

FCC Test Report

Equipment : AC1900 Wireless Dual Band Gigabit Router
Brand Name : TP-LINK
Model No. : Archer C9
FCC ID : TE7C9V2
Standard : 47 CFR FCC Part 15.407
Operating Band : 5150 MHz – 5250 MHz
FCC Classification : NII
Applicant : TP-LINK TECHNOLOGIES CO., LTD.
Manufacturer : Building 24 (floors 1,3,4,5) and 28 (floors1-4)
Central Science and Technology Park,Shennan Rd,
Nanshan, Shenzhen,China
Function : ☐ Outdoor AP ☒ Indoor AP
☐ Fixed P2P AP ☐ Portable Client

The product sample received on Aug. 05, 2015 and completely tested on Sep. 16, 2015. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:


Kevin Liang / Assistant Manager



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Summary of Test Result

| Conformance Test Specifications | | | |
|---------------------------------|------------------|--|----------|
| Report Clause | Ref. Std. Clause | Description | Result |
| 1.1.2 | 15.203 | Antenna Requirement | Complied |
| 3.1 | 15.207 | AC Power-line Conducted Emissions | Complied |
| 3.2 | 15.407(a) | Emission Bandwidth | Complied |
| 3.3 | 15.407(a) | RF Output Power (Maximum Conducted Output Power) | Complied |
| 3.4 | 15.407(a) | Peak Power Spectral Density | Complied |
| 3.5 | 15.407(b) | Transmitter Bandedge Emissions | Complied |
| 3.6 | 15.407(b) | Transmitter Unwanted Emissions | Complied |
| 3.6.9 | 15.407(g) | Frequency Stability | Complied |



SPORTON INTERNATIONAL INC.
TEL : 886-3-327-3456
FAX : 886-3-327-0973

1 General Description

1.1 Information

1.1.1 RF General Information

| RF General Information (non-beamforming) | | | | | | |
|---|------------------|-----------------|----------------|------------------------------------|-----------------------|-------------|
| Frequency Range (MHz) | IEEE Std. 802.11 | Ch. Freq. (MHz) | Channel Number | Transmit Chains (N _{TX}) | RF Output Power (dBm) | Co-location |
| 5150-5250 | a | 5180-5240 | 36-48 [4] | 3 | 25.45 | Yes |
| 5150-5250 | n (HT20) | 5180-5240 | 36-48 [4] | 3 | 26.16 | Yes |
| 5150-5250 | n (HT40) | 5190-5230 | 38-46 [2] | 3 | 26.51 | Yes |
| 5150-5250 | ac (VHT20) | 5180-5240 | 36-48 [4] | 3 | 26.11 | Yes |
| 5150-5250 | ac (VHT40) | 5190-5230 | 38-46 [2] | 3 | 26.59 | Yes |
| 5150-5250 | ac (VHT80) | 5210 | 42 [1] | 3 | 18.80 | Yes |
| Note 1: RF output power specifies that Maximum Conducted Output Power. Note 2: 802.11a/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation. Note 3: 802.11ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation. Note 4: Co-location, Co-location is generally defined as simultaneously transmitting (co-transmitting) antennas within 20 cm of each other. (i.e., EUT has simultaneously co-transmitting that operating 2.4GHz and 5GHz.) | | | | | | |

| RF General Information (beamforming) | | | | | |
|---|------------------|-----------------|----------------|------------------------------------|-----------------------|
| Frequency Range (MHz) | IEEE Std. 802.11 | Ch. Freq. (MHz) | Channel Number | Transmit Chains (N _{TX}) | RF Output Power (dBm) |
| 5150-5250 | ac (VHT20) | 5180-5240 | 36-48 [4] | 3 | 26.67 |
| 5150-5250 | ac (VHT40) | 5190-5230 | 38-46 [2] | 3 | 26.51 |
| 5150-5250 | ac (VHT80) | 5210 | 42 [1] | 3 | 17.83 |
| Note 1: RF output power specifies that Maximum Conducted Output Power. Note 2: 802.11a/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation. Note 3: 802.11ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation. | | | | | |

1.1.2 Antenna Information

| Antenna Category | |
|-------------------------------------|---|
| <input type="checkbox"/> | Integral antenna (antenna permanently attached) |
| <input type="checkbox"/> | Temporary RF connector provided |
| <input type="checkbox"/> | No temporary RF connector provided Transmit chains bypass antenna and soldered temporary RF connector provided for connected measurement. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator and correct for all losses in the RF path. |
| <input checked="" type="checkbox"/> | External antenna (dedicated antennas) |
| <input type="checkbox"/> | Single power level with corresponding antenna(s). |
| <input checked="" type="checkbox"/> | Multiple power level and corresponding antenna(s). |

| Antenna General Information (non-beamforming) | | | | |
|---|-----------|-----------|----------------|------------|
| No. | Ant. Cat. | Ant. Type | Ant. Connector | Gain (dBi) |
| 1 | External | Dipole | Reverse SMA | 1.68 |
| 2 | External | Dipole | Reverse SMA | 1.68 |
| 3 | External | Dipole | Reverse SMA | 1.68 |
| Remark: 11a/n/ac only includes 3TX to emission. IEEE 802.11n/ac has the CDD function. | | | | |

| Antenna General Information (beamforming) | | | | |
|---|-----------|-----------|----------------|------------|
| No. | Ant. Cat. | Ant. Type | Ant. Connector | Gain (dBi) |
| 1 | External | Dipole | Reverse SMA | 6.45 |
| 2 | External | Dipole | Reverse SMA | 6.45 |
| 3 | External | Dipole | Reverse SMA | 6.45 |
| Remark: 11a/n/ac only includes 3TX to emission. IEEE 802.11n/ac has the CDD function. | | | | |

1.1.3 Type of EUT

| Identify EUT | |
|-------------------------------------|---|
| EUT Serial Number | N/A |
| Presentation of Equipment | <input type="checkbox"/> Production ; <input checked="" type="checkbox"/> Pre-Production ; <input type="checkbox"/> Prototype |
| Type of EUT | |
| <input checked="" type="checkbox"/> | Stand-alone |
| <input type="checkbox"/> | Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.: ... |
| <input type="checkbox"/> | Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: ... |
| <input type="checkbox"/> | Other: |

1.1.4 Test Signal Duty Cycle

| Operated Mode for Worst Duty Cycle (non-beamforming) | |
|---|---------------------------------------|
| <input type="checkbox"/> Operated normally mode for worst duty cycle | |
| <input checked="" type="checkbox"/> Operated test mode for worst duty cycle | |
| Test Signal Duty Cycle (x) | Power Duty Factor [dB] – (10 log 1/x) |
| <input checked="" type="checkbox"/> 100.00% - IEEE 802.11a | 0.00 |
| <input checked="" type="checkbox"/> 100.00% - IEEE 802.11n (HT20) | 0.00 |
| <input checked="" type="checkbox"/> 100.00% - IEEE 802.11n (HT40) | 0.00 |
| <input checked="" type="checkbox"/> 100.00% - IEEE 802.11ac (VHT20) | 0.00 |
| <input checked="" type="checkbox"/> 100.00% - IEEE 802.11ac (VHT40) | 0.00 |
| <input checked="" type="checkbox"/> 100.00% - IEEE 802.11ac (VHT80) | 0.00 |

| Operated Mode for Worst Duty Cycle (beamforming) | |
|---|---------------------------------------|
| <input type="checkbox"/> Operated normally mode for worst duty cycle | |
| <input checked="" type="checkbox"/> Operated test mode for worst duty cycle | |
| Test Signal Duty Cycle (x) | Power Duty Factor [dB] – (10 log 1/x) |
| <input checked="" type="checkbox"/> 95.08% - IEEE 802.11ac (VHT20) | 0.22 |
| <input checked="" type="checkbox"/> 94.93% - IEEE 802.11ac (VHT40) | 0.23 |
| <input checked="" type="checkbox"/> 93.34% - IEEE 802.11ac (VHT80) | 0.30 |

1.1.5 EUT Operational Condition

| | | | |
|--------------------------|--|---|----------------------------------|
| Supply Voltage | <input checked="" type="checkbox"/> AC mains | <input type="checkbox"/> DC | |
| Type of DC Source | <input type="checkbox"/> Internal DC supply | <input checked="" type="checkbox"/> External AC adapter | <input type="checkbox"/> Battery |

1.2 Accessories and Support Equipment

| Accessories Information | | | | |
|-------------------------|--------------|--|------------|---------------|
| AC Adapter | Brand Name | TEN PAO | Model Name | S048CU1200330 |
| | Power Rating | I/P:100 - 240Vac, 1.5A, O/P:12Vdc, 3.3A | | |
| | Power Cord | 1.5meter, non-shielded cable, w/o ferrite core | | |

Note: Regarding to more detail and other information, please refer to user manual.

(non-beamforming)

| Support Equipment - RF Conducted | | | | |
|----------------------------------|----------------------|------------|------------|--------|
| No. | Equipment | Brand Name | Model Name | FCC ID |
| 1 | Notebook | DELL | E5540 | DoC |
| 2 | Adapter for Notebook | DELL | HA65NM130 | DoC |

(beamforming)

| Support Equipment - RF Conducted | | | | |
|----------------------------------|----------------------|------------|------------|--------|
| No. | Equipment | Brand Name | Model Name | FCC ID |
| 1 | Notebook | DELL | E5540 | DoC |
| 2 | Adapter for Notebook | DELL | HA65NM130 | DoC |
| 3 | PC | HP | Z201 | NA |

Note : The PC provides is by customer.

| Support Equipment - AC Conduction and Radiated Emission | | | | |
|---|-------------------------------|------------|------------|--------|
| No. | Equipment | Brand Name | Model Name | FCC ID |
| 1 | Notebook (Remote) | DELL | E5530 | DoC |
| 2 | Adapter for Notebook (Remote) | DELL | LA65NS2-01 | DoC |
| 3 | PC (Remote) | HP | Z201 | NA |

Note : The PC provides is by customer.

1.3 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013
- ◆ FCC KDB 789033 D02 v01
- ◆ FCC KDB 644545 D03 v01
- ◆ FCC KDB 662911 v02r01
- ◆ FCC-14-30A1-UNII

1.4 Testing Location Information

| Testing Location | | | |
|-------------------------------------|---------------|--|-----------------------------------|
| <input checked="" type="checkbox"/> | HWA YA | ADD : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. | |
| | | TEL : 886-3-327-3456 FAX : 886-3-327-0973 | |
| Test Condition | Test Site No. | Test Engineer | Test Environment |
| AC Conduction | CO04-HY | Zeus | 22°C / 62% |
| RF Conducted | TH06-HY | Leo | 25.4°C / 63% (non-beamforming) |
| RF Conducted | TH06-HY | Rory | 22.8°C / 63% (beamforming) |
| Radiated Emission | 03CH03-HY | Hunter | 26°C / 64.1% |

1.5 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

| Measurement Uncertainty | | |
|------------------------------------|---------------|-------------|
| Test Item | | Uncertainty |
| AC power-line conducted emissions | | ±2.3 dB |
| Emission bandwidth, 26dB bandwidth | | ±0.5% |
| RF output power, conducted | | ±0.1 dB |
| Power density, conducted | | ±0.5 dB |
| Unwanted emissions, conducted | 9 – 150 kHz | ±0.4 dB |
| | 0.15 – 30 MHz | ±0.4 dB |
| | 30 – 1000 MHz | ±0.6 dB |
| | 1 – 18 GHz | ±0.5 dB |
| | 18 – 40 GHz | ±0.5 dB |
| | 40 – 200 GHz | N/A |
| All emissions, radiated | 9 – 150 kHz | ±2.5 dB |
| | 0.15 – 30 MHz | ±2.3 dB |
| | 30 – 1000 MHz | ±2.6 dB |
| | 1 – 18 GHz | ±3.6 dB |
| | 18 – 40 GHz | ±3.8 dB |
| | 40 – 200 GHz | N/A |
| Temperature | | ±0.8 °C |
| Humidity | | ±5 % |
| DC and low frequency voltages | | ±0.9% |
| Time | | ±1.4 % |
| Duty Cycle | | ±0.5 % |

2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

| Worst Modulation Used for Conformance Testing (non-beamforming) | | | |
|---|------------------------------------|-----------------|-----------------------|
| Modulation Mode | Transmit Chains (N _{TX}) | Data Rate / MCS | Worst Data Rate / MCS |
| 11a | 3 | 6-54Mbps | 6 Mbps |
| HT20 | 3 | MCS 0-23 | MCS 0 |
| HT40 | 3 | MCS 0-23 | MCS 0 |
| VHT20 | 3 | MCS 0-8 | MCS 0 |
| VHT40 | 3 | MCS 0-9 | MCS 0 |
| VHT80 | 3 | MCS 0-9 | MCS 0 |

| Worst Modulation Used for Conformance Testing (beamforming) | | | |
|---|------------------------------------|-----------------|-----------------------|
| Modulation Mode | Transmit Chains (N _{TX}) | Data Rate / MCS | Worst Data Rate / MCS |
| VHT20 | 3 | MCS 0-8 | MCS 0 |
| VHT40 | 3 | MCS 0-9 | MCS 0 |
| VHT80 | 3 | MCS 0-9 | MCS 0 |

2.2 The Worst Case Power Setting Parameter




| The Worst Case Power Setting Parameter (5150-5250MHz band) (non-beamforming) | | | | | | | |
|--|-----------------|----------------------|------|------|------------|------|------------|
| Test Software Version | MTool_2.0.1.1 | | | | | | |
| Modulation Mode | N _{TX} | Test Frequency (MHz) | | | | | |
| | | NCB: 20MHz | | | NCB: 40MHz | | NCB: 80MHz |
| | | 5180 | 5200 | 5240 | 5190 | 5230 | 5210 |
| 11a | 3 | 77 | 77 | 77 | - | - | - |
| HT20 | 3 | 73 | 80 | 80 | - | - | - |
| HT40 | 3 | - | - | - | 60 | 82 | - |
| VHT20 | 3 | 73 | 80 | 80 | - | - | - |
| VHT40 | 3 | - | - | - | 60 | 82 | - |
| VHT80 | 3 | - | - | - | - | - | 50 |

| The Worst Case Power Setting Parameter (5150-5250MHz band) (beamforming) | | | | | | | |
|--|-----------------|----------------------|------|------|------------|------|------------|
| Test Software Version | DOS | | | | | | |
| Modulation Mode | N _{TX} | Test Frequency (MHz) | | | | | |
| | | NCB: 20MHz | | | NCB: 40MHz | | NCB: 80MHz |
| | | 5180 | 5200 | 5240 | 5190 | 5230 | 5210 |
| VHT20 | 3 | 75 | 82 | 82 | - | - | - |
| VHT40 | 3 | - | - | - | 56 | 82 | - |
| VHT80 | 3 | - | - | - | - | - | 44 |

2.3 The Worst Case Measurement Configuration

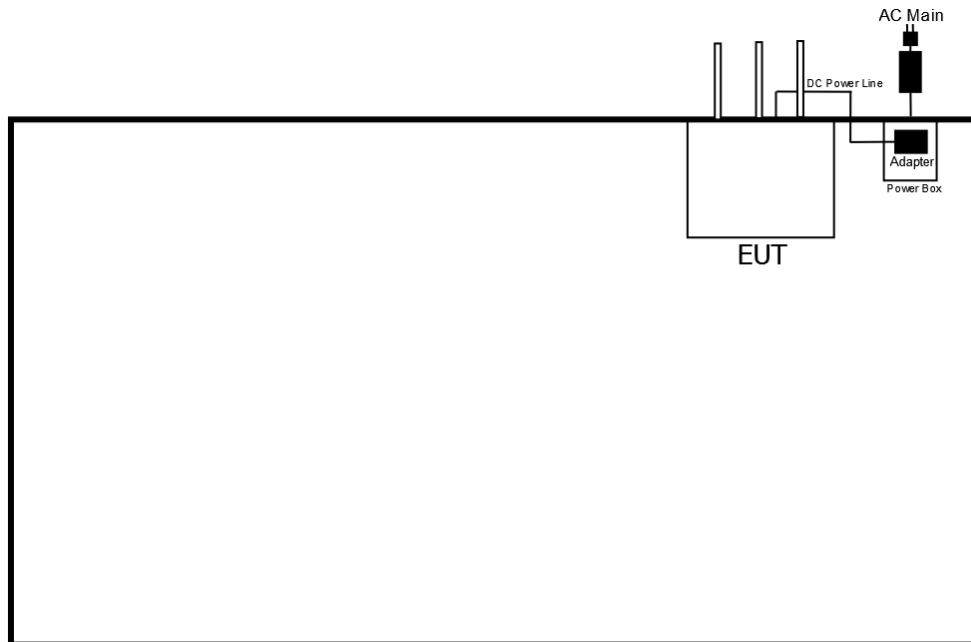
| The Worst Case Mode for Following Conformance Tests | |
|---|---|
| Tests Item | AC power-line conducted emissions |
| Condition | AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz |
| Operating Mode | Operating Mode Description |
| 1 | Adapter Mode and Transmit (non-beamforming) |
| 2 | Adapter Mode and Transmit (beamforming) |

| The Worst Case Mode for Following Conformance Tests | |
|---|---|
| Tests Item | RF Output Power, Peak Power Spectral Density, Emission Bandwidth, |
| Test Condition | Conducted measurement at transmit chains |
| Modulation Mode | 11a, HT20, HT40, VHT20, VHT40, VHT80 |

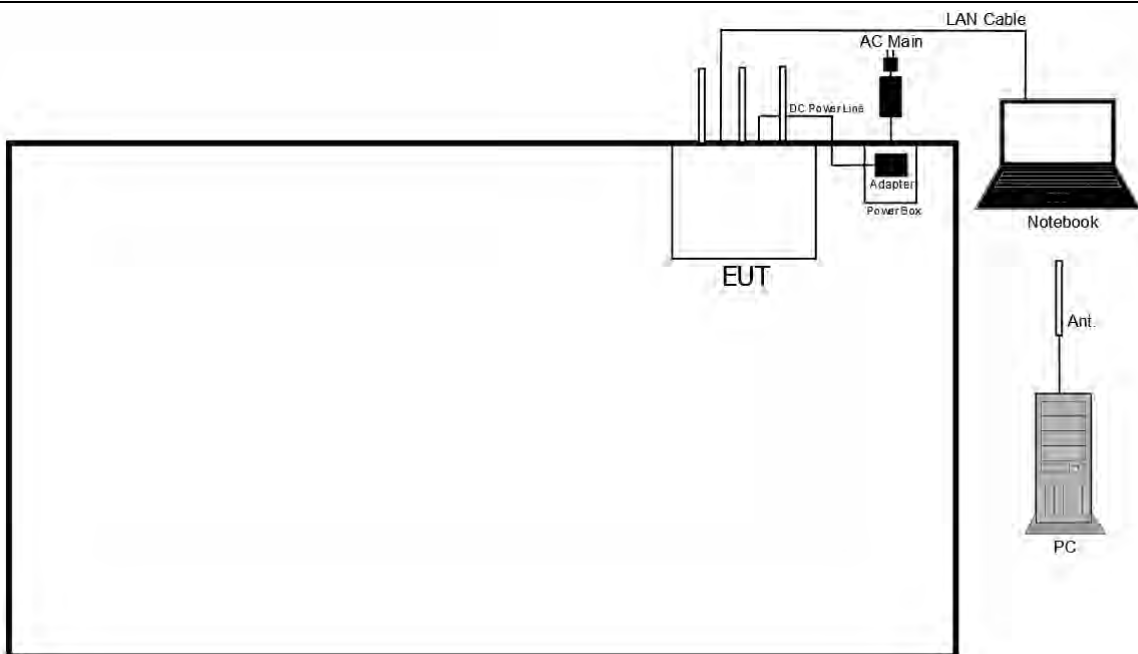
| The Worst Case Mode for Following Conformance Tests | | | |
|---|---|--|---|
| Tests Item | Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions | | |
| Test Condition | Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type. | | |
| User Position | <input type="checkbox"/> EUT will be placed in fixed position. | | |
| | <input checked="" type="checkbox"/> EUT will be placed in mobile position and operating multiple positions. EUT shall be performed three orthogonal planes. | | |
| | <input type="checkbox"/> EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions. | | |
| Operating Mode | Operating Mode Description | | |
| 1 | Adapter Mode and Transmit (non-beamforming) | | |
| 2 | Adapter Mode and Transmit (beamforming) | | |
| Modulation Mode | 11a, HT20, HT40, VHT20, VHT40, VHT80 | | |
| Orthogonal Planes of EUT | X Plane | Y Plane | Z Plane |
| |  |  |  |
| Worst Planes of EUT | | V | |

2.4 Test Setup Diagram

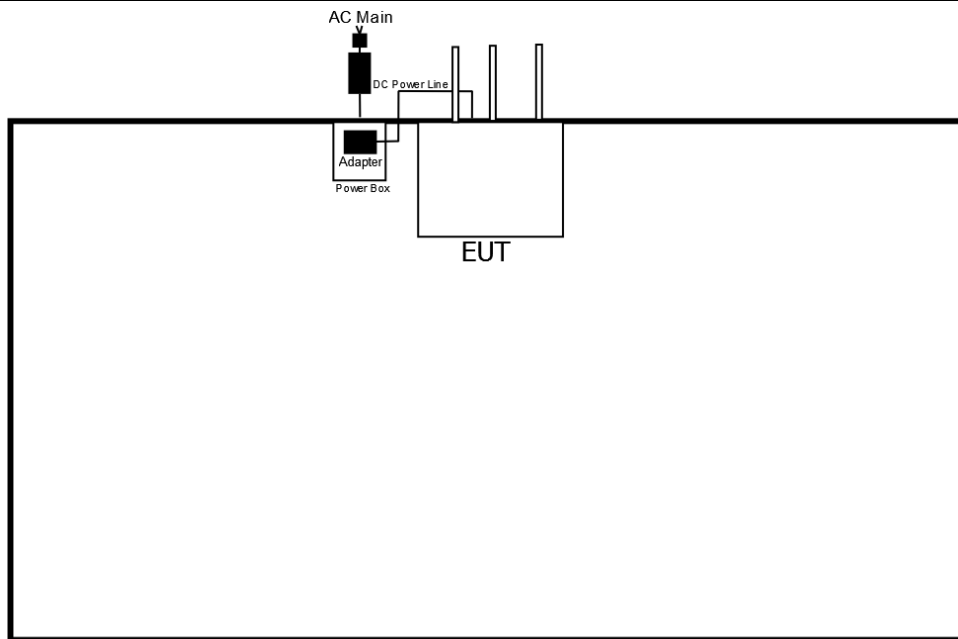
Test Setup Diagram – AC Line Conducted Emission Test - Mode 1



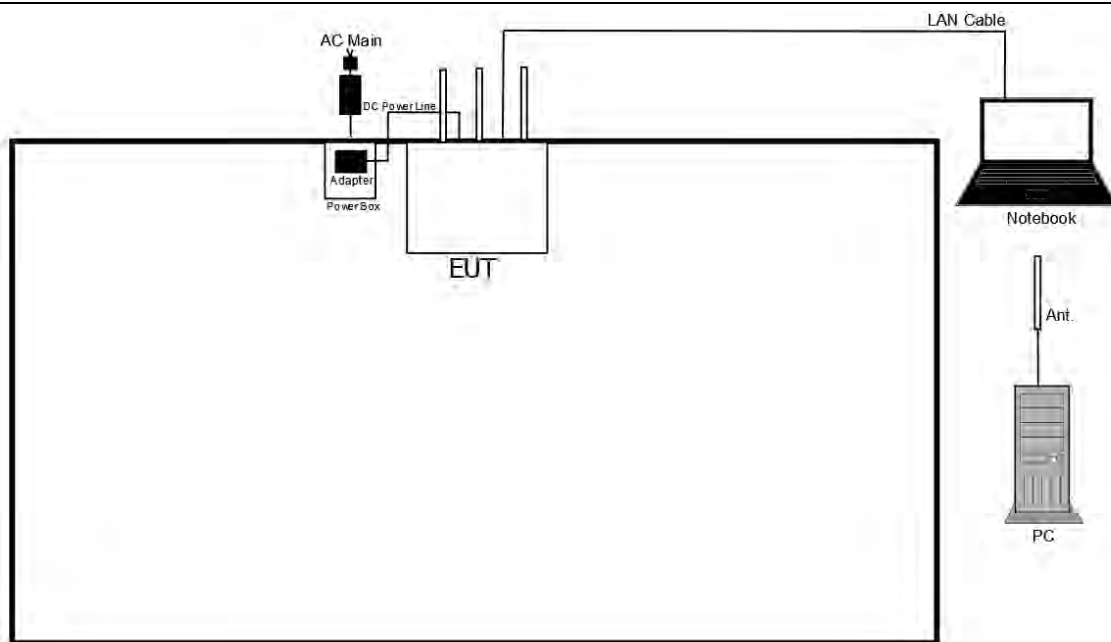
Test Setup Diagram – AC Line Conducted Emission Test - Mode 2

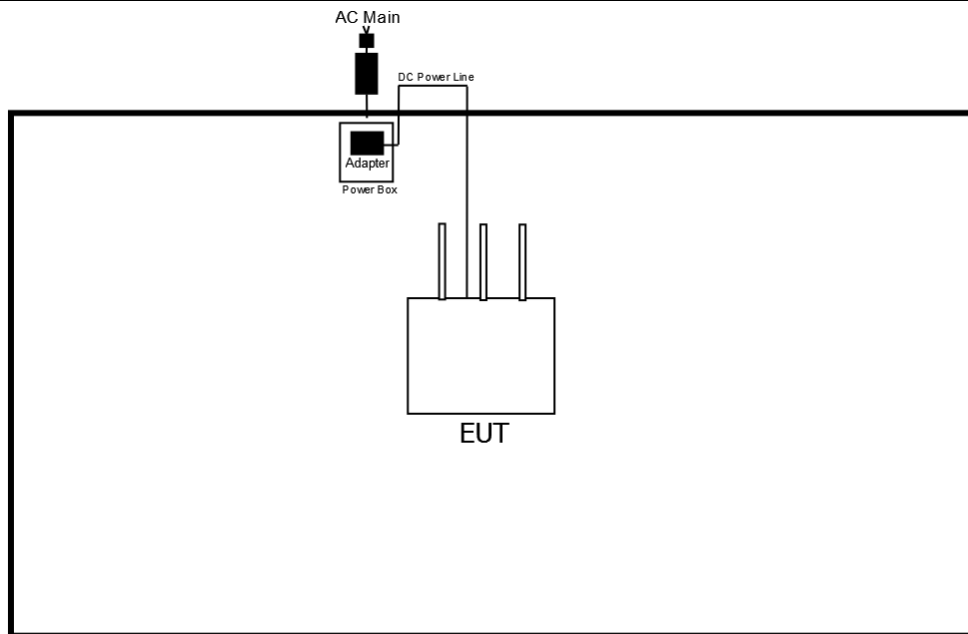
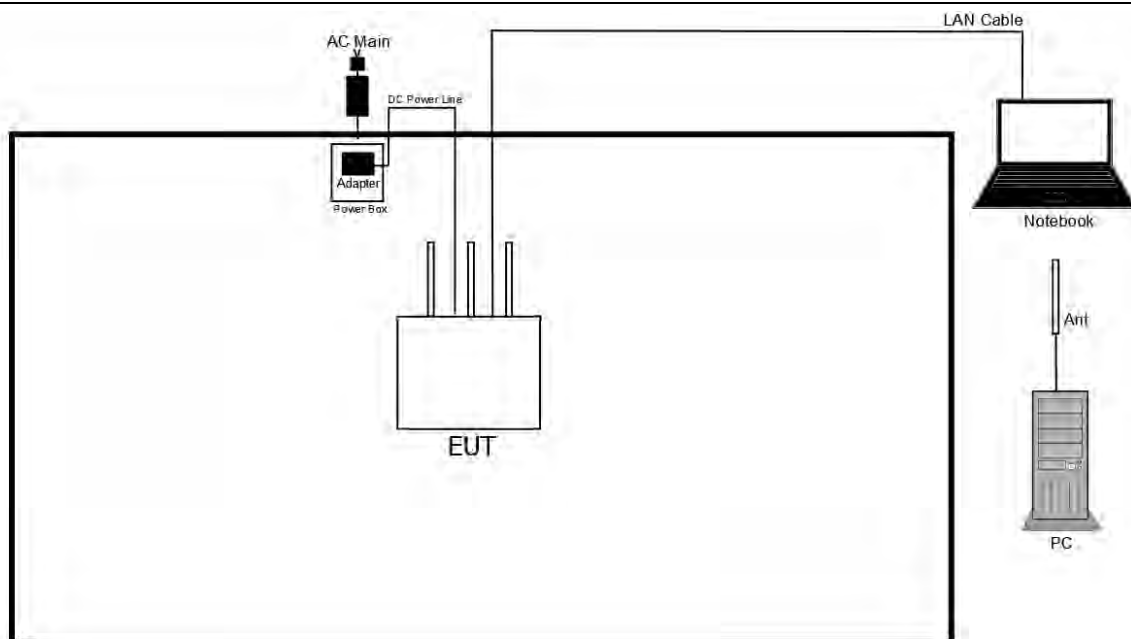


Test Setup Diagram - Radiated Emission (Below 1GHz) - Mode 1



Test Setup Diagram - Radiated Emission (Below 1GHz) - Mode 2



Test Setup Diagram - Radiated Emission (Above 1GHz) - Mode 1

Test Setup Diagram - Radiated Emission (Above 1GHz) - Mode 2


3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

| AC Power-line Conducted Emissions Limit | | |
|---|------------|-----------|
| Frequency Emission (MHz) | Quasi-Peak | Average |
| 0.15-0.5 | 66 - 56 * | 56 - 46 * |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

Note 1: * Decreases with the logarithm of the frequency.

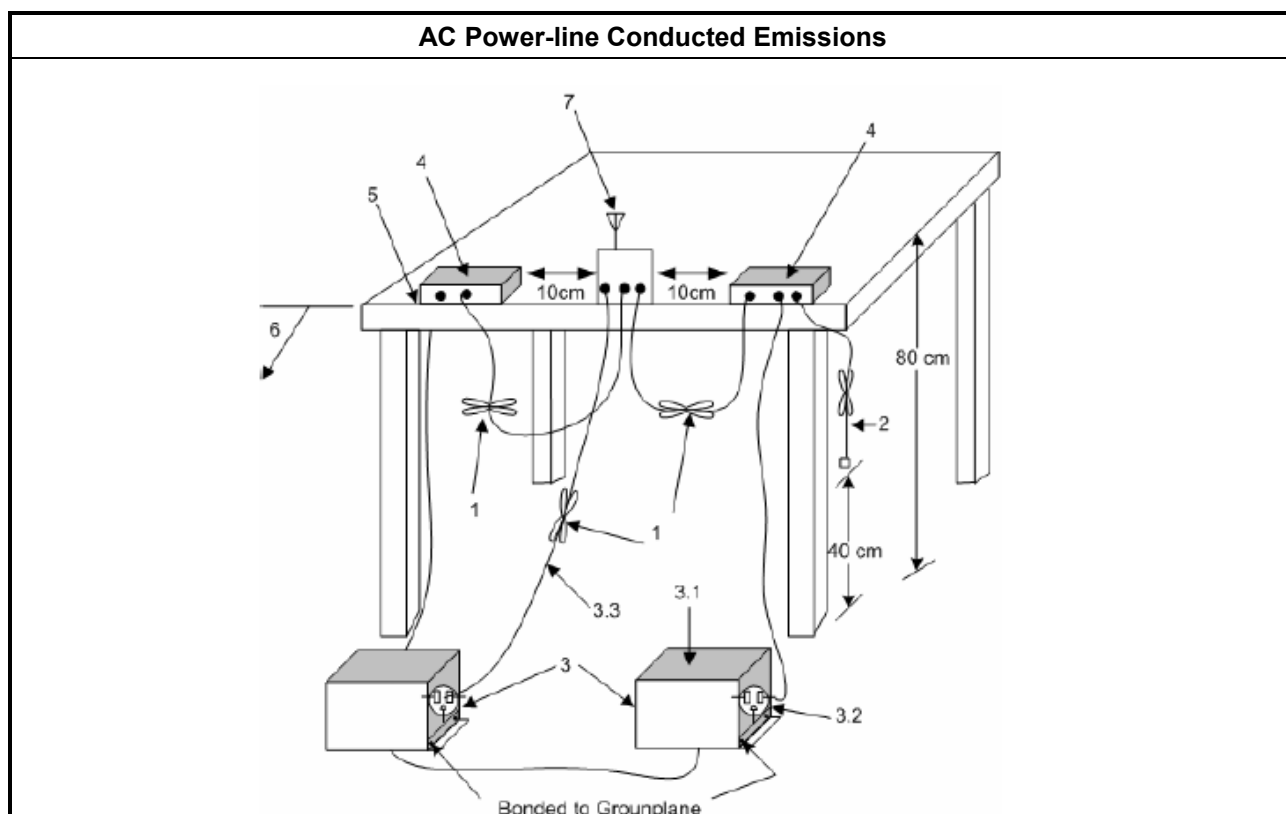
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

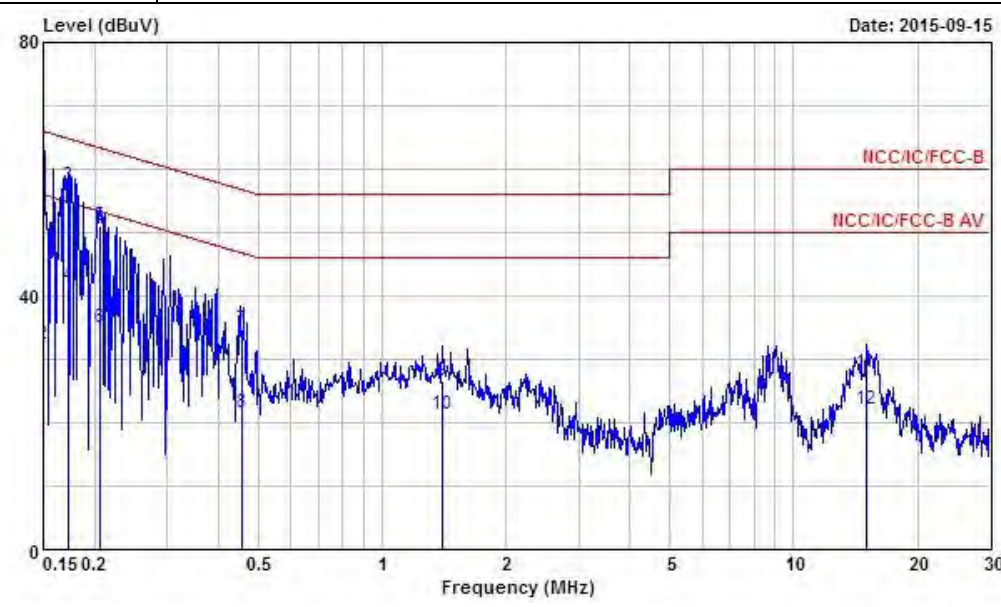
3.1.3 Test Procedures

| Test Method |
|--|
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions. |

3.1.4 Test Setup

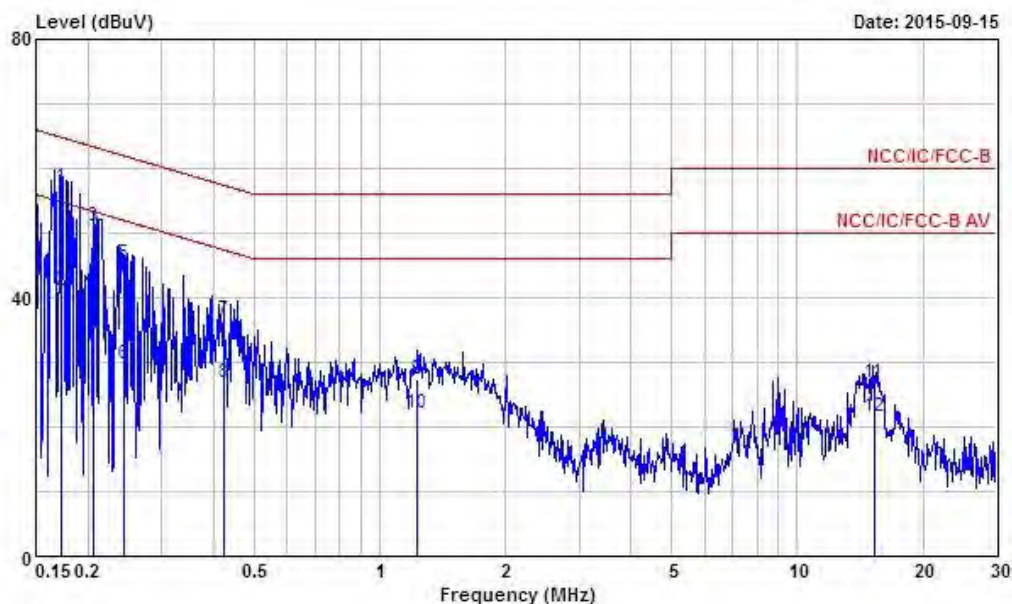


3.1.5 Test Result of AC Power-line Conducted Emissions

| AC Power-line Conducted Emissions Result | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-------|--------|-------------|-------|---------|-------|---------|------|-------|------|-------|------|------|-------|--|--|-----|------|-------|------|-------|--------|------|--------|--|-----|------|----|------|------|----|----|--|---|-----------|-------|--------|-------|-------|------|------|----|---|-----------|-------|--------|-------|-------|------|------|---------|---|-----------|-------|-------|-------|-------|------|------|----|---|-----------|-------|--------|-------|-------|------|------|---------|---|-----------|-------|--------|-------|-------|------|------|----|---|-----------|-------|--------|-------|-------|------|------|---------|---|-----------|-------|--------|-------|-------|------|------|----|---|-----------|-------|--------|-------|-------|------|------|---------|---|-------|-------|--------|-------|-------|------|------|----|----|-------|-------|--------|-------|-------|------|------|---------|----|--------|-------|--------|-------|-------|------|------|----|----|--------|-------|--------|-------|-------|------|------|---------|
| Operating Mode | 1 | | | Power Phase | | Neutral | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating Function | Adapter Mode and Transmit (non-beamforming) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>Level (dBuV)</div><div></div><div>Date: 2015-09-15</div></div></div> <table><tr><th></th><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>Read</th><th>LISN</th><th>Cable</th><th></th></tr><tr><th></th><th>MHz</th><th>dBuV</th><th>Limit</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Remark</th></tr><tr><th></th><th>MHz</th><th>dBuV</th><th>dB</th><th>dBuV</th><th>dBuV</th><th>dB</th><th>dB</th><th></th></tr><tr><td>1</td><td>0.1500000</td><td>55.30</td><td>-10.70</td><td>66.00</td><td>55.23</td><td>0.07</td><td>0.00</td><td>QP</td></tr><tr><td>2</td><td>0.1500000</td><td>32.34</td><td>-23.66</td><td>56.00</td><td>32.27</td><td>0.07</td><td>0.00</td><td>Average</td></tr><tr><td>3</td><td>0.1730690</td><td>57.37</td><td>-7.44</td><td>64.81</td><td>57.30</td><td>0.07</td><td>0.00</td><td>QP</td></tr><tr><td>4</td><td>0.1730690</td><td>41.70</td><td>-13.11</td><td>54.81</td><td>41.63</td><td>0.07</td><td>0.00</td><td>Average</td></tr><tr><td>5</td><td>0.2061360</td><td>51.10</td><td>-12.26</td><td>63.36</td><td>51.03</td><td>0.07</td><td>0.00</td><td>QP</td></tr><tr><td>6</td><td>0.2061360</td><td>34.88</td><td>-18.48</td><td>53.36</td><td>34.81</td><td>0.07</td><td>0.00</td><td>Average</td></tr><tr><td>7</td><td>0.4547500</td><td>34.61</td><td>-22.18</td><td>56.79</td><td>34.54</td><td>0.07</td><td>0.00</td><td>QP</td></tr><tr><td>8</td><td>0.4547500</td><td>21.68</td><td>-25.11</td><td>46.79</td><td>21.61</td><td>0.07</td><td>0.00</td><td>Average</td></tr><tr><td>9</td><td>1.400</td><td>26.60</td><td>-29.40</td><td>56.00</td><td>26.51</td><td>0.09</td><td>0.00</td><td>QP</td></tr><tr><td>10</td><td>1.400</td><td>21.39</td><td>-24.61</td><td>46.00</td><td>21.30</td><td>0.09</td><td>0.00</td><td>Average</td></tr><tr><td>11</td><td>14.998</td><td>27.99</td><td>-32.01</td><td>60.00</td><td>27.66</td><td>0.33</td><td>0.00</td><td>QP</td></tr><tr><td>12</td><td>14.998</td><td>22.20</td><td>-27.80</td><td>50.00</td><td>21.87</td><td>0.33</td><td>0.00</td><td>Average</td></tr></table> | | | | | | | | | Freq | Level | Over | Limit | Read | LISN | Cable | | | MHz | dBuV | Limit | Line | Level | Factor | Loss | Remark | | MHz | dBuV | dB | dBuV | dBuV | dB | dB | | 1 | 0.1500000 | 55.30 | -10.70 | 66.00 | 55.23 | 0.07 | 0.00 | QP | 2 | 0.1500000 | 32.34 | -23.66 | 56.00 | 32.27 | 0.07 | 0.00 | Average | 3 | 0.1730690 | 57.37 | -7.44 | 64.81 | 57.30 | 0.07 | 0.00 | QP | 4 | 0.1730690 | 41.70 | -13.11 | 54.81 | 41.63 | 0.07 | 0.00 | Average | 5 | 0.2061360 | 51.10 | -12.26 | 63.36 | 51.03 | 0.07 | 0.00 | QP | 6 | 0.2061360 | 34.88 | -18.48 | 53.36 | 34.81 | 0.07 | 0.00 | Average | 7 | 0.4547500 | 34.61 | -22.18 | 56.79 | 34.54 | 0.07 | 0.00 | QP | 8 | 0.4547500 | 21.68 | -25.11 | 46.79 | 21.61 | 0.07 | 0.00 | Average | 9 | 1.400 | 26.60 | -29.40 | 56.00 | 26.51 | 0.09 | 0.00 | QP | 10 | 1.400 | 21.39 | -24.61 | 46.00 | 21.30 | 0.09 | 0.00 | Average | 11 | 14.998 | 27.99 | -32.01 | 60.00 | 27.66 | 0.33 | 0.00 | QP | 12 | 14.998 | 22.20 | -27.80 | 50.00 | 21.87 | 0.33 | 0.00 | Average |
| | Freq | Level | Over | Limit | Read | LISN | Cable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MHz | dBuV | Limit | Line | Level | Factor | Loss | Remark | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.1500000 | 55.30 | -10.70 | 66.00 | 55.23 | 0.07 | 0.00 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 0.1500000 | 32.34 | -23.66 | 56.00 | 32.27 | 0.07 | 0.00 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 0.1730690 | 57.37 | -7.44 | 64.81 | 57.30 | 0.07 | 0.00 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 0.1730690 | 41.70 | -13.11 | 54.81 | 41.63 | 0.07 | 0.00 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 0.2061360 | 51.10 | -12.26 | 63.36 | 51.03 | 0.07 | 0.00 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 0.2061360 | 34.88 | -18.48 | 53.36 | 34.81 | 0.07 | 0.00 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 0.4547500 | 34.61 | -22.18 | 56.79 | 34.54 | 0.07 | 0.00 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 0.4547500 | 21.68 | -25.11 | 46.79 | 21.61 | 0.07 | 0.00 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 1.400 | 26.60 | -29.40 | 56.00 | 26.51 | 0.09 | 0.00 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 1.400 | 21.39 | -24.61 | 46.00 | 21.30 | 0.09 | 0.00 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 14.998 | 27.99 | -32.01 | 60.00 | 27.66 | 0.33 | 0.00 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | 14.998 | 22.20 | -27.80 | 50.00 | 21.87 | 0.33 | 0.00 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found emissions (No emissions were detected.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

AC Power-line Conducted Emissions Result

| | | | |
|---------------------------|---|--------------------|------|
| Operating Mode | 1 | Power Phase | Line |
| Operating Function | Adapter Mode and Transmit (non-beamforming) | | |



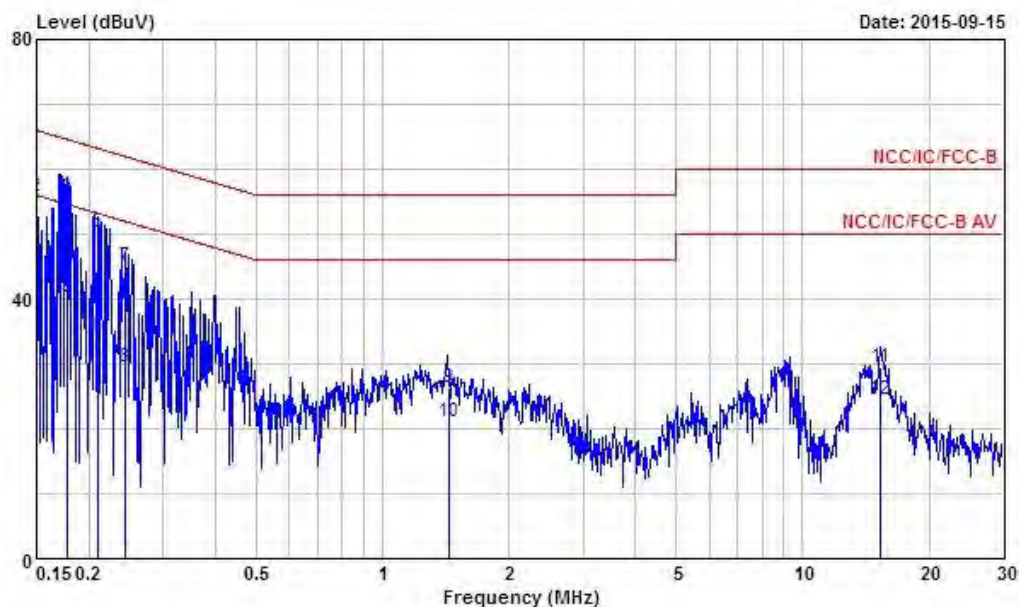
| | Freq | Level | Over | Limit | Read | LISN | Cable | |
|----|-----------|-------|--------|-------|-------|--------|-------|---------|
| | MHz | dBuV | Limit | Line | Level | Factor | Loss | Remark |
| | | | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.1727680 | 57.07 | -7.76 | 64.83 | 57.02 | 0.05 | 0.00 | QP |
| 2 | 0.1727680 | 40.96 | -13.87 | 54.83 | 40.91 | 0.05 | 0.00 | Average |
| 3 | 0.2061360 | 50.99 | -12.37 | 63.36 | 50.93 | 0.06 | 0.00 | QP |
| 4 | 0.2061360 | 34.37 | -18.99 | 53.36 | 34.31 | 0.06 | 0.00 | Average |
| 5 | 0.2429810 | 45.22 | -16.77 | 61.99 | 45.16 | 0.06 | 0.00 | QP |
| 6 | 0.2429810 | 29.81 | -22.18 | 51.99 | 29.75 | 0.06 | 0.00 | Average |
| 7 | 0.4215300 | 36.52 | -20.90 | 57.42 | 36.45 | 0.07 | 0.00 | QP |
| 8 | 0.4215300 | 26.72 | -20.70 | 47.42 | 26.65 | 0.07 | 0.00 | Average |
| 9 | 1.226 | 27.35 | -28.65 | 56.00 | 27.26 | 0.09 | 0.00 | QP |
| 10 | 1.226 | 22.10 | -23.90 | 46.00 | 22.01 | 0.09 | 0.00 | Average |
| 11 | 15.262 | 26.86 | -33.14 | 60.00 | 26.55 | 0.31 | 0.00 | QP |
| 12 | 15.262 | 21.45 | -28.55 | 50.00 | 21.14 | 0.31 | 0.00 | Average |

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result

| | | | |
|--------------------|---|-------------|---------|
| Operating Mode | 2 | Power Phase | Neutral |
| Operating Function | Adapter Mode and Transmit (beamforming) | | |



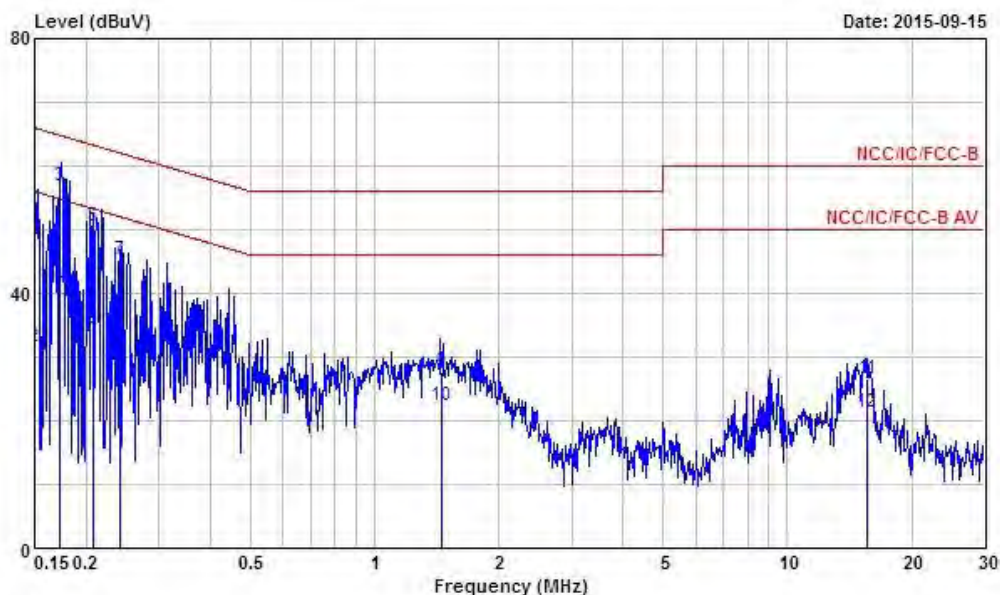
| | Freq | Level | Over | Limit | Read | LISN | Cable | |
|----|-----------|-------|--------|-------|-------|--------|-------|---------|
| | MHz | dBuV | Limit | Line | Level | Factor | Loss | Remark |
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.1500000 | 32.78 | -23.22 | 56.00 | 32.71 | 0.07 | 0.00 | Average |
| 2 | 0.1500000 | 55.81 | -10.19 | 66.00 | 55.74 | 0.07 | 0.00 | QP |
| 3 | 0.1767400 | 40.15 | -14.49 | 54.64 | 40.08 | 0.07 | 0.00 | Average |
| 4 | 0.1767400 | 56.18 | -8.46 | 64.64 | 56.11 | 0.07 | 0.00 | QP |
| 5 | 0.2105360 | 50.39 | -12.79 | 63.18 | 50.32 | 0.07 | 0.00 | QP |
| 6 | 0.2105360 | 34.24 | -18.94 | 53.18 | 34.17 | 0.07 | 0.00 | Average |
| 7 | 0.2436010 | 45.03 | -16.94 | 61.97 | 44.96 | 0.07 | 0.00 | QP |
| 8 | 0.2436010 | 29.44 | -22.53 | 51.97 | 29.37 | 0.07 | 0.00 | Average |
| 9 | 1.443 | 26.45 | -29.55 | 56.00 | 26.35 | 0.10 | 0.00 | QP |
| 10 | 1.443 | 21.16 | -24.84 | 46.00 | 21.06 | 0.10 | 0.00 | Average |
| 11 | 15.352 | 29.59 | -30.41 | 60.00 | 29.25 | 0.34 | 0.00 | QP |
| 12 | 15.352 | 24.38 | -25.62 | 50.00 | 24.04 | 0.34 | 0.00 | Average |

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result

| | | | |
|---------------------------|---|--------------------|------|
| Operating Mode | 2 | Power Phase | Line |
| Operating Function | Adapter Mode and Transmit (beamforming) | | |



| | Freq | Level | Over | Limit | Read | LISN | Cable | |
|----|-----------|-------|--------|-------|-------|--------|-------|---------|
| | MHz | dBuV | Limit | Line | Level | Factor | Loss | Remark |
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.1500000 | 55.76 | -10.24 | 66.00 | 55.71 | 0.05 | 0.00 | QP |
| 2 | 0.1500000 | 31.53 | -24.47 | 56.00 | 31.48 | 0.05 | 0.00 | Average |
| 3 | 0.1731880 | 56.93 | -7.88 | 64.81 | 56.87 | 0.06 | 0.00 | QP |
| 4 | 0.1731880 | 41.13 | -13.68 | 54.81 | 41.07 | 0.06 | 0.00 | Average |
| 5 | 0.2085070 | 50.62 | -12.64 | 63.26 | 50.56 | 0.06 | 0.00 | QP |
| 6 | 0.2085070 | 34.58 | -18.68 | 53.26 | 34.52 | 0.06 | 0.00 | Average |
| 7 | 0.2413320 | 45.22 | -16.83 | 62.05 | 45.16 | 0.06 | 0.00 | QP |
| 8 | 0.2413320 | 29.51 | -22.54 | 52.05 | 29.45 | 0.06 | 0.00 | Average |
| 9 | 1.459 | 27.50 | -28.50 | 56.00 | 27.41 | 0.09 | 0.00 | QP |
| 10 | 1.459 | 22.44 | -23.56 | 46.00 | 22.35 | 0.09 | 0.00 | Average |
| 11 | 15.623 | 26.55 | -33.45 | 60.00 | 26.24 | 0.31 | 0.00 | QP |
| 12 | 15.623 | 21.43 | -28.57 | 50.00 | 21.12 | 0.31 | 0.00 | Average |

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

| Emission Bandwidth Limit | |
|-------------------------------------|---|
| UNII Devices | |
| <input checked="" type="checkbox"/> | For the 5.15-5.25 GHz band |
| <input type="checkbox"/> | For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. |
| <input type="checkbox"/> | For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. |
| <input type="checkbox"/> | For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz. |

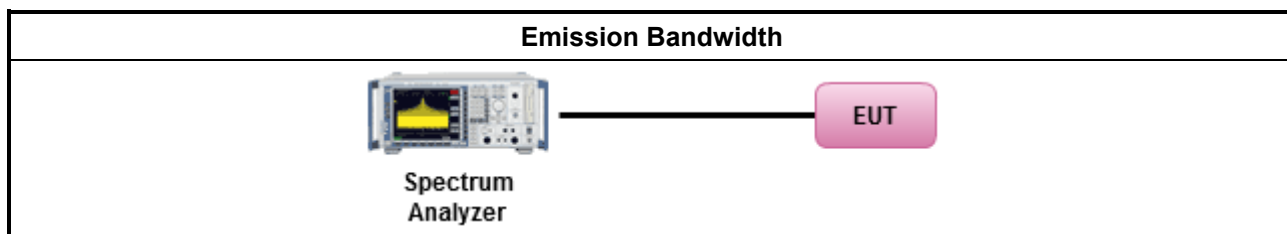
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

| Test Method | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | For the emission bandwidth shall be measured using one of the options below: |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause C for EBW and clause D for OBW measurement. |
| <input type="checkbox"/> | Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing. |
| <input type="checkbox"/> | Refer as IC RSS-Gen, clause 4.6 for bandwidth testing. |
| <input checked="" type="checkbox"/> | For conducted measurement. |
| <input type="checkbox"/> | The EUT supports single transmit chain and measurements performed on this transmit chain. |
| <input type="checkbox"/> | The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case. |
| <input checked="" type="checkbox"/> | The EUT supports multiple transmit chains using options given below: |
| <input type="checkbox"/> | Option 1: Multiple transmit chains measurements need to be performed on one of the active transmit chains (antenna outputs). All measurement had be performed on transmit chains 1. |
| <input checked="" type="checkbox"/> | Option 2: Multiple transmit chains measurements need to be performed on each transmit chains individually (antenna outputs). All measurement had be performed on all transmit chains. |

3.2.4 Test Setup



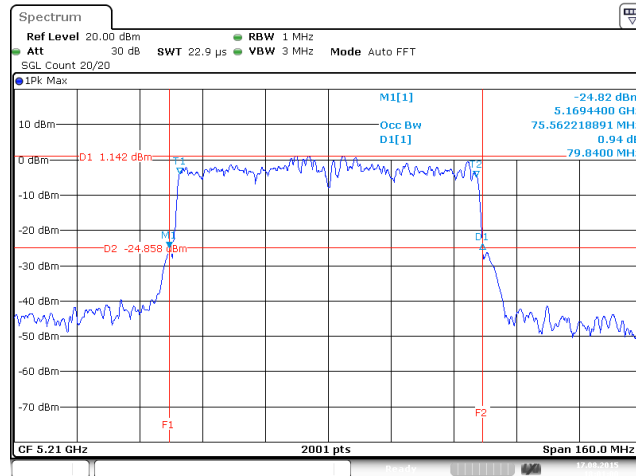
3.2.5 Test Result of Emission Bandwidth

| UNII Emission Bandwidth Result (5150-5250MHz band) (non-beamforming) | | | | | | | | |
|--|-----------------|-------------|--------------------------|--------------|--------------|---------------------|--------------|--------------|
| Condition | | | Emission Bandwidth (MHz) | | | | | |
| Modulation Mode | N _{TX} | Freq. (MHz) | 99% Bandwidth(MHz) | | | 26dB Bandwidth(MHz) | | |
| | | | Chain Port 1 | Chain Port 2 | Chain Port 3 | Chain Port 1 | Chain Port 2 | Chain Port 3 |
| 11a | 3 | 5180 | 16.56 | 16.49 | 16.49 | 19.82 | 19.67 | 19.57 |
| 11a | 3 | 5200 | 16.41 | 16.59 | 16.76 | 19.57 | 20.00 | 19.90 |
| 11a | 3 | 5240 | 16.81 | 16.61 | 16.49 | 20.30 | 19.80 | 19.30 |
| HT20 | 3 | 5180 | 17.86 | 17.91 | 18.01 | 20.17 | 20.17 | 20.70 |
| HT20 | 3 | 5200 | 17.81 | 17.69 | 17.71 | 20.32 | 19.45 | 19.62 |
| HT20 | 3 | 5240 | 17.94 | 17.66 | 17.76 | 20.22 | 20.10 | 20.00 |
| HT40 | 3 | 5190 | 36.18 | 36.34 | 36.42 | 39.20 | 39.24 | 38.84 |
| HT40 | 3 | 5230 | 36.46 | 36.86 | 36.34 | 39.48 | 39.44 | 39.12 |
| VHT20 | 3 | 5180 | 18.01 | 17.86 | 17.76 | 20.42 | 20.22 | 19.85 |
| VHT20 | 3 | 5200 | 18.06 | 17.69 | 18.06 | 20.92 | 19.90 | 20.65 |
| VHT20 | 3 | 5240 | 17.66 | 17.76 | 17.74 | 19.60 | 20.22 | 20.27 |
| VHT40 | 3 | 5190 | 36.26 | 36.46 | 36.46 | 39.80 | 39.00 | 39.00 |
| VHT40 | 3 | 5230 | 36.50 | 36.62 | 36.50 | 39.44 | 38.84 | 39.40 |
| VHT80 | 3 | 5210 | 75.56 | 75.72 | 75.64 | 79.84 | 79.20 | 79.44 |
| Result | | | Complied | | | | | |

| UNII Emission Bandwidth Result (5150-5250MHz band) (beamforming) | | | | | | | | |
|--|-----------------|-------------|--------------------------|--------------|--------------|---------------------|--------------|--------------|
| Condition | | | Emission Bandwidth (MHz) | | | | | |
| Modulation Mode | N _{TX} | Freq. (MHz) | 99% Bandwidth(MHz) | | | 26dB Bandwidth(MHz) | | |
| | | | Chain Port 1 | Chain Port 2 | Chain Port 3 | Chain Port 1 | Chain Port 2 | Chain Port 3 |
| VHT20 | 3 | 5180 | 17.76 | 17.71 | 17.81 | 19.85 | 19.75 | 19.92 |
| VHT20 | 3 | 5200 | 17.89 | 17.84 | 17.71 | 19.97 | 20.85 | 19.80 |
| VHT20 | 3 | 5240 | 17.74 | 18.01 | 17.64 | 20.27 | 20.57 | 19.62 |
| VHT40 | 3 | 5190 | 36.46 | 36.46 | 36.46 | 40.20 | 40.64 | 40.64 |
| VHT40 | 3 | 5230 | 36.50 | 36.62 | 36.66 | 43.52 | 42.44 | 43.88 |
| VHT80 | 3 | 5210 | 75.80 | 75.64 | 75.64 | 82.72 | 81.44 | 82.32 |
| Result | | | Complied | | | | | |

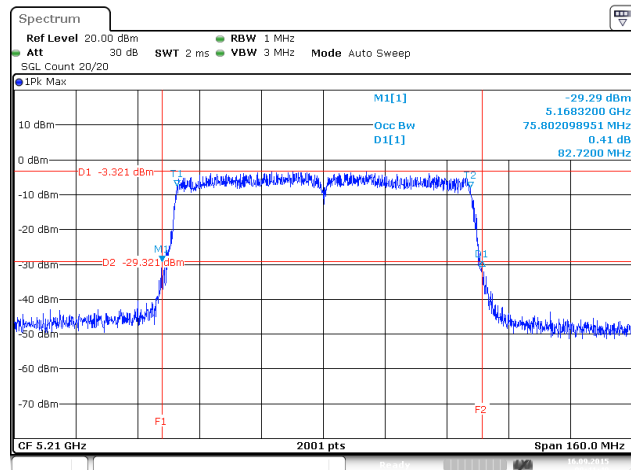


5150-5250MHz - Worst Emission 99% / 26dB Bandwidth Plots (non-beamforming)



Date: 17.AUG.2015 18:01:00

5150-5250MHz - Worst Emission 99% / 26dB Bandwidth Plots (beamforming)



Date: 16.SEP.2015 09:41:40

3.3 RF Output Power

3.3.1 RF Output Power Limit

| Maximum Conducted Output Power Limit | |
|--|---|
| UNII Devices | |
| <input checked="" type="checkbox"/> For the 5.15-5.25 GHz band: | |
| <input type="checkbox"/> | Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees ≤ 125 mW [21dBm] |
| <input checked="" type="checkbox"/> | Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ |
| <input type="checkbox"/> | Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. |
| <input type="checkbox"/> | Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$. |
| <input type="checkbox"/> | For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$. |
| <input type="checkbox"/> | For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$. |
| <input type="checkbox"/> For the 5.725-5.85 GHz band: | |
| <input type="checkbox"/> | Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. |
| <input type="checkbox"/> | Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. |
| P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi. | |

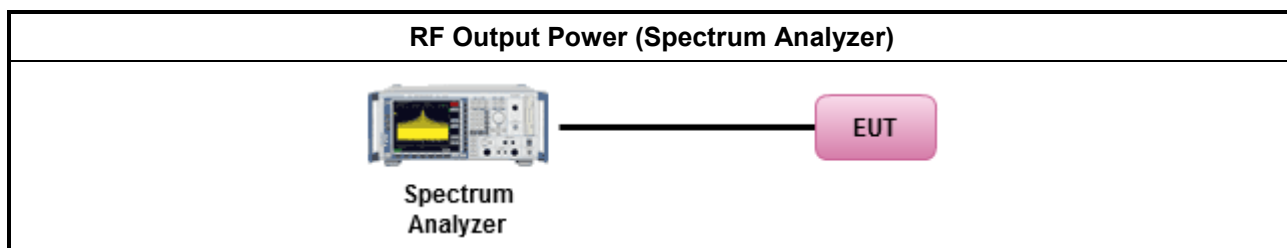
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

| Test Method | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Maximum Conducted Output Power |
| | [duty cycle \geq 98% or external video / power trigger] |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause E Method SA-1 (spectral trace averaging). |
| <input type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause E Method SA-1 Alt. (RMS detection with slow sweep speed) |
| | duty cycle < 98% and average over on/off periods with duty factor |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause E Method SA-2 (spectral trace averaging). |
| <input type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause E Method SA-2 Alt. (RMS detection with slow sweep speed) |
| | Wideband RF power meter and average over on/off periods with duty factor |
| <input type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause E Method PM (using an RF average power meter). |
| <input checked="" type="checkbox"/> | For conducted measurement. |
| <input type="checkbox"/> | The EUT supports single transmit chain and measurements performed on this transmit chain |
| <input type="checkbox"/> | The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case. |
| <input checked="" type="checkbox"/> | The EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them. |
| <input checked="" type="checkbox"/> | If multiple transmit chains, EIRP calculation could be following as methods: $P_{\text{total}} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $\text{EIRP}_{\text{total}} = P_{\text{total}} + \text{DG}$ |

3.3.4 Test Setup



3.3.5 Directional Gain for Power Measurement

| Directional Gain (DG) Result (non-beamforming) | | | | | |
|--|------------------------------|----------|-----------------|------|-----------------|
| Transmit Chains No. | | 1 | 2 | 3 | - |
| Maximum G_{ANT} (dBi) | | 1.68 | 1.68 | 1.68 | - |
| Modulation Mode | DG (dBi) (See the Note 3) | N_{TX} | N_{SS} (Min.) | STBC | Array Gain (dB) |
| 11a | 1.68 | 3 | 1 | - | 0.00 |
| HT20 | 1.68 | 3 | 1 | - | 0.00 |
| HT40 | 1.68 | 3 | 1 | - | 0.00 |
| VHT20 | 1.68 | 3 | 1 | - | 0.00 |
| VHT40 | 1.68 | 3 | 1 | - | 0.00 |
| VHT80 | 1.68 | 3 | 1 | - | 0.00 |
| <p>Note 1: For all transmitter outputs with equal antenna gains, directional gain is to be computed as follows: Any transmit signals are correlated, Directional Gain = $G_{ANT} + 10 \log(N_{TX})$ All transmit signals are completely uncorrelated, Directional Gain = G_{ANT}</p> <p>Note 2: For all transmitter outputs with unequal antenna gains, directional gain is to be computed as follows: Any transmit signals are correlated, Directional Gain = $10 \log[(10^{G_{1/20}} + \dots + 10^{G_{N/20}})^2 / N_{TX}]$ All transmit signals are completely uncorrelated, Directional Gain = $10 \log[(10^{G_{1/10}} + \dots + 10^{G_{N/10}}) / N_{TX}]$</p> <p>Note 3: For Spatial Multiplexing, Directional Gain (DG) = $G_{ANT} + 10 \log(N_{TX}/N_{SS})$, where N_{SS} = the number of independent spatial streams data.</p> <p>Note 4: For CDD transmissions, directional gain is calculated as power measurements: Directional Gain (DG) = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows: Array Gain = 0 dB (i.e., no array gain) for $N_{TX} \leq 4$; Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{TX};</p> | | | | | |

| Directional Gain (DG) Result (beamforming) | | | | | |
|--|------------------------------|----------|-----------------|------|-----------------|
| Transmit Chains No. | | 1 | 2 | 3 | - |
| Maximum G_{ANT} (dBi) | | 6.45 | 6.45 | 6.45 | - |
| Modulation Mode | DG (dBi) (See the Note 3) | N_{TX} | N_{SS} (Min.) | STBC | Array Gain (dB) |
| VHT20 | 6.45 | 3 | 1 | - | 0.00 |
| VHT40 | 6.45 | 3 | 1 | - | 0.00 |
| VHT80 | 6.45 | 3 | 1 | - | 0.00 |
| <p>Note 1: For all transmitter outputs with equal antenna gains, directional gain is to be computed as follows: Any transmit signals are correlated, Directional Gain = $G_{ANT} + 10 \log(N_{TX})$ All transmit signals are completely uncorrelated, Directional Gain = G_{ANT}</p> <p>Note 2: For all transmitter outputs with unequal antenna gains, directional gain is to be computed as follows: Any transmit signals are correlated, Directional Gain = $10 \log[(10^{G_{1/20}} + \dots + 10^{G_{N/20}})^2 / N_{TX}]$ All transmit signals are completely uncorrelated, Directional Gain = $10 \log[(10^{G_{1/10}} + \dots + 10^{G_{N/10}}) / N_{TX}]$</p> <p>Note 3: For Spatial Multiplexing, Directional Gain (DG) = $G_{ANT} + 10 \log(N_{TX}/N_{SS})$, where N_{SS} = the number of independent spatial streams data.</p> <p>Note 4: For CDD transmissions, directional gain is calculated as power measurements: Directional Gain (DG) = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows: Array Gain = 0 dB (i.e., no array gain) for $N_{TX} \leq 4$; Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{TX};</p> | | | | | |

3.3.6 Test Result of Maximum Conducted Output Power

| Maximum Conducted Output Power (5150-5250MHz band) (non-beamforming) | | | | | | | | |
|--|-----------------|-------------|--------------------|--------------|--------------|-----------|--------------------|-------------|
| Modulation Mode | N _{TX} | Freq. (MHz) | Output Power (dBm) | | | | Antenna Gain (dBi) | Power Limit |
| | | | Chain Port 1 | Chain Port 2 | Chain Port 3 | Sum Chain | | |
| 11a | 3 | 5180 | 20.38 | 19.90 | 19.67 | 24.76 | 1.68 | 30.00 |
| 11a | 3 | 5200 | 21.11 | 20.52 | 20.38 | 25.45 | 1.68 | 30.00 |
| 11a | 3 | 5240 | 20.91 | 20.60 | 20.27 | 25.37 | 1.68 | 30.00 |
| HT20 | 3 | 5180 | 19.95 | 19.67 | 19.26 | 24.41 | 1.68 | 30.00 |
| HT20 | 3 | 5200 | 21.58 | 21.33 | 20.84 | 26.03 | 1.68 | 30.00 |
| HT20 | 3 | 5240 | 21.75 | 21.34 | 21.04 | 26.16 | 1.68 | 30.00 |
| HT40 | 3 | 5190 | 17.00 | 16.69 | 16.25 | 21.43 | 1.68 | 30.00 |
| HT40 | 3 | 5230 | 22.08 | 21.81 | 21.29 | 26.51 | 1.68 | 30.00 |
| VHT20 | 3 | 5180 | 19.78 | 19.58 | 19.22 | 24.30 | 1.68 | 30.00 |
| VHT20 | 3 | 5200 | 21.53 | 21.28 | 20.96 | 26.03 | 1.68 | 30.00 |
| VHT20 | 3 | 5240 | 21.53 | 21.39 | 21.07 | 26.11 | 1.68 | 30.00 |
| VHT40 | 3 | 5190 | 17.08 | 16.76 | 16.30 | 21.50 | 1.68 | 30.00 |
| VHT40 | 3 | 5230 | 22.02 | 21.82 | 21.61 | 26.59 | 1.68 | 30.00 |
| VHT80 | 3 | 5210 | 14.25 | 13.93 | 13.90 | 18.80 | 1.68 | 30.00 |
| Result | | | Complied | | | | | |

| Maximum Conducted Output Power (5150-5250MHz band) (beamforming) | | | | | | | | |
|--|-----------------|-------------|--------------------|--------------|--------------|-----------|--------------------|-------------|
| Modulation Mode | N _{TX} | Freq. (MHz) | Output Power (dBm) | | | | Antenna Gain (dBi) | Power Limit |
| | | | Chain Port 1 | Chain Port 2 | Chain Port 3 | Sum Chain | | |
| VHT20 | 3 | 5180 | 21.17 | 17.95 | 20.71 | 24.93 | 6.45 | 29.55 |
| VHT20 | 3 | 5200 | 22.58 | 19.90 | 22.30 | 26.52 | 6.45 | 29.55 |
| VHT20 | 3 | 5240 | 22.86 | 20.10 | 22.29 | 26.67 | 6.45 | 29.55 |
| VHT40 | 3 | 5190 | 16.67 | 14.05 | 16.27 | 20.57 | 6.45 | 29.55 |
| VHT40 | 3 | 5230 | 22.66 | 20.06 | 22.11 | 26.51 | 6.45 | 29.55 |
| VHT80 | 3 | 5210 | 14.04 | 11.15 | 13.48 | 17.83 | 6.45 | 29.55 |
| Result | | | Complied | | | | | |

3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

| Peak Power Spectral Density Limit | |
|--|---|
| UNII Devices | |
| <input checked="" type="checkbox"/> For the 5.15-5.25 GHz band: | |
| <input type="checkbox"/> | Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. |
| <input checked="" type="checkbox"/> | Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. |
| <input type="checkbox"/> | Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$. |
| <input type="checkbox"/> | Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$. |
| <input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$. | |
| <input type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$. | |
| <input type="checkbox"/> For the 5.725-5.85 GHz band: | |
| <input type="checkbox"/> | Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. |
| <input type="checkbox"/> | Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. |
| PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi. | |

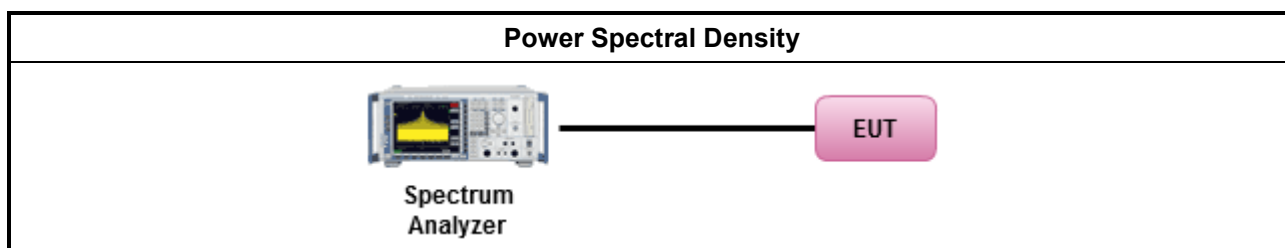
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

| Test Method | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options: |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth [duty cycle ≥ 98% or external video / power trigger] |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause E Method SA-1 (spectral trace averaging). |
| <input type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause E Method SA-1 Alt. (RMS detection with slow sweep speed) |
| | duty cycle < 98% and average over on/off periods with duty factor |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause E Method SA-2 (spectral trace averaging). |
| <input type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause E Method SA-2 Alt. (RMS detection with slow sweep speed) |
| <input checked="" type="checkbox"/> | For conducted measurement. |
| <input type="checkbox"/> | The EUT supports single transmit chain and measurements performed on this transmit chain |
| <input type="checkbox"/> | The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case. |
| <input checked="" type="checkbox"/> | The EUT supports multiple transmit chains using options given below: |
| <input checked="" type="checkbox"/> | Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them. |
| <input type="checkbox"/> | Option 2: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit. |
| <input type="checkbox"/> | If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$ |
| <input type="checkbox"/> | Each individually PPSD plots refer as test report clause 3.3.5 with each individually PPSD plots. |

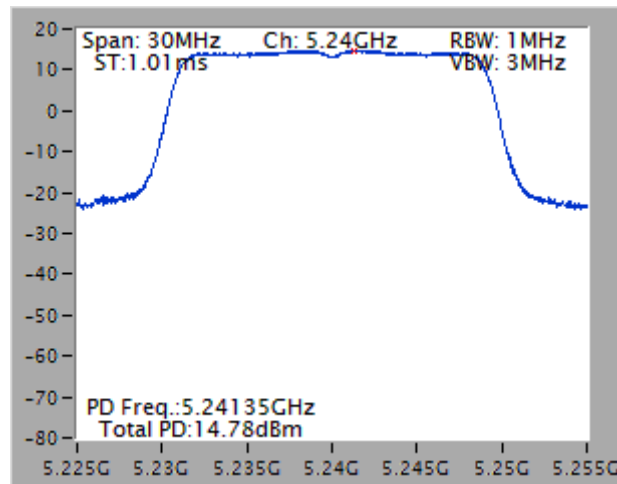
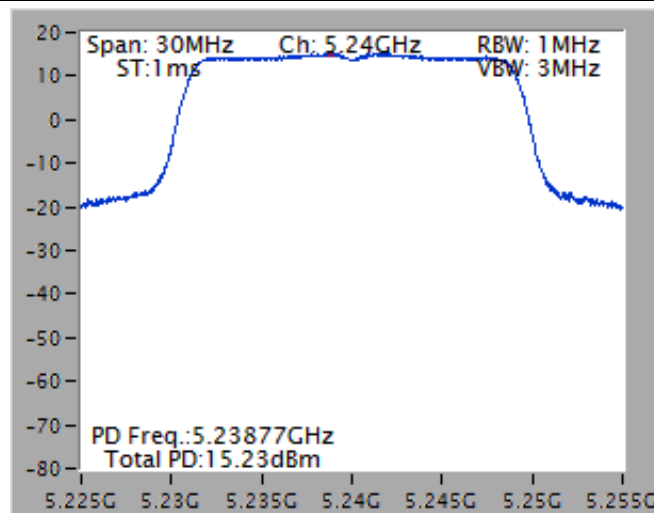
3.4.4 Test Setup



3.4.5 Test Result of Peak Power Spectral Density

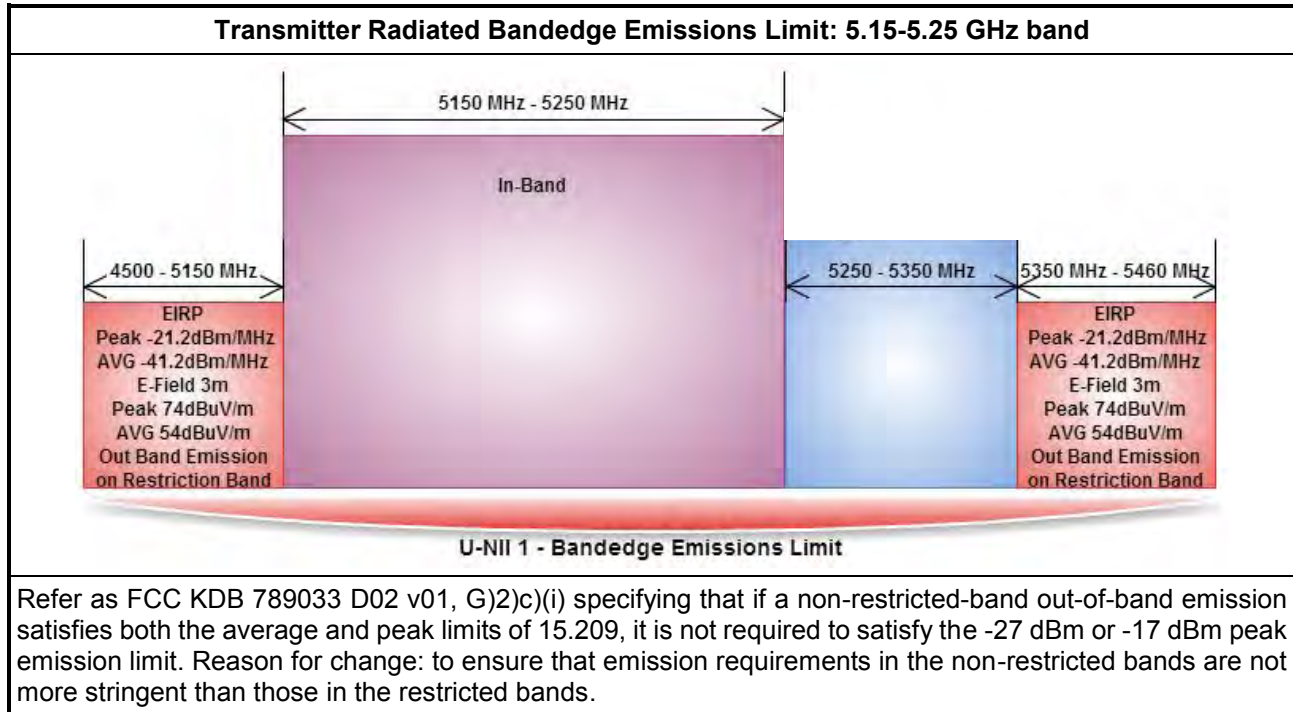
| Peak Power Spectral Density Result (5150-5250MHz band) (non-beamforming) | | | | | |
|---|-----------------------|--------------------|---|------------------|---------------------------|
| Modulation Mode | N_{TX} | Freq. (MHz) | Peak Power Spectral Density (dBm/1MHz) | PSD Limit | Antenna Gain (dBi) |
| 11a | 3 | 5180 | 13.82 | 16.55 | 6.45 |
| 11a | 3 | 5200 | 14.37 | 16.55 | 6.45 |
| 11a | 3 | 5240 | 14.34 | 16.55 | 6.45 |
| HT20 | 3 | 5180 | 13.06 | 16.55 | 6.45 |
| HT20 | 3 | 5200 | 14.73 | 16.55 | 6.45 |
| HT20 | 3 | 5240 | 14.78 | 16.55 | 6.45 |
| HT40 | 3 | 5190 | 7.20 | 16.55 | 6.45 |
| HT40 | 3 | 5230 | 12.23 | 16.55 | 6.45 |
| VHT20 | 3 | 5180 | 12.89 | 16.55 | 6.45 |
| VHT20 | 3 | 5200 | 14.59 | 16.55 | 6.45 |
| VHT20 | 3 | 5240 | 14.61 | 16.55 | 6.45 |
| VHT40 | 3 | 5190 | 7.35 | 16.55 | 6.45 |
| VHT40 | 3 | 5230 | 12.42 | 16.55 | 6.45 |
| VHT80 | 3 | 5210 | 1.43 | 16.55 | 6.45 |
| Result | | | Complied | | |

| Peak Power Spectral Density Result (5150-5250MHz band) (beamforming) | | | | | |
|---|-----------------------|--------------------|---|------------------|---------------------------|
| Modulation Mode | N_{TX} | Freq. (MHz) | Peak Power Spectral Density (dBm/1MHz) | PSD Limit | Antenna Gain (dBi) |
| VHT20 | 3 | 5180 | 13.67 | 16.55 | 6.45 |
| VHT20 | 3 | 5200 | 15.20 | 16.55 | 6.45 |
| VHT20 | 3 | 5240 | 15.45 | 16.55 | 6.45 |
| VHT40 | 3 | 5190 | 6.34 | 16.55 | 6.45 |
| VHT40 | 3 | 5230 | 12.36 | 16.55 | 6.45 |
| VHT80 | 3 | 5210 | 0.46 | 16.55 | 6.45 |
| Result | | | Complied | | |

5150-5250MHz - Worst Power Spectral Density Plots (non-beamforming)

5150-5250MHz - Worst Power Spectral Density Plots (beamforming)


3.5 Transmitter Bandedge Emissions

3.5.1 Transmitter Radiated Bandedge Emissions Limit



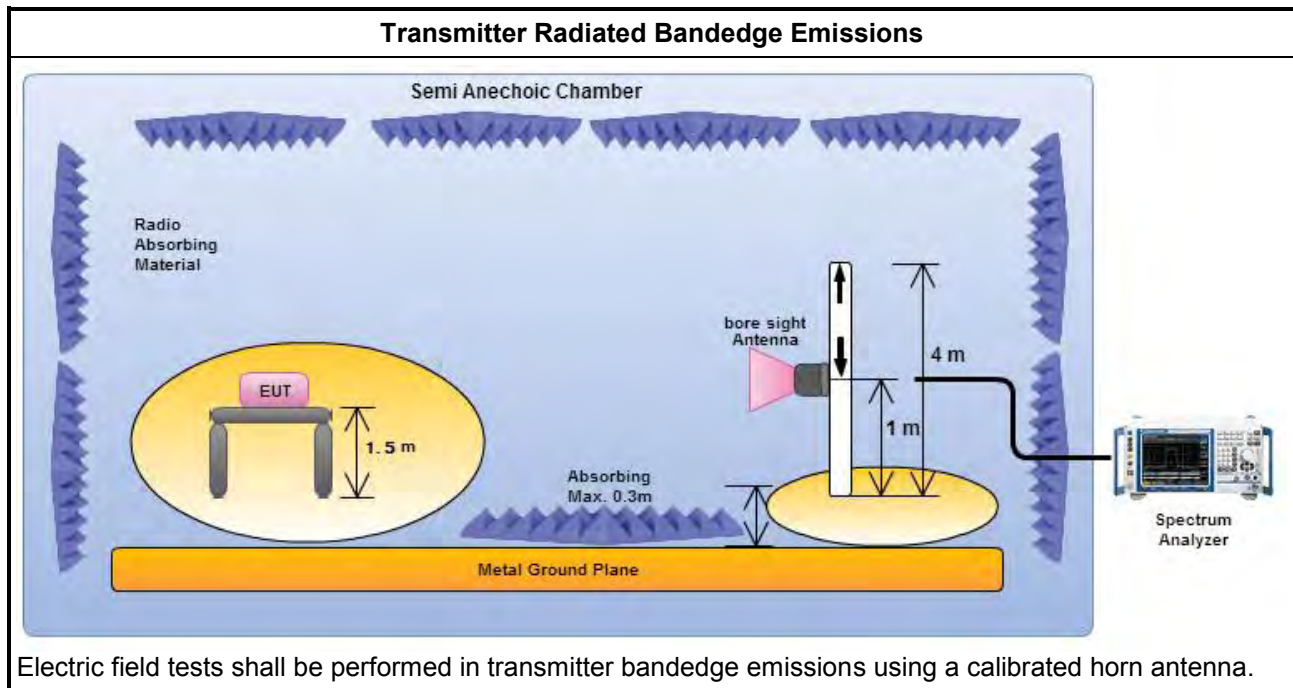
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

| Test Method | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.10 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. |
| <input type="checkbox"/> | If EUT operate in adjacent contiguous bands, bandedge testing performed at the lowest frequency channel at lower-band and highest frequency channel at higher-band. Transmitter in-band emissions will consist of adjacent contiguous bands (e.g., IEEE 802.11ac VHT160 The lowest frequency channel at lower-band and highest frequency channel at higher-band in-band emissions will consist of two adjacent contiguous bands.) |
| <input type="checkbox"/> | <input type="checkbox"/> Operating in 5.15-5.25 GHz band (lower-band) and 5.25-5.35 GHz band (higher-band). <input type="checkbox"/> Operating in 5.47-5.725 GHz band (lower-band) and 5.725-5.85 GHz band (higher-band). |
| <input type="checkbox"/> | If EUT operate in individual non-contiguous bands, bandedge testing performed at the lowest frequency channel and highest frequency channel within lower-band and higher-band. (e.g., IEEE 802.11ac VHT160) |
| <input type="checkbox"/> | <input type="checkbox"/> Operating in 5.25-5.35 GHz band (lower-band) and 5.47-5.725 GHz band (higher-band). <input type="checkbox"/> Operating in 5.15-5.25 GHz band (lower-band) and 5.725-5.85 GHz band (higher-band). |
| <input checked="" type="checkbox"/> | For the transmitter unwanted emissions shall be measured using following options below: |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause G)2) for unwanted emissions into non-restricted bands. |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause G)1) for unwanted emissions into restricted bands. |
| <input type="checkbox"/> | <input type="checkbox"/> Refer as FCC KDB 789033 D02 v01, G)6) Method AD (Trace Averaging). |
| <input type="checkbox"/> | <input type="checkbox"/> Refer as FCC KDB 789033 D02 v01, G)6) Method VB (Reduced VBW). |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time. |
| <input type="checkbox"/> | <input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02 v01, clause G)5) measurement procedure peak limit. |
| <input type="checkbox"/> | <input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit. |
| <input checked="" type="checkbox"/> | For the transmitter bandedge emissions shall be measured using following options below: |
| <input type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause G)3)d) for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz). |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.10 for band-edge testing. |
| <input type="checkbox"/> | Refer as ANSI C63.10, clause 6.10.6.2 for marker-delta method for band-edge measurements. |
| <input checked="" type="checkbox"/> | For radiated measurement, refer as ANSI C63.10, clause 6.6. Test distance is 3m. |
| <input checked="" type="checkbox"/> | Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements). Measurements in the bandedge are typically made at a closer distance 3m, because the instrumentation noise floor is typically close to the radiated emission limit. |

3.5.4 Test Setup



3.5.5 Transmitter Radiated Bandedge Emissions

| U-NII 5150-5250MHz Transmitter Radiated Bandedge (non-beamforming) | | | | | | | | | | |
|--|-----------------|-------------|----------------------|----------------|-------------------|-------------------|----------------|-------------------|-------------------|------|
| Modulation Mode | N _{TX} | Freq. (MHz) | Measure Distance (m) | Freq. (MHz) PK | Level (dBuV/m) PK | Limit (dBuV/m) PK | Freq. (MHz) AV | Level (dBuV/m) AV | Limit (dBuV/m) AV | Pol. |
| 11a | 3 | 5180 | 3 | 5149.680 | 70.53 | 74 | 5149.680 | 52.98 | 54 | V |
| 11a | 3 | 5240 | 3 | 5123.040 | 62.63 | 74 | 5132.400 | 48.92 | 54 | V |
| HT20 | 3 | 5180 | 3 | 5148.960 | 72.36 | 74 | 5149.680 | 51.85 | 54 | V |
| HT20 | 3 | 5240 | 3 | 5124.480 | 62.58 | 74 | 5132.400 | 49.26 | 54 | V |
| HT40 | 3 | 5190 | 3 | 5145.120 | 67.86 | 74 | 5149.920 | 52.53 | 54 | V |
| HT40 | 3 | 5230 | 3 | 5148.240 | 69.57 | 74 | 5148.240 | 52.02 | 54 | V |
| VHT20 | 3 | 5180 | 3 | 5149.680 | 71.99 | 74 | 5149.680 | 52.16 | 54 | V |
| VHT20 | 3 | 5240 | 3 | 5144.640 | 62.67 | 74 | 5136.000 | 49.29 | 54 | V |
| VHT40 | 3 | 5190 | 3 | 5145.360 | 70.05 | 74 | 5149.920 | 52.58 | 54 | V |
| VHT40 | 3 | 5230 | 3 | 5148.240 | 70.61 | 74 | 5148.240 | 52.14 | 54 | V |
| VHT80 | 3 | 5210 | 3 | 5146.080 | 69.10 | 74 | 5146.440 | 52.81 | 54 | V |
| Note 1: Measurement worst emissions of receive antenna polarization. | | | | | | | | | | |

| U-NII 5150-5250MHz Transmitter Radiated Bandedge (beamforming) | | | | | | | | | | |
|--|-----------------|-------------|----------------------|----------------|-------------------|-------------------|----------------|-------------------|-------------------|------|
| Modulation Mode | N _{TX} | Freq. (MHz) | Measure Distance (m) | Freq. (MHz) PK | Level (dBuV/m) PK | Limit (dBuV/m) PK | Freq. (MHz) AV | Level (dBuV/m) AV | Limit (dBuV/m) AV | Pol. |
| VHT20 | 3 | 5180 | 3 | 5147.400 | 72.82 | 74 | 5149.900 | 53.39 | 54 | V |
| VHT20 | 3 | 5240 | 3 | 5126.640 | 63.18 | 74 | 5127.360 | 49.09 | 54 | V |
| VHT40 | 3 | 5190 | 3 | 5149.060 | 65.71 | 74 | 5149.940 | 53.50 | 54 | V |
| VHT40 | 3 | 5230 | 3 | 5143.800 | 71.22 | 74 | 5149.800 | 53.35 | 54 | V |
| VHT80 | 3 | 5210 | 3 | 5146.200 | 66.92 | 74 | 5145.000 | 53.63 | 54 | V |
| Note 1: Measurement worst emissions of receive antenna polarization. | | | | | | | | | | |

3.6 Transmitter Unwanted Emissions

3.6.1 Transmitter Radiated Unwanted Emissions Limit

| Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit | | | |
|---|-----------------------|-------------------------|----------------------|
| Frequency Range (MHz) | Field Strength (uV/m) | Field Strength (dBuV/m) | Measure Distance (m) |
| 0.009~0.490 | 2400/F(kHz) | 48.5 - 13.8 | 300 |
| 0.490~1.705 | 24000/F(kHz) | 33.8 - 23 | 30 |
| 1.705~30.0 | 30 | 29 | 30 |
| 30~88 | 100 | 40 | 3 |
| 88~216 | 150 | 43.5 | 3 |
| 216~960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

| Un-restricted band emissions above 1GHz Limit | |
|---|---|
| Operating Band | Limit |
| 5.15 - 5.25 GHz | e.i.r.p. -27 dBm [68.2 dBuV/m@3m] |
| 5.725 - 5.85 GHz | 5.715 5.725 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] 5.85 5.86 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] Other un-restricted band: e.i.r.p. -27 dBm [68.2 dBuV/m@3m] |

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

3.6.2 Measuring Instruments

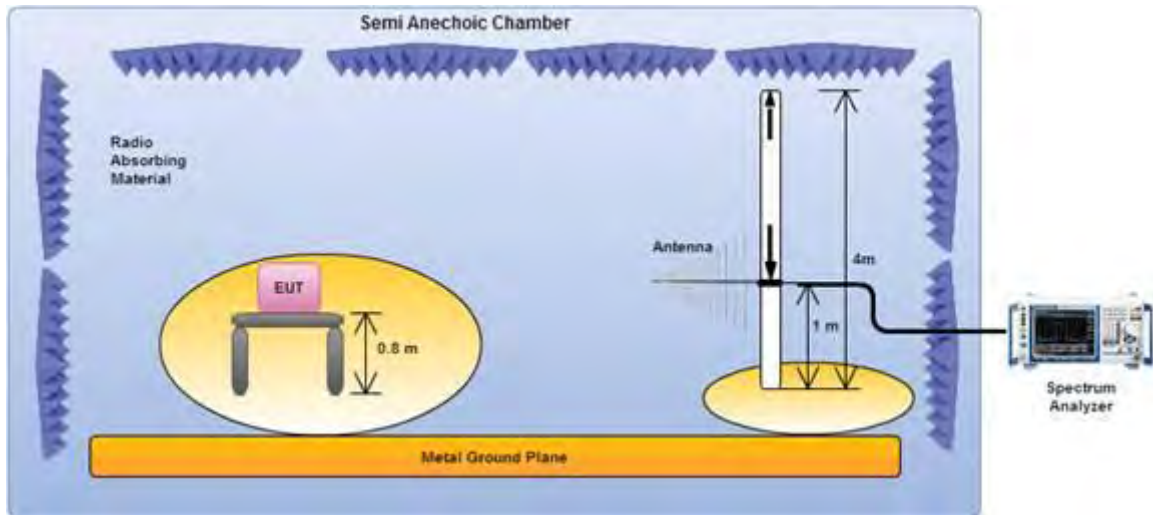
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

| Test Method | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements). |
| <input checked="" type="checkbox"/> | The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor]. |
| <input checked="" type="checkbox"/> | For the transmitter unwanted emissions shall be measured using following options below: |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause G)2) for unwanted emissions into non-restricted bands. |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause G)1) for unwanted emissions into restricted bands. |
| <input type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, G)6) Method AD (Trace Averaging). |
| <input type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, G)6) Method VB (Reduced VBW). |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time. |
| <input type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions. |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 789033 D02 v01, clause G)5) measurement procedure peak limit. |
| <input type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit. |
| <input checked="" type="checkbox"/> | For radiated measurement. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz. For 1 GHz to 5 GHz, test distance is 3m; For 5 GHz to 40 GHz, test distance is 3m. |
| <input checked="" type="checkbox"/> | The any unwanted emissions level shall not exceed the fundamental emission level. |
| <input checked="" type="checkbox"/> | All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported. |

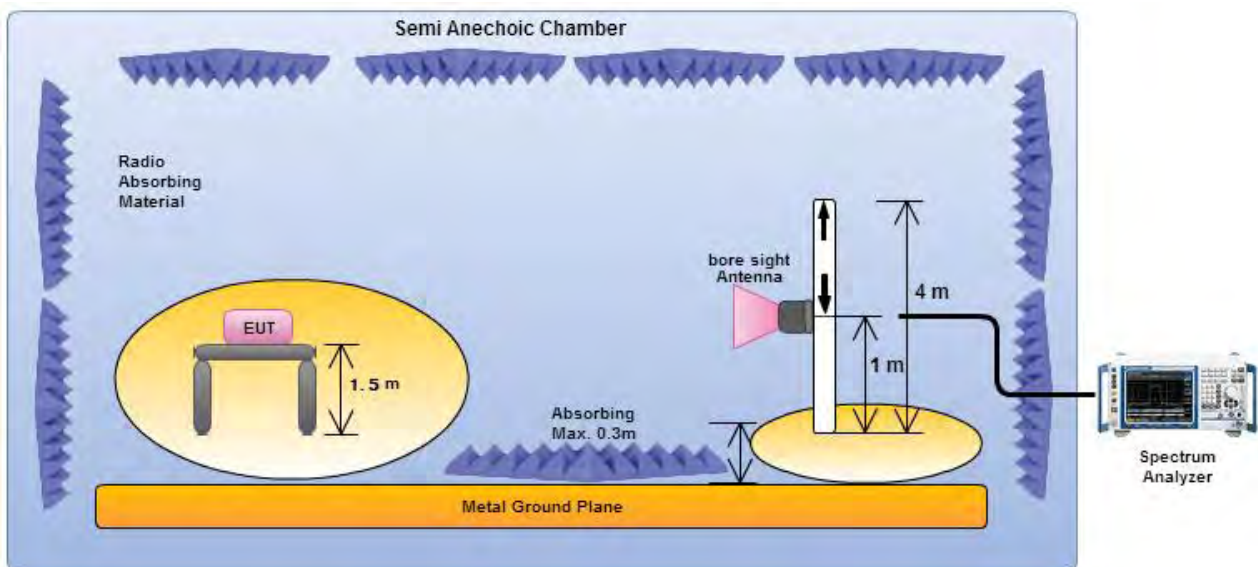
3.6.4 Test Setup

Transmitter Radiated Unwanted Emissions Below 1GHz



Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna.

Transmitter Radiated Unwanted Emissions Above 1GHz

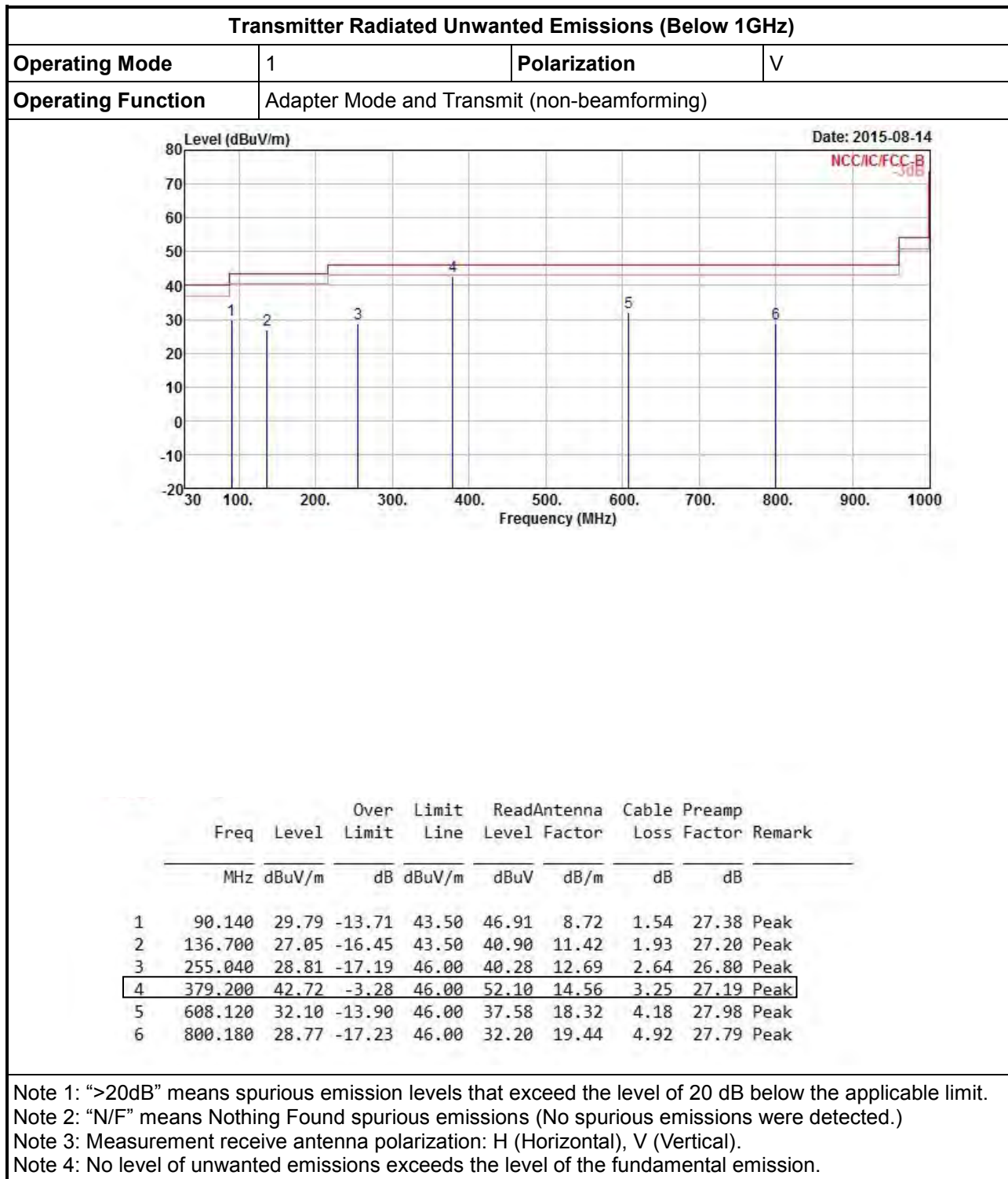


Electric field tests shall be performed in the frequency range of 1 GHz to 10th harmonic of highest fundamental frequency or 40 GHz using a calibrated horn antenna.

3.6.5 Transmitter Radiated Unwanted Emissions-with Antenna (Below 30MHz)

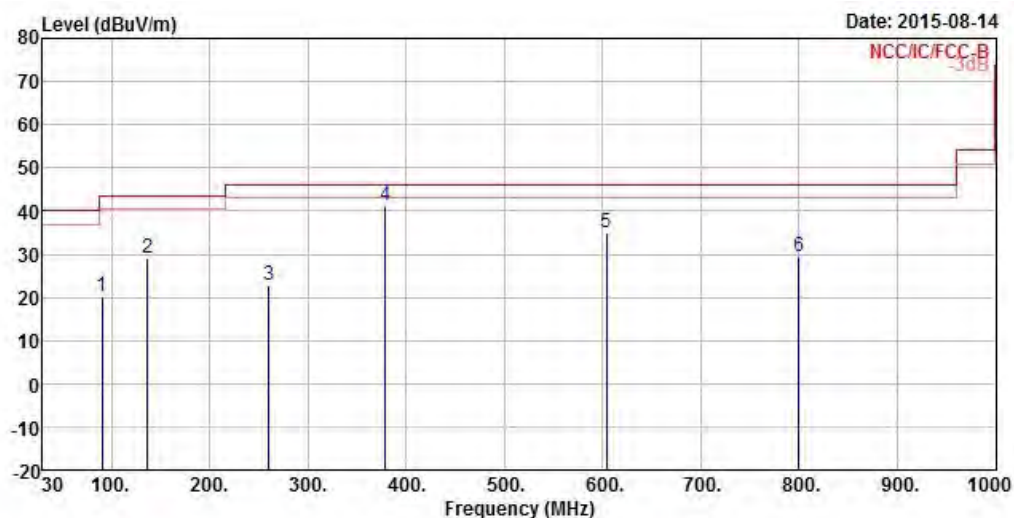
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.6.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)



Transmitter Radiated Unwanted Emissions (Below 1GHz)

| | | | |
|---------------------------|---|---------------------|---|
| Operating Mode | 1 | Polarization | H |
| Operating Function | Adapter Mode and Transmit (non-beamforming) | | |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|---------|--------|------------|------------|-------------------|------------|---------------|------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 90.140 | 20.33 | -23.17 | 43.50 | 37.45 | 8.72 | 1.54 | 27.38 Peak |
| 2 | 136.700 | 29.15 | -14.35 | 43.50 | 43.00 | 11.42 | 1.93 | 27.20 Peak |
| 3 | 259.890 | 22.68 | -23.32 | 46.00 | 33.52 | 13.27 | 2.67 | 26.78 Peak |
| 4 | 379.200 | 41.09 | -4.91 | 46.00 | 50.47 | 14.56 | 3.25 | 27.19 Peak |
| 5 | 604.240 | 35.11 | -10.89 | 46.00 | 40.68 | 18.25 | 4.17 | 27.99 Peak |
| 6 | 800.180 | 29.34 | -16.66 | 46.00 | 32.77 | 19.44 | 4.92 | 27.79 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

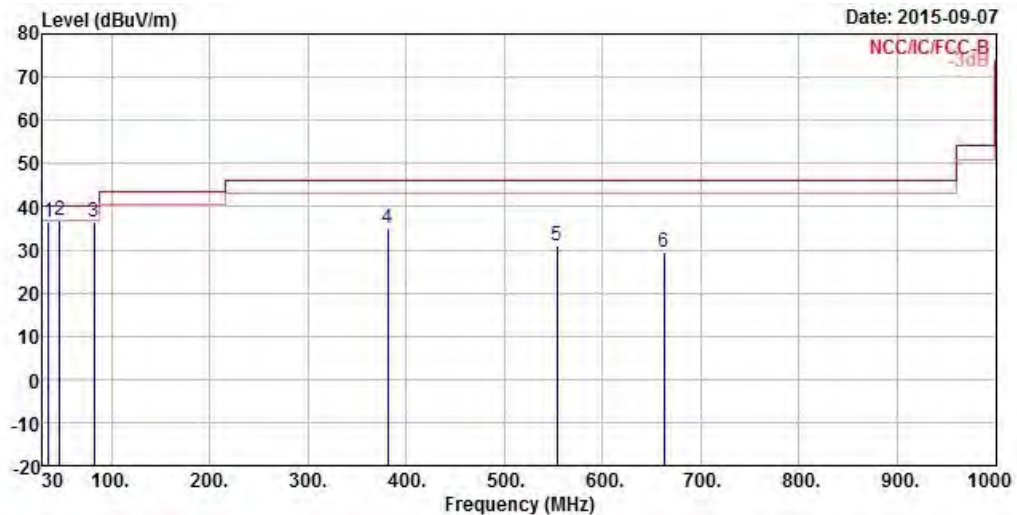
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical).

Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Below 1GHz)

| | | | |
|---------------------------|---|---------------------|---|
| Operating Mode | 2 | Polarization | V |
| Operating Function | Adapter Mode and Transmit (beamforming) | | |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp | Loss Factor | Remark |
|---|---------|--------|------------|------------|-------------------|--------------|-------------|------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 35.820 | 36.58 | -3.42 | 40.00 | 48.36 | 14.81 | 0.96 | 27.55 Peak |
| 2 | 47.460 | 36.89 | -3.11 | 40.00 | 54.44 | 8.88 | 1.10 | 27.53 OP |
| 3 | 82.380 | 36.64 | -3.36 | 40.00 | 55.60 | 6.97 | 1.47 | 27.40 Peak |
| 4 | 381.140 | 35.00 | -11.00 | 46.00 | 44.33 | 14.61 | 3.26 | 27.20 Peak |
| 5 | 553.800 | 31.08 | -14.92 | 46.00 | 36.71 | 18.36 | 3.94 | 27.93 Peak |
| 6 | 662.440 | 29.51 | -16.49 | 46.00 | 34.57 | 18.49 | 4.40 | 27.95 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

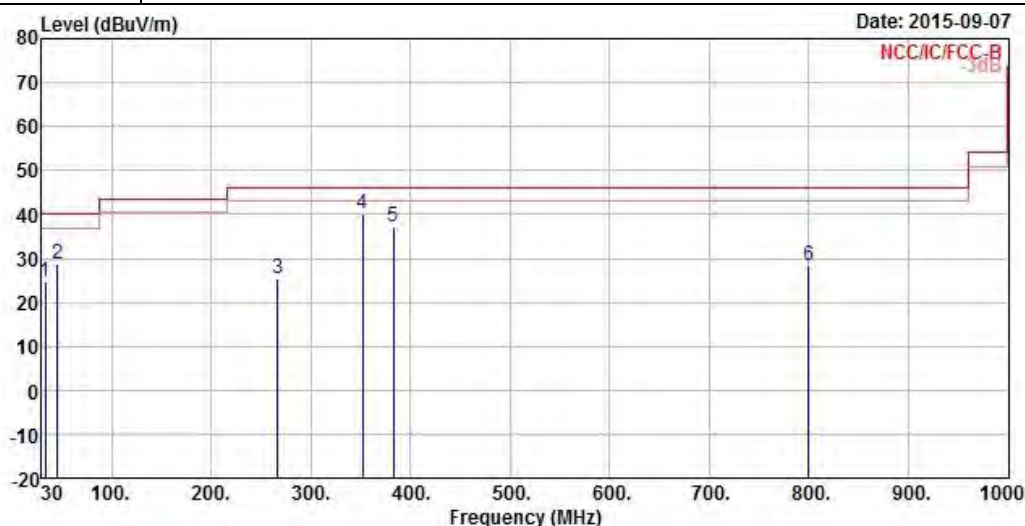
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical).

Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Below 1GHz)

| | | | |
|---------------------------|---|---------------------|---|
| Operating Mode | 2 | Polarization | H |
| Operating Function | Adapter Mode and Transmit (beamforming) | | |



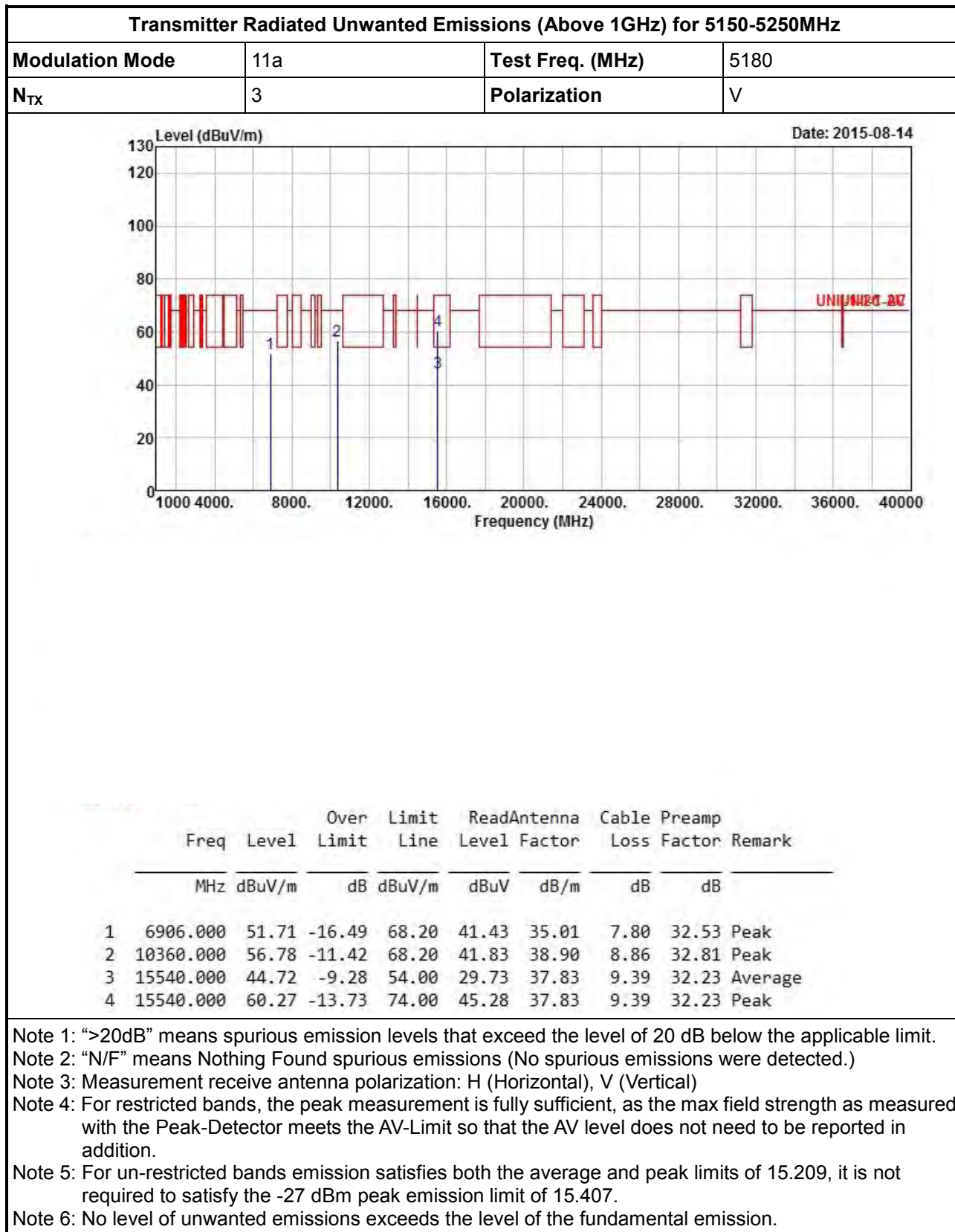
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|---------|--------|------------|------------|-------------------|------------|---------------|------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 33.880 | 24.58 | -15.42 | 40.00 | 35.37 | 15.85 | 0.92 | 27.56 Peak |
| 2 | 45.520 | 28.87 | -11.13 | 40.00 | 45.98 | 9.33 | 1.09 | 27.53 Peak |
| 3 | 266.680 | 25.50 | -20.50 | 46.00 | 36.87 | 12.68 | 2.71 | 26.76 Peak |
| 4 | 352.040 | 40.16 | -5.84 | 46.00 | 49.96 | 14.08 | 3.13 | 27.01 Peak |
| 5 | 383.080 | 37.09 | -8.91 | 46.00 | 46.36 | 14.68 | 3.27 | 27.22 Peak |
| 6 | 800.180 | 28.21 | -17.79 | 46.00 | 31.64 | 19.44 | 4.92 | 27.79 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

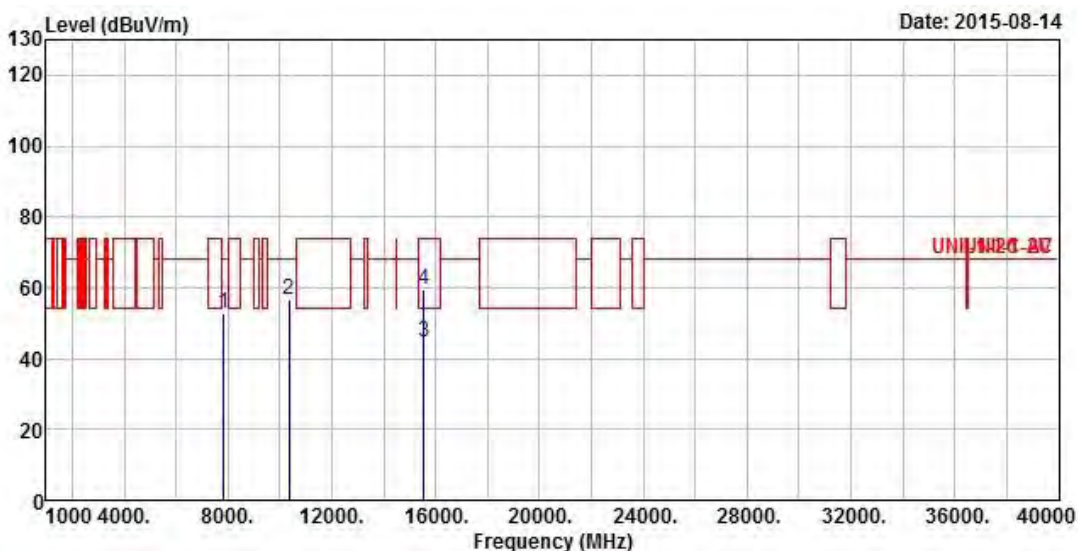
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical).

Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

3.6.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) non-beamforming


Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-----|-------------------------|------|
| Modulation Mode | 11a | Test Freq. (MHz) | 5180 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|-------------------|--------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7852.000 | 52.58 | -15.62 | 68.20 | 40.44 | 36.92 | 8.06 | 32.84 Peak |
| 2 | 10360.000 | 56.49 | -11.71 | 68.20 | 41.54 | 38.90 | 8.86 | 32.81 Peak |
| 3 | 15540.000 | 44.66 | -9.34 | 54.00 | 29.67 | 37.83 | 9.39 | 32.23 Average |
| 4 | 15540.000 | 59.28 | -14.72 | 74.00 | 44.29 | 37.83 | 9.39 | 32.23 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

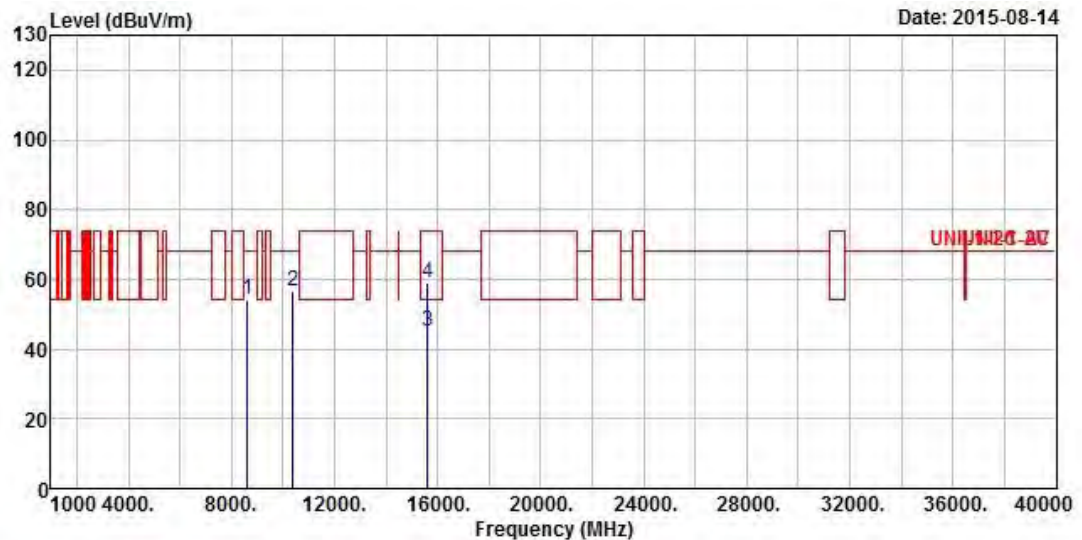
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-----|-------------------------|------|
| Modulation Mode | 11a | Test Freq. (MHz) | 5200 |
| N_{TX} | 3 | Polarization | V |

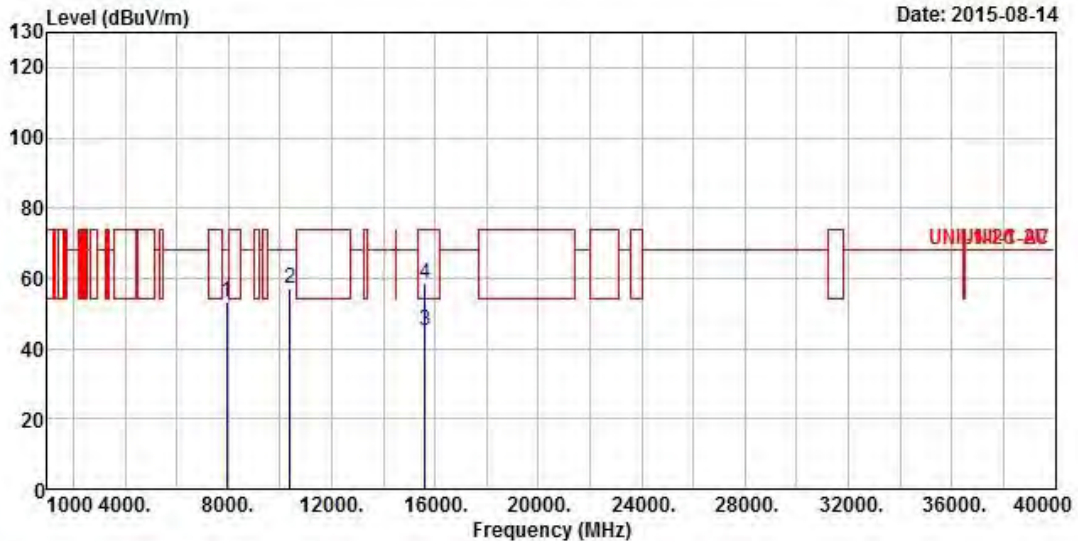


| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 8621.000 | 54.25 | -13.95 | 68.20 | 41.53 | 37.72 | 7.94 | 32.94 Peak |
| 2 | 10400.000 | 56.68 | -11.52 | 68.20 | 41.70 | 38.90 | 8.85 | 32.77 Peak |
| 3 | 15600.000 | 45.02 | -8.98 | 54.00 | 30.18 | 37.69 | 9.41 | 32.26 Average |
| 4 | 15600.000 | 59.10 | -14.90 | 74.00 | 44.26 | 37.69 | 9.41 | 32.26 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
 Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-----|-------------------------|------|
| Modulation Mode | 11a | Test Freq. (MHz) | 5200 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7941.000 | 53.36 | -14.84 | 68.20 | 41.11 | 37.02 | 8.09 | 32.86 Peak |
| 2 | 10400.000 | 57.31 | -10.89 | 68.20 | 42.33 | 38.90 | 8.85 | 32.77 Peak |
| 3 | 15600.000 | 45.17 | -8.83 | 54.00 | 30.33 | 37.69 | 9.41 | 32.26 Average |
| 4 | 15600.000 | 58.76 | -15.24 | 74.00 | 43.92 | 37.69 | 9.41 | 32.26 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

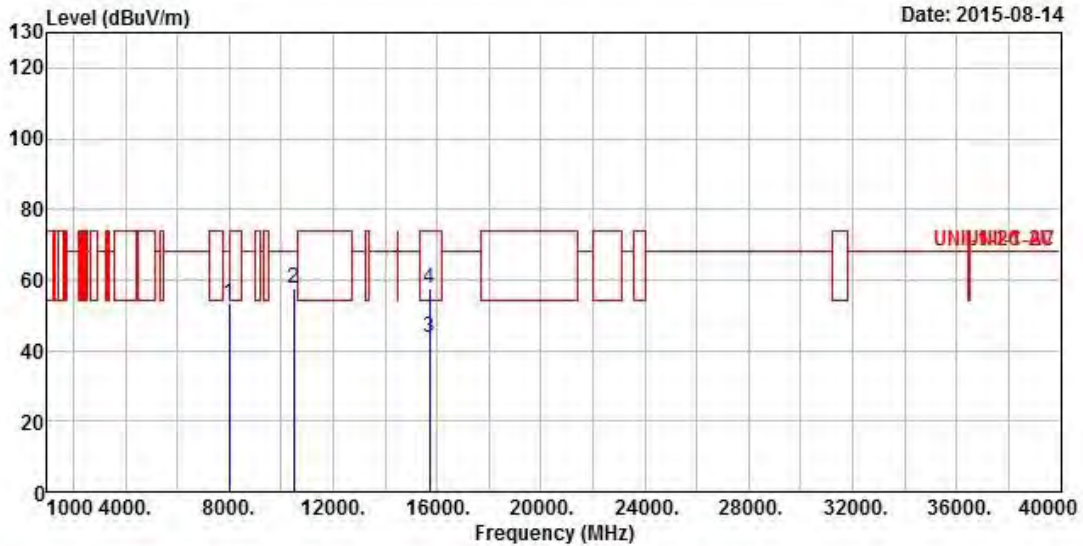
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-----|-------------------------|------|
| Modulation Mode | 11a | Test Freq. (MHz) | 5240 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp | Loss Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 8002.000 | 53.10 | -15.10 | 68.20 | 40.79 | 37.10 | 8.09 | 32.88 Peak |
| 2 | 10480.000 | 57.46 | -10.74 | 68.20 | 42.44 | 38.90 | 8.82 | 32.70 Peak |
| 3 | 15720.000 | 43.54 | -10.46 | 54.00 | 28.93 | 37.45 | 9.46 | 32.30 Average |
| 4 | 15720.000 | 57.77 | -16.23 | 74.00 | 43.16 | 37.45 | 9.46 | 32.30 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

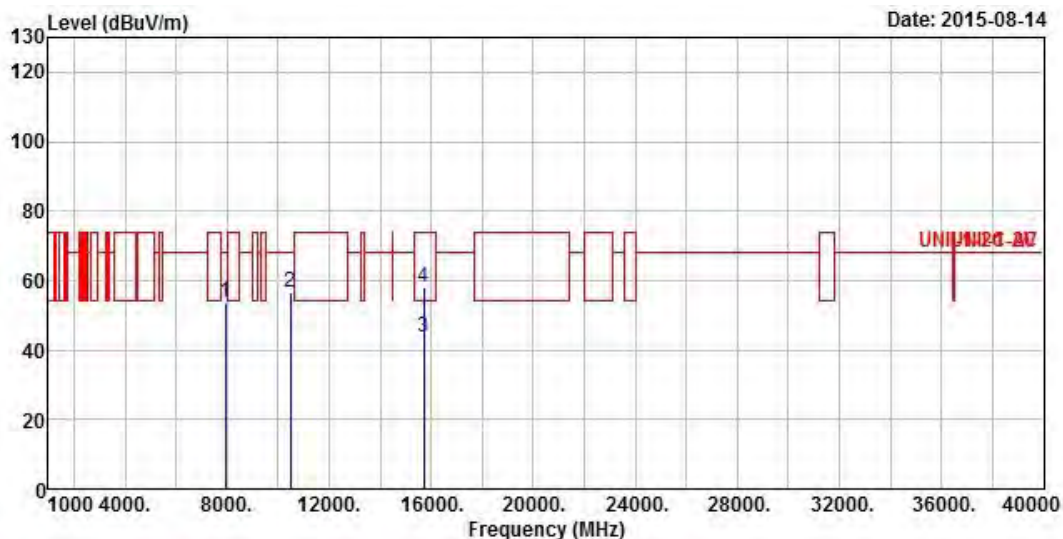
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-----|-------------------------|------|
| Modulation Mode | 11a | Test Freq. (MHz) | 5240 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|------------|---------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7932.000 | 53.54 | -14.66 | 68.20 | 41.29 | 37.02 | 8.09 | 32.86 Peak |
| 2 | 10480.000 | 56.61 | -11.59 | 68.20 | 41.59 | 38.90 | 8.82 | 32.70 Peak |
| 3 | 15720.000 | 43.77 | -10.23 | 54.00 | 29.16 | 37.45 | 9.46 | 32.30 Average |
| 4 | 15720.000 | 57.89 | -16.11 | 74.00 | 43.28 | 37.45 | 9.46 | 32.30 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

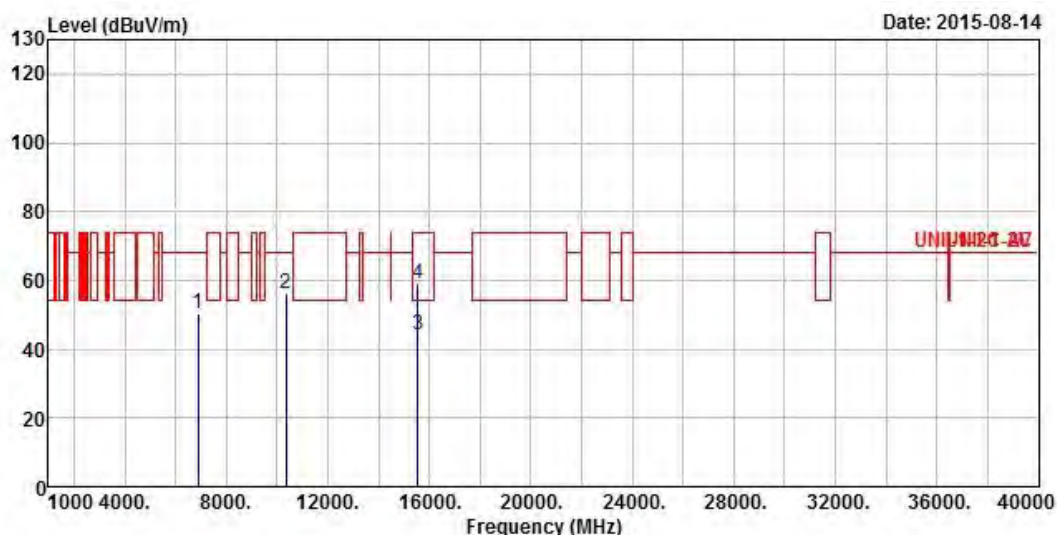
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 5180 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over | Limit | ReadAntenna | Cable | Preamp | |
|---|-----------|--------|--------|--------|-------------|-------|--------|---------------|
| | MHz | dBuV/m | Limit | Line | Level | Loss | Factor | Remark |
| | | | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 6906.000 | 50.32 | -17.88 | 68.20 | 40.04 | 35.01 | 7.80 | 32.53 Peak |
| 2 | 10360.000 | 56.07 | -12.13 | 68.20 | 41.12 | 38.90 | 8.86 | 32.81 Peak |
| 3 | 15540.000 | 44.21 | -9.79 | 54.00 | 29.22 | 37.83 | 9.39 | 32.23 Average |
| 4 | 15540.000 | 59.14 | -14.86 | 74.00 | 44.15 | 37.83 | 9.39 | 32.23 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

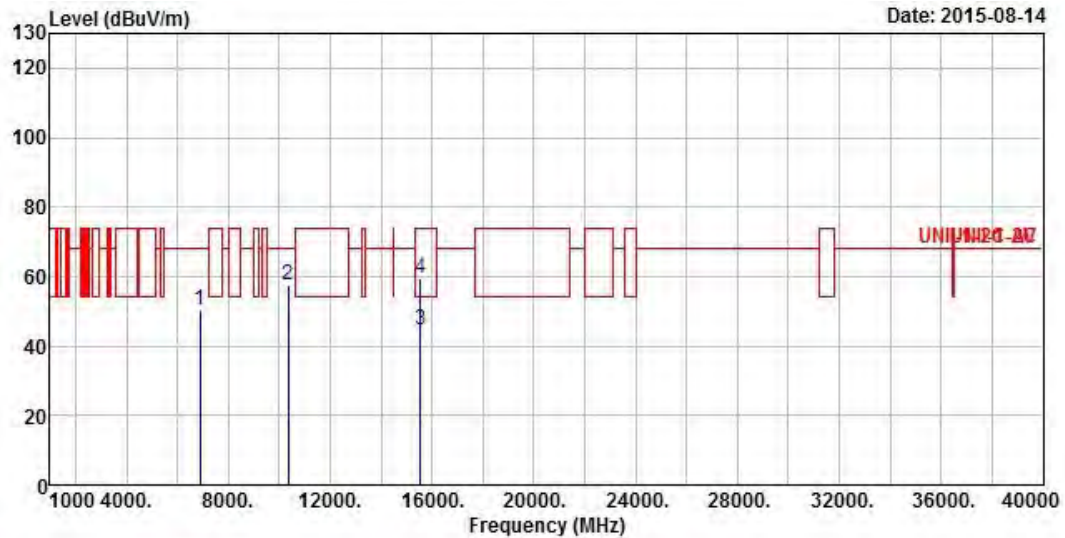
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 5180 |
| N_{TX} | 3 | Polarization | H |

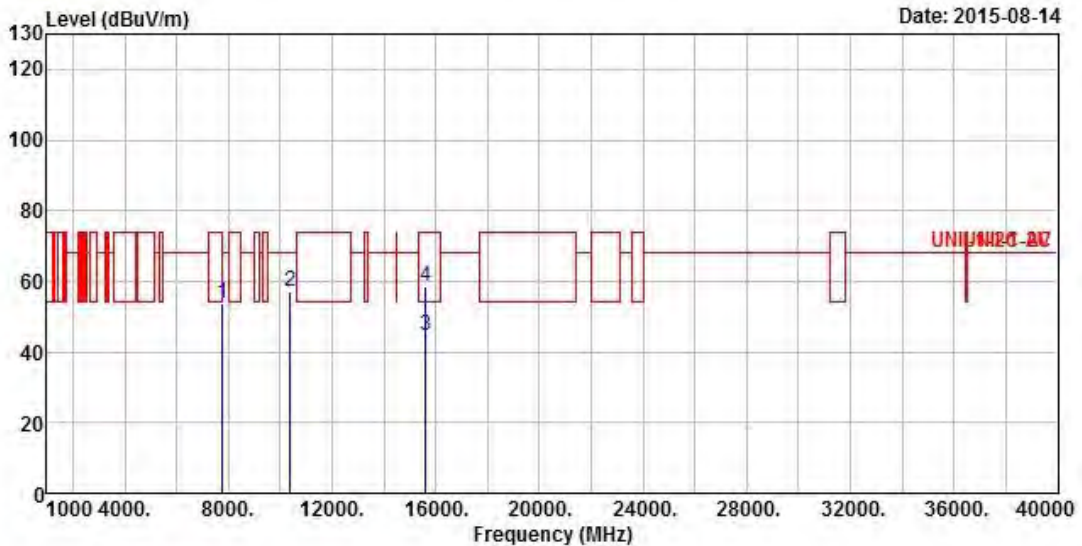


| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|------------|---------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 6887.000 | 50.50 | -17.70 | 68.20 | 40.24 | 34.98 | 7.80 | 32.52 Peak |
| 2 | 10360.000 | 57.59 | -10.61 | 68.20 | 42.64 | 38.90 | 8.86 | 32.81 Peak |
| 3 | 15540.000 | 44.81 | -9.19 | 54.00 | 29.82 | 37.83 | 9.39 | 32.23 Average |
| 4 | 15540.000 | 59.43 | -14.57 | 74.00 | 44.44 | 37.83 | 9.39 | 32.23 Peak |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 5200 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|-------------------|--------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7788.000 | 53.52 | -14.68 | 68.20 | 41.47 | 36.84 | 8.03 | 32.82 Peak |
| 2 | 10400.000 | 57.10 | -11.10 | 68.20 | 42.12 | 38.90 | 8.85 | 32.77 Peak |
| 3 | 15600.000 | 44.74 | -9.26 | 54.00 | 29.90 | 37.69 | 9.41 | 32.26 Average |
| 4 | 15600.000 | 58.43 | -15.57 | 74.00 | 43.59 | 37.69 | 9.41 | 32.26 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

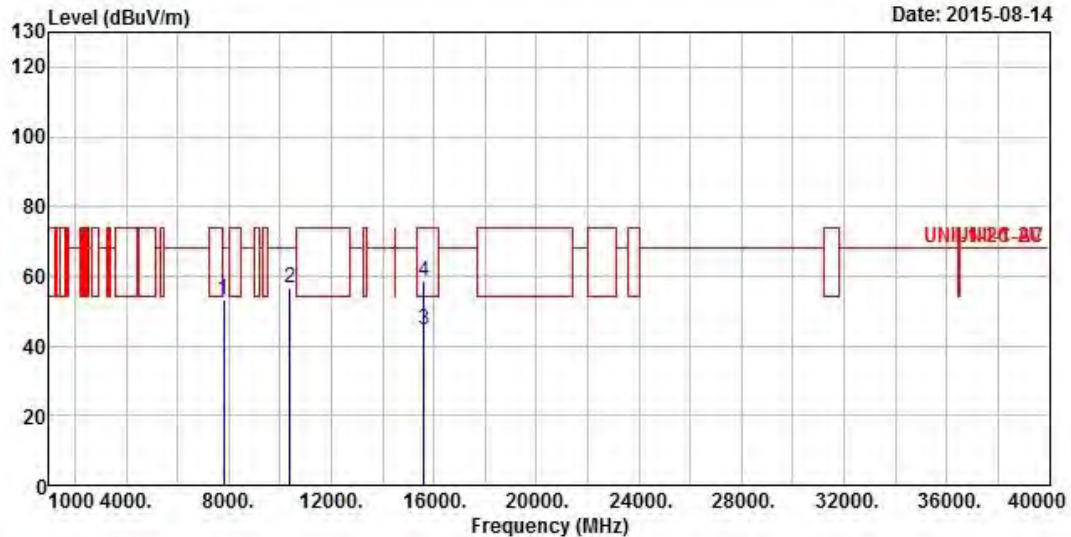
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 5200 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|-------------------|--------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7812.000 | 53.39 | -14.81 | 68.20 | 41.29 | 36.88 | 8.05 | 32.83 Peak |
| 2 | 10400.000 | 56.52 | -11.68 | 68.20 | 41.54 | 38.90 | 8.85 | 32.77 Peak |
| 3 | 15600.000 | 44.68 | -9.32 | 54.00 | 29.84 | 37.69 | 9.41 | 32.26 Average |
| 4 | 15600.000 | 58.66 | -15.34 | 74.00 | 43.82 | 37.69 | 9.41 | 32.26 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

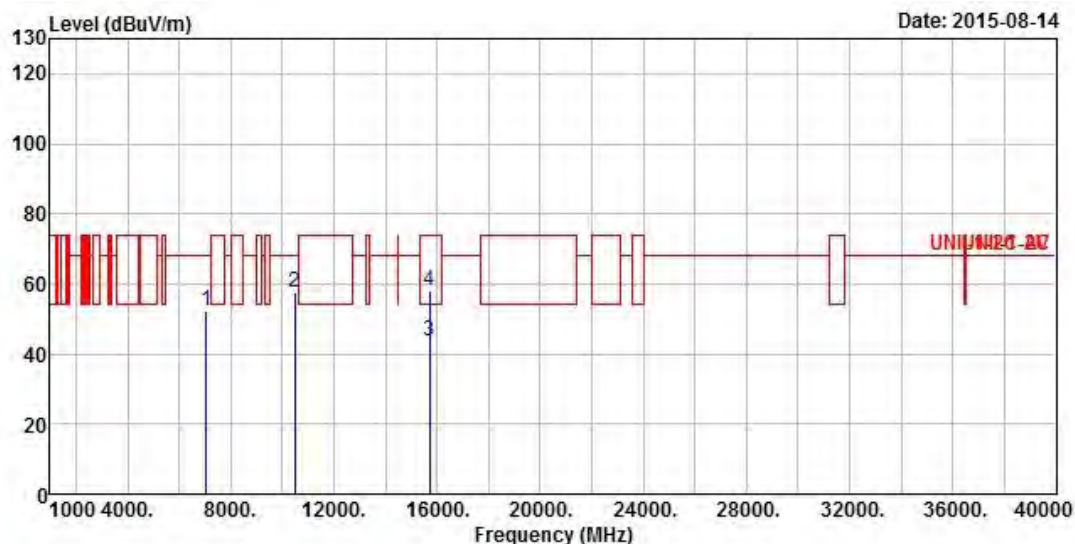
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 5240 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|------------|---------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7049.000 | 52.11 | -16.09 | 68.20 | 41.46 | 35.33 | 7.88 | 32.56 Peak |
| 2 | 10480.000 | 57.68 | -10.52 | 68.20 | 42.66 | 38.90 | 8.82 | 32.70 Peak |
| 3 | 15720.000 | 43.84 | -10.16 | 54.00 | 29.23 | 37.45 | 9.46 | 32.30 Average |
| 4 | 15720.000 | 58.27 | -15.73 | 74.00 | 43.66 | 37.45 | 9.46 | 32.30 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

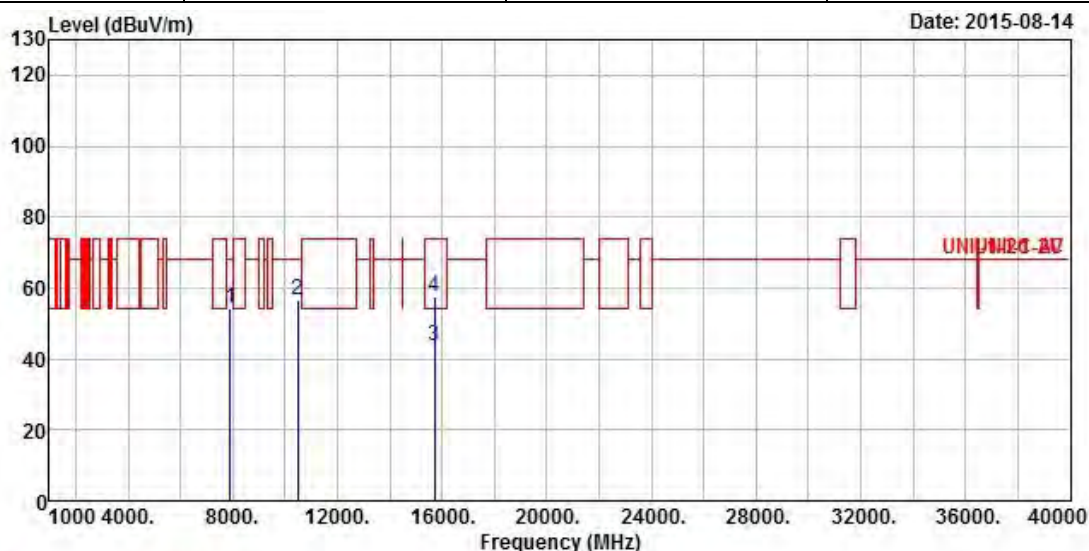
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 5240 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7920.000 | 54.07 | -14.13 | 68.20 | 41.86 | 37.00 | 8.07 | 32.86 Peak |
| 2 | 10480.000 | 56.45 | -11.75 | 68.20 | 41.43 | 38.90 | 8.82 | 32.70 Peak |
| 3 | 15720.000 | 43.46 | -10.54 | 54.00 | 28.85 | 37.45 | 9.46 | 32.30 Average |
| 4 | 15720.000 | 57.72 | -16.28 | 74.00 | 43.11 | 37.45 | 9.46 | 32.30 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

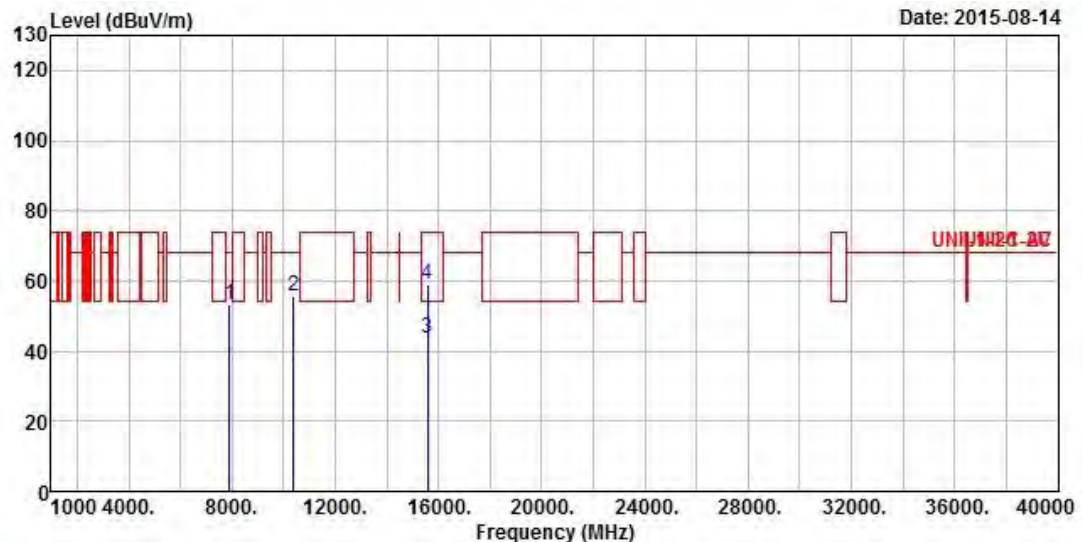
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 5190 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|-------------------|--------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7896.000 | 53.40 | -14.80 | 68.20 | 41.20 | 36.98 | 8.07 | 32.85 Peak |
| 2 | 10380.000 | 55.67 | -12.53 | 68.20 | 40.71 | 38.90 | 8.85 | 32.79 Peak |
| 3 | 15570.000 | 43.64 | -10.36 | 54.00 | 28.72 | 37.76 | 9.41 | 32.25 Average |
| 4 | 15570.000 | 59.20 | -14.80 | 74.00 | 44.28 | 37.76 | 9.41 | 32.25 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

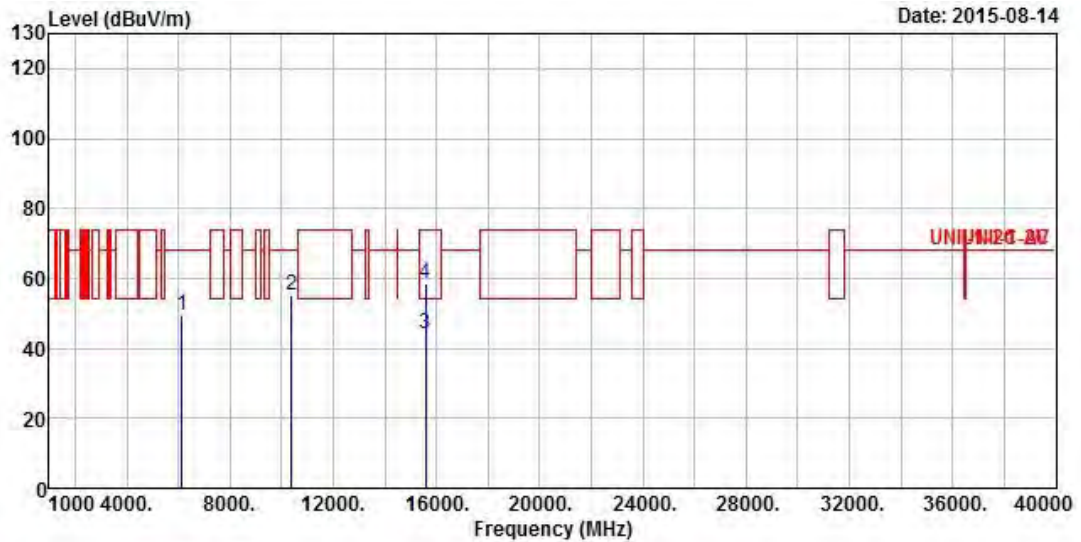
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 5190 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|------------|---------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 6144.000 | 49.35 | -18.85 | 68.20 | 40.10 | 34.23 | 7.48 | 32.46 Peak |
| 2 | 10380.000 | 55.26 | -12.94 | 68.20 | 40.30 | 38.90 | 8.85 | 32.79 Peak |
| 3 | 15570.000 | 44.08 | -9.92 | 54.00 | 29.16 | 37.76 | 9.41 | 32.25 Average |
| 4 | 15570.000 | 58.70 | -15.30 | 74.00 | 43.78 | 37.76 | 9.41 | 32.25 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

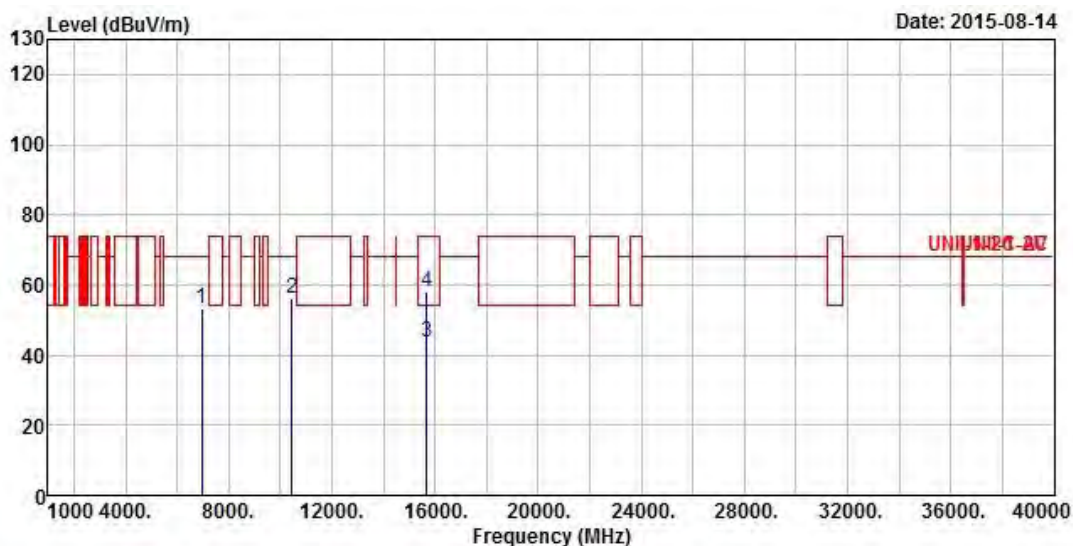
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 5230 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over | Limit | ReadAntenna | Cable | Preamp | |
|---|-----------|--------|--------|--------|-------------|-------|--------|---------------|
| | MHz | dBuV/m | Limit | Line | Level | Loss | Factor | Remark |
| | | | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 6972.000 | 53.19 | -15.01 | 68.20 | 42.74 | 35.14 | 7.85 | 32.54 Peak |
| 2 | 10460.000 | 56.10 | -12.10 | 68.20 | 41.10 | 38.90 | 8.82 | 32.72 Peak |
| 3 | 15690.000 | 43.58 | -10.42 | 54.00 | 28.89 | 37.52 | 9.46 | 32.29 Average |
| 4 | 15690.000 | 57.96 | -16.04 | 74.00 | 43.27 | 37.52 | 9.46 | 32.29 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

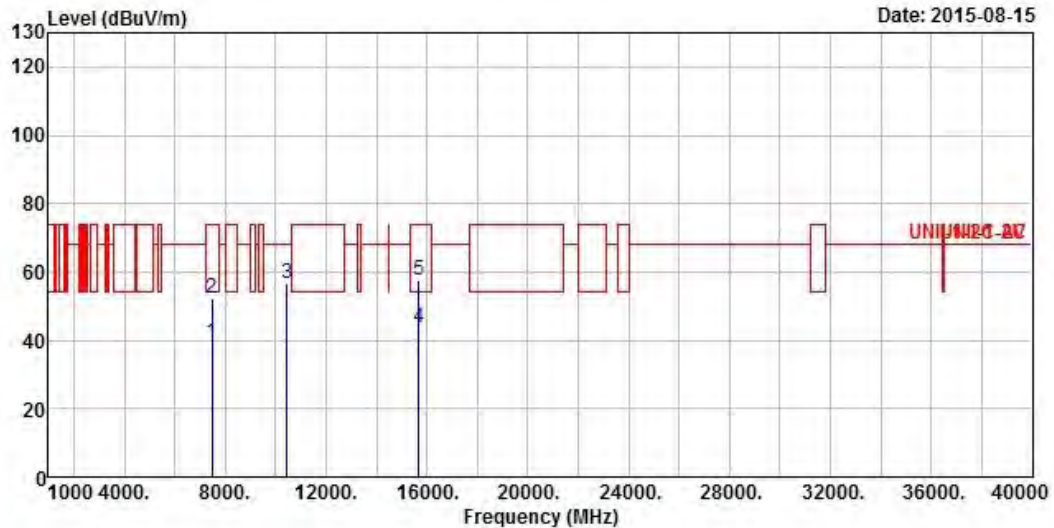
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|------|-------------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 5230 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7488.000 | 39.35 | -14.65 | 54.00 | 27.66 | 36.50 | 7.93 | 32.74 Average |
| 2 | 7488.000 | 52.43 | -21.57 | 74.00 | 40.74 | 36.50 | 7.93 | 32.74 Peak |
| 3 | 10460.000 | 56.45 | -11.75 | 68.20 | 41.45 | 38.90 | 8.82 | 32.72 Peak |
| 4 | 15690.000 | 43.43 | -10.57 | 54.00 | 28.74 | 37.52 | 9.46 | 32.29 Average |
| 5 | 15690.000 | 57.45 | -16.55 | 74.00 | 42.76 | 37.52 | 9.46 | 32.29 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

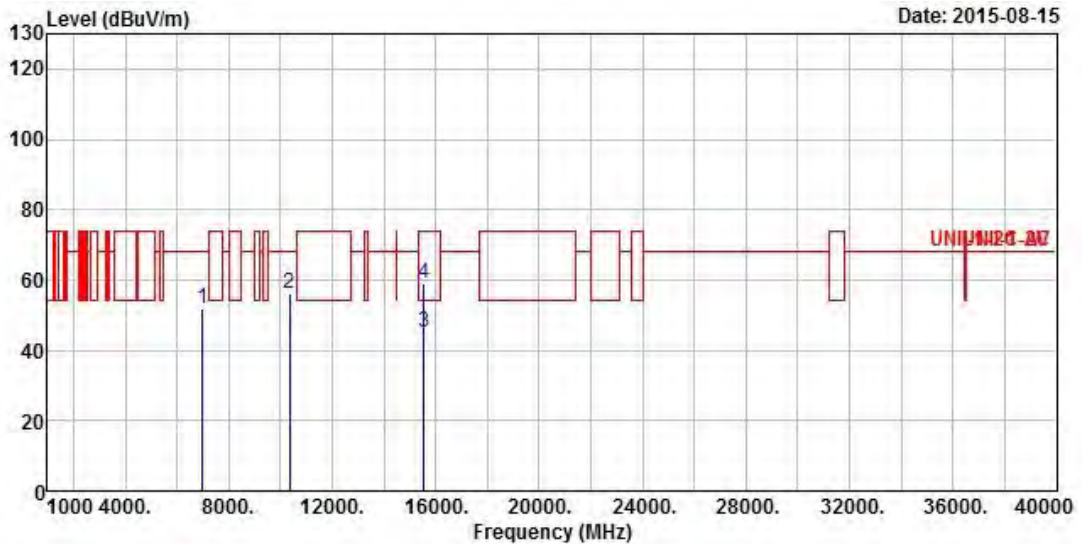
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5180 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|-------------------|--------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 6986.000 | 51.72 | -16.48 | 68.20 | 41.24 | 35.17 | 7.85 | 32.54 Peak |
| 2 | 10360.000 | 56.25 | -11.95 | 68.20 | 41.30 | 38.90 | 8.86 | 32.81 Peak |
| 3 | 15540.000 | 45.04 | -8.96 | 54.00 | 30.05 | 37.83 | 9.39 | 32.23 Average |
| 4 | 15540.000 | 58.84 | -15.16 | 74.00 | 43.85 | 37.83 | 9.39 | 32.23 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

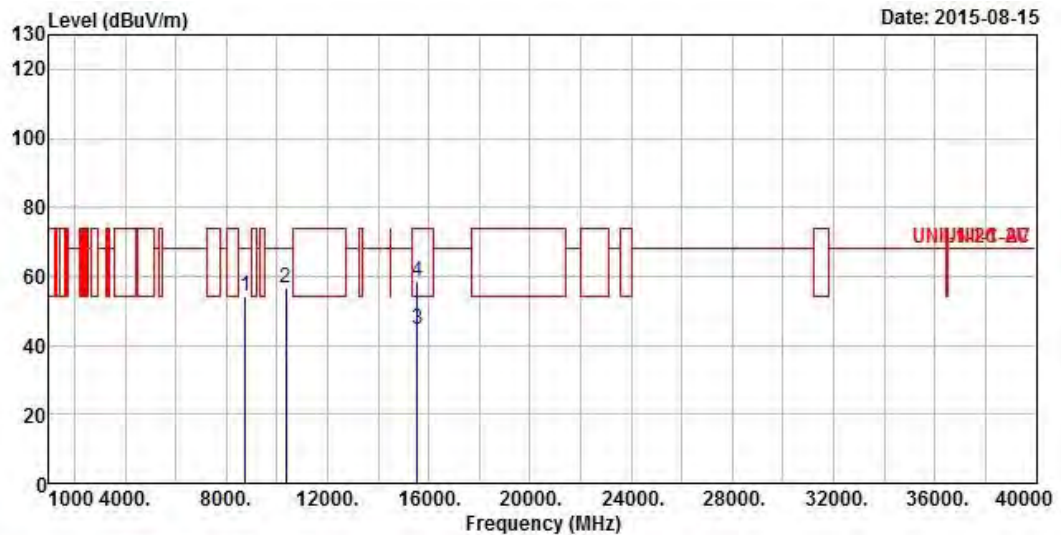
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5180 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamplifier | Remark |
|---|-----------|--------|------------|------------|-------------------|----------------|------------|--------------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | |
| 1 | 8756.000 | 54.42 | -13.78 | 68.20 | 41.70 | 37.75 | 7.94 | 32.97 | Peak |
| 2 | 10360.000 | 56.73 | -11.47 | 68.20 | 41.78 | 38.90 | 8.86 | 32.81 | Peak |
| 3 | 15540.000 | 44.76 | -9.24 | 54.00 | 29.77 | 37.83 | 9.39 | 32.23 | Average |
| 4 | 15540.000 | 58.56 | -15.44 | 74.00 | 43.57 | 37.83 | 9.39 | 32.23 | Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

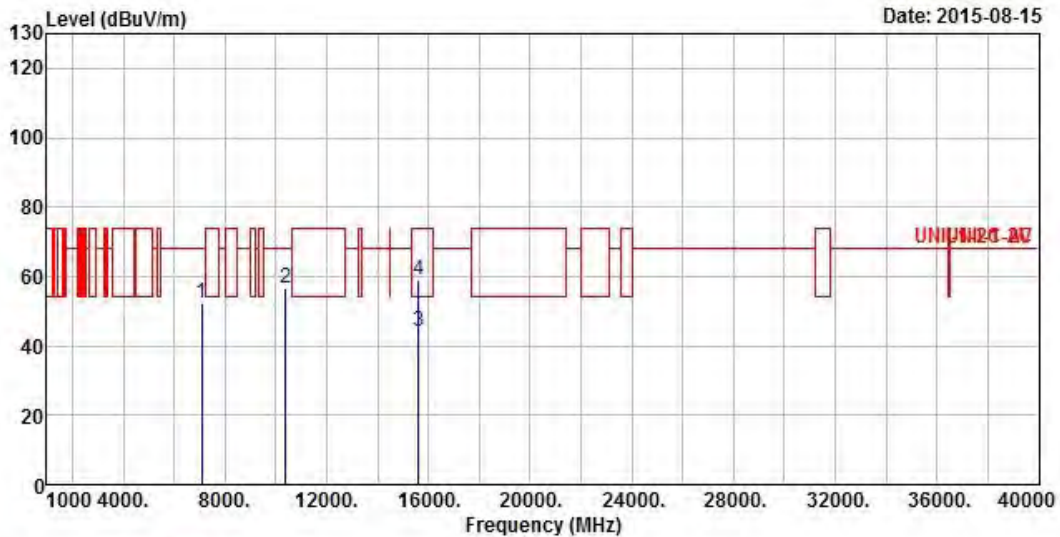
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5200 |
| N_{TX} | 3 | Polarization | V |

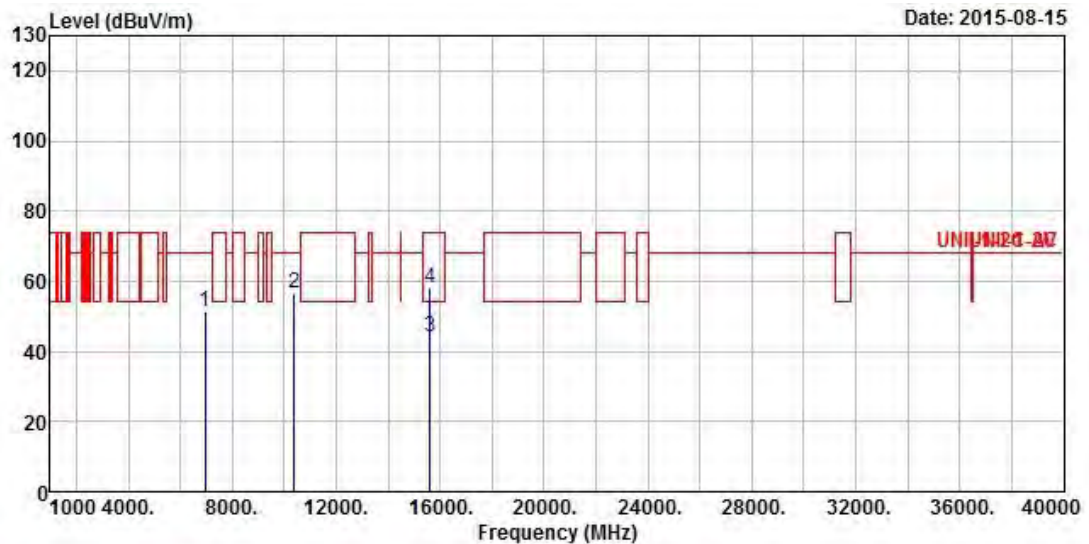


| | Freq | Level | Over | Limit | ReadAntenna | Cable | Preamp | |
|---|-----------|--------|--------|--------|-------------|-------|--------|---------------|
| | MHz | dBuV/m | Limit | Line | Level | Loss | Factor | Remark |
| | | | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7089.000 | 52.43 | -15.77 | 68.20 | 41.71 | 35.42 | 7.88 | 32.58 Peak |
| 2 | 10400.000 | 56.43 | -11.77 | 68.20 | 41.45 | 38.90 | 8.85 | 32.77 Peak |
| 3 | 15600.000 | 44.31 | -9.69 | 54.00 | 29.47 | 37.69 | 9.41 | 32.26 Average |
| 4 | 15600.000 | 58.79 | -15.21 | 74.00 | 43.95 | 37.69 | 9.41 | 32.26 Peak |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5200 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|-------------------|--------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 6951.000 | 51.29 | -16.91 | 68.20 | 40.86 | 35.11 | 7.85 | 32.53 Peak |
| 2 | 10400.000 | 56.61 | -11.59 | 68.20 | 41.63 | 38.90 | 8.85 | 32.77 Peak |
| 3 | 15600.000 | 44.29 | -9.71 | 54.00 | 29.45 | 37.69 | 9.41 | 32.26 Average |
| 4 | 15600.000 | 58.25 | -15.75 | 74.00 | 43.41 | 37.69 | 9.41 | 32.26 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

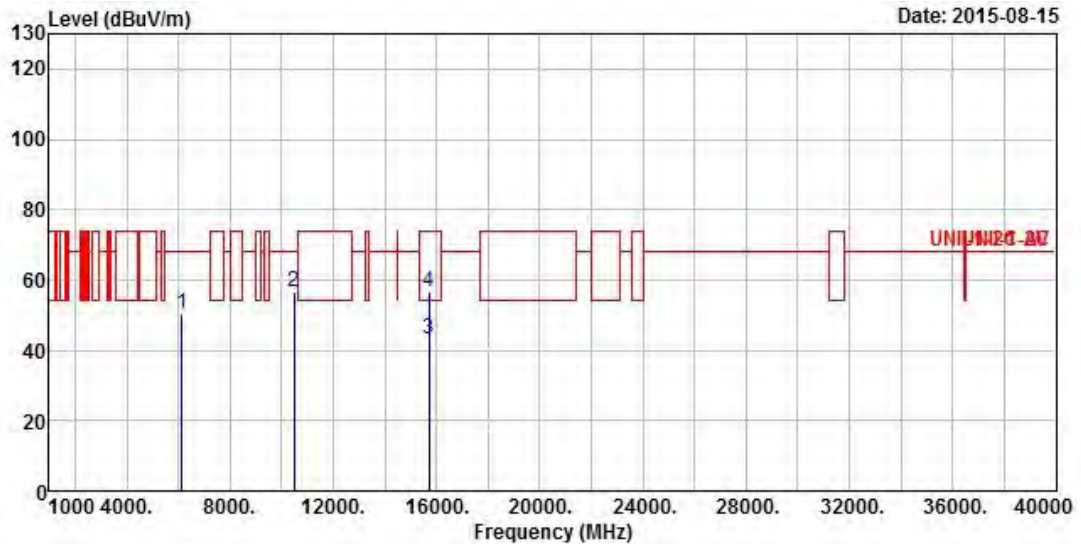
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5240 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 6144.000 | 50.51 | -17.69 | 68.20 | 41.26 | 34.23 | 7.48 | 32.46 Peak |
| 2 | 10480.000 | 56.61 | -11.59 | 68.20 | 41.59 | 38.90 | 8.82 | 32.70 Peak |
| 3 | 15720.000 | 43.07 | -10.93 | 54.00 | 28.46 | 37.45 | 9.46 | 32.30 Average |
| 4 | 15720.000 | 56.83 | -17.17 | 74.00 | 42.22 | 37.45 | 9.46 | 32.30 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

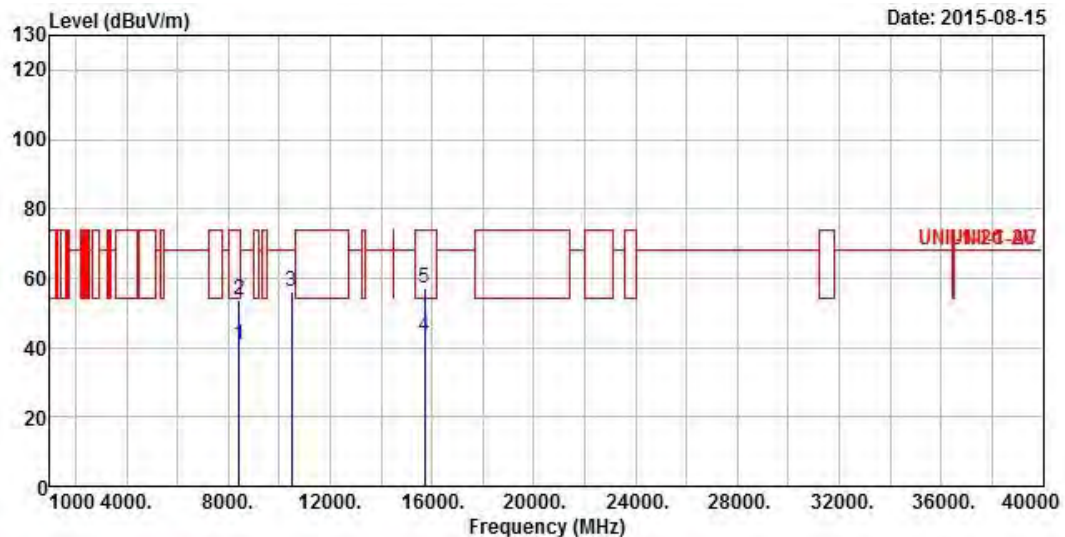
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5240 |
| N_{TX} | 3 | Polarization | H |

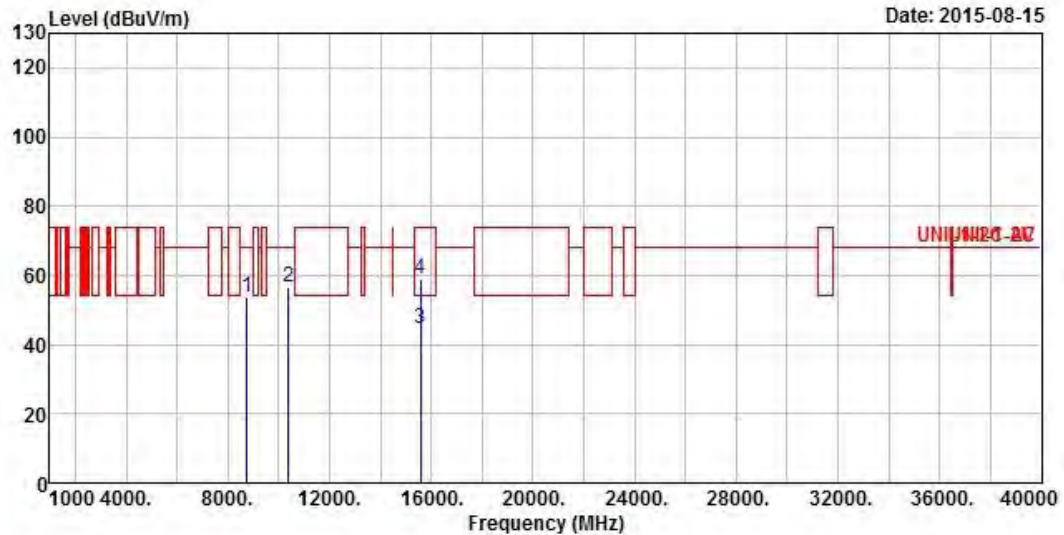


| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | |
| 1 | 8415.000 | 40.61 | -13.39 | 54.00 | 27.96 | 37.60 | 7.96 | 32.91 | Average |
| 2 | 8415.000 | 53.85 | -20.15 | 74.00 | 41.20 | 37.60 | 7.96 | 32.91 | Peak |
| 3 | 10480.000 | 56.20 | -12.00 | 68.20 | 41.18 | 38.90 | 8.82 | 32.70 | Peak |
| 4 | 15720.000 | 43.32 | -10.68 | 54.00 | 28.71 | 37.45 | 9.46 | 32.30 | Average |
| 5 | 15720.000 | 57.14 | -16.86 | 74.00 | 42.53 | 37.45 | 9.46 | 32.30 | Peak |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
 Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT40 | Test Freq. (MHz) | 5190 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|------------|---------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 8744.000 | 53.96 | -14.24 | 68.20 | 41.24 | 37.75 | 7.94 | 32.97 Peak |
| 2 | 10380.000 | 56.78 | -11.42 | 68.20 | 41.82 | 38.90 | 8.85 | 32.79 Peak |
| 3 | 15570.000 | 44.67 | -9.33 | 54.00 | 29.75 | 37.76 | 9.41 | 32.25 Average |
| 4 | 15570.000 | 58.84 | -15.16 | 74.00 | 43.92 | 37.76 | 9.41 | 32.25 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

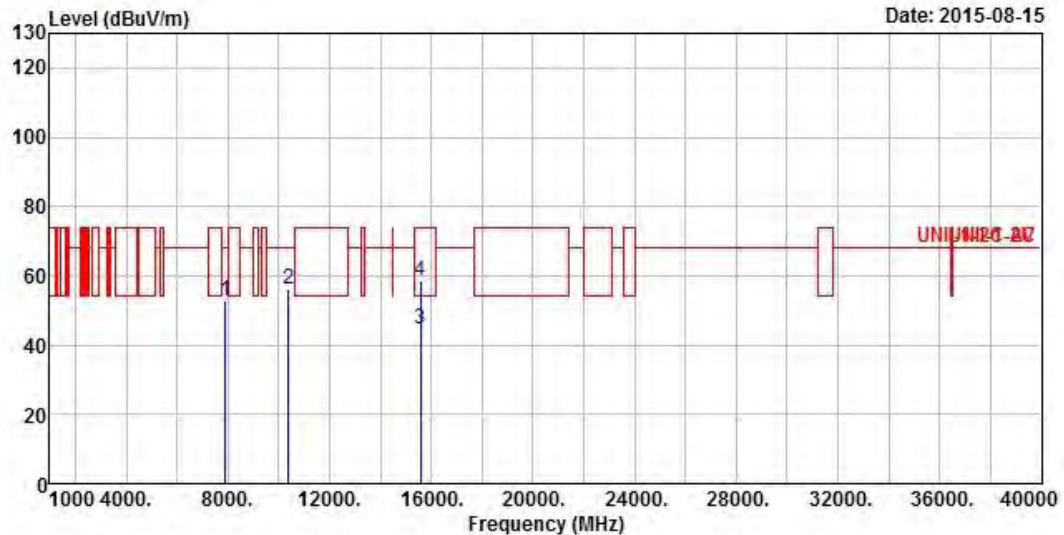
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT40 | Test Freq. (MHz) | 5190 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|------------|---------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7914.000 | 52.97 | -15.23 | 68.20 | 40.76 | 37.00 | 8.07 | 32.86 Peak |
| 2 | 10380.000 | 56.25 | -11.95 | 68.20 | 41.29 | 38.90 | 8.85 | 32.79 Peak |
| 3 | 15570.000 | 44.69 | -9.31 | 54.00 | 29.77 | 37.76 | 9.41 | 32.25 Average |
| 4 | 15570.000 | 58.61 | -15.39 | 74.00 | 43.69 | 37.76 | 9.41 | 32.25 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

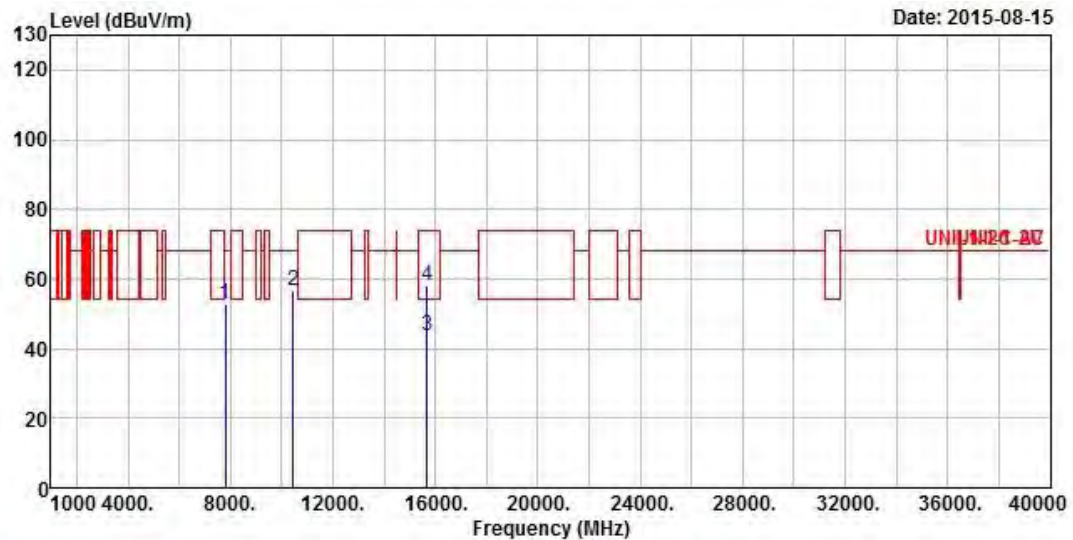
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT40 | Test Freq. (MHz) | 5230 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | |
| 1 | 7816.000 | 52.64 | -15.56 | 68.20 | 40.54 | 36.88 | 8.05 | 32.83 | Peak |
| 2 | 10460.000 | 56.68 | -11.52 | 68.20 | 41.68 | 38.90 | 8.82 | 32.72 | Peak |
| 3 | 15690.000 | 43.63 | -10.37 | 54.00 | 28.94 | 37.52 | 9.46 | 32.29 | Average |
| 4 | 15690.000 | 58.20 | -15.80 | 74.00 | 43.51 | 37.52 | 9.46 | 32.29 | Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

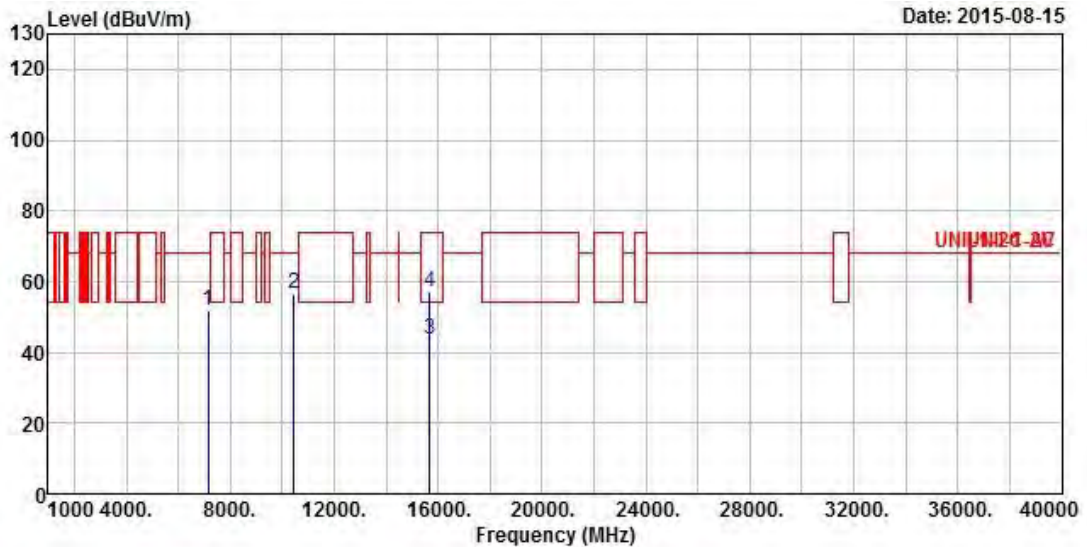
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT40 | Test Freq. (MHz) | 5230 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7144.000 | 51.74 | -16.46 | 68.20 | 40.89 | 35.56 | 7.89 | 32.60 Peak |
| 2 | 10460.000 | 56.77 | -11.43 | 68.20 | 41.77 | 38.90 | 8.82 | 32.72 Peak |
| 3 | 15690.000 | 43.48 | -10.52 | 54.00 | 28.79 | 37.52 | 9.46 | 32.29 Average |
| 4 | 15690.000 | 57.20 | -16.80 | 74.00 | 42.51 | 37.52 | 9.46 | 32.29 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

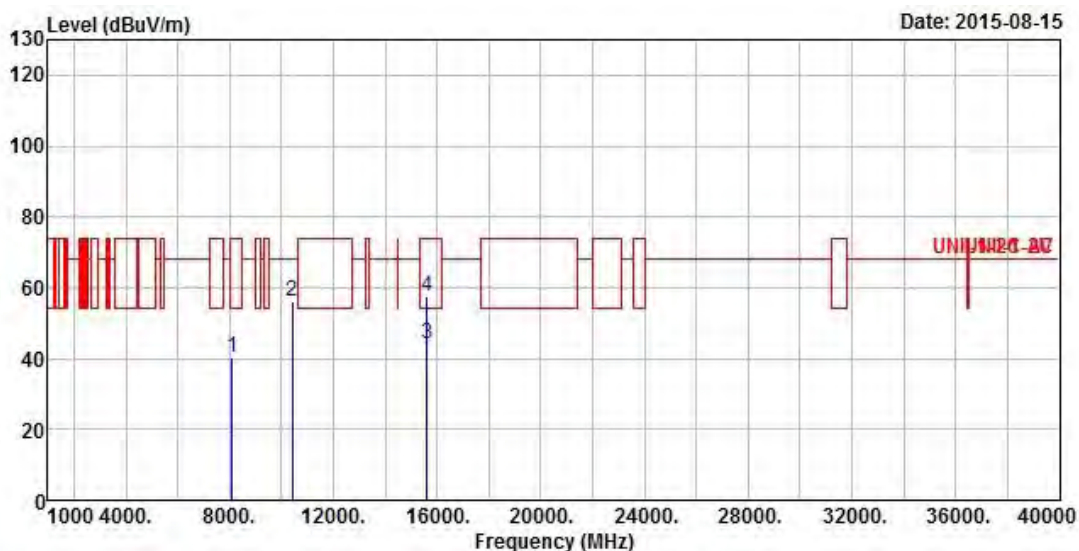
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT80 | Test Freq. (MHz) | 5210 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|-------------------|--------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 8112.000 | 40.14 | -33.86 | 74.00 | 27.75 | 37.22 | 8.06 | 32.89 Peak |
| 2 | 10420.000 | 56.13 | -12.07 | 68.20 | 41.15 | 38.90 | 8.83 | 32.75 Peak |
| 3 | 15630.000 | 43.95 | -10.05 | 54.00 | 29.18 | 37.62 | 9.42 | 32.27 Average |
| 4 | 15630.000 | 57.57 | -16.43 | 74.00 | 42.80 | 37.62 | 9.42 | 32.27 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

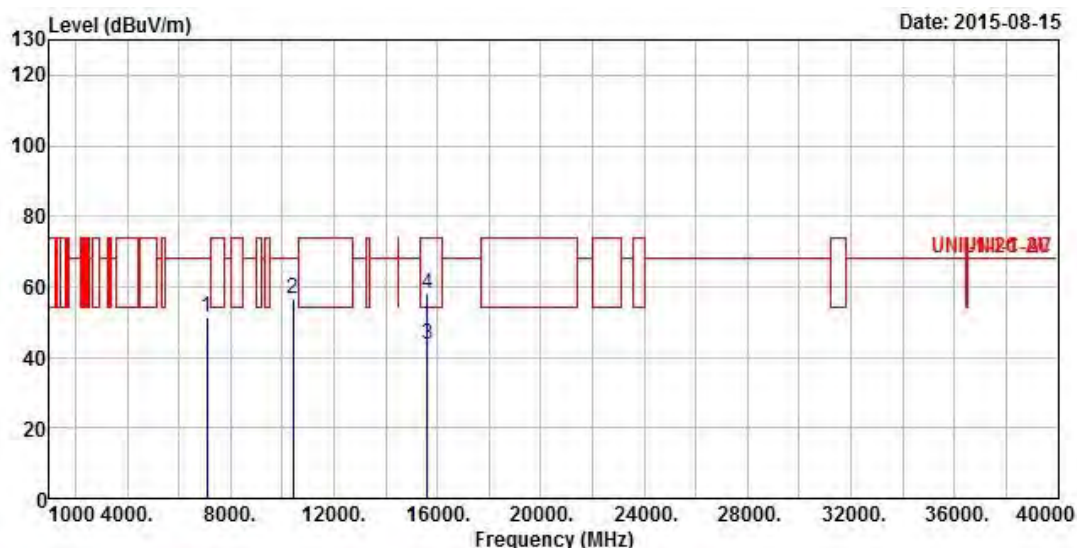
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT80 | Test Freq. (MHz) | 5210 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7098.000 | 51.51 | -16.69 | 68.20 | 40.74 | 35.47 | 7.88 | 32.58 Peak |
| 2 | 10420.000 | 56.78 | -11.42 | 68.20 | 41.80 | 38.90 | 8.83 | 32.75 Peak |
| 3 | 15630.000 | 43.87 | -10.13 | 54.00 | 29.10 | 37.62 | 9.42 | 32.27 Average |
| 4 | 15630.000 | 58.15 | -15.85 | 74.00 | 43.38 | 37.62 | 9.42 | 32.27 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

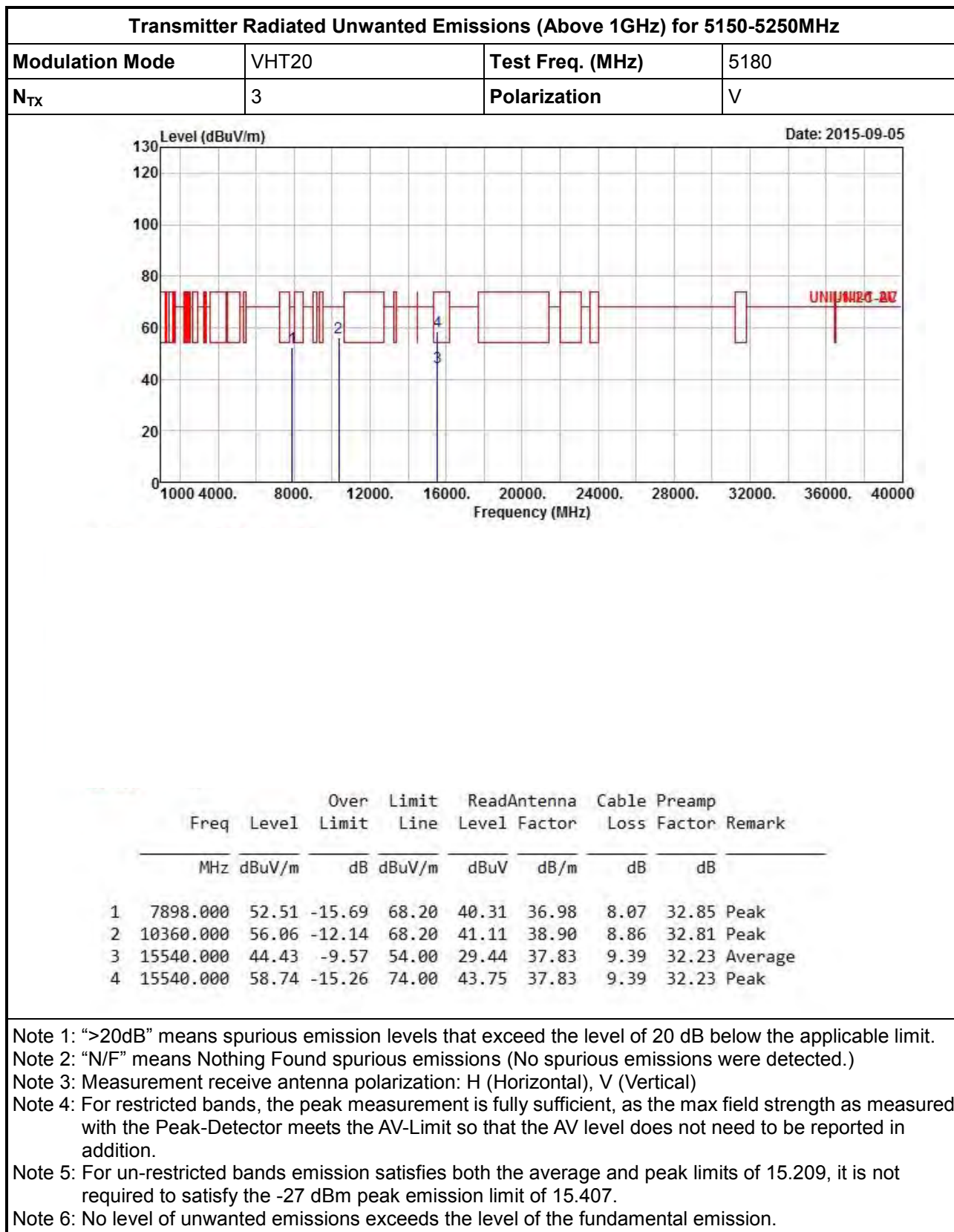
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

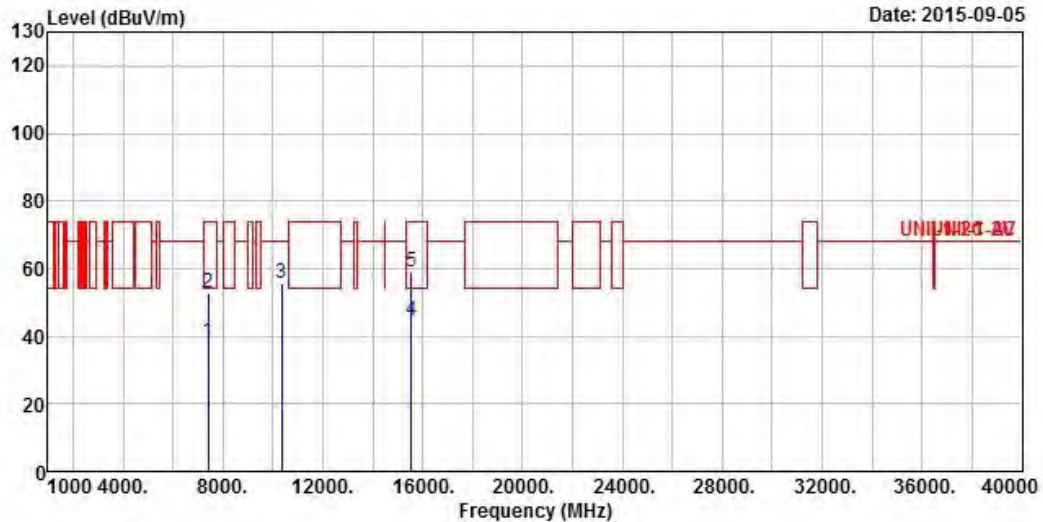
Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

3.6.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) beamforming


Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5180 |
| N_{TX} | 3 | Polarization | H |

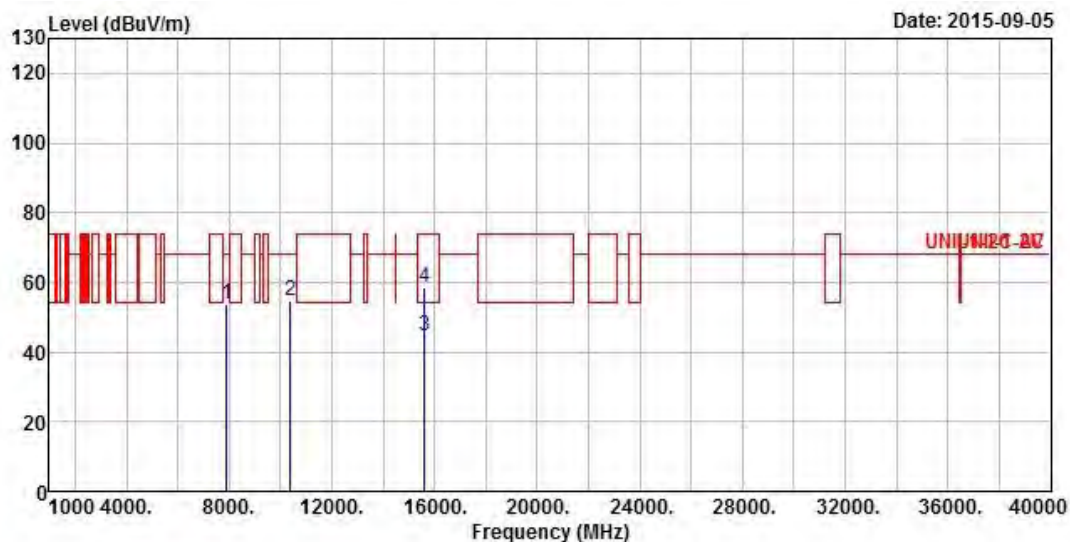


| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|-------------------|--------|--------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | |
| 1 | 7400.000 | 38.55 | -15.45 | 54.00 | 27.11 | 36.23 | 7.92 | 32.71 | Average |
| 2 | 7400.000 | 52.58 | -21.42 | 74.00 | 41.14 | 36.23 | 7.92 | 32.71 | Peak |
| 3 | 10360.000 | 55.44 | -12.76 | 68.20 | 40.49 | 38.90 | 8.86 | 32.81 | Peak |
| 4 | 15540.000 | 44.39 | -9.61 | 54.00 | 29.40 | 37.83 | 9.39 | 32.23 | Average |
| 5 | 15540.000 | 58.87 | -15.13 | 74.00 | 43.88 | 37.83 | 9.39 | 32.23 | Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
 Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5200 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|-------------------|--------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7908.000 | 53.85 | -14.35 | 68.20 | 41.66 | 36.98 | 8.07 | 32.86 Peak |
| 2 | 10400.000 | 54.46 | -13.74 | 68.20 | 39.48 | 38.90 | 8.85 | 32.77 Peak |
| 3 | 15600.000 | 44.48 | -9.52 | 54.00 | 29.64 | 37.69 | 9.41 | 32.26 Average |
| 4 | 15600.000 | 58.49 | -15.51 | 74.00 | 43.65 | 37.69 | 9.41 | 32.26 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

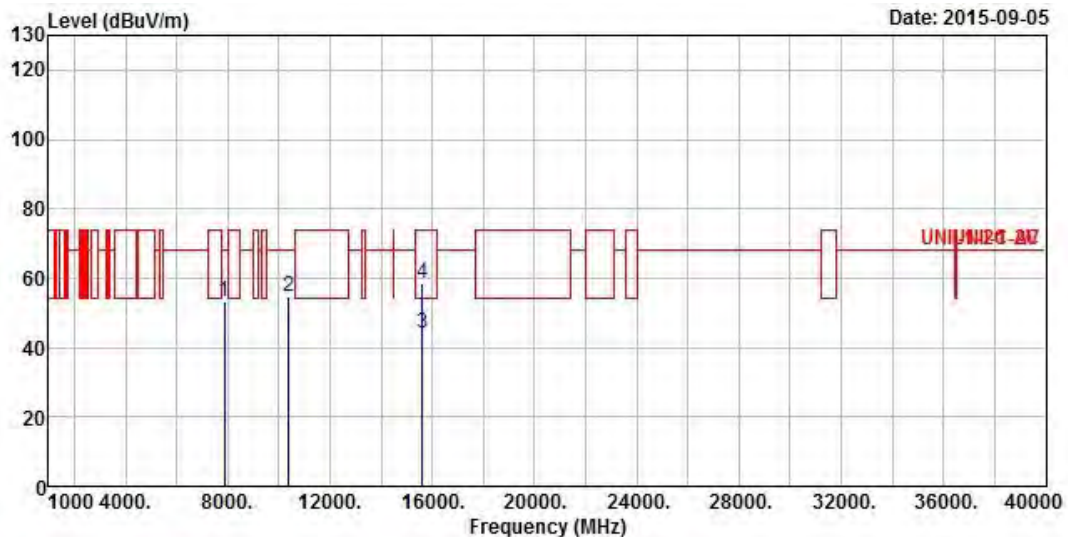
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5200 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|------------|---------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7876.000 | 53.21 | -14.99 | 68.20 | 41.06 | 36.94 | 8.06 | 32.85 Peak |
| 2 | 10400.000 | 54.70 | -13.50 | 68.20 | 39.72 | 38.90 | 8.85 | 32.77 Peak |
| 3 | 15600.000 | 44.28 | -9.72 | 54.00 | 29.44 | 37.69 | 9.41 | 32.26 Average |
| 4 | 15600.000 | 58.32 | -15.68 | 74.00 | 43.48 | 37.69 | 9.41 | 32.26 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

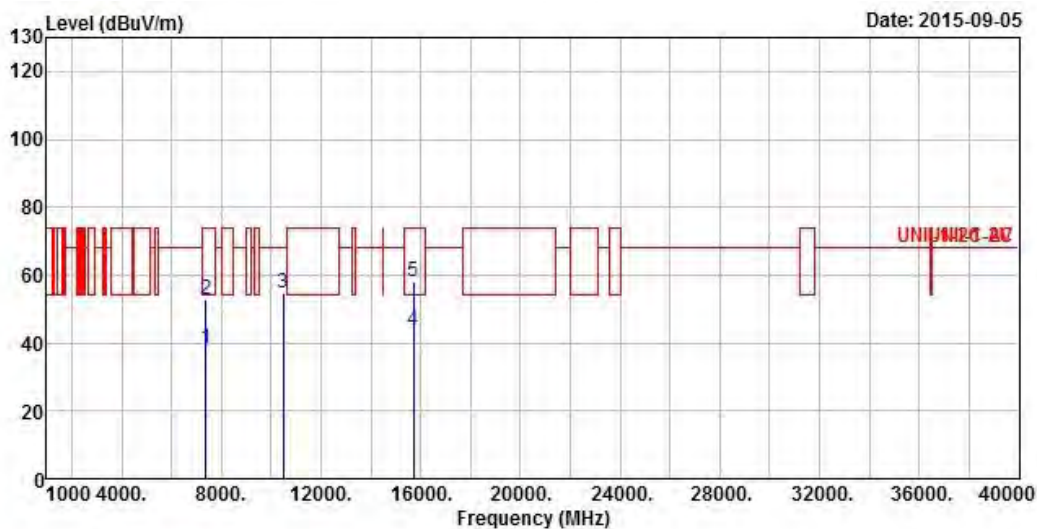
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5240 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7368.000 | 38.28 | -15.72 | 54.00 | 26.86 | 36.19 | 7.92 | 32.69 Average |
| 2 | 7368.000 | 52.74 | -21.26 | 74.00 | 41.32 | 36.19 | 7.92 | 32.69 Peak |
| 3 | 10480.000 | 54.86 | -13.34 | 68.20 | 39.84 | 38.90 | 8.82 | 32.70 Peak |
| 4 | 15720.000 | 43.51 | -10.49 | 54.00 | 28.90 | 37.45 | 9.46 | 32.30 Average |
| 5 | 15720.000 | 57.83 | -16.17 | 74.00 | 43.22 | 37.45 | 9.46 | 32.30 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

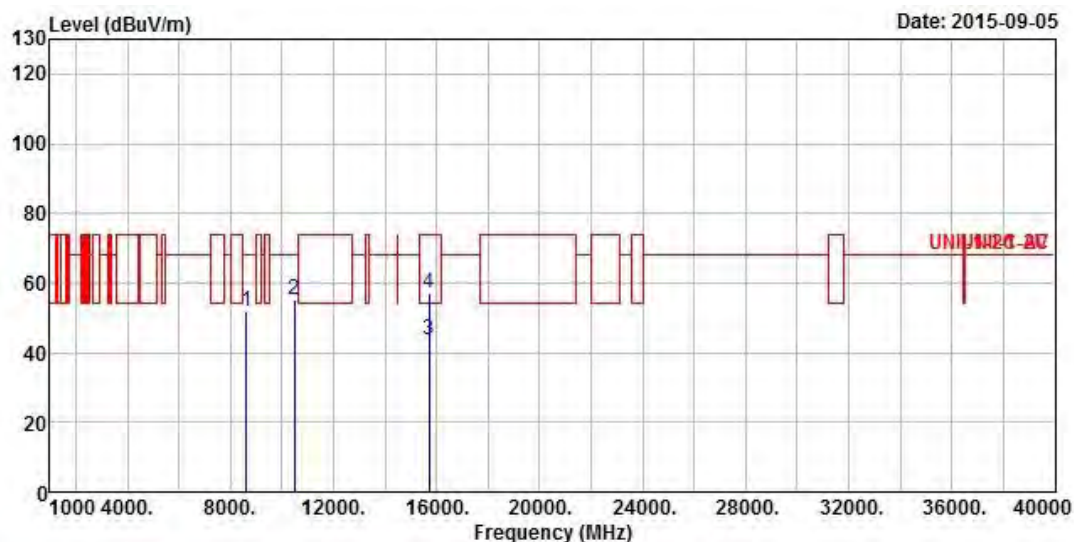
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT20 | Test Freq. (MHz) | 5240 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | |
| 1 | 8622.000 | 51.82 | -16.38 | 68.20 | 39.10 | 37.72 | 7.94 | 32.94 | Peak |
| 2 | 10480.000 | 55.24 | -12.96 | 68.20 | 40.22 | 38.90 | 8.82 | 32.70 | Peak |
| 3 | 15720.000 | 43.77 | -10.23 | 54.00 | 29.16 | 37.45 | 9.46 | 32.30 | Average |
| 4 | 15720.000 | 57.19 | -16.81 | 74.00 | 42.58 | 37.45 | 9.46 | 32.30 | Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

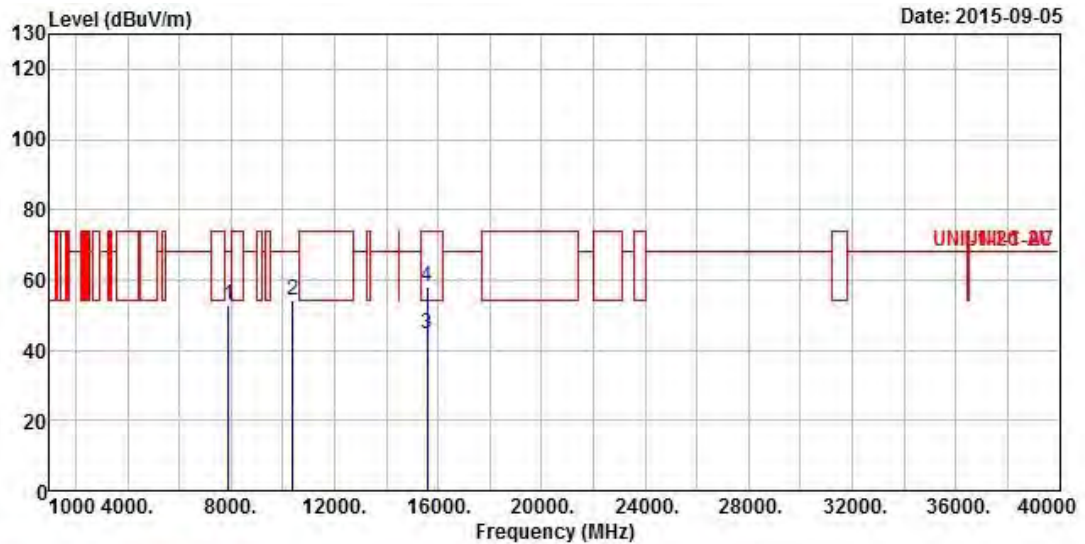
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT40 | Test Freq. (MHz) | 5190 |
| N_{TX} | 3 | Polarization | V |

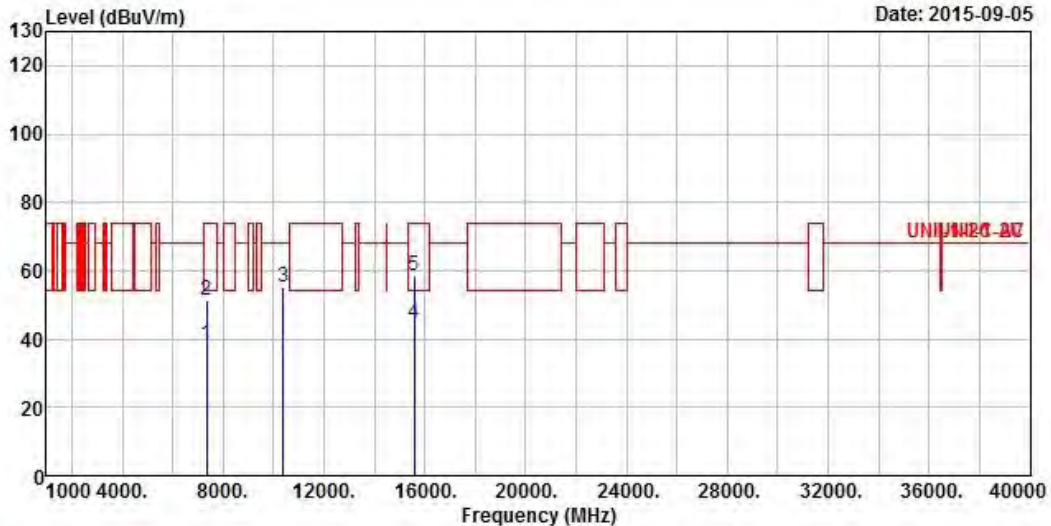


| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7904.000 | 52.57 | -15.63 | 68.20 | 40.38 | 36.98 | 8.07 | 32.86 Peak |
| 2 | 10380.000 | 54.32 | -13.88 | 68.20 | 39.36 | 38.90 | 8.85 | 32.79 Peak |
| 3 | 15570.000 | 44.46 | -9.54 | 54.00 | 29.54 | 37.76 | 9.41 | 32.25 Average |
| 4 | 15570.000 | 57.93 | -16.07 | 74.00 | 43.01 | 37.76 | 9.41 | 32.25 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
 Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT40 | Test Freq. (MHz) | 5190 |
| N_{TX} | 3 | Polarization | H |

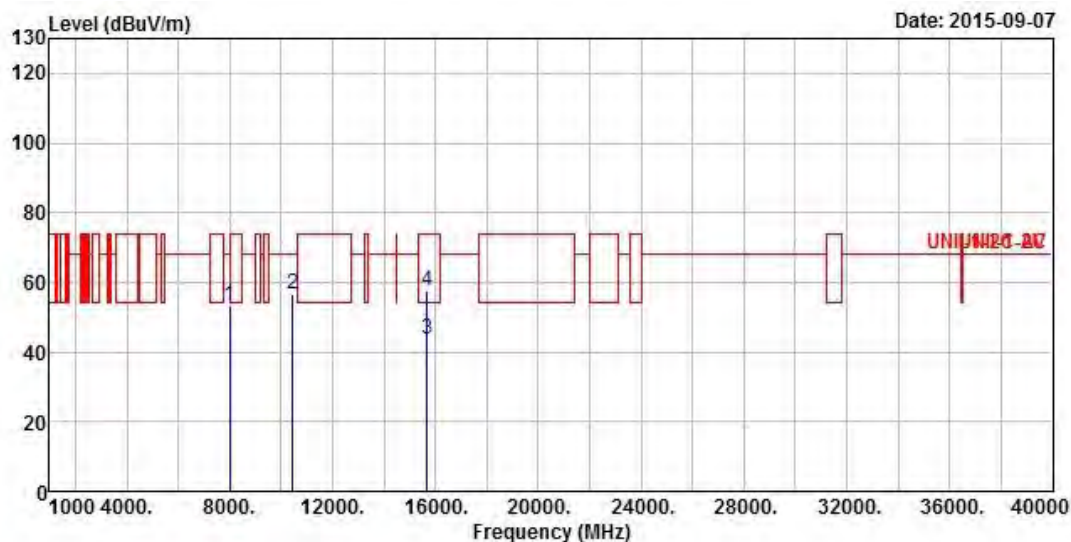


| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7364.000 | 38.58 | -15.42 | 54.00 | 27.21 | 36.14 | 7.92 | 32.69 Average |
| 2 | 7364.000 | 51.23 | -22.77 | 74.00 | 39.86 | 36.14 | 7.92 | 32.69 Peak |
| 3 | 10380.000 | 54.99 | -13.21 | 68.20 | 40.03 | 38.90 | 8.85 | 32.79 Peak |
| 4 | 15570.000 | 44.52 | -9.48 | 54.00 | 29.60 | 37.76 | 9.41 | 32.25 Average |
| 5 | 15570.000 | 58.50 | -15.50 | 74.00 | 43.58 | 37.76 | 9.41 | 32.25 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
 Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT40 | Test Freq. (MHz) | 5230 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|------------|---------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7988.000 | 53.42 | -14.78 | 68.20 | 41.12 | 37.08 | 8.10 | 32.88 Peak |
| 2 | 10460.000 | 56.82 | -11.38 | 68.20 | 41.82 | 38.90 | 8.82 | 32.72 Peak |
| 3 | 15690.000 | 43.86 | -10.14 | 54.00 | 29.17 | 37.52 | 9.46 | 32.29 Average |
| 4 | 15690.000 | 57.76 | -16.24 | 74.00 | 43.07 | 37.52 | 9.46 | 32.29 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

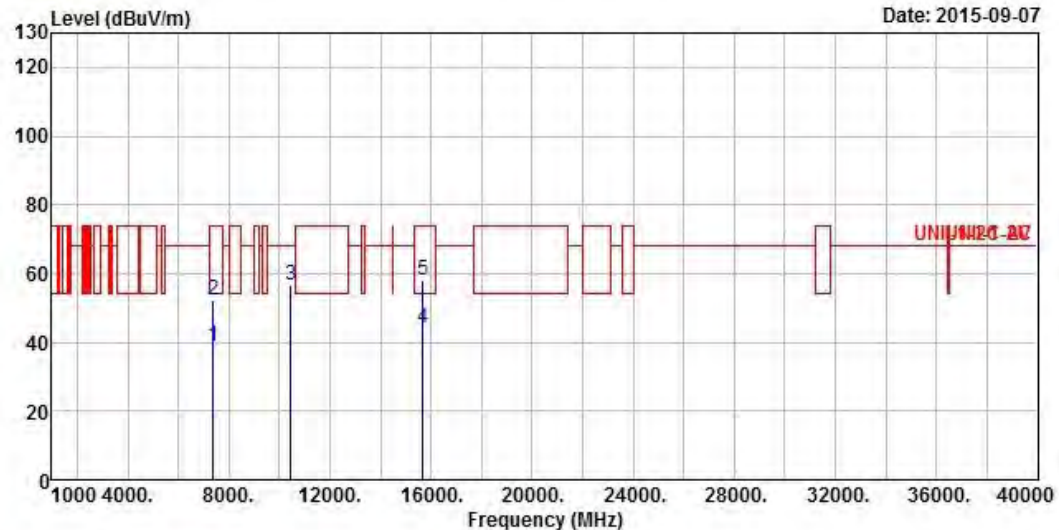
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT40 | Test Freq. (MHz) | 5230 |
| N_{TX} | 3 | Polarization | H |

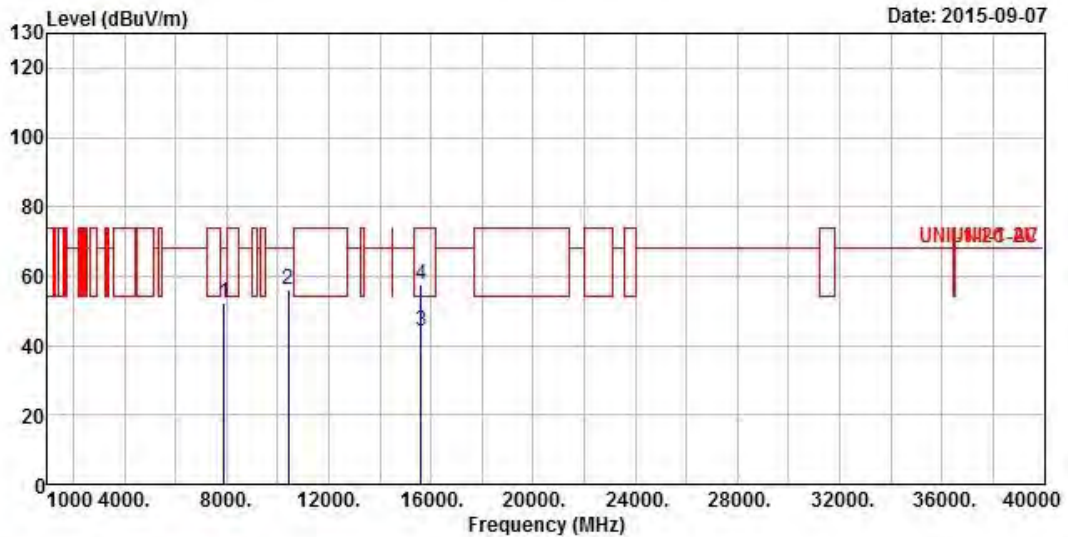


| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark |
|---|-----------|--------|------------|------------|-------------------|------------|---------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7384.000 | 38.66 | -15.34 | 54.00 | 27.21 | 36.23 | 7.92 | 32.70 Average |
| 2 | 7384.000 | 52.11 | -21.89 | 74.00 | 40.66 | 36.23 | 7.92 | 32.70 Peak |
| 3 | 10460.000 | 56.53 | -11.67 | 68.20 | 41.53 | 38.90 | 8.82 | 32.72 Peak |
| 4 | 15690.000 | 44.07 | -9.93 | 54.00 | 29.38 | 37.52 | 9.46 | 32.29 Average |
| 5 | 15690.000 | 58.21 | -15.79 | 74.00 | 43.52 | 37.52 | 9.46 | 32.29 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
 Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.
 Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT80 | Test Freq. (MHz) | 5210 |
| N_{TX} | 3 | Polarization | V |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7920.000 | 52.33 | -15.87 | 68.20 | 40.12 | 37.00 | 8.07 | 32.86 Peak |
| 2 | 10420.000 | 56.18 | -12.02 | 68.20 | 41.20 | 38.90 | 8.83 | 32.75 Peak |
| 3 | 15630.000 | 44.29 | -9.71 | 54.00 | 29.52 | 37.62 | 9.42 | 32.27 Average |
| 4 | 15630.000 | 57.62 | -16.38 | 74.00 | 42.85 | 37.62 | 9.42 | 32.27 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

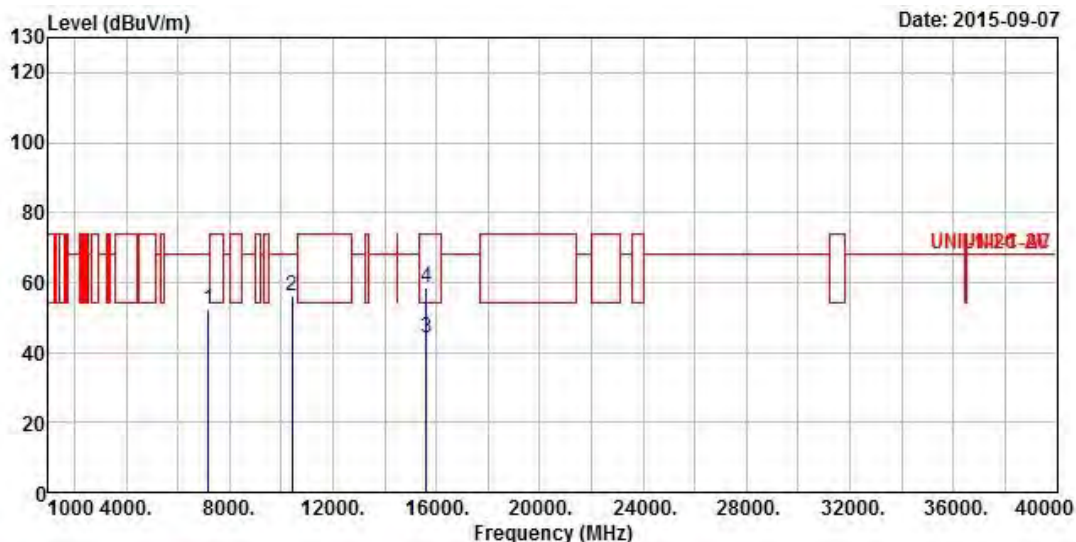
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz) for 5150-5250MHz

| | | | |
|------------------------|-------|-------------------------|------|
| Modulation Mode | VHT80 | Test Freq. (MHz) | 5210 |
| N_{TX} | 3 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB |
| 1 | 7188.000 | 52.37 | -15.83 | 68.20 | 41.40 | 35.69 | 7.90 | 32.62 Peak |
| 2 | 10420.000 | 56.17 | -12.03 | 68.20 | 41.19 | 38.90 | 8.83 | 32.75 Peak |
| 3 | 15630.000 | 44.32 | -9.68 | 54.00 | 29.55 | 37.62 | 9.42 | 32.27 Average |
| 4 | 15630.000 | 58.37 | -15.63 | 74.00 | 43.60 | 37.62 | 9.42 | 32.27 Peak |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands emission satisfies both the average and peak limits of 15.209, it is not required to satisfy the -27 dBm peak emission limit of 15.407.

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

3.6.9 Frequency Stability

3.6.10 Frequency Stability Limit

| Frequency Stability Limit | |
|-------------------------------------|--|
| UNII Devices | |
| <input checked="" type="checkbox"/> | In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual. |
| IEEE Std. 802.11n-2009 | |
| <input checked="" type="checkbox"/> | The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band and ± 25 ppm maximum for the 2.4 GHz band. |

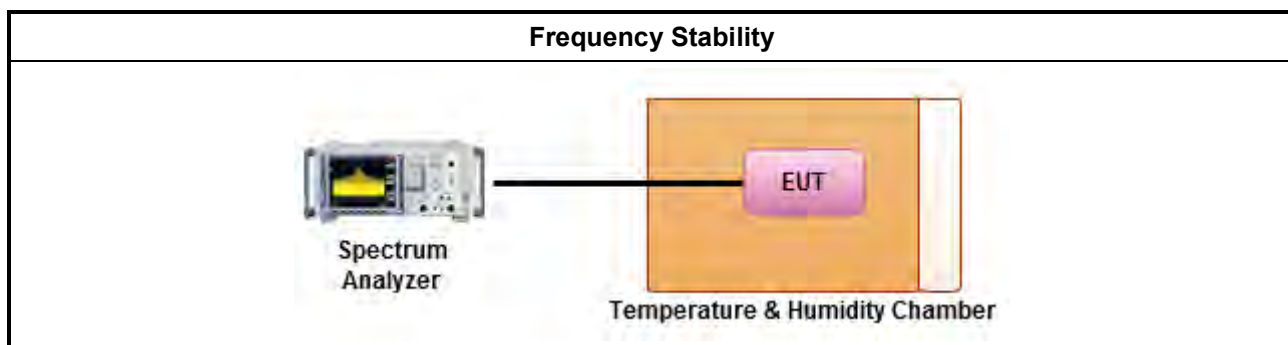
3.6.11 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.6.12 Test Procedures

| Test Method | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.8 for frequency stability tests |
| <input checked="" type="checkbox"/> | Frequency stability with respect to ambient temperature |
| <input checked="" type="checkbox"/> | Frequency stability when varying supply voltage |
| <input checked="" type="checkbox"/> | For conducted measurement. |
| <input checked="" type="checkbox"/> | For conducted measurements on devices with multiple transmit chains: Measurements need only to be performed on one of the active transmit chains (antenna outputs) |
| <input type="checkbox"/> | For radiated measurement. The equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted power level. |

3.6.13 Test Setup



3.6.14 Test Result of Frequency Stability

| Frequency Stability Result (only for non-beamforming mode) | | | | | |
|---|-------------|---------------------------|---------|---------|---------|
| Mode | | Frequency Stability (ppm) | | | |
| Condition | Freq. (MHz) | 0 min | 2 min | 5 min | 10 min |
| T _{20°C} Vmax | 5200 | 7.9942 | 7.9538 | 7.9250 | 7.7212 |
| T _{20°C} Vmin | 5200 | 7.9558 | 7.9192 | 7.8923 | 7.8019 |
| T _{50°C} Vnom | 5200 | -0.7519 | -0.9192 | -0.6673 | -0.4173 |
| T _{40°C} Vnom | 5200 | 1.5635 | 0.5000 | -0.1673 | -0.5000 |
| T _{30°C} Vnom | 5200 | 4.8423 | 3.9250 | 3.2558 | 2.5885 |
| T _{20°C} Vnom | 5200 | 8.0154 | 7.1981 | 6.5115 | 5.8442 |
| T _{10°C} Vnom | 5200 | 10.9365 | 10.2692 | 9.6019 | 9.1846 |
| T _{0°C} Vnom | 5200 | 13.1923 | 12.8577 | 12.4404 | 12.1058 |
| T _{-10°C} Vnom | 5200 | 17.3423 | 17.0019 | 16.0308 | 15.8635 |
| T _{-20°C} Vnom | 5200 | 16.9481 | 17.1154 | 17.4500 | 18.2019 |
| Limit (ppm) | | ±20 | | | |
| Result | | Complied | | | |
| Note 1: Measure at 85 % [Vmin] and 115 % [Vmax] of the nominal voltage [Vnom]. | | | | | |
| Note 2: The nominal voltage refer test report clause 0 for EUT operational condition. | | | | | |

4 Test Equipment and Calibration Data

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|--------------|--------------------------------|-----------|--------------------|-----------------|------------------|---------------|
| EMC Receiver | R&S | ESCS 30 | 100174 | 9kHz ~ 2.75GHz | Apr. 15, 2015 | AC Conduction |
| LISN | SCHWARZBECK MESS-ELEKTRONIK | NSLK 8127 | 8127-477 | 9kHz ~ 30MHz | Jan. 22, 2015 | AC Conduction |
| RF Cable-CON | HUBER+SUHNER | RG213/U | 076118320200 01 | 9kHz ~ 30MHz | Oct. 31, 2014 | AC Conduction |
| EMI Filter | LINDGREN | LRE-2030 | 2651 | < 450 Hz | NA | AC Conduction |

Note: Calibration Interval of instruments listed above is one year.

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|----------------------------|--------------|--------------|-------------|-----------------|------------------|--------------|
| Spectrum Analyzer | R&S | FSV 40 | 101500 | 9KHz~40GHz | May. 06, 2015 | RF Conducted |
| Temp. and Humidity Chamber | Giant Force | GTH-225-20-S | MAB0103-001 | -20 ~ 100℃ | Jun. 12, 2015 | RF Conducted |
| Signal Generator | R&S | SMR40 | 100116 | 10MHz ~ 40GHz | Jul. 28, 2015 | RF Conducted |
| AC Power Source | G.W | APS-9102 | EL920581 | AC 0V ~ 300V | Jun. 22, 2015 | RF Conducted |

Note: Calibration Interval of instruments listed above is one year.



| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|--------------------------|----------------|----------------|-------------|--------------------|------------------|-------------------|
| 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH03-HY | 30MHz ~ 1GHz 3m | Nov. 29, 2014 | Radiated Emission |
| 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH03-HY | 1GHz ~ 6GHz 3m | Dec. 17, 2014 | Radiated Emission |
| Amplifier | HP | 8447D | 2944A08033 | 10kHz ~ 1.3GHz | May 11, 2015 | Radiated Emission |
| Amplifier | Agilent | 8449B | 3008A02120 | 1GHz ~ 26.5GHz | Sep. 01, 2015 | Radiated Emission |
| Spectrum | R&S | FSP40 | 100004 | 9kHz ~ 40GHz | Apr. 02, 2015 | Radiated Emission |
| Bilog Antenna | SCHAFFNER | CBL 6112D | 22237 | 30MHz ~ 1GHz | Sep. 20, 2014 | Radiated Emission |
| Horn Antenna | ETS • LINDGREN | 3115 | 6741 | 1GHz ~ 18GHz | Jul. 15, 2015 | Radiated Emission |
| Horn Antenna | SCHWARZBECK | BBHA9170 | BBHA9170154 | 18GHz ~ 40GHz | Jan. 27, 2015 | Radiated Emission |
| RF Cable-R03m | Jye Bao | RG142 | CB021 | 9kHz ~ 1GHz | Nov. 15, 2014 | Radiated Emission |
| RF Cable-high | SUHNER | SUCOFLEX 106 | 03CH03-HY | 1GHz ~ 40GHz | Dec. 12, 2014 | Radiated Emission |
| Turn Table | EM Electronics | EM Electronics | 060615 | 0 ~ 360 degree | N/A | Radiated Emission |

Note: Calibration Interval of instruments listed above is one year.

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|--------------|-----------------|------------|------------|-----------------|------------------|-------------------|
| Amplifier | EMC INSTRUMENTS | EMC184045B | 980192 | 18GHz ~ 40GHz | Aug. 25.2014 | Radiated Emission |
| Loop Antenna | R&S | HFH2-Z2 | 100330 | 9 kHz~30 MHz | Nov. 10, 2014 | Radiated Emission |

Note: Calibration Interval of instruments listed above is two years.