



Canada

# EMC & RF Test Report

As per

## RSS-247 Issue 2:2017 & FCC Part 15 Subpart 15.247

Unlicensed Intentional Radiators  
DTS System  
on the

**ECB601/ECB501**

Issued by:

**TÜV SÜD Canada Inc.**  
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Gormley, ON, L0H 1G0  
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Testing produced for

ecobee

Prepared by:

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Sr. Project Engineer

Reviewed by:

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EMC Team Lead

See Appendix A for full client &  
EUT details.



Innovation, Science and  
Economic Development Canada

Registration #  
6844A-3



Testing Laboratory  
Certificate #2955.02

Report Issued:  
7/25/2022



R-14023, G-20072  
C-14498, T-20060



Registration #  
CA6844

|             |                                                    |                                                                                     |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Client      | <b>Ecobee Inc.</b>                                 |  |
| Product     | <b>ECB601/ECB501</b>                               |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

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| Client      | <b>Ecobee Inc.</b>                                 |  |
| Product     | <b>ECB601/ECB501</b>                               |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

## Report Scope

This report addresses the EMC verification testing and test results of the **Ecobee Inc.'s** Model: **ECB601/ECB501** (2.4 GHz DTS) and is herein referred to as EUT (Equipment Under Test). The EUT was tested for compliance against the following standards:

RSS-247 Issue 2:2017

FCC Part 15 Subpart C 15.247

Test procedures, results, justifications, and engineering considerations, if any, follow later in this report. The purpose of this report is to verify that the EUT is still in compliance with the rules after a C2PC. Refer to the original test report, TÜV SÜD Canada Report # **7169010244RA-001 (DTS – 2.4 GHz Thread)** for full testing and test results.

This report does not imply product endorsement by any government, accreditation agency, or TÜV SÜD Canada Inc.

Opinions or interpretations expressed in this report, if any, are outside the scope of TÜV SÜD Canada Inc. accreditations. Any opinions expressed do not necessarily reflect the opinions of TÜV SÜD Canada Inc., unless otherwise stated.

|             |                                                    |                                                                                     |
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| Product     | <b>ECB601/ECB501</b>                               |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

## Summary

The results contained in this report relate only to the item(s) tested.

|                                      |                   |
|--------------------------------------|-------------------|
| EUT:                                 | ECB601/ECB501     |
| FCC Certification #, FCC ID:         | WR955470766937    |
| Industry Canada Certification #, IC: | 7981A-55470766937 |
| EUT passed all tests performed       | Yes               |
| Tests conducted by                   | Min Xie           |
| Report reviewed by                   | Sanjiv Vyas       |

For testing dates, see "Testing Environmental Conditions and Dates".

|             |                                                    |                                                                                     |
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| Product     | <b>ECB601/ECB501</b>                               |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

## ***Test Results Summary***

| <b>Standard/Method</b>          | <b>Description</b>                            | <b>Class/Limit</b>   | <b>Result</b> |
|---------------------------------|-----------------------------------------------|----------------------|---------------|
| FCC 15.205<br>RSS-GEN (Table 6) | Restricted Bands for<br>Intentional Operation | QuasiPeak<br>Average | Pass          |
| FCC 15.209<br>RSS-GEN (Table 4) | Spurious Radiated<br>Emissions                | QuasiPeak<br>Average | Pass          |
| <b>Overall Result</b>           |                                               |                      | <b>Pass</b>   |

If the product as tested or otherwise complies with the specification, the EUT is deemed to comply with the requirement and is deemed a 'PASS' grade. If not 'FAIL' grade will be issued. Note that 'PASS' / 'FAIL' grade is independent of any measurement uncertainties.

|             |                                                    |                                                                                     |
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### ***Notes, Justifications, or Deviations***

The following notes, justifications for tests not performed or deviations from the above listed specifications apply:

This report is only an update based on Class II Permissive Changes. Refer to the original test report, TÜV SÜD Canada Report # **7169010244RA-001 (DTS-2.4GHz Thread)**, for full testing and test results.

As per the manufacturer, the new sample is electrically the same to the sample previously tested. None transmitter components were replaced with parts of same dimension and electrical characteristics. The following test was re-evaluated on the EUT to verify if this change did not degrade the radiated data previously reported.

- Spurious radiated emission
- Restricted band Band Edge measurements

Band edge testing was performed with high channels.

|             |                                                    |                                                                                     |
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### ***Sample Calculation(s)***

#### **Radiated Emission Test**

E-Field Level = Received Signal + Antenna Factor + Cable Loss – Pre-Amp Gain

E-Field Level = 50dB $\mu$ V + 10dB/m + 2dB – 20dB

E-Field Level = 42dB $\mu$ V/m

Margin = Limit – E-Field Level

Margin = 50dB $\mu$ V/m – 42dB $\mu$ V/m

Margin = 8.0 dB (pass)

#### **Power Line Conducted Emission Test**

E-Field Level = Received Signal + Attenuation Factor + Cable Loss + LISN Factor

E-Field Level = 50dB $\mu$ V + 10dB + 2.5dB + 0.5dB

E-Field Level = 63dB $\mu$ V

Margin = Limit – E-Field Level

Margin = 73dB $\mu$ V – 63dB $\mu$ V

Margin = 10.0 dB (pass)

|             |                                                    |                                                                                     |
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## Applicable Standards, Specifications and Methods

|                                       |                                                                                                                                      |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| ANSI C63.4:2014                       | Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz |
| ANSI C63.10:2013                      | American National Standard For Testing Unlicensed Wireless Devices                                                                   |
| CFR 47 FCC 15 Subpart C               | Code of Federal Regulations – Radio Frequency Devices, Intentional Radiators                                                         |
| FCC KDB 558074: 2019                  | FCC KDB 558074 Digital Transmission Systems, measurements and procedures                                                             |
| FCC KDB 447498: 2015                  | RF exposure procedures and equipment authorization policies for mobile and portable devices                                          |
| RSS-GEN Issue 5: 2018+A1:2019+A2:2021 | General Requirements and Information for the Certification of Radio Apparatus                                                        |
| RSS-247 Issue 2:2017                  | Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices         |
| ISO 17025:2017                        | General Requirements for the Competence of Testing and Calibration Laboratories                                                      |

|             |                                                    |                                                                                     |
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## Document Revision Status

| Revision | Date       | Description                    | Initials |
|----------|------------|--------------------------------|----------|
| 000      | 2022-07-18 | Initial Release                | MX       |
| 001      | 2022-07-25 | Updated graph title on page 27 | MX       |

|             |                                                    |                                                                                     |
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## Definitions and Acronyms

The following definitions and acronyms are applicable in this report.  
See also ANSI C63.14.

**DTS** – Digital Transmission System

**LISN** – Line Impedance Stabilization Network

**NCR** – No Calibration Required

**NSA** – Normalized Site Attenuation

**N/A** – Not Applicable

**RF** – Radio Frequency

**AE** – Auxiliary Equipment. A digital accessory that feeds data into or receives data from another device (host) that in turn, controls its operation.

**Antenna Port** – Port, other than a broadcast receiver tuner port, for connection of an antenna used for intentional transmission and/or reception of radiated RF energy.

**BW** – Bandwidth. Unless otherwise stated, this refers to the 6 dB bandwidth.

**EMC** – Electro-Magnetic Compatibility. The ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.

**EMI** – Electro-Magnetic Immunity. The ability to maintain a specified performance when the equipment is subjected to disturbance (unwanted) signals of specified levels.

**EUT** – Equipment Under Test. A device or system being evaluated for compliance that is representative of a product to be marketed.

**ITE** – Information Technology Equipment. Has a primary function of entry, storage, display, retrieval, transmission, processing, switching, or control of data and/or telecommunication messages and which may be equipped with one or more ports typically for information transfer.

|             |                                                    |                                                                                     |
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## Testing Facility

Testing for EMC on the EUT was carried out at TÜV SÜD Canada testing lab near Toronto, Ontario. The testing lab has calibrated 3m semi-anechoic chambers which allow measurements on a EUT that has a maximum width or length of up to 2m and a height of up to 3m. The testing lab also has a calibrated 10m Open Area Test Site (OATS). The chambers are equipped with a turntable that is capable of testing devices up to 5000lb in weight and are equipped with a mast that controls the polarization and height of the antenna. Control of the mast occurs in the control room adjoining the shielded chamber. This facility is capable of testing products that are rated for single phase or 3-phase AC input and DC capability is also available. Radiated emission measurements are performed using a BiLog antenna and a Horn antenna where applicable. Conducted emissions, unless otherwise stated, are performed using a LISN and using the vertical ground plane if applicable.

### **Calibrations and Accreditations**

The 3m semi-anechoic chamber is registered with Federal Communications Commission (FCC, CA6844), Innovation, Science and Economic Development Canada (ISED, 6844A-3) and Voluntary Control Council for Interference (VCCI, R-14023, G-20072, C-14498, and T-20060). This chamber was calibrated for Normalized Site Attenuation (NSA) using test procedures outlined in ANSI C63.4 "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz". The chamber is lined with ferrite tiles and absorption cones to minimize any undesired reflections. The NSA data is kept on file at TÜV SÜD Canada. For radiated susceptibility testing, a 16 point field calibration has been performed on the chamber. The field uniformity data is kept on file at TÜV SÜD Canada. TÜV SÜD Canada Inc. is accredited to ISO 17025 by A2LA with Testing Certificate #2955.02. The laboratory's current scope of accreditation listing can be found as listed on the A2LA website. All measuring equipment is calibrated on an annual or biennial basis as listed for each respective test.

|             |                                                    |                                                                                     |
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### ***Testing Environmental Conditions and Dates***

Following environmental conditions were recorded in the facility during time of testing

| Date       | Test               | Initials | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|------------|--------------------|----------|------------------|--------------|----------------|
| 2022-05-18 | Radiated Emissions | MX       | 22.3             | 30.3         | 101.3          |

|             |                                                    |                                                                                               |
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| Product     | <b>ECB601/ECB501</b>                               |                                                                                               |
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## Detailed Test Results Section

|             |                                                    |                                                                                     |
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| Client      | Ecobee Inc.                                        |  |
| Product     | ECB601/ECB501                                      |                                                                                     |
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## ***Transmitter Spurious Radiated Emissions***

### **Purpose**

The purpose of this test is to ensure that the RF energy unintentionally emitted from the EUT does not exceed the limits listed below as defined in the applicable test standard, as measured from a receiving antenna. This helps protect broadcast radio services such as television, FM radio, pagers, cellular telephones, emergency services, and so on, from unwanted interference.

### **Limits and Method**

The method is as defined in FCC KDB 558074 Section 12.2 and ANSI C63.10.

The limits, as defined in 15.247(d) for unintentional radiated emissions, apply for those emissions that fall in the restricted bands, as defined in Section 15.205(a). These emissions must comply with the radiated emission limits specified in Section 15.209(a).

| Frequency             | Field Strength Limit<br>( $\mu\text{V/m}$ ) | Field Strength at 3m<br>(dB $\mu\text{V/m}$ ) |
|-----------------------|---------------------------------------------|-----------------------------------------------|
| 0.009 MHz – 0.490 MHz | 2400/F(kHz) <sup>a</sup> (at 300m)          | 128.5 to 93.8 <sup>a</sup>                    |
| 0.490 MHz – 1.705 MHz | 24000/F(kHz) <sup>a</sup> (at 30m)          | 73.8 to 63.0 <sup>a</sup>                     |
| 1.705 MHz – 30 MHz    | 30 <sup>a</sup> (at 30m)                    | 69.5 <sup>a</sup>                             |
| 30 MHz – 88 MHz       | 100 <sup>a</sup> (at 3m)                    | 40.0 <sup>a</sup>                             |
| 88 MHz – 216 MHz      | 150 <sup>a</sup> (at 3m)                    | 43.5 <sup>a</sup>                             |
| 216 MHz – 960 MHz     | 200 <sup>a</sup> (at 3m)                    | 46.0 <sup>a</sup>                             |
| Above 960 MHz         | 500 <sup>a</sup> (at 3m)                    | 54.0 <sup>a</sup>                             |
| Above 1000 MHz        | 500 <sup>b</sup> (at 3m)                    | 54.0 <sup>b</sup>                             |
| Above 1000 MHz        | 5 mV/m <sup>c</sup> (at 3m)                 | 74.0 <sup>c</sup>                             |

<sup>a</sup>Limit is with Quasi Peak detector with bandwidths as defined in CISPR-16-1-1

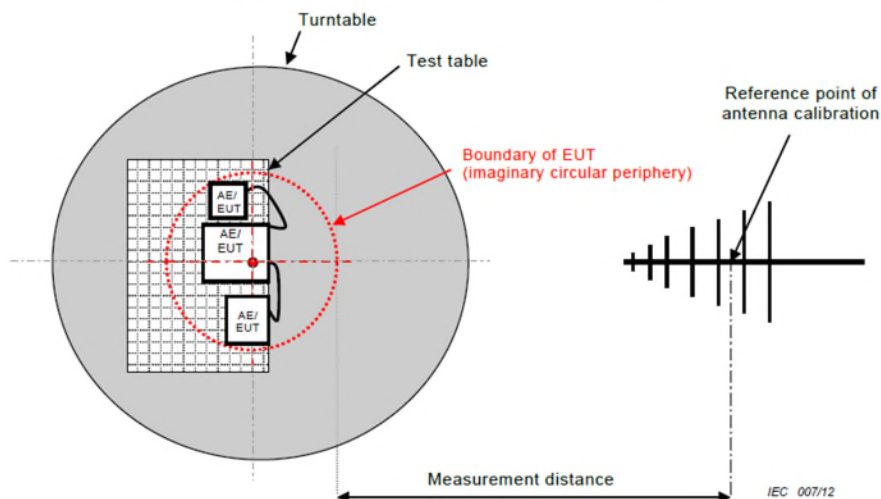
<sup>b</sup>Limit is with 1 MHz measurement bandwidth and using an Average detector

<sup>c</sup>Limit is with 1 MHz measurement bandwidth and using a Peak detector

Based on ANSI C63.4 Section 4.2, if the Peak detector measurements do not exceed the Quasi-Peak limits, where defined, then the EUT is deemed to have passed the requirements.

|             |                                                    |                                                                                     |
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### Typical Radiated Emissions Setup



### Measurement Uncertainty

The expanded measurement uncertainty is calculated in accordance with CISPR 16-4-2 and is  $\pm 5.67\text{dB}$  for 30MHz – 1GHz and  $\pm 4.58\text{dB}$  for 1GHz – 18GHz with a 'k=2' coverage factor and a 95% confidence level.

### Preliminary Graphs

The graphs shown below are maximized peak measurement graphs measured with a resolution bandwidth greater than or equal to the final required detector over a full 0-360°. This peaking process is done as a worst-case measurement and enables the detection of frequencies of concern for final measurement. For final measurements with the appropriate detector, where applicable, please refer to the tables under Final Measurements.

In accordance with FCC Part 15, Subpart A, Section 15.33, the device was scanned to the 10<sup>th</sup> harmonic (a minimum of 24.835 GHz).

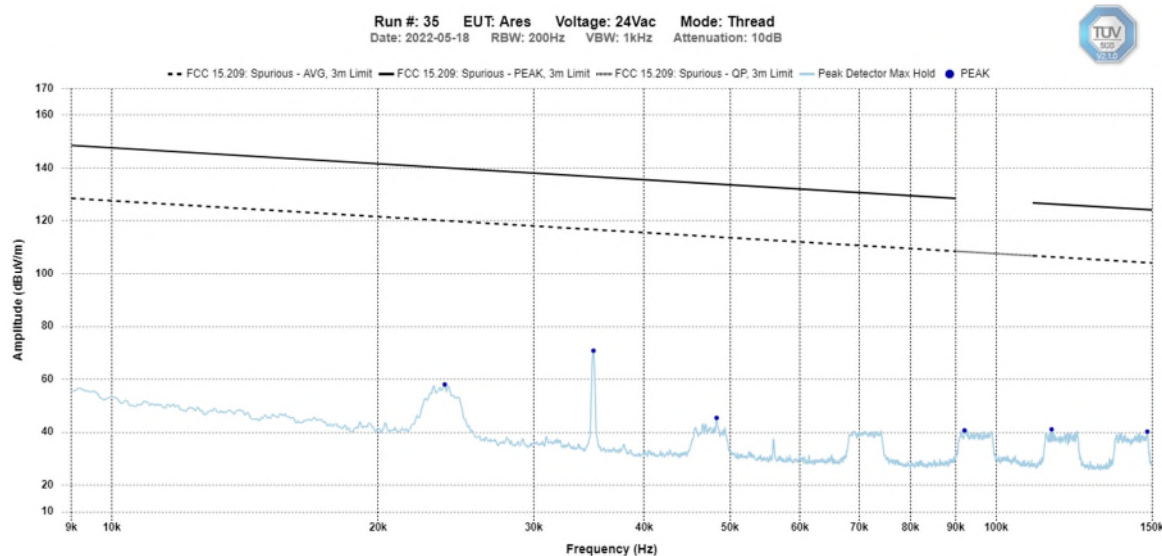
Devices scanned may be scanned at alternate test distances and in accordance with FCC Part 15, Subpart A, Section 15.31, an extrapolation factor of 20 dB/decade was used above 30 MHz and 40 dB/decade below 30 MHz. For example, for 1 meter measurements, an extrapolation factor 9.5 dB from 20 Log (1m / 3m) is applied.

Band-edge measurement graphs are shown for illustration purposes. See final measurement section for all measurements.

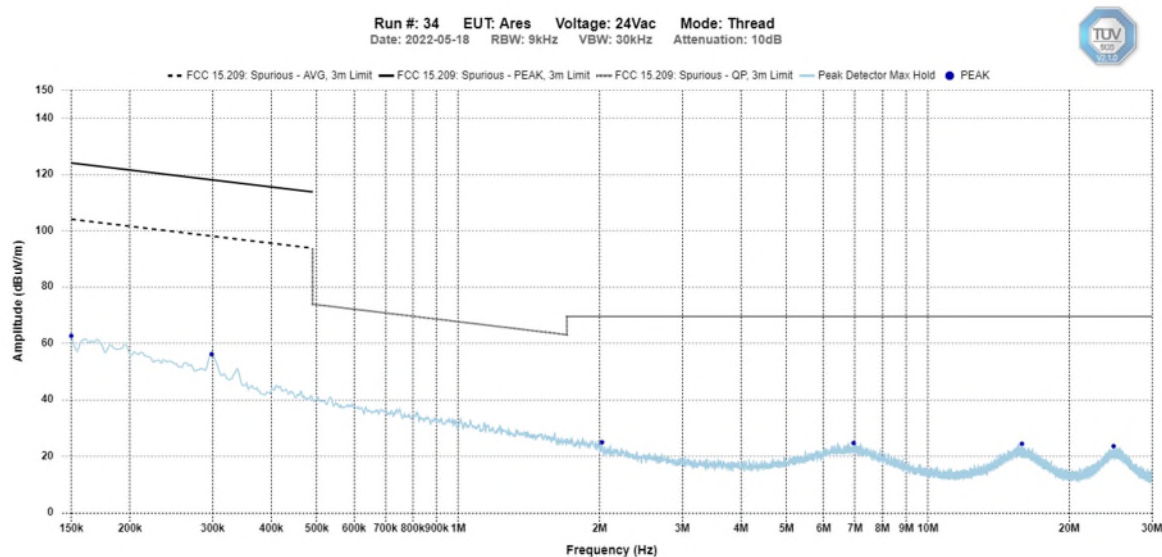
|             |                                                    |                                                                                               |
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## Spurious Emissions – ECB601

### Mid Channel 9 kHz – 150 kHz Peak Emission Graph

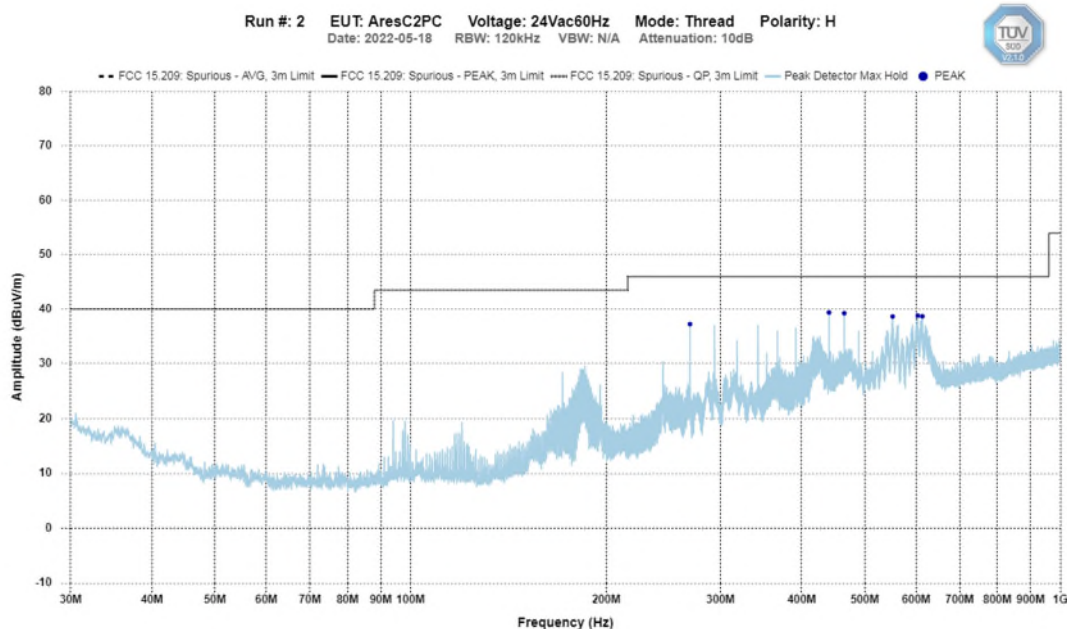


### Mid Channel 150 kHz – 30 MHz Peak Emission Graph

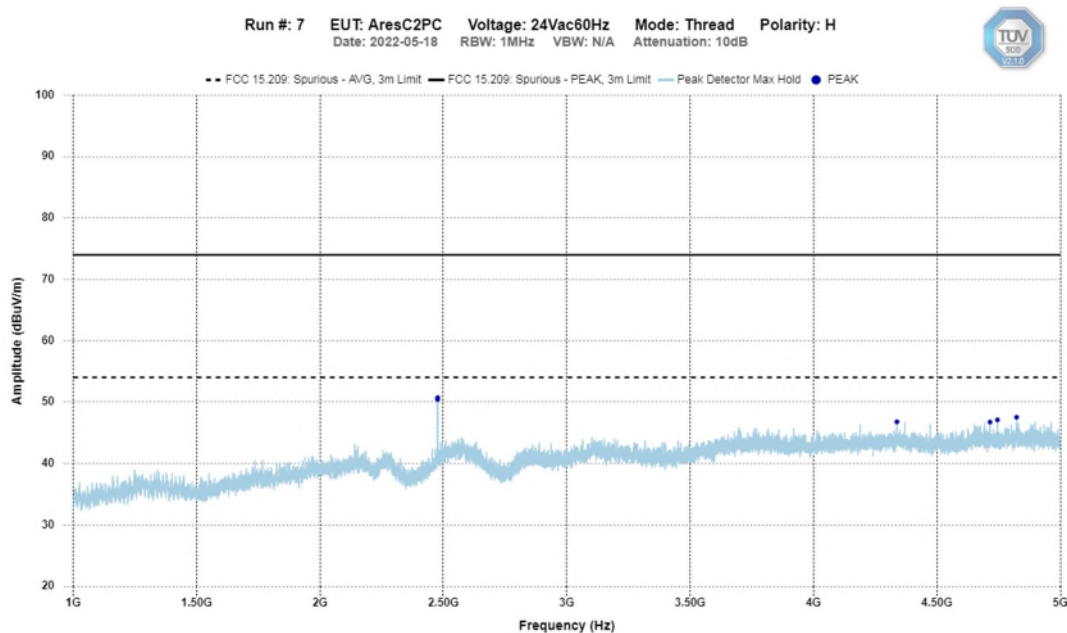


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### Mid Channel – 30 MHz – 1 GHz Horizontal - Peak Emission Graph

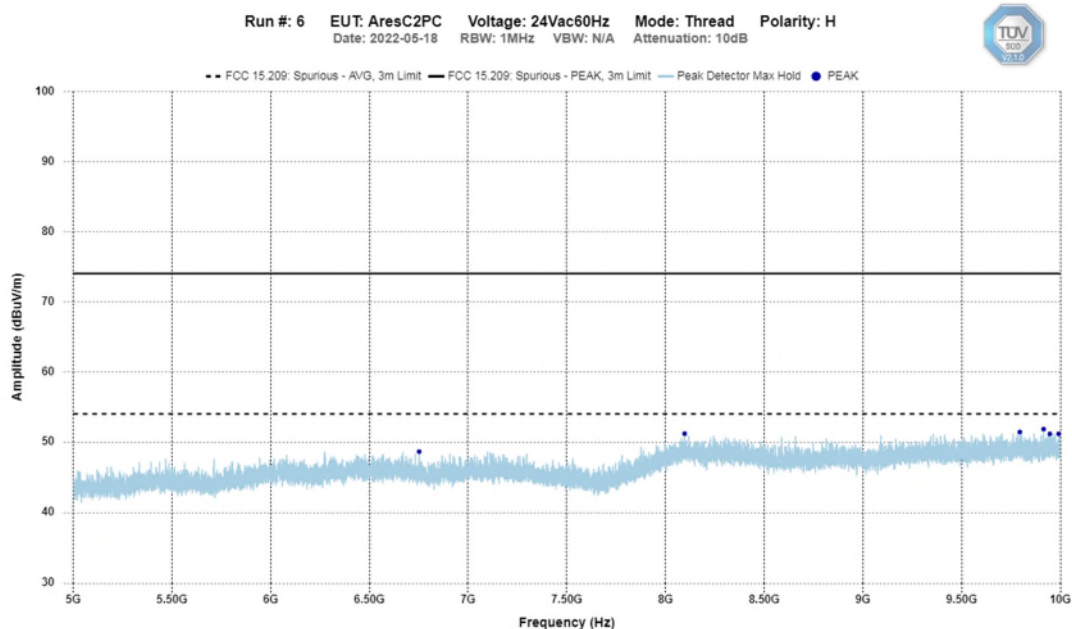


### Mid Channel – 1 GHz – 5 GHz Horizontal - Peak Emission Graph

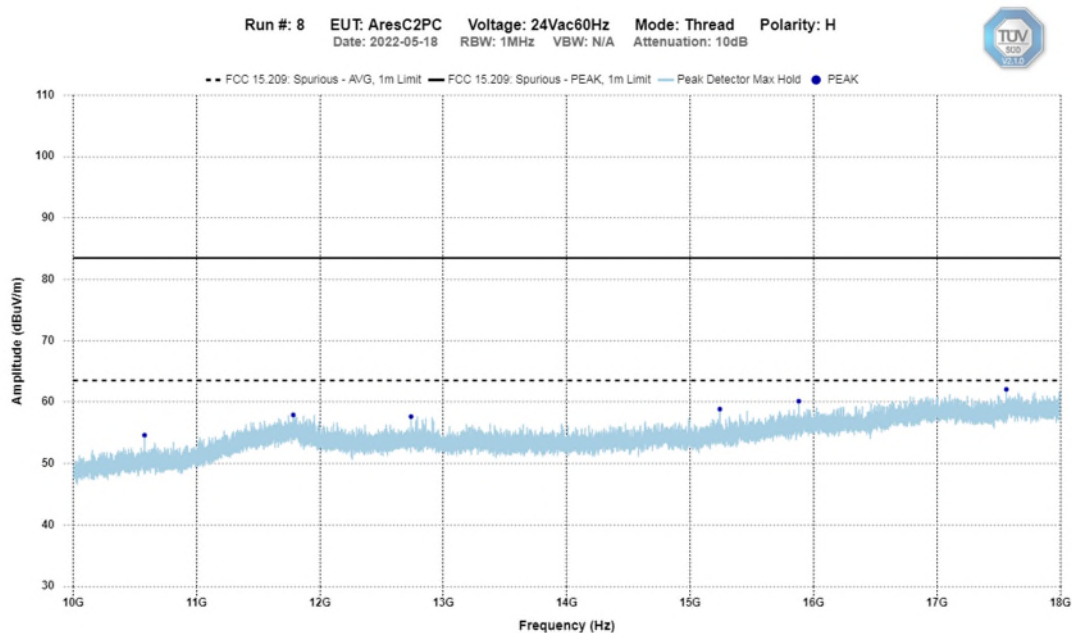


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### Mid Channel – 5 GHz – 10 GHz Horizontal - Peak Emission Graph



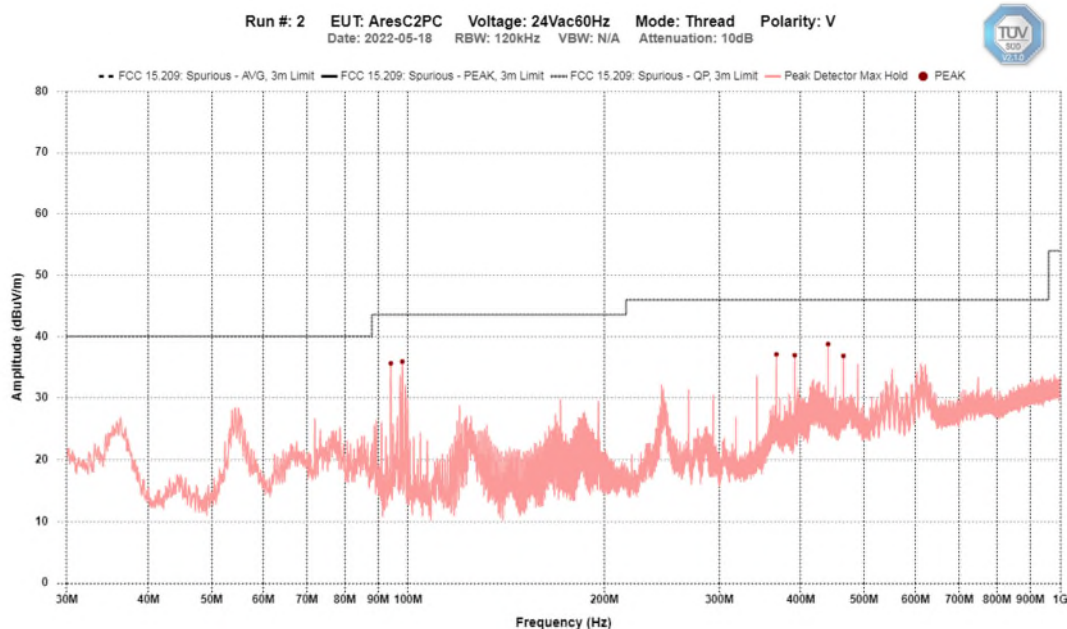
### Mid Channel – 10 GHz – 18 GHz Horizontal - Peak Emission Graph



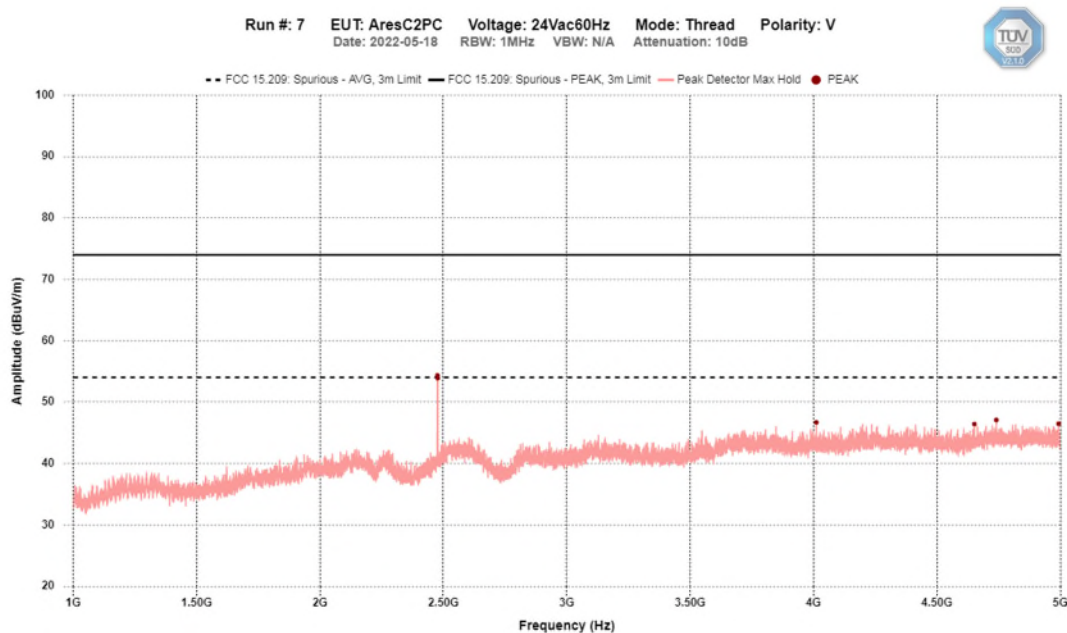
**Note: 10 GHz – 18 GHz plots were taken at 1 meter distance. All emissions from 10 GHz to 25 GHz were noise floor of measurement instrument. No emissions were found in this frequency range..**

|             |                                                    |                                                                                               |
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### Mid Channel – 30 MHz – 1 GHz Vertical - Peak Emission Graph

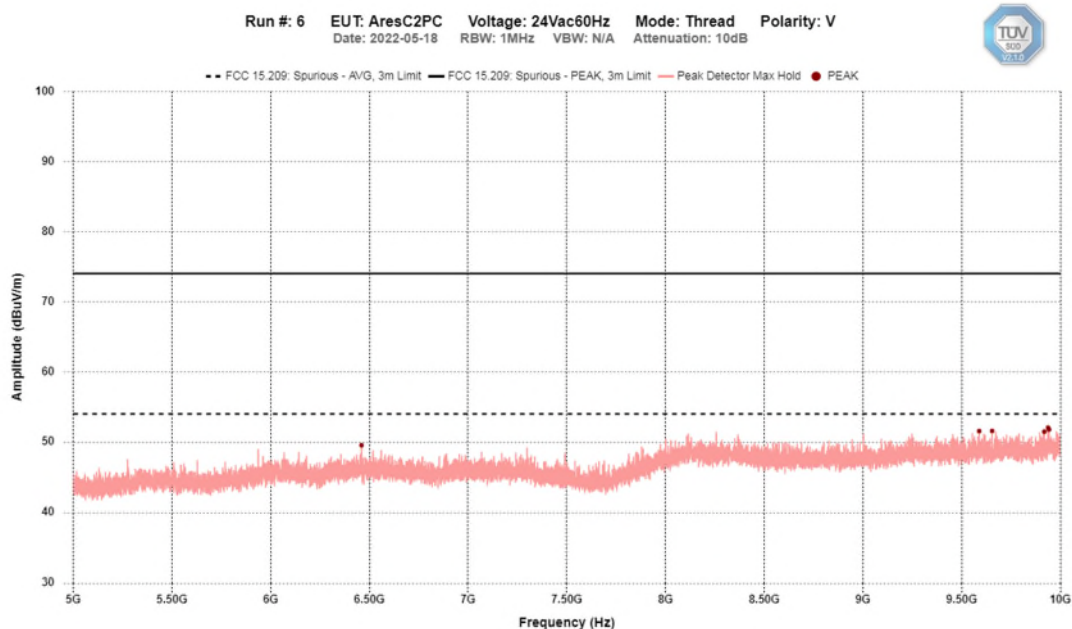


### Mid Channel – 1 GHz – 5 GHz Vertical - Peak Emission Graph

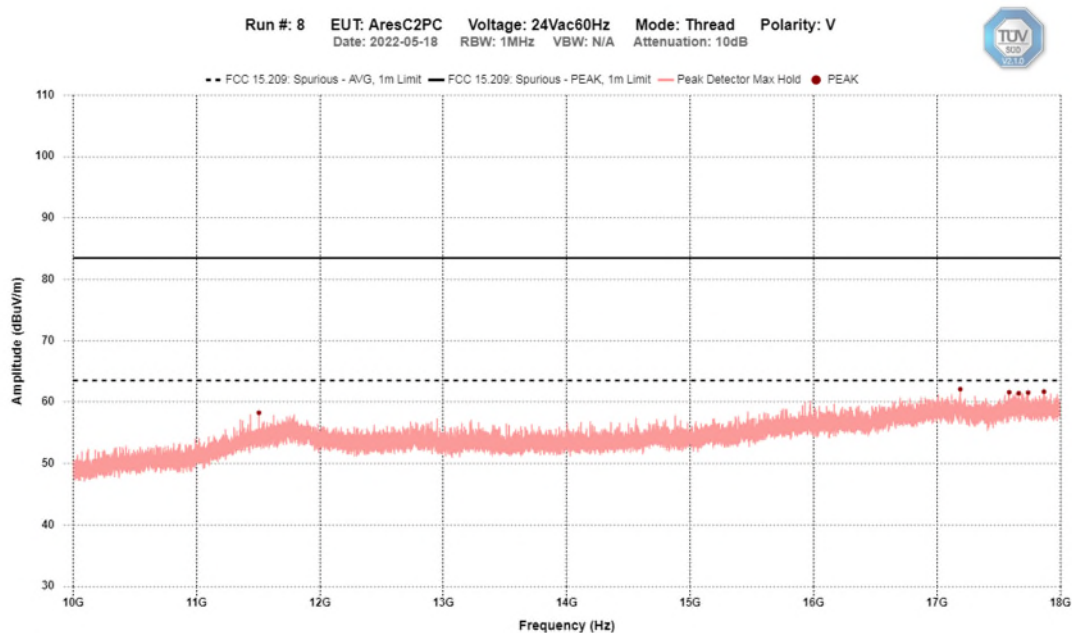


|             |                                                    |                                                                                     |
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### Mid Channel – 5 GHz – 10 GHz Vertical - Peak Emission Graph



### Mid Channel – 10 GHz – 18 GHz Vertical - Peak Emission Graph

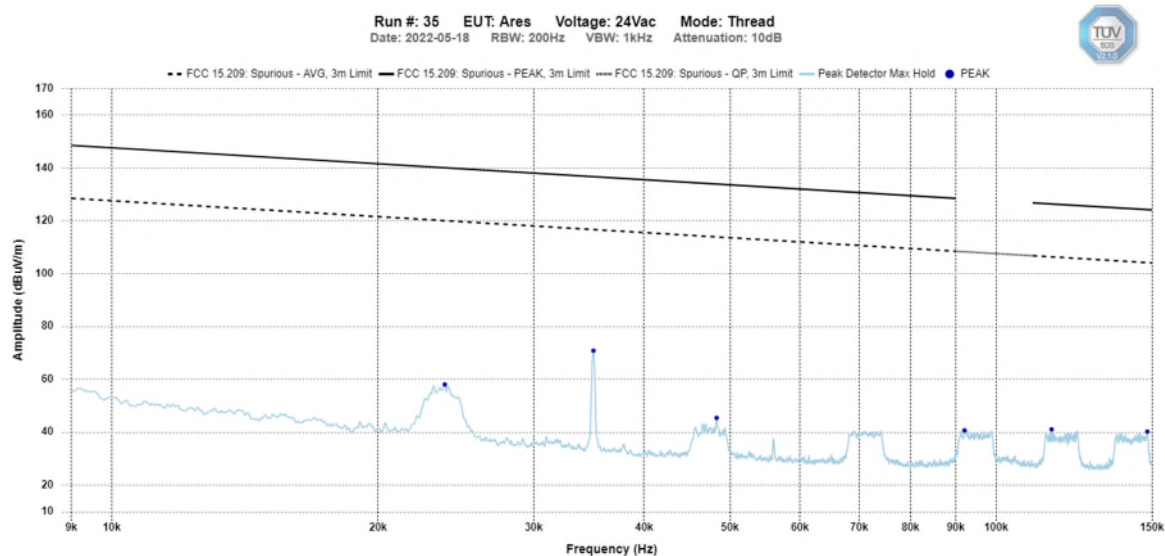


**Note: 10 GHz – 18 GHz plots were taken at 1 meter distance. All emissions from 10 GHz to 25 GHz were noise floor of measurement instrument. No emissions were found in this frequency range.**

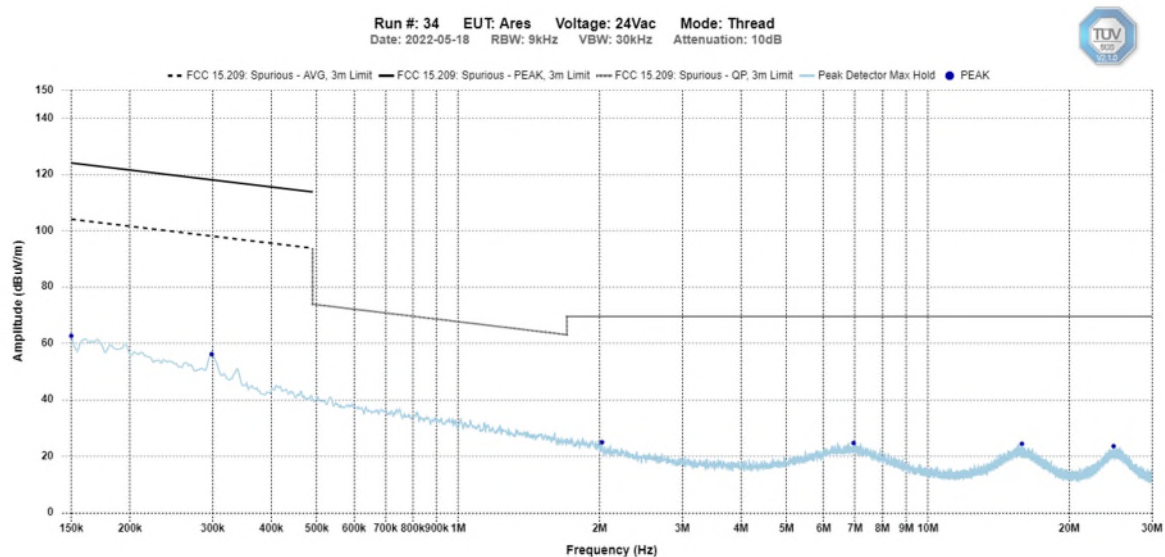
|             |                                                    |                                                                                               |
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## Spurious Emissions – ECB501

### Mid Channel 9 kHz – 150 kHz Peak Emission Graph

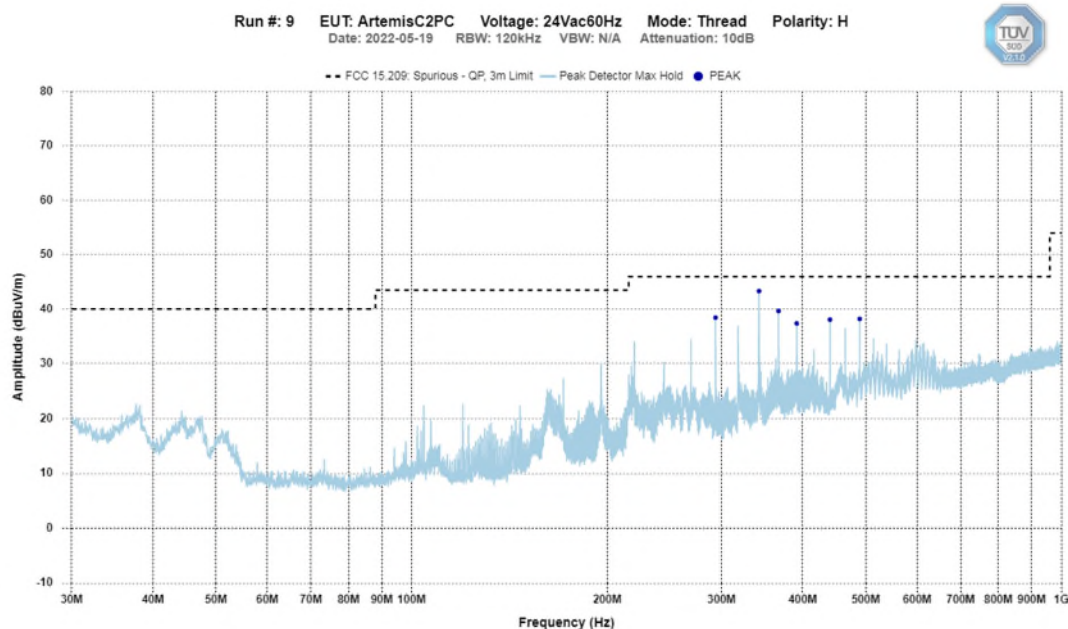


### Mid Channel 150 kHz – 30 MHz Peak Emission Graph

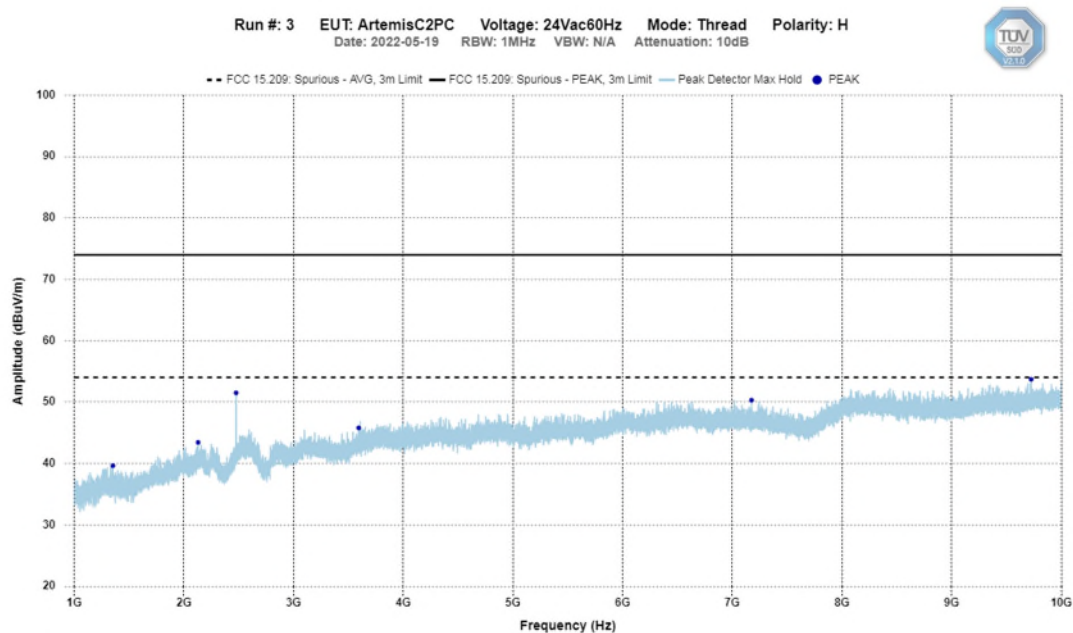


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### Mid Channel – 30 MHz – 1 GHz Horizontal - Peak Emission Graph

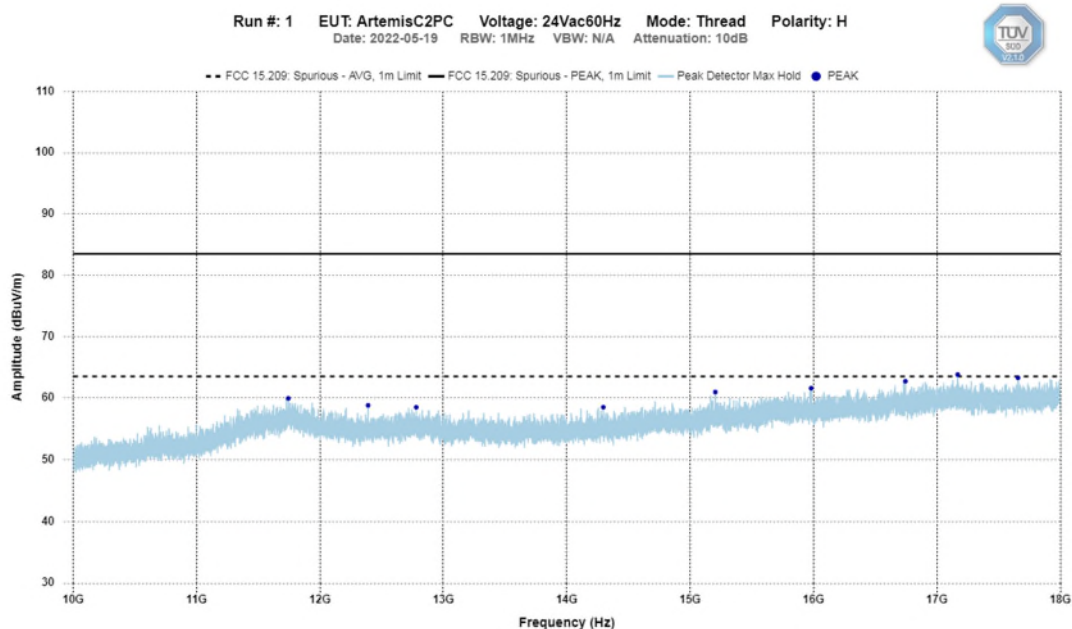


### Mid Channel – 1 GHz – 10 GHz Horizontal - Peak Emission Graph



|             |                                                    |                                                                                               |
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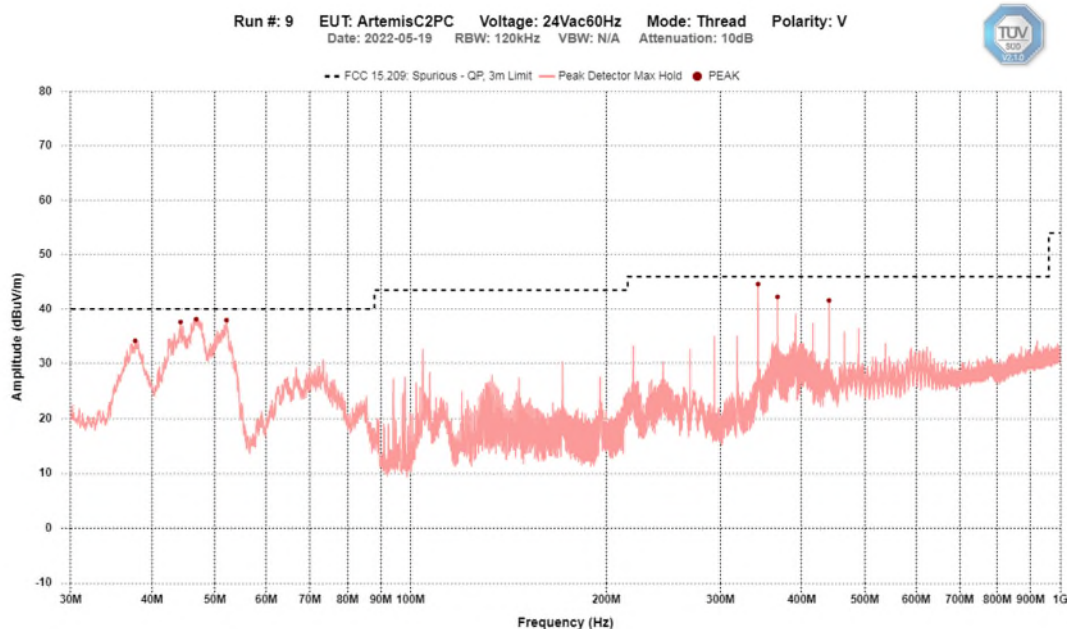
### Mid Channel – 10 GHz – 18 GHz Horizontal - Peak Emission Graph



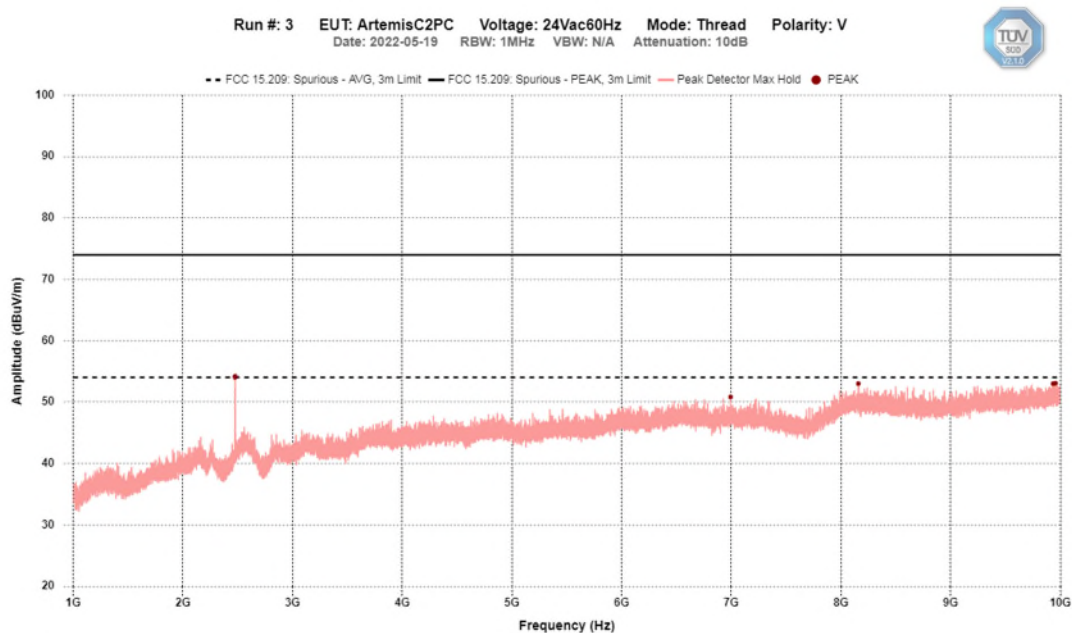
**Note: 10 GHz – 18 GHz plots were taken at a 1 meter distance. All emissions from 10 GHz to 25 GHz were noise floor of measurement instrument. No emissions were found in this frequency range.**

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| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Mid Channel – 30 MHz – 1 GHz Vertical - Peak Emission Graph

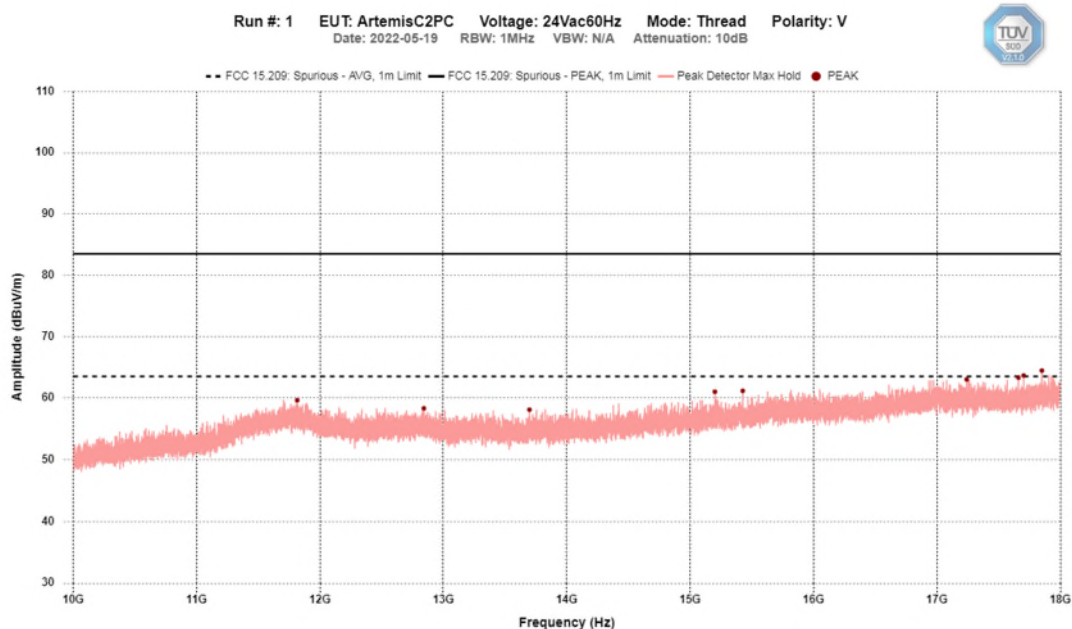


### Mid Channel – 1 GHz – 10 GHz Vertical - Peak Emission Graph



|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

Mid Channel – 10 GHz – 18 GHz  
Vertical - Peak Emission Graph

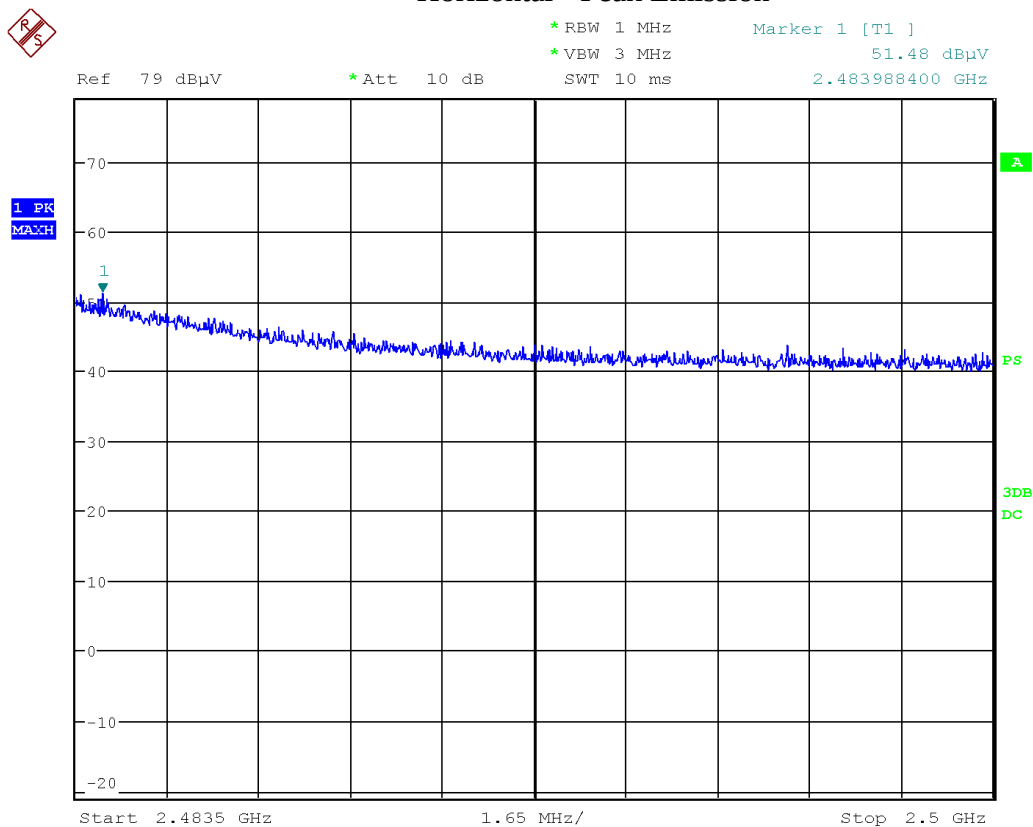


**Note: 10 GHz – 18 GHz plots were taken at a 1 meter distance. All emissions from 10 GHz to 25 GHz were noise floor of measurement instrument. No emissions were found in this frequency range.**

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

## Band Edges – ECB601

### Band Edge – Channel 48 Horizontal - Peak Emission

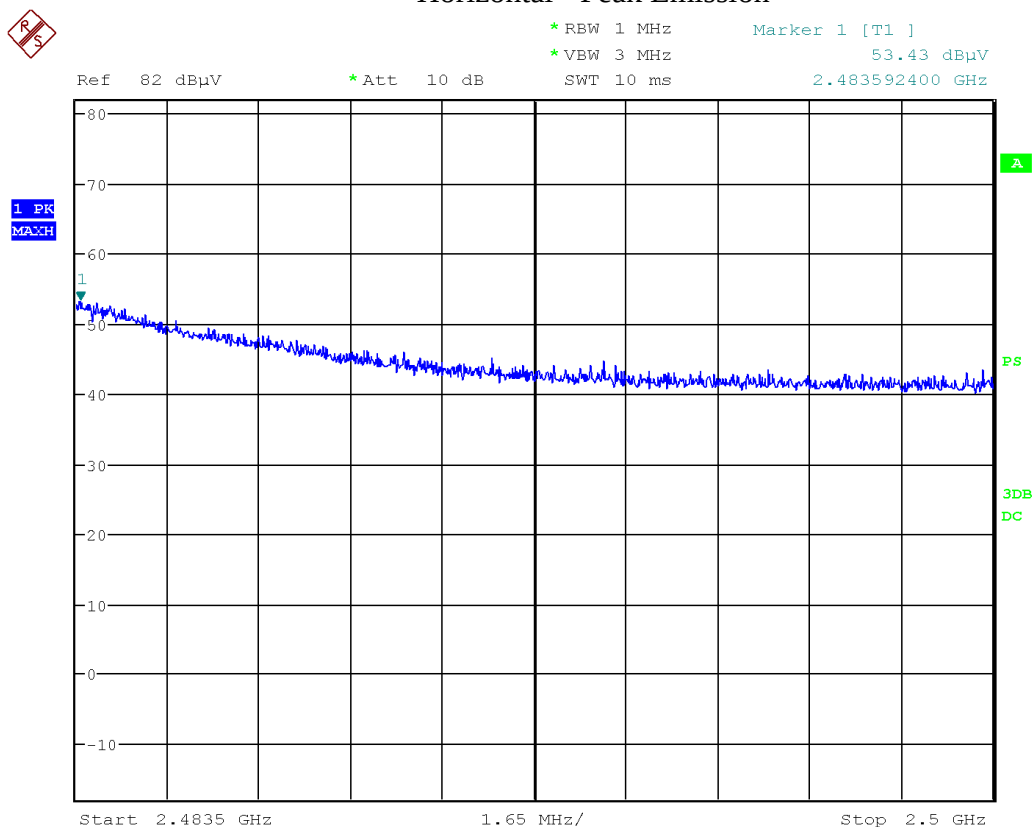


Date: 18.MAY.2022 16:49:46

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 49 Horizontal - Peak Emission

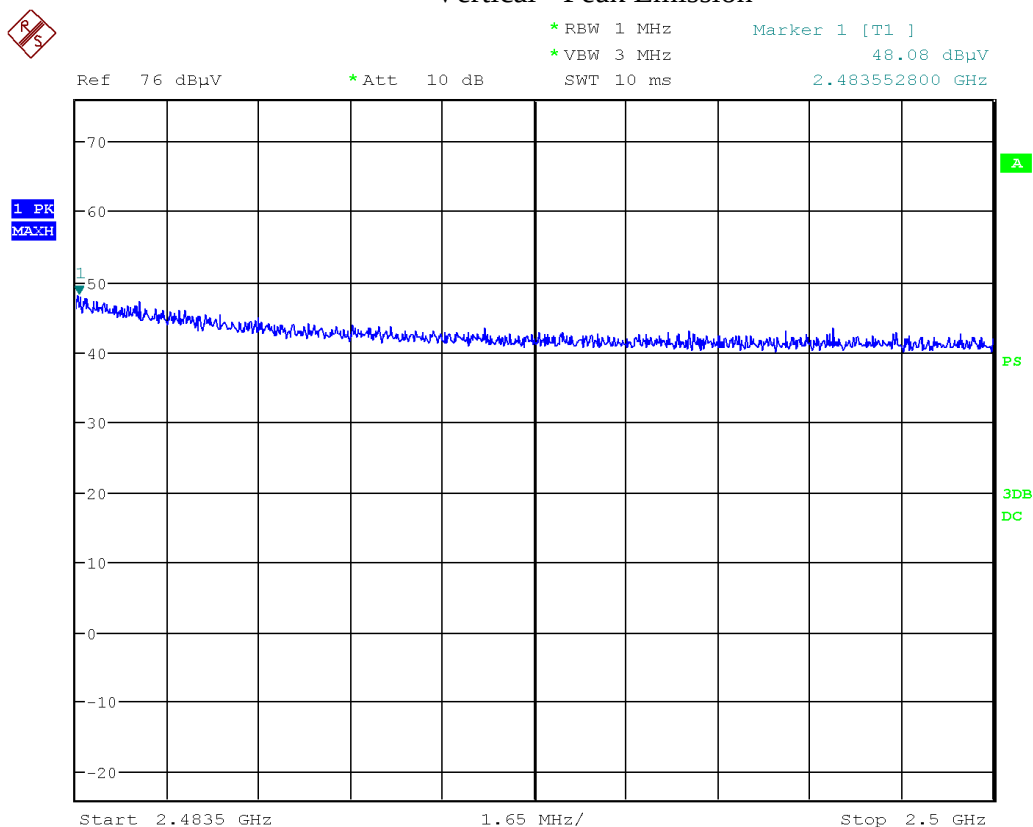


Date: 18.MAY.2022 16:32:53

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 48 Vertical - Peak Emission

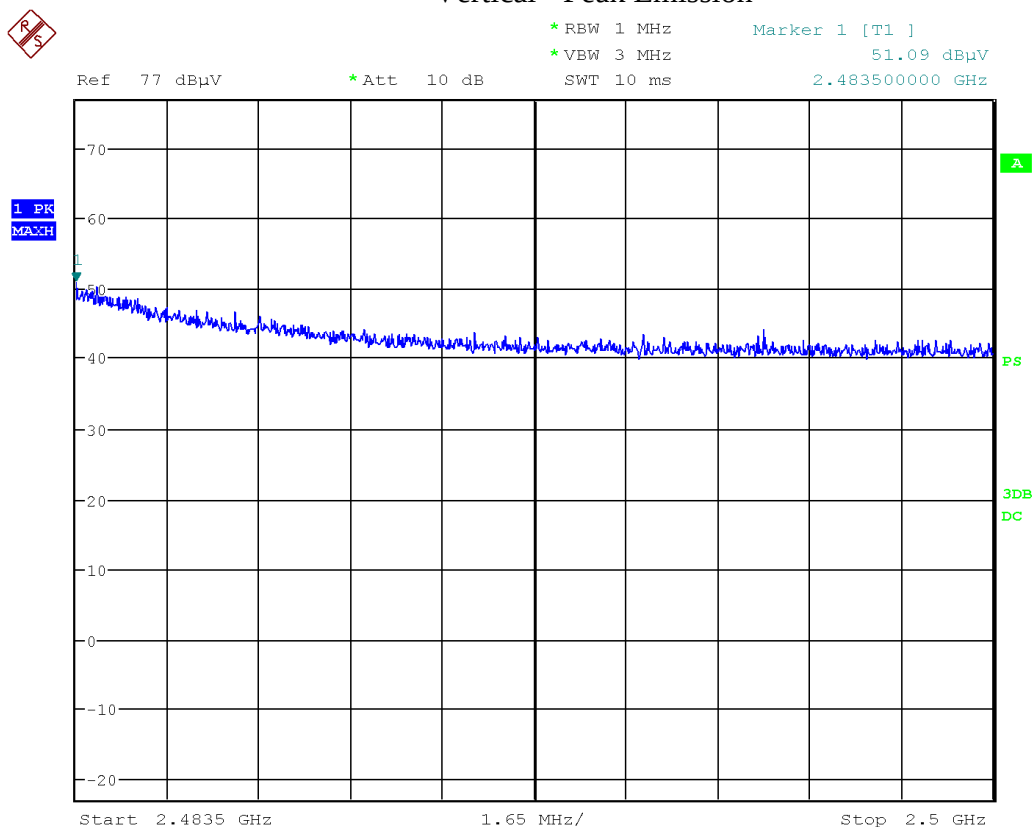


Date: 18.MAY.2022 16:45:45

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 49 Vertical - Peak Emission

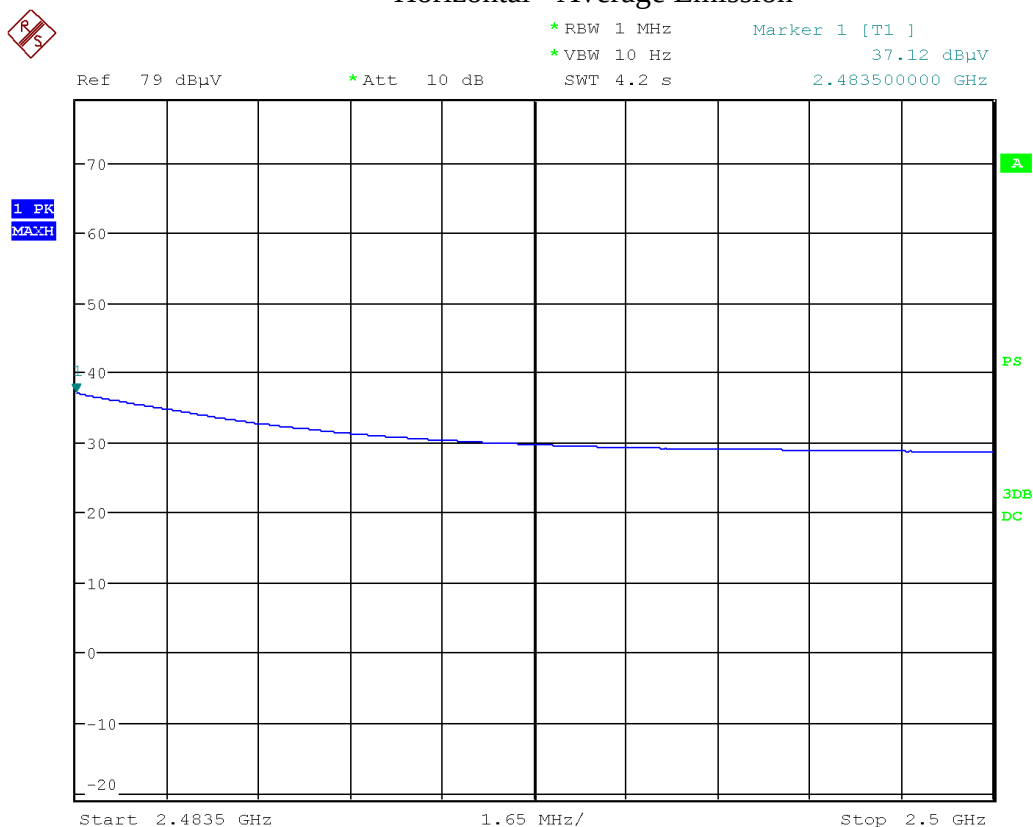


Date: 18.MAY.2022 16:38:35

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 48 Horizontal - Average Emission

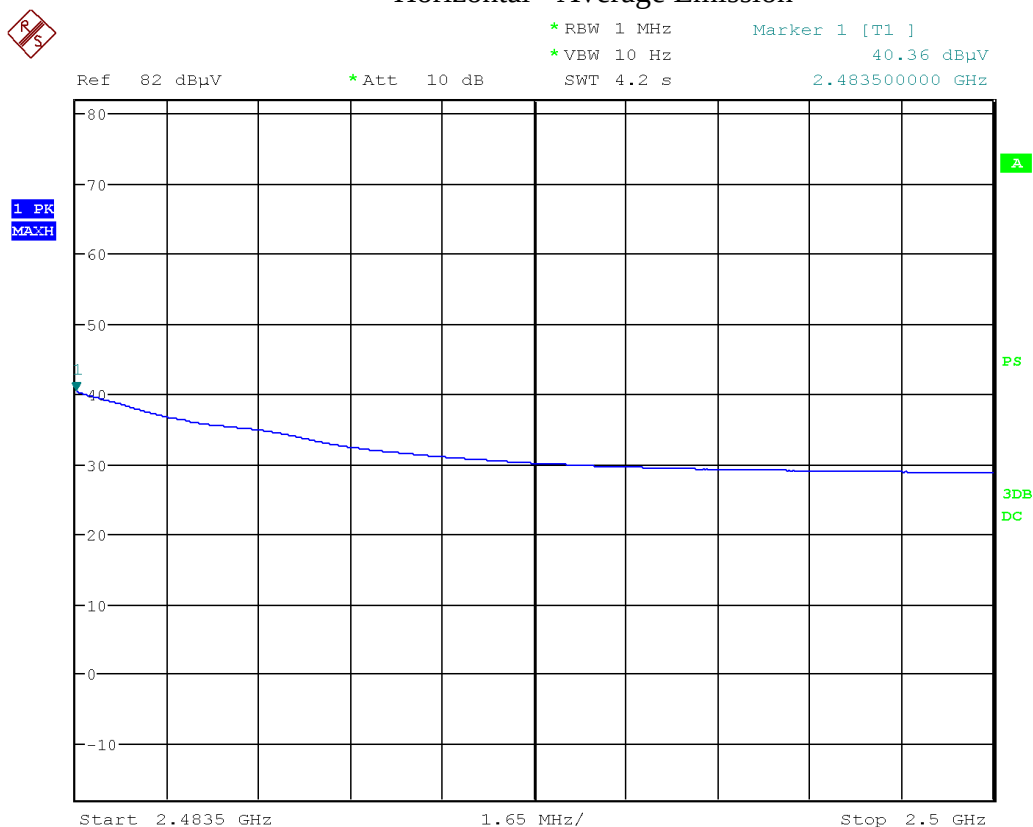


Date: 18.MAY.2022 16:50:04

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 49 Horizontal - Average Emission

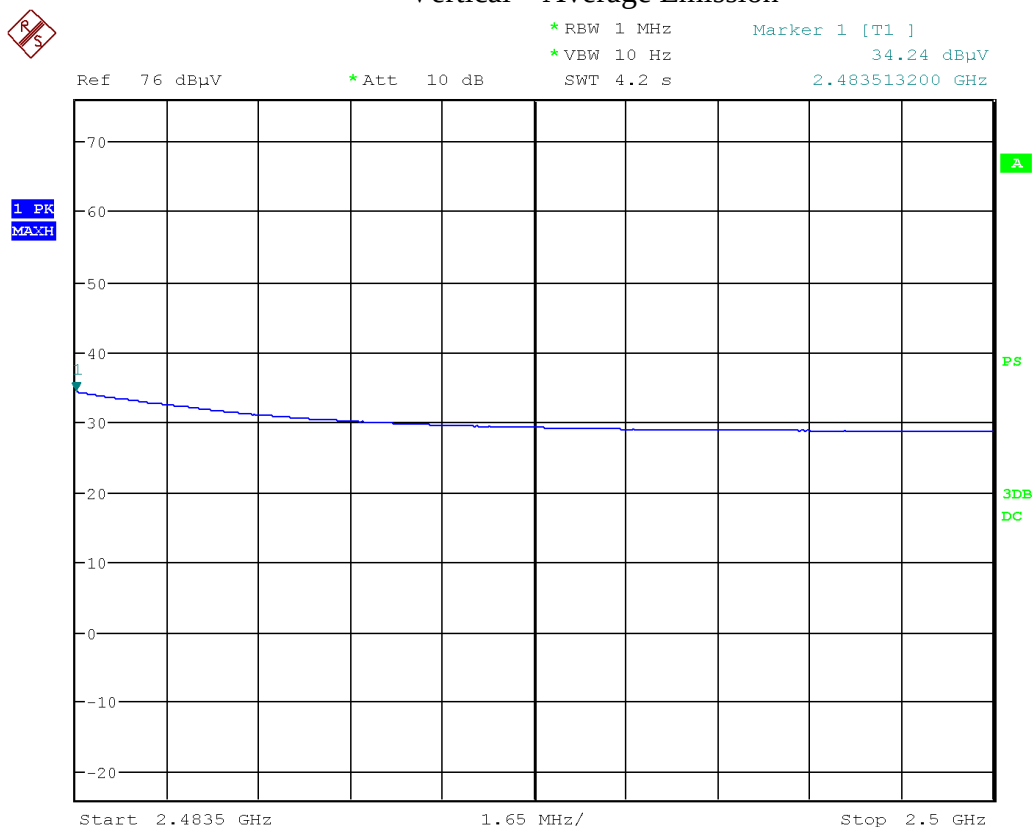


Date: 18.MAY.2022 16:33:11

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 48 Vertical – Average Emission

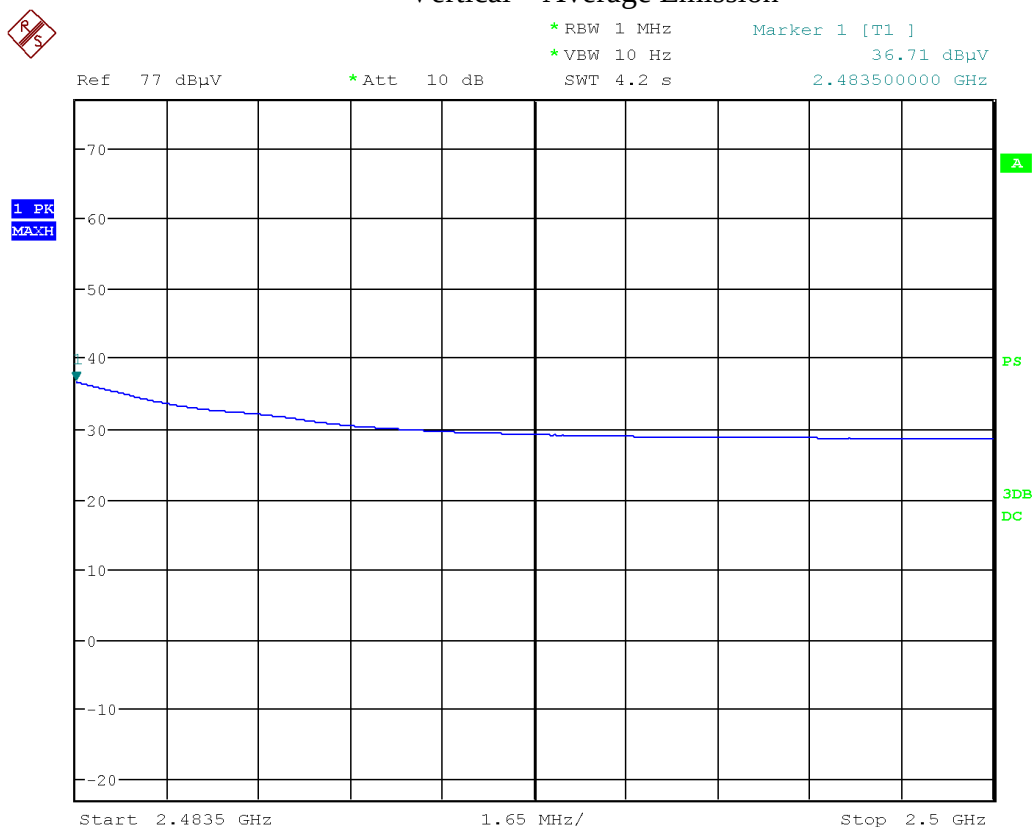


Date: 18.MAY.2022 16:46:03

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 49 Vertical – Average Emission



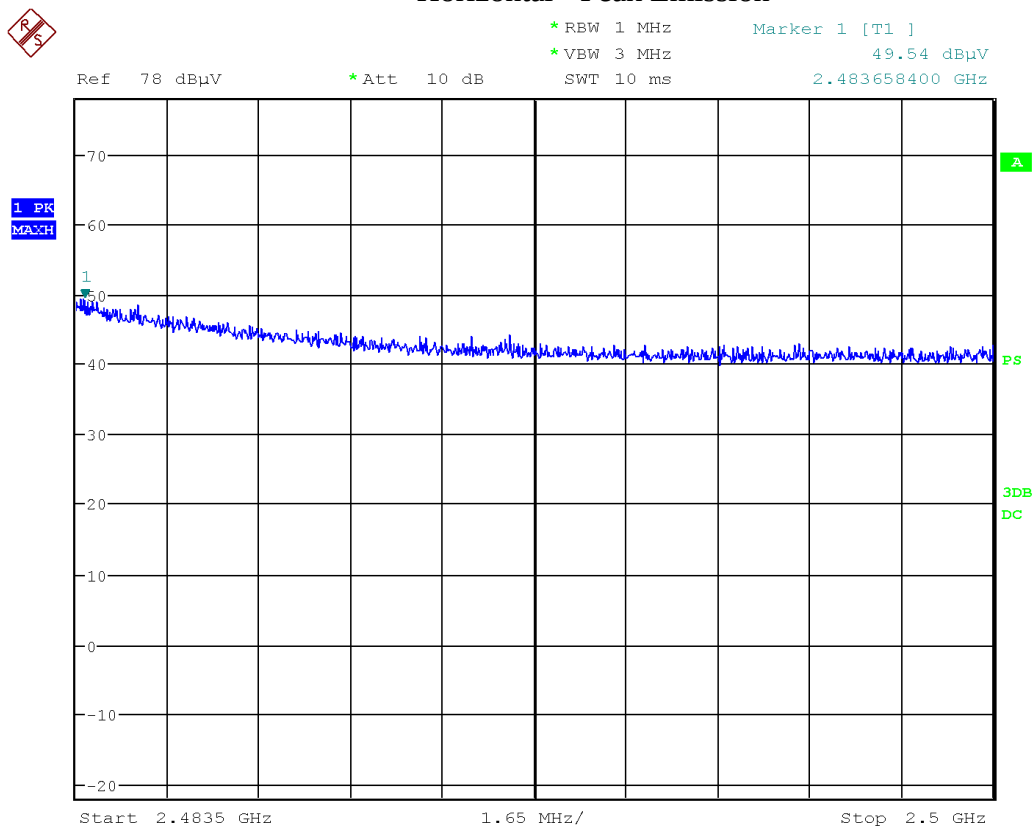
Date: 18.MAY.2022 16:38:53

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

## Band Edges – ECB501

### Band Edge – Channel 48 Horizontal - Peak Emission

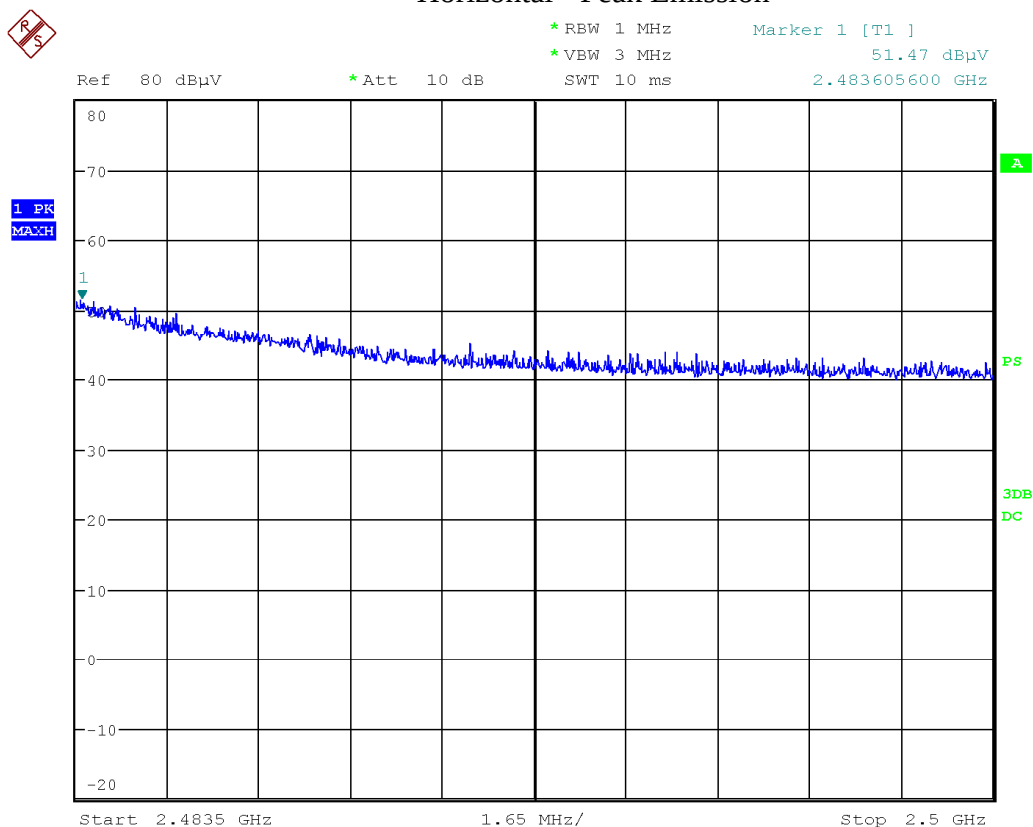


Date: 19.MAY.2022 12:45:14

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 49 Horizontal - Peak Emission

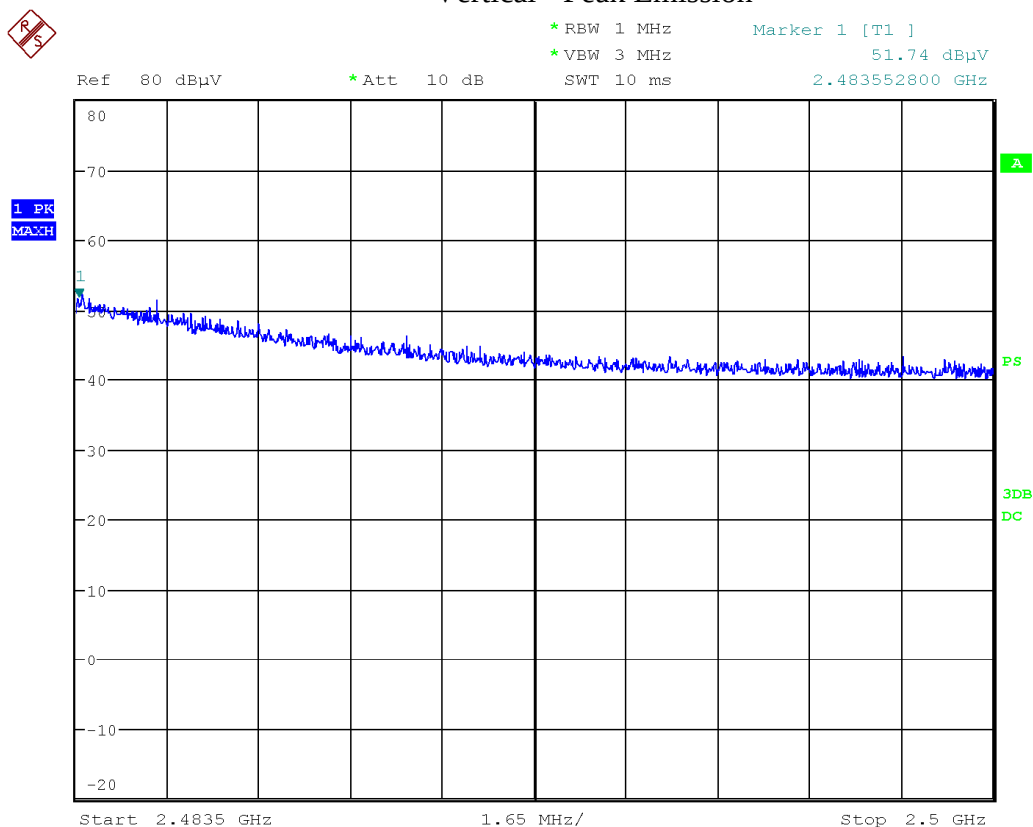


Date: 19.MAY.2022 12:59:00

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 48 Vertical - Peak Emission

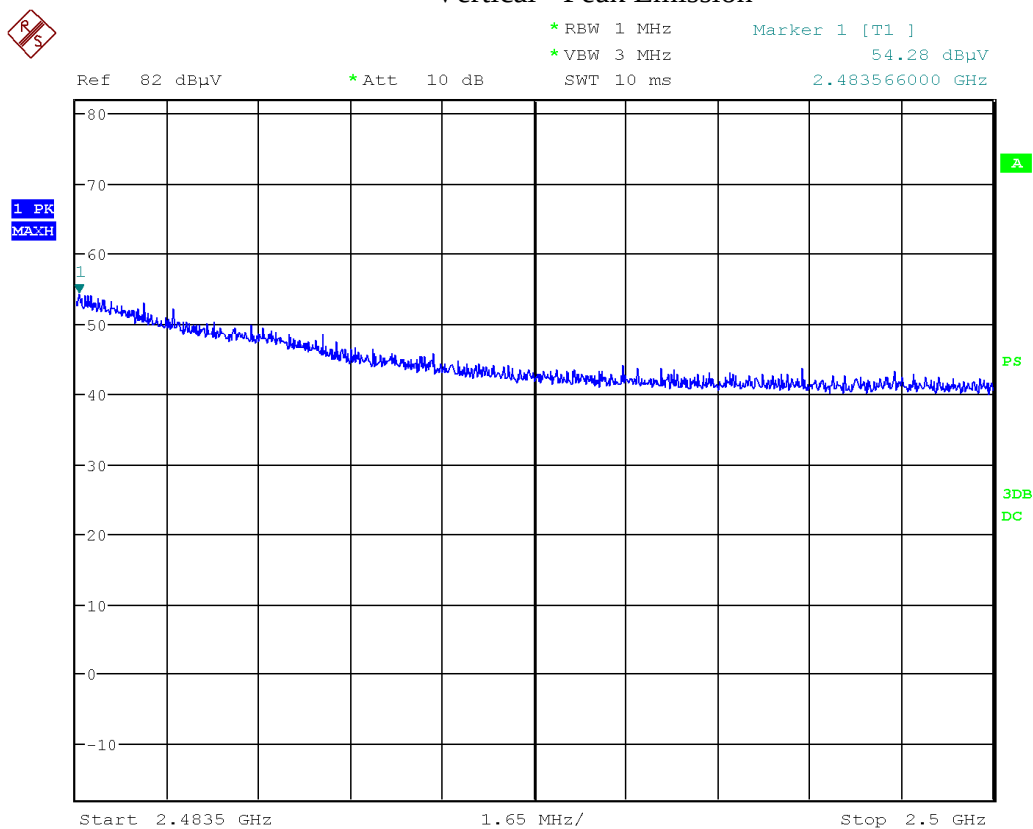


Date: 19.MAY.2022 12:41:23

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 49 Vertical - Peak Emission

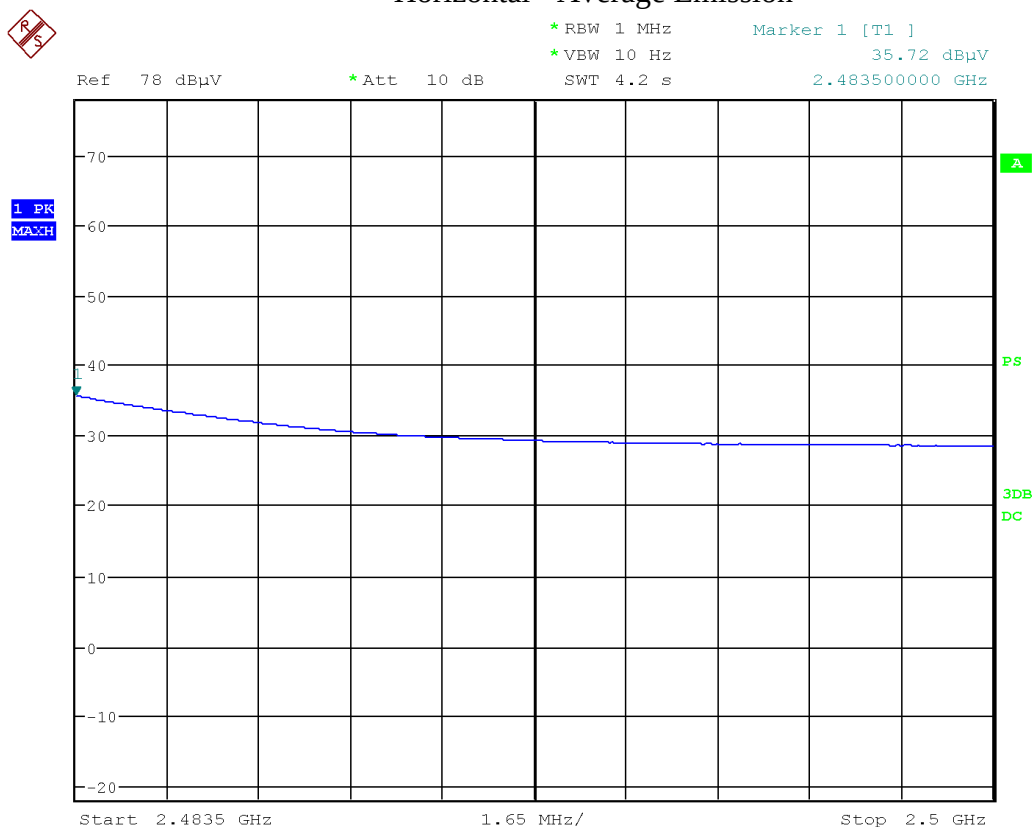


Date: 19.MAY.2022 12:55:45

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 48 Horizontal - Average Emission

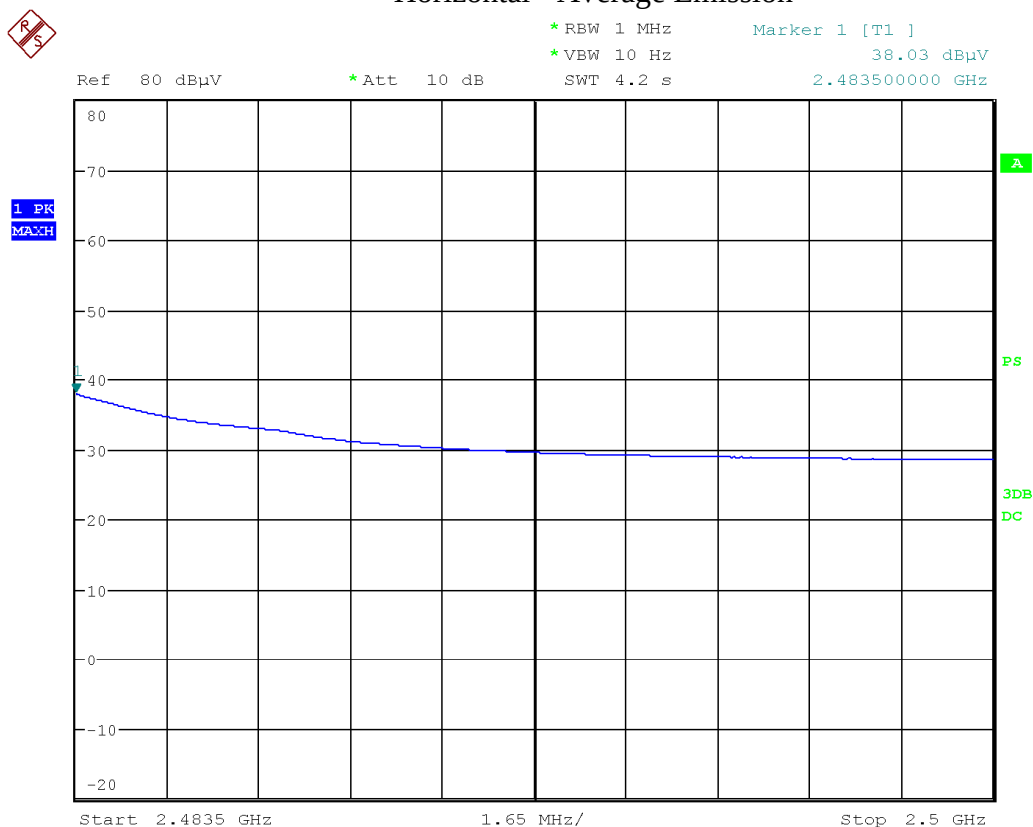


Date: 19.MAY.2022 12:45:32

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 49 Horizontal - Average Emission

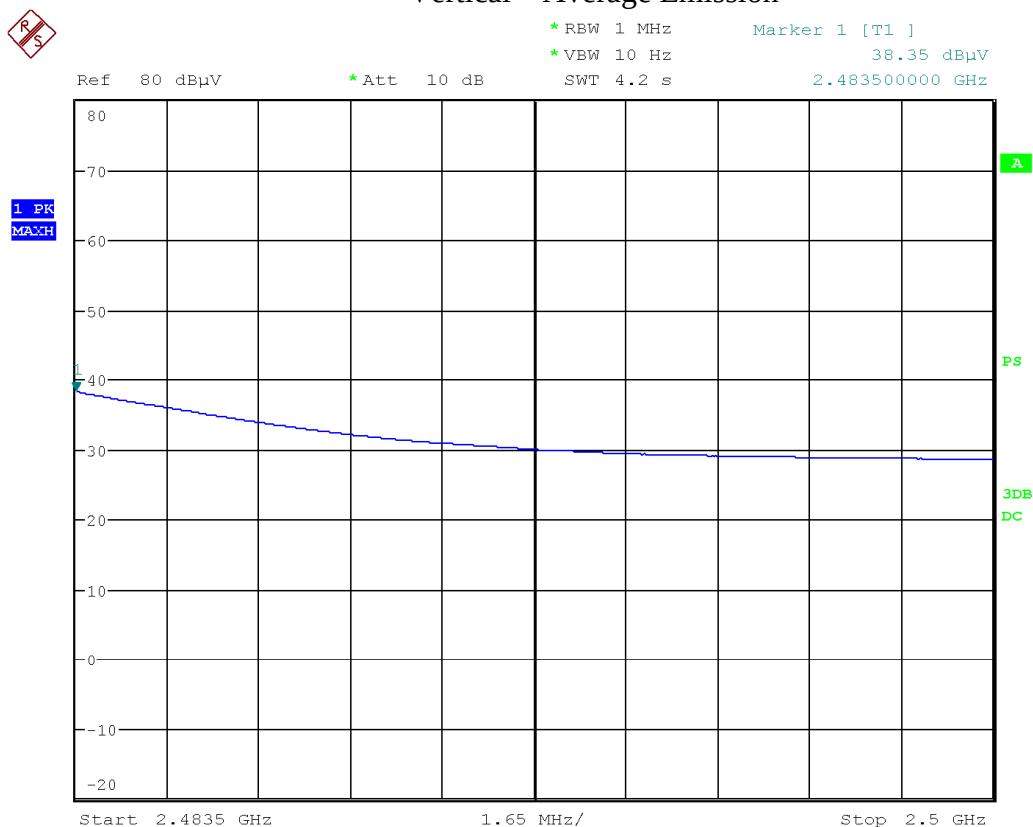


Date: 19.MAY.2022 12:59:18

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 48 Vertical – Average Emission

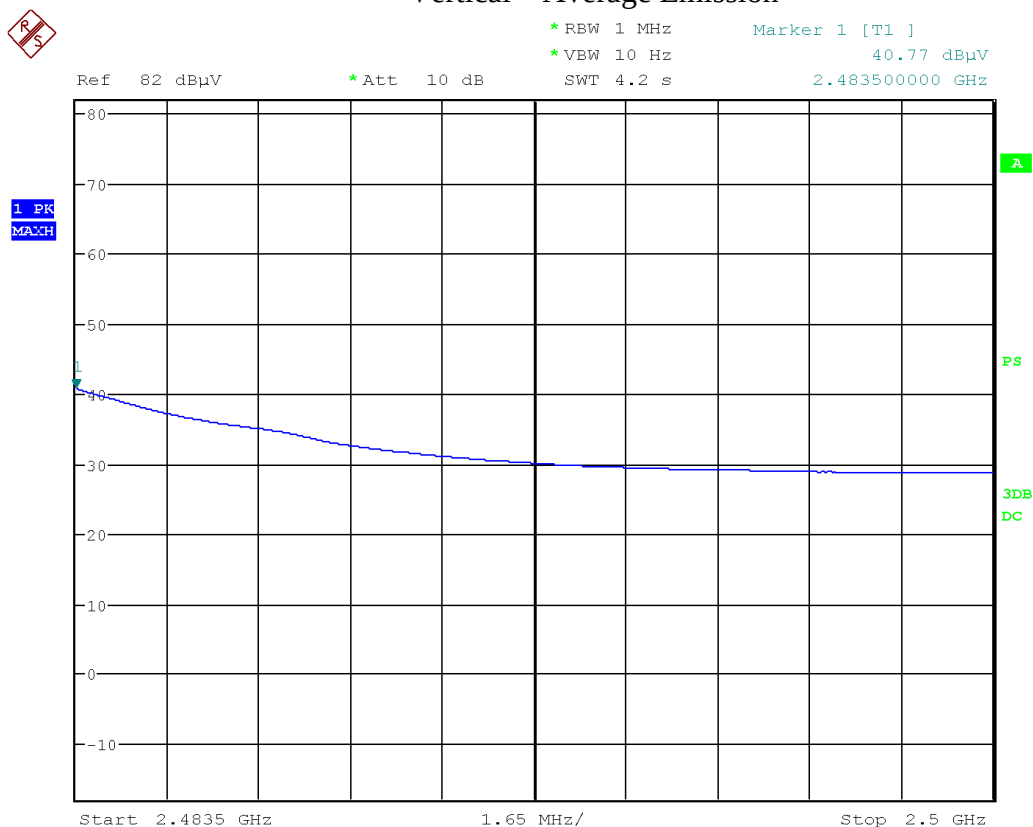


Date: 19.MAY.2022 12:41:41

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

### Band Edge – Channel 49 Vertical – Average Emission



Date: 19.MAY.2022 12:56:03

Note: Restricted band Band Edge plot was taken at a 3m measurement distance. The marker shows the raw value. See the Final Measurements and Results section below for correct values.

|             |                                                    |                                                                                     |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Client      | <b>Ecobee Inc.</b>                                 |  |
| Product     | <b>ECB601/ECB501</b>                               |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

## Final Measurements and Results

The EUT passed. high bands were measured as the last two high channels have different power.

In accordance with 15.247(d), only frequencies exceeding the 15.209 limit that occur within the bands listed in 15.205 need to be verified with a final detector. Emissions outside the restricted bands were measured for informational purposes.

The measurements were maximized by rotating the turn table over a full 0-360 rotation and the antenna height was varied from 1 m to 4 m.

### ECB601

| EUT Name       |          | EB601                  |                |                   |                |             |
|----------------|----------|------------------------|----------------|-------------------|----------------|-------------|
| Limit          |          | FCC 15.209, Spurious   |                |                   |                |             |
| Power Supply   |          | 24Vac60Hz              |                |                   |                |             |
| Frequency (Hz) | Detector | Correction Factor (dB) | Level (dBuV/m) | QP Limit (dBuV/m) | QP Margin (dB) | Test Result |
| Horizontal     |          |                        |                |                   |                |             |
| 440.67M        | PEAK     | -6.5                   | 39.4           | 46.0              | 6.6            | Pass        |
| 465.15M        | PEAK     | -5.1                   | 39.2           | 46.0              | 6.8            | Pass        |
| 603.51M        | PEAK     | -0.3                   | 38.8           | 46.0              | 7.2            | Pass        |
| 613.5M         | PEAK     | 0.0                    | 38.7           | 46.0              | 7.3            | Pass        |
| 552.15M        | PEAK     | -2.3                   | 38.6           | 46.0              | 7.4            | Pass        |
| 269.28M        | PEAK     | -12.0                  | 37.2           | 46.0              | 8.8            | Pass        |
| Vertical       |          |                        |                |                   |                |             |
| 440.67M        | PEAK     | -6.5                   | 38.8           | 46.0              | 7.2            | Pass        |
| 98.04M         | PEAK     | -18.2                  | 35.9           | 43.5              | 7.6            | Pass        |
| 94.14M         | PEAK     | -18.5                  | 35.6           | 43.5              | 7.9            | Pass        |
| 367.23M        | PEAK     | -7.7                   | 37.1           | 46.0              | 8.9            | Pass        |
| 391.71M        | PEAK     | -6.8                   | 36.9           | 46.0              | 9.1            | Pass        |
| 465.15M        | PEAK     | -5.1                   | 36.8           | 46.0              | 9.2            | Pass        |

|             |                                                    |                                                                                                             |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        | <br>TUV<br>SUD<br>Canada |
| Product     | ECB601/ECB501                                      |                                                                                                             |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                                             |

| High Channel (CH 49) |      |      |      |      |     |      |       |       |      |      |
|----------------------|------|------|------|------|-----|------|-------|-------|------|------|
| 2478.4               | Peak | Horz | 94.6 | 32.2 | 3.2 | 10.0 | -33.8 | 106.3 |      | PASS |
| 2478.4               | Avg  | Horz | 92.0 | 32.2 | 3.2 | 10.0 | -33.8 | 103.7 |      | PASS |
| 2478.4               | Peak | Vert | 90.6 | 32.2 | 3.2 | 10.0 | -33.8 | 102.3 |      | PASS |
| 2478.4               | Avg  | Vert | 87.9 | 32.2 | 3.2 | 10.0 | -33.8 | 99.6  |      | PASS |
| 2375.6               | Peak | Horz | 43.4 | 32.0 | 3.2 | 10.0 | -34.1 | 54.5  | 74.0 | 19.5 |
| 2389.9               | Avg  | Horz | 29.3 | 32.0 | 3.2 | 10.0 | -34.1 | 40.4  | 54.0 | 13.6 |
| 2381.2               | Peak | Vert | 43.9 | 32.0 | 3.2 | 10.0 | -34.1 | 55.0  | 74.0 | 19.0 |
| 2389.6               | Avg  | Vert | 29.3 | 32.0 | 3.2 | 10.0 | -34.1 | 40.4  | 54.0 | 13.6 |
| 2484                 | Peak | Horz | 53.4 | 32.2 | 3.2 | 10.0 | -33.8 | 65.1  | 74.0 | 8.9  |
| 2483.5               | Avg  | Horz | 40.4 | 32.2 | 3.2 | 10.0 | -33.8 | 52.0  | 54.0 | 2.0  |
| 2484                 | Peak | Vert | 51.1 | 32.2 | 3.2 | 10.0 | -33.8 | 62.8  | 74.0 | 11.2 |
| 2483.5               | Avg  | Vert | 36.7 | 32.2 | 3.2 | 10.0 | -33.8 | 48.4  | 54.0 | 5.6  |
| High Channel (Ch 48) |      |      |      |      |     |      |       |       |      |      |
| 2476.8               | Peak | Horz | 95.9 | 32.2 | 3.2 | 10.0 | -33.8 | 107.6 |      | PASS |
| 2476.8               | Avg  | Horz | 93.4 | 32.2 | 3.2 | 10.0 | -33.8 | 105.1 |      | PASS |
| 2476.8               | Peak | Vert | 91.9 | 32.2 | 3.2 | 10.0 | -33.8 | 103.6 |      | PASS |
| 2476.8               | Avg  | Vert | 89.2 | 32.2 | 3.2 | 10.0 | -33.8 | 100.9 |      | PASS |
| 2357                 | Peak | Horz | 43.5 | 31.9 | 3.2 | 10.0 | -34.2 | 54.5  | 74.0 | 19.5 |
| 2386.4               | Avg  | Horz | 29.3 | 32.0 | 3.2 | 10.0 | -34.1 | 40.4  | 54.0 | 13.6 |
| 2338.4               | Peak | Vert | 43.3 | 31.9 | 3.2 | 10.0 | -34.2 | 54.2  | 74.0 | 19.8 |
| 2388.1               | Avg  | Vert | 29.3 | 32.0 | 3.2 | 10.0 | -34.1 | 40.4  | 54.0 | 13.6 |
| 2483.9               | Peak | Horz | 51.5 | 32.2 | 3.2 | 10.0 | -33.8 | 63.2  | 74.0 | 10.8 |
| 2483.5               | Avg  | Horz | 37.1 | 32.2 | 3.2 | 10.0 | -33.8 | 48.8  | 54.0 | 5.2  |
| 2483.9               | Peak | Vert | 48.1 | 32.2 | 3.2 | 10.0 | -33.8 | 59.8  | 74.0 | 14.2 |
| 2483.5               | Avg  | Vert | 34.2 | 32.2 | 3.2 | 10.0 | -33.8 | 45.9  | 54.0 | 8.1  |
| 4953.6               | Peak | Horz | 49.4 | 34.1 | 4.5 | 10.0 | -32.5 | 65.4  | 74.0 | 8.6  |
| 4953.6               | Avg  | Horz | 34.1 | 34.1 | 4.5 | 10.0 | -32.5 | 50.2  | 54.0 | 3.8  |
| 4953.6               | Peak | Vert | 49.2 | 34.1 | 4.5 | 10.0 | -32.5 | 65.3  | 74.0 | 8.7  |
| 4953.6               | Avg  | Vert | 34.1 | 34.1 | 4.5 | 10.0 | -32.5 | 50.2  | 54.0 | 3.8  |
| 7430.4               | Peak | Horz | 48.2 | 35.7 | 6.0 | 10.0 | -33.1 | 66.8  | 74.0 | 7.2  |
| 7430.4               | Avg  | Horz | 33.6 | 35.7 | 6.0 | 10.0 | -33.1 | 52.2  | 54.0 | 1.8  |
| 7430.4               | Peak | Vert | 48.7 | 35.7 | 6.0 | 10.0 | -33.1 | 67.3  | 74.0 | 6.7  |
| 7430.4               | Avg  | Vert | 33.7 | 35.7 | 6.0 | 10.0 | -33.1 | 52.3  | 54.0 | 1.7  |

|             |                                                    |                                                                                     |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Client      | <b>Ecobee Inc.</b>                                 |  |
| Product     | <b>ECB601/ECB501</b>                               |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

## ECB501

| EUT Name          |          | ECB501                 |                |                   |                |             |
|-------------------|----------|------------------------|----------------|-------------------|----------------|-------------|
| Limit             |          | FCC 15.209, Spurious   |                |                   |                |             |
| Power Supply      |          | 24Vac60Hz              |                |                   |                |             |
| Frequency (Hz)    | Detector | Correction Factor (dB) | Level (dBuV/m) | QP Limit (dBuV/m) | QP Margin (dB) | Test Result |
| <b>Horizontal</b> |          |                        |                |                   |                |             |
| 367.23M           | PEAK     | -7.7                   | 39.6           | 46.0              | 6.4            | Pass        |
| 293.76M           | PEAK     | -12.1                  | 38.4           | 46.0              | 7.6            | Pass        |
| 489.63M           | PEAK     | -3.9                   | 38.2           | 46.0              | 7.8            | Pass        |
| 440.67M           | PEAK     | -6.5                   | 38.0           | 46.0              | 8.0            | Pass        |
| 391.68M           | PEAK     | -6.8                   | 37.4           | 46.0              | 8.6            | Pass        |
| 342.72M           | QP       | -9.1                   | 42.6           | 46.0              | 3.4            | Pass        |
| <b>Vertical</b>   |          |                        |                |                   |                |             |
| 440.67M           | PEAK     | -6.5                   | 41.6           | 46.0              | 4.4            | Pass        |
| 342.75M           | QP       | -9.1                   | 41.6           | 46.0              | 4.4            | Pass        |
| 46.8M             | QP       | -17.2                  | 33.9           | 40.0              | 6.1            | Pass        |
| 52.11M            | QP       | -18.6                  | 32.1           | 40.0              | 7.9            | Pass        |
| 44.28M            | QP       | -16.4                  | 32.4           | 40.0              | 7.6            | Pass        |
| 367.2M            | QP       | -7.7                   | 41.0           | 46.0              | 5.0            | Pass        |

|             |                                                    |                                                                                     |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Client      | Ecobee Inc.                                        |  |
| Product     | ECB601/ECB501                                      |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

| High Channel (CH 49) |      |      |      |      |     |      |       |       |      |      |
|----------------------|------|------|------|------|-----|------|-------|-------|------|------|
| 2478.4               | Peak | Horz | 93.5 | 32.2 | 3.2 | 10.0 | -33.8 | 105.1 |      | PASS |
| 2478.4               | Avg  | Horz | 90.9 | 32.2 | 3.2 | 10.0 | -33.8 | 102.6 |      | PASS |
| 2478.4               | Peak | Vert | 96.1 | 32.2 | 3.2 | 10.0 | -33.8 | 107.8 |      | PASS |
| 2478.4               | Avg  | Vert | 93.5 | 32.2 | 3.2 | 10.0 | -33.8 | 105.2 |      | PASS |
| 2375.6               | Peak | Horz | 43.8 | 32.0 | 3.2 | 10.0 | -34.1 | 54.9  | 74.0 | 19.1 |
| 2389.9               | Avg  | Horz | 29.2 | 32.0 | 3.2 | 10.0 | -34.1 | 40.3  | 54.0 | 13.7 |
| 2381.2               | Peak | Vert | 44.3 | 32.0 | 3.2 | 10.0 | -34.1 | 55.3  | 74.0 | 18.7 |
| 2389.6               | Avg  | Vert | 29.2 | 32.0 | 3.2 | 10.0 | -34.1 | 40.3  | 54.0 | 13.7 |
| 2484                 | Peak | Horz | 51.5 | 32.2 | 3.2 | 10.0 | -33.8 | 63.2  | 74.0 | 10.8 |
| 2483.5               | Avg  | Horz | 38.0 | 32.2 | 3.2 | 10.0 | -33.8 | 49.7  | 54.0 | 4.3  |
| 2484                 | Peak | Vert | 54.3 | 32.2 | 3.2 | 10.0 | -33.8 | 66.0  | 74.0 | 8.0  |
| 2483.5               | Avg  | Vert | 40.8 | 32.2 | 3.2 | 10.0 | -33.8 | 52.5  | 54.0 | 1.5  |
| High Channel (Ch 48) |      |      |      |      |     |      |       |       |      |      |
| 2476.8               | Peak | Horz | 94.7 | 32.2 | 3.2 | 10.0 | -33.8 | 106.4 |      | PASS |
| 2476.8               | Avg  | Horz | 92.2 | 32.2 | 3.2 | 10.0 | -33.8 | 103.9 |      | PASS |
| 2476.8               | Peak | Vert | 97.1 | 32.2 | 3.2 | 10.0 | -33.8 | 108.8 |      | PASS |
| 2476.8               | Avg  | Vert | 94.5 | 32.2 | 3.2 | 10.0 | -33.8 | 106.2 |      | PASS |
| 2357                 | Peak | Horz | 43.3 | 31.9 | 3.2 | 10.0 | -34.2 | 54.3  | 74.0 | 19.7 |
| 2386.4               | Avg  | Horz | 29.2 | 32.0 | 3.2 | 10.0 | -34.1 | 40.3  | 54.0 | 13.7 |
| 2338.4               | Peak | Vert | 43.4 | 31.9 | 3.2 | 10.0 | -34.2 | 54.2  | 74.0 | 19.8 |
| 2388.1               | Avg  | Vert | 29.2 | 32.0 | 3.2 | 10.0 | -34.1 | 40.3  | 54.0 | 13.7 |
| 2483.9               | Peak | Horz | 49.5 | 32.2 | 3.2 | 10.0 | -33.8 | 61.2  | 74.0 | 12.8 |
| 2483.5               | Avg  | Horz | 35.7 | 32.2 | 3.2 | 10.0 | -33.8 | 47.4  | 54.0 | 6.6  |
| 2483.9               | Peak | Vert | 51.7 | 32.2 | 3.2 | 10.0 | -33.8 | 63.4  | 74.0 | 10.6 |
| 2483.5               | Avg  | Vert | 38.3 | 32.2 | 3.2 | 10.0 | -33.8 | 50.0  | 54.0 | 4.0  |
| 4953.6               | Peak | Horz | 41.8 | 34.1 | 4.5 | 10.0 | -32.5 | 57.9  | 74.0 | 16.1 |
| 4953.6               | Avg  | Horz | 27.3 | 34.1 | 4.5 | 10.0 | -32.5 | 43.4  | 54.0 | 10.6 |
| 4953.6               | Peak | Vert | 42.1 | 34.1 | 4.5 | 10.0 | -32.5 | 58.2  | 74.0 | 15.8 |
| 4953.6               | Avg  | Vert | 27.4 | 34.1 | 4.5 | 10.0 | -32.5 | 43.5  | 54.0 | 10.5 |
| 7430.4               | Peak | Horz | 43.6 | 35.7 | 6.0 | 10.0 | -33.1 | 62.2  | 74.0 | 11.8 |
| 7430.4               | Avg  | Horz | 29.3 | 35.7 | 6.0 | 10.0 | -33.1 | 47.9  | 54.0 | 6.1  |
| 7430.4               | Peak | Vert | 42.9 | 35.7 | 6.0 | 10.0 | -33.1 | 61.5  | 74.0 | 12.5 |
| 7430.4               | Avg  | Vert | 29.7 | 35.7 | 6.0 | 10.0 | -33.1 | 48.2  | 54.0 | 5.8  |

|             |                                                    |                                                                                     |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Client      | <b>Ecobee Inc.</b>                                 |  |
| Product     | <b>ECB601/ECB501</b>                               |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

## Test Equipment List

| Equipment                     | Model No. | Manufacturer            | Last Calibration Date | Next Calibration Date | Asset #  |
|-------------------------------|-----------|-------------------------|-----------------------|-----------------------|----------|
| Spectrum Analyzer             | ESU 40    | Rohde & Schwarz         | Feb. 11, 2022         | Feb. 11, 2024         | GEMC 233 |
| Loop Antenna                  | EM 6871   | Electro-Metrics         | Feb 26, 2021          | Feb 26, 2023          | GEMC 70  |
| Loop Antenna                  | EM 6872   | Electro-Metrics         | Feb 26, 2021          | Feb 26, 2023          | GEMC 71  |
| BiLog Antenna                 | 3142-C    | ETS-Lindgren            | Nov. 25, 2020         | Nov. 25, 2022         | GEMC 8   |
| Horn Antenna<br>1 – 18 GHz    | 3117      | ETS-Lindgren            | Mar. 11, 2022         | Mar. 11, 2024         | GEMC 340 |
| Attenuator 6 dB               | 6N5W-06   | Inmet                   | NCR                   | NCR                   | GEMC 346 |
| Attenuator 10 dB              | 8493B     | Agilent                 | NCR                   | NCR                   | GEMC133  |
| Pre-Amp<br>9 kHz – 1 GHz      | CPA9230   | Chase                   | May 22, 2020          | May 22, 2022          | GEMC 301 |
| Pre-Amp<br>1 – 26.5 GHz       | HP 8449B  | HP                      | Mar. 11, 2022         | Mar. 11, 2024         | GEMC 189 |
| 2.4GHz-2.5GHz<br>Notch Filter | BRM50702  | Micro-Tronics           | NCR                   | NCR                   | GEMC 230 |
| RF Cable <1GHz                | LMR-400   | LexTec                  | NCR                   | NCR                   | GEMC 27  |
| RF Cable <1GHz                | HP305S    | Semflex                 | NCR                   | NCR                   | GEMC 310 |
| RF Cable >1GHz                | EMC2      | MegaPhase               | NCR                   | NCR                   | GEMC 370 |
| Emissions<br>Software         | V2.1.0    | TUV SUD<br>Canada, Inc. | NCR                   | NCR                   | GEMC 361 |

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | <b>Ecobee Inc.</b>                                 | <br>Canada |
| Product     | <b>ECB601/ECB501</b>                               |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

## Appendix A – EUT Summary

|             |                                                    |                                                                                     |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Client      | <b>Ecobee Inc.</b>                                 |  |
| Product     | <b>ECB601/ECB501</b>                               |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

For further details for filing purposes, refer to filing package.

## General EUT Description

| Client                               |                                                                                                                                                                                                    |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Organization / Address               | Ecobee Inc.<br>25 Dockside Drive. Suite 700<br>Toronto, ON. M5A 0B5, Canada                                                                                                                        |
| Contact                              | John Russomanno                                                                                                                                                                                    |
| Phone                                | 416-809-2405                                                                                                                                                                                       |
| Email                                | johnr@ecobee.com                                                                                                                                                                                   |
| EUT Details                          |                                                                                                                                                                                                    |
| EUT Name                             | ECB601/ECB501                                                                                                                                                                                      |
| FCC ID                               | WR955470766937                                                                                                                                                                                     |
| IC                                   | 7981A-55470766937                                                                                                                                                                                  |
| Equipment Category                   | Unlicensed transmitter                                                                                                                                                                             |
| Basic EUT Functionality              | EUT is a smart thermostat that have a 2400 – 2483.5 MHz DTS (802.11 b/g/n) and FHSS transmitters and a 902 – 928 MHz FHSS/Hybrid transmitter.<br>5250-5350 MHz and 5725-5850 MHz UNII transmitter. |
| Input Voltage and Frequency          | 24 Vac 60 Hz                                                                                                                                                                                       |
| Connectors available on EUT          | 1 (terminals for HVAC control)                                                                                                                                                                     |
| Peripherals Required for Test        | 120 Vac – 24 Vac step down transformer.                                                                                                                                                            |
| Release type                         | Final                                                                                                                                                                                              |
| Intentional Radiator Frequency Range | 2400 – 2483.5 MHz for DTS and FHSS<br>902 – 928 MHz FHSS/Hybrid<br>5250-5350 MHz and 5725-5850 MHz UNII transmitter.                                                                               |
| Antenna                              | Flexible PCB antennas                                                                                                                                                                              |
| Type of Transmitter                  | Hybrid, Frequency Hopping and Digitally Modulated                                                                                                                                                  |
| Modulation                           | FSK for Sub Gig<br>Various for 2.4 GHz 802.11 b/g/n, FSK, etc                                                                                                                                      |
| EUT Configuration                    | Test software was configured to transmit continuously at 100% duty cycle and to control                                                                                                            |

|             |                                                    |                                                                                     |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Client      | <b>Ecobee Inc.</b>                                 |  |
| Product     | <b>ECB601/ECB501</b>                               |                                                                                     |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                     |

|  |                                                                                                      |
|--|------------------------------------------------------------------------------------------------------|
|  | hopping through its pseudo random sequence or single channel.<br>Channels tested: Lowest and Highest |
|--|------------------------------------------------------------------------------------------------------|

Note the EUT is considered to have been received the date of the commencement of the first test, unless otherwise stated. For a close-up picture of the EUT, see ‘Appendix B – EUT and Test Setup Photos’.

|             |                                                    |                                                                                               |
|-------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Client      | <b>Ecobee Inc.</b>                                 | <br>Canada |
| Product     | <b>ECB601/ECB501</b>                               |                                                                                               |
| Standard(s) | RSS 247 Issue 2:2017<br>FCC Part 15 Subpart 15.247 |                                                                                               |

## Appendix B – EUT and Test Setup Photos

Refer to the files separate from this test report