

# **CERTIFICATION TEST REPORT**

**Report Number. :** S-4791706338-E1V2

**Applicant :** SAMSUNG ELECTRONICS CO., LTD.  
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,  
GYEONGGI-DO, 16677, KOREA

**Model :** SM-L320

**FCC ID :** A3LSML320

**EUT Description :** BT/BLE Smart Wearable + DTS/UNII a/b/g/n

**Test Standard(s) :** FCC 47 CFR PART 15 SUBPART C  
FCC 47 CFR PART 15 SUBPART E

**Date Of Issue:**  
2025-05-12

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Revision History

| Rev. | Issue Date | Revisions                         | Revised By |
|------|------------|-----------------------------------|------------|
| V1   | 2025-04-30 | Initial issue                     | Jaejin Lee |
| V2   | 2025-05-12 | Updated to address TCB's question | Jaejin Lee |

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SAMSUNG ELECTRONICS CO., LTD.  
**EUT DESCRIPTION:** BT/BLE Smart Wearable + DTS/UNII a/b/g/n  
**MODEL NUMBER:** SM-L320  
**SERIAL NUMBER:** R3AY400QL7T, R3AY400QL4Y (RADIATED)  
**DATE TESTED:** 2025-04-23 - 2025-04-30

| APPLICABLE STANDARDS     |              |
|--------------------------|--------------|
| STANDARD                 | TEST RESULTS |
| 47 CFR Part 15 Subpart C | Complies     |
| 47 CFR Part 15 Subpart E | Complies     |

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

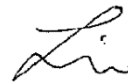
**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL KOREA LTD. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL KOREA LTD. 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 IAS, any agency of the Federal Government, or any agency of any government.

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Tested By:



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## 1.1. INTRODUCTION OF TEST DATA REUSE

This report references test data from FCC ID: A3LSML325 (FCC 47 CFR Part 15C & E).

This data reuse has been conducted in accordance with KDB 484596 D01 Referencing Test Data v03 criteria, and RF performance equivalence between the two models (A3LSML325 and A3LSML320) has been verified through spot-check measurements.

The applicant takes full responsibility that the test data referenced in this report represent compliance for this FCC ID.

## 1.2. DIFFERENCE

Key differences between A3LSML325 and A3LSML320:

### 1. RF Circuit Modifications:

- The A3LSML325 Main RF licensed related circuits have been physically depopulated, including all cellular functionality components.
- In the variant model, the part number has been changed which represents the exclusion of eSIM functionality at the chipset block level while maintaining the same physical form factor.
- This change is not visually identifiable but is documented in the component specifications.

### 2. Common Elements:

- The A3LSML320 BT/WIFI block diagram and antenna structure remain identical to the A3LSML325.
- All other aspects including form factors, materials, functions, PCB layouts, and common components are the same between both models.

## 1.3. DEVIATION CRITERIA

1. RF spot-check justification based on worst-case configuration per KDB 484596 D01 Referencing Test Data v03 Section 3.2
  - Spot-check measurements shall be made in correspondence to the worst-case scenario reported in the reference device filing, i.e., for those conditions that are the closest to non-compliance.
  - For EMC compliance test data (e.g., spurious emissions limits), the deviation between the variant and the parent model, for both field and power quantities, is expressed as:

$$d_{dB} = |V_{dB} - R_{dB}|$$

where  $V_{dB}$  is the variant spot-check level in dB, and  $R_{dB}$  is the corresponding reference measurement level in dB for the parent model. The spot-check will be deemed acceptable when:

$$d_{dB} \leq d_{dBmax}$$

where  $d_{dBmax}$  is the maximum deviation  $d_{dB}$  allowed for the EMC data for the spot-check to be considered acceptable. The definition of  $d_{dBmax}$  is based on "how far" the reference data  $R_{dB}$  is from the compliance threshold  $C_{dB}$  (also expressed in dB), for the test under consideration. More specifically, if  $M_{dB}$  is the margin in dB from the compliance limit, expressed as

$$M_{dB} = |C_{dB} - R_{dB}|$$

then  $d_{dBmax}$  is defined as a function of  $M_{dB}$ , which increases linearly from 3 dB to 6 dB, according to:

$$d_{dBmax}(M_{dB}) = \begin{cases} (3 + M_{dB}/20) \text{ dB}, & \text{for } 0 \leq M_{dB} \leq 60 \text{ dB} \\ 6 \text{ dB}, & \text{for } M_{dB} > 60 \text{ dB} \end{cases}$$

2. The conducted powers of the variant model will be spot checked to be within the tune-up tolerance.

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{CRITERIA} &= 3 + (\text{Test limit} - \text{Measured original value})/20 \\ &= 3 + (54 \text{ dBuV/m} - 41.02 \text{ dBuV/m})/20 = 3.65 \text{ dB} \end{aligned}$$

## 1.4. SPOT-CHECK VERIFICATION DATA

(Worst case of the radiated spurious emissions)

| Band              | Test Item | Mode                 | Frequency | Test Limit   | Original model     | Spot check model   | Deviation [dB] | Criteria Value[dB] | Remark |
|-------------------|-----------|----------------------|-----------|--------------|--------------------|--------------------|----------------|--------------------|--------|
|                   |           |                      |           |              | SM-L325U Results   | SM-L320 Results    |                |                    |        |
|                   |           |                      |           |              | FCC ID : A3LSML325 | FCC ID : A3LSML320 |                |                    |        |
| DTS WLAN (2.4GHz) | BANDEDGE  | 802.11b              | 2412 MHz  | 54.00 dBuV/m | 41.02 dBuV/m       | 40.59 dBuV/m       | -0.43 dB       | 3.65 dB            |        |
|                   | RSE       | 802.11b              | 4874 MHz  | 54.00 dBuV/m | 35.02 dBuV/m       | 36.07 dBuV/m       | 1.05 dB        | 3.95 dB            |        |
|                   | BANDEDGE  | 802.11g              | 2472 MHz  | 54.00 dBuV/m | 45.69 dBuV/m       | 46.93 dBuV/m       | 1.24 dB        | 3.42 dB            |        |
|                   | RSE       | 802.11g              | 9748 MHz  | 74.00 dBuV/m | 47.92 dBuV/m       | 47.88 dBuV/m       | -0.04 dB       | 4.30 dB            | Note1  |
|                   | BANDEDGE  | 802.11n HT20         | 2472 MHz  | 54.00 dBuV/m | 48.29 dBuV/m       | 48.06 dBuV/m       | -0.23 dB       | 3.29 dB            |        |
| DTS BLE 1M        | RSE       | 802.11n HT20         | 9848 MHz  | 74.00 dBuV/m | 47.68 dBuV/m       | 48.27 dBuV/m       | 0.59 dB        | 4.32 dB            | Note1  |
|                   | BANDEDGE  | 1Mbps                | 2480 MHz  | 54.00 dBuV/m | 40.77 dBuV/m       | 41.59 dBuV/m       | 0.82 dB        | 3.66 dB            |        |
| DTS BLE 2M        | RSE       | 1Mbps                | 4804 MHz  | 54.00 dBuV/m | 34.05 dBuV/m       | 35.09 dBuV/m       | 1.04 dB        | 4.00 dB            |        |
|                   | BANDEDGE  | 2Mbps                | 2478 MHz  | 54.00 dBuV/m | 44.55 dBuV/m       | 44.74 dBuV/m       | 0.19 dB        | 3.47 dB            |        |
| DSS BT BDR        | RSE       | 2Mbps                | 9912 MHz  | 74.00 dBuV/m | 48.75 dBuV/m       | 48.33 dBuV/m       | -0.42 dB       | 4.26 dB            | Note1  |
|                   | BANDEDGE  | GFSK                 | 2480 MHz  | 54.00 dBuV/m | 37.80 dBuV/m       | 39.14 dBuV/m       | 1.34 dB        | 3.81 dB            |        |
| DSS BT EDR        | RSE       | GFSK                 | 4804 MHz  | 54.00 dBuV/m | 29.48 dBuV/m       | 30.98 dBuV/m       | 1.50 dB        | 4.23 dB            |        |
|                   | BANDEDGE  | 8PSK                 | 2480 MHz  | 54.00 dBuV/m | 36.64 dBuV/m       | 37.39 dBuV/m       | 0.75 dB        | 3.87 dB            |        |
| NII WLAN (5GHz)   | RSE       | 8PSK                 | 4804 MHz  | 54.00 dBuV/m | 32.02 dBuV/m       | 34.24 dBuV/m       | 2.22 dB        | 4.10 dB            |        |
|                   | BANDEDGE  | UNII-1 802.11n HT20  | 5180 MHz  | 54.00 dBuV/m | 44.24 dBuV/m       | 46.37 dBuV/m       | 2.13 dB        | 3.49 dB            |        |
|                   | RSE       | UNII-1 802.11a       | 6734 MHz  | 68.20 dBuV/m | 47.93 dBuV/m       | 48.16 dBuV/m       | 0.23 dB        | 4.01 dB            | Note2  |
|                   | BANDEDGE  | UNII-2A 802.11n HT20 | 5320 MHz  | 54.00 dBuV/m | 46.15 dBuV/m       | 44.90 dBuV/m       | -1.25 dB       | 3.39 dB            |        |
|                   | RSE       | UNII-2A 802.11a      | 6838 MHz  | 68.20 dBuV/m | 47.30 dBuV/m       | 47.44 dBuV/m       | 0.14 dB        | 4.05 dB            | Note2  |
|                   | BANDEDGE  | UNII-2C 802.11n HT20 | 5700 MHz  | 68.20 dBuV/m | 63.91 dBuV/m       | 64.38 dBuV/m       | 0.47 dB        | 3.21 dB            |        |
|                   | RSE       | UNII-2C 802.11a      | 16500 MHz | 68.20 dBuV/m | 56.24 dBuV/m       | 56.90 dBuV/m       | 0.66 dB        | 3.60 dB            | Note1  |
|                   | BANDEDGE  | UNII-3 802.11n HT20  | 5825 MHz  | -27.00 dBm   | -34.75 dBm         | -33.60 dBm         | 1.15 dB        | 3.39 dB            |        |
|                   | RSE       | UNII-3 802.11a       | 7573 MHz  | 68.20 dBuV/m | 46.12 dBuV/m       | 48.14 dBuV/m       | 2.02 dB        | 4.10 dB            | Note2  |
|                   | BANDEDGE  | UNII-4 802.11a       | 5885 MHz  | 68.00 dBuV/m | 43.80 dBuV/m       | 45.05 dBuV/m       | 1.25 dB        | 4.21 dB            |        |
|                   | RSE       | UNII-4 802.11a       | 7651 MHz  | 68.20 dBuV/m | 47.21 dBuV/m       | 48.35 dBuV/m       | 1.14 dB        | 4.05 dB            | Note2  |

Note1. Noise floor, Note2. Parent model noise floor data excluded  
Comparison of two models, deviation is within FCC Technical Limits.

## 1.5. REFERENCE DETAIL

Reference application that contains the reused reference data in the individual test reports:

| Equipment Class | Reference FCC ID (Parent) | Application Type | Reference Test report number   | Exhibit Type | Variant Test Report Number           | Data Re-used |
|-----------------|---------------------------|------------------|--------------------------------|--------------|--------------------------------------|--------------|
| DTS             | A3LSML325                 | Original Grant   | S-4791706309-E5 (DTS)          | Test Report  | S-4791706338-E1 (DTS, BLE, BT, UNII) | All          |
| DTS             | A3LSML325                 | Original Grant   | S-4791706309-E6 (Bluetooth LE) | Test Report  |                                      | All          |
| DSS             | A3LSML325                 | Original Grant   | S-4791706309-E7 (Bluetooth)    | Test Report  |                                      | All          |
| NII             | A3LSML325                 | Original Grant   | S-4791706309-E8 (UNII)         | Test Report  | S-4791706338-E1 (DTS, BLE, BT, UNII) | All          |
|                 |                           |                  |                                |              | S-4791706338-E2 (DFS)                | Fully Tested |

## 2. TEST METHODOLOGY

1. FCC 47 CFR Part 2.
2. FCC 47 CFR Part 15.
3. KDB 558074 D01 DTS Meas Guidance v05r02.
4. KDB 789033 D02 General UNII Test Procedures New Rules v02r01
5. KDB 291074 D02 v01
6. KDB 484596 Referencing Test Data v03
7. ANSI C63.10-2020.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

| 218 Maeyeong-ro                     |                                     |
|-------------------------------------|-------------------------------------|
| <input checked="" type="checkbox"/> | Chamber 1(3m semi-anechoic chamber) |
| <input checked="" type="checkbox"/> | Chamber 2(3m semi-anechoic chamber) |
| <input checked="" type="checkbox"/> | Chamber 3(3m semi-anechoic chamber) |
| <input type="checkbox"/>            | Chamber 4(3m Full-anechoic chamber) |
| <input type="checkbox"/>            | Chamber 5(3m Full-anechoic chamber) |

UL KOREA LTD. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.



## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 28.9 \text{ dBuV/m} &= 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} \end{aligned}$$

### 4.3. MEASUREMENT UNCERTAINTY

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

| PARAMETER                             | UNCERTAINTY |
|---------------------------------------|-------------|
| Radiated Disturbance, 9 kHz to 30 MHz | 2.41 dB     |
| Radiated Disturbance, 30 MHz to 1 GHz | 3.69 dB     |
| Radiated Disturbance, 1 GHz to 18 GHz | 5.18 dB     |
| Radiated Disturbance, Above 18 GHz    | 5.07 dB     |

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

### 4.4. DECISION RULE

Decision rule for statement(s) of conformity is based on Clause 4.4.3 in IEC Guide 115:2023.

## 5. EQUIPMENT UNDER TEST

### 5.1. EUT DESCRIPTION

The EUT is a BT/BLE Smart Wearable + DTS/UNII a/b/g/n.  
This test report addresses the DTS, NII, Bluetooth LE, Bluetooth operational mode.

#### WiFi operating mode

| Frequency rage                  | Mode               | ANT 1 |
|---------------------------------|--------------------|-------|
| 2.4GHz<br>(2412 MHz ~ 2472 MHz) | 802.11b SISO       | TX/RX |
|                                 | 802.11g SISO       |       |
|                                 | 802.11n(HT20) SISO |       |
| 5GHz<br>(5150 MHz ~ 5925 MHz)   | 802.11a SISO       | TX/RX |
|                                 | 802.11n HT20 SISO  |       |

#### Bluetooth & Bluetooth LE operating mode

| Frequency rage                        | Mode               | ANT1  |
|---------------------------------------|--------------------|-------|
| 2.4GHz BLE<br>(2 402 MHz ~ 2 480 MHz) | 1Mbps              | TX/RX |
| 2.4GHz BLE<br>(2 404 MHz ~ 2 478 MHz) | 2Mbps              |       |
| 2.4GHz BT<br>(2 402 MHz ~ 2 480 MHz)  | Basic GFSK         | TX/RX |
|                                       | Enhanced Pi/4-DPSK |       |
|                                       | Enhanced 8PSK      |       |

### 5.2. WORST-CASE CONFIGURATION AND MODE

The fundamentals of the EUT were investigated in three orthogonal orientations X, Y and Z on 1TX SISO mode. It was determined that the worst-case orientation follows the worst axis of the parent model.

Radiated harmonics spurious 1~18 GHz Low/Mid/High channels,18-26GHz were performed with the EUT set at the worst mode.

Based on the baseline scan, the worst-case data rates follow those of the parent model.

### 5.3. DESCRIPTION OF TEST SETUP

#### SUPPORT EQUIPMENT

| Support Equipment List |              |          |                |        |
|------------------------|--------------|----------|----------------|--------|
| Description            | Manufacturer | Model    | Serial Number  | FCC ID |
| Charger                | SAMSUNG      | EP-TA800 | R37XBMJF8FBDKA | N/A    |
| Wireless Charger       | SAMSUNG      | EP-OL300 | -              | -      |

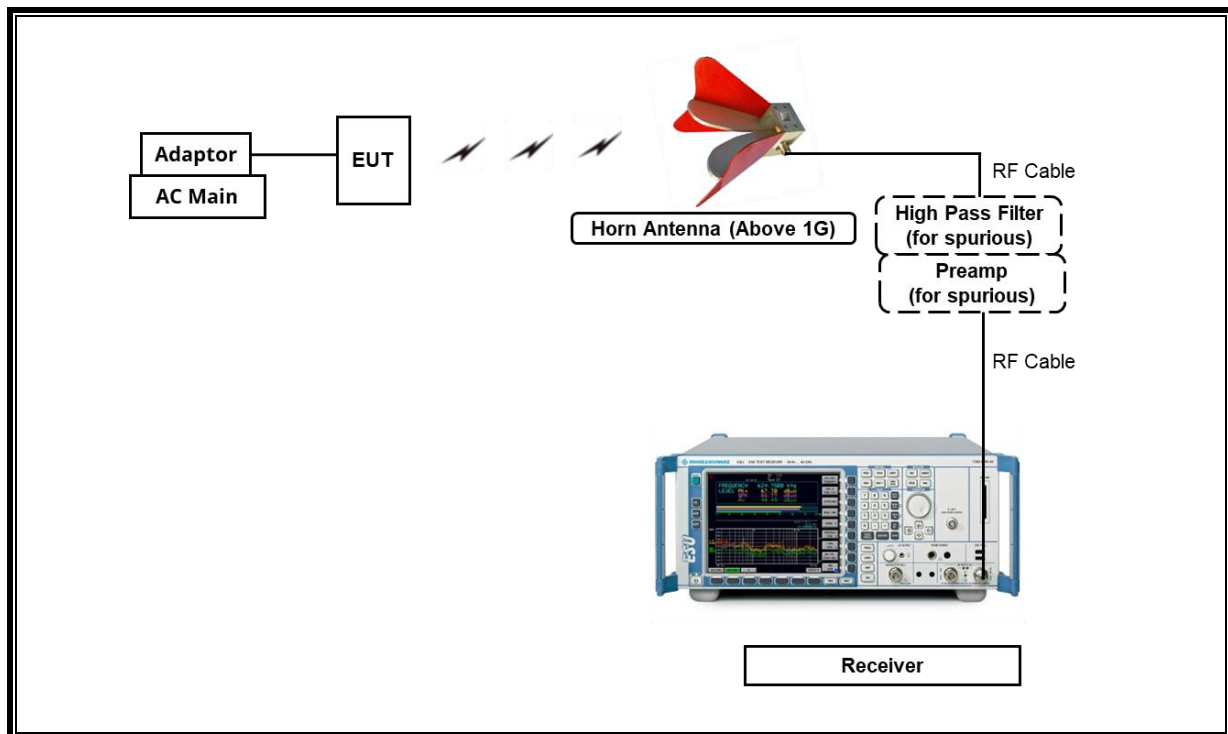
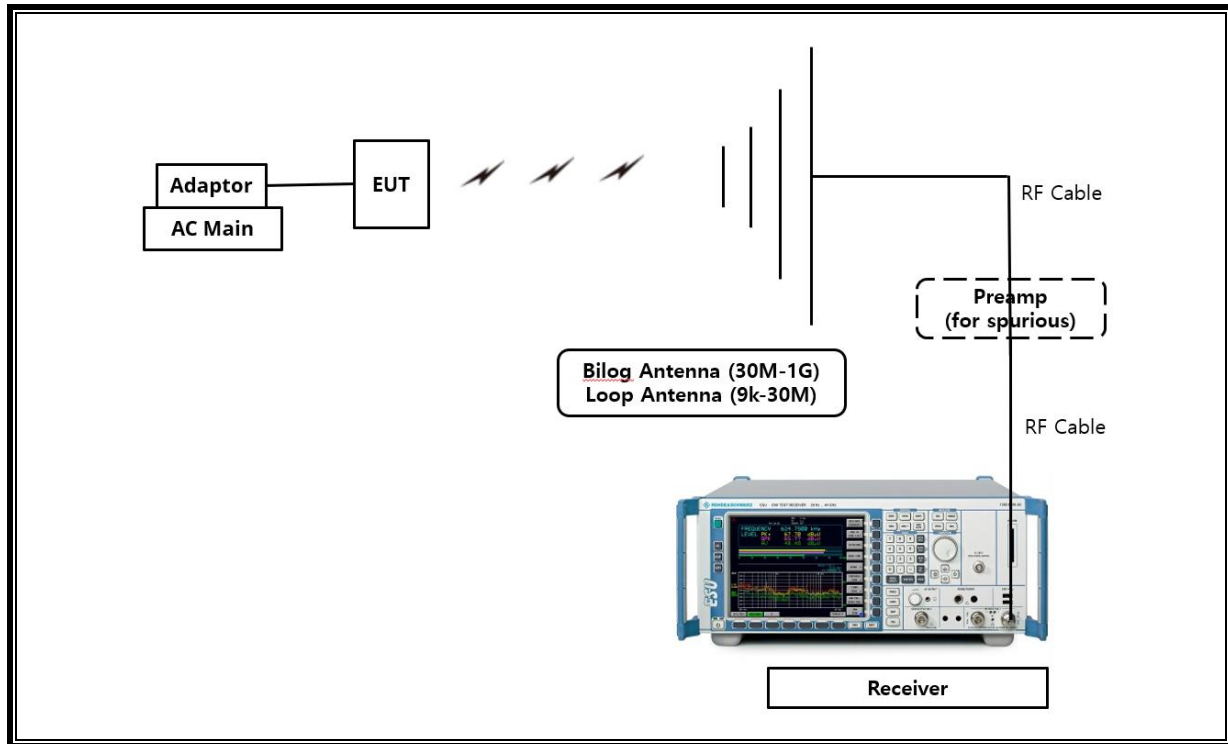
#### I/O CABLE

| I/O Cable List |          |                      |                |            |                  |         |
|----------------|----------|----------------------|----------------|------------|------------------|---------|
| Cable No.      | Port     | # of identical ports | Connector Type | Cable Type | Cable Length (m) | Remarks |
| 1              | DC Power | 1                    | C Type         | Shielded   | 0.8 m            | N/A     |

#### TEST SETUP

The EUT is a stand-alone unit during the tests.  
Test software in hidden menu exercised the EUT to enable DTS mode.

**SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)**



## 6. MEASUREMENT METHOD

### **2.4GHz WLAN & Bluetooth LE**

Out-of-band Emissions in Non-restricted Bands: ANSI C63.10-2020, Section 11.11 Emissions in nonrestricted frequency bands

Out-of-band Emissions in Restricted Bands: ANSI C63.10-2020, Section 11.12 Emissions in restricted frequency bands

### **5 GHz WLAN**

Unwanted emissions in restricted bands : KDB 789033 D02 v02r01, Section II.G.3 – II.G.6.

Unwanted emissions in non-restricted bands : KDB 789033 D02 v02r01, Section II.G.3 – II.G.6.

### **Bluetooth**

Out-of-band Emissions in Non-restricted Bands: ANSI C63.10-2020, Section 7.8.8

Out-of-band Emissions in Restricted Bands: ANSI C63.10-2020, Section 7.8.8

## 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                      | S/N        | Cal Due    |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK           | VULB 9163                  | 750        | 2026-07-30 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK           | VULB 9163                  | 845        | 2026-07-30 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK           | VULB 9163                  | 749        | 2026-08-12 |
| Antenna, Horn, 18 GHz      | ETS                   | 3115                       | 00167211   | 2026-07-17 |
| Antenna, Horn, 18 GHz      | ETS                   | 3115                       | 00161451   | 2026-07-17 |
| Antenna, Horn, 18 GHz      | ETS                   | 3117                       | 00168724   | 2026-07-17 |
| Antenna, Horn, 18 GHz      | ETS                   | 3117                       | 00168717   | 2026-07-17 |
| Antenna, Horn, 18 GHz      | ETS                   | 3117                       | 00218957   | N/A        |
| Antenna, Horn, 40 GHz      | ETS                   | 3116C                      | 00166155   | 2026-07-23 |
| Antenna, Horn, 40 GHz      | ETS                   | 3116C                      | 00168645   | 2025-10-06 |
| Preamplifier               | ETS                   | 3116C-PA                   | 00168841   | 2025-07-25 |
| Preamplifier, 1000 MHz     | Sonoma                | 310N                       | 341282     | 2025-07-22 |
| Preamplifier, 1000 MHz     | Sonoma                | 310N                       | 351741     | 2025-07-22 |
| Preamplifier, 1000 MHz     | Sonoma                | 310N                       | 370599     | 2025-07-22 |
| Preamplifier, 18 GHz       | Miteq                 | AFS42-00101800-25-S-42     | 2029169    | 2025-07-23 |
| Preamplifier, 18 GHz       | B&Z Technologies, LLC | BZR-01001800-231040-182020 | 28451      | 2025-07-22 |
| Preamplifier, 18 GHz       | B&Z Technologies, LLC | BZR-01001800-231040-181515 | 23576      | 2025-07-25 |
| Spectrum Analyzer, 44 GHz  | Agilent / HP          | N9030A                     | MY54170614 | 2025-07-24 |
| Spectrum Analyzer, 44 GHz  | Agilent / HP          | N9030A                     | MY54490312 | 2026-01-02 |
| EMI Test Receiver, 44 GHz  | R&S                   | ESW44                      | 101590     | 2025-07-23 |
| Spectrum Analyzer, 44 GHz  | KEYSIGHT              | N9030B                     | MY60070693 | 2026-01-02 |
| RF Switching Unit          | TA Engineering        | TA-018S-16                 | SW-1       | N/A        |
| Average Power Sensor       | Agilent / HP          | U2000A                     | MY54270007 | 2025-07-23 |
| Average Power Sensor       | Agilent / HP          | U2000A                     | MY54260010 | 2025-07-23 |
| Attenuator                 | PASTERNAK             | PE7087-10                  | A001       | 2025-07-23 |
| Attenuator                 | PASTERNAK             | PE7087-10                  | A008       | 2025-07-23 |
| Attenuator                 | PASTERNAK             | PE7004-10                  | 2          | 2025-07-23 |
| Attenuator                 | PASTERNAK             | PE7087-10                  | A009       | 2025-07-23 |
| EMI Test Receive, 40 GHz   | R&S                   | ESU40                      | 100439     | 2025-07-23 |
| EMI Test Receive, 40 GHz   | R&S                   | ESU40                      | 100457     | 2025-07-22 |
| EMI Test Receive, 3 GHz    | R&S                   | ESR 3                      | 101832     | 2025-07-22 |
| Notch Filter               | Micro-Tronics         | BRM50702-02                | G037       | 2025-07-24 |
| Notch Filter               | Micro-Tronics         | BRM50716-2                 | 006        | 2025-07-23 |
| Low Pass Filter 5GHz       | Micro-Tronics         | LPS17541                   | 009        | 2025-07-22 |
| Low Pass Filter 5GHz       | Micro-Tronics         | LPS17541                   | 015        | 2025-07-22 |
| Low Pass Filter 5GHz       | Micro-Tronics         | LPS17541                   | 020        | 2025-07-23 |
| High Pass Filter 3GHz      | Micro-Tronics         | HPM17543                   | 010        | 2025-07-22 |
| High Pass Filter 3GHz      | Micro-Tronics         | HPM17543                   | 015        | 2025-07-22 |
| High Pass Filter 3GHz      | Micro-Tronics         | HPM17543                   | 20         | 2025-07-23 |
| High Pass Filter 6GHz      | Micro-Tronics         | HPS17542                   | 009        | 2025-07-22 |
| High Pass Filter 6GHz      | Micro-Tronics         | HPS17542                   | 016        | 2025-07-22 |
| High Pass Filter 6GHz      | Micro-Tronics         | HPS17542                   | 21         | 2025-07-23 |
| Antenna, Loop, 9kHz-30MHz  | R&S                   | HFH2-Z2                    | 100418     | 2025-09-07 |
| Termination                | WEINSCHEL             | M1406A                     | T09        | 2025-07-23 |
| Attenuator                 | WEINSCHEL             | WA76-30-21                 | A015       | 2025-07-23 |
| UL Software                |                       |                            |            |            |
| Description                | Manufacturer          | Model                      | Version    |            |
| Radiated software          | UL                    | UL EMC                     | Ver 9.5    |            |

## 8. RADIATED SPOT-CHECK TEST RESULTS

### LIMITS

FCC §15.205 and §15.209

| Limits for radiated disturbance of an intentional radiator |                 |                          |
|------------------------------------------------------------|-----------------|--------------------------|
| Frequency range (MHz)                                      | Limits (μV/m)   | Measurement Distance (m) |
| 0.009 – 0.490                                              | 2400 / F (kHz)  | 300                      |
| 0.490 – 1.705                                              | 24000 / F (kHz) | 30                       |
| 1.705 – 30.0                                               | 30              | 30                       |
| 30 – 88                                                    | 100**           | 3                        |
| 88 - 216                                                   | 150**           | 3                        |
| 216 – 960                                                  | 200**           | 3                        |
| Above 960                                                  | 500             | 3                        |

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

FCC Part 15.205 (a) : Only spurious emissions are permitted in any of the frequency bands listed below :

| MHz               | MHz                 | MHz            | MHz             | GHz          | GHz           |
|-------------------|---------------------|----------------|-----------------|--------------|---------------|
| 0.009 ~ 0.110     | 8.41425 ~ 8.41475   | 108 ~ 121.94   | 1300 ~ 1427     | 4.5 ~ 5.15   | 14.47 ~ 14.5  |
| 0.495 ~ 0.505     | 12.29 ~ 12.293      | 123 ~ 138      | 1435 ~ 1626.5   | 5.35 ~ 5.46  | 15.35 ~ 16.2  |
| 2.1735 ~ 2.1905   | 12.51975 ~ 12.52025 | 149.9 ~ 150.05 | 1645.5 ~ 1646.5 | 7.25 ~ 7.75  | 17.7 ~ 21.4   |
| 4.125 ~ 4.128     | 12.57675 ~ 12.57725 | 156.52475 ~    | 1660 ~ 1710     | 8.025 ~ 8.5  | 22.01 ~ 23.12 |
| 4.17725 ~ 4.17775 | 13.36 ~ 13.41       | 156.52525      | 1718.8 ~ 1722.2 | 9.0 ~ 9.2    | 23.6 ~ 24.0   |
| 4.20725 ~ 4.20775 | 16.42 ~ 16.423      | 156.7 ~ 156.9  | 2200 ~ 2300     | 9.3 ~ 9.5    | 31.2 ~ 31.8   |
| 6.215 ~ 6.218     | 16.69475 ~ 16.69525 | 162.0125 ~     | 2310 ~ 2390     | 10.6 ~ 12.7  | 36.43 ~ 36.5  |
| 6.26775 ~ 6.26825 | 16.80425 ~ 16.80475 | 167.17         | 2483.5 ~ 2500   | 13.25 ~ 13.4 | Above 38.6    |
| 6.31175 ~ 6.31225 | 25.5 ~ 25.67        | 167.72 ~ 173.2 | 2655 ~ 2900     |              |               |
| 8.291 ~ 8.294     | 37.5 ~ 38.25        | 240 ~ 285      | 3260 ~ 3267     |              |               |
| 8.362 ~ 8.366     | 73 ~ 74.6           | 322 ~ 335.4    | 3332 ~ 3339     |              |               |
| 8.37625 ~ 8.38675 | 74.8 ~ 75.2         | 399.90 ~ 410   | 3345.8 ~ 3358   |              |               |
|                   |                     | 608 ~ 614      | 3600 ~ 4400     |              |               |
|                   |                     | 960 ~ 1240     |                 |              |               |

▪ FCC Part 15.205(b) : The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

## **TEST PROCEDURE**

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1 GHz and 150 cm for above 1 GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For 2.4 GHz & 5 GHz WLAN & Bluetooth measurements above 1 GHz, the resolution bandwidth is set to 1 MHz. The video bandwidth is set to 3 MHz for peak measurements, and a duty cycle factor is added for average measurements.

(Restricted bandedge, Final detection of spurious harmonic emissions)

For Bluetooth measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1/T (on time) for average measurement.

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.

The spectrum from 1 GHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Note : Emission was pre-scanned from 9 kHz to 30 MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).

Per FCC part 15.31(o), test results were not reported.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.

Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

The radiated band edge with the measurement antenna in the vertical polarity represented the worst case compared to the horizontal polarity, and results for all cases were reported. For measurements with the antenna in the horizontal polarity, only the worst case channel was reported.

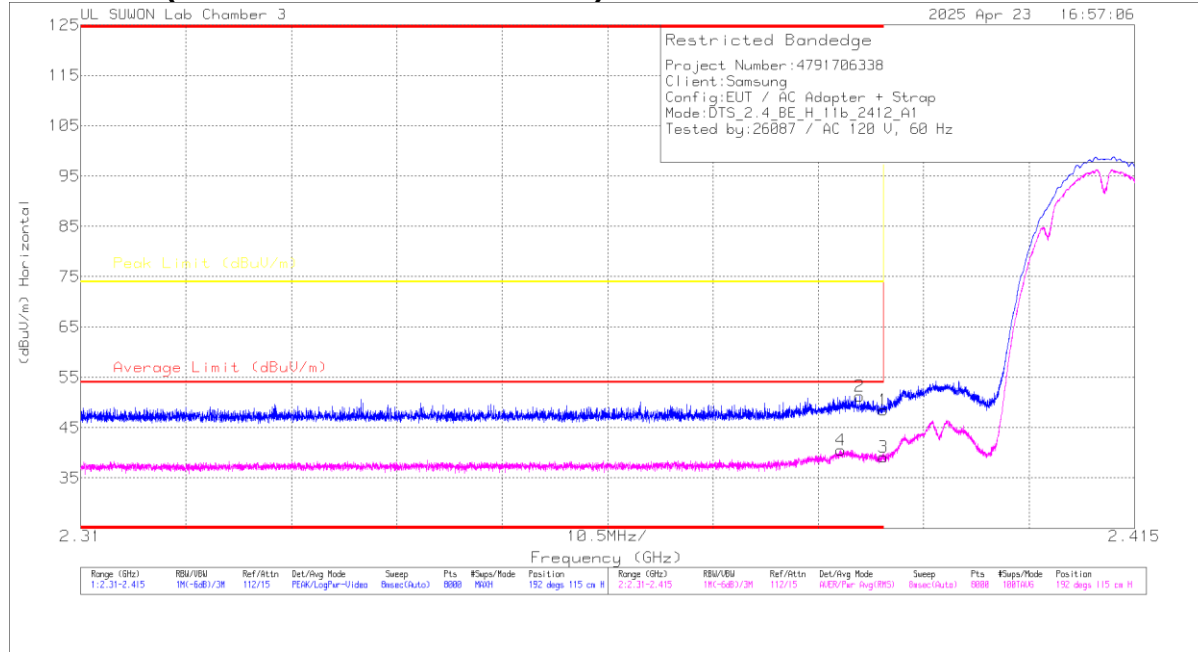


## 8.1. 2.4 GHz WLAN SPOT-CHECK TEST RESULT

### 8.1.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

#### 1TX Antenna 1

#### BANDEDGE (WORST CASE: 1 CHANNEL)



#### HORIZONTAL RESULT

#### Trace Markers

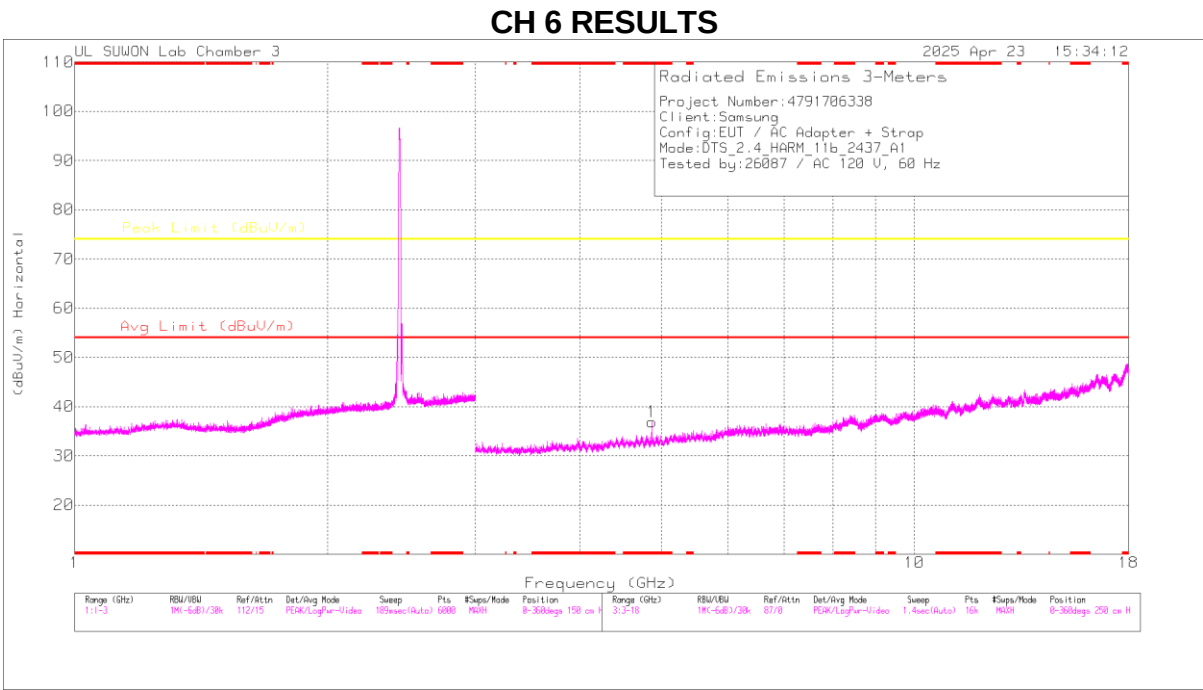
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | Antenna_Factor (dBm) | 10dB_Path Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | * 2.39          | 41.31                | PK  | 32.1                 | -24.9               | 0            | 48.51                      | -                      | -           | 74                  | -25.49         | 192            | 115         | H        |
| 2      | * 2.38761       | 44.27                | PK  | 32.1                 | -25.1               | 0            | 51.27                      | -                      | -           | 74                  | -22.73         | 192            | 115         | H        |
| 3      | * 2.39          | 31.93                | RMS | 32.1                 | -24.9               | 0            | 39.13                      | 54                     | -14.87      | -                   | -              | 192            | 115         | H        |
| 4      | * 2.38573       | 33.49                | RMS | 32.1                 | -25                 | 0            | 40.59                      | 54                     | -13.41      | -                   | -              | 192            | 115         | H        |

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

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 6 CHANNEL)



**HORIZONTAL**

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

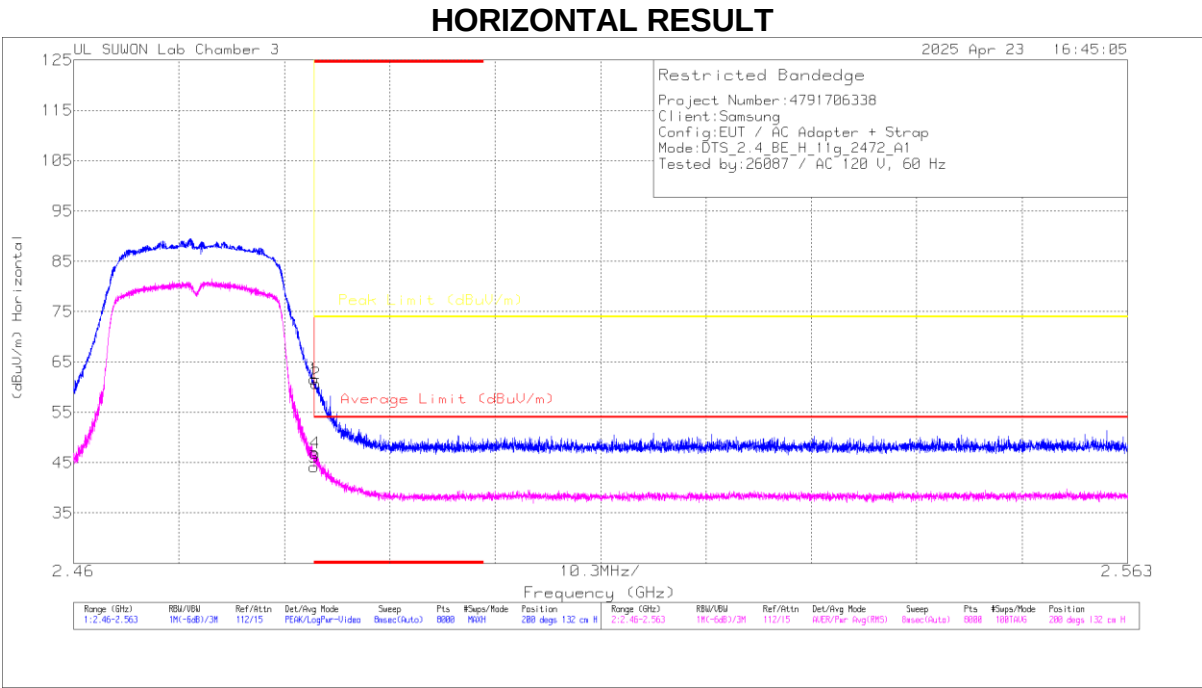
| Frequency (GHz) | Meter Reading (dBuV) | Det  | Antenna_Factor (dB/m) | 3GHz_HP_Pat h Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-----------------------|------------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| * 4.87399       | 41.14                | PK2  | 34.2                  | -30.5                  | 0            | 44.84                      | -                  | -           | 74                  | -29.16      | 36             | 264         | H        |
| * 4.87388       | 32.37                | MAV1 | 34.2                  | -30.5                  | 0            | 36.07                      | 54                 | -17.93      | -                   | -           | 36             | 264         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK2 - KDB558074 Method: Maximum Peak  
MAV1 - KDB558074 Option 1 Maximum RMS Average

8.1.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

1TX Antenna 1

BANDEDGE (WORST CASE: 13 CHANNEL)

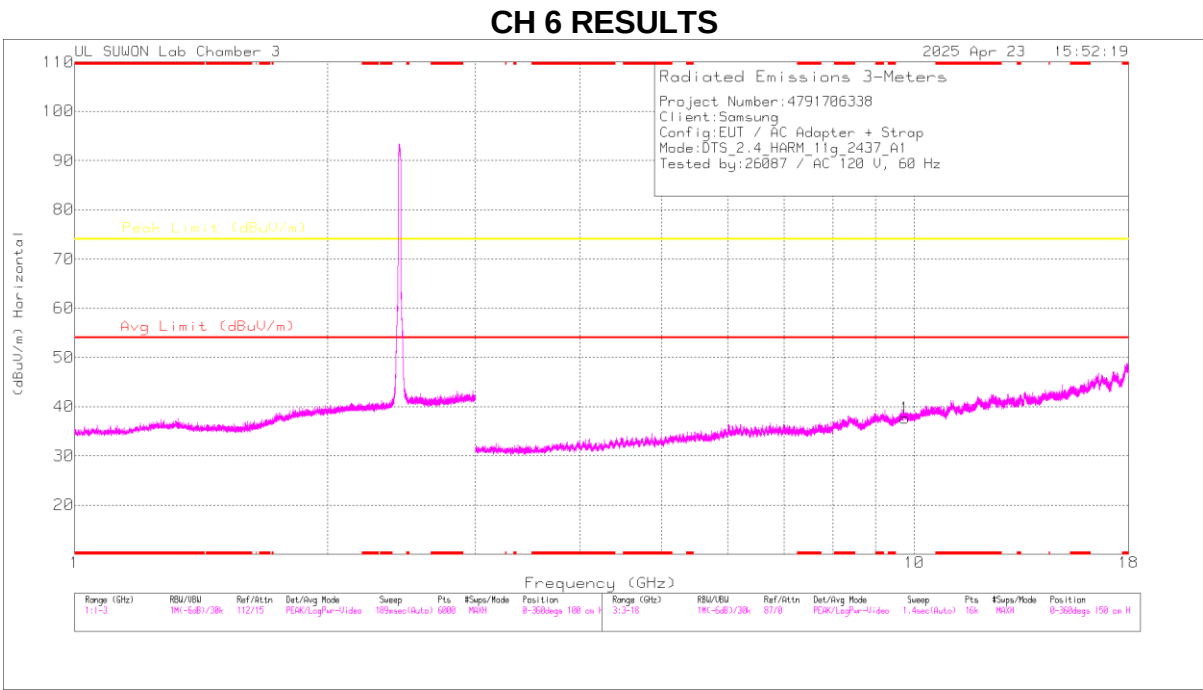


Trace Markers

| Marker | Frequency (GHz) | Marker Reading (dBuV) | Det | Antenna Factor (dB/m) | 10dB Path Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|-----------------------|-----|-----------------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | * 2.4835        | 54.08                 | PK  | 32.4                  | -24.9               | 0            | 61.58                      | -                      | -           | 74                  | -12.42         | 200            | 132         | H        |
| 2      | * 2.48367       | 53.23                 | PK  | 32.4                  | -24.9               | 0            | 60.73                      | -                      | -           | 74                  | -13.27         | 200            | 132         | H        |
| 3      | * 2.4835        | 36.45                 | RMS | 32.4                  | -24.9               | 18           | 44.13                      | 54                     | -9.87       | -                   | -              | 200            | 132         | H        |
| 4      | * 2.48359       | 39.25                 | RMS | 32.4                  | -24.9               | 18           | 46.93                      | 54                     | -7.07       | -                   | -              | 200            | 132         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Pk - Peak detector  
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 6 CHANNEL)



HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

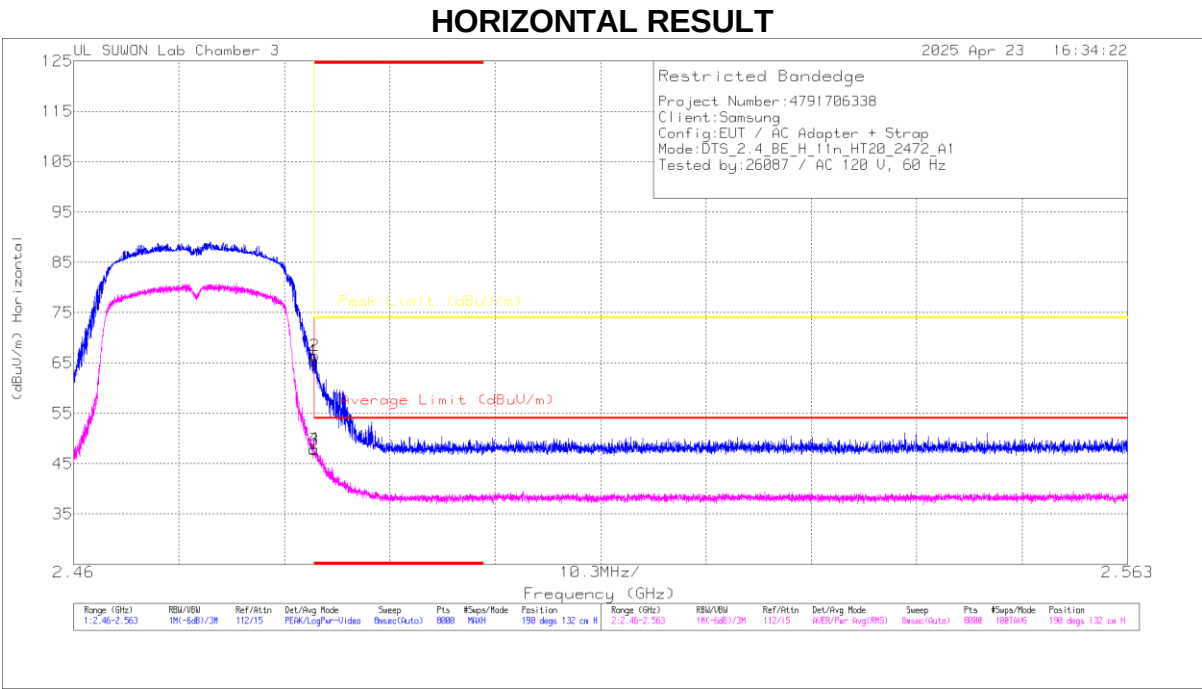
| Frequency (GHz) | Meter Reading (dBuV) | Det | Antenna_Factor (dB/m) | 3GHz_HP_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------------------|-----------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| 9.75187         | 32.28                | PK2 | 36.9                  | -21.3                 | 0            | 47.88                      | -                  | -           | 74                  | -26.12      | 0              | 100         | H        |

PK2 - KDB558074 Method: Maximum Peak

8.1.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

1TX Antenna 1

BANDEDGE (WORST CASE: 13 CHANNEL)

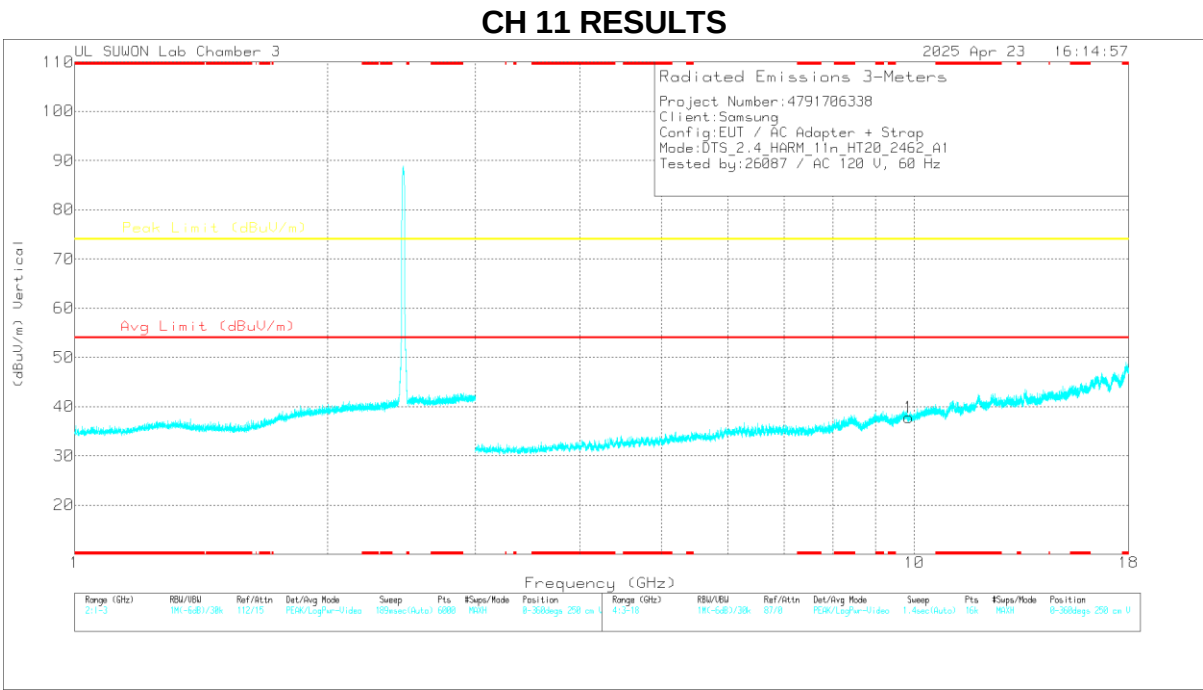


Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | Antenna Factor (dB/m) | 10dB Path Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | * 2.4835        | 58.01                | PK  | 32.4                  | -24.9               | 0            | 65.51                      | -                      | -           | 74                  | -8.49          | 190            | 132         | H        |
| 2      | * 2.4835        | 59                   | PK  | 32.4                  | -24.9               | 0            | 66.5                       | -                      | -           | 74                  | -7.5           | 190            | 132         | H        |
| 3      | * 2.4835        | 40.2                 | RMS | 32.4                  | -24.9               | .09          | 47.79                      | 54                     | -6.21       | -                   | -              | 190            | 132         | H        |
| 4      | * 2.48351       | 40.47                | RMS | 32.4                  | -24.9               | .09          | 48.06                      | 54                     | -5.94       | -                   | -              | 190            | 132         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Pk - Peak detector  
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 11 CHANNEL)



**VERTICAL**

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

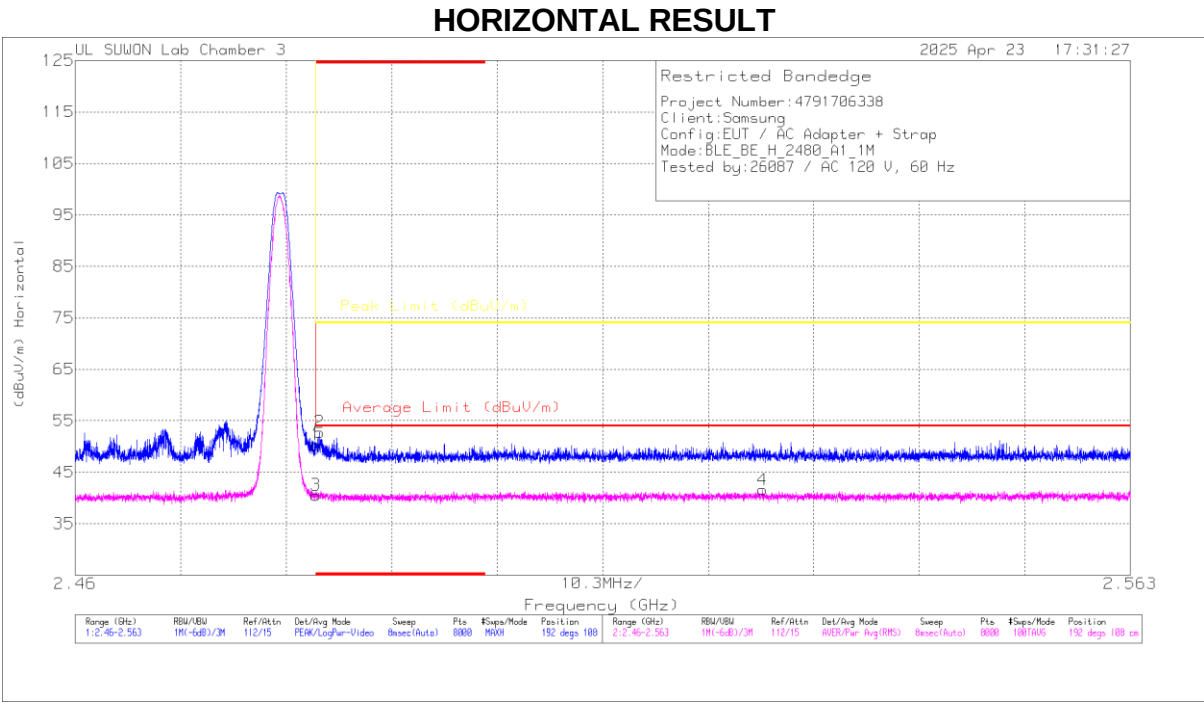
| Frequency (GHz) | Meter Reading (dBuV) | Det | Antenna_Factor (dB/m) | 3GHz_HP_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------------------|-----------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| 9.84551         | 32.47                | PK2 | 37.1                  | -21.3                 | 0            | 48.27                      | -                  | -           | 74                  | -25.73      | 0              | 100         | V        |

PK2 - KDB558074 Method: Maximum Peak

8.2. BLUETOOTH LE SPOT-CHECK TEST RESULT

8.2.1. TX ABOVE 1 GHz BLUETOOTH LE 1 Mbps

BANDEDGE (WORST CASE : 2480 MHz, ANT1)

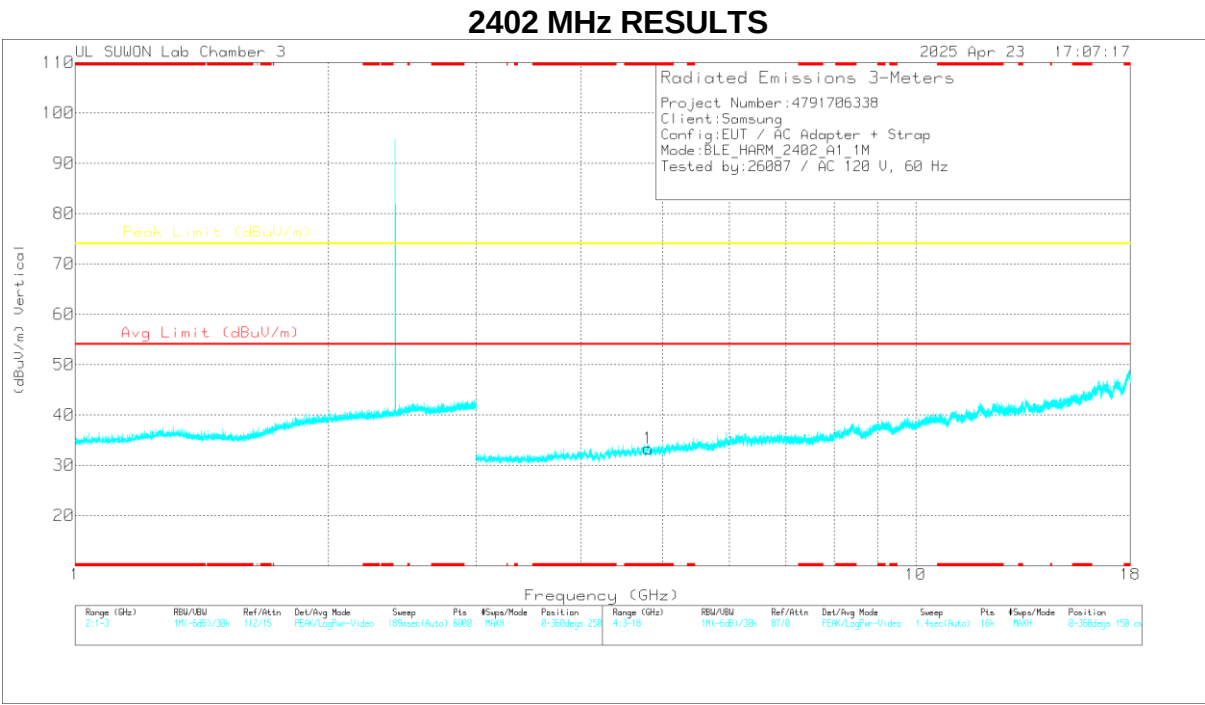


Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | Antenna Factor (dB/m) | 10dB Path Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | * 2.4835        | 42.82                | Pk  | 32.4                  | -24.9               | 0            | 50.32                      | -                      | -           | 74                  | -23.68         | 192            | 108         | H        |
| 2      | * 2.48384       | 45.27                | Pk  | 32.4                  | -24.9               | 0            | 52.77                      | -                      | -           | 74                  | -21.23         | 192            | 108         | H        |
| 3      | * 2.4835        | 30.92                | RMS | 32.4                  | -24.9               | 2.13         | 40.55                      | 54                     | -13.45      | -                   | -              | 192            | 108         | H        |
| 4      | 2.5271          | 31.86                | RMS | 32.4                  | -24.8               | 2.13         | 41.59                      | 54                     | -12.41      | -                   | -              | 192            | 108         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Pk - Peak detector  
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE : 2402 MHz, ANT1)



VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

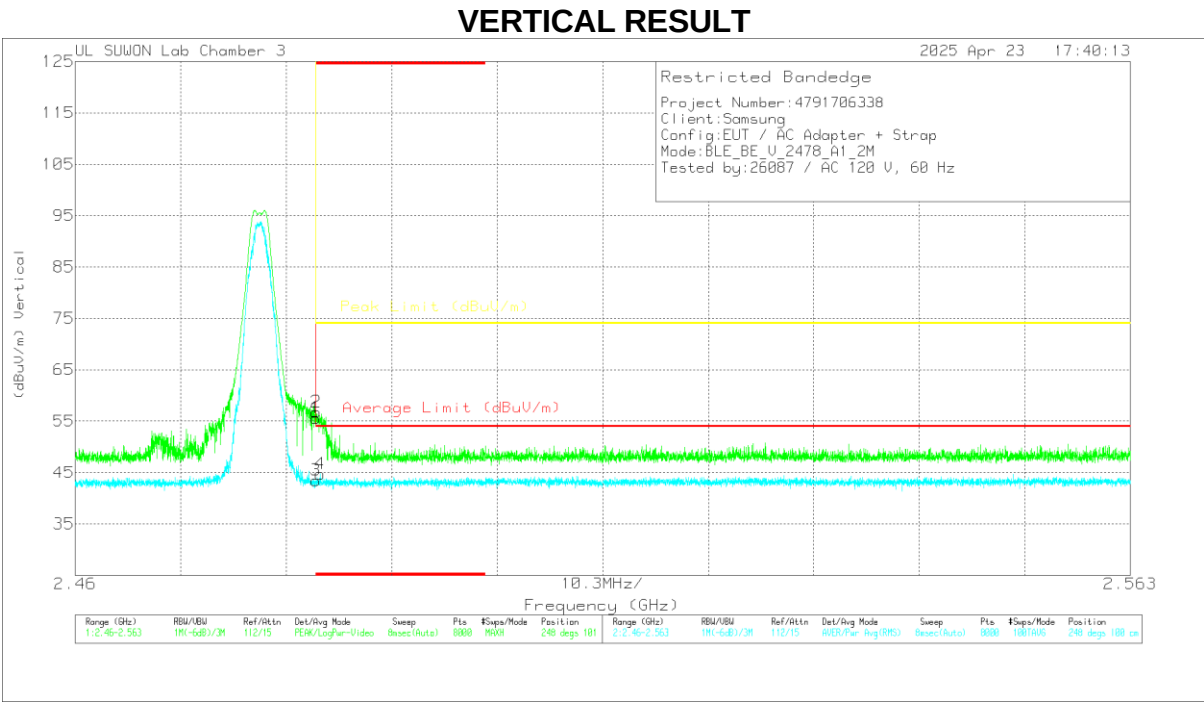
| Frequency (GHz) | Meter Reading (dBuV) | Det  | Antenna Factor (dB/m) | 3GHz_HP_Pat h Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-----------------------|------------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| * 4.80316       | 39.61                | PK2  | 34.3                  | -29.8                  | 0            | 44.11                      | -                  | -           | 74                  | -29.89      | 52             | 100         | V        |
| * 4.80361       | 28.46                | MAV1 | 34.3                  | -29.8                  | 2.13         | 35.09                      | 54                 | -18.91      | -                   | -           | 52             | 100         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK2 - KDB558074 Method: Maximum Peak  
MAV1 - KDB558074 Option 1 Maximum RMS Average



8.2.2. TX ABOVE 1 GHz BLUETOOTH LE 2 Mbps

BANDEDGE (WORST CASE : 2478 MHz, ANT1)

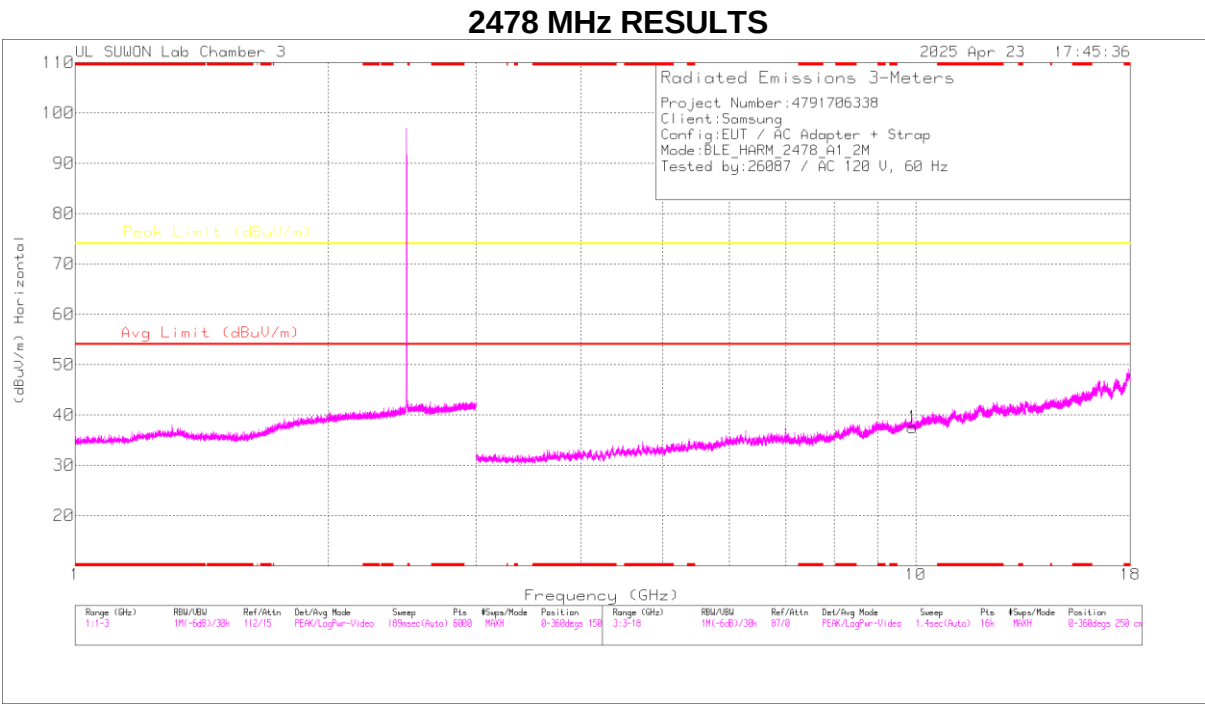


Trace Markers

| Marker | Frequency (GHz) | Marker Reading (dBuV/m) | Det | Antenna_Factor (dBm) | 10dB_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|-------------------------|-----|----------------------|--------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | * 2.4835        | 48.11                   | PK  | 32.4                 | -24.9              | 0            | 55.61                      | -                      | -           | 74                  | -18.39         | 248             | 101         | V        |
| 2      | * 2.48351       | 49.27                   | PK  | 32.4                 | -24.9              | 0            | 56.77                      | -                      | -           | 74                  | -17.23         | 248             | 101         | V        |
| 3      | * 2.4835        | 30.95                   | RMS | 32.4                 | -24.9              | 5.04         | 43.49                      | 54                     | -10.51      | -                   | -              | 248             | 100         | V        |
| 4      | * 2.48394       | 32.2                    | RMS | 32.4                 | -24.9              | 5.04         | 44.74                      | 54                     | -9.26       | -                   | -              | 248             | 100         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK - Peak detector  
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE : 2478 MHz, ANT1)



HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

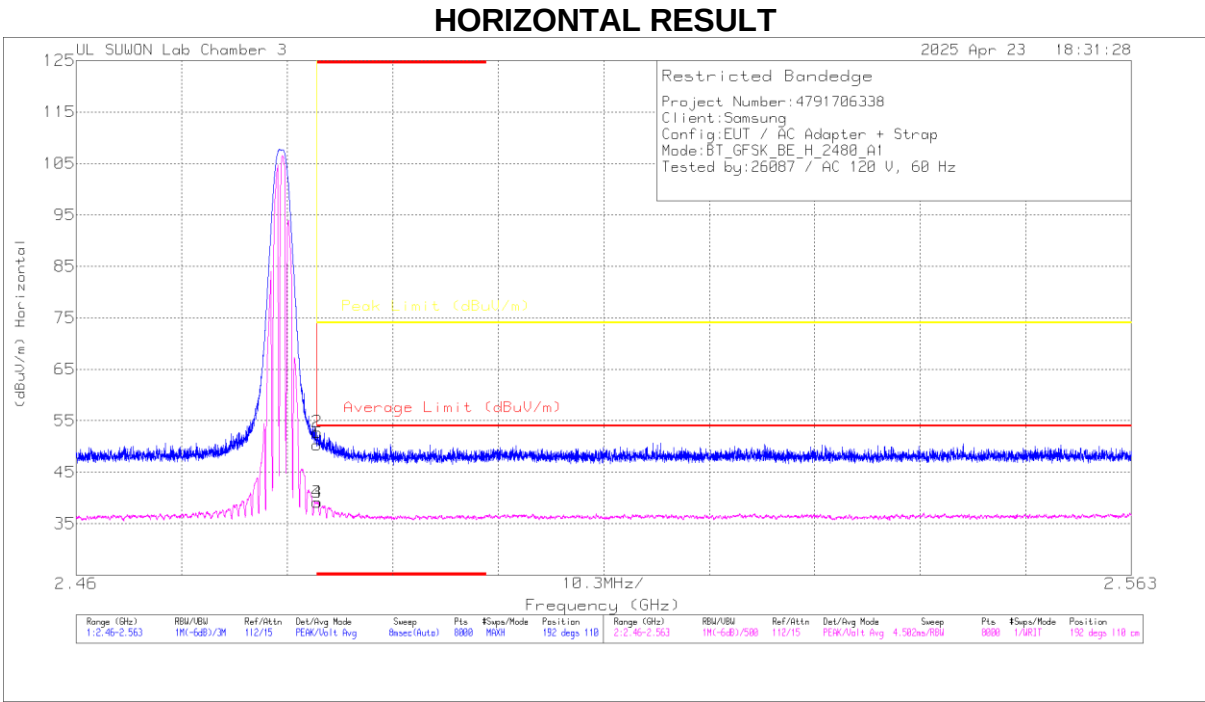
| Frequency (GHz) | Meter Reading (dBuV) | Det | Antenna_Factor (dB/m) | 3GHz_HP_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|-----------------------|-----------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| 9.91721         | 32.53                | PK2 | 37.1                  | -21.3                 | 0            | 48.33                      | -                  | -           | 74                  | -25.67      | 0              | 100         | H        |

PK2 - KDB558074 Method: Maximum Peak

8.3. BLUETOOTH SPOT-CHECK TEST RESULT

8.3.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

BANDEDGE (WORST CASE: 78 CHANNEL, ANT1)

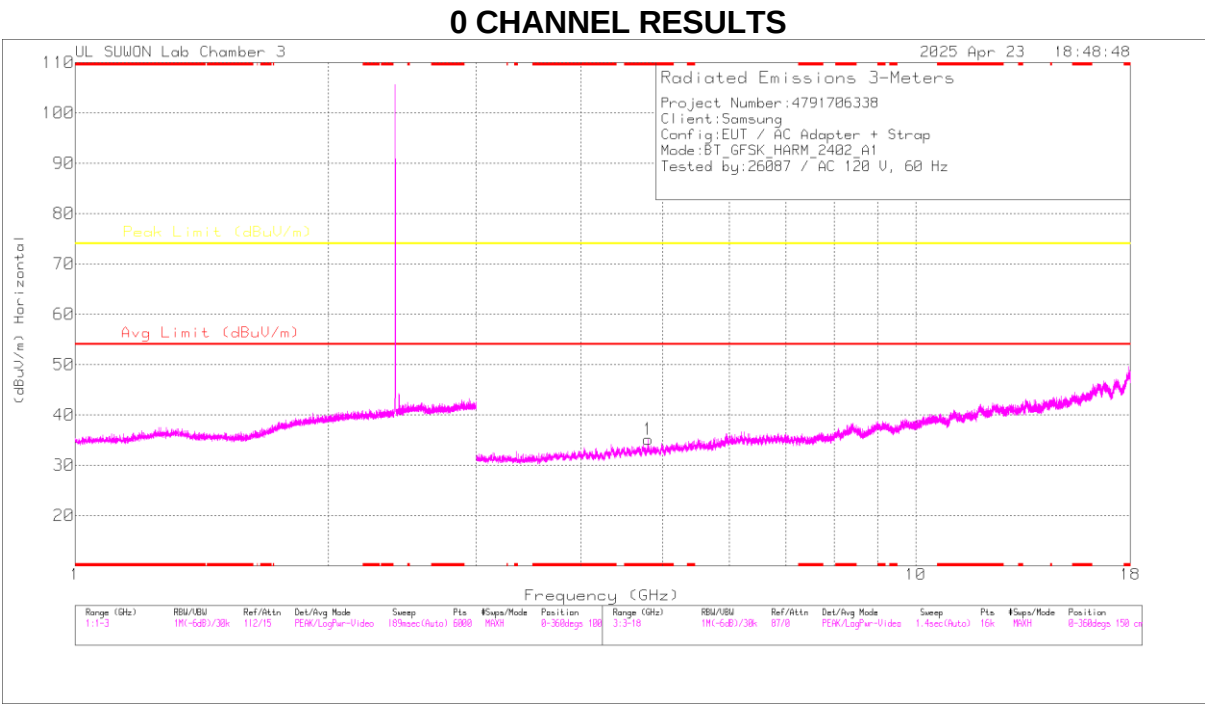


Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det  | Antenna_Factor (dB/m) | 10dB_Path Loss(dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|------|-----------------------|--------------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | * 2.4835        | 42.81                | Pk   | 32.4                  | -24.9              | 50.31                      | -                      | -           | 74                  | -23.69         | 192            | 110         | H        |
| 2      | * 2.48351       | 45.28                | Pk   | 32.4                  | -24.9              | 52.78                      | -                      | -           | 74                  | -21.22         | 192            | 110         | H        |
| 3      | * 2.4835        | 31.63                | VA1T | 32.4                  | -24.9              | 39.13                      | 54                     | -14.87      | -                   | -              | 192            | 110         | H        |
| 4      | * 2.48351       | 31.64                | VA1T | 32.4                  | -24.9              | 39.14                      | 54                     | -14.86      | -                   | -              | 192            | 110         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Pk - Peak detector  
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 0 CHANNEL, ANT1)



HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

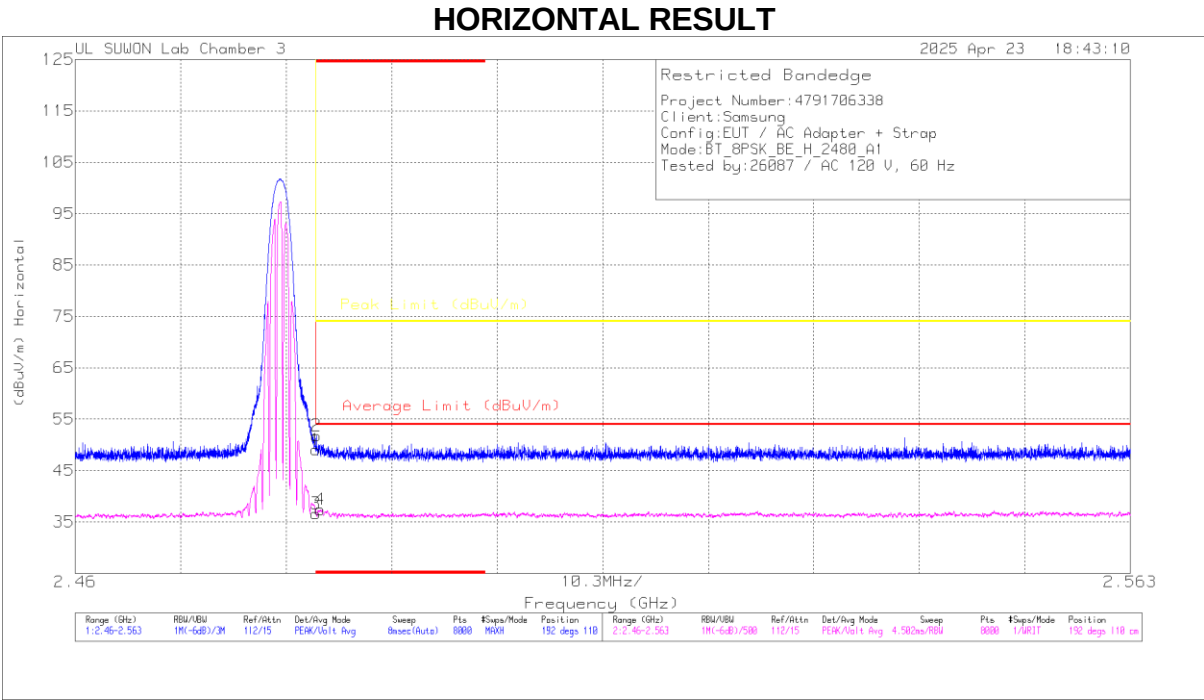
Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det  | Antenna Factor (dB/m) | 3GHz_HP_Path Loss(dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-----------------------|-----------------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| * 4.80468       | 38.55                | PKFH | 34.3                  | -29.8                 | 43.05                      | -                  | -           | 74                  | -30.95      | 38             | 108         | H        |
| * 4.80404       | 26.48                | VA1T | 34.3                  | -29.8                 | 30.98                      | 54                 | -23.02      | -                   | -           | 38             | 108         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak  
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

8.3.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

BANDEDGE (WORST CASE: 78 CHANNEL, ANT1)

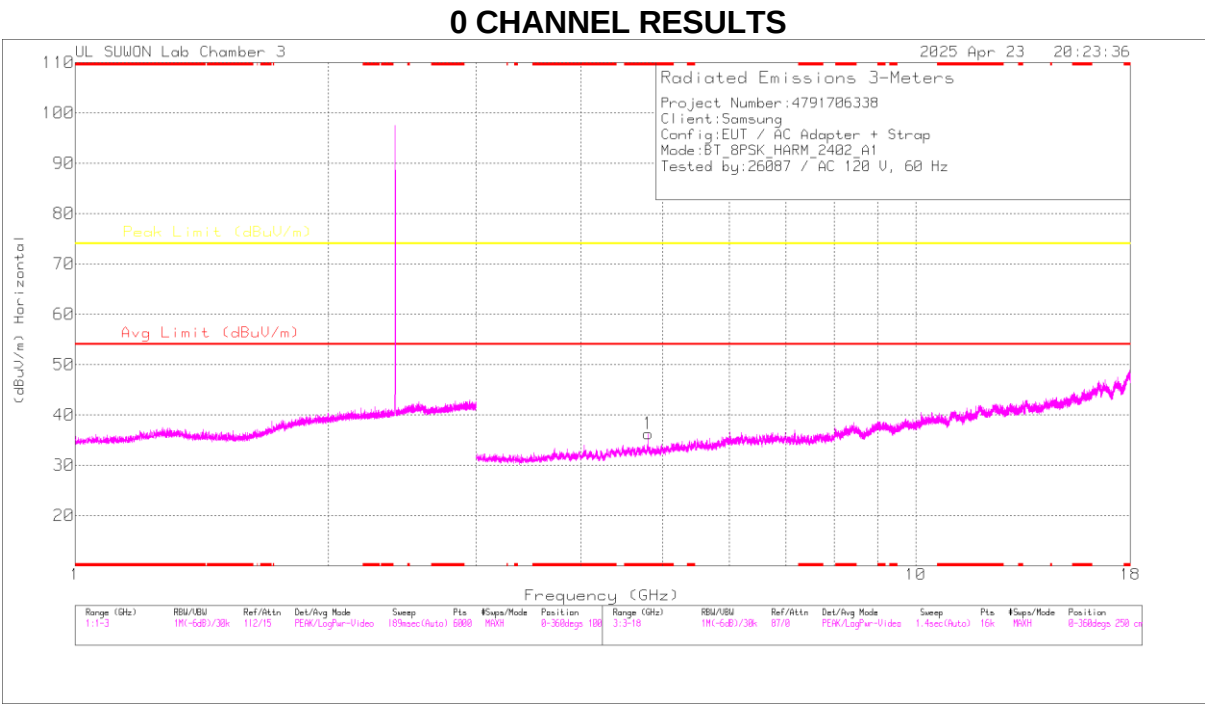


Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det  | Antenna_Factor (dB/m) | 10dB_Path Loss(dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|------|-----------------------|--------------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | * 2.4835        | 41.56                | Pk   | 32.4                  | -24.9              | 49.06                      | -                      | -           | 74                  | -24.94         | 192            | 110         | H        |
| 2      | * 2.48353       | 44.3                 | Pk   | 32.4                  | -24.9              | 51.8                       | -                      | -           | 74                  | -22.2          | 192            | 110         | H        |
| 3      | * 2.4835        | 29.11                | VA1T | 32.4                  | -24.9              | 36.61                      | 54                     | -17.39      | -                   | -              | 192            | 110         | H        |
| 4      | * 2.48394       | 29.89                | VA1T | 32.4                  | -24.9              | 37.39                      | 54                     | -16.61      | -                   | -              | 192            | 110         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Pk - Peak detector  
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 0 CHANNEL, ANT1)



HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

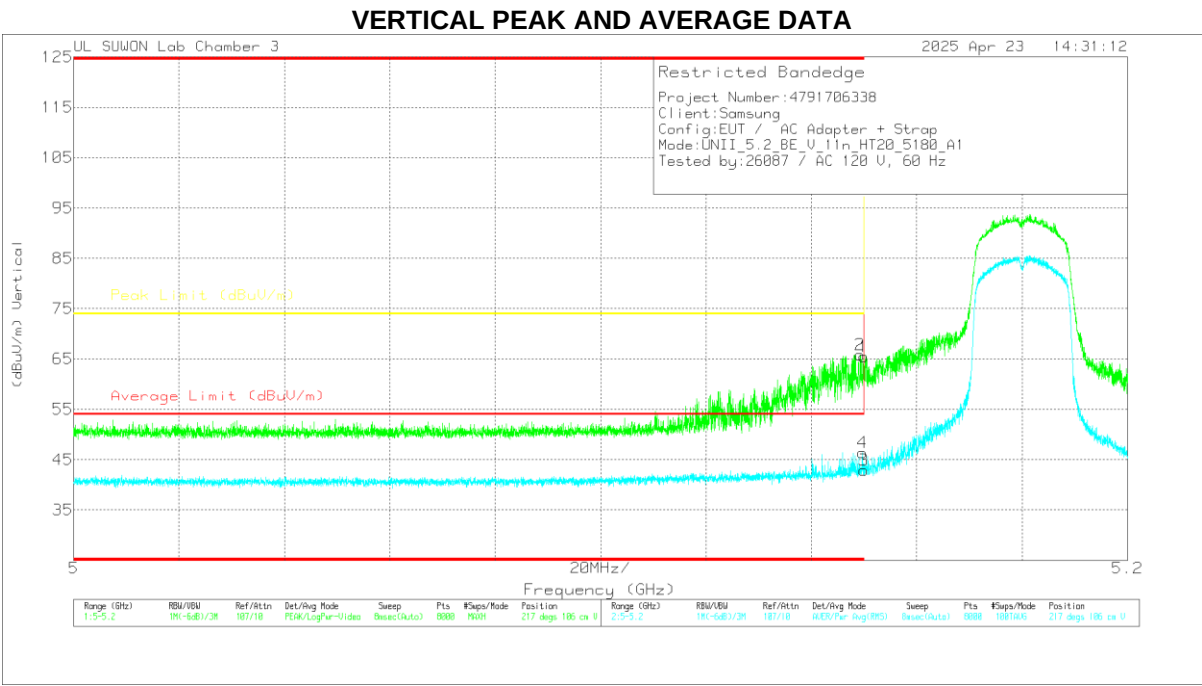
| Frequency (GHz) | Meter Reading (dBuV) | Det  | Antenna_Factor (dB/m) | 3GHz_HP_Path Loss(dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-----------------------|-----------------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| * 4.80423       | 41.2                 | PKFH | 34.3                  | -29.8                 | 45.7                       | -                  | -           | 74                  | -28.3       | 39             | 246         | H        |
| * 4.80408       | 29.74                | VA1T | 34.3                  | -29.8                 | 34.24                      | 54                 | -19.76      | -                   | -           | 39             | 246         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak  
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

8.4. 5 GHz WLAN SPOT-CHECK TEST RESULT

8.4.1. TX ABOVE 1 GHz 1TX MODE IN THE 5.2 GHz BAND

**BANDEDGE (WORST CASE: 802.11n HT20 / 5180 MHz)**

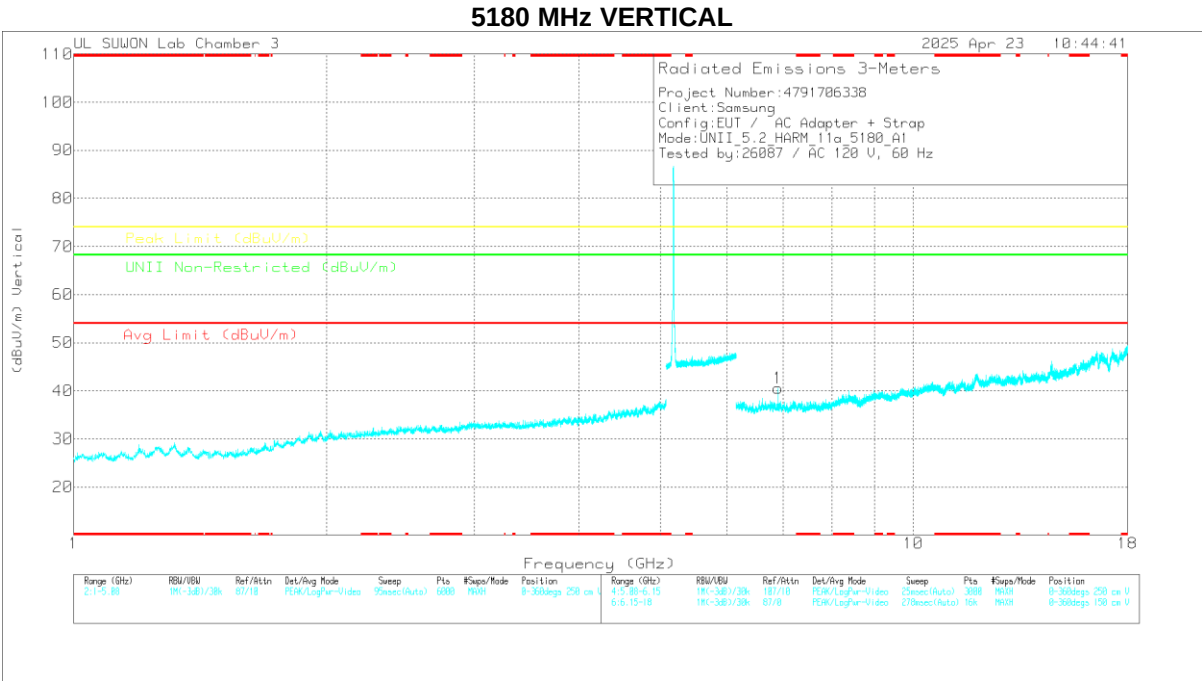


Trace Markers

| Marker | Frequency (GHz) | Marker Reading (dBUV) | Det | Antenna_Factor (dBm) | 10dB_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBUV/m) | Average Limit (dBUV/m) | Margin (dB) | Peak Limit (dBUV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|-----------------------|-----|----------------------|--------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | * 5.14999       | 51.54                 | PK  | 34.4                 | -20.5              | 0            | 65.44                      | -                      | -           | 74                  | -8.56          | 217            | 106         | V        |
| 2      | * 5.14929       | 51.91                 | PK  | 34.4                 | -20.5              | 0            | 65.81                      | -                      | -           | 74                  | -8.19          | 217            | 106         | V        |
| 3      | * 5.14999       | 28.84                 | RMS | 34.4                 | -20.5              | 13           | 42.87                      | 54                     | -11.13      | -                   | -              | 217            | 106         | V        |
| 4      | * 5.14977       | 32.34                 | RMS | 34.4                 | -20.5              | 13           | 46.37                      | 54                     | -7.63       | -                   | -              | 217            | 106         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Pk - Peak detector  
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5180 MHz )



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5180 MHz DATA

Radiated Emissions

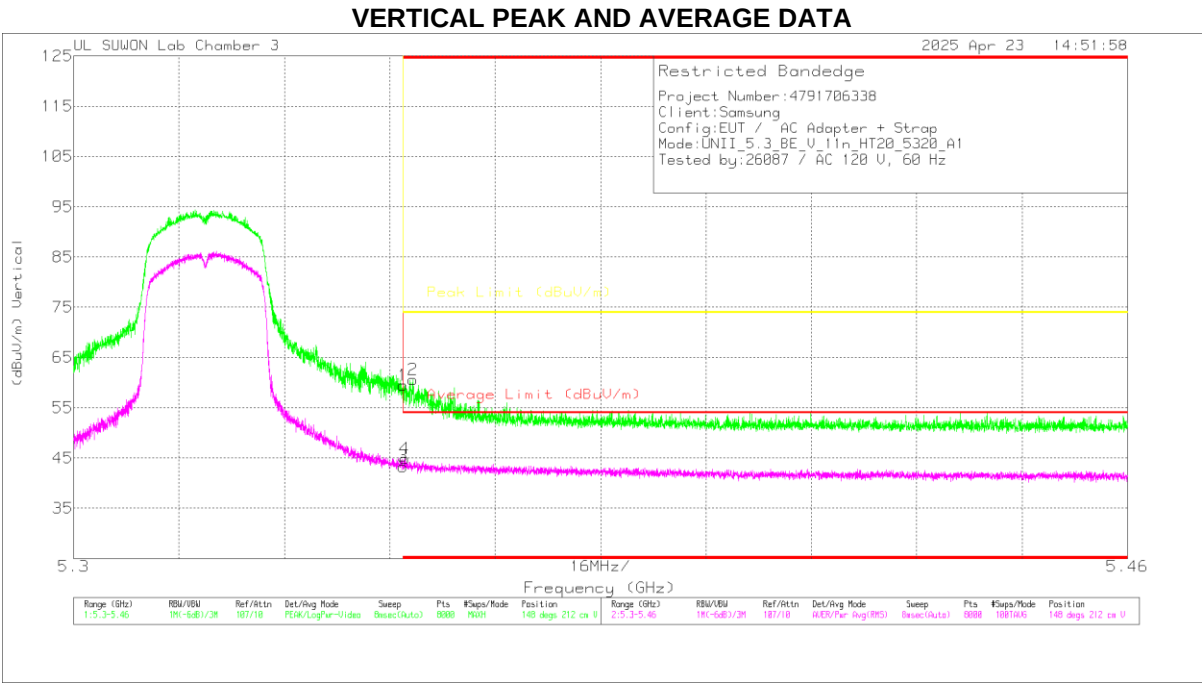
| Frequency (GHz) | Meas Reading (dBuV) | Det  | Antenna Factor (dBm) | 4GHz_HF_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Altitude (meters) | Height (cm) | Priority |
|-----------------|---------------------|------|----------------------|-----------------------|--------------|--------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|-------------------|-------------|----------|
| 6.00622         | 38.66               | PK-U | 36                   | -26.5                 | 0            | 48.16                    | -                  | -           | -                   | -           | 68.2                         | -20.04      | 197               | 177         | V        |

PK-U - U-NII: Maximum Peak



8.4.2. TX ABOVE 1 GHz 1TX MODE IN THE 5.3 GHz BAND

BANDEDGE (WORST CASE: 802.11n HT20 / 5320 MHz Upper)

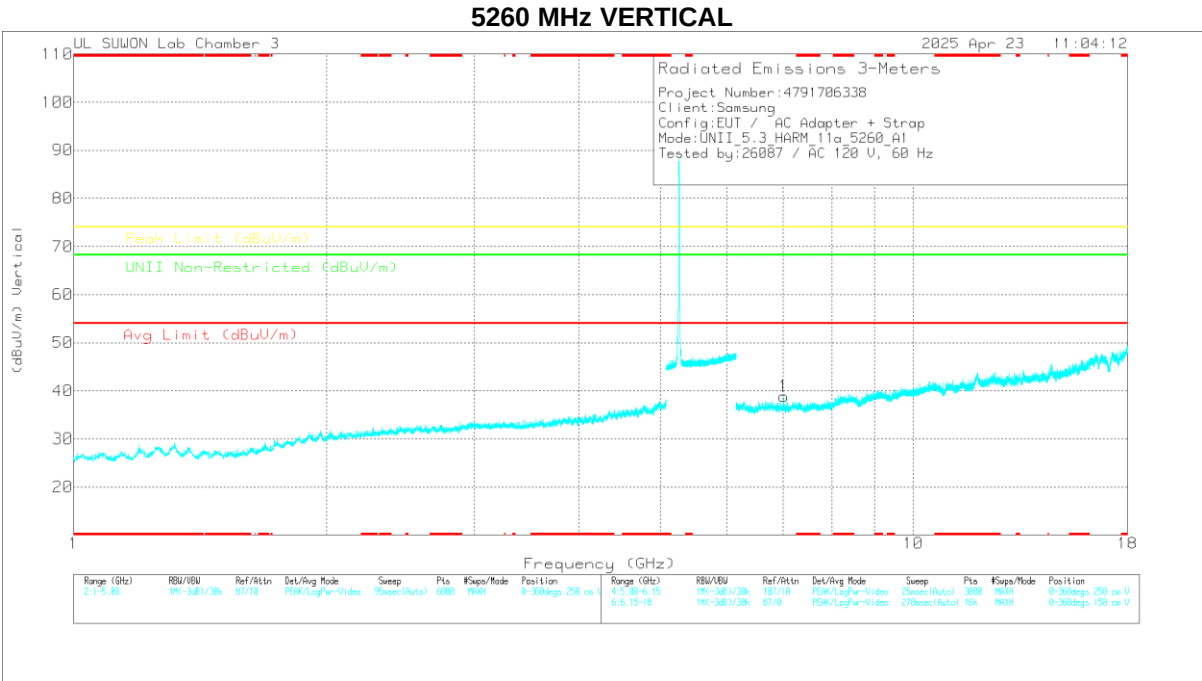


Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | Antenna_Factor (dBm) | 10dB_Path_Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------------|--------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | * 5.35001       | 44.9                 | PK  | 34.7                 | -20.1              | 0            | 59.5                       | -                      | -           | 74                  | -14.5          | 149            | 212         | V        |
| 2      | * 5.35149       | 46.08                | PK  | 34.7                 | -20.2              | 0            | 60.58                      | -                      | -           | 74                  | -13.42         | 148            | 212         | V        |
| 3      | * 5.35001       | 28.61                | RMS | 34.7                 | -20.1              | 13           | 43.34                      | 54                     | -10.66      | -                   | -              | 148            | 212         | V        |
| 4      | * 5.35029       | 30.17                | RMS | 34.7                 | -20.1              | 13           | 44.9                       | 54                     | -9.1        | -                   | -              | 148            | 212         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Pk - Peak detector  
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5260 MHz)



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5260 MHz DATA

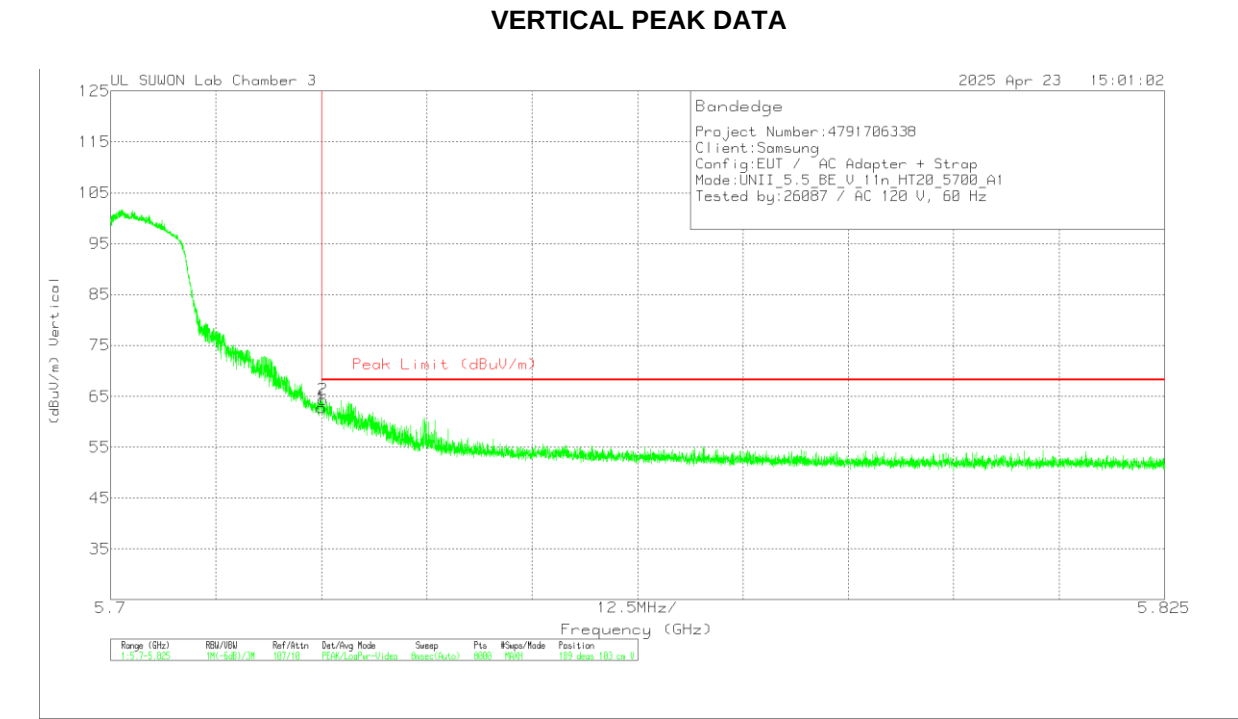
Radiated Emissions

| Frequency (GHz) | Meas Reading (dBuV) | Det  | Antenna Factor (dBm) | 5GHz_HP_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Azimuth (deg) | Height (cm) | Polarity |
|-----------------|---------------------|------|----------------------|-----------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|---------------|-------------|----------|
| 7.01345         | -37.24              | PK-U | 36                   | -25.8                 | 0            | -47.44                     | -                  | -           | -                   | -           | 68.2                         | -20.76      | 197           | 179         | V        |

PK-U - U-NII: Maximum Peak

8.4.3. TX ABOVE 1 GHz 1TX MODE IN THE 5.5 GHz BAND

**BANDEDGE (WORST CASE: 802.11n HT20 / 5700 MHz)**

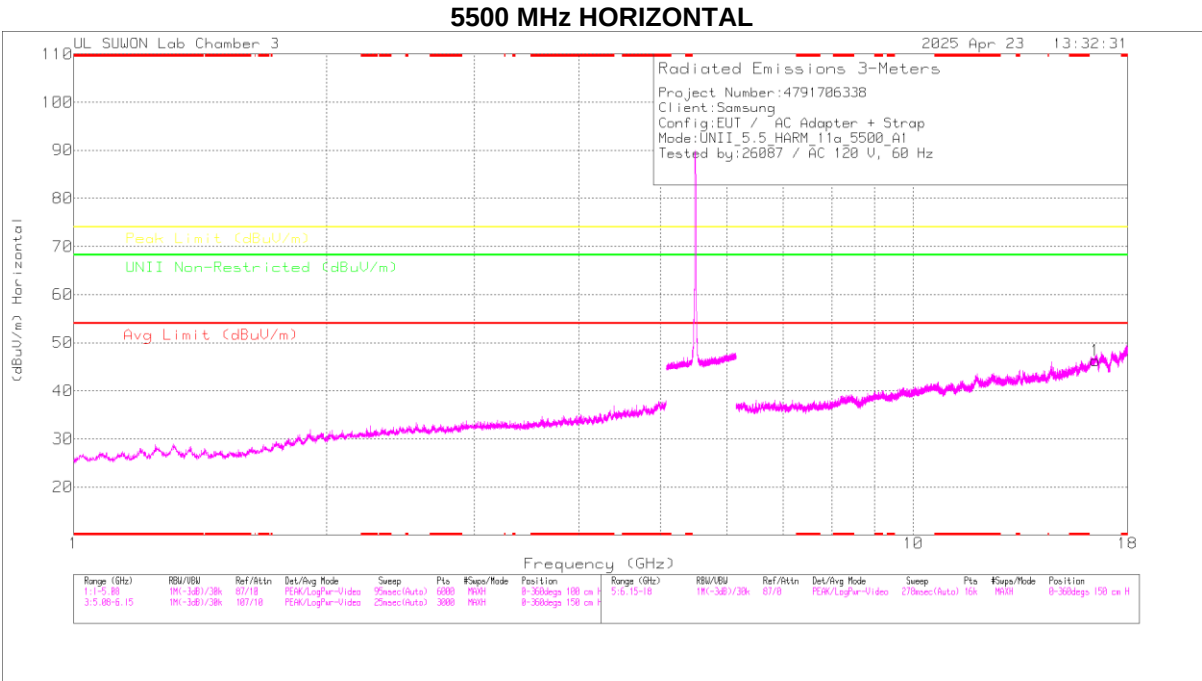


Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | Antenna_Factor (dB/m) | 10dB_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|--------------------|--------------|----------------------------|---------------------|----------------|----------------|-------------|----------|
| 1      | 5.725           | 47.27                | Pk  | 35                    | -19.5              | 0            | 62.77                      | 68.2                | -5.43          | 189            | 103         | V        |
| 2      | 5.72519         | 48.88                | Pk  | 35                    | -19.5              | 0            | 64.38                      | 68.2                | -3.82          | 189            | 103         | V        |

Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5500 MHz)



Note. Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5500 MHz DATA

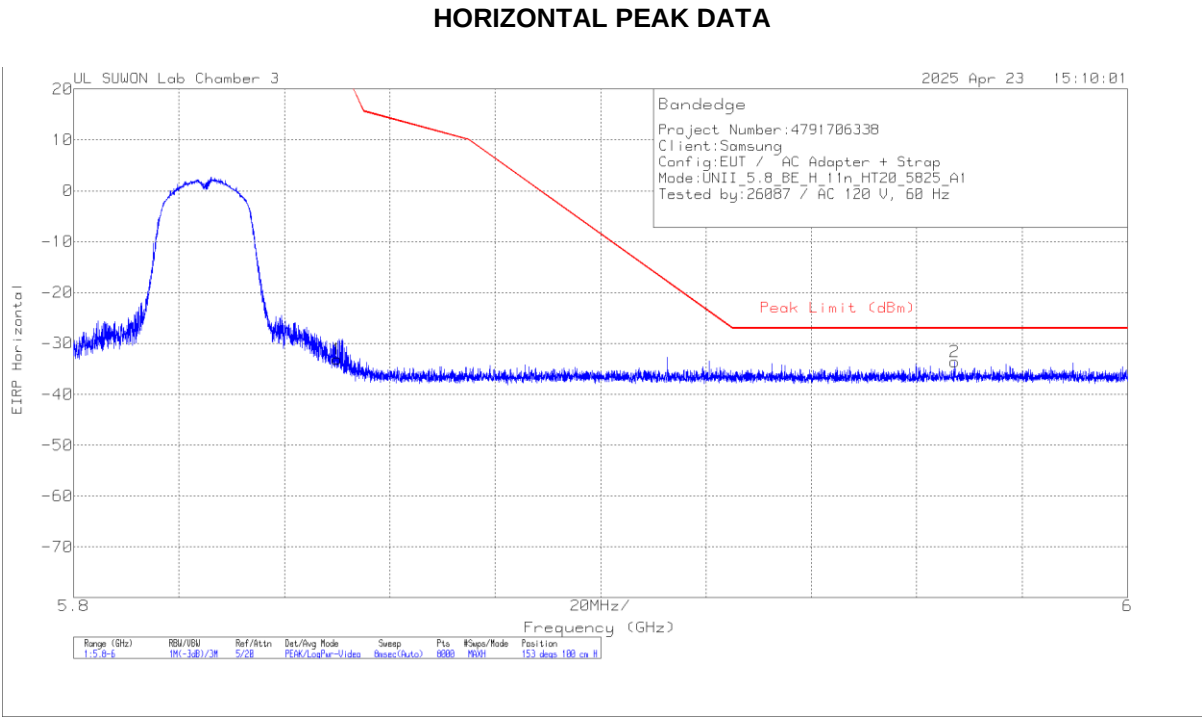
Radiated Emissions

| Frequency (GHz) | Meas. Reading (dBm) | Det  | Antenna Factor (dBm) | 60Hz HP_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBm) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Altitude (m) | Height (cm) | Polarity |
|-----------------|---------------------|------|----------------------|-----------------------|--------------|-------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|--------------|-------------|----------|
| 16.50086        | -34.2               | PK-U | -41.6                | -18.9                 | 0            | -56.9                   | -                  | -           | -                   | -           | -68.2                        | -31.3       | 0            | 100         | H        |

PK-U - U-NII: Maximum Peak

8.4.4. TX ABOVE 1 GHz 1TX MODE IN THE 5.8 GHz BAND

**BANDEDGE (WORST CASE: 802.11n HT20 / 5825 MHz)**

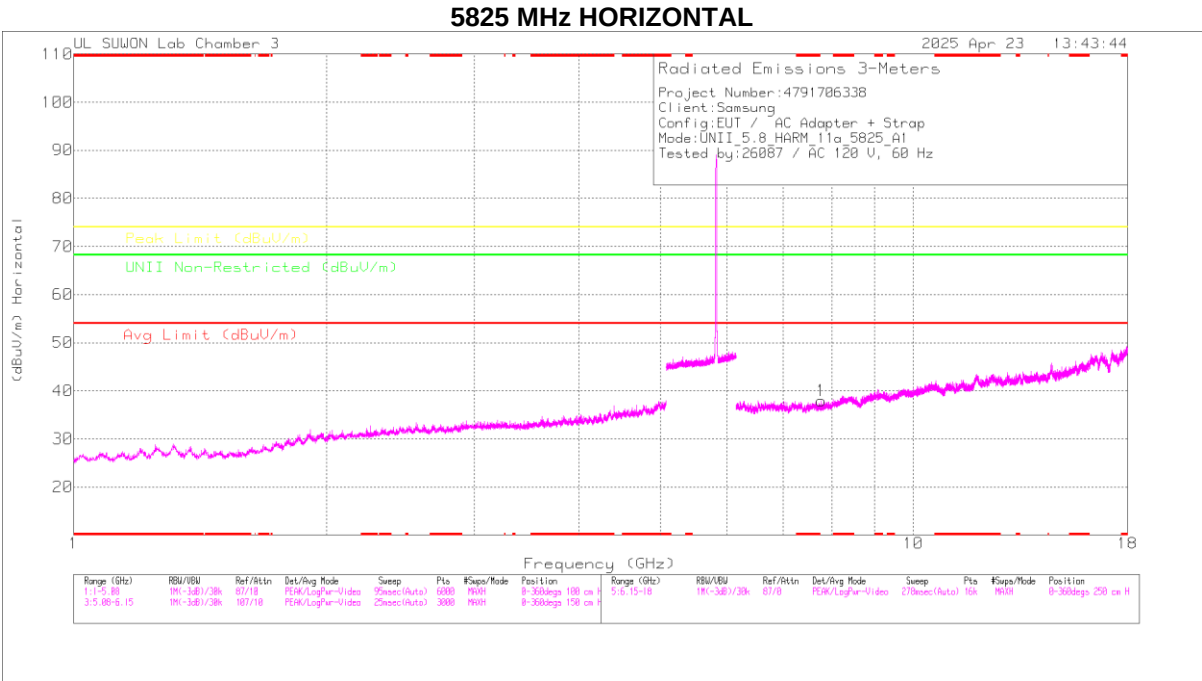


Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | Antenna Factor (dB/m) | 10dB_Path Loss (dB) | Conversion Factor (dB) | DC Corr (dB) | Corrected Reading EIRP | Peak Limit (dBm) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|-----------------------|---------------------|------------------------|--------------|------------------------|------------------|----------------|----------------|-------------|----------|
| 1      | 5.85001         | -60.66              | PK  | 35.2                  | -19.4               | 11.8                   | 0            | -33.06                 | 26.99            | -60.05         | 153            | 100         | H        |
| 2      | 5.96725         | -61.7               | PK  | 35.6                  | -19.3               | 11.8                   | 0            | -33.6                  | -27              | -6.6           | 153            | 100         | H        |

Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 802.11a / 5825 MHz)



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5825 MHz DATA

Radiated Emissions

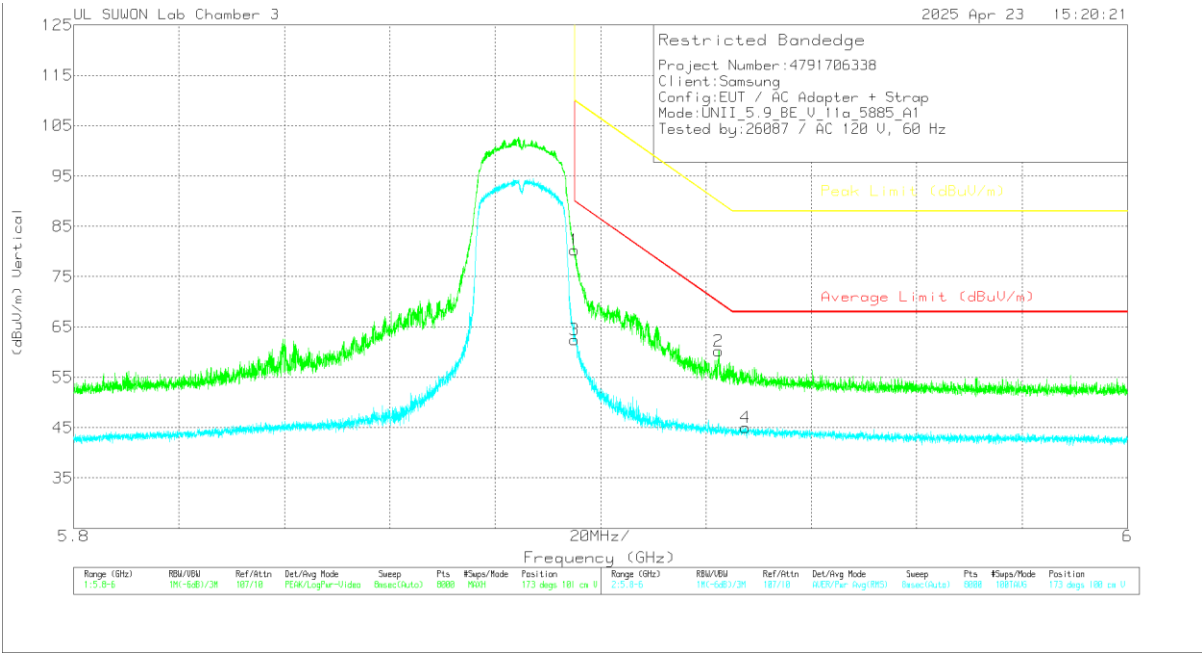
| Frequency (GHz) | Meas Reading (dBuV) | Det  | Antenna Factor (dBm) | 5GHz_HP_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Azimuth (Deg) | Height (cm) | Polarity |
|-----------------|---------------------|------|----------------------|-----------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|---------------|-------------|----------|
| 7.76663         | 35.74               | PK-U | 35.9                 | -24.5                 | 0            | 45.14                      | -                  | -           | -                   | -           | 68.2                         | -20.06      | 136           | 100         | H        |

PK-U - U-NII: Maximum Peak

8.4.5. TX ABOVE 1 GHz 1TX MODE IN THE 5.9 GHz BAND

BANDEDGE (WORST CASE: 802.11a / 5885 MHz)

VERTICAL PEAK AND AVERAGE DATA

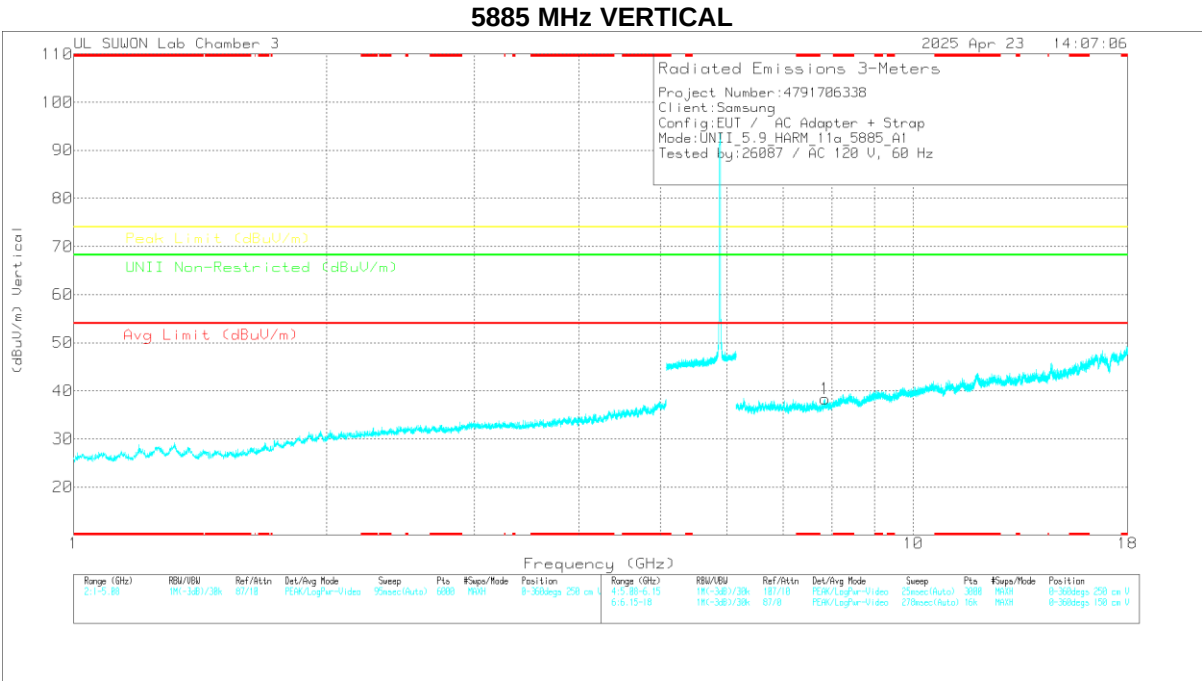


Trace Markers

| Marker | Frequency (GHz) | Meas Reading (dBuV) | Det | Antenna_Factor (dB/m) | 10dB_Path Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Acimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|-----------------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | 5.89501         | 64.26               | Pk  | 35.4                  | -19.4               | 0            | 60.26                      | -                      | -           | 109.99              | -29.73         | 173            | 101         | V        |
| 2      | 5.92244         | 44.08               | Pk  | 35.5                  | -19.3               | 0            | 60.28                      | -                      | -           | 88.88               | -29.6          | 173            | 101         | V        |
| 3      | 5.89501         | 46.22               | RMS | 35.4                  | -19.4               | -21          | 62.43                      | 89.99                  | -27.56      | -                   | -              | 173            | 100         | V        |
| 4      | 5.92754         | 28.74               | RMS | 35.5                  | -19.4               | -21          | 45.05                      | 68                     | -22.95      | -                   | -              | 173            | 100         | V        |

Pk - Peak detector  
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5885 MHz)



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5885 MHz DATA

Radiated Emissions

| Frequency (GHz) | Meas Reading (dBuV) | Det  | Antenna Factor (dBm) | 5GHz_HP_Path Loss(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Altitude (m) | Height (cm) | Polarity |
|-----------------|---------------------|------|----------------------|-----------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|--------------|-------------|----------|
| 7.84686         | 36.55               | PK-U | 35.9                 | -24.1                 | 0            | 45.35                      | -                  | -           | -                   | -           | 68.2                         | -19.85      | 206          | 286         | V        |

PK-U - U-NII: Maximum Peak

END OF TEST REPORT