



CERTIFICATION TEST REPORT

Report Number. : 4789867746-E3V2

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

Model : SM-T735

FCC ID : A3LSMT735

EUT Description : GSM/WCDMA/LTE Tablet + BT/BLE, DTS/UNII a/b/g/n/ac

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

Date Of Issue:
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Prepared by:
UL Korea, Ltd.
26th floor, 152, Teheran-ro, Gangnam-gu Seoul, 06236, Korea

Suwon Test Site: UL Korea, LTD. Suwon Laboratory
218 Maeyeong-ro, Yeongtong-gu
Suwon-si, Gyeonggi-do, 16675, Korea
TEL: (031) 337-9902
FAX: (031) 213-5433



ACCREDITED

Testing Laboratory

TL-637

Revision History

| <u>Rev.</u> | <u>Issue Date</u> | <u>Revisions</u> | <u>Revised By</u> |
|-------------|-------------------|-----------------------------------|-------------------|
| V1 | 2021-04-22 | Initial issue | Hyunsik Yun |
| V2 | 2021-04-30 | Updated to address TCB's question | Hyunsik Yun |

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION: GSM/WCDMA/LTE Tablet + BT/BLE, DTS/UNII a/b/g/n/ac
MODEL NUMBER: SM-T735
SERIAL NUMBER: R32R2009HKX (Conducted, Original);
R32R2009QPH, R32R2009K5M, R32R300FS7B (Radiated, Original);
R32R200DYSJ, R32R200DY4W (Radiated, Spot-check);
DATE TESTED: 2021-03-16 ~ 2021-04-20(Original);
2021-04-14 ~ 2021-04-22(Spot-check);

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

Approved & Released For
UL Korea, Ltd. By:



Junwhan Lee
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:



Hyunsik Yun
Suwon Lab Engineer
UL Korea, Ltd.

1.1. INTRODUCTION OF TEST DATA REUSE

This report referenced from the FCC ID: A3LSMT736B DTS(FCC CFR 47 Part 15C).
 And the applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID.

1.2. DIFFERENCE

The FCC ID: A3LSMT735 shares the same enclosure and circuit board as FCC ID: A3LSMT736B. The WLAN antennas and surrounding circuitry and layout are identical between these two units for re-used bands.

In SM-T735 model, 5G NR parts are removed from the PCB.

After confirming through preliminary radiated emissions that the performance of the FCC ID: A3LSMT736B remains representative of FCC ID: A3LSMT735. The test data of FCC ID: A3LSMT736B being submitted for this application to cover WLAN features.

1.3. SPOT CHECK VERIFICATION DATA

| Band | Test Item | Mode | Frequency | Test Limit | Original model | Spot check model | Deviation | Remark |
|-----------------------|-----------|-------------------|-----------|------------|---------------------|--------------------|-----------|--------|
| | | | | | SM-T736B | SM-T735 | | |
| | | | | | FCC ID : A3LSMT736B | FCC ID : A3LSMT735 | | |
| DTS WLAN (2.4 GHz) | Band Edge | 11b 2462 ANT1 | 2462 MHz | 74 dBuV/m | 68.09 dBuV/m | 52.71 dBuV/m | -15.38 dB | |
| | RSE | 11b 2462 ANT1 | 4924 MHz | 54 dBuV/m | 44.20 dBuV/m | 44.96 dBuV/m | 0.76 dB | |
| | Band Edge | 11b 2412 ANT2 | 2412 MHz | 74 dBuV/m | 69.80 dBuV/m | 52.80 dBuV/m | -17.00 dB | |
| | RSE | 11b 2437 ANT2 | 4874 MHz | 54 dBuV/m | 50.86 dBuV/m | 40.62 dBuV/m | -10.24 dB | |
| | Band Edge | 11g 2462 ALL | 2462 MHz | 54 dBuV/m | 50.94 dBuV/m | 49.57 dBuV/m | -1.37 dB | |
| | RSE | 11g 2437 ALL | 4874 MHz | 54 dBuV/m | 48.08 dBuV/m | 47.55 dBuV/m | -0.53 dB | |
| | Band Edge | 11n HT20 2412 ALL | 2412 MHz | 54 dBuV/m | 51.17 dBuV/m | 50.82 dBuV/m | -0.35 dB | |
| | RSE | 11n HT20 2457 ALL | 4914 MHz | 54 dBuV/m | 45.27 dBuV/m | 38.08 dBuV/m | -7.19 dB | |

Comparison of two models, upper deviation is within 3dB range and all test results are under FCC technical limits.

1.4. REFERENCE DETAIL

Reference application that contains the re-used reference data.

| Equipment Class | Reference FCC ID | Application Type | Reference Test report | Reuse (EMC/RFX) | Report Title / Section |
|-----------------|------------------|------------------|-----------------------|-----------------|--|
| PCB | A3LSMT736B | Original Grant | 4789841420-E2 | EMC | FCC Report WWAN/ All sections |
| DTS | A3LSMT736B | Original Grant | 4789841420-E3 | EMC | Report DTS[b,g,n] WLAN/ All sections |
| | | | 4789841420-E4 | EMC | FCC Report BLE/ All sections |
| DSS | A3LSMT736B | Original Grant | 4789841420-E5 | EMC | FCC Report BT/ All sections |
| NII | A3LSMT736B | Original Grant | 4789841420-E6 | EMC | FCC Report UNII[a,n,ac] WLAN/ All sections |

2. TEST METHODOLOGY

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. KDB 558074 D01 DTS Meas Guidance v05r02.
4. KDB 662911 D01 Multiple Transmitter Output v02r01
5. ANSI C63.10-2013.
6. KDB 484596 D01 Referencing Test Data v01

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 |
| <input checked="" type="checkbox"/> Chamber 2 |
| <input checked="" type="checkbox"/> Chamber 3 |

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 |
|--|-------------|
| Conducted Disturbance, 0.15 to 30 MHz | 3.01 dB |
| Radiated Disturbance, 30 MHz to 1 GHz | 4.26 dB |
| Radiated Disturbance, 1 GHz to 18 GHz | 5.90 dB |
| Radiated Disturbance, 18 GHz to 40 GHz | 5.49 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 Procedure 1, Clause 4.4.2 in IEC Guide 115:2007.

5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The EUT is a GSM/WCDMA/LTE Tablet + BT/BLE, DTS/UNII a/b/g/n/ac.
 This test report addresses the DTS (WLAN) operational mode.

WiFi operating mode

| Frequency range | Mode | ANT 1 | ANT 2 |
|---------------------------------|--------------------|-------|-------|
| 2.4GHz (2412 MHz ~ 2472 MHz) | 802.11b SISO | TX/RX | TX/RX |
| | 802.11g MIMO | TX/RX | |
| | 802.11n(HT20) MIMO | TX/RX | |

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted average output power as follows:

| Frequency Range [MHz] | Mode | Output Power [dBm] | | Output Power [mW] | |
|-----------------------|--------------------|--------------------|-------|-------------------|-------|
| | | ANT1 | ANT2 | ANT1 | ANT2 |
| 2412 - 2472 | 802.11b SISO | 17.90 | 18.34 | 61.66 | 68.23 |
| | 802.11g MIMO | 21.11 | | 129.12 | |
| | 802.11n(HT20) MIMO | 19.87 | | 97.05 | |

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

**The internal antenna was Permanently attached.
Therefore this E.U.T Complies with the requirement of §15.203.**

The radio utilizes an internal antennas, with ANT 1's maximum gain of -1.71 dBi and ANT 2's maximum gain of -3.31 dBi "WiFi1" and "WiFi2" as indicated in antenna specification are written as ANT1 and ANT2 in this report.

5.4. TESTED CHANNELS LIST

| Ch. | Frequency [MHz] | 11b [SISO] | 11g [MIMO] | 11n(HT20) [MIMO] |
|-----|-----------------|------------|------------|------------------|
| 1 | 2 412 | O | O | O |
| 2 | 2 417 | - | O | O |
| 6 | 2 437 | O | O | O |
| 10 | 2 457 | - | O | O |
| 11 | 2 462 | O | O | O |
| 12 | 2 467 | O | O | O |
| 13 | 2 472 | O | O | O |

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/High Channels.

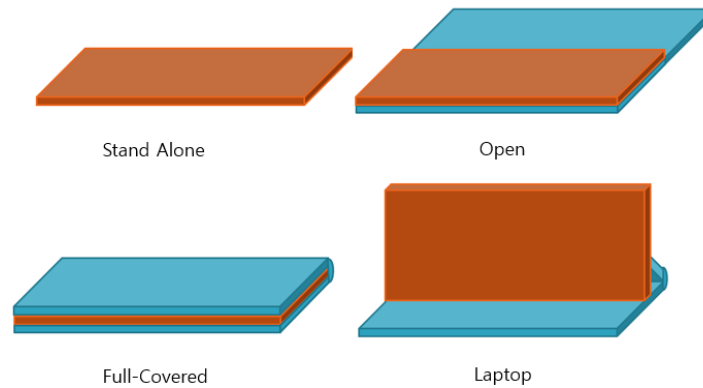
i. Worst Axis Condition

The fundamental and radiated spurious emission were investigated in three orthogonal orientations X, Y and Z, it was determined that below orientation was worst-case orientation for each antenna.

| Antenna | Worst Case | | | |
|---------|--------------|---|---|--------|
| | X | Y | Z | Laptop |
| ANT1 | Stand Alone | - | - | - |
| ANT2 | Full Covered | - | - | - |
| ANT ALL | Stand Alone | - | - | - |

ii. Foldable Condition

The Fundamental of the EUT was investigated in four foldable conditions(Stand Alone, , Open, Full-Coverd, Laptop).



Based on the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps 1TX

802.11g mode: 6 Mbps 2TX

802.11n HT20 mode: MCS0 2TX

All radiated and power line conducted tests were performed attached with travel adapter for the worst case condition mode.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

| Support Equipment List | | | | |
|------------------------|--------------|-------------|----------------|--------|
| Description | Manufacturer | Model | Serial Number | FCC ID |
| Charger | SAMSUNG | EP-TA200 | R37R1XS0P35DK3 | N/A |
| Data Cable | SAMSUNG | EP-DT725BBE | N/A | N/A |

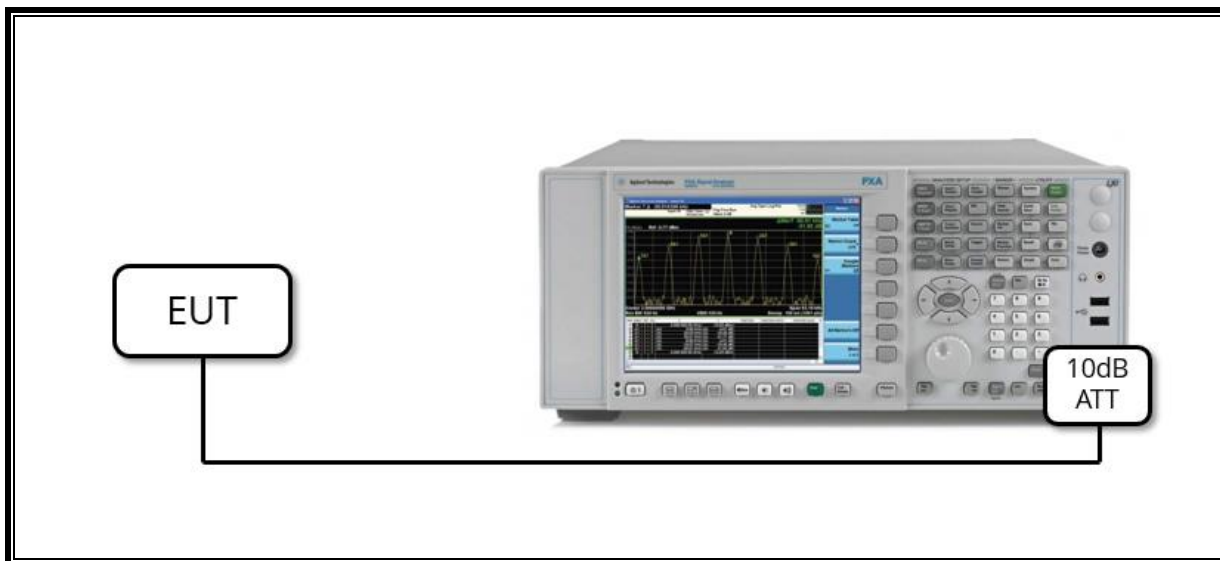
I/O CABLE

| 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 | 1.0 m | N/A |

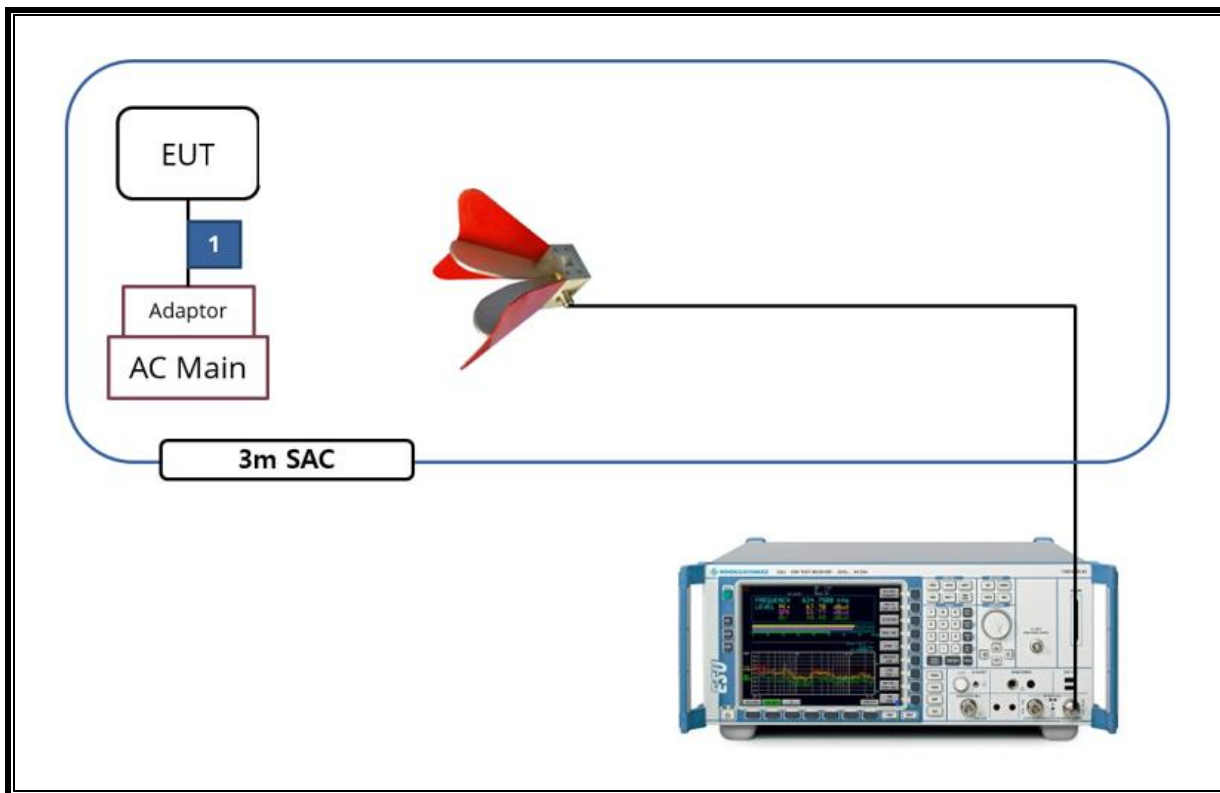
TEST SETUP

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 (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. MEASUREMENT METHOD

6 dB BW : KDB 558074 D01 v05r02, Section 8.2

OUTPUT POWER : KDB 558074 D01 v05r02, Section 8.3.2.3.

POWER SPECTRAL DENSITY : KDB 558074 D01 v05r02, Section 8.4.

Out-of-band EMISSIONS (Conducted) : KDB 558074 D01 v05r02, Section 8.5.

Out-of-band EMISSIONS IN NON-RESTRICTED BANDS: KDB 558074 D01 v05r02, Section 8.5.

Out-of-band EMISSIONS IN RESTRICTED BANDS KDB 558074 D01 v05r02, Section 8.6.

AC Power Line Conducted Emission : ANSI C63.10-2013, Section 6.2.

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 | VULB9163 | 750 | 08-19-22 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK | VULB9163 | 749 | 08-13-22 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK | VULB9163 | 845 | 08-13-22 |
| Antenna, Horn, 18 GHz | ETS | 3115 | 00167211 | 07-27-22 |
| Antenna, Horn, 18 GHz | ETS | 3115 | 00161451 | 08-15-22 |
| Antenna, Horn, 18 GHz | ETS | 3117 | 00168724 | 07-27-22 |
| Antenna, Horn, 18 GHz | ETS | 3117 | 00168717 | 08-15-22 |
| Antenna, Horn, 40 GHz | ETS | 3116C | 00166155 | 08-04-22 |
| Antenna, Horn, 40 GHz | ETS | 3116C | 00168645 | 10-02-21 |
| Preamplifier | ETS | 3116C-PA | 00168841 | 08-06-21 |
| Preamplifier, 1000 MHz | Sonoma | 310N | 341282 | 08-03-21 |
| Preamplifier, 1000 MHz | Sonoma | 310N | 351741 | 08-03-21 |
| Preamplifier, 1000 MHz | Sonoma | 310N | 370599 | 08-06-21 |
| Preamplifier, 18 GHz | Miteq | AFS42-00101800-25-S-42 | 1876511 | 08-03-21 |
| Preamplifier, 18 GHz | Miteq | AFS42-00101800-25-S-42 | 1896138 | 08-03-21 |
| Preamplifier, 18 GHz | Miteq | AFS42-00101800-25-S-42 | 2029169 | 08-04-21 |
| Spectrum Analyzer, 44 GHz | Agilent / HP | N9030A | MY54170614 | 08-05-21 |
| Spectrum Analyzer, 44 GHz | Agilent / HP | N9030A | MY54490312 | 08-05-21 |
| Spectrum Analyzer, 43.5 GHz | R&S | FSW43 | 104089 | 08-06-21 |
| Average Power Sensor | Agilent / HP | U2000 | MY54270007 | 08-05-21 |
| Attenuator | PASTERNAK | PE7087-10 | A001 | 08-03-21 |
| Attenuator | PASTERNAK | PE7087-10 | A008 | 08-03-21 |
| Attenuator | PASTERNAK | PE7004-10 | 2 | 08-04-21 |
| Attenuator | PASTERNAK | PE7087-10 | A009 | 08-03-21 |
| EMI Test Receive, 40 GHz | R&S | ESU40 | 100439 | 08-03-21 |
| EMI Test Receive, 40 GHz | R&S | ESU40 | 100457 | 08-03-21 |
| EMI Test Receive, 3 GHz | R&S | ESR3 | 101832 | 08-03-21 |
| Low Pass Filter 5GHz | Micro-Tronics | LPS17541 | 009 | 08-03-21 |
| Low Pass Filter 5GHz | Micro-Tronics | LPS17541 | 015 | 08-03-21 |
| Low Pass Filter 5GHz | Micro-Tronics | LPS17541 | 020 | 08-04-21 |
| High Pass Filter 3GHz | Micro-Tronics | HPM17543 | 010 | 08-03-21 |
| High Pass Filter 3GHz | Micro-Tronics | HPM17543 | 015 | 08-03-21 |
| High Pass Filter 3GHz | Micro-Tronics | HPM17543 | 020 | 08-04-21 |
| High Pass Filter 6GHz | Micro-Tronics | HPS17542 | 009 | 08-03-21 |
| High Pass Filter 6GHz | Micro-Tronics | HPS17542 | 016 | 08-03-21 |
| High Pass Filter 6GHz | Micro-Tronics | HPS17542 | 021 | 08-04-21 |
| LISN | R&S | ENV-216 | 101837 | 08-06-21 |
| Antenna, Loop, 9kHz-30MHz | R&S | HFH2-Z2 | 100418 | 10-02-21 |
| UL Software | | | | |
| Description | Manufacturer | Model | Version | |
| Radiated software | UL | UL EMC | Ver 9.5 | |
| AC Line Conducted software | UL | UL EMC | Ver 9.5 | |

8. SUMMARY TABLE

| FCC Part Section | Test Description | Test Limit | Test Condition | Test Result |
|-------------------|---|----------------|----------------------|-------------|
| 15.247 (a)(2) | Occupied Bandwidth(6dB) | > 500kHz | Conducted | PASS |
| 2.1051, 15.247(d) | Band Edge / Conducted Spurious Emission | -30 dBc | | PASS |
| 15.247 (b)(3) | TX conducted output power | < 30 dBm | | PASS |
| 15.247(e) | PSD | < 8 dBm/3kHz | | PASS |
| 15.207(a) | AC Power Line conducted emissions | Section 11 | Power Line conducted | PASS |
| 15.205, 15.209 | Radiated Spurious Emission | < 54dBuV/m(Av) | Radiated | PASS |

9. ANTENNA PORT TEST RESULTS

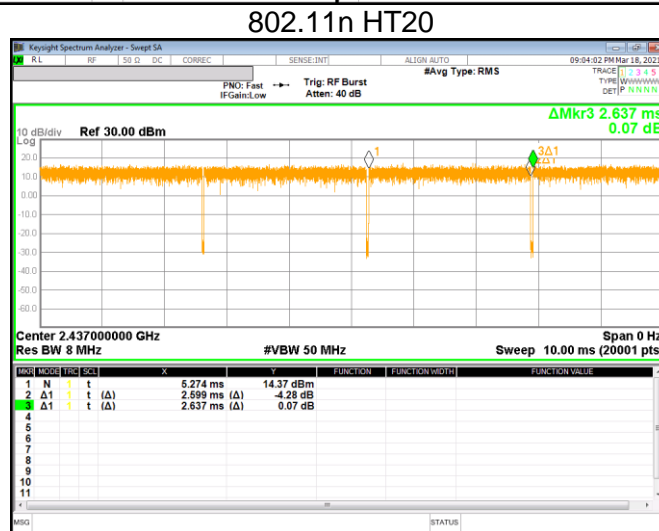
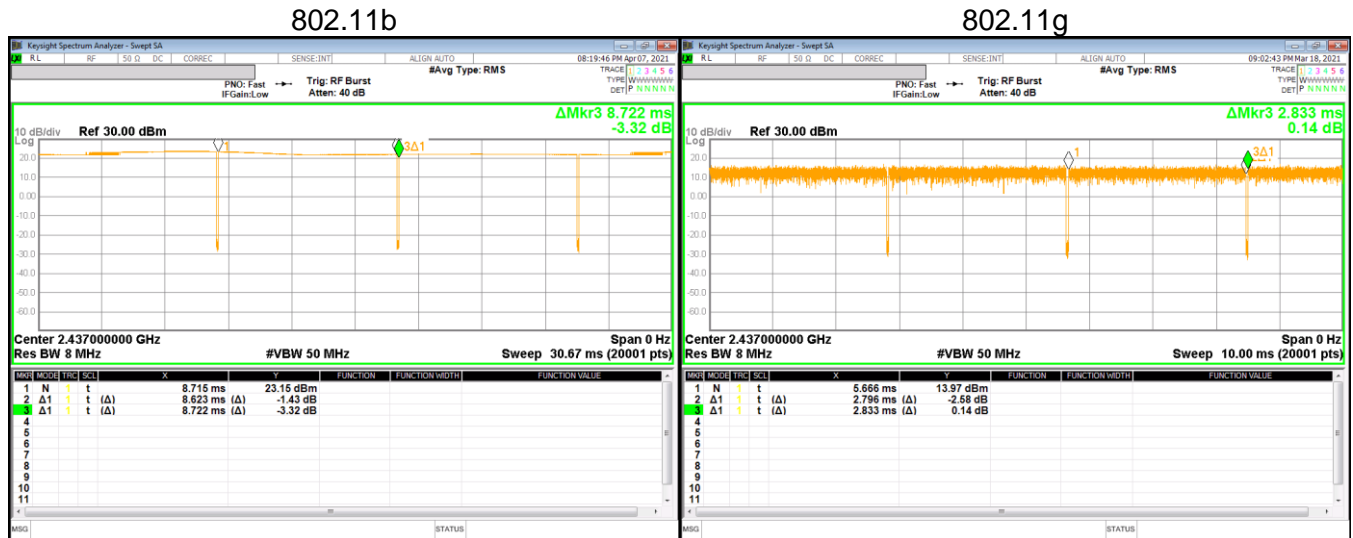
9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

| Mode | On Time [ms] | Period [ms] | Duty Cycle X [Linear] | Duty Cycle X [%] | Duty Cycle Correction Factor[dB] | 1/T Minimum VBW[kHz] |
|--------------------|--------------|-------------|-----------------------|------------------|----------------------------------|----------------------|
| 802.11b | 8.623 | 8.722 | 0.989 | 98.865 | - | 0.12 |
| 802.11g MIMO | 2.796 | 2.833 | 0.987 | 98.694 | - | 0.36 |
| 802.11n(HT20) MIMO | 2.599 | 2.637 | 0.986 | 98.559 | - | 0.38 |

Note. According to ANSI C63.10 Section 11.6, do not apply the Duty Cycle Correction Factor judging that a duty cycle of greater than or equal to 98% is continuous signal.



9.2. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

The minimum 6 dB bandwidth shall be at least 500 kHz.

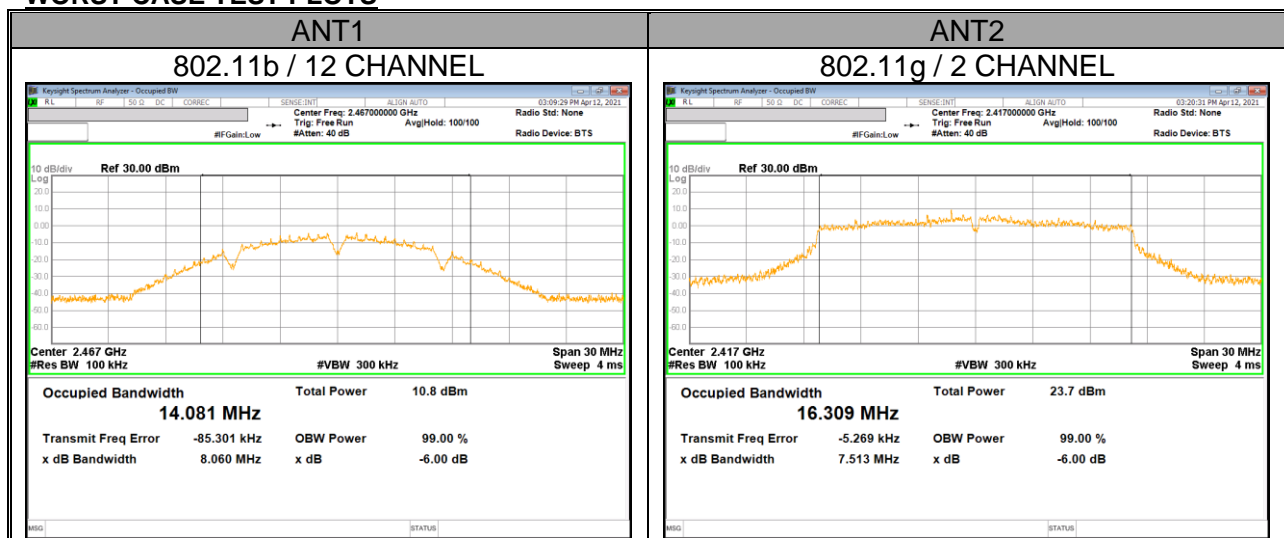
TEST PROCEDURE

Reference to KDB 558074 D01 15.247 Meas Guidance: The transmitter output is connected to a spectrum analyzer with the RBW set to 100 kHz, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS



9.2.1. 802.11b SISO MODE IN THE 2.4 GHz BAND

| Channel | Frequency [MHz] | 6 dB Bandwidth [MHz] | | Minimum Limit [MHz] |
|---------|-----------------|----------------------|-------------|---------------------|
| | | ANT 1 | ANT 2 | |
| 1 | 2 412 | 8.51 | 9.04 | 0.5 |
| 6 | 2 437 | 9.03 | 8.04 | |
| 11 | 2 462 | 8.06 | 8.54 | |
| 12 | 2 467 | 8.06 | 9.01 | |
| 13 | 2 472 | 8.53 | 8.07 | |
| Worst | | 8.06 | 8.04 | |

9.2.2. 802.11g MIMO MODE IN THE 2.4 GHz BAND

| Channel | Frequency [MHz] | 6 dB Bandwidth [MHz] | | Minimum Limit [MHz] |
|---------|-----------------|----------------------|-------------|---------------------|
| | | ANT 1 | ANT 2 | |
| 1 | 2 412 | 15.02 | 11.30 | 0.5 |
| 2 | 2 417 | 13.55 | 7.51 | |
| 6 | 2 437 | 13.49 | 13.80 | |
| 10 | 2 457 | 12.57 | 15.05 | |
| 11 | 2 462 | 10.28 | 13.18 | |
| 12 | 2 467 | 12.59 | 13.78 | |
| 13 | 2 472 | 12.52 | 15.07 | |
| Worst | | 10.28 | 7.51 | |

9.2.3. 802.11n HT20 MIMO MODE IN THE 2.4 GHz BAND

| Channel | Frequency [MHz] | 6 dB Bandwidth [MHz] | | Minimum Limit [MHz] |
|---------|-----------------|----------------------|--------------|---------------------|
| | | ANT 1 | ANT 2 | |
| 1 | 2 412 | 14.68 | 11.78 | 0.5 |
| 2 | 2 417 | 12.60 | 15.62 | |
| 6 | 2 437 | 14.91 | 13.73 | |
| 10 | 2 457 | 13.78 | 13.82 | |
| 11 | 2 462 | 13.72 | 13.81 | |
| 12 | 2 467 | 15.89 | 11.32 | |
| 13 | 2 472 | 16.77 | 16.24 | |
| Worst | | 12.60 | 11.32 | |

9.3. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Measurements perform using a wideband RF frame average power sensor. The cable assembly insertion loss and duty cycle correction factor was entered as an offset in the power sensor to allow for direct reading of power. Output power measurement was performed utilizing the 8.3.2.3 under KDB558074 D01 15.247 Meas Guidance.

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

| Bands [MHz] | ANT 1 [dBi] | ANT 2 [dBi] | Correlated Directional Gain [dBi] |
|---------------|-------------|-------------|-----------------------------------|
| 2 412 – 2 472 | -1.71 | -3.31 | 0.54 |

9.3.1. TEST RESULTS

| Included in Calculations of Corr'd Power | | | |
|--|-------------------|---|----|
| Duty Cycle CF | 802.11b SISO | - | dB |
| | 802.11g MIMO | - | dB |
| | 802.11n HT20 MIMO | - | dB |

Calculation of Output Power result

Average Power = Meas. Power + Duty Cycle CF / Total Corr'd Power = ANT1's Average Power + ANT2's Average Power

- SISO Mode

| Mode | Channel | Frequency [MHz] | SISO Average Power [dBm] | | MIMO Average Power [dBm] | | | Power Limit [dBm] |
|-------------------|---------|-----------------|--------------------------|--------------|--------------------------|-------|--------------------------|-------------------|
| | | | ANT1 | ANT2 | ANT1 | ANT2 | Total Corr'd Power [dBm] | |
| 802.11b | 1 | 2 412 | 17.71 | 17.75 | Not Supported | | | 30.00 |
| | 6 | 2 437 | 17.90 | 18.34 | | | | |
| | 11 | 2 462 | 17.81 | 18.01 | | | | |
| | 12 | 2 467 | 4.45 | 3.98 | | | | |
| | 13 | 2 472 | 1.19 | 1.51 | | | | |
| Worst Case | | | 17.90 | 18.34 | | | | |
| 802.11g | 1 | 2 412 | 15.18 | 15.03 | 15.21 | 14.93 | 18.08 | 30.00 |
| | 2 | 2 417 | 18.05 | 18.15 | 18.16 | 18.03 | 21.11 | |
| | 6 | 2 437 | 17.98 | 18.16 | 18.05 | 18.07 | 21.07 | |
| | 10 | 2 457 | 18.12 | 18.03 | 18.16 | 17.92 | 21.05 | |
| | 11 | 2 462 | 15.10 | 15.01 | 15.08 | 14.84 | 17.97 | |
| | 12 | 2 467 | 4.52 | 4.47 | 3.98 | 4.24 | 7.12 | |
| | 13 | 2 472 | 0.61 | 1.03 | 0.58 | 0.71 | 3.66 | |
| Worst Case | | | 18.12 | 18.16 | 21.11 | | | |
| 802.11n HT20 | 1 | 2 412 | 15.02 | 14.85 | 15.04 | 14.76 | 17.91 | 30.00 |
| | 2 | 2 417 | 16.83 | 16.96 | 16.87 | 16.85 | 19.87 | |
| | 6 | 2 437 | 16.76 | 16.98 | 16.79 | 16.9 | 19.86 | |
| | 10 | 2 457 | 16.91 | 16.85 | 16.93 | 16.78 | 19.87 | |
| | 11 | 2 462 | 14.93 | 14.83 | 14.93 | 14.71 | 17.83 | |
| | 12 | 2 467 | 3.85 | 4.27 | 3.86 | 4.17 | 7.03 | |
| 13 | 2 472 | 0.47 | 0.84 | 0.43 | 0.41 | 3.43 | | |
| Worst Case | | | 16.91 | 16.98 | 19.87 | | | |

9.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

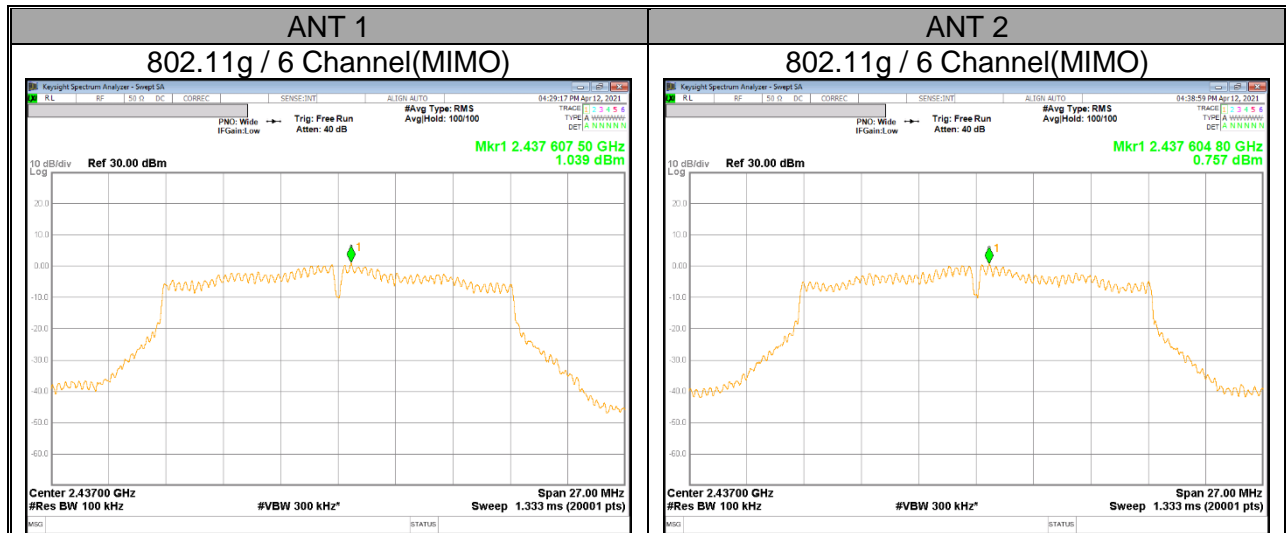
TEST PROCEDURE

Power Spectral Density was performed utilizing the section 8.4 under KDB558074 D01 15.247 Meas Guidance.

RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS



9.4.1. 802.11b/g/n HT20 MODE TEST RESULTS

| Included in Calculations of Corr'd Power | | | |
|--|-------------------|------|----|
| Duty Cycle CF | 802.11b SISO | - | dB |
| | 802.11g MIMO | 0.11 | dB |
| | 802.11n HT20 MIMO | 0.11 | dB |

Calculation of Output PSD result

- 1TX : Corr'd PSD = Meas PSD + Duty Cycle CF
- 2TX : Total PSD = ANT1 Meas PSD + ANT2 Meas PSD + Duty Cycle CF

- SISO Mode

| Mode | Channel | Frequency [MHz] | Meas PSD [dBm/100kHz] | | Total Corr'd PSD [dBm/100kHz] | | PSD Limit [dBm/3kHz] |
|---------|---------|-----------------|-----------------------|---------|-------------------------------|---------|----------------------|
| | | | ANT1 | ANT2 | ANT1 | ANT2 | |
| 802.11b | 1 | 2 412 | 1.689 | 1.289 | 1.689 | 1.289 | 8.00 |
| | 6 | 2 437 | 1.390 | 1.552 | 1.390 | 1.552 | |
| | 11 | 2 462 | 1.504 | 1.138 | 1.504 | 1.138 | |
| | 12 | 2 467 | -11.836 | -12.675 | -11.836 | -12.675 | |
| | 13 | 2 472 | -14.690 | -15.208 | -14.690 | -15.208 | |

- MIMO Mode

| Mode | Channel | Frequency [MHz] | Meas PSD [dBm/100kHz] | | Total Corr'd PSD [dBm/100kHz] | PSD Limit [dBm/3kHz] |
|--------------|---------|-----------------|-----------------------|--------------|-------------------------------|----------------------|
| | | | ANT1 | ANT2 | | |
| 802.11g | 1 | 2 412 | -2.680 | -2.705 | 0.318 | 8.00 |
| | 2 | 2 417 | 0.301 | 0.804 | 3.570 | |
| | 6 | 2 437 | 1.039 | 0.757 | 3.911 | |
| | 10 | 2 457 | 0.727 | 0.102 | 3.436 | |
| | 11 | 2 462 | -2.847 | -3.012 | 0.082 | |
| | 12 | 2 467 | -13.419 | -13.495 | -10.447 | |
| | 13 | 2 472 | -17.345 | -17.461 | -14.392 | |
| 802.11n HT20 | 1 | 2 412 | -2.804 | -2.432 | 0.396 | 8.00 |
| | 2 | 2 417 | -0.587 | -0.749 | 2.343 | |
| | 6 | 2 437 | -1.036 | -0.994 | 1.995 | |
| | 10 | 2 457 | -0.303 | -0.553 | 2.584 | |
| | 11 | 2 462 | -2.467 | -3.264 | 0.163 | |
| | 12 | 2 467 | -13.879 | -13.808 | -10.833 | |
| | 13 | 2 472 | -17.692 | -17.904 | -14.786 | |

9.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

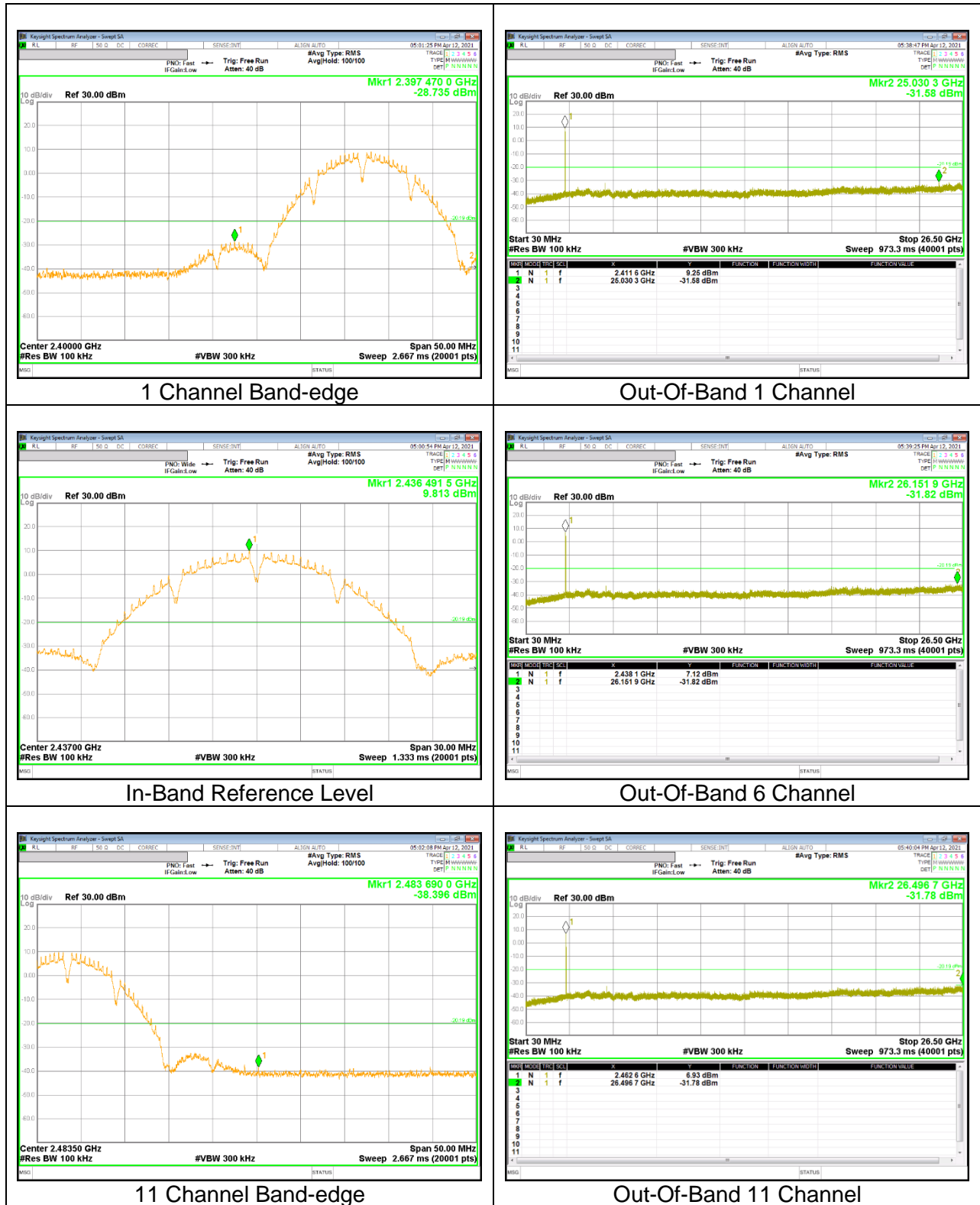
RSS-247 5.5

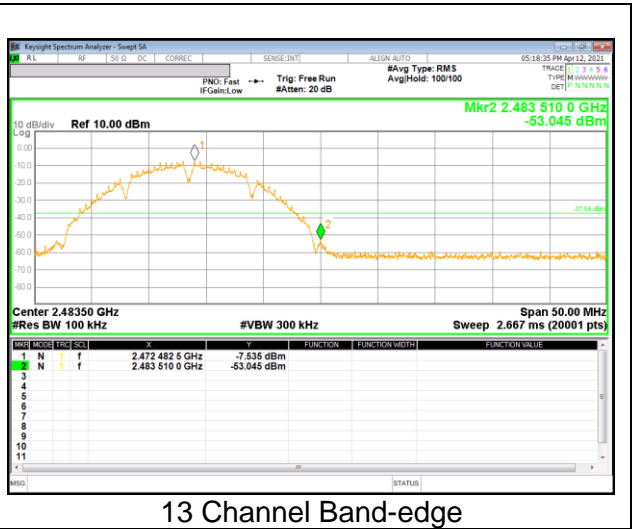
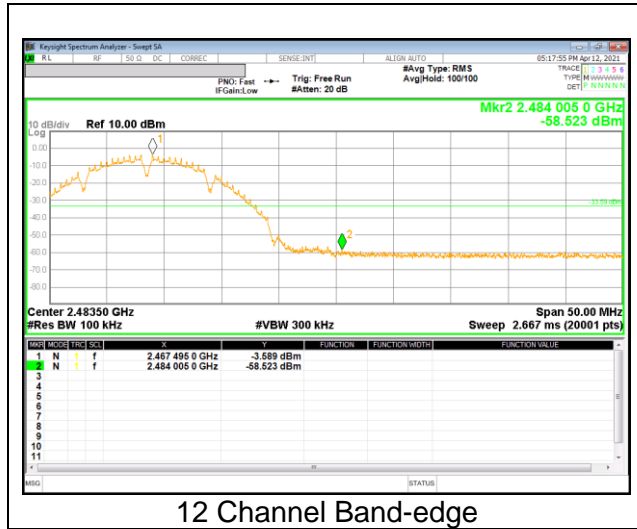
Output power was measured based on the use of average measurement, therefore the required attenuation is 30 dB.

RESULTS

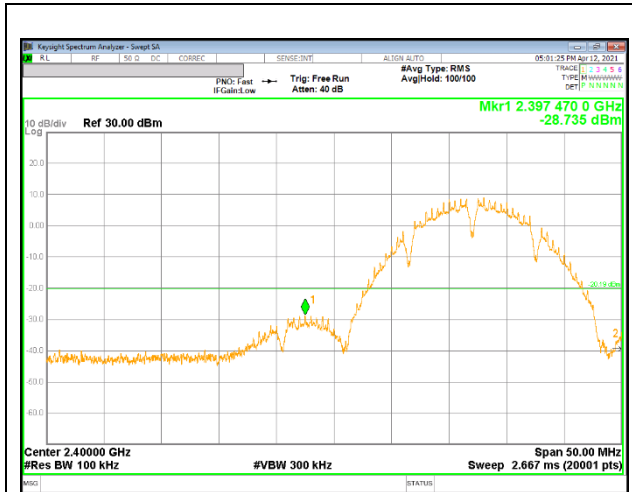
9.5.1. 802.11b MODE

1TX Antenna 1

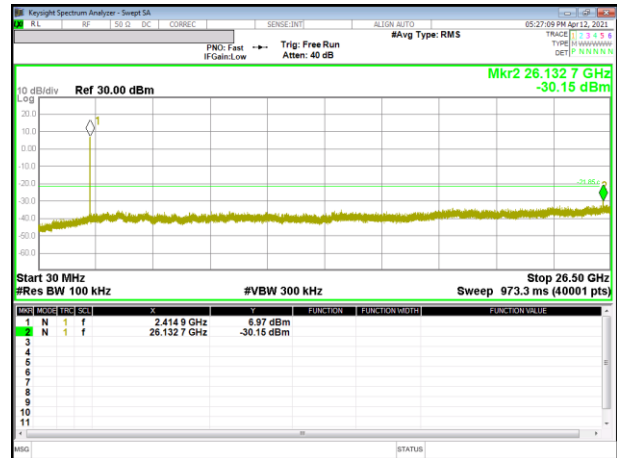




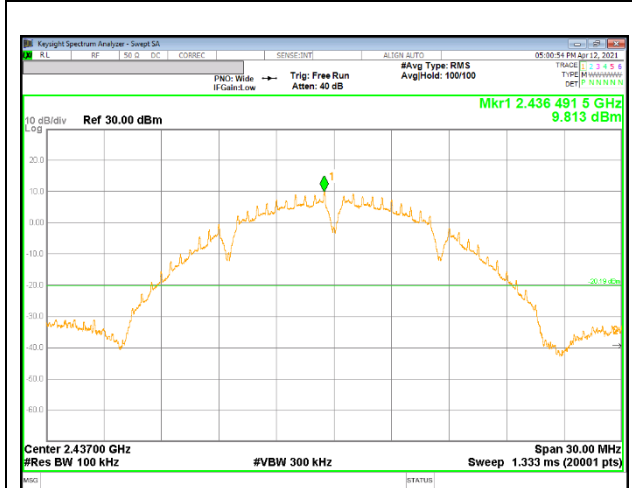
1TX Antenna 2



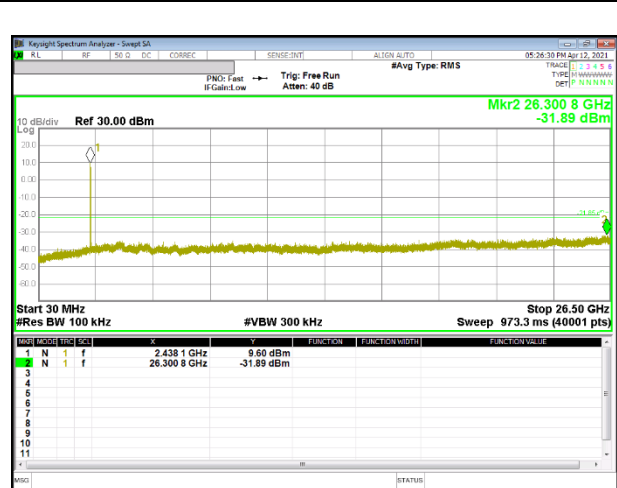
1 Channel Band-edge



Out-Of-Band 1 Channel



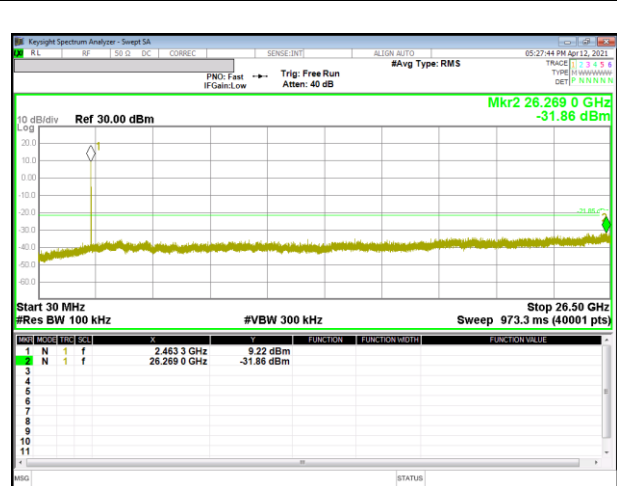
In-Band Reference Level



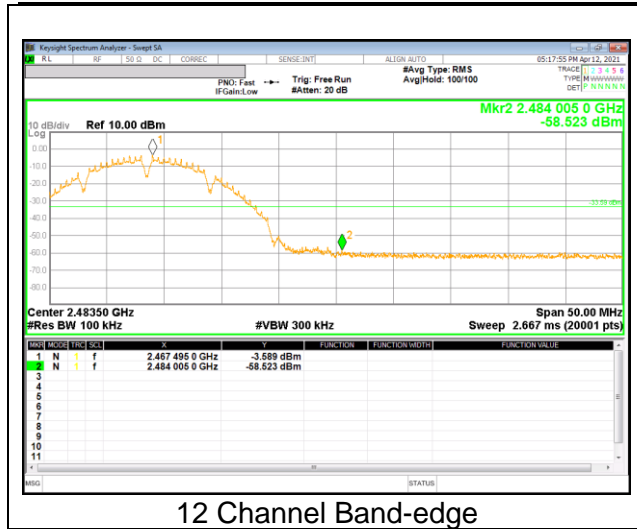
Out-Of-Band 6 Channel



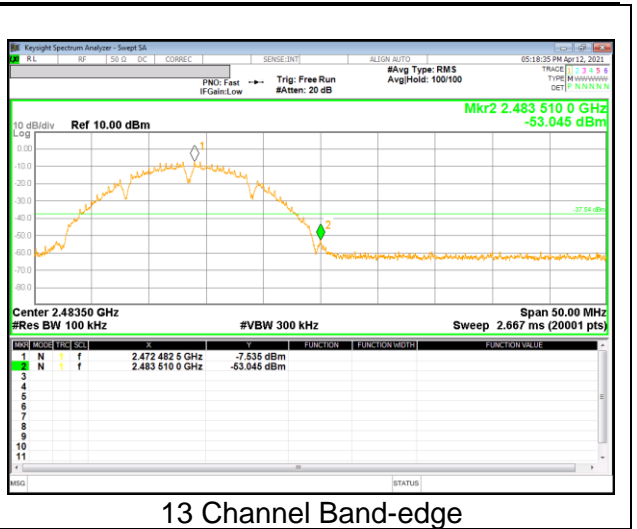
11 Channel Band-edge



Out-Of-Band 11 Channel



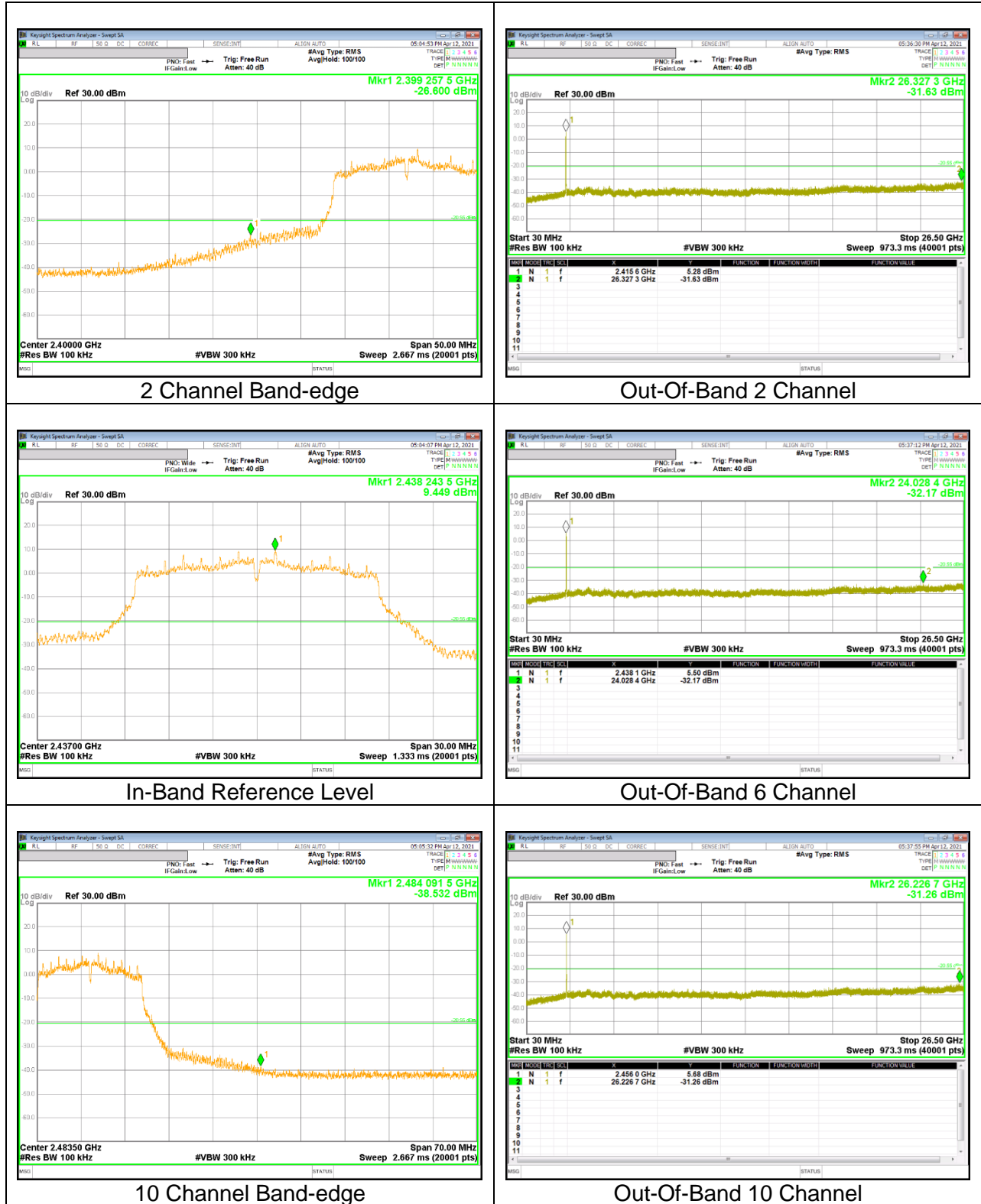
12 Channel Band-edge

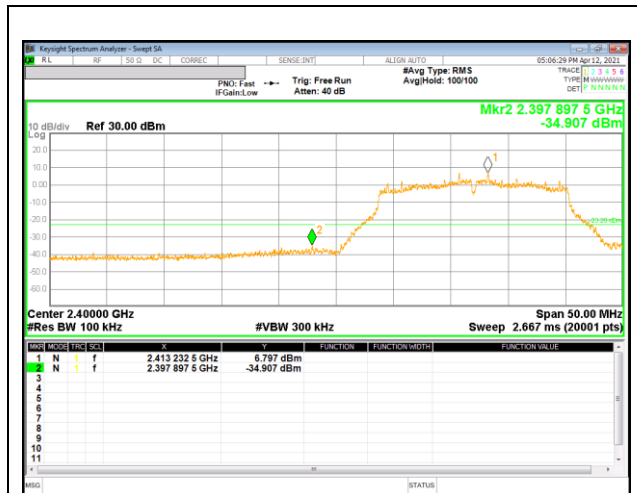


13 Channel Band-edge

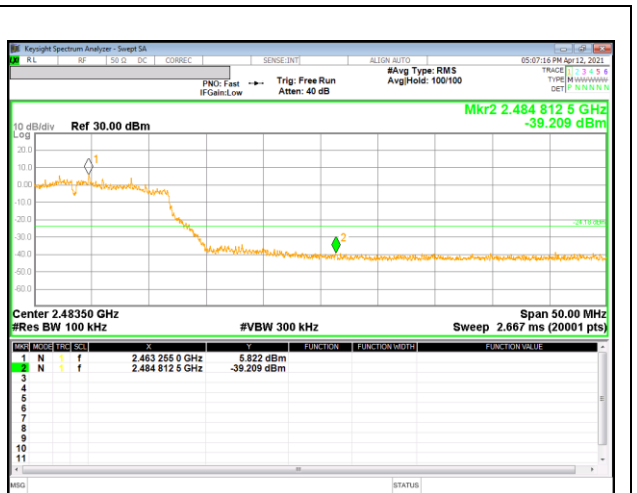
9.5.2. 802.11g MODE

2TX Antenna 1

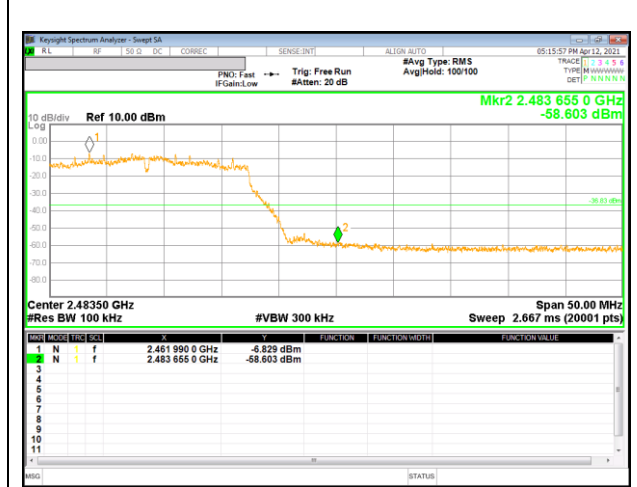




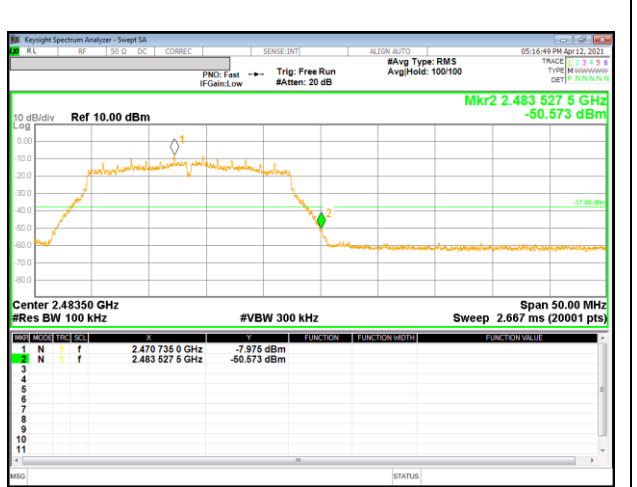
1 Channel Band-edge



11 Channel Band-edge

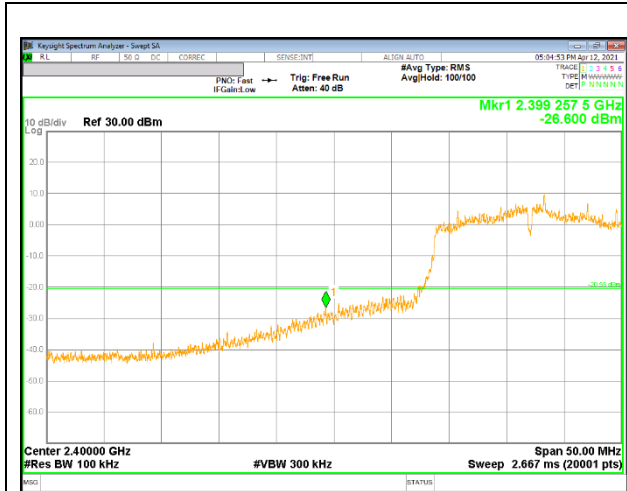


12 Channel Band-edge

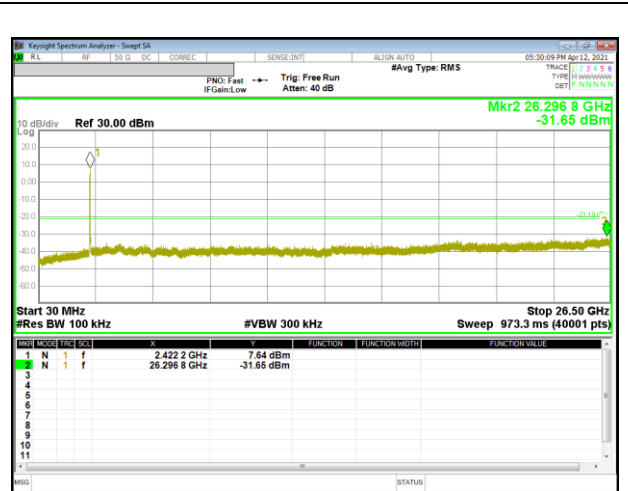


13 Channel Band-edge

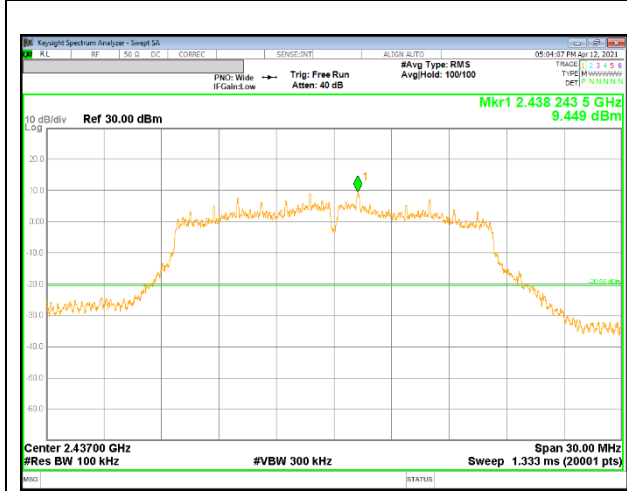
2TX Antenna 2



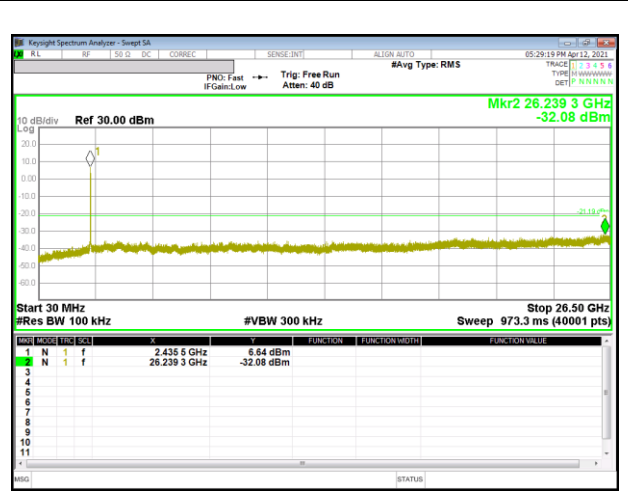
2 Channel Band-edge



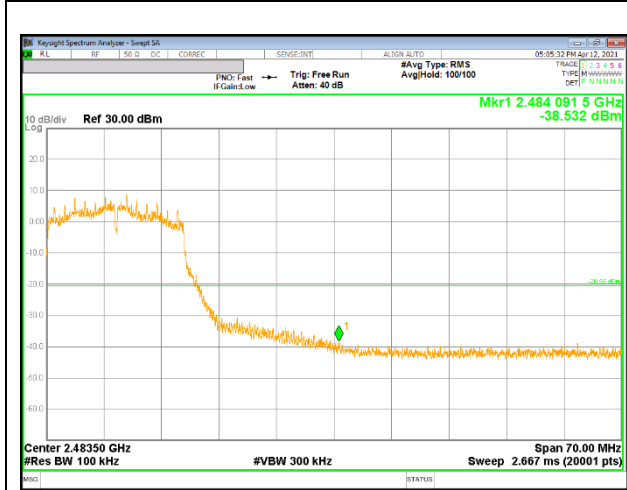
Out-Of-Band 2 Channel



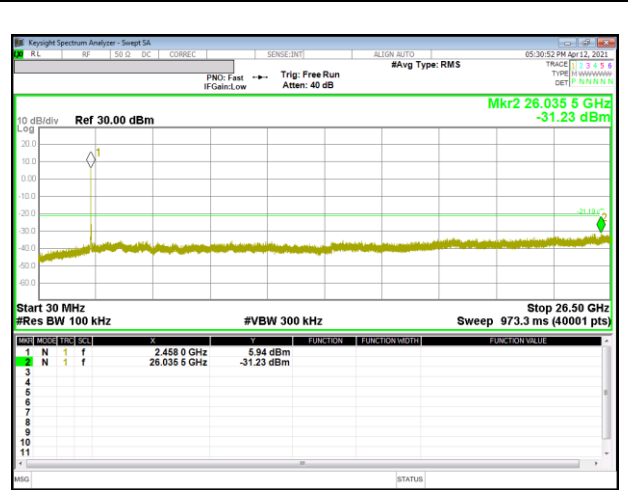
In-Band Reference Level



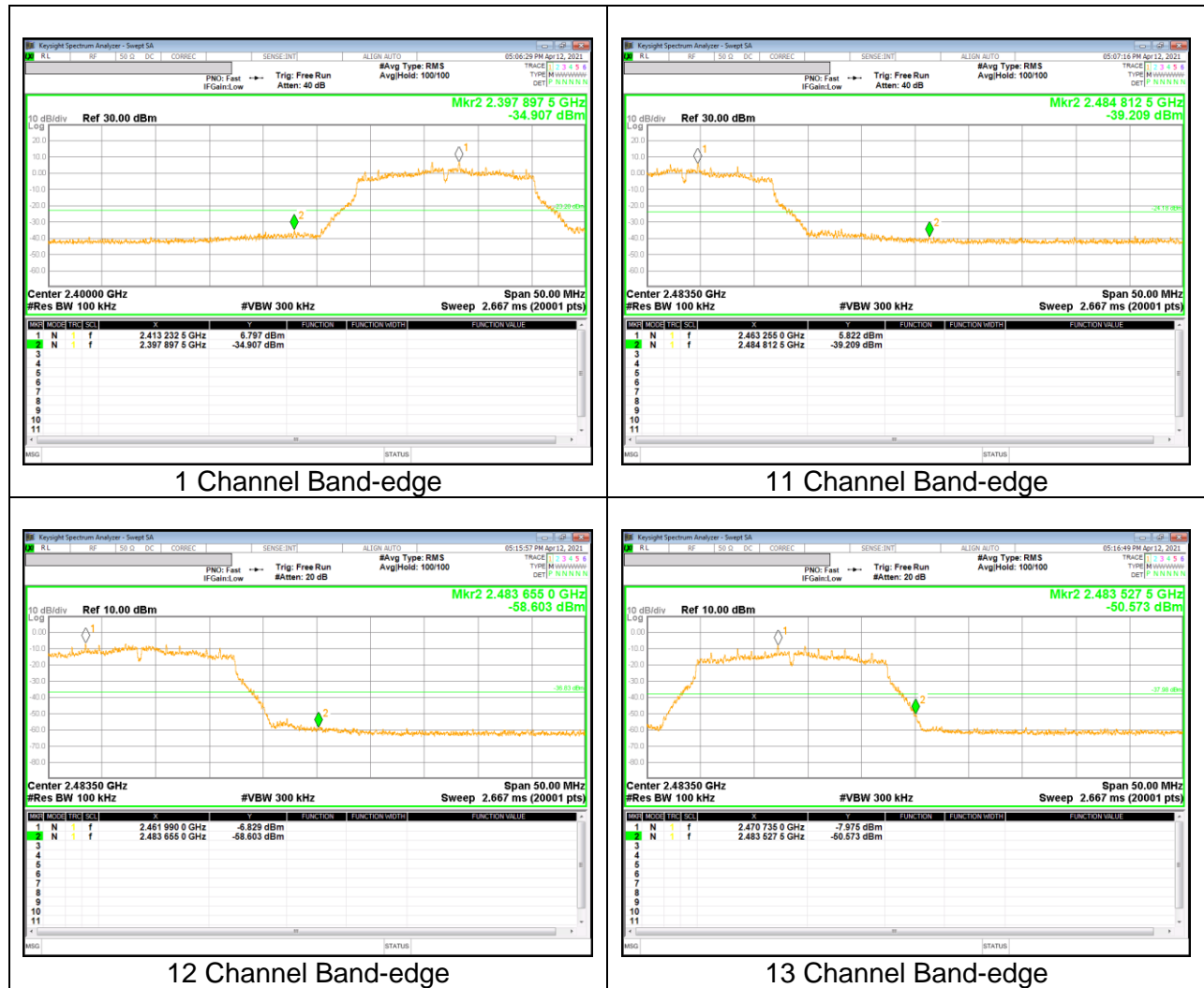
Out-Of-Band 6 Channel



10 Channel Band-edge

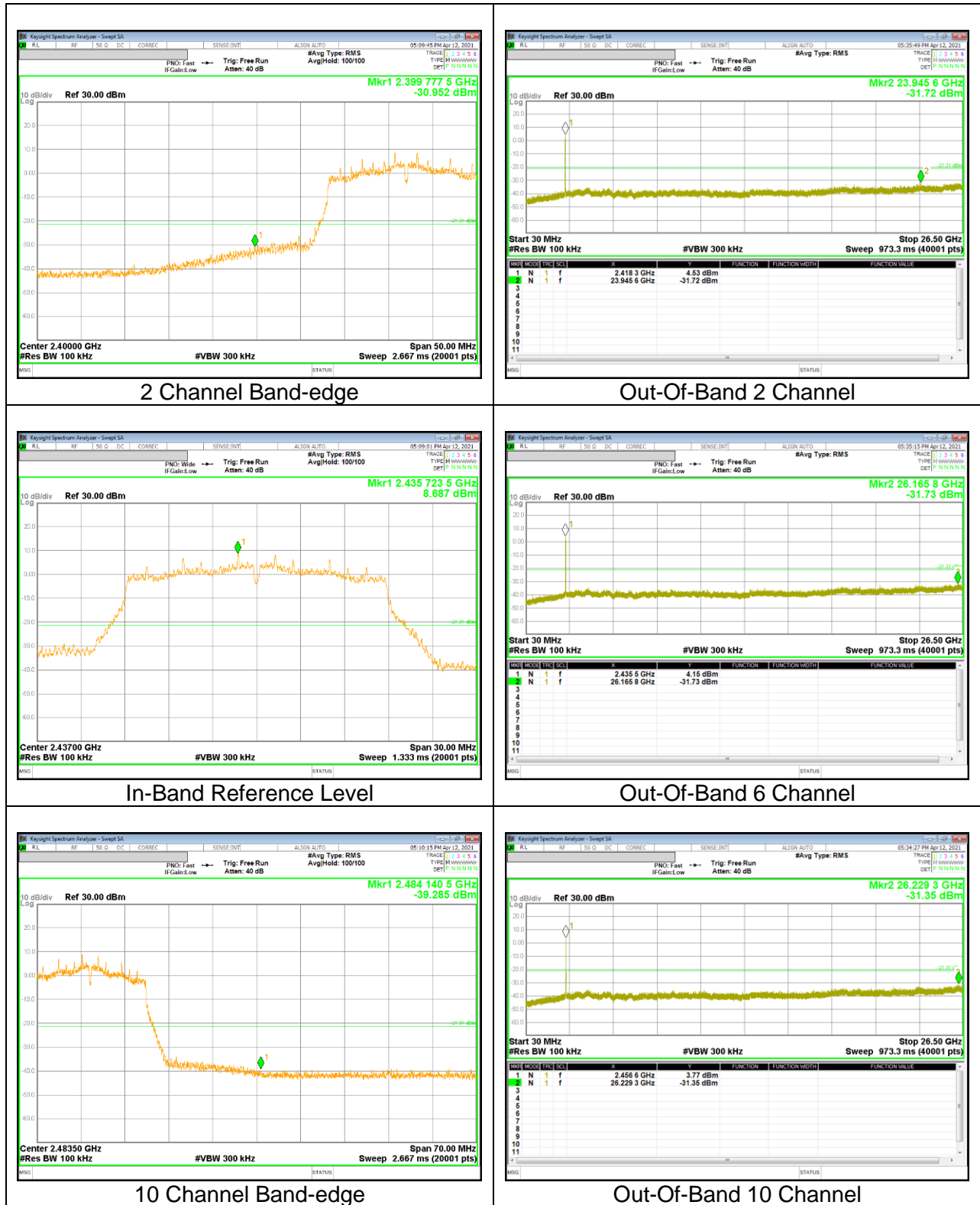


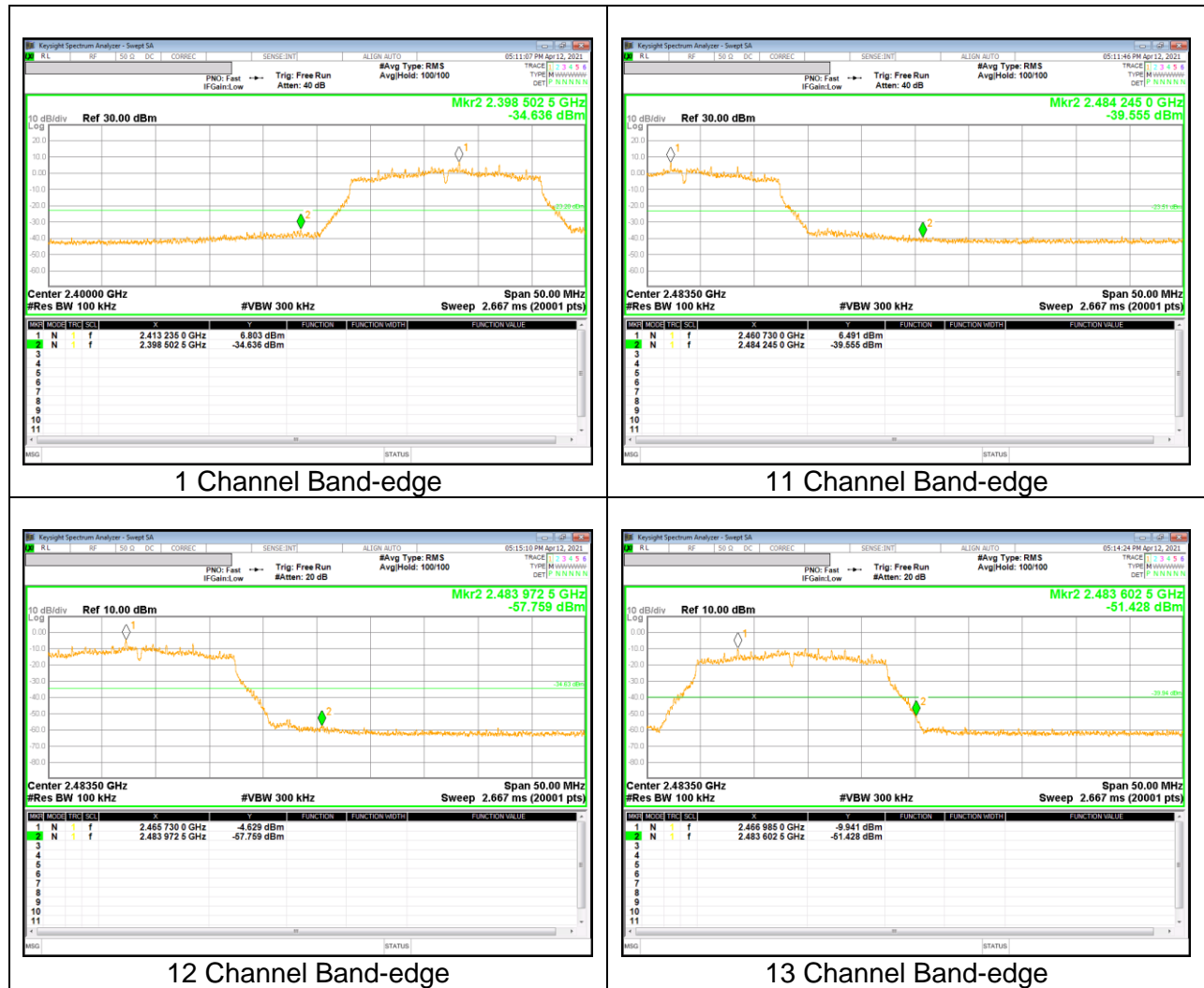
Out-Of-Band 10 Channel



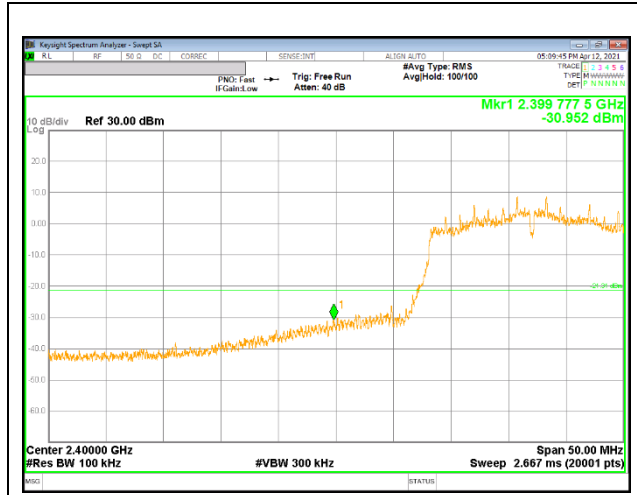
9.5.3. 802.11n HT20 MODE

2TX Antenna 1 MODE

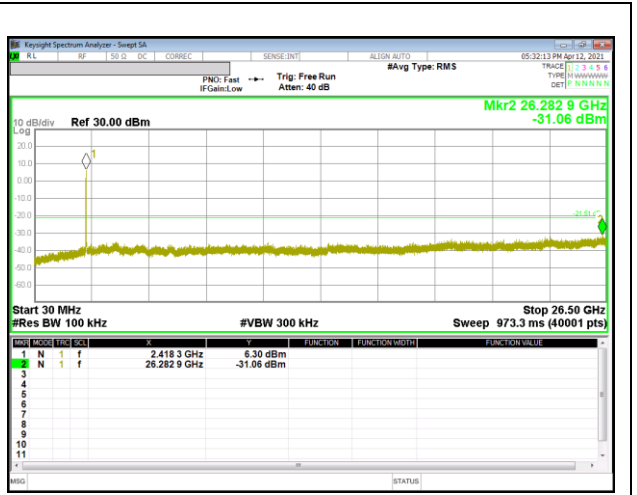




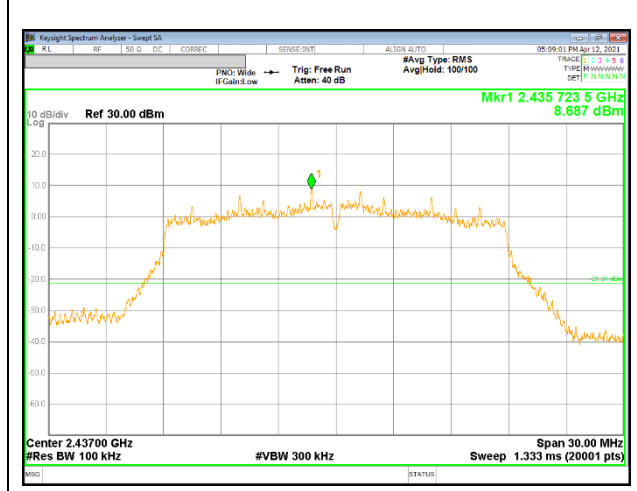
2TX Antenna 2 MODE



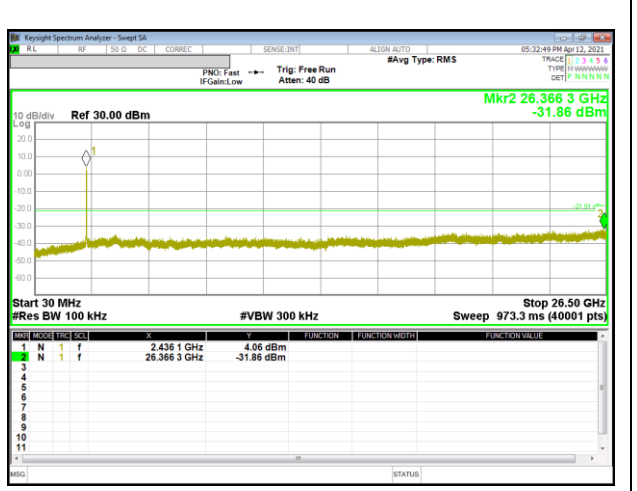
2 Channel Band-edge



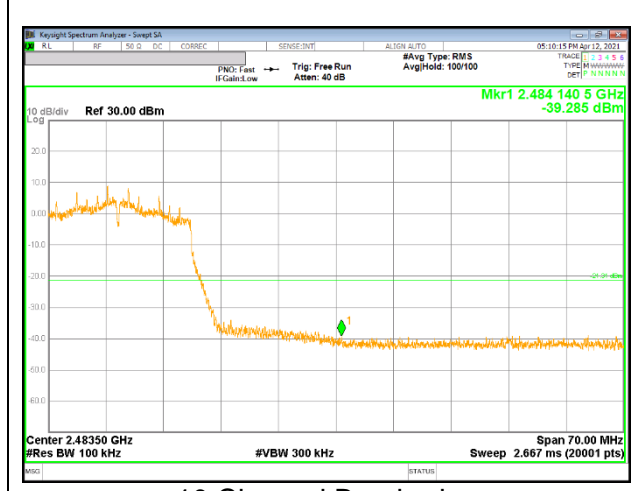
Out-Of-Band 2 Channel



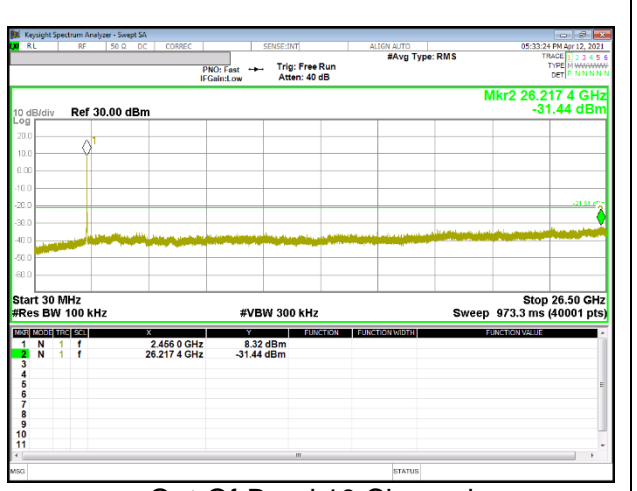
In-Band Reference Level



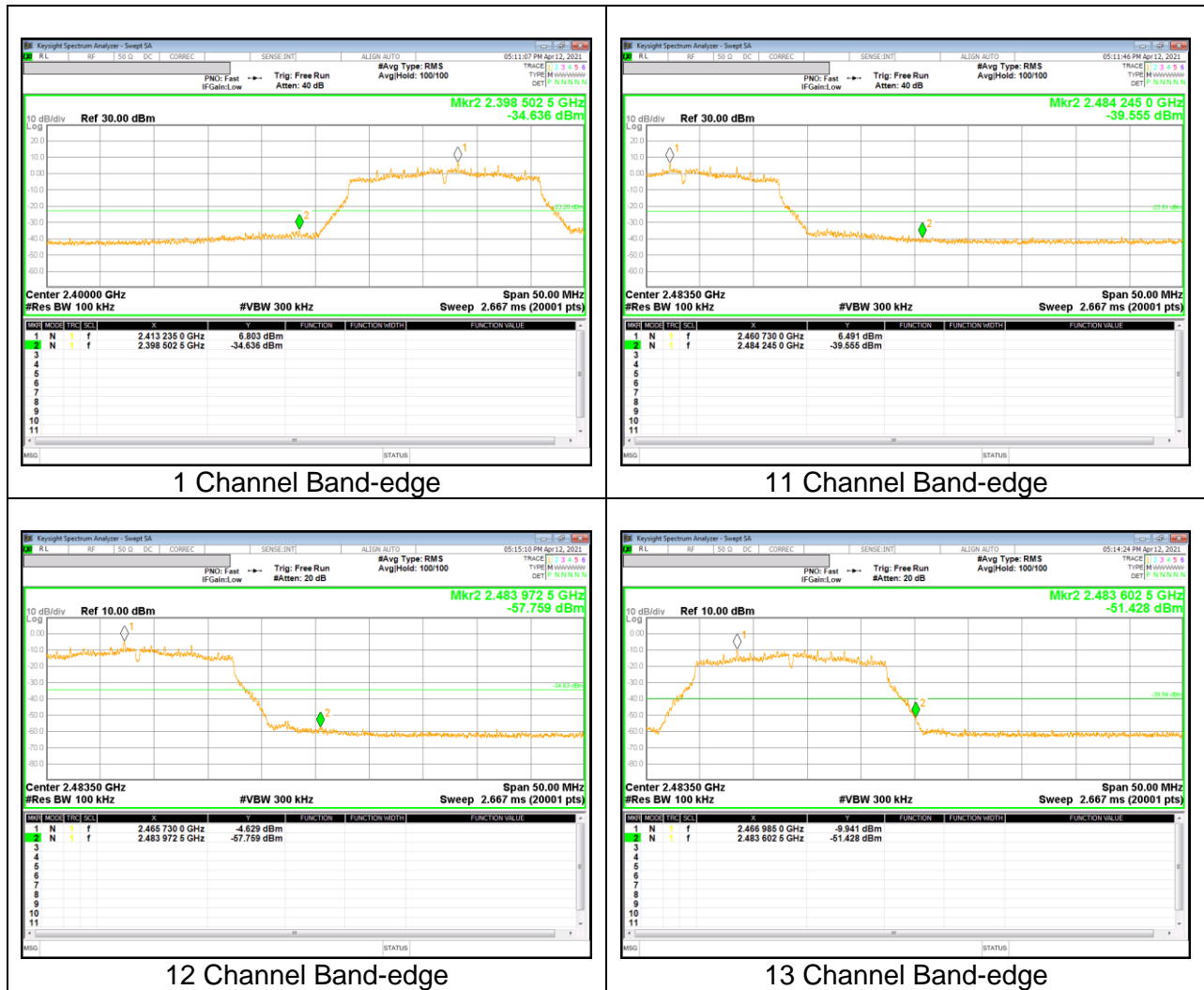
Out-Of-Band 6 Channel



10 Channel Band-edge



Out-Of-Band 10 Channel



10. RADIATED 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 measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. (Restricted bandedge, Final detection of spurious harmonic emissions)

Duty cycle factor = $10\log(1/x)$ For this sample:

802.11b SISO mode = 0 dB (duty cycle > 98%);
802.11g MIMO mode = 0 dB (duty cycle > 98%);
802.11n(HT20) MIMO mode = 0 dB (duty cycle > 98%);

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.

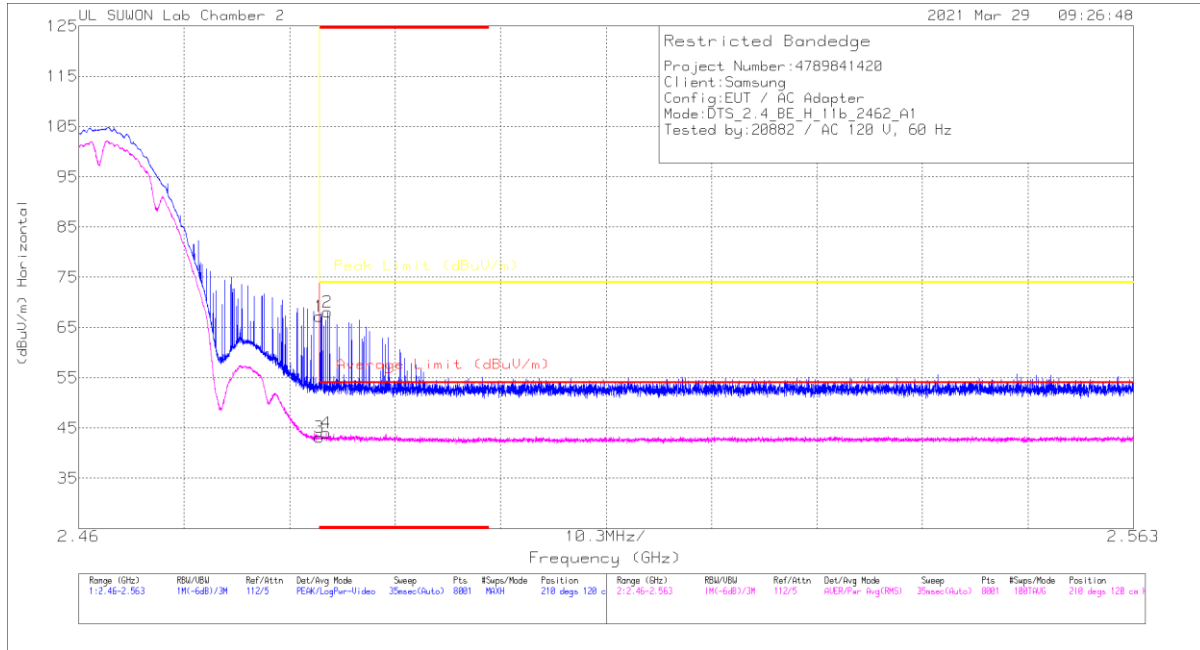
Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field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

10.1. TRANSMITTER ABOVE 1 GHz

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

BANDEDGE(ANT1 WORST CASE: 11 CHANNEL)

HORIZONTAL RESULT



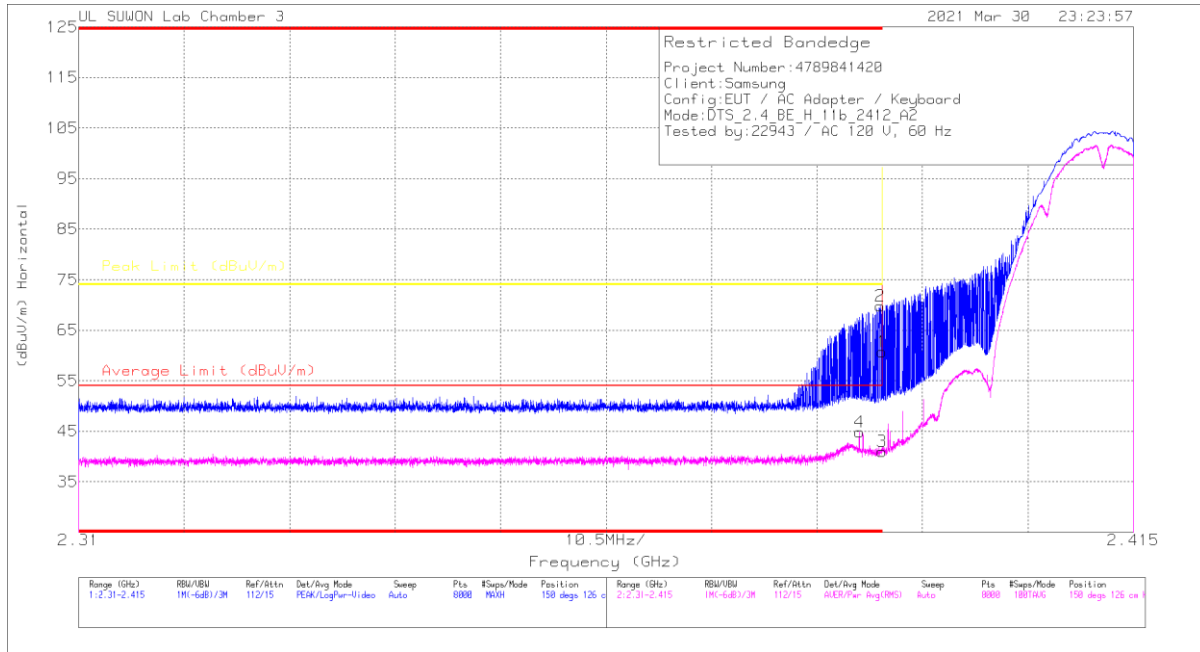
Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00168724 | 10dB_ATT[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 | * 2.48351 | 55.35 | PK | 32 | -20.2 | 0 | 67.15 | - | - | 74 | -6.85 | 210 | 120 | H |
| 2 | * 2.4843 | 56.29 | PK | 32 | -20.2 | 0 | 68.09 | - | - | 74 | -5.91 | 210 | 120 | H |
| 3 | * 2.48351 | 31.35 | RMS | 32 | -20.2 | 0 | 43.15 | 54 | -10.85 | - | - | 210 | 120 | H |
| 4 | * 2.48417 | 32.18 | RMS | 32 | -20.2 | 0 | 43.98 | 54 | -10.02 | - | - | 210 | 120 | H |

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

BANDEDGE(ANT2 WORST CASE: 1 CHANNEL)

HORIZONTAL RESULT



Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[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 | 53.06 | Pk | | -25.2 | 0 | 60.56 | - | - | 74 | -13.32 | 150 | 126 | H |
| 2 | * 2.3898 | 62.2 | Pk | | -25.2 | 0 | 69.8 | - | - | 74 | -4.2 | 150 | 126 | H |
| 3 | * 2.39 | 33.4 | RMS | | -25.2 | 0 | 41 | 54 | -13 | - | - | 150 | 126 | H |
| 4 | * 2.38771 | 37.26 | RMS | | -25.2 | 0 | 44.86 | 54 | -9.14 | - | - | 150 | 126 | H |

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

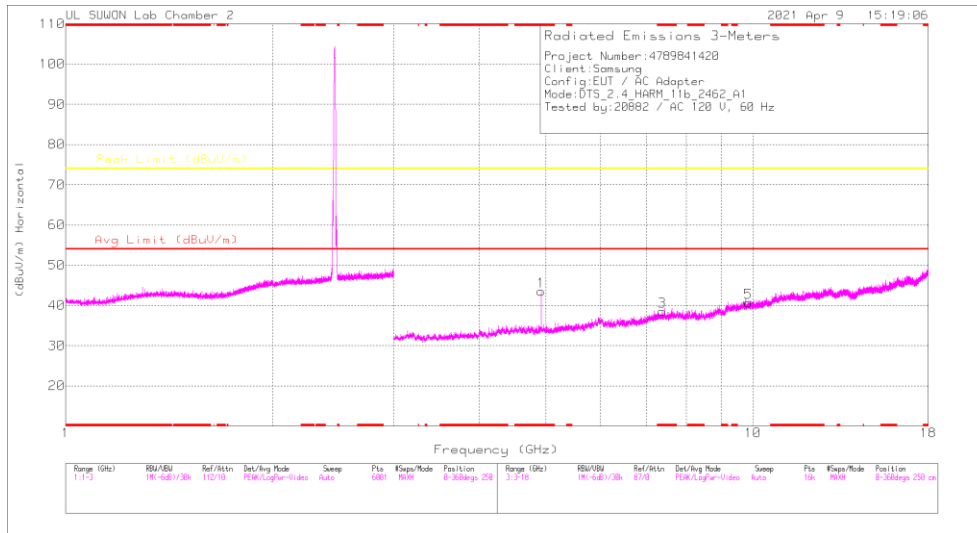
BANEDGE TEST DATA

| Freq. [MHz] | Antenna | Frequency [GHz] | Reading [dBuV] | Detector Mode | ANT Factor | Loss [dB] | DC Corr [dB] | Result [dBuV/m] | AV Limit [dBuV/m] | AV Margin [dB] | PK Limit [dBuV/m] | PK Margin [dB] | Azimuth [Degs] | Height [cm] | Polarity | |
|-------------|---------|-----------------|----------------|---------------|------------|-----------|--------------|-----------------|-------------------|----------------|-------------------|----------------|----------------|-------------|----------|---|
| 2412 | ANT1 | * 2.39 | 40.61 | Pk | 31.90 | -20.30 | 0.00 | 52.21 | - | - | 74.00 | -21.79 | 212 | 111 | H | |
| | | * 2.38966 | 55.06 | Pk | 31.90 | -20.30 | 0.00 | 66.66 | - | - | 74.00 | -7.34 | 212 | 111 | H | |
| | | * 2.39 | 31.38 | RMS | 31.90 | -20.30 | 0.00 | 42.98 | 54.00 | -11.02 | - | - | - | 212 | 111 | H |
| | | * 2.3885 | 32.16 | RMS | 31.90 | -20.30 | 0.00 | 43.76 | 54.00 | -10.24 | - | - | - | 212 | 111 | H |
| | | * 2.39 | 40.55 | Pk | 31.90 | -20.30 | 0.00 | 52.15 | - | - | 74.00 | -21.85 | 169 | 377 | V | |
| | | * 2.38956 | 53.34 | Pk | 31.90 | -20.30 | 0.00 | 64.94 | - | - | 74.00 | -9.06 | 169 | 377 | V | |
| | | * 2.39 | 30.89 | RMS | 31.90 | -20.30 | 0.00 | 42.49 | 54.00 | -11.51 | - | - | - | 169 | 377 | V |
| * 2.38928 | 31.59 | RMS | 31.90 | -20.30 | 0.00 | 43.19 | 54.00 | -10.81 | - | - | - | 169 | 377 | V | | |
| 2462 | ANT1 | * 2.48351 | 55.35 | Pk | 32.00 | -20.20 | 0.00 | 67.15 | - | - | 74.00 | -6.85 | 210 | 120 | H | |
| | | * 2.4843 | 56.29 | Pk | 32.00 | -20.20 | 0.00 | 68.09 | - | - | 74.00 | -5.91 | 210 | 120 | H | |
| | | * 2.48351 | 31.35 | RMS | 32.00 | -20.20 | 0.00 | 43.15 | 54.00 | -10.85 | - | - | - | 210 | 120 | H |
| | | * 2.48417 | 32.18 | RMS | 32.00 | -20.20 | 0.00 | 43.98 | 54.00 | -10.02 | - | - | - | 210 | 120 | H |
| | | * 2.48351 | 40.31 | Pk | 32.00 | -20.20 | 0.00 | 52.11 | - | - | 74.00 | -21.89 | 162 | 312 | V | |
| | | * 2.48387 | 55.05 | Pk | 32.00 | -20.20 | 0.00 | 66.85 | - | - | 74.00 | -7.15 | 162 | 312 | V | |
| | | * 2.48351 | 31.25 | RMS | 32.00 | -20.20 | 0.00 | 43.05 | 54.00 | -10.95 | - | - | - | 162 | 312 | V |
| * 2.48372 | 31.78 | RMS | 32.00 | -20.20 | 0.00 | 43.58 | 54.00 | -10.42 | - | - | - | 162 | 312 | V | | |
| 2467 | ANT1 | * 2.48351 | 41.51 | Pk | 32.00 | -20.20 | 0.00 | 53.31 | - | - | 74.00 | -20.69 | 214 | 106 | H | |
| | | * 2.484 | 49.88 | Pk | 32.00 | -20.20 | 0.00 | 61.68 | - | - | 74.00 | -12.32 | 214 | 106 | H | |
| | | * 2.48351 | 30.92 | RMS | 32.00 | -20.20 | 0.00 | 42.72 | 54.00 | -11.28 | - | - | - | 214 | 106 | H |
| | | 2.560 | 31.37 | RMS | 32.20 | -20.10 | 0.00 | 43.47 | 54.00 | -10.53 | - | - | - | 214 | 106 | H |
| | | * 2.48351 | 41.26 | Pk | 32.00 | -25.30 | 0.00 | 47.96 | - | - | 74.00 | -26.04 | 168 | 310 | V | |
| | | 2.522 | 45.90 | Pk | 32.00 | -25.10 | 0.00 | 52.80 | - | - | 74.00 | -21.20 | 168 | 310 | V | |
| | | * 2.48351 | 33.04 | RMS | 32.00 | -25.30 | 0.00 | 39.74 | 54.00 | -14.26 | - | - | - | 168 | 310 | V |
| 2.538 | 33.45 | RMS | 32.00 | -25.10 | 0.00 | 40.35 | 54.00 | -13.65 | - | - | - | 168 | 310 | V | | |
| 2472 | ANT1 | * 2.48351 | 41.38 | Pk | 32.00 | -20.20 | 0.00 | 53.18 | - | - | 74.00 | -20.82 | 209 | 170 | H | |
| | | * 2.48468 | 45.73 | Pk | 32.00 | -20.20 | 0.00 | 57.53 | - | - | 74.00 | -16.47 | 209 | 170 | H | |
| | | * 2.48351 | 31.65 | RMS | 32.00 | -20.20 | 0.00 | 43.45 | 54.00 | -10.55 | - | - | - | 209 | 170 | H |
| | | * 2.48352 | 31.96 | RMS | 32.00 | -20.20 | 0.00 | 43.76 | 54.00 | -10.24 | - | - | - | 209 | 170 | H |
| | | * 2.48351 | 40.36 | Pk | 32.00 | -20.20 | 0.00 | 52.16 | - | - | 74.00 | -21.84 | 161 | 312 | V | |
| | | * 2.4843 | 45.17 | Pk | 32.00 | -20.20 | 0.00 | 56.97 | - | - | 74.00 | -17.03 | 161 | 312 | V | |
| | | * 2.48351 | 31.82 | RMS | 32.00 | -20.20 | 0.00 | 43.62 | 54.00 | -10.38 | - | - | - | 161 | 312 | V |
| * 2.4837 | 31.74 | RMS | 32.00 | -20.20 | 0.00 | 43.54 | 54.00 | -10.46 | - | - | - | 161 | 312 | V | | |

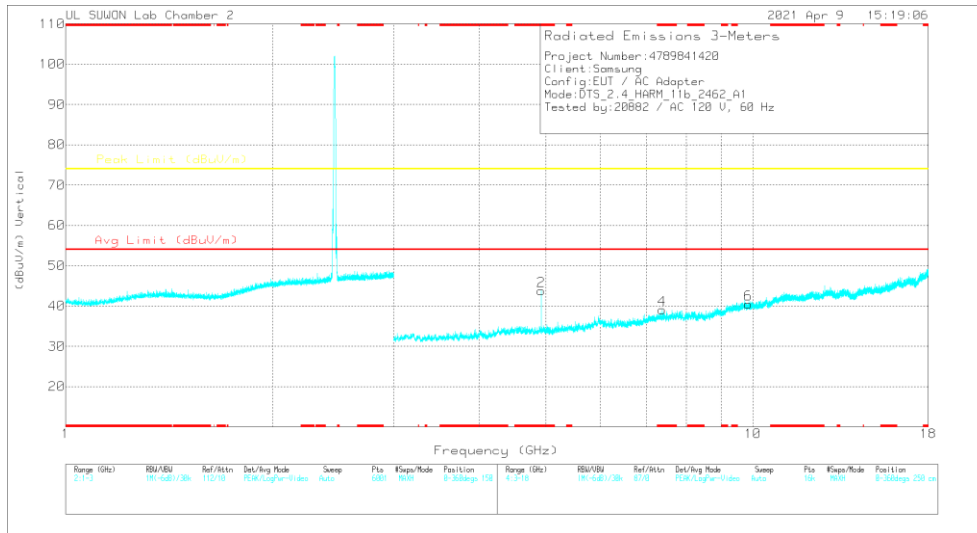
| Freq. [MHz] | Antenna | Frequency [GHz] | Reading [dBuV] | Detector Mode | ANT Factor | Loss [dB] | DC Corr [dB] | Result [dBuV/m] | AV Limit [dBuV/m] | AV Margin [dB] | PK Limit [dBuV/m] | PK Margin [dB] | Azimuth [Degs] | Height [cm] | Polarity | |
|-------------|---------|-----------------|----------------|---------------|------------|-----------|--------------|-----------------|-------------------|----------------|-------------------|----------------|----------------|-------------|----------|---|
| 2412 | ANT2 | * 2.39 | 53.08 | Pk | 32.80 | -25.20 | 0.00 | 60.68 | - | - | 74.00 | -13.32 | 150 | 126 | H | |
| | | * 2.3898 | 62.20 | Pk | 32.80 | -25.20 | 0.00 | 69.80 | - | - | 74.00 | -4.20 | 150 | 126 | H | |
| | | * 2.39 | 33.40 | RMS | 32.80 | -25.20 | 0.00 | 41.00 | 54.00 | -13.00 | - | - | - | 150 | 126 | H |
| | | * 2.38771 | 37.26 | RMS | 32.80 | -25.20 | 0.00 | 44.86 | 54.00 | -9.14 | - | - | - | 150 | 126 | H |
| | | * 2.39 | 43.08 | Pk | 32.80 | -25.20 | 0.00 | 50.68 | - | - | 74.00 | -23.32 | 197 | 315 | V | |
| | | * 2.38973 | 60.11 | Pk | 32.80 | -25.20 | 0.00 | 67.71 | - | - | 74.00 | -6.29 | 197 | 315 | V | |
| | | * 2.39 | 33.18 | RMS | 32.80 | -25.20 | 0.00 | 40.78 | 54.00 | -13.22 | - | - | - | 197 | 315 | V |
| * 2.38833 | 34.55 | RMS | 32.80 | -25.20 | 0.00 | 42.15 | 54.00 | -11.85 | - | - | - | 197 | 315 | V | | |
| 2462 | ANT2 | * 2.4835 | 48.69 | Pk | 32.90 | -25.00 | 0.00 | 56.59 | - | - | 74.00 | -17.41 | 151 | 111 | H | |
| | | * 2.48362 | 61.51 | Pk | 32.90 | -25.00 | 0.00 | 69.41 | - | - | 74.00 | -4.59 | 151 | 111 | H | |
| | | * 2.4835 | 34.31 | RMS | 32.90 | -25.00 | 0.00 | 42.21 | 54.00 | -11.79 | - | - | - | 151 | 111 | H |
| | | * 2.48373 | 37.25 | RMS | 32.90 | -25.00 | 0.00 | 45.15 | 54.00 | -8.85 | - | - | - | 151 | 111 | H |
| | | * 2.4835 | 58.23 | Pk | 32.90 | -25.00 | 0.00 | 66.13 | - | - | 74.00 | -7.87 | 194 | 296 | V | |
| | | * 2.48364 | 59.55 | Pk | 32.90 | -25.00 | 0.00 | 67.45 | - | - | 74.00 | -6.55 | 194 | 296 | V | |
| | | * 2.4835 | 33.37 | RMS | 32.90 | -25.00 | 0.00 | 41.27 | 54.00 | -12.73 | - | - | - | 194 | 296 | V |
| * 2.4836 | 35.42 | RMS | 32.90 | -25.00 | 0.00 | 43.32 | 54.00 | -10.68 | - | - | - | 194 | 296 | V | | |
| 2467 | ANT2 | * 2.4835 | 41.75 | Pk | 32.90 | -25.00 | 0.00 | 49.65 | - | - | 74.00 | -24.35 | 153 | 116 | H | |
| | | * 2.48368 | 51.56 | Pk | 32.90 | -25.00 | 0.00 | 59.46 | - | - | 74.00 | -14.54 | 153 | 116 | H | |
| | | * 2.4835 | 32.58 | RMS | 32.90 | -25.00 | 0.00 | 40.48 | 54.00 | -13.52 | - | - | - | 153 | 116 | H |
| | | 2.513 | 33.03 | RMS | 32.90 | -25.00 | 0.00 | 40.93 | 54.00 | -13.07 | - | - | - | 153 | 116 | H |
| | | * 2.4835 | 49.07 | Pk | 32.90 | -25.00 | 0.00 | 56.97 | - | - | 74.00 | -17.03 | 197 | 297 | V | |
| | | * 2.4853 | 49.85 | Pk | 32.90 | -25.00 | 0.00 | 57.75 | - | - | 74.00 | -16.25 | 197 | 297 | V | |
| | | * 2.4835 | 32.04 | RMS | 32.90 | -25.00 | 0.00 | 39.94 | 54.00 | -14.06 | - | - | - | 197 | 297 | V |
| 2.525 | 33.25 | RMS | 32.90 | -25.00 | 0.00 | 41.15 | 54.00 | -12.85 | - | - | - | 197 | 297 | V | | |
| 2472 | ANT2 | * 2.4835 | 42.32 | Pk | 32.90 | -25.00 | 0.00 | 50.22 | - | - | 74.00 | -23.78 | 172 | 175 | H | |
| | | * 2.48387 | 46.31 | Pk | 32.90 | -25.00 | 0.00 | 54.21 | - | - | 74.00 | -19.79 | 172 | 175 | H | |
| | | * 2.4835 | 32.10 | RMS | 32.90 | -25.00 | 0.00 | 40.00 | 54.00 | -14.00 | - | - | - | 172 | 175 | H |
| | | * 2.48364 | 33.58 | RMS | 32.90 | -25.00 | 0.00 | 41.48 | 54.00 | -12.52 | - | - | - | 172 | 175 | H |
| | | * 2.4835 | 43.80 | Pk | 32.90 | -25.00 | 0.00 | 51.70 | - | - | 74.00 | -22.30 | 130 | 137 | V | |
| | | * 2.48389 | 46.17 | Pk | 32.90 | -25.00 | 0.00 | 54.07 | - | - | 74.00 | -19.93 | 130 | 137 | V | |
| | | * 2.4835 | 32.31 | RMS | 32.90 | -25.00 | 0.00 | 40.21 | 54.00 | -13.79 | - | - | - | 130 | 137 | V |
| 2.512 | 33.16 | RMS | 32.90 | -25.00 | 0.00 | 41.06 | 54.00 | -12.94 | - | - | - | 130 | 137 | V | | |

Note1. Pk - Peak detector, RMS - RMS detector
 Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

HARMONICS AND SPURIOUS EMISSIONS(ANT1 WORST CASE: 11 CHANNEL) CH 11 RESULTS



HORIZONTAL



VERTICAL

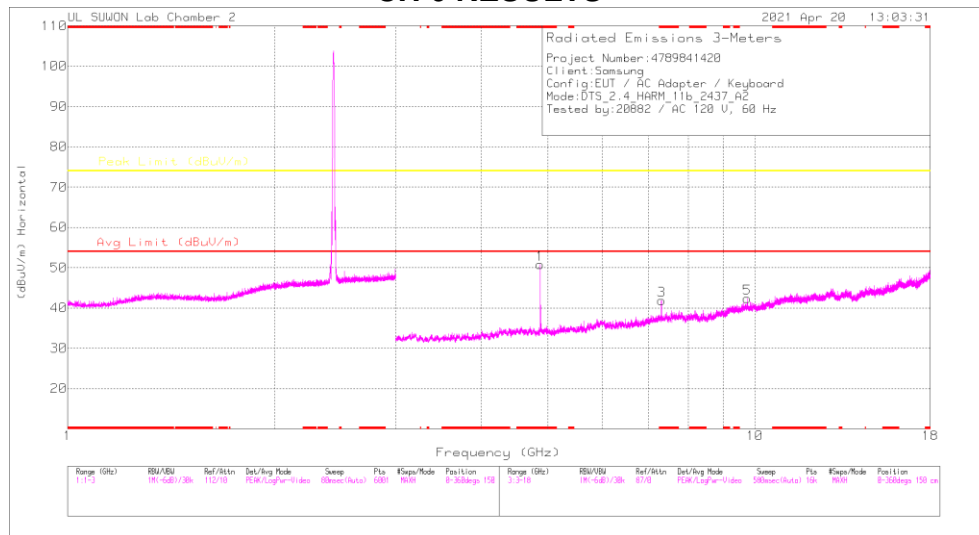
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

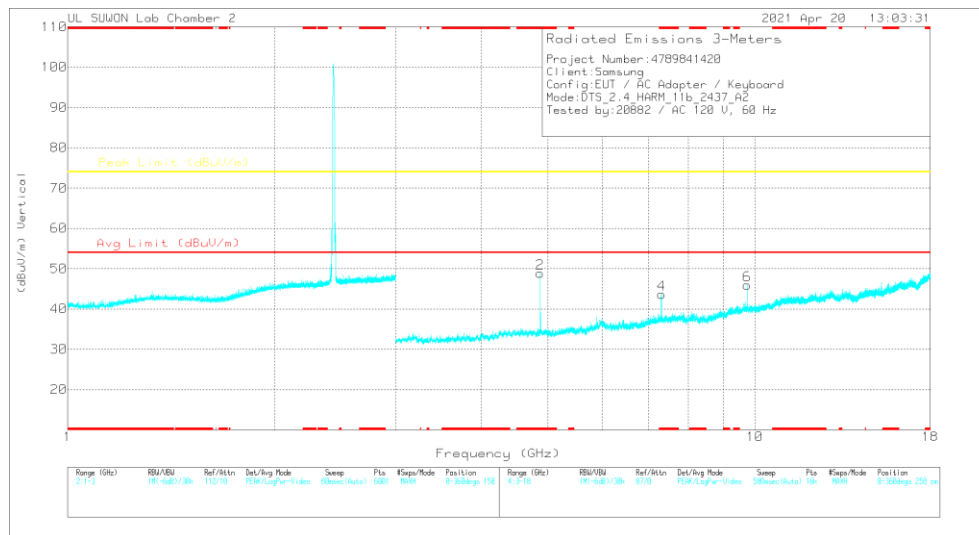
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_0016872 4 | 3GHz_HP[dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|----------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| * 4.92399 | 41.82 | PK2 | 34.1 | -26.8 | 0 | 49.12 | - | - | 74 | -24.88 | 204 | 108 | H |
| * 4.92397 | 36.9 | MAV1 | 34.1 | -26.8 | 0 | 44.2 | 54 | -9.8 | - | - | 204 | 108 | H |
| * 4.92397 | 41.74 | PK2 | 34.1 | -26.8 | 0 | 49.04 | - | - | 74 | -24.96 | 177 | 233 | V |
| * 4.92399 | 36.76 | MAV1 | 34.1 | -26.8 | 0 | 44.06 | 54 | -9.94 | - | - | 177 | 233 | V |
| * 7.37564 | 35.26 | PK2 | 36.1 | -24.1 | 0 | 47.26 | - | - | 74 | -26.74 | 74 | 120 | H |
| * 7.38508 | 23.57 | MAV1 | 36.1 | -24 | 0 | 35.67 | 54 | -18.33 | - | - | 74 | 120 | H |
| * 7.38846 | 34.95 | PK2 | 36.1 | -24 | 0 | 47.05 | - | - | 74 | -26.95 | 286 | 378 | V |
| * 7.38512 | 23.7 | MAV1 | 36.1 | -24 | 0 | 35.8 | 54 | -18.2 | - | - | 286 | 378 | V |
| 9.84378 | 32.23 | PK2 | 37.3 | -21 | 0 | 48.53 | - | - | 74 | -25.47 | 74 | 120 | H |
| 9.84154 | 32.53 | PK2 | 37.3 | -20.9 | 0 | 48.93 | - | - | 74 | -25.07 | 0 | 100 | V |

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

HARMONICS AND SPURIOUS EMISSIONS(ANT2 WORST CASE: 6 CHANNEL) CH 6 RESULTS



HORIZONTAL



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 | 3117_0016872 4 | 3GHz_HP[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 |
|-----------------|----------------------|------|----------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| * 4.87392 | 47.49 | PK2 | 34.1 | -27.7 | 0 | 53.89 | - | - | 74 | -20.11 | 167 | 130 | H |
| * 4.87402 | 44.46 | MAV1 | 34.1 | -27.7 | 0 | 50.86 | 54 | -3.14 | - | - | 167 | 130 | H |
| * 4.87398 | 46.72 | PK2 | 34.1 | -27.7 | 0 | 53.12 | - | - | 74 | -20.88 | 193 | 250 | V |
| * 4.87398 | 44.34 | MAV1 | 34.1 | -27.7 | 0 | 50.74 | 54 | -3.26 | - | - | 193 | 250 | V |
| * 7.31061 | 38.83 | PK2 | 36.2 | -24.6 | 0 | 50.43 | - | - | 74 | -23.57 | 150 | 135 | H |
| * 7.31183 | 30.58 | MAV1 | 36.2 | -24.6 | 0 | 42.18 | 54 | -11.82 | - | - | 150 | 135 | H |
| * 7.31161 | 41.81 | PK2 | 36.2 | -24.6 | 0 | 53.41 | - | - | 74 | -20.59 | 214 | 100 | V |
| * 7.31187 | 36.37 | MAV1 | 36.2 | -24.6 | 0 | 47.97 | 54 | -6.03 | - | - | 214 | 100 | V |
| 9.74786 | 34.82 | PK2 | 37.2 | -20.5 | 0 | 51.52 | - | - | 74 | -22.48 | 100 | 104 | V |
| 9.74784 | 33.19 | PK2 | 37.2 | -20.5 | 0 | 49.89 | - | - | 74 | -24.11 | 58 | 100 | H |

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

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

| Freq. [MHz] | Antenna | Frequency [GHz] | Reading [dBuV] | Detector Mode | ANT Factor | Loss [dB] | DC Corr [dB] | Result [dBuV/m] | AV Limit [dBuV/m] | AV Margin [dB] | PK Limit [dBuV/m] | PK Margin [dB] | Azimuth [Degs] | Height [cm] | Polarity | |
|-------------|---------|-----------------|----------------|---------------|------------|-----------|--------------|-----------------|-------------------|----------------|-------------------|----------------|----------------|-------------|----------|---|
| 2412 | ANT1 | *4.82406 | 40.54 | PK2 | 34.10 | -27.90 | 0.00 | 46.74 | - | - | 74.00 | -27.26 | 205 | 100 | H | |
| | | *4.82402 | 34.49 | MAV1 | 34.10 | -27.90 | 0.00 | 40.69 | 54.00 | -13.31 | - | - | - | 205 | 100 | H |
| | | *4.824 | 40.57 | PK2 | 34.10 | -27.90 | 0.00 | 46.77 | - | - | 74.00 | -27.23 | 179 | 247 | V | |
| | | *4.82394 | 34.76 | MAV1 | 34.10 | -27.90 | 0.00 | 40.96 | 54.00 | -13.04 | - | - | - | 179 | 247 | V |
| | | 7.237 | 35.46 | PK2 | 36.20 | -25.10 | 0.00 | 46.56 | - | - | 74.00 | -27.44 | 246 | 369 | H | |
| | | 7.236 | 37.09 | PK2 | 36.20 | -25.10 | 0.00 | 48.19 | - | - | 74.00 | -25.81 | 172 | 363 | V | |
| | | 9.646 | 32.41 | PK2 | 37.00 | -20.80 | 0.00 | 48.61 | - | - | 74.00 | -25.39 | 360 | 100 | H | |
| | | 9.648 | 33.15 | PK2 | 37.00 | -20.90 | 0.00 | 49.25 | - | - | 74.00 | -24.75 | 360 | 100 | V | |
| | | *4.8738 | 40.37 | PK2 | 34.10 | -27.70 | 0.00 | 46.77 | - | - | 74.00 | -27.23 | 206 | 131 | H | |
| | | *4.87394 | 34.15 | MAV1 | 34.10 | -27.70 | 0.00 | 40.55 | 54.00 | -13.45 | - | - | - | 206 | 131 | H |
| 2437 | ANT1 | *4.87404 | 40.98 | PK2 | 34.10 | -27.70 | 0.00 | 47.38 | - | - | 74.00 | -26.62 | 178 | 261 | V | |
| | | *4.87396 | 35.52 | MAV1 | 34.10 | -27.70 | 0.00 | 41.92 | 54.00 | -12.08 | - | - | - | 178 | 261 | V |
| | | *7.30799 | 35.78 | PK2 | 36.20 | -24.70 | 0.00 | 47.28 | - | - | 74.00 | -26.72 | 67 | 128 | H | |
| | | *7.31005 | 24.69 | MAV1 | 36.20 | -24.60 | 0.00 | 36.29 | 54.00 | -17.71 | - | - | - | 67 | 128 | H |
| | | *7.30951 | 37.84 | PK2 | 36.20 | -24.70 | 0.00 | 49.34 | - | - | 74.00 | -24.66 | 173 | 265 | V | |
| | | *7.30993 | 27.65 | MAV1 | 36.20 | -24.60 | 0.00 | 39.25 | 54.00 | -14.75 | - | - | - | 173 | 265 | V |
| | | 9.752 | 32.09 | PK2 | 37.20 | -20.50 | 0.00 | 48.79 | - | - | 74.00 | -25.21 | 0 | 100 | H | |
| | | 9.752 | 33.08 | PK2 | 37.20 | -20.50 | 0.00 | 49.78 | - | - | 74.00 | -24.22 | 0 | 100 | V | |
| | | *4.92399 | 41.82 | PK2 | 34.10 | -26.80 | 0.00 | 49.12 | - | - | 74.00 | -24.88 | 204 | 108 | H | |
| | | *4.92397 | 36.90 | MAV1 | 34.10 | -26.80 | 0.00 | 44.20 | 54.00 | -9.80 | - | - | - | 204 | 108 | H |
| 2462 | ANT1 | *4.92397 | 41.74 | PK2 | 34.10 | -26.80 | 0.00 | 49.04 | - | - | 74.00 | -24.96 | 177 | 233 | V | |
| | | *4.92399 | 36.76 | MAV1 | 34.10 | -26.80 | 0.00 | 44.06 | 54.00 | -9.94 | - | - | - | 177 | 233 | V |
| | | *7.37564 | 35.26 | PK2 | 36.10 | -24.10 | 0.00 | 47.26 | - | - | 74.00 | -26.74 | 74 | 120 | H | |
| | | *7.38508 | 23.57 | MAV1 | 36.10 | -24.00 | 0.00 | 35.67 | 54.00 | -18.33 | - | - | - | 74 | 120 | H |
| | | *7.38846 | 34.95 | PK2 | 36.10 | -24.00 | 0.00 | 47.05 | - | - | 74.00 | -26.95 | 286 | 378 | V | |
| | | *7.38512 | 23.70 | MAV1 | 36.10 | -24.00 | 0.00 | 35.80 | 54.00 | -18.20 | - | - | - | 286 | 378 | V |
| | | 9.844 | 32.23 | PK2 | 37.30 | -21.00 | 0.00 | 48.53 | - | - | 74.00 | -25.47 | 74 | 120 | H | |
| | | 9.842 | 32.53 | PK2 | 37.30 | -20.90 | 0.00 | 48.93 | - | - | 74.00 | -25.07 | 0 | 100 | V | |

| Freq. [MHz] | Antenna | Frequency [GHz] | Reading [dBuV] | Detector Mode | ANT Factor | Loss [dB] | DC Corr [dB] | Result [dBuV/m] | AV Limit [dBuV/m] | AV Margin [dB] | PK Limit [dBuV/m] | PK Margin [dB] | Azimuth [Degs] | Height [cm] | Polarity | |
|-------------|---------|-----------------|----------------|---------------|------------|-----------|--------------|-----------------|-------------------|----------------|-------------------|----------------|----------------|-------------|----------|---|
| 2412 | ANT2 | *4.82398 | 47.83 | PK2 | 34.10 | -31.30 | 0.00 | 50.63 | - | - | 74.00 | -23.37 | 170 | 155 | H | |
| | | *4.82392 | 43.95 | MAV1 | 34.10 | -31.30 | 0.00 | 46.75 | 54.00 | -7.25 | - | - | - | 170 | 155 | H |
| | | *4.82408 | 47.36 | PK2 | 34.10 | -31.30 | 0.00 | 50.16 | - | - | 74.00 | -23.84 | 194 | 254 | V | |
| | | *4.82398 | 43.25 | MAV1 | 34.10 | -31.30 | 0.00 | 46.05 | 54.00 | -7.95 | - | - | - | 194 | 254 | V |
| | | 7.237 | 39.87 | PK2 | 35.80 | -27.60 | 0.00 | 48.07 | - | - | 74.00 | -25.93 | 152 | 147 | H | |
| | | 7.235 | 41.97 | PK2 | 35.80 | -27.60 | 0.00 | 50.17 | - | - | 74.00 | -23.83 | 217 | 100 | V | |
| | | 9.648 | 37.51 | PK2 | 37.20 | -23.10 | 0.00 | 51.61 | - | - | 74.00 | -22.39 | 333 | 104 | H | |
| | | 9.648 | 40.86 | PK2 | 37.20 | -23.20 | 0.00 | 54.86 | - | - | 74.00 | -19.14 | 109 | 101 | V | |
| | | *4.87392 | 47.49 | PK2 | 34.10 | -27.70 | 0.00 | 53.89 | - | - | 74.00 | -20.11 | 167 | 130 | H | |
| | | *4.87402 | 44.46 | MAV1 | 34.10 | -27.70 | 0.00 | 50.86 | 54.00 | -3.14 | - | - | - | 167 | 130 | H |
| 2437 | ANT2 | *4.87398 | 46.72 | PK2 | 34.10 | -27.70 | 0.00 | 53.12 | - | - | 74.00 | -20.88 | 193 | 250 | V | |
| | | *4.87398 | 44.34 | MAV1 | 34.10 | -27.70 | 0.00 | 50.74 | 54.00 | -3.26 | - | - | - | 193 | 250 | V |
| | | *7.31061 | 38.83 | PK2 | 36.20 | -24.60 | 0.00 | 50.43 | - | - | 74.00 | -23.57 | 150 | 135 | H | |
| | | *7.31183 | 30.58 | MAV1 | 36.20 | -24.60 | 0.00 | 42.18 | 54.00 | -11.82 | - | - | - | 150 | 135 | H |
| | | *7.31181 | 41.81 | PK2 | 36.20 | -24.60 | 0.00 | 53.41 | - | - | 74.00 | -20.59 | 214 | 100 | V | |
| | | *7.31187 | 36.37 | MAV1 | 36.20 | -24.60 | 0.00 | 47.97 | 54.00 | -6.03 | - | - | - | 214 | 100 | V |
| | | 9.748 | 34.82 | PK2 | 37.20 | -20.50 | 0.00 | 51.52 | - | - | 74.00 | -22.48 | 100 | 104 | V | |
| | | 9.748 | 33.19 | PK2 | 37.20 | -20.50 | 0.00 | 49.89 | - | - | 74.00 | -24.11 | 58 | 100 | H | |
| | | *4.92395 | 41.45 | PK2 | 34.10 | -26.80 | 0.00 | 48.75 | - | - | 74.00 | -25.25 | 183 | 139 | H | |
| | | *4.92397 | 36.62 | MAV1 | 34.10 | -26.80 | 0.00 | 43.92 | 54.00 | -10.08 | - | - | - | 183 | 139 | H |
| 2462 | ANT2 | *4.92399 | 41.51 | PK2 | 34.10 | -26.80 | 0.00 | 48.81 | - | - | 74.00 | -25.19 | 192 | 272 | V | |
| | | *4.92395 | 37.04 | MAV1 | 34.10 | -26.80 | 0.00 | 44.34 | 54.00 | -9.66 | - | - | - | 192 | 272 | V |
| | | *7.38301 | 36.83 | PK2 | 36.10 | -24.00 | 0.00 | 48.93 | - | - | 74.00 | -25.07 | 153 | 132 | H | |
| | | *7.38501 | 27.24 | MAV1 | 36.10 | -24.00 | 0.00 | 39.34 | 54.00 | -14.66 | - | - | - | 153 | 132 | H |
| | | *7.38513 | 39.17 | PK2 | 36.10 | -24.00 | 0.00 | 51.27 | - | - | 74.00 | -22.73 | 216 | 100 | V | |
| | | *7.38521 | 32.28 | MAV1 | 36.10 | -24.00 | 0.00 | 44.38 | 54.00 | -9.62 | - | - | - | 216 | 100 | V |
| | | 9.848 | 33.20 | PK2 | 37.30 | -20.90 | 0.00 | 49.60 | - | - | 74.00 | -24.40 | 56 | 100 | H | |
| | | 9.848 | 36.30 | PK2 | 37.30 | -20.90 | 0.00 | 52.70 | - | - | 74.00 | -21.30 | 280 | 331 | V | |

Note1. PK2 - KDB558074 Method: Maximum Peak / MAV1 - KDB558074 Option 1 Maximum RMS Average

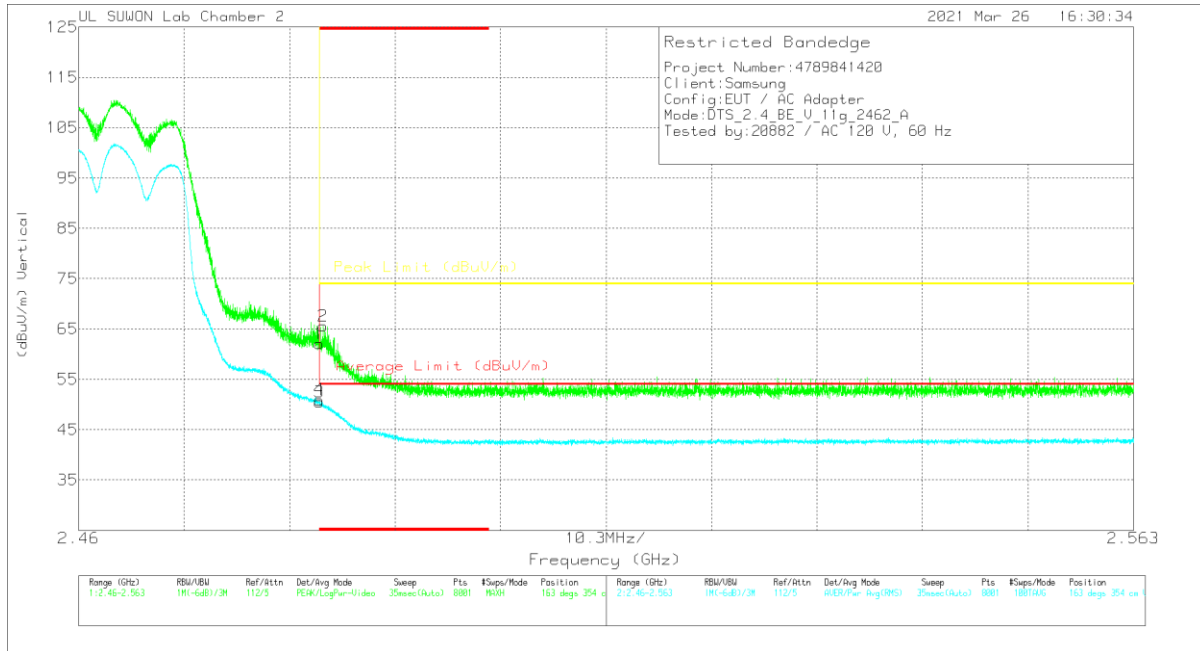
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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

2TX Antenna 1 + Antenna 2

BANDEDGE (WORST CASE: 11 CHANNEL)

VERTICAL RESULT



Trace Markers

| Marker | Frequency (GHz) | Meas Reading (dBuV) | Det | 3117_00168724 | 10dB_ATT(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 | * 2.48351 | 50.3 | Pk | 32 | -20.2 | 0 | 62.1 | - | - | 74 | -11.9 | 163 | 354 | V |
| 2 | * 2.48384 | 53.77 | Pk | 32 | -20.2 | 0 | 65.57 | - | - | 74 | -8.43 | 163 | 354 | V |
| 3 | * 2.48351 | 38.75 | RMS | 32 | -20.2 | 0 | 50.55 | 54 | -3.45 | - | - | 163 | 354 | V |
| 4 | * 2.48352 | 39.14 | RMS | 32 | -20.2 | 0 | 50.94 | 54 | -3.06 | - | - | 163 | 354 | V |

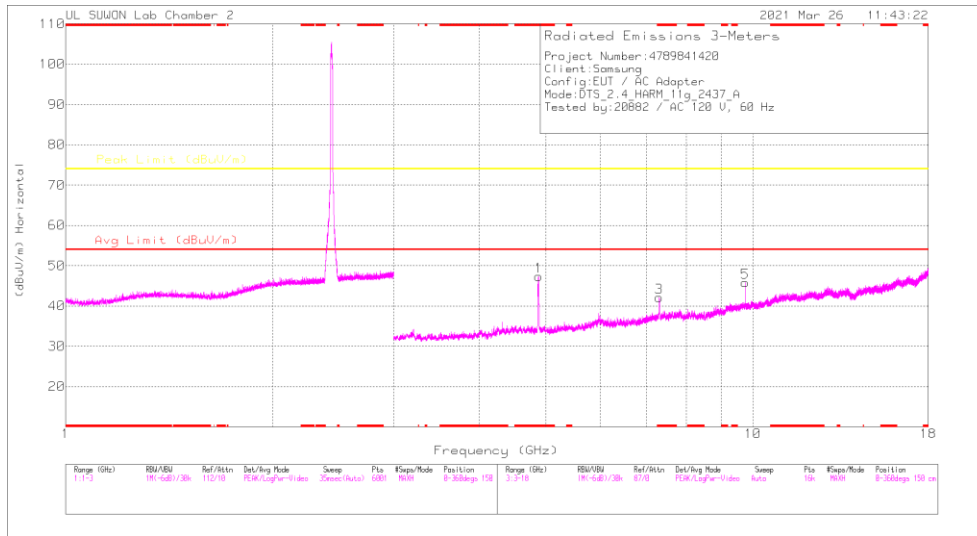
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 RMS - RMS detection

BANDEDGE TEST DATA

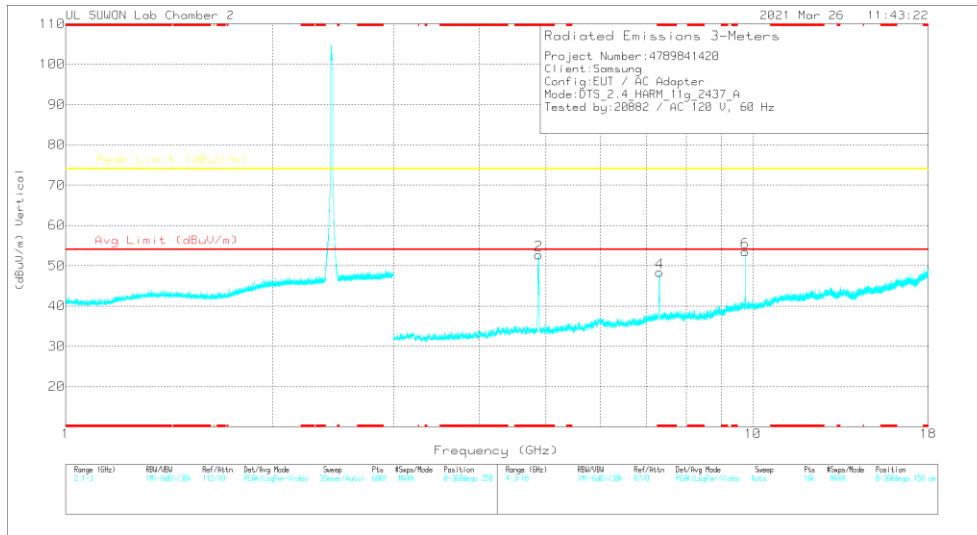
| Freq. [MHz] | Antenna | Frequency [GHz] | Reading [dBuV] | Detector Mode | ANT Factor | Loss [dB] | DC Corr [dB] | Result [dBuV/m] | AV Limit [dBuV/m] | AV Margin [dB] | PK Limit [dBuV/m] | PK Margin [dB] | Azimuth [Degs] | Height [cm] | Polarity | |
|-------------|---------|-----------------|----------------|---------------|------------|-----------|--------------|-----------------|-------------------|----------------|-------------------|----------------|----------------|-------------|----------|---|
| 2412 | MIMO | * 2.39 | 53.40 | Pk | 32.80 | -25.20 | 0.00 | 61.00 | - | - | 74.00 | -13.00 | 205 | 106 | H | |
| | | * 2.38922 | 54.60 | Pk | 32.80 | -25.10 | 0.00 | 62.30 | - | - | 74.00 | -11.70 | 205 | 106 | H | |
| | | * 2.39 | 40.26 | RMS | 32.80 | -25.20 | 0.00 | 47.86 | 54.00 | -6.14 | - | - | - | 205 | 106 | H |
| | | * 2.38938 | 41.42 | RMS | 32.80 | -25.10 | 0.00 | 49.12 | 54.00 | -4.88 | - | - | - | 205 | 106 | H |
| | | * 2.39 | 48.71 | Pk | 31.90 | -20.30 | 0.00 | 60.31 | - | - | 74.00 | -13.69 | 158 | 333 | V | |
| | | * 2.38773 | 52.47 | Pk | 31.90 | -20.20 | 0.00 | 64.17 | - | - | 74.00 | -9.83 | 158 | 333 | V | |
| | | * 2.39 | 36.98 | RMS | 31.90 | -20.30 | 0.00 | 48.58 | 54.00 | -5.42 | - | - | - | 158 | 333 | V |
| | | * 2.38804 | 38.66 | RMS | 31.90 | -20.20 | 0.00 | 50.36 | 54.00 | -3.64 | - | - | - | 158 | 333 | V |
| 2417 | MIMO | * 2.39 | 52.23 | Pk | 32.80 | -25.20 | 0.00 | 59.83 | - | - | 74.00 | -14.17 | 200 | 103 | H | |
| | | * 2.38864 | 53.41 | Pk | 32.80 | -25.20 | 0.00 | 61.01 | - | - | 74.00 | -12.99 | 200 | 103 | H | |
| | | * 2.39 | 39.27 | RMS | 32.80 | -25.20 | 0.00 | 46.87 | 54.00 | -7.13 | - | - | - | 200 | 103 | H |
| | | * 2.38833 | 41.57 | RMS | 32.80 | -25.20 | 0.00 | 49.17 | 54.00 | -4.83 | - | - | - | 200 | 103 | H |
| | | * 2.39 | 49.07 | Pk | 31.90 | -20.30 | 0.00 | 60.67 | - | - | 74.00 | -13.33 | 167 | 334 | V | |
| | | * 2.38977 | 51.85 | Pk | 31.90 | -20.30 | 0.00 | 63.45 | - | - | 74.00 | -10.55 | 167 | 334 | V | |
| | | * 2.39 | 37.93 | RMS | 31.90 | -20.30 | 0.00 | 49.53 | 54.00 | -4.47 | - | - | - | 167 | 334 | V |
| | | * 2.38922 | 39.10 | RMS | 31.90 | -20.30 | 0.00 | 50.70 | 54.00 | -3.30 | - | - | - | 167 | 334 | V |
| 2457 | MIMO | * 2.4835 | 50.80 | Pk | 32.90 | -25.00 | 0.00 | 58.70 | - | - | 74.00 | -15.30 | 203 | 119 | H | |
| | | * 2.48409 | 53.15 | Pk | 32.90 | -25.00 | 0.00 | 61.05 | - | - | 74.00 | -12.95 | 203 | 119 | H | |
| | | * 2.4835 | 39.81 | RMS | 32.90 | -25.00 | 0.00 | 47.71 | 54.00 | -6.29 | - | - | - | 203 | 119 | H |
| | | * 2.48416 | 41.27 | RMS | 32.90 | -25.00 | 0.00 | 49.17 | 54.00 | -4.83 | - | - | - | 203 | 119 | H |
| | | * 2.48351 | 46.97 | Pk | 32.00 | -20.20 | 0.00 | 58.77 | - | - | 74.00 | -15.23 | 160 | 318 | V | |
| | | * 2.48428 | 47.48 | Pk | 32.00 | -20.20 | 0.00 | 59.28 | - | - | 74.00 | -14.72 | 160 | 318 | V | |
| | | * 2.48351 | 35.40 | RMS | 32.00 | -20.20 | 0.00 | 47.20 | 54.00 | -6.80 | - | - | - | 160 | 318 | V |
| | | * 2.48554 | 35.39 | RMS | 32.00 | -20.20 | 0.00 | 47.19 | 54.00 | -6.81 | - | - | - | 160 | 318 | V |
| 2462 | MIMO | * 2.4835 | 51.54 | Pk | 32.90 | -25.00 | 0.00 | 59.44 | - | - | 74.00 | -14.56 | 186 | 148 | H | |
| | | * 2.48422 | 51.94 | Pk | 32.90 | -25.00 | 0.00 | 59.84 | - | - | 74.00 | -14.16 | 186 | 148 | H | |
| | | * 2.4835 | 41.28 | RMS | 32.90 | -25.00 | 0.00 | 49.18 | 54.00 | -4.82 | - | - | - | 186 | 148 | H |
| | | * 2.48381 | 40.74 | RMS | 32.90 | -25.00 | 0.00 | 48.64 | 54.00 | -5.36 | - | - | - | 186 | 148 | H |
| | | * 2.48351 | 50.30 | Pk | 32.00 | -20.20 | 0.00 | 62.10 | - | - | 74.00 | -11.90 | 163 | 354 | V | |
| | | * 2.48384 | 53.77 | Pk | 32.00 | -20.20 | 0.00 | 65.57 | - | - | 74.00 | -8.43 | 163 | 354 | V | |
| | | * 2.48351 | 38.75 | RMS | 32.00 | -20.20 | 0.00 | 50.55 | 54.00 | -3.45 | - | - | - | 163 | 354 | V |
| | | * 2.48352 | 39.14 | RMS | 32.00 | -20.20 | 0.00 | 50.94 | 54.00 | -3.06 | - | - | - | 163 | 354 | V |
| 2467 | MIMO | * 2.4835 | 43.27 | Pk | 32.90 | -25.00 | 0.00 | 51.17 | - | - | 74.00 | -22.83 | 152 | 112 | H | |
| | | * 2.48389 | 45.98 | Pk | 32.90 | -25.00 | 0.00 | 53.88 | - | - | 74.00 | -20.12 | 152 | 112 | H | |
| | | * 2.4835 | 32.89 | RMS | 32.90 | -25.00 | 0.00 | 40.79 | 54.00 | -13.21 | - | - | - | 152 | 112 | H |
| | | * 2.48377 | 34.73 | RMS | 32.90 | -25.00 | 0.00 | 42.63 | 54.00 | -11.37 | - | - | - | 152 | 112 | H |
| | | * 2.4835 | 42.46 | Pk | 32.90 | -25.00 | 0.00 | 50.36 | - | - | 74.00 | -23.64 | 168 | 329 | V | |
| | | * 2.48479 | 45.15 | Pk | 32.90 | -25.00 | 0.00 | 53.05 | - | - | 74.00 | -20.95 | 168 | 329 | V | |
| | | * 2.4835 | 32.97 | RMS | 32.90 | -25.00 | 0.00 | 40.87 | 54.00 | -13.13 | - | - | - | 168 | 329 | V |
| | | * 2.48601 | 34.16 | RMS | 32.90 | -25.00 | 0.00 | 42.06 | 54.00 | -11.94 | - | - | - | 168 | 329 | V |
| 2472 | MIMO | * 2.4835 | 45.58 | Pk | 32.90 | -25.00 | 0.00 | 53.48 | - | - | 74.00 | -20.52 | 182 | 124 | H | |
| | | * 2.48353 | 47.64 | Pk | 32.90 | -25.00 | 0.00 | 55.54 | - | - | 74.00 | -18.46 | 182 | 124 | H | |
| | | * 2.4835 | 34.67 | RMS | 32.90 | -25.00 | 0.00 | 42.57 | 54.00 | -11.43 | - | - | - | 182 | 124 | H |
| | | * 2.48354 | 35.17 | RMS | 32.90 | -25.00 | 0.00 | 43.07 | 54.00 | -10.93 | - | - | - | 182 | 124 | H |
| | | * 2.4835 | 51.74 | Pk | 32.90 | -25.00 | 0.00 | 59.64 | - | - | 74.00 | -14.36 | 170 | 312 | V | |
| | | * 2.48353 | 51.54 | Pk | 32.90 | -25.00 | 0.00 | 59.44 | - | - | 74.00 | -14.56 | 170 | 312 | V | |
| | | * 2.4835 | 38.29 | RMS | 32.90 | -25.00 | 0.00 | 46.19 | 54.00 | -7.81 | - | - | - | 170 | 312 | V |
| | | * 2.48351 | 38.33 | RMS | 32.90 | -25.00 | 0.00 | 46.23 | 54.00 | -7.77 | - | - | - | 170 | 312 | V |

Note1. Pk - Peak detector, RMS - RMS detector
 Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 6 CHANNEL) CH 6 RESULTS



HORIZONTAL



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 | 3117_0016872 4 | 3GHz_HP[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 |
|-----------------|----------------------|------|----------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| * 4.87622 | 49.78 | PK2 | 34.1 | -27.6 | 0 | 56.28 | - | - | 74 | -17.72 | 209 | 217 | H |
| * 4.87634 | 35.96 | MAV1 | 34.1 | -27.6 | 0 | 42.46 | 54 | -11.54 | - | - | 209 | 217 | H |
| * 4.87612 | 55.72 | PK2 | 34.1 | -27.6 | 0 | 62.22 | - | - | 74 | -11.78 | 211 | 101 | V |
| * 4.8762 | 41.58 | MAV1 | 34.1 | -27.6 | 0 | 48.08 | 54 | -5.92 | - | - | 211 | 101 | V |
| * 7.30727 | 43.11 | PK2 | 36.2 | -24.7 | 0 | 54.61 | - | - | 74 | -19.39 | 350 | 107 | H |
| * 7.31139 | 29.2 | MAV1 | 36.2 | -24.6 | 0 | 40.8 | 54 | -13.2 | - | - | 350 | 107 | H |
| * 7.30735 | 48.29 | PK2 | 36.2 | -24.7 | 0 | 59.79 | - | - | 74 | -14.21 | 354 | 240 | V |
| * 7.31255 | 33.83 | MAV1 | 36.1 | -24.6 | 0 | 45.33 | 54 | -8.67 | - | - | 354 | 240 | V |
| 9.74782 | 35.91 | PK2 | 37.2 | -20.5 | 0 | 52.61 | - | - | 74 | -21.39 | 253 | 101 | H |
| 9.74802 | 40.03 | PK2 | 37.2 | -20.5 | 0 | 56.73 | - | - | 74 | -17.27 | 318 | 256 | V |

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

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

| Freq. [MHz] | Antenna | Frequency [GHz] | Reading [dBuV] | Detector Mode | ANT Factor | Loss [dB] | DC Corr [dB] | Result [dBuV/m] | AV Limit [dBuV/m] | AV Margin [dB] | PK Limit [dBuV/m] | PK Margin [dB] | Azimuth [Degs] | Height [cm] | Polarity | |
|-------------|---------|-----------------|----------------|---------------|------------|-----------|--------------|-----------------|-------------------|----------------|-------------------|----------------|----------------|-------------|----------|---|
| 2417 | MIMO | * 4.83628 | 41.72 | PK2 | 34.60 | -30.40 | 0.00 | 45.92 | - | - | 74.00 | -28.08 | 101 | 207 | H | |
| | | * 4.83662 | 30.24 | MAV1 | 34.60 | -30.40 | 0.00 | 34.44 | 54.00 | -19.56 | - | - | - | 101 | 207 | H |
| | | * 4.83443 | 52.36 | PK2 | 34.60 | -30.40 | 0.00 | 56.56 | - | - | 74.00 | -17.44 | - | 155 | 111 | V |
| | | * 4.83441 | 38.70 | MAV1 | 34.60 | -30.40 | 0.00 | 42.90 | 54.00 | -11.10 | - | - | - | 155 | 111 | V |
| | | * 7.25025 | 37.26 | PK2 | 36.00 | -25.40 | 0.00 | 47.86 | - | - | 74.00 | -26.14 | - | 43 | 253 | H |
| | | * 7.25475 | 25.91 | MAV1 | 36.00 | -25.40 | 0.00 | 36.51 | 54.00 | -17.49 | - | - | - | 43 | 253 | H |
| | | * 7.25475 | 45.35 | PK2 | 36.00 | -25.40 | 0.00 | 55.95 | - | - | 74.00 | -18.05 | - | 173 | 100 | V |
| | | * 7.25075 | 32.08 | MAV1 | 36.00 | -25.40 | 0.00 | 42.68 | 54.00 | -11.32 | - | - | - | 173 | 100 | V |
| | | 9.668 | 35.89 | PK2 | 37.40 | -21.30 | 0.00 | 51.99 | - | - | 74.00 | -22.01 | - | 78 | 101 | H |
| | | 9.668 | 41.28 | PK2 | 37.40 | -21.30 | 0.00 | 57.38 | - | - | 74.00 | -16.62 | - | 145 | 222 | V |
| 2437 | MIMO | * 4.87622 | 49.78 | PK2 | 34.10 | -27.60 | 0.00 | 56.28 | - | - | 74.00 | -17.72 | 209 | 217 | H | |
| | | * 4.87634 | 35.96 | MAV1 | 34.10 | -27.60 | 0.00 | 42.46 | 54.00 | -11.54 | - | - | 209 | 217 | H | |
| | | * 4.87612 | 55.72 | PK2 | 34.10 | -27.60 | 0.00 | 62.22 | - | - | 74.00 | -11.78 | - | 211 | 101 | V |
| | | * 4.8762 | 41.58 | MAV1 | 34.10 | -27.60 | 0.00 | 48.08 | 54.00 | -5.92 | - | - | - | 211 | 101 | V |
| | | * 7.30727 | 43.11 | PK2 | 36.20 | -24.70 | 0.00 | 54.61 | - | - | 74.00 | -19.39 | - | 350 | 107 | H |
| | | * 7.31139 | 29.20 | MAV1 | 36.20 | -24.60 | 0.00 | 40.80 | 54.00 | -13.20 | - | - | - | 350 | 107 | H |
| | | * 7.30735 | 48.29 | PK2 | 36.20 | -24.70 | 0.00 | 59.79 | - | - | 74.00 | -14.21 | - | 354 | 240 | V |
| | | * 7.31255 | 33.83 | MAV1 | 36.10 | -24.60 | 0.00 | 45.33 | 54.00 | -8.67 | - | - | - | 354 | 240 | V |
| | | 9.748 | 35.91 | PK2 | 37.20 | -20.50 | 0.00 | 52.61 | - | - | 74.00 | -21.39 | - | 253 | 101 | H |
| | | 9.748 | 40.03 | PK2 | 37.20 | -20.50 | 0.00 | 56.73 | - | - | 74.00 | -17.27 | - | 318 | 256 | V |
| 2457 | MIMO | * 4.91442 | 48.73 | PK2 | 34.70 | -31.00 | 0.00 | 52.43 | - | - | 74.00 | -21.57 | 60 | 100 | H | |
| | | * 4.91488 | 36.79 | MAV1 | 34.70 | -31.00 | 0.00 | 40.49 | 54.00 | -13.51 | - | - | 60 | 100 | H | |
| | | * 4.91117 | 54.22 | PK2 | 34.70 | -31.00 | 0.00 | 57.92 | - | - | 74.00 | -16.08 | - | 156 | 250 | V |
| | | * 4.91204 | 42.80 | MAV1 | 34.70 | -31.00 | 0.00 | 46.50 | 54.00 | -7.50 | - | - | - | 156 | 250 | V |
| | | * 7.36583 | 39.39 | PK2 | 36.00 | -24.80 | 0.00 | 50.59 | - | - | 74.00 | -23.41 | - | 165 | 138 | H |
| | | * 7.36557 | 26.91 | MAV1 | 36.00 | -24.80 | 0.00 | 38.11 | 54.00 | -15.89 | - | - | - | 165 | 138 | H |
| | | * 7.37522 | 47.75 | PK2 | 36.00 | -24.60 | 0.00 | 59.15 | - | - | 74.00 | -14.85 | - | 169 | 101 | V |
| | | * 7.37036 | 34.05 | MAV1 | 36.00 | -24.70 | 0.00 | 45.35 | 54.00 | -8.65 | - | - | - | 169 | 101 | V |
| | | 9.828 | 34.77 | PK2 | 37.70 | -21.30 | 0.00 | 51.17 | - | - | 74.00 | -22.83 | - | 76 | 103 | H |
| | | 9.828 | 42.44 | PK2 | 37.70 | -21.30 | 0.00 | 58.84 | - | - | 74.00 | -15.16 | - | 140 | 217 | V |

Note1. PK2 - KDB558074 Method: Maximum Peak / MAV1 - KDB558074 Option 1 Maximum RMS Average

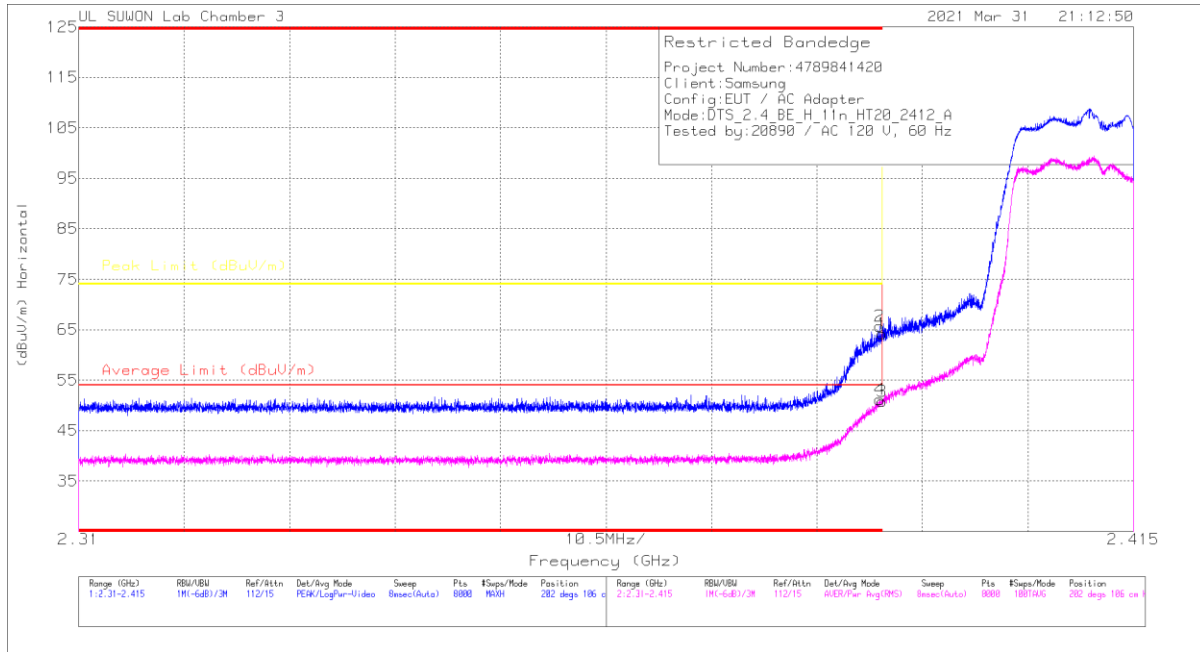
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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

2TX Antenna 1 + Antenna 2

BANDEDGE (WORST CASE: 1 CHANNEL)

HORIZONTAL RESULT



Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[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 | 56.65 | Pk | 32.8 | -25.2 | 0 | 64.25 | - | - | 74 | -9.75 | 202 | 106 | H |
| 2 | * 2.38971 | 58.03 | Pk | 32.8 | -25.2 | 0 | 65.63 | - | - | 74 | -8.37 | 202 | 106 | H |
| 3 | * 2.39 | 43.14 | RMS | 32.8 | -25.2 | 0 | 50.74 | 54 | -3.26 | - | - | 202 | 106 | H |
| 4 | * 2.38976 | 43.57 | RMS | 32.8 | -25.2 | 0 | 51.17 | 54 | -2.83 | - | - | 202 | 106 | H |

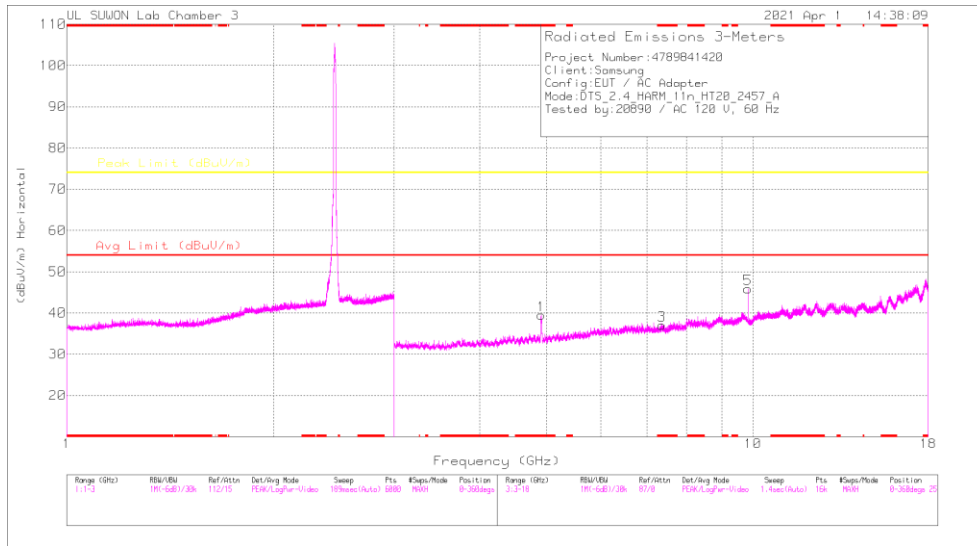
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK - Peak detector
 RMS - RMS detection

BANEDGE TEST DATA

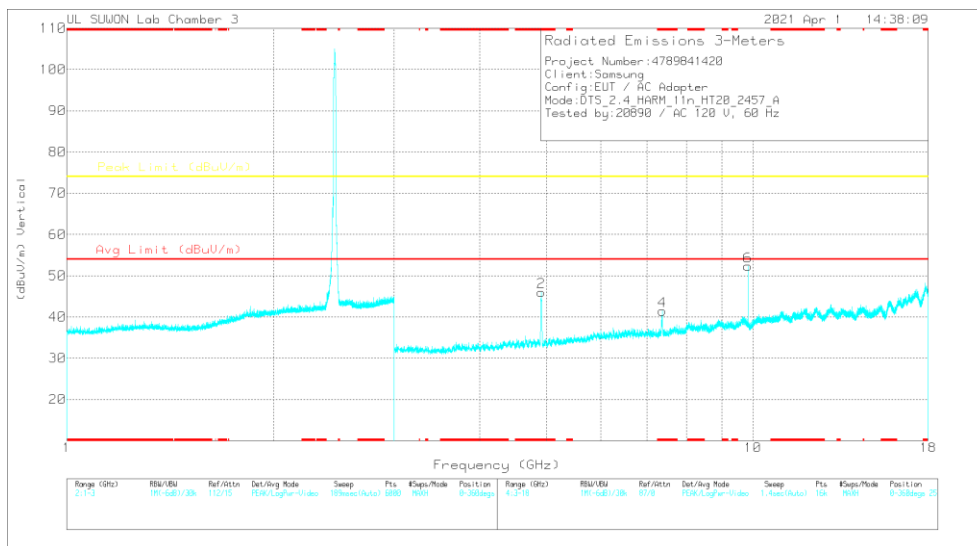
| Freq. [MHz] | Antenna | Frequency [GHz] | Reading [dBuV] | Detector Mode | ANT Factor | Loss [dB] | DC Corr [dB] | Result [dBuV/m] | AV Limit [dBuV/m] | AV Margin [dB] | PK Limit [dBuV/m] | PK Margin [dB] | Azimuth [Degs] | Height [cm] | Polarity | |
|-------------|---------|-----------------|----------------|---------------|------------|-----------|--------------|-----------------|-------------------|----------------|-------------------|----------------|----------------|-------------|----------|---|
| 2412 | MIMO | * 2.39 | 56.65 | Pk | 32.80 | -25.20 | 0.00 | 64.25 | - | - | 74.00 | -9.75 | 202 | 106 | H | |
| | | * 2.38971 | 58.03 | Pk | 32.80 | -25.20 | 0.00 | 65.63 | - | - | 74.00 | -8.37 | 202 | 106 | H | |
| | | * 2.39 | 43.14 | RMS | 32.80 | -25.20 | 0.00 | 50.74 | 54.00 | -3.26 | - | - | - | 202 | 106 | H |
| | | * 2.38976 | 43.57 | RMS | 32.80 | -25.20 | 0.00 | 51.17 | 54.00 | -2.83 | - | - | - | 202 | 106 | H |
| | | * 2.39 | 55.14 | Pk | 32.80 | -25.20 | 0.00 | 62.74 | - | - | 74.00 | -11.26 | 187 | 326 | V | |
| | | * 2.38893 | 57.44 | Pk | 32.80 | -25.10 | 0.00 | 65.14 | - | - | 74.00 | -8.86 | 187 | 326 | V | |
| | | * 2.39 | 42.85 | RMS | 32.80 | -25.20 | 0.00 | 50.45 | 54.00 | -3.55 | - | - | - | 187 | 326 | V |
| | | * 2.38934 | 43.26 | RMS | 32.80 | -25.10 | 0.00 | 50.96 | 54.00 | -3.04 | - | - | - | 187 | 326 | V |
| 2417 | MIMO | * 2.39 | 54.78 | Pk | 32.80 | -25.20 | 0.00 | 62.38 | - | - | 74.00 | -11.62 | 204 | 105 | H | |
| | | * 2.38997 | 56.47 | Pk | 32.80 | -25.20 | 0.00 | 64.07 | - | - | 74.00 | -9.93 | 204 | 105 | H | |
| | | * 2.39 | 41.62 | RMS | 32.80 | -25.20 | 0.00 | 49.22 | 54.00 | -4.78 | - | - | - | 204 | 105 | H |
| | | * 2.38998 | 42.77 | RMS | 32.80 | -25.20 | 0.00 | 50.37 | 54.00 | -3.63 | - | - | - | 204 | 105 | H |
| | | * 2.39 | 47.65 | Pk | 31.90 | -20.30 | 0.00 | 59.25 | - | - | 74.00 | -14.75 | 190 | 332 | V | |
| | | * 2.38976 | 51.75 | Pk | 31.90 | -20.30 | 0.00 | 63.35 | - | - | 74.00 | -10.65 | 190 | 332 | V | |
| | | * 2.39 | 37.57 | RMS | 31.90 | -20.30 | 0.00 | 49.17 | 54.00 | -4.83 | - | - | - | 190 | 332 | V |
| | | * 2.38993 | 37.88 | RMS | 31.90 | -20.30 | 0.00 | 49.48 | 54.00 | -4.52 | - | - | - | 190 | 332 | V |
| 2457 | MIMO | * 2.4835 | 50.25 | Pk | 32.90 | -25.00 | 0.00 | 58.15 | - | - | 74.00 | -15.85 | 201 | 102 | H | |
| | | * 2.48471 | 51.66 | Pk | 32.90 | -25.00 | 0.00 | 59.56 | - | - | 74.00 | -14.44 | 201 | 102 | H | |
| | | * 2.4835 | 39.49 | RMS | 32.90 | -25.00 | 0.00 | 47.39 | 54.00 | -6.61 | - | - | - | 201 | 102 | H |
| | | * 2.48385 | 39.72 | RMS | 32.90 | -25.00 | 0.00 | 47.62 | 54.00 | -6.38 | - | - | - | 201 | 102 | H |
| | | * 2.4835 | 45.02 | Pk | 32.00 | -20.20 | 0.00 | 56.82 | - | - | 74.00 | -17.18 | 169 | 352 | V | |
| | | * 2.48365 | 47.98 | Pk | 32.00 | -20.20 | 0.00 | 59.78 | - | - | 74.00 | -14.22 | 169 | 352 | V | |
| | | * 2.48351 | 35.67 | RMS | 32.00 | -20.20 | 0.00 | 47.47 | 54.00 | -6.53 | - | - | - | 169 | 352 | V |
| | | * 2.48368 | 36.51 | RMS | 32.00 | -20.20 | 0.00 | 48.31 | 54.00 | -5.69 | - | - | - | 169 | 352 | V |
| 2462 | MIMO | * 2.4835 | 54.85 | Pk | 32.90 | -25.00 | 0.00 | 62.75 | - | - | 74.00 | -11.25 | 212 | 150 | H | |
| | | * 2.48402 | 55.53 | Pk | 32.90 | -25.00 | 0.00 | 63.43 | - | - | 74.00 | -10.57 | 212 | 150 | H | |
| | | * 2.4835 | 41.21 | RMS | 32.90 | -25.00 | 0.00 | 49.11 | 54.00 | -4.89 | - | - | - | 212 | 150 | H |
| | | * 2.48364 | 41.98 | RMS | 32.90 | -25.00 | 0.00 | 49.88 | 54.00 | -4.12 | - | - | - | 212 | 150 | H |
| | | * 2.48351 | 48.86 | Pk | 32.00 | -20.20 | 0.00 | 60.66 | - | - | 74.00 | -13.34 | 193 | 353 | V | |
| | | * 2.48617 | 50.10 | Pk | 32.00 | -20.20 | 0.00 | 61.90 | - | - | 74.00 | -12.10 | 193 | 353 | V | |
| | | * 2.48351 | 37.65 | RMS | 32.00 | -20.20 | 0.00 | 49.45 | 54.00 | -4.55 | - | - | - | 193 | 353 | V |
| | | * 2.48361 | 37.76 | RMS | 32.00 | -20.20 | 0.00 | 49.56 | 54.00 | -4.44 | - | - | - | 193 | 353 | V |
| 2467 | MIMO | * 2.4835 | 42.96 | Pk | 32.90 | -25.00 | 0.00 | 50.86 | - | - | 74.00 | -23.14 | 155 | 113 | H | |
| | | * 2.541 | 45.24 | Pk | 32.90 | -25.00 | 0.00 | 53.14 | - | - | 74.00 | -20.86 | 155 | 113 | H | |
| | | * 2.4835 | 33.31 | RMS | 32.90 | -25.00 | 0.00 | 41.21 | 54.00 | -12.79 | - | - | - | 155 | 113 | H |
| | | * 2.48356 | 33.93 | RMS | 32.90 | -25.00 | 0.00 | 41.83 | 54.00 | -12.17 | - | - | - | 155 | 113 | H |
| | | * 2.4835 | 42.92 | Pk | 32.90 | -25.00 | 0.00 | 50.82 | - | - | 74.00 | -23.18 | 166 | 345 | V | |
| | | * 2.48521 | 45.00 | Pk | 32.90 | -25.00 | 0.00 | 52.90 | - | - | 74.00 | -21.10 | 166 | 345 | V | |
| | | * 2.4835 | 31.92 | RMS | 32.90 | -25.00 | 0.00 | 39.82 | 54.00 | -14.18 | - | - | - | 166 | 345 | V |
| | | * 2.48417 | 33.54 | RMS | 32.90 | -25.00 | 0.00 | 41.44 | 54.00 | -12.56 | - | - | - | 166 | 345 | V |
| 2472 | MIMO | * 2.4835 | 50.17 | Pk | 32.90 | -25.00 | 0.00 | 58.07 | - | - | 74.00 | -15.93 | 169 | 123 | H | |
| | | * 2.48363 | 51.26 | Pk | 32.90 | -25.00 | 0.00 | 59.16 | - | - | 74.00 | -14.84 | 169 | 123 | H | |
| | | * 2.4835 | 38.06 | RMS | 32.90 | -25.00 | 0.00 | 45.96 | 54.00 | -8.04 | - | - | - | 169 | 123 | H |
| | | * 2.48359 | 38.62 | RMS | 32.90 | -25.00 | 0.00 | 46.52 | 54.00 | -7.48 | - | - | - | 169 | 123 | H |
| | | * 2.4835 | 53.27 | Pk | 32.90 | -25.00 | 0.00 | 61.17 | - | - | 74.00 | -12.83 | 192 | 339 | V | |
| | | * 2.48353 | 52.65 | Pk | 32.90 | -25.00 | 0.00 | 60.55 | - | - | 74.00 | -13.45 | 192 | 339 | V | |
| | | * 2.4835 | 39.62 | RMS | 32.90 | -25.00 | 0.00 | 47.52 | 54.00 | -6.48 | - | - | - | 192 | 339 | V |
| | | * 2.48351 | 40.63 | RMS | 32.90 | -25.00 | 0.00 | 48.53 | 54.00 | -5.47 | - | - | - | 192 | 339 | V |

Note1. Pk - Peak detector, RMS - RMS detector
 Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 10 CHANNEL) CH 10 RESULTS



HORIZONTAL



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 | 3117_0021895 7 | 3GHz_HP[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 |
|-----------------|----------------------|------|----------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| * 4.91318 | 45.25 | PK2 | 34.7 | -30.9 | 0 | 49.05 | - | - | 74 | -24.95 | 63 | 101 | H |
| * 4.91546 | 33.51 | MAV1 | 34.7 | -31 | 0 | 37.21 | 54 | -16.79 | - | - | 63 | 101 | H |
| * 4.91486 | 53.99 | PK2 | 34.7 | -31 | 0 | 57.69 | - | - | 74 | -16.31 | 119 | 276 | V |
| * 4.91522 | 41.57 | MAV1 | 34.7 | -31 | 0 | 45.27 | 54 | -8.73 | - | - | 119 | 276 | V |
| * 7.36714 | 37.81 | PK2 | 36 | -24.8 | 0 | 49.01 | - | - | 74 | -24.99 | 163 | 128 | H |
| * 7.36483 | 25.33 | MAV1 | 36 | -24.8 | 0 | 36.53 | 54 | -17.47 | - | - | 163 | 128 | H |
| * 7.3736 | 39.34 | PK2 | 36 | -24.6 | 0 | 50.74 | - | - | 74 | -23.26 | 166 | 102 | V |
| * 7.37262 | 26.05 | MAV1 | 36 | -24.6 | 0 | 37.45 | 54 | -16.55 | - | - | 166 | 102 | V |
| 9.82822 | 34.63 | PK2 | 37.7 | -21.3 | 0 | 51.03 | - | - | 74 | -22.97 | 73 | 105 | H |
| 9.82796 | 40.91 | PK2 | 37.7 | -21.3 | 0 | 57.31 | - | - | 74 | -16.69 | 137 | 211 | V |

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

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

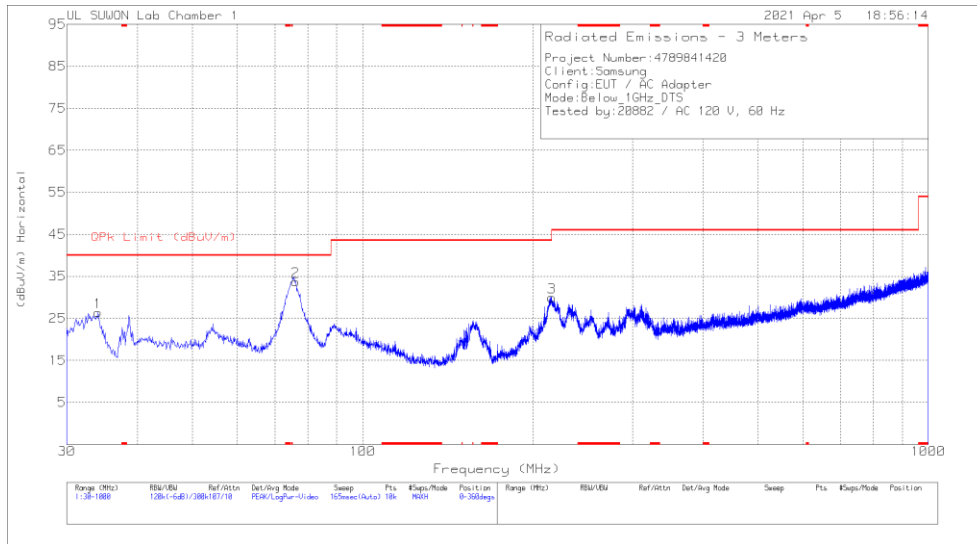
HARMONICS AND SPURIOUS EMISSIONS TEST DATA

| Freq. [MHz] | Antenna | Frequency [GHz] | Reading [dBuV] | Detector Mode | ANT Factor | Loss [dB] | DC Corr [dB] | Result [dBuV/m] | AV Limit [dBuV/m] | AV Margin [dB] | PK Limit [dBuV/m] | PK Margin [dB] | Azimuth [Degs] | Height [cm] | Polarity |
|-------------|---------|-----------------|----------------|---------------|------------|-----------|--------------|-----------------|-------------------|----------------|-------------------|----------------|----------------|-------------|----------|
| 2417 | MIMO | * 4.83766 | 45.62 | PK2 | 34.60 | -30.40 | 0.00 | 49.82 | - | - | 74.00 | -24.18 | 61 | 109 | H |
| | | * 4.83704 | 34.21 | MAV1 | 34.60 | -30.40 | 0.00 | 38.41 | 54.00 | -15.59 | - | - | 61 | 109 | H |
| | | * 4.8377 | 50.62 | PK2 | 34.60 | -30.40 | 0.00 | 54.82 | - | - | 74.00 | -19.18 | 156 | 227 | V |
| | | * 4.83608 | 38.37 | MAV1 | 34.60 | -30.40 | 0.00 | 42.57 | 54.00 | -11.43 | - | - | 156 | 227 | V |
| | | * 7.25075 | 34.85 | PK2 | 36.00 | -25.40 | 0.00 | 45.45 | - | - | 74.00 | -28.55 | 176 | 108 | H |
| | | * 7.25125 | 23.94 | MAV1 | 36.00 | -25.40 | 0.00 | 34.54 | 54.00 | -19.46 | - | - | 176 | 108 | H |
| | | * 7.25325 | 37.99 | PK2 | 36.00 | -25.40 | 0.00 | 48.59 | - | - | 74.00 | -25.41 | 201 | 104 | V |
| | | * 7.25175 | 25.38 | MAV1 | 36.00 | -25.40 | 0.00 | 35.98 | 54.00 | -18.02 | - | - | 201 | 104 | V |
| | | 9.668 | 36.03 | PK2 | 37.40 | -21.30 | 0.00 | 52.13 | - | - | 74.00 | -21.87 | 71 | 104 | H |
| | | 9.668 | 42.24 | PK2 | 37.40 | -21.30 | 0.00 | 58.34 | - | - | 74.00 | -15.66 | 145 | 224 | V |
| 2437 | MIMO | * 4.87722 | 48.57 | PK2 | 34.10 | -27.60 | 0.00 | 55.07 | - | - | 74.00 | -18.93 | 39 | 188 | H |
| | | * 4.87464 | 35.05 | MAV1 | 34.10 | -27.70 | 0.00 | 41.45 | 54.00 | -12.55 | - | - | 39 | 188 | H |
| | | * 4.87793 | 49.52 | PK2 | 34.10 | -27.60 | 0.00 | 56.02 | - | - | 74.00 | -17.98 | 123 | 389 | V |
| | | * 4.87738 | 36.35 | MAV1 | 34.10 | -27.60 | 0.00 | 42.85 | 54.00 | -11.15 | - | - | 123 | 389 | V |
| | | * 7.31346 | 42.55 | PK2 | 36.10 | -24.60 | 0.00 | 54.05 | - | - | 74.00 | -19.95 | 167 | 127 | H |
| | | * 7.31116 | 29.20 | MAV1 | 36.20 | -24.60 | 0.00 | 40.80 | 54.00 | -13.20 | - | - | 167 | 127 | H |
| | | * 7.31132 | 46.17 | PK2 | 36.20 | -24.60 | 0.00 | 57.77 | - | - | 74.00 | -16.23 | 234 | 100 | V |
| | | * 7.30996 | 32.31 | MAV1 | 36.20 | -24.60 | 0.00 | 43.91 | 54.00 | -10.09 | - | - | 234 | 100 | V |
| | | 9.748 | 36.06 | PK2 | 37.20 | -20.50 | 0.00 | 52.76 | - | - | 74.00 | -21.24 | 38 | 100 | H |
| | | 9.748 | 41.44 | PK2 | 37.20 | -20.50 | 0.00 | 58.14 | - | - | 74.00 | -15.86 | 138 | 229 | V |
| 2457 | MIMO | * 4.91318 | 45.25 | PK2 | 34.70 | -30.90 | 0.00 | 49.05 | - | - | 74.00 | -24.95 | 63 | 101 | H |
| | | * 4.91546 | 33.51 | MAV1 | 34.70 | -31.00 | 0.00 | 37.21 | 54.00 | -16.79 | - | - | 63 | 101 | H |
| | | * 4.91486 | 53.99 | PK2 | 34.70 | -31.00 | 0.00 | 57.69 | - | - | 74.00 | -16.31 | 119 | 276 | V |
| | | * 4.91522 | 41.57 | MAV1 | 34.70 | -31.00 | 0.00 | 45.27 | 54.00 | -8.73 | - | - | 119 | 276 | V |
| | | * 7.36714 | 37.81 | PK2 | 36.00 | -24.80 | 0.00 | 49.01 | - | - | 74.00 | -24.99 | 163 | 128 | H |
| | | * 7.36483 | 25.33 | MAV1 | 36.00 | -24.80 | 0.00 | 36.53 | 54.00 | -17.47 | - | - | 163 | 128 | H |
| | | * 7.3736 | 39.34 | PK2 | 36.00 | -24.60 | 0.00 | 50.74 | - | - | 74.00 | -23.26 | 166 | 102 | V |
| | | * 7.37262 | 26.05 | MAV1 | 36.00 | -24.60 | 0.00 | 37.45 | 54.00 | -16.55 | - | - | 166 | 102 | V |
| | | 9.828 | 34.63 | PK2 | 37.70 | -21.30 | 0.00 | 51.03 | - | - | 74.00 | -22.97 | 73 | 105 | H |
| | | 9.828 | 40.91 | PK2 | 37.70 | -21.30 | 0.00 | 57.31 | - | - | 74.00 | -16.69 | 137 | 211 | V |

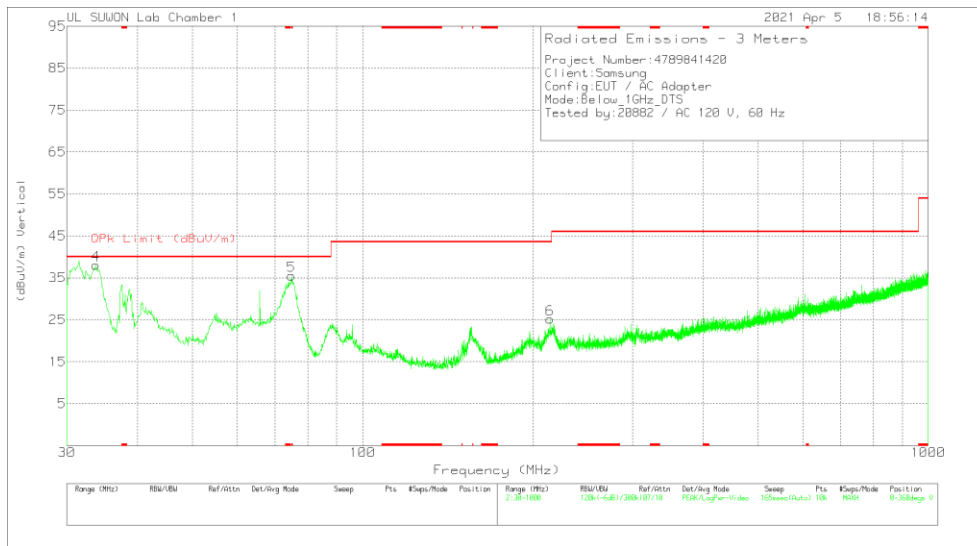
Note1. PK2 - KDB558074 Method: Maximum Peak / MAV1 - KDB558074 Option 1 Maximum RMS Average

Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

10.2. WORST CASE BELOW 1 GHZ



HORIZONTAL



VERTICAL

Below 1GHz DATA

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_750 | Below_1G[dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|--------------|--------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 1 | 34.074 | 41.15 | Pk | 16.2 | -30.9 | 0 | 26.45 | 40 | -13.55 | 0-360 | 300 | H |
| 2 | 76.075 | 50.66 | Pk | 13.1 | -30 | 0 | 33.76 | 40 | -6.24 | 0-360 | 200 | H |
| 3 | 216.046 | 41.5 | Pk | 16.9 | -28.4 | 0 | 30 | 46.02 | -16.02 | 0-360 | 200 | H |
| 4 | 33.783 | 52.76 | Pk | 16.1 | -30.8 | 0 | 38.06 | 40 | -1.94 | 0-360 | 100 | V |
| 5 | * 74.911 | 52.21 | Pk | 13.4 | -30.1 | 0 | 35.51 | 40 | -4.49 | 0-360 | 100 | V |
| 6 | 214.494 | 36.56 | Pk | 16.8 | -28.2 | 0 | 25.16 | 43.52 | -18.36 | 0-360 | 200 | V |

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

Radiated Emissions

| Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_750 | Below_1G[dB] | DC Corr (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|--------------|--------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 33.783 | 46.05 | Qp | 16.1 | -30.8 | 0 | 31.35 | 40 | -8.65 | 202 | 101 | V |

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

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

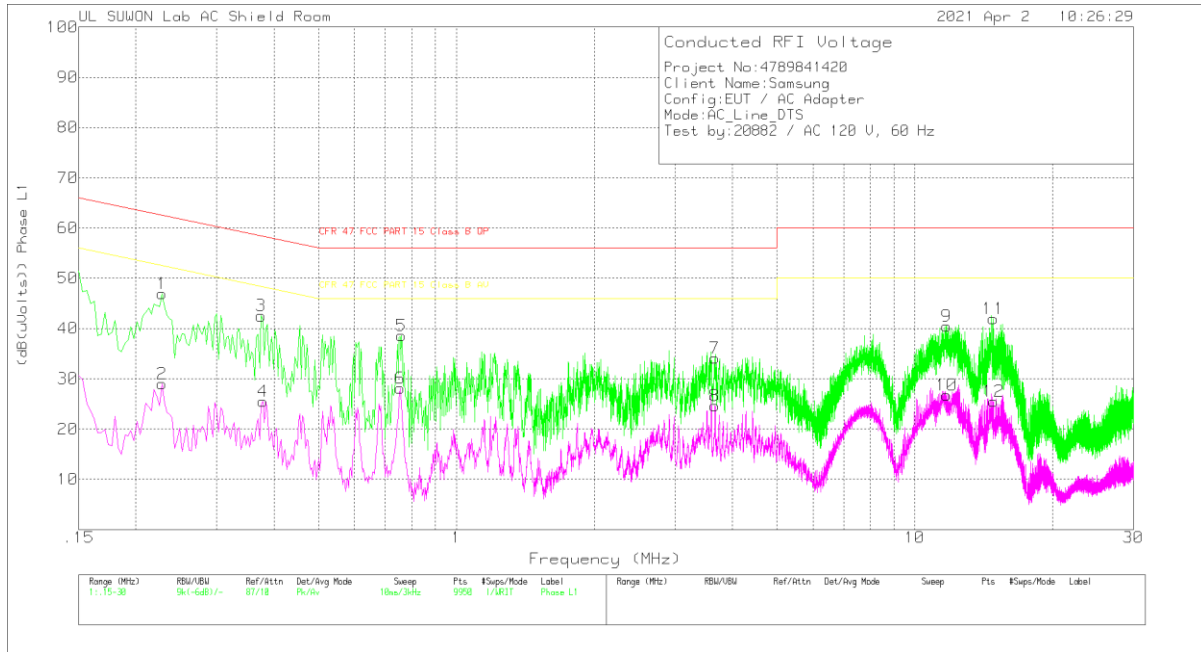
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

11.1.1. AC Power Line

LINE 1 RESULTS



Trace Markers

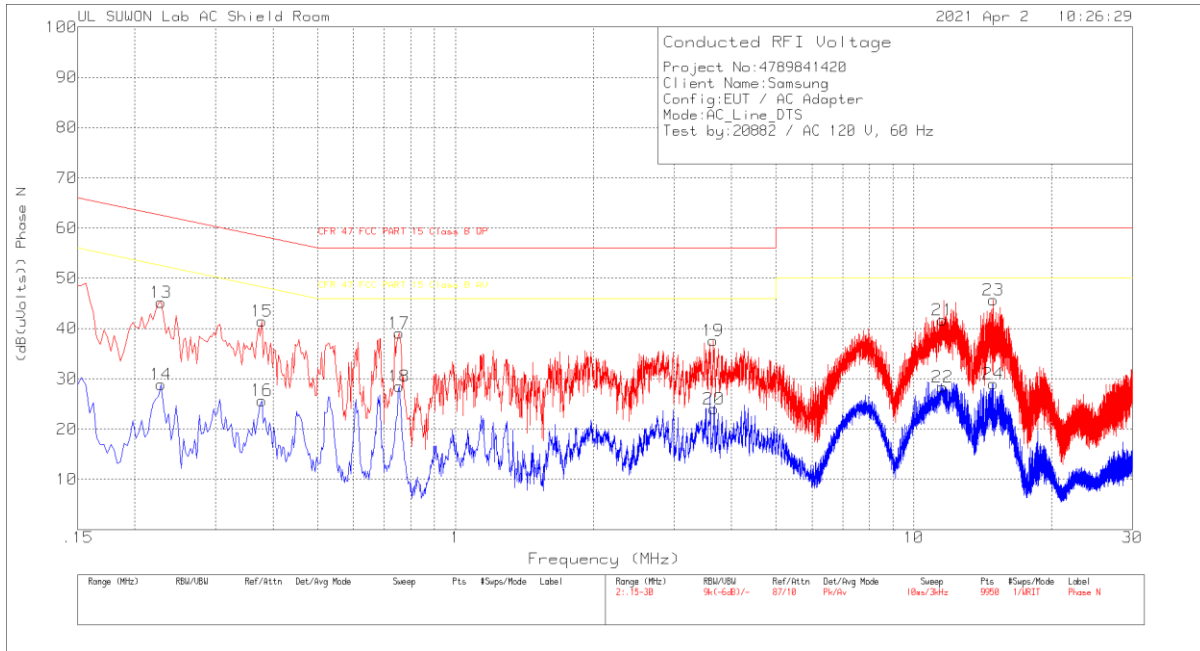
Range 1: Phase L1 .15 - 30MHz

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 101836_Wit h EX_L1[dB] | CABLELOS S(dB) | Corrected Reading (dB(uVolts)) | CFR 47 FCC PART 15 Class B QP | Margin (dB) | CFR 47 FCC PART 15 Class B AV | Margin (dB) |
|--------|-----------------|----------------------|-----|------------------------|----------------|--------------------------------|-------------------------------|-------------|-------------------------------|-------------|
| 1 | .228 | 36.91 | Pk | 9.8 | .2 | 46.91 | 62.52 | -15.61 | - | - |
| 2 | .228 | 19.05 | Av | 9.8 | .2 | 29.05 | - | - | 52.52 | -23.47 |
| 3 | .375 | 32.42 | Pk | 9.9 | .2 | 42.52 | 58.39 | -15.87 | - | - |
| 4 | .378 | 15.36 | Av | 9.9 | .2 | 25.46 | - | - | 48.32 | -22.86 |
| 5 | .759 | 28.5 | Pk | 9.9 | .2 | 38.6 | 56 | -17.4 | - | - |
| 6 | .753 | 18.07 | Av | 9.9 | .2 | 28.17 | - | - | 46 | -17.83 |
| 7 | 3.666 | 23.95 | Pk | 9.8 | .3 | 34.05 | 56 | -21.95 | - | - |
| 8 | 3.666 | 14.53 | Av | 9.8 | .3 | 24.63 | - | - | 46 | -21.37 |
| 9 | 11.733 | 30.21 | Pk | 10 | .3 | 40.51 | 60 | -19.49 | - | - |
| 10 | 11.724 | 16.5 | Av | 10 | .3 | 26.8 | - | - | 50 | -23.2 |
| 11 | 14.841 | 31.42 | Pk | 10.1 | .4 | 41.92 | 60 | -18.08 | - | - |
| 12 | 14.844 | 14.97 | Av | 10.1 | .4 | 25.47 | - | - | 50 | -24.53 |

Pk - Peak detector

Av - Average detection

LINE 2 RESULTS



Trace Markers

Range 2: Phase N .15 - 30MHz

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 101836_Wit h EX_N[dB] | CABLELOS S(dB) | Corrected Reading (dB(uVolts)) | CFR 47 FCC PART 15 Class B QP | Margin (dB) | CFR 47 FCC PART 15 Class B AV | Margin (dB) |
|--------|-----------------|----------------------|-----|-----------------------|----------------|--------------------------------|-------------------------------|-------------|-------------------------------|-------------|
| 13 | .228 | 35.14 | Pk | 9.8 | .2 | 45.14 | 62.52 | -17.38 | - | - |
| 14 | .228 | 18.88 | Av | 9.8 | .2 | 28.88 | - | - | 52.52 | -23.64 |
| 15 | .378 | 31.4 | Pk | 9.9 | .2 | 41.5 | 58.32 | -16.82 | - | - |
| 16 | .378 | 15.59 | Av | 9.9 | .2 | 25.69 | - | - | 48.32 | -22.63 |
| 17 | .753 | 29.04 | Pk | 9.9 | .2 | 39.14 | 56 | -16.86 | - | - |
| 18 | .753 | 18.38 | Av | 9.9 | .2 | 28.48 | - | - | 46 | -17.52 |
| 19 | 3.651 | 27.45 | Pk | 9.8 | .3 | 37.55 | 56 | -18.45 | - | - |
| 20 | 3.666 | 13.9 | Av | 9.8 | .3 | 24 | - | - | 46 | -22 |
| 21 | 11.556 | 31.42 | Pk | 10 | .3 | 41.72 | 60 | -18.28 | - | - |
| 22 | 11.559 | 18.09 | Av | 10 | .3 | 28.39 | - | - | 50 | -21.61 |
| 23 | 14.922 | 35.14 | Pk | 10.1 | .4 | 45.64 | 60 | -14.36 | - | - |
| 24 | 14.916 | 18.52 | Av | 10.1 | .4 | 29.02 | - | - | 50 | -20.98 |

Pk - Peak detector

Av - Average detection

END OF TEST REPORT