



**FCC CFR 47 PART 15 SUBPART F §15.519**

**ISED RSS-220 ISSUE 1 AMENDMENT 1**

**CERTIFICATION TEST REPORT**

**FOR**

**SMART PHONE**

**MODEL NUMBER: A2341**

**REPORT NUMBER: 13259315-E21V4**

**ISSUE DATE: SEPTEMBER 25, 2020**

**FCC ID: BCG-E3545A**

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NVLAP LAB CODE 200065-0 (FREMONT)

Revision History

| Rev. | Issue Date | Revisions                                                                             | Revised By |
|------|------------|---------------------------------------------------------------------------------------|------------|
| V1   | 08/24/2020 | Initial Issue                                                                         | Thu Chan   |
| V2   | 09/11/2020 | Addressed TCB's questions                                                             | Thu Chan   |
| V3   | 09/18/2020 | Addressed TCB's questions                                                             | Thu Chan   |
| V4   | 09/25/2020 | Section 5.1: Updated Information of Ant. UWB3<br>Section 5.3: Naming Changed on ANT 2 | Thu Chan   |

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** APPLE INC.  
ONE APPLE PARK WAY  
CUPERTINO, CA 95014, USA

**EUT DESCRIPTION:** SMART PHONE

**MODEL:** A2341

**SERIAL NUMBERS:** G6TD200B04PJ  
G6TCP027Q5R9  
G6TD201104P9

**DATE TESTED:** JULY 5 – AUGUST 22, 2020

| APPLICABLE STANDARDS             |              |
|----------------------------------|--------------|
| STANDARD                         | TEST RESULTS |
| FCC §15 Subpart F                | Complies     |
| ISED RSS-220 Issue 1 Amendment 1 | Complies     |

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services 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 the U.S. government.

Approved & Released For  
UL Verification Services Inc. By:



THU CHAN  
STAFF ENGINEER  
UL Verification Services Inc.

Tested By:



GIA-PIAO CHIN  
TEST ENGINEER  
UL Verification Services Inc.

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with CFR Title 47 Part 15 Subpart F, KDB 393764 D01 UWB FAQ v02, ISED RSS-220 Issue 1 Amendment 1 and ANSI C63.10-2013 and RSS GEN Issue 5.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA and at 47658 Kato Road, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies the locations of the facilities that were utilized for radiated emission measurements documented in this report. The specific facilities used are identified in the test results sections.

| 47173 Benicia Street<br>ISED 2324A | 47266 Benicia Street<br>ISED 22541            | 47658 Kato Rd<br>ISED 2324B        |
|------------------------------------|-----------------------------------------------|------------------------------------|
| <input type="checkbox"/> Chamber A | <input checked="" type="checkbox"/> Chamber D | <input type="checkbox"/> Chamber I |
| <input type="checkbox"/> Chamber B | <input type="checkbox"/> Chamber E            | <input type="checkbox"/> Chamber J |
| <input type="checkbox"/> Chamber C | <input checked="" type="checkbox"/> Chamber F | <input type="checkbox"/> Chamber K |
|                                    | <input type="checkbox"/> Chamber G            | <input type="checkbox"/> Chamber L |
|                                    | <input type="checkbox"/> Chamber H            | <input type="checkbox"/> Chamber M |

The above test sites and facilities are covered under FCC Test Firm Registration # 208313 and covered under ISED Canada company numbers 2324A, 2324B and 22541 as listed in the table.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

## 4. DECISION RULES AND MEASUREMENT UNCERTAINTY

### 4.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

### 4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER                                           | U <sub>LAB</sub> |
|-----------------------------------------------------|------------------|
| Worst Case Conducted Disturbance, 9KHz to 0.15 MHz  | 3.39 dB          |
| Worst Case Conducted Disturbance, 0.15 to 30 MHz    | 3.07 dB          |
| Worst Case Radiated Disturbance, 9KHz to 30 MHz     | 2.52 dB          |
| Worst Case Radiated Disturbance, 30 to 1000 MHz     | 4.88 dB          |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz  | 4.24 dB          |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz | 4.37 dB          |
| Worst Case Radiated Disturbance, 26000 to 40000 MHz | 5.17 dB          |

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC and WPT. All models support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

This test report addresses the UWB operational mode.

The EUT has a UWB transceiver with four integral antennas (ANT 0 = UWB1, ANT 1 = UWB2, ANT 2 = ANT6/shared UWB & UWB3) and operates on 6.5 GHz (Channel 5) and 8 GHz (Channel 9). The antennas are not user accessible and UWB3 is disable on device. Six signal configurations (CONFIG 0,1,2,3,4 & 5) are available for each ANT/CH setting.

| ANT | CH | CONFIG |
|-----|----|--------|
| 0   | 5  | 0      |
| 0   | 5  | 1      |
| 0   | 5  | 2      |
| 0   | 5  | 3      |
| 0   | 5  | 4      |
| 0   | 5  | 5      |
|     |    |        |
| 0   | 9  | 0      |
| 0   | 9  | 1      |
| 0   | 9  | 2      |
| 0   | 9  | 3      |
| 0   | 9  | 4      |
| 0   | 9  | 5      |
|     |    |        |
| 1   | 5  | 0      |
| 1   | 5  | 1      |
| 1   | 5  | 2      |
| 1   | 5  | 3      |
| 1   | 5  | 4      |
| 1   | 5  | 5      |
|     |    |        |
| 1   | 9  | 0      |
| 1   | 9  | 1      |
| 1   | 9  | 2      |
| 1   | 9  | 3      |
| 1   | 9  | 4      |
| 1   | 9  | 5      |
|     |    |        |
| 2   | 5  | 0      |
| 2   | 5  | 1      |
| 2   | 5  | 2      |
| 2   | 5  | 3      |
| 2   | 5  | 4      |
| 2   | 5  | 5      |
|     |    |        |
| 2   | 9  | 0      |
| 2   | 9  | 1      |
| 2   | 9  | 2      |
| 2   | 9  | 3      |
| 2   | 9  | 4      |
| 2   | 9  | 5      |

## 5.2. MAXIMUM OUTPUT POWER

Highest Average Powers based on ANT/CH.

| ANT | CH | CONFIG | Average Power (dBm EIRP) |
|-----|----|--------|--------------------------|
| 0   | 5  | 2      | -42.02                   |
| 0   | 9  | 4      | -42.13                   |
| 1   | 5  | 0      | -42.15                   |
| 1   | 9  | 1      | -42.01                   |
| 2   | 5  | 1      | -42.01                   |
| 2   | 9  | 3      | -42.04                   |

## 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Three integral antennas are employed and the antenna gains are listed as follow:

| CH | Freq. Band (GHz) | Gain (dBi)   |              |                         |
|----|------------------|--------------|--------------|-------------------------|
|    |                  | ANT 0 (UWB1) | ANT 1 (UWB2) | ANT 2 (ANT6/shared UWB) |
| 5  | 6.5              | -2.7         | -2.3         | -5.2                    |
| 9  | 8.0              | 0.3          | -0.4         | -2.0                    |

## 5.4. MODULATION

The UWB signal is BPSK pulsed modulated signal.

## 5.5. SOFTWARE AND FIRMWARE

The Software and Firmware version used at test is 18A23120m.



## 6. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

| SUPPORT EQUIPMENT LIST |              |              |                                  |
|------------------------|--------------|--------------|----------------------------------|
| Description            | Manufacturer | Model        | Serial Number                    |
| Laptop + Adapter       | Apple        | Mac Book Air | C02TK02YJ10C                     |
| Kanzi – USB Adapter    | Apple        | --           | 325D59                           |
| Laptop + Adapter       | Apple        | Mac Book Air | C02YL5TNJHC8                     |
| Kanzi – USB Adapter    | Apple        | --           | 316FAS                           |
| Smart Phone            | Apple        | A2172        | G6TD204K04FR-CRB-G9Y63DXU-011584 |

### I/O CABLES

| I/O CABLES |                      |                |             |                  |         |
|------------|----------------------|----------------|-------------|------------------|---------|
| Port       | # of Identical Ports | Connector Type | Cable Type  | Cable Length (m) | Remarks |
| AC         | 1                    | AC             | Un-shielded | 2                | N/A     |
| USB        | 1                    | USB            | Un-shielded | 1                | N/A     |

### TEST SETUP

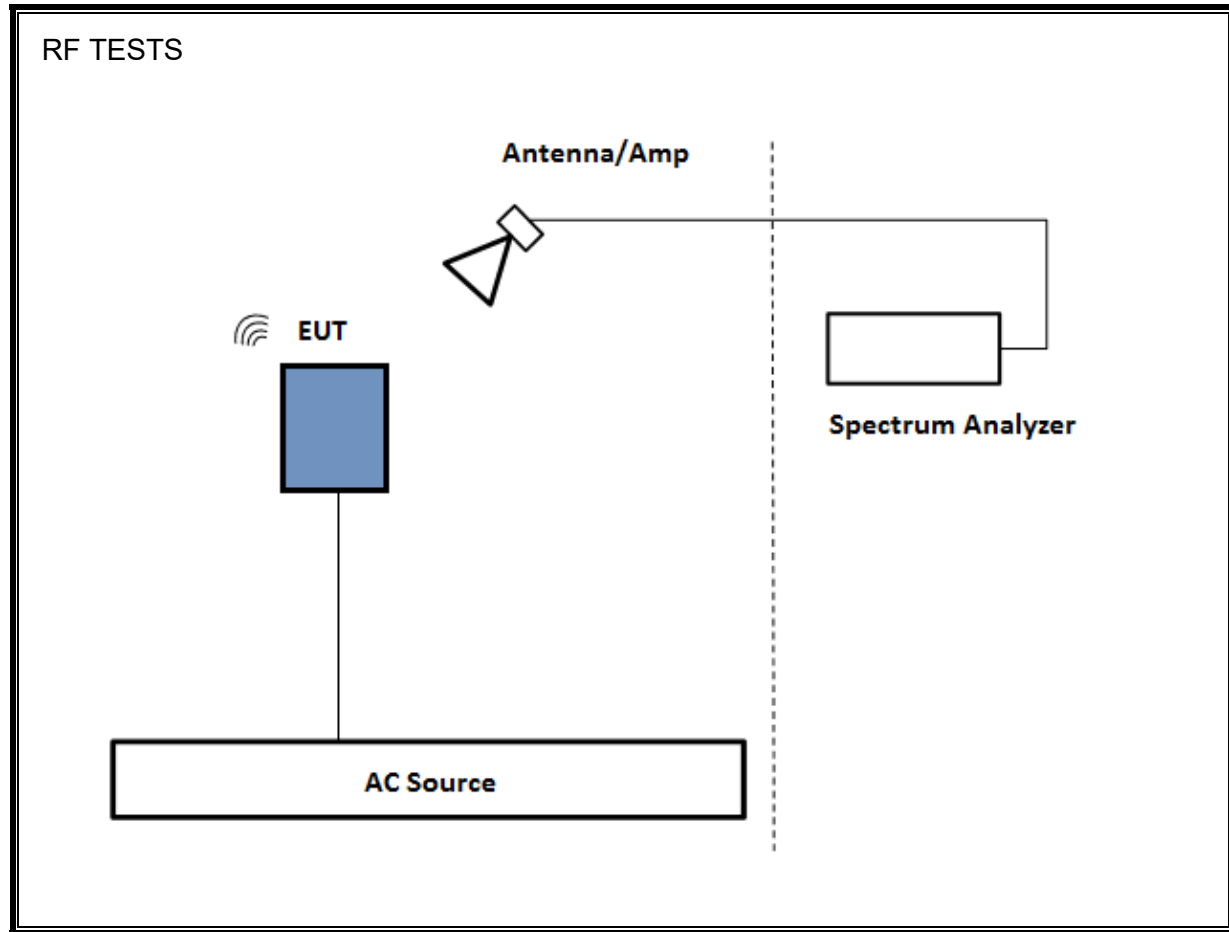
The EUT was examined at pre-scan test using a fundamental frequency in the portrait (z), landscape (y), and flatbed (x) position and the worst case orientation of individual ANT/CH/CONFIG setting was determined for final spurious emission measurement. Config 3, Payload 125 of both CH5 and CH9 on all 3 antennas were selected to test for unwanted emissions as the worst case after pre-scan.

Measurements of spurious average emissions were made with the device operating at a higher power than production power to ensure compliance. Measurements of the in-band signal (peak and average emissions, 10 dBc bandwidth, 99% bandwidth) were all made at the production power settings.

EUT was connected to AC power adapter in all test cases.

For simultaneous transmission of multiple channels in the UWB, LTE, Sub-6 GHz 5G FR1 band, 2.4 GHz WiFi & 5 GHz WiFi bands, 28 GHz & 39 GHz 5G FR2 bands, no noticeable new emission was found.

**SETUP DIAGRAM FOR TESTS**



## 7. TEST AND MEASUREMENT EQUIPMENT

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

| Test Equipment List                   |                               |                            |                       |            |            |
|---------------------------------------|-------------------------------|----------------------------|-----------------------|------------|------------|
| Description                           | Manufacturer                  | Model                      | Local ID              | Cal Date   | Cal Due    |
| EMI Test Receiver                     | Rohde & Schwarz               | ESW44                      | PRE0203383            | 2/18/2020  | 2/18/2021  |
| Horn Antenna, 1-18 GHz                | ETS Lindgren                  | 3117                       | T119                  | 4/21/2020  | 4/21/2021  |
| Horn Antenna, 1-18GHz                 | ETS Lindgren                  | 3117                       | T345                  | 5/19/2020  | 5/19/2021  |
| Preamp, 1-18 GHz                      | Miteq                         | AFS42-00101800-25-S-42     | PRE0183207            | 6/11/2020  | 6/11/2021  |
| PXA Signal Analyzer                   | Agilent                       | N9030A                     | T342                  | 1/24/2020  | 1/24/2021  |
| Hybrid Antenna, 30-2000 MHz           | SunAR                         | JB1                        | T243                  | 4/15/2020  | 4/15/2021  |
| Preamp, 0.1-1300 MHz                  | Sonoma Inst.                  | 310                        | T173                  | 7/22/2020  | 7/22/2021  |
| Horn Antenna, 1-18 GHz                | ETS Lindgren                  | 3117                       | T711                  | 2/12/2020  | 2/12/2021  |
| Preamp, 1-18 GHz                      | Miteq                         | AFS42-00101800-25-S-42     | PRE0183530            | 8/31/2019  | 8/31/2020  |
| EMI Test Receiver                     | Rohde & Schwarz               | ESW44                      | PRE0203384            | 2/18/2020  | 2/18/2021  |
| Antenna, Active Loop 9kHz-30MHz       | ETS Lindgren                  | 6502                       | T1616                 | 10/18/2019 | 10/18/2020 |
| Spectrum Analyzer, 44GHz              | Keysight                      | N9030A                     | T905                  | 1/27/2020  | 1/27/2021  |
| Preamplifier, 1-26.5GHz               | Agilent                       | 8449B                      | T404                  | 4/8/2020   | 4/8/2021   |
| Horn Antenna, 18-26.5GHz              | ARA                           | MWH-1826/B                 | PRE0079280            | 4/17/2020  | 4/17/2021  |
| Preamplifier, 26-40 GHz               | Miteq                         | NSTTA2640-35-HG            | T1864                 | 4/8/2020   | 4/8/2021   |
| Horn Antenna, 26-40 GHz               | ARA                           | MWH-2640/B                 | PRE0182203            | 4/17/2020  | 4/17/2021  |
| DC Power Supply                       | Hewlett Packard               | E3610A                     | T502                  | NCR        | --         |
| DC Power Supply                       | All-Bright Technology Co.     | 8185D                      | PRE0129629            | NCR        | --         |
| Multimeter                            | Fluke                         | 77                         | T78                   | 1/21/2020  | 1/21/2021  |
| Low Pass Filter                       | Microtronics                  | LPM20143                   | PR0199966             | 11/23/2019 | 11/23/2020 |
| High Pass Filter, CH5                 | Wainwright Inst. GMBH         | WHW2-7100-10000-18000-40DC | --                    | NCR        | --         |
| High Pass Filter, CH9                 | Wainwright Inst. GMBH         | WHW2-8165-11500-21000-40CD | --                    | NCR        | --         |
| EMI Test Receiver 9kHz-7GHz           | Rohde & Schwarz               | ESR                        | T1436                 | 2/20/2020  | 2/20/2021  |
| Power Cable, Line Conducted Emissions | UL                            | PR1                        | T861                  | 10/27/2019 | 10/27/2020 |
| LISN for Conducted Emissions CISPR-16 | FISCHER CUSTOM COMMUNICATIONS | FCC-LISN-50/250-25-2-01    | T1310                 | 1/23/2020  | 1/23/2021  |
| Radiated Software                     | UL                            | UL EMC                     | Ver 9.5, Mar 6, 2020  |            |            |
| AC Line Conducted Software            | UL                            | UL EMC                     | Ver 9.5, Feb 21, 2020 |            |            |

## **8. APPLICABLE LIMITS AND TEST RESULTS**

### **8.1. 99% BANDWIDTH**

#### **LIMIT**

None; for reporting purposes only.

#### **TEST PROCEDURE**

The transmitter output is connected to a spectrum analyzer. The RBW is in the range of 1% to 5% of the OBW bandwidth. The VBW is set to  $\geq 3 \times \text{RBW}$ . The sweep time is coupled.

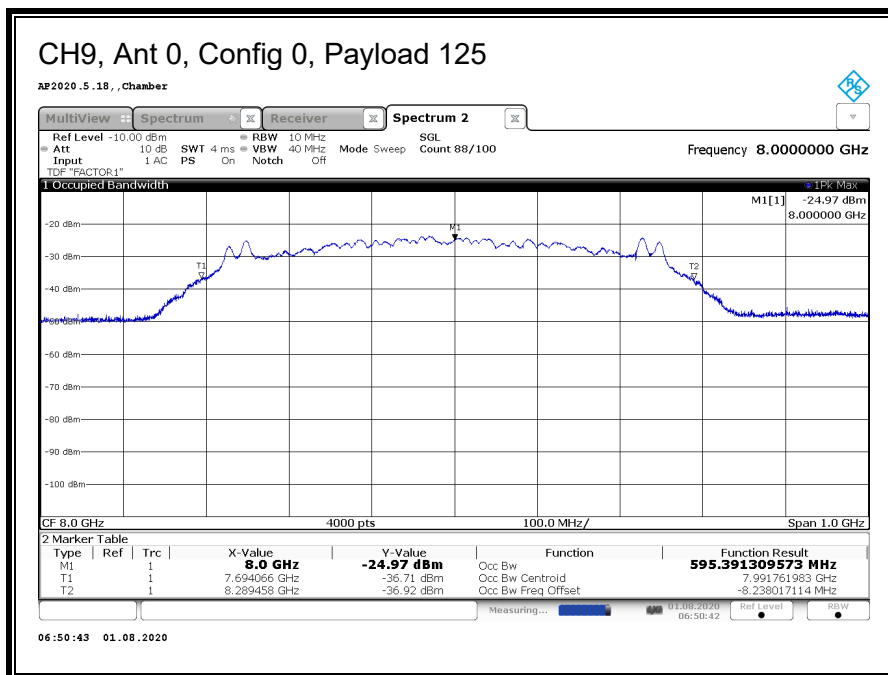
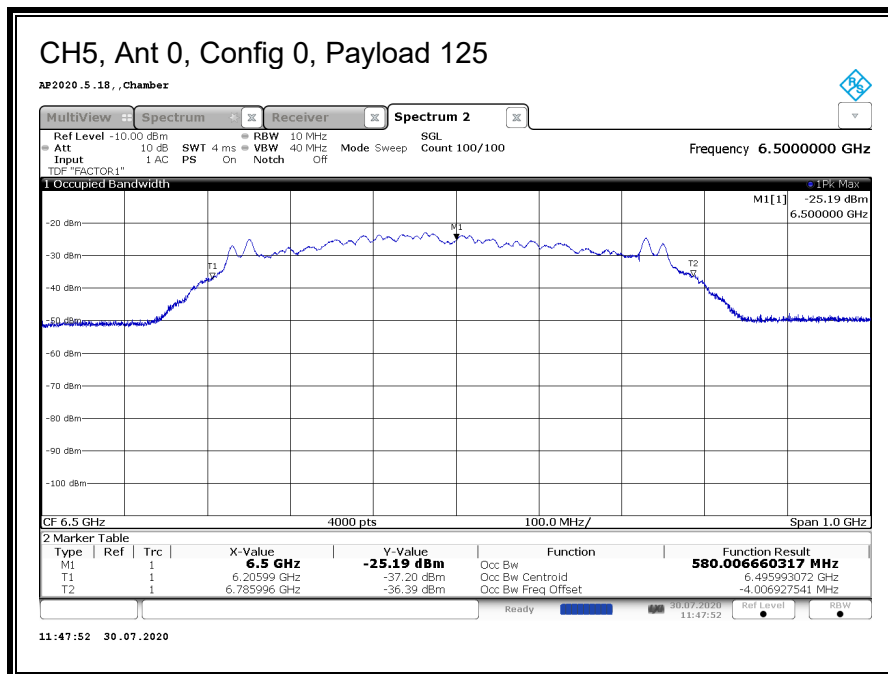
Tabulated data provides the test results of all available test configurations. The plots of Ant 0, CONFIG 0, Payload 125 bandwidth measurement on CH5 and CH9 are presented and same measurement settings apply to the rest of test configurations.

## **RESULTS**

Tested By: 19419, 12501, 12485, 12472, 20737

| ANT | CH | CONFIG | Payload | EUT<br>Orientation | Meas. Ant<br>Polarity | 99% BW<br>(MHz) |
|-----|----|--------|---------|--------------------|-----------------------|-----------------|
| 0   | 5  | 0      | 125     | Portrait           | H                     | 580.01          |
| 0   | 5  | 1      | 125     | Portrait           | H                     | 576.18          |
| 0   | 5  | 2      | 125     | Portrait           | H                     | 599.93          |
| 0   | 5  | 3      | 125     | Portrait           | H                     | 604.72          |
| 0   | 5  | 4      | 0       | Portrait           | H                     | 618.70          |
| 0   | 5  | 5      | 0       | Portrait           | H                     | 588.82          |
|     |    |        |         |                    |                       |                 |
| 0   | 9  | 0      | 125     | Portrait           | H                     | 595.39          |
| 0   | 9  | 1      | 125     | Portrait           | H                     | 593.43          |
| 0   | 9  | 2      | 125     | Portrait           | H                     | 634.26          |
| 0   | 9  | 3      | 125     | Portrait           | H                     | 640.36          |
| 0   | 9  | 4      | 0       | Portrait           | H                     | 670.01          |
| 0   | 9  | 5      | 0       | Portrait           | H                     | 616.89          |
|     |    |        |         |                    |                       |                 |
| 1   | 5  | 0      | 125     | Portrait           | H                     | 575.10          |
| 1   | 5  | 1      | 125     | Portrait           | H                     | 573.64          |
| 1   | 5  | 2      | 125     | Portrait           | H                     | 630.28          |
| 1   | 5  | 3      | 125     | Portrait           | H                     | 624.11          |
| 1   | 5  | 4      | 0       | Portrait           | H                     | 701.50          |
| 1   | 5  | 5      | 0       | Portrait           | H                     | 611.62          |
|     |    |        |         |                    |                       |                 |
| 1   | 9  | 0      | 125     | Portrait           | H                     | 584.30          |
| 1   | 9  | 1      | 125     | Portrait           | H                     | 581.42          |
| 1   | 9  | 2      | 125     | Portrait           | H                     | 575.10          |
| 1   | 9  | 3      | 125     | Portrait           | H                     | 618.81          |
| 1   | 9  | 4      | 0       | Portrait           | H                     | 632.03          |
| 1   | 9  | 5      | 0       | Portrait           | H                     | 600.45          |
|     |    |        |         |                    |                       |                 |
| 2   | 5  | 0      | 125     | Landscape          | H                     | 608.21          |
| 2   | 5  | 1      | 125     | Landscape          | H                     | 604.68          |
| 2   | 5  | 2      | 125     | Landscape          | H                     | 625.85          |
| 2   | 5  | 3      | 125     | Landscape          | H                     | 628.65          |
| 2   | 5  | 4      | 0       | Landscape          | H                     | 615.35          |
| 2   | 5  | 5      | 0       | Landscape          | H                     | 604.05          |
|     |    |        |         |                    |                       |                 |
| 2   | 9  | 0      | 125     | Landscape          | H                     | 598.16          |
| 2   | 9  | 1      | 125     | Landscape          | H                     | 594.98          |
| 2   | 9  | 2      | 125     | Landscape          | H                     | 626.51          |
| 2   | 9  | 3      | 125     | Landscape          | H                     | 611.77          |
| 2   | 9  | 4      | 0       | Landscape          | H                     | 628.11          |
| 2   | 9  | 5      | 0       | Landscape          | H                     | 612.59          |

**99% BW**



## 8.2. OPERATING BANDWIDTH

### LIMITS

#### FCC

§15.503 (a) *UWB bandwidth*. For the purpose of this subpart, the UWB bandwidth is the frequency band bounded by the points that are 10 dB below the highest radiated emission, as based on the complete transmission system including the antenna. The upper boundary is designated  $f_H$  and the lower boundary is designated  $f_L$ . The frequency at which the highest radiated emission occurs is designated  $f_M$ .

§15.503 (b) *Center frequency*. The center frequency,  $f_C$ , equals  $(f_H + f_L)/2$ .

§15.503 (c) *Fractional bandwidth*. The fractional bandwidth equals  $2(f_H - f_L)/(f_H + f_L)$ .

§15.503 (d) *Ultra-wideband (UWB) transmitter*. An intentional radiator that, at any point in time, has a fractional bandwidth equal to or greater than 0.20 or has a UWB bandwidth equal to or greater than 500 MHz, regardless of the fractional bandwidth.

§15.519 (b) The UWB bandwidth of a device operating under the provisions of this section must be contained between 3100 MHz and 10,600 MHz.

### RSS-220

Section 2 A *UWB device* is an intentional radiator that has either a *-10 dB bandwidth* of at least 500 MHz or a *-10 dB fractional bandwidth* greater than 0.2.

Section 5.1 (a) The *-10 dB bandwidth* of the device shall be totally contained in the band 3.1-10.6 GHz.

“-10 dB bandwidth  $B_{-10}$ ” and “-10 dB fractional bandwidth  $\mu_{-10}$ ” are defined as follows:

$$B_{-10} = f_H - f_L$$
$$\mu_{-10} = B_{-10}/f_C$$

where:

$f_M$  is the frequency of maximum UWB transmission;

$f_H$  is the highest frequency at which the power spectral density of the UWB transmission is -10 dB relative to  $f_M$ ;

$f_L$  is the lowest frequency at which the power spectral density of the UWB transmission is -10 dB relative to  $f_M$ ; and

$f_C = (f_H + f_L)/2$  is the centre frequency of the -10 dB bandwidth.

### TEST PROCEDURE

ANSI C63.10 Clause 10.1.

RSS-220 Section 2 of the Annex

Tabulated data provides the test results of all available test configurations. The plots of Ant 0, CONFIG 0, Payload 125 bandwidth measurement on CH5 and CH9 are presented and same measurement settings apply to the rest of test configurations.

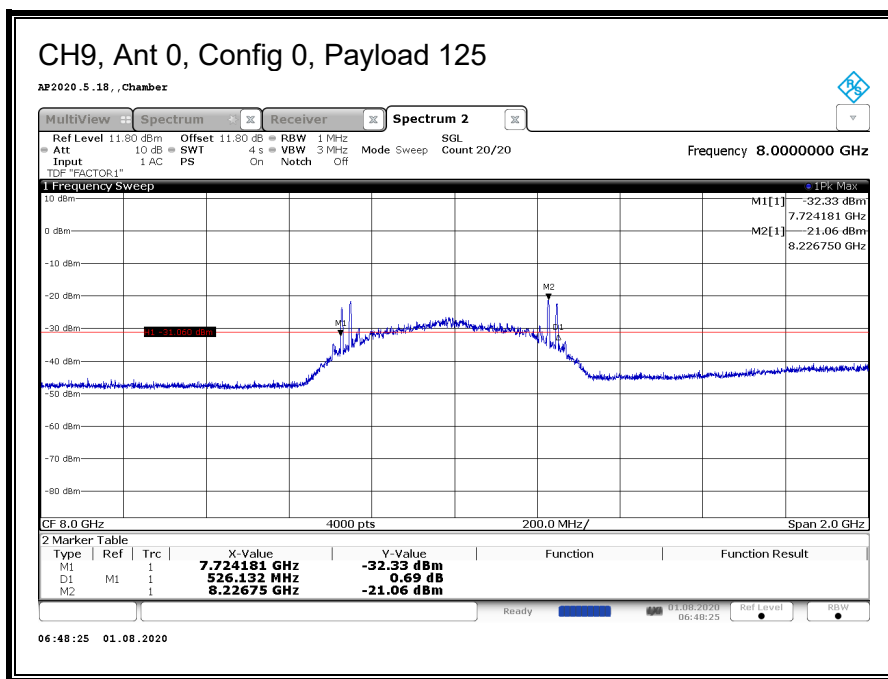
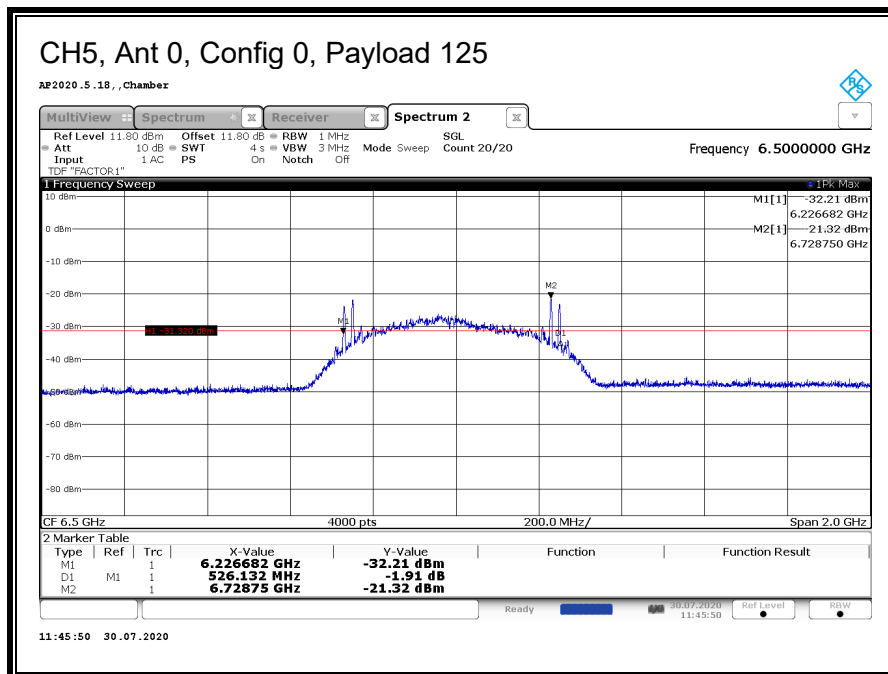
## RESULTS

Tested By: 19419, 12501, 12485, 12472, 20737

| ANT | CH | CONFIG | Payload | EUT Orientation | Meas. Ant Polarity | FM (GHz) | FL (GHz) | FH (GHz) | FC (GHz) | OBW (MHz) | Min. OBW (MHz) | OBW Margin (MHz) | OBW Pass/Fail |
|-----|----|--------|---------|-----------------|--------------------|----------|----------|----------|----------|-----------|----------------|------------------|---------------|
| 0   | 5  | 0      | 125     | Portrait        | H                  | 6.729    | 6.227    | 6.753    | 6.490    | 526.132   | 500            | 26.132           | P             |
| 0   | 5  | 1      | 125     | Portrait        | H                  | 6.729    | 6.227    | 6.753    | 6.490    | 526.132   | 500            | 26.132           | P             |
| 0   | 5  | 2      | 125     | Portrait        | H                  | 6.729    | 6.228    | 6.751    | 6.489    | 523.631   | 500            | 23.631           | P             |
| 0   | 5  | 3      | 125     | Portrait        | H                  | 6.250    | 6.228    | 6.751    | 6.489    | 522.631   | 500            | 22.631           | P             |
| 0   | 5  | 4      | 0       | Portrait        | H                  | 6.729    | 6.227    | 6.753    | 6.490    | 526.132   | 500            | 26.132           | P             |
| 0   | 5  | 5      | 0       | Portrait        | H                  | 6.728    | 6.226    | 6.754    | 6.490    | 528.132   | 500            | 28.132           | P             |
| 0   | 9  | 0      | 125     | Portrait        | H                  | 8.227    | 7.724    | 8.250    | 7.987    | 526.132   | 500            | 26.132           | P             |
| 0   | 9  | 1      | 125     | Portrait        | H                  | 8.226    | 7.724    | 8.250    | 7.987    | 526.132   | 500            | 26.132           | P             |
| 0   | 9  | 2      | 125     | Portrait        | H                  | 8.226    | 7.726    | 8.249    | 7.987    | 523.631   | 500            | 23.631           | P             |
| 0   | 9  | 3      | 125     | Portrait        | H                  | 8.226    | 7.726    | 8.248    | 7.987    | 522.131   | 500            | 22.131           | P             |
| 0   | 9  | 4      | 0       | Portrait        | H                  | 8.226    | 7.724    | 8.250    | 7.987    | 526.132   | 500            | 26.132           | P             |
| 0   | 9  | 5      | 0       | Portrait        | H                  | 8.226    | 7.723    | 8.251    | 7.987    | 528.132   | 500            | 28.132           | P             |
| 1   | 5  | 0      | 125     | Portrait        | H                  | 6.729    | 6.227    | 6.753    | 6.490    | 526.132   | 500            | 26.132           | P             |
| 1   | 5  | 1      | 125     | Portrait        | H                  | 6.729    | 6.227    | 6.753    | 6.490    | 526.132   | 500            | 26.132           | P             |
| 1   | 5  | 2      | 125     | Portrait        | H                  | 6.729    | 6.228    | 6.752    | 6.490    | 523.631   | 500            | 23.631           | P             |
| 1   | 5  | 3      | 125     | Portrait        | H                  | 6.729    | 6.229    | 6.751    | 6.490    | 522.131   | 500            | 22.131           | P             |
| 1   | 5  | 4      | 0       | Portrait        | H                  | 6.729    | 6.227    | 6.753    | 6.490    | 526.132   | 500            | 26.132           | P             |
| 1   | 5  | 5      | 0       | Portrait        | H                  | 6.423    | 6.226    | 6.754    | 6.490    | 527.632   | 500            | 27.632           | P             |
| 1   | 9  | 0      | 125     | Portrait        | H                  | 7.748    | 7.724    | 8.250    | 7.987    | 525.631   | 500            | 25.631           | P             |
| 1   | 9  | 1      | 125     | Portrait        | H                  | 7.748    | 7.724    | 8.250    | 7.987    | 525.631   | 500            | 25.631           | P             |
| 1   | 9  | 2      | 125     | Portrait        | H                  | 7.748    | 7.725    | 8.249    | 7.987    | 523.631   | 500            | 23.631           | P             |
| 1   | 9  | 3      | 125     | Portrait        | H                  | 7.748    | 7.726    | 8.248    | 7.987    | 522.631   | 500            | 22.631           | P             |
| 1   | 9  | 4      | 0       | Portrait        | H                  | 7.748    | 7.724    | 8.250    | 7.987    | 526.132   | 500            | 26.132           | P             |
| 1   | 9  | 5      | 0       | Portrait        | H                  | 7.748    | 7.723    | 8.251    | 7.987    | 527.632   | 500            | 27.632           | P             |
| 2   | 5  | 0      | 125     | Landscape       | H                  | 6.250    | 6.227    | 6.752    | 6.489    | 525.631   | 500            | 25.631           | P             |
| 2   | 5  | 1      | 125     | Landscape       | H                  | 6.251    | 6.227    | 6.752    | 6.489    | 525.631   | 500            | 25.631           | P             |
| 2   | 5  | 2      | 125     | Landscape       | H                  | 6.250    | 6.228    | 6.751    | 6.489    | 523.631   | 500            | 23.631           | P             |
| 2   | 5  | 3      | 125     | Landscape       | H                  | 6.251    | 6.229    | 6.751    | 6.490    | 522.131   | 500            | 22.131           | P             |
| 2   | 5  | 4      | 0       | Landscape       | H                  | 6.251    | 6.227    | 6.752    | 6.489    | 525.631   | 500            | 25.631           | P             |
| 2   | 5  | 5      | 0       | Landscape       | H                  | 6.251    | 6.226    | 6.753    | 6.489    | 527.132   | 500            | 27.132           | P             |
| 2   | 9  | 0      | 125     | Landscape       | H                  | 8.226    | 7.725    | 8.250    | 7.988    | 525.131   | 500            | 25.131           | P             |
| 2   | 9  | 1      | 125     | Landscape       | H                  | 8.227    | 7.725    | 8.250    | 7.988    | 525.131   | 500            | 25.131           | P             |
| 2   | 9  | 2      | 125     | Landscape       | H                  | 8.226    | 7.726    | 8.249    | 7.988    | 523.131   | 500            | 23.131           | P             |
| 2   | 9  | 3      | 125     | Landscape       | H                  | 8.226    | 7.726    | 8.249    | 7.987    | 522.631   | 500            | 22.631           | P             |
| 2   | 9  | 4      | 0       | Landscape       | H                  | 8.226    | 7.725    | 8.250    | 7.988    | 525.131   | 500            | 25.131           | P             |
| 2   | 9  | 5      | 0       | Landscape       | H                  | 8.226    | 7.724    | 8.252    | 7.988    | 527.632   | 500            | 27.632           | P             |



## RESULTS



### 8.3. PEAK POWER AND MAXIMUM AVERAGE EMISSIONS

#### LIMITS

#### FCC

15.519 (e) There is a limit on the peak level of the emissions contained within a 50 MHz bandwidth centered on the frequency at which the highest radiated emission occurs,  $f_m$ . That limit is 0 dBm EIRP.

15.519 (c) The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

| Frequency in MHz | EIRP in dBm |
|------------------|-------------|
| 3100 - 10600     | -41.3       |

#### RSS-220

Annex, Section 4 (c) Peak measurements shall be made in addition to average measurements. Transmissions shall not exceed 0 dBm e.i.r.p. in any 50 MHz bandwidth when the average limit is -41.3 dBm/MHz.

Section 5.3.1 (d) Radiated emissions above 960 MHz from a device shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz.

| Frequency       | E.I.R.P. in a Resolution Bandwidth of 1 MHz |
|-----------------|---------------------------------------------|
| 4.75 – 10.6 GHz | -41.3 dBm                                   |

#### TEST PROCEDURE

ANSI C63.10 Clause 10.3.

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Peak EIPR power is measured using RBW of 50 MHz.

The radiated emissions of 6 - 9 GHz frequency band are performed at 3-meter test distance.

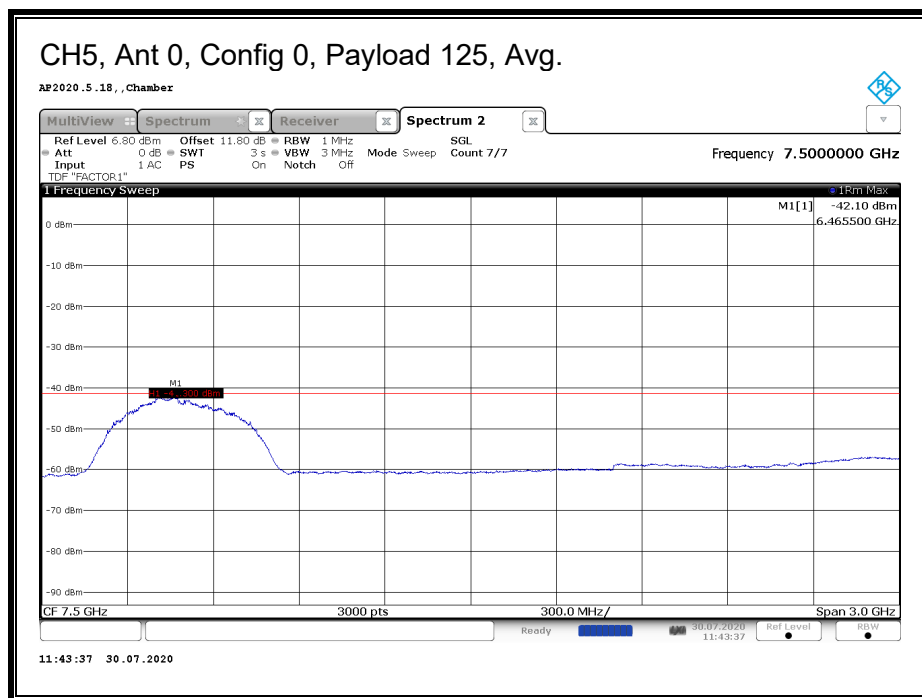
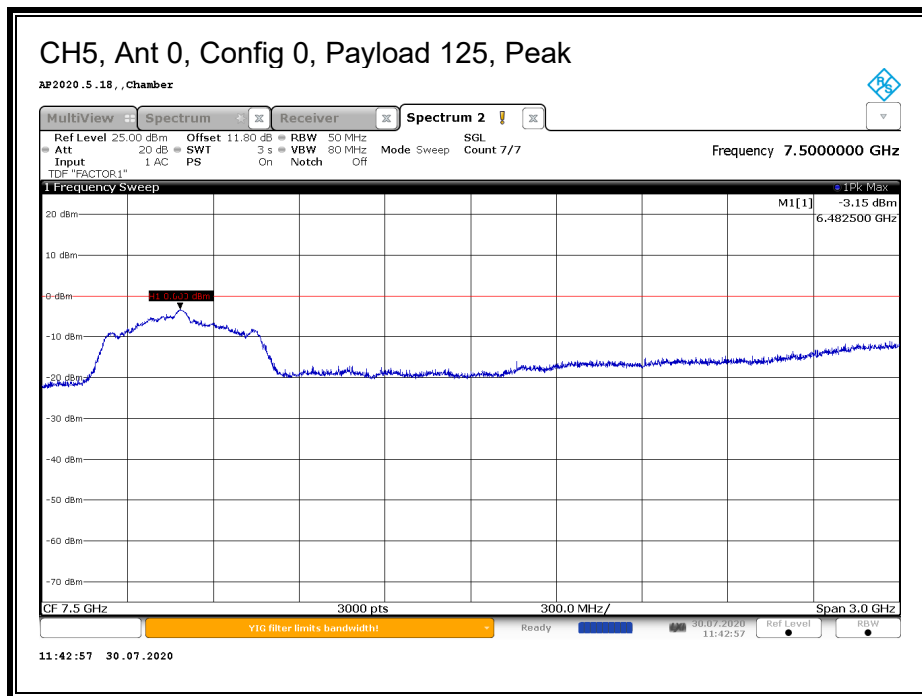
Tabulated data provides the test results of all available test configurations. The plots of Ant 0, CONFIG 0, Payload 125 power measurement on CH5 and CH9 are presented and same measurement settings apply to the rest of test configurations.

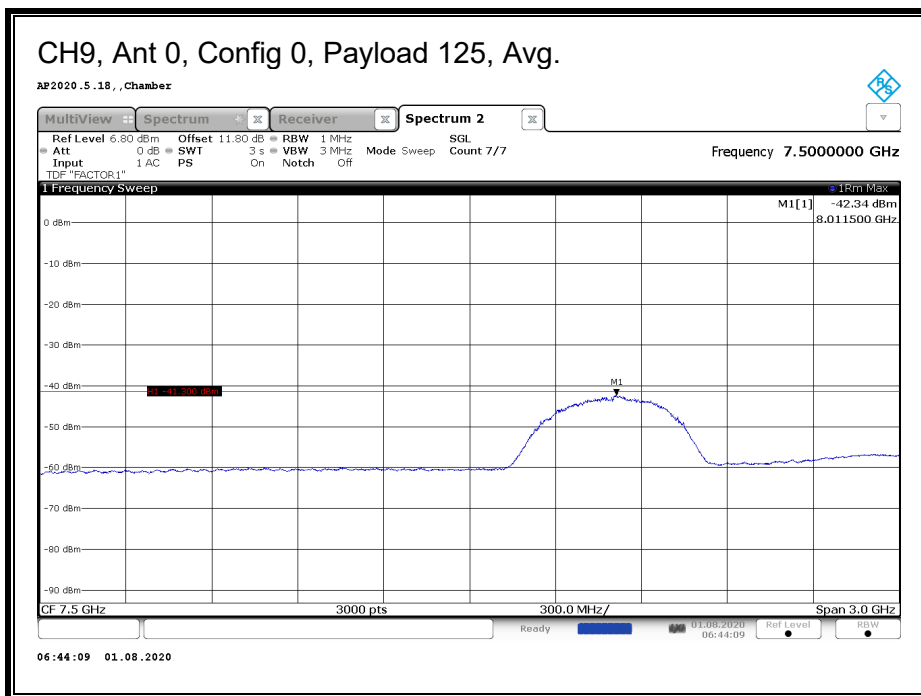
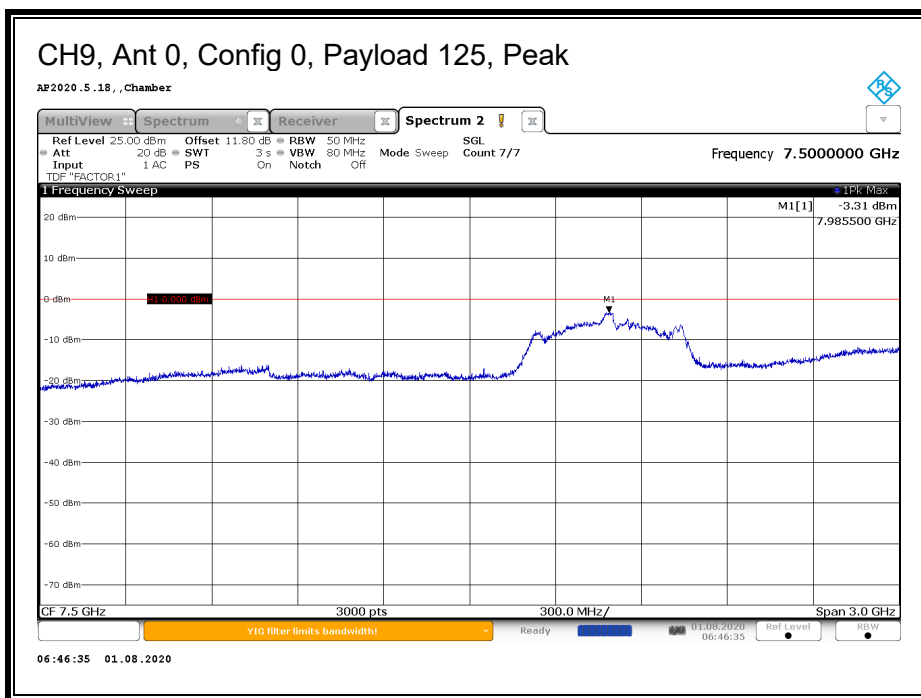
## RESULTS

Tested By: 19419, 12501, 12485, 12472, 20737

| ANT | CH | CONFIG | Payload | EUT Orientation | Meas. Ant. Polarity | Peak EIRP Power |                        |                           |             | Average EIRP Power |                     |                     |             |
|-----|----|--------|---------|-----------------|---------------------|-----------------|------------------------|---------------------------|-------------|--------------------|---------------------|---------------------|-------------|
|     |    |        |         |                 |                     | FM (GHz)        | Peak Power (dBm/50MHz) | Peak Limit (0 dBm/50 MHz) | Margin (dB) | FM (GHz)           | Avg Power (dBm/MHz) | Avg Limit (dBm/MHz) | Margin (dB) |
| 0   | 5  | 0      | 125     | Portrait        | H                   | 6.4825          | -3.15                  | 0                         | -3.15       | 6.4655             | -42.10              | -41.3               | -0.80       |
| 0   | 5  | 1      | 125     | Portrait        | H                   | 6.4945          | -2.62                  | 0                         | -2.62       | 6.4655             | -42.40              | -41.3               | -1.10       |
| 0   | 5  | 2      | 125     | Portrait        | H                   | 6.4845          | -6.11                  | 0                         | -6.11       | 6.4655             | -42.02              | -41.3               | -0.72       |
| 0   | 5  | 3      | 125     | Portrait        | H                   | 6.4895          | -6.07                  | 0                         | -6.07       | 6.4625             | -42.30              | -41.3               | -1.00       |
| 0   | 5  | 4      | 0       | Portrait        | H                   | 6.7355          | -8.12                  | 0                         | -8.12       | 6.4075             | -42.47              | -41.3               | -1.17       |
| 0   | 5  | 5      | 0       | Portrait        | H                   | 6.4875          | -6.39                  | 0                         | -6.39       | 6.4615             | -42.22              | -41.3               | -0.92       |
|     |    |        |         |                 |                     |                 |                        |                           |             |                    |                     |                     |             |
| 0   | 9  | 0      | 125     | Portrait        | H                   | 7.9855          | -3.31                  | 0                         | -3.31       | 8.0115             | -42.34              | -41.3               | -1.04       |
| 0   | 9  | 1      | 125     | Portrait        | H                   | 7.9995          | -2.78                  | 0                         | -2.78       | 8.0115             | -42.83              | -41.3               | -1.53       |
| 0   | 9  | 2      | 125     | Portrait        | H                   | 7.9875          | -5.80                  | 0                         | -5.80       | 7.9715             | -42.4               | -41.3               | -1.10       |
| 0   | 9  | 3      | 125     | Portrait        | H                   | 7.9775          | -5.87                  | 0                         | -5.87       | 8.0075             | -42.3               | -41.3               | -1.00       |
| 0   | 9  | 4      | 0       | Portrait        | H                   | 8.2405          | -5.94                  | 0                         | -5.94       | 8.0075             | -42.13              | -41.3               | -0.83       |
| 0   | 9  | 5      | 0       | Portrait        | H                   | 8.2435          | -4.40                  | 0                         | -4.40       | 8.0155             | -42.26              | -41.3               | -0.96       |
|     |    |        |         |                 |                     |                 |                        |                           |             |                    |                     |                     |             |
| 1   | 5  | 0      | 125     | Portrait        | H                   | 6.4865          | -3.6                   | 0                         | -3.60       | 6.4555             | -42.15              | -41.3               | -0.85       |
| 1   | 5  | 1      | 125     | Portrait        | H                   | 6.4805          | -2.95                  | 0                         | -2.95       | 6.4505             | -42.5               | -41.3               | -1.20       |
| 1   | 5  | 2      | 125     | Portrait        | H                   | 6.4845          | -7.06                  | 0                         | -7.06       | 6.4515             | -42.68              | -41.3               | -1.38       |
| 1   | 5  | 3      | 125     | Portrait        | H                   | 6.4925          | -6.83                  | 0                         | -6.83       | 6.4515             | -42.47              | -41.3               | -1.17       |
| 1   | 5  | 4      | 0       | Portrait        | H                   | 6.4285          | -8.35                  | 0                         | -8.35       | 6.4475             | -42.64              | -41.3               | -1.34       |
| 1   | 5  | 5      | 0       | Portrait        | H                   | 6.4325          | -6.89                  | 0                         | -6.89       | 6.4485             | -42.46              | -41.3               | -1.16       |
|     |    |        |         |                 |                     |                 |                        |                           |             |                    |                     |                     |             |
| 1   | 9  | 0      | 125     | Portrait        | H                   | 7.9775          | -2.27                  | 0                         | -2.27       | 8.0265             | -42.81              | -41.3               | -1.51       |
| 1   | 9  | 1      | 125     | Portrait        | H                   | 7.9765          | -1.73                  | 0                         | -1.73       | 8.0255             | -42.01              | -41.3               | -0.71       |
| 1   | 9  | 2      | 125     | Portrait        | H                   | 7.9835          | -6.04                  | 0                         | -6.04       | 8.0285             | -42.02              | -41.3               | -0.72       |
| 1   | 9  | 3      | 125     | Portrait        | H                   | 8.0025          | -5.04                  | 0                         | -5.04       | 8.0255             | -42.12              | -41.3               | -0.82       |
| 1   | 9  | 4      | 0       | Portrait        | H                   | 7.7345          | -5.26                  | 0                         | -5.26       | 8.0295             | -42.08              | -41.3               | -0.78       |
| 1   | 9  | 5      | 0       | Portrait        | H                   | 7.7395          | -3.65                  | 0                         | -3.65       | 8.0285             | -42.38              | -41.3               | -1.08       |
|     |    |        |         |                 |                     |                 |                        |                           |             |                    |                     |                     |             |
| 2   | 5  | 0      | 125     | Landscape       | H                   | 6.4875          | -4.25                  | 0                         | -4.25       | 6.3235             | -42.46              | -41.3               | -1.16       |
| 2   | 5  | 1      | 125     | Landscape       | H                   | 6.4875          | -2.65                  | 0                         | -2.65       | 6.3235             | -42.01              | -41.3               | -0.71       |
| 2   | 5  | 2      | 125     | Landscape       | H                   | 6.4915          | -7.16                  | 0                         | -7.16       | 6.3655             | -42.50              | -41.3               | -1.20       |
| 2   | 5  | 3      | 125     | Landscape       | H                   | 6.4845          | -6.71                  | 0                         | -6.71       | 6.2495             | -42.05              | -41.3               | -0.75       |
| 2   | 5  | 4      | 0       | Landscape       | H                   | 6.2415          | -3.99                  | 0                         | -3.99       | 6.3105             | -42.48              | -41.3               | -1.18       |
| 2   | 5  | 5      | 0       | Landscape       | H                   | 6.2445          | -2.84                  | 0                         | -2.84       | 6.3095             | -42.40              | -41.3               | -1.10       |
|     |    |        |         |                 |                     |                 |                        |                           |             |                    |                     |                     |             |
| 2   | 9  | 0      | 125     | Landscape       | H                   | 8.2405          | -3.68                  | 0                         | -3.68       | 8.0875             | -42.41              | -41.3               | -1.11       |
| 2   | 9  | 1      | 125     | Landscape       | H                   | 8.2435          | -2.46                  | 0                         | -2.46       | 8.0875             | -42.14              | -41.3               | -0.84       |
| 2   | 9  | 2      | 125     | Landscape       | H                   | 7.9815          | -6.66                  | 0                         | -6.66       | 8.0345             | -42.08              | -41.3               | -0.78       |
| 2   | 9  | 3      | 125     | Landscape       | H                   | 7.9905          | -6.40                  | 0                         | -6.40       | 8.0905             | -42.04              | -41.3               | -0.74       |
| 2   | 9  | 4      | 0       | Landscape       | H                   | 8.2375          | -2.67                  | 0                         | -2.67       | 8.0295             | -42.12              | -41.3               | -0.82       |
| 2   | 9  | 5      | 0       | Landscape       | H                   | 8.2415          | -1.14                  | 0                         | -1.14       | 8.0285             | -42.29              | -41.3               | -0.99       |

## RESULTS





## **8.4. CESSATION TIME**

### **LIMITS**

#### **FCC**

§15.519(a)(1) A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting.

#### **RSS-220**

Section 5.3.1 (b) The device is to transmit only when it is sending information to an associated receiver. The device shall cease transmission of information within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB device at least every 10 seconds or the UWB device shall cease transmitting any information other than periodic signals used for the establishment or re-establishment of a communication link with an associated receiver.

### **TEST PROCEDURES**

Transmissions are monitored for two cases:

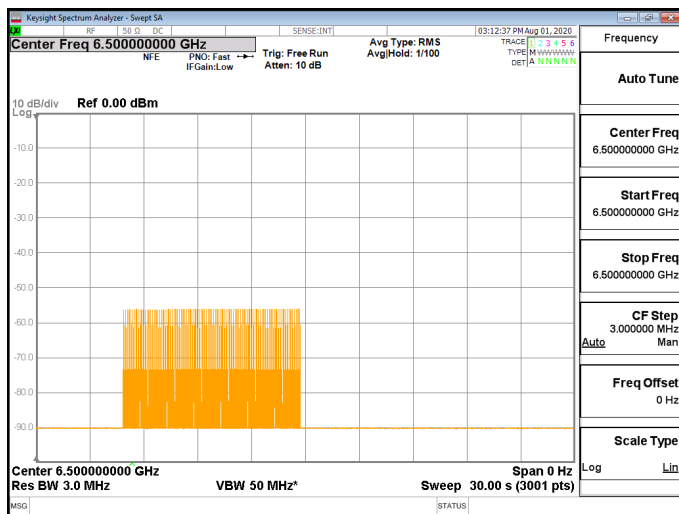
1. The smart phone ends the UWB link.
2. The EUT ends the UWB link.

## RESULTS

Signal Levels on all Plots

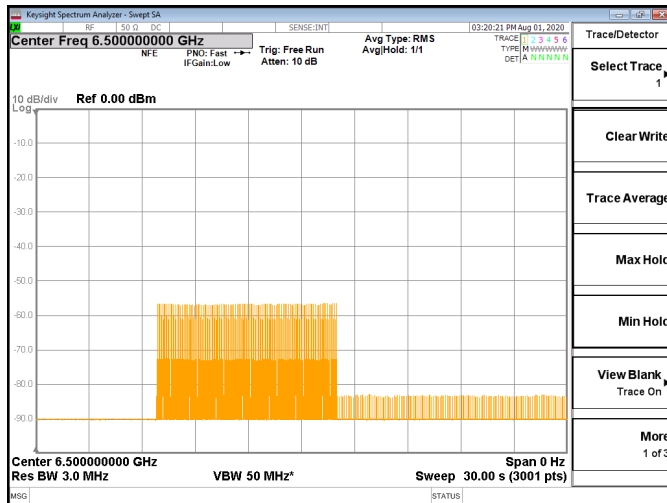
- EUT is High Amplitude
- Smart Phone is Low Amplitude

### Case 1: Smart Phone ends the UWB link

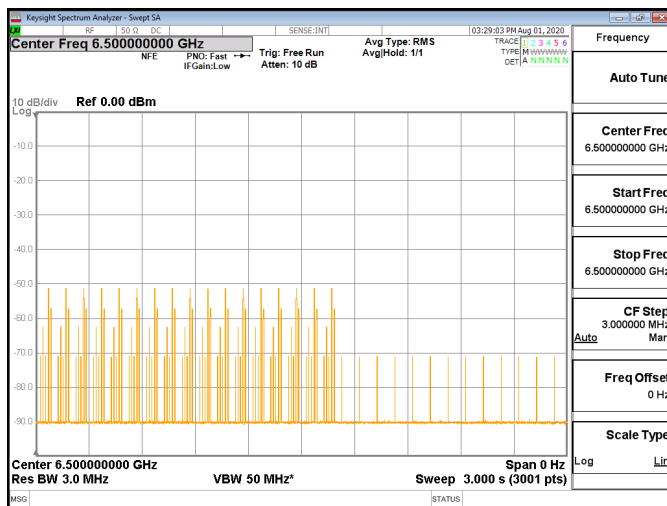


## RESULT

- All devices, including the EUT, cease transmissions

Case 2: EUT ends the UWB linkRESULT

- EUT ends the link, Smart Phone stops Acknowledgements but continues Polling
  - EUT ceases transmissions, does not respond to Polling Signals

Zoom-in Plot during On-Off TransitionRESULT

- Shows Link Traffic, Acknowledgements and Polling Signals while Link is established
- Shows Polling Signals after Link has ended



## 8.5. EMISSIONS BELOW 960 MHz

### LIMITS

#### FCC

§15.519 (c) The radiated emissions at or below 960 MHz from a device operating under the provisions of this section shall not exceed the emission levels in §15.209. The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

15.209 (a)

| Frequency (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 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                             |

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Section 3.4 Radiated emissions at or below 960 MHz for all subclasses of UWB device shall not exceed the following limits. Measurements of radiated emissions at and below 960 MHz are to be made using a CISPR quasi-peak detector. CISPR measurement bandwidth specifications are to be used.

| Frequency (MHz) | Field Strength (Microvolts/m) | Measurement Distance (Metres) | E.i.r.p. (dBmW)                       |
|-----------------|-------------------------------|-------------------------------|---------------------------------------|
| 0.009-0.490     | 2,400/F<br>(F in kHz)         | 300                           | $10 \log (17.28 / F^2)$<br>(F in kHz) |
| 0.490-1.705     | 24,000/F<br>(F in kHz)        | 30                            | $10 \log (17.28 / F^2)$<br>(F in kHz) |
| 1.705-30        | 30                            | 30                            | -45.7                                 |
| 30-88           | 100                           | 3                             | -55.2                                 |
| 88-216          | 150                           | 3                             | -51.7                                 |
| 216-960         | 200                           | 3                             | -49.2                                 |

**Note:** The emission limits for the bands 9-90 kHz and 110-490 kHz are based on measurements employing an average emissions detector.

## **TEST PROCEDURE**

ANSI C63.10 Clause 10.2 and 10.3.

RSS-220 Annex

## **PROCEDURE FOR 9 kHz TO 960 MHz**

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 3m from the EUT.

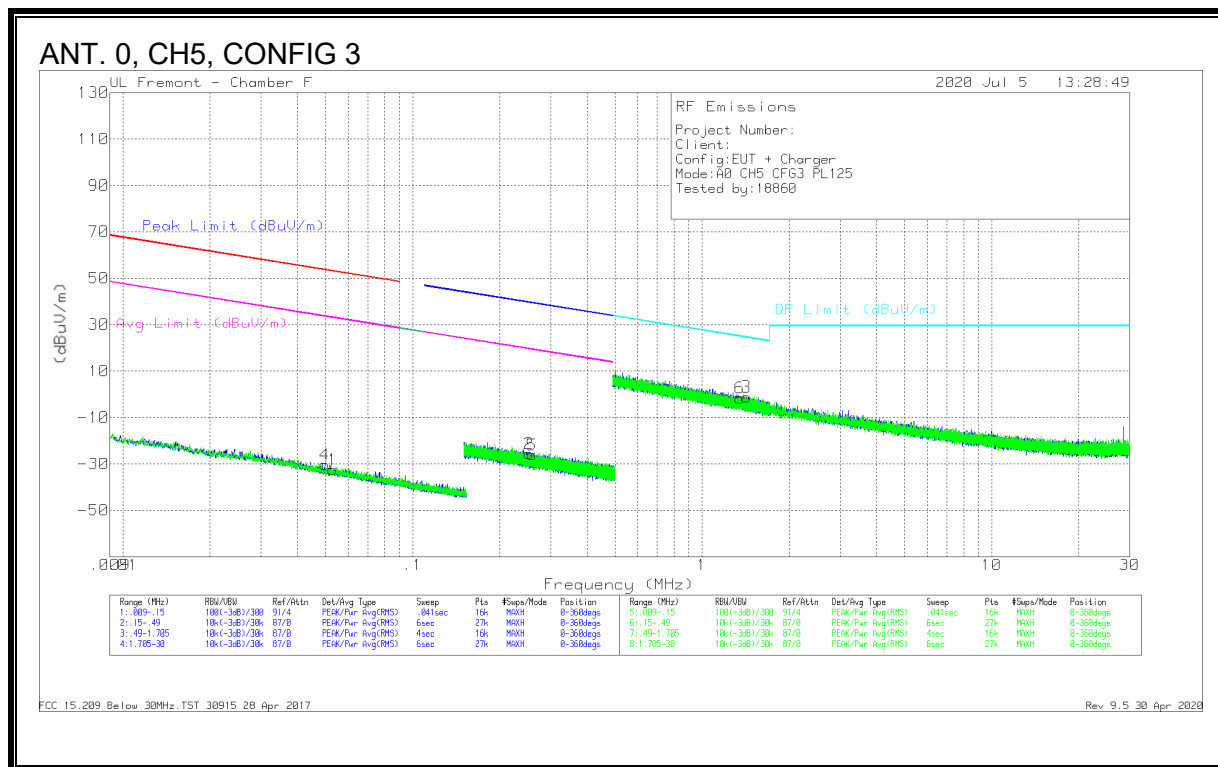
A final test is made at any frequencies at which emissions are found. During this final scan, the antenna is kept no further from the EUT than the maximum distance calculated for each band that yields a minimum system noise floor.

## **RESULTS**

### **Emissions Summary**

| Ant | CH | Config | Payload | Power Setting | Frequency Range |              |
|-----|----|--------|---------|---------------|-----------------|--------------|
|     |    |        |         |               | 9 kHz - 30 MHz  | 30 - 960 MHz |
| 0   | 5  | 3      | 125     | Max           | PASS            | PASS         |
| 0   | 9  | 3      | 125     | Max           | PASS            | PASS         |
| 1   | 5  | 3      | 125     | Max           | PASS            | PASS         |
| 1   | 9  | 3      | 125     | Max           | PASS            | PASS         |
| 2   | 5  | 3      | 125     | Max           | PASS            | PASS         |
| 2   | 9  | 3      | 125     | Max           | PASS            | PASS         |

## 8.5.1. EMISSIONS, 9 kHz – 30 MHz



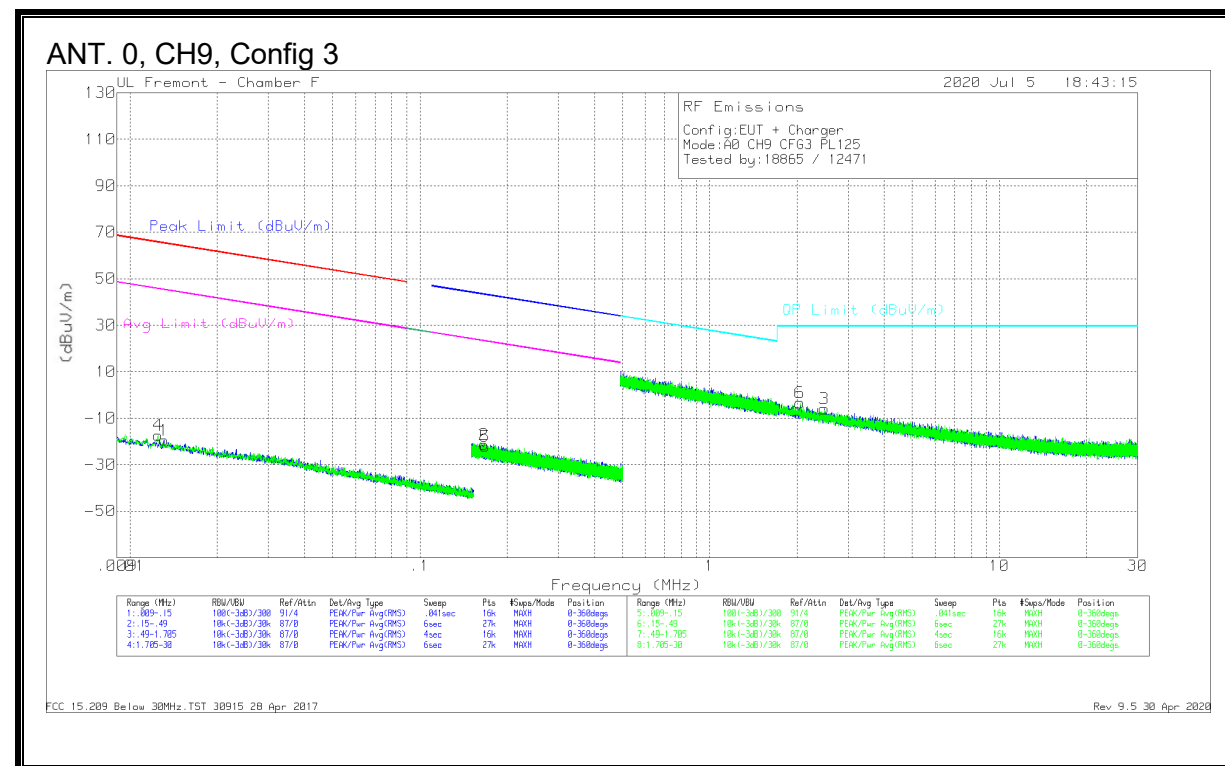
### Trace Markers

| Marker | Freq. (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-------------|------------------------|-----|--------------------|-------------|----------------|----------------------------|---------------------|-------------|--------------------|-------------|---------------------|-------------|--------------------|-------------|----------------|
| 1      | .05297      | 35.06                  | Pk  | 12.4               | 0           | -80            | -32.54                     | 53.11               | -85.65      | 33.11              | -65.65      | -                   | -           | -                  | -           | 0-360          |
| 2      | .25219      | 43.42                  | Pk  | 10.9               | .1          | -80            | -25.58                     | -                   | -           | -                  | -           | 39.58               | -65.16      | 19.58              | -45.16      | 0-360          |
| 4      | .04977      | 37.31                  | Pk  | 12.4               | 0           | -80            | -30.29                     | 53.65               | -83.94      | 33.65              | -63.94      | -                   | -           | -                  | -           | 0-360          |
| 5      | .25816      | 42.94                  | Pk  | 10.9               | .1          | -80            | -26.06                     | -                   | -           | -                  | -           | 39.38               | -65.44      | 19.38              | -45.44      | 0-360          |

### Pk - Peak detector

| Marker | Frequency (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr 40Log | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-----------------|------------------------|-----|--------------------|-------------|-----------------|----------------------------|-------------------|-------------|----------------|
| 3      | 1.42222         | 27.55                  | Pk  | 11.2               | .1          | -40             | -1.15                      | 24.57             | -25.72      | 0-360          |
| 6      | 1.34926         | 27.16                  | Pk  | 11.2               | .1          | -40             | -1.54                      | 25.03             | -26.57      | 0-360          |

### Pk - Peak detector



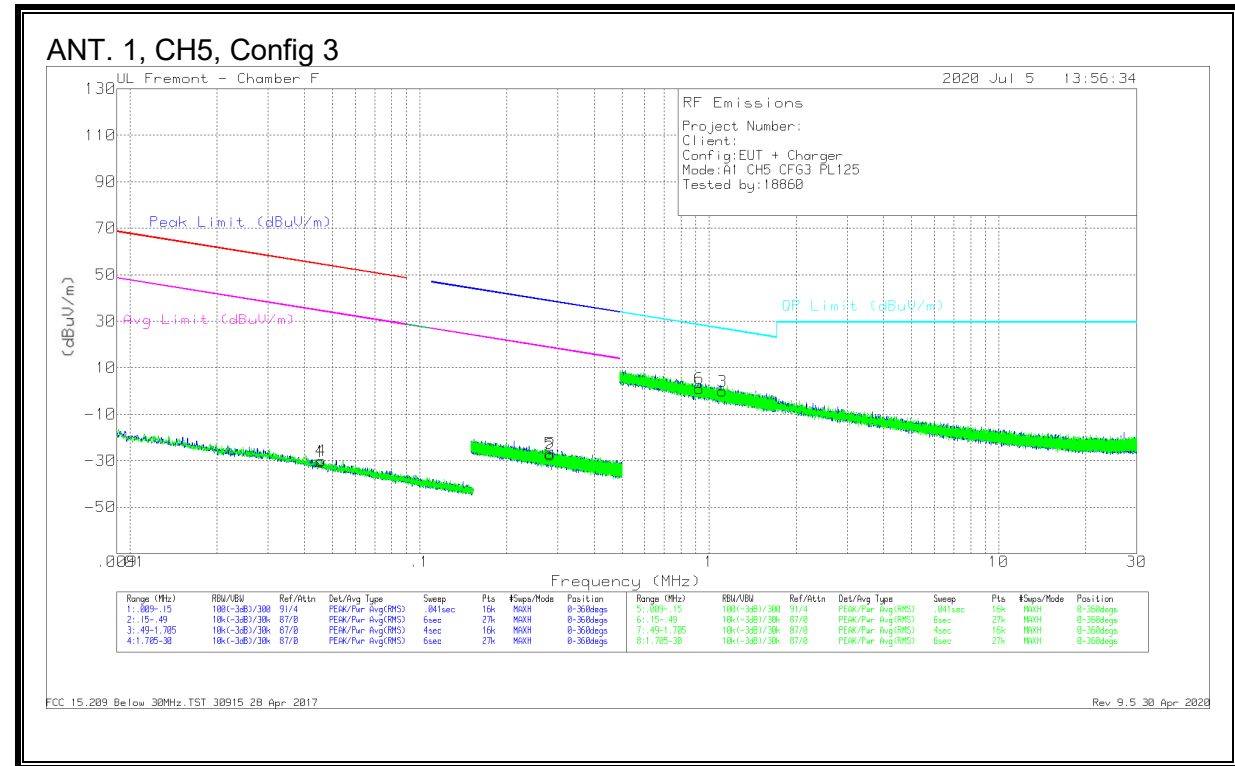
## Trace Markers

| Marker | Freq. (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-------------|------------------------|-----|--------------------|-------------|----------------|----------------------------|---------------------|-------------|--------------------|-------------|---------------------|-------------|--------------------|-------------|----------------|
| 1      | .0131       | 42.68                  | Pk  | 17.3               | 0           | -80            | -19.52                     | 65.24               | -84.76      | 45.24              | -84.76      | -                   | -           | -                  | -           | 0-360          |
| 2      | .16648      | 47.47                  | Pk  | 11.1               | -1          | -80            | -21.33                     | -                   | -           | -                  | -           | 43.19               | -64.52      | 23.19              | -44.52      | 0-360          |
| 4      | .01249      | 44.7                   | Pk  | 18                 | 0           | -80            | -17.3                      | 65.65               | -82.95      | 45.65              | -82.95      | -                   | -           | -                  | -           | 0-360          |
| 5      | .16781      | 46.69                  | Pk  | 11.1               | -1          | -80            | -22.11                     | -                   | -           | -                  | -           | 43.12               | -65.23      | 23.12              | -45.23      | 0-360          |

## Pk - Peak detector

| Marker | Frequency (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr 40Log | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-----------------|------------------------|-----|--------------------|-------------|-----------------|----------------------------|-------------------|-------------|----------------|
| 3      | 2.48471         | 22.54                  | Pk  | 11.3               | .2          | -40             | -5.96                      | 29.5              | -35.46      | 0-360          |
| 6      | 2.0477          | 25.12                  | Pk  | 11.3               | .2          | -40             | -3.38                      | 29.5              | -32.88      | 0-360          |

## Pk - Peak detector



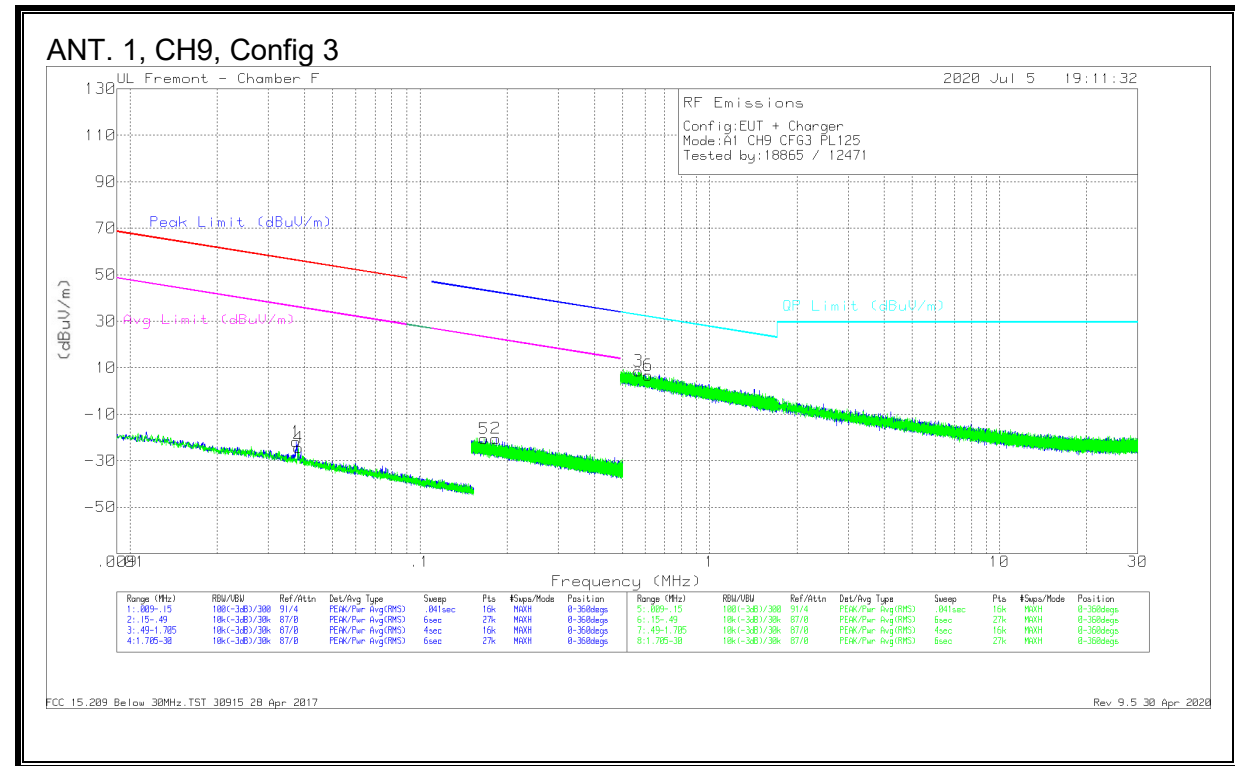
## Trace Markers

| Marker | Freq. (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-------------|------------------------|-----|--------------------|-------------|----------------|----------------------------|---------------------|-------------|--------------------|-------------|---------------------|-------------|--------------------|-------------|----------------|
| 1      | .04555      | 36.75                  | Pk  | 12.8               | 0           | -80            | -30.45                     | 54.42               | -84.87      | 34.42              | -84.87      | -                   | -           | -                  | -           | 0-360          |
| 2      | .28345      | 41.48                  | Pk  | 10.9               | .1          | -80            | -27.52                     | -                   | -           | -                  | -           | 38.56               | -66.08      | 18.56              | -46.08      | 0-360          |
| 4      | .04573      | 37.2                   | Pk  | 12.8               | 0           | -80            | -30                        | 54.38               | -84.38      | 34.38              | -84.38      | -                   | -           | -                  | -           | 0-360          |
| 5      | .28185      | 42.07                  | Pk  | 10.9               | .1          | -80            | -26.93                     | -                   | -           | -                  | -           | 38.61               | -65.54      | 18.61              | -45.54      | 0-360          |

## Pk - Peak detector

| Marker | Frequency (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr (dB) 40Log | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-----------------|------------------------|-----|--------------------|-------------|----------------------|----------------------------|-------------------|-------------|----------------|
| 3      | 1.111           | 28.58                  | Pk  | 11.2               | .1          | -40                  | -12                        | 26.71             | -26.83      | 0-360          |
| 6      | .9251           | 29.84                  | Pk  | 11.1               | .1          | -40                  | 1.04                       | 28.3              | -27.26      | 0-360          |

## Pk - Peak detector



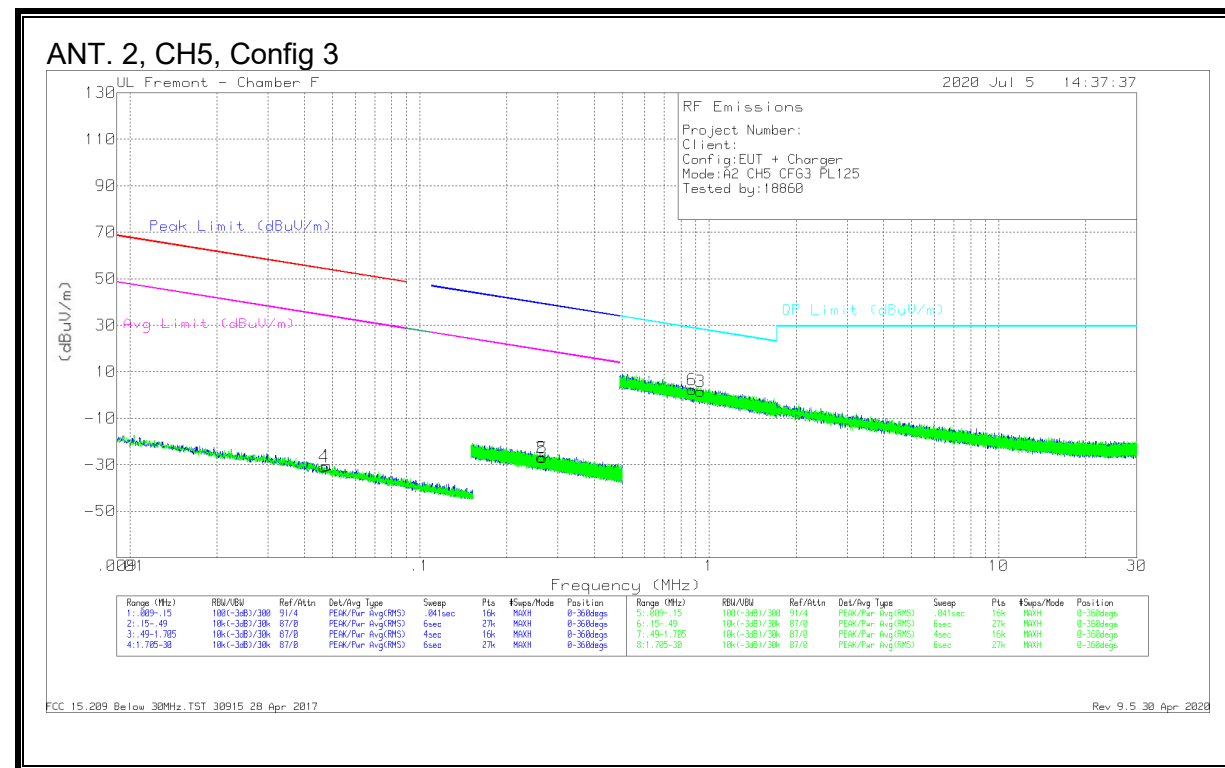
## Trace Markers

| Marker | Freq. (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-------------|------------------------|-----|--------------------|-------------|----------------|----------------------------|---------------------|-------------|--------------------|-------------|---------------------|-------------|--------------------|-------------|----------------|
| 1      | .03743      | 44.46                  | Pk  | 13.7               | 0           | -80            | -21.84                     | 56.12               | -77.96      | 36.12              | -57.96      | -                   | -           | -                  | -           | 0-360          |
| 2      | .18294      | 48.39                  | Pk  | 11.1               | .1          | -80            | -20.41                     | -                   | -           | -                  | -           | 42.37               | -62.78      | 22.37              | -42.78      | 0-360          |
| 4      | .03809      | 42.02                  | Pk  | 13.6               | 0           | -80            | -24.38                     | 55.97               | -80.35      | 35.97              | -60.35      | -                   | -           | -                  | -           | 0-360          |
| 5      | .1666       | 48.2                   | Pk  | 11.1               | .1          | -80            | -20.6                      | -                   | -           | -                  | -           | 43.19               | -63.79      | 23.19              | -43.79      | 0-360          |

## Pk - Peak detector

| Marker | Frequency (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr 40Log | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-----------------|------------------------|-----|--------------------|-------------|-----------------|----------------------------|-------------------|-------------|----------------|
| 3      | .56836          | 37.48                  | Pk  | 11                 | .1          | -40             | 8.58                       | 32.52             | -23.94      | 0-360          |
| 6      | .61342          | 35.65                  | Pk  | 11                 | .1          | -40             | 6.75                       | 31.85             | -25.1       | 0-360          |

## Pk - Peak detector



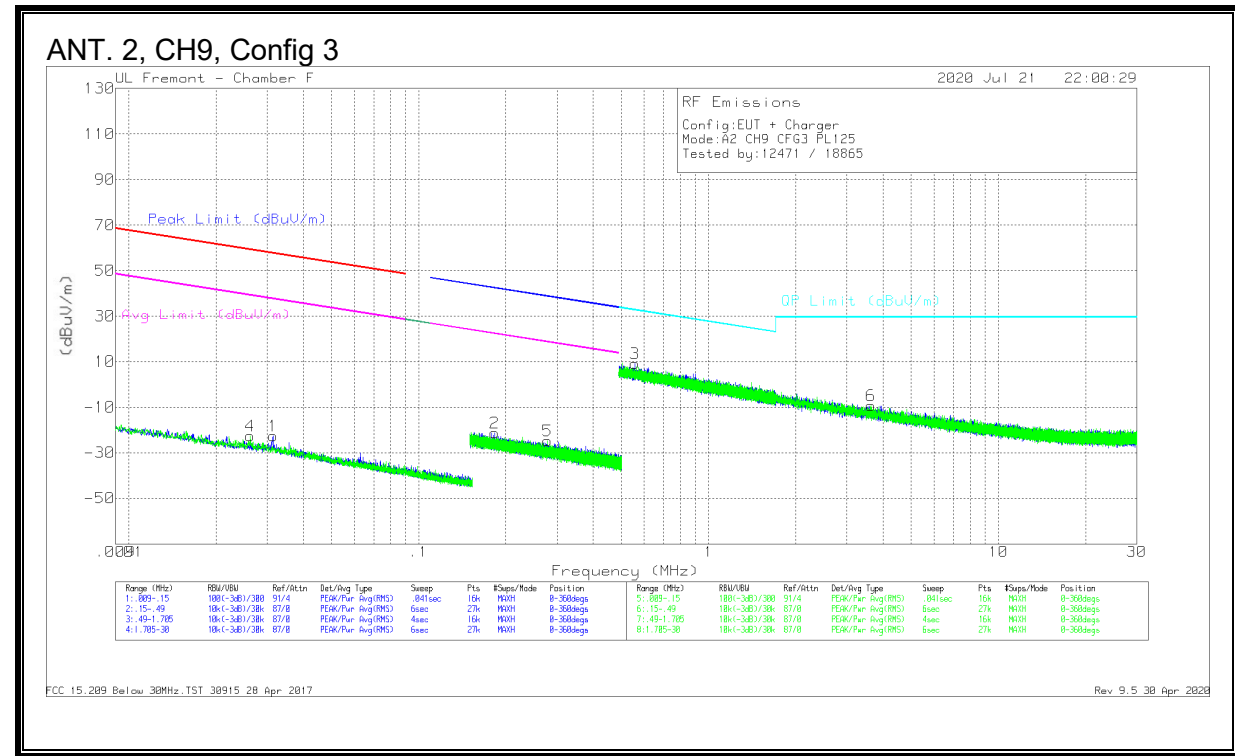
## Trace Markers

| Marker | Freq. (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-------------|------------------------|-----|--------------------|-------------|----------------|----------------------------|---------------------|-------------|--------------------|-------------|---------------------|-------------|--------------------|-------------|----------------|
| 1      | .04775      | 36.38                  | Pk  | 12.6               | 0           | -80            | -30.44                     | 54.01               | -84.45      | 34.01              | -84.45      | -                   | -           | -                  | -           | 0-360          |
| 2      | .2634       | 42.13                  | Pk  | 10.9               | .1          | -80            | -26.87                     | -                   | -           | -                  | -           | 39.2                | -66.07      | 19.2               | -46.07      | 0-360          |
| 4      | .04685      | 36.34                  | Pk  | 12.7               | 0           | -80            | -30.96                     | 54.17               | -85.13      | 34.17              | -85.13      | -                   | -           | -                  | -           | 0-360          |
| 5      | .26614      | 41.91                  | Pk  | 10.9               | .1          | -80            | -27.09                     | -                   | -           | -                  | -           | 39.11               | -66.2       | 19.11              | -46.2       | 0-360          |

## Pk - Peak detector

| Marker | Frequency (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr (dB) 40Log | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-----------------|------------------------|-----|--------------------|-------------|----------------------|----------------------------|-------------------|-------------|----------------|
| 3      | .93376          | 30.28                  | Pk  | 11.1               | .1          | -40                  | 1.48                       | 28.22             | -26.74      | 0-360          |
| 6      | .87167          | 31.18                  | Pk  | 11                 | .1          | -40                  | 2.28                       | 28.81             | -26.53      | 0-360          |

## Pk - Peak detector



## Trace Markers

| Marker | Freq. (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-------------|------------------------|-----|--------------------|-------------|----------------|----------------------------|---------------------|-------------|--------------------|-------------|---------------------|-------------|--------------------|-------------|----------------|
| 1      | 031445      | 43.24                  | Pk  | 14.3               | 0           | -80            | -22.46                     | 57.63               | -80.09      | 37.63              | -80.09      | -                   | -           | 22.36              | -43.63      | 0-360          |
| 2      | 18216       | 47.53                  | Pk  | 11.1               | -1          | -80            | -21.27                     | 58.2                | -81.86      | 38.2               | -81.86      | -                   | -           | 22.36              | -43.63      | 0-360          |
| 4      | 02824       | 42.84                  | Pk  | 14.7               | 0           | -80            | -22.66                     | 58.2                | -81.86      | 38.2               | -81.86      | -                   | -           | 22.36              | -43.63      | 0-360          |
| 5      | 27821       | 44.21                  | Pk  | 10.9               | -1          | -80            | -24.79                     | -                   | -           | -                  | -           | 38.73               | -63.52      | 18.73              | -43.52      | 0-360          |

## Pk - Peak detector

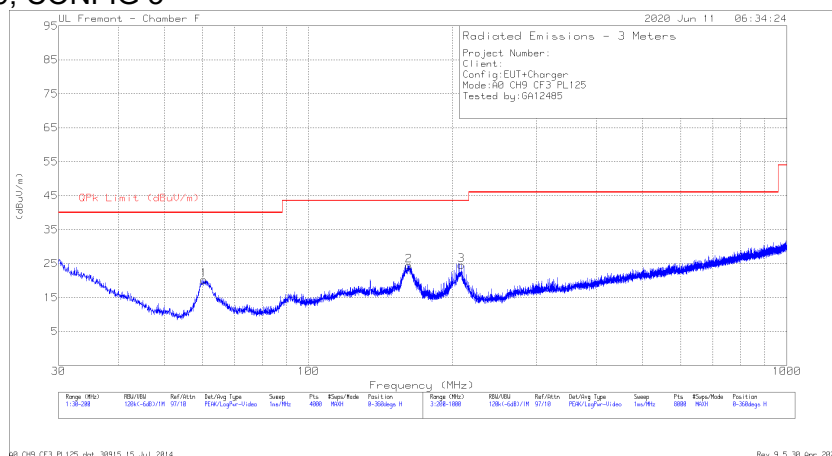
| Marker | Frequency (MHz) | Meter Reading (dBuV/m) | Det | Loop Antenna (dBm) | Cables (dB) | Dist Corr (dB) | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|--------|-----------------|------------------------|-----|--------------------|-------------|----------------|----------------------------|-------------------|-------------|----------------|
| 3      | 5581            | 38.01                  | Pk  | 11                 | .1          | -40            | 9.11                       | 32.67             | -23.56      | 0-360          |
| 6      | 3.63646         | 19.28                  | Pk  | 11.4               | .2          | -40            | -9.12                      | 29.5              | -38.62      | 0-360          |

## Pk - Peak detector



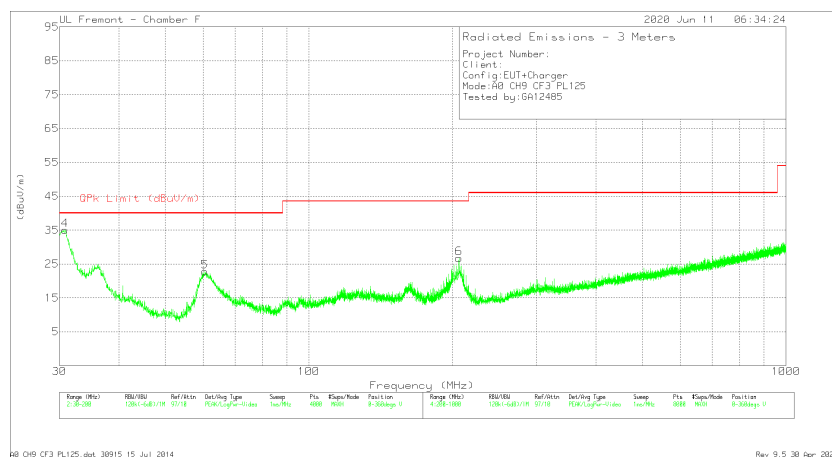


### ANT. 0, CH9, CONFIG 3



RR\_O19\_CF3\_PL125\_dut\_30915\_15\_Jul\_2014

Rev: 9.5\_30 Apr 2020



RR\_O19\_CF3\_PL125\_dut\_30915\_15\_Jul\_2014

Rev: 9.5\_30 Apr 2020

### Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 1      | 60.4379         | 38.37                | Pk  | 13.5           | -31.6        | 20.27                      | 40                 | -19.73      | 0-360          | 400         | H        |
| 2      | 162.1667        | 36.83                | Pk  | 18.3           | -30.7        | 24.43                      | 43.52              | -19.09      | 0-360          | 200         | H        |
| 4      | 30.8077         | 39.35                | Pk  | 27.6           | -31.9        | 35.05                      | 40                 | -4.95       | 0-360          | 100         | V        |
| 5      | 60.5654         | 40.79                | Pk  | 13.6           | -31.6        | 22.79                      | 40                 | -17.21      | 0-360          | 100         | V        |
| 3      | 208.7011        | 38.02                | Pk  | 17             | -30.4        | 24.62                      | 43.52              | -18.9       | 0-360          | 100         | H        |
| 6      | 206.3008        | 39.93                | Pk  | 17.2           | -30.4        | 26.73                      | 43.52              | -16.79      | 0-360          | 100         | V        |

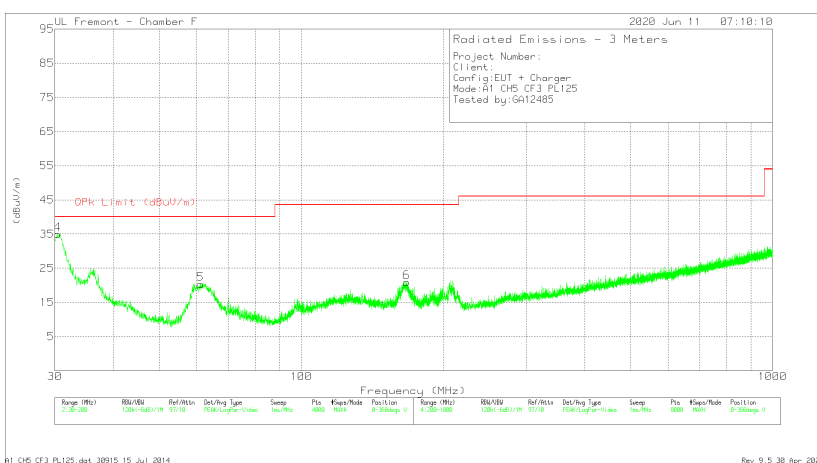
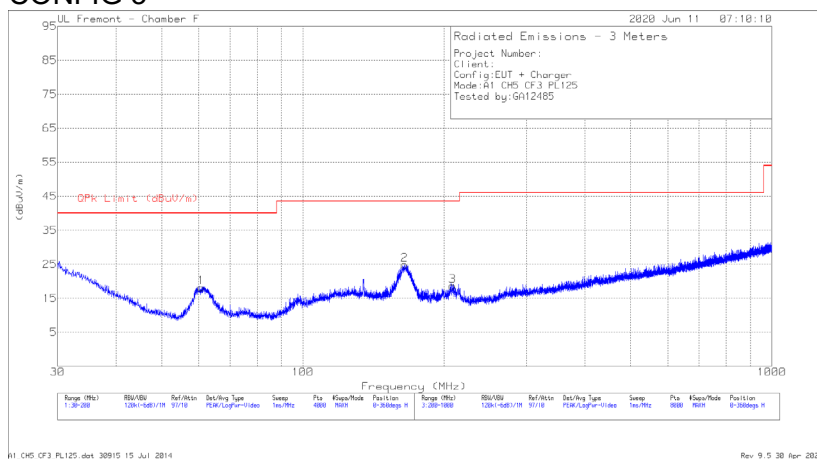
Pk - Peak detector

### Radiated Emissions

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 4      | 30.5821         | 36.45                | Qp  | 27.7           | -31.9        | 32.25                      | 40                 | -7.75       | 348            | 105         | V        |

Qp - Quasi-Peak detector

### ANT.1, CH5, CONFIG 3



### Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 1      | 60.778          | 36.21                | Pk  | 13.6           | -31.6        | 18.21                      | 40                 | -21.79      | 0-360          | 200         | H        |
| 2      | 164.9299        | 37.49                | Pk  | 18.1           | -30.7        | 24.89                      | 43.52              | -18.63      | 0-360          | 100         | H        |
| 4      | 30.4251         | 38.93                | Pk  | 27.9           | -31.9        | 34.93                      | 40                 | -5.07       | 0-360          | 100         | V        |
| 5      | 61.1606         | 38.34                | Pk  | 13.6           | -31.6        | 20.34                      | 40                 | -19.66      | 0-360          | 100         | V        |
| 6      | 167.268         | 33.54                | Pk  | 18             | -30.6        | 20.94                      | 43.52              | -22.58      | 0-360          | 100         | V        |
| 3      | 208.5011        | 32.16                | Pk  | 17             | -30.5        | 18.66                      | 43.52              | -24.86      | 0-360          | 100         | H        |

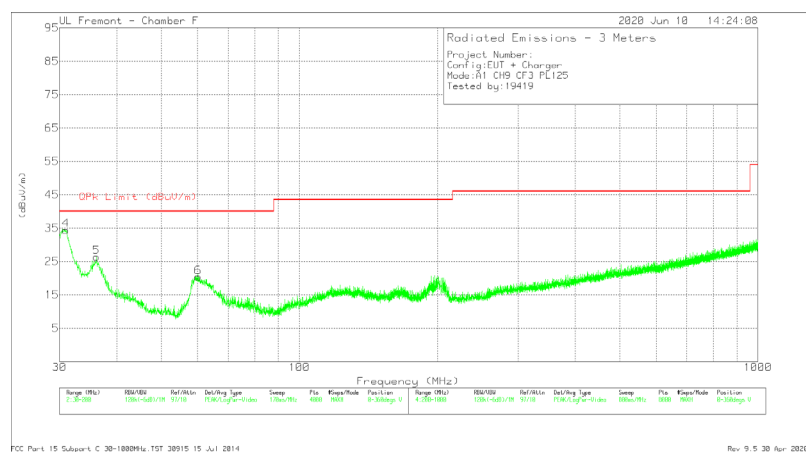
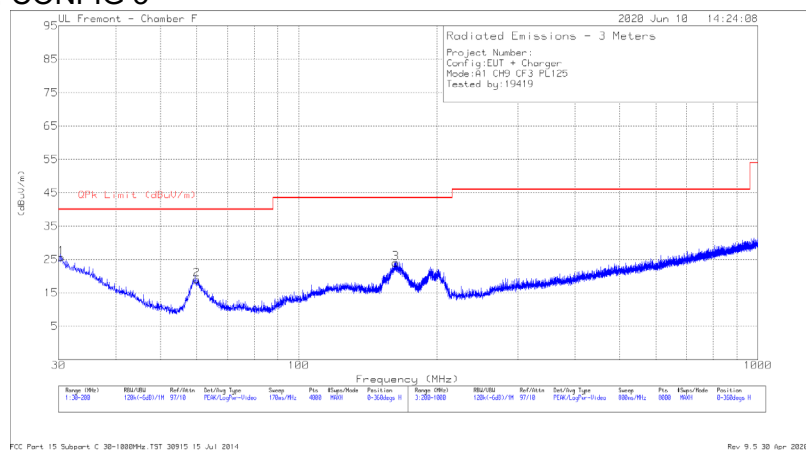
Pk - Peak detector

### Radiated Emissions

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 4      | 30.2816         | 28.44                | Qp  | 28             | -31.9        | 24.54                      | 40                 | -15.46      | 116            | 332         | V        |

Qp - Quasi-Peak detector

### ANT. 1, CH9, CONFIG 3



### Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 1      | 30.4251         | 29.65                | Pk  | 27.9           | -31.9        | 25.65                      | 40                 | -14.35      | 0-360          | 201         | H        |
| 2      | 59.9703         | 37.17                | Pk  | 13.5           | -31.6        | 19.07                      | 40                 | -20.93      | 0-360          | 399         | H        |
| 3      | 162.6343        | 36.6                 | Pk  | 18.2           | -30.8        | 24                         | 43.52              | -19.52      | 0-360          | 201         | H        |
| 4      | 30.9778         | 38.92                | Pk  | 27.4           | -31.9        | 34.42                      | 40                 | -5.58       | 0-360          | 100         | V        |
| 5      | 36.1216         | 34.75                | Pk  | 23.4           | -31.8        | 26.35                      | 40                 | -13.65      | 0-360          | 100         | V        |
| 6      | 60.1828         | 38.45                | Pk  | 13.5           | -31.6        | 20.35                      | 40                 | -19.65      | 0-360          | 100         | V        |

Pk - Peak detector

### Radiated Emissions

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 4      | 30.9514         | 35                   | Qp  | 27.4           | -31.9        | 30.5                       | 40                 | -9.5        | 334            | 107         | V        |

Qp - Quasi-Peak detector

U. Fremont - Chamber F

2020 Jun 11 08:35:59

Radiated Emissions - 3 Meters

Project Number:

Client:

Config: A2 CH5 CF3 PL125

Mode: EUT-Charger

Tested by: ghl2485

dBuV/m

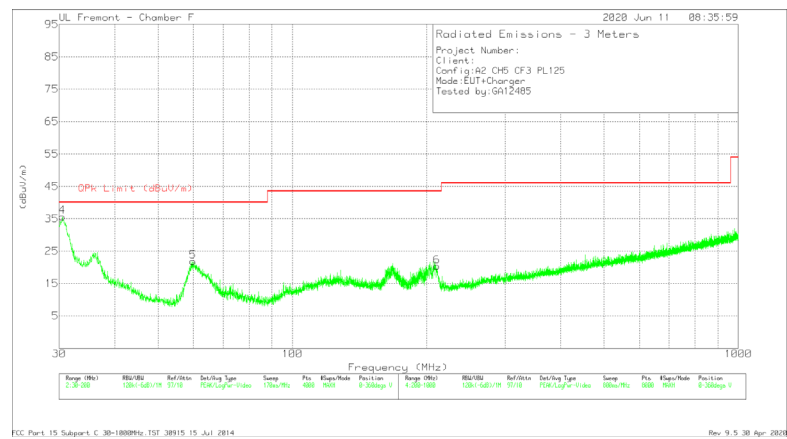
OPk L[emf] < dB(uV/m)

Frequency (MHz)

|              |          |         |     |               |    |      |      |                |       |                |     |         |     |               |    |      |      |                |       |                |     |
|--------------|----------|---------|-----|---------------|----|------|------|----------------|-------|----------------|-----|---------|-----|---------------|----|------|------|----------------|-------|----------------|-----|
| Power (Watt) | 1.3E-008 | Ref Ant | N/A | Ant Imp (Ohm) | 50 | Temp | 15.0 | Pwr. Meas Node | P-300 | Pwr. Meas Unit | dBm | Ref Ant | N/A | Ant Imp (Ohm) | 50 | Temp | 15.0 | Pwr. Meas Node | P-300 | Pwr. Meas Unit | dBm |
| Power (Watt) | 1.3E-008 | Ref Ant | N/A | Ant Imp (Ohm) | 50 | Temp | 15.0 | Pwr. Meas Node | P-300 | Pwr. Meas Unit | dBm | Ref Ant | N/A | Ant Imp (Ohm) | 50 | Temp | 15.0 | Pwr. Meas Node | P-300 | Pwr. Meas Unit | dBm |

FCC Part 15 Subpart C\_30-1000MHz\_TST\_201915\_15\_Jul\_2014

Rev: 9.5\_20\_Apr\_2014

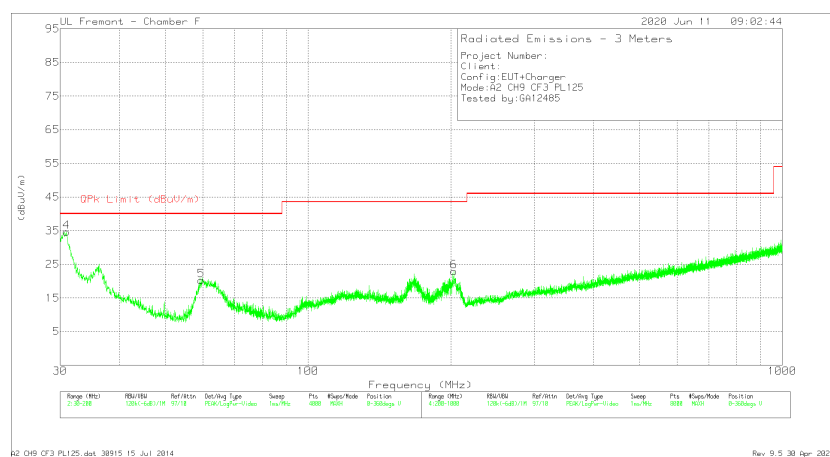
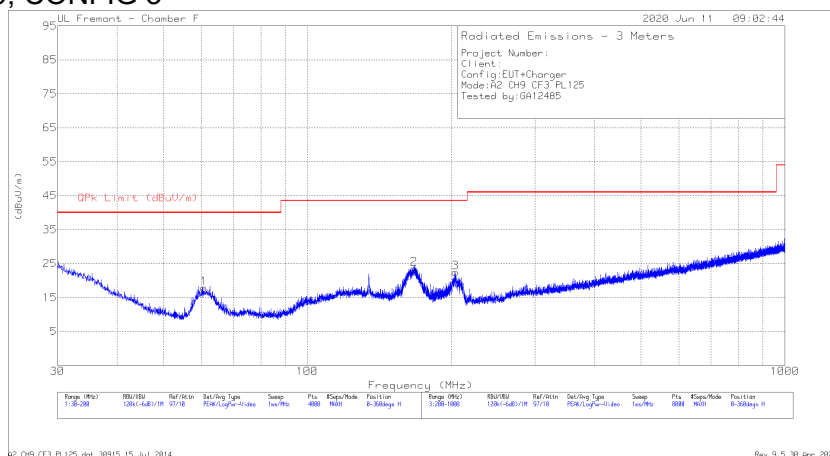


| Marker | Frequency (MHz) | Meter Reading (dBUV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBUV/m) | QPk Limit (dBUV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 1      | 59.4601         | 37.05                | Pk  | 13.5           | -31.6        | 18.95                      | 40                 | -21.05      | 0-360          | 400         | H        |
| 2      | 164.0372        | 37.62                | Pk  | 18.2           | -30.8        | 25.02                      | 43.52              | -18.5       | 0-360          | 200         | H        |
| 4      | 30.5101         | 39.75                | Pk  | 27.8           | -31.9        | 35.65                      | 40                 | -4.35       | 0-360          | 100         | V        |
| 5      | 59.8427         | 39.96                | Pk  | 13.5           | -31.6        | 21.86                      | 40                 | -18.14      | 0-360          | 100         | V        |
| 3      | 209.2012        | 34.11                | Pk  | 17             | -30.4        | 20.71                      | 43.52              | -22.81      | 0-360          | 100         | H        |
| 6      | 211.0014        | 33.73                | Pk  | 17             | -30.4        | 20.33                      | 43.52              | -23.19      | 0-360          | 100         | V        |

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 4      | 30.5317         | 35.14                | Qb  | 27.8           | -31.9        | 31.04                      | 40                 | -8.96       | 163            | 102         | V        |

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### ANT. 2, CH9, CONFIG 3



### Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 1      | 60.7355         | 35.86                | Pk  | 13.6           | -31.6        | 17.86                      | 40                 | -22.14      | 0-360          | 300         | H        |
| 2      | 167.268         | 36.08                | Pk  | 18             | -30.6        | 23.48                      | 43.52              | -20.04      | 0-360          | 201         | H        |
| 4      | 30.9352         | 39.06                | Pk  | 27.5           | -31.9        | 34.66                      | 40                 | -5.34       | 0-360          | 100         | V        |
| 5      | 59.5877         | 38.37                | Pk  | 13.5           | -31.6        | 20.27                      | 40                 | -19.73      | 0-360          | 100         | V        |
| 3      | 204.5006        | 34.95                | Pk  | 17.8           | -30.4        | 22.35                      | 43.52              | -21.17      | 0-360          | 100         | H        |
| 6      | 203.2004        | 34.79                | Pk  | 18.5           | -30.4        | 22.89                      | 43.52              | -20.63      | 0-360          | 100         | V        |

Pk - Peak detector

### Radiated Emissions

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T243 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 4      | 30.7274         | 34.58                | Qp  | 27.6           | -31.9        | 30.28                      | 40                 | -9.72       | 168            | 100         | V        |

Qp - Quasi-Peak detector

## 8.6. AVERAGE EMISSIONS ABOVE 960 MHz

### LIMITS

### FCC

15.519 (c)

| Frequency in MHz | EIRP in dBm |
|------------------|-------------|
| 960-1610         | -75.3       |
| 1610-1990        | -63.3       |
| 1990-3100        | -61.3       |
| 3100-10600       | -41.3       |
| Above 10600      | -61.3       |

§15.519 (d) In addition to the radiated emission limits specified in the table in paragraph (c) of this section, UWB transmitters operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of no less than 1 kHz:

| Frequency in MHz | EIRP in dBm |
|------------------|-------------|
| 1164-1240        | -85.3       |
| 1559-1610        | -85.3       |

### RSS-220

Section 5.3.1 (d) Radiated emissions above 960 MHz from a device shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz.

| <b>Hand-held (Outdoor) Communication, Measurement, Location Sensing, and Tracking Devices</b> |                                             |
|-----------------------------------------------------------------------------------------------|---------------------------------------------|
| Frequency                                                                                     | E.i.r.p. in a Resolution Bandwidth of 1 MHz |
| 960-1 610 MHz                                                                                 | -75.3 dBm                                   |
| 1.61-4.75 GHz                                                                                 | -70.0 dBm                                   |
| 4.75-10.6 GHz                                                                                 | -41.3 dBm                                   |
| Above 10.6 GHz                                                                                | -61.3 dBm                                   |

Section 5.3.1 (e) In addition to the limits specified in paragraph (d) of this section, radiated emissions shall not exceed the following average limits when measured using a resolution bandwidth greater than or equal to 1 kHz. The measurements shall demonstrate compliance with the stated limits at whatever resolution bandwidth is used.

| Frequency       | E.i.r.p. in a Resolution Bandwidth of no less than 1 kHz |
|-----------------|----------------------------------------------------------|
| 1 164-1 240 MHz | -85.3 dBm                                                |
| 1 559-1 610 MHz | -85.3 dBm                                                |

## **TEST PROCEDURE**

ANSI C63.10 Clause 10.2 and 10.3.

RSS-220 Annex

### **PROCEDURE FOR 0.96 TO 6 GHz**

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 0.5m from the EUT.

A low pass filter with a cut off frequency of 6 GHz is used to suppress the fundamental and perform measurement for 0.96 - 6 GHz.

### **RESULTS FOR 6 GHz TO 9 GHz**

The 6 - 9 GHz frequency band is covered in Section 8.2.

### **PROCEDURE FOR 9 GHz TO 18 GHz**

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 0.5m from the EUT.

A high pass filter with pass band frequency beyond 9 GHz is used to suppress the fundamental and perform measurement for 9 - 18 GHz.

### **PROCEDURE FOR 1.164 TO 1.240 GHz**

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 0.5m from the EUT.

RBW = 120 kHz & VBW = 360 kHz were used at pre-scan.

A low pass filter with a cut off frequency of 6 GHz is used to suppress the fundamental and perform measurement for 1.164 – 1.240 GHz.

### **PROCEDURE FOR 1.559 TO 1.610 GHz**

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 0.5m from the EUT.

RBW = 120 kHz & VBW = 360 kHz were used at pre-scan.

A low pass filter with a cut off frequency of 6 GHz is used to suppress the fundamental and perform measurement for 1.559 – 1.610 GHz.



## **PROCEDURE FOR 18 GHz TO 40 GHz**

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 0.5m from the EUT.

A final test is made at any frequencies at which emissions are found. During this final scan, the antenna is kept no further from the EUT than the maximum distance calculated for each band that yields a minimum system noise floor.

Distance Correction Factor from 3m to 0.5m =  $20 \cdot \log(0.5\text{m}/3\text{m}) = -15.56 \text{ dB}$

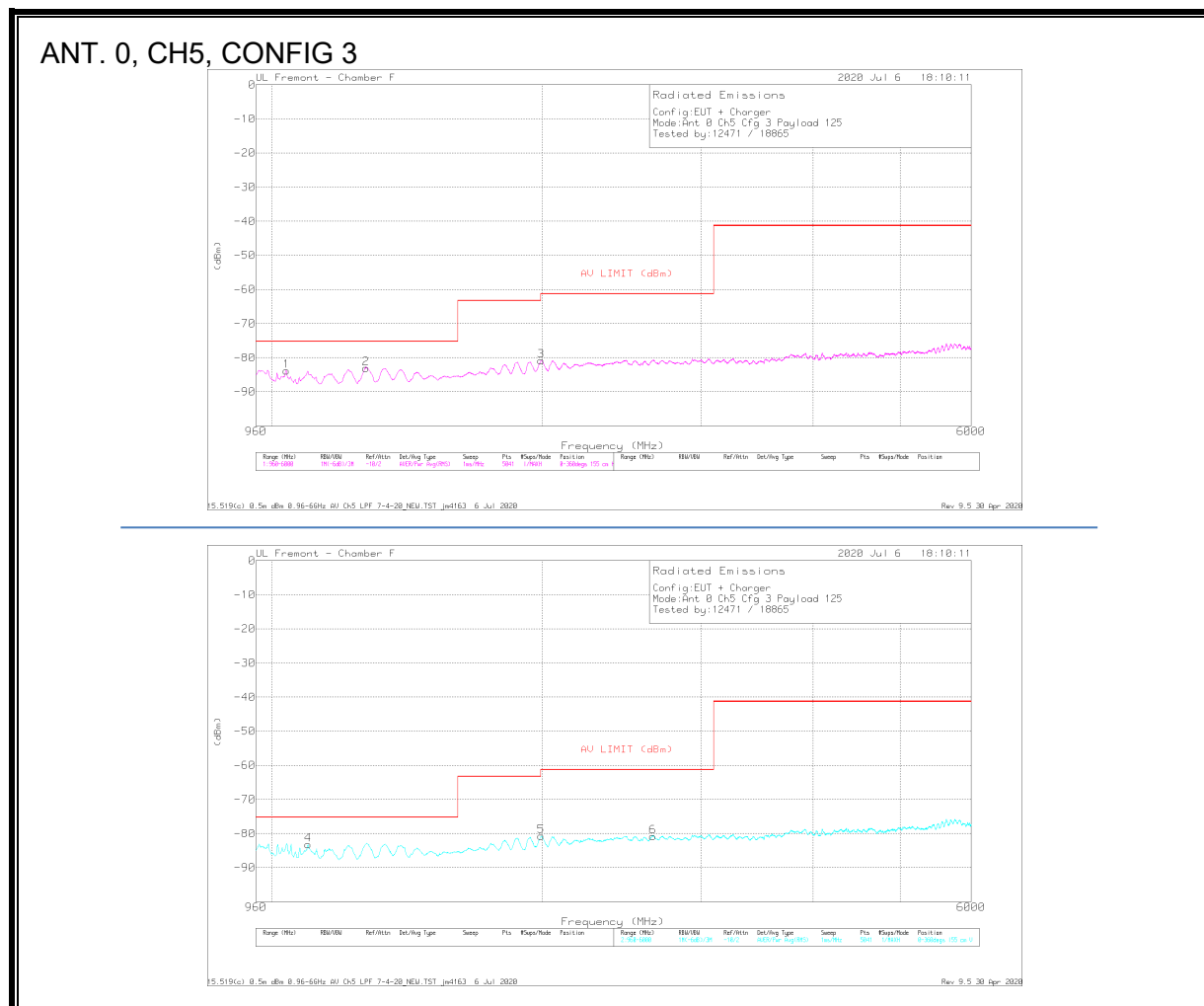
## **RESULTS**

### **Average Emissions Summary**

| Ant | CH | Config | Payload | Power Setting | Frequency Range |                 |               |             |             |
|-----|----|--------|---------|---------------|-----------------|-----------------|---------------|-------------|-------------|
|     |    |        |         |               | 1164 - 1240 MHz | 1559 - 1610 MHz | 0.96 - 18 GHz | 18 - 26 GHz | 26 - 40 GHz |
| 0   | 5  | 3      | 125     | Max           | PASS            | PASS            | PASS          | PASS        | PASS        |
| 0   | 9  | 3      | 125     | Max           | PASS            | PASS            | PASS          | PASS        | PASS        |
| 1   | 5  | 3      | 125     | Max           | PASS            | PASS            | PASS          | PASS        | PASS        |
| 1   | 9  | 3      | 125     | Max           | PASS            | PASS            | PASS          | PASS        | PASS        |
| 2   | 5  | 3      | 125     | Max           | PASS            | PASS            | PASS          | PASS        | PASS        |
| 2   | 9  | 3      | 125     | Max           | PASS            | PASS            | PASS          | PASS        | PASS        |

## 8.6.1. AVERAGE EMISSIONS, 0.96 – 6 GHz

### 8.6.1.1. FCC15.519 (C)



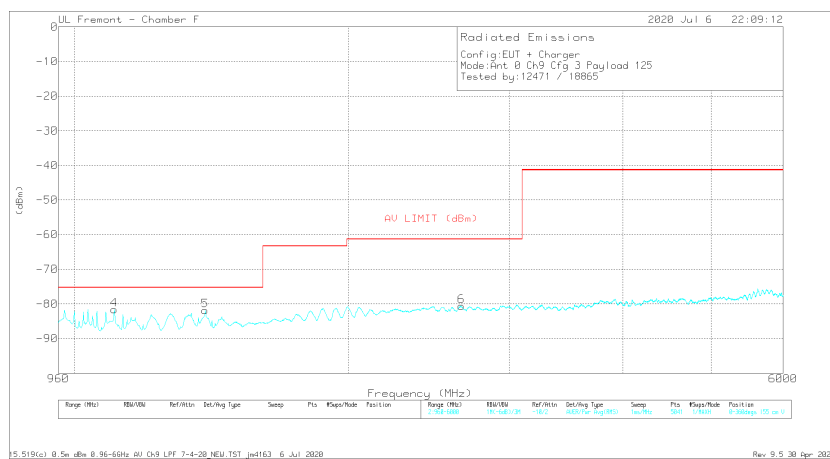
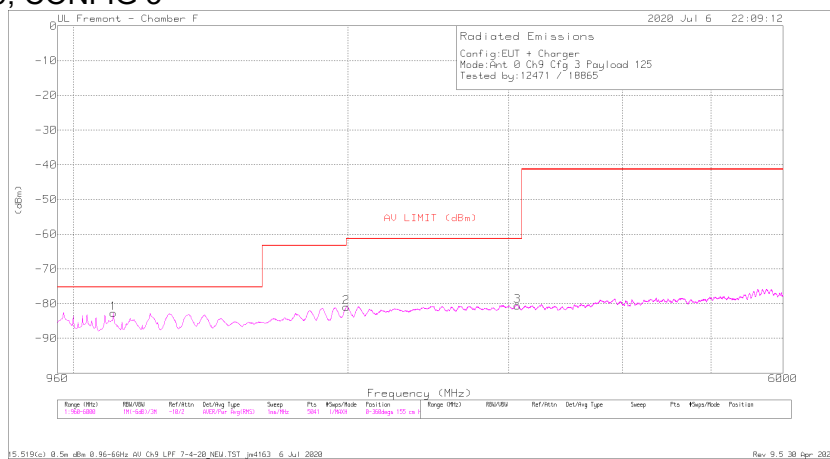
### Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5_LPF (dB) | EIRP (dBm) | FCC15.519(c) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 1038            | -61.96              | RMS | 26.9          | -45.2        | -15.6                | 11.8                   | .2           | -83.86     | -75.3                       | -8.56       | 242            | 155         | H        |
| 2      | 1272            | -62.86              | RMS | 28.9          | -45.4        | -15.6                | 11.8                   | .1           | -83.06     | -75.3                       | -7.76       | 86             | 155         | H        |
| 3      | 1993            | -63.3               | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -80.9      | -61.3                       | -19.6       | 110            | 155         | H        |
| 4      | 1098            | -61.6               | RMS | 27.5          | -45.5        | -15.6                | 11.8                   | .2           | -83.2      | -75.3                       | -7.9        | 206            | 155         | V        |
| 5      | 1994            | -63.11              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -80.71     | -61.3                       | -19.41      | 140            | 155         | V        |
| 6      | 2655            | -64.54              | RMS | 32.4          | -45          | -15.6                | 11.8                   | .1           | -80.84     | -61.3                       | -19.54      | 75             | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.

### ANT. 0, CH9, CONFIG 3



### Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9_LPF (dB) | EIRP (dBm) | FCC15.519(c) ERP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|------------|----------------------------|-------------|----------------|-------------|----------|
| 1      | 1106            | -61.22              | RMS | 27.5          | -45.4        | -15.6                | 11.8                   | .2           | -82.72     | -75.3                      | -7.42       | 242            | 155         | H        |
| 2      | 1991            | -63.34              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -80.94     | -61.3                      | -19.64      | 220            | 155         | H        |
| 3      | 3068            | -66.11              | RMS | 33            | -44.1        | -15.6                | 11.8                   | .4           | -80.61     | -61.3                      | -19.31      | 197            | 155         | H        |
| 4      | 1106            | -60.14              | RMS | 27.5          | -45.4        | -15.6                | 11.8                   | .2           | -81.64     | -75.3                      | -6.34       | 229            | 155         | V        |
| 5      | 1392            | -61.61              | RMS | 28.7          | -45.2        | -15.6                | 11.8                   | .1           | -81.81     | -75.3                      | -6.51       | 206            | 155         | V        |
| 6      | 2660            | -64.3               | RMS | 32.5          | -45.1        | -15.6                | 11.8                   | .1           | -80.6      | -61.3                      | -19.3       | 52             | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

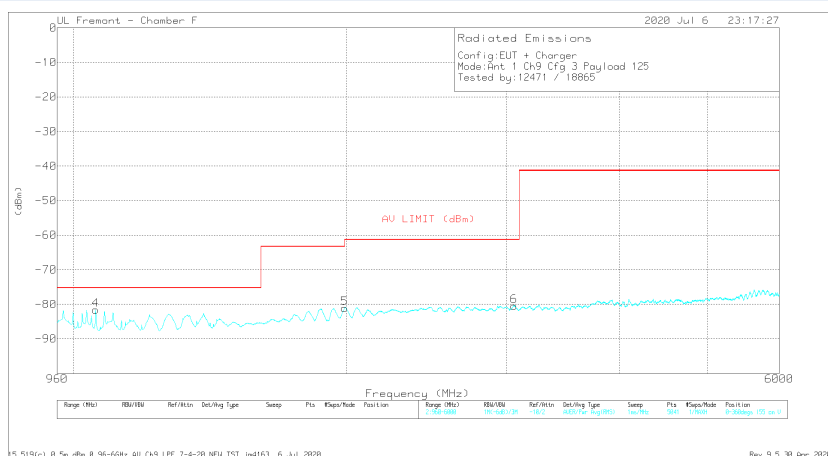
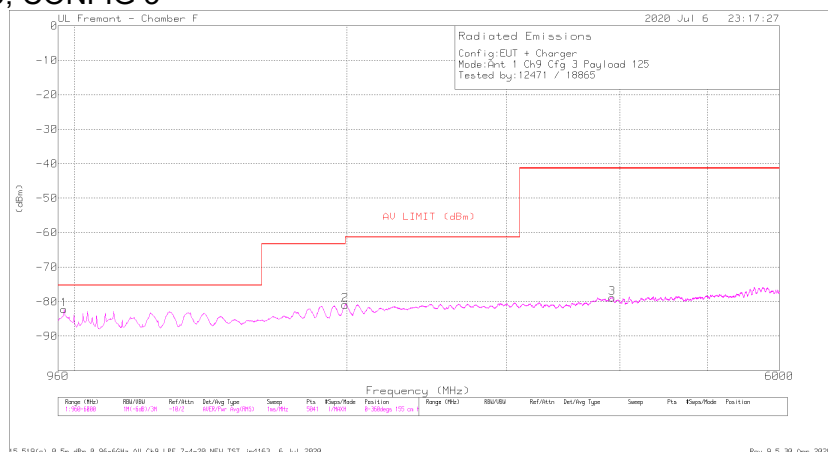


| Marker | Frequency (MHz) | Measuring Meter (MHz) | Det | AF 17711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CHS_LPF (dB) | ERP (dBm) | FC15.419(c) ERP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|-----------------------|-----|----------------|--------------|----------------------|------------------------|--------------|-----------|---------------------------|-------------|----------------|-------------|----------|
| 1      | 1105            | -61.77                | RMS | 27.5           | -45.4        | -15.6                | 11.8                   | 2            | -83.27    | -75.3                     | -7.97       | 242            | 155         | H        |
| 2      | 1996            | -63.29                | RMS | 31.3           | -45.4        | -15.6                | 11.8                   | 3            | -80.95    | -61.3                     | -19.59      | 0              | 155         | H        |
| 3      | 3058            | -65.93                | RMS | 35.9           | -45.4        | -15.6                | 11.8                   | 5            | -80.95    | -61.3                     | -19.03      | 242            | 155         | H        |
| 4      | 1105            | -60.2                 | RMS | 27.5           | -45.4        | -15.6                | 11.8                   | 2            | -81.7     | -75.3                     | -6.4        | 228            | 155         | V        |
| 5      | 1390            | -62.45                | RMS | 28.8           | -45.2        | -15.6                | 11.8                   | 2            | -82.45    | -75.3                     | -7.15       | 207            | 155         | V        |
| 6      | 2716            | -64.68                | RMS | 32.3           | -44.9        | -15.6                | 11.8                   | 2            | -80.88    | -61.3                     | -19.58      | 338            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.

### ANT. 1, CH9, CONFIG 3



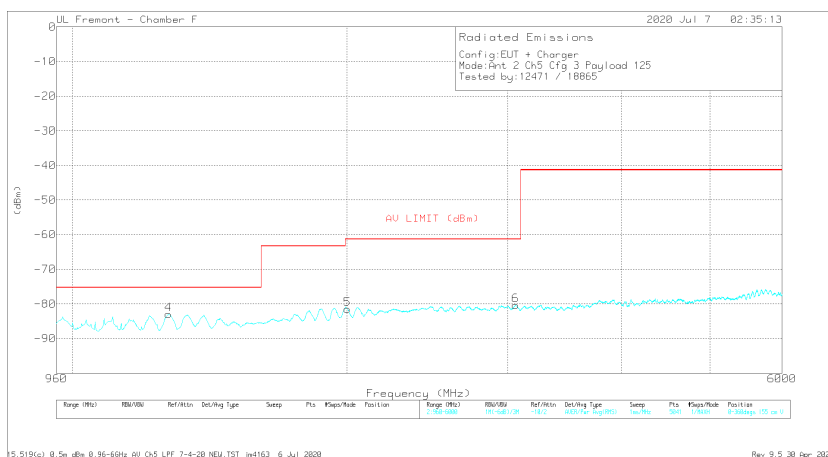
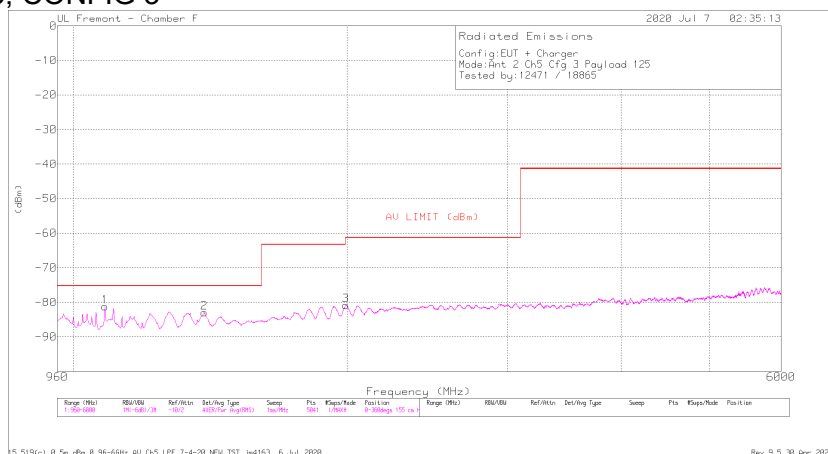
### Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9_LPF (dB) | EIRP (dBm) | FCC15.519(c) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 975             | -61.27              | RMS | 27.8          | -45.1        | -15.6                | 11.8                   | .2           | -82.17     | -75.3                       | -6.87       | 251            | 155         | H        |
| 2      | 1992            | -63.31              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -80.91     | -61.3                       | -19.61      | 53             | 155         | H        |
| 3      | 3924            | -66.77              | RMS | 33.7          | -42.6        | -15.6                | 11.8                   | .6           | -78.87     | -41.3                       | -37.57      | 229            | 155         | H        |
| 4      | 1059            | -59.28              | RMS | 26.8          | -45.4        | -15.6                | 11.8                   | .1           | -81.58     | -75.3                       | -6.28       | 220            | 155         | V        |
| 5      | 1991            | -63.45              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -81.05     | -61.3                       | -19.75      | 242            | 155         | V        |
| 6      | 3061            | -66.1               | RMS | 33            | -44.1        | -15.6                | 11.8                   | .5           | -80.5      | -61.3                       | -19.2       | 286            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

## ANT. 2, CH5, CONFIG 3



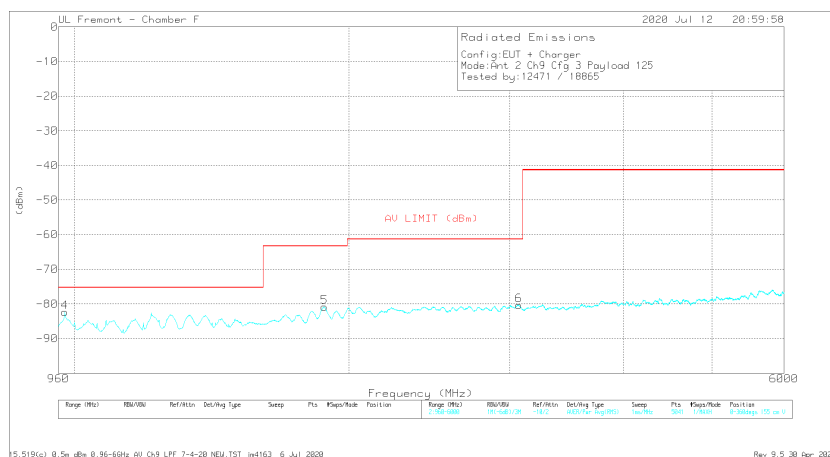
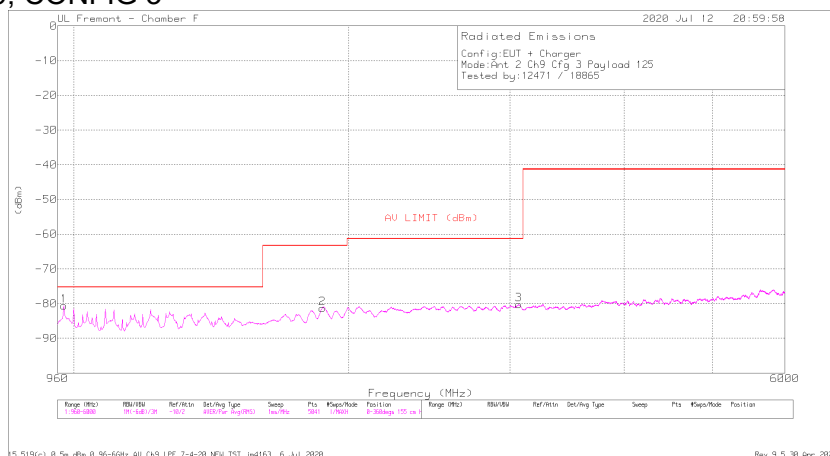
## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5_LPF (dB) | EIRP (dBm) | FCC15.519(c) ERP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|------------|----------------------------|-------------|----------------|-------------|----------|
| 1      | 1083            | -59.66              | RMS | 27.4          | -45.4        | -15.6                | 11.8                   | .2           | -81.26     | -75.3                      | -5.96       | 197            | 155         | H        |
| 2      | 1393            | -62.73              | RMS | 28.7          | -45.2        | -15.6                | 11.8                   | .1           | -82.93     | -75.3                      | -7.63       | 176            | 155         | H        |
| 3      | 1994            | -63.24              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -80.84     | -61.3                      | -19.54      | 308            | 155         | H        |
| 4      | 1274            | -62.99              | RMS | 29            | -45.3        | -15.6                | 11.8                   | .1           | -82.99     | -75.3                      | -7.69       | 141            | 155         | V        |
| 5      | 2002            | -63.83              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -81.43     | -61.3                      | -20.13      | 295            | 155         | V        |
| 6      | 3062            | -65.93              | RMS | 33            | -44.1        | -15.6                | 11.8                   | .5           | -80.33     | -61.3                      | -19.03      | 339            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.

## ANT. 2, CH9, CONFIG 3



## Trace Markers

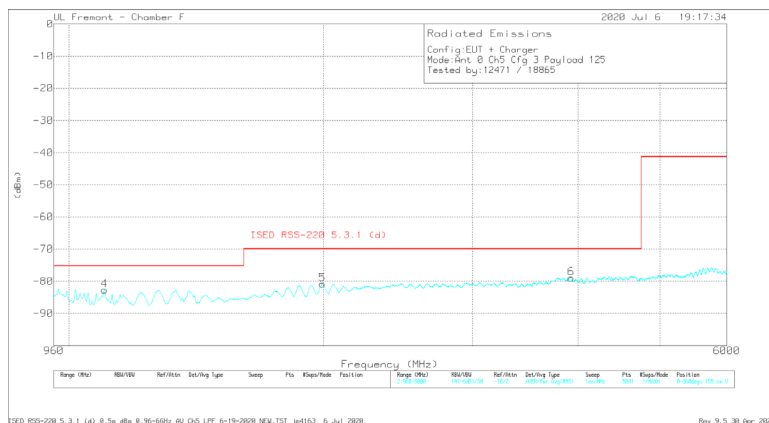
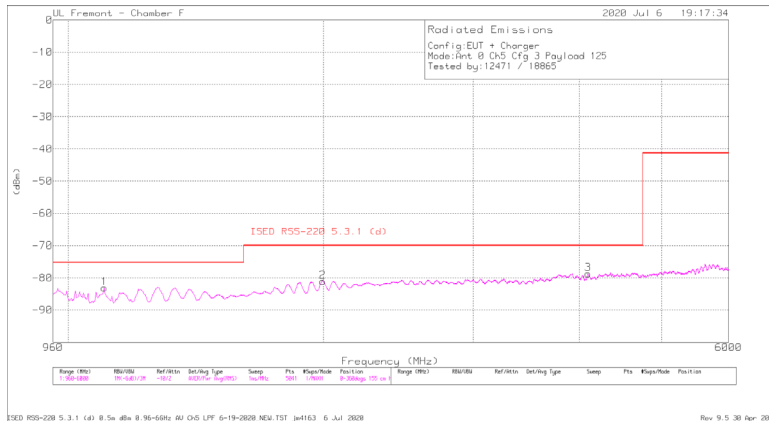
| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9_LPF (dB) | EIRP (dBm) | FCC15.519(c) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 976             | -59.65              | RMS | 27.8          | -45.1        | -15.6                | 11.8                   | .2           | -80.55     | -75.3                       | -5.25       | 110            | 155         | H        |
| 2      | 1871            | -63.56              | RMS | 30.8          | -45.1        | -15.6                | 11.8                   | .3           | -81.36     | -63.3                       | -18.06      | 44             | 155         | H        |
| 3      | 3068            | -65.78              | RMS | 33            | -44.1        | -15.6                | 11.8                   | .4           | -80.28     | -61.3                       | -18.98      | 242            | 155         | H        |
| 4      | 976             | -61.43              | RMS | 27.8          | -45.1        | -15.6                | 11.8                   | .2           | -82.33     | -75.3                       | -7.03       | 119            | 155         | V        |
| 5      | 1879            | -63.07              | RMS | 30.7          | -45          | -15.6                | 11.8                   | .3           | -80.87     | -63.3                       | -17.57      | 229            | 155         | V        |
| 6      | 3071            | -65.89              | RMS | 33            | -44.1        | -15.6                | 11.8                   | .4           | -80.39     | -61.3                       | -19.09      | 317            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

## 8.6.1.2. RSS-220 5.3.1 (d)

### ANT. 0, CH5, CONFIG 3



### Trace Markers

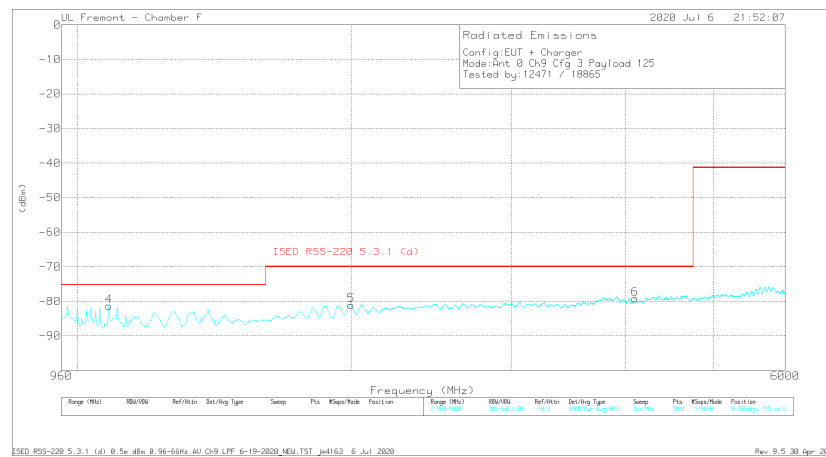
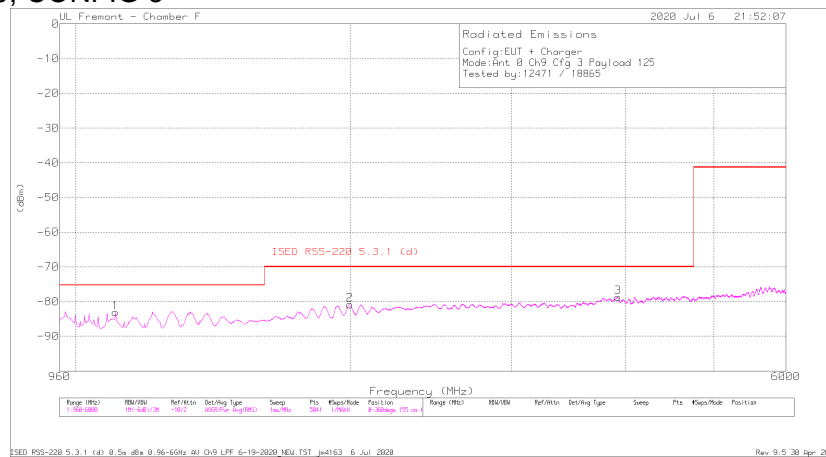
| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5_LPF (dB) | Corrected Reading (dBm) | ISSED RSS-220 5.3.1 (d) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|-------------------------|-------------------------|-------------|----------------|-------------|----------|
| 1      | 1103            | -61.54              | RMS | 27.5          | -45.4        | -15.6                | 11.8                   | .2           | -83.04                  | -75.3                   | -7.74       | 241            | 155         | H        |
| 2      | 1996            | -63.45              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -81.05                  | -70                     | -11.05      | 1              | 155         | H        |
| 3      | 4097            | -66.28              | RMS | 33.8          | -42.9        | -15.6                | 11.8                   | .5           | -78.68                  | -70                     | -8.68       | 198            | 155         | H        |
| 4      | 1102            | -61.11              | RMS | 27.5          | -45.5        | -15.6                | 11.8                   | .2           | -82.71                  | -75.3                   | -7.41       | 229            | 155         | V        |
| 5      | 1995            | -63.2               | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -80.8                   | -70                     | -10.8       | 97             | 155         | V        |
| 6      | 3929            | -67.13              | RMS | 33.7          | -42.2        | -15.6                | 11.8                   | .5           | -78.93                  | -70                     | -8.93       | 31             | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.



## ANT. 0, CH9, CONFIG 3



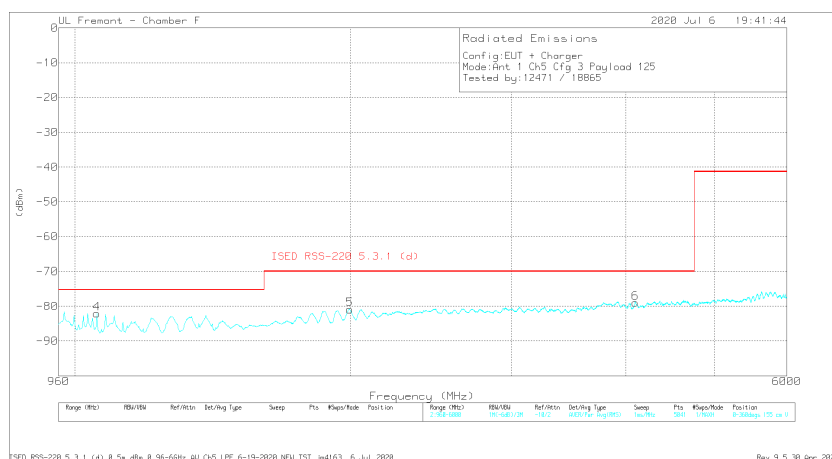
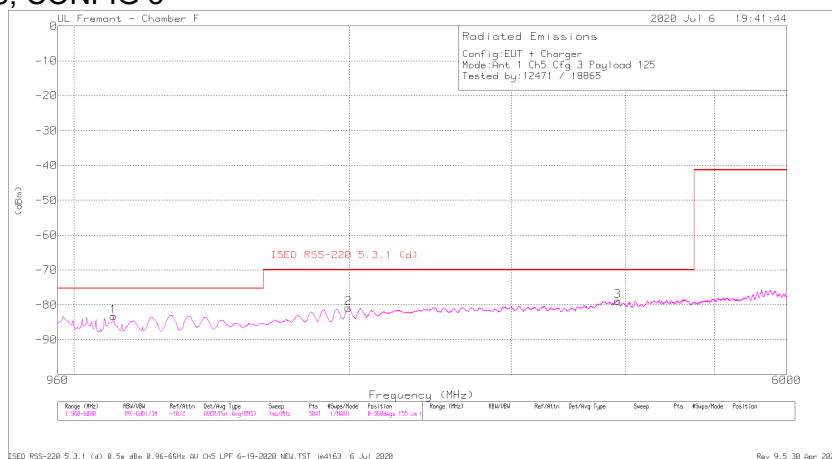
## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9_LPF (dB) | Corrected Reading (dBm) | ISED RSS-228 5.3.1 (d) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|-------------------------|------------------------|-------------|----------------|-------------|----------|
| 1      | 1106            | -61.59              | RMS | 27.5          | -45.4        | -15.6                | 11.8                   | .2           | -83.09                  | -75.3                  | -7.79       | 251            | 155         | H        |
| 2      | 1998            | -63.29              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -80.89                  | -70                    | -10.89      | 206            | 155         | H        |
| 3      | 3928            | -66.98              | RMS | 33.7          | -42.3        | -15.6                | 11.8                   | .6           | -78.78                  | -70                    | -8.78       | 97             | 155         | H        |
| 4      | 1083            | -59.79              | RMS | 27.4          | -45.4        | -15.6                | 11.8                   | .2           | -81.39                  | -75.3                  | -6.09       | 220            | 155         | V        |
| 5      | 2000            | -63.55              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -81.15                  | -70                    | -11.15      | 87             | 155         | V        |
| 6      | 4103            | -66.84              | RMS | 33.8          | -43          | -15.6                | 11.8                   | .6           | -79.24                  | -70                    | -9.24       | 154            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

## ANT. 1, CH5, CONFIG 3



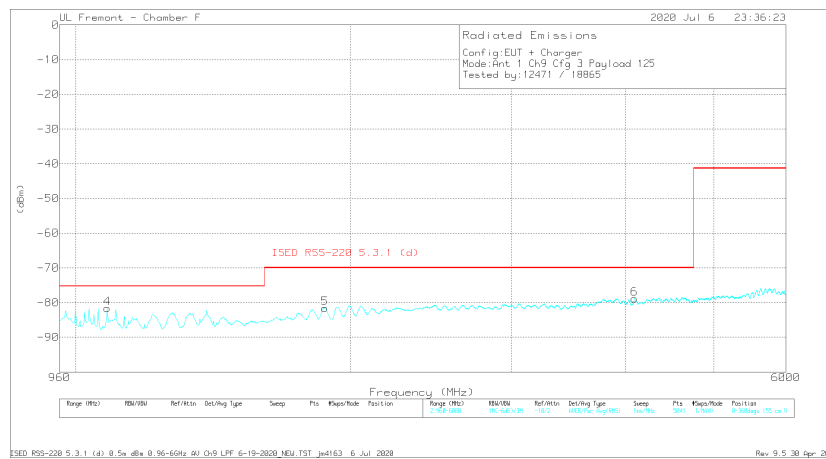
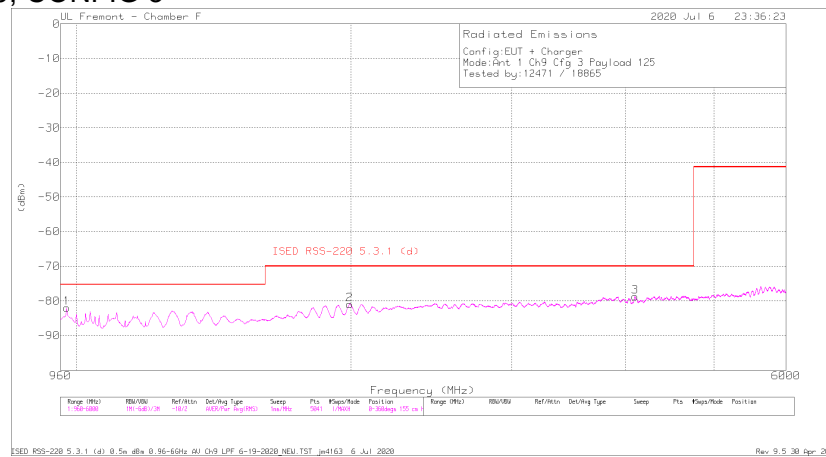
## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5_LPF (dB) | Corrected Reading (dBm) | ISSED RSS-220 5.3.1 (d) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|-------------------------|-------------------------|-------------|----------------|-------------|----------|
| 1      | 1105            | -61.75              | RMS | 27.5          | -45.4        | -15.6                | 11.8                   | .2           | -83.25                  | -75.3                   | -7.95       | 251            | 155         | H        |
| 2      | 1993            | -63.29              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -80.89                  | -70                     | -10.89      | 339            | 155         | H        |
| 3      | 3924            | -66.7               | RMS | 33.7          | -42.6        | -15.6                | 11.8                   | .6           | -78.8                   | -70                     | -8.8        | 229            | 155         | H        |
| 4      | 1057            | -59.73              | RMS | 26.7          | -45.4        | -15.6                | 11.8                   | .1           | -82.13                  | -75.3                   | -6.83       | 220            | 155         | V        |
| 5      | 1997            | -63.31              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -80.91                  | -70                     | -10.91      | 132            | 155         | V        |
| 6      | 4098            | -66.53              | RMS | 33.8          | -42.9        | -15.6                | 11.8                   | .5           | -78.93                  | -70                     | -8.93       | 241            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.

## ANT. 1, CH9, CONFIG 3



## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9_LPF (dB) | Corrected Reading (dBm) | ISSED RSS-228 5.3.1 (d) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|-------------------------|-------------------------|-------------|----------------|-------------|----------|
| 1      | 976             | -61.11              | RMS | 27.8          | -45.1        | -15.6                | 11.8                   | .2           | -82.01                  | -75.3                   | -6.71       | 242            | 155         | H        |
| 2      | 1993            | -63.4               | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .3           | -81                     | -70                     | -11         | 176            | 155         | H        |
| 3      | 4098            | -66.3               | RMS | 33.8          | -42.9        | -15.6                | 11.8                   | .5           | -78.7                   | -70                     | -8.7        | 131            | 155         | H        |
| 4      | 1083            | -60.03              | RMS | 27.4          | -45.4        | -15.6                | 11.8                   | .2           | -81.63                  | -75.3                   | -6.33       | 229            | 155         | V        |
| 5      | 1875            | -63.75              | RMS | 30.8          | -45.1        | -15.6                | 11.8                   | .3           | -81.55                  | -70                     | -11.55      | 118            | 155         | V        |
| 6      | 4094            | -66.29              | RMS | 33.8          | -43.1        | -15.6                | 11.8                   | .5           | -78.89                  | -70                     | -8.89       | 163            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

OL Fremant - Chamber F

2020 Jul 7 02:51:37

Radiated Emissions  
Config: EUT + Charger  
Mode: Int 2 Ch5 Cfg 3 Payload 125  
Tested by: 12471 / 18865

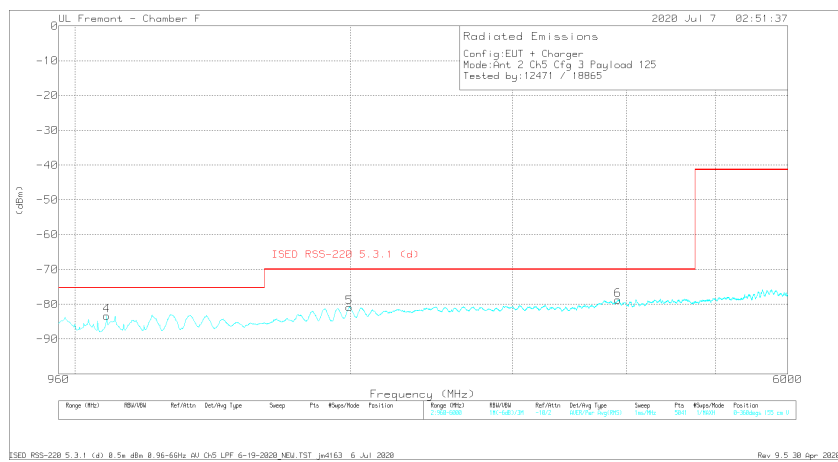
ISED RSS-220 5.3.1 (d)

Frequency (MHz)

| Range (MHz) | Ref/Att     | Ref/Att | Det/Ref Type | Sweep   | Flt     | Wave/Mode | Position | Range (MHz) | Ref/Att     | Ref/Att | Det/Ref Type | Sweep   | Flt     | Wave/Mode | Position |
|-------------|-------------|---------|--------------|---------|---------|-----------|----------|-------------|-------------|---------|--------------|---------|---------|-----------|----------|
| 1-6000      | 100-140/120 | -10/2   | 100/120      | 100/120 | 100/120 | 100/120   | 100/120  | 1-6000      | 100-140/120 | -10/2   | 100/120      | 100/120 | 100/120 | 100/120   | 100/120  |

ISED RSS-220 5.3.1 (d) 8.5w dbr 8.96-65Hz au CH5 LPF 6-19-2020 NCU TST jmd163 6 Jul 2020

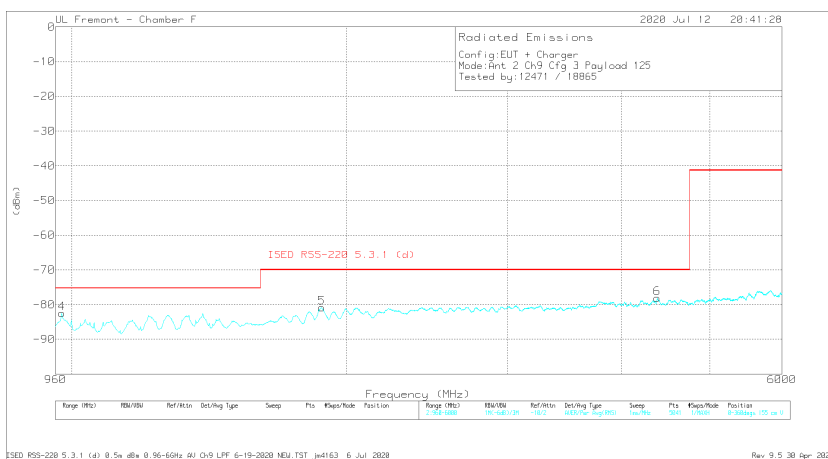
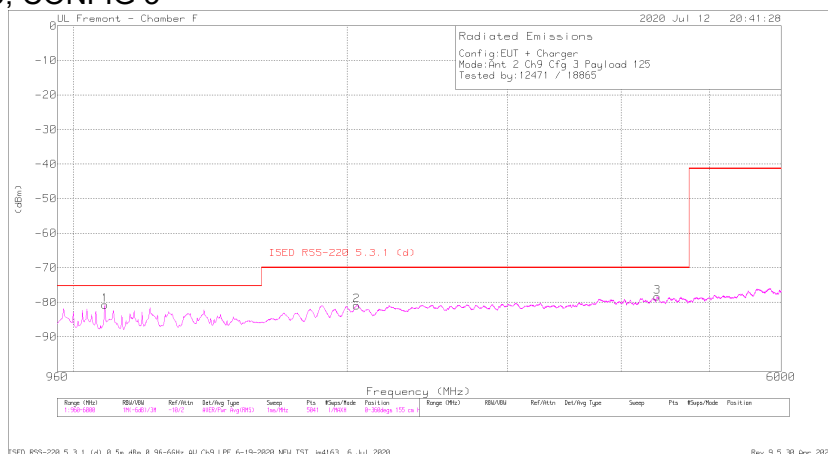
Rev: 9.5.30 Apr 2020



| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | A/ 17111 (dBm) | Amp/CBI (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5_LPF (dB) | Corrected Reading (dBm) | ISED RSS-228 5.3.1 (dB) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|----------------|--------------|----------------------|------------------------|--------------|-------------------------|-------------------------|-------------|----------------|-------------|----------|
| 1      | 1083            | -58.06              | RMS | 27.4           | -45.4        | -15.6                | 11.8                   | 2            | -79.66                  | -75.3                   | -4.36       | 162            | 155         | H        |
| 2      | 1995            | -63.09              | RMS | 31.3           | -45.4        | -15.6                | 11.8                   | 3            | -80.69                  | -70                     | -10.69      | 207            | 155         | H        |
| 3      | 3922            | -66.41              | RMS | 33.7           | -42.8        | -15.6                | 11.8                   | 3            | -78.71                  | -70                     | -8.71       | 368            | 155         | H        |
| 4      | 1083            | -61.68              | RMS | 27.4           | -45.4        | -15.6                | 11.8                   | 2            | -83.28                  | -75.3                   | -7.98       | 154            | 155         | V        |
| 5      | 1993            | -63.26              | RMS | 31.3           | -45.4        | -15.6                | 11.8                   | 3            | -80.86                  | -70                     | -10.86      | 65             | 155         | V        |
| 6      | 3916            | -66.13              | RMS | 33.7           | -43.1        | -15.6                | 11.8                   | 6            | -78.73                  | -70                     | -8.73       | 65             | 155         | V        |

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.

## ANT. 2, CH9, CONFIG 3



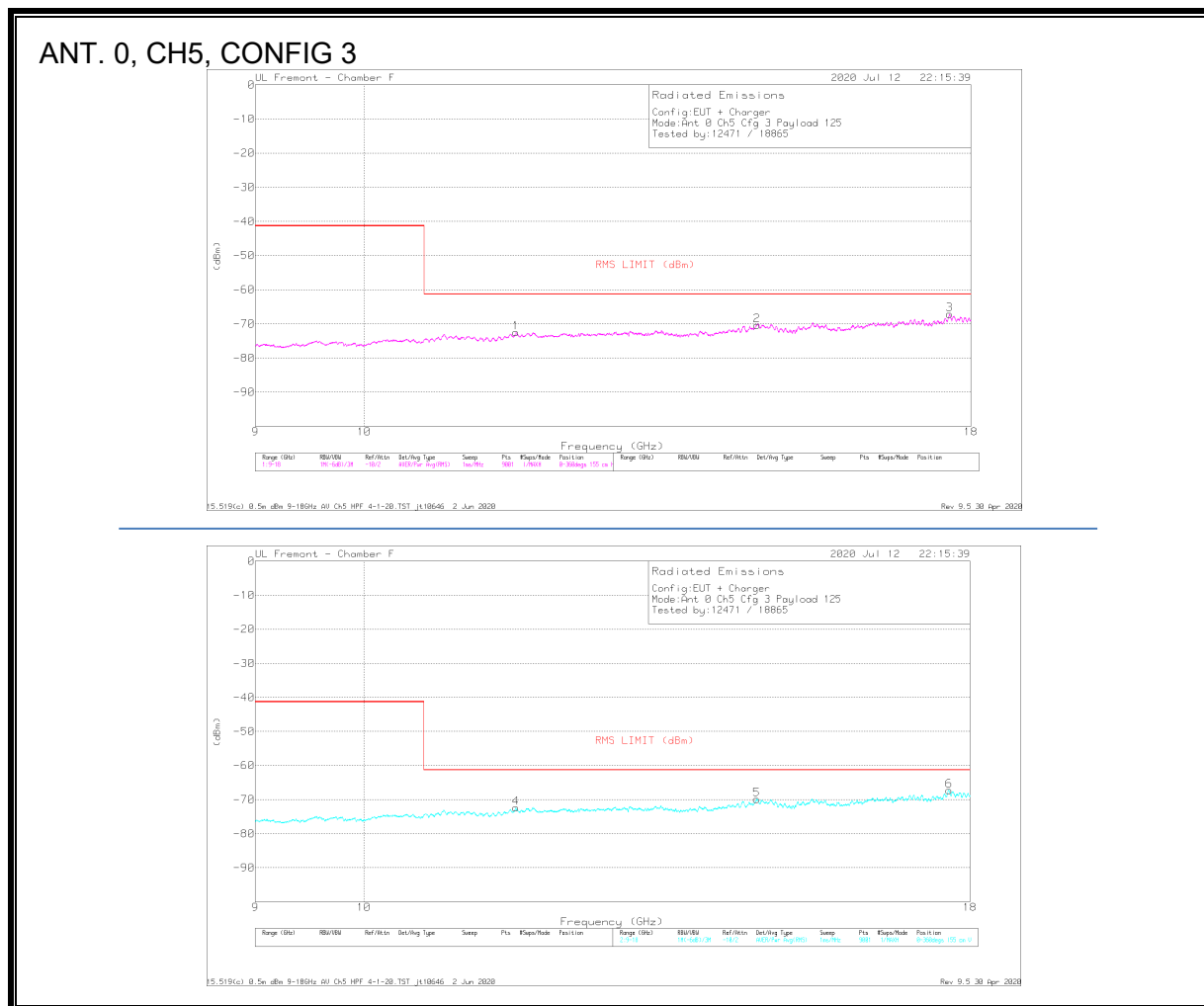
## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9_LPF (dB) | Corrected Reading (dBm) | ISED RSS-228 5.3.1 (d) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|-------------------------|------------------------|-------------|----------------|-------------|----------|
| 1      | 1083            | -59.17              | RMS | 27.4          | -45.4        | -15.6                | 11.8                   | .2           | -80.77                  | -75.3                  | -5.47       | 141            | 155         | H        |
| 2      | 2049            | -63.41              | RMS | 31.3          | -45.4        | -15.6                | 11.8                   | .4           | -80.91                  | -70                    | -10.91      | 53             | 155         | H        |
| 3      | 4383            | -65.58              | RMS | 33.9          | -43.2        | -15.6                | 11.8                   | .3           | -78.38                  | -70                    | -8.38       | 316            | 155         | H        |
| 4      | 976             | -61.54              | RMS | 27.8          | -45.1        | -15.6                | 11.8                   | .2           | -82.44                  | -75.3                  | -7.14       | 132            | 155         | V        |
| 5      | 1879            | -63.09              | RMS | 30.7          | -45          | -15.6                | 11.8                   | .3           | -80.89                  | -70                    | -10.89      | 330            | 155         | V        |
| 6      | 4381            | -65.34              | RMS | 33.9          | -43.2        | -15.6                | 11.8                   | .3           | -78.14                  | -70                    | -8.14       | 110            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

## 8.6.2. AVERAGE EMISSIONS, 9 – 18 GHz



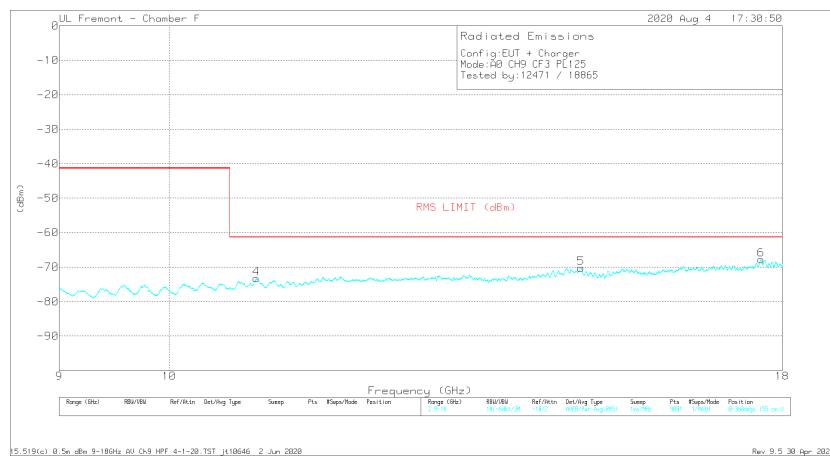
### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5_HP (dB) | EIRP (dBm) | FCC15.519(c) EIRP RMS (dBm) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|-------------|------------|-----------------------------|-------------|-----------------|-------------|----------|
| 1      | 11.585          | -70.72              | RMS | 38.6          | -37.2        | -15.6                | 11.8                   | .6          | -72.52     | -61.3                       | -11.22      | 329             | 155         | H        |
| 2      | 14.63           | -71.1               | RMS | 40.1          | -36.3        | -15.6                | 11.8                   | .7          | -70.4      | -61.3                       | -9.1        | 219             | 155         | H        |
| 3      | 17.634          | -70.86              | RMS | 41.5          | -34.6        | -15.6                | 11.8                   | .6          | -67.16     | -61.3                       | -5.86       | 1               | 155         | H        |
| 4      | 11.589          | -70.77              | RMS | 38.6          | -37          | -15.6                | 11.8                   | .6          | -72.37     | -61.3                       | -11.07      | 251             | 155         | V        |
| 5      | 14.639          | -70.67              | RMS | 40.1          | -36.2        | -15.6                | 11.8                   | .7          | -69.87     | -61.3                       | -8.57       | 251             | 155         | V        |
| 6      | 17.637          | -70.85              | RMS | 41.5          | -34.7        | -15.6                | 11.8                   | .6          | -67.25     | -61.3                       | -5.95       | 163             | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a high-pass filter with pass-band frequency starting at 9 GHz to suppress CH5 fundamental signal.

### ANT. 0, CH9, CONFIG 3



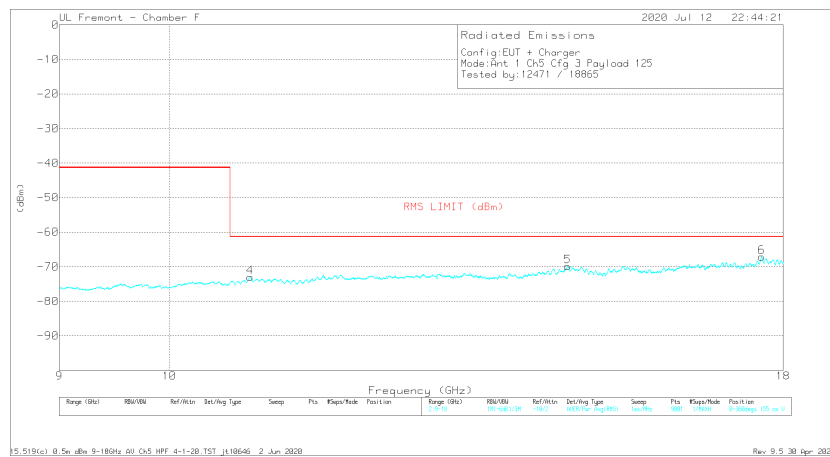
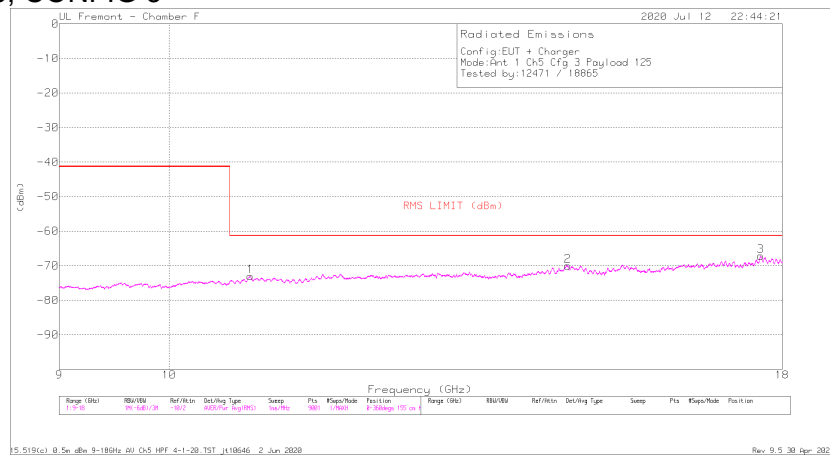
### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9_HPF (dB) | EIRP (dBm) | FCC15.519(c) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 10.873          | -70.06              | RMS | 37.8          | -37.7        | -15.6                | 11.8                   | 0            | -73.76     | -61.3                       | -12.46      | 330            | 155         | H        |
| 2      | 14.841          | -71.12              | RMS | 40.1          | -36.4        | -15.6                | 11.8                   | .8           | -70.42     | -61.3                       | -9.12       | 286            | 155         | H        |
| 3      | 17.627          | -71.62              | RMS | 41.4          | -36.6        | -15.6                | 11.8                   | -4           | -68.22     | -61.3                       | -6.92       | 220            | 155         | H        |
| 4      | 10.872          | -69.6               | RMS | 37.8          | -37.7        | -15.6                | 11.8                   | 0            | -73.3      | -61.3                       | -12         | 75             | 155         | V        |
| 5      | 14.841          | -70.92              | RMS | 40.1          | -36.4        | -15.6                | 11.8                   | .8           | -70.22     | -61.3                       | -8.92       | 53             | 155         | V        |
| 6      | 17.637          | -71.32              | RMS | 41.6          | -34.7        | -15.6                | 11.8                   | -5           | -67.82     | -61.3                       | -6.52       | 207            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a high-pass filter with pass-band frequency starting at 9 GHz to suppress CH9 fundamental signal.

### ANT. 1, CH5, CONFIG 3



### Trace Markers

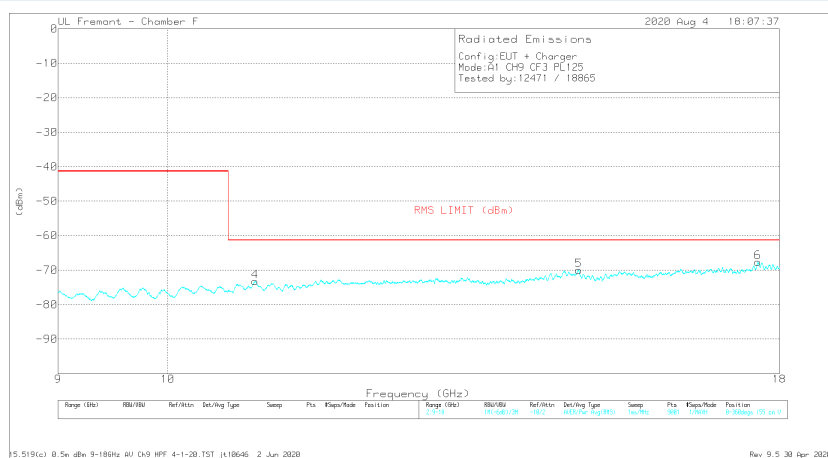
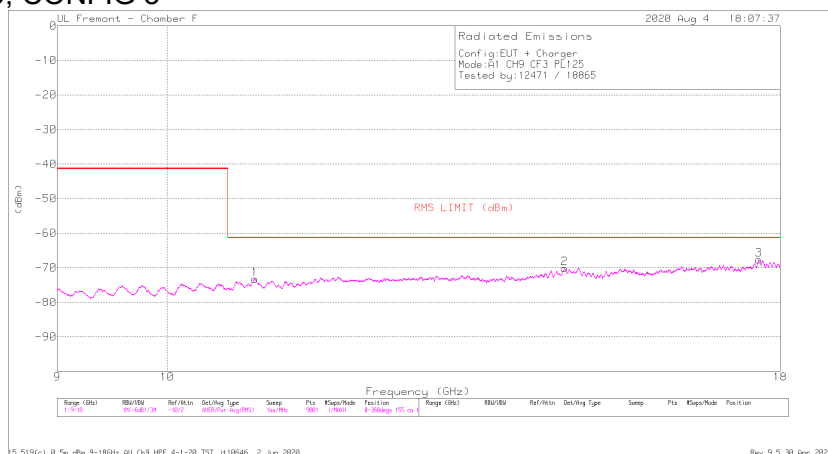
| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5_HPF (dB) | EIRP (dBm) | FCC15.519(c) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 10.808          | -70.68              | RMS | 37.9          | -37          | -15.6                | 11.8                   | .6           | -72.98     | -61.3                       | -11.68      | 251            | 155         | H        |
| 2      | 14.655          | -70.67              | RMS | 40.2          | -36.4        | -15.6                | 11.8                   | .7           | -69.97     | -61.3                       | -8.67       | 30             | 155         | H        |
| 3      | 17.634          | -70.9               | RMS | 41.5          | -34.6        | -15.6                | 11.8                   | .6           | -67.2      | -61.3                       | -5.9        | 141            | 155         | H        |
| 4      | 10.805          | -70.52              | RMS | 37.8          | -37.1        | -15.6                | 11.8                   | .6           | -73.02     | -61.3                       | -11.72      | 154            | 155         | V        |
| 5      | 14.641          | -70.72              | RMS | 40.1          | -36.2        | -15.6                | 11.8                   | .7           | -69.92     | -61.3                       | -8.62       | 88             | 155         | V        |
| 6      | 17.634          | -70.79              | RMS | 41.5          | -34.6        | -15.6                | 11.8                   | .6           | -67.09     | -61.3                       | -5.79       | 43             | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a high-pass filter with pass-band frequency starting at 9 GHz to suppress CH5 fundamental signal.



## ANT. 1, CH9, CONFIG 3



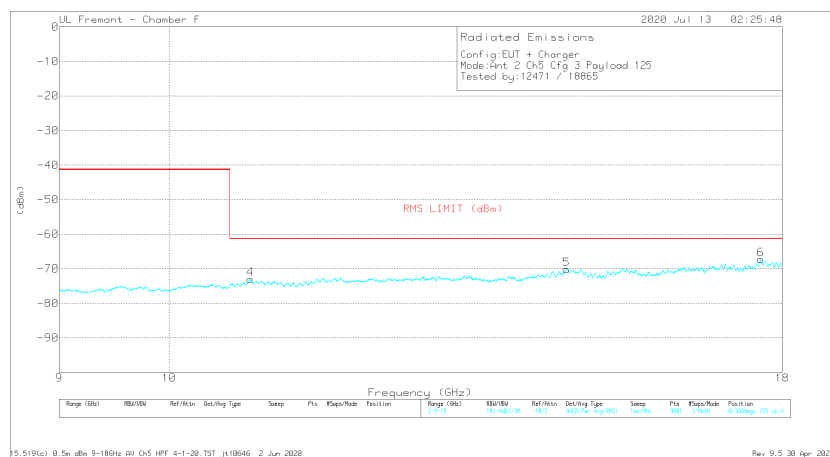
## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9_HPF (dB) | EIRP (dBm) | FCC15.519(c) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 10.876          | -69.51              | RMS | 37.8          | -37.7        | -15.6                | 11.8                   | 0            | -73.21     | -61.3                       | -11.91      | 308            | 155         | H        |
| 2      | 14.638          | -70.68              | RMS | 40.1          | -36.2        | -15.6                | 11.8                   | -4           | -70.18     | -61.3                       | -8.88       | 44             | 155         | H        |
| 3      | 17.635          | -71.27              | RMS | 41.5          | -34.6        | -15.6                | 11.8                   | -5           | -67.67     | -61.3                       | -6.37       | 1              | 155         | H        |
| 4      | 10.877          | -69.55              | RMS | 37.8          | -37.7        | -15.6                | 11.8                   | 0            | -73.25     | -61.3                       | -11.95      | 184            | 155         | V        |
| 5      | 14.843          | -70.69              | RMS | 40.1          | -36.4        | -15.6                | 11.8                   | -8           | -69.99     | -61.3                       | -8.69       | 118            | 155         | V        |
| 6      | 17.635          | -71.27              | RMS | 41.5          | -34.6        | -15.6                | 11.8                   | -5           | -67.67     | -61.3                       | -6.37       | 272            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a high-pass filter with pass-band frequency starting at 9 GHz to suppress CH9 fundamental signal.

## ANT. 2, CH5, CONFIG 3



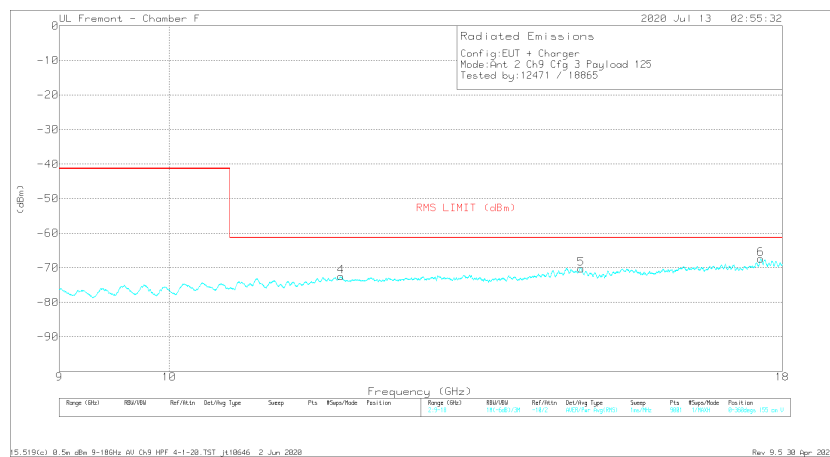
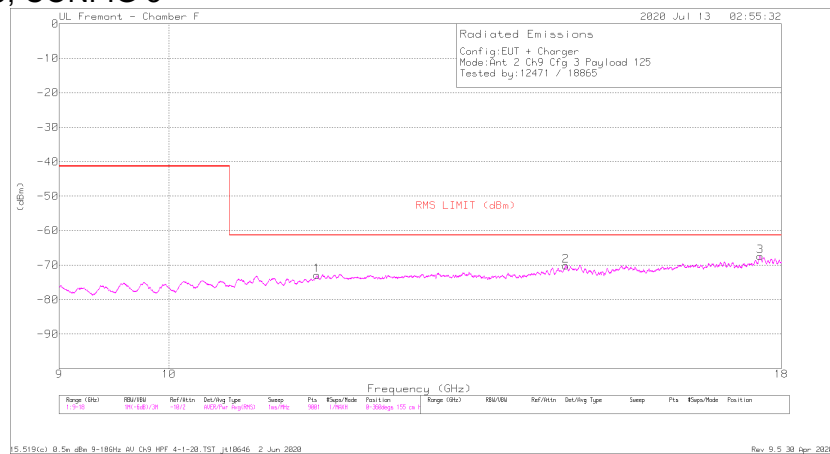
## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5_HPF (dB) | EIRP (dBm) | FCC15.519(c) ERP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|--------------|------------|----------------------------|-------------|----------------|-------------|----------|
| 1      | 10.806          | -70.69              | RMS | 37.9          | -37.1        | -15.6                | 11.8                   | .6           | -73.09     | -61.3                      | -11.79      | 264            | 155         | H        |
| 2      | 14.644          | -70.79              | RMS | 40.1          | -36.2        | -15.6                | 11.8                   | .7           | -69.99     | -61.3                      | -8.69       | 22             | 155         | H        |
| 3      | 17.625          | -70.85              | RMS | 41.4          | -34.7        | -15.6                | 11.8                   | .6           | -67.35     | -61.3                      | -6.05       | 1              | 155         | H        |
| 4      | 10.808          | -70.64              | RMS | 37.9          | -37          | -15.6                | 11.8                   | .6           | -72.94     | -61.3                      | -11.64      | 339            | 155         | V        |
| 5      | 14.64           | -70.9               | RMS | 40.1          | -36.2        | -15.6                | 11.8                   | .7           | -70.1      | -61.3                      | -8.8        | 163            | 155         | V        |
| 6      | 17.632          | -70.91              | RMS | 41.5          | -34.6        | -15.6                | 11.8                   | .6           | -67.21     | -61.3                      | -5.91       | 339            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a high-pass filter with pass-band frequency starting at 9 GHz to suppress CH5 fundamental signal.

## ANT. 2, CH9, CONFIG 3

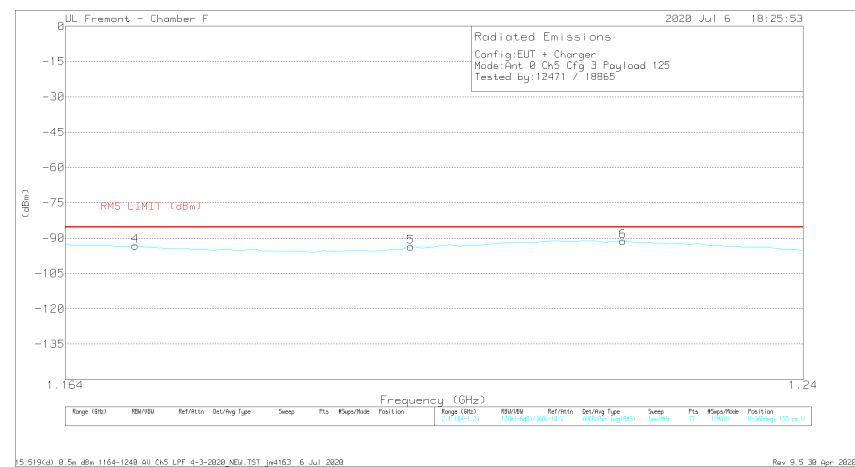


## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9_HP (dB) | Corrected Reading (dBm) | FCC15.519(c) ERP RMS (dBm) | Margin (dB) | Altitude (Dogs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|-------------|-------------------------|----------------------------|-------------|-----------------|-------------|----------|
| 1      | 11.528          | -70.61              | RMS | 38.4          | -37.4        | -15.6                | 11.8                   | .5          | -72.91                  | -61.3                      | -11.61      | 330             | 155         | H        |
| 2      | 14.636          | -70.63              | RMS | 40.1          | -36.2        | -15.6                | 11.8                   | .4          | -70.13                  | -61.3                      | -8.83       | 330             | 155         | H        |
| 3      | 17.637          | -70.92              | RMS | 41.5          | -34.7        | -15.6                | 11.8                   | .5          | -67.42                  | -61.3                      | -6.12       | 263             | 155         | H        |
| 4      | 11.792          | -70.66              | RMS | 38.9          | -37.4        | -15.6                | 11.8                   | .5          | -72.46                  | -61.3                      | -11.16      | 339             | 155         | V        |
| 5      | 14.847          | -70.82              | RMS | 40.1          | -36.5        | -15.6                | 11.8                   | .8          | -70.22                  | -61.3                      | -8.92       | 317             | 155         | V        |
| 6      | 17.635          | -70.98              | RMS | 41.5          | -34.6        | -15.6                | 11.8                   | .5          | -67.38                  | -61.3                      | -6.08       | 317             | 155         | V        |

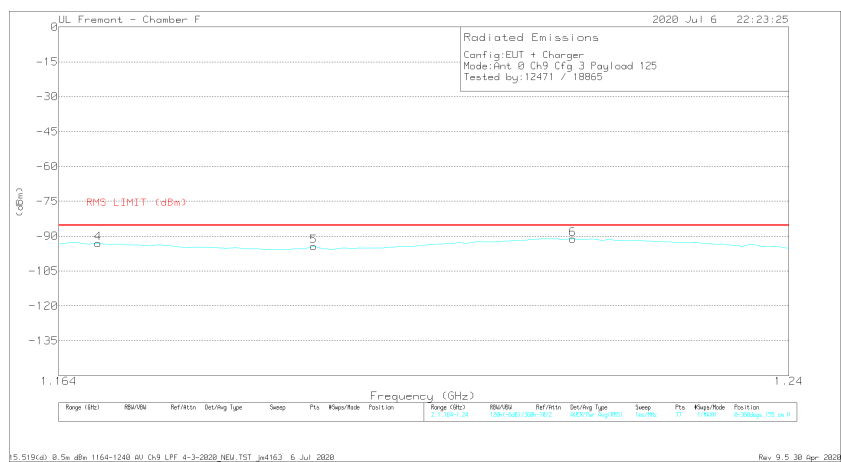
RMS - RMS detection

\*Note: Test was performed with a high-pass filter with pass-band frequency starting at 9 GHz to suppress CH9 fundamental signal.



| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AP 1711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CHS LP Filter | EIRP (dBm) | FC15.519(dB) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 1.173           | -73.49              | RMS | 28.6          | -45.4        | -15.6                | 11.8                   | 1             | -93.99     | -85.3                       | -8.69       | 185            | 155         | H        |
| 2      | 1.212           | -72.26              | RMS | 29.7          | -45.2        | -15.6                | 11.8                   | 2             | -91.36     | -85.3                       | -6.06       | 317            | 155         | H        |
| 3      | 1.235           | -72.74              | RMS | 29.8          | -45.4        | -15.6                | 11.8                   | 2             | -91.8      | -85.3                       | -6.5        | 119            | 155         | H        |
| 4      | 1.171           | -72.74              | RMS | 29.6          | -45.4        | -15.6                | 11.8                   | 1             | -93.24     | -85.3                       | -7.94       | 88             | 155         | V        |
| 5      | 1.199           | -74.48              | RMS | 29.6          | -45.1        | -15.6                | 11.8                   | 1             | -93.68     | -85.3                       | -8.38       | 176            | 155         | V        |
| 6      | 1.221           | -72.1               | RMS | 29.9          | -45.3        | -15.6                | 11.8                   | 2             | -91.1      | -85.3                       | -5.8        | 0              | 155         | V        |

## ANT. 0, CH9, CONFIG 3



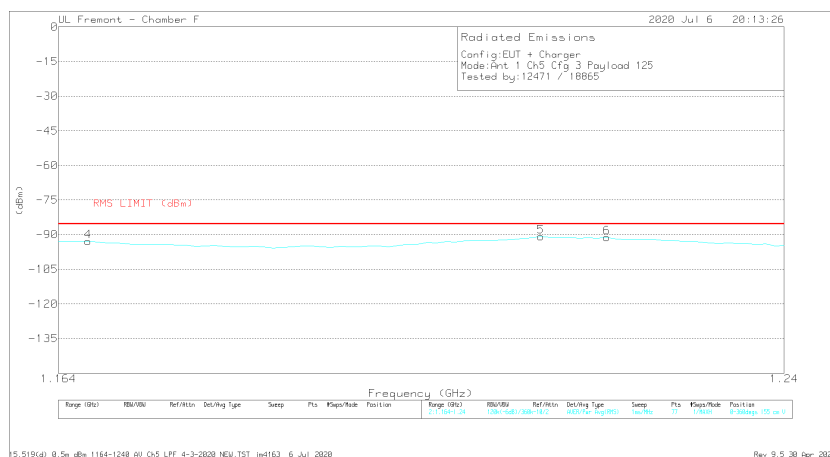
## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9 LP Filter | EIRP (dBm) | FCC15.519(d) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 1.171           | -72.81              | RMS | 28.6          | -45.4        | -15.6                | 11.8                   | .1            | -93.31     | -85.3                       | -8.01       | 75             | 155         | H        |
| 2      | 1.19            | -74.47              | RMS | 29.1          | -45.2        | -15.6                | 11.8                   | .1            | -94.27     | -85.3                       | -8.97       | 185            | 155         | H        |
| 3      | 1.213           | -71.73              | RMS | 29.7          | -45.2        | -15.6                | 11.8                   | .2            | -90.83     | -85.3                       | -5.53       | 185            | 155         | H        |
| 4      | 1.168           | -72.57              | RMS | 28.6          | -45.4        | -15.6                | 11.8                   | .1            | -93.07     | -85.3                       | -7.77       | 175            | 155         | V        |
| 5      | 1.19            | -74.61              | RMS | 29.1          | -45.2        | -15.6                | 11.8                   | .1            | -94.41     | -85.3                       | -9.11       | 242            | 155         | V        |
| 6      | 1.217           | -72.35              | RMS | 29.9          | -45.2        | -15.6                | 11.8                   | .2            | -91.25     | -85.3                       | -5.95       | 1              | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

## ANT. 1, CH5, CONFIG 3



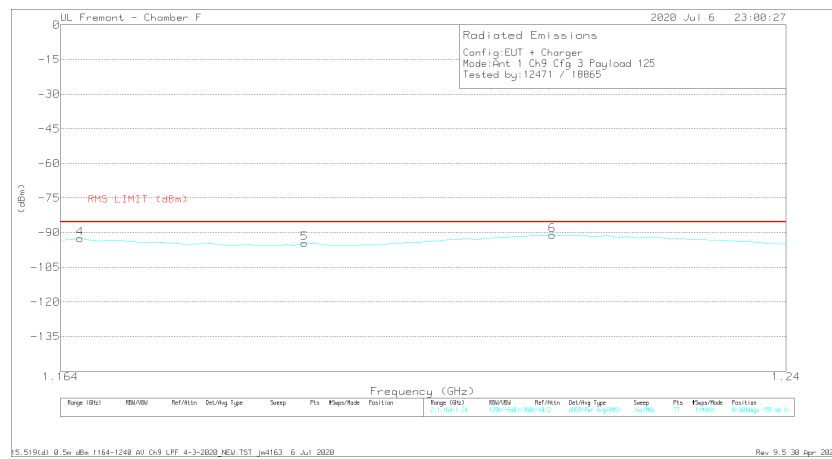
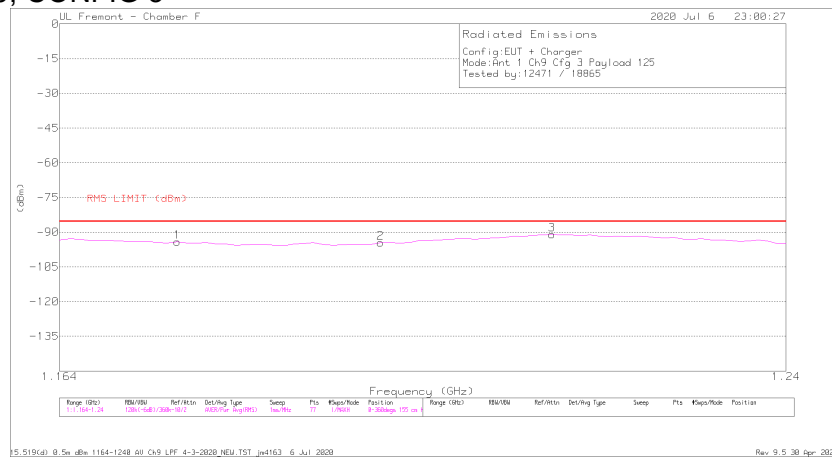
## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5 LP Filter | EIRP (dBm) | FCC15.519(d) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 1.168           | -72.55              | RMS | 28.6          | -45.4        | -15.6                | 11.8                   | .1            | -93.05     | -85.3                       | -7.75       | 185            | 155         | H        |
| 2      | 1.189           | -75                 | RMS | 29.1          | -45.2        | -15.6                | 11.8                   | .1            | -94.8      | -85.3                       | -9.5        | 228            | 155         | H        |
| 3      | 1.216           | -72.26              | RMS | 29.9          | -45.2        | -15.6                | 11.8                   | .2            | -91.16     | -85.3                       | -5.86       | 317            | 155         | H        |
| 4      | 1.167           | -72.34              | RMS | 28.6          | -45.4        | -15.6                | 11.8                   | .1            | -92.84     | -85.3                       | -7.54       | 242            | 155         | V        |
| 5      | 1.214           | -71.75              | RMS | 29.8          | -45.2        | -15.6                | 11.8                   | .2            | -90.75     | -85.3                       | -5.45       | 242            | 155         | V        |
| 6      | 1.221           | -72.15              | RMS | 29.9          | -45.3        | -15.6                | 11.8                   | .2            | -91.15     | -85.3                       | -5.85       | 264            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.

### ANT. 1, CH9, CONFIG 3



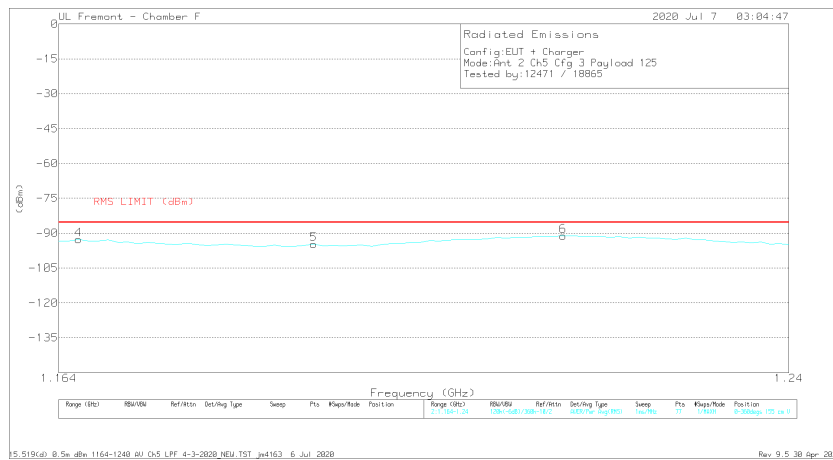
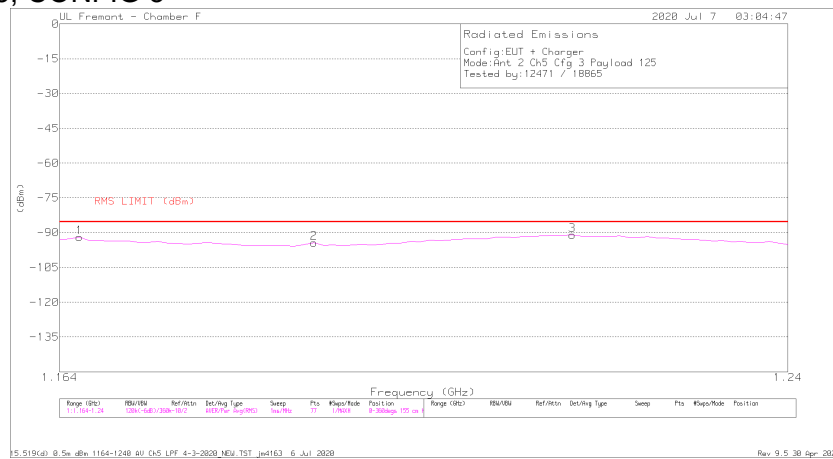
### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9 LP Filter | EIRP (dBm) | FCC15.519(d) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 1.176           | -73.65              | RMS | 28.6          | -45.4        | -15.6                | 11.8                   | .1            | -94.15     | -85.3                       | -8.85       | 198            | 155         | H        |
| 2      | 1.197           | -75.21              | RMS | 29.5          | -45.1        | -15.6                | 11.8                   | .1            | -94.51     | -85.3                       | -9.21       | 242            | 155         | H        |
| 3      | 1.215           | -72.02              | RMS | 29.8          | -45.2        | -15.6                | 11.8                   | .2            | -91.02     | -85.3                       | -5.72       | 66             | 155         | H        |
| 4      | 1.166           | -71.9               | RMS | 28.5          | -45.4        | -15.6                | 11.8                   | .1            | -92.5      | -85.3                       | -7.2        | 97             | 155         | V        |
| 5      | 1.189           | -74.68              | RMS | 29.1          | -45.2        | -15.6                | 11.8                   | .1            | -94.48     | -85.3                       | -9.18       | 228            | 155         | V        |
| 6      | 1.215           | -71.99              | RMS | 29.8          | -45.2        | -15.6                | 11.8                   | .2            | -90.99     | -85.3                       | -5.69       | 75             | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

## ANT. 2, CH5, CONFIG 3



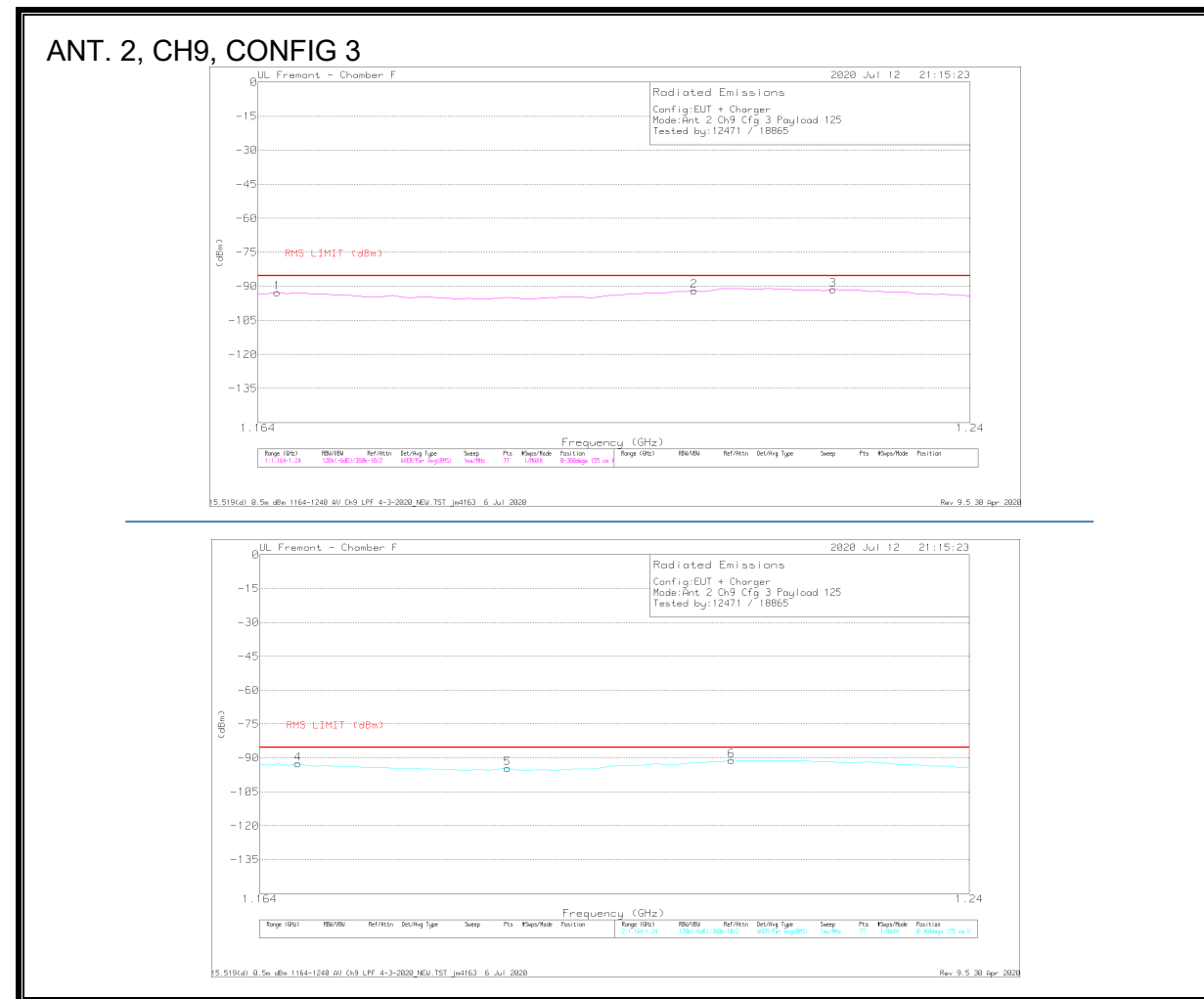
## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5 LP Filter | EIRP (dBm) | FCC15.519(d) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 1.166           | -71.27              | RMS | 28.5          | -45.4        | -15.6                | 11.8                   | .1            | -91.87     | -85.3                       | -6.57       | 154            | 155         | H        |
| 2      | 1.19            | -74.51              | RMS | 29.1          | -45.2        | -15.6                | 11.8                   | .1            | -94.31     | -85.3                       | -9.01       | 154            | 155         | H        |
| 3      | 1.217           | -72.16              | RMS | 29.9          | -45.2        | -15.6                | 11.8                   | .2            | -91.06     | -85.3                       | -5.76       | 263            | 155         | H        |
| 4      | 1.166           | -72.06              | RMS | 28.5          | -45.4        | -15.6                | 11.8                   | .1            | -92.66     | -85.3                       | -7.36       | 185            | 155         | V        |
| 5      | 1.19            | -74.86              | RMS | 29.1          | -45.2        | -15.6                | 11.8                   | .1            | -94.66     | -85.3                       | -9.36       | 207            | 155         | V        |
| 6      | 1.216           | -72.19              | RMS | 29.9          | -45.2        | -15.6                | 11.8                   | .2            | -91.09     | -85.3                       | -5.79       | 97             | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.





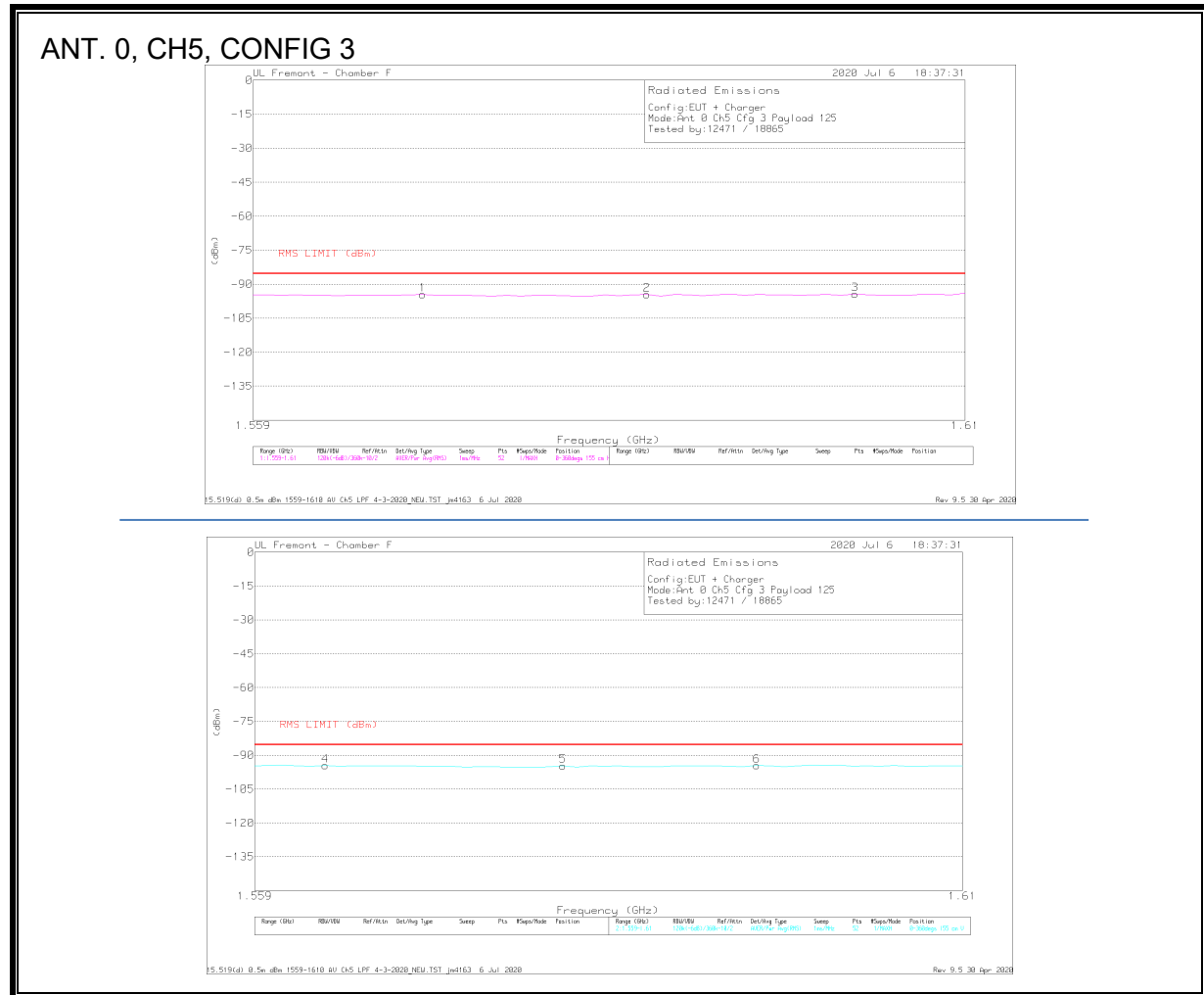
## Trace Markers

| Marker | Frequency (GHz) | Meas Reading (dBm) | Det | AF 1711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9 LP Filter | EIRP (dBm) | FCC15.519(dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|--------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|----------------|-------------|----------------|-------------|----------|
| 1      | 1.166           | -72.15             | RMS | 28.5          | -45.4        | -15.6                | 11.8                   | 1             | -92.75     | -85.3          | -7.45       | 97             | 155         | H        |
| 2      | 1.21            | -72.6              | RMS | 29.6          | -45.3        | -15.6                | 11.8                   | 2             | -91.9      | -85.3          | -6.6        | 273            | 155         | H        |
| 3      | 1.225           | -72.17             | RMS | 29.8          | -45.4        | -15.6                | 11.8                   | 2             | -91.37     | -85.3          | -6.07       | 238            | 155         | H        |
| 4      | 1.168           | -72.06             | RMS | 28.6          | -45.2        | -15.6                | 11.8                   | 1             | -92.56     | -85.3          | -7.26       | 308            | 155         | V        |
| 5      | 1.19            | -74.74             | RMS | 29.1          | -45.2        | -15.6                | 11.8                   | 1             | -94.54     | -85.3          | -9.24       | 86             | 155         | V        |
| 6      | 1.214           | -72.04             | RMS | 29.8          | -45.2        | -15.6                | 11.8                   | 2             | -94.04     | -85.3          | -8.74       | 86             | 155         | V        |

### RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

## 8.6.4. AVERAGE EMISSIONS, 1.559 – 1.610 GHz



### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5 LP Filter | EIRP (dBm) | FCC15.519(d) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 1.571           | -73.68              | RMS | 28            | -45.2        | -15.6                | 11.8                   | .2            | -94.48     | -85.3                       | -9.18       | 219            | 155         | H        |
| 2      | 1.587           | -73.58              | RMS | 28            | -45.3        | -15.6                | 11.8                   | .2            | -94.48     | -85.3                       | -9.18       | 66             | 155         | H        |
| 3      | 1.602           | -73.42              | RMS | 28            | -45.3        | -15.6                | 11.8                   | .2            | -94.32     | -85.3                       | -9.02       | 241            | 155         | H        |
| 4      | 1.564           | -73.65              | RMS | 27.9          | -45.2        | -15.6                | 11.8                   | .2            | -94.65     | -85.3                       | -9.25       | 31             | 155         | V        |
| 5      | 1.581           | -73.64              | RMS | 27.9          | -45.3        | -15.6                | 11.8                   | .2            | -94.64     | -85.3                       | -9.34       | 31             | 155         | V        |
| 6      | 1.595           | -73.78              | RMS | 28            | -45.2        | -15.6                | 11.8                   | .3            | -94.48     | -85.3                       | -9.18       | 338            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.

### ANT. 0, CH9, CONFIG 3

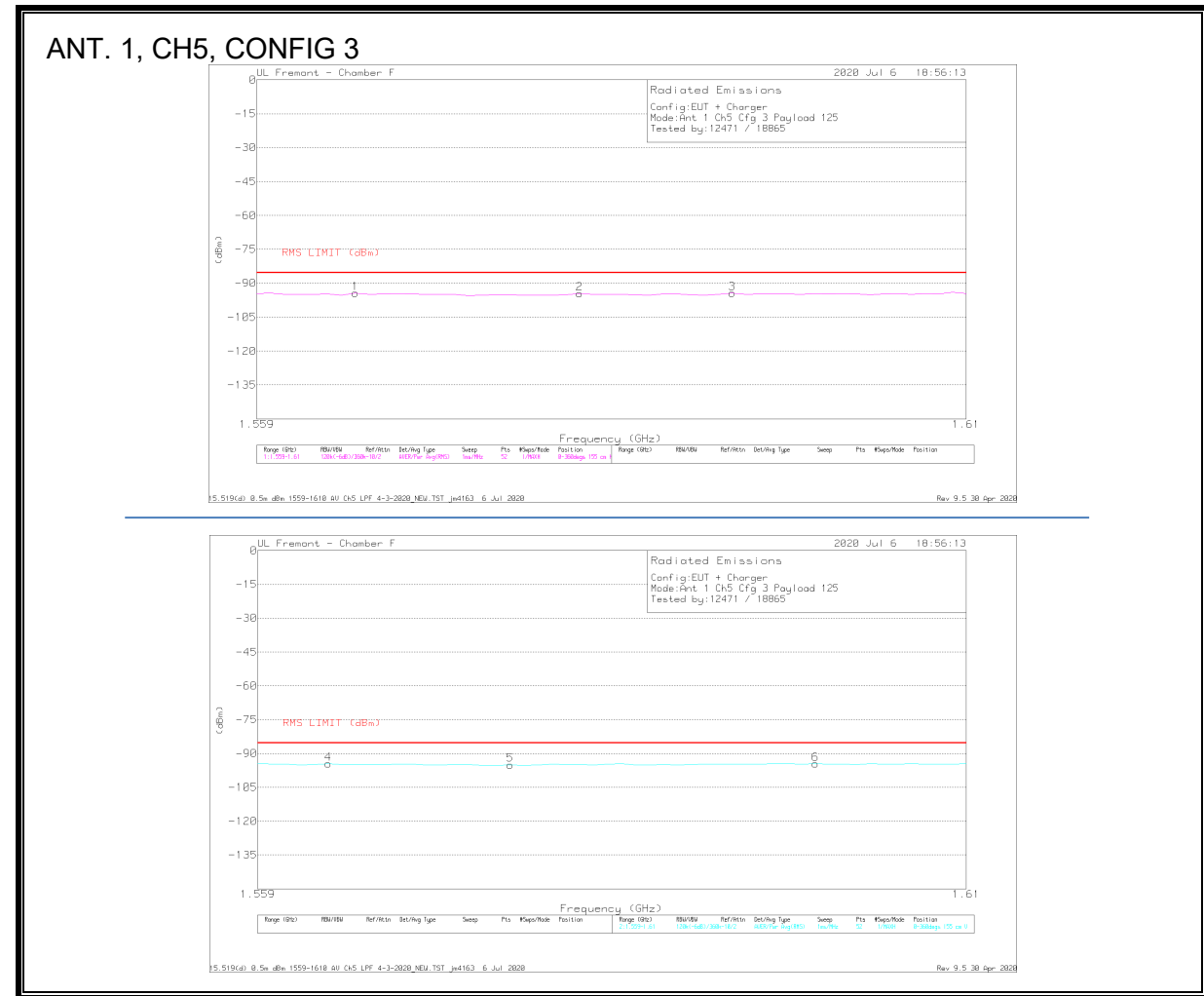


### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9 LP Filter | EIRP (dBm) | FCC15.519(d) ERP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|----------------------------|-------------|----------------|-------------|----------|
| 1      | 1.568           | -73.68              | RMS | 27.9          | -45.2        | -15.6                | 11.8                   | .2            | -94.58     | -85.3                      | -9.28       | 198            | 155         | H        |
| 2      | 1.589           | -73.67              | RMS | 28            | -45.3        | -15.6                | 11.8                   | .2            | -94.57     | -85.3                      | -9.27       | 198            | 155         | H        |
| 3      | 1.603           | -73.31              | RMS | 28            | -45.3        | -15.6                | 11.8                   | .2            | -94.21     | -85.3                      | -8.91       | 153            | 155         | H        |
| 4      | 1.563           | -73.56              | RMS | 27.9          | -45.2        | -15.6                | 11.8                   | .2            | -94.46     | -85.3                      | -9.16       | 97             | 155         | V        |
| 5      | 1.571           | -73.89              | RMS | 28            | -45.2        | -15.6                | 11.8                   | .2            | -94.69     | -85.3                      | -9.39       | 295            | 155         | V        |
| 6      | 1.6             | -73.7               | RMS | 28            | -45.3        | -15.6                | 11.8                   | .3            | -94.5      | -85.3                      | -9.2        | 229            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.



## Trace Markers

| Marker | Frequency (GHz) | Measuring Meter Reading (dBm) | Det | At 17111 (dBm) | Amp/Cb1 (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5 LP Filter | ERP (dBm) | FCC15.519(dB) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|-------------------------------|-----|----------------|--------------|----------------------|------------------------|---------------|-----------|---------------|-------------|----------------|-------------|----------|
| 1      | 1.566           | -73.52                        | RMS | 27.9           | -45.2        | -15.6                | 11.8                   | 2             | -94.42    | -85.3         | -9.12       | 295            | 155         | H        |
| 2      | 1.582           | -73.69                        | RMS | 27.9           | -45.2        | -15.6                | 11.8                   | 2             | -94.59    | -85.3         | -9.29       | 311            | 155         | H        |
| 3      | 1.593           | -73.6                         | RMS | 28             | -45.2        | -15.6                | 11.8                   | 3             | -94.3     | -85.3         | -9          | 97             | 155         | H        |
| 4      | 1.564           | -73.57                        | RMS | 27.9           | -45.2        | -15.6                | 11.8                   | 2             | -94.47    | -85.3         | -9.17       | 66             | 155         | V        |
| 5      | 1.577           | -74.11                        | RMS | 28             | -45.3        | -15.6                | 11.8                   | 2             | -95.01    | -85.3         | -9.71       | 176            | 155         | V        |
| 6      | 1.599           | -73.87                        | RMS | 28             | -45.2        | -15.6                | 11.8                   | 3             | -94.57    | -85.3         | -9.27       | 330            | 155         | V        |

## RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.

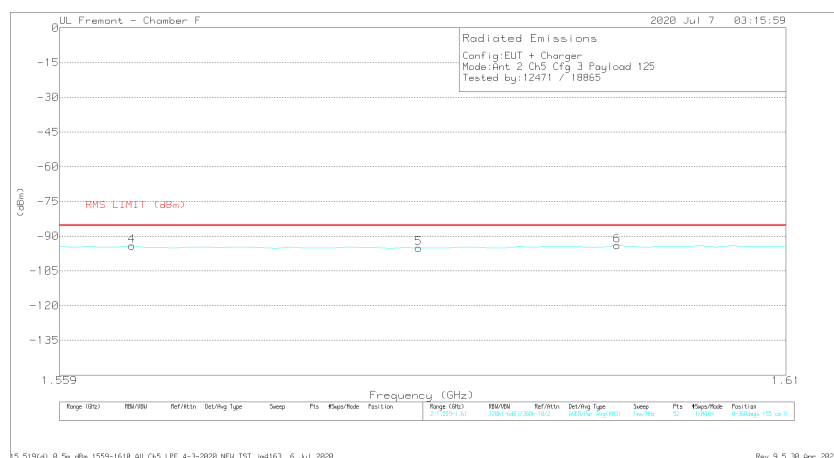


| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | A* 17111 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9 LP Filter | ERP (dBm) | FC15.519(dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|----------------|--------------|----------------------|------------------------|---------------|-----------|---------------|-------------|----------------|-------------|----------|
| 1      | 1.567           | -73.65              | RMS | 27.9           | -45.2        | -15.6                | 11.8                   | 2             | -94.55    | -85.3         | -9.25       | 206            | 155         | H        |
| 2      | 1.587           | -73.86              | RMS | 28             | -45.3        | -15.6                | 11.8                   | 2             | -94.76    | -85.3         | -3.46       | 359            | 155         | H        |
| 3      | 1.590           | -73.66              | RMS | 28             | -45.2        | -15.6                | 11.8                   | 2             | -94.58    | -85.18        | -8.56       | 359            | 155         | H        |
| 4      | 1.564           | -73.65              | RMS | 27.9           | -45.2        | -15.6                | 11.8                   | 2             | -94.55    | -85.3         | -9.25       | 65             | 155         | V        |
| 5      | 1.588           | -73.46              | RMS | 28             | -45.3        | -15.6                | 11.8                   | 2             | -94.36    | -85.3         | -9.06       | 263            | 155         | V        |
| 6      | 1.602           | -73.57              | RMS | 28             | -45.3        | -15.6                | 11.8                   | 2             | -94.47    | -85.3         | -9.17       | 175            | 155         | V        |

## RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

## ANT. 2, CH5, CONFIG 3



## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH5 LP Filter | EIRP (dBm) | FCC15.519(d) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 1.564           | -73.82              | RMS | 27.9          | -45.2        | -15.6                | 11.8                   | .2            | -94.72     | -85.3                       | -9.42       | 141            | 155         | H        |
| 2      | 1.58            | -73.89              | RMS | 28            | -45.3        | -15.6                | 11.8                   | .2            | -94.79     | -85.3                       | -9.49       | 207            | 155         | H        |
| 3      | 1.596           | -73.84              | RMS | 28            | -45.2        | -15.6                | 11.8                   | .3            | -94.54     | -85.3                       | -9.24       | 74             | 155         | H        |
| 4      | 1.584           | -73.25              | RMS | 27.9          | -45.2        | -15.6                | 11.8                   | .2            | -94.15     | -85.3                       | -8.85       | 66             | 155         | V        |
| 5      | 1.584           | -74.12              | RMS | 27.9          | -45.2        | -15.6                | 11.8                   | .2            | -95.02     | -85.3                       | -9.72       | 330            | 155         | V        |
| 6      | 1.598           | -73.21              | RMS | 28            | -45.2        | -15.6                | 11.8                   | .3            | -93.91     | -85.3                       | -8.61       | 241            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH5 fundamental signal.

## ANT. 2, CH9, CONFIG 3



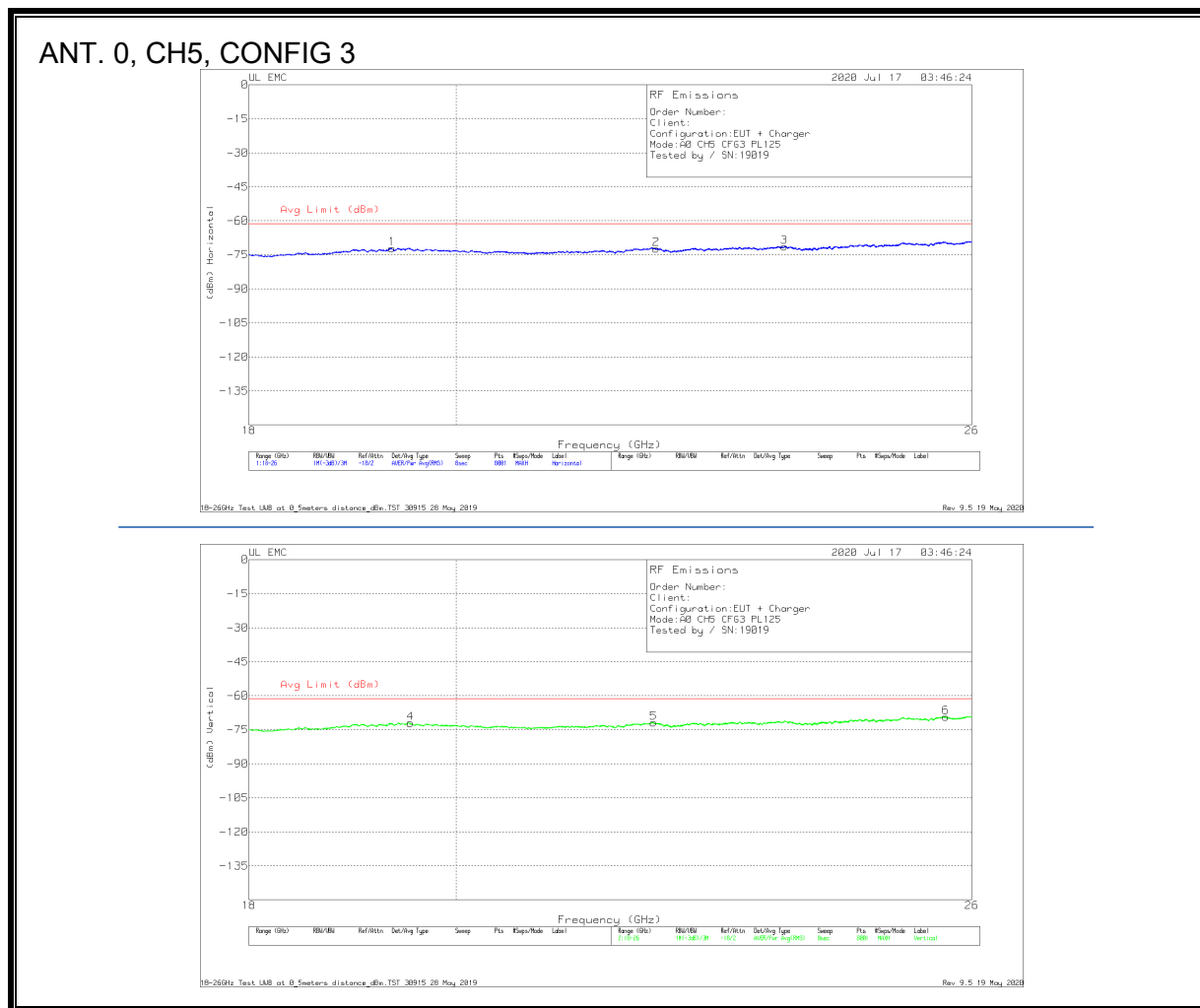
## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | AF T711 (dBm) | Amp/Cbl (dB) | Dist Correction (dB) | Conversion Factor (dB) | CH9 LP Filter | EIRP (dBm) | FCC15.519(d) EIRP RMS (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|--------------|----------------------|------------------------|---------------|------------|-----------------------------|-------------|----------------|-------------|----------|
| 1      | 1.566           | -73.29              | RMS | 27.9          | -45.2        | -15.6                | 11.8                   | .2            | -94.19     | -85.3                       | -8.89       | 242            | 155         | H        |
| 2      | 1.581           | -73.65              | RMS | 27.9          | -45.3        | -15.6                | 11.8                   | .2            | -94.65     | -85.3                       | -9.35       | 264            | 155         | H        |
| 3      | 1.596           | -74.43              | RMS | 28            | -45.2        | -15.6                | 11.8                   | .3            | -95.13     | -85.3                       | -9.83       | 308            | 155         | H        |
| 4      | 1.561           | -73.51              | RMS | 27.9          | -45.2        | -15.6                | 11.8                   | .2            | -94.41     | -85.3                       | -9.11       | 317            | 155         | V        |
| 5      | 1.577           | -74.1               | RMS | 28            | -45.3        | -15.6                | 11.8                   | .2            | -95        | -85.3                       | -9.7        | 229            | 155         | V        |
| 6      | 1.595           | -73.67              | RMS | 28            | -45.2        | -15.6                | 11.8                   | .3            | -94.37     | -85.3                       | -9.07       | 163            | 155         | V        |

RMS - RMS detection

\*Note: Test was performed with a low-pass filter with cutoff frequency at 6 GHz to suppress CH9 fundamental signal.

## 8.6.5. AVERAGE EMISSIONS, 18 – 26 GHz



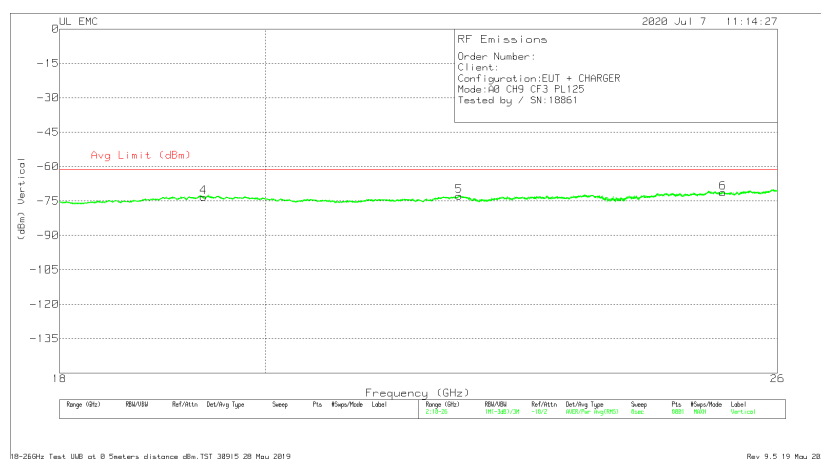
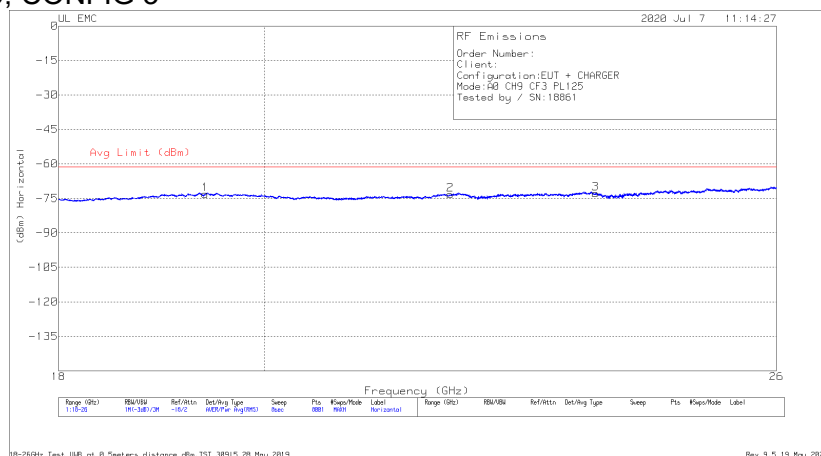
### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0079280 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 19.358          | -82.1               | RMS | 32.6                 | -18.8        | -15.6          | 11.8                   | -72.1      | -61.3           | -10.8       |
| 2      | 22.141          | -81.68              | RMS | 33.4                 | -20.2        | -15.6          | 11.8                   | -72.28     | -61.3           | -10.98      |
| 3      | 23.632          | -81.55              | RMS | 33.7                 | -19.8        | -15.6          | 11.8                   | -71.45     | -61.3           | -10.15      |
| 4      | 19.541          | -81.53              | RMS | 32.7                 | -19.4        | -15.6          | 11.8                   | -72.03     | -61.3           | -10.73      |
| 5      | 22.113          | -81.4               | RMS | 33.4                 | -20.1        | -15.6          | 11.8                   | -71.9      | -61.3           | -10.6       |
| 6      | 25.657          | -79.97              | RMS | 34.2                 | -19.8        | -15.6          | 11.8                   | -69.37     | -61.3           | -8.07       |

RMS - RMS detection



### ANT. 0, CH9, CONFIG 3

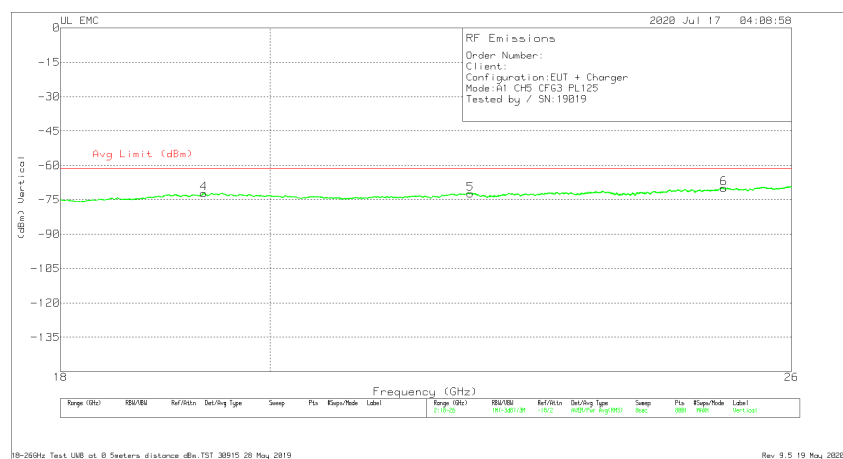
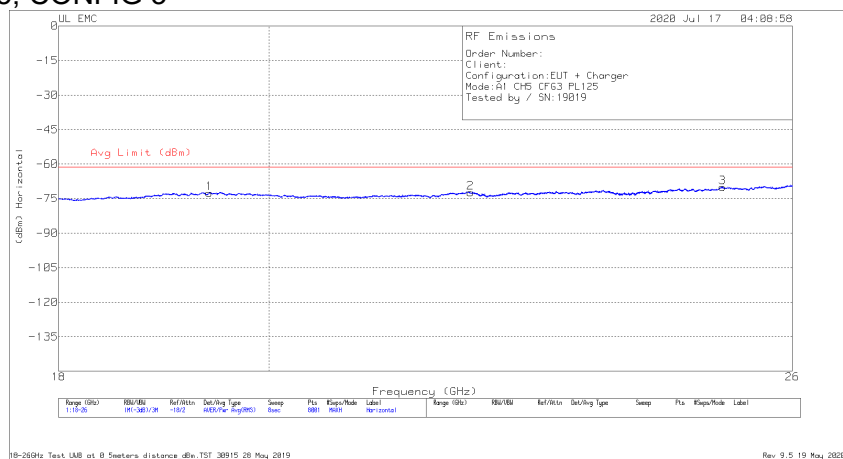


### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0079280 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 19.405          | -83.09              | RMS | 32.6                 | -18.9        | -15.6          | 11.8                   | -73.19     | -61.3           | -11.89      |
| 2      | 21.999          | -82.61              | RMS | 33.4                 | -20.3        | -15.6          | 11.8                   | -73.31     | -61.3           | -12.01      |
| 3      | 23.698          | -83.02              | RMS | 33.8                 | -19.8        | -15.6          | 11.8                   | -72.82     | -61.3           | -11.52      |
| 4      | 19.378          | -83.16              | RMS | 32.6                 | -18.9        | -15.6          | 11.8                   | -73.26     | -61.3           | -11.96      |
| 5      | 22.087          | -82.51              | RMS | 33.4                 | -19.9        | -15.6          | 11.8                   | -72.81     | -61.3           | -11.51      |
| 6      | 25.283          | -82.07              | RMS | 34.2                 | -19.6        | -15.6          | 11.8                   | -71.27     | -61.3           | -9.97       |

RMS - RMS detection

### ANT. 1, CH5, CONFIG 3

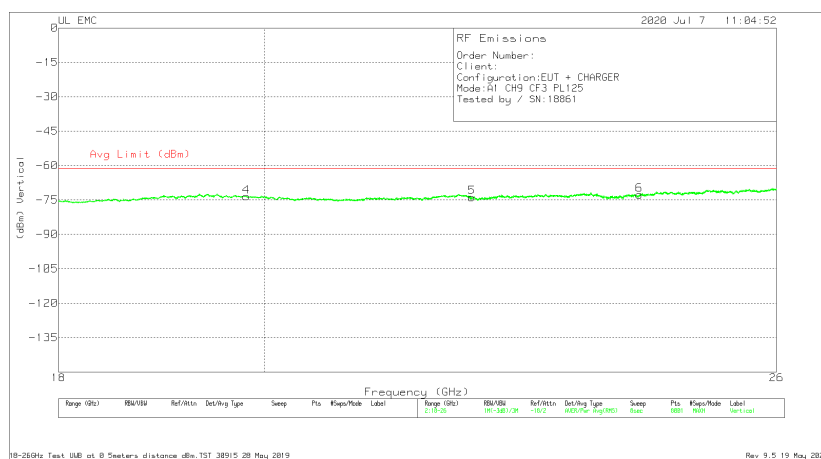
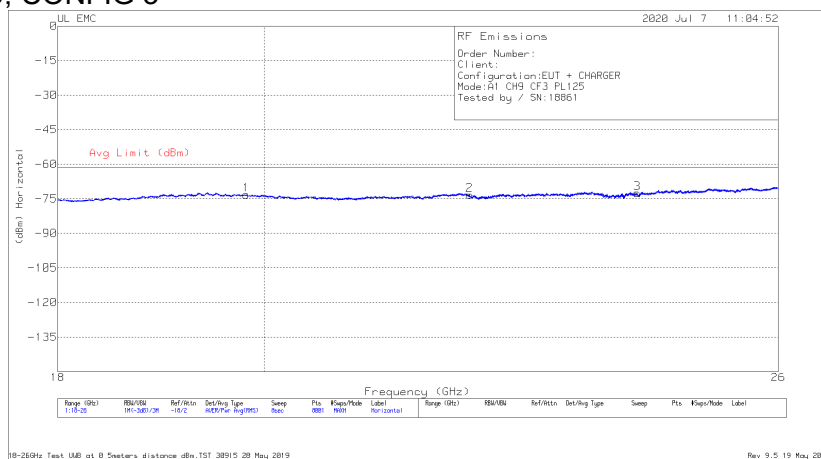


### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0079280 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 19.412          | -82.66              | RMS | 32.6                 | -18.7        | -15.6          | 11.8                   | -72.56     | -61.3           | -11.26      |
| 2      | 22.126          | -81.83              | RMS | 33.4                 | -20.2        | -15.6          | 11.8                   | -72.43     | -61.3           | -11.13      |
| 3      | 25.105          | -81.46              | RMS | 34.3                 | -19.1        | -15.6          | 11.8                   | -70.06     | -61.3           | -8.76       |
| 4      | 19.346          | -82.31              | RMS | 32.6                 | -18.7        | -15.6          | 11.8                   | -72.21     | -61.3           | -10.91      |
| 5      | 22.121          | -81.81              | RMS | 33.4                 | -20.1        | -15.6          | 11.8                   | -72.31     | -61.3           | -11.01      |
| 6      | 25.127          | -81.13              | RMS | 34.3                 | -19.3        | -15.6          | 11.8                   | -69.93     | -61.3           | -8.63       |

RMS - RMS detection

### ANT. 1, CH9, CONFIG 3

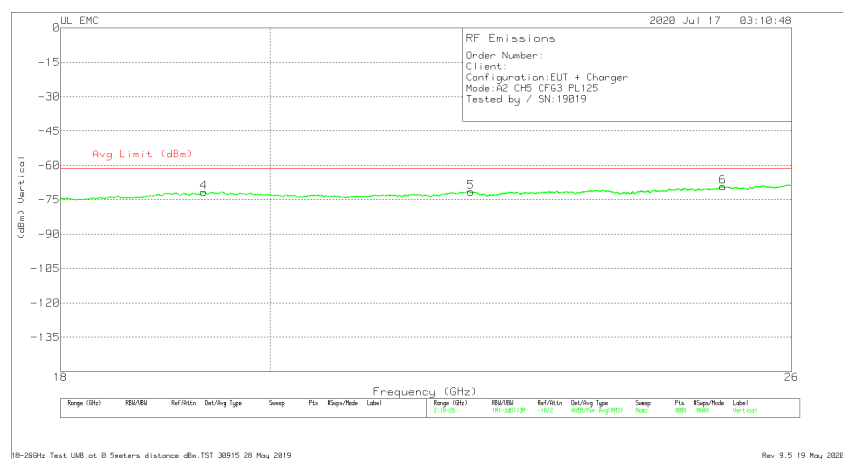
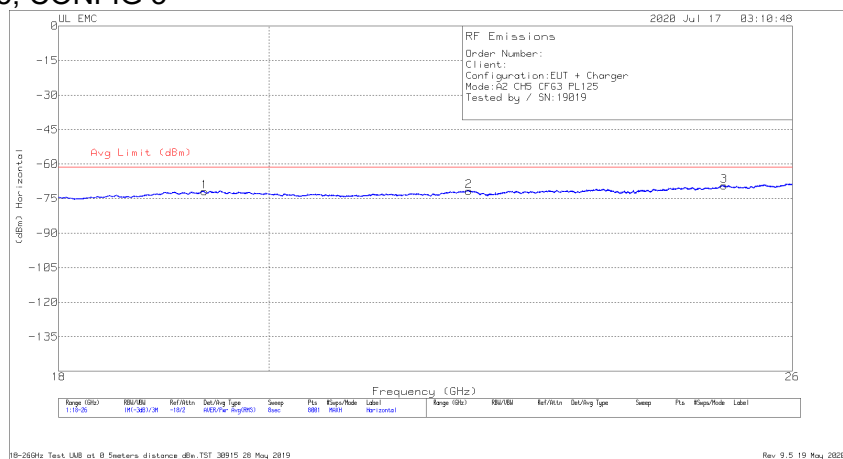


### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0079280 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 19.817          | -81.78              | RMS | 32.7                 | -20.3        | -15.6          | 11.8                   | -73.18     | -61.3           | -11.88      |
| 2      | 22.21           | -82.75              | RMS | 33.4                 | -20.1        | -15.6          | 11.8                   | -73.25     | -61.3           | -11.95      |
| 3      | 24.194          | -83.2               | RMS | 33.8                 | -19.3        | -15.6          | 11.8                   | -72.5      | -61.3           | -11.2       |
| 4      | 19.818          | -82                 | RMS | 32.7                 | -20.4        | -15.6          | 11.8                   | -73.5      | -61.3           | -12.2       |
| 5      | 22.243          | -83.1               | RMS | 33.4                 | -20.3        | -15.6          | 11.8                   | -73.8      | -61.3           | -12.5       |
| 6      | 24.235          | -83.43              | RMS | 33.8                 | -19.3        | -15.6          | 11.8                   | -72.73     | -61.3           | -11.43      |

RMS - RMS detection

### ANT. 2, CH5, CONFIG 3

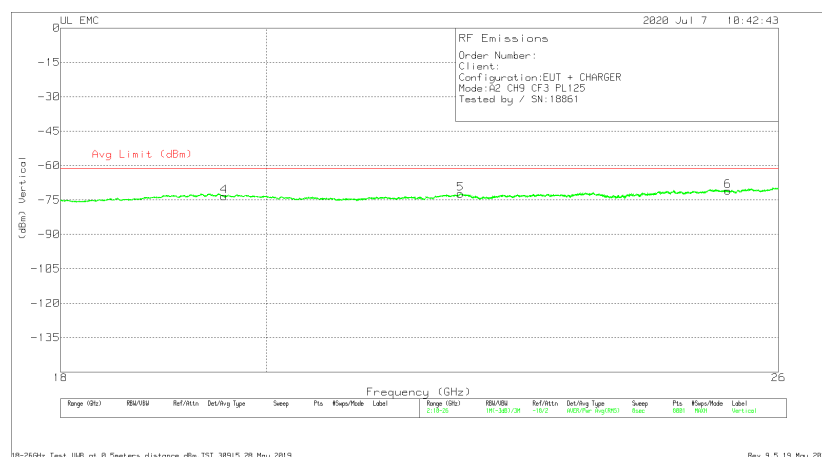
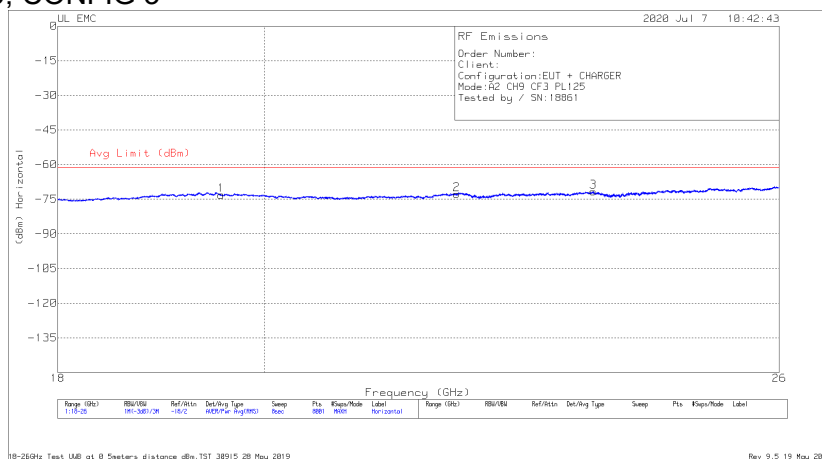


### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0079280 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 19.366          | -81.84              | RMS | 32.6                 | -18.8        | -15.6          | 11.8                   | -71.84     | -61.3           | -10.54      |
| 2      | 22.107          | -81.25              | RMS | 33.4                 | -20          | -15.6          | 11.8                   | -71.65     | -61.3           | -10.35      |
| 3      | 25.123          | -80.57              | RMS | 34.3                 | -19.3        | -15.6          | 11.8                   | -69.37     | -61.3           | -8.07       |
| 4      | 19.346          | -81.75              | RMS | 32.6                 | -18.7        | -15.6          | 11.8                   | -71.65     | -61.3           | -10.35      |
| 5      | 22.126          | -80.95              | RMS | 33.4                 | -20.2        | -15.6          | 11.8                   | -71.55     | -61.3           | -10.25      |
| 6      | 25.117          | -80.54              | RMS | 34.3                 | -19.2        | -15.6          | 11.8                   | -69.24     | -61.3           | -7.94       |

RMS - RMS detection

### ANT. 2, CH9, CONFIG 3

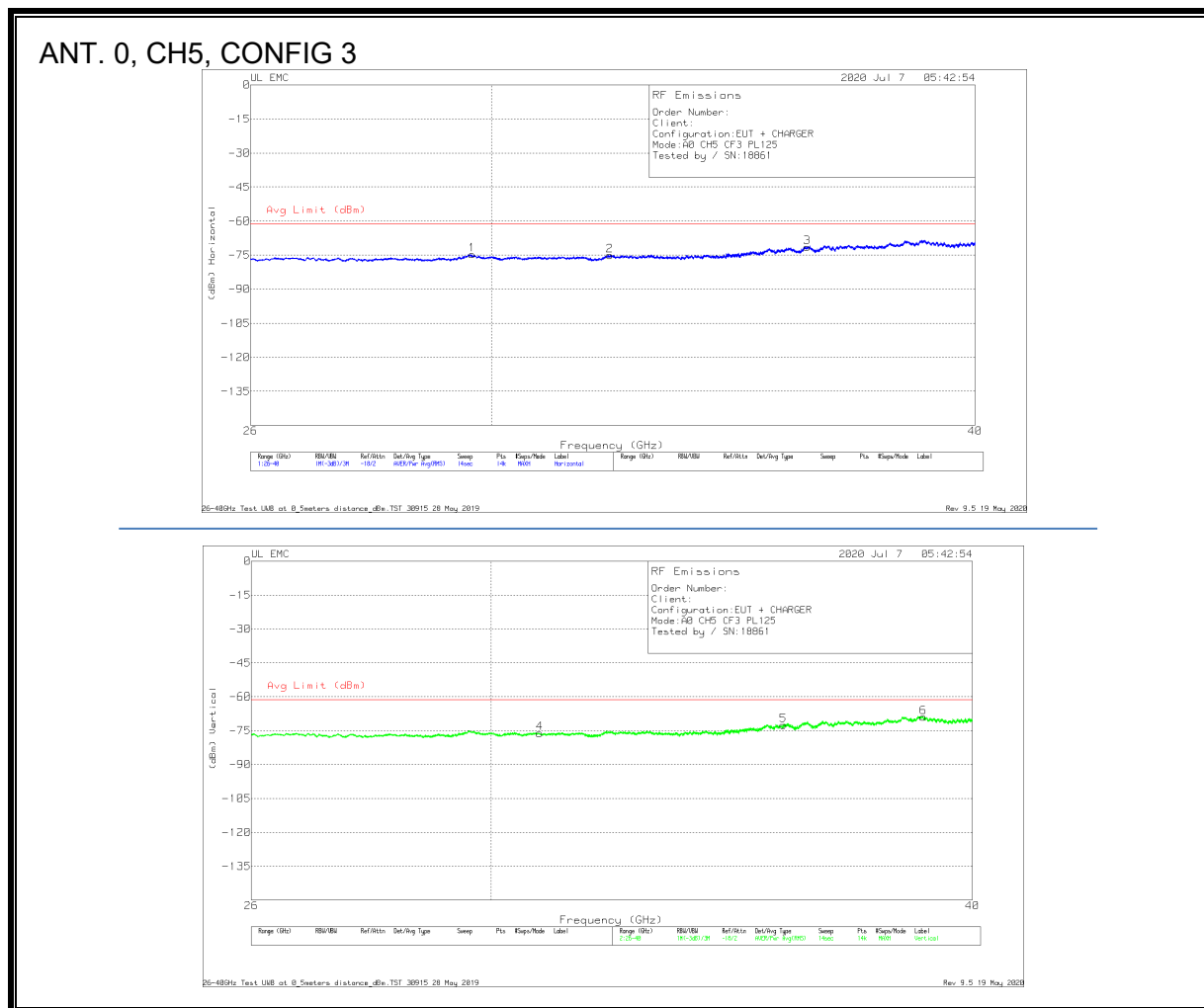


### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0079280 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 19.564          | -82.34              | RMS | 32.7                 | -19.7        | -15.6          | 11.8                   | -73.14     | -61.3           | -11.84      |
| 2      | 22.058          | -81.99              | RMS | 33.4                 | -20.4        | -15.6          | 11.8                   | -72.79     | -61.3           | -11.49      |
| 3      | 23.649          | -82.1               | RMS | 33.8                 | -19.6        | -15.6          | 11.8                   | -71.7      | -61.3           | -10.4       |
| 4      | 19.573          | -82.39              | RMS | 32.6                 | -19.8        | -15.6          | 11.8                   | -73.39     | -61.3           | -12.09      |
| 5      | 22.091          | -82                 | RMS | 33.4                 | -19.9        | -15.6          | 11.8                   | -72.3      | -61.3           | -11         |
| 6      | 25.334          | -81.49              | RMS | 34.2                 | -19.9        | -15.6          | 11.8                   | -70.99     | -61.3           | -9.69       |

RMS - RMS detection

## 8.6.6. AVERAGE EMISSIONS, 26 – 40 GHz

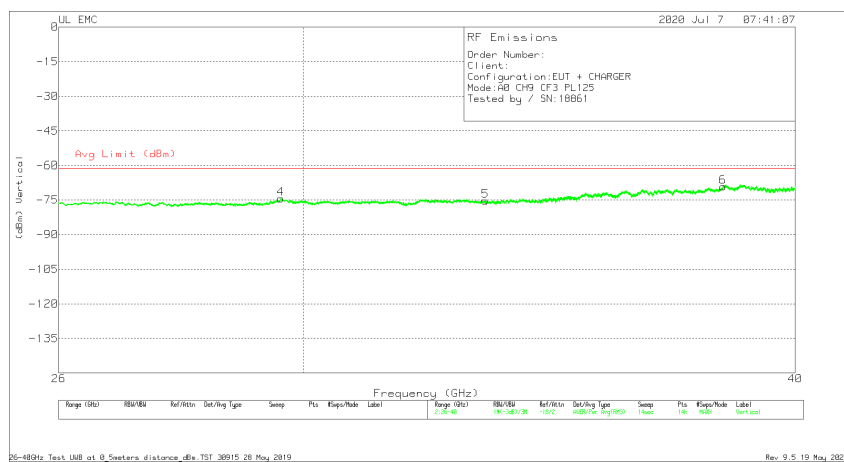
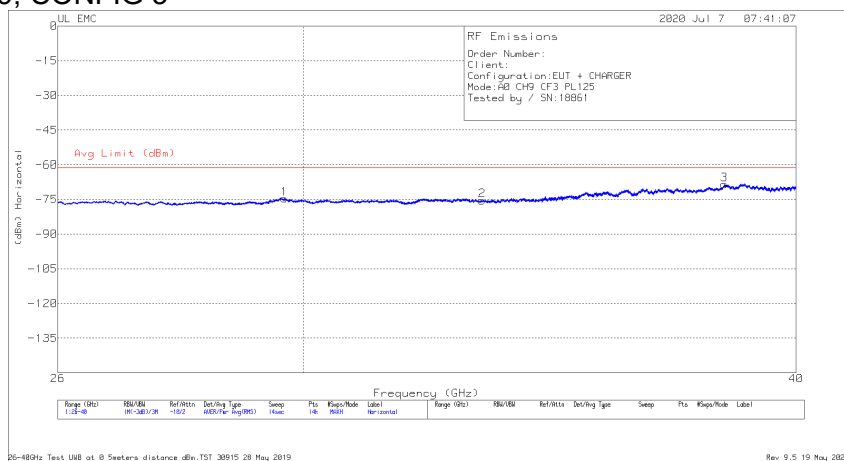


### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0182203 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 29.66           | -80.79              | RMS | 37.4                 | -27.5        | -15.6          | 11.8                   | -74.69     | -61.3           | -13.39      |
| 2      | 32.191          | -80.27              | RMS | 37                   | -28          | -15.6          | 11.8                   | -75.07     | -61.3           | -13.77      |
| 3      | 36.197          | -79.07              | RMS | 37.6                 | -26.2        | -15.6          | 11.8                   | -71.47     | -61.3           | -10.17      |
| 4      | 30.886          | -81.11              | RMS | 36.5                 | -27.7        | -15.6          | 11.8                   | -76.11     | -61.3           | -14.81      |
| 5      | 35.727          | -80.14              | RMS | 37.6                 | -26.2        | -15.6          | 11.8                   | -72.54     | -61.3           | -11.24      |
| 6      | 38.843          | -78.19              | RMS | 38.3                 | -25.3        | -15.6          | 11.8                   | -68.99     | -61.3           | -7.69       |

RMS - RMS detection

## ANT. 0, CH9, CONFIG 3

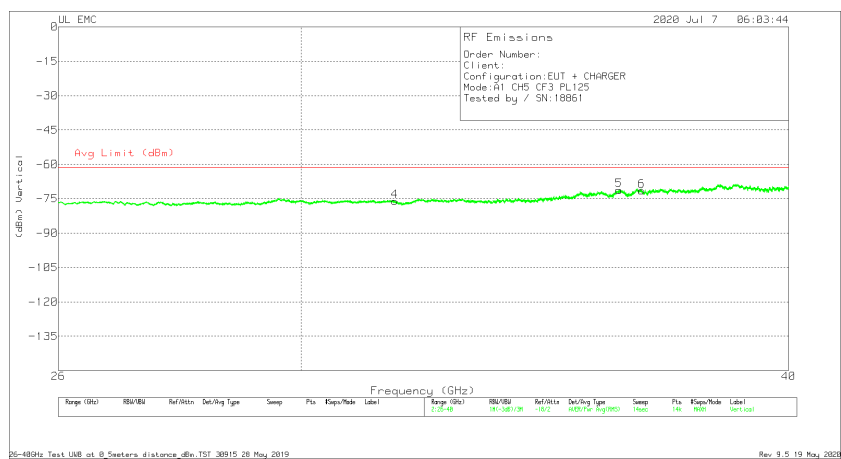
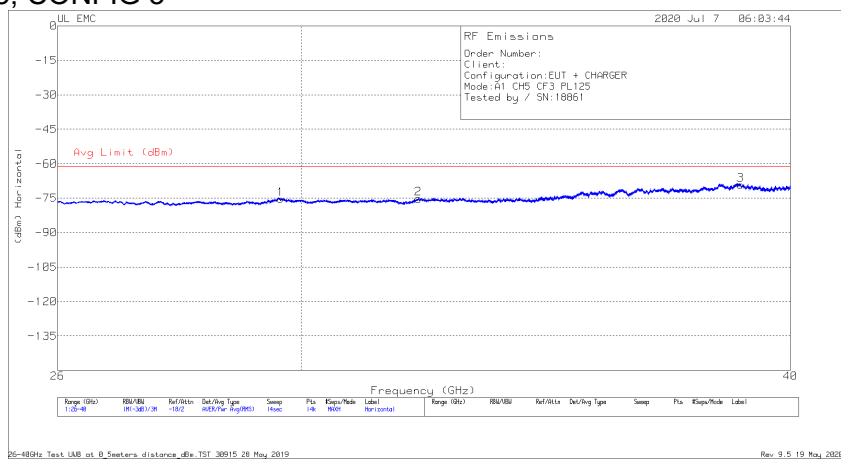


## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0182203 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 29.673          | -80.91              | RMS | 37.5                 | -27.4        | -15.6          | 11.8                   | -74.61     | -61.3           | -13.31      |
| 2      | 33.301          | -80.32              | RMS | 36.8                 | -28.1        | -15.6          | 11.8                   | -75.42     | -61.3           | -14.12      |
| 3      | 38.357          | -78.15              | RMS | 38.2                 | -24.7        | -15.6          | 11.8                   | -68.45     | -61.3           | -7.15       |
| 4      | 29.604          | -80.75              | RMS | 37.3                 | -27.1        | -15.6          | 11.8                   | -74.35     | -61.3           | -13.05      |
| 5      | 33.369          | -80.42              | RMS | 36.9                 | -28          | -15.6          | 11.8                   | -75.32     | -61.3           | -14.02      |
| 6      | 38.341          | -78.64              | RMS | 38.2                 | -25          | -15.6          | 11.8                   | -69.24     | -61.3           | -7.94       |

RMS - RMS detection

### ANT. 1, CH5, CONFIG 3



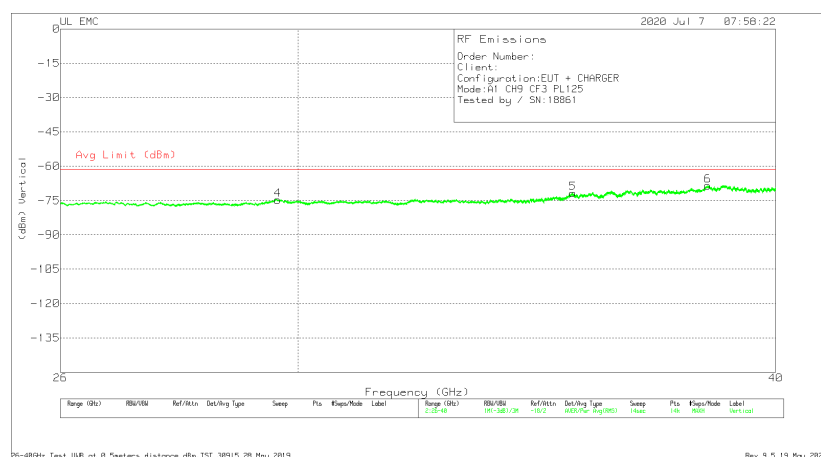
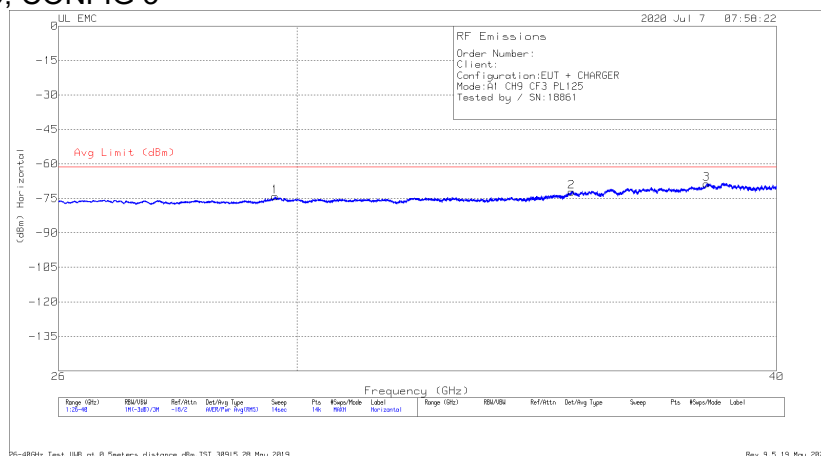
### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0182203 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 29.641          | -81.37              | RMS | 37.4                 | -27.5        | -15.6          | 11.8                   | -75.27     | -61.3           | -13.97      |
| 2      | 32.142          | -80.51              | RMS | 37                   | -27.9        | -15.6          | 11.8                   | -75.21     | -61.3           | -13.91      |
| 3      | 38.84           | -78.44              | RMS | 38.3                 | -25.2        | -15.6          | 11.8                   | -69.14     | -61.3           | -7.84       |
| 4      | 31.706          | -81.11              | RMS | 36.7                 | -27.8        | -15.6          | 11.8                   | -76.01     | -61.3           | -14.71      |
| 5      | 36.193          | -78.66              | RMS | 37.6                 | -26.3        | -15.6          | 11.8                   | -71.16     | -61.3           | -9.86       |
| 6      | 36.676          | -79.48              | RMS | 37.8                 | -25.9        | -15.6          | 11.8                   | -71.38     | -61.3           | -10.08      |

RMS - RMS detection



### ANT. 1, CH9, CONFIG 3

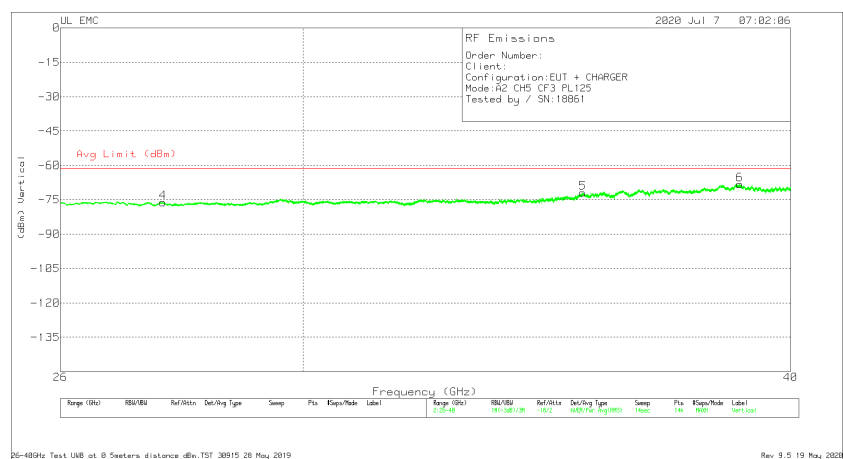
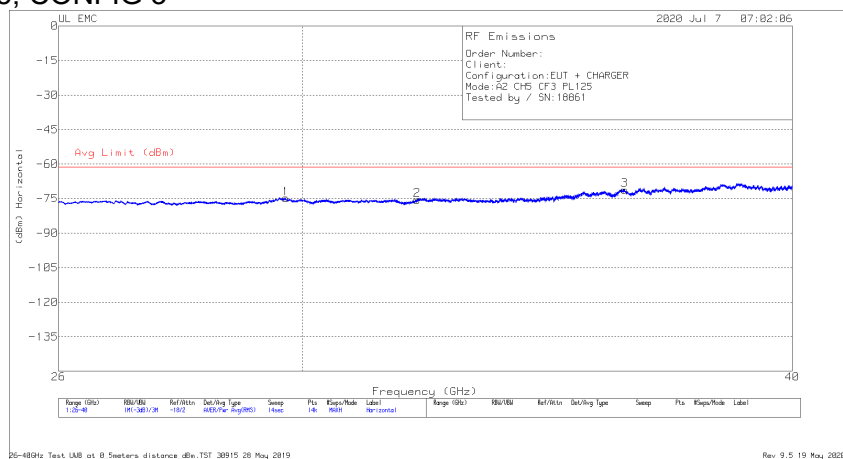


### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0182203 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 29.608          | -80.52              | RMS | 37.3                 | -27.1        | -15.6          | 11.8                   | -74.12     | -61.3           | -12.82      |
| 2      | 35.371          | -79.5               | RMS | 37.7                 | -26.5        | -15.6          | 11.8                   | -72.1      | -61.3           | -10.8       |
| 3      | 38.352          | -78.31              | RMS | 38.2                 | -24.7        | -15.6          | 11.8                   | -68.61     | -61.3           | -7.31       |
| 4      | 29.637          | -80.78              | RMS | 37.4                 | -27.5        | -15.6          | 11.8                   | -74.68     | -61.3           | -13.38      |
| 5      | 35.399          | -79.31              | RMS | 37.8                 | -26.4        | -15.6          | 11.8                   | -71.71     | -61.3           | -10.41      |
| 6      | 38.396          | -77.71              | RMS | 38.3                 | -25.3        | -15.6          | 11.8                   | -68.51     | -61.3           | -7.21       |

RMS - RMS detection

### ANT. 2, CH5, CONFIG 3

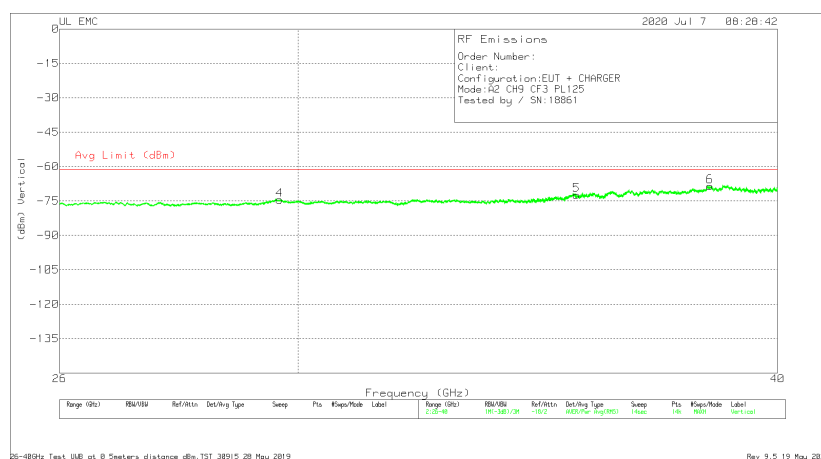
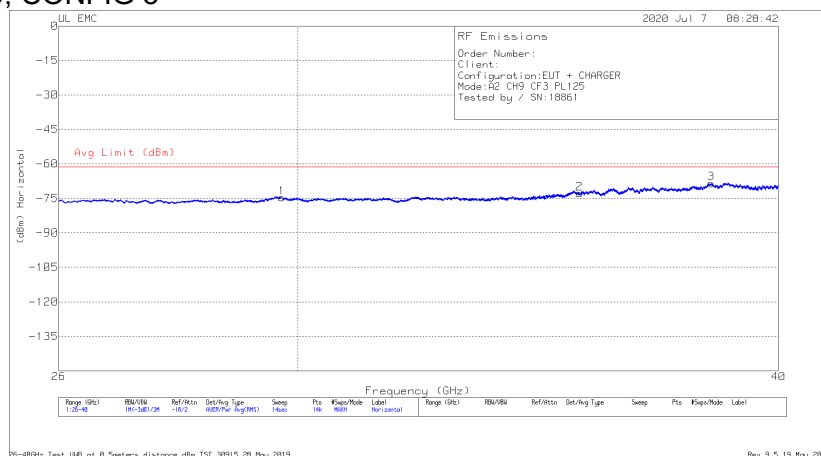


### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0182203 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 29.708          | -81.08              | RMS | 37.5                 | -27.4        | -15.6          | 11.8                   | -74.78     | -61.3           | -13.48      |
| 2      | 32.092          | -80.49              | RMS | 36.9                 | -28.1        | -15.6          | 11.8                   | -75.49     | -61.3           | -14.19      |
| 3      | 36.243          | -78.94              | RMS | 37.6                 | -26          | -15.6          | 11.8                   | -71.14     | -61.3           | -9.84       |
| 4      | 27.621          | -79.12              | RMS | 35.8                 | -29          | -15.6          | 11.8                   | -76.12     | -61.3           | -14.82      |
| 5      | 35.382          | -79.51              | RMS | 37.7                 | -26.3        | -15.6          | 11.8                   | -71.91     | -61.3           | -10.61      |
| 6      | 38.814          | -77.74              | RMS | 38.3                 | -25          | -15.6          | 11.8                   | -68.24     | -61.3           | -6.94       |

RMS - RMS detection

### ANT. 2, CH9, CONFIG 3



### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | PRE0182203 AF (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Conversion Factor (dB) | EIRP (dBm) | Avg Limit (dBm) | Margin (dB) |
|--------|-----------------|---------------------|-----|----------------------|--------------|----------------|------------------------|------------|-----------------|-------------|
| 1      | 29.717          | -80.86              | RMS | 37.4                 | -27.4        | -15.6          | 11.8                   | -74.66     | -61.3           | -13.36      |
| 2      | 35.509          | -80.26              | RMS | 37.6                 | -26.4        | -15.6          | 11.8                   | -72.86     | -61.3           | -11.56      |
| 3      | 38.423          | -77.94              | RMS | 38.3                 | -25          | -15.6          | 11.8                   | -68.44     | -61.3           | -7.14       |
| 4      | 29.67           | -80.71              | RMS | 37.5                 | -27.5        | -15.6          | 11.8                   | -74.51     | -61.3           | -13.21      |
| 5      | 35.452          | -79.85              | RMS | 37.7                 | -26.4        | -15.6          | 11.8                   | -72.35     | -61.3           | -11.05      |
| 6      | 38.409          | -77.95              | RMS | 38.3                 | -25.1        | -15.6          | 11.8                   | -68.55     | -61.3           | -7.25       |

RMS - RMS detection

## 8.7. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

FCC §15.207 (a)

| Frequency of Emission (MHz) | Conducted Limit (dBuV) |                       |
|-----------------------------|------------------------|-----------------------|
|                             | Quasi-peak             | Average               |
| 0.15-0.5                    | 66 to 56 <sup>*</sup>  | 56 to 46 <sup>*</sup> |
| 0.5-5                       | 56                     | 46                    |
| 5-30                        | 60                     | 50                    |

<sup>\*</sup> Decreases with the logarithm of the frequency.

### TEST PROCEDURE

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.

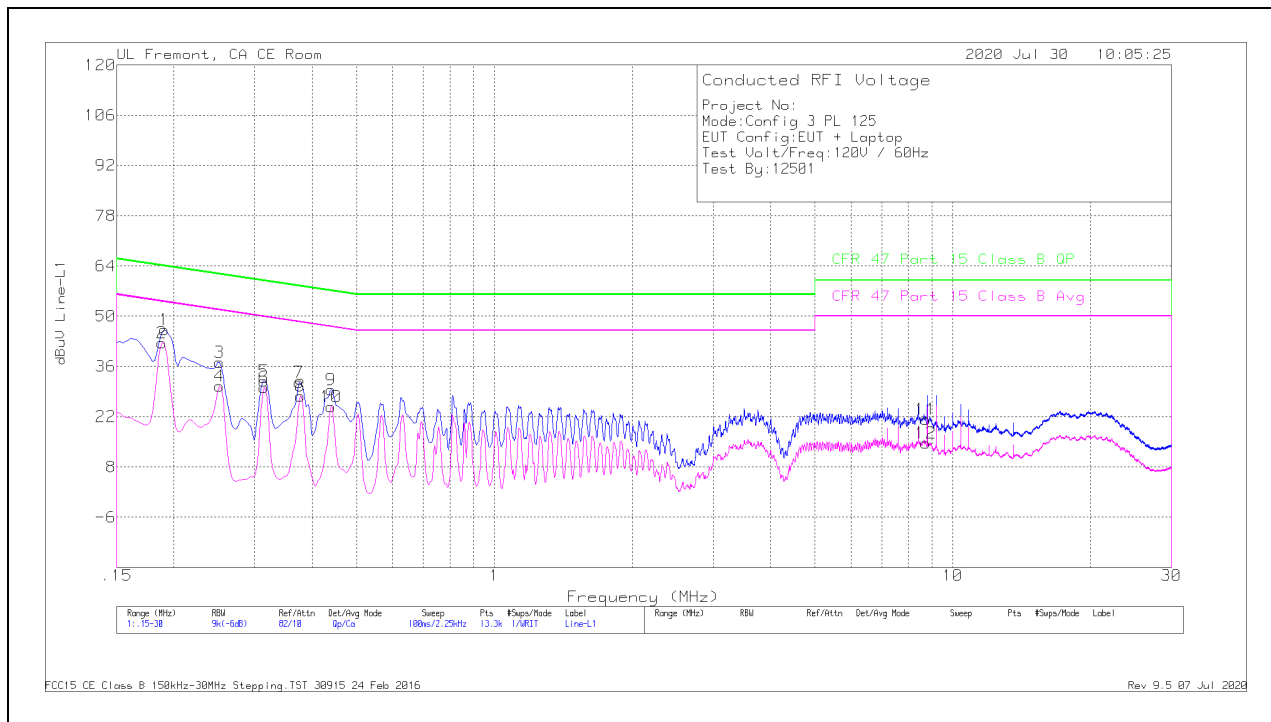
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

### RESULTS

## 8.7.1. AC Power Line Host

### LINE 1 RESULTS



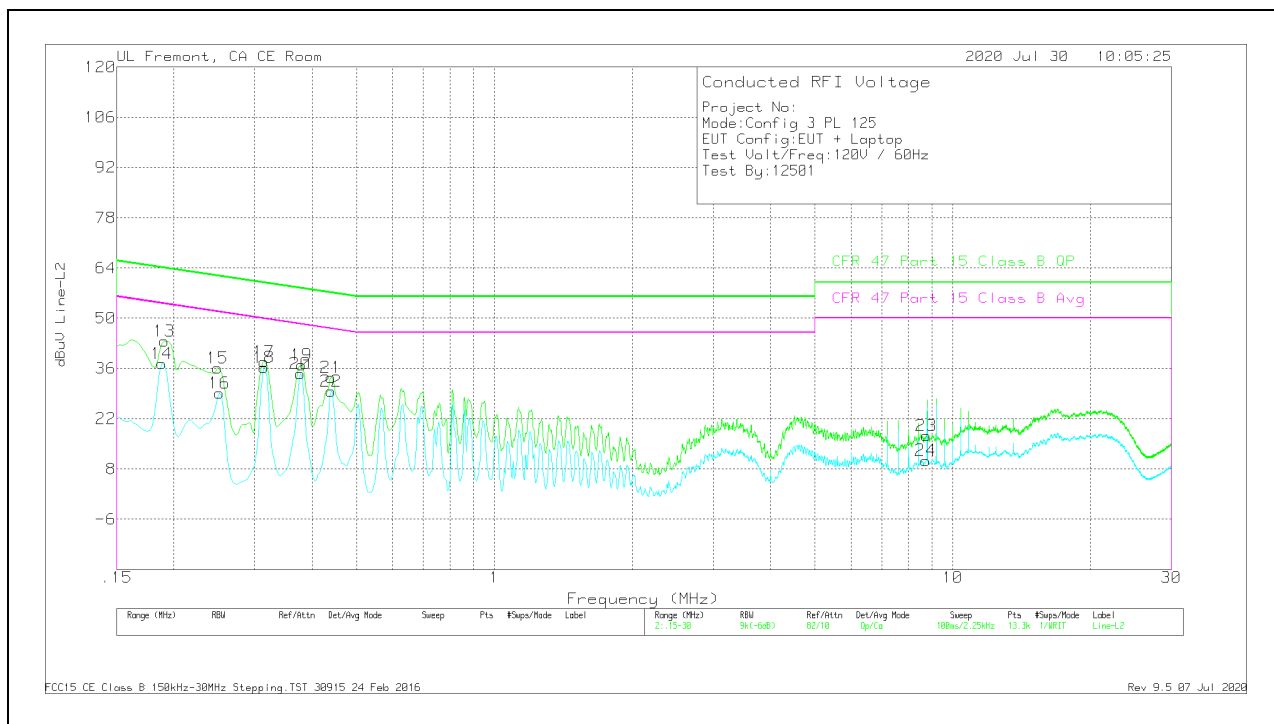
#### Range 1: Line-L1 .15 - 30MHz

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | PRE018644 6 LISN L1 | LC Cables C1&C3 | Limiter (dB) | Corrected Reading dBuV | CFR 47 Part 15 Class B QP | QP Margin (dB) | CFR 47 Part 15 Class B Avg | Av(CISPR)Margin (dB) |
|--------|-----------------|----------------------|-----|---------------------|-----------------|--------------|------------------------|---------------------------|----------------|----------------------------|----------------------|
| 1      | .1905           | 36.18                | Qp  | 0                   | 0               | 10           | 46.18                  | 64.01                     | -17.83         | -                          | -                    |
| 2      | .18825          | 32.63                | Ca  | 0                   | 0               | 10           | 42.63                  | -                         | -              | 54.11                      | -11.48               |
| 3      | .25125          | 27.22                | Qp  | 0                   | 0               | 10           | 37.22                  | 61.72                     | -24.5          | -                          | -                    |
| 4      | .25125          | 20.57                | Ca  | 0                   | 0               | 10           | 30.57                  | -                         | -              | 51.72                      | -21.15               |
| 5      | .31425          | 21.95                | Qp  | 0                   | 0               | 10           | 31.95                  | 59.86                     | -27.91         | -                          | -                    |
| 6      | .31425          | 20.11                | Ca  | 0                   | 0               | 10           | 30.11                  | -                         | -              | 49.86                      | -19.75               |
| 7      | .375            | 21.53                | Qp  | 0                   | 0               | 10           | 31.53                  | 58.39                     | -26.86         | -                          | -                    |
| 8      | .37725          | 17.83                | Ca  | 0                   | 0               | 10           | 27.83                  | -                         | -              | 48.34                      | -20.51               |
| 9      | .44025          | 19.42                | Qp  | 0                   | 0               | 10           | 29.42                  | 57.06                     | -27.64         | -                          | -                    |
| 10     | .44025          | 14.82                | Ca  | 0                   | 0               | 10           | 24.82                  | -                         | -              | 47.06                      | -22.24               |
| 11     | 8.7405          | 11.06                | Qp  | 0                   | .2              | 10.1         | 21.36                  | 60                        | -38.64         | -                          | -                    |
| 12     | 8.736           | 4.39                 | Ca  | 0                   | .2              | 10.1         | 14.69                  | -                         | -              | 50                         | -35.31               |

Qp - Quasi-Peak detector

Ca - CISPR average detection

## LINE 2 RESULTS



### Range 2: Line-L2 .15 - 30MHz

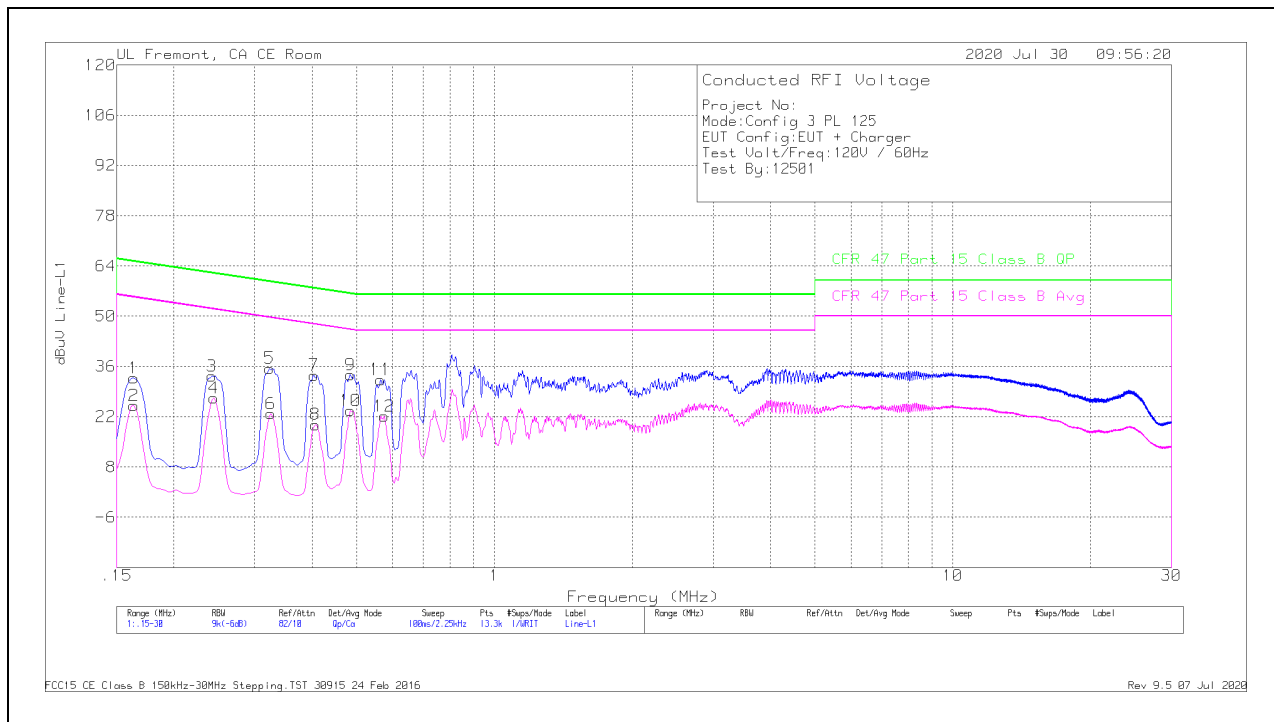
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | PRE018644 6 LISN L2 | LC Cables C2&C3 | Limiter (dB) | Corrected Reading dBuV | CFR 47 Part 15 Class B QP | QP Margin (dB) | CFR 47 Part 15 Class B Avg | Av(CISPR)M argin (dB) |
|--------|-----------------|----------------------|-----|---------------------|-----------------|--------------|------------------------|---------------------------|----------------|----------------------------|-----------------------|
| 13     | .1905           | 33.67                | Qp  | 0                   | 0               | 10           | 43.67                  | 64.01                     | -20.34         | -                          | -                     |
| 14     | .18825          | 27.32                | Ca  | 0                   | 0               | 10           | 37.32                  | -                         | -              | 54.11                      | -16.79                |
| 15     | .249            | 26.15                | Qp  | 0                   | 0               | 10           | 36.15                  | 61.79                     | -25.64         | -                          | -                     |
| 16     | .25125          | 19.14                | Ca  | 0                   | 0               | 10           | 29.14                  | -                         | -              | 51.72                      | -22.58                |
| 17     | .31425          | 27.84                | Qp  | 0                   | 0               | 10           | 37.84                  | 59.86                     | -22.02         | -                          | -                     |
| 18     | .31425          | 26.24                | Ca  | 0                   | 0               | 10           | 36.24                  | -                         | -              | 49.86                      | -13.62                |
| 19     | .3795           | 26.94                | Qp  | 0                   | 0               | 10           | 36.94                  | 58.29                     | -21.35         | -                          | -                     |
| 20     | .37725          | 24.48                | Ca  | 0                   | 0               | 10           | 34.48                  | -                         | -              | 48.34                      | -13.86                |
| 21     | .44025          | 23.47                | Qp  | 0                   | 0               | 10           | 33.47                  | 57.06                     | -23.59         | -                          | -                     |
| 22     | .44025          | 19.72                | Ca  | 0                   | 0               | 10           | 29.72                  | -                         | -              | 47.06                      | -17.34                |
| 23     | 8.754           | 7                    | Qp  | 0                   | .2              | 10.1         | 17.3                   | 60                        | -42.7          | -                          | -                     |
| 24     | 8.74275         | .08                  | Ca  | 0                   | .2              | 10.1         | 10.38                  | -                         | -              | 50                         | -39.62                |

Qp - Quasi-Peak detector

Ca - CISPR average detection

## 8.7.2. AC Power Line Norm

### LINE 1 RESULTS



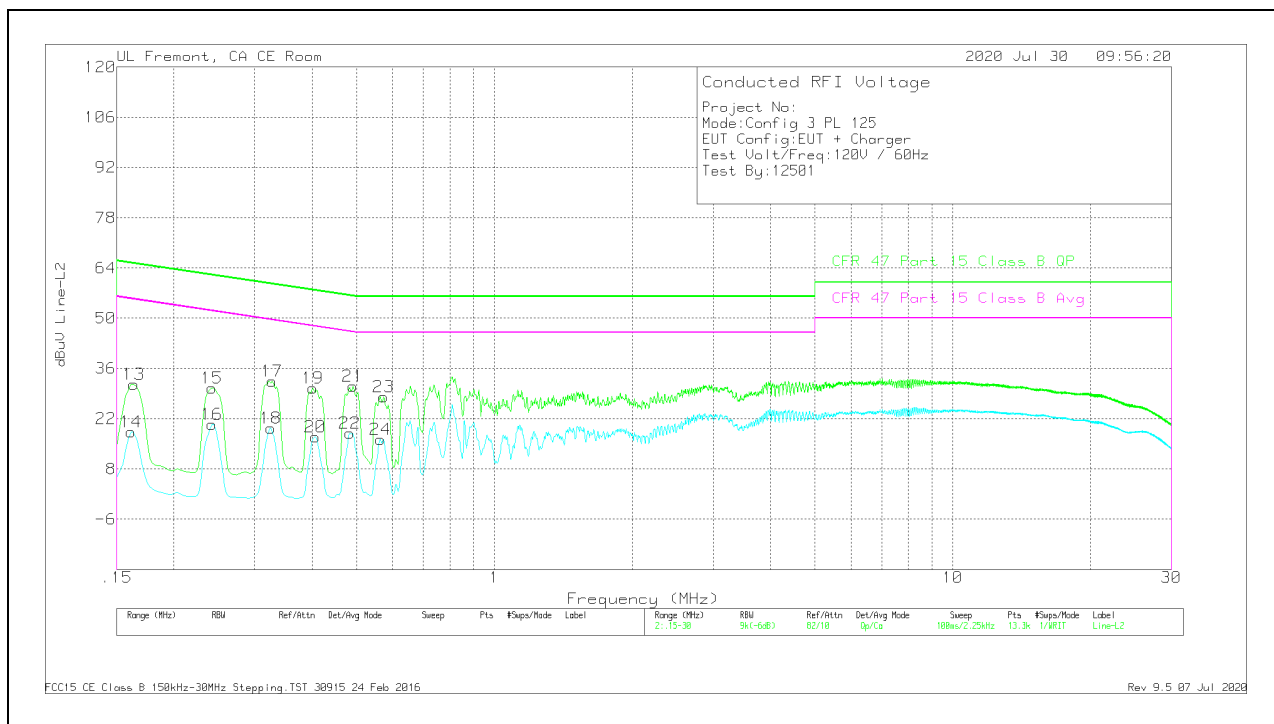
#### Range 1: Line-L1 .15 - 30MHz

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | PRE018644 6 LISN L1 | LC Cables C1&C3 | Limiter (dB) | Corrected Reading dBuV | CFR 47 Part 15 Class B QP | QP Margin (dB) | CFR 47 Part 15 Class B Avg | Av(CISPR)Margin (dB) |
|--------|-----------------|----------------------|-----|---------------------|-----------------|--------------|------------------------|---------------------------|----------------|----------------------------|----------------------|
| 1      | .1635           | 22.78                | Qp  | 0                   | 0               | 10           | 32.78                  | 65.28                     | -32.5          | -                          | -                    |
| 2      | .1635           | 15.19                | Ca  | 0                   | 0               | 10           | 25.19                  | -                         | -              | 55.28                      | -30.09               |
| 3      | .24225          | 23.39                | Qp  | 0                   | 0               | 10           | 33.39                  | 62.02                     | -28.63         | -                          | -                    |
| 4      | .2445           | 17.19                | Ca  | 0                   | 0               | 10           | 27.19                  | -                         | -              | 51.94                      | -24.75               |
| 5      | .32325          | 25.51                | Qp  | 0                   | 0               | 10           | 35.51                  | 59.62                     | -24.11         | -                          | -                    |
| 6      | .3255           | 12.83                | Ca  | 0                   | 0               | 10           | 22.83                  | -                         | -              | 49.57                      | -26.74               |
| 7      | .40425          | 23.59                | Qp  | 0                   | 0               | 10           | 33.59                  | 57.77                     | -24.18         | -                          | -                    |
| 8      | .4065           | 9.81                 | Ca  | 0                   | 0               | 10           | 19.81                  | -                         | -              | 47.72                      | -27.91               |
| 9      | .48525          | 23.72                | Qp  | 0                   | 0               | 10           | 33.72                  | 56.25                     | -22.53         | -                          | -                    |
| 10     | .48525          | 13.66                | Ca  | 0                   | 0               | 10           | 23.66                  | -                         | -              | 46.25                      | -22.59               |
| 11     | .564            | 22.37                | Qp  | 0                   | 0               | 10           | 32.37                  | 56                        | -23.63         | -                          | -                    |
| 12     | .57525          | 12.12                | Ca  | 0                   | 0               | 10           | 22.12                  | -                         | -              | 46                         | -23.88               |

Qp - Quasi-Peak detector

Ca - CISPR average detection

## LINE 2 RESULTS



### Range 2: Line-L2 .15 - 30MHz

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | PRE018644 6 LISN L2 | LC Cables C2&C3 | Limiter (dB) | Corrected Reading dBuV | CFR 47 Part 15 Class B QP | QP Margin (dB) | CFR 47 Part 15 Class B Avg | Av(CISPR)M argin (dB) |
|--------|-----------------|----------------------|-----|---------------------|-----------------|--------------|------------------------|---------------------------|----------------|----------------------------|-----------------------|
| 13     | .1635           | 21.6                 | Qp  | 0                   | 0               | 10           | 31.6                   | 65.28                     | -33.68         | -                          | -                     |
| 14     | .16125          | 8.4                  | Ca  | 0                   | 0               | 10           | 18.4                   | -                         | -              | 55.4                       | -37                   |
| 15     | .24225          | 20.58                | Qp  | 0                   | 0               | 10           | 30.58                  | 62.02                     | -31.44         | -                          | -                     |
| 16     | .24225          | 10.39                | Ca  | 0                   | 0               | 10           | 20.39                  | -                         | -              | 52.02                      | -31.63                |
| 17     | .32775          | 22.42                | Qp  | 0                   | 0               | 10           | 32.42                  | 59.51                     | -27.09         | -                          | -                     |
| 18     | .3255           | 9.37                 | Ca  | 0                   | 0               | 10           | 19.37                  | -                         | -              | 49.57                      | -30.2                 |
| 19     | .402            | 20.46                | Qp  | 0                   | 0               | 10           | 30.46                  | 57.81                     | -27.35         | -                          | -                     |
| 20     | .4065           | 6.93                 | Ca  | 0                   | 0               | 10           | 16.93                  | -                         | -              | 47.72                      | -30.79                |
| 21     | .492            | 21.01                | Qp  | 0                   | 0               | 10           | 31.01                  | 56.13                     | -25.12         | -                          | -                     |
| 22     | .483            | 7.95                 | Ca  | 0                   | 0               | 10           | 17.95                  | -                         | -              | 46.29                      | -28.34                |
| 23     | .573            | 18.11                | Qp  | 0                   | 0               | 10           | 28.11                  | 56                        | -27.89         | -                          | -                     |
| 24     | .564            | 6.28                 | Ca  | 0                   | 0               | 10           | 16.28                  | -                         | -              | 46                         | -29.72                |

Qp - Quasi-Peak detector  
Ca - CISPR average detection

## END OF REPORT



## **9. SETUP PHOTOS**

Please refer to 13259315-EP2V1 for setup photos.

**END OF REPORT**