

# **Honeywell Home**

## **FCC / ISED Test Report**

**For**

### **GRIP 5” AIO Panel**

**Report #: 50346-A5**

**FCC ID: CFS8DL-GRIPAI05**

**IC ID: 573F-GRIPAI05**

**Report Completion Date: 2018-12-07**

*Prepared by and for:*

**Ademco Inc.**

**2 Corporate Center Dr.**

**Suite 100 PO Box 9040**

**Melville, NY 11747**



Testing

NVLAP Lab Code: 600110

### **Document Introduction**

Ademco Inc. tested the above equipment in accordance with the requirements set forth in the listed standards. All indications of Pass/Fail in the report are opinions expressed by Ademco Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

This document is a record of the FCC/ISED Test Report for Ademco Inc. products. It demonstrates the data required to be analyzed to certify a product according to the requirements of the FCC & ISED.

The results in the report reflect only the model of the items under test unless noted otherwise. This document may not be altered or revised in any way unless done so by Ademco Inc. and all revisions are duly noted in the revisions section. Any alterations of this document not carried out by Ademco Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

| <b>Test Report Revision History</b> |                    |                    |                         |                     |
|-------------------------------------|--------------------|--------------------|-------------------------|---------------------|
| <b>Revision</b>                     | <b>Prepared By</b> | <b>Reviewed By</b> | <b>Revision Detail</b>  | <b>Release Date</b> |
| ---                                 | <b>M. Antola</b>   | <b>A. Roussin</b>  | <b>Original Release</b> | <b>2018-12-07</b>   |
|                                     |                    |                    |                         |                     |
|                                     |                    |                    |                         |                     |

Report Authorization

**Report Prepared By:**



Michael Antola  
Hardware Engineer II  
Honeywell Home  
Ademco Inc.

**Reviewed & Approved By:**



Andrew Roussin  
Hardware Engineer II  
Honeywell Home  
Ademco Inc.

## **Contents**

|  |    |
|--|----|
| Applicable Test Standards/Limits.....      | 5  |
| Deviations from Test Methods .....         | 5  |
| Facilities and Accreditation .....         | 5  |
| Test Item Description .....                | 5  |
| Worse-Case Configuration & Mode.....       | 6  |
| Calibration & Measurement Uncertainty..... | 7  |
| Opinions / Interpretations .....           | 7  |
| Test Summary.....                          | 8  |
| On Time and Duty Cycle.....                | 9  |
| Radiated Emissions (Intentional) .....     | 13 |
| Conducted Emissions (Mains).....           | 39 |
| END OF REPORT.....                         | 41 |

| <b>Applicable Test Standards/Limits</b>    |               |                         |
|--|---------------|-------------------------|
| <b>Test Standards/Limits</b>               | <b>Result</b> | <b>Dates Tested</b>     |
| ANSI C63.10: 2013                          | Compliant     | 11/01/2018 – 12/05/2018 |
| RSS-247, Issue 2, Section 5                | Compliant     | 11/01/2018 – 12/05/2018 |
| RSS-GEN, Issue 4                           | Compliant     | 11/01/2018 – 12/05/2018 |
| CFR 47 Pt 15 Subpart C, Section 15.207/209 | Compliant     | 11/01/2018 – 12/05/2018 |
| CFR 47 Pt 15 Subpart C, Section 15.247     | Compliant     | 11/01/2018 – 12/05/2018 |

| <b>Deviations from Test Methods</b> |                              |
|-------------------------------------|------------------------------|
| <b>#</b>                            | <b>Deviation Description</b> |
| 0                                   | None                         |

| <b>Facilities and Accreditation</b>   |
|---|
| The test site and measurement facility used to collect data are located at 2 Corporate Center Dr., Melville, NY 11747, USA. Ademco Inc. is accredited by NVLAP, Laboratory Code 600110-0. The full scope of accreditation can be viewed at the NVLAP website. |

| <b>Test Item Description</b>   |
|--|
| <p>The Global Residential Intrusion Platform (GRIP) 5” All-In-One (AIO) solution consists of a panel with a built-in touch screen display. The panel consists of a main PCB board that contains components (Display, camera, microphones, speaker) to support features such as video and audio, interfaces to external devices/sensors (sensors, devices, and cameras) and wireless communicators. The EUT is AC powered with a battery back-up.</p> <p>There are three (3) on-board radios - Bluetooth (LE), RF6 and Wiselink. Plug-in modules can support Wi-Fi, Z-Wave and cellular communications. This report will cover the RF6 portion of the EUT only, which is a 2.4GHz Zigbee-based transmitter. This report contains only radiated (spurious emissions, Bandedge, etc.) and conducted emissions (mains) data. Conducted antenna port data is being leveraged from a previous certification (FCC ID: CFS8DL-GRIPAI07, IC: 573F-GRIPAI07) based on similarities. See test report exhibit titled “AIO 7-INCH EXHIBIT 5-2A FCC_ISED Test Report RF6” for specific data.</p> <p>It contains two (2) integral PCB antennas with gains of 6.6dBi &amp; 4.7dBi.</p> |

**Worse-Case Configuration & Mode**

Radiated emissions was performed with the EUT set to transmit at the low/mid/high channels with the highest output power as worst-case scenario. The EUT has a typical installation orientation of vertical (i.e. wall-mounted or standing upright on desktop). Therefore, all final radiated test was performed with the EUT in the vertical orientation. See setup photos for details. The AC powered configuration proved to be the worse-case configuration and was tested as such.

**Test Sample Identification**

| <b>Sample ID Number</b> | <b>Sample Serial Number</b>    | <b>Date Received</b> |
|-------------------------|--------------------------------|----------------------|
| MEL-576                 | Non-serialized production unit | 10/08/2018           |
|                         |                                |                      |
|                         |                                |                      |
|                         |                                |                      |
|                         |                                |                      |
|                         |                                |                      |

## Calibration & Measurement Uncertainty

- Measuring Instrument Calibration – The measuring equipment utilized to perform the tests documented in this report have been calibrated in accordance with the manufacturer’s recommendations and is traceable to recognized national standards.
- Sample Calculation – Where relevant, the following sample calculation is provided:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

[i.e.]  $37 \text{ dBuV/m} = 30 \text{ dBuV} + 18.5 \text{ dB/m} + 0.5 \text{ dB} - 12 \text{ dB}$

- Uncertainty - Figures are valid to a confidence level of 95%.

| Test  | Standard Uncertainty |
|---|----------------------|
| Radiated Emissions (30-200MHz Horizontal)   | +/- 5.05 dB          |
| Radiated Emissions (30-200MHz Vertical)     | +/- 5.28 dB          |
| Radiated Emissions (200-1000MHz Horizontal) | +/- 10.21 dB         |
| Radiated Emissions (200-1000MHz Vertical)   | +/- 10.36 dB         |
| Radiated Emissions (Above 1GHz)             | +/- 9.70 dB          |
| Conducted Emissions (150KHz-30MHz)          | +/- 4.36 dB          |

## Opinions / Interpretations

None

### Test Summary

All tests described below are required, unless otherwise noted. Notes should be described in detail in the "Additional notes" section.

| # | Test Description                 | Status |
|---|----------------------------------|--------|
| 1 | Radiated Emissions (Intentional) | PASS   |
| 2 | Conducted Emissions (Mains)      | PASS   |



## Test & Measurement Equipment

The following test and measurement equipment was utilized for the tests documented in this report:

### Equipment List

| Instrument Type                | ID #  | Serial #   | Manufacturer    | Model       | Cal Date | Cal Due Date |
|--------------------------------|-------|------------|-----------------|-------------|----------|--------------|
| RF Lab (RF power Measurements) |       |            |                 |             |          |              |
| Power Sensor                   | 11568 | 105317     | Rohde & Schwarz | NRP-Z81     | 10/02/18 | 10/02/19     |
| Attenuator                     | -     | 1624       | Pasternack      | PE7087-6    | *        | *            |
| RF Chamber                     |       |            |                 |             |          |              |
| Spectrum Analyzer              | 11496 | 100303     | Rohde & Schwarz | FSU26       | 04/11/18 | 04/11/19     |
| Loop Antenna (9kHz-30MHz)      | 11535 | 121080     | Com-Power       | AL-130R     | 10/29/18 | 10/29/19     |
| Bilog Antenna (30MHz-5GHz)     | 11311 | A022406    | Sunol           | JB5         | 02/01/18 | 02/01/19     |
| Horn Antenna (1-18GHz)         | 2319  | 2317       | EMCO            | 3115        | 01/10/18 | 01/10/19     |
| Horn Antenna (18-40GHz)        | 11472 | 151        | EMCO            | EM-6963     | 02/14/18 | 02/14/19     |
| Preamp (10-4200MHz)            | 11537 | 1603006    | Mini Circuits   | TVA-11-422  | *        | *            |
| Preamp (500MHz-18GHz)          | 11557 | 18040034   | Com-Power       | PAM-118A    | *        | *            |
| Preamp (18-40GHz)              | 11541 | 160911     | Amplical        | AMP18G40-35 | *        | *            |
| Band Reject Filter             | 11553 | G041       | Micro-tronics   | BRM50702-01 | *        | *            |
| RF Cable                       | -     | -          | Mini-Circuits   | RDE#2       | *        | *            |
| RF Cable                       | -     | -          | Insulated Wire  | SMA#8       | *        | *            |
| OATS                           |       |            |                 |             |          |              |
| Spectrum Analyzer              | 11545 | 103125     | Rohde & Schwarz | FSW26       | 02/21/18 | 02/21/19     |
| Bilog Antenna (30MHz-6GHz)     | 11534 | A012816    | Sunol           | JB6         | 03/27/18 | 03/27/19     |
| Horn Antenna (1-18GHz)         | 2973  | 3127       | EMCO            | RGA-60      | 01/22/18 | 01/22/19     |
| Horn Antenna (18-40GHz)        | 11472 | 151        | EMCO            | EM-6963     | 02/14/18 | 02/14/19     |
| Preamp (100kHz-1.3GHz)         | 11540 | 2443AUF555 | HP              | 8447D       | *        | *            |
| Preamp (1-18GHz)               | 11539 | 160362     | Amplical        | AMP1G18-35  | *        | *            |
| Preamp (18-40GHz)              | 11541 | 160911     | Amplical        | AMP18G40-35 | *        | *            |
| High Pass                      | 11552 | G018       | Micro-tronics   | HPM50111-01 | *        | *            |

|                      |       |             |                    |               |          |          |
|----------------------|-------|-------------|--------------------|---------------|----------|----------|
| Filter               |       |             |                    |               |          |          |
| RF Cable             | -     | -           | Pasternack         | RDE#1         | *        | *        |
| RF Cable             | -     | -           | MegaPhase          | EMC2-S1S1-360 | *        | *        |
| Shield Room          |       |             |                    |               |          |          |
| EMI Receiver         | 11566 | 102484      | Rohde & Schwarz    | ESR3          | 09/19/18 | 09/19/19 |
| LISN                 | 11527 | 241259      | Com-Power          | LIN-120A      | 01/10/18 | 01/10/19 |
| Misc.                |       |             |                    |               |          |          |
| Measurement Software | 11543 | Version 9.5 | UL                 | UL EMC        | N/A      | N/A      |
| Environmental Meter  | 11533 | A070144     | Extech Instruments | SD700         | 08/21/17 | 08/21/20 |

\*-Passive devices & Preamps are characterized in-house, not calibrated.

## On Time and Duty Cycle

### Test Description

Refer to KDB 558074 Zero-Span Analyzer Method.

### Test Criteria

| Reference             | Limit                    |
|-----------------------|--------------------------|
| KDB 558074, Section 6 | None, for reporting only |

### Test Information

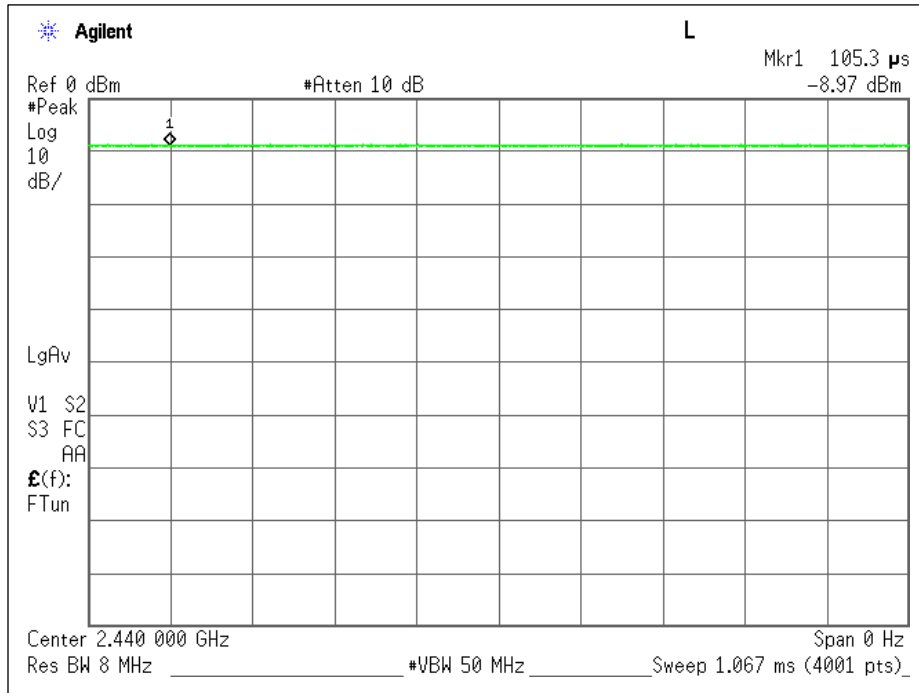
| Tester | Test Location | Date     | Temperature (°C) | Humidity (%RH) | Pressure (mbar) | Results (P/F) |
|--------|---------------|----------|------------------|----------------|-----------------|---------------|
| MA     | RF Lab        | 12/10/18 | 22.6             | 37.2           | 1014            | P             |

### Test Results

| On Time (usec) | Period (usec) | Duty Cycle | Duty Cycle (%) |
|----------------|---------------|------------|----------------|
| 105.3          | 105.3         | 1          | 100            |

**Note:** The duty cycle used for testing was 100%. In normal operation, the device is limited by the protocol to a maximum operational duty factor of 6.75% (refer to additional exhibits in this filing) and this value is used to determine the average level of radiated spurious emissions related to the fundamental from the measured peak level of the spurious emission using the 20log(d) factor allowed under section 12.5.2.2 (4) of KDB 558074.

Duty Cycle Plot



## Radiated Emissions (Intentional)

### Test Description

Intentional Radiator Radiated Emissions are a test of the emissions, and harmonics on the EUT. The EUT is positioned to get the maximum emissions after a series of prescan measurements. The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1 GHz measurements and 1.5 m above the ground plane for above 1 GHz measurements. The antenna to EUT distance is 3 meters. For measurements below 1 GHz the resolution bandwidth is set to 120 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements. The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

### Test Criteria

| Reference   | Limit                 |                             |                               |
|---|-----------------------|-----------------------------|-------------------------------|
|   | Frequency Range (MHz) | Field Strength Limit (uV/m) | Measurement distance (meters) |
| CFR 47 Subpart C, 15.205<br>CFR 47 Subpart C, 15.209<br>RSS-GEN | 0.009-0.490           | 2400/F(kHz)                 | 300                           |
|   | 0.490-1.705           | 24000/F(kHz)                | 30                            |
|   | 1.705-30.0            | 30                          | 30                            |
|   | 30-88                 | 100**                       | 3                             |
|   | 88-216                | 150**                       | 3                             |
|   | 216-960               | 200**                       | 3                             |
|   | Above 960             | 500                         | 3                             |

\*\*Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

### Test Information

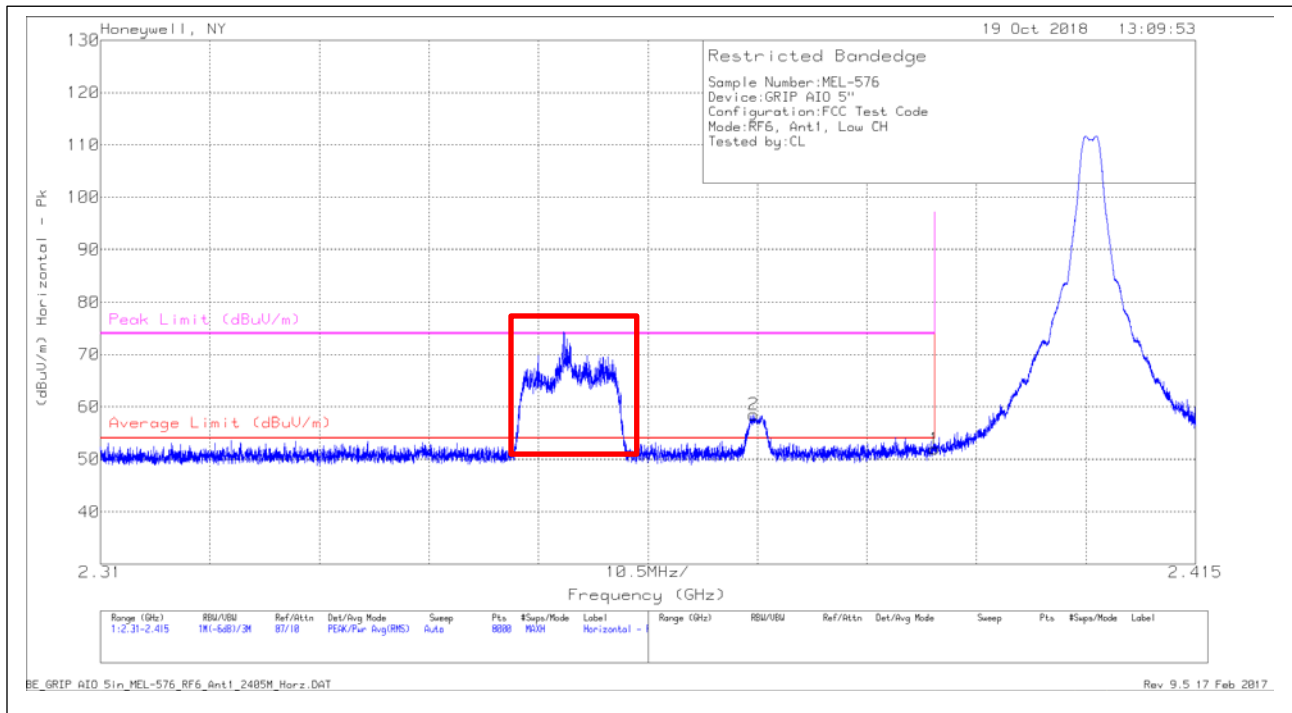
| Tester | Test Location   | Date              | Temperature (°C) | Humidity (%RH) | Pressure (mbar) | Results (P/F) |
|--------|-----------------|-------------------|------------------|----------------|-----------------|---------------|
| CL/JB  | RF Chamber/OATS | 10/22/18-12/05/18 | 2.7              | 40             | 1013            | P             |

**NOTE:** Below 30MHz, pretesting showed that no emissions as a product of the EUT were detected within 20dB of the regulatory limit. Worse-case plot/data reported from 30MHz - 1GHz and above 18GHz. Prescans performed in an anechoic chamber, final measurements performed on an OATS.

Since Wiselink/RF6/Bluetooth radios can transmit simultaneously, additional spurious scans are provided with all radios on and transmitting in their worse-case state.

**Test Results**

**Restricted Band Edge**



Antenna 1: Low Channel Horizontal - Plot

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m)    | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|------------------------|----------------|----------------|-------------|----------|
| 1      | * 2.39          | 17.62                | Pk  | 28.5      | .7          | 2.6       | 2.5       | -            | 51.92                      | 74                     | -22.08         | 168            | 107         | H        |
| 2      | * 2.373         | 24.33                | Pk  | 28.4      | .7          | 2.6       | 2.5       | -            | 58.53                      | 74                     | -15.47         | 168            | 107         | H        |
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB)    | Azimuth (Degs) | Height (cm) | Polarity |
| 1      | * 2.39          | 17.62                | Av  | 28.5      | .7          | 2.6       | 2.5       | -23.4        | 28.52                      | 54                     | -25.48         | 168            | 107         | H        |
| 2      | * 2.373         | 24.33                | Av  | 28.4      | .7          | 2.6       | 2.5       | -23.4        | 35.13                      | 54                     | -18.87         | 168            | 107         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

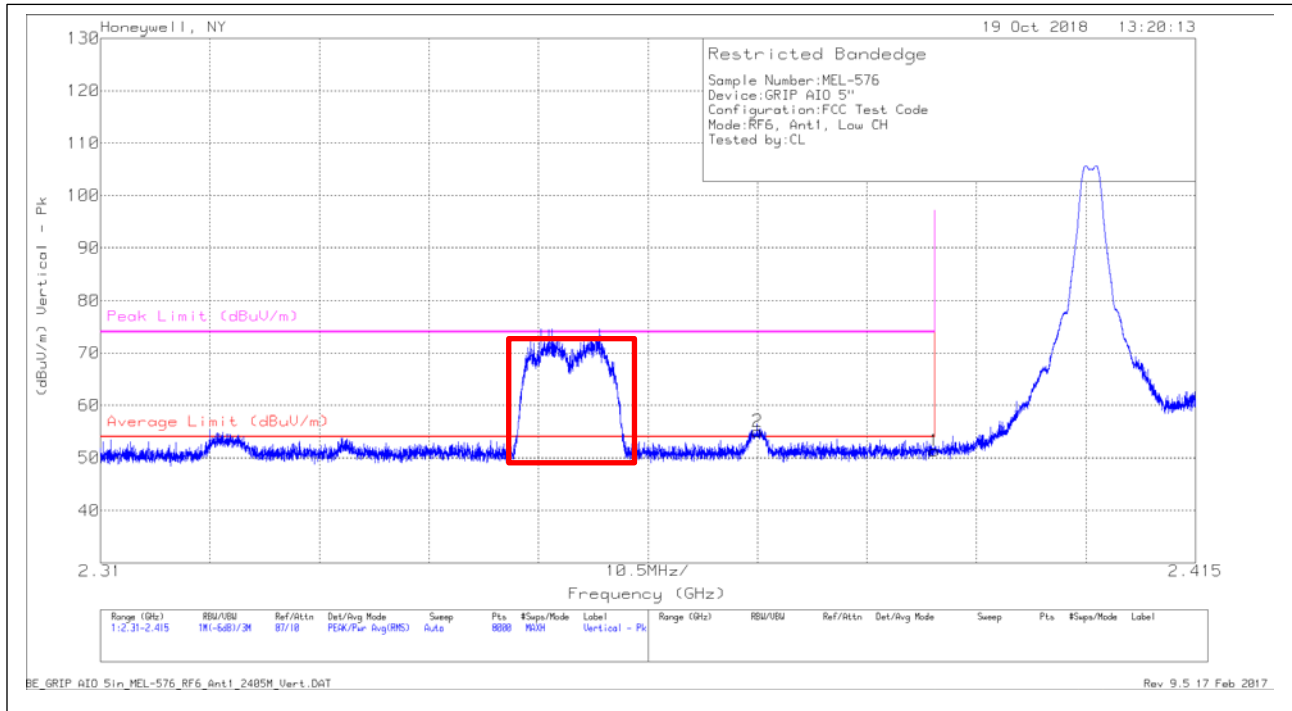
Pk - Peak detector

Av - Peak + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.06752) = -23.4\text{dB}$

NOTE: Emissions highlighted in the plot above is OATS ambient and not a product of the transmitter.

Antenna 1: Low Channel Horizontal - Data



Antenna 1: Low Channel Vertical - Plot

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m)    | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|------------------------|----------------|----------------|-------------|----------|
| 1      | * 2.39          | 17.03                | Pk  | 28.5      | .7          | 2.6       | 2.5       | -            | 51.33                      | 74                     | -22.67         | 316            | 264         | V        |
| 2      | * 2.373         | 20.84                | Pk  | 28.4      | .7          | 2.6       | 2.5       | -            | 55.04                      | 74                     | -18.96         | 316            | 264         | V        |
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB)    | Azimuth (Degs) | Height (cm) | Polarity |
| 1      | * 2.39          | 17.03                | Av  | 28.5      | .7          | 2.6       | 2.5       | -23.4        | 27.93                      | 54                     | -26.07         | 316            | 264         | V        |
| 2      | * 2.373         | 20.84                | Av  | 28.4      | .7          | 2.6       | 2.5       | -23.4        | 31.64                      | 54                     | -22.36         | 316            | 264         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

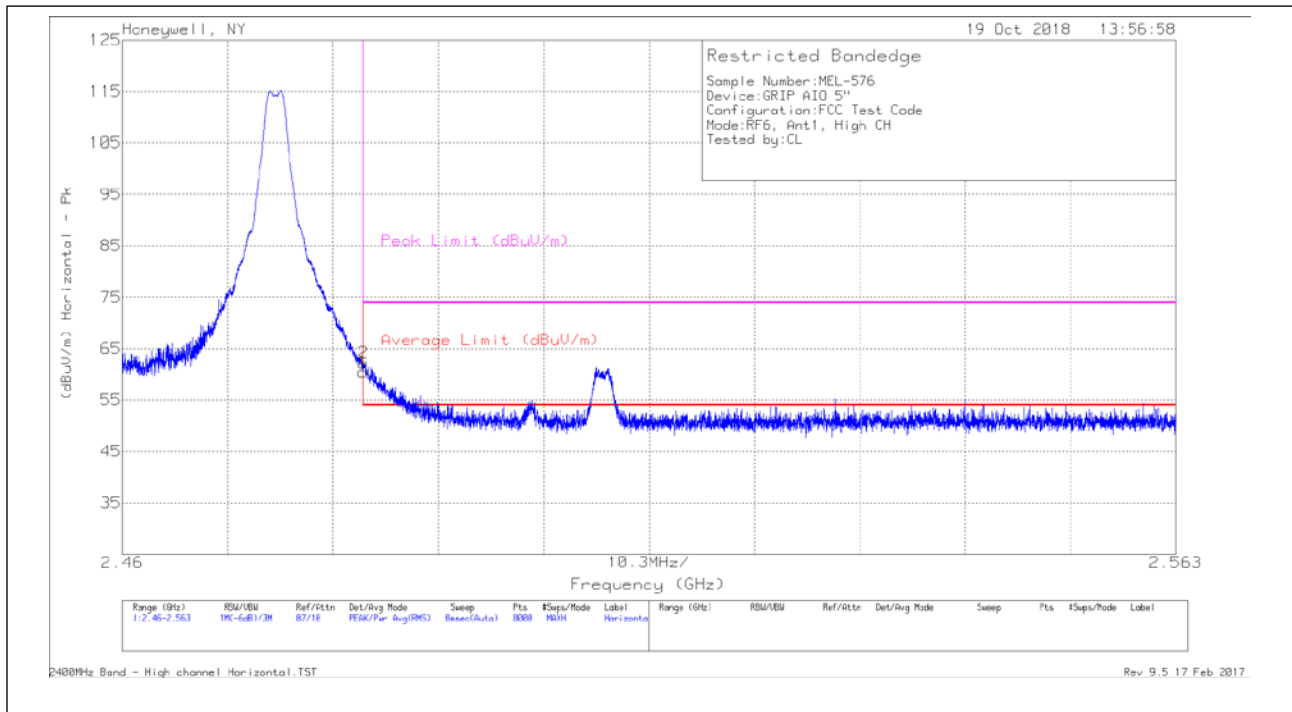
Pk - Peak detector

Av - Peak + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.06752) = -23.4\text{dB}$

NOTE: Emissions highlighted in the plot above is OATS ambient and not a product of the transmitter.

Antenna 1: Low Channel Vertical - Data



Antenna 1: High Channel Horizontal - Plot

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m)    | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|------------------------|----------------|----------------|-------------|----------|
| 1      | * 2.484         | 25.85                | Pk  | 28.7      | .7          | 2.6       | 2.6       | -            | 60.45                      | 74                     | -13.55         | 133            | 118         | H        |
| 2      | * 2.484         | 27.6                 | Pk  | 28.7      | .7          | 2.6       | 2.6       | -            | 62.2                       | 74                     | -11.8          | 133            | 118         | H        |
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB)    | Azimuth (Degs) | Height (cm) | Polarity |
| 1      | * 2.484         | 25.85                | Av  | 28.7      | .7          | 2.6       | 2.6       | -23.4        | 37.05                      | 54                     | -16.95         | 133            | 118         | H        |
| 2      | * 2.484         | 27.6                 | Av  | 28.7      | .7          | 2.6       | 2.6       | -23.4        | 38.8                       | 54                     | -15.2          | 133            | 118         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

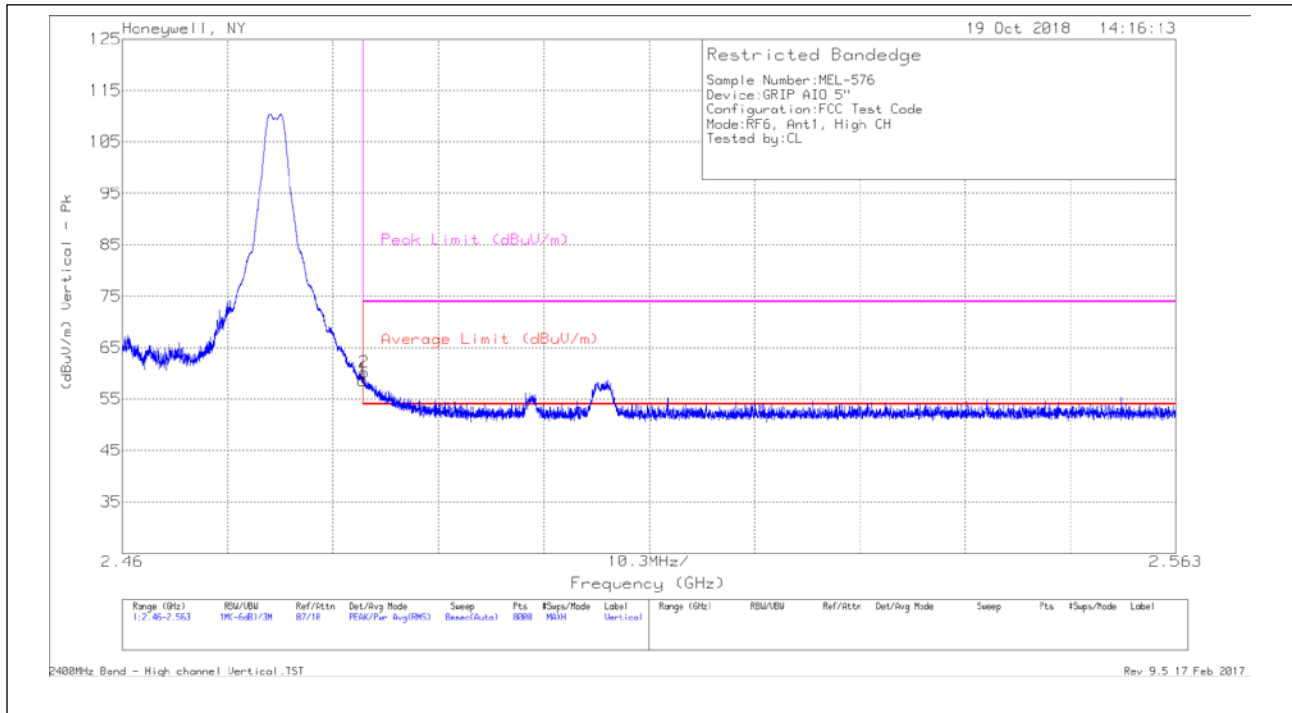
Av - Peak + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.06752) = -23.4\text{dB}$

NOTE: Worse-case emissions are reported and all other peak emissions, once corrected by the DC Corr, would be below the average limit.

Antenna 1: High Channel Horizontal - Data





Antenna 1: High Channel Vertical - Plot

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m)    | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|------------------------|----------------|----------------|-------------|----------|
| 1      | * 2.484         | 24.08                | Pk  | 28.7      | .7          | 2.6       | 2.6       | -            | 58.68                      | 74                     | -15.32         | 149            | 205         | V        |
| 2      | * 2.484         | 25.59                | Pk  | 28.7      | .7          | 2.6       | 2.6       | -            | 60.19                      | 74                     | -13.81         | 149            | 205         | V        |
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB)    | Azimuth (Degs) | Height (cm) | Polarity |
| 1      | * 2.484         | 24.08                | Av  | 28.7      | .7          | 2.6       | 2.6       | -23.4        | 35.28                      | 54                     | -18.72         | 149            | 205         | V        |
| 2      | * 2.484         | 25.59                | Av  | 28.7      | .7          | 2.6       | 2.6       | -23.4        | 36.79                      | 54                     | -17.21         | 149            | 205         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

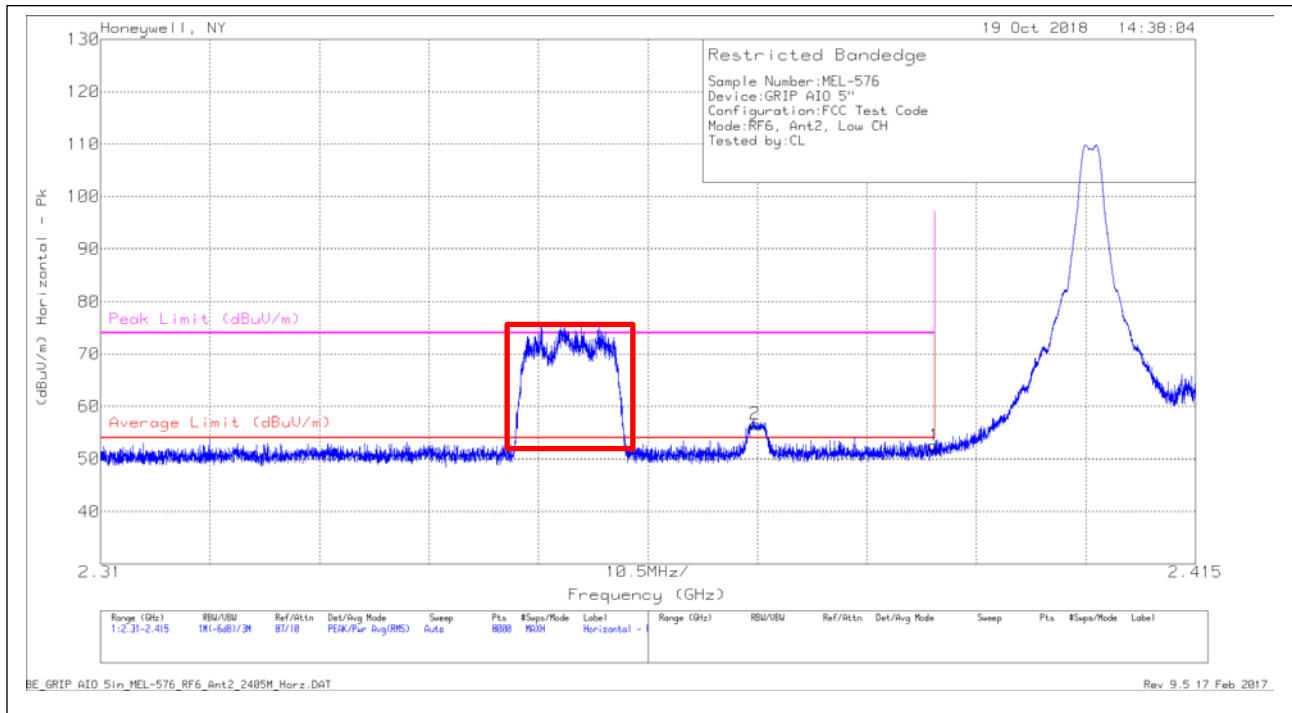
Pk - Peak detector

Av - Peak + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.06752) = -23.4\text{dB}$

NOTE: Worse-case emissions are reported and all other peak emissions, once corrected by the DC Corr, would be below the average limit.

Antenna 1: High Channel Vertical - Data



Antenna 2: Low Channel Horizontal - Plot

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m)    | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|------------------------|----------------|----------------|-------------|----------|
| 1      | * 2.39          | 18.28                | Pk  | 28.5      | .7          | 2.6       | 2.5       | -            | 52.58                      | 74                     | -21.42         | 202            | 288         | H        |
| 2      | * 2.373         | 22.45                | Pk  | 28.4      | .7          | 2.6       | 2.5       | -            | 56.65                      | 74                     | -17.35         | 202            | 288         | H        |
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB)    | Azimuth (Degs) | Height (cm) | Polarity |
| 1      | * 2.39          | 18.28                | Av  | 28.5      | .7          | 2.6       | 2.5       | -23.4        | 29.18                      | 54                     | -24.82         | 202            | 288         | H        |
| 2      | * 2.373         | 22.45                | Av  | 28.4      | .7          | 2.6       | 2.5       | -23.4        | 33.25                      | 54                     | -20.75         | 202            | 288         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

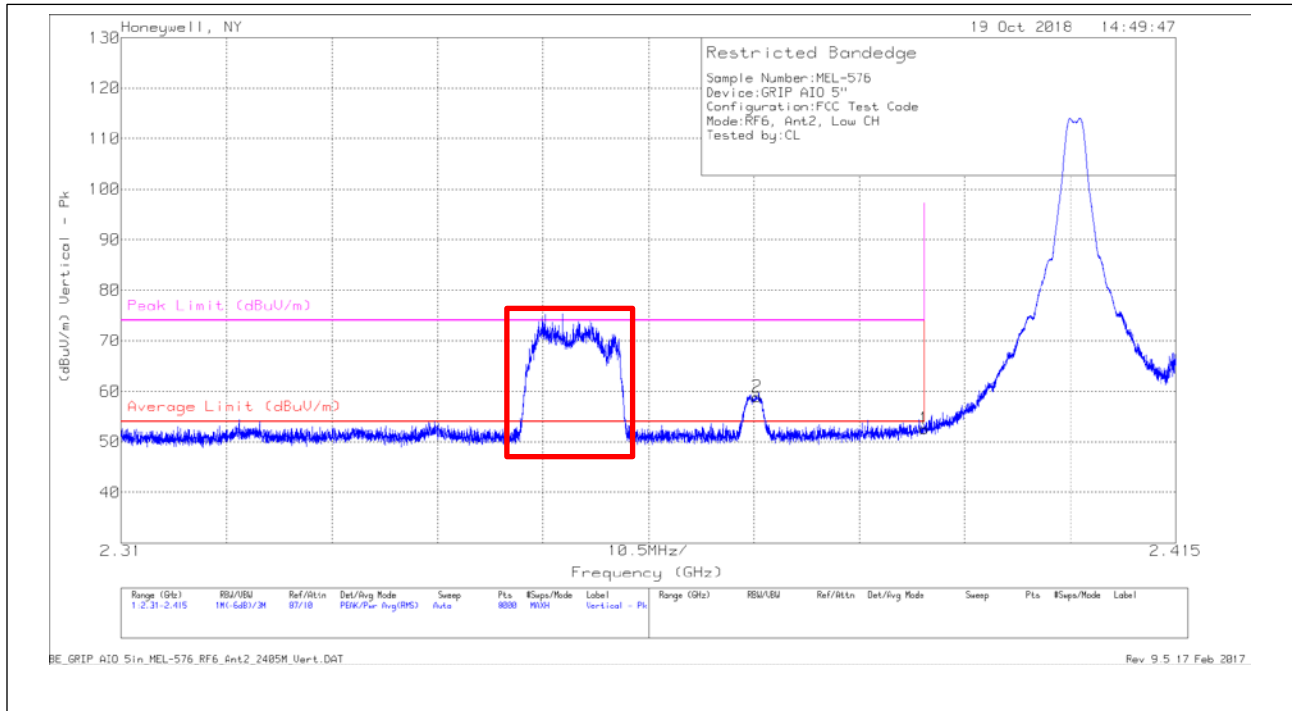
Pk - Peak detector

Av - Peak + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.06752) = -23.4\text{dB}$

NOTE: Emissions highlighted in the plot above is OATS ambient and not a product of the transmitter.

Antenna 2: Low Channel Horizontal - Data



Antenna 2: Low Channel Vertical - Plot

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m)    | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|------------------------|----------------|----------------|-------------|----------|
| 1      | * 2.39          | 18.32                | Pk  | 28.5      | .7          | 2.6       | 2.5       | -            | 52.62                      | 74                     | -21.38         | 84             | 287         | V        |
| 2      | * 2.373         | 24.75                | Pk  | 28.4      | .7          | 2.6       | 2.5       | -            | 58.95                      | 74                     | -15.05         | 84             | 287         | V        |
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB)    | Azimuth (Degs) | Height (cm) | Polarity |
| 1      | * 2.39          | 18.32                | Av  | 28.5      | .7          | 2.6       | 2.5       | -23.4        | 29.22                      | 54                     | -24.78         | 84             | 287         | V        |
| 2      | * 2.373         | 24.75                | Av  | 28.4      | .7          | 2.6       | 2.5       | -23.4        | 35.55                      | 54                     | -18.45         | 84             | 287         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

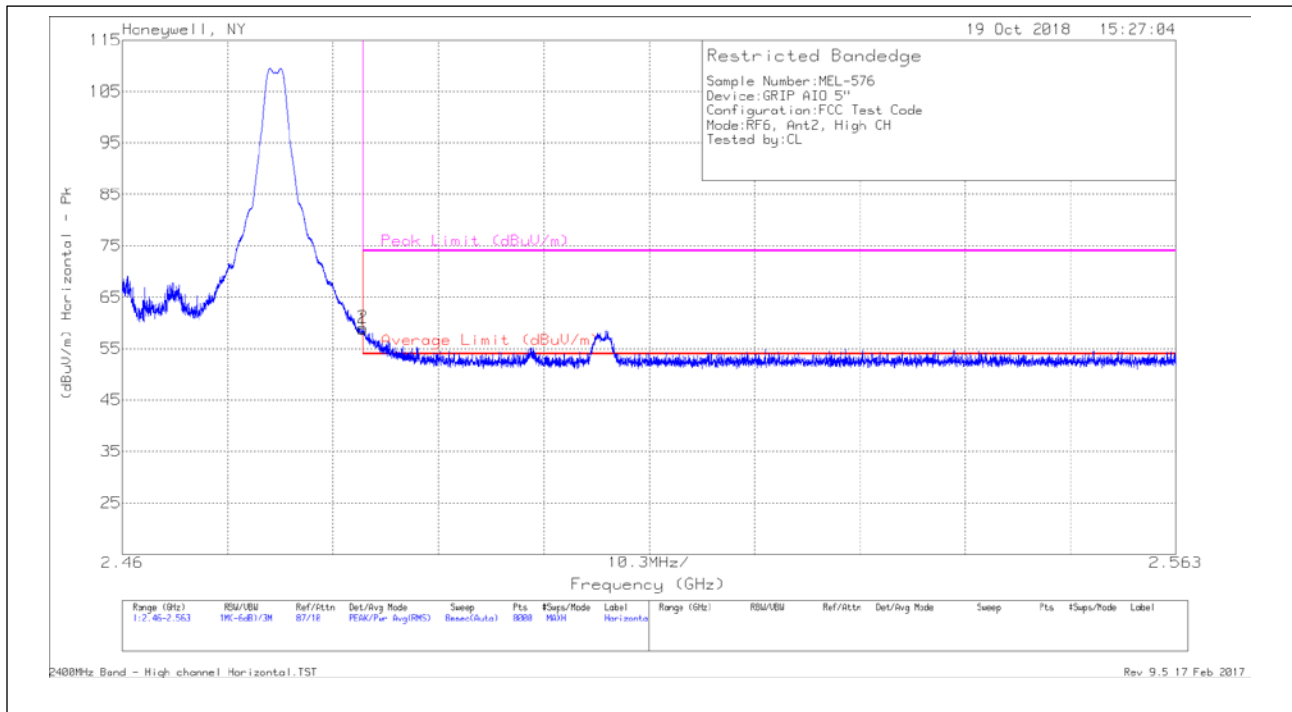
Pk - Peak detector

Av - Peak + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.06752) = -23.4\text{dB}$

NOTE: Emissions highlighted in the plot above is OATS ambient and not a product of the transmitter.

Antenna 2: Low Channel Vertical - Data



Antenna 2: High Channel Horizontal - Plot

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m)    | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|------------------------|----------------|----------------|-------------|----------|
| 1      | * 2.484         | 24.15                | Pk  | 28.7      | .7          | 2.6       | 2.6       | -            | 58.75                      | 74                     | -15.25         | 30             | 281         | H        |
| 2      | * 2.484         | 24.51                | Pk  | 28.7      | .7          | 2.6       | 2.6       | -            | 59.11                      | 74                     | -14.89         | 30             | 281         | H        |
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB)    | Azimuth (Degs) | Height (cm) | Polarity |
| 1      | * 2.484         | 24.15                | Av  | 28.7      | .7          | 2.6       | 2.6       | -23.4        | 35.35                      | 54                     | -18.65         | 30             | 281         | H        |
| 2      | * 2.484         | 24.51                | Av  | 28.7      | .7          | 2.6       | 2.6       | -23.4        | 35.71                      | 54                     | -18.29         | 30             | 281         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

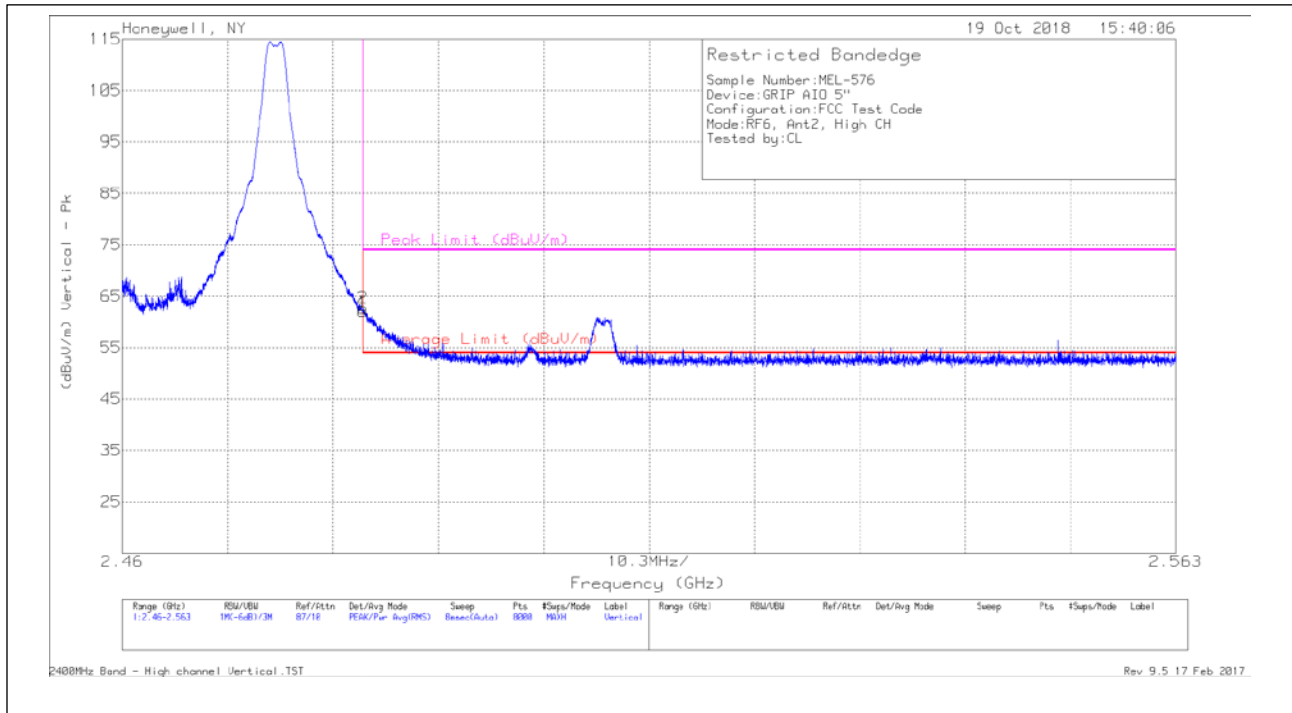
Pk - Peak detector

Av - Peak + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.06752) = -23.4\text{dB}$

NOTE: Worse-case emissions are reported and all other peak emissions, once corrected by the DC Corr, would be below the average limit.

Antenna 2: High Channel Horizontal - Data



Antenna 2: High Channel Vertical - Plot

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m)    | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|------------------------|----------------|----------------|-------------|----------|
| 1      | * 2.484         | 27.38                | Pk  | 28.7      | .7          | 2.6       | 2.6       | -            | 61.98                      | 74                     | -12.02         | 80             | 253         | V        |
| 2      | * 2.484         | 28.06                | Pk  | 28.7      | .7          | 2.6       | 2.6       | -            | 62.66                      | 74                     | -11.34         | 80             | 253         | V        |
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX3 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB)    | Azimuth (Degs) | Height (cm) | Polarity |
| 1      | * 2.484         | 27.38                | Av  | 28.7      | .7          | 2.6       | 2.6       | -23.4        | 38.58                      | 54                     | -15.42         | 80             | 253         | V        |
| 2      | * 2.484         | 28.06                | Av  | 28.7      | .7          | 2.6       | 2.6       | -23.4        | 39.26                      | 54                     | -14.74         | 80             | 253         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

Av - Peak + DC Corr (Duty Cycle Correction Factor)

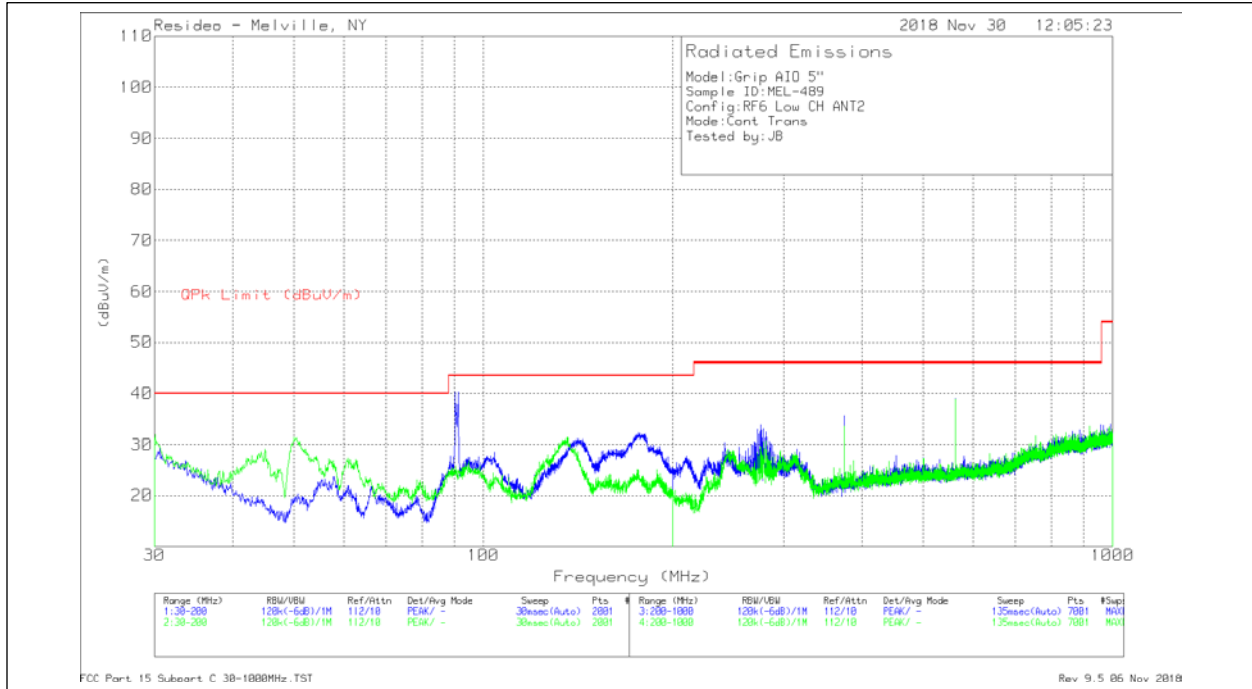
Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.06752) = -23.4\text{dB}$

NOTE: Worse-case emissions are reported and all other peak emissions, once corrected by the DC Corr, would be below the average limit.

Antenna 2: High Channel Vertical - Data

**Spurious Emissions**

**Below 1GHz (Worse-case)**



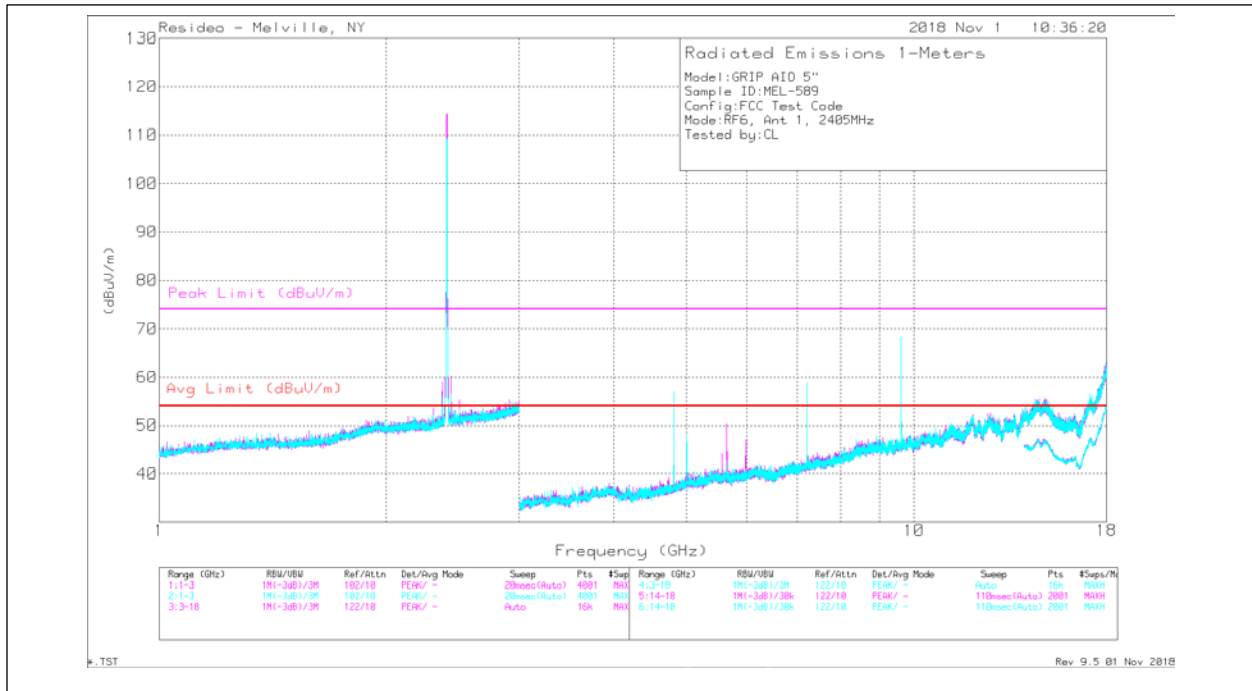
Antenna 2 Mid Channel - Plot

| Frequency (MHz) | Meter Reading (dBuV) | Det | AF_JB6 [dB/m] | Cable 1 [dB] | Corrected Reading (dBuV/m) | QPK Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|---------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 90.18           | 20.69                | Qp  | 12            | 1.5          | 34.19                      | 43.52              | -9.33       | 84             | 387         | H        |
| 30.5724         | 11.1                 | Qp  | 24.4          | .9           | 36.4                       | 40                 | -3.6        | 43             | 365         | H        |
| 30.1            | 11.34                | Qp  | 24.8          | .9           | 37.04                      | 40                 | -2.96       | 239            | 247         | V        |
| 562.5552        | 4.38                 | Qp  | 23            | 5.8          | 33.18                      | 46.02              | -12.84      | 242            | 396         | H        |
| 374.9887        | 6.15                 | Qp  | 19.1          | 3.8          | 29.05                      | 46.02              | -16.97      | 0              | 203         | V        |
| 562.4009        | 4.36                 | Qp  | 23            | 5.8          | 33.16                      | 46.02              | -12.86      | 234            | 330         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 Qp - Quasi-Peak detector

Antenna 2 Mid Channel - Data

**1-18GHz**



Antenna 1: Low Channel - Plot

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|----------------------------|---------------------|----------------|----------------|-------------|----------|
| * 4.809         | 46.55                | PK  | 33.1      | -41.2       | 3.7       | 3.7       | 45.85                      | 74                  | -28.15         | 55             | 213         | H        |
| 7.216           | 48.61                | PK  | 36.2      | -39.5       | 4.7       | 4.5       | 54.51                      | 74                  | -19.49         | 100            | 321         | H        |
| 9.622           | 60.31                | PK  | 38        | -39         | 5.6       | 5.2       | 70.11                      | 74                  | -3.89          | 75             | 273         | H        |
| * 12.027        | 38.83                | PK  | 39.4      | -37.3       | 6.5       | 5.6       | 53.03                      | 74                  | -20.97         | 34             | 261         | H        |
| 14.433          | 39.21                | PK  | 42.1      | -36.9       | 6.8       | 6.4       | 57.61                      | 74                  | -16.39         | 143            | 237         | H        |
| 16.84           | 39.22                | PK  | 39.6      | -38.1       | 7.5       | 7.1       | 55.32                      | 74                  | -18.68         | 22             | 364         | H        |
| * 4.809         | 47.4                 | PK  | 33.1      | -41.2       | 3.7       | 3.7       | 46.7                       | 74                  | -27.3          | 29             | 287         | V        |
| 7.213           | 49.58                | PK  | 36.2      | -39.5       | 4.7       | 4.5       | 55.48                      | 74                  | -18.52         | 20             | 167         | V        |
| 9.618           | 62.34                | PK  | 38        | -39         | 5.6       | 5.2       | 72.14                      | 74                  | -1.86          | 2              | 337         | V        |
| * 12.028        | 38.36                | PK  | 39.4      | -37.3       | 6.5       | 5.6       | 52.56                      | 74                  | -21.44         | 38             | 279         | V        |
| 14.427          | 39.35                | PK  | 42.1      | -36.9       | 6.8       | 6.4       | 57.75                      | 74                  | -16.25         | 332            | 364         | V        |
| 16.834          | 39.09                | PK  | 39.6      | -38.1       | 7.4       | 7.1       | 55.09                      | 74                  | -18.91         | 249            | 317         | V        |

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr [dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Av Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|--------------------|----------------|----------------|-------------|----------|
| * 4.809         | 46.55                | Av  | 33.1      | -41.2       | 3.7       | 3.7       | -23.4        | 22.45                      | 54                 | -31.55         | 55             | 213         | H        |
| 7.216           | 48.61                | Av  | 36.2      | -39.5       | 4.7       | 4.5       | -23.4        | 31.11                      | 54                 | -22.89         | 100            | 321         | H        |
| 9.622           | 60.31                | Av  | 38        | -39         | 5.6       | 5.2       | -23.4        | 46.71                      | 54                 | -7.29          | 75             | 273         | H        |
| * 12.027        | 38.83                | Av  | 39.4      | -37.3       | 6.5       | 5.6       | -23.4        | 29.63                      | 54                 | -24.37         | 34             | 261         | H        |
| 14.433          | 39.21                | Av  | 42.1      | -36.9       | 6.8       | 6.4       | -23.4        | 34.21                      | 54                 | -19.79         | 143            | 237         | H        |
| 16.84           | 39.22                | Av  | 39.6      | -38.1       | 7.5       | 7.1       | -23.4        | 31.92                      | 54                 | -22.08         | 22             | 364         | H        |
| * 4.809         | 47.4                 | Av  | 33.1      | -41.2       | 3.7       | 3.7       | -23.4        | 23.3                       | 54                 | -30.7          | 29             | 287         | V        |
| 7.213           | 49.58                | Av  | 36.2      | -39.5       | 4.7       | 4.5       | -23.4        | 32.08                      | 54                 | -21.92         | 20             | 167         | V        |
| 9.618           | 62.34                | Av  | 38        | -39         | 5.6       | 5.2       | -23.4        | 48.74                      | 54                 | -5.26          | 2              | 337         | V        |
| * 12.028        | 38.36                | Av  | 39.4      | -37.3       | 6.5       | 5.6       | -23.4        | 29.16                      | 54                 | -24.84         | 38             | 279         | V        |
| 14.427          | 39.35                | Av  | 42.1      | -36.9       | 6.8       | 6.4       | -23.4        | 34.35                      | 54                 | -19.65         | 332            | 364         | V        |
| 16.834          | 39.09                | Av  | 39.6      | -38.1       | 7.4       | 7.1       | -23.4        | 31.69                      | 54                 | -22.31         | 249            | 317         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

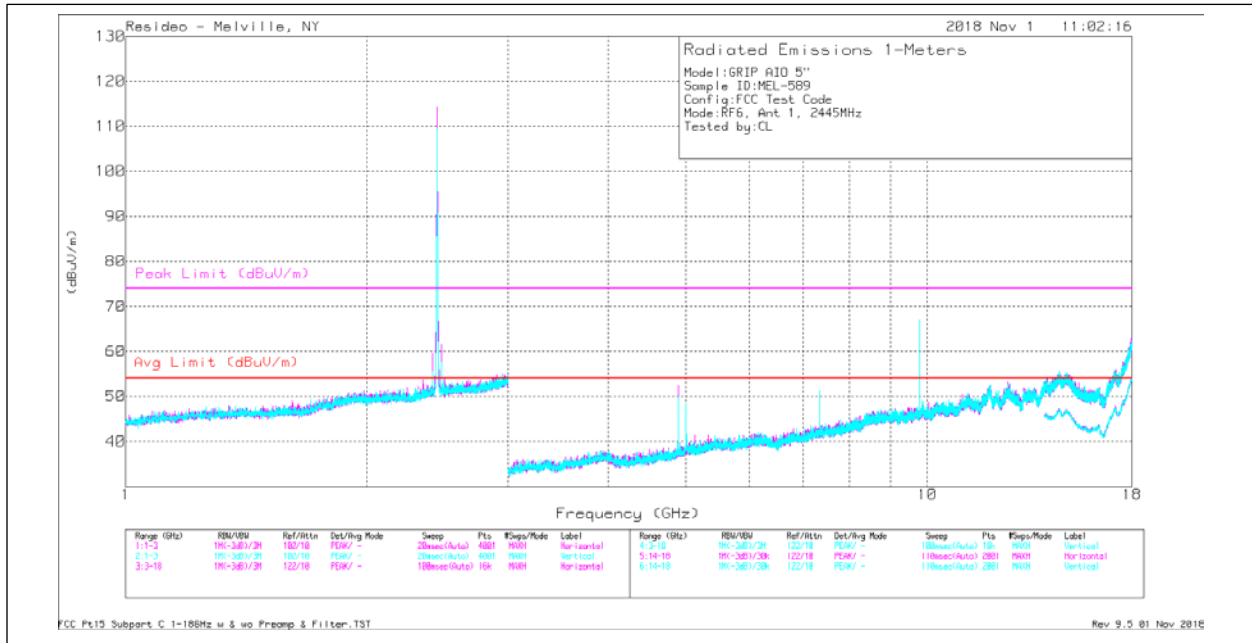
PK - KDB558074 Method: Maximum Peak

Av - KDB558074 Method: PK + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.0675) = -23.4\text{dB}$

Antenna 1: Low Channel - Data





Antenna 1: Mid Channel – Plot

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|----------------------------|---------------------|----------------|----------------|-------------|----------|
| * 4.889         | 44.14                | PK  | 33.2      | -41.4       | 3.7       | 3.6       | 43.24                      | 74                  | -30.76         | 145            | 134         | H        |
| * 7.333         | 44.55                | PK  | 36.6      | -39.7       | 4.6       | 4.5       | 50.55                      | 74                  | -23.45         | 356            | 158         | H        |
| 9.778           | 58.88                | PK  | 38.1      | -39.1       | 5.5       | 5.3       | 68.68                      | 74                  | -5.32          | 106            | 181         | H        |
| * 12.227        | 40.99                | PK  | 39.2      | -37.2       | 6.5       | 5.9       | 55.39                      | 74                  | -18.61         | 293            | 197         | H        |
| 14.668          | 38.55                | PK  | 42.6      | -36.9       | 6.7       | 6.4       | 57.35                      | 74                  | -16.65         | 207            | 254         | H        |
| 17.112          | 39.35                | PK  | 41.1      | -38.1       | 7.5       | 7         | 56.85                      | 74                  | -17.15         | 226            | 130         | H        |
| * 4.889         | 46.97                | PK  | 33.2      | -41.4       | 3.7       | 3.6       | 46.07                      | 74                  | -27.93         | 129            | 117         | V        |
| * 7.336         | 44.66                | PK  | 36.6      | -39.7       | 4.6       | 4.5       | 50.66                      | 74                  | -23.34         | 289            | 126         | V        |
| 9.782           | 62.02                | PK  | 38.1      | -39.1       | 5.5       | 5.3       | 71.82                      | 74                  | -2.18          | 14             | 333         | V        |
| * 12.227        | 40.16                | PK  | 39.2      | -37.2       | 6.5       | 5.9       | 54.56                      | 74                  | -19.44         | 275            | 339         | V        |
| 14.673          | 39.21                | PK  | 42.6      | -36.9       | 6.6       | 6.4       | 57.91                      | 74                  | -16.09         | 347            | 322         | V        |
| 17.112          | 39.2                 | PK  | 41.1      | -38.1       | 7.5       | 7         | 56.7                       | 74                  | -17.3          | 88             | 249         | V        |

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr [dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Av Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|--------------------|----------------|----------------|-------------|----------|
| * 4.889         | 44.14                | Av  | 33.2      | -41.4       | 3.7       | 3.6       | -23.4        | 19.84                      | 54                 | -34.16         | 145            | 134         | H        |
| * 7.333         | 44.55                | Av  | 36.6      | -39.7       | 4.6       | 4.5       | -23.4        | 27.15                      | 54                 | -26.85         | 356            | 158         | H        |
| 9.778           | 58.88                | Av  | 38.1      | -39.1       | 5.5       | 5.3       | -23.4        | 45.28                      | 54                 | -8.72          | 106            | 181         | H        |
| * 12.227        | 40.99                | Av  | 39.2      | -37.2       | 6.5       | 5.9       | -23.4        | 31.99                      | 54                 | -22.01         | 293            | 197         | H        |
| 14.668          | 38.55                | Av  | 42.6      | -36.9       | 6.7       | 6.4       | -23.4        | 33.95                      | 54                 | -20.05         | 207            | 254         | H        |
| 17.112          | 39.35                | Av  | 41.1      | -38.1       | 7.5       | 7         | -23.4        | 33.45                      | 54                 | -20.55         | 226            | 130         | H        |
| * 4.889         | 46.97                | Av  | 33.2      | -41.4       | 3.7       | 3.6       | -23.4        | 22.67                      | 54                 | -31.33         | 129            | 117         | V        |
| * 7.336         | 44.66                | Av  | 36.6      | -39.7       | 4.6       | 4.5       | -23.4        | 27.26                      | 54                 | -26.74         | 289            | 126         | V        |
| 9.782           | 62.02                | Av  | 38.1      | -39.1       | 5.5       | 5.3       | -23.4        | 48.42                      | 54                 | -5.58          | 14             | 333         | V        |
| * 12.227        | 40.16                | Av  | 39.2      | -37.2       | 6.5       | 5.9       | -23.4        | 31.16                      | 54                 | -22.84         | 275            | 339         | V        |
| 14.673          | 39.21                | Av  | 42.6      | -36.9       | 6.6       | 6.4       | -23.4        | 34.51                      | 54                 | -19.49         | 347            | 322         | V        |
| 17.112          | 39.2                 | Av  | 41.1      | -38.1       | 7.5       | 7         | -23.4        | 33.3                       | 54                 | -20.7          | 88             | 249         | V        |

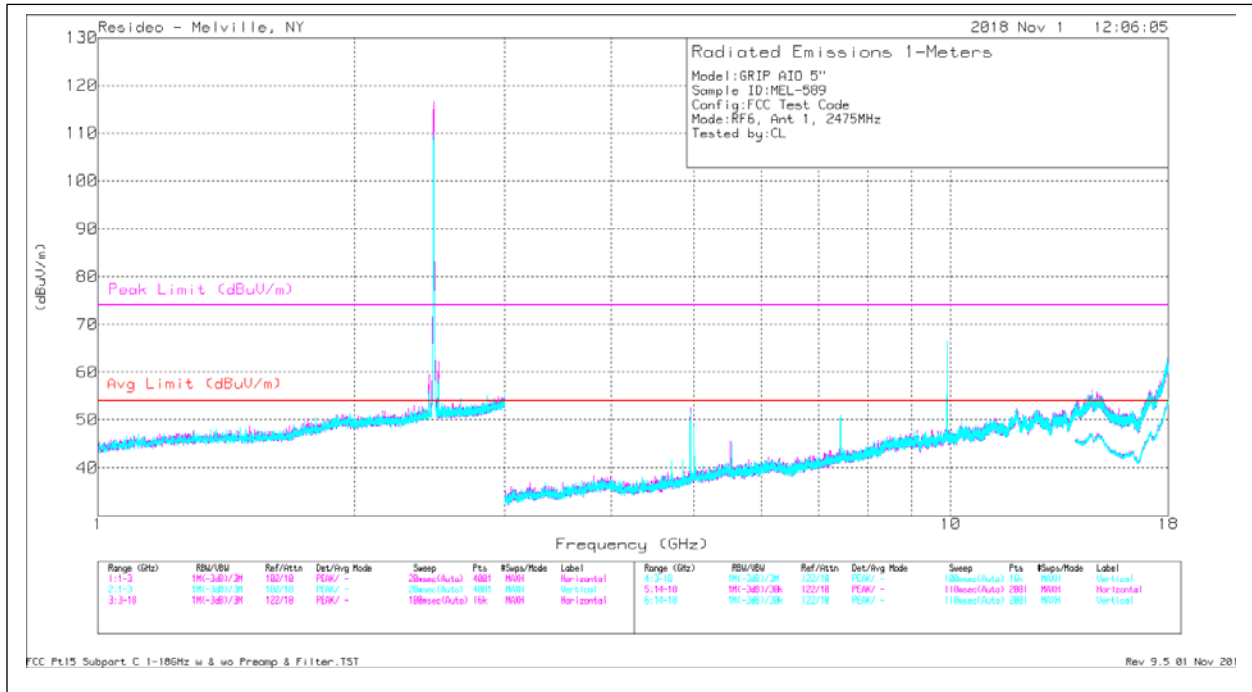
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK - KDB558074 Method: Maximum Peak

Av - KDB558074 Method: PK + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.0675) = -23.4\text{dB}$

Antenna 1: Mid Channel - Data



Antenna 1: High Channel - Plot

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|----------------------------|---------------------|----------------|----------------|-------------|----------|
| * 4.951         | 50.15                | PK  | 33.2      | -41.5       | 3.8       | 3.7       | 49.35                      | 74                  | -24.65         | 214            | 161         | H        |
| * 7.426         | 53.23                | PK  | 36.7      | -39.7       | 4.7       | 4.6       | 59.53                      | 74                  | -14.47         | 48             | 173         | H        |
| 9.898           | 57.8                 | PK  | 38.2      | -39.2       | 5.5       | 5.2       | 67.5                       | 74                  | -6.5           | 102            | 193         | H        |
| * 12.377        | 38.91                | PK  | 38.9      | -37.1       | 6.5       | 5.9       | 53.11                      | 74                  | -20.89         | 34             | 196         | H        |
| 14.849          | 40.85                | PK  | 42        | -36.9       | 6.8       | 6.5       | 59.25                      | 74                  | -14.75         | 15             | 394         | H        |
| 17.322          | 42.34                | PK  | 42.4      | -38.2       | 7.5       | 7.1       | 61.14                      | 74                  | -12.86         | 331            | 380         | H        |
| * 4.951         | 49.16                | PK  | 33.2      | -41.5       | 3.8       | 3.7       | 48.36                      | 74                  | -25.64         | 75             | 180         | V        |
| * 7.423         | 48.64                | PK  | 36.7      | -39.7       | 4.7       | 4.6       | 54.94                      | 74                  | -19.06         | 48             | 102         | V        |
| 9.898           | 60.03                | PK  | 38.2      | -39.2       | 5.5       | 5.2       | 69.73                      | 74                  | -4.27          | 22             | 316         | V        |
| * 12.377        | 40.83                | PK  | 38.9      | -37.1       | 6.5       | 5.9       | 55.03                      | 74                  | -18.97         | 336            | 290         | V        |
| 14.851          | 41.61                | PK  | 42        | -36.9       | 6.8       | 6.5       | 60.01                      | 74                  | -13.99         | 332            | 234         | V        |
| 17.326          | 40.33                | PK  | 42.4      | -38.2       | 7.5       | 7.1       | 59.13                      | 74                  | -14.87         | 189            | 316         | V        |

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr [dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Av Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|--------------------|----------------|----------------|-------------|----------|
| * 4.951         | 50.15                | Av  | 33.2      | -41.5       | 3.8       | 3.7       | -23.4        | 25.95                      | 54                 | -28.05         | 214            | 161         | H        |
| * 7.426         | 53.23                | Av  | 36.7      | -39.7       | 4.7       | 4.6       | -23.4        | 36.13                      | 54                 | -17.87         | 48             | 173         | H        |
| 9.898           | 57.8                 | Av  | 38.2      | -39.2       | 5.5       | 5.2       | -23.4        | 44.1                       | 54                 | -9.9           | 102            | 193         | H        |
| * 12.377        | 38.91                | Av  | 38.9      | -37.1       | 6.5       | 5.9       | -23.4        | 29.71                      | 54                 | -24.29         | 34             | 196         | H        |
| 14.849          | 40.85                | Av  | 42        | -36.9       | 6.8       | 6.5       | -23.4        | 35.85                      | 54                 | -18.15         | 15             | 394         | H        |
| 17.322          | 42.34                | Av  | 42.4      | -38.2       | 7.5       | 7.1       | -23.4        | 37.74                      | 54                 | -16.26         | 331            | 380         | H        |
| * 4.951         | 49.16                | Av  | 33.2      | -41.5       | 3.8       | 3.7       | -23.4        | 24.96                      | 54                 | -29.04         | 75             | 180         | V        |
| * 7.423         | 48.64                | Av  | 36.7      | -39.7       | 4.7       | 4.6       | -23.4        | 31.54                      | 54                 | -22.46         | 48             | 102         | V        |
| 9.898           | 60.03                | Av  | 38.2      | -39.2       | 5.5       | 5.2       | -23.4        | 46.33                      | 54                 | -7.67          | 22             | 316         | V        |
| * 12.377        | 40.83                | Av  | 38.9      | -37.1       | 6.5       | 5.9       | -23.4        | 31.63                      | 54                 | -22.37         | 336            | 290         | V        |
| 14.851          | 41.61                | Av  | 42        | -36.9       | 6.8       | 6.5       | -23.4        | 36.61                      | 54                 | -17.39         | 332            | 234         | V        |
| 17.326          | 40.33                | Av  | 42.4      | -38.2       | 7.5       | 7.1       | -23.4        | 35.73                      | 54                 | -18.27         | 189            | 316         | V        |

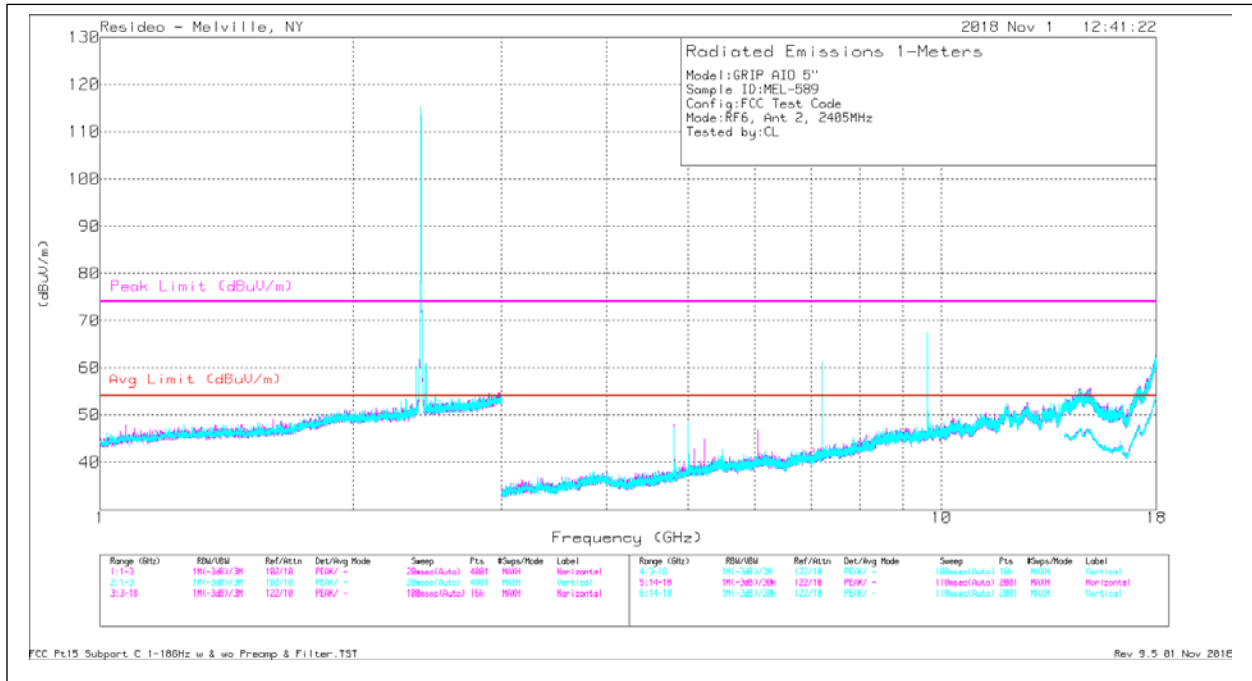
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK - KDB558074 Method: Maximum Peak

Av - KDB558074 Method: PK + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.0675) = -23.4\text{dB}$

Antenna 1: High Channel – Data



Antenna 2: Low Channel - Plot

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|----------------------------|---------------------|----------------|----------------|-------------|----------|
| * 4.809         | 48.32                | PK  | 33.1      | -41.2       | 3.7       | 3.7       | 47.62                      | 74                  | -26.38         | 131            | 147         | H        |
| 7.214           | 53.67                | PK  | 36.2      | -39.5       | 4.7       | 4.5       | 59.57                      | 74                  | -14.43         | 128            | 148         | H        |
| 9.622           | 55.69                | PK  | 38        | -39         | 5.6       | 5.2       | 65.49                      | 74                  | -8.51          | 65             | 264         | H        |
| * 12.022        | 39.87                | PK  | 39.4      | -37.3       | 6.5       | 5.6       | 54.07                      | 74                  | -19.93         | 316            | 274         | H        |
| 14.432          | 40.1                 | PK  | 42.1      | -36.9       | 6.8       | 6.4       | 58.5                       | 74                  | -15.5          | 122            | 207         | H        |
| 16.835          | 41.1                 | PK  | 39.6      | -38.1       | 7.4       | 7.1       | 57.1                       | 74                  | -16.9          | 26             | 376         | H        |
| * 4.811         | 49.9                 | PK  | 33.1      | -41.2       | 3.7       | 3.7       | 49.2                       | 74                  | -24.8          | 82             | 342         | V        |
| 7.213           | 57.45                | PK  | 36.2      | -39.5       | 4.7       | 4.5       | 63.35                      | 74                  | -10.65         | 29             | 176         | V        |
| 9.622           | 55.4                 | PK  | 38        | -39         | 5.6       | 5.2       | 65.2                       | 74                  | -8.8           | 274            | 173         | V        |
| * 12.027        | 40.55                | PK  | 39.4      | -37.3       | 6.5       | 5.6       | 54.75                      | 74                  | -19.25         | 93             | 361         | V        |
| 14.433          | 41.56                | PK  | 42.1      | -36.9       | 6.8       | 6.4       | 59.96                      | 74                  | -14.04         | 208            | 165         | V        |
| 16.837          | 40.82                | PK  | 39.6      | -38.1       | 7.5       | 7.1       | 56.92                      | 74                  | -17.08         | 139            | 172         | V        |

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr [dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Av Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|--------------------|----------------|----------------|-------------|----------|
| * 4.809         | 48.32                | Av  | 33.1      | -41.2       | 3.7       | 3.7       | -23.4        | 24.22                      | 54                 | -29.78         | 131            | 147         | H        |
| 7.214           | 53.67                | Av  | 36.2      | -39.5       | 4.7       | 4.5       | -23.4        | 36.17                      | 54                 | -17.83         | 128            | 148         | H        |
| 9.622           | 55.69                | Av  | 38        | -39         | 5.6       | 5.2       | -23.4        | 42.09                      | 54                 | -11.91         | 65             | 264         | H        |
| * 12.022        | 39.87                | Av  | 39.4      | -37.3       | 6.5       | 5.6       | -23.4        | 30.67                      | 54                 | -23.33         | 316            | 274         | H        |
| 14.432          | 40.1                 | Av  | 42.1      | -36.9       | 6.8       | 6.4       | -23.4        | 35.1                       | 54                 | -18.9          | 122            | 207         | H        |
| 16.835          | 41.1                 | Av  | 39.6      | -38.1       | 7.4       | 7.1       | -23.4        | 33.7                       | 54                 | -20.3          | 26             | 376         | H        |
| * 4.811         | 49.9                 | Av  | 33.1      | -41.2       | 3.7       | 3.7       | -23.4        | 25.8                       | 54                 | -28.2          | 82             | 342         | V        |
| 7.213           | 57.45                | Av  | 36.2      | -39.5       | 4.7       | 4.5       | -23.4        | 39.95                      | 54                 | -14.05         | 29             | 176         | V        |
| 9.622           | 55.4                 | Av  | 38        | -39         | 5.6       | 5.2       | -23.4        | 41.8                       | 54                 | -12.2          | 274            | 173         | V        |
| * 12.027        | 40.55                | Av  | 39.4      | -37.3       | 6.5       | 5.6       | -23.4        | 31.35                      | 54                 | -22.65         | 93             | 361         | V        |
| 14.433          | 41.56                | Av  | 42.1      | -36.9       | 6.8       | 6.4       | -23.4        | 36.56                      | 54                 | -17.44         | 208            | 165         | V        |
| 16.837          | 40.82                | Av  | 39.6      | -38.1       | 7.5       | 7.1       | -23.4        | 33.52                      | 54                 | -20.48         | 139            | 172         | V        |

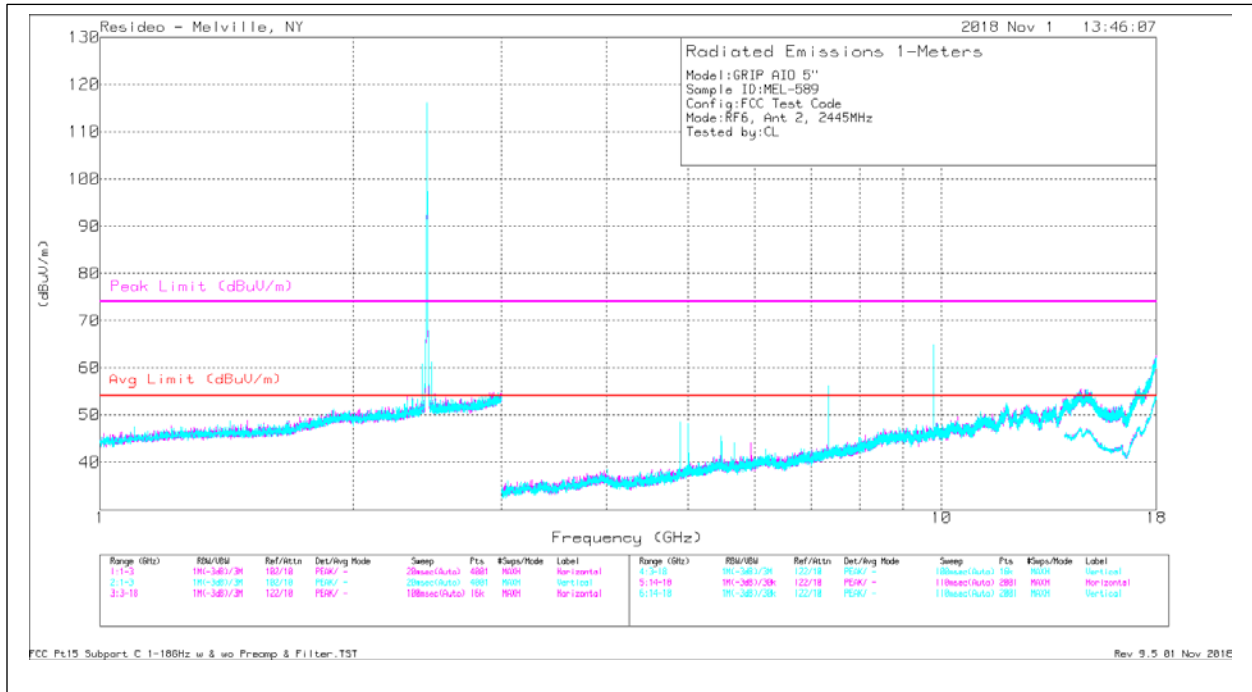
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK - KDB558074 Method: Maximum Peak

Av - KDB558074 Method: PK + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.0675) = -23.4\text{dB}$

Antenna 2: Low Channel - Data



Antenna 2: Mid Channel – Plot

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|----------------------------|---------------------|----------------|----------------|-------------|----------|
| * 4.889         | 48.26                | PK  | 33.2      | -41.4       | 3.7       | 3.6       | 47.36                      | 74                  | -26.64         | 131            | 133         | H        |
| * 7.333         | 51.2                 | PK  | 36.6      | -39.7       | 4.6       | 4.5       | 57.2                       | 74                  | -16.8          | 124            | 149         | H        |
| 9.778           | 54.88                | PK  | 38.1      | -39.1       | 5.5       | 5.3       | 64.68                      | 74                  | -9.32          | 61             | 261         | H        |
| * 12.227        | 40.52                | PK  | 39.2      | -37.2       | 6.5       | 5.9       | 54.92                      | 74                  | -19.08         | 247            | 188         | H        |
| 14.671          | 41.65                | PK  | 42.6      | -36.9       | 6.6       | 6.4       | 60.35                      | 74                  | -13.65         | 173            | 142         | H        |
| 17.118          | 40.87                | PK  | 41.1      | -38.1       | 7.5       | 7         | 58.37                      | 74                  | -15.63         | 129            | 274         | H        |
| * 4.889         | 48.84                | PK  | 33.2      | -41.4       | 3.7       | 3.6       | 47.94                      | 74                  | -26.06         | 51             | 188         | V        |
| * 7.336         | 55.18                | PK  | 36.6      | -39.7       | 4.6       | 4.5       | 61.18                      | 74                  | -12.82         | 64             | 165         | V        |
| 9.778           | 56.57                | PK  | 38.1      | -39.1       | 5.5       | 5.3       | 66.37                      | 74                  | -7.63          | 14             | 343         | V        |
| * 12.228        | 40.29                | PK  | 39.2      | -37.2       | 6.5       | 5.9       | 54.69                      | 74                  | -19.31         | 283            | 332         | V        |
| 14.668          | 41.08                | PK  | 42.6      | -36.9       | 6.7       | 6.4       | 59.88                      | 74                  | -14.12         | 331            | 188         | V        |
| 17.115          | 41.65                | PK  | 41.1      | -38.1       | 7.5       | 7         | 59.15                      | 74                  | -14.85         | 95             | 201         | V        |

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr [dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Av Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|--------------------|----------------|----------------|-------------|----------|
| * 4.889         | 48.26                | Av  | 33.2      | -41.4       | 3.7       | 3.6       | -23.4        | 23.96                      | 54                 | -30.04         | 131            | 133         | H        |
| * 7.333         | 51.2                 | Av  | 36.6      | -39.7       | 4.6       | 4.5       | -23.4        | 33.8                       | 54                 | -20.2          | 124            | 149         | H        |
| 9.778           | 54.88                | Av  | 38.1      | -39.1       | 5.5       | 5.3       | -23.4        | 41.28                      | 54                 | -12.72         | 61             | 261         | H        |
| * 12.227        | 40.52                | Av  | 39.2      | -37.2       | 6.5       | 5.9       | -23.4        | 31.52                      | 54                 | -22.48         | 247            | 188         | H        |
| 14.671          | 41.65                | Av  | 42.6      | -36.9       | 6.6       | 6.4       | -23.4        | 36.95                      | 54                 | -17.05         | 173            | 142         | H        |
| 17.118          | 40.87                | Av  | 41.1      | -38.1       | 7.5       | 7         | -23.4        | 34.97                      | 54                 | -19.03         | 129            | 274         | H        |
| * 4.889         | 48.84                | Av  | 33.2      | -41.4       | 3.7       | 3.6       | -23.4        | 24.54                      | 54                 | -29.46         | 51             | 188         | V        |
| * 7.336         | 55.18                | Av  | 36.6      | -39.7       | 4.6       | 4.5       | -23.4        | 37.78                      | 54                 | -16.22         | 64             | 165         | V        |
| 9.778           | 56.57                | Av  | 38.1      | -39.1       | 5.5       | 5.3       | -23.4        | 42.97                      | 54                 | -11.03         | 14             | 343         | V        |
| * 12.228        | 40.29                | Av  | 39.2      | -37.2       | 6.5       | 5.9       | -23.4        | 31.29                      | 54                 | -22.71         | 283            | 332         | V        |
| 14.668          | 41.08                | Av  | 42.6      | -36.9       | 6.7       | 6.4       | -23.4        | 36.48                      | 54                 | -17.52         | 331            | 188         | V        |
| 17.115          | 41.65                | Av  | 41.1      | -38.1       | 7.5       | 7         | -23.4        | 35.75                      | 54                 | -18.25         | 95             | 201         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

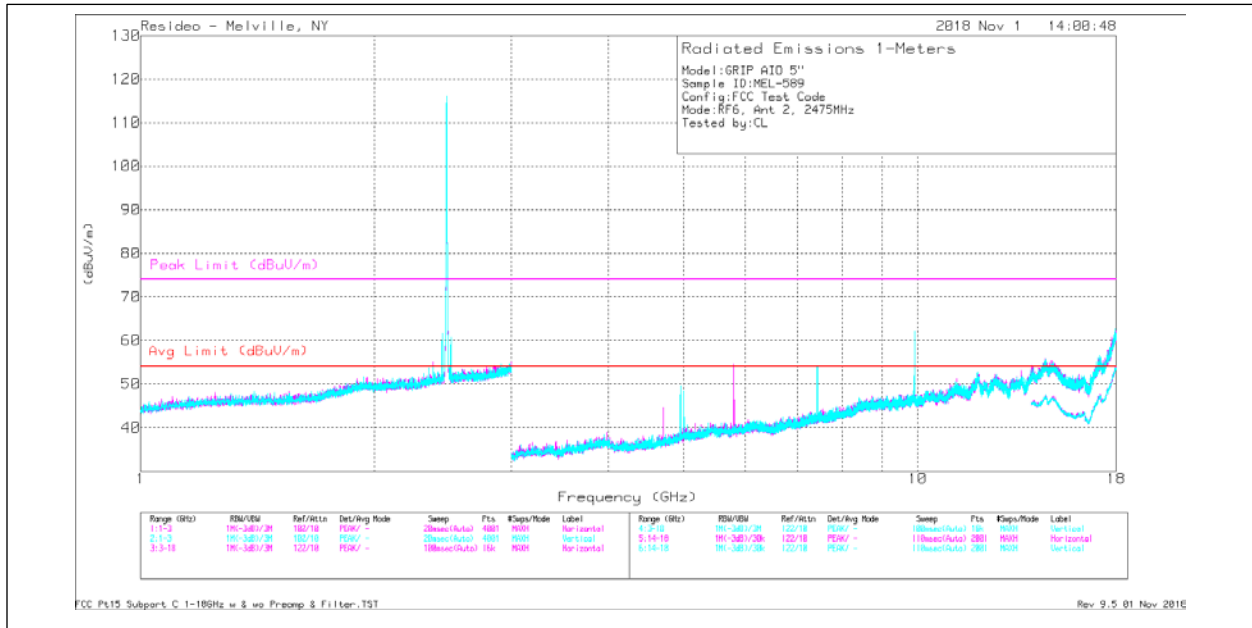
PK - KDB558074 Method: Maximum Peak

Av - KDB558074 Method: PK + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.0675) = -23.4\text{dB}$

Antenna 2: Mid Channel - Data





Antenna 2: High Channel – Plot

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|----------------------------|---------------------|----------------|----------------|-------------|----------|
| * 4.949         | 47.64                | PK  | 33.2      | -41.5       | 3.8       | 3.7       | 46.84                      | 74                  | -27.16         | 33             | 214         | H        |
| * 7.423         | 49.01                | PK  | 36.7      | -39.7       | 4.7       | 4.6       | 55.31                      | 74                  | -18.69         | 287            | 225         | H        |
| 9.898           | 51.07                | PK  | 38.2      | -39.2       | 5.5       | 5.2       | 60.77                      | 74                  | -13.23         | 99             | 262         | H        |
| * 12.377        | 40.11                | PK  | 38.9      | -37.1       | 6.5       | 5.9       | 54.31                      | 74                  | -19.69         | 270            | 210         | H        |
| 14.849          | 41.02                | PK  | 42        | -36.9       | 6.8       | 6.5       | 59.42                      | 74                  | -14.58         | 152            | 398         | H        |
| 17.327          | 40.66                | PK  | 42.4      | -38.2       | 7.5       | 7.1       | 59.46                      | 74                  | -14.54         | 98             | 216         | H        |
| * 4.951         | 47.48                | PK  | 33.2      | -41.5       | 3.8       | 3.7       | 46.68                      | 74                  | -27.32         | 41             | 202         | V        |
| * 7.423         | 52.12                | PK  | 36.7      | -39.7       | 4.7       | 4.6       | 58.42                      | 74                  | -15.58         | 14             | 251         | V        |
| 9.898           | 54                   | PK  | 38.2      | -39.2       | 5.5       | 5.2       | 63.7                       | 74                  | -10.3          | 13             | 318         | V        |
| * 12.373        | 40.31                | PK  | 38.9      | -37.1       | 6.5       | 5.9       | 54.51                      | 74                  | -19.49         | 227            | 170         | V        |
| 14.847          | 40.65                | PK  | 42        | -36.9       | 6.8       | 6.5       | 59.05                      | 74                  | -14.95         | 155            | 189         | V        |
| 17.324          | 41.14                | PK  | 42.4      | -38.2       | 7.5       | 7.1       | 59.94                      | 74                  | -14.06         | 175            | 256         | V        |

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF [dB/m] | SWBOX2 [dB] | SMA7 [dB] | SMA5 [dB] | DC Corr [dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Av Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------|-------------|-----------|-----------|--------------|----------------------------|--------------------|----------------|----------------|-------------|----------|
| * 4.949         | 47.64                | Av  | 33.2      | -41.5       | 3.8       | 3.7       | -23.4        | 23.44                      | 54                 | -30.56         | 33             | 214         | H        |
| * 7.423         | 49.01                | Av  | 36.7      | -39.7       | 4.7       | 4.6       | -23.4        | 31.91                      | 54                 | -22.09         | 287            | 225         | H        |
| 9.898           | 51.07                | Av  | 38.2      | -39.2       | 5.5       | 5.2       | -23.4        | 37.37                      | 54                 | -16.63         | 99             | 262         | H        |
| * 12.377        | 40.11                | Av  | 38.9      | -37.1       | 6.5       | 5.9       | -23.4        | 30.91                      | 54                 | -23.09         | 270            | 210         | H        |
| 14.849          | 41.02                | Av  | 42        | -36.9       | 6.8       | 6.5       | -23.4        | 36.02                      | 54                 | -17.98         | 152            | 398         | H        |
| 17.327          | 40.66                | Av  | 42.4      | -38.2       | 7.5       | 7.1       | -23.4        | 36.06                      | 54                 | -17.94         | 98             | 216         | H        |
| * 4.951         | 47.48                | Av  | 33.2      | -41.5       | 3.8       | 3.7       | -23.4        | 23.28                      | 54                 | -30.72         | 41             | 202         | V        |
| * 7.423         | 52.12                | Av  | 36.7      | -39.7       | 4.7       | 4.6       | -23.4        | 35.02                      | 54                 | -18.98         | 14             | 251         | V        |
| 9.898           | 54                   | Av  | 38.2      | -39.2       | 5.5       | 5.2       | -23.4        | 40.3                       | 54                 | -13.7          | 13             | 318         | V        |
| * 12.373        | 40.31                | Av  | 38.9      | -37.1       | 6.5       | 5.9       | -23.4        | 31.11                      | 54                 | -22.89         | 227            | 170         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK - KDB558074 Method: Maximum Peak

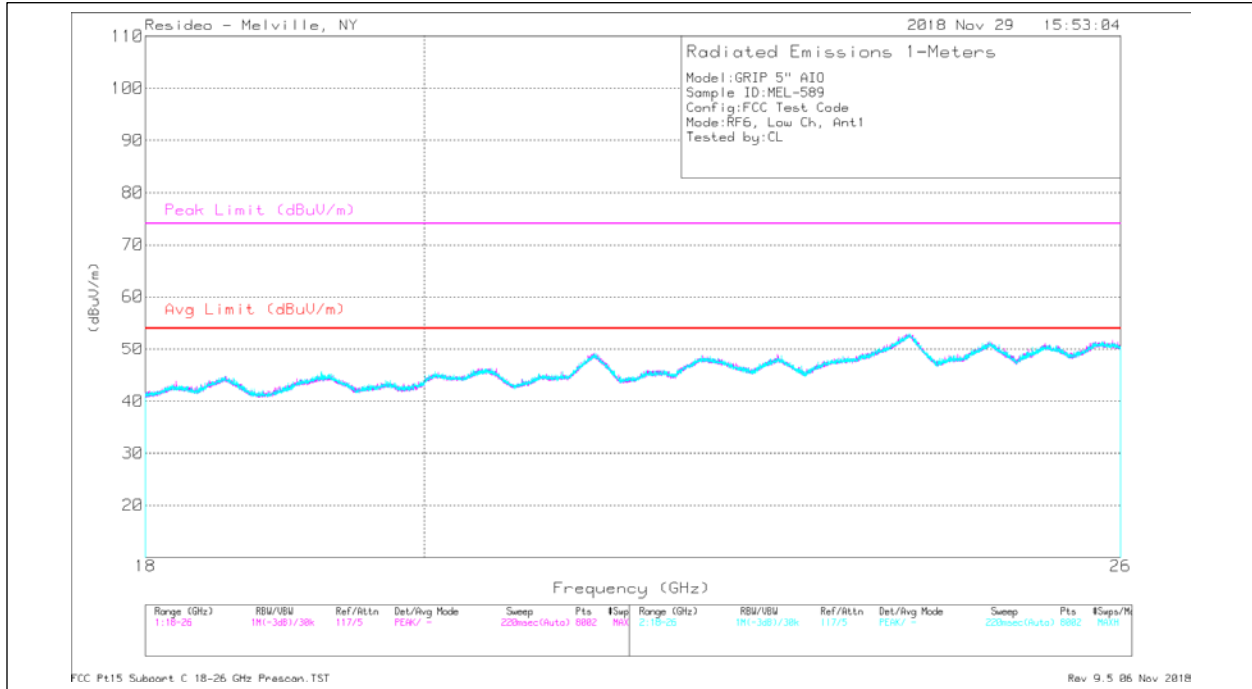
Av - KDB558074 Method: PK + DC Corr (Duty Cycle Correction Factor)

Duty Cycle = 6.75%, thus DC Corr =  $20\log(0.0675) = -23.4\text{dB}$

Antenna 2: High Channel – Data

**18-26GHz (Worse-case)**

**Note:** No emissions detected above the system noise floor



Antenna 1: Low Channel - Plot

| Frequency (GHz) | Meter Reading (dBUV) | Det  | AF EM-6963 [dB/m] | Preamp [dB] | SMA7 [dB] | SMA5 [dB] | Dist Corr [dB] | Corrected Reading (dBUV/m) | Avg Limit (dBUV/m) | Margin (dB) | Peak Limit (dBUV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-------------------|-------------|-----------|-----------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 19.274        | 28.65                | PK2  | 44.1              | -34.5       | 7.9       | 8         | -9.5           | 44.65                      | -                  | -           | 74                  | -29.35         | 0              | 100         | H        |
| * 19.276        | 20.91                | MAv1 | 44.1              | -34.5       | 7.9       | 8         | -9.5           | 36.91                      | 54                 | -17.09      | -                   | -              | 0              | 100         | H        |
| * 21.319        | 33.99                | PK2  | 44.5              | -31.9       | 8.3       | 8.1       | -9.5           | 53.49                      | -                  | -           | 74                  | -20.51         | 0              | 100         | H        |
| * 21.319        | 20.79                | MAv1 | 44.5              | -31.9       | 8.3       | 8.1       | -9.5           | 40.29                      | 54                 | -13.71      | -                   | -              | 0              | 100         | H        |
| * 21.318        | 31.03                | PK2  | 44.5              | -31.9       | 8.3       | 8.1       | -9.5           | 50.53                      | -                  | -           | 74                  | -23.47         | 193            | 166         | H        |
| * 21.318        | 20.71                | MAv1 | 44.5              | -31.9       | 8.3       | 8.1       | -9.5           | 40.21                      | 54                 | -13.79      | -                   | -              | 193            | 166         | H        |
| 24.027          | 30.98                | PK2  | 46.4              | -30.4       | 8.9       | 8.4       | -9.5           | 54.78                      | -                  | -           | 74                  | -19.22         | 140            | 354         | H        |
| 24.026          | 20.24                | MAv1 | 46.4              | -30.4       | 8.9       | 8.4       | -9.5           | 44.04                      | 54                 | -9.96       | -                   | -              | 140            | 354         | H        |
| * 19.29         | 31                   | PK2  | 44.2              | -34.3       | 7.9       | 8         | -9.5           | 47.3                       | -                  | -           | 74                  | -26.7          | 277            | 321         | V        |
| * 19.29         | 21.1                 | MAv1 | 44.2              | -34.3       | 7.9       | 8         | -9.5           | 37.4                       | 54                 | -16.6       | -                   | -              | 277            | 321         | V        |
| * 21.323        | 31.14                | PK2  | 44.5              | -32         | 8.3       | 8.1       | -9.5           | 50.54                      | -                  | -           | 74                  | -23.46         | 139            | 366         | V        |
| * 21.324        | 20.5                 | MAv1 | 44.5              | -32         | 8.3       | 8.1       | -9.5           | 39.9                       | 54                 | -14.1       | -                   | -              | 139            | 366         | V        |
| 24.018          | 30.41                | PK2  | 46.4              | -30.3       | 8.9       | 8.4       | -9.5           | 54.31                      | -                  | -           | 74                  | -19.69         | 272            | 380         | V        |
| 24.019          | 20.61                | MAv1 | 46.4              | -30.3       | 8.9       | 8.4       | -9.5           | 44.51                      | 54                 | -9.49       | -                   | -              | 272            | 380         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

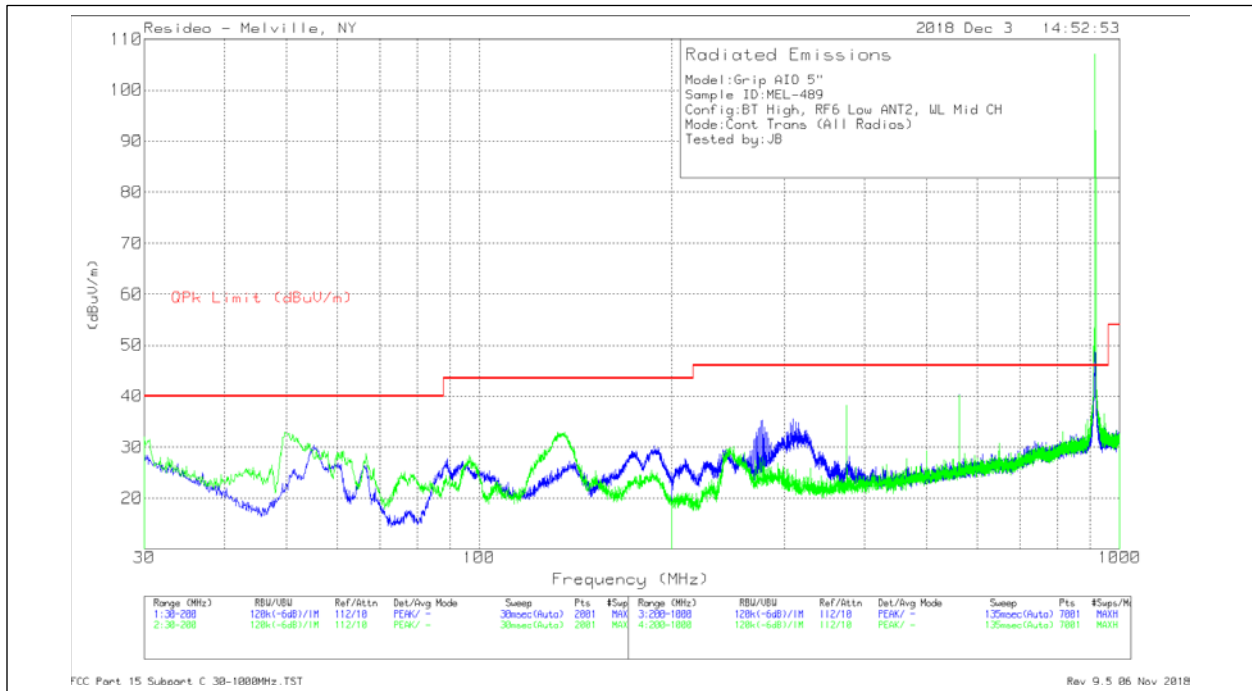
MAv1 - KDB558074 Option 1 Maximum RMS Average

Antenna 1: Low Channel - Data

**Simultaneous Transmission**

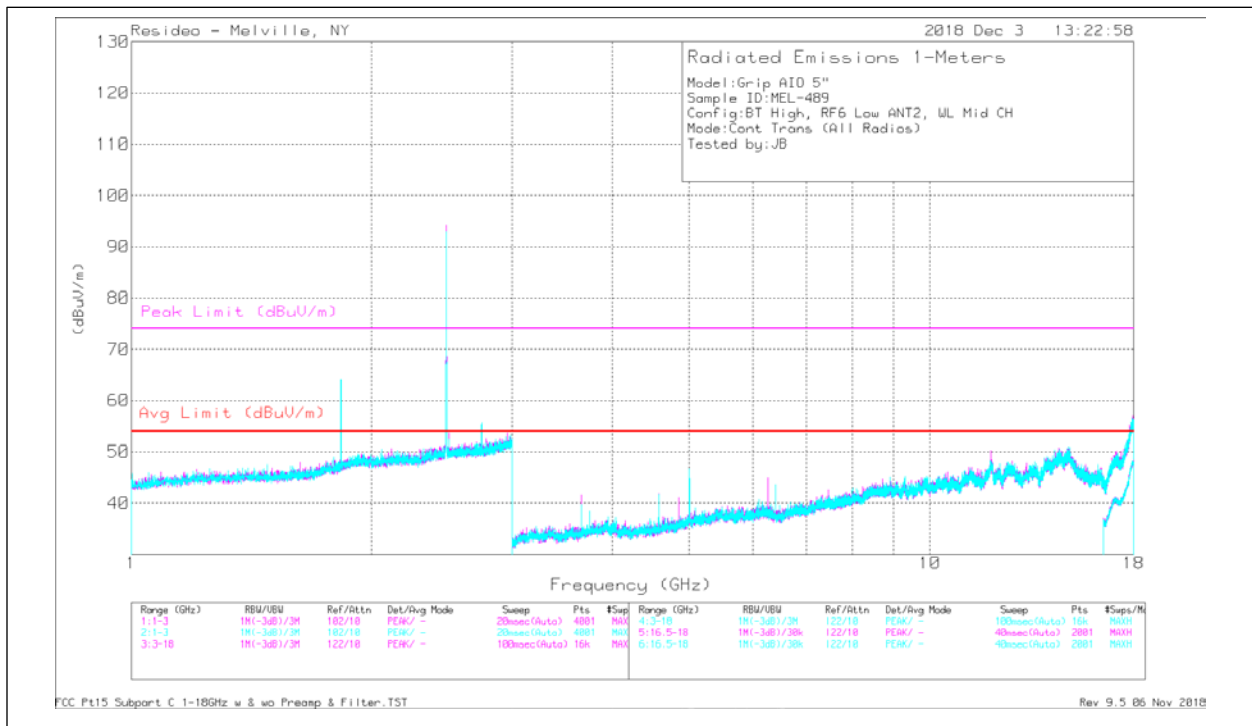
Configuration (Worse-case):

- RF6 – Antenna 2, Low Channel
- Wiselink – Mid Channel
- Bluetooth (LE) – High Channel



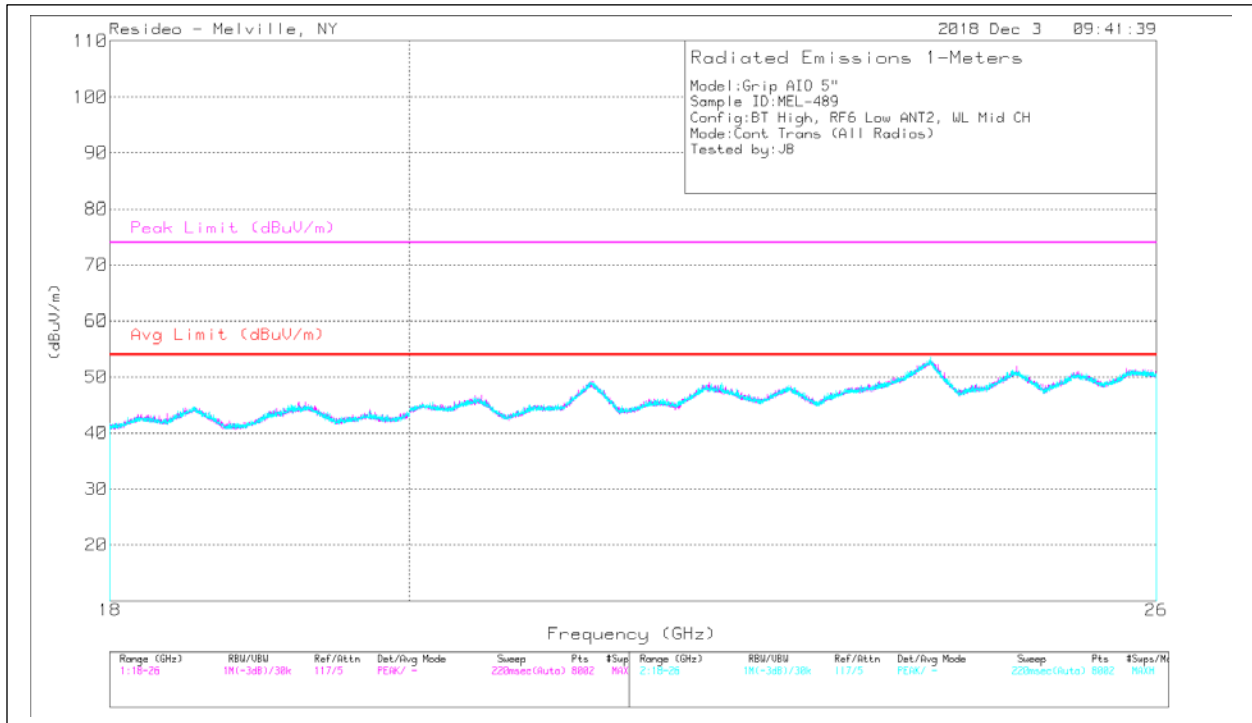
30-1000MHz – Plot

Note: No additional emissions detected because of simultaneous transmission



1-18GHz – Plot

Note: No additional emissions detected because of simultaneous transmission



18-26GHz – Plot

Note: No additional emissions detected because of simultaneous transmission

## Conducted Emissions (Mains)

### Test Description

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10 / C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorder for both NEUTRAL and HOT lines.

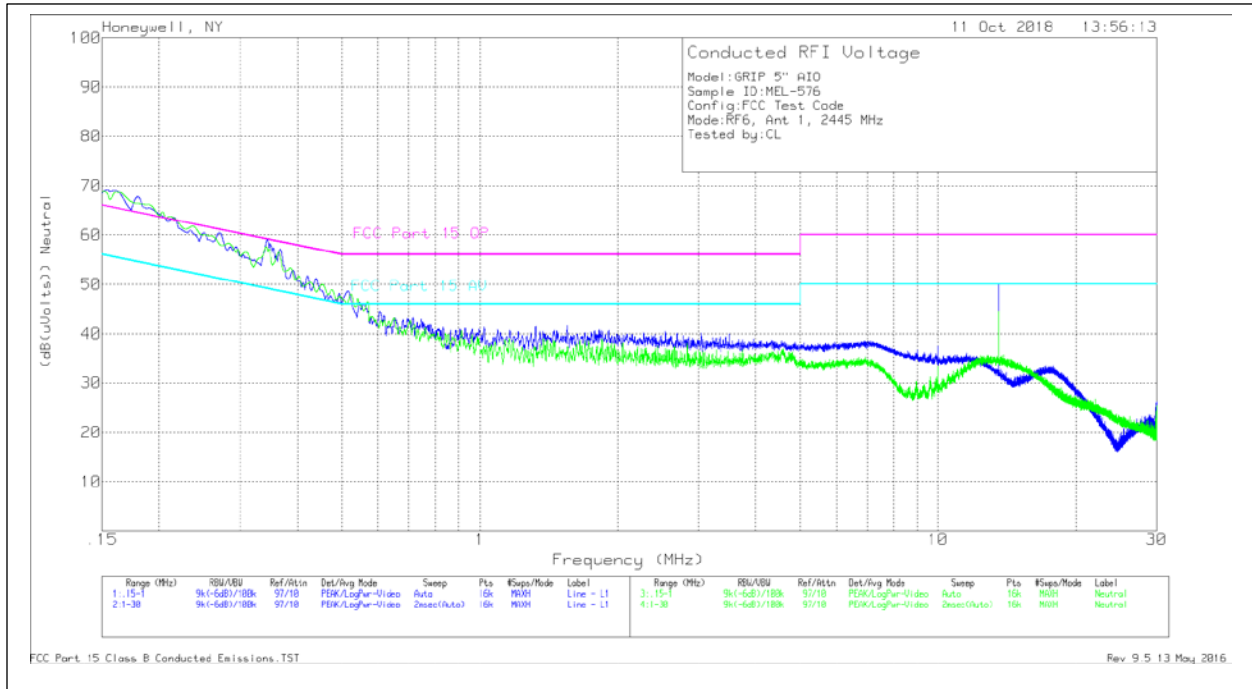
### Test Criteria

| Reference                            | Limit (dBuV)          |            |          |
|--------------------------------------|-----------------------|------------|----------|
|                                      | Frequency Range (MHz) | Quasi-Peak | Average  |
| CFR 47 Subpart C, 15.207<br>RSS-GEN  | 0.15-0.5              | 66 to 56   | 56 to 46 |
| CFR 47 Subpart B, 15.107<br>ICES-003 | 0.5-5                 | 56         | 46       |
|                                      | 5-30                  | 60         | 50       |

### Test Information

| Tester | Test Location | Date    | Temperature (°C) | Humidity (%RH) | Pressure (mbar) | Results (P/F) |
|--------|---------------|---------|------------------|----------------|-----------------|---------------|
| CL     | RF Lab        | 8/15/18 | 22.6             | 70.6           | 1004            | P             |

**Test Results (Worse-case)**



Plot

| LINE 1          |                      |     |               |           |                                |                |             |                |             |
|-----------------|----------------------|-----|---------------|-----------|--------------------------------|----------------|-------------|----------------|-------------|
| Frequency (MHz) | Meter Reading (dBuV) | Det | LISN1 L1 [dB] | CDE Cable | Corrected Reading (dB(uVolts)) | FCC Part 15 QP | Margin (dB) | FCC Part 15 AV | Margin (dB) |
| .1595           | 29.42                | Ca  | 10.5          | 0         | 39.92                          | 65.49          | -25.57      | 55.49          | -15.57      |
| .26906          | 22.92                | Ca  | 10.1          | 0         | 33.02                          | 61.15          | -28.13      | 51.15          | -18.13      |
| .3432           | 25.01                | Ca  | 10            | 0         | 35.01                          | 59.13          | -24.12      | 49.13          | -14.12      |
| .51578          | 16.61                | Ca  | 9.9           | 0         | 26.51                          | 56             | -29.49      | 46             | -19.49      |
| 13.5605         | 19.13                | Ca  | 10.1          | .1        | 29.33                          | 60             | -30.67      | 50             | -20.67      |
| .15968          | 29.27                | Qp  | 10.5          | 0         | 39.77                          | 65.48          | -25.71      | 55.48          | -15.71      |

| LINE 2          |                      |     |               |           |                                |                |             |                |             |
|-----------------|----------------------|-----|---------------|-----------|--------------------------------|----------------|-------------|----------------|-------------|
| Frequency (MHz) | Meter Reading (dBuV) | Det | LISN1 L2 [dB] | CDE Cable | Corrected Reading (dB(uVolts)) | FCC Part 15 QP | Margin (dB) | FCC Part 15 AV | Margin (dB) |
| .16634          | 31.16                | Ca  | 10.5          | 0         | 41.66                          | 65.14          | -23.48      | 55.14          | -13.48      |
| .21351          | 20.91                | Ca  | 10.3          | 0         | 31.21                          | 63.07          | -31.86      | 53.07          | -21.86      |
| .34013          | 22.73                | Ca  | 10.1          | 0         | 32.83                          | 59.2           | -26.37      | 49.2           | -16.37      |
| .52402          | 10.3                 | Ca  | 10            | 0         | 20.3                           | 56             | -35.7       | 46             | -25.7       |
| .16651          | 31.21                | Qp  | 10.5          | 0         | 41.71                          | 65.13          | -23.42      | 55.13          | -13.42      |
| .21362          | 20.99                | Qp  | 10.3          | 0         | 31.29                          | 63.06          | -31.77      | 53.06          | -21.77      |

Ca - CISPR average detection  
 Qp - Quasi-Peak detector

Data



**END OF REPORT**