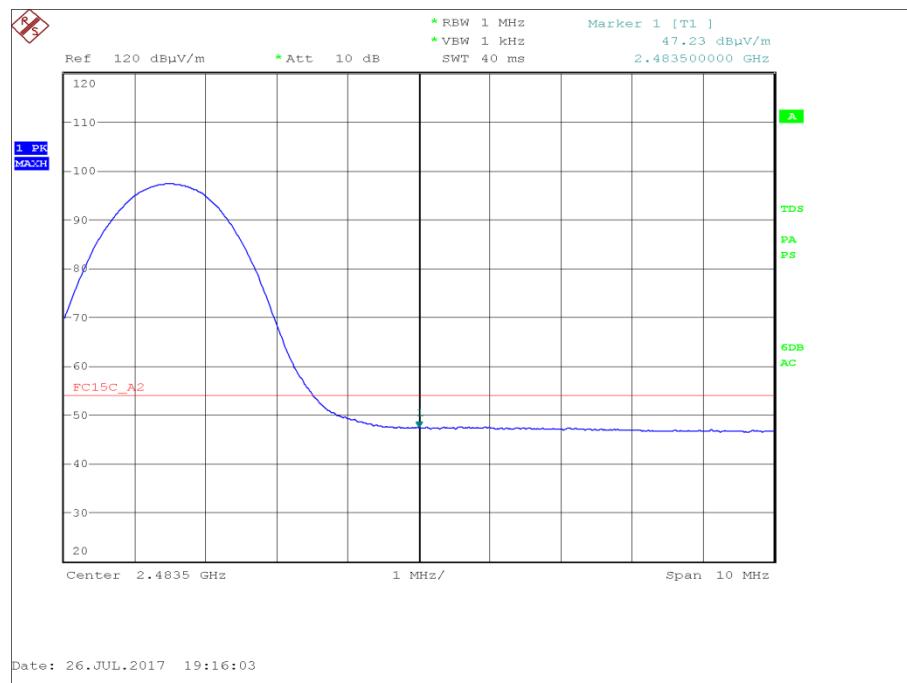


Figure 6 - Static - $\pi/4$ DQPSK/2DH5 - 2480 MHz - Measured Frequency 2483.5 MHz - Average

FCC 47 CFR Part 15, Limit Clause 15.209

| Frequency (MHz) | Field Strength (μ V/m at 3 m) |
|-----------------|------------------------------------|
| 30 to 88 | 100 |
| 88 to 216 | 150 |
| 216 to 960 | 200 |
| Above 960 | 500 |

Table 8
Industry Canada RSS-GEN, Limit Clause 8.9

| Frequency (MHz) | Field Strength (μ V/m at 3 metres) |
|-----------------|---|
| 30-88 | 100 |
| 88-216 | 150 |
| 216-960 | 200 |
| Above 960* | 500 |

Table 9

*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.

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 |
|-------------------------------------|-----------------|-------------------|-------|-----------------------------|-----------------|
| Screened Room (5) | Rainford | Rainford | 1545 | 36 | 20-Dec-2017 |
| Turntable Controller | Inn-Co GmbH | CO 1000 | 1606 | - | TU |
| Hygrometer | Rotronic | A1 | 2138 | 12 | 02-Feb-2018 |
| Digital Multimeter | Iso-tech | IDM-101 | 2895 | 12 | 20-Jul-2018 |
| Cable (N-N, 8m) | Rhophase | NPS-2302-8000-NPS | 3248 | 12 | 02-May-2018 |
| 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 | 6 | 04-Nov-2017 |
| Double Ridge Broadband Horn Antenna | Schwarzbeck | BBHA 9120 B | 4848 | 12 | 17-Feb-2018 |

Table 10

TU - Traceability Unscheduled



2.3 Spurious Radiated Emissions

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d) and 15.205
Industry Canada RSS-247, Clause 5.5
Industry Canada RSS-GEN, Clause 6.13

2.3.2 Equipment Under Test and Modification State

DAQRI Compute Pack, S/N: OA565-7DF-94TC48EA8Y - Modification State 0

2.3.3 Date of Test

26-July-2017

2.3.4 Test Method

Bluetooth

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

Plots for average measurements were taken in accordance with ANSI C63.10, clause 4.1.4.2.3 to characterize the EUT. Where emissions were detected, final average measurements were taken in accordance with ANSI C63.10-2013 clause 4.1.4.2.2.

The plots shown are the characterisation of the EUT. The limits on the plots represent the most stringent case for restricted bands, (54/74 dB μ V/m) when compared to 20 dBc outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

Measurements are reported in dB μ V/m. The following conversion can be applied to convert from dB μ V/m to μ V/m: $10^{(Field\ Strength\ in\ dB\mu\text{V}/m)/20}$.

2.3.5 Environmental Conditions

Ambient Temperature 20.8 °C

Relative Humidity 67.0 %

2.3.6 Test Results

Bluetooth

Testing was performed on the modulation and packet type which resulted in the highest conducted output power. The Modulation/Packet type was GFSK/DH5.

| Frequency (MHz) | Result (dB μ V/m) | | Limit (dB μ V/m) | | Margin (dB μ V/m) | |
|-----------------|-----------------------|---------|----------------------|---------|-----------------------|---------|
| | Peak | Average | Peak | Average | Peak | Average |
| * | | | | | | |

Table 11 - 2402 MHz - 1 GHz to 3 GHz

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

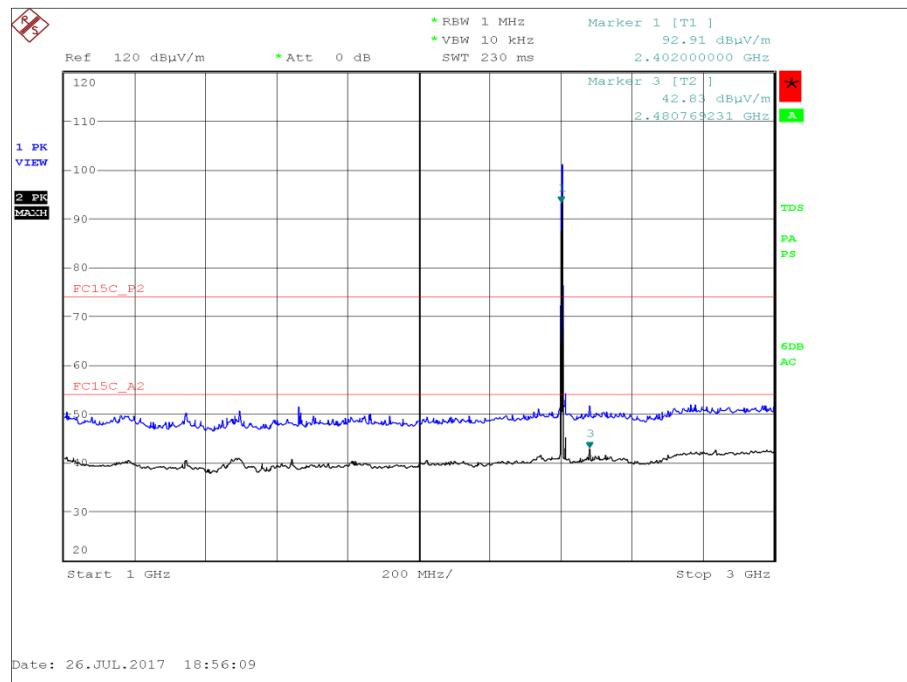


Figure 7 – 2402 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in 15.209(a)

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

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 |
|-------------------------------------|--------------------------|------------------------|-------|-----------------------------|-----------------|
| Screened Room (5) | Rainford | Rainford | 1545 | 36 | 20-Dec-2017 |
| Turntable Controller | Inn-Co GmbH | CO 1000 | 1606 | - | TU |
| Hygrometer | Rotronic | A1 | 2138 | 12 | 02-Feb-2018 |
| Filter Unit | Rohde & Schwarz | ASCU 850 | 3148 | - | TU |
| Cable (N-N, 8m) | Rhophase | NPS-2302-8000-NPS | 3248 | 12 | 02-May-2018 |
| EMI Test Receiver | Rohde & Schwarz | ESU40 | 3506 | 12 | 12-Nov-2017 |
| Tilt Antenna Mast | maturo GmbH | TAM 4.0-P | 3916 | - | TU |
| Suspended Substrate Highpass Filter | Advance Power Components | 11SH10-3000/X18000-O/O | 4411 | 12 | 22-May-2018 |
| Cable (Rx, Km-Km 2m) | Scott Cables | KPS-1501-2000-KPS | 4526 | 6 | 17-Sep-2017 |
| Double Ridge Broadband Horn Antenna | Schwarzbeck | BBHA 9120 B | 4848 | 12 | 17-Feb-2018 |

Table 12

TU - Traceability Unscheduled

3 Measurement Uncertainty

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

| Test Name | Measurement Uncertainty |
|-----------------------------|--|
| Authorised Band Edges | 30 MHz to 1 GHz: ± 5.1 dB 1 GHz to 40 GHz: ± 6.3 dB |
| Restricted Band Edges | 30 MHz to 1 GHz: ± 5.1 dB 1 GHz to 40 GHz: ± 6.3 dB |
| Spurious Radiated Emissions | 30 MHz to 1 GHz: ± 5.1 dB 1 GHz to 40 GHz: ± 6.3 dB |

Table 13