# TEST REPORT

**Report Number :** 15107858-E16V1

| | | |
|---|---|---|
| **Applicant** | : | GOOGLE LLC<br>1600 AMPHITHEATRE PARKWAY<br>MOUNTAIN VIEW, CA 94043 U.S.A. |
| **Model** | : | GGX8B |
| **FCC ID** | : | A4RGGX8B |
| **EUT Description** | : | PHONE |
| **Test Standard(s)** | : | FCC CFR 47 PART 15 SUBPART F §15.519 |

**Date Of Issue:**
2024-04-17

**Prepared by:**
UL VEIFICATION SERVICES INC.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

ACCREDITED
CERT #0751.05

## Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| V1 | 2024-04-17 | Initial Issue | --- |



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# 1. ATTESTATION OF TEST RESULTS

| | |
|---|---|
| Applicant Name and Address | GOOGLE LLC<br>1600 AMPHITHEATRE PARKWAY<br>MOUNTAIN VIEW, CA 94043 U.S.A. |
| Model | GGX8B |
| FCC ID | A4RGGX8B |
| EUT Description | PHONE |
| SERIAL NUMBER | 3B041FDAS0001G |
| SAMPLE RECEIPT DATE | 2023-12-19 |
| DATE TESTED | 2023-12-19 TO 2024-04-09 |
| Applicable Standards | FCC CFR 47 PART 15 SUBPART F §15.519 |
| Test Results | 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.

| Approved & Released By: | Prepared & Reviewed By: |
|---|---|
|  |  |
| Thu Chan<br>Staff Engineer<br>UL Verification Services, Inc. | Benjamin Dobbins<br>Senior Test Engineer<br>UL Verification Services, Inc. |

# 2. TEST RESULTS SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

| FCC Clause | Requirement | Result | Comment |
|---|---|---|---|
| - | 99% OBW | Reporting purposes only | ANSI C63.10 Section 6.9.4 |
| 15.503 & 15.519 (b) | -10 dB BW | Complies | ANSI C63.10 Section 10.1 |
| 15.519 (c) & (e) | Pk Power & Max Avg Emissions | Complies | ANSI C63.10 Section 10.3 |
| 15.519 (a)(1) | Cessation Time | Complies | None |
| 15.519 (c) & 15.209 (a) | Emissions Below 960 MHz | Complies | ANSI C63.10 Section 10.2 |
| 15.519 (c) & (d) | Emissions Above 960 MHz | Complies | ANSI C63.10 Section 10.3 |
| 15.207 (a) | AC Power Line Conducted Emissions | Complies | ANSI C63.10 Section 6.2 |



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# 3. 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 v02r01
- ANSI C63.10:2013
- ISED RSS-220 Issue 1 Amendment 1
- ISED RSS GEN Issue 5 Amendment 2

# 4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

| | Address | ISED CABID | ISED Company Number | FCC Registration |
|---|---|---|---|---|
| ☐ | Building 1: 47173 Benicia Street, Fremont, CA 94538, USA | US0104 | 2324A | 550739 |
| ☒ | Building 2: 47266 Benicia Street, Fremont, CA 94538, USA | | | |
| ☐ | Building 3: 843 Auburn Ct, Fremont, CA 94538, USA | | | |
| ☒ | Building 4: 47658 Kato Rd, Fremont, CA 94538, USA | | | |
| ☐ | Building 5: 47670 Kato Rd, Fremont, CA 94538, USA | | | |



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# 5. DECISION RULES AND MEASUREMENT UNCERTAINTY

## 5.1. 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.

## 5.2. 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.)

## 5.3. MEASUREMENT UNCERTAINTY

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

| PARAMETER | $U_{LAB}$ |
|---|---|
| Conducted Antenna Port Emission Measurement | 1.940 dB |
| Power Spectral Density | 2.466 dB |
| Time Domain Measurements Using SA | 3.39 % |
| Radio Frequency (Spectrum Analyzer) | 141.16 Hz |
| Occupied Bandwidth | 1.22% |
| Worst Case Conducted Disturbance, 9KHz to 0.15 MHz | 3.78 dB |
| Worst Case Conducted Disturbance, 0.15 to 30 MHz | 3.40 dB |
| Worst Case Radiated Disturbance, 9KHz to 30 MHz | 2.87 dB |
| Worst Case Radiated Disturbance, 30 to 1000 MHz | 6.01 dB |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz | 4.73 dB |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz | 4.51 dB |
| Worst Case Radiated Disturbance, 26000 to 40000 MHz | 5.29 dB |

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



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## 5.4. SAMPLE CALCULATION

**RADIATED EMISSIONS**

Where relevant, the following sample calculation is provided:

EIRP (dBm) = Meter Reading (dBm) + Antenna Factor (dB/m) + Pre-Amp Gain/Cbl Loss (dB)
+ dBm-to-dBm Unit Conversion Factor @ 3m
= -60 dBm + 28 dB/m + (-27) dB + 11.8
= -47.2 dBm

**MAINS CONDUCTED EMISSIONS**

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + LISN Insertion Loss (dB) + Cable Loss (dB)
+ Limiter Factor (dB)
= 42.19 dBuV + 0.1 dB + 0 dB + 9.4 (dB)
= 51.69 dBuV



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# 6. EQUIPMENT UNDER TEST

## 6.1. DESCRIPTION OF EUT

The EUT is a phone.

## 6.2. MAXIMUM OUTPUT POWER

Highest Average Powers based on ANT/CH are listed as follows:

| Mode | ANT | CH | CONFIG | Average Power (dBm EIRP) |
|---|---|---|---|---|
| 7 | Common | 5 | 1 | -41.34 |
| 16 | Common | 9 | 3 | -41.51 |
| 17 | Ranging | 5 | 4 | -41.48 |
| 26 | Ranging | 9 | 6 | -41.44 |

## 6.3. MODULATION

The UWB signal is BPSK pulsed modulated signal.



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## 6.4. TEST MODE

| Test Configuration | | | | | |
|---|---|---|---|---|---|
| **Mode** | **Antenna** | **Channel** | **Modulation** | **Config ID** | **Payload Length (bytes)** |
| 1 | Ranging Antenna | 5 | BPRF | 0 | 125 |
| 2 | Ranging Antenna | 9 | BPRF | 0 | 125 |
| 3 | Common AoA | 5 | BPRF | 0 | 125 |
| 4 | Common AoA | 9 | BPRF | 0 | 125 |
| 5 | Ranging Antenna | 5 | BPRF | 1 | 125 |
| 6 | Ranging Antenna | 9 | BPRF | 1 | 125 |
| 7 | Common AoA | 5 | BPRF | 1 | 125 |
| 8 | Common AoA | 9 | BPRF | 1 | 125 |
| 9 | Ranging Antenna | 5 | BPRF | 2 | NA |
| 10 | Ranging Antenna | 9 | BPRF | 2 | NA |
| 11 | Common AoA | 5 | BPRF | 2 | NA |
| 12 | Common AoA | 9 | BPRF | 2 | NA |
| 13 | Ranging Antenna | 5 | HPRF | 3 | 150 |
| 14 | Ranging Antenna | 9 | HPRF | 3 | 150 |
| 15 | Common AoA | 5 | HPRF | 3 | 150 |
| 16 | Common AoA | 9 | HPRF | 3 | 150 |
| 17 | Ranging Antenna | 5 | HPRF | 4 | 150 |
| 18 | Ranging Antenna | 9 | HPRF | 4 | 150 |
| 19 | Common AoA | 5 | HPRF | 4 | 150 |
| 20 | Common AoA | 9 | HPRF | 4 | 150 |
| 21 | Ranging Antenna | 5 | HPRF | 5 | N/A |
| 22 | Ranging Antenna | 9 | HPRF | 5 | N/A |
| 23 | Common AoA | 5 | HPRF | 5 | N/A |
| 24 | Common AoA | 9 | HPRF | 5 | N/A |
| 25 | Ranging Antenna | 5 | HPRF | 6 | N/A |
| 26 | Ranging Antenna | 9 | HPRF | 6 | N/A |
| 27 | Common AoA | 5 | HPRF | 6 | N/A |
| 28 | Common AoA | 9 | HPRF | 6 | N/A |



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# 7. DESCRIPTION OF TEST SETUP

## 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. All selected modes are used for the Ant/Ch settings that were tested at their respective powers from in-band average emissions, and modes 7 (Common Antenna, CH5), 16 (Common Antenna, CH9), 17 (Ranging Antenna, CH5), & 26 (Ranging Antenna, CH9) were chosed for unwanted emission test.

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 except 0.96 – 6 GHz, 1164 – 1240 MHz, and 1559 – 1610 MHz due to noise unrelated to the UWB signal from the device.

For simultaneous transmission on the same antenna of multiple channels in the UWB and WiFi, no noticeable new emission was found.



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# 8. TEST AND MEASUREMENT EQUIPMENT

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

| Test Equipment | | | | | |
|---|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Local ID** | **Cal Date** | **Cal Due** |
| Antenna, Passive Loop 30Hz - 1MHz | Electro-Metrics | EM-6871 | 219909 | 2023-06-20 | 2024-06-30 |
| Antenna, Passive Loop 100kHz - 30MHz | Electro-Metrics | EM-6872 | 219911 | 2023-12-05 | 2024-12-31 |
| Antenna, Broadband Hybrid, 30 MHz to 3GHz | Sunol Sciences Corp | JB3 | 230634 | 2023-01-23 | 2025-01-31 |
| Amplifier, 9kHz to 1 GHz, 32dB | Sonoma Instrumnet | 310N | 79584 | 2023-12-28 | 2024-12-31 |
| EMI Test Reciever | Rohde & Schwarz | ESW44 | 235266 | 2023-03-30 | 2024-03-31 |
| Horn Antenna, 1-18GHz | ETS-Lindgren | 3117 | 206808 | 2023-03-07 | 2024-03-31 |
| RF Filter Box, 1-18GHz | UL-FR1 (CTECH) | N/A | PRE0183 207 | 2023-03-13 | 2024-03-31 |
| Antenna, Horn 18-26.5GHz | ARA | MWH-1826/B | 172363 | 2023-01-27 | 2024-01-31 |
| RF Amplifier 18-26.5GHz | Amplical | AMP18G26.5-60 | 171580 | 2023-05-19 | 2024-05-31 |
| Antenna, Horn 26.5-40GHz | ARA | MWH-2640/B | 172366 | 2023-01-27 | 2024-01-31 |
| RF Amplifier 26.5-40GHz | Amplical | AMP26G40-60 | 172345 | 2023-05-19 | 2024-05-31 |
| Filter, LPF 0-5400MHz Ch5/9 5.4G LPF | Wainwright Instruments Gmbh | WLKX12-5400-5913-18000-60ST | 204843 | 2023-11-14 | 2024-11-30 |
| Filter, HPF, 9-18GHz | RF-Lambda | RHPF23G09G18 | 206078 | 2024-01-03 | 2025-01-31 |
| Filter, HPF 11.2GHz, Ch9 11.5G HPF | Wainwright Instruments Gmbh | WHW2-8165-11500-21000-40CD | 176234 | 2024-01-03 | 2025-01-31 |
| EMI TEST RECEIVER | Rohde & Schwarz | ESR | 171646 | 2023-02-20 | 2024-02-29 |
| Cable, RG223 Coax, double shield, BNC | Pasternack Enterprises | RG233/U | 202322 | 2023-08-10 | 2024-08-31 |
| Cable, RG223 Coax, double shield, BNC | Pasternack Enterprises | RG233/U | 202326 | 2023-08-10 | 2024-08-31 |
| Transient Limiter | TE | TBFL1 | 207996 | 2023-08-10 | 2024-08-31 |
| LISN for Conducted Emissions CISPR-16 | Fischer Custom Communications, Ince | FCC-LISN-50/250/-25-2-01-480V | 175765 | 2024-01-26 | 2025-01-31 |
| Radiated Software | UL | UL EMC | Version 9.5 May 1, 2023 | | |
| AC Line Conducted Software | UL | UL EMC | Version 9.5 March 3, 2023 | | |

***Tests were performed prior to the calibration date to ensure accurate measurements were recorded.***



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# 9. APPLICABLE LIMITS AND TEST RESULTS

## 9.1. 99% BANDWIDTH

**LIMIT**

None; for reporting purposes only.

**TEST PROCEDURE**

ANSI C63.10 Section 6.9.3

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 ≥ 3*RBW. The sweep time is coupled.

Tabulated data provides the test results of all available test modes. The plots for Common Antenna Modes 7 and 16 and Ranging Antenna Modes 17 and 26 bandwidth measurement are presented and same measurement settings apply to the rest of the test modes.

**RESULTS**

Employee IDs: 32067
Location: Chamber 2F
Test Date: 2024/01/12



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**99% BW**

| Test Mode | EUT Orientation | Ant. Polarity | 99% OBW |
|---|---|---|---|
| 1 | Flatbed | H | 603 |
| 2 | Landscape | H | 572 |
| 3 | Landscape | H | 538 |
| 4 | Portrait | H | 562 |
| 5 | Flatbed | H | 601 |
| 6 | Landscape | H | 570 |
| 7 | Landscape | H | 540 |
| 8 | Portrait | H | 565 |
| 9 | Flatbed | H | 597 |
| 10 | Landscape | H | 582 |
| 11 | Landscape | H | 575 |
| 12 | Portrait | H | 572 |
| 13 | Flatbed | H | 597 |
| 14 | Landscape | H | 595 |
| 15 | Landscape | H | 576 |
| 16 | Portrait | H | 572 |
| 17 | Flatbed | H | 596 |
| 18 | Landscape | H | 571 |
| 19 | Landscape | H | 565 |
| 20 | Portrait | H | 568 |
| 21 | Flatbed | H | 598 |
| 22 | Landscape | H | 590 |
| 23 | Landscape | H | 580 |
| 24 | Portrait | H | 570 |
| 25 | Flatbed | H | 618 |
| 26 | Landscape | H | 559 |
| 27 | Landscape | H | 543 |
| 28 | Portrait | H | 550 |



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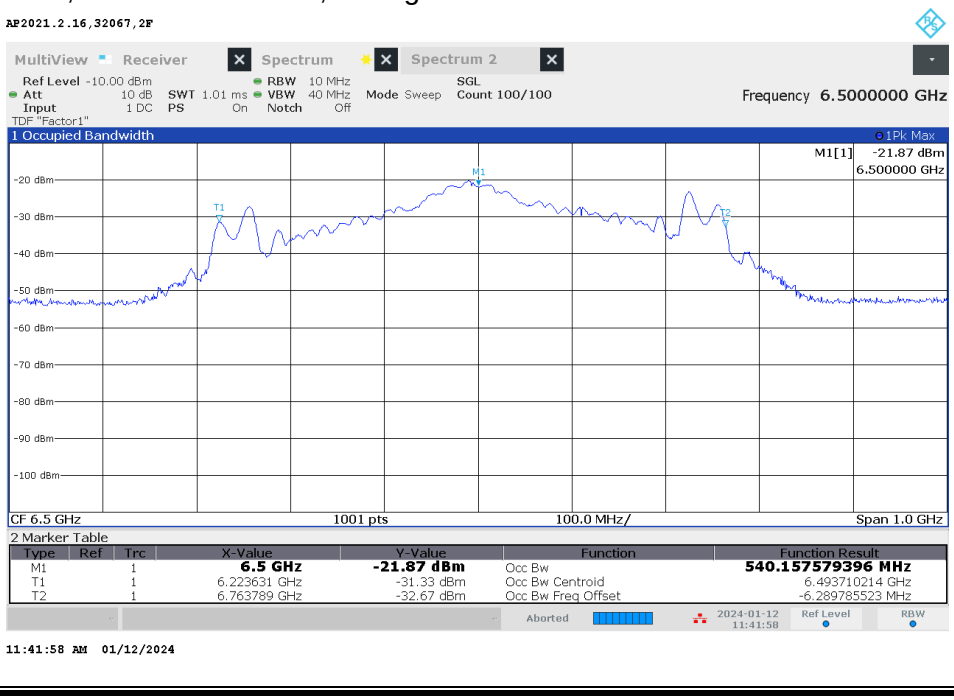
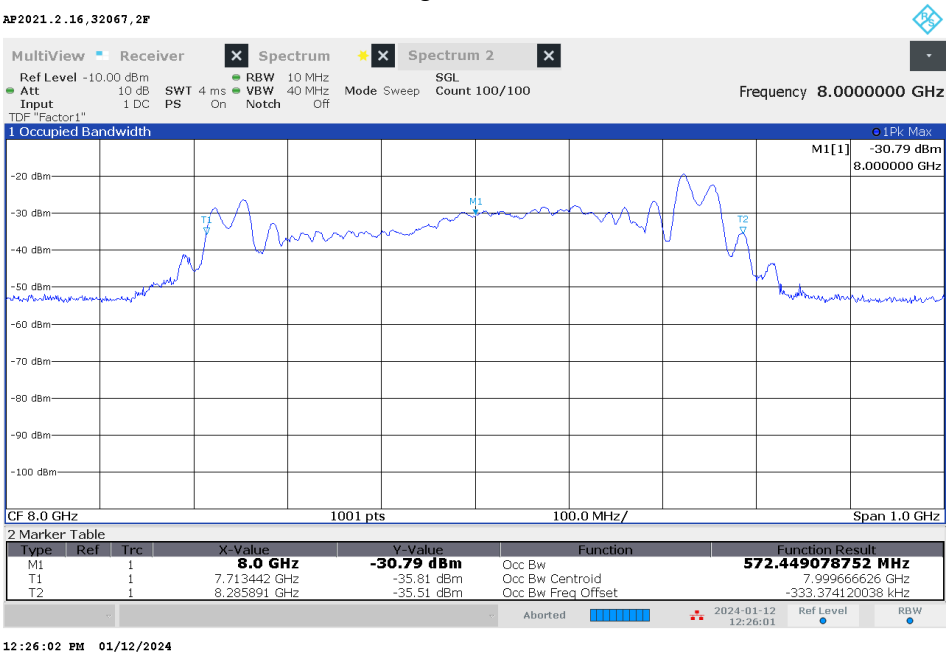
## Mode 7, CH5, Common Antenna, Config 1




## Mode 16, CH9, Common Antenna, Config 3



## Mode 17, CH5, Ranging Antenna, Config 4


## Mode 26, CH9, Ranging Antenna, Config 6

## 9.2. 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 fH and the lower boundary is designated fL. The frequency at which the highest radiated emission occurs is designated fM.

§15.503 (b)*Center frequency.* The center frequency, FC, equals (FH + FL)/2.

§15.503 (c)*Fractional bandwidth.* The fractional bandwidth equals 2(FH−FL)/ (FH+ FL).

§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.

**TEST PROCEDURE**

ANSI C63.10 Clause 10.1

Tabulated data provides the test results of all available test modes. The plots for Common Antenna Modes 7 and 16 and Ranging Antenna Modes 17 and 26 bandwidth measurement are presented and same measurement settings apply to the rest of the test modes.

**RESULTS**

Employee IDs: 32067, 32188
Location: Chamber 2F
Test Date: 2023/12/26 – 2023/12/27

## OPERATING BANDWIDTH

| Test Mode | EUT Orientation | Ant. Polarity | FM (GHz) | FL (GHz) | FH (GHz) | FC (GHz) | OBW (MHz) | Min. OBW (MHz) | OBW Margin (MHz) | OBW Pass/Fail |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Flatbed | H | 6.72475 | 6.223681 | 6.769818 | 6.4967495 | 546.137 | 500 | 46.137 | P |
| 2 | Landscape | H | 7.83225 | 7.716679 | 8.257314 | 7.9869965 | 540.635 | 500 | 40.635 | P |
| 3 | Landscape | H | 6.72475 | 6.222681 | 6.759815 | 6.491248 | 537.134 | 500 | 37.134 | P |
| 4 | Portrait | H | 8.22225 | 7.748687 | 8.257314 | 8.0030005 | 508.627 | 500 | 8.627 | P |
| 5 | Flatbed | H | 6.72475 | 6.224181 | 6.759815 | 6.491998 | 535.634 | 500 | 35.634 | P |
| 6 | Landscape | H | 8.22225 | 7.716679 | 8.257314 | 7.9869965 | 540.635 | 500 | 40.635 | P |
| 7 | Landscape | H | 6.72475 | 6.222181 | 6.759315 | 6.490748 | 537.134 | 500 | 37.134 | P |
| 8 | Portrait | H | 8.22225 | 7.749187 | 8.257314 | 8.0032505 | 508.127 | 500 | 8.127 | P |
| 9 | Flatbed | H | 6.72475 | 6.222681 | 6.772819 | 6.49775 | 550.138 | 500 | 50.138 | P |
| 10 | Landscape | H | 7.89375 | 7.717179 | 8.257314 | 7.9872465 | 540.135 | 500 | 40.135 | P |
| 11 | Landscape | H | 6.52075 | 6.222681 | 6.759315 | 6.490998 | 536.634 | 500 | 36.634 | P |
| 12 | Portrait | H | 8.22175 | 7.72018 | 8.257314 | 7.988747 | 537.134 | 500 | 37.134 | P |
| 13 | Flatbed | H | 6.72525 | 6.223181 | 6.759815 | 6.491498 | 536.634 | 500 | 36.634 | P |
| 14 | Landscape | H | 8.22175 | 7.716679 | 8.257314 | 7.9869965 | 540.635 | 500 | 40.635 | P |
| 15 | Landscape | H | 6.48975 | 6.222181 | 6.759315 | 6.490748 | 537.134 | 500 | 37.134 | P |
| 16 | Portrait | H | 8.22225 | 7.72168 | 8.257314 | 7.989497 | 535.634 | 500 | 35.634 | P |
| 17 | Flatbed | H | 6.48925 | 6.251188 | 6.771318 | 6.511253 | 520.13 | 500 | 20.13 | P |
| 18 | Landscape | H | 7.98725 | 7.71918 | 8.254314 | 7.986747 | 535.134 | 500 | 35.134 | P |
| 19 | Landscape | H | 6.48975 | 6.250688 | 6.758315 | 6.5045015 | 507.627 | 500 | 7.627 | P |
| 20 | Portrait | H | 7.98725 | 7.72068 | 8.257314 | 7.988997 | 536.634 | 500 | 36.634 | P |
| 21 | Flatbed | H | 6.72475 | 6.223181 | 6.759815 | 6.491498 | 536.634 | 500 | 36.634 | P |
| 22 | Landscape | H | 8.22275 | 7.716679 | 8.257314 | 7.9869965 | 540.635 | 500 | 40.635 | P |
| 23 | Landscape | H | 6.49025 | 6.250688 | 6.758815 | 6.5047515 | 508.127 | 500 | 8.127 | P |
| 24 | Portrait | H | 8.22225 | 7.72018 | 8.257314 | 7.988747 | 537.134 | 500 | 37.134 | P |
| 25 | Flatbed | H | 6.59325 | 6.252688 | 6.773818 | 6.513253 | 521.13 | 500 | 21.13 | P |
| 26 | Landscape | H | 7.87725 | 7.71818 | 8.255314 | 7.986747 | 537.134 | 500 | 37.134 | P |
| 27 | Landscape | H | 6.50475 | 6.251188 | 6.757815 | 6.5045015 | 506.627 | 500 | 6.627 | P |
| 28 | Portrait | H | 8.05275 | 7.72068 | 8.256814 | 7.988747 | 536.134 | 500 | 36.134 | P |



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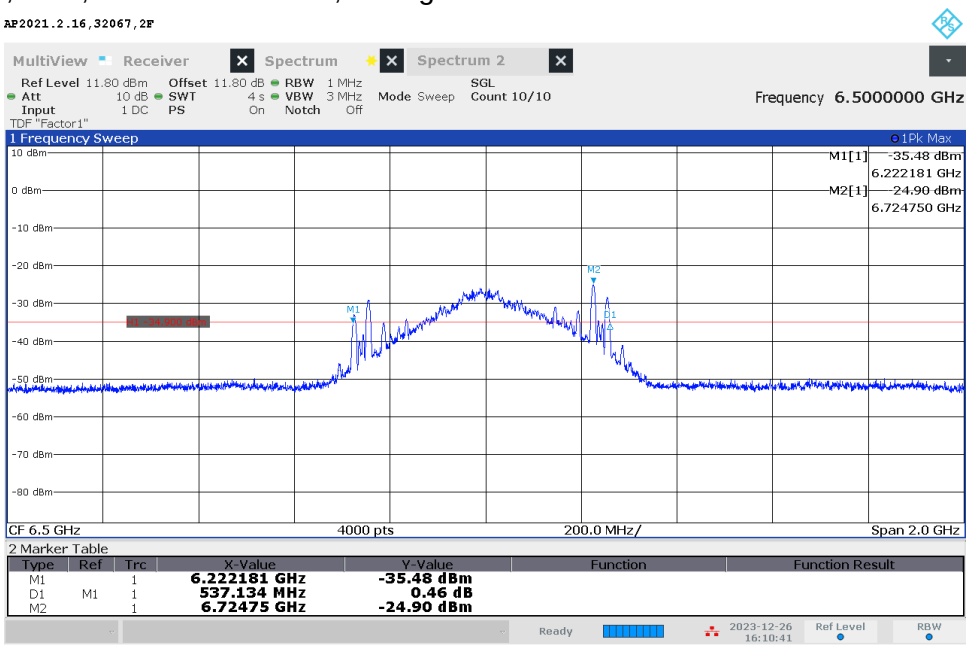
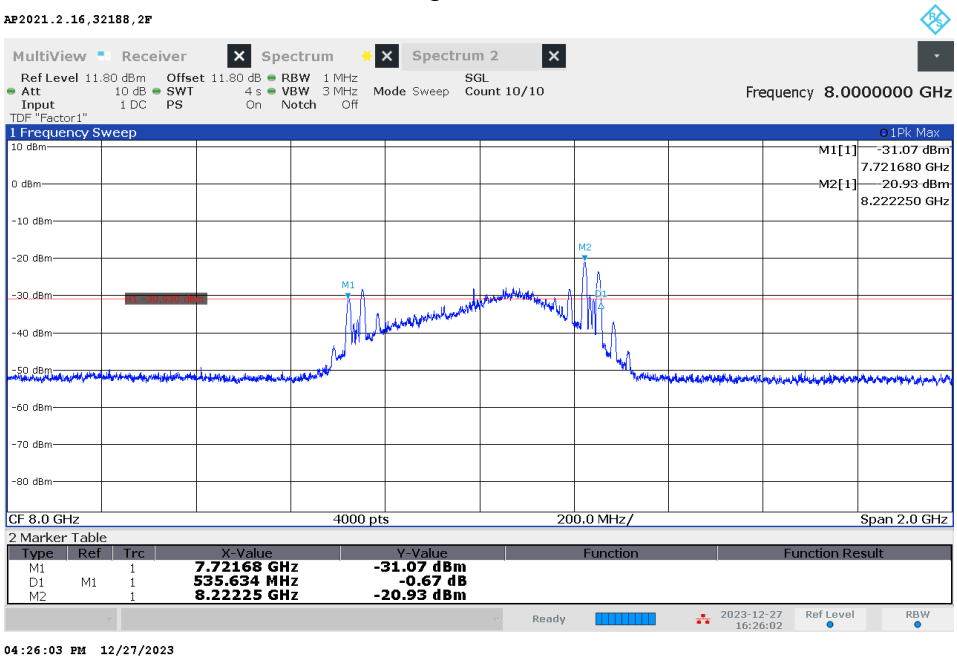
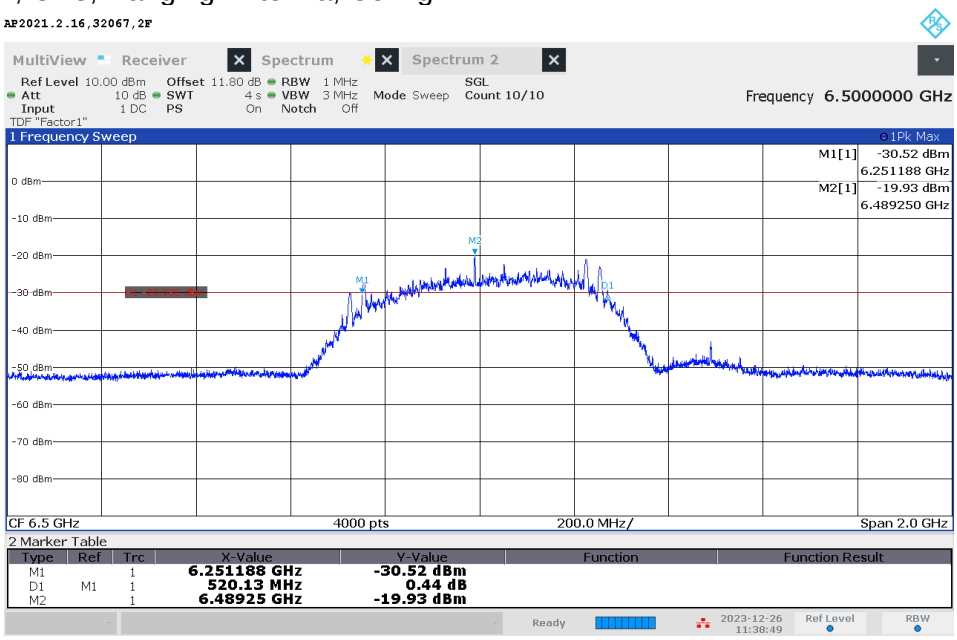
## Mode 7, CH5, Common Antenna, Config 1



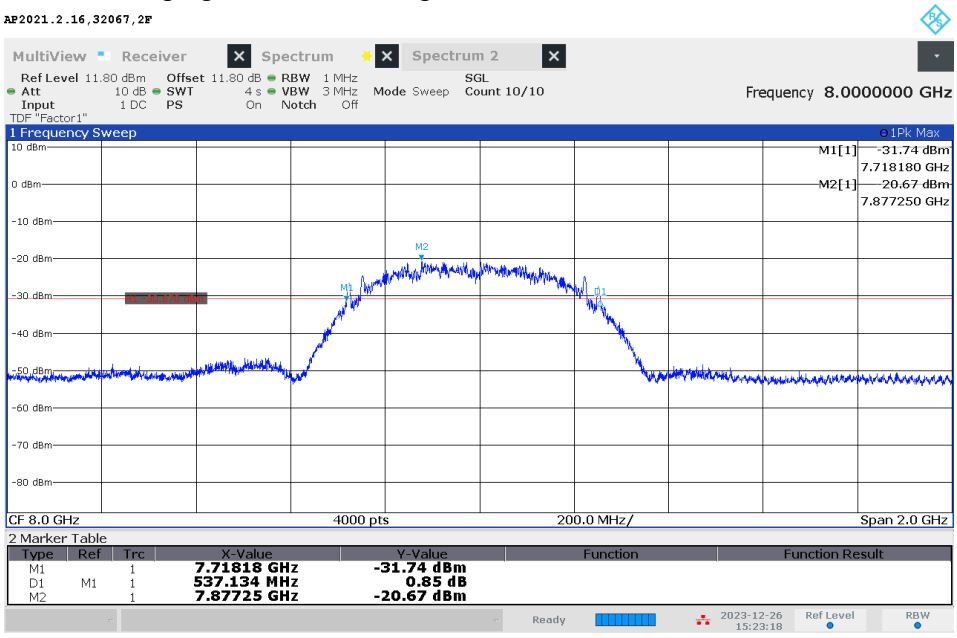

## Mode 16, CH9, Common Antenna, Config 3



## Mode 17, CH5, Ranging Antenna, Config 4




## Mode 26, CH9, Ranging Antenna, Config 6



# 9.3. 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 |

## TEST PROCEDURE

ANSI C63.10 Clause 10.3

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 modes. The plots for Common Antenna Modes 7 and 16 and Ranging Antenna Modes 17 and 26 peak and maximum average power measurements are presented and same measurement settings apply to the rest of the test modes.

## RESULTS

Employee IDs: 32067
Location: Chamber 2F
Test Date: 2023/12/19 – 2023/12/27



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## PEAK POWER AND MAXIMUM AVERAGE EMISSIONS

| | | | | Peak EIRP Power | | | | | Average EIRP Power | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Test Mode | EUT Orientation | Ant. Polarity | | FM (GHz) | Peak | Pk Limit | Margin (dB) | | FM (GHz) | Avg | Avg Limit | Margin (dB) |
| 1 | Flatbed | H | | 6.4875 | -2.56 | 0 | -2.56 | | 6.5905 | -41.84 | -41.3 | -0.54 |
| 2 | Landscape | H | | 7.9835 | -1.71 | 0 | -1.71 | | 7.9095 | -41.61 | -41.3 | -0.31 |
| 3 | Landscape | H | | 6.4875 | -1.24 | 0 | -1.24 | | 6.5055 | -41.88 | -41.3 | -0.58 |
| 4 | Portrait | H | | 8.2205 | -1.12 | 0 | -1.12 | | 8.0885 | -41.56 | -41.3 | -0.26 |
| 5 | Flatbed | H | | 6.4845 | -3.82 | 0 | -3.82 | | 6.5915 | -41.74 | -41.3 | -0.44 |
| 6 | Landscape | H | | 7.9805 | -2.63 | 0 | -2.63 | | 7.8935 | -41.6 | -41.3 | -0.30 |
| 7 | Landscape | H | | 6.4865 | -1.82 | 0 | -1.82 | | 6.5205 | -41.34 | -41.3 | -0.04 |
| 8 | Portrait | H | | 8.2215 | -1.14 | 0 | -1.14 | | 8.0885 | -41.69 | -41.3 | -0.39 |
| 9 | Flatbed | H | | 6.7415 | -5.60 | 0 | -5.60 | | 6.5945 | -41.82 | -41.3 | -0.52 |
| 10 | Landscape | H | | 8.2205 | -4.55 | 0 | -4.55 | | 7.8965 | -41.73 | -41.3 | -0.43 |
| 11 | Landscape | H | | 6.7405 | -7.79 | 0 | -7.79 | | 6.5085 | -42.31 | -41.3 | -1.01 |
| 12 | Portrait | H | | 8.2205 | -1.77 | 0 | -1.77 | | 8.0725 | -41.53 | -41.3 | -0.23 |
| 13 | Flatbed | H | | 6.7395 | -6.00 | 0 | -6.00 | | 6.5935 | -42.43 | -41.3 | -1.13 |
| 14 | Landscape | H | | 8.2195 | -4.68 | 0 | -4.68 | | 8.0555 | -42.15 | -41.3 | -0.85 |
| 15 | Landscape | H | | 6.7405 | -7.95 | 0 | -7.95 | | 6.4895 | -41.63 | -41.3 | -0.33 |
| 16 | Portrait | H | | 8.2215 | -0.95 | 0 | -0.95 | | 8.0715 | -41.51 | -41.3 | -0.21 |
| 17 | Flatbed | H | | 6.7395 | -3.19 | 0 | -3.19 | | 6.5305 | -41.48 | -41.3 | -0.18 |
| 18 | Landscape | H | | 8.2205 | -4.58 | 0 | -4.58 | | 7.9255 | -41.55 | -41.3 | -0.25 |
| 19 | Landscape | H | | 6.7395 | -5.00 | 0 | -5.00 | | 6.4905 | -41.89 | -41.3 | -0.59 |
| 20 | Portrait | H | | 8.2205 | -1.93 | 0 | -1.93 | | 8.0835 | -41.85 | -41.3 | -0.55 |
| 21 | Flatbed | H | | 6.7415 | -5.82 | 0 | -5.82 | | 6.5935 | -41.91 | -41.3 | -0.61 |
| 22 | Landscape | H | | 8.2205 | -4.56 | 0 | -4.56 | | 7.8915 | -41.6 | -41.3 | -0.30 |
| 23 | Landscape | H | | 6.7395 | -11.40 | 0 | -11.40 | | 6.4895 | -41.62 | -41.3 | -0.32 |
| 24 | Portrait | H | | 8.2205 | -1.85 | 0 | -1.85 | | 8.0745 | -41.68 | -41.3 | -0.38 |
| 25 | Flatbed | H | | 6.7395 | -5.46 | 0 | -5.46 | | 6.6205 | -41.54 | -41.3 | -0.24 |
| 26 | Landscape | H | | 8.2215 | -5.02 | 0 | -5.02 | | 7.9215 | -41.44 | -41.3 | -0.14 |
| 27 | Landscape | H | | 6.7405 | -7.09 | 0 | -7.09 | | 6.5045 | -41.77 | -41.3 | -0.47 |
| 28 | Portrait | H | | 8.2205 | -1.49 | 0 | -1.49 | | 8.0555 | -41.6 | -41.3 | -0.30 |



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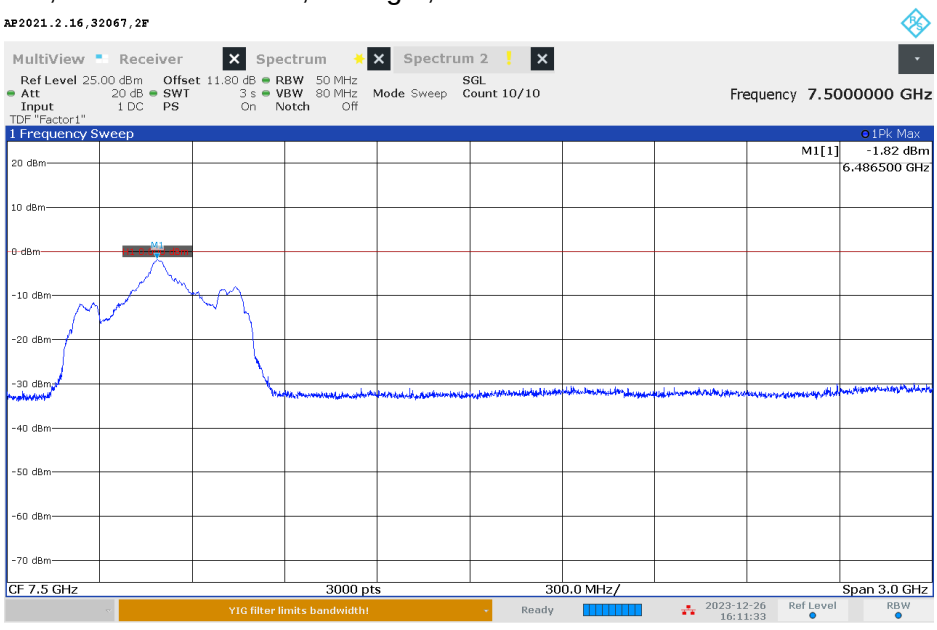
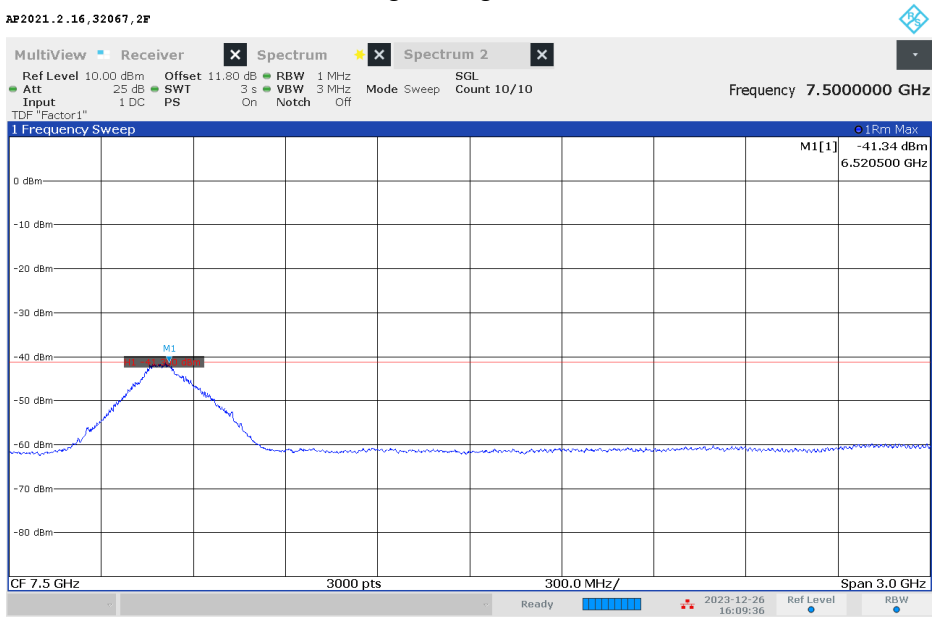
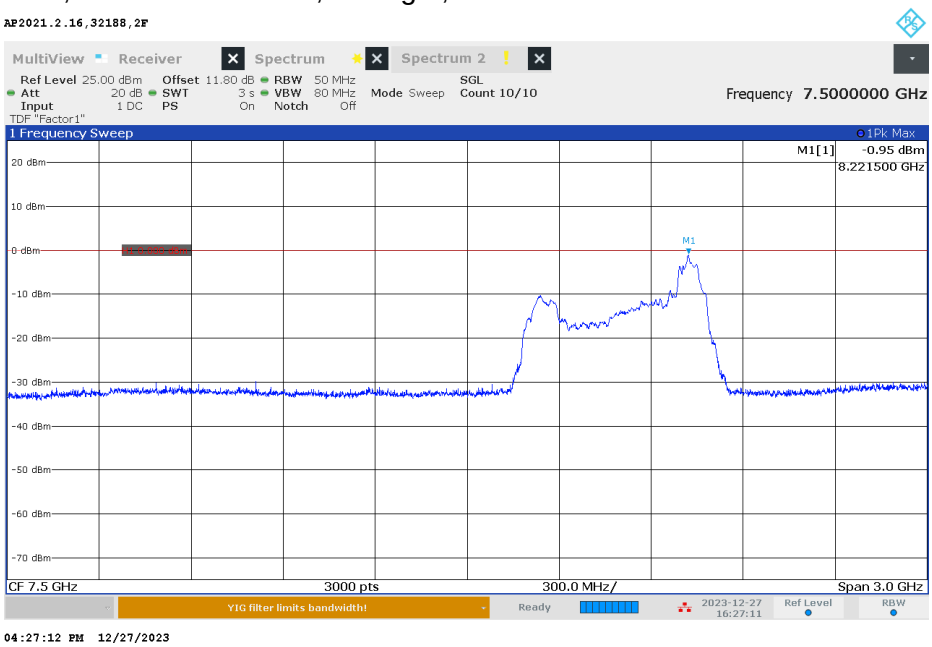
## Mode 7, CH5, Common Antenna, Config 1, Peak



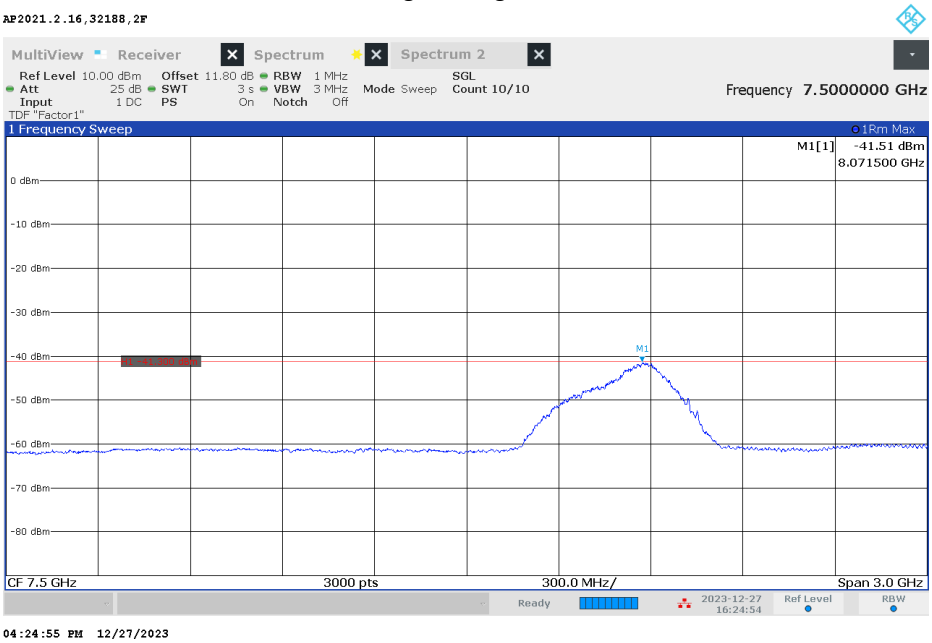

## Mode 7, CH5, Common Antenna, Config 1, Avg



## Mode 16, CH9, Common Antenna, Config 3, Peak




## Mode 16, CH9, Common Antenna, Config 3, Avg



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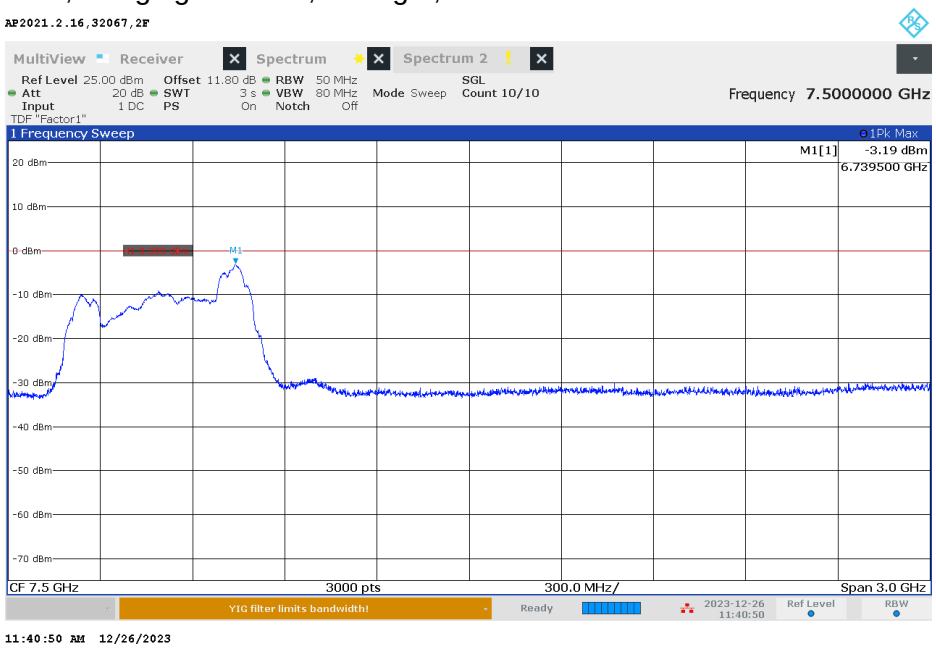
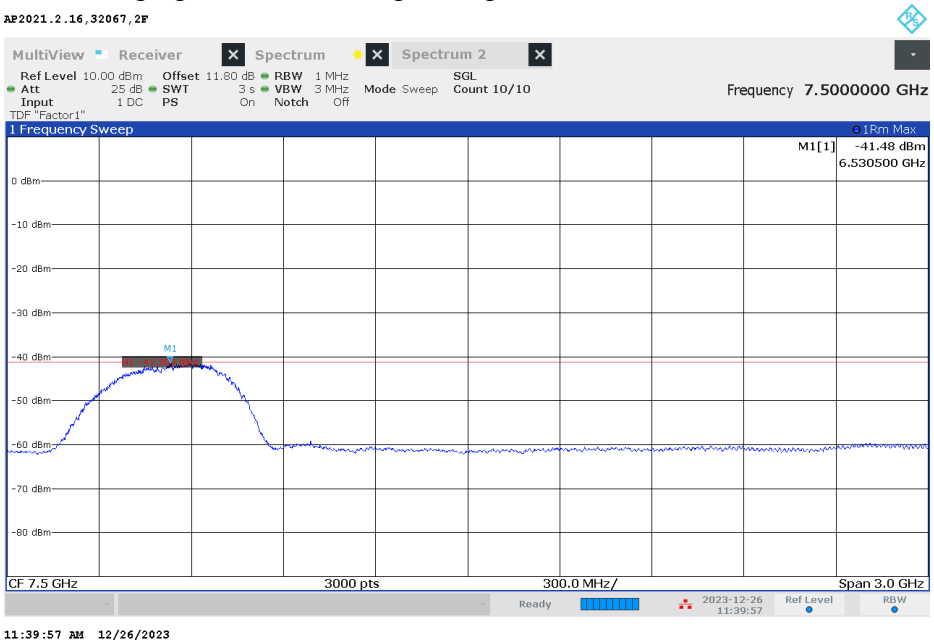
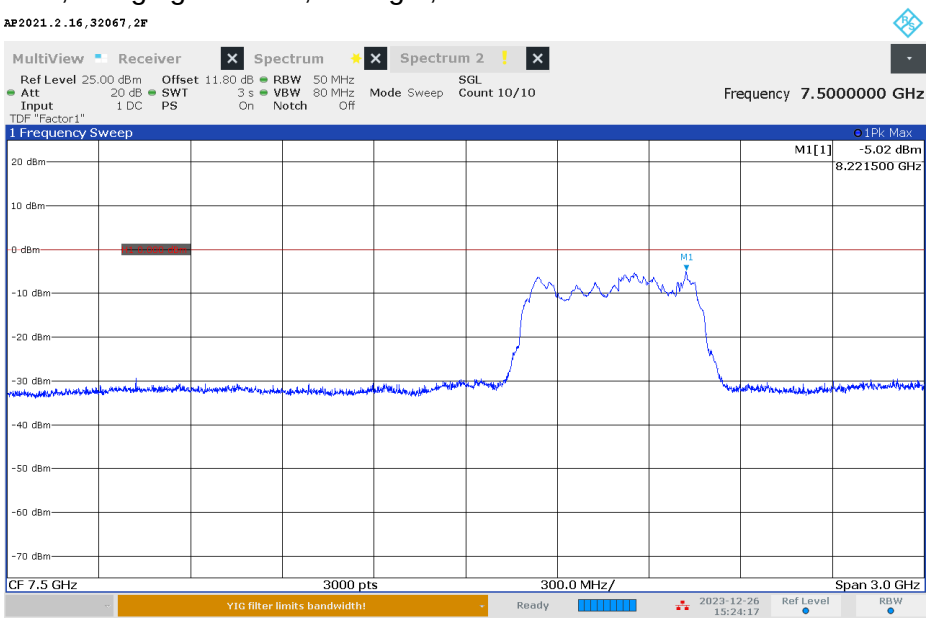
## Mode 17, CH5, Ranging Antenna, Config 4, Peak



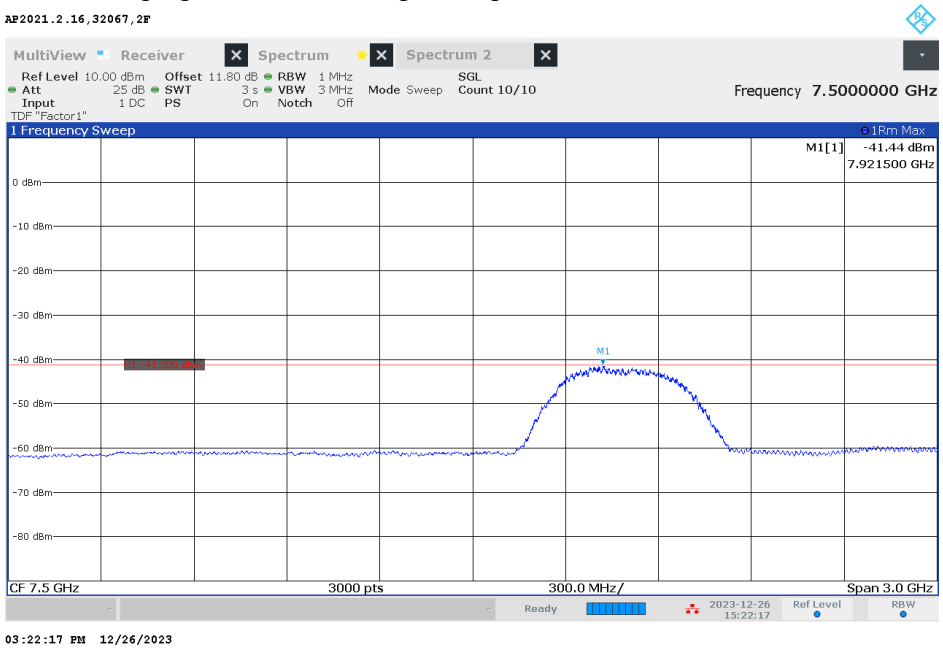

## Mode 17, CH5, Ranging Antenna, Config 4, Avg



## Mode 26, CH9, Ranging Antenna, Config 6, Peak




## Mode 26, CH9, Ranging Antenna, Config 6, Avg



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## 9.4. 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.

**TEST PROCEDURES**

* Initiator = EUT
* Responder = associated receiver

Transmissions are monitored for two cases:

1. The Initiator ends the UWB link.
2. The Responder ends the UWB link.

**RESULTS**

Employee ID: 26051
Location: Chamber 2F
Test Date: 2024-03-21

Signal Levels on all Plots

- Initiator is Low Amplitude
- Responder is High Amplitude



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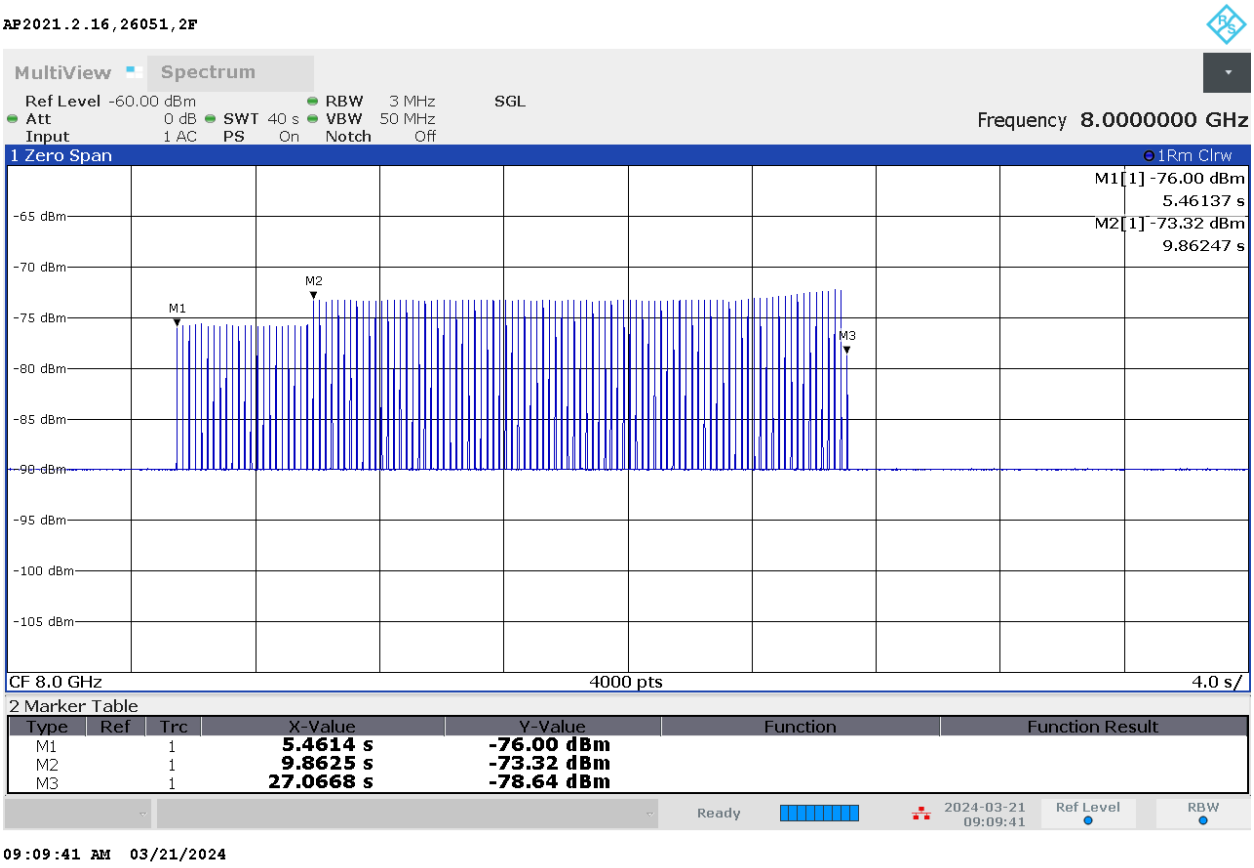
Case 1: Initiator ends the UWB link




## RESULT

- M1: The iniator starts polling.
- M2: The responder sends an acknowledgement and the iniator starts transmitting.
- M3: The iniator ceases transmission and polling.



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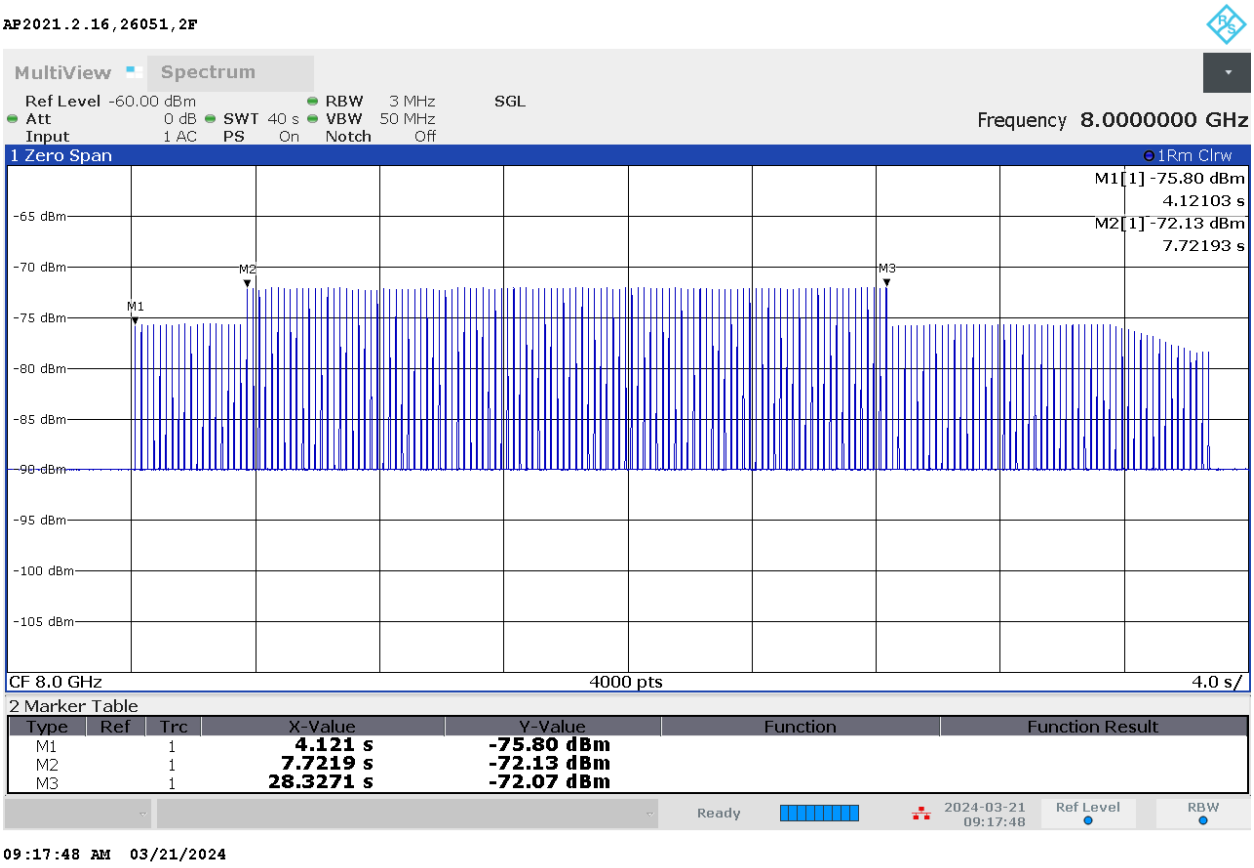
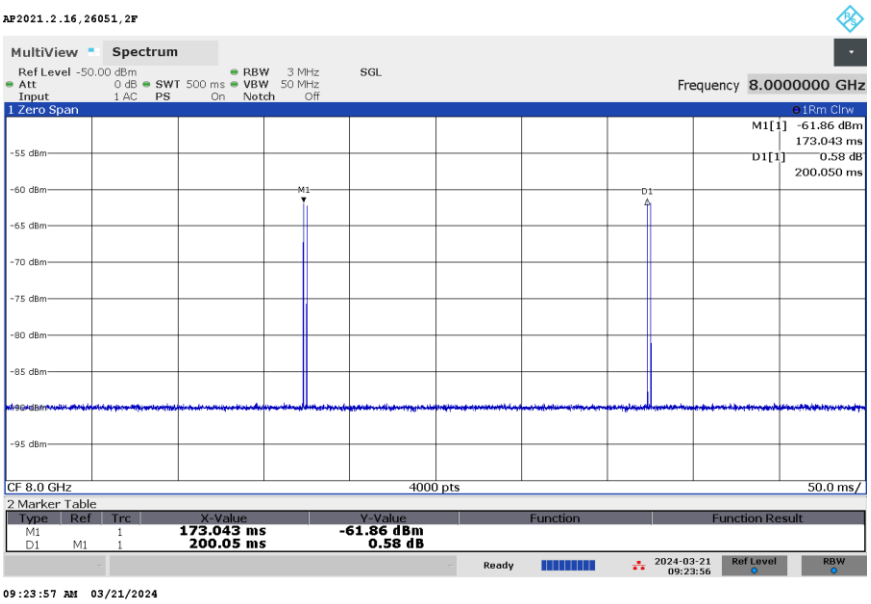
Case 2: Responder ends the UWB link

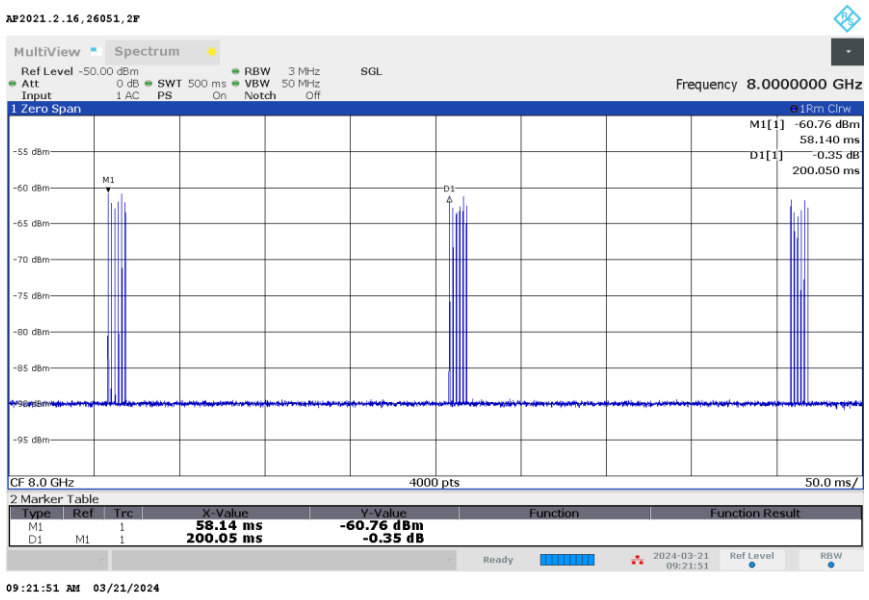



## RESULT

- M1: The iniator starts polling.
- M2: The responder sends an acknowledgement and the iniator starts transmitting.
- M3: The responder stops sending acknowledgements and the iniator continues polling.

Zoom-in Plot




## RESULT

- First plot shows Polling Signals after Link has ended
- Second plot shows Link Traffic, Acknowledgements and Polling Signals while Link is established

## 9.5. 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 |

**TEST PROCEDURE**

ANSI C63.10 Clause 10.2

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

For below 30 MHz testing, investigation was done on three antenna orientations: RX antenna Face-on, Face-off and horizontal (parallel to ground). The worst-case configurations were determined on RX antenna Face-on and Face-off; therefore, all final tests were performed using these two orientations.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 meter open area test site. Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

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.

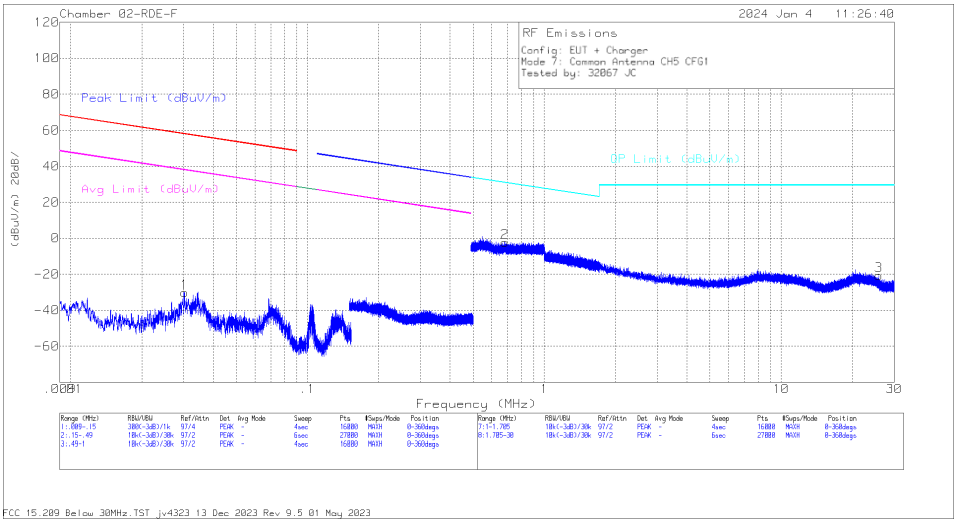
**RESULTS**

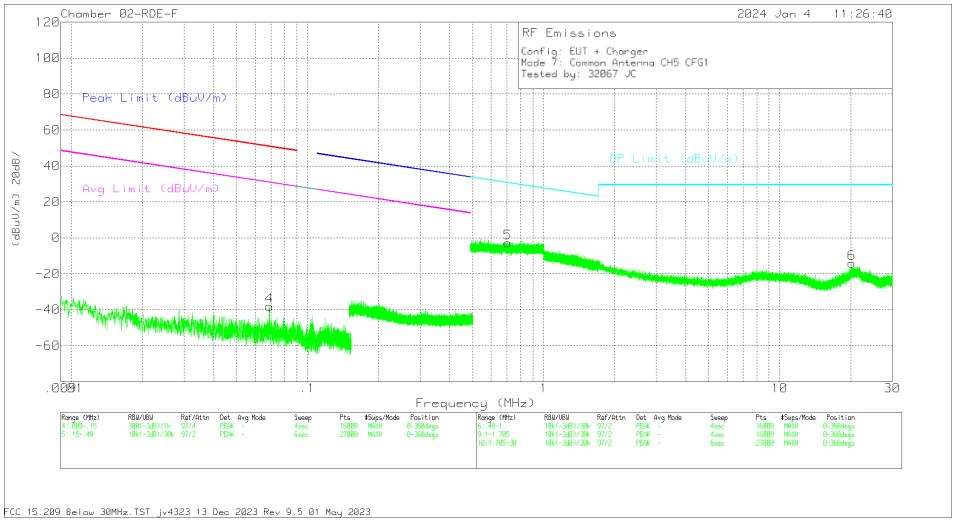
**Emissions Summary**

Employee IDs: 32067
Location: Chamber 2F
Test Date:2024/01/02 – 2024/04/09

### 9.5.1. EMISSIONS, 9 kHz – 30 MHz

Mode 7, CH5, Common Antenna, Config 1




## Trace Markers

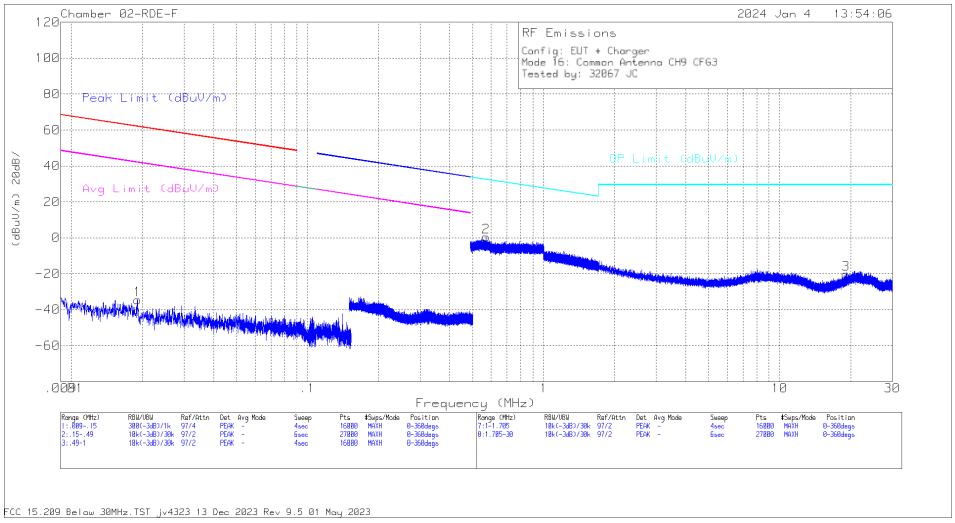
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna E(ACF) (dB/m) | Cbl (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .0303 | 23.99 | Pk | 57.9 | -32.1 | -80 | -30.21 | 57.95 | -88.16 | 37.95 | -68.16 | 0-360 |
| 4 | .0691 | 18.43 | Pk | 55.9 | -32.5 | -80 | -38.17 | 50.79 | -88.96 | 30.79 | -68.96 | 0-360 |

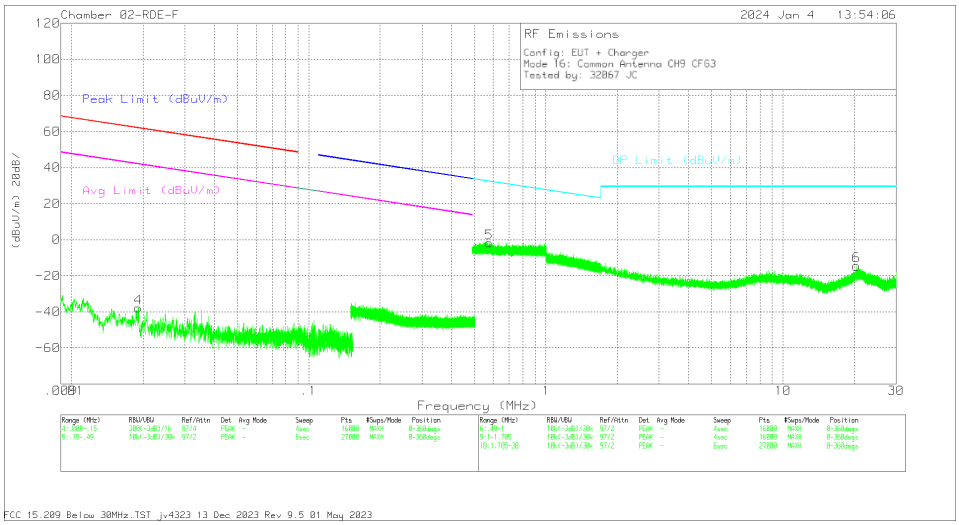
Pk - Peak detector

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna E (ACF) (dB/m) | Cbl (dB) | Dist Corr (dB) 40Log | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | .683 | 14.09 | Pk | 56.2 | -32.5 | -40 | -2.21 | 30.92 | -33.13 | 0-360 |
| 5 | .7058 | 13.46 | Pk | 56.2 | -32.5 | -40 | -2.84 | 30.64 | -33.48 | 0-360 |
| 6 | 20.176 | 23.47 | Pk | 34.2 | -31.9 | -40 | -14.23 | 29.5 | -43.73 | 0-360 |
| 3 | 25.8268 | 17.89 | Pk | 33.2 | -31.8 | -40 | -20.71 | 29.5 | -50.21 | 0-360 |

Pk - Peak detector

Mode 16, CH9, Common Antenna, Config 3




## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna E(ACF) (dB/m) | Cbl (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .019 | 17.89 | Pk | 59.1 | -31.6 | -80 | -34.61 | 61.99 | -96.6 | 41.99 | -76.6 | 0-360 |
| 4 | .0191 | 14.78 | Pk | 59.1 | -31.6 | -80 | -37.72 | 61.96 | -99.68 | 41.96 | -79.68 | 0-360 |

Pk - Peak detector

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna E(ACF) (dB/m) | Cbl (dB) | Dist Corr (dB) 40Log | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | .5696 | 16.79 | Pk | 56.1 | -32.5 | -40 | .39 | 32.5 | -32.11 | 0-360 |
| 5 | .5753 | 14.6 | Pk | 56.1 | -32.5 | -40 | -1.8 | 32.41 | -34.21 | 0-360 |
| 3 | 19.0829 | 17.81 | Pk | 34.2 | -32.1 | -40 | -20.09 | 29.5 | -49.59 | 0-360 |
| 6 | 20.3594 | 23.26 | Pk | 34.2 | -32 | -40 | -14.54 | 29.5 | -44.04 | 0-360 |

Pk - Peak detector



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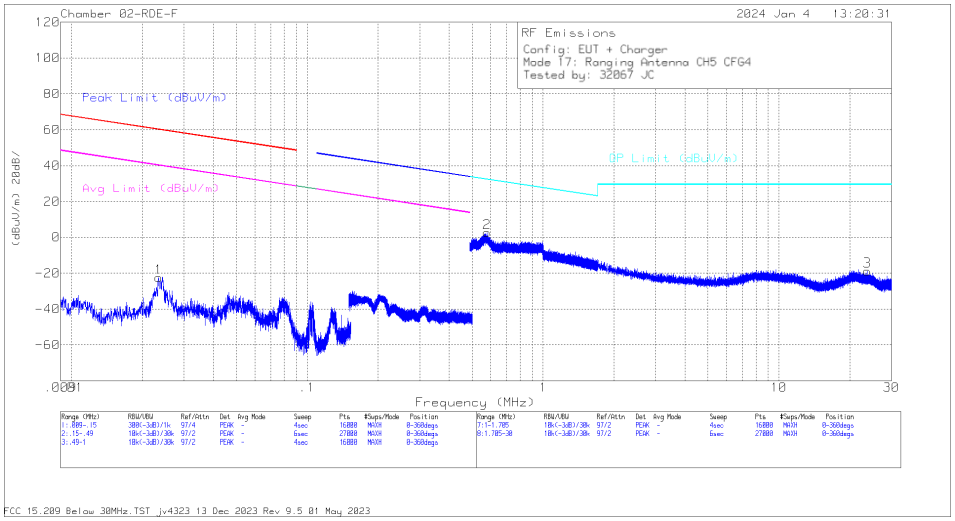
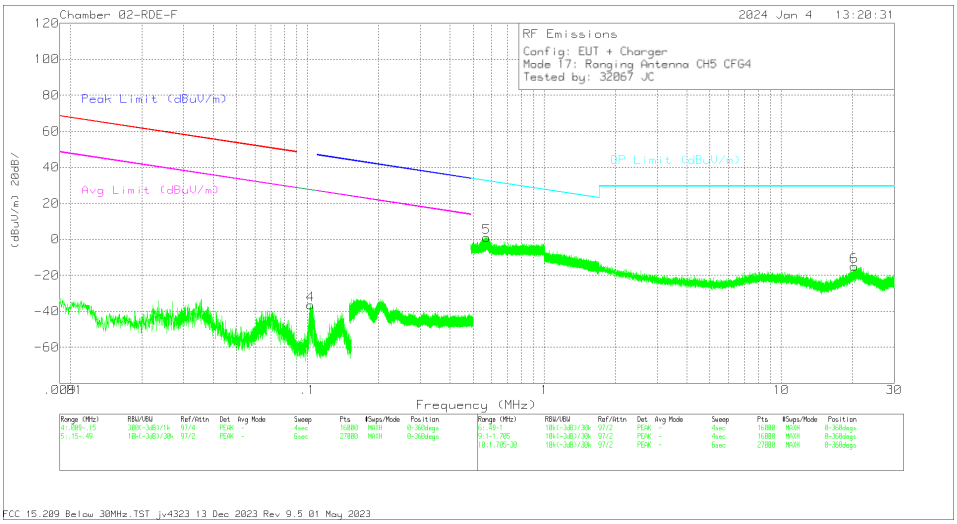
Mode 17, CH5, Ranging Antenna, Config 4




## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna E(ACF) (dB/m) | Cbl (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .0234 | 30.98 | Pk | 58.6 | -31.9 | -80 | -22.32 | 60.18 | -82.5 | 40.18 | -62.5 | - | - | 0-360 |
| 4 | .1032 | 20.42 | Pk | 55.6 | -32.6 | -80 | -36.58 | - | - | - | - | 27.34 | -63.92 | 0-360 |

Pk - Peak detector

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna E(ACF) (dB/m) | Cbl (dB) | Dist Corr (dB) 40Log | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | .5717 | 17.35 | Pk | 56.1 | -32.5 | -40 | .95 | 32.46 | -31.51 | 0-360 |
| 2 | .5785 | 19.15 | Pk | 56.1 | -32.5 | -40 | 2.75 | 32.36 | -29.61 | 0-360 |
| 6 | 20.3468 | 22.79 | Pk | 34.2 | -32 | -40 | -15.01 | 29.5 | -44.51 | 0-360 |
| 3 | 23.7224 | 19.71 | Pk | 33.5 | -31.9 | -40 | -18.69 | 29.5 | -48.19 | 0-360 |

Pk - Peak detector



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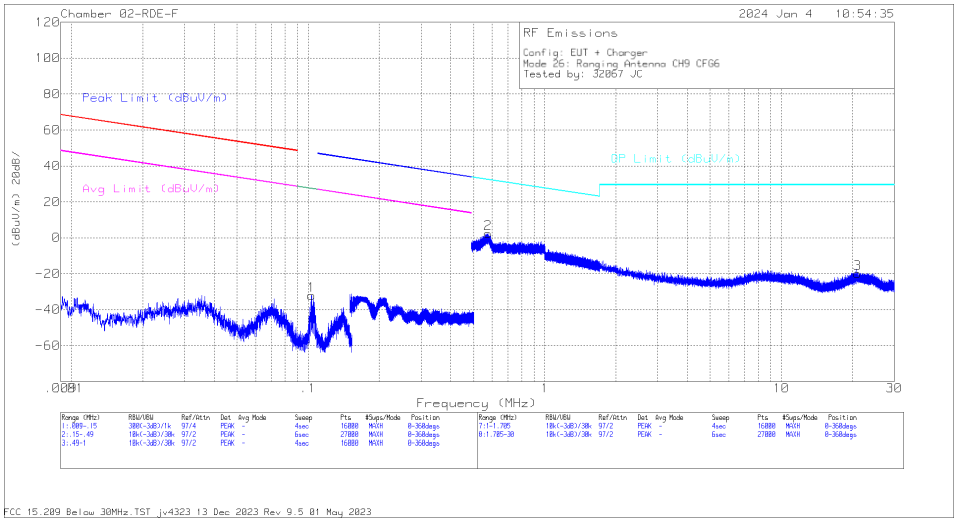
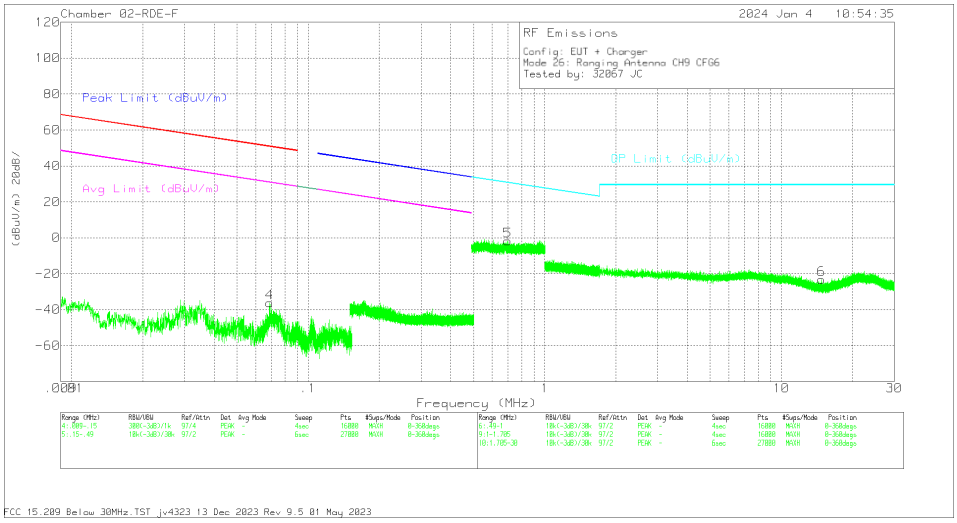
Mode 26, CH9, Ranging Antenna, Config 6




## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna E(ACF) (dB/m) | Cbl (dB) | Dist Corr 300m | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | .0689 | 20.47 | Pk | 55.9 | -32.5 | -80 | -36.13 | 50.82 | -86.95 | 30.82 | -66.95 | - | - | 0-360 |
| 1 | .1033 | 24.91 | Pk | 55.6 | -32.6 | -80 | -32.09 | - | - | - | - | 27.33 | -59.42 | 0-360 |

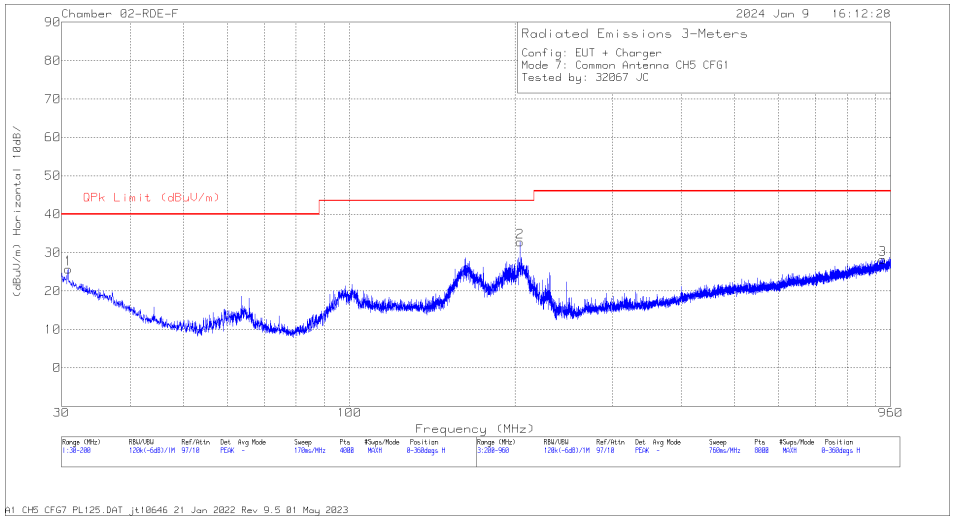
Pk - Peak detector

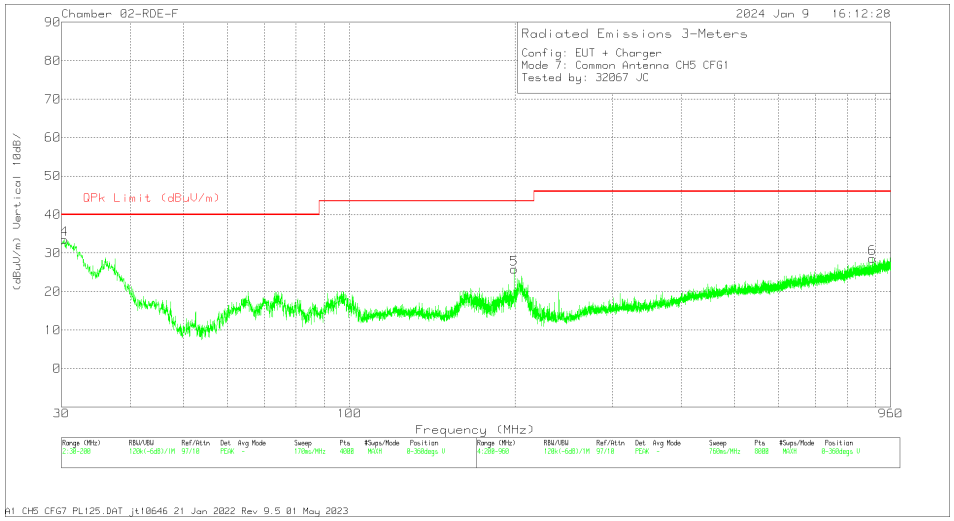
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna E(ACF) (dB/m) | Cbl (dB) | Dist Corr (dB) 40Log | Corrected Reading (dBuV/m) | QP Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | .5774 | 18.91 | Pk | 56.1 | -32.5 | -40 | 2.51 | 32.38 | -29.87 | 0-360 |
| 5 | .697 | 14.49 | Pk | 56.2 | -32.5 | -40 | -1.81 | 30.75 | -32.56 | 0-360 |
| 6 | 14.7945 | 14.79 | Pk | 33.9 | -32 | -40 | -23.31 | 29.5 | -52.81 | 0-360 |
| 3 | 20.9526 | 17.96 | Pk | 34.1 | -31.9 | -40 | -19.84 | 29.5 | -49.34 | 0-360 |

Pk - Peak detector

## 9.5.2. EMISSIONS, 30 - 960 MHz

Mode 7, CH5, Common Antenna, Config 1



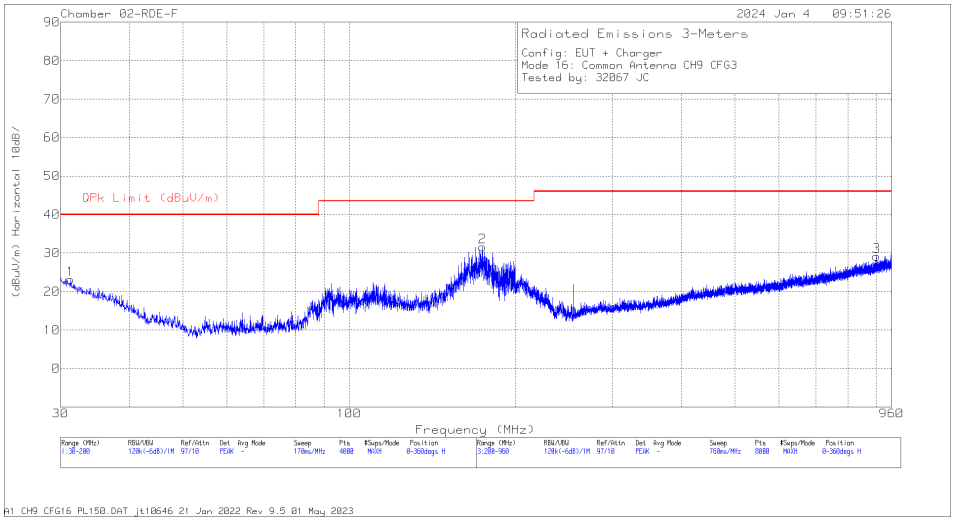



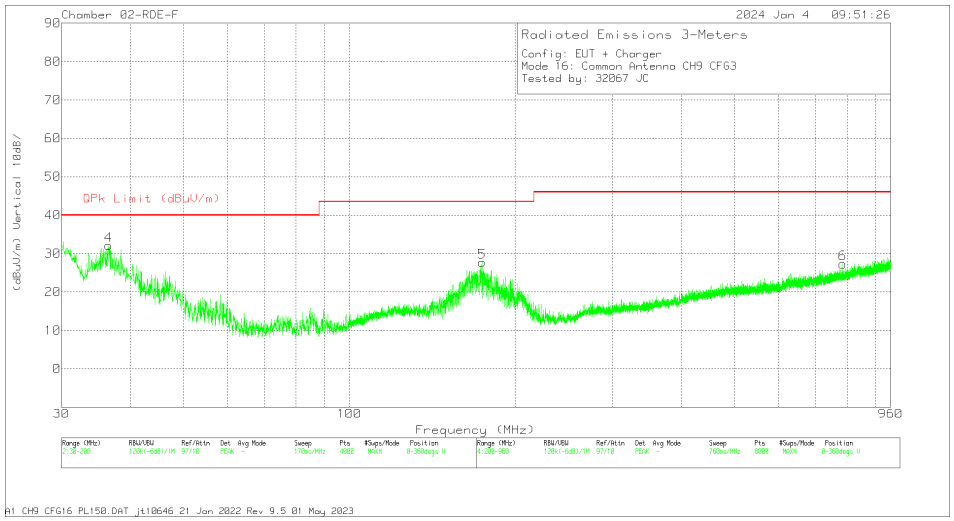

## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 230634 ACF (dB/m) | CBL/AMP (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 30.3826 | 38.82 | Pk | 26.6 | -31.9 | 33.52 | 40 | -6.48 | 0-360 | 103 | V |
| 1 | 30.8502 | 31.25 | Pk | 26.2 | -31.7 | 25.75 | 40 | -14.25 | 0-360 | 198 | H |
| 5 | 198.939 | 38.21 | Pk | 18 | -30.4 | 25.81 | 43.52 | -17.71 | 0-360 | 103 | V |
| 2 | 203.991 | 46 | Pk | 17.2 | -30.5 | 32.7 | 43.52 | -10.82 | 0-360 | 199 | H |
| 6 | 890.357 | 28.55 | Pk | 27.7 | -27.6 | 28.65 | 46.02 | -17.37 | 0-360 | 102 | V |
| 3 | 927.982 | 27.29 | Pk | 28.1 | -27.1 | 28.29 | 46.02 | -17.73 | 0-360 | 299 | H |

Pk - Peak detector

Mode 16, CH9, Common Antenna, Config 3



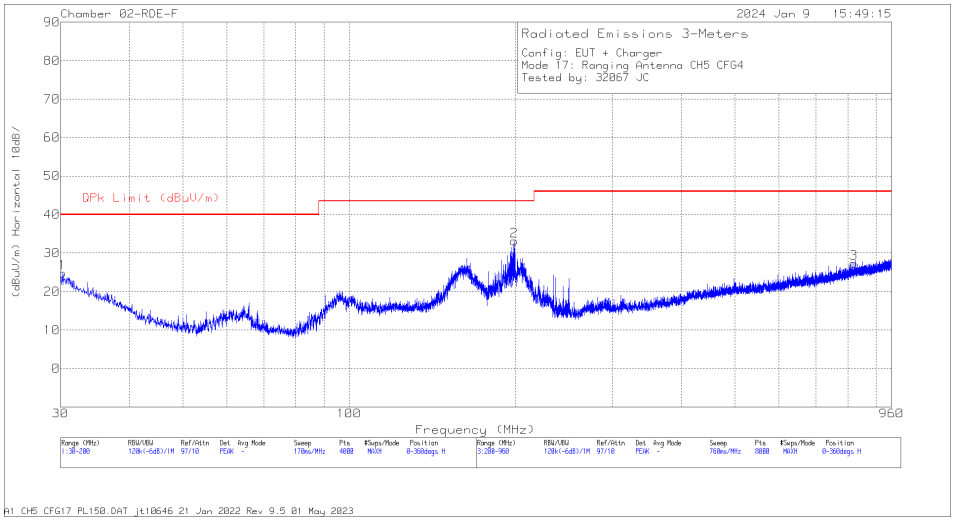



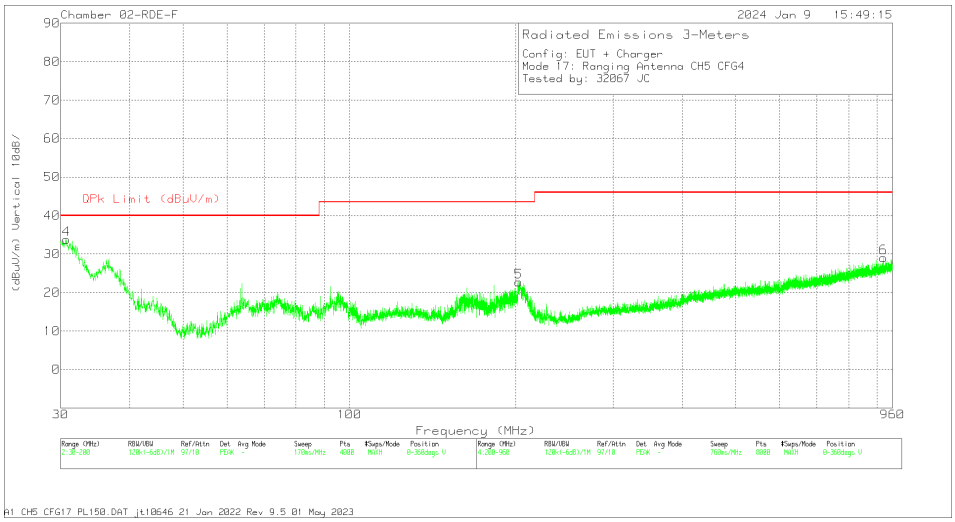

## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 230634 ACF (dB/m) | CBL/AMP (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31.2328 | 28.84 | Pk | 26 | -31.7 | 23.14 | 40 | -16.86 | 0-360 | 199 | H |
| 4 | 36.5467 | 41.66 | Pk | 22 | -31.5 | 32.16 | 40 | -7.84 | 0-360 | 103 | V |
| 5 | 174.155 | 40.8 | Pk | 17.2 | -30.3 | 27.7 | 43.52 | -15.82 | 0-360 | 103 | V |
| 2 | 174.325 | 44.81 | Pk | 17.2 | -30.4 | 31.61 | 43.52 | -11.91 | 0-360 | 199 | H |
| 6 | 785.939 | 28.4 | Pk | 26.8 | -27.9 | 27.3 | 46.02 | -18.72 | 0-360 | 199 | V |
| 3 | 902.234 | 28.63 | Pk | 27.8 | -27.3 | 29.13 | 46.02 | -16.89 | 0-360 | 399 | H |

Pk - Peak detector

Mode 17, CH5, Ranging Antenna, Config 4



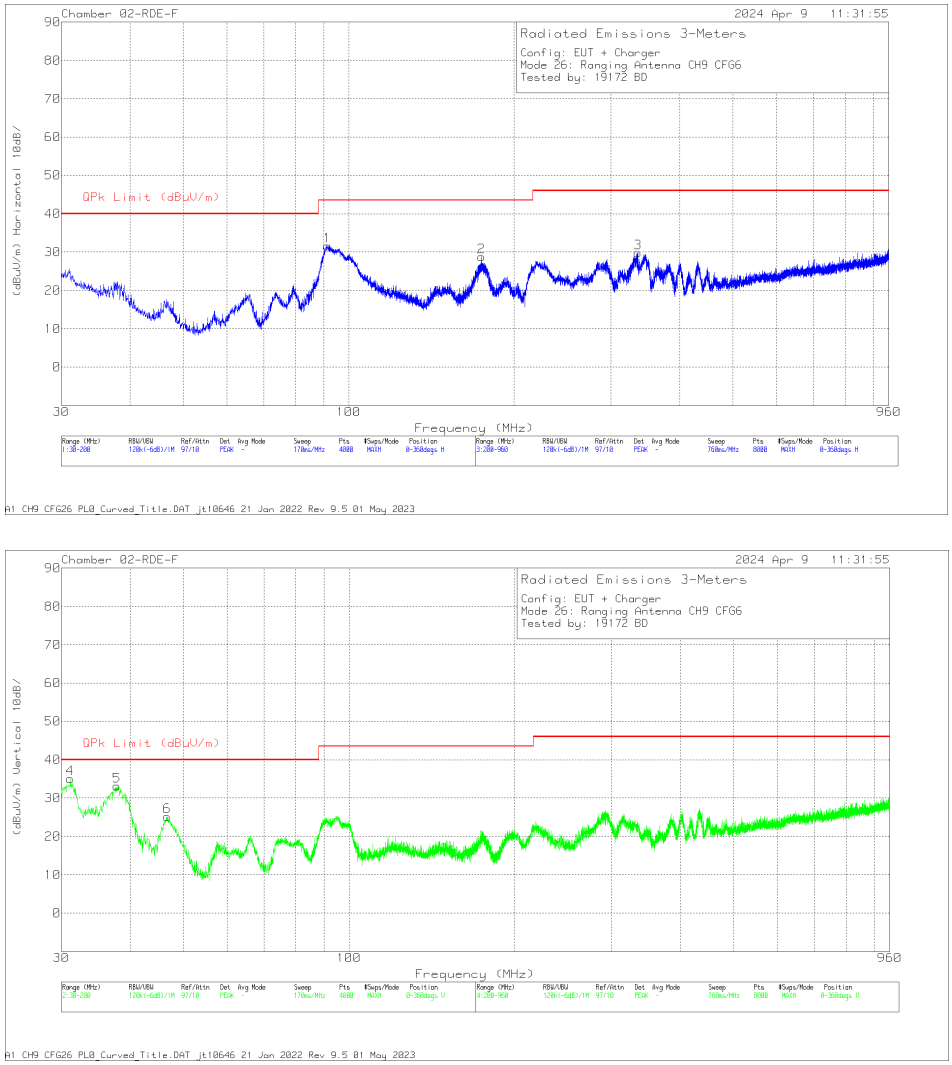




## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 230634 ACF (dB/m) | CBL/AMP (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30.2551 | 29.95 | Pk | 26.7 | -31.9 | 24.75 | 40 | -15.25 | 0-360 | 199 | H |
| 4 | 30.7652 | 39.29 | Pk | 26.3 | -31.8 | 33.79 | 40 | -6.21 | 0-360 | 103 | V |
| 2 | 199.194 | 45.58 | Pk | 18 | -30.4 | 33.18 | 43.52 | -10.34 | 0-360 | 103 | H |
| 5 | 202.47 | 35.44 | Pk | 17.5 | -30.2 | 22.74 | 43.52 | -20.78 | 0-360 | 103 | V |
| 3 | 821.093 | 28.4 | Pk | 27.2 | -28.2 | 27.4 | 46.02 | -18.62 | 0-360 | 103 | H |
| 6 | 924.562 | 28.14 | Pk | 28.1 | -27.2 | 29.04 | 46.02 | -16.98 | 0-360 | 199 | V |

Pk - Peak detector

Mode 26, CH9, Ranging Antenna, Config 6




## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 230634 ACF (dB) 10m H | CBL/AMP (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 31.1478 | 40.74 | Pk | 26 | -31.7 | 35.04 | 40 | -4.96 | 0-360 | 103 | V |
| 5 | 37.8645 | 44.17 | Pk | 20.9 | -31.9 | 33.17 | 40 | -6.83 | 0-360 | 103 | V |
| 6 | 46.6643 | 41.37 | Pk | 15.2 | -31.4 | 25.17 | 40 | -14.83 | 0-360 | 103 | V |
| 1 | 91.3859 | 48.67 | Pk | 13.9 | -31 | 31.57 | 43.52 | -11.95 | 0-360 | 299 | H |
| 2 | 174.452 | 41.92 | Pk | 17.2 | -30.4 | 28.72 | 43.52 | -14.8 | 0-360 | 199 | H |
| 3 | 335.582 | 39.91 | Pk | 19.7 | -29.8 | 29.81 | 46.02 | -16.21 | 0-360 | 103 | H |

Pk - Peak detector

## Radiated Emissions

| Frequency (MHz) | Meter Reading (dBuV) | Det | 230634 ACF (dB) 10m H | CBL/AMP (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.9257 | 36.36 | Qp | 26.2 | -31.7 | 30.86 | 40 | -9.14 | 295 | 108 | V |

Qp - Quasi-Peak detector

## 9.6. 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 |

**TEST PROCEDURE**

ANSI C63.10 Clause 10.3.

Exploratory measurements for all frequency ranges are performed with the measurement antenna at close distances to the EUT as described in ANSI C63.10 6.6.4.2. Where emissions are observed the measurement antenna is then positioned at a height of 1.5m and a distance of 1m for 18-40GHz and 0.5m for 0.96-6GHz, 1.164-1.240GHz, and 1.559-1.610GHz from the EUT and final measurements are made at the frequencies observed in the exploratory scans using the alternative measurement procedures detailed in ANSI C63.10 section 6.6.5. If no emissions are observed, a plot is made at a test distance of 1m for 18-40GHz and 0.5m for 0.96-6GHz, 1.164-1.240GHz, and 1.559-1.610GHz from the EUT to show the measurement system noise floor.

**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 5.4 GHz is used to suppress the fundamental and perform measurement for 0.96 - 6 GHz.

Distance Correction Factor from 3m to 0.5m = 20*log(0.5m/3m) = -15.56 dB

**RESULTS FOR 6 GHz TO 9 GHz**

The 6 - 9 GHz frequency band is covered in Section 9.3.

**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.

Distance Correction Factor from 3m to 0.5m = 20*log(0.5m/3m) = -15.56 dB

**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 = 500 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.

Distance Correction Factor from 3m to 0.5m = 20*log(0.5m/3m) = -15.56 dB

**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.

Distance Correction Factor from 3m to 0.5m = 20*log(0.5m/3m) = -15.56 dB

**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 1m 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 1m = 20*log(1m/3m) = -9.54 dB



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## RESULTS

### Average Emissions Summary

Employee IDs: 32067
Location: Chamber 2F
Test Date: 2024/01/02 – 2024/01/09



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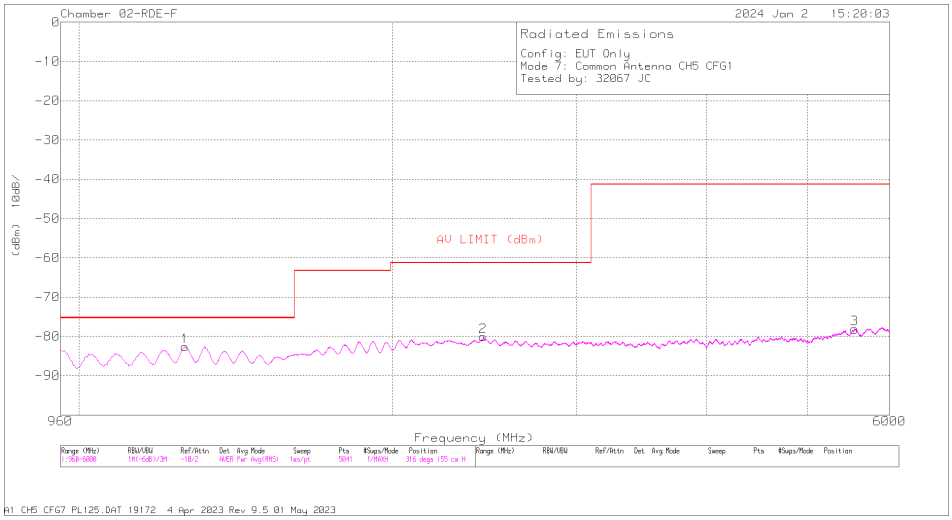
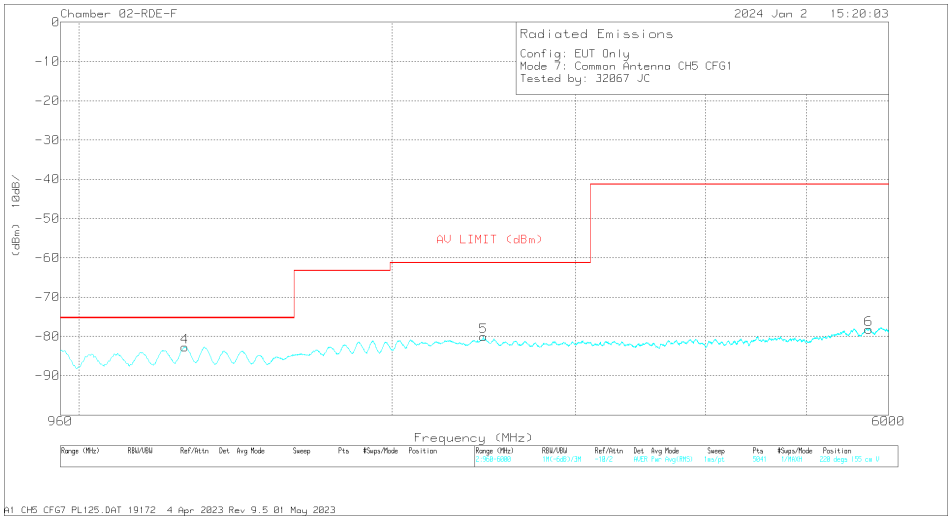
## 9.6.1. AVERAGE EMISSIONS, 0.96 – 6 GHz

**FCC15.519 (C)**

Mode 7, CH5, Common Antenna, Config 1



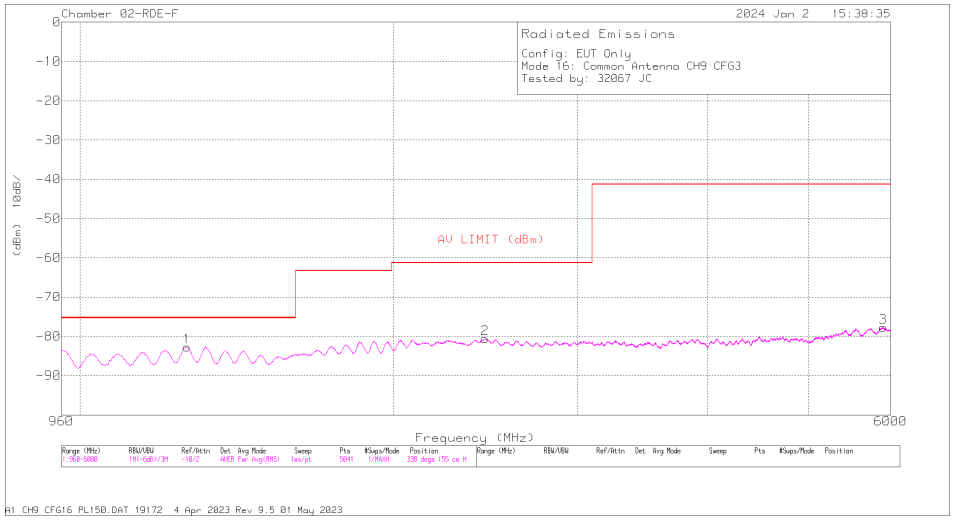



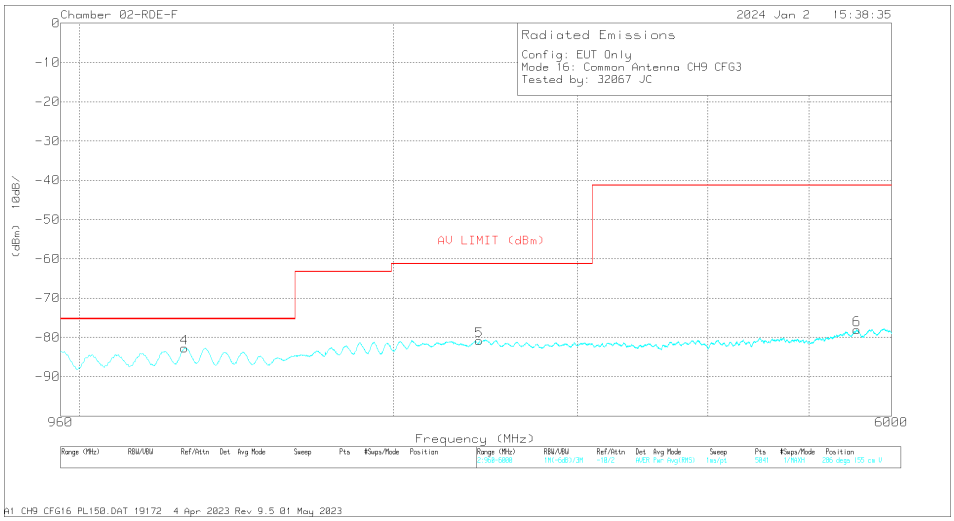

## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | AV LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1264 | -61.1 | RMS | 28.8 | -46.7 | -15.6 | 11.8 | .2 | -82.6 | -75.3 | -7.3 | 74 | 155 | H |
| 4 | 1264 | -61.19 | RMS | 28.8 | -46.7 | -15.6 | 11.8 | .2 | -82.69 | -75.3 | -7.39 | 44 | 155 | V |
| 2 | 2444 | -62.04 | RMS | 32.3 | -46.7 | -15.6 | 11.8 | .2 | -80.04 | -61.3 | -18.74 | 338 | 155 | H |
| 5 | 2448 | -62.14 | RMS | 32.4 | -46.7 | -15.6 | 11.8 | .2 | -80.04 | -61.3 | -18.74 | 132 | 155 | V |
| 3 | 5555 | -65.54 | RMS | 34.4 | -45.2 | -15.6 | 11.8 | 2 | -78.14 | -41.3 | -36.84 | 338 | 155 | H |
| 6 | 5741 | -65.65 | RMS | 34.6 | -45.3 | -15.6 | 11.8 | 2 | -78.15 | -41.3 | -36.85 | 176 | 155 | V |

RMS - RMS detection

Mode 16, CH9, Common Antenna, Config 3




## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | AV LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1261 | -61.23 | RMS | 28.8 | -46.7 | -15.6 | 11.8 | .2 | -82.73 | -75.3 | -7.43 | 308 | 155 | V |
| 1 | 1267 | -61.18 | RMS | 28.8 | -46.7 | -15.6 | 11.8 | .2 | -82.68 | -75.3 | -7.38 | 316 | 155 | H |
| 5 | 2416 | -62.39 | RMS | 32.2 | -47 | -15.6 | 11.8 | .2 | -80.79 | -61.3 | -19.49 | 198 | 155 | V |
| 2 | 2449 | -62.71 | RMS | 32.4 | -46.7 | -15.6 | 11.8 | .2 | -80.61 | -61.3 | -19.31 | 272 | 155 | H |
| 6 | 5558 | -65.32 | RMS | 34.4 | -45.3 | -15.6 | 11.8 | 2 | -78.02 | -41.3 | -36.72 | 220 | 155 | V |
| 3 | 5904 | -65.43 | RMS | 35 | -45.5 | -15.6 | 11.8 | 2 | -77.73 | -41.3 | -36.43 | 52 | 155 | H |

RMS - RMS detection



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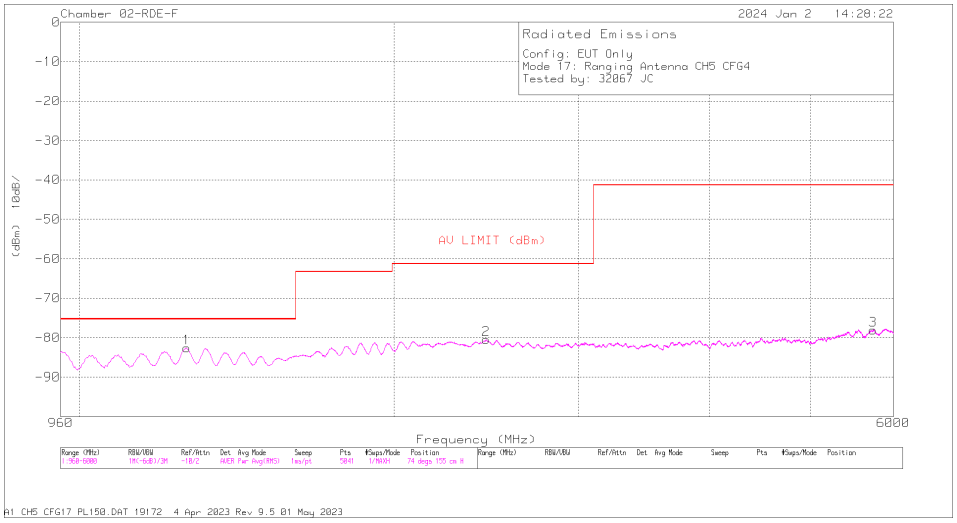
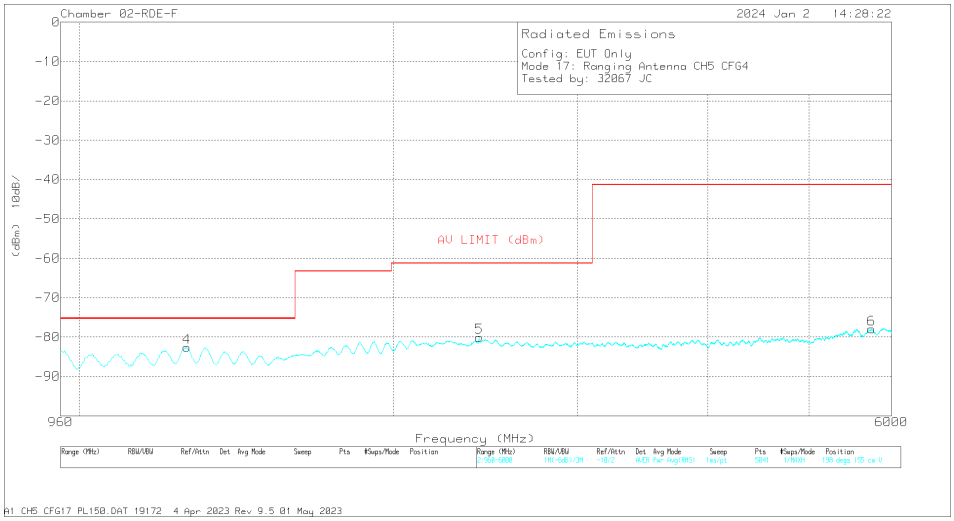
Mode 17, CH5, Ranging Antenna, Config 4




## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | AV LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1267 | -61.16 | RMS | 28.8 | -46.7 | -15.6 | 11.8 | .2 | -82.66 | -75.3 | -7.36 | 74 | 155 | H |
| 4 | 1268 | -61.09 | RMS | 28.8 | -46.7 | -15.6 | 11.8 | .2 | -82.59 | -75.3 | -7.29 | 220 | 155 | V |
| 5 | 2416 | -61.63 | RMS | 32.2 | -47 | -15.6 | 11.8 | .2 | -80.03 | -61.3 | -18.73 | 198 | 155 | V |
| 2 | 2448 | -62.61 | RMS | 32.4 | -46.7 | -15.6 | 11.8 | .2 | -80.51 | -61.3 | -19.21 | 118 | 155 | H |
| 3 | 5740 | -65.44 | RMS | 34.6 | -45.4 | -15.6 | 11.8 | 2 | -78.04 | -41.3 | -36.74 | 250 | 155 | H |
| 6 | 5741 | -65.48 | RMS | 34.6 | -45.3 | -15.6 | 11.8 | 2 | -77.98 | -41.3 | -36.68 | 198 | 155 | V |

RMS - RMS detection



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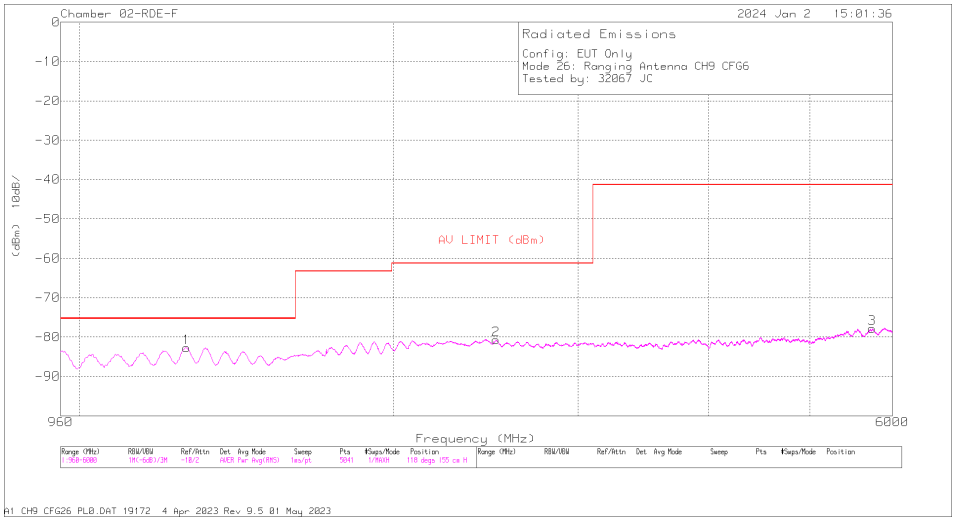
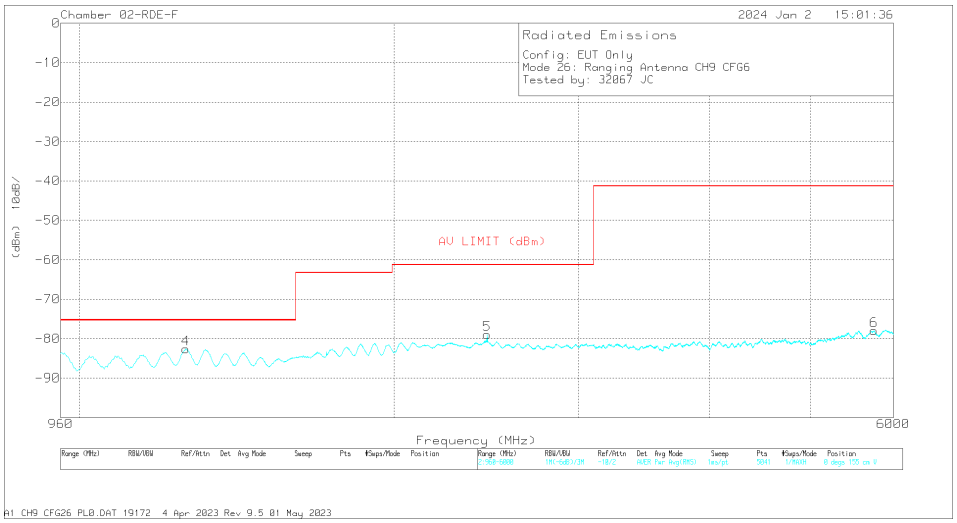
Mode 26, CH9, Ranging Antenna, Config 6




## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | AV LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1264 | -61.07 | RMS | 28.8 | -46.7 | -15.6 | 11.8 | .2 | -82.57 | -75.3 | -7.27 | 88 | 155 | V |
| 1 | 1267 | -61.22 | RMS | 28.8 | -46.7 | -15.6 | 11.8 | .2 | -82.72 | -75.3 | -7.42 | 206 | 155 | H |
| 5 | 2455 | -61.17 | RMS | 32.4 | -46.7 | -15.6 | 11.8 | .3 | -78.97 | -61.3 | -17.67 | 264 | 155 | V |
| 2 | 2505 | -62.99 | RMS | 32.5 | -46.7 | -15.6 | 11.8 | .3 | -80.69 | -61.3 | -19.39 | 141 | 155 | H |
| 3 | 5738 | -65.28 | RMS | 34.6 | -45.4 | -15.6 | 11.8 | 2 | -77.88 | -41.3 | -36.58 | 141 | 155 | H |
| 6 | 5751 | -65.38 | RMS | 34.6 | -45.4 | -15.6 | 11.8 | 2 | -77.98 | -41.3 | -36.68 | 22 | 155 | V |

RMS - RMS detection



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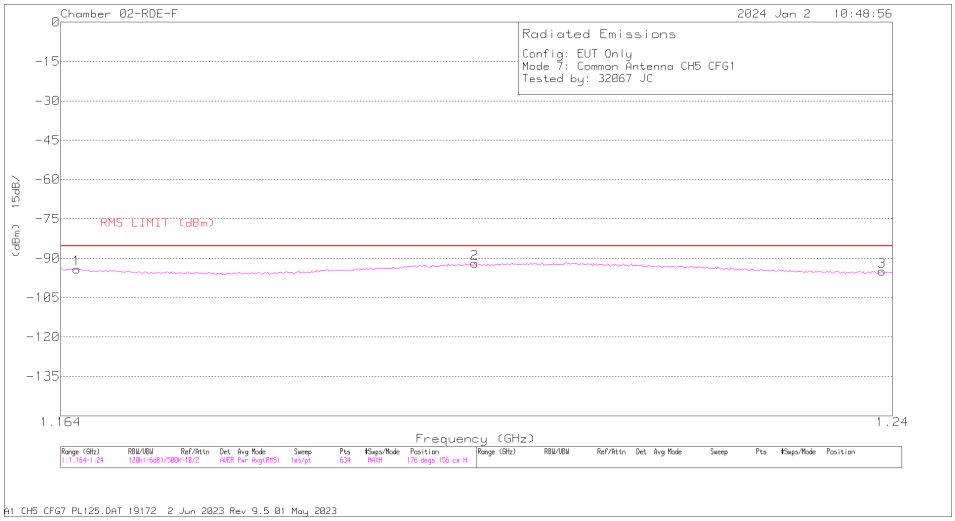
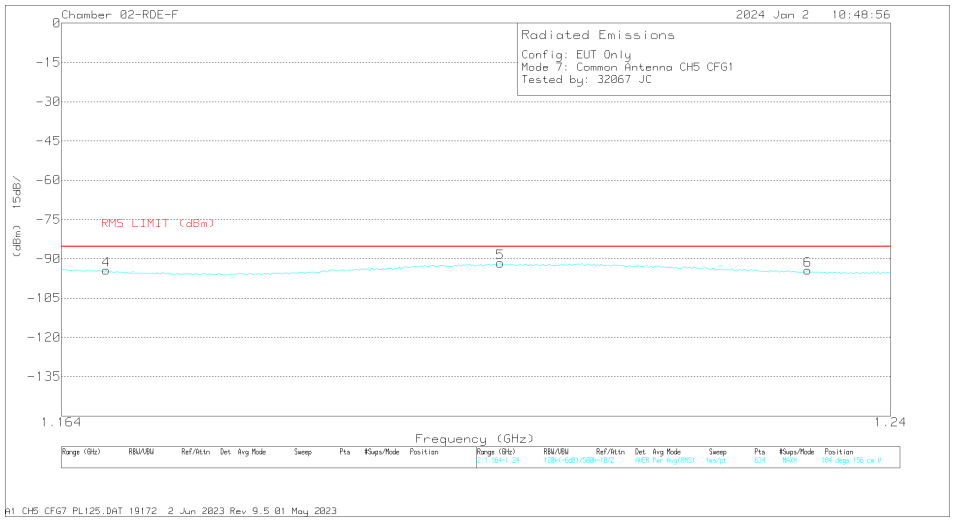
## 9.6.2. AVERAGE EMISSIONS, 1.164 – 1.240 GHz

Mode 7, CH5, Common Antenna, Config 1



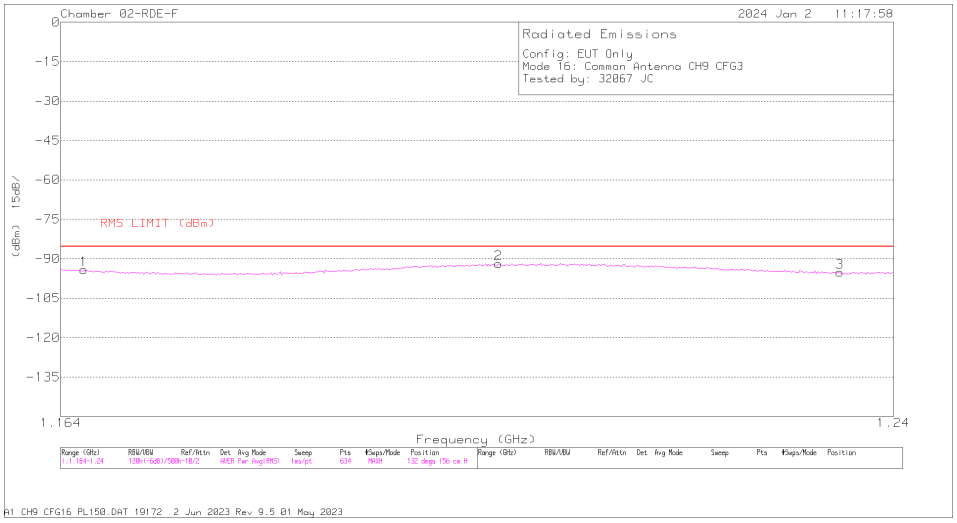



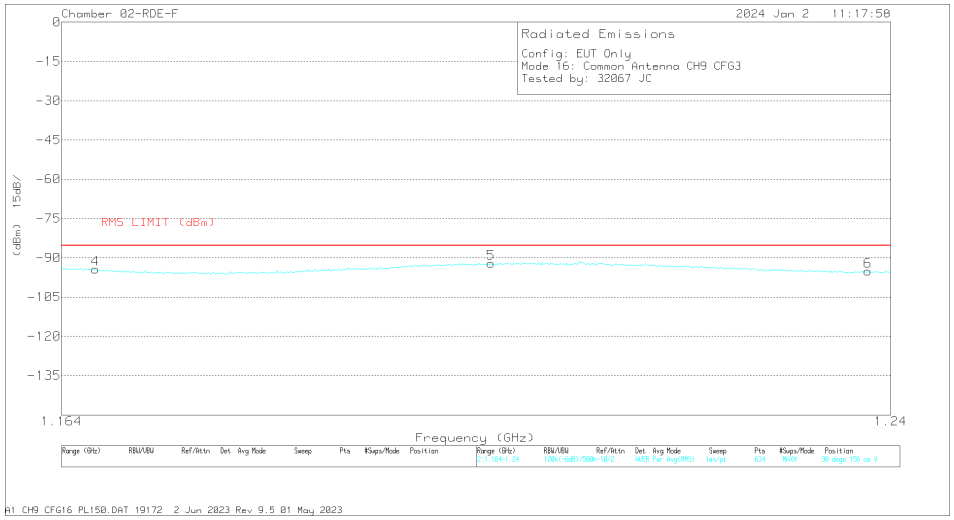

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.165441 | -71.45 | RMS | 28 | -47 | -15.6 | 11.8 | .2 | -94.05 | -85.3 | -8.75 | 132 | 156 | H |
| 4 | 1.167962 | -71.85 | RMS | 28.1 | -47 | -15.6 | 11.8 | .2 | -94.35 | -85.3 | -9.05 | 140 | 156 | V |
| 2 | 1.20122 | -69.63 | RMS | 28.4 | -47 | -15.6 | 11.8 | .2 | -91.83 | -85.3 | -6.53 | 110 | 156 | H |
| 5 | 1.203621 | -69.49 | RMS | 28.4 | -46.9 | -15.6 | 11.8 | .2 | -91.59 | -85.3 | -6.29 | 294 | 156 | V |
| 6 | 1.232196 | -72.52 | RMS | 28.6 | -46.8 | -15.6 | 11.8 | .2 | -94.32 | -85.3 | -9.02 | 140 | 156 | V |
| 3 | 1.239039 | -73.24 | RMS | 28.7 | -46.8 | -15.6 | 11.8 | .2 | -94.94 | -85.3 | -9.64 | 242 | 156 | H |

RMS - RMS detection

Mode 16, CH9, Common Antenna, Config 3




## Trace Markers

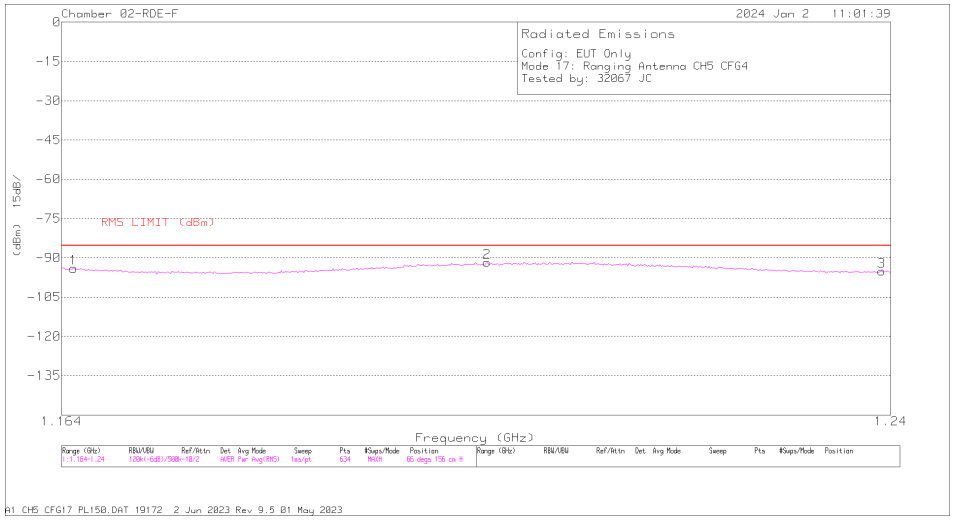
| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.166041 | -71.56 | RMS | 28 | -47 | -15.6 | 11.8 | .2 | -94.16 | -85.3 | -8.86 | 132 | 156 | H |
| 4 | 1.167002 | -71.89 | RMS | 28.1 | -47 | -15.6 | 11.8 | .2 | -94.39 | -85.3 | -9.09 | 184 | 156 | V |
| 5 | 1.20278 | -69.91 | RMS | 28.4 | -47 | -15.6 | 11.8 | .2 | -92.11 | -85.3 | -6.81 | 119 | 156 | V |
| 2 | 1.203381 | -69.78 | RMS | 28.4 | -46.9 | -15.6 | 11.8 | .2 | -91.88 | -85.3 | -6.58 | 132 | 156 | H |
| 3 | 1.234957 | -73.2 | RMS | 28.6 | -46.8 | -15.6 | 11.8 | .2 | -95 | -85.3 | -9.7 | 22 | 156 | H |
| 6 | 1.237839 | -73.23 | RMS | 28.6 | -46.8 | -15.6 | 11.8 | .2 | -95.03 | -85.3 | -9.73 | 119 | 156 | V |

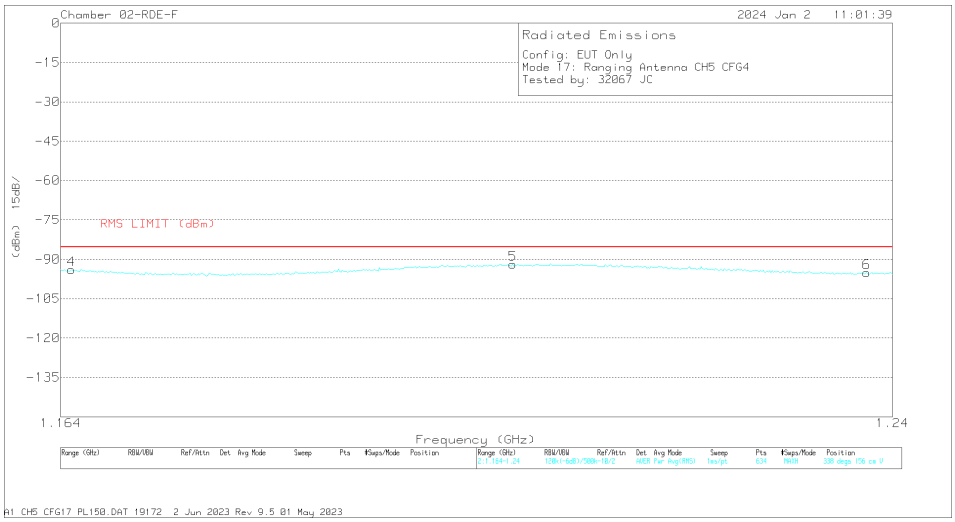
RMS - RMS detection



UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

Mode 17, CH5, Ranging Antenna, Config 4




## Trace Markers

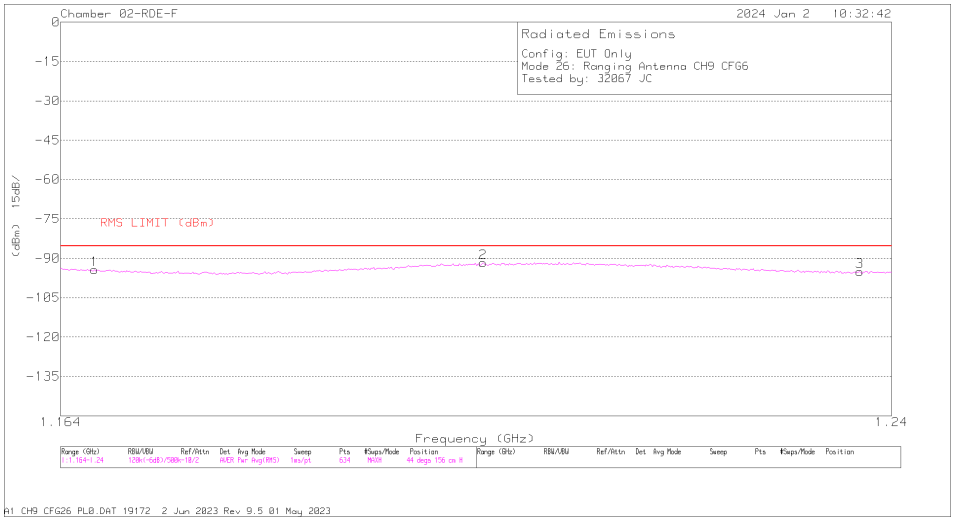
| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1.164961 | -71.35 | RMS | 28 | -47 | -15.6 | 11.8 | .2 | -93.95 | -85.3 | -8.65 | 52 | 156 | V |
| 1 | 1.165081 | -71.44 | RMS | 28 | -47 | -15.6 | 11.8 | .2 | -94.04 | -85.3 | -8.74 | 154 | 156 | H |
| 2 | 1.20242 | -69.47 | RMS | 28.4 | -47 | -15.6 | 11.8 | .2 | -91.67 | -85.3 | -6.37 | 330 | 156 | H |
| 5 | 1.204701 | -69.64 | RMS | 28.4 | -47 | -15.6 | 11.8 | .2 | -91.84 | -85.3 | -6.54 | 272 | 156 | V |
| 6 | 1.237599 | -73.34 | RMS | 28.6 | -46.8 | -15.6 | 11.8 | .2 | -95.14 | -85.3 | -9.84 | 228 | 156 | V |
| 3 | 1.239159 | -73.44 | RMS | 28.7 | -46.8 | -15.6 | 11.8 | .2 | -95.14 | -85.3 | -9.84 | 22 | 156 | H |

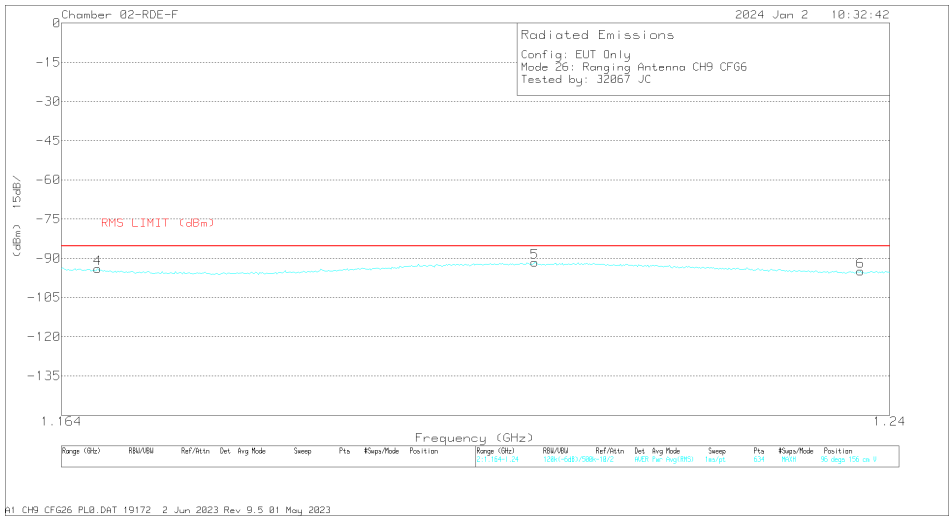
RMS - RMS detection



UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

Mode 26, CH9, Ranging Antenna, Config 6




## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.167002 | -71.8 | RMS | 28.1 | -47 | -15.6 | 11.8 | .2 | -94.3 | -85.3 | -9 | 44 | 156 | H |
| 4 | 1.167242 | -71.53 | RMS | 28.1 | -47 | -15.6 | 11.8 | .2 | -94.03 | -85.3 | -8.73 | 162 | 156 | V |
| 2 | 1.20206 | -69.52 | RMS | 28.4 | -47 | -15.6 | 11.8 | .2 | -91.72 | -85.3 | -6.42 | 264 | 156 | H |
| 5 | 1.206862 | -69.36 | RMS | 28.4 | -47 | -15.6 | 11.8 | .2 | -91.56 | -85.3 | -6.26 | 118 | 156 | V |
| 3 | 1.236998 | -73.21 | RMS | 28.6 | -46.8 | -15.6 | 11.8 | .2 | -95.01 | -85.3 | -9.71 | 88 | 156 | H |
| 6 | 1.237238 | -73.04 | RMS | 28.6 | -46.8 | -15.6 | 11.8 | .2 | -94.84 | -85.3 | -9.54 | 294 | 156 | V |

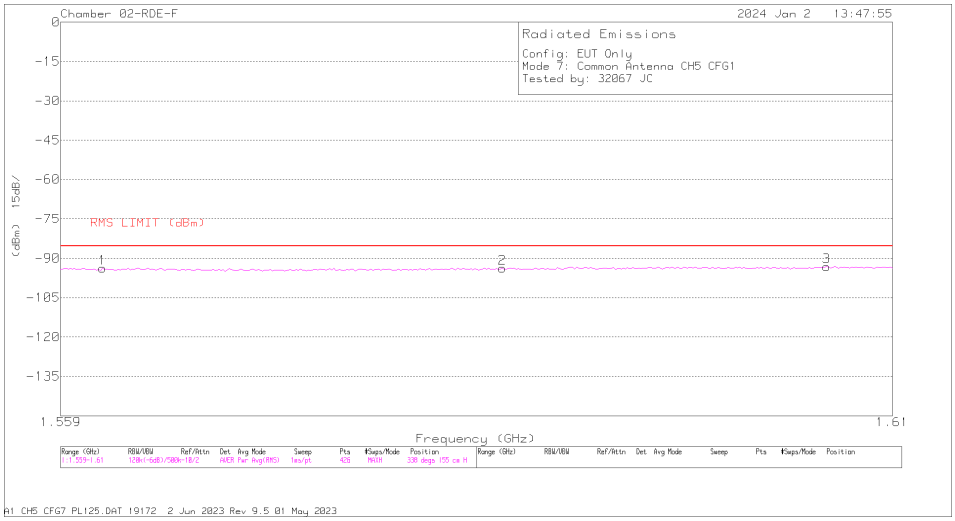
RMS - RMS detection

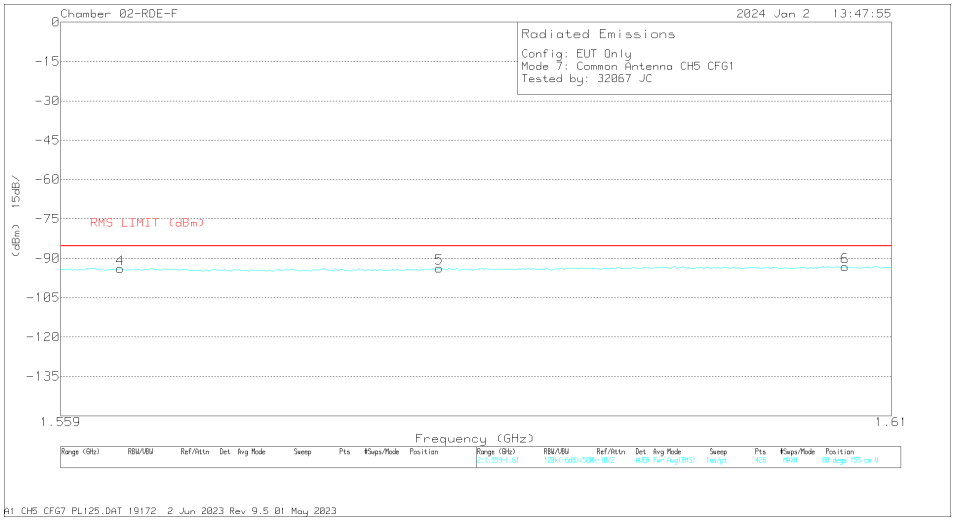


UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

## 9.6.3. AVERAGE EMISSIONS, 1.559 – 1.610 GHz

Mode 7, CH5, Common Antenna, Config 1




## Trace Markers

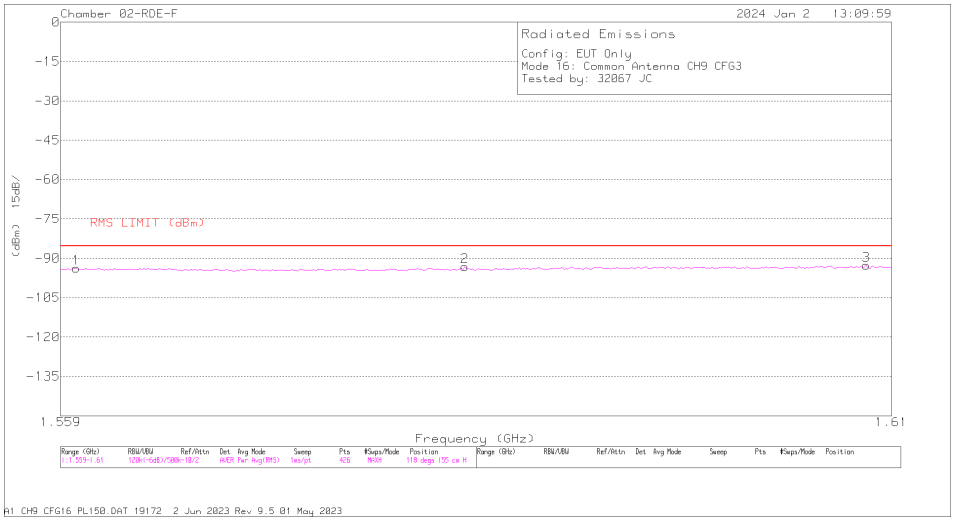
| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.56152 | -71.04 | RMS | 27.8 | -46.9 | -15.6 | 11.8 | .2 | -93.74 | -85.3 | -8.44 | 360 | 155 | H |
| 4 | 1.5626 | -71.24 | RMS | 27.8 | -46.9 | -15.6 | 11.8 | .2 | -93.94 | -85.3 | -8.64 | 176 | 155 | V |
| 5 | 1.58204 | -71.27 | RMS | 27.9 | -46.7 | -15.6 | 11.8 | .2 | -93.67 | -85.3 | -8.37 | 88 | 155 | V |
| 2 | 1.58588 | -71.45 | RMS | 28 | -46.7 | -15.6 | 11.8 | .2 | -93.75 | -85.3 | -8.45 | 250 | 155 | H |
| 3 | 1.60592 | -70.93 | RMS | 28.2 | -46.8 | -15.6 | 11.8 | .2 | -93.13 | -85.3 | -7.83 | 228 | 155 | H |
| 6 | 1.60712 | -70.91 | RMS | 28.2 | -46.8 | -15.6 | 11.8 | .2 | -93.11 | -85.3 | -7.81 | 44 | 155 | V |

RMS - RMS detection



UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

Mode 16, CH9, Common Antenna, Config 3





## Trace Markers

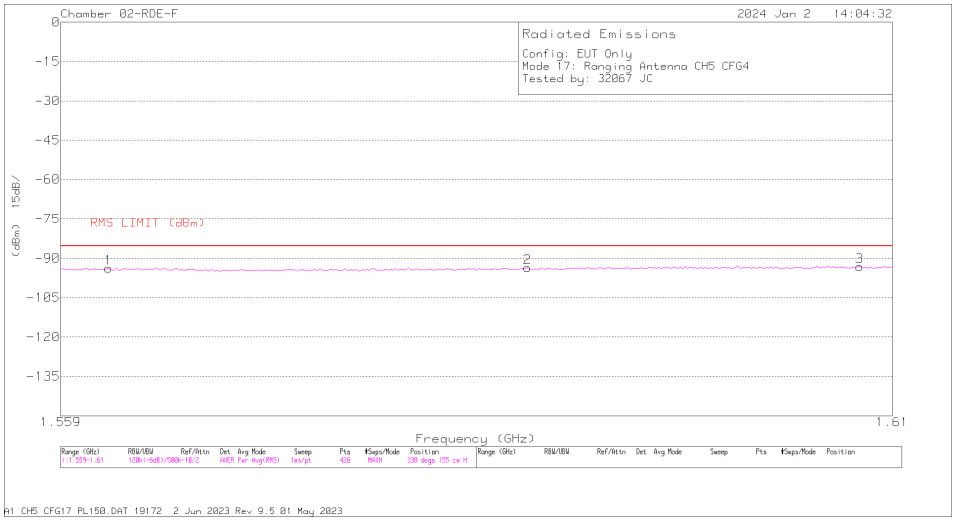
| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.55996 | -71.1 | RMS | 27.7 | -46.8 | -15.6 | 11.8 | .3 | -93.7 | -85.3 | -8.4 | 118 | 155 | H |
| 4 | 1.5626 | -70.74 | RMS | 27.8 | -46.9 | -15.6 | 11.8 | .2 | -93.44 | -85.3 | -8.14 | 220 | 155 | V |
| 2 | 1.5836 | -70.96 | RMS | 28 | -46.7 | -15.6 | 11.8 | .2 | -93.26 | -85.3 | -7.96 | 184 | 155 | H |
| 5 | 1.5842 | -71.31 | RMS | 28 | -46.7 | -15.6 | 11.8 | .2 | -93.61 | -85.3 | -8.31 | 330 | 155 | V |
| 6 | 1.60784 | -70.69 | RMS | 28.2 | -46.8 | -15.6 | 11.8 | .2 | -92.89 | -85.3 | -7.59 | 22 | 155 | V |
| 3 | 1.60844 | -70.47 | RMS | 28.2 | -46.8 | -15.6 | 11.8 | .2 | -92.67 | -85.3 | -7.37 | 250 | 155 | H |

RMS - RMS detection



UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

Mode 17, CH5, Ranging Antenna, Config 4





## Trace Markers

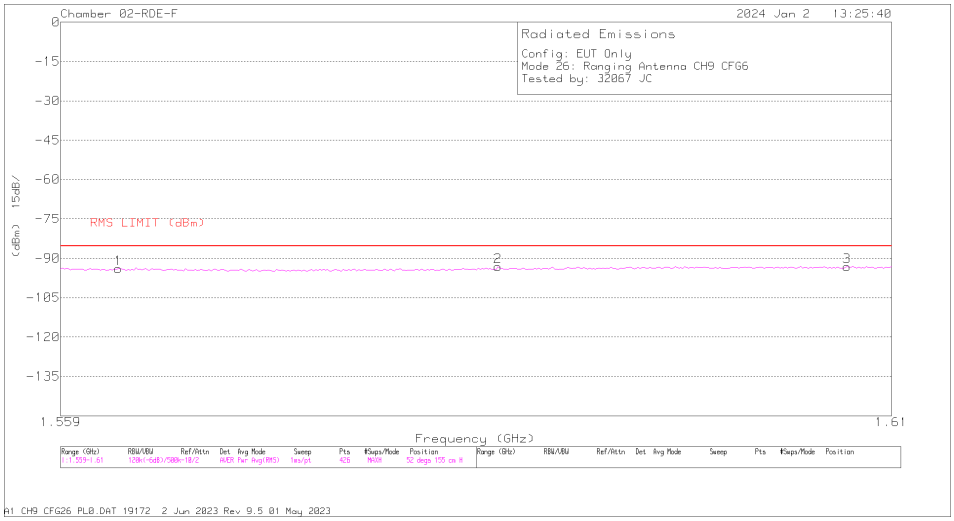
| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1.5602 | -71.04 | RMS | 27.7 | -46.9 | -15.6 | 11.8 | .3 | -93.74 | -85.3 | -8.44 | 220 | 155 | V |
| 1 | 1.56188 | -71.07 | RMS | 27.8 | -46.9 | -15.6 | 11.8 | .2 | -93.77 | -85.3 | -8.47 | 52 | 155 | H |
| 5 | 1.586 | -71.27 | RMS | 28 | -46.7 | -15.6 | 11.8 | .2 | -93.57 | -85.3 | -8.27 | 264 | 155 | V |
| 2 | 1.58744 | -71.27 | RMS | 28 | -46.7 | -15.6 | 11.8 | .2 | -93.57 | -85.3 | -8.27 | 140 | 155 | H |
| 3 | 1.60796 | -70.97 | RMS | 28.2 | -46.8 | -15.6 | 11.8 | .2 | -93.17 | -85.3 | -7.87 | 118 | 155 | H |
| 6 | 1.6094 | -70.78 | RMS | 28.2 | -46.8 | -15.6 | 11.8 | .1 | -93.08 | -85.3 | -7.78 | 88 | 155 | V |

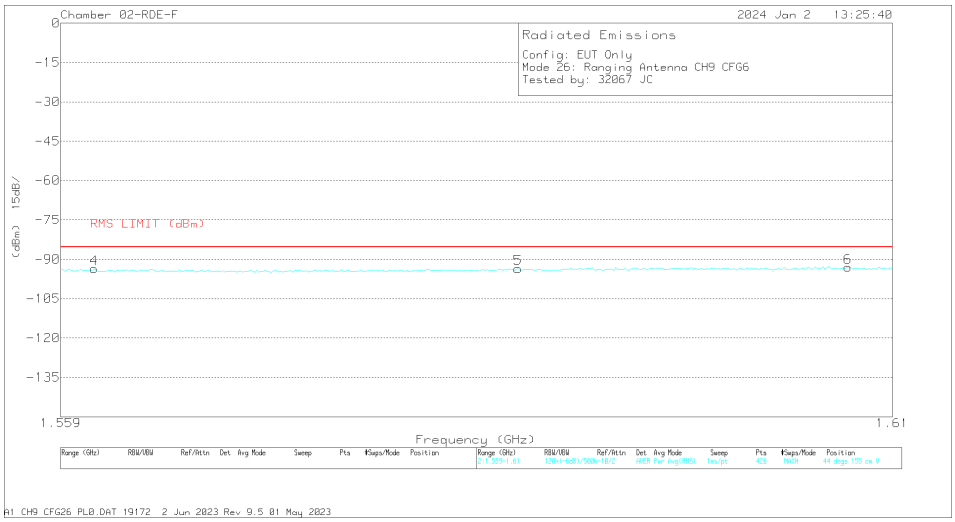
RMS - RMS detection



UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

Mode 26, CH9, Ranging Antenna, Config 6




## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 204843 LPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1.56104 | -70.96 | RMS | 27.8 | -46.9 | -15.6 | 11.8 | .2 | -93.66 | -85.3 | -8.36 | 330 | 155 | V |
| 1 | 1.56248 | -71.28 | RMS | 27.8 | -46.9 | -15.6 | 11.8 | .2 | -93.98 | -85.3 | -8.68 | 206 | 155 | H |
| 2 | 1.58564 | -70.92 | RMS | 28 | -46.7 | -15.6 | 11.8 | .2 | -93.22 | -85.3 | -7.92 | 96 | 155 | H |
| 5 | 1.58684 | -71.18 | RMS | 28 | -46.7 | -15.6 | 11.8 | .2 | -93.48 | -85.3 | -8.18 | 88 | 155 | V |
| 3 | 1.60724 | -70.95 | RMS | 28.2 | -46.8 | -15.6 | 11.8 | .2 | -93.15 | -85.3 | -7.85 | 184 | 155 | H |
| 6 | 1.60724 | -70.8 | RMS | 28.2 | -46.8 | -15.6 | 11.8 | .2 | -93 | -85.3 | -7.7 | 154 | 155 | V |

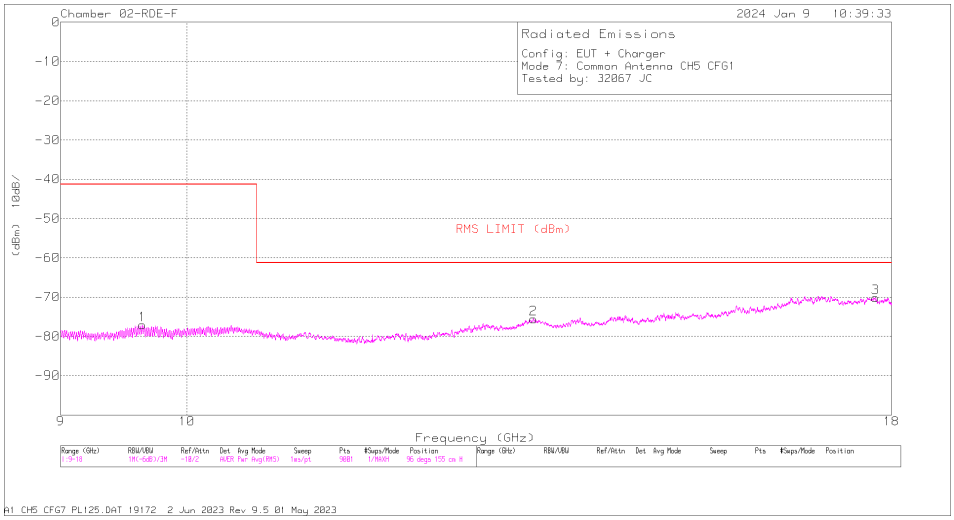
RMS - RMS detection

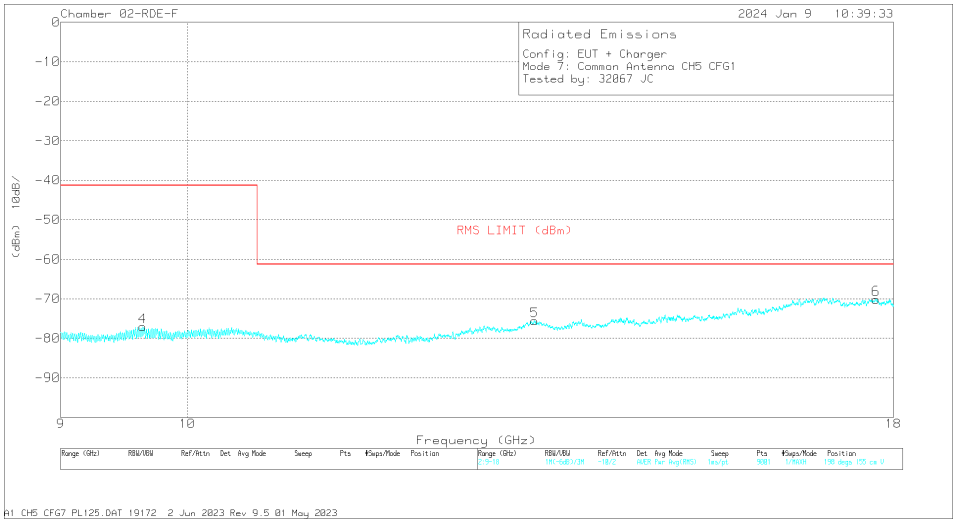


UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

## 9.6.4. AVERAGE EMISSIONS, 9 – 18 GHz

Mode 7, CH5, Common Antenna, Config 1




## Trace Markers

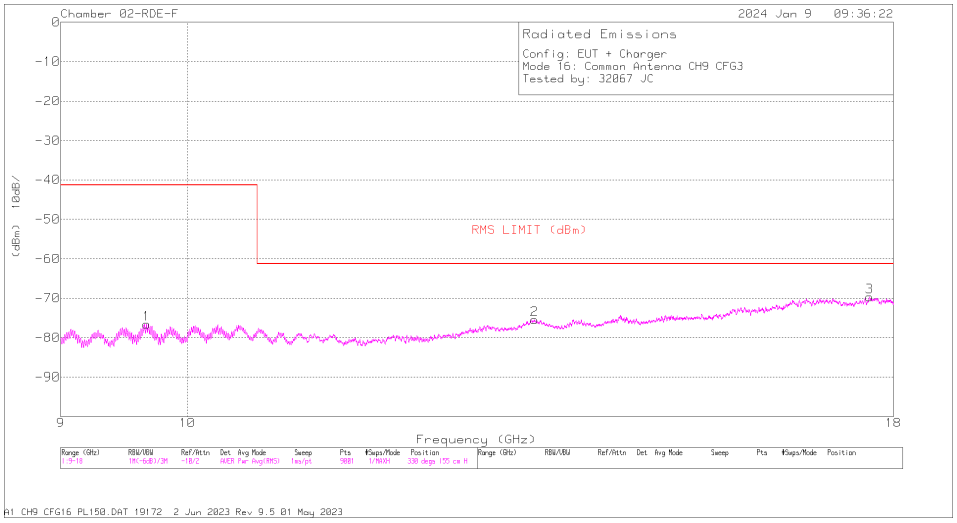
| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 206078 9 GHz HPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 9.637 | -67.28 | RMS | 36.6 | -43 | -15.6 | 11.8 | .4 | -77.08 | -41.3 | -35.78 | 220 | 155 | V |
| 1 | 9.6375 | -67.37 | RMS | 36.6 | -42.9 | -15.6 | 11.8 | .4 | -77.07 | -41.3 | -35.77 | 96 | 155 | H |
| 5 | 13.352 | -68.82 | RMS | 39.2 | -42.4 | -15.6 | 11.8 | .3 | -75.52 | -61.3 | -14.22 | 0 | 155 | V |
| 2 | 13.354 | -68.85 | RMS | 39.2 | -42.4 | -15.6 | 11.8 | .3 | -75.55 | -61.3 | -14.25 | 360 | 155 | H |
| 6 | 17.74 | -67.71 | RMS | 41.4 | -40.1 | -15.6 | 11.8 | .1 | -70.11 | -61.3 | -8.81 | 66 | 155 | V |
| 3 | 17.766 | -67.41 | RMS | 41.3 | -40.4 | -15.6 | 11.8 | .1 | -70.21 | -61.3 | -8.91 | 206 | 155 | H |

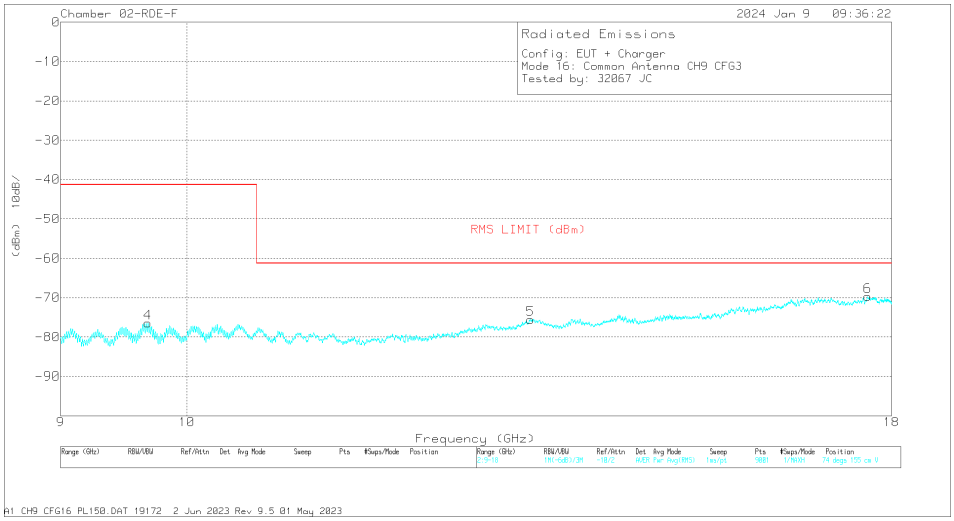
RMS - RMS detection



UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

Mode 16, CH9, Common Antenna, Config 3




## Trace Markers

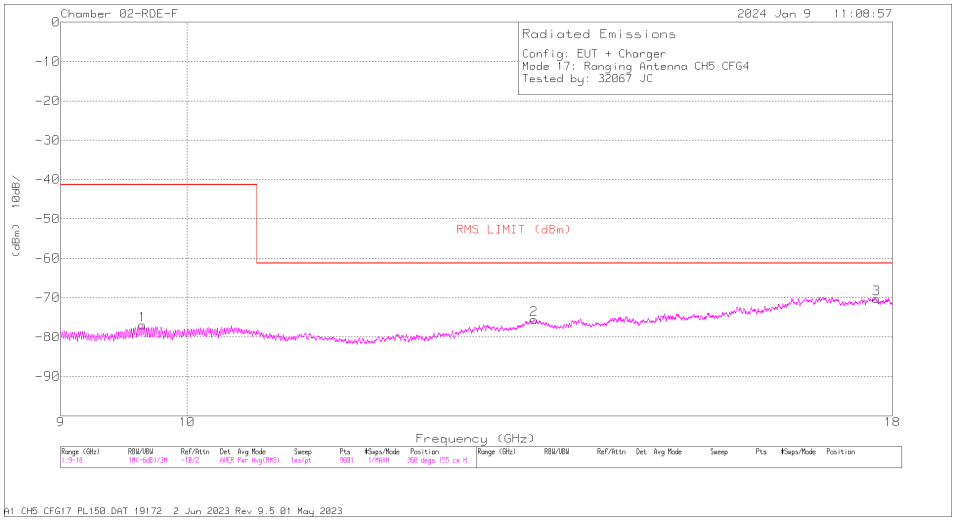
| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | High Pass Filter (dB), | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.667 | -65.96 | RMS | 36.7 | -43.5 | -15.6 | 11.8 | 0 | -76.56 | -41.3 | -35.26 | 88 | 155 | H |
| 4 | 9.681 | -66.04 | RMS | 36.7 | -43.3 | -15.6 | 11.8 | 0 | -76.44 | -41.3 | -35.14 | 360 | 155 | V |
| 5 | 13.319 | -68.77 | RMS | 39.1 | -42.4 | -15.6 | 11.8 | .3 | -75.57 | -61.3 | -14.27 | 228 | 155 | V |
| 2 | 13.352 | -68.56 | RMS | 39.2 | -42.4 | -15.6 | 11.8 | .1 | -75.46 | -61.3 | -14.16 | 264 | 155 | H |
| 6 | 17.645 | -68.16 | RMS | 41.5 | -39.5 | -15.6 | 11.8 | .3 | -69.66 | -61.3 | -8.36 | 272 | 155 | V |
| 3 | 17.647 | -68.04 | RMS | 41.5 | -39.6 | -15.6 | 11.8 | .3 | -69.64 | -61.3 | -8.34 | 22 | 155 | H |

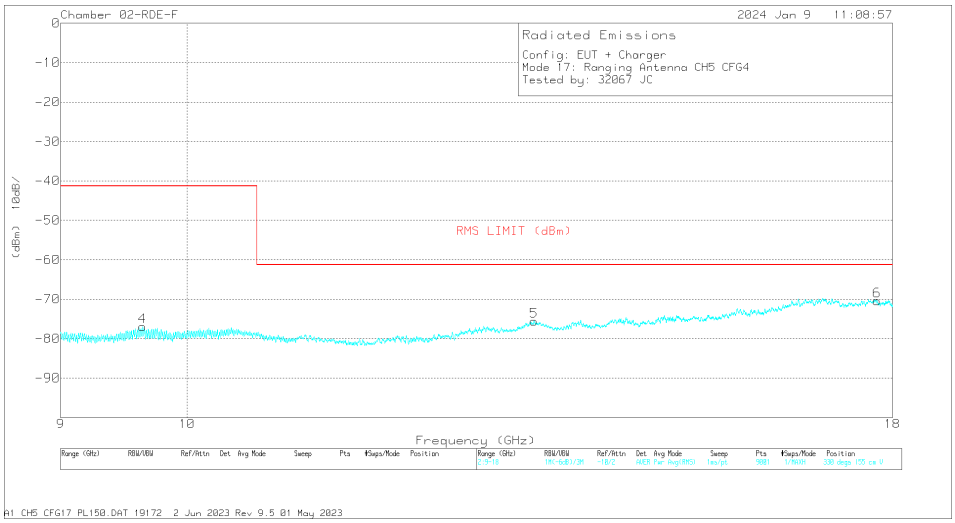
RMS - RMS detection



UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

Mode 17, CH5, Ranging Antenna, Config 4




## Trace Markers

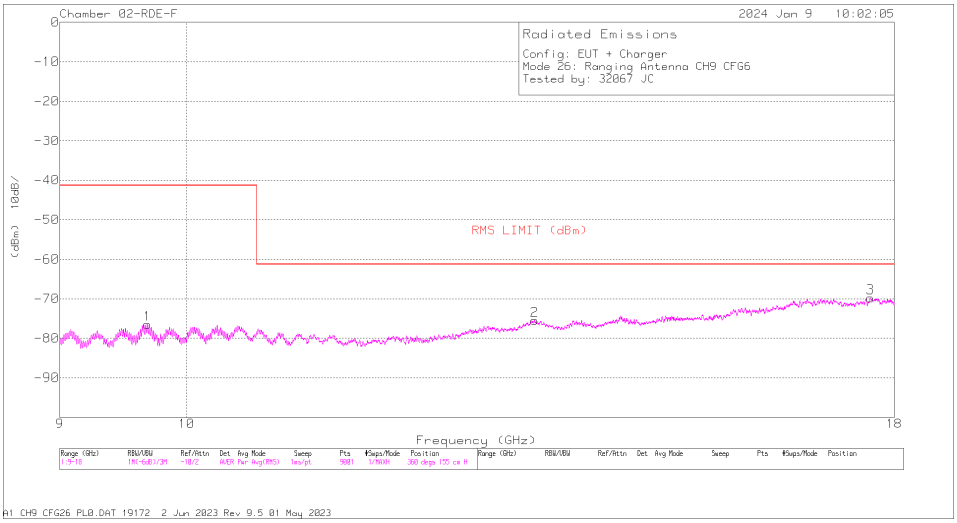
| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | 206078 9 GHz HPF (dB) | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 9.637 | -67.12 | RMS | 36.6 | -43 | -15.6 | 11.8 | .4 | -76.92 | -41.3 | -35.62 | 308 | 155 | V |
| 1 | 9.638 | -67.25 | RMS | 36.6 | -42.9 | -15.6 | 11.8 | .4 | -76.95 | -41.3 | -35.65 | 316 | 155 | H |
| 2 | 13.3505 | -68.82 | RMS | 39.1 | -42.4 | -15.6 | 11.8 | .3 | -75.62 | -61.3 | -14.32 | 140 | 155 | H |
| 5 | 13.355 | -68.71 | RMS | 39.2 | -42.5 | -15.6 | 11.8 | .2 | -75.61 | -61.3 | -14.31 | 264 | 155 | V |
| 3 | 17.767 | -67.51 | RMS | 41.3 | -40.4 | -15.6 | 11.8 | .1 | -70.31 | -61.3 | -9.01 | 207 | 155 | H |
| 6 | 17.769 | -67.44 | RMS | 41.3 | -40.6 | -15.6 | 11.8 | .1 | -70.44 | -61.3 | -9.14 | 0 | 155 | V |

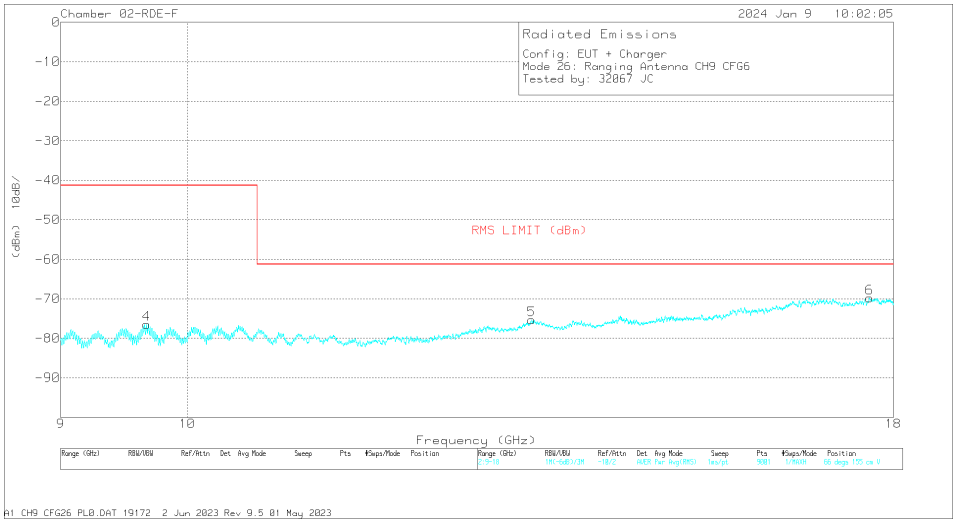
RMS - RMS detection



UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

Mode 26, CH9, Ranging Antenna, Config 6




## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206808 ACF (dB/m) | Amp/Cbl (dB) | Dist. Corr. (dB) | Conv. Fact. (dB) | High Pass Filter (dB), | Corrected Reading (dBm) | RMS LIMIT (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 9.668 | -65.89 | RMS | 36.7 | -43.5 | -15.6 | 11.8 | 0 | -76.49 | -41.3 | -35.19 | 198 | 155 | V |
| 1 | 9.682 | -66.19 | RMS | 36.7 | -43.2 | -15.6 | 11.8 | 0 | -76.49 | -41.3 | -35.19 | 184 | 155 | H |
| 5 | 13.321 | -68.48 | RMS | 39.1 | -42.4 | -15.6 | 11.8 | .3 | -75.28 | -61.3 | -13.98 | 308 | 155 | V |
| 2 | 13.352 | -68.6 | RMS | 39.2 | -42.4 | -15.6 | 11.8 | .1 | -75.5 | -61.3 | -14.2 | 295 | 155 | H |
| 3 | 17.6475 | -68.13 | RMS | 41.5 | -39.6 | -15.6 | 11.8 | .3 | -69.73 | -61.3 | -8.43 | 162 | 155 | H |
| 6 | 17.649 | -68.08 | RMS | 41.5 | -39.7 | -15.6 | 11.8 | .3 | -69.78 | -61.3 | -8.48 | 22 | 155 | V |

RMS - RMS detection



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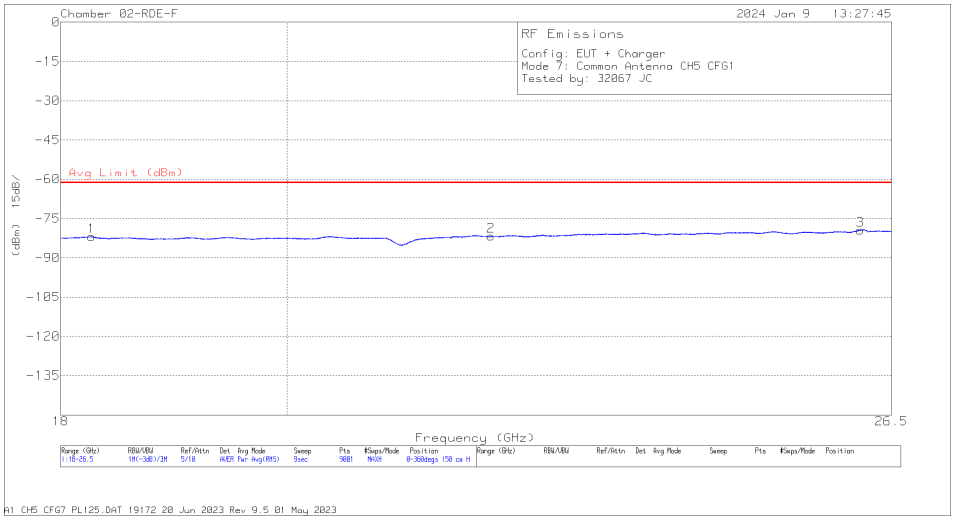
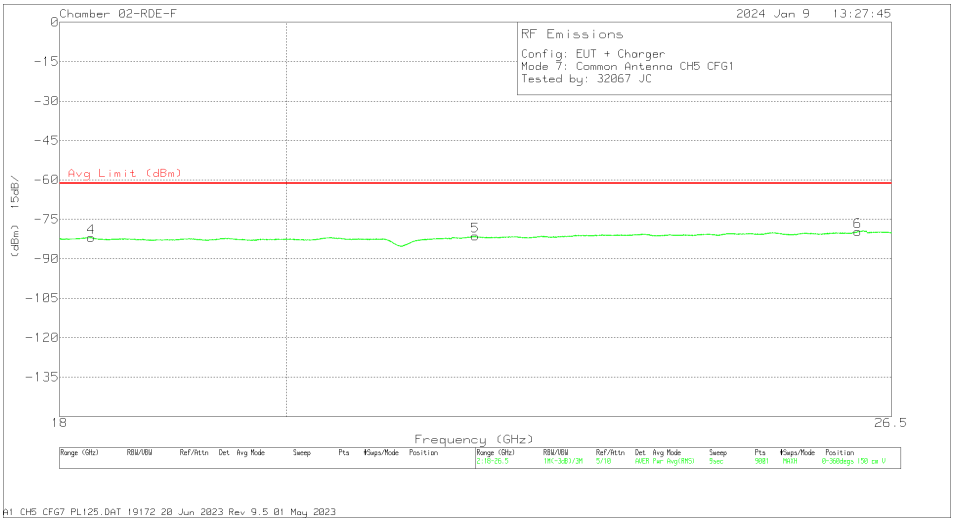
## 9.6.5. AVERAGE EMISSIONS, 18 – 26.5 GHz

Mode 7, CH5, Common Antenna, Config 1



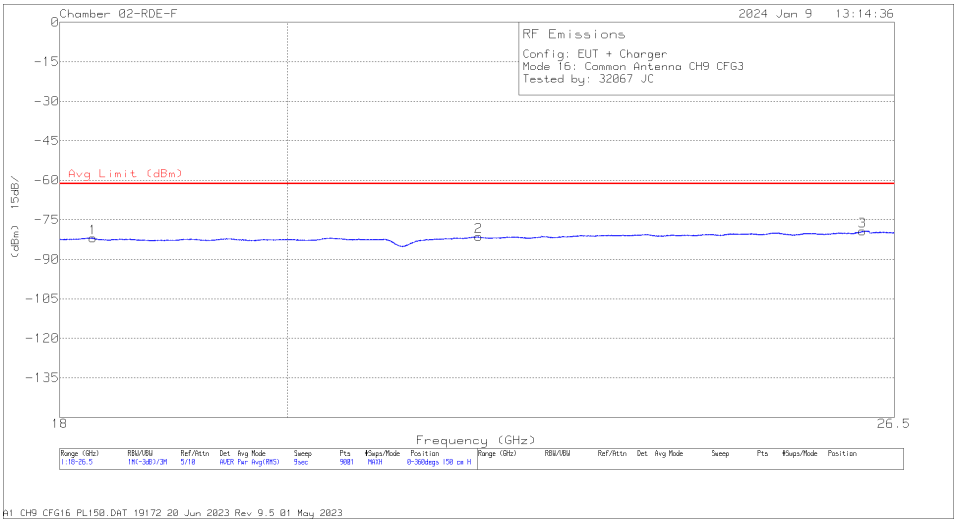



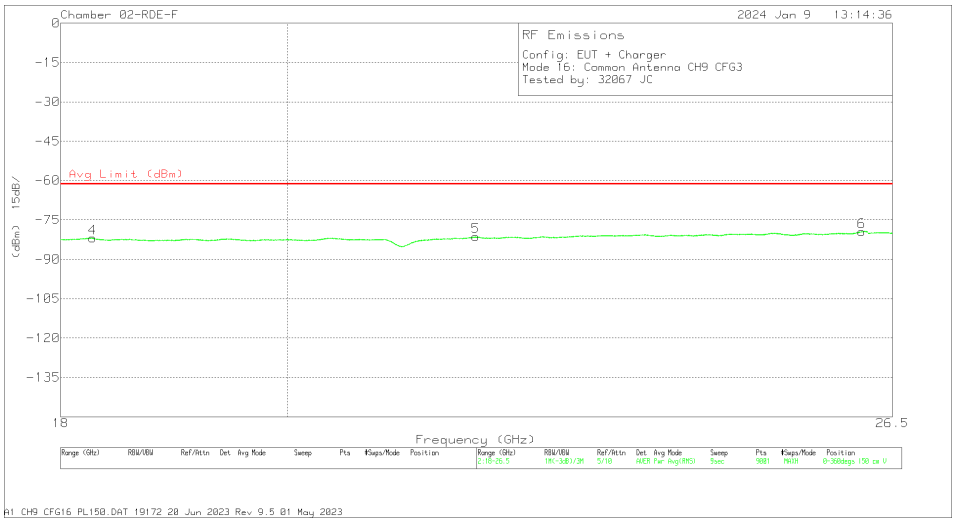

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 172363 ACF (dB/m) | 171580 Amp (dB) | CBL (dB) | Dist Corr (dB) | Conv. Fact. (dB) | Corrected Reading (dBm) | Avg Limit (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 18.2635 | -62.97 | RMS | 32.7 | -63.9 | 16.1 | -15.6 | 11.8 | -81.87 | -61.3 | -20.57 | 0-360 | 150 | H |
| 4 | * 18.266333 | -62.94 | RMS | 32.7 | -63.9 | 16.1 | -15.6 | 11.8 | -81.84 | -61.3 | -20.54 | 0-360 | 150 | V |
| 5 | 21.837276 | -65.47 | RMS | 33.8 | -63.4 | 17.5 | -15.6 | 11.8 | -81.37 | -61.3 | -20.07 | 0-360 | 150 | V |
| 2 | 21.992165 | -65.89 | RMS | 33.9 | -63.5 | 17.6 | -15.6 | 11.8 | -81.69 | -61.3 | -20.39 | 0-360 | 150 | H |
| 6 | 26.090107 | -68.25 | RMS | 35.3 | -61.9 | 19 | -15.6 | 11.8 | -79.65 | -61.3 | -18.35 | 0-360 | 150 | V |
| 3 | 26.116552 | -67.88 | RMS | 35.3 | -62 | 19 | -15.6 | 11.8 | -79.38 | -61.3 | -18.08 | 0-360 | 150 | H |

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

Mode 16, CH9, Common Antenna, Config 3




## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 172363 ACF (dB/m) | 171580 Amp (dB) | CBL (dB) | Dist Corr (dB) | Conv. Fact. (dB) | Corrected Reading (dBm) | Avg Limit (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 18.277667 | -62.94 | RMS | 32.7 | -63.9 | 16.1 | -15.6 | 11.8 | -81.84 | -61.3 | -20.54 | 0-360 | 150 | H |
| 4 | * 18.272 | -62.98 | RMS | 32.7 | -63.9 | 16.1 | -15.6 | 11.8 | -81.88 | -61.3 | -20.58 | 0-360 | 150 | V |
| 5 | 21.832554 | -65.51 | RMS | 33.8 | -63.4 | 17.5 | -15.6 | 11.8 | -81.41 | -61.3 | -20.11 | 0-360 | 150 | V |
| 2 | 21.85522 | -65.36 | RMS | 33.8 | -63.4 | 17.5 | -15.6 | 11.8 | -81.26 | -61.3 | -19.96 | 0-360 | 150 | H |
| 3 | 26.115135 | -67.84 | RMS | 35.3 | -62 | 19 | -15.6 | 11.8 | -79.34 | -61.3 | -18.04 | 0-360 | 150 | H |
| 6 | 26.126941 | -67.99 | RMS | 35.4 | -62 | 19 | -15.6 | 11.8 | -79.39 | -61.3 | -18.09 | 0-360 | 150 | V |

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



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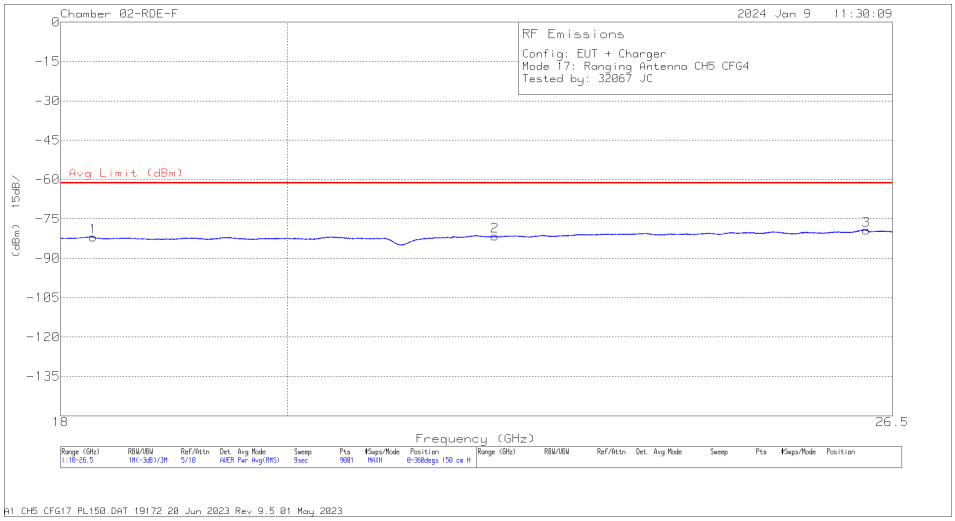
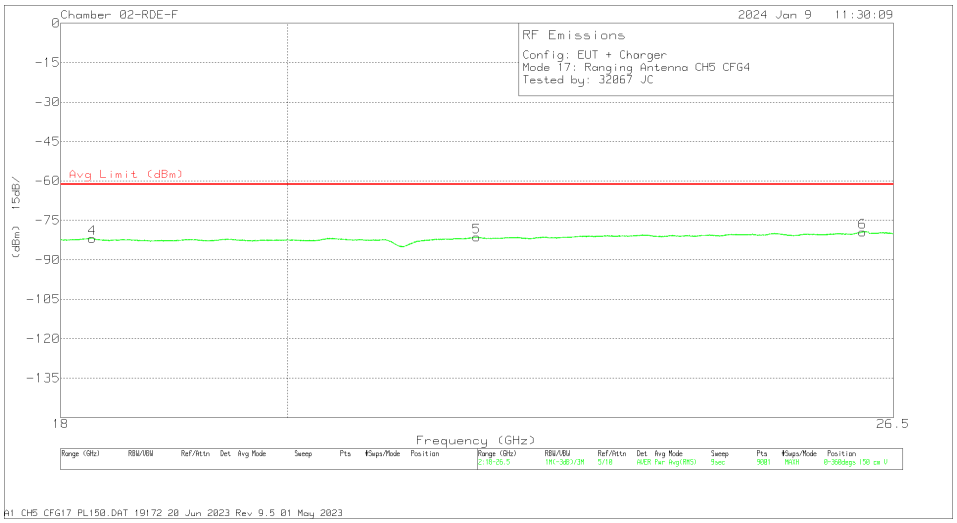
Mode 17, CH5, Ranging Antenna, Config 4




## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 172363 ACF (dB/m) | 171580 Amp (dB) | CBL (dB) | Dist Corr (dB) | Conv. Fact. (dB) | Corrected Reading (dBm) | Avg Limit (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 18.273889 | -63.01 | RMS | 32.7 | -63.9 | 16.1 | -15.6 | 11.8 | -81.91 | -61.3 | -20.61 | 0-360 | 150 | H |
| 2 | * 22.030887 | -65.68 | RMS | 33.9 | -63.6 | 17.6 | -15.6 | 11.8 | -81.58 | -61.3 | -20.28 | 0-360 | 150 | H |
| 4 | * 18.267278 | -62.91 | RMS | 32.7 | -63.9 | 16.1 | -15.6 | 11.8 | -81.81 | -61.3 | -20.51 | 0-360 | 150 | V |
| 5 | 21.83822 | -65.48 | RMS | 33.8 | -63.4 | 17.5 | -15.6 | 11.8 | -81.38 | -61.3 | -20.08 | 0-360 | 150 | V |
| 6 | 26.122218 | -67.97 | RMS | 35.4 | -62 | 19 | -15.6 | 11.8 | -79.37 | -61.3 | -18.07 | 0-360 | 150 | V |
| 3 | 26.179829 | -67.71 | RMS | 35.4 | -62.2 | 19.1 | -15.6 | 11.8 | -79.21 | -61.3 | -17.91 | 0-360 | 150 | H |

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



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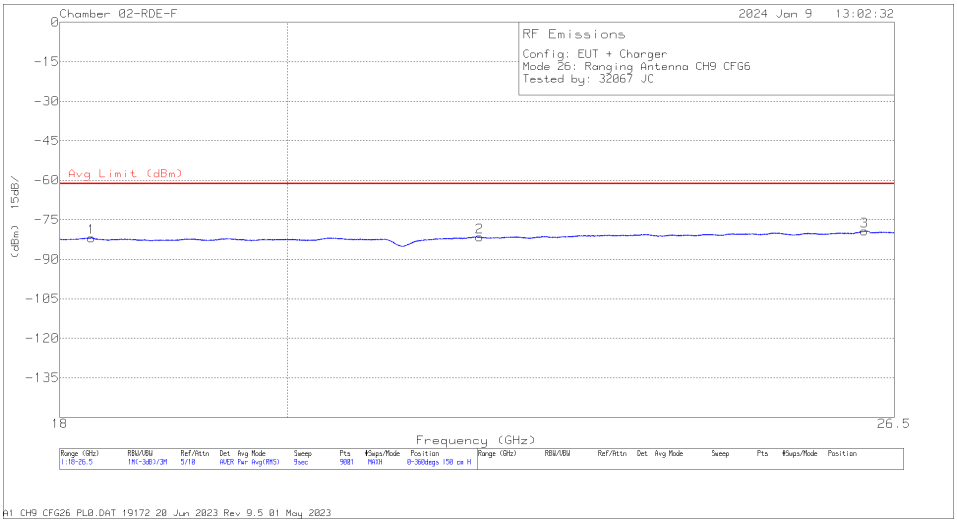
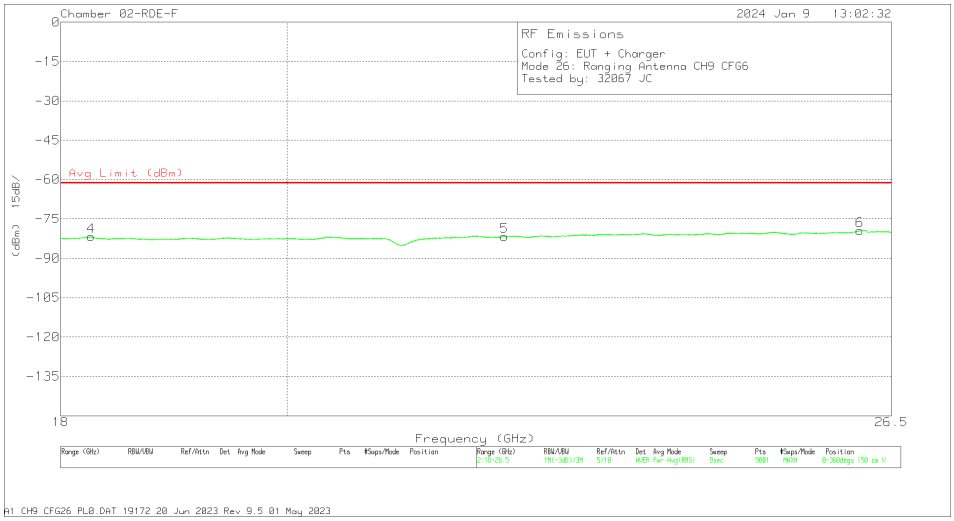
Mode 26, CH9, Ranging Antenna, Config 6




## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 172363 ACF (dB/m) | 171580 Amp (dB) | CBL (dB) | Dist Corr (dB) | Conv. Fact. (dB) | Corrected Reading (dBm) | Avg Limit (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 18.268222 | -62.9 | RMS | 32.7 | -63.9 | 16.1 | -15.6 | 11.8 | -81.8 | -61.3 | -20.5 | 0-360 | 150 | H |
| 4 | * 18.259722 | -62.82 | RMS | 32.7 | -63.9 | 16.1 | -15.6 | 11.8 | -81.72 | -61.3 | -20.42 | 0-360 | 150 | V |
| 5 | * 22.130054 | -65.76 | RMS | 34 | -63.7 | 17.6 | -15.6 | 11.8 | -81.66 | -61.3 | -20.36 | 0-360 | 150 | V |
| 2 | 21.865609 | -65.59 | RMS | 33.8 | -63.4 | 17.5 | -15.6 | 11.8 | -81.49 | -61.3 | -20.19 | 0-360 | 150 | H |
| 6 | 26.110885 | -67.92 | RMS | 35.3 | -62 | 19 | -15.6 | 11.8 | -79.42 | -61.3 | -18.12 | 0-360 | 150 | V |
| 3 | 26.139218 | -67.8 | RMS | 35.4 | -62.1 | 19 | -15.6 | 11.8 | -79.3 | -61.3 | -18 | 0-360 | 150 | H |

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



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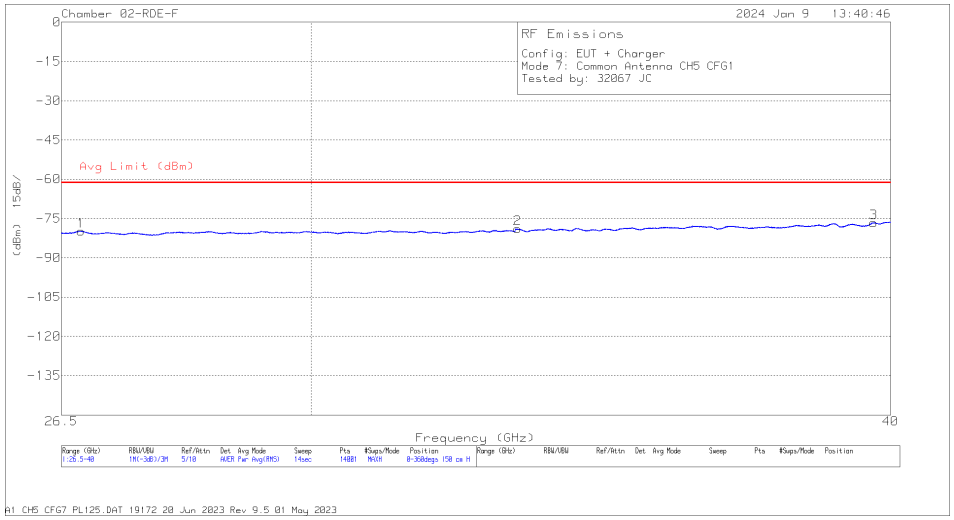
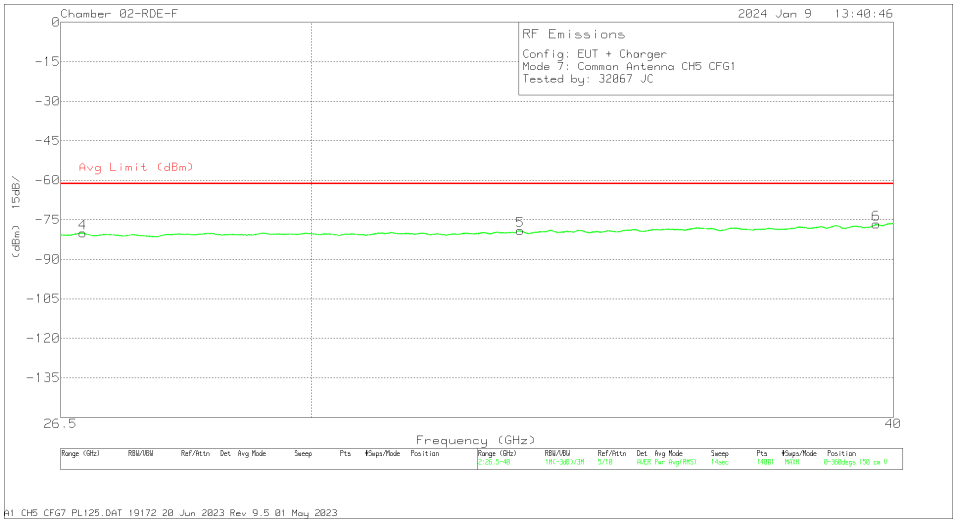
## 9.6.6. AVERAGE EMISSIONS, 26.5 – 40 GHz

Mode 7, CH5, Common Antenna, Config 1



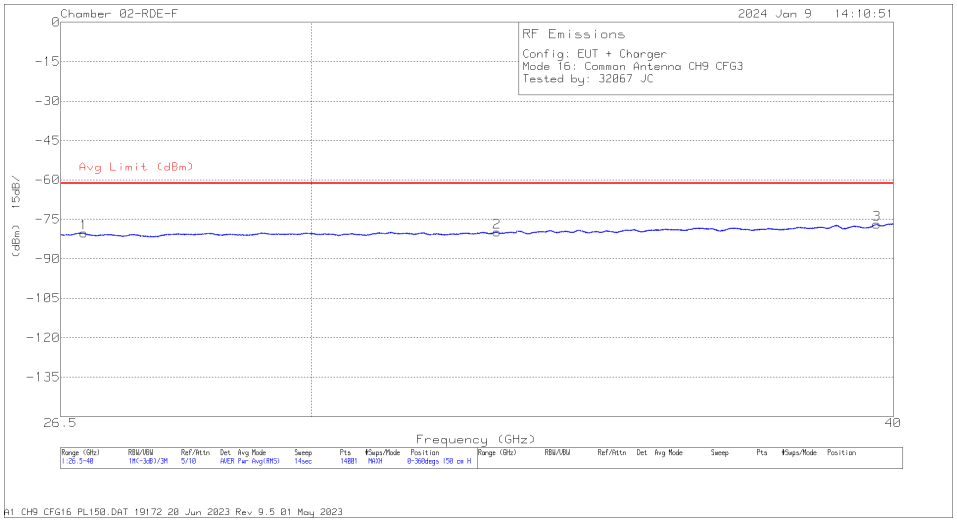



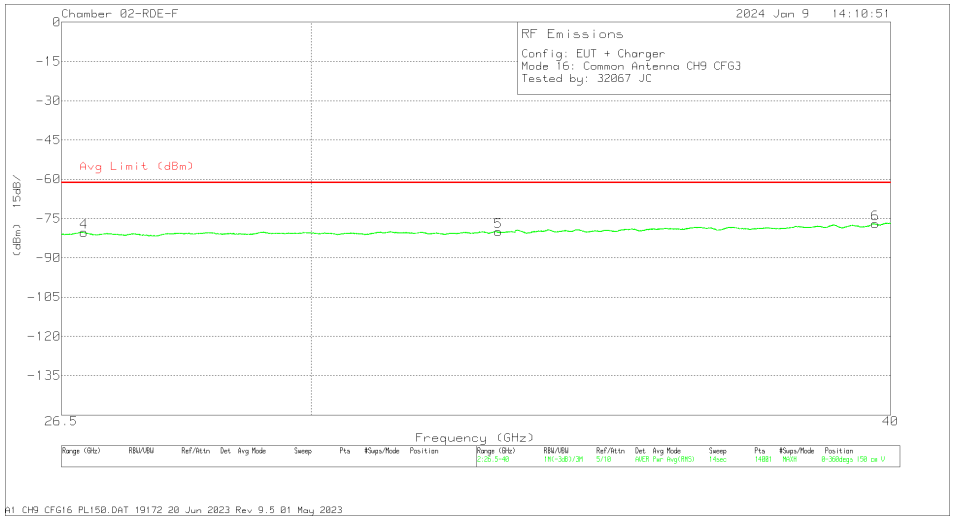

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 172366 ACF (dB/m) | CBL AMP (dB) | Dist Corr (dB) | Conv. Fact. (dB) | CBL (dB) | Corrected Reading (dBm) | Avg Limit (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 26.757464 | -54.99 | RMS | 36 | -76.3 | -15.6 | 11.8 | 19.3 | -79.79 | -61.3 | -18.49 | 0-360 | 150 | H |
| 4 | 26.792179 | -55.31 | RMS | 36 | -76.2 | -15.6 | 11.8 | 19.3 | -80.01 | -61.3 | -18.71 | 0-360 | 150 | V |
| 2 | 33.240359 | -60.6 | RMS | 37.5 | -73.5 | -15.6 | 11.8 | 21.5 | -78.9 | -61.3 | -17.6 | 0-360 | 150 | H |
| 5 | 33.263502 | -60.68 | RMS | 37.4 | -73.5 | -15.6 | 11.8 | 21.5 | -79.08 | -61.3 | -17.78 | 0-360 | 150 | V |
| 3 | 39.663468 | -62.96 | RMS | 39.3 | -73.2 | -15.6 | 11.8 | 24.1 | -76.56 | -61.3 | -15.26 | 0-360 | 150 | H |
| 6 | 39.663468 | -63.03 | RMS | 39.3 | -73.2 | -15.6 | 11.8 | 24.1 | -76.63 | -61.3 | -15.33 | 0-360 | 150 | V |

RMS - RMS detection

Mode 16, CH9, Common Antenna, Config 3




## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 172366 ACF (dB/m) | CBL AMP (dB) | Dist Corr (dB) | Conv. Fact. (dB) | CBL (dB) | Corrected Reading (dBm) | Avg Limit (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 26.798929 | -55.59 | RMS | 36 | -76.2 | -15.6 | 11.8 | 19.3 | -80.29 | -61.3 | -18.99 | 0-360 | 150 | V |
| 1 | 26.802786 | -55.48 | RMS | 36 | -76.2 | -15.6 | 11.8 | 19.3 | -80.18 | -61.3 | -18.88 | 0-360 | 150 | H |
| 2 | 32.877788 | -61.73 | RMS | 37.4 | -73 | -15.6 | 11.8 | 21.3 | -79.83 | -61.3 | -18.53 | 0-360 | 150 | H |
| 5 | 32.919252 | -61.97 | RMS | 37.4 | -73 | -15.6 | 11.8 | 21.3 | -80.07 | -61.3 | -18.77 | 0-360 | 150 | V |
| 3 | 39.673111 | -63.25 | RMS | 39.3 | -73.2 | -15.6 | 11.8 | 24.1 | -76.85 | -61.3 | -15.55 | 0-360 | 150 | H |
| 6 | 39.697218 | -63.34 | RMS | 39.3 | -73.3 | -15.6 | 11.8 | 24.2 | -76.94 | -61.3 | -15.64 | 0-360 | 150 | V |

RMS - RMS detection



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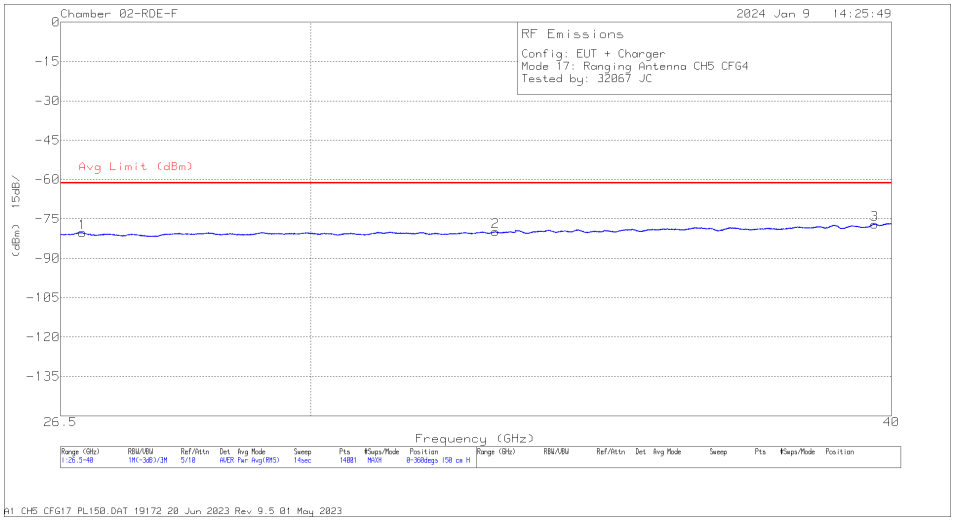
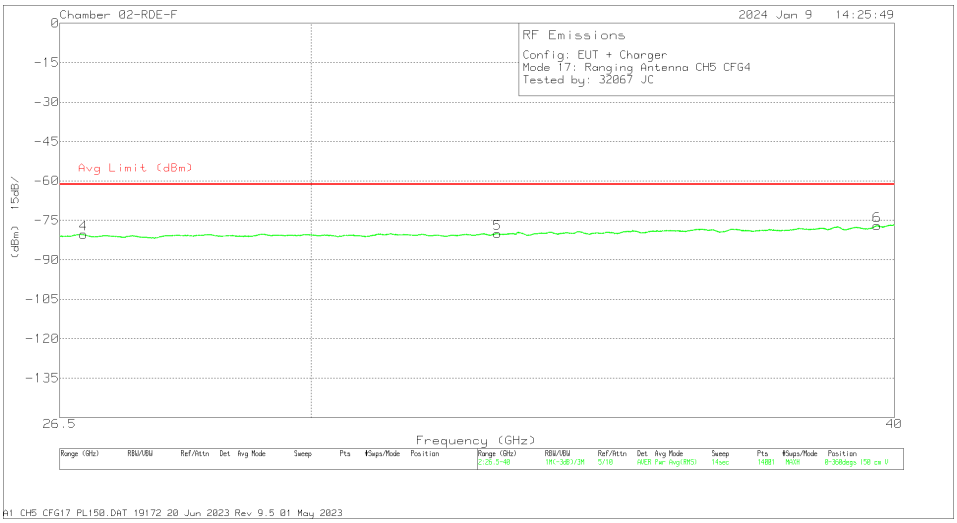
Mode 17, CH5, Ranging Antenna, Config 4




## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 172366 ACF (dB/m) | CBL AMP (dB) | Dist Corr (dB) | Conv. Fact. (dB) | CBL (dB) | Corrected Reading (dBm) | Avg Limit (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 26.789286 | -55.54 | RMS | 36 | -76.2 | -15.6 | 11.8 | 19.3 | -80.24 | -61.3 | -18.94 | 0-360 | 150 | H |
| 4 | 26.809536 | -55.59 | RMS | 36 | -76.2 | -15.6 | 11.8 | 19.3 | -80.29 | -61.3 | -18.99 | 0-360 | 150 | V |
| 2 | 32.87393 | -61.86 | RMS | 37.4 | -72.9 | -15.6 | 11.8 | 21.3 | -79.86 | -61.3 | -18.56 | 0-360 | 150 | H |
| 5 | 32.890323 | -61.83 | RMS | 37.4 | -73 | -15.6 | 11.8 | 21.3 | -79.93 | -61.3 | -18.63 | 0-360 | 150 | V |
| 6 | 39.663468 | -63.33 | RMS | 39.3 | -73.2 | -15.6 | 11.8 | 24.1 | -76.93 | -61.3 | -15.63 | 0-360 | 150 | V |
| 3 | 39.665397 | -63.33 | RMS | 39.3 | -73.2 | -15.6 | 11.8 | 24.1 | -76.93 | -61.3 | -15.63 | 0-360 | 150 | H |

RMS - RMS detection



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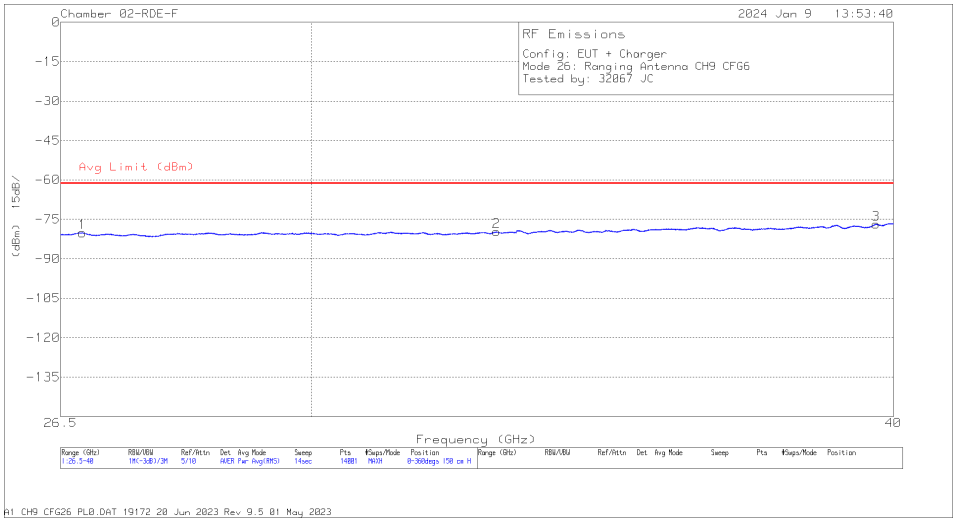
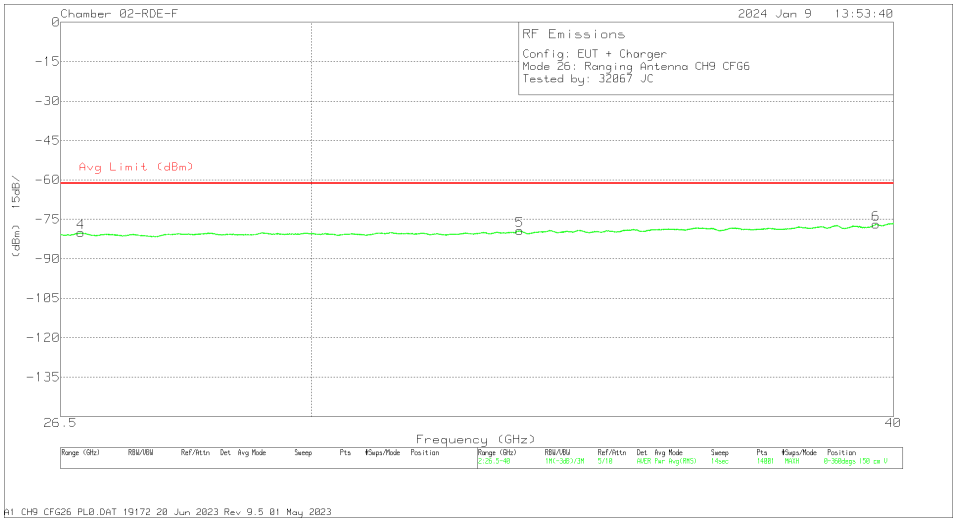
Mode 26, CH9, Ranging Antenna, Config 6




## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 172366 ACF (dB/m) | CBL AMP (dB) | Dist Corr (dB) | Conv. Fact. (dB) | CBL (dB) | Corrected Reading (dBm) | Avg Limit (dBm) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 26.769036 | -55.28 | RMS | 36 | -76.3 | -15.6 | 11.8 | 19.3 | -80.08 | -61.3 | -18.78 | 0-360 | 150 | V |
| 1 | 26.783018 | -55.4 | RMS | 36 | -76.2 | -15.6 | 11.8 | 19.3 | -80.1 | -61.3 | -18.8 | 0-360 | 150 | H |
| 2 | 32.87393 | -61.7 | RMS | 37.4 | -72.9 | -15.6 | 11.8 | 21.3 | -79.7 | -61.3 | -18.4 | 0-360 | 150 | H |
| 5 | 33.250002 | -60.95 | RMS | 37.5 | -73.5 | -15.6 | 11.8 | 21.5 | -79.25 | -61.3 | -17.95 | 0-360 | 150 | V |
| 3 | 39.655754 | -63.28 | RMS | 39.3 | -73.1 | -15.6 | 11.8 | 24.1 | -76.78 | -61.3 | -15.48 | 0-360 | 150 | H |
| 6 | 39.66154 | -63.34 | RMS | 39.3 | -73.1 | -15.6 | 11.8 | 24.1 | -76.84 | -61.3 | -15.54 | 0-360 | 150 | V |

RMS - RMS detection

## 9.7. AC POWER-LINE CONDUCTED EMISSIONS

**LIMITS**

FCC §15.207 (a)

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

*Decreases with the logarithm of the frequency.

**TEST PROCEDURE**

ANSI C63.10 Section 6.2

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**

Employee IDs: 19172
Location: Immunity Room
Test Date: 2024-03-29



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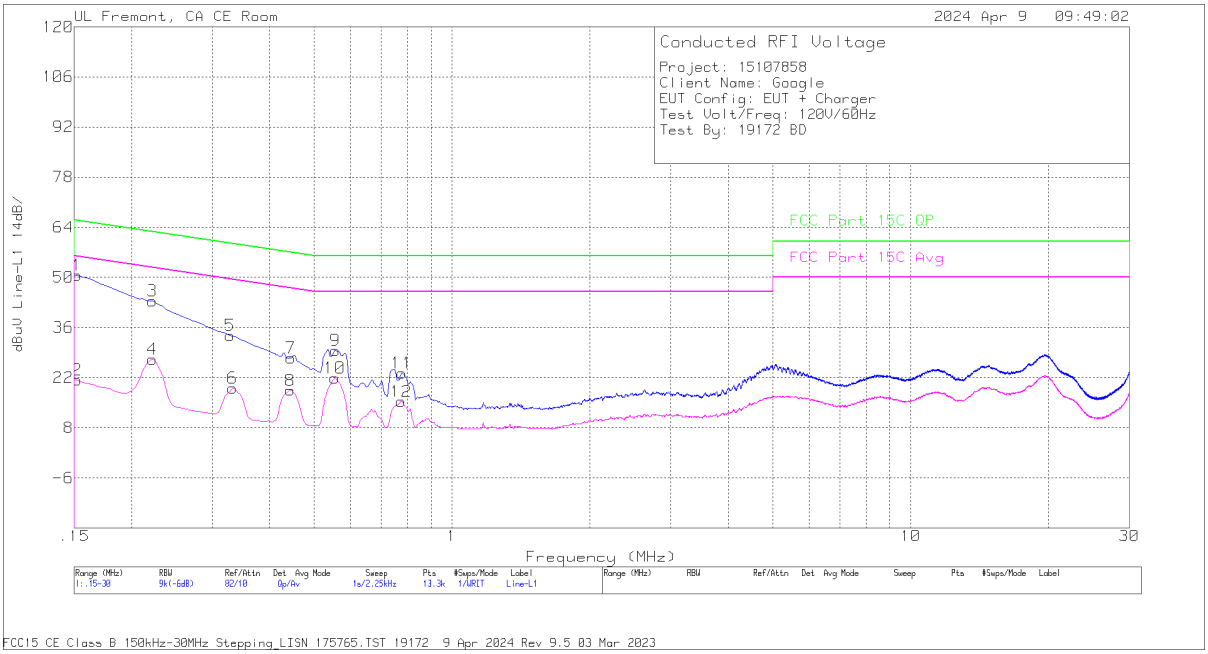
## LINE 1 RESULTS

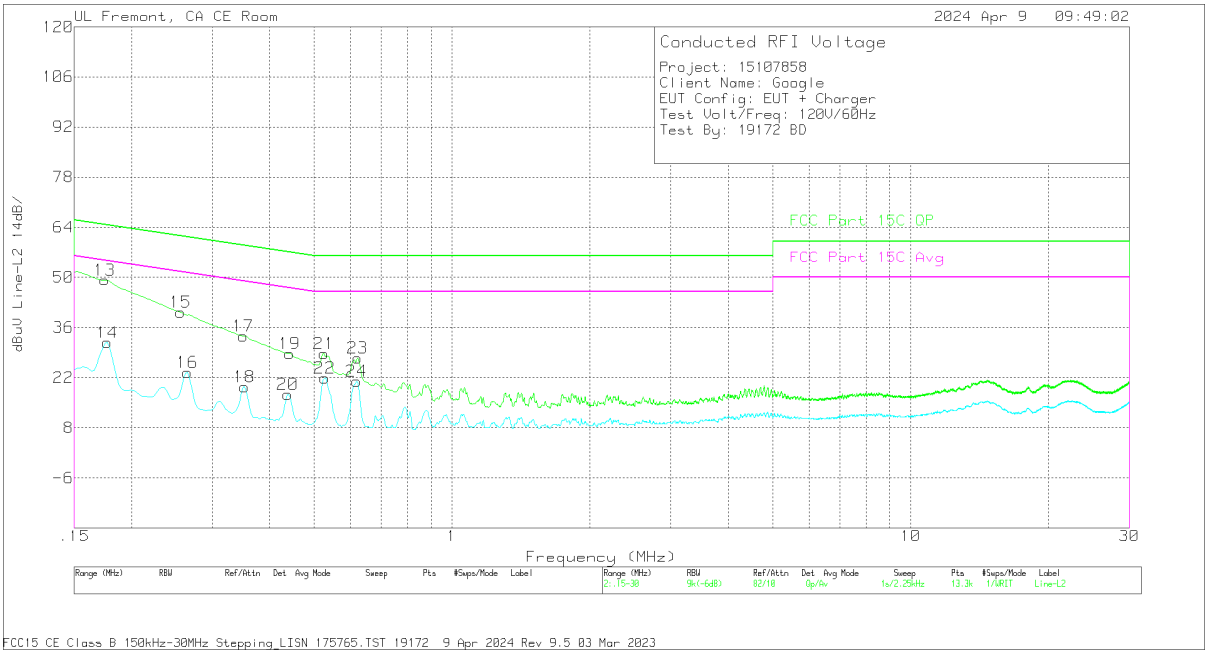



## Trace Markers

| Range 1: Line-L1 .15 - 30MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN (dB) | Cbl (dB) | Trns Limiter (dB) | 10dB Atten (dB) | Corrected Reading dBuV | FCC Part 15C QP Limit | QP Margin (dB) | FCC Part 15C Avg Limit | Av Margin (dB) |
| | | | | | | | | | | | | |
| 2 | .1523 | 1.7 | Av | .1 | 0 | 9.5 | 10 | 21.3 | - | - | 55.88 | -34.58 |
| 4 | .222 | 7.69 | Av | 0 | .1 | 9.4 | 10 | 27.19 | - | - | 52.74 | -25.55 |
| 6 | .3323 | -.39 | Av | 0 | 0 | 9.4 | 10 | 19.01 | - | - | 49.39 | -30.38 |
| 8 | .4436 | -.95 | Av | 0 | .1 | 9.3 | 10 | 18.45 | - | - | 46.99 | -28.54 |
| 10 | .555 | 2.49 | Av | 0 | .1 | 9.3 | 10 | 21.89 | - | - | 46 | -24.11 |
| 12 | .7744 | -4.19 | Av | 0 | .1 | 9.4 | 10 | 15.31 | - | - | 46 | -30.69 |
| 1 | .1523 | 31.06 | Qp | .1 | 0 | 9.5 | 10 | 50.66 | 65.88 | -15.22 | - | - |
| 3 | .222 | 23.91 | Qp | 0 | .1 | 9.4 | 10 | 43.41 | 62.74 | -19.33 | - | - |
| 5 | .3278 | 14.38 | Qp | 0 | 0 | 9.4 | 10 | 33.78 | 59.51 | -25.73 | - | - |
| 7 | .4448 | 8.13 | Qp | 0 | .1 | 9.3 | 10 | 27.53 | 56.97 | -29.44 | - | - |
| 9 | .5573 | 10.21 | Qp | 0 | .1 | 9.3 | 10 | 29.61 | 56 | -26.39 | - | - |
| 11 | .7778 | 3.89 | Qp | 0 | .1 | 9.3 | 10 | 23.29 | 56 | -32.71 | - | - |

Qp - Quasi-Peak detector
Av - Average detection

## LINE 2 RESULTS




## Trace Markers

| Range 2: Line-L2 .15 - 30MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN (dB) | Cbl (dB) | Trns Limiter (dB) | 10dB Atten (dB) | Corrected Reading dBuV | FCC Part 15C QP Limit | QP Margin (dB) | FCC Part 15C Avg Limit | Av Margin (dB) |
| | | | | | | | | | | | | |
| 14 | .177 | 12.28 | Av | 0 | .1 | 9.4 | 10 | 31.78 | - | - | 54.63 | -22.85 |
| 16 | .2648 | 3.99 | Av | 0 | 0 | 9.4 | 10 | 23.39 | - | - | 51.28 | -27.89 |
| 18 | .3525 | -.02 | Av | 0 | .1 | 9.4 | 10 | 19.48 | - | - | 48.9 | -29.42 |
| 20 | .438 | -1.98 | Av | 0 | 0 | 9.3 | 10 | 17.32 | - | - | 47.1 | -29.78 |
| 22 | .528 | 2.57 | Av | 0 | 0 | 9.3 | 10 | 21.87 | - | - | 46 | -24.13 |
| 24 | .6203 | 1.53 | Av | 0 | .1 | 9.4 | 10 | 21.03 | - | - | 46 | -24.97 |
| 13 | .1748 | 29.79 | Qp | 0 | 0 | 9.5 | 10 | 49.29 | 64.73 | -15.44 | - | - |
| 15 | .2558 | 20.84 | Qp | 0 | 0 | 9.4 | 10 | 40.24 | 61.57 | -21.33 | - | - |
| 17 | .3503 | 14.14 | Qp | 0 | .1 | 9.4 | 10 | 33.64 | 58.96 | -25.32 | - | - |
| 19 | .4425 | 9.45 | Qp | 0 | 0 | 9.3 | 10 | 28.75 | 57.01 | -28.26 | - | - |
| 21 | .5258 | 9.4 | Qp | 0 | 0 | 9.3 | 10 | 28.7 | 56 | -27.3 | - | - |
| 23 | .6225 | 8 | Qp | 0 | .1 | 9.4 | 10 | 27.5 | 56 | -28.5 | - | - |

Qp - Quasi-Peak detector
Av - Average detection

## 10. SETUP PHOTOS

Please refer to 15107858-EP1 for setup photos.

# END OF REPORT



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