



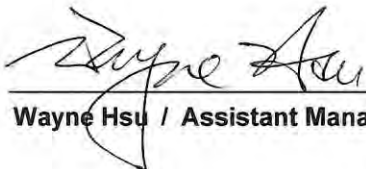
FCC Test Report

Equipment : 802.11 b/g/n high power USB Module
Brand Name : SparkLAN
Model No. : WUBA-171GN
FCC ID : RYK-WUBA171GN
Standard : 47 CFR FCC Part 15.247
Operating Band : 2400 MHz – 2483.5 MHz
FCC Classification : DTS
Applicant : SparkLAN Communications, Inc
Manufacturer : 8F., No.257, Sec. 2, Tiding Blvd.,
Neihu District, Taipei City 11493, Taiwan.

The product sample received on Aug. 13, 2014 and completely tested on Aug. 14, 2014. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 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:



Wayne Hsu / Assistant Manager



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APPENDIX A. TEST PHOTOS

APPENDIX B. PHOTOGRAPHS OF EUT



Summary of Test Result

| Conformance Test Specifications | | | | | |
|---------------------------------|------------------|---|---|---|----------|
| Report Clause | Ref. Std. Clause | Description | Measured | Limit | Result |
| 1.1.1 | 15.247(b) | RF Output Power (Maximum Peak Conducted Output Power) | Power [dBm]: 28.66 | Power [dBm]:30 | Complied |
| 1.1.2 | 15.203 | Antenna Requirement | Antenna connector mechanism complied | FCC 15.203 | Complied |
| 3.1 | 15.207 | AC Power-line Conducted Emissions | [dBuV]: 0.157326MHz 28.39 (Margin 27.21dB) - AV 51.56 (Margin 14.04dB) - QP | FCC 15.207 | Complied |
| 3.2 | 15.247(c) | Transmitter Radiated Bandedge Emissions | Non-Restricted Bands: 2400.05MHz: 26.45dB Restricted Bands [dBuV/m at 3m]: 2389.99MHz 68.80 (Margin 5.20dB) - PK 53.79 (Margin 0.21dB) - AV | Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209 | Complied |
| 3.3 | 15.247(c) | Transmitter Radiated Unwanted Emissions | [dBuV/m at 3m]: 68.80MHz 35.16 (Margin 4.84dB) - PK | Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209 | Complied |

Remark: This report just adds one additional antenna whose RF power is comply with the original report FR351115. So we only verified AC Conducted Emission and Radiated Emission test outcome here.



Revision History

| Report No. | Version | Description | Issued Date |
|-------------|---------|---|---------------|
| FR351115 | Rev. 01 | Initial issue of report | May 20, 2013 |
| FR351115-01 | Rev. 01 | Update information as below: 1. Class 2 Permissive Change (C2PC). 2. Add one additional antenna | Sep. 18, 2014 |
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1 General Description

This report is case of Class 2 Permissive Change (C2PC). Its original report is FR351115 in which 5 antennas were all evaluated and recorded there. In this report, we add one additional antenna and verified its AC Conducted Emission and Radiated Emission test outcome here.

1.1 Information

1.1.1 RF General Information

| RF General Information | | | | | |
|------------------------|------------------|-----------------|----------------|------------------------------------|-----------------------|
| Frequency Range (MHz) | IEEE Std. 802.11 | Ch. Freq. (MHz) | Channel Number | Transmit Chains (N _{TX}) | RF Output Power (dBm) |
| 2400-2483.5 | b | 2412-2462 | 1-11 [11] | 1 | 23.12 |
| 2400-2483.5 | g | 2412-2462 | 1-11 [11] | 1 | 28.66 |
| 2400-2483.5 | n (HT20) | 2412-2462 | 1-11 [11] | 1 | 28.62 |
| 2400-2483.5 | n (HT40) | 2422-2452 | 3-9 [7] | 1 | 28.41 |

Note 1: RF output power specifies that Maximum Peak Conducted Output Power.
 Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
 Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.

1.1.2 Antenna Information

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

| Antenna General Information | | | | | |
|-----------------------------|-----------|-----------|----------|--------------------|------------|
| No. | Ant. Cat. | Ant. Type | Brand | Model No. | Gain (dBi) |
| 1 | External | Omni | Superbat | WA2-0011-N01SP-050 | 5 |



1.1.3 Type of EUT

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

1.1.4 EUT Operational Condition

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

1.2 Support Equipment

| Support Equipment – AC Conduction & Radiated Emission | | | | |
|---|-----------|------------|------------|--------|
| No. | Equipment | Brand Name | Model Name | FCC ID |
| 1 | Notebook | DELL | E5520 | R33002 |

1.3 Testing Applied Standards

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

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2009
- ◆ FCC KDB 558074 D01v03r02
- ◆ FCC KDB 662911 D01v02r01

1.4 Testing Location Information

| Testing Location | | | |
|-------------------------------------|---------------|--|----------------------|
| <input checked="" type="checkbox"/> | HWA YA | ADD : No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. | |
| | | TEL : 886-3-327-3456 | FAX : 886-3-327-0973 |
| Test Condition | Test Site No. | Test Engineer | Test Environment |
| AC Conduction | CO04-HY | Zeus | 25°C / 45% |
| Radiated Emission | 03CH02-HY | Daniel | 24.6°C / 61% |

1.5 Measurement Uncertainty

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

| Measurement Uncertainty | | |
|-----------------------------------|---------------|-------------|
| Test Item | | Uncertainty |
| AC power-line conducted emissions | | ±2.2 dB |
| Emission bandwidth, 6dB bandwidth | | ±1.4 % |
| RF output power, conducted | | ±0.6 dB |
| Power density, conducted | | ±0.8 dB |
| Unwanted emissions, conducted | 9 – 150 kHz | ±0.3 dB |
| | 0.15 – 30 MHz | ±0.4 dB |
| | 30 – 1000 MHz | ±0.5 dB |
| | 1 – 18 GHz | ±0.6 dB |
| | 18 – 40 GHz | ±0.8 dB |
| | 40 – 200 GHz | N/A |
| All emissions, radiated | 9 – 150 kHz | ±2.4 dB |
| | 0.15 – 30 MHz | ±2.2 dB |
| | 30 – 1000 MHz | ±2.5 dB |
| | 1 – 18 GHz | ±3.5 dB |
| | 18 – 40 GHz | ±3.8 dB |
| | 40 – 200 GHz | N/A |
| Temperature | | ±0.8 °C |
| Humidity | | ±3 % |
| DC and low frequency voltages | | ±3 % |
| Time | | ±1.4 % |
| Duty Cycle | | ±1.4 % |




2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

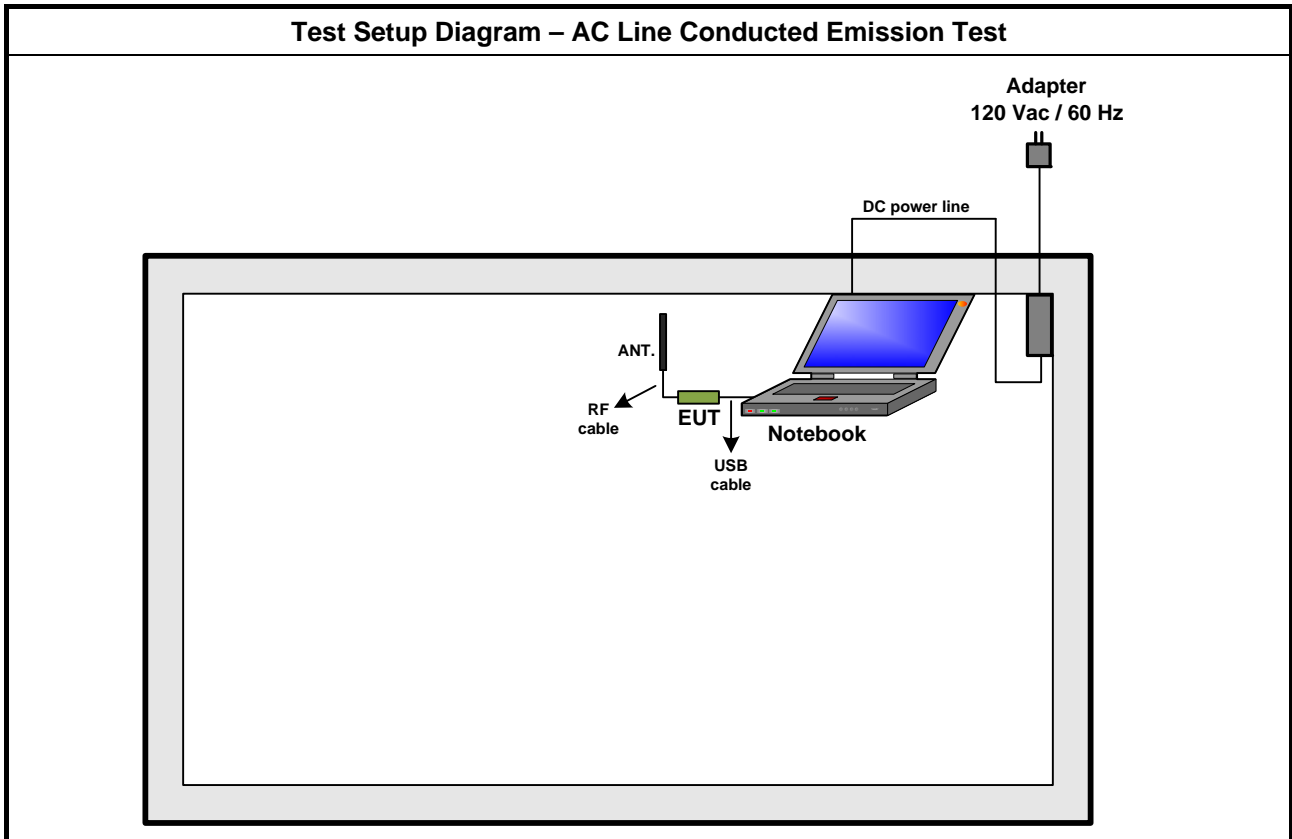
| Worst Modulation Used for Conformance Testing | | | |
|--|---|------------------------|------------------------------|
| Modulation Mode | Transmit Chains (N_{TX}) | Data Rate / MCS | Worst Data Rate / MCS |
| 11b,1-11Mbps | 1 | 1-11 Mbps | 1 Mbps |
| 11g,6-54Mbps | 1 | 6-54 Mbps | 6 Mbps |
| HT20,M0-7 | 1 | MCS 0-7 | M 0 |
| HT40,M0-7 | 1 | MCS 0-7 | M 0 |

2.2 The Worst Case Measurement Configuration

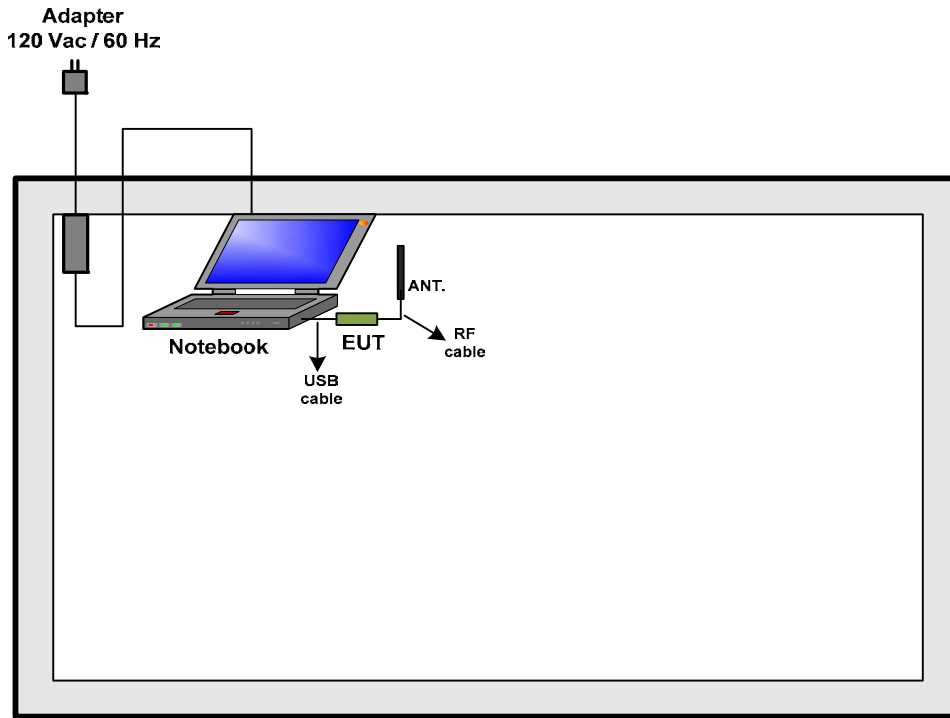
| The Worst Case Mode for Following Conformance Tests | |
|--|---|
| Tests Item | AC power-line conducted emissions |
| Condition | AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz |
| Operating Mode | Operating Mode Description |
| 1 | EUT with Notebook via USB Cable & transmit |

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

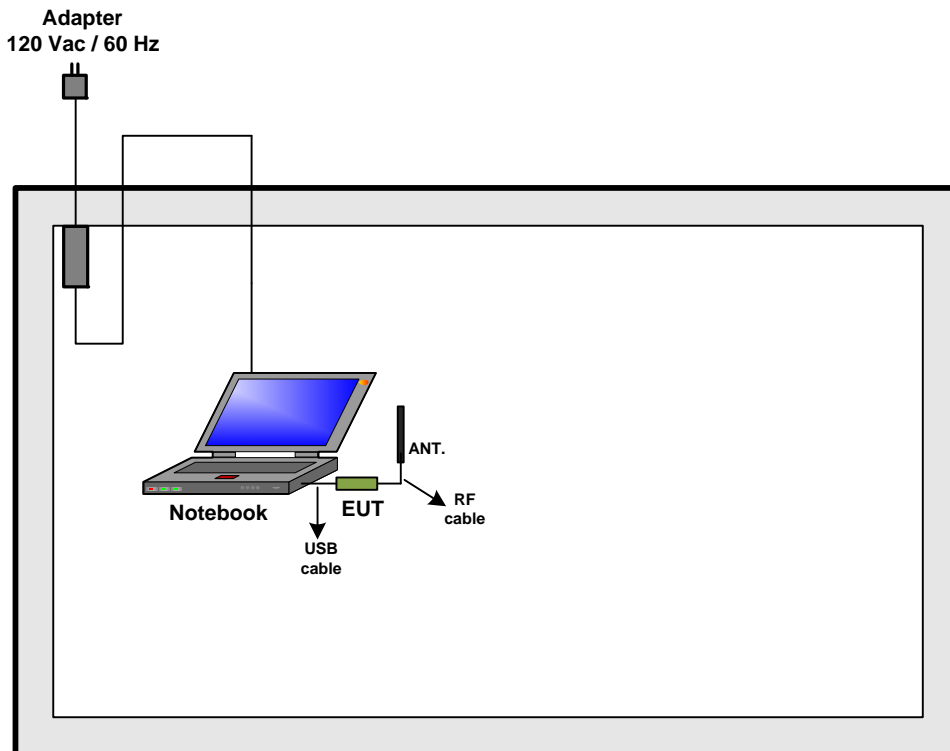
2.3 Test Setup Diagram



Test Setup Diagram - Radiated Emission (Below 1GHz)



Test Setup Diagram - Radiated Emission (Above 1GHz)



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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

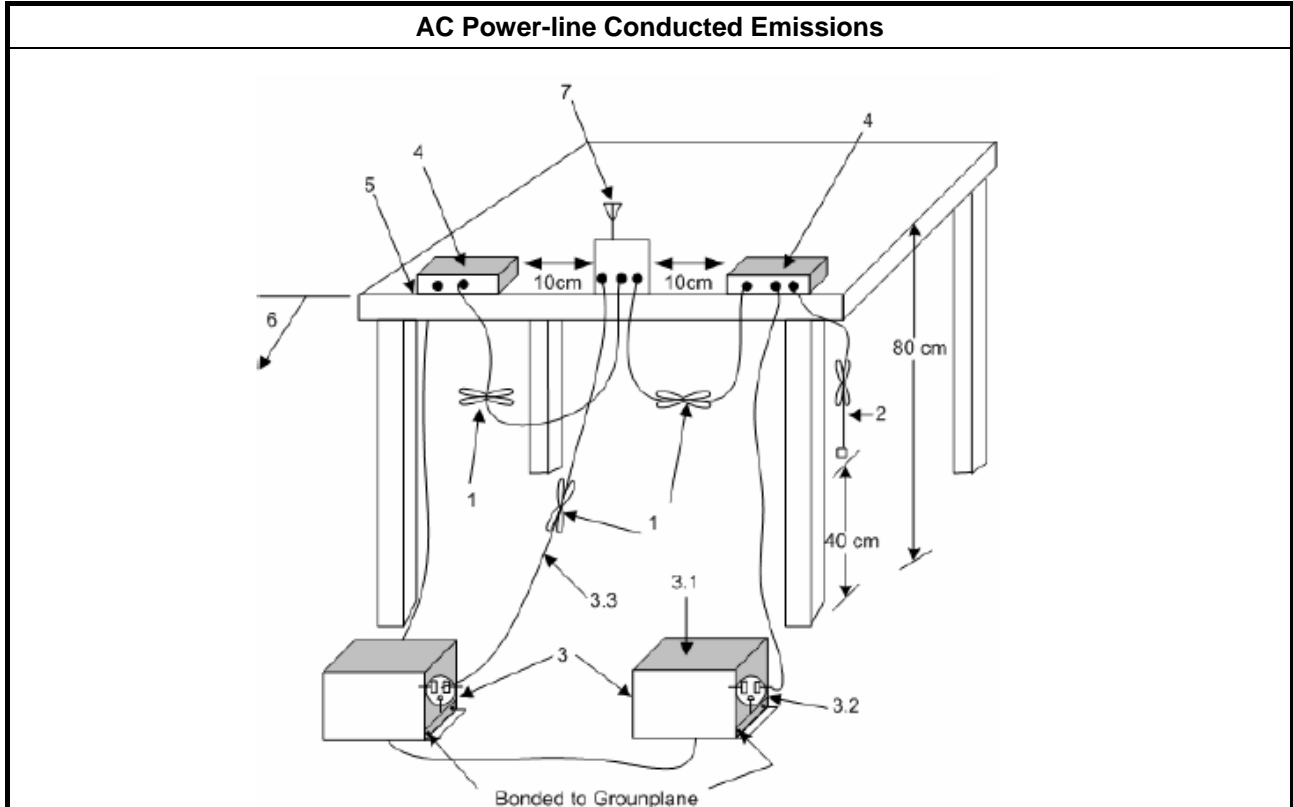
3.1.2 Measuring Instruments

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

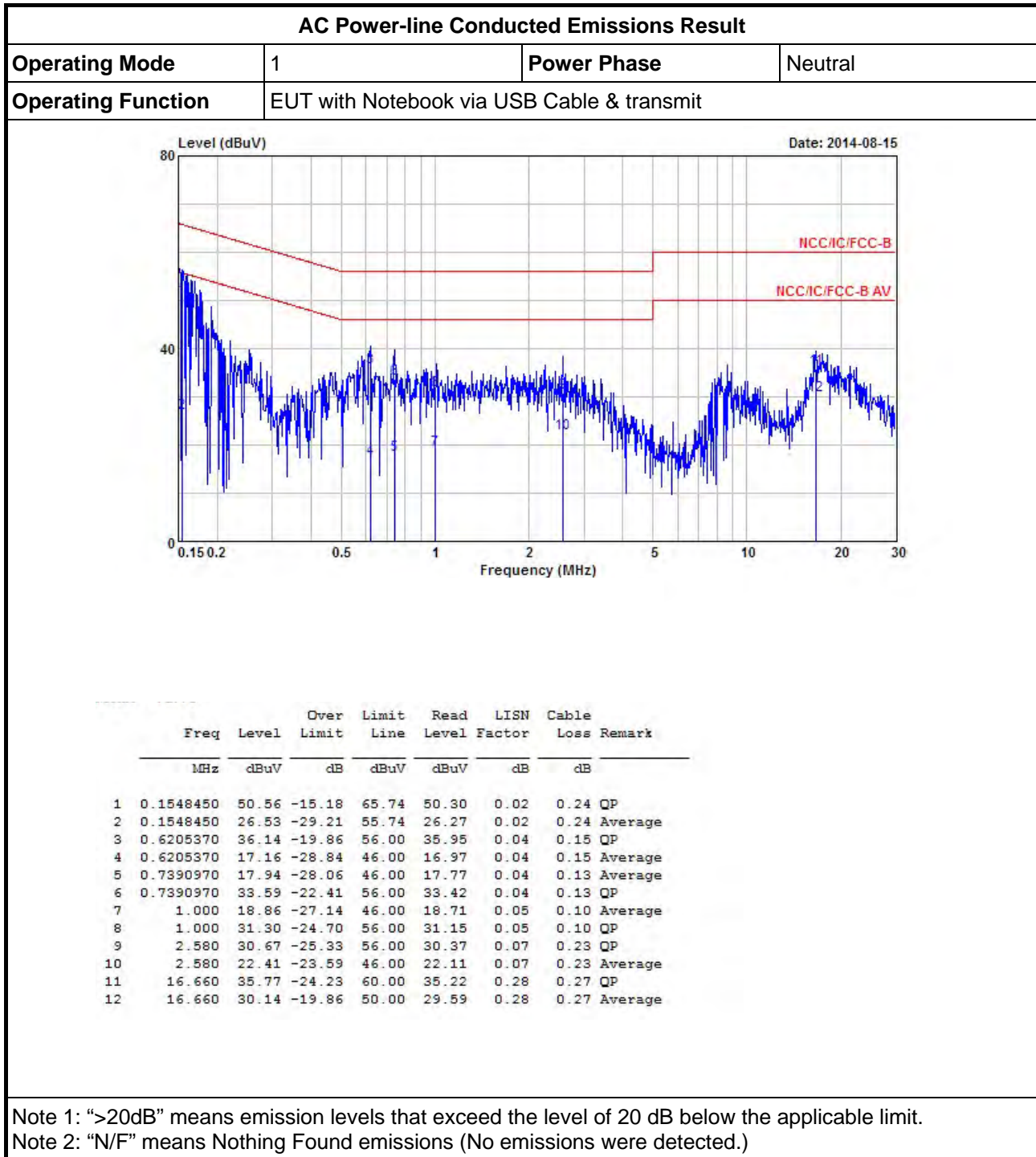
3.1.3 Test Procedures

| Test Method |
|--|
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2009, clause 6.2 for AC power-line conducted emissions. |

3.1.4 Test Setup



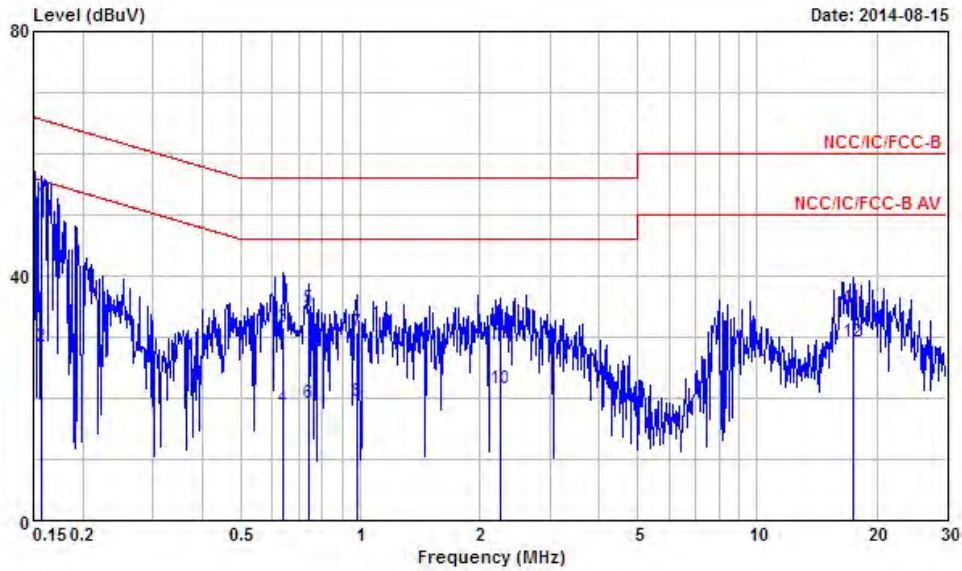
3.1.5 Test Result of AC Power-line Conducted Emissions





AC Power-line Conducted Emissions Result

| | | | |
|--------------------|--|-------------|------|
| Operating Mode | 1 | Power Phase | Line |
| Operating Function | EUT with Notebook via USB Cable & transmit | | |

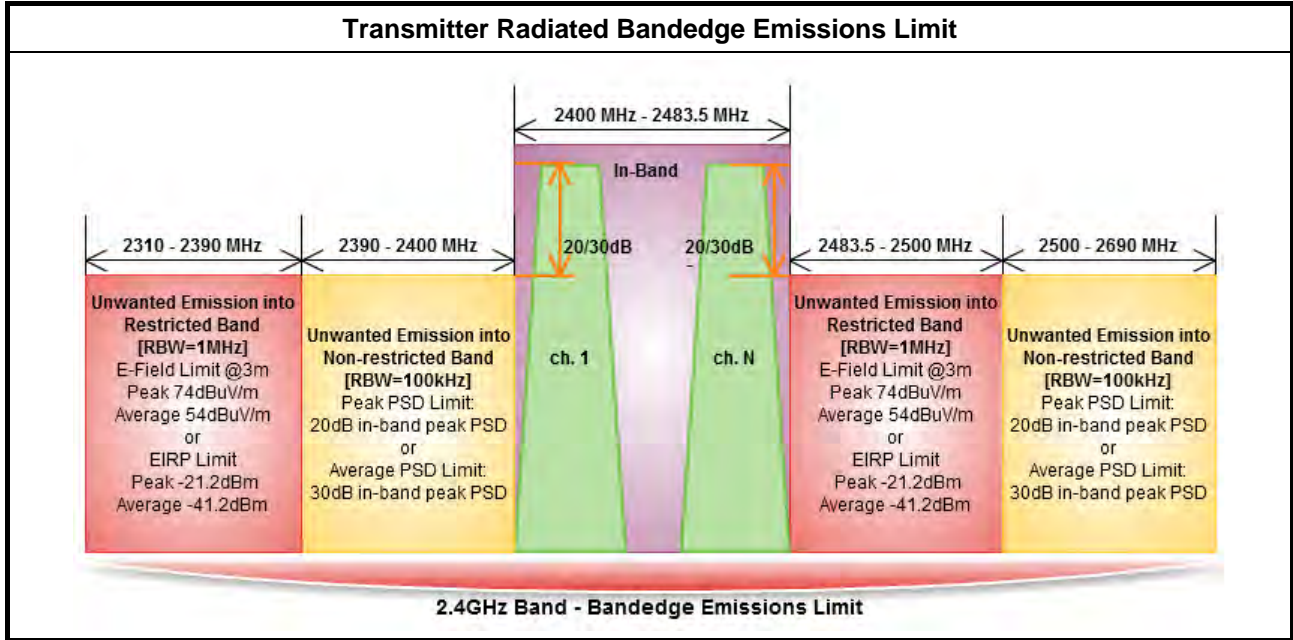


| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------|------------|------------|------------|-------------|------------|---------|---|---|----|----|----|
| Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark | | | | | |
| dBuV | dB | dBuV | dBuV | dB | dB | | | | | | |
| 51.56 | -14.04 | 65.60 | 51.30 | 0.03 | 0.23 | QP | | | | | |
| 28.39 | -27.21 | 55.60 | 28.13 | 0.03 | 0.23 | Average | | | | | |
| 31.52 | -24.48 | 56.00 | 31.32 | 0.05 | 0.15 | QP | | | | | |
| 18.33 | -27.67 | 46.00 | 18.13 | 0.05 | 0.15 | Average | | | | | |
| 34.67 | -21.33 | 56.00 | 34.49 | 0.05 | 0.13 | QP | | | | | |
| 19.25 | -26.75 | 46.00 | 19.07 | 0.05 | 0.13 | Average | | | | | |
| 30.74 | -25.26 | 56.00 | 30.58 | 0.06 | 0.10 | QP | | | | | |
| 19.53 | -26.47 | 46.00 | 19.37 | 0.06 | 0.10 | Average | | | | | |
| 30.23 | -25.77 | 56.00 | 29.88 | 0.08 | 0.27 | QP | | | | | |
| 21.53 | -24.47 | 46.00 | 21.18 | 0.08 | 0.27 | Average | | | | | |
| 34.77 | -25.23 | 60.00 | 34.23 | 0.29 | 0.25 | QP | | | | | |
| 29.10 | -20.90 | 50.00 | 28.56 | 0.29 | 0.25 | Average | | | | | |

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

3.2 Transmitter Bandedge Emissions

3.2.1 Transmitter Radiated Bandedge Emissions Limit



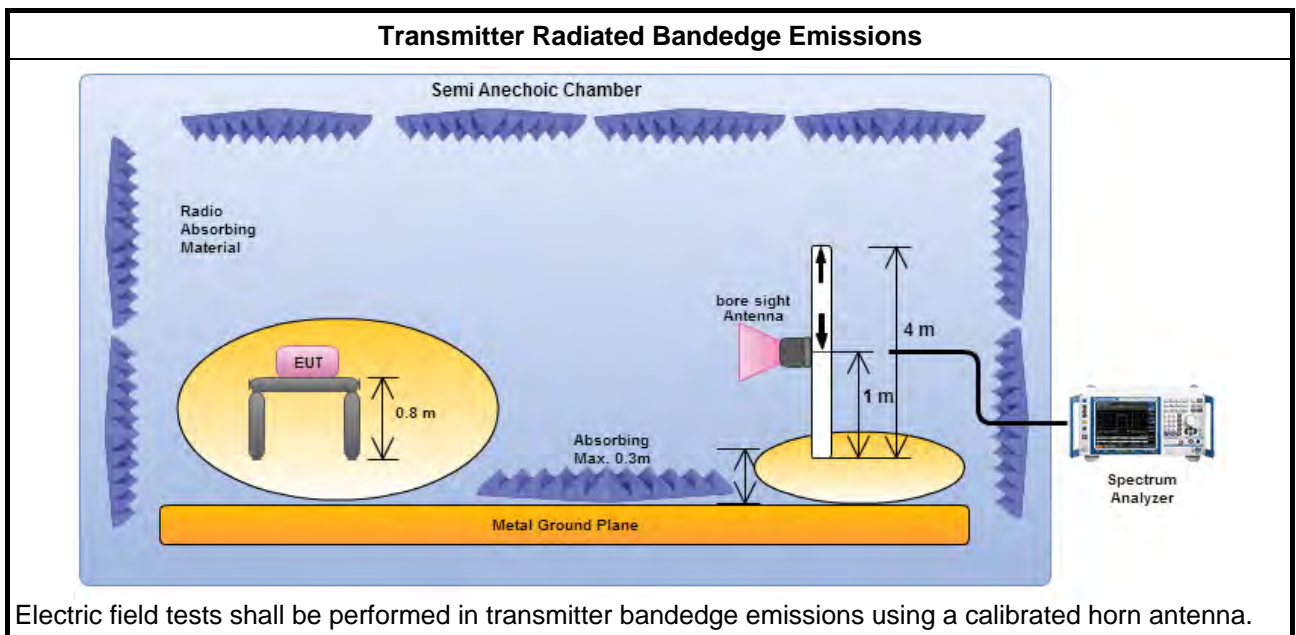
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

| Test Method | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor]. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.9.2.2 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. |
| <input checked="" type="checkbox"/> | For the transmitter unwanted emissions shall be measured using following options below: |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands. |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands. |
| <input type="checkbox"/> | Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle $\geq 98\%$) |
| <input type="checkbox"/> | Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor). |
| <input type="checkbox"/> | Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW $\geq 1/T$). |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time. |
| <input type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions. |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 11.3 and 12.2.4 measurement procedure peak limit. |
| <input checked="" type="checkbox"/> | For the transmitter bandedge emissions shall be measured using following options below: |
| <input type="checkbox"/> | Refer as FCC KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz). |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.9.2 for band-edge testing and the test distance is 3m. |
| <input type="checkbox"/> | Refer as ANSI C63.10, clause 6.9.3 for marker-delta method for band-edge measurements. |
| <input checked="" type="checkbox"/> | For radiated measurement, refer as FCC KDB 558074, clause 12.2.7. |

3.2.4 Test Setup





3.2.5 Transmitter Radiated Bandedge Emissions

| 2400-2483.5MHz Transmitter Radiated Bandedge Emissions (Non-restricted Band) | | | | | | | | |
|--|-----------------|------------------|-------------------------------|-------------|--------------------------------|----------------|------------|------|
| Modulation | N _{TX} | Test Freq. (MHz) | In-band PSD [i] (dBuV/100kHz) | Freq. (MHz) | Out-band PSD [o] (dBuV/100kHz) | [i] – [o] (dB) | Limit (dB) | Pol. |
| 11b | 1 | 2412 | 99.80 | 2390.86 | 63.21 | 36.59 | 20 | H |
| 11b | 1 | 2462 | 104.37 | 2511.40 | 63.85 | 40.52 | 20 | H |
| 11g | 1 | 2412 | 99.31 | 2399.60 | 72.64 | 26.67 | 20 | H |
| 11g | 1 | 2462 | 97.61 | 2533.00 | 64.10 | 33.51 | 20 | H |
| HT20 | 1 | 2412 | 98.58 | 2400.05 | 72.13 | 26.45 | 20 | H |
| HT20 | 1 | 2462 | 99.21 | 2505.60 | 64.83 | 34.38 | 20 | H |
| HT40 | 1 | 2422 | 96.55 | 2400.02 | 68.90 | 27.65 | 20 | H |
| HT40 | 1 | 2452 | 93.62 | 2526.32 | 64.17 | 29.45 | 20 | H |

Note 1: Measurement worst emissions of receive antenna polarization

| 2400-2483.5MHz Transmitter Radiated Bandedge Emissions (Restricted Band) | | | | | | | | | | |
|--|-----------------|-------------|----------------------|----------------|-------------------|-------------------|----------------|-------------------|-------------------|------|
| Modulation Mode | N _{TX} | Freq. (MHz) | Measure Distance (m) | Freq. (MHz) PK | Level (dBuV/m) PK | Limit (dBuV/m) PK | Freq. (MHz) AV | Level (dBuV/m) AV | Limit (dBuV/m) AV | Pol. |
| 11b | 1 | 2412 | 3 | 2315.38 | 60.38 | 74 | 2318.29 | 47.75 | 54 | H |
| 11b | 1 | 2462 | 3 | 2499.00 | 61.05 | 74 | 2487.80 | 48.75 | 54 | H |
| 11g | 1 | 2412 | 3 | 2389.74 | 67.93 | 74 | 2389.86 | 51.28 | 54 | H |
| 11g | 1 | 2462 | 3 | 2484.20 | 64.65 | 74 | 2483.60 | 48.92 | 54 | H |
| HT20 | 1 | 2412 | 3 | 2389.52 | 68.78 | 74 | 2389.86 | 52.50 | 54 | H |
| HT20 | 1 | 2462 | 3 | 2483.60 | 61.04 | 74 | 2483.60 | 48.32 | 54 | H |
| HT40 | 1 | 2422 | 3 | 2389.46 | 68.80 | 74 | 2389.99 | 53.79 | 54 | H |
| HT40 | 1 | 2452 | 3 | 2483.60 | 66.48 | 74 | 2483.84 | 52.04 | 54 | H |

Note 1: Measurement worst emissions of receive antenna polarization.

3.3 Transmitter Unwanted Emissions

3.3.1 Transmitter 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 |

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.

3.3.2 Measuring Instruments

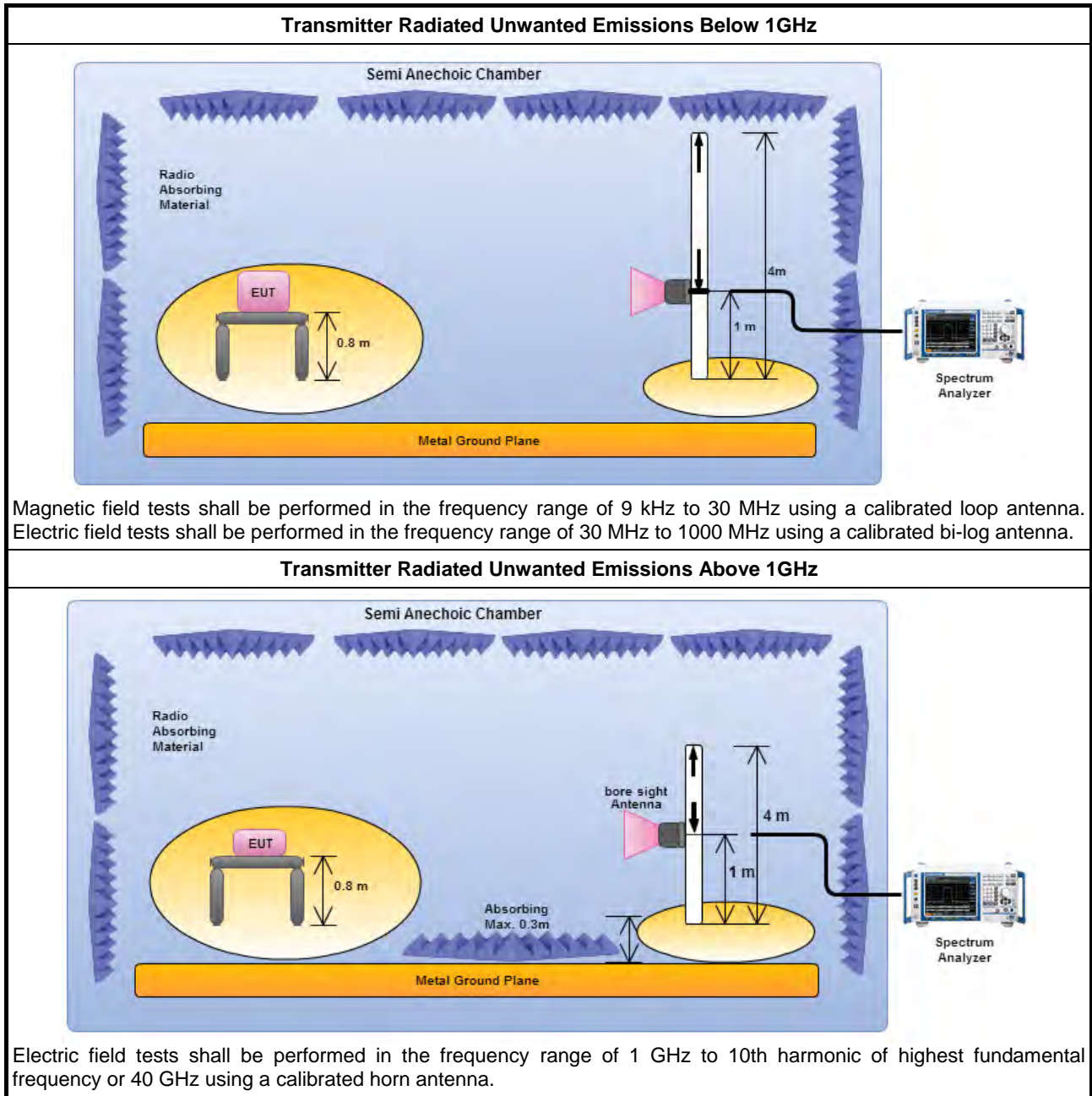
Refer a test equipment and calibration data table in this test report.



3.3.3 Test Procedures

| Test Method | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | 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). |
| <input type="checkbox"/> | Measurements in the frequency range 10 GHz - 18GHz are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit. |
| <input type="checkbox"/> | Measurements in the frequency range above 18 GHz - 25GHz are typically made at a closer distance 0.5m, because the instrumentation noise floor is typically close to the radiated emission limit. |
| <input checked="" type="checkbox"/> | The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. |
| <input checked="" type="checkbox"/> | For the transmitter unwanted emissions shall be measured using following options below: |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands. |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands. |
| <input type="checkbox"/> | Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle \geq 98%) |
| <input type="checkbox"/> | Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor). |
| <input type="checkbox"/> | Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW \geq 1/T). |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time. |
| <input type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions. |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 11.3 and 12.2.4 measurement procedure peak limit. |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 12.2.3 measurement procedure Quasi-Peak limit. |
| <input checked="" type="checkbox"/> | For radiated measurement, refer as FCC KDB 558074, clause 12.2.7. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1 GHz and test distance is 3m. |

3.3.4 Test Setup

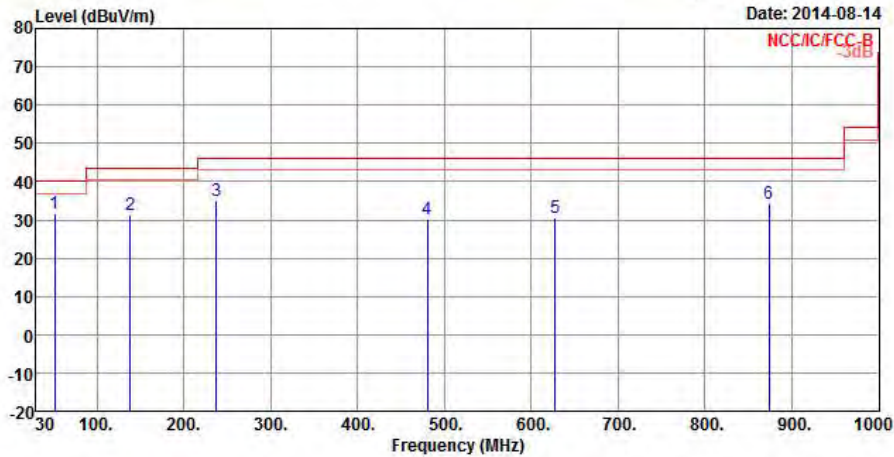


3.3.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

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

3.3.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)

| Transmitter Radiated Unwanted Emissions (Below 1GHz) | | | |
|--|--|--------------|---|
| Operating Mode | 1 | Polarization | V |
| Operating Function | EUT with Notebook via USB Cable & transmit | | |



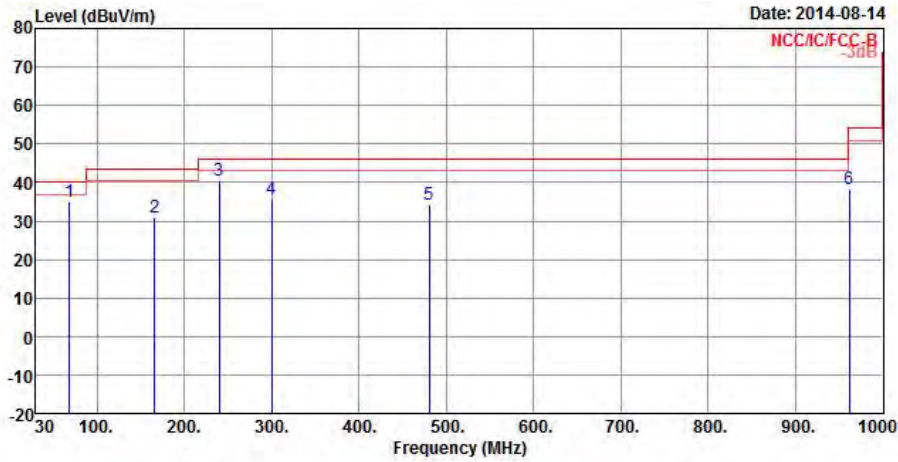
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|--------|--------|------------|------------|-------------------|----------------|------------|---------------|--------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 51.34 | 31.65 | -8.35 | 40.00 | 50.09 | 8.10 | 0.98 | 27.52 | Peak | --- | --- |
| 2 | 138.64 | 31.24 | -12.26 | 43.50 | 45.90 | 11.28 | 1.69 | 27.63 | Peak | --- | --- |
| 3 | 237.58 | 35.08 | -10.92 | 46.00 | 48.85 | 11.29 | 2.26 | 27.32 | Peak | --- | --- |
| 4 | 480.08 | 30.09 | -15.91 | 46.00 | 37.65 | 17.58 | 3.19 | 28.33 | Peak | --- | --- |
| 5 | 627.52 | 30.70 | -15.30 | 46.00 | 36.25 | 19.12 | 3.78 | 28.45 | Peak | --- | --- |
| 6 | 873.90 | 34.33 | -11.67 | 46.00 | 37.19 | 20.46 | 4.53 | 27.85 | 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)



Transmitter Radiated Unwanted Emissions (Below 1GHz)

| | | | |
|--------------------|--|--------------|---|
| Operating Mode | 1 | Polarization | H |
| Operating Function | EUT with Notebook via USB Cable & transmit | | |



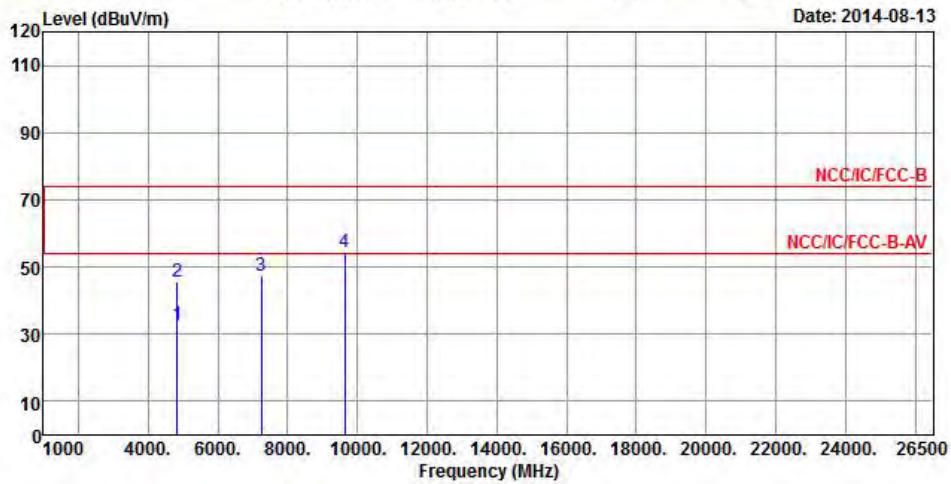
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|--------|--------|------------|------------|-------------------|----------------|------------|---------------|--------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 68.80 | 35.16 | -4.84 | 40.00 | 55.24 | 6.39 | 1.13 | 27.60 | Peak | --- | --- |
| 2 | 165.80 | 30.85 | -12.65 | 43.50 | 46.61 | 9.92 | 1.86 | 27.54 | Peak | --- | --- |
| 3 | 239.52 | 40.59 | -5.41 | 46.00 | 54.08 | 11.56 | 2.27 | 27.32 | Peak | --- | --- |
| 4 | 299.66 | 35.72 | -10.28 | 46.00 | 47.11 | 13.25 | 2.51 | 27.15 | Peak | --- | --- |
| 5 | 480.08 | 34.34 | -11.66 | 46.00 | 41.90 | 17.58 | 3.19 | 28.33 | Peak | --- | --- |
| 6 | 961.20 | 38.15 | -15.85 | 54.00 | 40.10 | 20.98 | 4.76 | 27.69 | 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)



3.3.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)

| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|-----|------------------|------|
| Modulation Mode | 11b | Test Freq. (MHz) | 2412 |
| N _{TX} | 1 | Polarization | V |



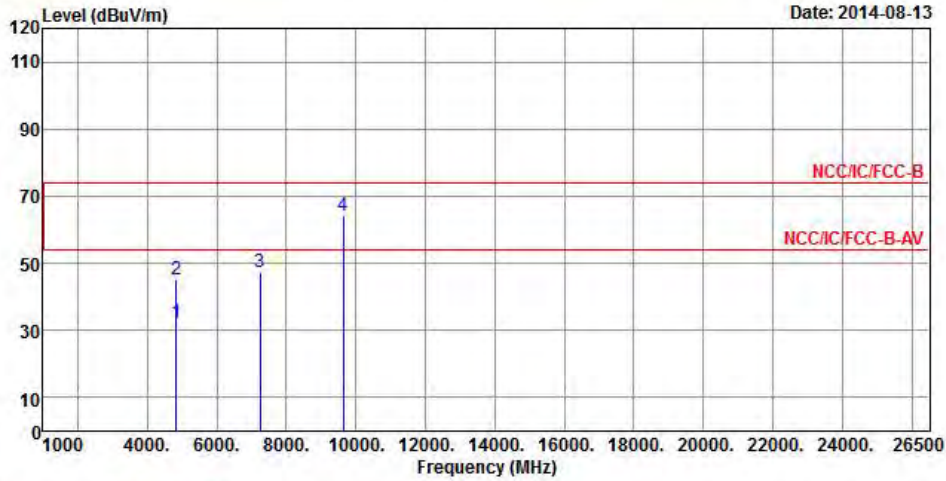
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4824.00 | 32.63 | -21.37 | 54.00 | 28.28 | 34.33 | 4.70 | 34.68 | Average | --- | --- |
| 2 | 4824.00 | 45.74 | -28.26 | 74.00 | 41.39 | 34.33 | 4.70 | 34.68 | Peak | --- | --- |
| 3 | 7236.00 | 47.54 | | | 41.21 | 35.90 | 5.37 | 34.94 | Peak | --- | --- |
| 4 | 9648.00 | 54.51 | | | 46.92 | 36.59 | 6.35 | 35.35 | 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 20 dB relative to the maximum measured in-band level (102.11 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11b | Test Freq. (MHz) | 2412 |
| N _{TX} | 1 | Polarization | H |



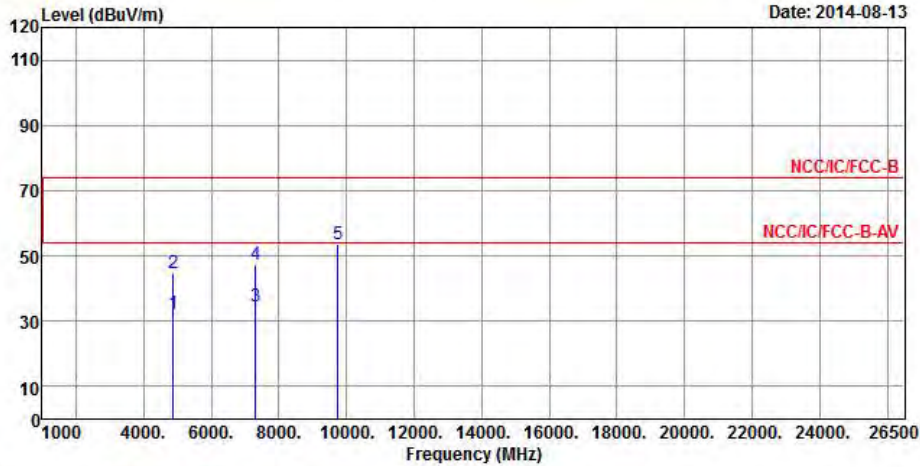
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBUV/m | dB | dBUV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4824.00 | 32.49 | -21.51 | 54.00 | 28.14 | 34.33 | 4.70 | 34.68 | Average | --- | --- |
| 2 | 4824.00 | 45.14 | -28.86 | 74.00 | 40.79 | 34.33 | 4.70 | 34.68 | Peak | --- | --- |
| 3 | 7236.00 | 47.29 | | | 40.96 | 35.90 | 5.37 | 34.94 | Peak | --- | --- |
| 4 | 9648.00 | 64.28 | | | 56.69 | 36.59 | 6.35 | 35.35 | 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 20 dB relative to the maximum measured in-band level (102.11 dBUV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11b | Test Freq. (MHz) | 2437 |
| N _{TX} | 1 | Polarization | V |



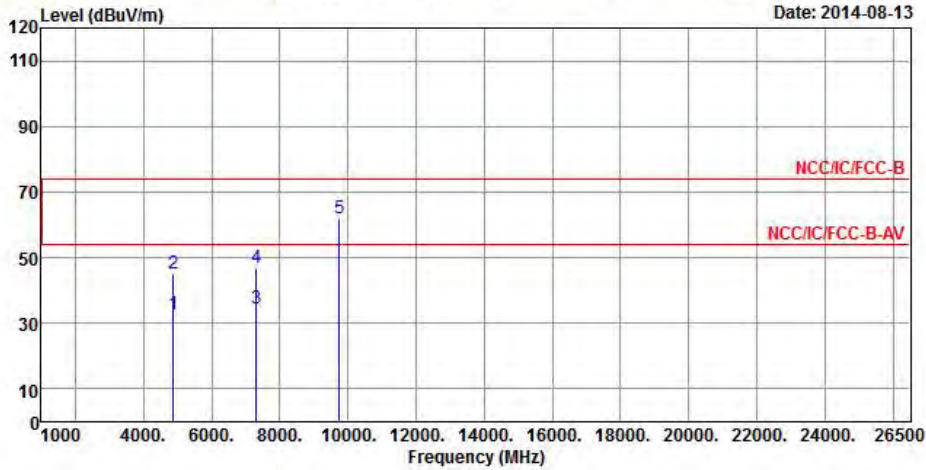
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4874.00 | 32.47 | -21.53 | 54.00 | 28.09 | 34.32 | 4.73 | 34.67 | Average | --- | --- |
| 2 | 4874.00 | 44.94 | -29.06 | 74.00 | 40.56 | 34.32 | 4.73 | 34.67 | Peak | --- | --- |
| 3 | 7311.00 | 34.53 | -19.47 | 54.00 | 28.13 | 35.88 | 5.47 | 34.95 | Average | --- | --- |
| 4 | 7311.00 | 47.38 | -26.62 | 74.00 | 40.98 | 35.88 | 5.47 | 34.95 | Peak | --- | --- |
| 5 | 9748.00 | 53.75 | | | 45.99 | 36.71 | 6.41 | 35.36 | 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 20 dB relative to the maximum measured in-band level (105.79 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11b | Test Freq. (MHz) | 2437 |
| N _{TX} | 1 | Polarization | H |



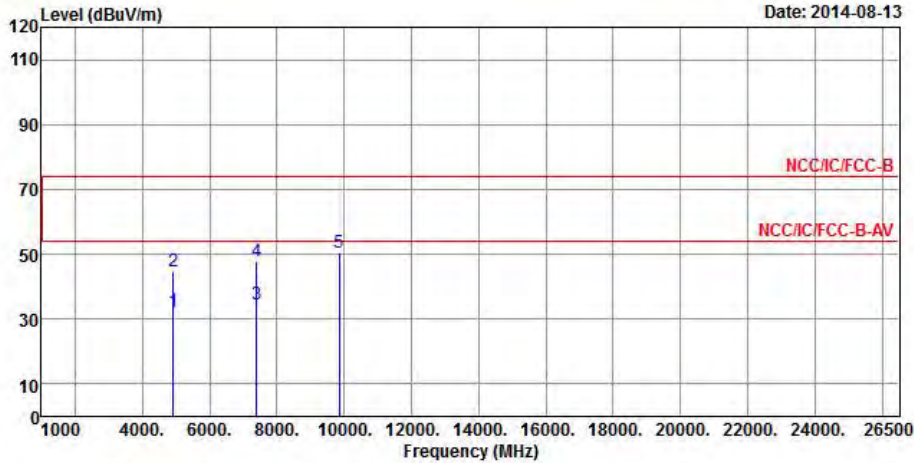
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|--------------|-------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4874.00 | 32.80 | -21.20 | 54.00 | 28.42 | 34.32 | 4.73 | 34.67 | Average | --- | --- |
| 2 | 4874.00 | 44.99 | -29.01 | 74.00 | 40.61 | 34.32 | 4.73 | 34.67 | Peak | --- | --- |
| 3 | 7311.00 | 34.51 | -19.49 | 54.00 | 28.11 | 35.88 | 5.47 | 34.95 | Average | --- | --- |
| 4 | 7311.00 | 47.04 | -26.96 | 74.00 | 40.64 | 35.88 | 5.47 | 34.95 | Peak | --- | --- |
| 5 | 9748.00 | 62.00 | | | 54.24 | 36.71 | 6.41 | 35.36 | 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 20 dB relative to the maximum measured in-band level (105.79 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11b | Test Freq. (MHz) | 2462 |
| N _{TX} | 1 | Polarization | V |



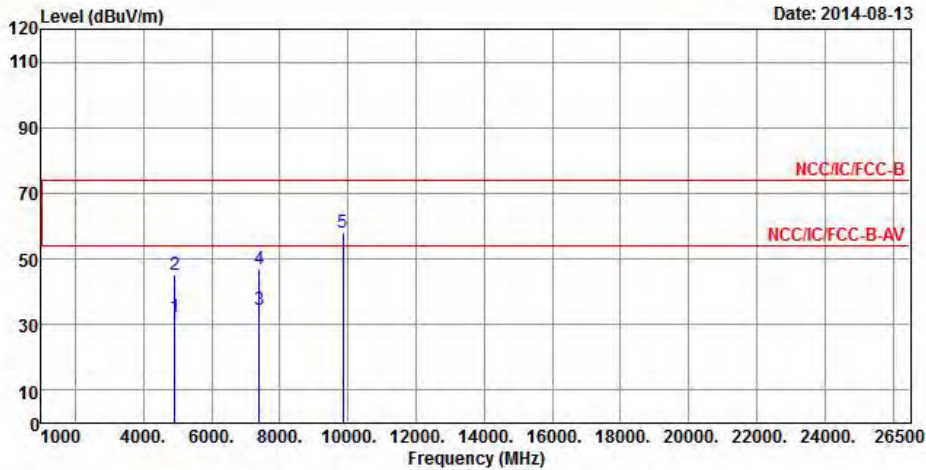
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4924.00 | 32.52 | -21.48 | 54.00 | 28.08 | 34.31 | 4.79 | 34.66 | Average | --- | --- |
| 2 | 4924.00 | 44.68 | -29.32 | 74.00 | 40.24 | 34.31 | 4.79 | 34.66 | Peak | --- | --- |
| 3 | 7386.00 | 34.32 | -19.68 | 54.00 | 27.88 | 35.84 | 5.57 | 34.97 | Average | --- | --- |
| 4 | 7386.00 | 47.81 | -26.19 | 74.00 | 41.37 | 35.84 | 5.57 | 34.97 | Peak | --- | --- |
| 5 | 9848.00 | 50.45 | | | 42.51 | 36.81 | 6.50 | 35.37 | 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 20 dB relative to the maximum measured in-band level (106.36 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11b | Test Freq. (MHz) | 2462 |
| N _{TX} | 1 | Polarization | H |



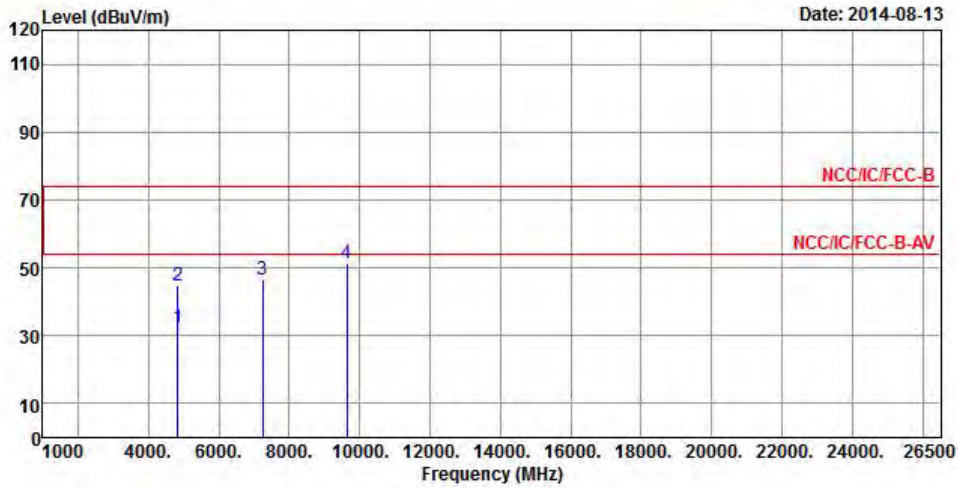
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4924.00 | 32.49 | -21.51 | 54.00 | 28.05 | 34.31 | 4.79 | 34.66 | Average | --- | --- |
| 2 | 4924.00 | 45.21 | -28.79 | 74.00 | 40.77 | 34.31 | 4.79 | 34.66 | Peak | --- | --- |
| 3 | 7386.00 | 34.34 | -19.66 | 54.00 | 27.90 | 35.84 | 5.57 | 34.97 | Average | --- | --- |
| 4 | 7386.00 | 46.84 | -27.16 | 74.00 | 40.40 | 35.84 | 5.57 | 34.97 | Peak | --- | --- |
| 5 | 9848.00 | 58.10 | | | 50.16 | 36.81 | 6.50 | 35.37 | 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 20 dB relative to the maximum measured in-band level (106.36 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11g | Test Freq. (MHz) | 2412 |
| N _{TX} | 1 | Polarization | V |



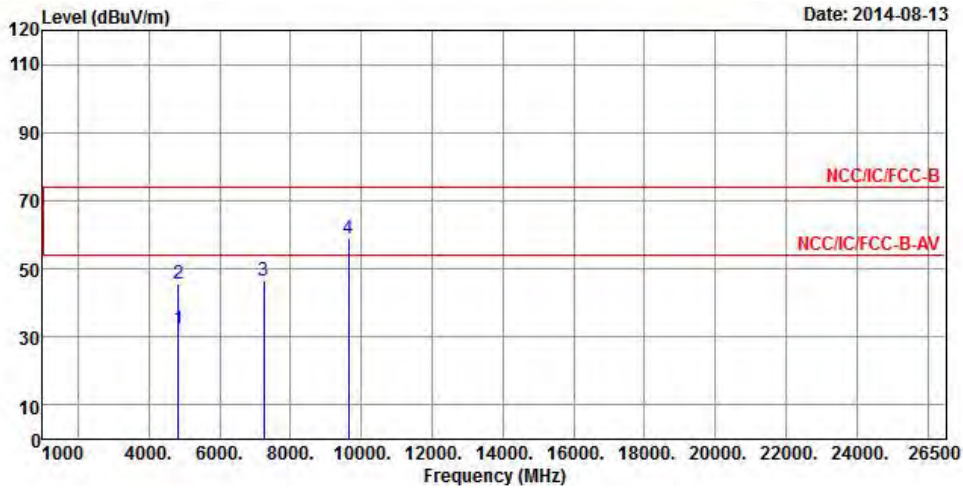
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4824.00 | 32.39 | -21.61 | 54.00 | 28.04 | 34.33 | 4.70 | 34.68 | Average | -- | --- |
| 2 | 4824.00 | 44.58 | -29.42 | 74.00 | 40.23 | 34.33 | 4.70 | 34.68 | Peak | -- | --- |
| 3 | 7236.00 | 46.46 | | | 40.13 | 35.90 | 5.37 | 34.94 | Peak | -- | --- |
| 4 | 9648.00 | 51.39 | | | 43.80 | 36.59 | 6.35 | 35.35 | 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 20 dB relative to the maximum measured in-band level (107.05 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11g | Test Freq. (MHz) | 2412 |
| N _{TX} | 1 | Polarization | H |



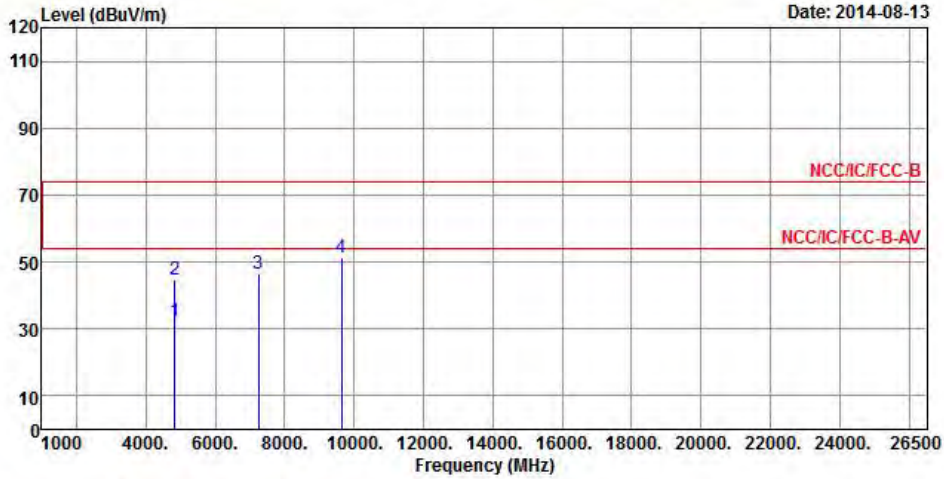
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|------------|---------------|---------------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | | cm | deg |
| 1 | 4824.00 | 32.23 | -21.77 | 54.00 | 27.88 | 34.33 | 4.70 | 34.68 Average | --- | --- |
| 2 | 4824.00 | 45.77 | -28.23 | 74.00 | 41.42 | 34.33 | 4.70 | 34.68 Peak | --- | --- |
| 3 | 7236.00 | 46.53 | | | 40.20 | 35.90 | 5.37 | 34.94 Peak | --- | --- |
| 4 | 9648.00 | 58.82 | | | 51.23 | 36.59 | 6.35 | 35.35 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 20 dB relative to the maximum measured in-band level (107.05 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11g | Test Freq. (MHz) | 2437 |
| N _{TX} | 1 | Polarization | V |



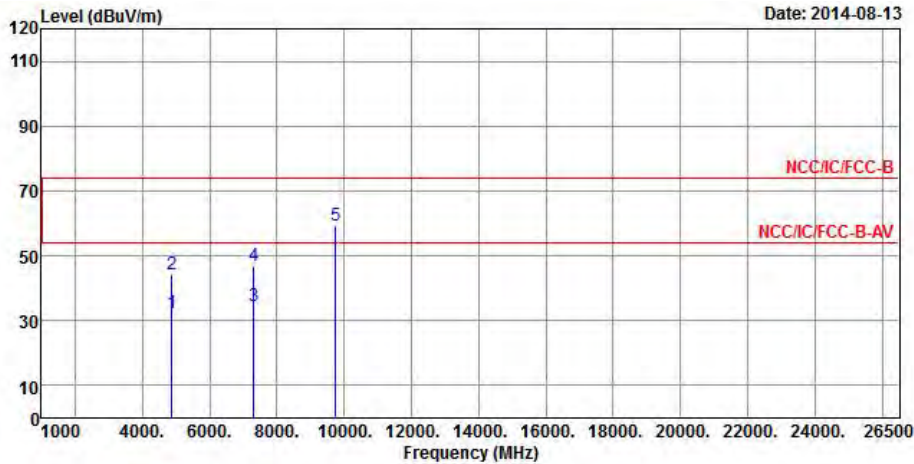
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBUV/m | dB | dBUV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4824.00 | 32.39 | -21.61 | 54.00 | 28.04 | 34.33 | 4.70 | 34.68 | Average | --- | --- |
| 2 | 4824.00 | 44.58 | -29.42 | 74.00 | 40.23 | 34.33 | 4.70 | 34.68 | Peak | --- | --- |
| 3 | 7236.00 | 46.46 | | | 40.13 | 35.90 | 5.37 | 34.94 | Peak | --- | --- |
| 4 | 9648.00 | 51.39 | | | 43.80 | 36.59 | 6.35 | 35.35 | 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 20 dB relative to the maximum measured in-band level (106.64 dBUV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11g | Test Freq. (MHz) | 2437 |
| N _{TX} | 1 | Polarization | H |



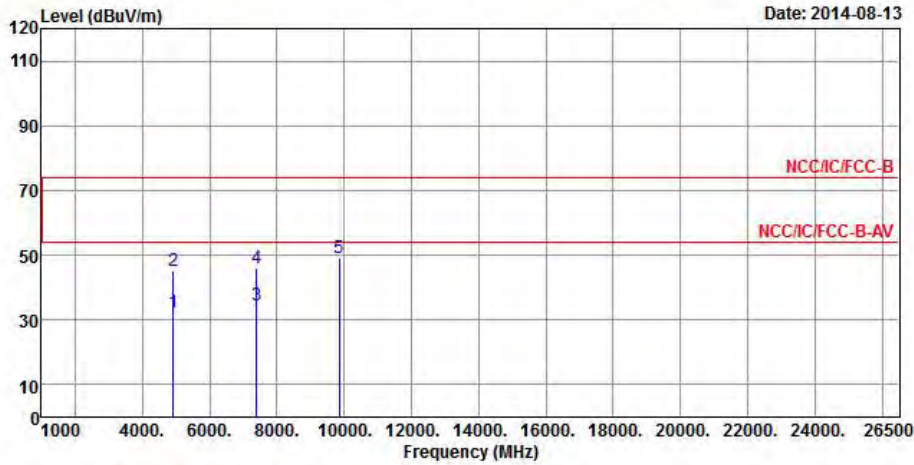
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4874.00 | 32.29 | -21.71 | 54.00 | 27.91 | 34.32 | 4.73 | 34.67 | Average | --- | --- |
| 2 | 4874.00 | 44.43 | -29.57 | 74.00 | 40.05 | 34.32 | 4.73 | 34.67 | Peak | --- | --- |
| 3 | 7311.00 | 34.51 | -19.49 | 54.00 | 28.11 | 35.88 | 5.47 | 34.95 | Average | --- | --- |
| 4 | 7311.00 | 46.83 | -27.17 | 74.00 | 40.43 | 35.88 | 5.47 | 34.95 | Peak | --- | --- |
| 5 | 9748.00 | 59.48 | | | 51.72 | 36.71 | 6.41 | 35.36 | 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 20 dB relative to the maximum measured in-band level (106.64 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11g | Test Freq. (MHz) | 2462 |
| N _{TX} | 1 | Polarization | V |



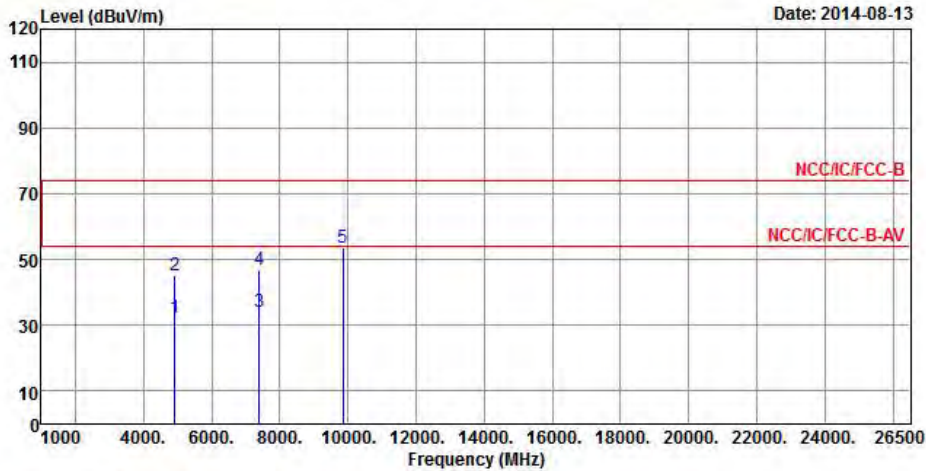
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4924.00 | 32.52 | -21.48 | 54.00 | 28.08 | 34.31 | 4.79 | 34.66 | Average | --- | --- |
| 2 | 4924.00 | 45.33 | -28.67 | 74.00 | 40.89 | 34.31 | 4.79 | 34.66 | Peak | --- | --- |
| 3 | 7386.00 | 34.36 | -19.64 | 54.00 | 27.92 | 35.84 | 5.57 | 34.97 | Average | --- | --- |
| 4 | 7386.00 | 46.18 | -27.82 | 74.00 | 39.74 | 35.84 | 5.57 | 34.97 | Peak | --- | --- |
| 5 | 9848.00 | 49.10 | | | 41.16 | 36.81 | 6.50 | 35.37 | 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 20 dB relative to the maximum measured in-band level (105.54 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----|------------------|------|
| Modulation Mode | 11g | Test Freq. (MHz) | 2462 |
| N _{TX} | 1 | Polarization | H |



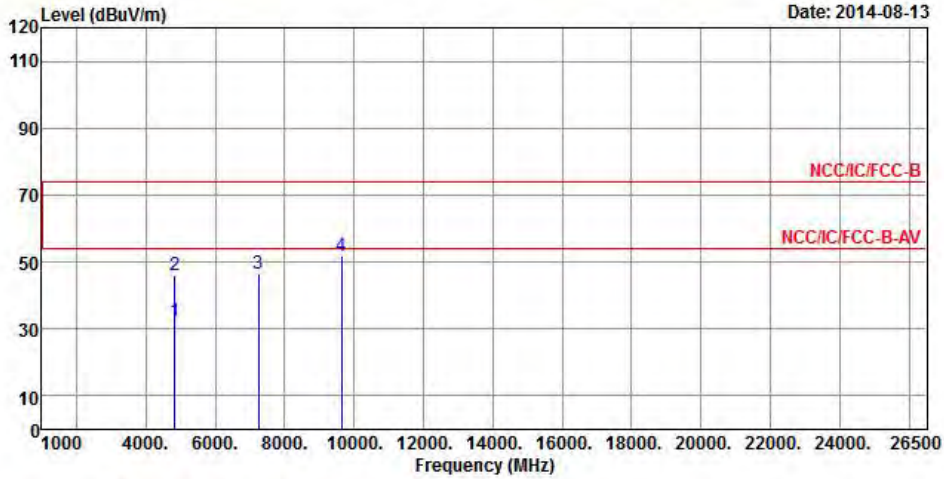
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4924.00 | 32.40 | -21.60 | 54.00 | 27.96 | 34.31 | 4.79 | 34.66 | Average | --- | --- |
| 2 | 4924.00 | 45.29 | -28.71 | 74.00 | 40.85 | 34.31 | 4.79 | 34.66 | Peak | --- | --- |
| 3 | 7386.00 | 34.25 | -19.75 | 54.00 | 27.81 | 35.84 | 5.57 | 34.97 | Average | --- | --- |
| 4 | 7386.00 | 47.12 | -26.88 | 74.00 | 40.68 | 35.84 | 5.57 | 34.97 | Peak | --- | --- |
| 5 | 9848.00 | 53.48 | | | 45.54 | 36.81 | 6.50 | 35.37 | 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 20 dB relative to the maximum measured in-band level (105.54 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 2412 |
| N _{TX} | 1 | Polarization | V |



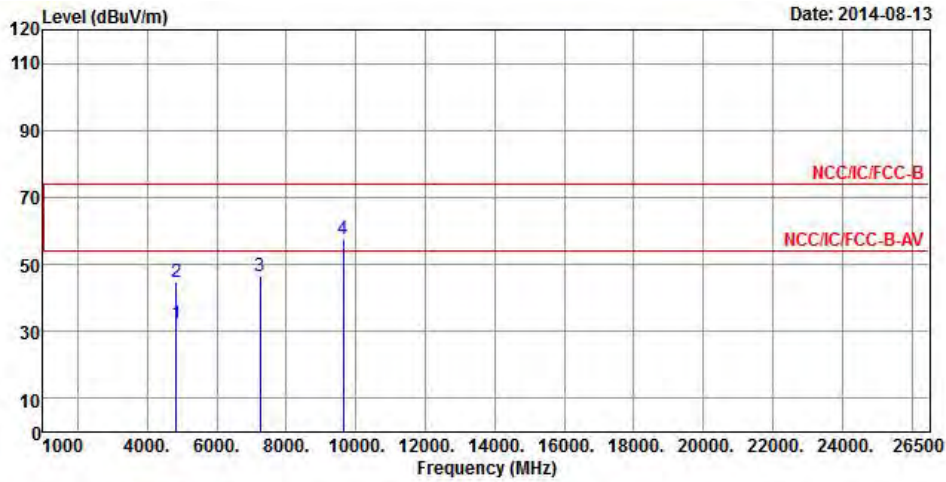
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBUV/m | dB | dBUV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4824.00 | 32.28 | -21.72 | 54.00 | 27.93 | 34.33 | 4.70 | 34.68 | Average | --- | --- |
| 2 | 4824.00 | 45.98 | -28.02 | 74.00 | 41.63 | 34.33 | 4.70 | 34.68 | Peak | --- | --- |
| 3 | 7236.00 | 46.69 | | | 40.36 | 35.90 | 5.37 | 34.94 | Peak | --- | --- |
| 4 | 9648.00 | 51.86 | | | 44.27 | 36.59 | 6.35 | 35.35 | 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 20 dB relative to the maximum measured in-band level (105.73 dBUV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 2412 |
| N _{TX} | 1 | Polarization | H |



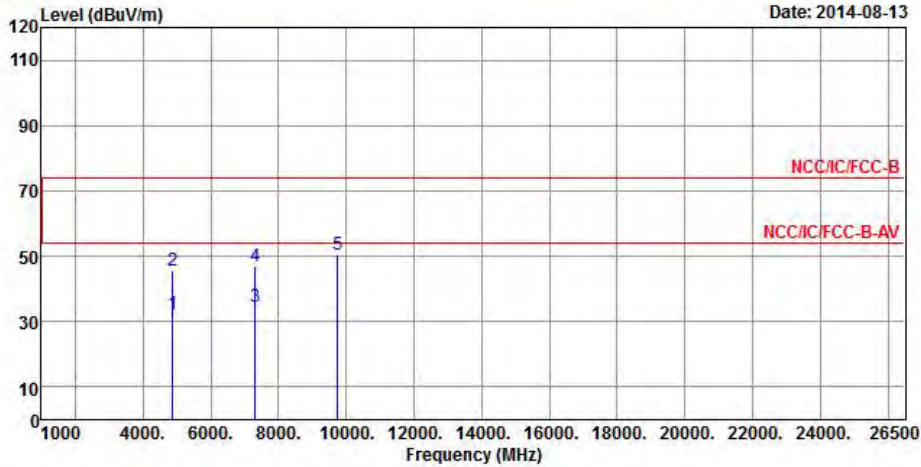
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBUV/m | dB | dBUV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4824.00 | 32.13 | -21.87 | 54.00 | 27.78 | 34.33 | 4.70 | 34.68 | Average | --- | --- |
| 2 | 4824.00 | 44.78 | -29.22 | 74.00 | 40.43 | 34.33 | 4.70 | 34.68 | Peak | --- | --- |
| 3 | 7236.00 | 46.67 | | | 40.34 | 35.90 | 5.37 | 34.94 | Peak | --- | --- |
| 4 | 9648.00 | 57.74 | | | 50.15 | 36.59 | 6.35 | 35.35 | 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 20 dB relative to the maximum measured in-band level (105.73 dBUV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 2437 |
| N _{TX} | 1 | Polarization | V |



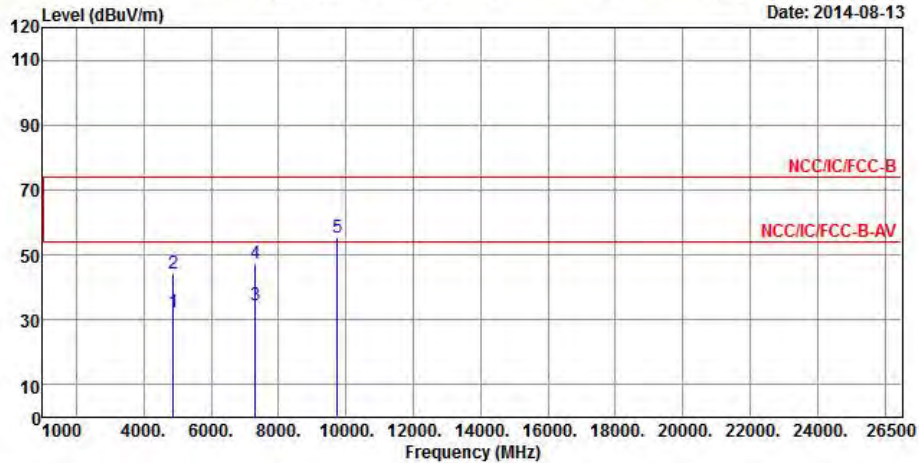
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|------------|---------------|---------------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | cm | deg |
| 1 | 4874.00 | 32.32 | -21.68 | 54.00 | 27.94 | 34.32 | 4.73 | 34.67 Average | --- | --- |
| 2 | 4874.00 | 45.60 | -28.40 | 74.00 | 41.22 | 34.32 | 4.73 | 34.67 Peak | --- | --- |
| 3 | 7311.00 | 34.44 | -19.56 | 54.00 | 28.04 | 35.88 | 5.47 | 34.95 Average | --- | --- |
| 4 | 7311.00 | 46.74 | -27.26 | 74.00 | 40.34 | 35.88 | 5.47 | 34.95 Peak | --- | --- |
| 5 | 9748.00 | 50.52 | | | 42.76 | 36.71 | 6.41 | | --- | --- |

- 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 20 dB relative to the maximum measured in-band level (106.98 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 2437 |
| N _{TX} | 1 | Polarization | H |



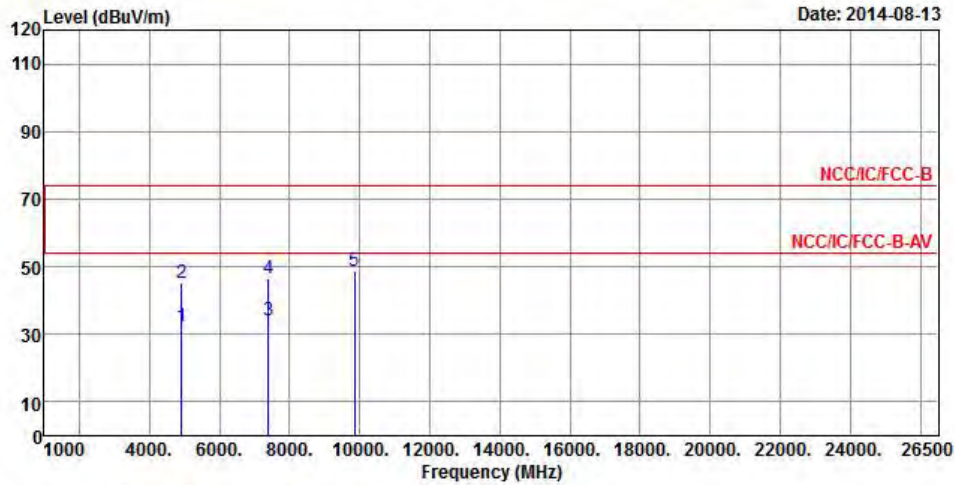
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4874.00 | 32.33 | -21.67 | 54.00 | 27.95 | 34.32 | 4.73 | 34.67 | Average | --- | --- |
| 2 | 4874.00 | 44.34 | -29.66 | 74.00 | 39.96 | 34.32 | 4.73 | 34.67 | Peak | --- | --- |
| 3 | 7311.00 | 34.50 | -19.50 | 54.00 | 28.10 | 35.88 | 5.47 | 34.95 | Average | --- | --- |
| 4 | 7311.00 | 47.20 | -26.80 | 74.00 | 40.80 | 35.88 | 5.47 | 34.95 | Peak | --- | --- |
| 5 | 9748.00 | 55.41 | | | 47.65 | 36.71 | 6.41 | 35.36 | 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 20 dB relative to the maximum measured in-band level 106.98 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 2462 |
| N _{TX} | 1 | Polarization | V |



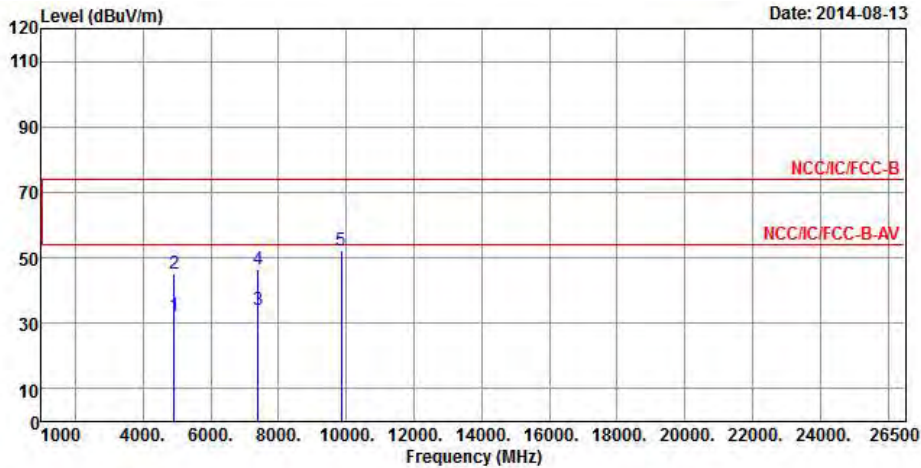
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4924.00 | 32.40 | -21.60 | 54.00 | 27.96 | 34.31 | 4.79 | 34.66 | Average | --- | --- |
| 2 | 4924.00 | 45.13 | -28.87 | 74.00 | 40.69 | 34.31 | 4.79 | 34.66 | Peak | --- | --- |
| 3 | 7386.00 | 34.27 | -19.73 | 54.00 | 27.83 | 35.84 | 5.57 | 34.97 | Average | --- | --- |
| 4 | 7386.00 | 46.64 | -27.36 | 74.00 | 40.20 | 35.84 | 5.57 | 34.97 | Peak | --- | --- |
| 5 | 9848.00 | 48.89 | | | 40.95 | 36.81 | 6.50 | 35.37 | 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 20 dB relative to the maximum measured in-band level (106.59 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT20 | Test Freq. (MHz) | 2462 |
| N _{TX} | 1 | Polarization | H |



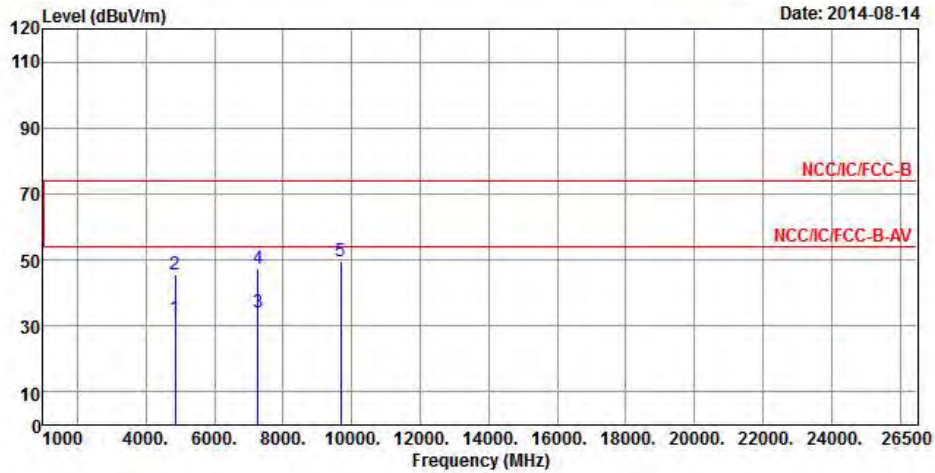
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4924.00 | 32.43 | -21.57 | 54.00 | 27.99 | 34.31 | 4.79 | 34.66 | Average | --- | --- |
| 2 | 4924.00 | 45.04 | -28.96 | 74.00 | 40.60 | 34.31 | 4.79 | 34.66 | Peak | --- | --- |
| 3 | 7386.00 | 34.24 | -19.76 | 54.00 | 27.80 | 35.84 | 5.57 | 34.97 | Average | --- | --- |
| 4 | 7386.00 | 46.54 | -27.46 | 74.00 | 40.10 | 35.84 | 5.57 | 34.97 | Peak | --- | --- |
| 5 | 9848.00 | 52.34 | | | 44.40 | 36.81 | 6.50 | 35.37 | 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 20 dB relative to the maximum measured in-band level (106.59 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 2422 |
| N _{TX} | 1 | Polarization | V |



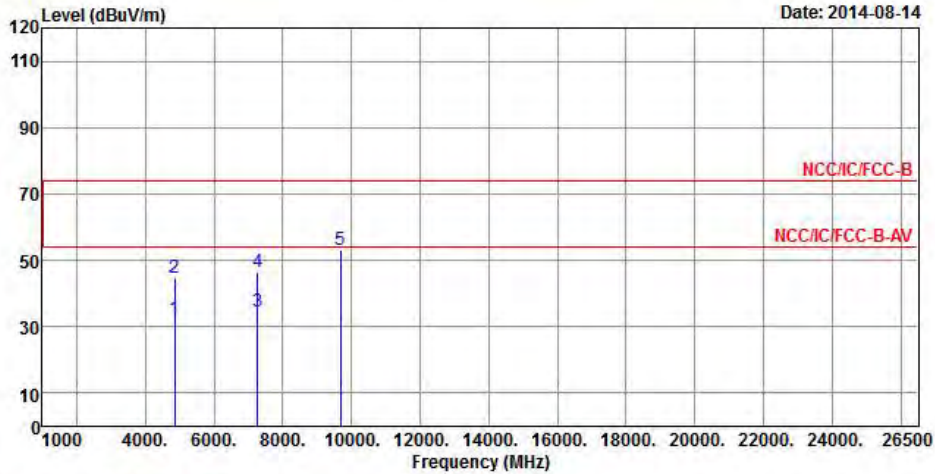
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4844.00 | 32.30 | -21.70 | 54.00 | 27.92 | 34.33 | 4.73 | 34.68 | Average | --- | --- |
| 2 | 4844.00 | 45.57 | -28.43 | 74.00 | 41.19 | 34.33 | 4.73 | 34.68 | Peak | --- | --- |
| 3 | 7266.00 | 34.28 | -19.72 | 54.00 | 27.91 | 35.89 | 5.42 | 34.94 | Average | --- | --- |
| 4 | 7266.00 | 47.17 | -26.83 | 74.00 | 40.80 | 35.89 | 5.42 | 34.94 | Peak | --- | --- |
| 5 | 9688.00 | 49.71 | | | 42.06 | 36.63 | 6.38 | 35.36 | 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 20 dB relative to the maximum measured in-band level (102.25 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 2422 |
| N _{TX} | 1 | Polarization | H |



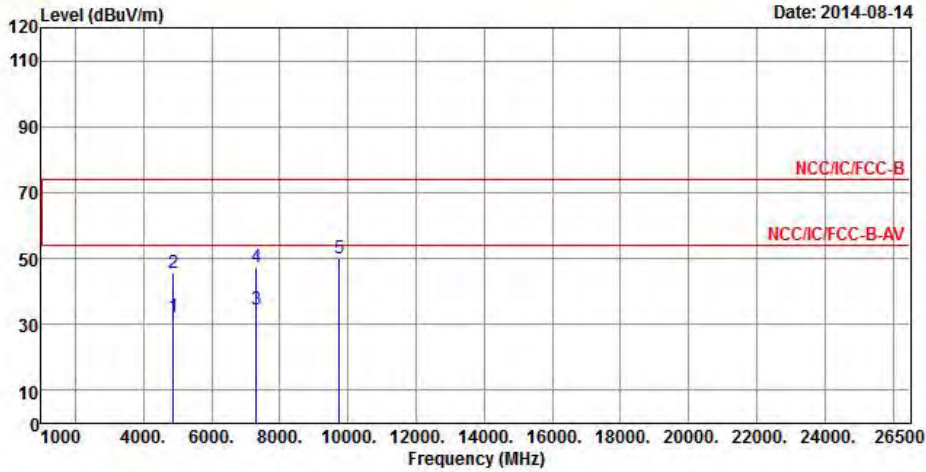
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|--------------|-------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4844.00 | 32.33 | -21.67 | 54.00 | 27.95 | 34.33 | 4.73 | 34.68 | Average | --- | --- |
| 2 | 4844.00 | 44.79 | -29.21 | 74.00 | 40.41 | 34.33 | 4.73 | 34.68 | Peak | --- | --- |
| 3 | 7266.00 | 34.40 | -19.60 | 54.00 | 28.03 | 35.89 | 5.42 | 34.94 | Average | --- | --- |
| 4 | 7266.00 | 46.45 | -27.55 | 74.00 | 40.08 | 35.89 | 5.42 | 34.94 | Peak | --- | --- |
| 5 | 9688.00 | 53.30 | | | 45.65 | 36.63 | 6.38 | 35.36 | 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 20 dB relative to the maximum measured in-band level (102.25 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 2437 |
| N _{TX} | 1 | Polarization | V |



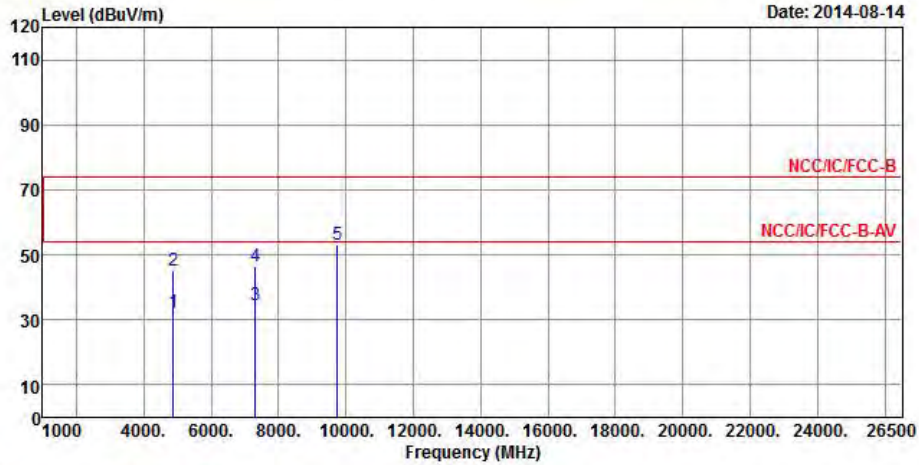
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4874.00 | 32.36 | -21.64 | 54.00 | 27.98 | 34.32 | 4.73 | 34.67 | Average | --- | --- |
| 2 | 4874.00 | 45.60 | -28.40 | 74.00 | 41.22 | 34.32 | 4.73 | 34.67 | Peak | --- | --- |
| 3 | 7311.00 | 34.48 | -19.52 | 54.00 | 28.08 | 35.88 | 5.47 | 34.95 | Average | --- | --- |
| 4 | 7311.00 | 47.30 | -26.70 | 74.00 | 40.90 | 35.88 | 5.47 | 34.95 | Peak | --- | --- |
| 5 | 9748.00 | 49.94 | | | 42.18 | 36.71 | 6.41 | 35.36 | 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 20 dB relative to the maximum measured in-band level (104.24 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 2437 |
| N _{TX} | 1 | Polarization | H |



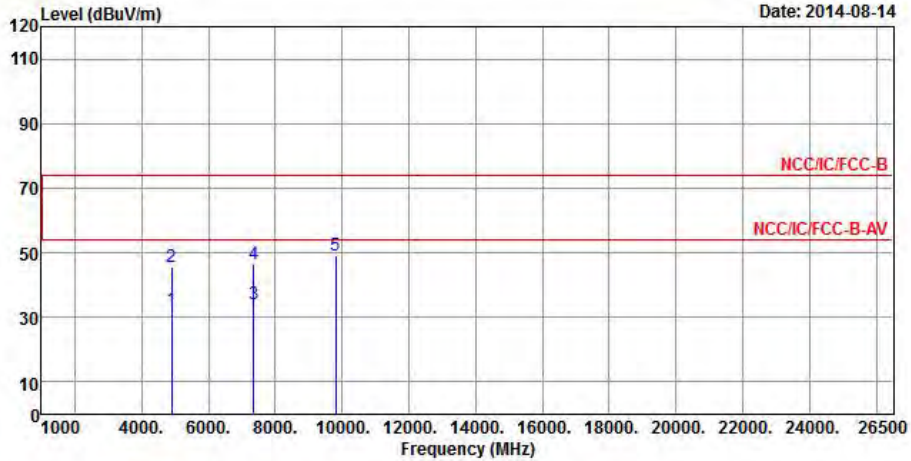
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4874.00 | 32.40 | -21.60 | 54.00 | 28.02 | 34.32 | 4.73 | 34.67 | Average | --- | --- |
| 2 | 4874.00 | 45.32 | -28.68 | 74.00 | 40.94 | 34.32 | 4.73 | 34.67 | Peak | --- | --- |
| 3 | 7311.00 | 34.44 | -19.56 | 54.00 | 28.04 | 35.88 | 5.47 | 34.95 | Average | --- | --- |
| 4 | 7311.00 | 46.35 | -27.65 | 74.00 | 39.95 | 35.88 | 5.47 | 34.95 | Peak | --- | --- |
| 5 | 9748.00 | 53.34 | | | 45.58 | 36.71 | 6.41 | 35.36 | 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 20 dB relative to the maximum measured in-band level (104.24 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 2452 |
| N _{TX} | 1 | Polarization | V |



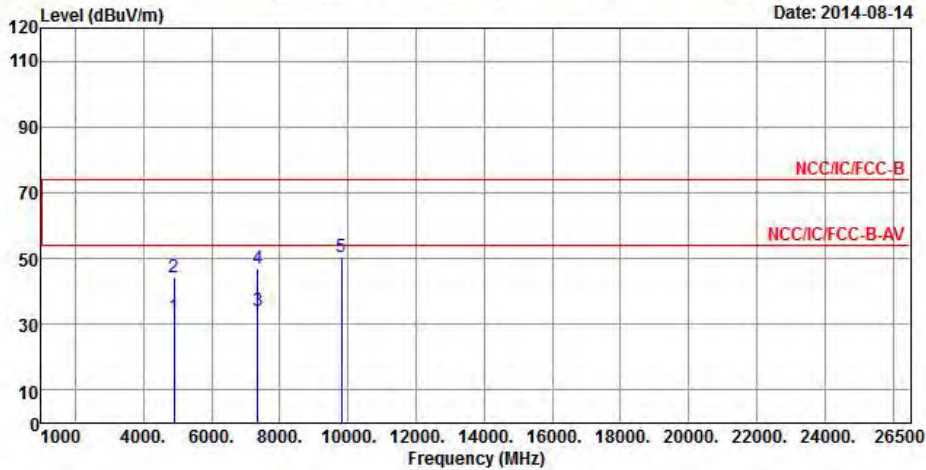
| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4904.00 | 32.38 | -21.62 | 54.00 | 27.96 | 34.32 | 4.76 | 34.66 | Average | | |
| 2 | 4904.00 | 45.41 | -28.59 | 74.00 | 40.99 | 34.32 | 4.76 | 34.66 | Peak | | |
| 3 | 7356.00 | 34.12 | -19.88 | 54.00 | 27.70 | 35.86 | 5.52 | 34.96 | Average | --- | --- |
| 4 | 7356.00 | 46.61 | -27.39 | 74.00 | 40.19 | 35.86 | 5.52 | 34.96 | Peak | --- | --- |
| 5 | 9808.00 | 49.00 | | | 41.12 | 36.77 | 6.47 | 35.36 | 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 20 dB relative to the maximum measured in-band level (100.98 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|------|------------------|------|
| Modulation Mode | HT40 | Test Freq. (MHz) | 2452 |
| N _{TX} | 1 | Polarization | H |



| | Freq | Level | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | A/Pos | T/Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|-------|-------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB/m | dB | dB | | cm | deg |
| 1 | 4904.00 | 32.34 | -21.66 | 54.00 | 27.92 | 34.32 | 4.76 | 34.66 | Average | --- | --- |
| 2 | 4904.00 | 44.25 | -29.75 | 74.00 | 39.83 | 34.32 | 4.76 | 34.66 | Peak | --- | --- |
| 3 | 7356.00 | 34.26 | -19.74 | 54.00 | 27.84 | 35.86 | 5.52 | 34.96 | Average | --- | --- |
| 4 | 7356.00 | 46.93 | -27.07 | 74.00 | 40.51 | 35.86 | 5.52 | 34.96 | Peak | --- | --- |
| 5 | 9808.00 | 50.48 | | | 42.60 | 36.77 | 6.47 | 35.36 | 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 20 dB relative to the maximum measured in-band level (100.98 dBuV/m).
- Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



4 Test Equipment and Calibration Data

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|--------------|--------------------------------|-----------|-----------------|-----------------|------------------|---------------|
| EMC Receiver | R&S | ESCS 30 | 100174 | 9kHz ~ 2.75GHz | Mar. 26, 2014 | AC Conduction |
| LISN | SCHWARZBECK MESS-ELEKTRONIK | NSLK 8127 | 8127-477 | 9kHz ~ 30MHz | Jan. 21, 2014 | AC Conduction |
| RF Cable-CON | HUBER+SUHNER | RG213/U | 7.61183201e+012 | 9kHz ~ 30MHz | Oct. 30, 2013 | AC Conduction |
| EMI Filter | LINDGREN | LRE-2030 | 2651 | < 450 Hz | N/A | AC Conduction |

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

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|--------------------------|-------------------------|-------------|-------------|--------------------|------------------|-------------------|
| Spectrum Analyzer | R&S | FSP40 | 100593 | 9kHz ~ 40GHz | Oct. 03, 2013 | Radiated Emission |
| 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH02-HY | 30MHz ~ 1GHz 3m | May 11, 2014 | Radiated Emission |
| Amplifier | Agilent | 8447D | 2944A11149 | 100kHz ~ 1.3GHz | Jul. 22, 2014 | Radiated Emission |
| Amplifier | Agilent | 8449B | 3008A02373 | 1GHz ~ 26.5GHz | Aug. 28, 2013 | Radiated Emission |
| Horn Antenna | ETS-LINDGREN | 3117 | 00091920 | 1GHz ~ 18GHz | Nov. 25, 2013 | Radiated Emission |
| Horn Antenna | SCHWARZBECK | BBHA9170 | BBHA9170154 | 15GHz ~ 40GHz | Jan. 10, 2014 | Radiated Emission |
| RF Cable-R03m | Jye Bao | RG142 | CB021 | 9kHz ~ 1GHz | Nov. 09, 2013 | Radiated Emission |
| RF Cable-high | SUHNER | SUCOFLEX106 | 03CH02-HY | 1GHz ~ 40GHz | Mar. 05, 2014 | Radiated Emission |
| Bilog Antenna | SCHAFFNER | CBL61128 | 2723 | 30MHz ~ 2GHz | Oct. 10, 2013 | Radiated Emission |
| Turn Table | Chaintek Instruments | 3000 | MF7802058 | 0~ 360 degree | N/A | Radiated Emission |
| Antenna Mast | MF | MF7802 | MF780208205 | 1 ~ 4 m | N/A | Radiated Emission |

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

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|--------------|--------------|-----------|------------|-----------------|------------------|-------------------|
| Loop Antenna | TESEQ | HLA 6120 | 31244 | 9kHz ~ 30MHz | Dec. 02, 2012 | Radiated Emission |

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