

Equipment : 802.11ac Wireless Router

Brand Name : Synology Model No. : RT2600ac

FCC ID : YOR-RT2600AC

Standard : 47 CFR FCC Part 15.247 Frequency : 2400 MHz – 2483.5 MHz

FCC Classification : DTS

Applicant : Synology Incorporated

3F-3, No.106, Chang An W. Rd., Taipei 103, Taiwan

Manufacturer : ASKEY TECHNOLOY (JIANG SU) LTD.

NO.1388, Jiao Tong Road, Wu Jiang

Economic-Technological Development Area, Jiangsu

Province215200, P.R.C

The product sample received on Jun. 03, 2016 and completely tested on Aug. 12, 2016 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

Testing Laboratory
1190

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Appendix I. Test Result of AC Power-line Conducted Emissions

Appendix A. Test Result of Emission Bandwidth

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**Appendix C. Test Result of Power Spectral Density** 

Appendix D. Test Result of Transmitter Radiated Bandedge Emissions

**Appendix E. Transmitter Radiated Unwanted Emissions** 

**Appendix F. Test Photos** 

Appendix G. Photographs of EUT

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# **Summary of Test Result**

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|                  | Conformance Test Specifications |  |  |   |          |  |  |  |  |  |
|------------------|---------------------------------|--|--|---|----------|--|--|--|--|--|
| Report<br>Clause | Ref. Std.<br>Clause             | Description  | Measured   | Limit   | Result   |  |  |  |  |  |
| 1.1.2            | 15.203                          | Antenna Requirement  | Antenna connector mechanism complied   | FCC 15.203  | Complied |  |  |  |  |  |
| 3.1              | 15.207                          | AC Power-line<br>Conducted Emissions                         | [dBuV]: 0.370119MHz<br>43.34 (Margin 15.16dB) - QP<br>37.59 (Margin 10.91dB) - AV  | FCC 15.207  | Complied |  |  |  |  |  |
| 3.2              | 15.247(a)                       | DTS Bandwidth  | Refer as Appendix A  | ≥500kHz   | Complied |  |  |  |  |  |
| 3.3              | 15.247(b)                       | Fundamental Emission<br>Output Power                         | Refer as Appendix B  | Power [dBm]:30  | Complied |  |  |  |  |  |
| 3.4              | 15.247(e)                       | Power Spectral Density                                       | Refer as Appendix C  | PSD<br>[dBm/3kHz]:8   | Complied |  |  |  |  |  |
| 3.5              | 15.247(d)                       | Test Result of<br>Transmitter Radiated<br>Bandedge Emissions | Non-Restricted Bands:<br>2399.936 MHz: 48.81dB<br>Restricted Bands<br>[dBuV/m at 3m]: 2483.60MHz<br>65.68 (Margin 8.32dB) - PK<br>53.76 (Margin 0.24dB) - AV | Non-Restricted<br>Bands:> 30 dBc<br>Bands: FCC<br>15.209            | Complied |  |  |  |  |  |
| 3.6              | 15.247(d)                       | Transmitter Radiated Unwanted Emissions                      | Restricted Bands<br>[dBuV/m at 3m]: 875.84MHz<br>42.62 (Margin 3.38dB) - PK  | Non-Restricted<br>Bands:> 30 dBc<br>Restricted Bands:<br>FCC 15.209 | Complied |  |  |  |  |  |

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# **Revision History**

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| Report No. | Version | Description             | Issued Date   |
|------------|---------|-------------------------|---------------|
| FR662420AC | Rev. 01 | Initial issue of report | Sep. 05, 2016 |
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1 General Description

### 1.1 Information

#### 1.1.1 RF General Information

| Band | Mode | BWch (MHz) | CH. Number | Nss-Min   | Nant |
|------|------|------------|------------|-----------|------|
| 2.4G | 11b  | 20         | 1-11 [11]  | 1         | 4    |
| 2.4G | 11g  | 20         | 1-11 [11]  | 1         | 4    |
| 2.4G | HT20 | 20         | 1-11 [11]  | 1,(M0-31) | 4    |
| 2.4G | HT40 | 40         | 3-9 [7]    | 1,(M0-31) | 4    |

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#### Note:

- 2.4G is the 2.4GHz Band (2.4-2.4835GHz).
- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

#### 1.1.2 Antenna Information

|             | Antenna Category   |  |  |  |  |  |
|-------------|--|--|--|--|--|--|
|             | Integral antenna (antenna permanently attached)  |  |  |  |  |  |
|             | ☐ Temporary RF connector provided  |  |  |  |  |  |
|             | 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. |  |  |  |  |  |
| $\boxtimes$ | External antenna (dedicated antennas)  |  |  |  |  |  |
|             | Single power level with corresponding antenna(s).  |  |  |  |  |  |
|             | ☐ Multiple power level and corresponding antenna(s).   |  |  |  |  |  |

| No. | Ant. Cat. | Ant. Type | Gain <sub>(dBi)</sub> |
|-----|-----------|-----------|-----------------------|
| 1   | External  | Dipole    | 4.5                   |
| 2   | External  | Dipole    | 4.5                   |
| 3   | External  | Dipole    | 4.5                   |
| 4   | External  | Dipole    | 4.5                   |

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# 1.1.3 Type of EUT

|   | Identify EUT                                 |         |           |  |                |          |                     |
|---|--|---------|-----------|--|----------------|----------|---------------------|
| EUT Serial Number   | N/A  |         |           |  |                |          |                     |
| Presentation of Equipment [   | Produc                                       | ction   | ; 🛛 Pro   | e-Pro                                    | oduction;      | rototype | }                   |
| ·   |  |         | Туре      | of EU                                    | JT             |          |                     |
|   |  |         |           |  |                |          |                     |
| Combined (EUT where the radio part is fully integrated within another device) |  |         |           |  |                |          |                     |
| Combined Equipment - Bra  | Combined Equipment - Brand Name / Model No.: |         |           |  |                |          |                     |
| ☐ Plug-in radio (EUT intende  | ed for a va                                  | riety ( | of host s | syster                                   | ms)            |          |                     |
| Host System - Brand Name  | e / Model                                    | No.:    |           |  |                |          |                     |
| Other:  |  |         |           |  |                |          |                     |
| 1.1.4 Mode Test Duty C  | ycle   |         |           |  |                |          |                     |
|   | Opera  | ted N   | lode for  | r Wo                                     | rst Duty Cycle |          |                     |
| Operated test mode for wo   | orst duty c                                  | ycle    |           |  |                |          |                     |
| Test Signal Duty  | Cycle (x)                                    |         |           | Power Duty Factor<br>[dB] – (10 log 1/x) |                |          |                     |
|   |  |         |           |  |                | 0.0      | )1                  |
| □ 96.7%- IEEE 802.11g   |  |         |           |  |                | 0.1      | 5                   |
|   | 20)  |         |           |  |                | 0.0      | 06                  |
| ☑ 97.4%- IEEE 802.11n (HT   | 40)  |         |           | 0.11                                     |                |          |                     |
| 1.1.5 EUT Operational (   | Conditio                                     | on      |           | ı  |                |          |                     |
| Supply Voltage  | AC main                                      | s       |           |  | DC             |          |                     |
| Type of DC Source   | External                                     | AC a    | dapter    |  | From Host Sys  | tem      | Battery             |
| 1.1.6 EUT Operate Info  |  |         |           |  |                |          |                     |
| Items   |  |         |           |  | Descr          | iption   |                     |
| Communication Mode  |  |         | IP Base   | ed (L                                    | oad Based)     |          | Frame Based         |
| Beamforming Function  |  |         |           | With beamforming                         |                |          | Without beamforming |
|   | $\boxtimes$                                  | Indoor  |           |  |                | Outdoor  |                     |
| Operate Condition   |  |         | Fixed F   | P2P                                      |                |          | Portable Client     |
| Operate Mode  |  |         |           |  |                | L        |                     |

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# 1.2 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
- KDB 558074 D01 v03r05
- KDB 662911 D01 v02r01

# 1.3 Testing Location Information

|             | Testing Location  |     |   |   |            |               |            |  |
|-------------|---|-----|---|---|------------|---------------|------------|--|
| $\boxtimes$ | 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  |     |   |   |            |               |            |  |
| •           | Test Condition Test Site No. Test Engineer Test Environment Test Date |     |   |   |            | Test Date     |            |  |
|             | AC Conduction   |     |   | CO04-HY   | Ryan       | 22.2°C / 54%  | 05/08/2016 |  |
|             | RF Conducted TH01-HY Ryan 24.8°C / 65% 02/08/2016                     |     |   |   | 02/08/2016 |               |            |  |
| R           | adiated Emissio   | n   |   | 03CH09-HY   | Thor       | 22.2C / 51.8% | 11/08/2016 |  |

Test site registered number [ 553509 ] with FCC.

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1.4 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)

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| Measurement Uncertainty           |               |             |  |  |  |
|-----------------------------------|---------------|-------------|--|--|--|
| Test Item                         |               | Uncertainty |  |  |  |
| AC power-line conducted emissions |               | ±2.3 dB     |  |  |  |
| Emission bandwidth, 6dB bandwidth |               | ±0.6 %      |  |  |  |
| RF output power, conducted        |               | ±0.1 dB     |  |  |  |
| Power density, conducted          |               | ±0.6 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                        |               | ±0.6 %      |  |  |  |

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2 Test Configuration of EUT

# 2.1 The Worst Case Modulation Configuration

| Worst Modulation Used for Conformance Testing  |   |           |        |  |  |  |  |
|--|---|-----------|--------|--|--|--|--|
| Modulation Mode Transmit Chains (N <sub>TX</sub> ) Data Rate / MCS Worst Data Rate / |   |           |        |  |  |  |  |
| 11b  | 4 | 1-11 Mbps | 1 Mbps |  |  |  |  |
| 11g  | 4 | 6-54 Mbps | 6 Mbps |  |  |  |  |
| HT20   | 4 | MCS 0-31  | MCS 0  |  |  |  |  |
| HT40   | 4 | MCS 0-31  | MCS 0  |  |  |  |  |

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Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). The EUT support HT20 and HT40. Worst modulation mode of Guard Interval (GI) is 800ns.

Note 2: Modulation modes consist below configuration:

11b: IEEE 802.11b, 11g: IEEE 802.11g, HT20/HT40: IEEE 802.11n

Note 3: RF output power specifies that Maximum Peak Conducted Output Power.

### 2.2 Test Channel Mode

| Test Software Version | QRCT V3.0.174.0 |
|-----------------------|-----------------|
|                       |                 |

| Band | Mode | BWch<br>(MHz) | Nss-Min | Nant | Ch.<br>(MHz) | Range | Power<br>Setting |
|------|------|---------------|---------|------|--------------|-------|------------------|
| 2.4G | 11b  | 20            | 1       | 4    | 2412         | L     | 16.5             |
| 2.4G | 11b  | 20            | 1       | 4    | 2437         | М     | 19.5             |
| 2.4G | 11b  | 20            | 1       | 4    | 2462         | Н     | 16               |
| 2.4G | 11g  | 20            | 1       | 4    | 2412         | L     | 16               |
| 2.4G | 11g  | 20            | 1       | 4    | 2437         | М     | 20               |
| 2.4G | 11g  | 20            | 1       | 4    | 2462         | Н     | 16.5             |
| 2.4G | HT20 | 20            | 1       | 4    | 2412         | L     | 15               |
| 2.4G | HT20 | 20            | 1       | 4    | 2437         | М     | 20               |
| 2.4G | HT20 | 20            | 1       | 4    | 2462         | Н     | 15.5             |
| 2.4G | HT40 | 40            | 1       | 4    | 2422         | L     | 11               |
| 2.4G | HT40 | 40            | 1       | 4    | 2437         | М     | 15               |
| 2.4G | HT40 | 40            | 1       | 4    | 2452         | Н     | 12.5             |

#### **Abbreviation Explanation**

| Band | Mode | BWch<br>(MHz) | Nss-Min   | Nant | Ch.<br>(MHz) | Range | Test<br>Cond. | Abbreviation                          |
|------|------|---------------|-----------|------|--------------|-------|---------------|---------------------------------------|
| 2.4G | HT20 | 20            | 1,(M0-15) | 2    | 2412         | L     | TN,VN         | 2.4G;HT20;20;1,(M0-15);2;2412;L;TN,VN |
| 2.4G | HT40 | 40            | 1,(M0-15) | 2    | 2437         | М     | TN,VN         | 2.4G;HT40;40;1,(M0-15);2;2437;M;TN,VN |

#### Note:

Test range channel consist of L (Low Ch.), M (Middle Ch.), H (High Ch.), S (Single Ch).

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# 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   |  |

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| The Worst Case Mode for Following Conformance Tests |   |  |
|---|---|--|
| Tests Item  | DTS Bandwidth, Fundamental Emission Output Power, Power Spectral Density, Emissions in Non-restricted Frequency Bands |  |
| Test Condition                                      | Conducted measurement at transmit chains  |  |

| Th   | The Worst Case Mode for Following Conformance Tests  |                 |                              |  |  |
|--|--|-----------------|------------------------------|--|--|
| Tests Item   | Emissions in Restricted Frequency Bands  |                 |                              |  |  |
| Test Condition  Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used regardless of spatial multiplexing MIMO configuration), the radiated test be performed with highest antenna gain of each antenna type. |  |                 | n), the radiated test should |  |  |
|  | ☐ EUT will be placed in  | fixed position. |                              |  |  |
| User Position  | EUT will be placed in mobile position and operating multiple positions.                        |                 |                              |  |  |
|  | EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions. |                 |                              |  |  |
| Operating Mode < 1GHz  | □ 1. Adapter Mode  |                 |                              |  |  |
|  | X Plane  | Y Plane         | Z Plane                      |  |  |
| Orthogonal Planes of<br>EUT  |  |                 |                              |  |  |
| Worst Planes of EUT  | V  |                 |                              |  |  |
| Worst Planes of Ant  |  |                 | V                            |  |  |

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# 2.4 Accessories and Support Equipment

| Accessories Information |              |  |                       |          |
|-------------------------|--------------|--|-----------------------|----------|
|                         | Brand Name   | CWT                                      | Model Name            | 2ABN042F |
| AC Adapter              | Power Rating | I/P:100 - 240Vac, 1.3A, O/P: 12Vdc, 3.5A |                       |          |
|                         | Power Cord   | 1.45 meter, non-shielded of              | cable, w/o ferrite co | re       |
| RJ45 Cable              | Power Cord   | 1.5 meter, non-shielded ca               | able                  |          |

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

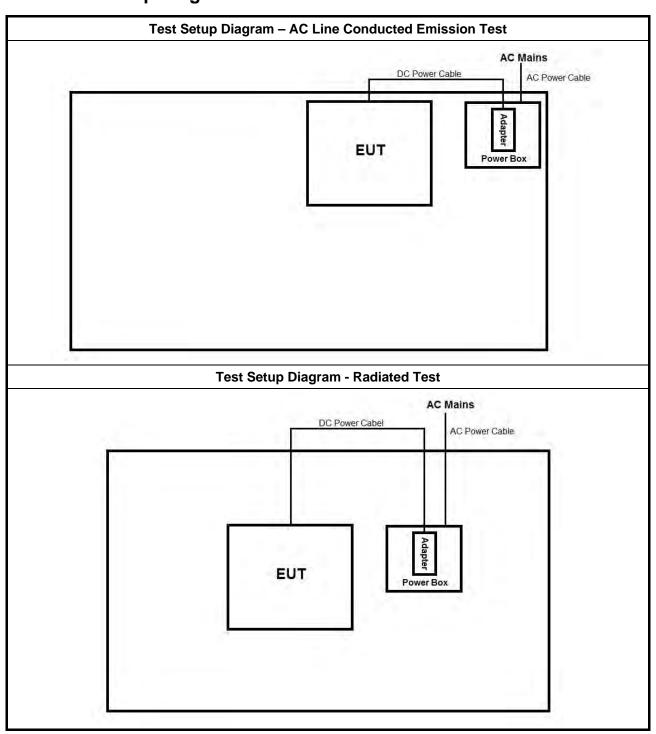
|     | Support Equipment - RF Conducted |            |            |              |  |  |
|-----|----------------------------------|------------|------------|--------------|--|--|
| No. | Equipment                        | Brand Name | Model Name | FCC ID       |  |  |
| 1   | Notebook                         | DELL       | E6400      | R33002 / DOC |  |  |
| 2   | Adapter for NB                   | DELL       | HA65NM130  | R35737 / DOC |  |  |

|     | Support Equipment - AC Conduction and Radiated Emission |            |            |  |  |
|-----|---|------------|------------|--|--|
| No. | Equipment   | Brand Name | Model Name |  |  |
| 1   | -   | -          | -          |  |  |

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2.6 Test Setup Diagram



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# 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. |           |           |  |

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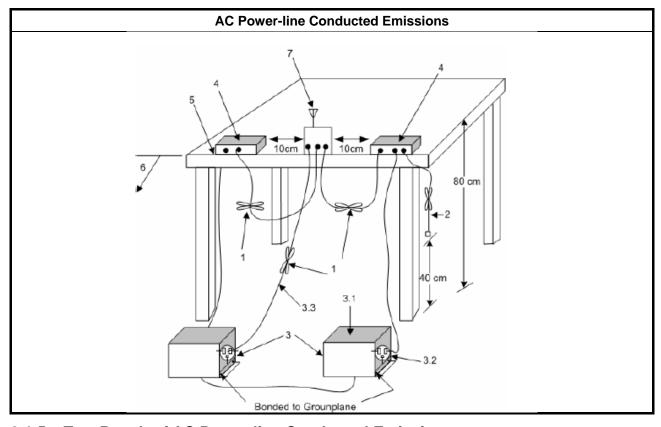
## 3.1.2 Measuring Instruments

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

### 3.1.3 Test Procedures

| Test Method  |
|--|
| 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

Refer as Appendix I

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### 3.2 DTS Bandwidth

### 3.2.1 6dB Bandwidth Limit

| 6dB Bandwidth Limit                          |  |  |
|--|--|--|
| Systems using digital modulation techniques: |  |  |
| ■ 6 dB bandwidth ≥ 500 kHz.                  |  |  |

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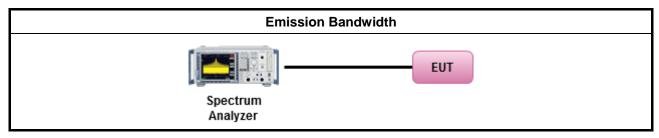
# 3.2.2 Measuring Instruments

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

### 3.2.3 Test Procedures

|   | Test Method  |  |  |  |
|---|--|--|--|--|
| • | For the emission bandwidth shall be measured using one of the options below: |  |  |  |
|   | Refer as KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.     |  |  |  |
|   | Refer as KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.     |  |  |  |
|   | Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.           |  |  |  |

# 3.2.4 Test Setup



### 3.2.5 Test Result of Emission Bandwidth

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# 3.3 Fundamental Emission Output Power

# 3.3.1 Fundamental Emission Output Power Limit

| Max      | imuı  | n Peak Conducted Output Power or Maximum Conducted Output Power Limit                               |  |  |  |  |
|----------|---|---|--|--|--|--|
| •        | 2400-2483.5 MHz Band:   |   |  |  |  |  |
|          |   | If $G_{TX} \le 6$ dBi, then $P_{Out} \le 30$ dBm (1 W)  |  |  |  |  |
|          |   | Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm      |  |  |  |  |
|          | •   | Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm         |  |  |  |  |
|          | •   | Smart antenna system (SAS):   |  |  |  |  |
|          |   | - Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm                        |  |  |  |  |
|          |   | - Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm                       |  |  |  |  |
|          |   | - Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8dB$ dBm |  |  |  |  |
| e.i.r    | .p. P   | ower Limit:   |  |  |  |  |
| •        | 240   | 0-2483.5 MHz Band   |  |  |  |  |
|          | •   | Point-to-multipoint systems (P2M): $P_{eirp} \le 36 \text{ dBm } (4 \text{ W})$                     |  |  |  |  |
|          | •   | Point-to-point systems (P2P): $P_{eirp} \le MAX(36, [P_{Out} + G_{TX}]) dBm$                        |  |  |  |  |
|          | •   | Smart antenna system (SAS)  |  |  |  |  |
|          |   | - Single beam: $P_{eirp} \le MAX(36, P_{Out} + G_{TX}) dBm$   |  |  |  |  |
|          | - Overlap beam: P <sub>eirp</sub> ≤ MAX(36, P <sub>Out</sub> + G <sub>TX</sub> ) dBm  |   |  |  |  |  |
|          | - Aggregate power on all beams: P <sub>eirp</sub> ≤ MAX(36, [P <sub>Out</sub> + G <sub>TX</sub> + 8]) dBm   |   |  |  |  |  |
| $G_{TX}$ | <ul> <li>Pout = maximum peak conducted output power or maximum conducted output power in dBm,</li> <li>G<sub>TX</sub> = the maximum transmitting antenna directional gain in dBi.</li> <li>P<sub>eirp</sub> = e.i.r.p. Power in dBm.</li> </ul> |   |  |  |  |  |

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# 3.3.2 Measuring Instruments

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

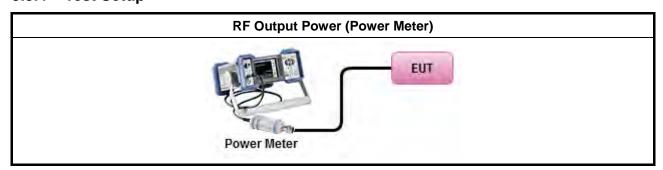
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### 3.3.3 Test Procedures

|   | Test Method   |
|---|---|
| • | Maximum Peak Conducted Output Power   |
|   | ☐ Refer as KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).  |
|   | ☐ Refer as KDB 558074, clause 9.1.2 Option 2 (peak power meter for VBW ≥ DTS BW)  |
| • | Maximum Conducted Output Power  |
|   | [duty cycle ≥ 98% or external video / power trigger]  |
|   | Refer as KDB 558074, clause 9.2.2.2 Method AVGSA-2 (spectral trace averaging).  |
|   | Refer as KDB 558074, clause 9.2.2.3 Method AVGSA-2 Alt. (slow sweep speed)  |
|   | duty cycle < 98% and average over on/off periods with duty factor   |
|   | Refer as KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).  |
|   | Refer as KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)  |
|   | RF power meter and average over on/off periods with duty factor or gated trigger  |
|   | Refer as KDB 558074, clause 9.2.3 Method AVGPM (using an RF average power meter).   |
| • | For conducted measurement.  |
|   | ■ If 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. |
|   | If multiple transmit chains, EIRP calculation could be following as methods: P <sub>total</sub> = P <sub>1</sub> + P <sub>2</sub> + + P <sub>n</sub> (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP <sub>total</sub> = P <sub>total</sub> + DG  |

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# 3.3.4 Test Setup



# 3.3.5 Test Result of Maximum Average Conducted Output Power

Refer as Appendix B

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# 3.4 Power Spectral Density

# 3.4.1 Power Spectral Density Limit

| Power Spectral Density Limit                                  |
|---|
| <ul> <li>Power Spectral Density (PSD) ≤ 8 dBm/3kHz</li> </ul> |

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# 3.4.2 Measuring Instruments

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

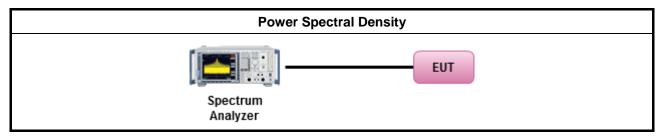
### 3.4.3 Test Procedures

|  | Test Method  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
| •  | Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).   |  |  |  |  |  |  |  |  |
|  | Refer as KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak).   |  |  |  |  |  |  |  |  |
|  | [duty cycle ≥ 98% or external video / power trigger]   |  |  |  |  |  |  |  |  |
| Refer as KDB 558074, clause 10.3 Method AVGPSD-2 (spectral trace averaging).     |  |  |  |  |  |  |  |  |  |
|  | Refer as KDB 558074, clause 10.4 Method AVGPSD-2 (slow sweep speed)  |  |  |  |  |  |  |  |  |
|  | duty cycle < 98% and average over on/off periods with duty factor  |  |  |  |  |  |  |  |  |
| Refer as KDB 558074, clause 10.5 Method AVGPSD-2 Alt (spectral trace averaging). |  |  |  |  |  |  |  |  |  |
|  | Refer as KDB 558074, clause 10.6 Method AVGPSD-2 Alt. (slow sweep speed)   |  |  |  |  |  |  |  |  |
| •  | For conducted measurement.   |  |  |  |  |  |  |  |  |
|  | If The EUT supports multiple transmit chains using options given below:  |  |  |  |  |  |  |  |  |
|  | Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the N <sub>TX</sub> output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace. |  |  |  |  |  |  |  |  |
|  | Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,   |  |  |  |  |  |  |  |  |
|  | Option 3: 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.  |  |  |  |  |  |  |  |  |

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# 3.4.4 Test Setup



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# 3.4.5 Test Result of Power Spectral Density

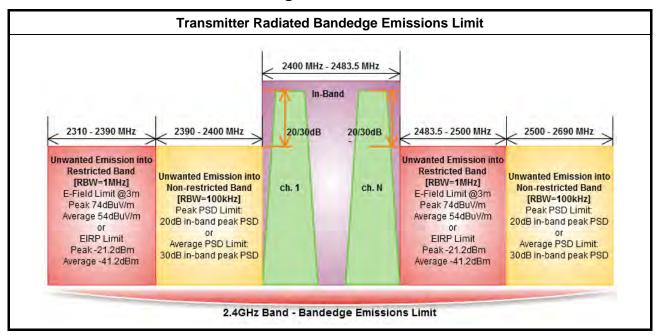
Refer as Appendix C

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3.5 Transmitter Radiated Bandedge Emissions

#### 3.5.1 Transmitter Radiated Bandedge Emissions Limit



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### 3.5.2 Measuring Instruments

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

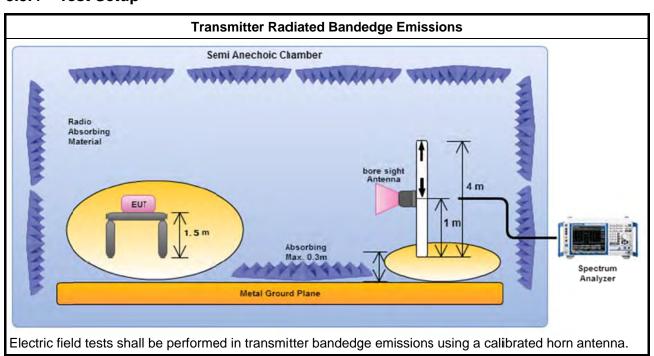
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### 3.5.3 Test Procedures

|  |  | Test Method  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|
| $\boxtimes$  | The  | average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].   |  |  |  |  |  |  |  |  |  |  |
| $\boxtimes$  |  | 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. |  |  |  |  |  |  |  |  |  |  |
| $\boxtimes$  | For  | For the transmitter unwanted emissions shall be measured using following options below:  |  |  |  |  |  |  |  |  |  |  |
|  | Refer as KDB 558074, clause 11 for unwanted emissions into non-restricted bands.   |  |  |  |  |  |  |  |  |  |  |  |
|  | Refer as KDB 558074, clause 12 for unwanted emissions into restricted bands.   |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Refer as KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle ≥98%)  |  |  |  |  |  |  |  |  |  |  |
| Refer as KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor). |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Refer as KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW≥1/T).   |  |  |  |  |  |  |  |  |  |  |
|  |  | Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.  |  |  |  |  |  |  |  |  |  |  |
|  |  | Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions.  |  |  |  |  |  |  |  |  |  |  |
|  |  | Refer as KDB 558074, clause 11.3 and 12.2.4 measurement procedure peak limit.  |  |  |  |  |  |  |  |  |  |  |
| $\boxtimes$  | For  | the transmitter bandedge emissions shall be measured using following options below:  |  |  |  |  |  |  |  |  |  |  |
|  | Refer as KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the bar power and summing the spectral levels (i.e., 1 MHz). |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Refer as ANSI C63.10, clause 6.10 for band-edge testing.   |  |  |  |  |  |  |  |  |  |  |
|  | $\boxtimes$  | Refer as ANSI C63.10, clause 6.10.6.2 for marker-delta method for band-edge measurements.  |  |  |  |  |  |  |  |  |  |  |
| $\boxtimes$  |  | radiated measurement, refer as KDB 558074, clause 12.2.7 and ANSI C63.10, clause 6.6. Test ance is 3m.   |  |  |  |  |  |  |  |  |  |  |

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# 3.5.4 Test Setup



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3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

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#### 3.6 Transmitter Radiated Unwanted Emissions

#### 3.6.1 Transmitter in Radiated Unwanted Emissions Limit

| Restricted Band Emissions 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                    |  |  |  |  |  |  |

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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 Limit   |    |  |  |  |  |  |
|--------------------------------------|----|--|--|--|--|--|
| RF output power procedure Limit (dB) |    |  |  |  |  |  |
| Peak output power procedure          | 20 |  |  |  |  |  |
| Average output power procedure       | 30 |  |  |  |  |  |

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

#### 3.6.2 Measuring Instruments

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

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# 3.6.3 Test Procedures

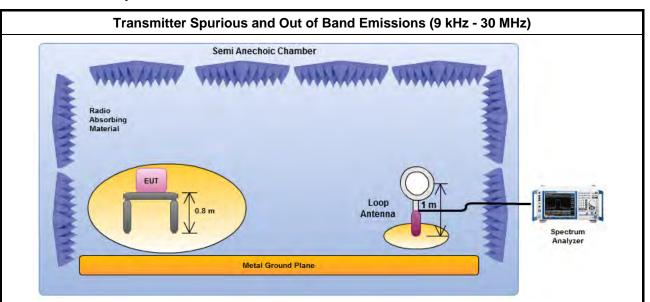
|             |  | Test Method   |  |  |  |  |  |  |  |  |  |  |
|-------------|--|---|--|--|--|--|--|--|--|--|--|--|
|             | perf<br>equi<br>extra<br>dista   | Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the 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). |  |  |  |  |  |  |  |  |  |  |
| $\boxtimes$ | The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor]. |   |  |  |  |  |  |  |  |  |  |  |
| $\boxtimes$ | For  | the transmitter unwanted emissions shall be measured using following options below:   |  |  |  |  |  |  |  |  |  |  |
|             | $\boxtimes$  | Refer as KDB 558074, clause 11 for unwanted emissions into non-restricted bands.  |  |  |  |  |  |  |  |  |  |  |
|             | Refer as KDB 558074, clause 12 for unwanted emissions into restricted bands.       |   |  |  |  |  |  |  |  |  |  |  |
|             |  | Refer as KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle ≥98%)   |  |  |  |  |  |  |  |  |  |  |
|             |  | Refer as KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).  |  |  |  |  |  |  |  |  |  |  |
|             |  | Refer as KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW≥1/T).  |  |  |  |  |  |  |  |  |  |  |
|             |  | Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.   |  |  |  |  |  |  |  |  |  |  |
|             |  | Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions.   |  |  |  |  |  |  |  |  |  |  |
|             |  | Refer as KDB 558074, clause 11.3 and 12.2.4 measurement procedure peak limit.   |  |  |  |  |  |  |  |  |  |  |
|             |  | Refer as KDB 558074, clause 12.2.3 measurement procedure Quasi-Peak limit.  |  |  |  |  |  |  |  |  |  |  |
| $\boxtimes$ | For  | radiated measurement, refer as KDB 558074, clause 12.2.7.   |  |  |  |  |  |  |  |  |  |  |
|             | $\boxtimes$  | Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.   |  |  |  |  |  |  |  |  |  |  |
|             | $\boxtimes$  | Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.  |  |  |  |  |  |  |  |  |  |  |
|             | $\boxtimes$  | Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1 GHz and test distance is 3m.  |  |  |  |  |  |  |  |  |  |  |
| $\boxtimes$ | The  | any unwanted emissions level shall not exceed the fundamental emission level.   |  |  |  |  |  |  |  |  |  |  |
| $\boxtimes$ |  | amplitude of spurious emissions that are attenuated by more than 30 dB below the permissible value no need to be reported.  |  |  |  |  |  |  |  |  |  |  |

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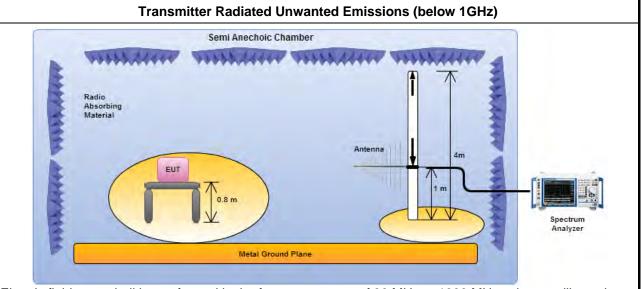


### 3.6.4 Test Setup



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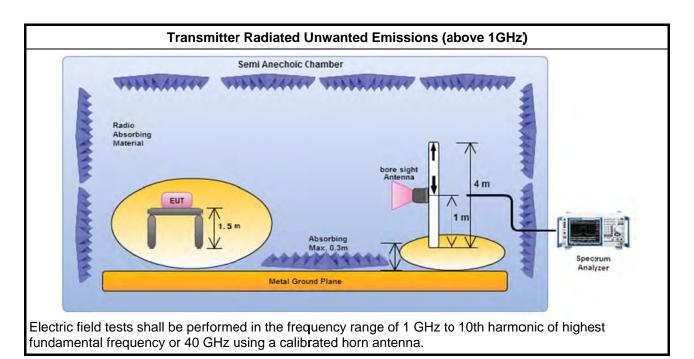
Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna.



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

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### 3.6.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported. Any spurious which has more than 20 dB of margin compared to the applicable limit is not necessarily reported.

#### 3.6.6 Transmitter Radiated Unwanted Emissions

Refer as Appendix E

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4 Test Equipment and Calibration Data

### **Instrument for AC Conduction**

| modulinon for Ac Conduction |                                |           |            |                 |                     |                         |  |  |  |
|-----------------------------|--------------------------------|-----------|------------|-----------------|---------------------|-------------------------|--|--|--|
| Instrument                  | Manufacturer                   | Model No. | Serial No. | Characteristics | Calibration<br>Date | Calibration<br>Due Date |  |  |  |
| EMC Receiver                | KEYSIGHT                       | N9038A    | MY54130031 | 20Hz ~ 8.4GHz   | 14/04/2016          | 13/04/2017              |  |  |  |
| LISN                        | SCHWARZBECK<br>MESS-ELEKTRONIK | NSLK 8127 | 8127-477   | 9kHz ~ 30MHz    | 26/01/2016          | 25/01/2017              |  |  |  |
| LISN<br>(Support Unit)      | R&S                            | ENV216    | 101295     | 9kHz ~ 30MHz    | 04/11/2015          | 03/11/2016              |  |  |  |
| EMI Filter                  | LINDGREN                       | LRE-2030  | 2651       | < 450 Hz        | NCR                 | NCR                     |  |  |  |

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NCR: Non-Calibration required.

### **Instrument for Conducted Test**

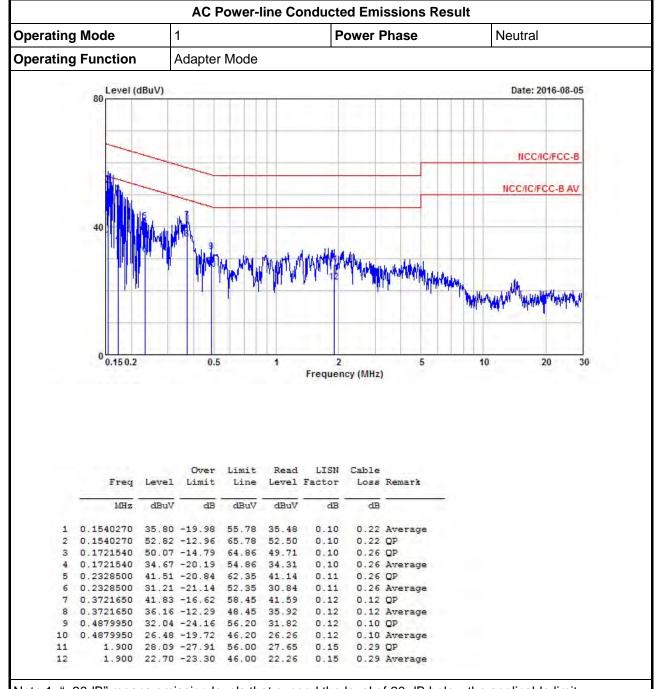
| Instrument        | Manufacturer | Model No. | Serial No. | Characteristics | Calibration<br>Date | Calibration<br>Due Date |
|-------------------|--------------|-----------|------------|-----------------|---------------------|-------------------------|
| Spectrum Analyzer | R&S          | FSV 40    | 101500     | 9KHz~40GHz      | 12/05/2016          | 11/05/ 2017             |
| Power Sensor      | Anritsu      | MA2411B   | 917017     | 300MHz ~ 40GHz  | 04/02/2016          | 03/02/2017              |
| Power Meter       | Anritsu      | ML2495A   | 949003     | 300MHz ~ 40GHz  | 04/02/2016          | 03/02/2017              |
| Signal Generator  | R&S          | SMR40     | 100116     | 10MHz ~ 40GHz   | 28/07/2015          | 27/07/2016              |

#### **Instrument for Radiated Test**

| Instrument                        | Instrument Manufacturer |                     | Serial No.         | Characteristics    | Calibration<br>Date | Calibration<br>Due Date |
|-----------------------------------|-------------------------|---------------------|--------------------|--------------------|---------------------|-------------------------|
| 3m Semi Anechoic<br>Chamber       | TDK                     | SAC-3M              | 03CH09-HY          | 30MHz ~ 1GHz<br>3m | 25/04/2016          | 24/04/2017              |
| 3m Semi Anechoic<br>Chamber       | TDK                     |                     | 03CH09-HY          | 1GHz ~ 18GHz<br>3m | 30/06/2016          | 29/06/2017              |
| Amplifier                         | EMC                     | EMC9135             | 980232             | 9kHz ~ 1.0GHz      | 29/01/2016          | 28/01/2017              |
| Amplifier                         | Agilent                 | 8449B               | 3008A02096         | 1GHz ~ 26.5GHz     | 11/04/2016          | 10/04/2017              |
| Spectrum                          | KEYSIGHT                | N9010A              | MY54200885         | 10Hz ~ 44GHz       | 04/07/2016          | 03/07/2017              |
| Bilog Antenna & 5dB<br>Attenuator | TESEQ & MTJ             | CBL 6111D & MTJ6102 | 35418              | 30MHz ~ 1GHz       | 31/03/2016          | 30/03/2017              |
| Horn Antenna                      | SCHWARZBECK             | BBHA 9120D          | BBHA 9120D<br>1534 | 1GHz ~ 18GHz       | 22/04/2016          | 21/04/2017              |
| Horn Antenna SCHWARZBEC           |                         | BBHA9170            | BBHA9170614        | 18GHz ~ 40GHz      | 04/01/2016          | 03/01/2017              |
| Loop Antenna                      | ROHDE&SCHWARZ           | HFH2-Z2             | 100330             | 9 kHz~30 MHz       | 10/11/2014          | 09/11/2016              |

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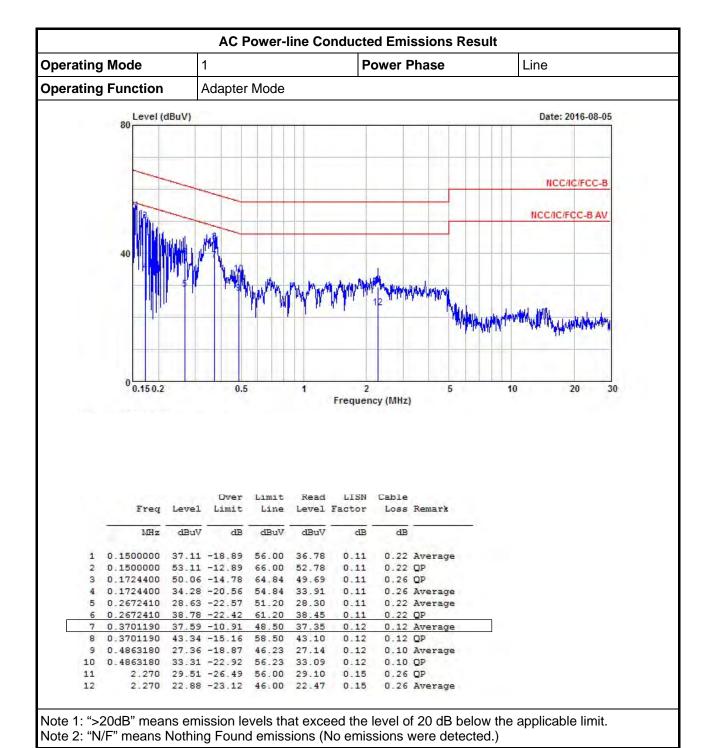
Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

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EBW Result
Appendix A

Summary

| Mode                     | Max-N dB Max-OBW ITU-Code |         | Min-N dB | Min-OBW |         |
|--------------------------|---------------------------|---------|----------|---------|---------|
|                          | (Hz)                      | (Hz)    |          | (Hz)    | (Hz)    |
| 2.4G;11b;20;1;4          | 9.05M                     | 12.894M | 12M9G1D  | 7.05M   | 12.419M |
| 2.4G;11g;20;1;4          | 16.3M                     | 16.392M | 16M4D1D  | 14.175M | 16.317M |
| 2.4G;HT20;20;1,(M0-31);4 | 17.55M                    | 17.616M | 17M6D1D  | 15.425M | 17.516M |
| 2.4G;HT40;40;1,(M0-31);4 | 36.3M                     | 36.182M | 36M2D1D  | 33.8M   | 36.032M |

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EBW Result
Appendix A

# Result

| Mode                                  | Result | Limit | P1-N dB | P1-OBW  | P2-N dB | P2-OBW  | P3-N dB | P3-OBW  | P4-N dB | P4-OBW  |
|---------------------------------------|--------|-------|---------|---------|---------|---------|---------|---------|---------|---------|
|                                       |        |       | (Hz)    |
| 2.4G;11b;20;1;4;2412;L;TN,VN          | Pass   | 500k  | 8M      | 12.594M | 7.5M    | 12.619M | 8.025M  | 12.419M | 8.05M   | 12.819M |
| 2.4G;11b;20;1;4;2437;M;TN,VN          | Pass   | 500k  | 9.05M   | 12.794M | 8.5M    | 12.569M | 7.575M  | 12.844M | 8.525M  | 12.894M |
| 2.4G;11b;20;1;4;2462;H;TN,VN          | Pass   | 500k  | 8M      | 12.744M | 7.05M   | 12.444M | 7.5M    | 12.544M | 7.55M   | 12.844M |
| 2.4G;11g;20;1;4;2412;L;TN,VN          | Pass   | 500k  | 15.925M | 16.392M | 15.875M | 16.392M | 15.65M  | 16.317M | 16M     | 16.392M |
| 2.4G;11g;20;1;4;2437;M;TN,VN          | Pass   | 500k  | 16M     | 16.367M | 15.225M | 16.367M | 14.175M | 16.342M | 15.85M  | 16.367M |
| 2.4G;11g;20;1;4;2462;H;TN,VN          | Pass   | 500k  | 16.3M   | 16.392M | 15.675M | 16.342M | 16M     | 16.367M | 15.65M  | 16.367M |
| 2.4G;HT20;20;1,(M0-31);4;2412;L;TN,VN | Pass   | 500k  | 16.5M   | 17.616M | 15.65M  | 17.591M | 15.6M   | 17.541M | 15.425M | 17.541M |
| 2.4G;HT20;20;1,(M0-31);4;2437;M;TN,VN | Pass   | 500k  | 16.525M | 17.616M | 17.125M | 17.566M | 16.25M  | 17.516M | 16.275M | 17.566M |
| 2.4G;HT20;20;1,(M0-31);4;2462;H;TN,VN | Pass   | 500k  | 17.55M  | 17.591M | 16.525M | 17.566M | 15.925M | 17.566M | 16.275M | 17.541M |
| 2.4G;HT40;40;1,(M0-31);4;2422;L;TN,VN | Pass   | 500k  | 35.25M  | 36.132M | 36.3M   | 36.182M | 35.05M  | 36.132M | 35M     | 36.132M |
| 2.4G;HT40;40;1,(M0-31);4;2437;M;TN,VN | Pass   | 500k  | 34.95M  | 36.082M | 33.8M   | 36.032M | 35.9M   | 36.132M | 35.05M  | 36.132M |
| 2.4G;HT40;40;1,(M0-31);4;2452;H;TN,VN | Pass   | 500k  | 36.25M  | 36.082M | 35M     | 36.132M | 35.65M  | 36.132M | 35.05M  | 36.132M |

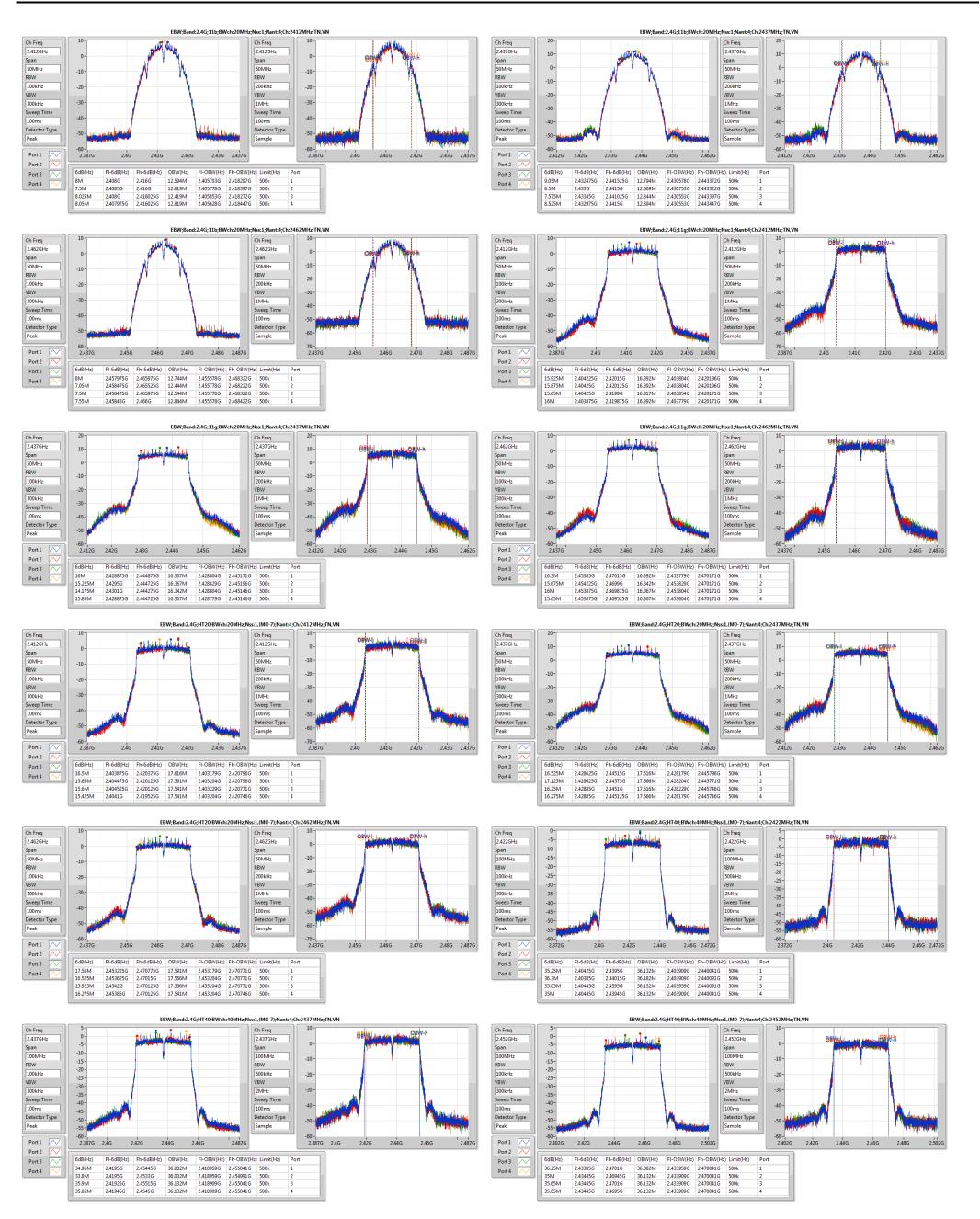
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EBW Result
Appendix A



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PowerAV Result

Appendix B

Summary

| Mode                     | Sum   | Sum     | EIRP  | EIRP    |  |  |
|--------------------------|-------|---------|-------|---------|--|--|
|                          | (dBm) | (W)     | (dBm) | (W)     |  |  |
| 2.4G;11b;20;1;4          | 26.13 | 0.4102  | 30.63 | 1.15611 |  |  |
| 2.4G;11g;20;1;4          | 26.75 | 0.47315 | 31.25 | 1.33352 |  |  |
| 2.4G;HT20;20;1,(M0-31);4 | 26.57 | 0.45394 | 31.07 | 1.27938 |  |  |
| 2.4G;HT40;40;1,(M0-31);4 | 21.66 | 0.14655 | 26.16 | 0.41305 |  |  |

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PowerAV Result

Appendix B

# Result

| Mode                                  | Result | DG    | EIRP  | EIRP Lim. | Sum   | Sum Lim. | P1    | P2    | P3    | P4    |
|---------------------------------------|--------|-------|-------|-----------|-------|----------|-------|-------|-------|-------|
|                                       |        | (dBi) | (dBm) | (dBm)     | (dBm) | (dBm)    | (dBm) | (dBm) | (dBm) | (dBm) |
| 2.4G;11b;20;1;4;2412;L;TN,VN          | Pass   | 4.50  | 27.59 | 36.00     | 23.09 | 30.00    | 17.33 | 16.80 | 17.00 | 17.15 |
| 2.4G;11b;20;1;4;2437;M;TN,VN          | Pass   | 4.50  | 30.63 | 36.00     | 26.13 | 30.00    | 20.35 | 20.04 | 20.08 | 19.97 |
| 2.4G;11b;20;1;4;2462;H;TN,VN          | Pass   | 4.50  | 27.07 | 36.00     | 22.57 | 30.00    | 16.64 | 16.62 | 16.55 | 16.39 |
| 2.4G;11g;20;1;4;2412;L;TN,VN          | Pass   | 4.50  | 27.40 | 36.00     | 22.90 | 30.00    | 17.11 | 16.58 | 16.79 | 17.01 |
| 2.4G;11g;20;1;4;2437;M;TN,VN          | Pass   | 4.50  | 31.25 | 36.00     | 26.75 | 30.00    | 20.83 | 20.81 | 20.64 | 20.62 |
| 2.4G;11g;20;1;4;2462;H;TN,VN          | Pass   | 4.50  | 27.90 | 36.00     | 23.40 | 30.00    | 17.46 | 17.46 | 17.25 | 17.35 |
| 2.4G;HT20;20;1,(M0-31);4;2412;L;TN,VN | Pass   | 4.50  | 26.17 | 36.00     | 21.67 | 30.00    | 15.81 | 15.41 | 15.53 | 15.81 |
| 2.4G;HT20;20;1,(M0-31);4;2437;M;TN,VN | Pass   | 4.50  | 31.07 | 36.00     | 26.57 | 30.00    | 20.64 | 20.59 | 20.42 | 20.53 |
| 2.4G;HT20;20;1,(M0-31);4;2462;H;TN,VN | Pass   | 4.50  | 26.59 | 36.00     | 22.09 | 30.00    | 16.09 | 16.15 | 15.97 | 16.07 |
| 2.4G;HT40;40;1,(M0-31);4;2422;L;TN,VN | Pass   | 4.50  | 22.23 | 36.00     | 17.73 | 30.00    | 11.66 | 11.65 | 11.81 | 11.70 |
| 2.4G;HT40;40;1,(M0-31);4;2437;M;TN,VN | Pass   | 4.50  | 26.16 | 36.00     | 21.66 | 30.00    | 15.65 | 15.55 | 15.62 | 15.73 |
| 2.4G;HT40;40;1,(M0-31);4;2452;H;TN,VN | Pass   | 4.50  | 23.59 | 36.00     | 19.09 | 30.00    | 13.10 | 13.19 | 12.86 | 13.13 |

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PSD Result
Appendix C

Summary

| Mode                     | PD        | EIRP.PD   |
|--------------------------|-----------|-----------|
|                          | (dBm/RBW) | (dBm/RBW) |
| 2.4G;11b;20;1;4          | 1.34      | 11.86     |
| 2.4G;11g;20;1;4          | -1.71     | 8.81      |
| 2.4G;HT20;20;1,(M0-31);4 | -2.57     | 7.95      |
| 2.4G;HT40;40;1,(M0-31);4 | -9.30     | 1.22      |

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PSD Result
Appendix C

# Result

| Mode                                  | Result | Meas.RBW | Lim.RBW | BWCF | DG    | Sum.Max   | PD        | PD.Limit  | EIRP.PD   | EIRP.PD.Li<br>m | P1        | P2        | P3        | P4        |
|---------------------------------------|--------|----------|---------|------|-------|-----------|-----------|-----------|-----------|-----------------|-----------|-----------|-----------|-----------|
|                                       |        | (Hz)     | (Hz)    | (dB) | (dBi) | (dBm/RBW) | (dBm/RBW) | (dBm/RBW) | (dBm/RBW) | (dBm/RBW)       | (dBm/RBW) | (dBm/RBW) | (dBm/RBW) | (dBm/RBW) |
| 2.4G;11b;20;1;4;2412;L;TN,VN          | Pass   | 3k       | 3k      | 0.00 | 10.52 | -2.00     | -2.00     | 8.00      | 8.52      | Inf             | -5.76     | -5.59     | -6.61     | -5.62     |
| 2.4G;11b;20;1;4;2437;M;TN,VN          | Pass   | 3k       | 3k      | 0.00 | 10.52 | 1.34      | 1.34      | 8.00      | 11.86     | Inf             | -3.36     | -2.12     | -2.83     | -1.64     |
| 2.4G;11b;20;1;4;2462;H;TN,VN          | Pass   | 3k       | 3k      | 0.00 | 10.52 | -3.14     | -3.14     | 8.00      | 7.38      | Inf             | -6.18     | -5.94     | -6.19     | -5.22     |
| 2.4G;11g;20;1;4;2412;L;TN,VN          | Pass   | 3k       | 3k      | 0.00 | 10.52 | -5.86     | -5.86     | 8.00      | 4.66      | Inf             | -9.75     | -10.76    | -9.70     | -10.42    |
| 2.4G;11g;20;1;4;2437;M;TN,VN          | Pass   | 3k       | 3k      | 0.00 | 10.52 | -1.71     | -1.71     | 8.00      | 8.81      | Inf             | -6.26     | -5.92     | -5.69     | -6.57     |
| 2.4G;11g;20;1;4;2462;H;TN,VN          | Pass   | 3k       | 3k      | 0.00 | 10.52 | -5.26     | -5.26     | 8.00      | 5.26      | Inf             | -10.11    | -9.87     | -10.41    | -9.52     |
| 2.4G;HT20;20;1,(M0-31);4;2412;L;TN,VN | Pass   | 3k       | 3k      | 0.00 | 10.52 | -7.06     | -7.06     | 8.00      | 3.46      | Inf             | -11.69    | -11.49    | -12.07    | -11.74    |
| 2.4G;HT20;20;1,(M0-31);4;2437;M;TN,VN | Pass   | 3k       | 3k      | 0.00 | 10.52 | -2.57     | -2.57     | 8.00      | 7.95      | Inf             | -6.34     | -5.92     | -6.86     | -6.24     |
| 2.4G;HT20;20;1,(M0-31);4;2462;H;TN,VN | Pass   | 3k       | 3k      | 0.00 | 10.52 | -6.49     | -6.49     | 8.00      | 4.03      | Inf             | -10.54    | -11.42    | -9.74     | -11.34    |
| 2.4G;HT40;40;1,(M0-31);4;2422;L;TN,VN | Pass   | 3k       | 3k      | 0.00 | 10.52 | -13.54    | -13.54    | 8.00      | -3.02     | Inf             | -18.46    | -18.79    | -16.59    | -18.68    |
| 2.4G;HT40;40;1,(M0-31);4;2437;M;TN,VN | Pass   | 3k       | 3k      | 0.00 | 10.52 | -9.30     | -9.30     | 8.00      | 1.22      | Inf             | -12.47    | -13.14    | -14.15    | -13.07    |
| 2.4G;HT40;40;1,(M0-31);4;2452;H;TN,VN | Pass   | 3k       | 3k      | 0.00 | 10.52 | -11.71    | -11.71    | 8.00      | -1.19     | Inf             | -16.72    | -16.30    | -16.59    | -17.04    |

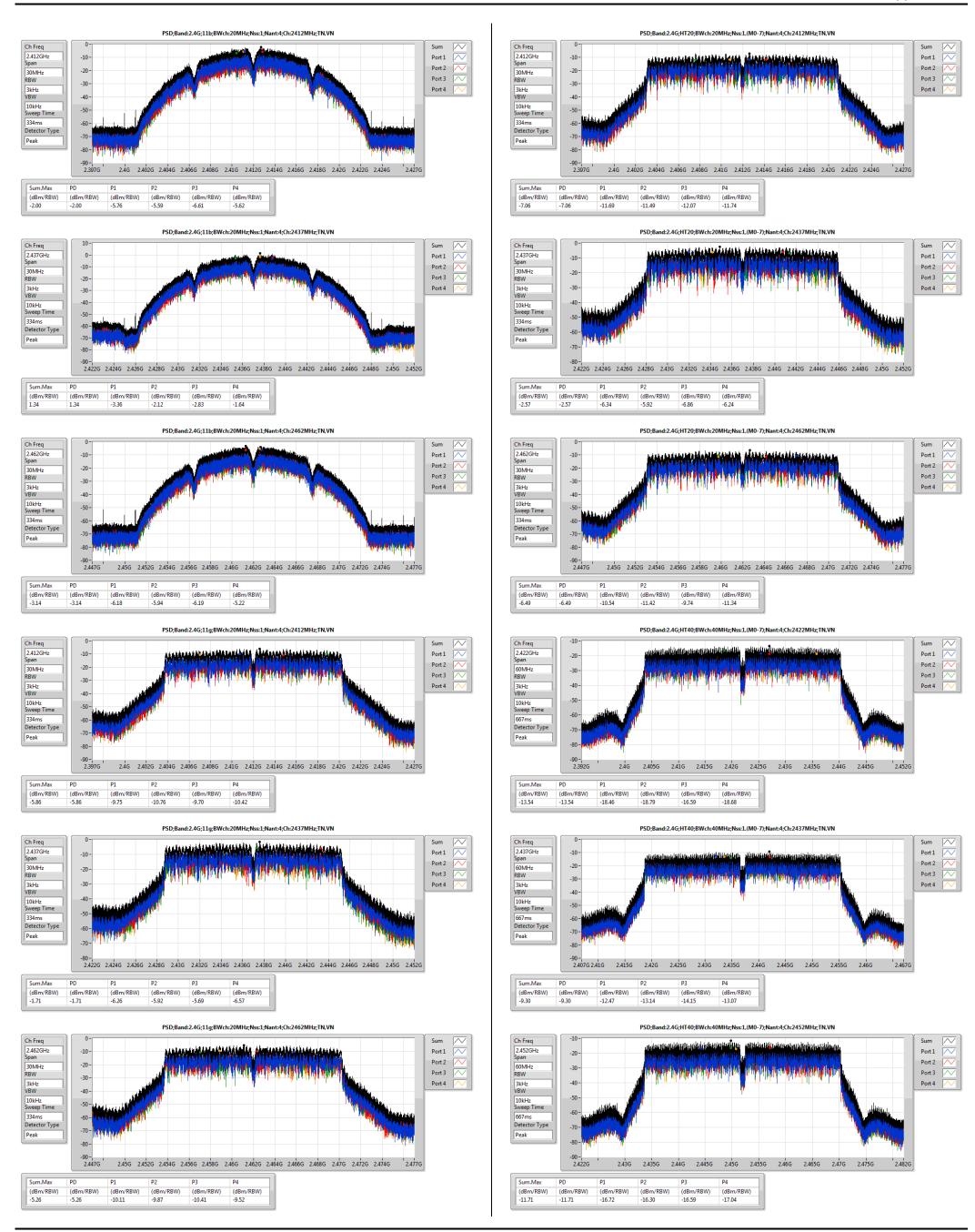
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PSD Result
Appendix C



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# Transmitter Radiated Bandedge Emissions

Appendix D

| 2400-2483.5MHz Transmitter Radiated Bandedge Emissions (Non-restricted Band) |                 |                        |                                     |             |                                      |                |            |      |  |  |  |  |
|--|-----------------|------------------------|-------------------------------------|-------------|--------------------------------------|----------------|------------|------|--|--|--|--|
| Modulation   | N <sub>TX</sub> | Test<br>Freq.<br>(MHz) | In-band PSD<br>[i]<br>(dBuV/100kHz) | Freq. (MHz) | Out-band<br>PSD [o]<br>(dBuV/100kHz) | [i] – [o] (dB) | Limit (dB) | Pol. |  |  |  |  |
| 11b  | 4               | 2412                   | 115.96                              | 2397.136    | 52.07                                | 63.89          | 30         | V    |  |  |  |  |
| 11b  | 4               | 2462                   | 117.49                              | 2503.000    | 53.12                                | 64.37          | 30         | V    |  |  |  |  |
| 11g  | 4               | 2412                   | 111.65                              | 2399.936    | 59.16                                | 52.49          | 30         | V    |  |  |  |  |
| 11g  | 4               | 2462                   | 112.59                              | 2502.200    | 50.49                                | 62.10          | 30         | V    |  |  |  |  |
| HT20   | 4               | 2412                   | 110.97                              | 2399.936    | 62.16                                | 48.81          | 30         | V    |  |  |  |  |
| HT20   | 4               | 2462                   | 110.64                              | 2504.800    | 50.15                                | 60.49          | 30         | V    |  |  |  |  |
| HT40   | 4               | 2422                   | 105.99                              | 2391.312    | 55.01                                | 50.98          | 30         | V    |  |  |  |  |
| HT40   | 4               | 2452                   | 106.46                              | 2504.480    | 50.03                                | 56.43          | 30         | V    |  |  |  |  |

| Modulation<br>Mode | N <sub>TX</sub> | Freq.<br>(MHz) | Measure<br>Distance<br>(m) | Freq.<br>(MHz)<br>PK | Level<br>(dBuV/m)<br>PK | Limit<br>(dBuV/m)<br>PK | Freq.<br>(MHz)<br>AV | Level<br>(dBuV/m)<br>AV | Limit<br>(dBuV/m)<br>AV | Pol. |
|--------------------|-----------------|----------------|----------------------------|----------------------|-------------------------|-------------------------|----------------------|-------------------------|-------------------------|------|
| 11b                | 4               | 2412           | 3                          | 233.616              | 63.00                   | 74                      | 2373.168             | 53.35                   | 54                      | V    |
| 11b                | 4               | 2462           | 3                          | 2484.400             | 64.98                   | 74                      | 2495.800             | 53.19                   | 54                      | V    |
| 11g                | 4               | 2412           | 3                          | 2389.968             | 65.08                   | 74                      | 2389.968             | 53.49                   | 54                      | V    |
| 11g                | 4               | 2462           | 3                          | 2485.400             | 64.16                   | 74                      | 2483.600             | 53.65                   | 54                      | V    |
| HT20               | 4               | 2412           | 3                          | 2389.968             | 63.88                   | 74                      | 2389.968             | 53.58                   | 54                      | V    |
| HT20               | 4               | 2462           | 3                          | 2483.600             | 65.68                   | 74                      | 2483.600             | 53.76                   | 54                      | V    |
| HT40               | 4               | 2422           | 3                          | 2389.992             | 65.30                   | 74                      | 2389.992             | 53.30                   | 54                      | V    |
| HT40               | 4               | 2452           | 3                          | 2484.080             | 67.13                   | 74                      | 2484.080             | 53.69                   | 54                      | V    |

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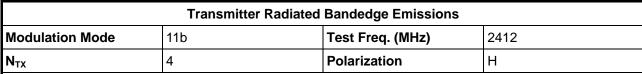
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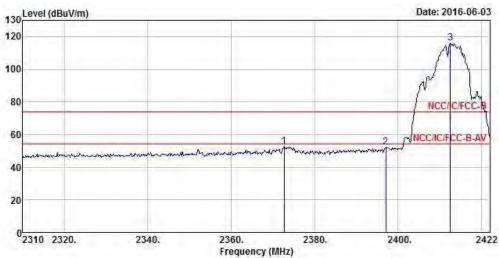


Appendix D



### **Transmitter Radiated Bandedge Emissions (Non-restricted Band)**





|   | Freq     | Level  | Over<br>Limit | 2.440,.149 | 202 20 181 | Antenna<br>Factor |      | Preamp<br>Factor | Remark |
|---|----------|--------|---------------|------------|------------|-------------------|------|------------------|--------|
|   | MHz      | dBuV/m | dB            | dBuV/m     | dBuV       | dB/m              | dB   | dB               |        |
| 1 | 2372.720 | 52.53  |               |            | 21.31      | 26.97             | 4.25 | 0.00             | Peak   |
| 2 | 2397.136 | 52.07  |               |            | 20.76      | 27.03             | 4.28 | 0.00             | Peak   |
| 3 | 2412.592 | 115.96 |               |            | 84.61      | 27.07             | 4.28 | 0.00             | Peak   |
|   |          |        |               |            |            |                   |      |                  |        |

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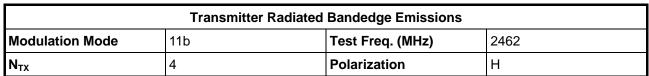
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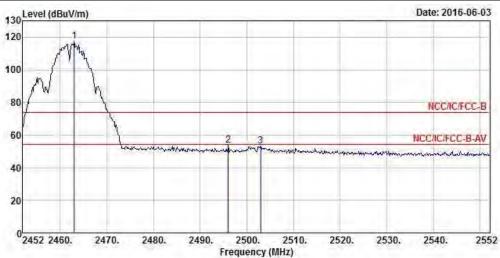
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|          |        | 0             |             |       | Ama mananan       |      |                 |        |
|----------|--------|---------------|-------------|-------|-------------------|------|-----------------|--------|
| Freq     | Level  | Over<br>Limit | Charles Co. |       | Antenna<br>Factor |      | ALCOHOL: NO PER | Remark |
| MHz      | dBuV/m | dB            | dBuV/m      | dBuV  | dB/m              | dB   | dB              |        |
| 2463.000 | 117.49 |               |             | 85.94 | 27.20             | 4.35 | 0.00            | Peak   |
| 2496.000 | 53.63  |               |             | 21.99 | 27.29             | 4.35 | 0.00            | Peak   |
| 2503.000 | 53.12  |               |             | 21.43 | 27.31             | 4.38 | 0.00            | Peak   |
|          |        |               |             |       |                   |      |                 |        |

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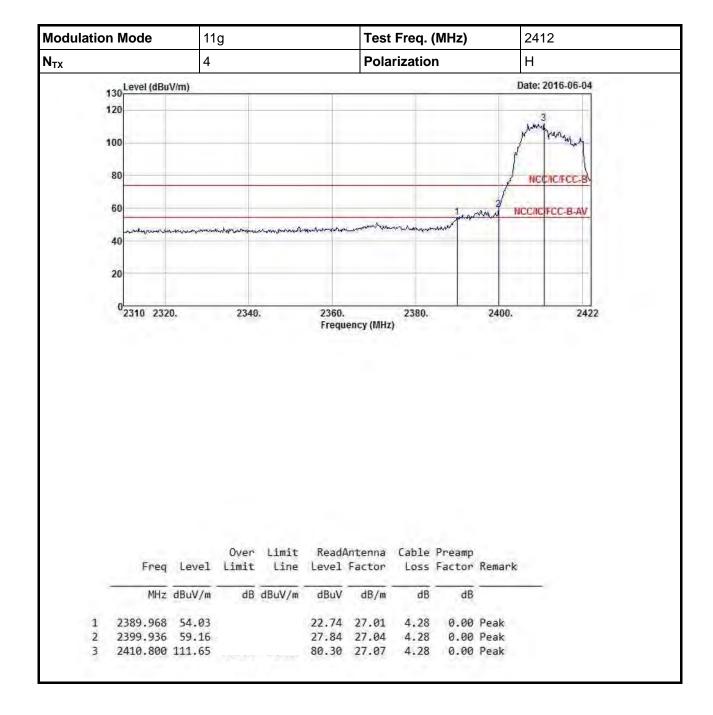
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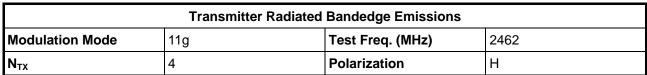


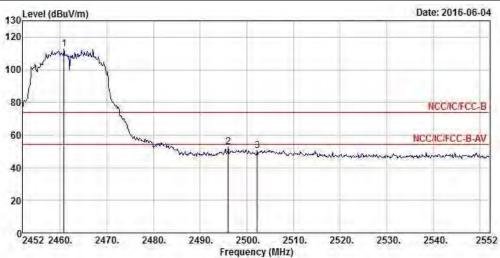
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|   | Freq     | Level  | 7.7 | Limit<br>Line | 20 To 180 | Antenna<br>Factor |      | Preamp<br>Factor | Remark |
|---|----------|--------|-----|---------------|-----------|-------------------|------|------------------|--------|
|   | MHz      | dBuV/m | dB  | dBuV/m        | dBuV      | dB/m              | dB   | dB               |        |
| 1 | 2460.800 | 112.59 |     |               | 81.07     | 27.20             | 4.32 | 0.00             | Peak   |
| 2 | 2496.000 | 52.77  |     |               | 21.13     | 27.29             | 4.35 | 0.00             | Peak   |
| 3 | 2502.200 | 50.49  |     |               | 18.80     | 27.31             | 4.38 | 0.00             | Peak   |

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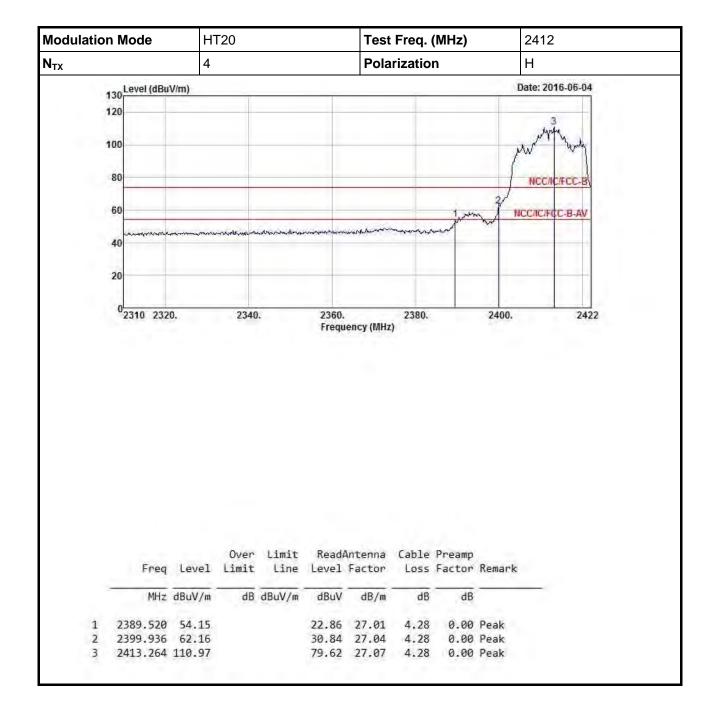
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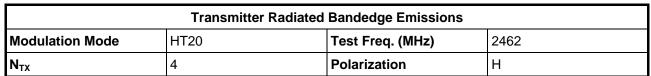
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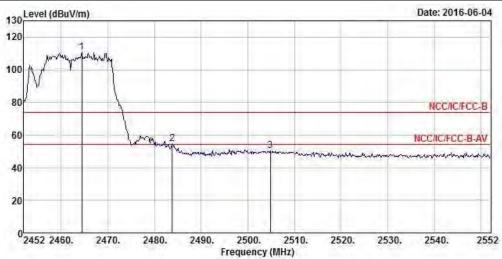
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|   | Freq     | Level  | Over<br>Limit | 2000000 | 202 N.M. | Antenna<br>Factor |      | Preamp<br>Factor | Remark |
|---|----------|--------|---------------|---------|----------|-------------------|------|------------------|--------|
|   | MHz      | dBuV/m | dB            | dBuV/m  | dBuV     | dB/m              | dB   | dB               |        |
| 1 | 2464.400 | 110.64 |               |         | 79.08    | 27.21             | 4.35 | 0.00             | Peak   |
| 2 | 2483.800 | 54.89  |               |         | 23.28    | 27.26             | 4.35 | 0.00             | Peak   |
| 3 | 2504.800 | 50.15  |               |         | 18.46    | 27.31             | 4.38 | 0.00             | Peak   |

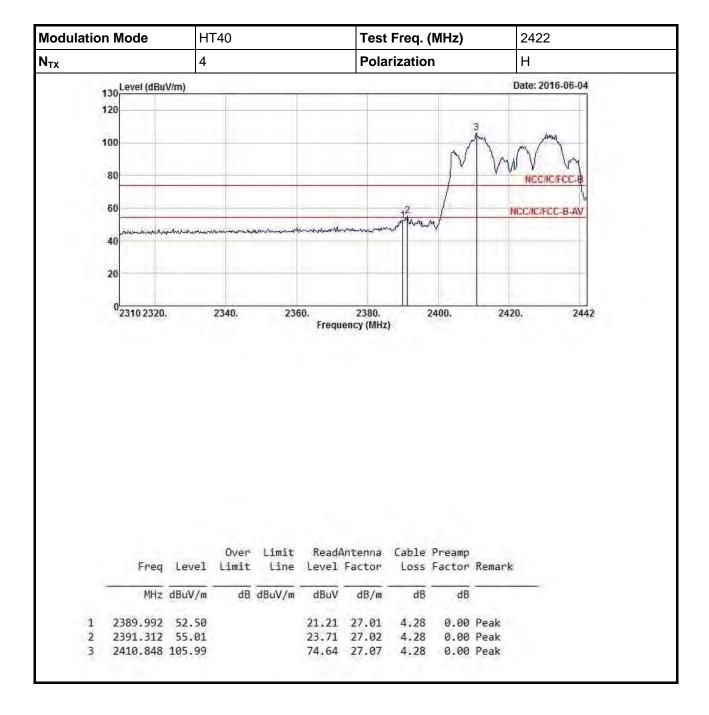
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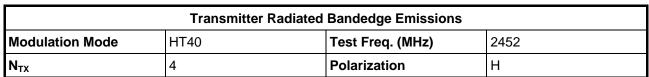
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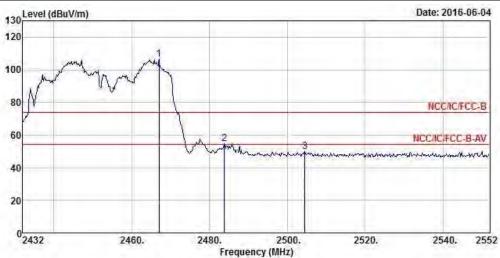
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|   |          |        | Over  |        | Read  | Antenna | Cable | Preamp |        |
|---|----------|--------|-------|--------|-------|---------|-------|--------|--------|
|   | Freq     | Level  | Limit | Line   | Level | Factor  | Loss  | Factor | Remark |
|   | MHz      | dBuV/m | dB    | dBuV/m | dBuV  | dB/m    | dB    | dB     | _      |
| 1 | 2467.040 | 106.46 |       |        | 74.90 | 27.21   | 4.35  | 0.00   | Peak   |
| 2 | 2483.840 | 54.87  |       |        | 23.26 | 27.26   | 4.35  | 0.00   | Peak   |
| 3 | 2504.480 | 50.03  |       |        | 18.34 | 27.31   | 4.38  | 0.00   | Peak   |
|   |          |        |       |        |       |         |       |        |        |

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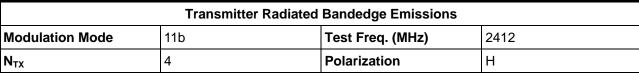
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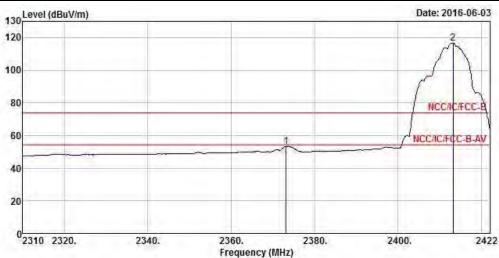
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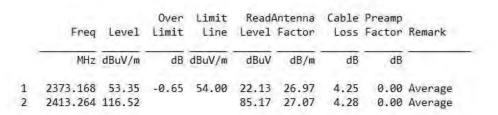
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# 1.1.1 Transmitter Radiated Bandedge Emissions (Restricted Band)







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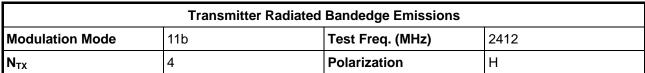
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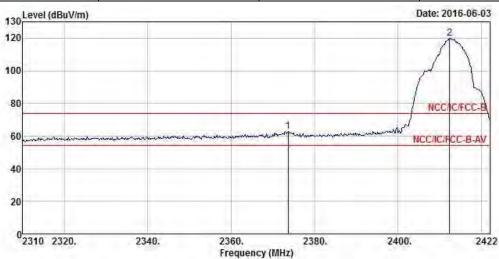
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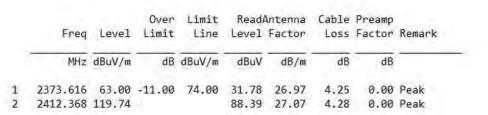
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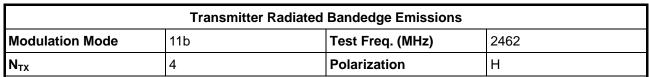


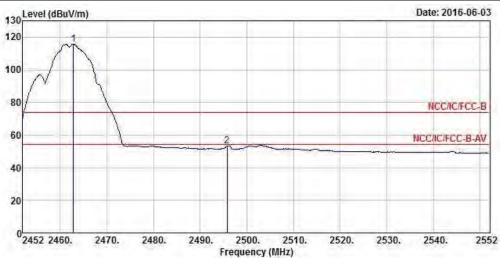


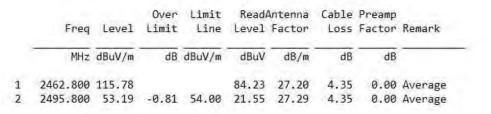
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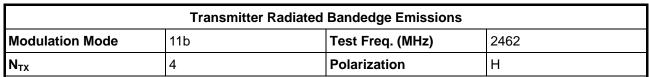


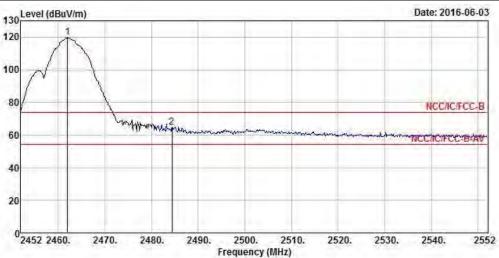


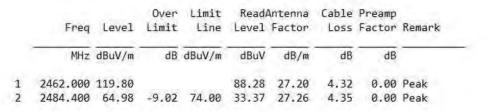
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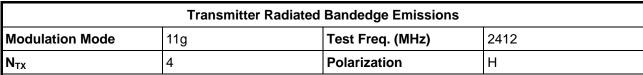


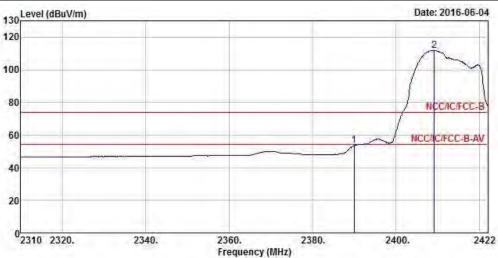


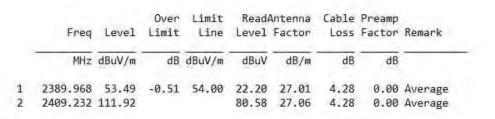
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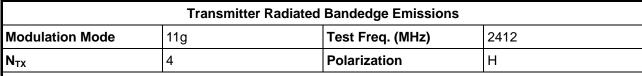


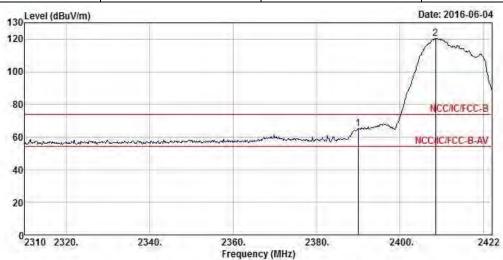


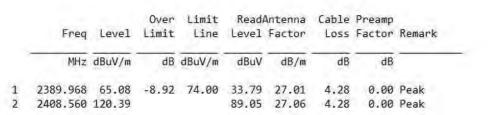
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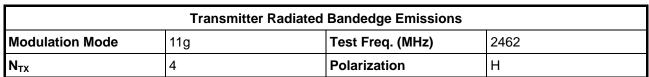


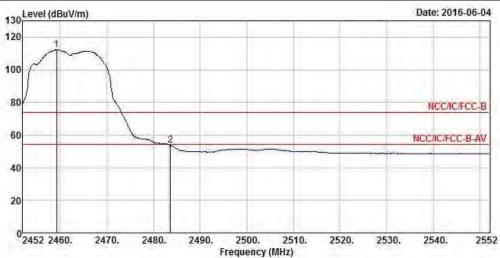


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| Freq     | Level  |       | 0.040,040 | 202 20 48 | Antenna<br>Factor |      | A CONTRACTOR OF THE PARTY OF TH | Remark  |
|----------|--------|-------|-----------|-----------|-------------------|------|--|---------|
| MHz      | dBuV/m | dB    | dBuV/m    | dBuV      | dB/m              | dB   | dB   |         |
| 2459.200 | 112.05 |       |           | 80.54     | 27.19             | 4.32 | 0.00   | Average |
| 2483.600 | 53.65  | -0.35 | 54.00     | 22.04     | 27.26             | 4.35 | 0.00   | Average |

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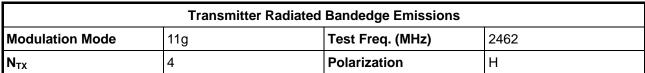
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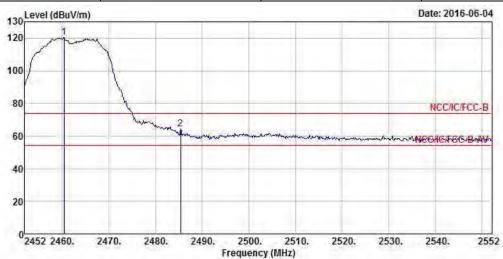
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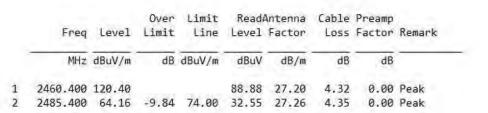
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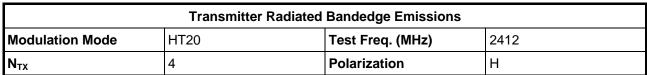


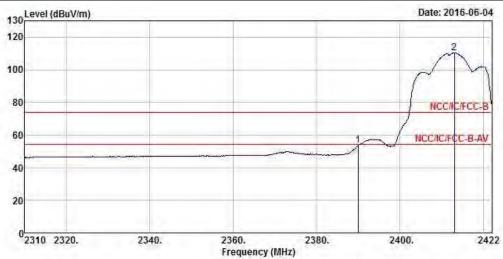


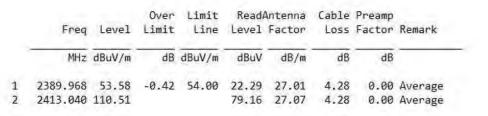
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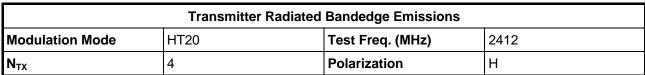


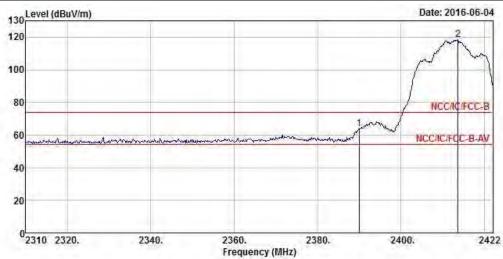


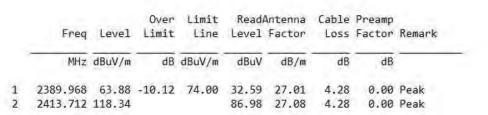
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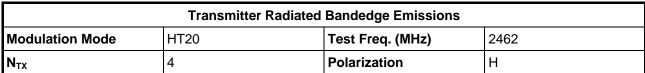


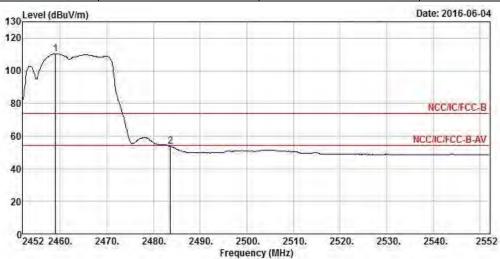


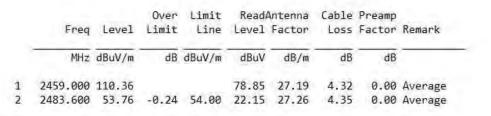
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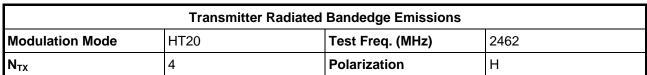
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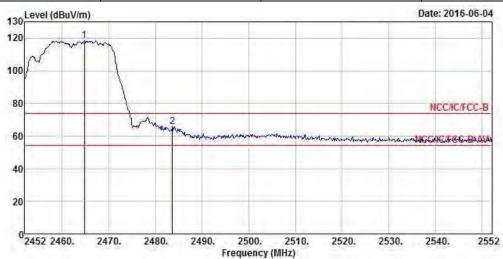
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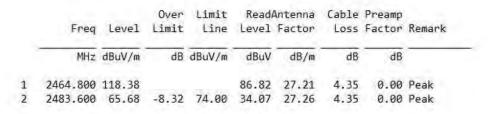
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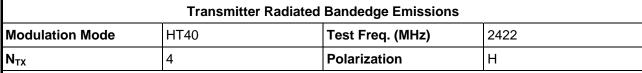


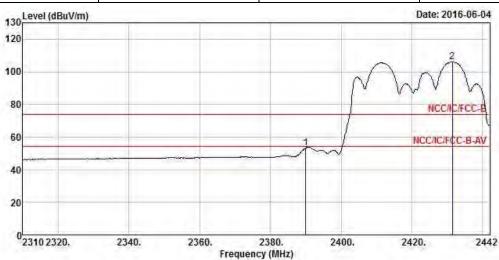
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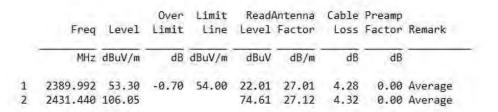
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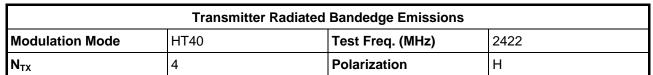


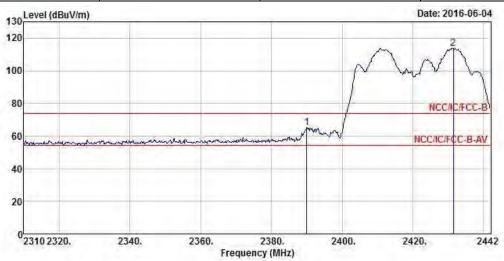


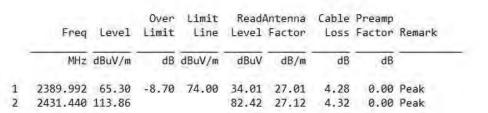
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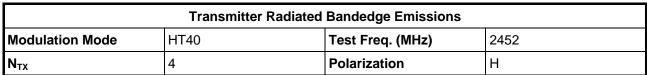


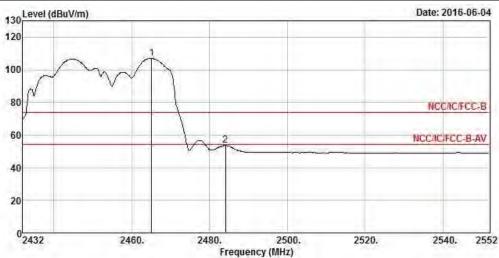


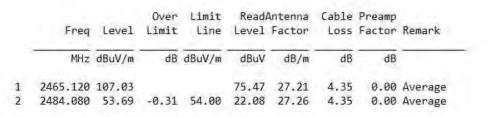
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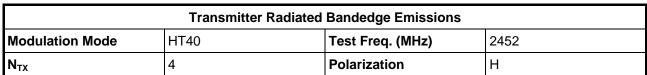
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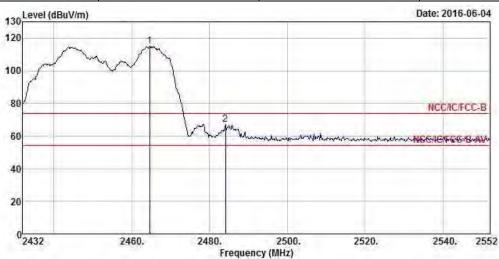
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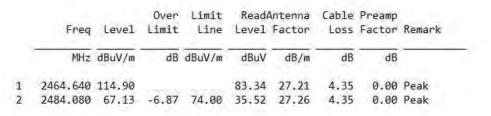
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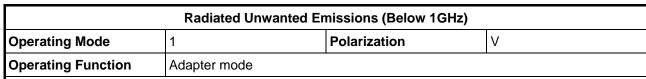
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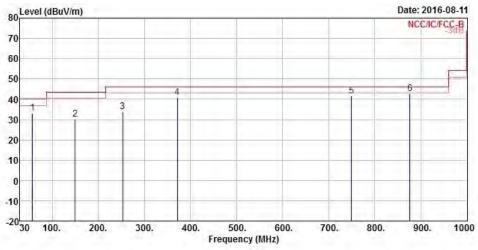
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#### **Transmitter Radiated Unwanted Emissions (Below 1GHz)**





|   | Freq    | Level  | Over<br>Limit | AMERICAN PROPERTY. |       | Antenna<br>Factor |      |       | Remark |
|---|---------|--------|---------------|--------------------|-------|-------------------|------|-------|--------|
|   | MHz     | dBuV/m | ——dB          | dBuV/m             | dBuV  | dB/m              | dB   | ——dB  | -      |
| 1 | 57.160  | 33.30  | -6.70         | 40.00              | 58.10 | 11.88             | 0.46 | 37.14 | Peak   |
| 2 | 149.310 | 30.07  | -13.43        | 43.50              | 49.36 | 16.63             | 0.69 | 36.61 | Peak   |
| 3 | 253.100 | 33.97  | -12.03        | 46.00              | 51.17 | 18.31             | 0.89 | 36.40 | Peak   |
| 4 | 371.440 | 40.99  | -5.01         | 46.00              | 55.68 | 20.81             | 1.08 | 36.58 | Peak   |
| 5 | 749.740 | 41.68  | -4.32         | 46.00              | 50.70 | 26.90             | 1.60 | 37.52 | Peak   |
| 6 | 875.840 | 42.62  | -3.38         | 46.00              | 50.21 | 28.30             | 1.76 | 37.65 | 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.)

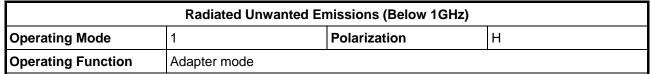
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

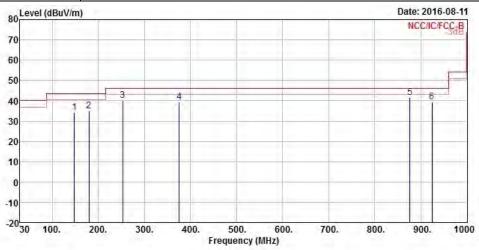
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|   | Freq    | Level  | 20.30 | Limit<br>Line |       | Antenna<br>Factor |      |       | Remark |
|---|---------|--------|-------|---------------|-------|-------------------|------|-------|--------|
|   | MHz     | dBuV/m | dB    | dBuV/m        | dBuV  | dB/m              | dB   | dB    | -      |
| 1 | 148.340 | 34.32  | -9.18 | 43.50         | 53.58 | 16.67             | 0.68 | 36.61 | Peak   |
| 2 | 179.380 | 35.03  | -8.47 | 43.50         | 56.21 | 14.54             | 0.76 | 36.48 | Peak   |
| 3 | 253.100 | 40.21  | -5.79 | 46.00         | 57.41 | 18.31             | 0.89 | 36.40 | Peak   |
| 4 | 375.320 | 39.25  | -6.75 | 46.00         | 53.86 | 20.91             | 1.08 | 36.60 | QP     |
| 5 | 875.840 | 41.46  | -4.54 | 46.00         | 49.05 | 28.30             | 1.76 | 37.65 | Peak   |
| 6 | 924.340 | 39.38  | -6.62 | 46.00         | 45.91 | 29.23             | 1.82 | 37.58 | Peak   |

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

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

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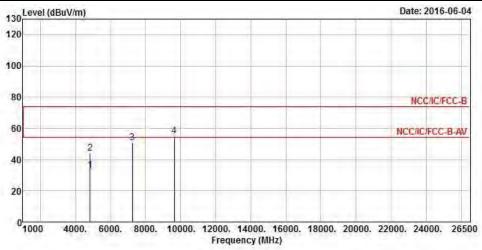
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#### Transmitter Radiated Unwanted Emissions (Above 1GHz)

| Transmitter Radiated Unwanted Emissions (Above 1GHz) |     |                  |      |  |  |  |  |  |
|--|-----|------------------|------|--|--|--|--|--|
| Modulation Mode                                      | 11b | Test Freq. (MHz) | 2412 |  |  |  |  |  |
| N <sub>TX</sub>                                      | 4   | Polarization     | V    |  |  |  |  |  |



|   | Freq     | Level  |        | Limit<br>Line |       | Antenna<br>Factor |      | the same and the same and | Remark  |
|---|----------|--------|--------|---------------|-------|-------------------|------|---------------------------|---------|
|   | MHz      | dBuV/m | dB     | dBuV/m        | dBuV  | dB/m              | dB   | dB                        |         |
| 1 | 4824.000 | 33.08  | -20.92 | 54.00         | 30.98 | 31.15             | 6.11 | 35.16                     | Average |
| 2 | 4824.000 | 43.95  | -30.05 | 74.00         | 41.85 | 31.15             | 6.11 | 35.16                     | Peak    |
| 3 | 7236.000 | 50.77  |        |               | 42.70 | 35.91             | 7.57 | 35.41                     | Peak    |
| 4 | 9648.000 | 55.03  |        |               | 43.49 | 38.69             | 8.80 | 35.95                     | Peak    |
|   |          |        |        |               |       |                   |      |                           |         |

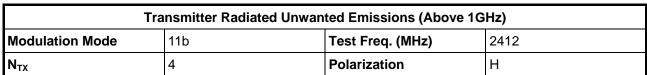
- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted 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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (119.74 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

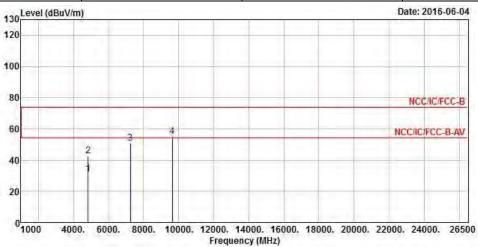
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|   |          |        | Over   |        | Read  | Antenna | Cable | Preamp |         |
|---|----------|--------|--------|--------|-------|---------|-------|--------|---------|
|   | Freq     | Level  | Limit  | Line   | Leve1 | Factor  | Loss  | Factor | Remark  |
|   | MHz      | dBuV/m | dB     | dBuV/m | dBuV  | dB/m    | dB    | dB     |         |
| 1 | 4824.000 | 31.38  | -22.62 | 54.00  | 29.28 | 31.15   | 6.11  | 35.16  | Average |
| 2 | 4824.000 | 42.78  | -31.22 | 74.00  | 40.68 | 31.15   | 6.11  | 35.16  | Peak    |
| 3 | 7236.000 | 50.85  |        |        | 42.78 | 35.91   | 7.57  | 35.41  | Peak    |
| 4 | 9648.000 | 55.13  |        |        | 43.59 | 38.69   | 8.80  | 35.95  | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (119.74dBuV/m).

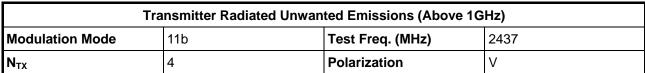
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

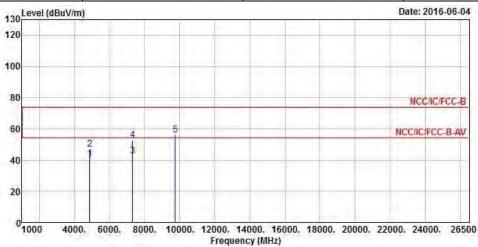
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|   | Freq     | Leve1  | Over<br>Limit |        |       | Antenna<br>Factor |      |       | Remark  |
|---|----------|--------|---------------|--------|-------|-------------------|------|-------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m | dBuV  | dB/m              | dB   | dB    |         |
| 1 | 4874.000 | 40.95  | -13.05        | 54.00  | 38.76 | 31.22             | 6.13 | 35.16 | Average |
| 2 | 4874.000 | 47.09  | -26.91        | 74.00  | 44.90 | 31.22             | 6.13 | 35.16 | Peak    |
| 3 | 7311.000 | 42.62  | -11.38        | 54.00  | 34.33 | 36.11             | 7.60 | 35.42 | Average |
| 4 | 7311.000 | 52.54  | -21.46        | 74.00  | 44.25 | 36.11             | 7.60 | 35.42 | Peak    |
| 5 | 9748.000 | 55.97  |               |        | 44.28 | 38.75             | 8.89 | 35.95 | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (120.92 dBuV/m).

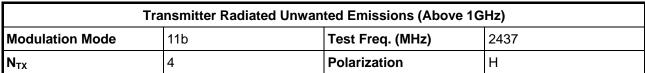
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

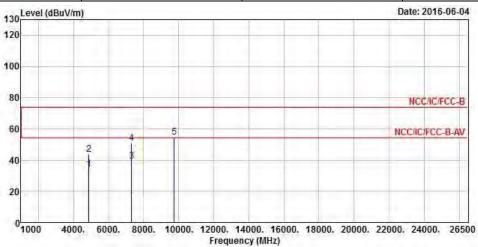
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|   | Freq     | Level  | Over<br>Limit | 3-20-3-8 | vice with | Antenna<br>Factor |      | Preamp<br>Factor | Remark  |
|---|----------|--------|---------------|----------|-----------|-------------------|------|------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m   | dBuV      | dB/m              | dB   | dB               |         |
| 1 | 4874.000 | 33.87  | -20.13        | 54.00    | 31.68     | 31.22             | 6.13 | 35.16            | Average |
| 2 | 4874.000 | 43.66  | -30.34        | 74.00    | 41.47     | 31.22             | 6.13 | 35.16            | Peak    |
| 3 | 7311.000 | 39.15  | -14.85        | 54.00    | 30.86     | 36.11             | 7.60 | 35.42            | Average |
| 4 | 7311.000 | 50.80  | -23.20        | 74.00    | 42.51     | 36.11             | 7.60 | 35.42            | Peak    |
| 5 | 9748.000 | 54.75  |               |          | 43.06     | 38.75             | 8.89 | 35.95            | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (120.92 dBuV/m).

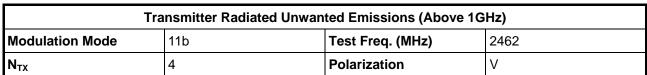
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

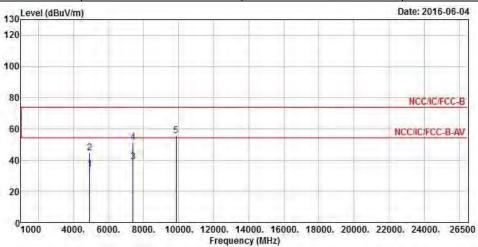
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|   | Freq     | Level  | Over<br>Limit | 22000  | No- wills | Antenna<br>Factor |      | Preamp<br>Factor | Remark  |
|---|----------|--------|---------------|--------|-----------|-------------------|------|------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m | dBuV      | dB/m              | dB   | dB               |         |
| 1 | 4924.000 | 34.17  | -19.83        | 54.00  | 31.86     | 31.29             | 6.17 | 35.15            | Average |
| 2 | 4924.000 | 44.46  | -29.54        | 74.00  | 42.15     | 31.29             | 6.17 | 35.15            | Peak    |
| 3 | 7386.000 | 38.77  | -15.23        | 54.00  | 30.48     | 36.11             | 7.60 | 35.42            | Average |
| 4 | 7386.000 | 51.26  | -22.74        | 74.00  | 42.97     | 36.11             | 7.60 | 35.42            | Peak    |
| 5 | 9848.000 | 55.83  |               |        | 43.95     | 38.81             | 9.03 | 35.96            | Peak    |
|   |          |        |               |        |           |                   |      |                  |         |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (119.80 dBuV/m).

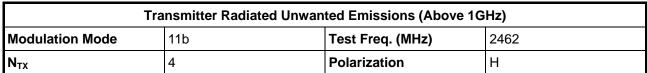
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

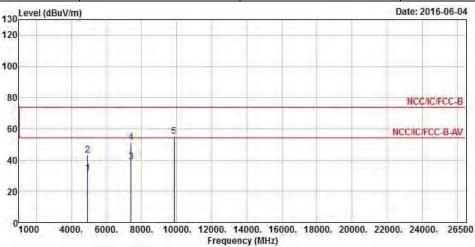
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|   | Freq     | Level  | Over<br>Limit | 330.00 | No-wills | Antenna<br>Factor |      | Preamp<br>Factor | Remark  |
|---|----------|--------|---------------|--------|----------|-------------------|------|------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m | dBuV     | dB/m              | dB   | dB               |         |
| 1 | 4924.000 | 31.61  | -22.39        | 54.00  | 29.30    | 31.29             | 6.17 | 35.15            | Average |
| 2 | 4924.000 | 43.07  | -30.93        | 74.00  | 40.76    | 31.29             | 6.17 | 35.15            | Peak    |
| 3 | 7386.000 | 38.79  | -15.21        | 54.00  | 30.29    | 36.30             | 7.63 | 35.43            | Average |
| 4 | 7386.000 | 51.33  | -22.67        | 74.00  | 42.83    | 36.30             | 7.63 | 35.43            | Peak    |
| 5 | 9848.000 | 55.36  |               |        | 43.48    | 38.81             | 9.03 | 35.96            | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (119.80dBuV/m).

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

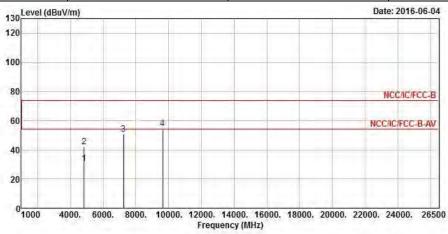
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| Transmitter Radiated Unwanted Emissions (Above 1GHz) |     |                  |      |  |  |  |  |  |
|--|-----|------------------|------|--|--|--|--|--|
| Modulation Mode                                      | 11g | Test Freq. (MHz) | 2412 |  |  |  |  |  |
| $N_{TX}$   | 4   | Polarization     | V    |  |  |  |  |  |



|   |          |        | Over   | Limit  | Read  | Antenna | Cable | Preamp |         |
|---|----------|--------|--------|--------|-------|---------|-------|--------|---------|
|   | Freq     | Level  | Limit  | Line   | Level | Factor  | Loss  | Factor | Remark  |
|   | MHz      | dBuV/m | dB     | dBuV/m | dBuV  | dB/m    | dB    | dB     |         |
| 1 | 4824.000 | 30.77  | -23.23 | 54.00  | 28.67 | 31.15   | 6.11  | 35.16  | Average |
| 2 | 4824.000 | 42.36  | -31.64 | 74.00  | 40.26 | 31.15   | 6.11  | 35.16  | Peak    |
| 3 | 7236.000 | 50.79  | -23.21 | 74.00  | 42.72 | 35.91   | 7.57  | 35.41  | Peak    |
| 4 | 9648.000 | 54.90  |        |        | 43.36 | 38.69   | 8.80  | 35.95  | Peak    |

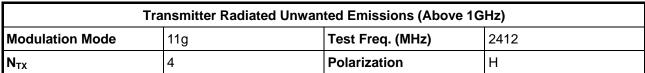
- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted 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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (120.39dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

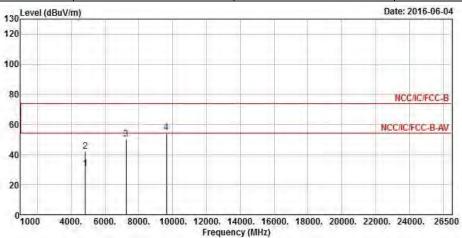
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|   | Freq     | Level  | Over<br>Limit | Limit<br>Line |       | Antenna<br>Factor |      | The state of the state of | Remark  |
|---|----------|--------|---------------|---------------|-------|-------------------|------|---------------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m        | dBuV  | dB/m              | dB   | dB                        |         |
| 1 | 4824.000 | 30.47  | -23.53        | 54.00         | 28.37 | 31.15             | 6.11 | 35.16                     | Average |
| 2 | 4824.000 | 42.19  | -31.81        | 74.00         | 40.09 | 31.15             | 6.11 | 35.16                     | Peak    |
| 3 | 7236.000 | 50.36  | -23.64        | 74.00         | 42.29 | 35.91             | 7.57 | 35.41                     | Peak    |
| 4 | 9648.000 | 54.69  |               |               | 43.15 | 38.69             | 8.80 | 35.95                     | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (120.39 dBuV/m).

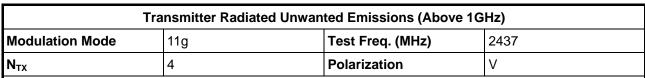
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

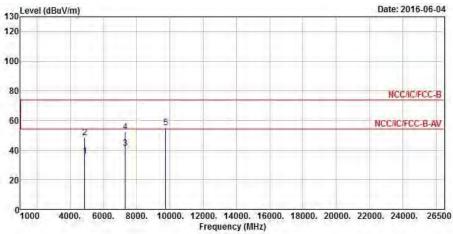
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|   | Freq     | Leve1  | Over<br>Limit | Limit<br>Line |       | Antenna<br>Factor |      | The same of the same of | Remark  |
|---|----------|--------|---------------|---------------|-------|-------------------|------|-------------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m        | dBuV  | dB/m              | dB   | dB                      |         |
| 1 | 4874.000 | 35.88  | -18.12        | 54.00         | 33.69 | 31.22             | 6.13 | 35.16                   | Average |
| 2 | 4874.000 | 48.42  | -25.58        | 74.00         | 46.23 | 31.22             | 6.13 | 35.16                   | Peak    |
| 3 | 7311.000 | 41.37  | -12.63        | 54.00         | 33.08 | 36.11             | 7.60 | 35.42                   | Average |
| 4 | 7311.000 | 52.13  | -21.87        | 74.00         | 43.84 | 36.11             | 7.60 | 35.42                   | Peak    |
| 5 | 9748.000 | 54.98  |               |               | 43.29 | 38.75             | 8.89 | 35.95                   | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (121.08 dBuV/m).

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

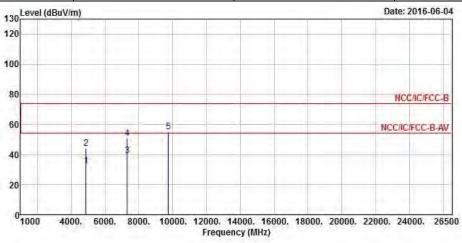
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| Transmitter Radiated Unwanted Emissions (Above 1GHz) |     |                  |      |  |  |  |  |  |
|--|-----|------------------|------|--|--|--|--|--|
| Modulation Mode                                      | 11g | Test Freq. (MHz) | 2437 |  |  |  |  |  |
| N <sub>TX</sub> 4 Polarization H                     |     |                  |      |  |  |  |  |  |



|      |                             | Over  | Limit  | Read   | Antenna  | Cable   | Preamp  |  |
|------|-----------------------------|---|--|--|--|---|---|--|
| Freq | Leve1                       | Limit   | Line   | Level  | Factor   | Loss  | Factor  | Remark   |
| MHz  | dBuV/m                      | dB  | dBuV/m   | dBuV   | dB/m   | dB  | dB  |  |
| .000 | 32.46                       | -21.54  | 54.00  | 30.27  | 31.22  | 6.13  | 35.16   | Average  |
| .000 | 44.09                       | -29.91  | 74.00  | 41.90  | 31.22  | 6.13  | 35.16   | Peak   |
| .000 | 39.57                       | -14.43  | 54.00  | 31.28  | 36.11  | 7.60  | 35.42   | Average  |
| .000 | 50.70                       | -23.30  | 74.00  | 42.41  | 36.11  | 7.60  | 35.42   | Peak   |
| .000 | 55.10                       |   |  | 43.41  | 38.75  | 8.89  | 35.95   | Peak   |
|      | MHz<br>.000<br>.000<br>.000 | MHz dBuV/m  .000 32.46 .000 44.09 .000 39.57 .000 50.70 | Freq Level Limit  MHz dBuV/m dB  .000 32.46 -21.54 .000 44.09 -29.91 .000 39.57 -14.43 .000 50.70 -23.30 | Freq Level Limit Line  MHz dBuV/m dB dBuV/m  .000 32.46 -21.54 54.00 .000 44.09 -29.91 74.00 .000 39.57 -14.43 54.00 .000 50.70 -23.30 74.00 | Freq Level Limit Line Level  MHz dBuV/m dB dBuV/m dBuV  .000 32.46 -21.54 54.00 30.27  .000 44.09 -29.91 74.00 41.90  .000 39.57 -14.43 54.00 31.28  .000 50.70 -23.30 74.00 42.41 | Freq Level Limit Line Level Factor  MHz dBuV/m dB dBuV/m dBuV dB/m  .000 32.46 -21.54 54.00 30.27 31.22 .000 44.09 -29.91 74.00 41.90 31.22 .000 39.57 -14.43 54.00 31.28 36.11 .000 50.70 -23.30 74.00 42.41 36.11 | Freq         Level         Limit         Line         Level         Factor         Loss           MHz         dBuV/m         dB dBuV/m         dBuV         dB/m         dB           .000         32.46         -21.54         54.00         30.27         31.22         6.13           .000         44.09         -29.91         74.00         41.90         31.22         6.13           .000         39.57         -14.43         54.00         31.28         36.11         7.60           .000         50.70         -23.30         74.00         42.41         36.11         7.60 | Freq Level Limit Line Level Factor Loss Factor  MHz dBuV/m dB dBuV/m dBuV dB/m dB dB  .000 32.46 -21.54 54.00 30.27 31.22 6.13 35.16  .000 44.09 -29.91 74.00 41.90 31.22 6.13 35.16  .000 39.57 -14.43 54.00 31.28 36.11 7.60 35.42  .000 50.70 -23.30 74.00 42.41 36.11 7.60 35.42 |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (121.08 dBuV/m).

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

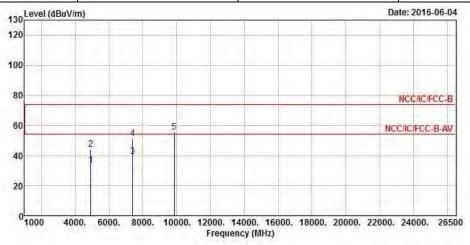
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| Transmitter Radiated Unwanted Emissions (Above 1GHz) |                                  |                  |      |  |  |  |  |  |  |  |
|--|----------------------------------|------------------|------|--|--|--|--|--|--|--|
| Modulation Mode                                      | 11g                              | Test Freq. (MHz) | 2462 |  |  |  |  |  |  |  |
| $N_{TX}$   | N <sub>TX</sub> 4 Polarization V |                  |      |  |  |  |  |  |  |  |



|   |          |        | Over   | Limit  | Read  | Antenna | Cable | Preamp |         |
|---|----------|--------|--------|--------|-------|---------|-------|--------|---------|
|   | Freq     | Leve1  | Limit  | Line   | Level | Factor  | Loss  | Factor | Remark  |
|   | MHz      | dBuV/m | dB     | dBuV/m | dBuV  | dB/m    | dB    | dB     | _       |
| 1 | 4924.000 | 33.47  | -20.53 | 54.00  | 31.16 | 31.29   | 6.17  | 35.15  | Average |
| 2 | 4924.000 | 44.17  | -29.83 | 74.00  | 41.86 | 31.29   | 6.17  | 35.15  | Peak    |
| 3 | 7386.000 | 39.52  | -14.48 | 54.00  | 31.02 | 36.30   | 7.63  | 35.43  | Average |
| 4 | 7386.000 | 51.17  | -22.83 | 74.00  | 42.67 | 36.30   | 7.63  | 35.43  | Peak    |
| 5 | 9848.000 | 55.59  |        |        | 43.71 | 38.81   | 9.03  | 35.96  | Peak    |
|   |          |        |        |        |       |         |       |        |         |

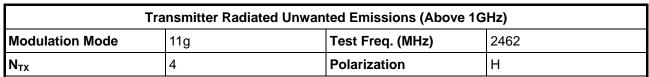
- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted 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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (120.40 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

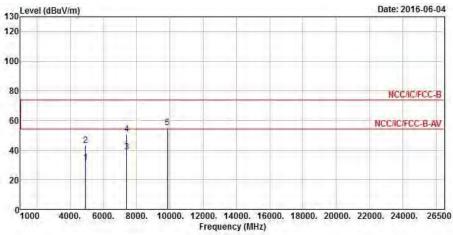
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|   | Freq     | Level  | Over<br>Limit | Limit<br>Line | 10-02 | Antenna<br>Factor | 70700 | Preamp<br>Factor |         |
|---|----------|--------|---------------|---------------|-------|-------------------|-------|------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m        | dBuV  | dB/m              | dB    | dB               |         |
| 1 | 4924.000 | 31.56  | -22.44        | 54.00         | 29.25 | 31.29             | 6.17  | 35.15            | Average |
| 2 | 4924.000 | 43.01  | -30.99        | 74.00         | 40.70 | 31.29             | 6.17  | 35.15            | Peak    |
| 3 | 7386.000 | 38.95  | -15.05        | 54.00         | 30.45 | 36.30             | 7.63  | 35.43            | Average |
| 4 | 7386.000 | 50.76  | -23.24        | 74.00         | 42.26 | 36.30             | 7.63  | 35.43            | Peak    |
| 5 | 9848.000 | 55.13  |               |               | 43.25 | 38.81             | 9.03  | 35.96            | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (120.40 dBuV/m).

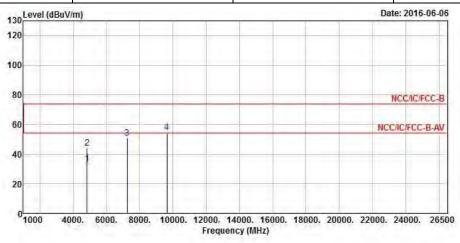
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

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| Transmitter Radiated Unwanted Emissions (Above 1GHz) |      |                  |      |  |  |  |  |  |  |
|--|------|------------------|------|--|--|--|--|--|--|
| Modulation Mode                                      | HT20 | Test Freq. (MHz) | 2412 |  |  |  |  |  |  |
| N <sub>TX</sub> 4 Polarization V                     |      |                  |      |  |  |  |  |  |  |



|   |          |        | Over   | Limit  | Read  | Antenna | Cable | Preamp |         |
|---|----------|--------|--------|--------|-------|---------|-------|--------|---------|
|   | Freq     | Leve1  | Limit  | Line   | Level | Factor  | Loss  | Factor | Remark  |
|   | MHz      | dBuV/m | dB     | dBuV/m | dBuV  | dB/m    | dB    | dB     | -       |
| 1 | 4824.000 | 33.38  | -20.62 | 54.00  | 31.28 | 31.15   | 6.11  | 35.16  | Average |
| 2 | 4824.000 | 44.29  | -29.71 | 74.00  | 42.19 | 31.15   | 6.11  | 35.16  | Peak    |
| 3 | 7236.000 | 50.74  |        |        | 42.67 | 35.91   | 7.57  | 35.41  | Peak    |
| 4 | 9648.000 | 54.90  |        |        | 43.36 | 38.69   | 8.80  | 35.95  | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (118.34 dBuV/m).

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

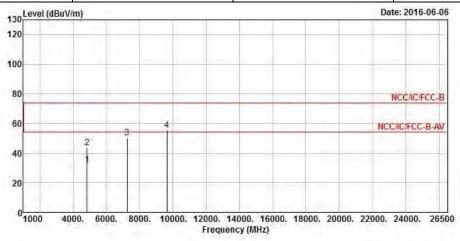
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| Transmitter Radiated Unwanted Emissions (Above 1GHz) |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|
| Modulation Mode                                      | Modulation Mode HT20 Test Freq. (MHz) 2412 |  |  |  |  |  |  |  |  |  |
| N <sub>TX</sub>                                      | N <sub>TX</sub> 4 Polarization H           |  |  |  |  |  |  |  |  |  |



|   |          |        | Over   | Limit  | Read  | Antenna | Cable | Preamp |         |
|---|----------|--------|--------|--------|-------|---------|-------|--------|---------|
|   | Freq     | Level  | Limit  | Line   | Level | Factor  | Loss  | Factor | Remark  |
|   | MHz      | dBuV/m | dB     | dBuV/m | dBuV  | dB/m    | dB    | dB     | _       |
| 1 | 4824.000 | 32.36  | -21.64 | 54.00  | 30.26 | 31.15   | 6.11  | 35.16  | Average |
| 2 | 4824.000 | 43.85  | -30.15 | 74.00  | 41.75 | 31.15   | 6.11  | 35.16  | Peak    |
| 3 | 7236.000 | 50.23  |        |        | 42.16 | 35.91   | 7.57  | 35.41  | Peak    |
| 4 | 9648.000 | 55.59  |        |        | 44.05 | 38.69   | 8.80  | 35.95  | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (118.34 dBuV/m).

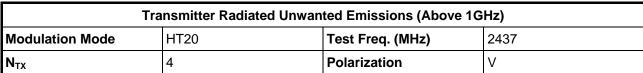
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

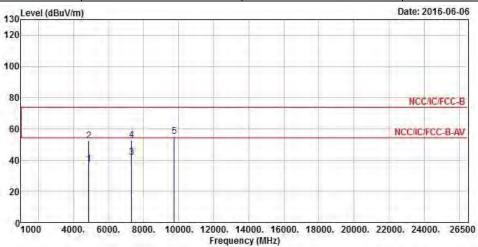
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|   | Frea     | Level  | Over<br>Limit |        | No- with | Antenna<br>Factor |      | Preamp<br>Factor | Remark     |
|---|----------|--------|---------------|--------|----------|-------------------|------|------------------|------------|
|   |          |        |               |        | -        |                   |      |                  | - Tremer W |
|   | MHZ      | dBuV/m | qB            | dBuV/m | dBuV     | dB/m              | dB   | dB               |            |
| 1 | 4874.000 | 37.32  | -16.68        | 54.00  | 35.13    | 31.22             | 6.13 | 35.16            | Average    |
| 2 | 4874.000 | 52.36  | -21.64        | 74.00  | 50.17    | 31.22             | 6.13 | 35.16            | Peak       |
| 3 | 7311.000 | 41.55  | -12.45        | 54.00  | 33.26    | 36.11             | 7.60 | 35.42            | Average    |
| 4 | 7311.000 | 52.87  | -21.13        | 74.00  | 44.58    | 36.11             | 7.60 | 35.42            | Peak       |
| 5 | 9748.000 | 55.36  |               |        | 43.67    | 38.75             | 8.89 | 35.95            | Peak       |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (120.68 dBuV/m).

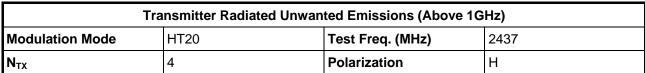
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

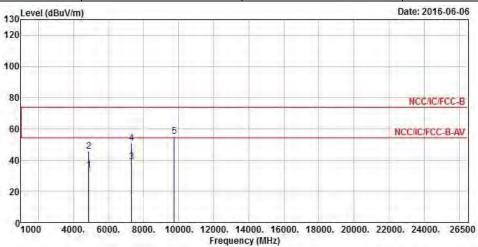
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|   | Freq     | Level  | Over<br>Limit | Limit<br>Line | No-wills | Antenna<br>Factor |      | Preamp<br>Factor | Remark  |
|---|----------|--------|---------------|---------------|----------|-------------------|------|------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m        | dBuV     | dB/m              | dB   | dB               | -       |
| 1 | 4874.000 | 33.54  | -20.46        | 54.00         | 31.35    | 31.22             | 6.13 | 35.16            | Average |
| 2 | 4874.000 | 45.39  | -28.61        | 74.00         | 43.20    | 31.22             | 6.13 | 35.16            | Peak    |
| 3 | 7311.000 | 39.04  | -14.96        | 54.00         | 30.75    | 36.11             | 7.60 | 35.42            | Average |
| 4 | 7311.000 | 51.04  | -22.96        | 74.00         | 42.75    | 36.11             | 7.60 | 35.42            | Peak    |
| 5 | 9748.000 | 55.02  |               |               | 43.33    | 38.75             | 8.89 | 35.95            | Peak    |
| 5 | 9748.000 | 55.02  |               |               | 43.33    | 38.75             | 8.89 | 35.95            | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (120.68 dBuV/m).

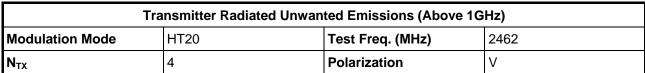
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

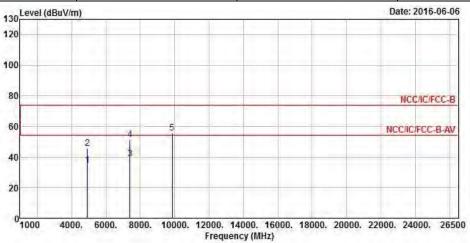
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|   |          |        | Over   | Limit  | Read  | Antenna | Cable | Preamp |         |
|---|----------|--------|--------|--------|-------|---------|-------|--------|---------|
|   | Freq     | Leve1  | Limit  | Line   | Level | Factor  | Loss  | Factor | Remark  |
|   | MHz      | dBuV/m | dB     | dBuV/m | dBuV  | dB/m    | dB    | dB     |         |
| 1 | 4924.000 | 34.33  | -19.67 | 54.00  | 32.02 | 31.29   | 6.17  | 35.15  | Average |
| 2 | 4924.000 | 45.60  | -28.40 | 74.00  | 43.29 | 31.29   | 6.17  | 35.15  | Peak    |
| 3 | 7386.000 | 38.95  | -15.05 | 54.00  | 30.45 | 36.30   | 7.63  | 35.43  | Average |
| 4 | 7386.000 | 51.17  | -22.83 | 74.00  | 42.67 | 36.30   | 7.63  | 35.43  | Peak    |
| 5 | 9848.000 | 55.73  |        |        | 43.85 | 38.81   | 9.03  | 35.96  | Peak    |
|   |          |        |        |        |       |         |       |        |         |

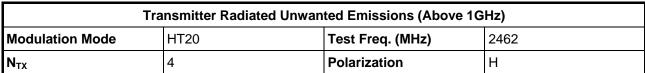
- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted 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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (118.38 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

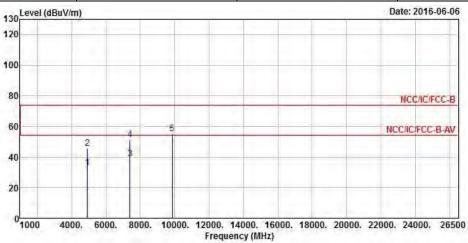
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|   |          |        |             | 0ver   | 44000 | No-A-Di- |      |        | Preamp  |  |
|---|----------|--------|-------------|--------|-------|----------|------|--------|---------|--|
|   | Freq     | Level  | Limit       | Line   | Level | Factor   | Loss | Factor | Remark  |  |
|   | MHz      | dBuV/m | dB          | dBuV/m | dBuV  | dB/m     | dB   | dB     |         |  |
| 1 | 4924.000 | 33.23  | -20.77      | 54.00  | 30.92 | 31.29    | 6.17 | 35.15  | Average |  |
| 2 | 4924.000 | 45.71  | -28.29      | 74.00  | 43.40 | 31.29    | 6.17 | 35.15  | Peak    |  |
| 3 | 7386.000 | 38.91  | -15.09      | 54.00  | 30.41 | 36.30    | 7.63 | 35.43  | Average |  |
| 4 | 7386.000 | 51.21  | -22.79      | 74.00  | 42.71 | 36.30    | 7.63 | 35.43  | Peak    |  |
| 5 | 9848.000 | 55.14  | 1813W-13074 |        | 43.26 | 38.81    | 9.03 | 35.96  | 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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (118.38 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

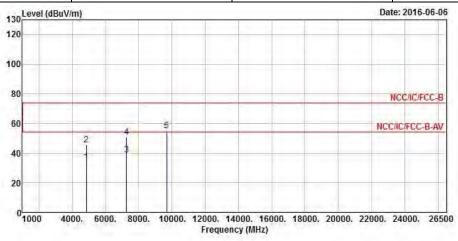
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| Transmitter Radiated Unwanted Emissions (Above 1GHz) |  |              |   |  |  |  |  |  |
|--|--|--------------|---|--|--|--|--|--|
| Modulation Mode                                      | Modulation Mode HT40 Test Freq. (MHz) 2422 |              |   |  |  |  |  |  |
| N <sub>TX</sub>                                      | 4  | Polarization | V |  |  |  |  |  |



|   |          |        | Over   | Limit  | Read  | Antenna | Cable | Preamp |         |
|---|----------|--------|--------|--------|-------|---------|-------|--------|---------|
|   | Freq     | Leve1  | Limit  | Line   | Level | Factor  | Loss  | Factor | Remark  |
|   | MHz      | dBuV/m | dB     | dBuV/m | dBuV  | dB/m    | dB    | dB     |         |
| 1 | 4844.000 | 34.12  | -19.88 | 54.00  | 31.97 | 31.18   | 6.13  | 35.16  | Average |
| 2 | 4844.000 | 45.41  | -28.59 | 74.00  | 43.26 | 31.18   | 6.13  | 35.16  | Peak    |
| 3 | 7266.000 | 38.85  | -15.15 | 54.00  | 30.69 | 35.99   | 7.59  | 35.42  | Average |
| 4 | 7266.000 | 51.01  | -22.99 | 74.00  | 42.85 | 35.99   | 7.59  | 35.42  | Peak    |
| 5 | 9688.000 | 55.39  |        |        | 43.79 | 38.71   | 8.84  | 35.95  | 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: 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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (113.86dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

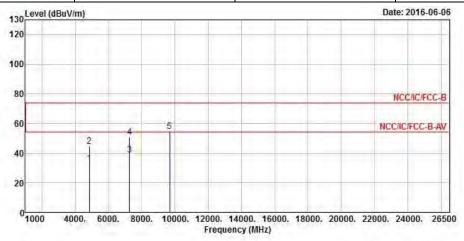
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| Transmitter Radiated Unwanted Emissions (Above 1GHz) |  |              |   |  |  |  |  |  |
|--|--|--------------|---|--|--|--|--|--|
| Modulation Mode                                      | Modulation Mode HT40 Test Freq. (MHz) 2422 |              |   |  |  |  |  |  |
| N <sub>TX</sub>                                      | 4  | Polarization | Н |  |  |  |  |  |



|   | Freq     | Level  | Over<br>Limit |        |       | Antenna<br>Factor |      | The second second | Remark  |
|---|----------|--------|---------------|--------|-------|-------------------|------|-------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m | dBuV  | dB/m              | dB   | dB                | _       |
| 1 | 4844.000 | 32.86  | -21.14        | 54.00  | 30.71 | 31.18             | 6.13 | 35.16             | Average |
| 2 | 4844.000 | 44.71  | -29.29        | 74.00  | 42.56 | 31.18             | 6.13 | 35.16             | Peak    |
| 3 | 7266.000 | 38.72  | -15.28        | 54.00  | 30.56 | 35.99             | 7.59 | 35.42             | Average |
| 4 | 7266.000 | 50.74  | -23.26        | 74.00  | 42.58 | 35.99             | 7.59 | 35.42             | Peak    |
| 5 | 9688.000 | 54.81  |               |        | 43.21 | 38.71             | 8.84 | 35.95             | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (113.86 dBuV/m).

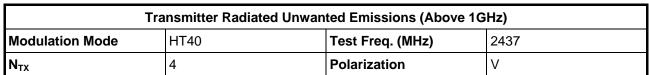
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

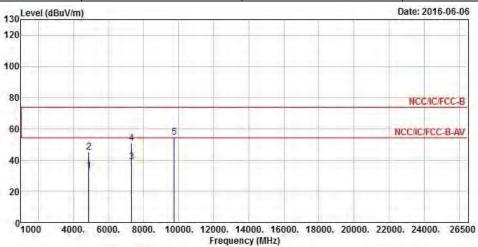
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|   | Freq     | Level  | Over<br>Limit | Limit<br>Line | No-will. | Antenna<br>Factor |      | Preamp<br>Factor | Remark  |
|---|----------|--------|---------------|---------------|----------|-------------------|------|------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m        | dBuV     | dB/m              | dB   | dB               |         |
| 1 | 4874.000 | 33.07  | -20.93        | 54.00         | 30.88    | 31.22             | 6.13 | 35.16            | Average |
| 2 | 4874.000 | 44.87  | -29.13        | 74.00         | 42.68    | 31.22             | 6.13 | 35.16            | Peak    |
| 3 | 7311.000 | 39.08  | -14.92        | 54.00         | 30.79    | 36.11             | 7.60 | 35.42            | Average |
| 4 | 7311.000 | 50.92  | -23.08        | 74.00         | 42.63    | 36.11             | 7.60 | 35.42            | Peak    |
| 5 | 9748.000 | 54.65  |               |               | 42.96    | 38.75             | 8.89 | 35.95            | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (118.05dBuV/m).

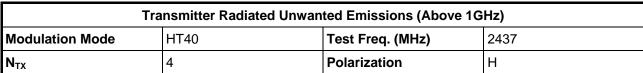
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

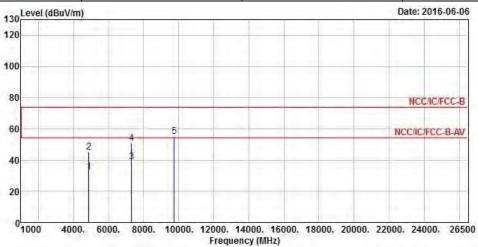
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|   | Freq     | Level  | Over<br>Limit | 1220.00 | No-wills | Antenna<br>Factor |      | Preamp<br>Factor | Remark  |
|---|----------|--------|---------------|---------|----------|-------------------|------|------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m  | dBuV     | dB/m              | dB   | dB               |         |
| 1 | 4874.000 | 32.79  | -21.21        | 54.00   | 30.60    | 31.22             | 6.13 | 35.16            | Average |
| 2 | 4874.000 | 44.90  | -29.10        | 74.00   | 42.71    | 31.22             | 6.13 | 35.16            | Peak    |
| 3 | 7311.000 | 38.89  | -15.11        | 54.00   | 30.60    | 36.11             | 7.60 | 35.42            | Average |
| 4 | 7311.000 | 51.09  | -22.91        | 74.00   | 42.80    | 36.11             | 7.60 | 35.42            | Peak    |
| 5 | 9748.000 | 55.00  |               |         | 43.31    | 38.75             | 8.89 | 35.95            | Peak    |

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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (118.05 dBuV/m).

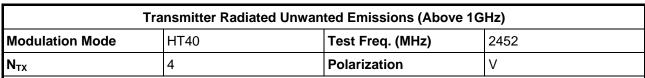
Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

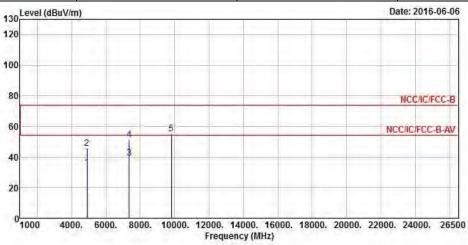
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|       |                                  |                         | Over             | Limit          | Read                    | Antenna                 | Cable                | Preamp                  |                      |
|-------|----------------------------------|-------------------------|------------------|----------------|-------------------------|-------------------------|----------------------|-------------------------|----------------------|
|       | Freq                             | Leve1                   | Limit            | Line           | Level                   | Factor                  | Loss                 | Factor                  | Remark               |
| -     | MHz                              | dBuV/m                  | dB               | dBuV/m         | dBuV                    | dB/m                    | dB                   | dB                      |                      |
| 1     | 4904.000                         | 33.23                   | -20.77           | 54.00          | 30.96                   | 31.27                   | 6.15                 | 35.15                   | Average              |
| 2     | 4904.000                         | 45.54                   | -28.46           | 74.00          | 43.27                   | 31.27                   | 6.15                 | 35.15                   | Peak                 |
| 3     | 7356.000                         | 39.44                   | -14.56           | 54.00          | 31.03                   | 36.23                   | 7.61                 | 35.43                   | Average              |
| 1     | 7356.000                         | 51.09                   | -22.91           | 74.00          | 42.68                   | 36.23                   | 7.61                 | 35.43                   | Peak                 |
| 5     | 9808.000                         | 55.18                   |                  |                | 43.37                   | 38.78                   | 8.99                 | 35.96                   | Peak                 |
| 2 3 1 | 4904.000<br>7356.000<br>7356.000 | 45.54<br>39.44<br>51.09 | -28.46<br>-14.56 | 74.00<br>54.00 | 43.27<br>31.03<br>42.68 | 31.27<br>36.23<br>36.23 | 6.15<br>7.61<br>7.61 | 35.15<br>35.43<br>35.43 | Peak<br>Aver<br>Peak |

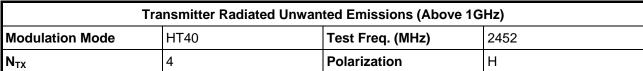
- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted 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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (114.90 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

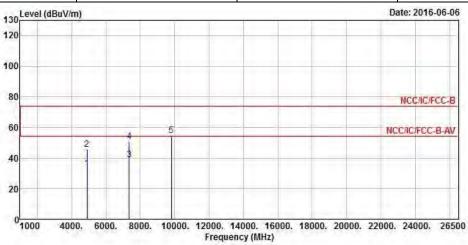
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|   | Freq     | Leve1  | Over<br>Limit | 44000  | Non-Angle | Antenna<br>Factor |      | Preamp<br>Factor | Remark  |
|---|----------|--------|---------------|--------|-----------|-------------------|------|------------------|---------|
|   | MHz      | dBuV/m | dB            | dBuV/m | dBuV      | dB/m              | dB   | dB               |         |
| 1 | 4904.000 | 32.95  | -21.05        | 54.00  | 30.68     | 31.27             | 6.15 | 35.15            | Average |
| 2 | 4904.000 | 45.76  | -28.24        | 74.00  | 43.49     | 31.27             | 6.15 | 35.15            | Peak    |
| 3 | 7356.000 | 38.91  | -15.09        | 54.00  | 30.50     | 36.23             | 7.61 | 35.43            | Average |
| 4 | 7356.000 | 51.02  | -22.98        | 74.00  | 42.61     | 36.23             | 7.61 | 35.43            | Peak    |
| 5 | 9808.000 | 54.91  |               |        | 43.10     | 38.78             | 8.99 | 35.96            | 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, unwanted emissions shall be attenuated by at least 30 dB relative to the maximum measured in-band level (114.90 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

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