

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------|
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| <b>Prüfbericht - Nr.:</b><br>Test Report No.:                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |                                  |
| <b>Auftraggeber:</b><br>Client:                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       |                                  | Panasonic System Networks Co., Ltd.<br>4-1-62 Minoshima, Hakata-ku, Fukuoka-shi, Fukuoka 812-8531, Japan                                                                                                                                                                                                                                                                                                                                 |                                       |                                  |
| <b>Gegenstand der Prüfung:</b><br>Test Item:                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |                                  | Hybrid IP-PBX                                                                                                                                                                                                                                                                                                                                                                                                                            |                                       |                                  |
| <b>Bezeichnung:</b><br>Identification:                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       | KX-HTS824                        | <b>Serien-Nr.:</b><br>Serial No.:                                                                                                                                                                                                                                                                                                                                                                                                        |                                       | E.S.(No.2), E.S.(No.3)           |
| <b>Wareneingangs-Nr.:</b><br>Receipt No.:                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       | A000200568-001<br>A000200568-002 | <b>Eingangsdatum:</b><br>Date of Receipt:                                                                                                                                                                                                                                                                                                                                                                                                |                                       | 2015-05-18                       |
| <b>Zustand des Prüfgegenstandes bei Anlieferung:</b><br>Condition of Test Item at Delivery:                                                                                                                                                                                                                                                                                                                                                                           |                                       |                                  | Good                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                       |                                  |
| <b>Prüfört:</b><br>Testing Location:                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                                  | TÜV Rheinland Japan Ltd. – Global Technology Assessment Center<br>4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan                                                                                                                                                                                                                                                                                                               |                                       |                                  |
| <b>Prüfgrundlage:</b><br>Test Specification:                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |                                  | FCC 47 CFR Part 15, Subpart C, Section 15.247 (October 30, 2015)<br>ANSI C63.10-2013<br>KDB Publication No. 558074 D01: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 (v03r03)<br>KDB Publication No. 662911 D01: Emissions Testing of Transmitters with Multiple Outputs in the Same Band<br><br>RSS-247 (Issue 1): 2015<br>RSS-Gen (Issue 4): 2014<br>ANSI C63.10-2013 |                                       |                                  |
| <b>Prüfergebnis:</b><br>Test Result:                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                                  | Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).<br>The test item passed the test specification(s).                                                                                                                                                                                                                                                                                                                        |                                       |                                  |
| <b>Prüflaboratorium:</b><br>Testing Laboratory:                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       |                                  | TÜV Rheinland Japan Ltd. – Global Technology Assessment Center<br>4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan                                                                                                                                                                                                                                                                                                               |                                       |                                  |
| <b>geprüft/ tested by:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                       |                                  | <b>kontrolliert/ reviewed by:</b>                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |                                  |
| <div style="text-align: center;"> <br/>           2016-01-20 K. Dezaki / Inspector         </div>                                                                                                                                                                                                                                                                                  |                                       |                                  | <div style="text-align: center;"> <br/>           2016-01-22 R. Meiranke / Reviewer         </div>                                                                                                                                                                                                                                                  |                                       |                                  |
| <b>Datum</b><br>Date                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Name/Stellung</b><br>Name/Position | <b>Unterschrift</b><br>Signature | <b>Datum</b><br>Date                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name/Stellung</b><br>Name/Position | <b>Unterschrift</b><br>Signature |
| <b>Sonstiges / Other Aspects:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |                                  |
| <b>Abkürzungen:</b> P(ass) = entspricht Prüfgrundlage<br>F(ail) = entspricht nicht Prüfgrundlage<br>N/A = nicht anwendbar<br>N/T = nicht getestet                                                                                                                                                                                                                                                                                                                     |                                       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |                                  |
| <b>Abbreviations:</b> P(ass) = passed<br>F(ail) = failed<br>N/A = not applicable<br>N/T = not tested                                                                                                                                                                                                                                                                                                                                                                  |                                       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |                                  |
| Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.<br>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products. |                                       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |                                  |

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## TEST SUMMARY

**5.1.1 SUPPLY VOLTAGE REQUIREMENTS**

RESULT: PASS

**5.1.2 ANTENNA REQUIREMENTS**

RESULT: PASS

**5.1.3 RESTRICTED BANDS OF OPERATION**

RESULT: PASS

**5.2.1 CONDUCTED OUTPUT POWER**

RESULT: PASS

**5.2.2 6dB BANDWIDTH**

RESULT: PASS

**5.2.3 99% BANDWIDTH****5.2.4 CONDUCTED SPURIOUS EMISSIONS**

RESULT: PASS

**5.2.5 PEAK POWER SPECTRAL DENSITY**

RESULT: PASS

**5.3.1 RADIATED SPURIOUS EMISSIONS OF TRANSMITTER**

RESULT: PASS

**5.4.1 AC POWER LINE CONDUCTED EMISSION OF TRANSMITTER**

RESULT: PASS

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**Produkte**  
*Products*

|                           |                                 |                        |
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## 1. General Remarks

### 1.1 Complementary Materials

There is no attachment to this test report.

## 2. Test Sites

### 2.1 Test Facilities

TÜV Rheinland Japan Ltd. – Global Technology Assessment Center  
4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan

The used test equipment is in accordance with CISPR 16 for measurement of radio interference.

The Federal Communications Commission has reviewed the technical characteristics of the radiated and conducted emission facilities and has found these test sites to be in compliance with the requirements of section 2.948 of the FCC rules. The description of the test facility is listed under FCC registration number 299054.

The Industry Canada has reviewed the technical characteristics of the radiated and conducted emission facilities and has found these test sites to be in compliance with Canadian requirements. The description of the test facility is listed under OATS filing number 3466B-1.

The test facility is accredited by VLAC (member of ILAC) under number VLAC-017 according to ISO/IEC 17025:2005.



TÜV Rheinland Japan Ltd. is accredited by the Federal Communications Commission as a Conformity Assessment Body under Designation Number JP0017 and Test Firm Registration Number 386498.

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## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

| Kind of Equipment                                    | Manufacturer         | Model Name       | Serial Number     | Equipment ID | Calibrated until |
|------------------------------------------------------|----------------------|------------------|-------------------|--------------|------------------|
| <b>For Antenna Port Conducted Emission</b>           |                      |                  |                   |              |                  |
| Receiver                                             | Rohde & Schwarz      | ESU 40           | 100029            | RF-0021      | 2016-03          |
| RF Power Meter                                       | Agilent              | N1911A           | MY451017<br>37    | RF-0393      | 2016-01          |
| RF Peak Power Sensor                                 | Agilent              | N1921A           | MY452422<br>28    | RF-0394      | 2015-12          |
| <b>For AC Power Line Conducted Emission</b>          |                      |                  |                   |              |                  |
| Conducted Emission Measurement Software              | Toyo Corporation     | EP5/CE           | Ver. 5.0.20       | RF-0025      | 2016-01          |
| Receiver                                             | Rohde & Schwarz      | ESU 8            | 100025            | RF-0020      | 2016-08          |
| LISN                                                 | Rohde & Schwarz      | ENV216           | 100276            | RF-0016      | 2016-05          |
| LISN                                                 | Rohde & Schwarz      | ENV216           | 101958            | RF-0708      | 2016-09          |
| <b>For Radiated Emission</b>                         |                      |                  |                   |              |                  |
| Radiated Emission Measurement Software (below 30MHz) | Toyo Corporation     | EP5/ME           | Ver. 5.0.10       | RF-0172      | 2016-01          |
| Radiated Emission Measurement Software (above 30MHz) | Toyo Corporation     | EP7/RE           | Ver. 5.0.2        | RF-0026      | 2016-01          |
| Receiver                                             | Rohde & Schwarz      | ESU 40           | 100029            | RF-0021      | 2016-03          |
| RF Selector (10m Chamber)                            | Toyo Corporation     | NS4900           | 0703-182          | RF-0029      | 2016-01          |
| Loop Antenna with Amplifier, 9kHz-30MHz              | Rohde & Schwarz      | HFH2-Z2          | 100139            | RF-0048      | 2016-05          |
| Trilog Antenna No. 2, 30-1000MHz                     | Schwarzbeck          | VULB9168         | 9168-475          | RF-0462      | 2015-12          |
| Biconical Antenna, 30-300MHz                         | EMCO                 | 3110B            | 9603-2379         | RF-0207      | 2016-08          |
| Log-Periodic Antenna, 300-1000MHz                    | Schwarzbeck          | UHALP 9108 A1    | UHALP 9108-A 0845 | RF-0287      | 2016-08          |
| 3dB Attenuator                                       | Tamagawa Electronics | CFA-01           | -                 | RF-0265      | 2016-01          |
| Low Noise Preamplifier, 9kHz-1GHz                    | TSJ                  | MLA-10K01-B01-35 | 1370750           | RF-0253      | 2016-01          |
| Low Pass Filter, DC-1GHz                             | R&K                  | LP1000CH3        | 12104001          | RF-0515      | 2016-01          |
| Horn Antenna, 1-8GHz                                 | Schwarzbeck          | BBHA9120D        | 1059              | RF-0553      | 2016-06          |
| Microwave Preamplifier, 1-8GHz                       | Toyo Corporation     | TPA0108-40       | 0634              | RF-0052      | 2016-01          |
| Band Reject Filter, 1-8GHz                           | Nitsuki              | NF-49BT          | 027               | RF-0131      | 2016-01          |

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| Kind of Equipment                                                            | Manufacturer     | Model Name | Serial Number | Equipment ID | Calibrated until |
|------------------------------------------------------------------------------|------------------|------------|---------------|--------------|------------------|
| Horn Antenna with Preamplifier, 8-18GHz                                      | Toyo Corporation | HAP06-18W  | 00000025      | RF-0065      | 2016-07          |
| Horn Antenna with Preamplifier, 18-26.5GHz                                   | Toyo Corporation | HAP18-26N  | 00000010      | RF-0070      | 2016-07          |
| <b>Constant Voltage Constant Frequency Stabilizers and Power Accessories</b> |                  |            |               |              |                  |
| CVCF (3m Chamber)                                                            | NF Corporation   | ES2000S    | 9075613       | RF-0208      | N/A              |
| CVCF Booster (3m chamber)                                                    | NF Corporation   | ES2000B    | 9072132       | RF-0209      | N/A              |
| CVCF (Shielded Room)                                                         | NF Corporation   | ES2000S    | 9075612       | RF-0210      | N/A              |
| CVCF Booster (Shielded Room)                                                 | NF Corporation   | ES2000B    | 9074403       | RF-0211      | N/A              |
| CVCF (10m Chamber)                                                           | NF Corporation   | ES2000U    | 9067307       | RF-0212      | N/A              |
| CVCF Booster (10m Chamber)                                                   | NF Corporation   | ES2000B    | 9074408       | RF-0213      | N/A              |
| True RMS Multimeter                                                          | Fluke            | 87V        | 97680445      | RF-0281      | 2016-01          |
| True RMS Multimeter                                                          | Fluke            | 87V        | 97680450      | RF-0282      | 2016-02          |

Conformance of the used measurement and test equipment with the requirements of ISO/IEC 17025:2005 has been confirmed before testing.

## 2.3 Measurement Uncertainty

**Table 2: Emission Measurement Uncertainty**

| Measurement Type                 | Frequency      | Uncertainty |
|----------------------------------|----------------|-------------|
| AC Power Line Conducted Emission | 150kHz - 30MHz | ±2.0dB      |
| Antenna Port Conducted Emission  | 20Hz - 40GHz   | ±1.5dB      |
| Radiated Emission                | 150kHz - 30MHz | ±4.7dB      |
|                                  | 30MHz - 1GHz   | ±4.7dB      |
|                                  | > 1GHz         | ±4.7dB      |

### 3. General Product Information

#### 3.1 Product Function and Intended Use

The EUT (Equipment Under Test) KX-HTS824 is a Hybrid IP-PBX used at locations other than telecommunication centers e.g. within offices, customers' premises, etc. The EUT has Wi-Fi router function.

#### 3.2 System Details

|                          |                                                                                                                                                                                                                               |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency range:         | 2412 – 2462MHz                                                                                                                                                                                                                |
| Number of channels:      | 11                                                                                                                                                                                                                            |
| Channel spacing:         | 5MHz                                                                                                                                                                                                                          |
| Modulation type:         | DSSS coupled with DBPSK, DQPSK and CCK<br>OFDM coupled with BPSK, QPSK, 16QAM and 64QAM                                                                                                                                       |
| FCC classification:      | DTS                                                                                                                                                                                                                           |
| IC classification:       | Spread Spectrum/Digital Device (2400-2483.5 MHz)                                                                                                                                                                              |
| Emission designator:     | G1D                                                                                                                                                                                                                           |
| Radio standard:          | IEEE 802.11b<br>IEEE 802.11g<br>IEEE 802.11n (20HT/40HT)                                                                                                                                                                      |
| Frequency range:         | 2412 – 2472MHz                                                                                                                                                                                                                |
| Output power (measured): | 802.11b (DSSS) 37.15 mW<br>802.11g (OFDM) 67.92 mW<br>802.11n (OFDM) 123.59 mW                                                                                                                                                |
| Antenna gain:            | 2.14dBi for each antenna<br>5.15dBi (= 2.14dBi + 10*log(2)) for 2 antenna system, to take into account correlation effects                                                                                                    |
| Antenna type:            | Antenna 0: Pattern antenna (printed on PCB)<br>Antenna 1: Pattern antenna (printed on PCB)                                                                                                                                    |
| Antenna mounting type:   | Internal of EUT                                                                                                                                                                                                               |
| Modulation type:         | IEEE 802.11b (DSSS): BPSK, QPSK, CCK<br>IEEE 802.11g (OFDM): BPSK, QPSK, 16 QAM, 64QAM<br>IEEE 802.11n (OFDM): BPSK, QPSK, 16 QAM, 64QAM                                                                                      |
| Signal spreading:        | DSSS and OFDM (coupled with modulation type above)                                                                                                                                                                            |
| Transmit speed:          | 802.11b: 11 / 5.5 / 2 / 1 Mbps<br>802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps<br>802.11n (20HT): 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5 Mbps<br>802.11n (40HT): 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5 Mbps |
| Number of channels:      | 11                                                                                                                                                                                                                            |

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Channel spacing: 5MHz  
Rated temperature: 0 – 40°C  
Rated voltage: AC 120V  
Rated frequency: 50/60Hz  
Rated current: 1.3 - 0.9A  
Protection class: I for AC  
Duty cycle for radio testing: 100%

**Note:**

Protocols IEEE 802.11b and g transmit either from antenna 0 or antenna 1, but not from both antennas at the same time. Protocol IEEE 802.11n (20HT/40HT) can transmit from both antennas simultaneously.

### **3.3 Clock Frequencies**

The highest frequency generated or used by the EUT is 720MHz for the digital interface.

### **3.4 Noise Suppressing Parts**

Refer to schematics.

## 4. Test Set-up and Operation Modes

### 4.1 Test Methodology

The test methodology used is based on the requirements of 47 CFR Part 15, Sections 15.31, 15.33, 15.35, 15.205, 15.207, 15.209, KDB Publication No. 558074 D01 and KDB Publication No. 662911 D01.

The test methods, which have been used, are based on ANSI C63.10 and RSS-Gen (Issue 4).

For details, see under each test item.

### 4.2 Operation Modes

The basic operation modes used for testing are:

- A. EUT transmits a modulated signal at lowest channel
- B. EUT transmits a modulated signal at middle channel
- C. EUT transmits a modulated signal at highest channel

Channel frequencies and communication modes used for testing:

| Protocol            | Lowest channel | Middle channel | Highest channel |
|---------------------|----------------|----------------|-----------------|
| IEEE 802.11b        | 2412MHz        | 2437MHz        | 2462MHz         |
| IEEE 802.11g        | 2412MHz        | 2437MHz        | 2462MHz         |
| IEEE 802.11n (20HT) | 2412MHz        | 2437MHz        | 2462MHz         |
| IEEE 802.11n (40HT) | 2422MHz        | 2447MHz        | 2452MHz         |

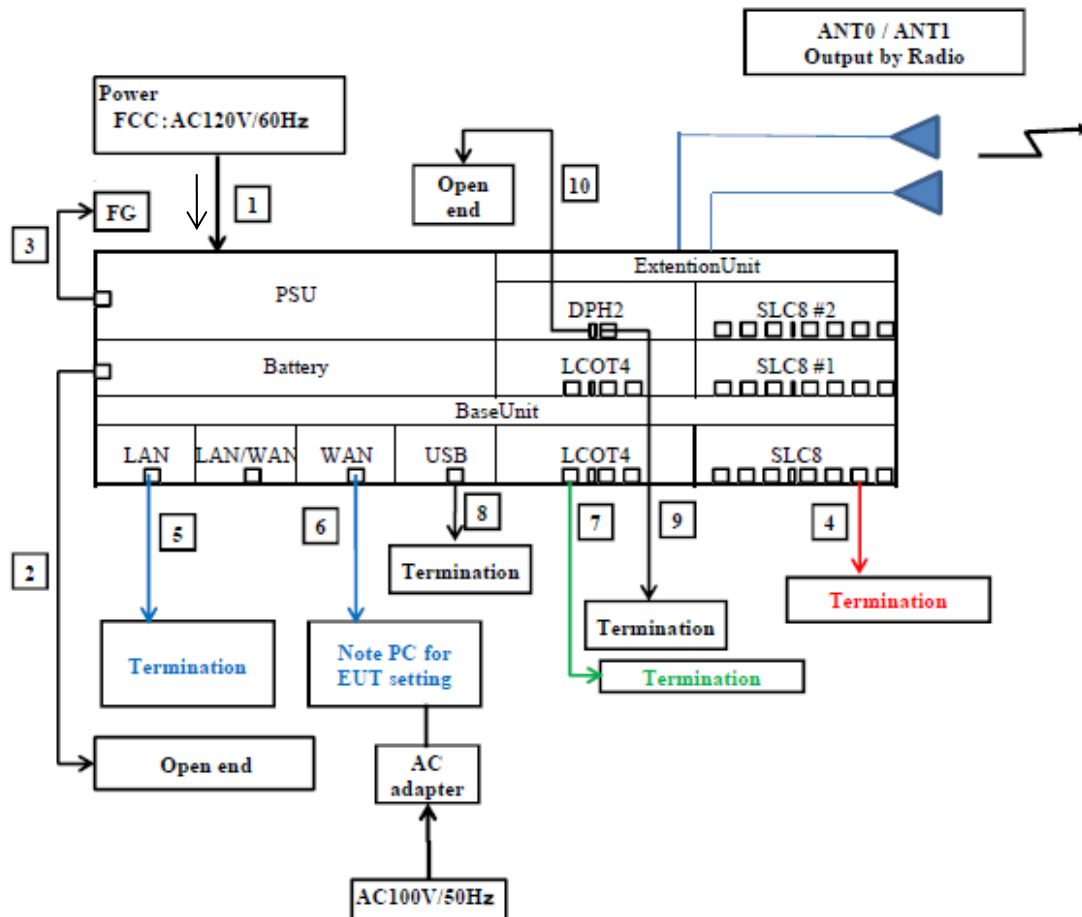
Note:

Unless otherwise specified, the measurements were made with the transmit speed (data rate) corresponding to the worst case output power (found by peak output power measurement.)

### 4.3 Physical Configuration for Testing

The test system was configured in a typical fashion (as a customer would normally use it).

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.10-2013.

**Figure 1: Block Diagram****Table 3: Interfaces present on the EUT**

| No. | Interface(s):                                                 | Cable Length, Shielding | Cable Classification           | Remarks                          |
|-----|---------------------------------------------------------------|-------------------------|--------------------------------|----------------------------------|
| 1.  | AC Main input (PSU)                                           | 2m, Un-shielded         | AC Input Power Port            |                                  |
| 2.  | Battery port                                                  | 1m, Un-shielded         | DC Input Power Port of Battery | Open                             |
| 3.  | FG (Frame Ground)                                             | 2m, Un-shielded         | Frame ground for PE            |                                  |
| 4.  | Extension line interface for telephone (Main Unit and SLC8)   | 1m, Un-shielded         | Telecom Line                   | Terminated by resistor *100 Ohms |
| 5.  | LAN (Ethernet)                                                | 3m, Un-shielded         | Telecom Line                   | Terminated by Ethernet hub       |
| 6.  | LAN/WAN (Ethernet)                                            | 3m, Un-shielded         | Telecom Line                   | Connected to laptop computer     |
| 7.  | LINE 1 – 4 Analogue PSTN line interface (Main Unit and LCOT4) | 1m Un-shielded          | Telecom Line                   | Terminated by resistor           |
| 8.  | USB                                                           | 1m, Un-shielded         | Signal Line and DC power Port  | Terminated by USB hub            |

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|     |                    |                 |              |                          |
|-----|--------------------|-----------------|--------------|--------------------------|
| 9.  | Door phone (DPH2)  | 1m, Un-shielded | Telecom Line | Terminated by dummy load |
| 10. | Door opener (DPH2) | 1m, Un-shielded | Signal Line  | Terminated by dummy load |

**Notes:**

Two test samples were available. Sample E.S.(No.2) was used for antenna conducted measurements and sample E.S.(No.3) was used for radiated measurements.

For antenna conducted measurements, the antennas were replaced by a 50Ω antenna connector.

For more details, refer to section: Photographs of the Test Set-Up.

## 4.4 Test Software

The EUT was provided by the manufacturer with suitable software to allow operation in all the required modes.

Driver and Firmware version on EUT for testing:

WLAN driver version: 03.05.00.00.39\_r2.0 by Panasonic System Networks Co., Ltd.

WLAN MAC FW version: FW\_3.5.0\_r4552 by Panasonic System Networks Co., Ltd.

Following two software programs were running on the laptop computer connected to the EUT. They were used to enable the test operation modes listed in section 4.2 as appropriate.

Lantiq DUT 6.49

Teraterm 4.88

## 4.5 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

1. Product: Laptop Computer  
Model: CF-SX2ADHCS  
Manufacturer: Panasonic  
Rated Voltage: DC 16V  
Protection Class: III  
Serial No.: 3HKSA33632
2. Product: AC Adapter for Laptop Computer  
Model: CF-AA6412CJS  
Manufacturer: Panasonic  
Rated Voltage: AC 100V-240V  
Input Current: 1.5A  
Frequency: 50-60Hz  
Protection Class: II
3. Product: Ethernet Hub (for termination use)  
Model: FXG-08IMB2  
Manufacturer: PCi  
Rated Voltage: AC 100-240V  
Input Current: 0.3A  
Protection Class: II  
Serial No.: 07KD00762AR
4. Product: USB Hub (for termination use)  
Model: U2H-TV003  
Manufacturer: Elecom  
Rated Voltage: DC 5V  
Input Current: < 1A  
Protection Class: III

## 4.6 Countermeasures to achieve Compliance

No additional measures were employed to achieve compliance.

## 5. Test Results RADIO

### 5.1 Technical Requirements

#### 5.1.1 Supply Voltage Requirements

**RESULT:** **PASS**

Requirements:

FCC 15.31(e)

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

Verdict:

The EUT has an internal voltage regulator to supply the RF circuit. Hence it complies with the supply voltage requirements.

#### 5.1.2 Antenna Requirements

**RESULT:** **PASS**

Requirements:

FCC 15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Verdict:

The EUT has internal antennas which are not user accessible. Hence it complies with the antenna requirements.

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### 5.1.3 Restricted Bands of Operation

**RESULT:****PASS**

Requirements:

FCC 15.205 and RSS-Gen 8.10

Only spurious emissions are permitted in any of the restricted frequency bands, unless otherwise specified.

Verdict:

The EUT operation frequency range is 2412-2462MHz. Therefore only spurious emissions may be found in the restricted bands of operation and the EUT complies with the restricted frequency band requirement.

## 5.2 Conducted Measurements at Antenna Port

### 5.2.1 Conducted Output Power

**RESULT:****PASS**

Date of testing: 2015-11-02

Ambient temperature: 24°C

Relative humidity: 46%

Atmospheric pressure: 1012hPa

## Requirements:

FCC 15.247(b)(3) and RSS-247 5.4(4)

For systems using digital modulation in the 2400-2483.5MHz band, the maximum peak output power is 1W (30dBm).

If transmitting antennas of directional gain greater than 6dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

## Test procedure:

ANSI C63.10-2013, RSS-Gen 6.12, KDB Publication No. 558074 D01 and KDB Publication No. 662911 D01

The maximum peak output power was measured at the antenna port with a power sensor.

Prechecks were performed at all available data rates. The reported results correspond to the worst case data rates.

The readings of the measurements take into account the loss generated by all the involved cables.

The total antenna gain, taking into account correlation effects, is 5.18dBi. The maximum peak output power limit is therefore 30dBm.

The readings of the measurements given here below take into account the loss generated by all the involved cables.

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**Table 4: Conducted Output Power, 11b\_Antenna 0**

| Frequency (MHz) | Data Rate [Mbps] | Power Antenna 0 [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|------------------|-----------------------|-------------|-------------|
| 2412            | 11               | 15.66                 | 30.00       | 14.34       |
| 2437            | 11               | 15.39                 | 30.00       | 14.61       |
| 2462            | 11               | 15.70                 | 30.00       | 14.30       |

**Table 5: Conducted Output Power, 11b\_Antenna 1**

| Frequency (MHz) | Data Rate [Mbps] | Power Antenna 1 [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|------------------|-----------------------|-------------|-------------|
| 2412            | 11               | 14.82                 | 30.00       | 15.18       |
| 2437            | 11               | 14.74                 | 30.00       | 15.26       |
| 2462            | 11               | 14.85                 | 30.00       | 15.15       |

**Table 6: Conducted Output Power, 11g\_Antenna 0**

| Frequency (MHz) | Data Rate [Mbps] | Power Antenna 0 [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|------------------|-----------------------|-------------|-------------|
| 2412            | 18               | 18.32                 | 30.00       | 11.68       |
| 2437            | 18               | 18.16                 | 30.00       | 11.84       |
| 2462            | 18               | 17.79                 | 30.00       | 12.21       |

**Table 7: Conducted Output Power, 11g\_Antenna 1**

| Frequency (MHz) | Data Rate [Mbps] | Power Antenna 0 [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|------------------|-----------------------|-------------|-------------|
| 2412            | 18               | 17.82                 | 30.00       | 12.18       |
| 2437            | 18               | 18.10                 | 30.00       | 11.90       |
| 2462            | 18               | 17.67                 | 30.00       | 12.33       |

**Table 8: Conducted Output Power, 11n(20HT)**

| Frequency (MHz) | Data Rate [Mbps] | Power Antenna 1 [dBm] | Power Antenna 2 [dBm] | Total Power [dBm] | Limit [dBm] | Margin [dB] |
|-----------------|------------------|-----------------------|-----------------------|-------------------|-------------|-------------|
| 2412            | 26               | 18.11                 | 17.69                 | 20.92             | 30.00       | 9.08        |
| 2437            | 26               | 17.54                 | 17.56                 | 20.56             | 30.00       | 9.44        |
| 2462            | 26               | 17.98                 | 16.76                 | 20.42             | 30.00       | 9.58        |

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**Table 9: Conducted Output Power, 11n(40HT)**

| Frequency<br>(MHz) | Data Rate<br>[Mbps] | Power<br>Antenna 1<br>[dBm] | Power<br>Antenna 2<br>[dBm] | Total<br>Power<br>[dBm] | Limit<br>[dBm] | Margin [dB] |
|--------------------|---------------------|-----------------------------|-----------------------------|-------------------------|----------------|-------------|
| 2422               | 54                  | 15.66                       | 14.82                       | 18.27                   | 30.00          | 11.73       |
| 2447               | 54                  | 15.39                       | 14.74                       | 18.09                   | 30.00          | 11.91       |
| 2452               | 54                  | 15.70                       | 14.85                       | 18.31                   | 30.00          | 11.69       |

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**5.2.2 6dB Bandwidth****RESULT:****PASS**

Date of testing: 2015-11-02

Ambient temperature: 24°C

Relative humidity: 46%

Atmospheric pressure: 1012hPa

## Requirements:

FCC 15.247(a)(2) and RSS-247 5.2(1)

For systems using digital modulation in the 2400-2483.5MHz band, the 6dB bandwidth shall be at least 500kHz.

## Test procedure:

ANSI C63.10-2013, RSS-Gen 6.6 and KDB Publication No. 558074 D01.

The 6dB bandwidth was measured at the antenna port with a spectrum analyzer using a peak detector. The resolution bandwidth was set to 100kHz and the video bandwidth to 300kHz. Markers placed at the lowest and highest intersections of the trace with a 6dBc line were used to calculate the emission bandwidth.

For protocols IEEE 802.11b and g, measurements were done on antenna 0, selected as representative antenna.

**Table 10: 6dB Bandwidth, 11b\_Antenna 0**

| Operating Frequency [MHz] | 6dB Bandwidth [MHz] | Limit [MHz] |
|---------------------------|---------------------|-------------|
| 2412                      | 7.69                | 0.5         |
| 2437                      | 7.93                | 0.5         |
| 2462                      | 7.69                | 0.5         |

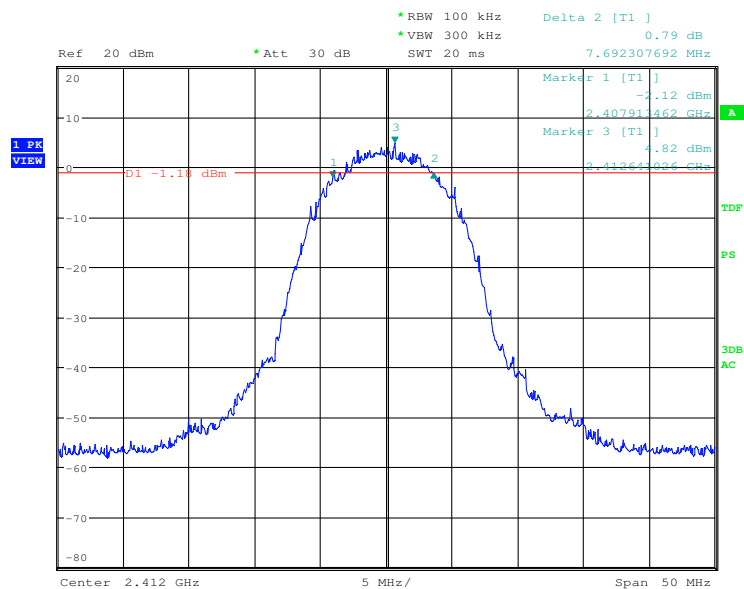
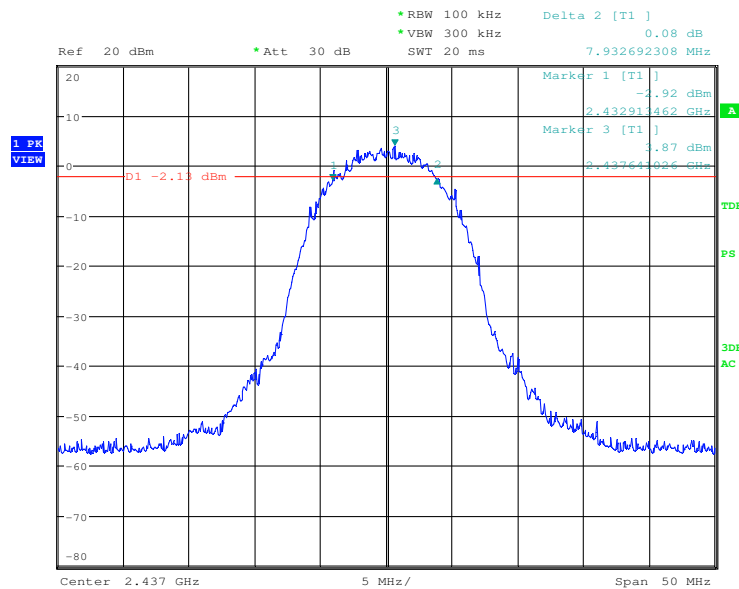
**Figure 2: 6dB Bandwidth, Mode A (2412MHz), 11b\_Antenna 0**

 6dB bandwidth, mode 11b, 2412MHz  
 Date: 2.NOV.2015 16:39:49

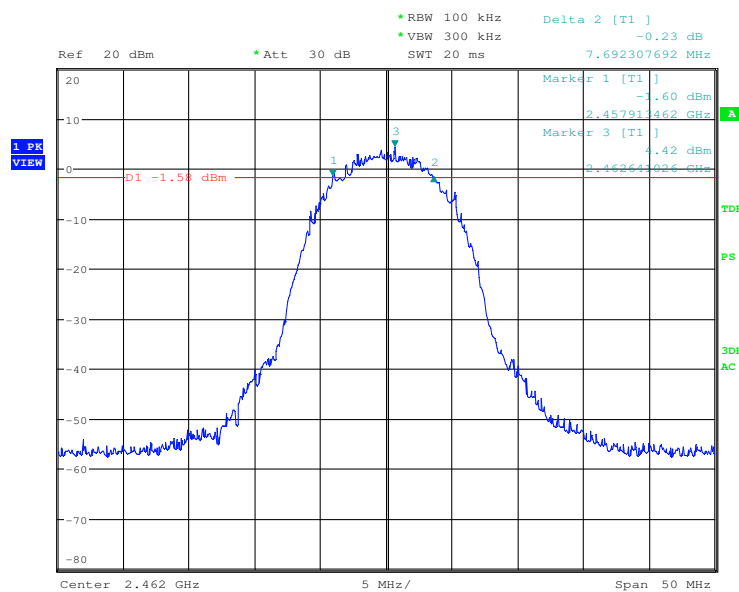
Figure 3: 6dB Bandwidth, Mode B (2437MHz), 11b\_Antenna 0



6dB bandwidth, mode 11b, 2437MHz

Date: 2.NOV.2015 16:50:58

Figure 4: 6dB Bandwidth, Mode C (2462MHz), 11b\_Antenna 0



6dB bandwidth, mode 11b, 2462MHz

Date: 2.NOV.2015 17:02:18

**Table 11: 6dB Bandwidth, 11g\_Antenna 0**

| Operating Frequency [MHz] | 6dB Bandwidth [MHz] | Limit [MHz] |
|---------------------------|---------------------|-------------|
| 2412                      | 16.58               | 0.5         |
| 2437                      | 16.66               | 0.5         |
| 2462                      | 16.58               | 0.5         |

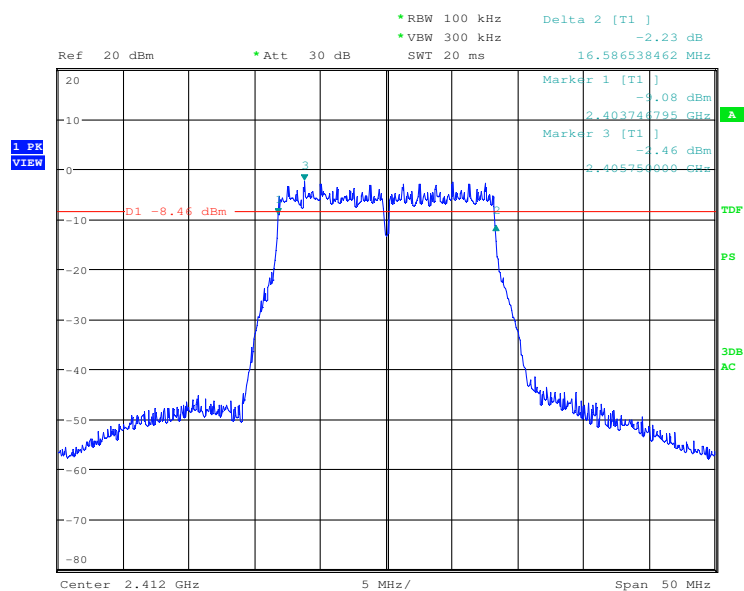
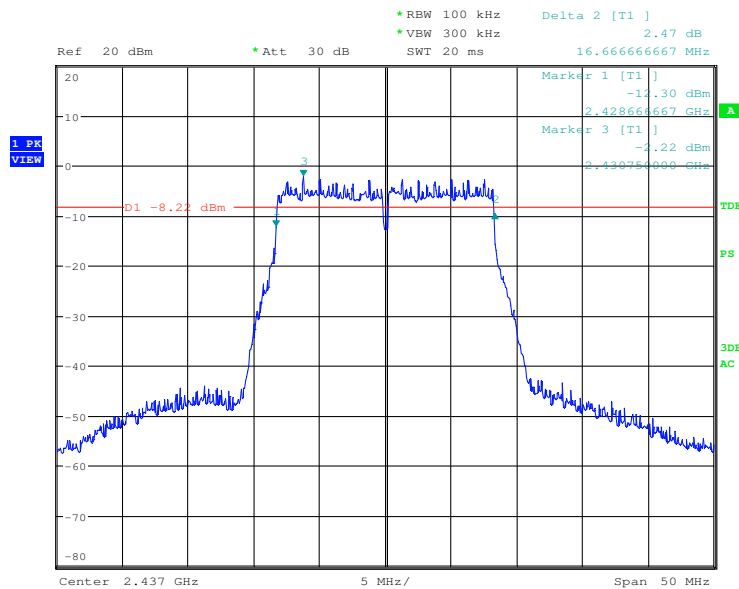
**Figure 5: 6dB Bandwidth, Mode A (2412MHz), 11g\_Antenna 0**

 6dB bandwidth, mode 11g, 2412MHz  
 Date: 2.NOV.2015 17:54:04

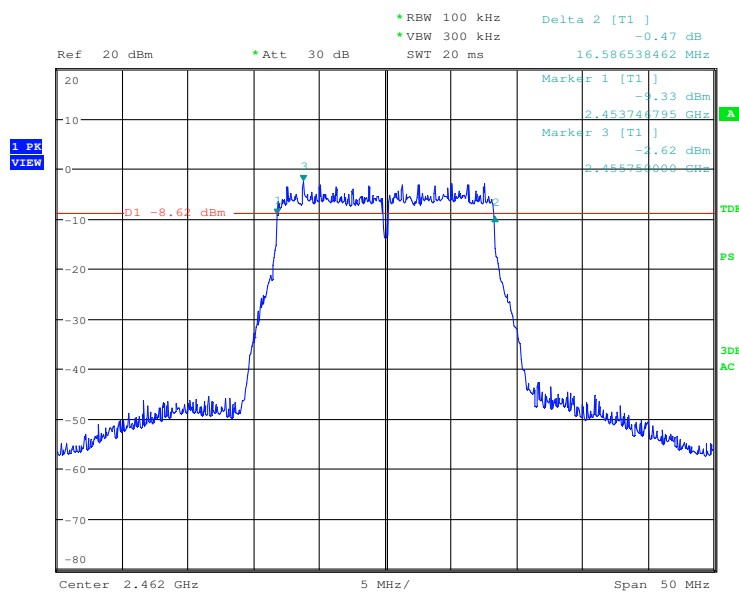
Figure 6: 6dB Bandwidth, Mode B (2437MHz), 11g\_Antenna 0



6dB bandwidth, mode 11g, 2437MHz

Date: 2.NOV.2015 17:15:25

Figure 7: 6dB Bandwidth, Mode C (2462MHz), 11g\_Antenna 0



6dB bandwidth, mode 11g, 2462MHz

Date: 2.NOV.2015 17:36:51

**Table 12: 6dB Bandwidth, 11n(20HT)\_Antenna 0**

| Operating Frequency [MHz] | 6dB Bandwidth [MHz] | Limit [MHz] |
|---------------------------|---------------------|-------------|
| 2412                      | 17.78               | 0.5         |
| 2437                      | 17.78               | 0.5         |
| 2462                      | 17.78               | 0.5         |

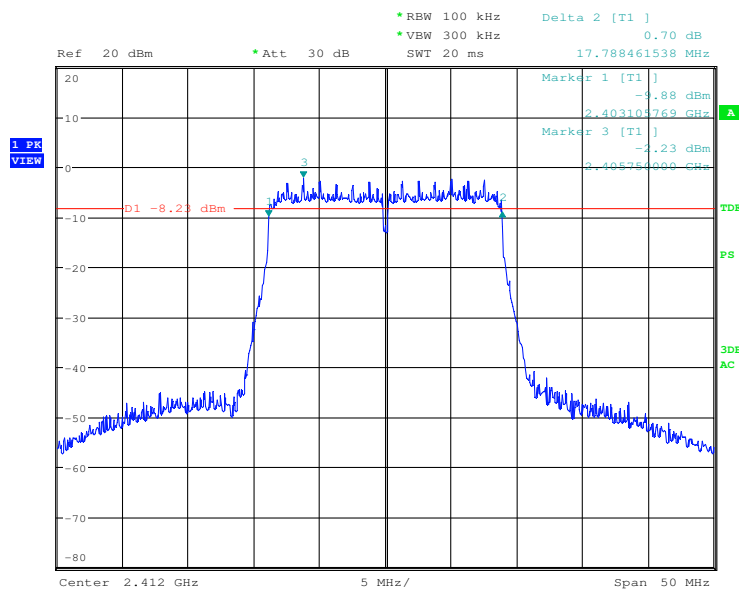
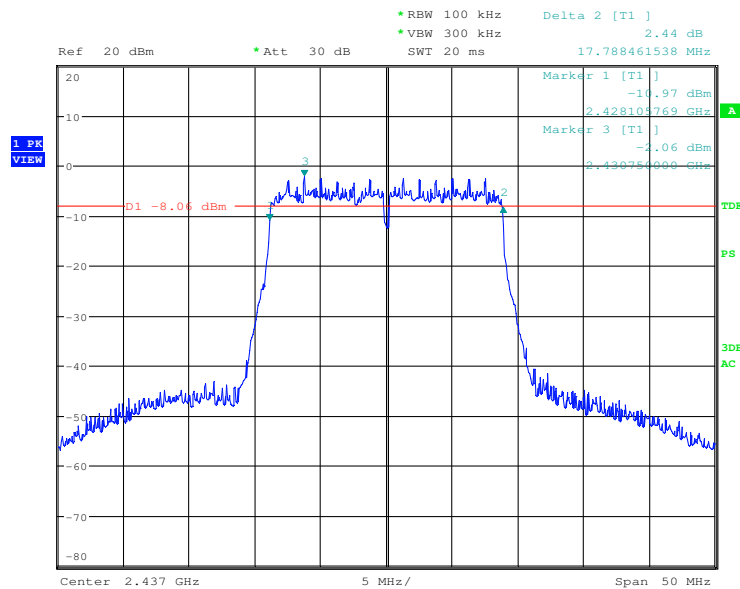
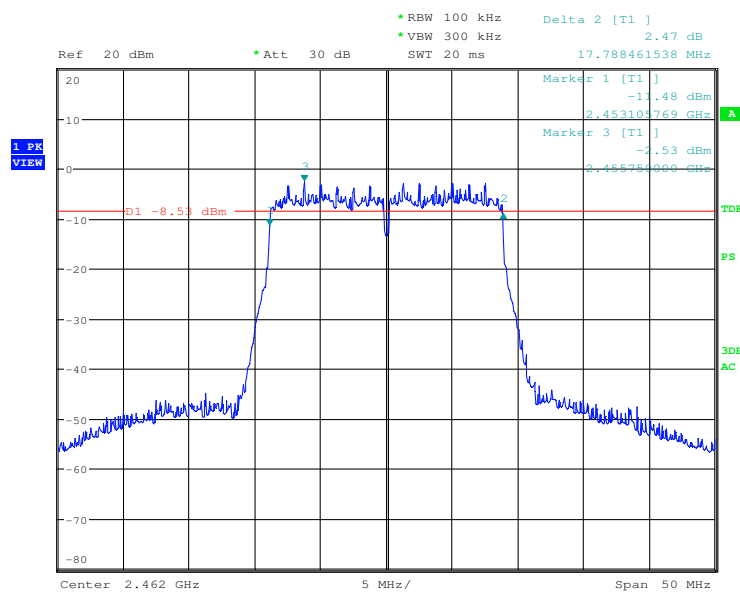
**Figure 8: 6dB Bandwidth, Mode A (2412MHz), 11n(20HT)\_Antenna 0**

 6dB bandwidth, mode 11n(20HT), 2412MHz  
 Date: 2.NOV.2015 17:50:15

Figure 9: 6dB Bandwidth, Mode B (2437MHz), 11n(20HT)\_Antenna 0



6dB bandwidth, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 17:45:24

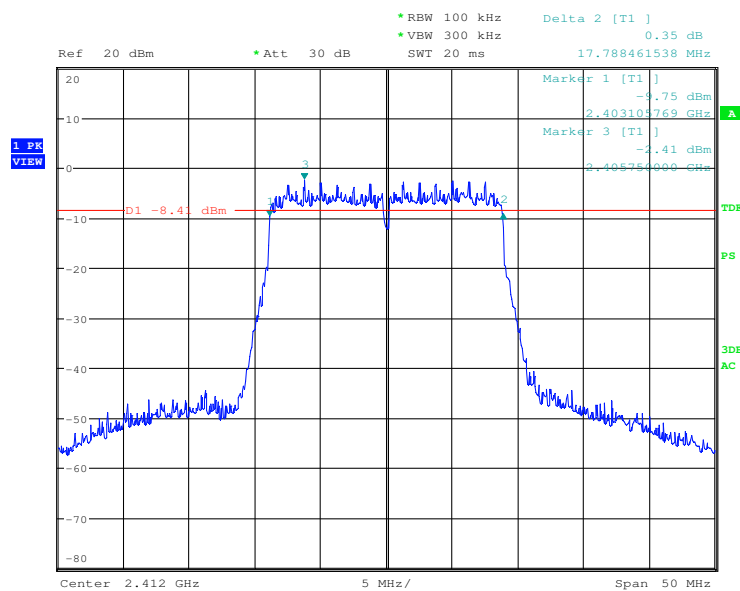
Figure 10: 6dB Bandwidth, Mode C (2462MHz), 11n(20HT)\_Antenna 0



6dB bandwidth, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 17:41:19

**Table 13: 6dB Bandwidth, 11n(20HT)\_Antenna 1**

| Operating Frequency [MHz] | 6dB Bandwidth [MHz] | Limit [MHz] |
|---------------------------|---------------------|-------------|
| 2412                      | 17.78               | 0.5         |
| 2437                      | 17.86               | 0.5         |
| 2462                      | 17.78               | 0.5         |

**Figure 11: 6dB Bandwidth, Mode A (2412MHz), 11n(20HT)\_Antenna 1**


6dB bandwidth, mode 11n(20HT), 2412MHz, Ant1  
 Date: 2.NOV.2015 18:25:31

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Figure 12: 6dB Bandwidth, Mode B (2437MHz), 11n(20HT)\_Antenna 1

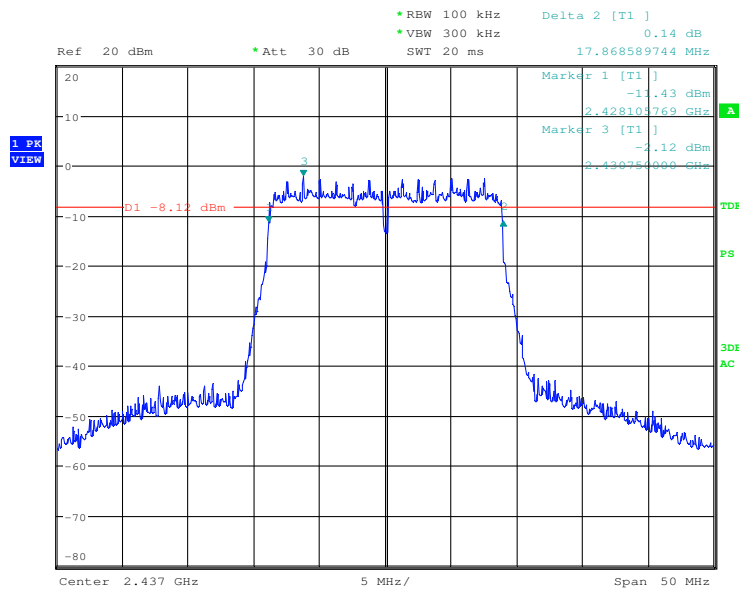
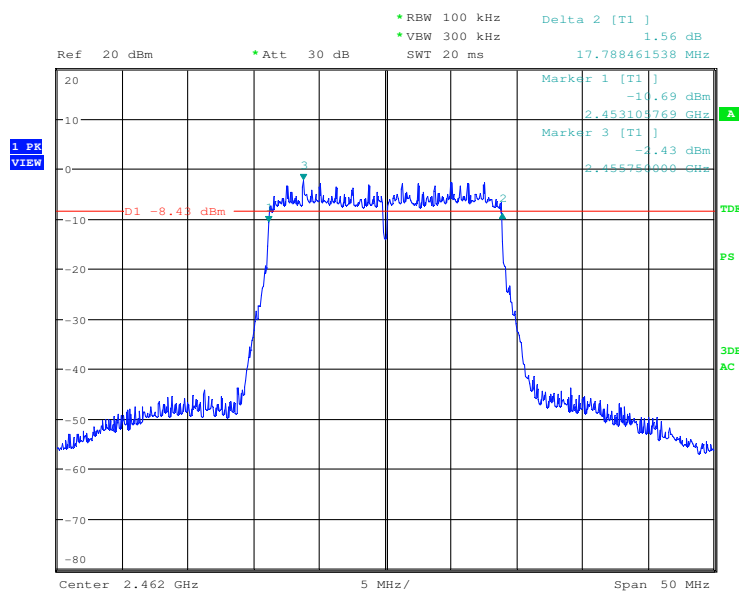
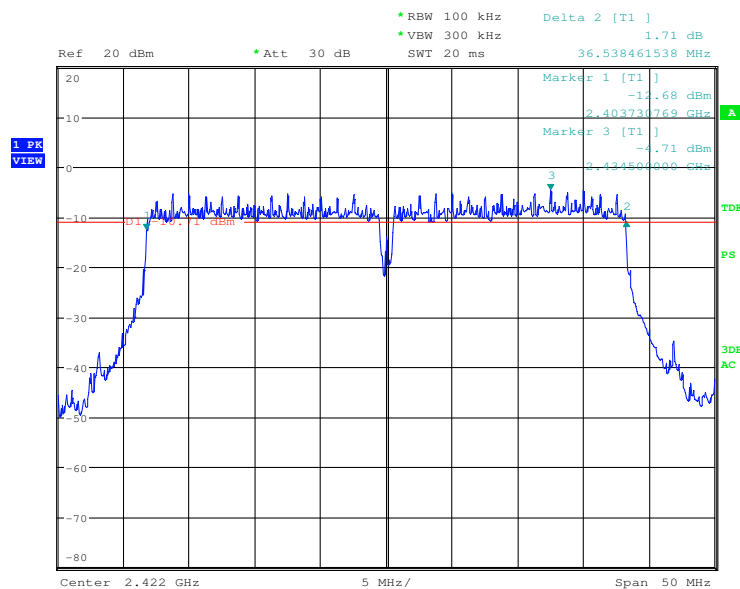
6dB bandwidth, mode 11n(20HT), 2437MHz, Ant1  
Date: 2.NOV.2015 18:27:52

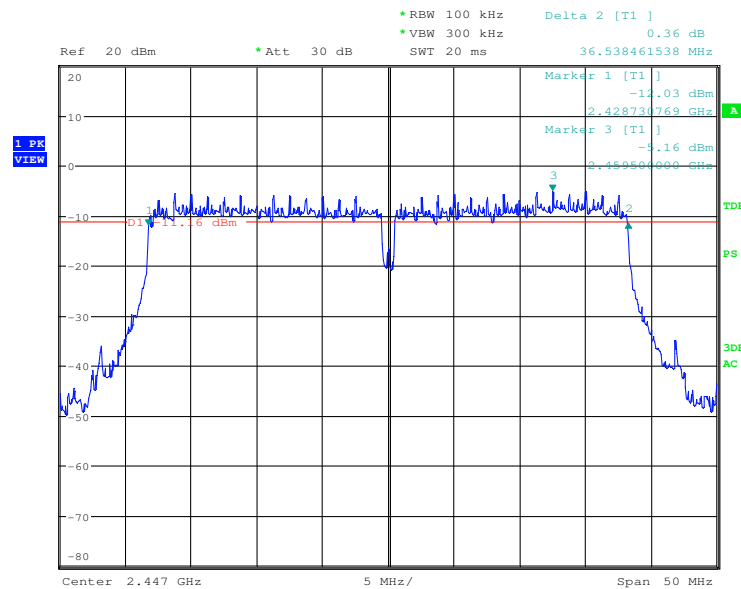
Figure 13: 6dB Bandwidth, Mode C (2462MHz), 11n(20HT)\_Antenna 1

6dB bandwidth, mode 11n(20HT), 2462MHz, Ant1  
Date: 2.NOV.2015 18:30:00

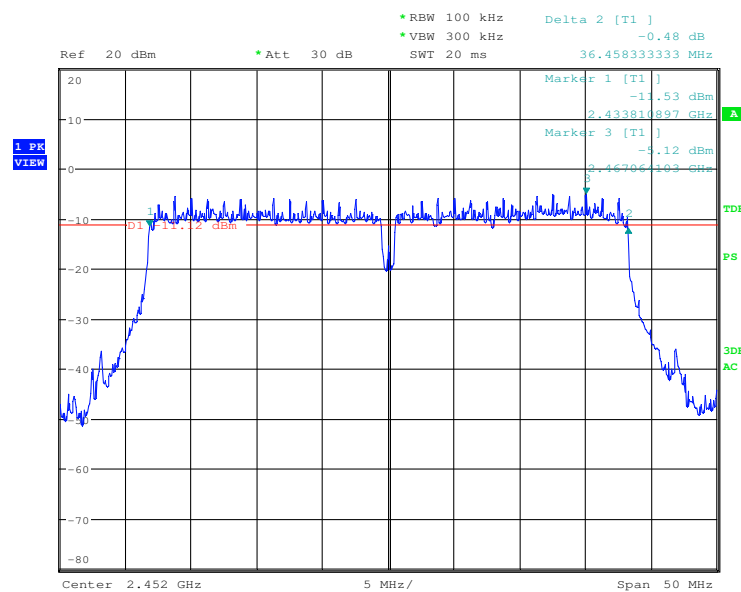
**Table 14: 6dB Bandwidth, 11n(40HT)\_Antenna 0**

| Operating Frequency [MHz] | 6dB Bandwidth [MHz] | Limit [MHz] |
|---------------------------|---------------------|-------------|
| 2422                      | 36.53               | 0.5         |
| 2447                      | 36.53               | 0.5         |
| 2452                      | 36.45               | 0.5         |

**Figure 14: 6dB Bandwidth, Mode A (2422MHz), 11n(40HT)\_Antenna 0**

 6dB bandwidth, mode 11n(40HT), 2422MHz  
 Date: 2.NOV.2015 18:03:37

**Figure 15: 6dB Bandwidth, Mode B (2447MHz), 11n(40HT)\_Antenna 0**

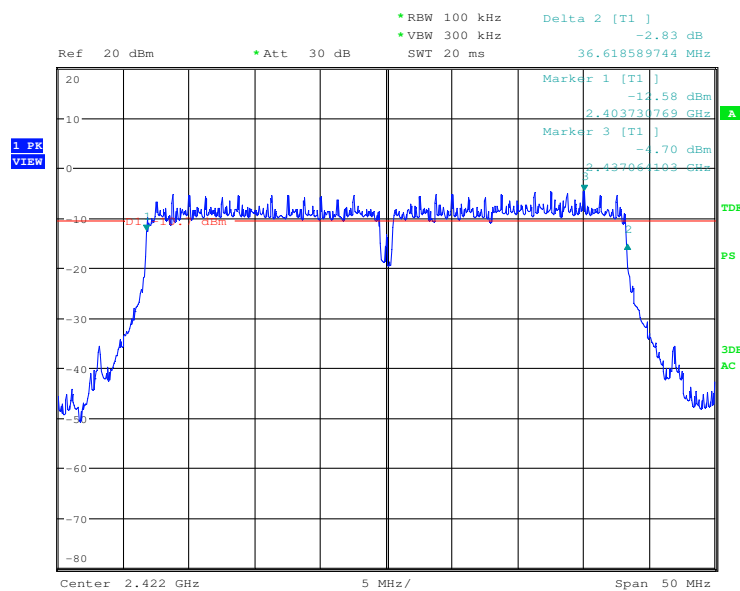
6dB bandwidth, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 18:09:40

**Figure 16: 6dB Bandwidth, Mode C (2452MHz), 11n(40HT)\_Antenna 0**

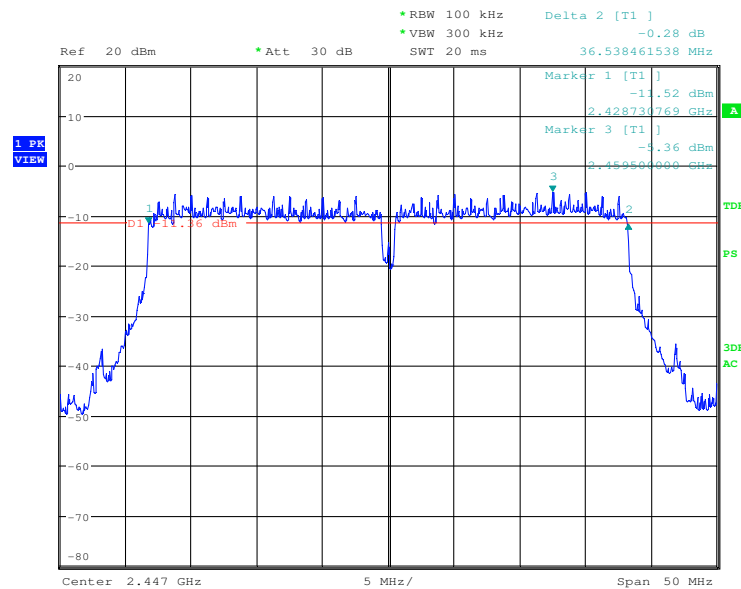
6dB bandwidth, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 18:12:24

**Table 15: 6dB Bandwidth, 11n(40HT)\_Antenna 1**

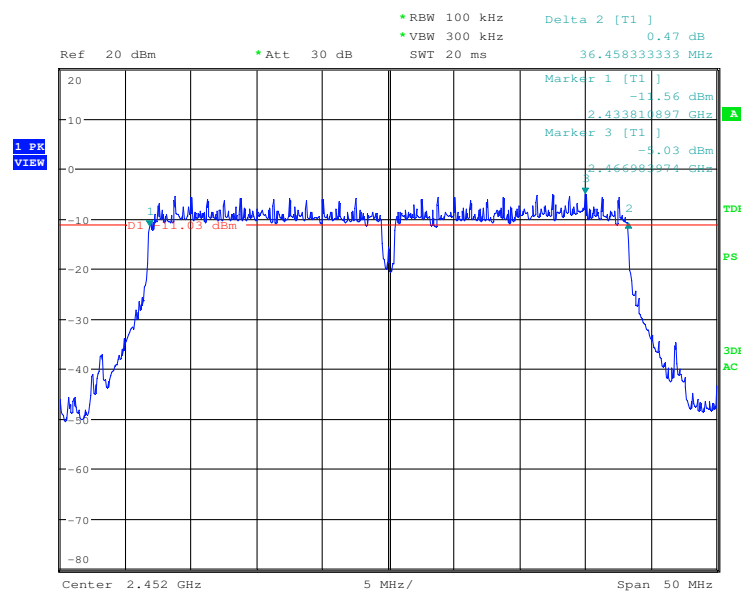
| Operating Frequency [MHz] | 6dB Bandwidth [MHz] | Limit [MHz] |
|---------------------------|---------------------|-------------|
| 2422                      | 36.61               | 0.5         |
| 2447                      | 36.53               | 0.5         |
| 2452                      | 36.45               | 0.5         |

**Figure 17: 6dB Bandwidth, Mode A (2422MHz), 11n(40HT)\_Antenna 1**


6dB bandwidth, mode 11n(40HT), 2422MHz, Ant1  
 Date: 2.NOV.2015 18:21:31

**Figure 18: 6dB Bandwidth, Mode B (2447MHz), 11n(40HT)\_Antenna 1**

6dB bandwidth, mode 11n(40HT), 2447MHz, Ant1  
Date: 2.NOV.2015 18:18:44

**Figure 19: 6dB Bandwidth, Mode C (2452MHz), 11n(40HT)\_Antenna 1**

6dB bandwidth, mode 11n(40HT), 2452MHz, Ant1  
Date: 2.NOV.2015 18:16:01

**5.2.3 99% Bandwidth**

Date of testing: 2015-11-02

Ambient temperature: 24°C

Relative humidity: 46%

Atmospheric pressure: 1012hPa

Requirements:

RSS-Gen 6.6

The 99% bandwidth shall be reported according to RSS-Gen 6.6.

Test procedure:

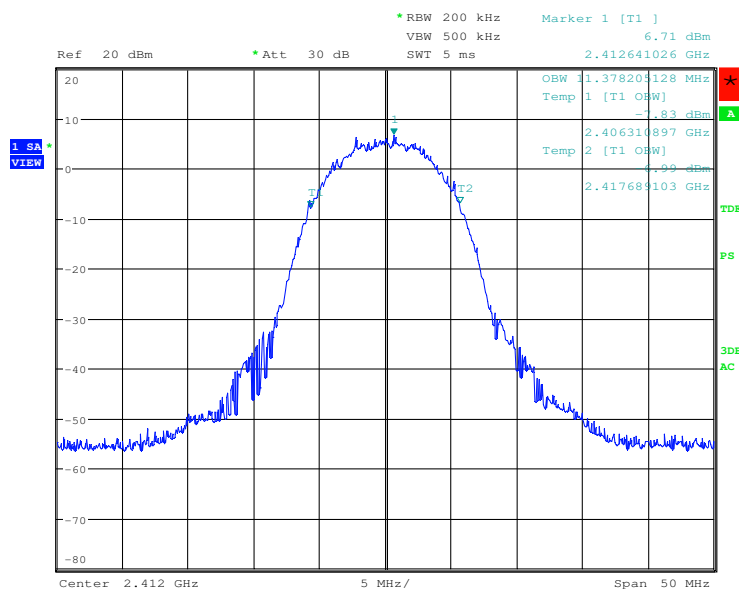
RSS-Gen 6.6

Measurements were taken using both antenna 0 and antenna 1. The measurements were performed using a spectrum analyzer with the resolution bandwidth (RBW) set in the range of 1% to 5% of the occupied bandwidth (OBW) and the video bandwidth (VBW) set to approximately  $3 \times \text{RBW}$ . The 99% bandwidth was measured by using the OBW function of the analyzer with a 99% coverage setting.

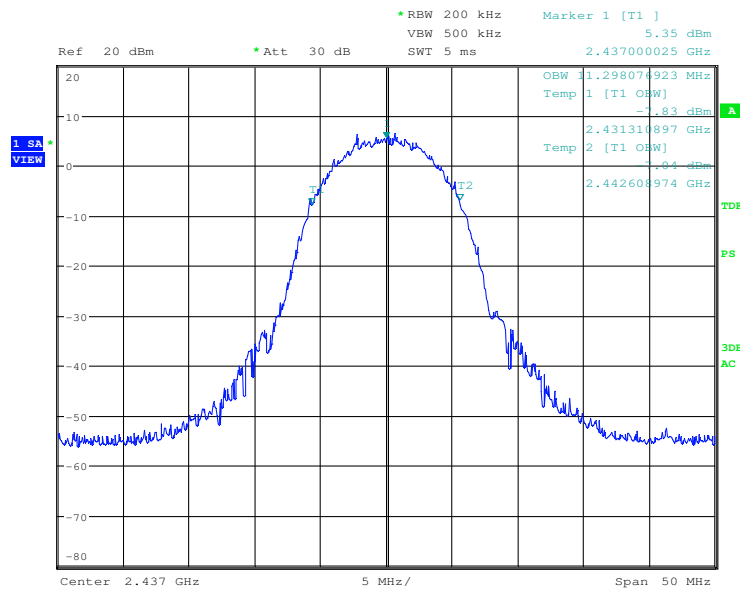
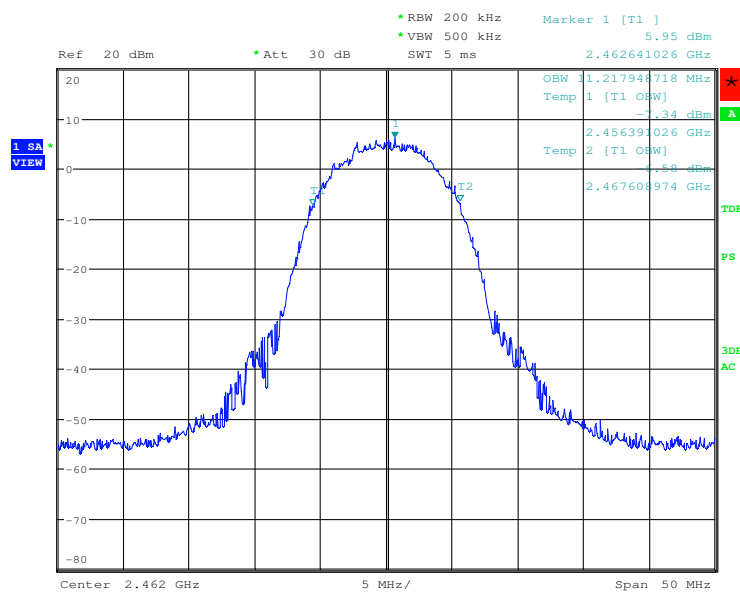
For protocols IEEE 802.11b and g, measurements were done on antenna 0, selected as representative antenna.

**Table 16: 99% Bandwidth, 11b\_Antenna 0**

| Operating Frequency [MHz] | 99% Bandwidth [MHz] |
|---------------------------|---------------------|
| 2412MHz                   | 11.38               |
| 2437MHz                   | 11.30               |
| 2464MHz                   | 11.22               |

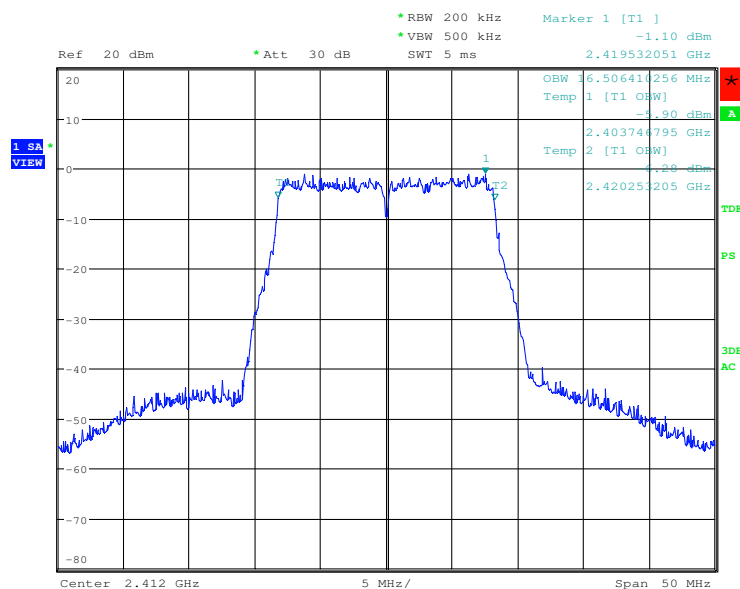
**Figure 20: 99% Bandwidth, Mode A (2412MHz), 11b\_Antenna 0**


99% bandwidth, mode 11b, 2412MHz  
 Date: 2.NOV.2015 16:43:26

**Prüfbericht - Nr.: 50027424 001**  
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Page 34 of 123**Figure 21: 99% Bandwidth, Mode B (2437MHz), 11b\_Antenna 0**99% bandwidth, mode 11b, 2437MHz  
Date: 2.NOV.2015 16:55:50**Figure 22: 99% Bandwidth, Mode C (2462MHz), 11b\_Antenna 0**99% bandwidth, mode 11b, 2462MHz  
Date: 2.NOV.2015 17:03:30

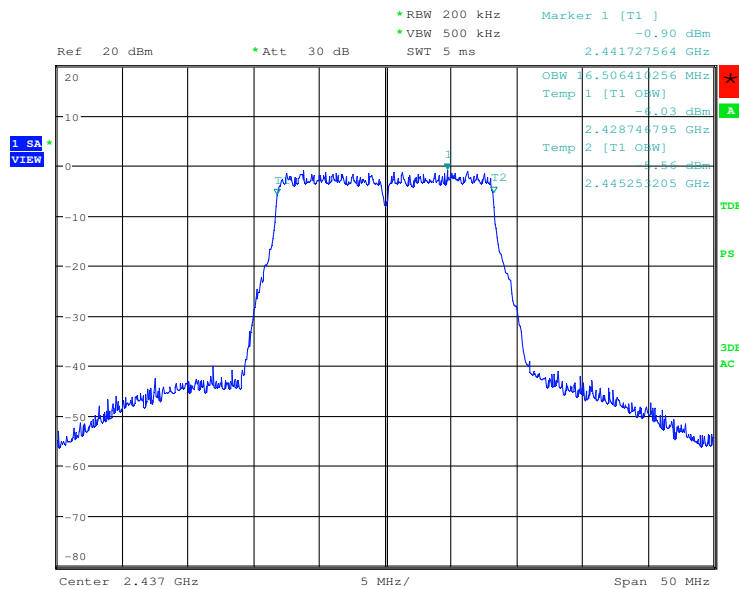
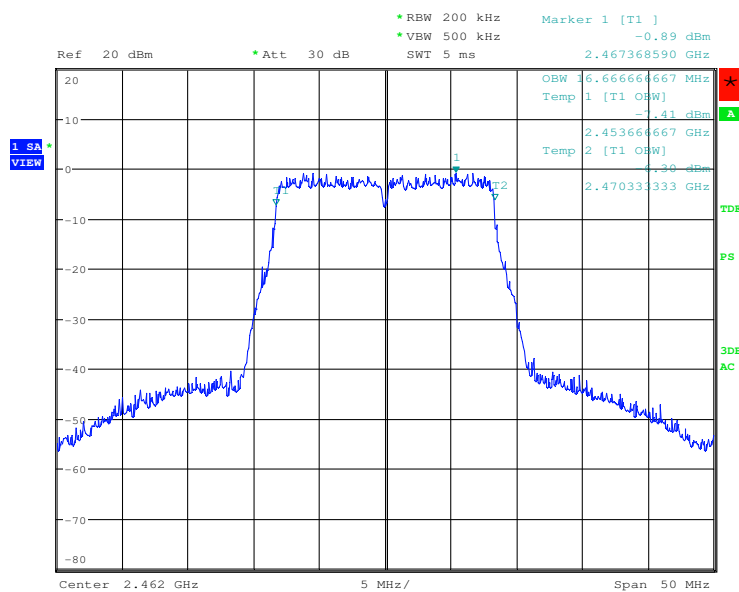
**Table 17: 99% Bandwidth, 11g\_Antenna 0**

| Operating Frequency [MHz] | 99% Bandwidth [MHz] |
|---------------------------|---------------------|
| 2412MHz                   | 16.51               |
| 2437MHz                   | 16.51               |
| 2464MHz                   | 16.67               |

**Figure 23: 99% Bandwidth, Mode A (2412MHz), 11g\_Antenna 0**


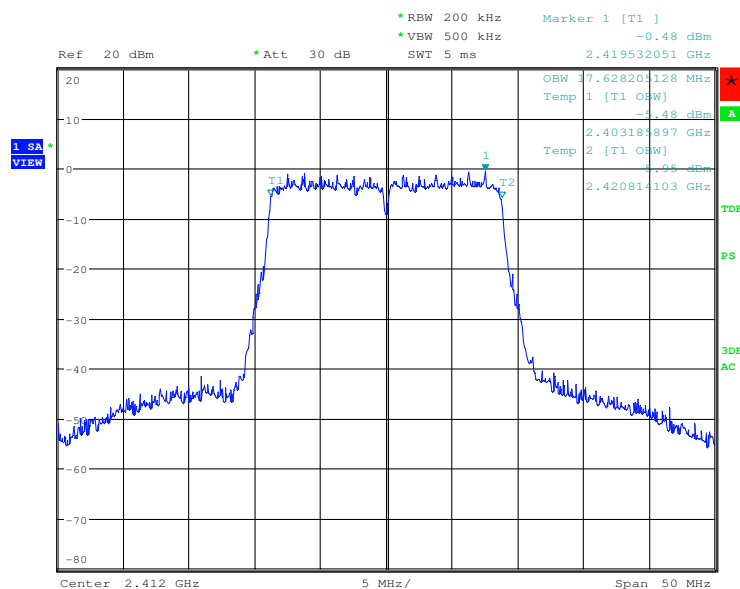
99% bandwidth, mode 11g, 2412MHz

Date: 2.NOV.2015 17:54:23

**Prüfbericht - Nr.: 50027424 001**  
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Page 36 of 123**Figure 24: 99% Bandwidth, Mode B (2437MHz), 11g\_Antenna 0**99% bandwidth, mode 11g, 2437MHz  
Date: 2.NOV.2015 17:16:18**Figure 25: 99% Bandwidth, Mode C (2462MHz), 11g\_Antenna 0**99% bandwidth, mode 11g, 2462MHz  
Date: 2.NOV.2015 17:37:52

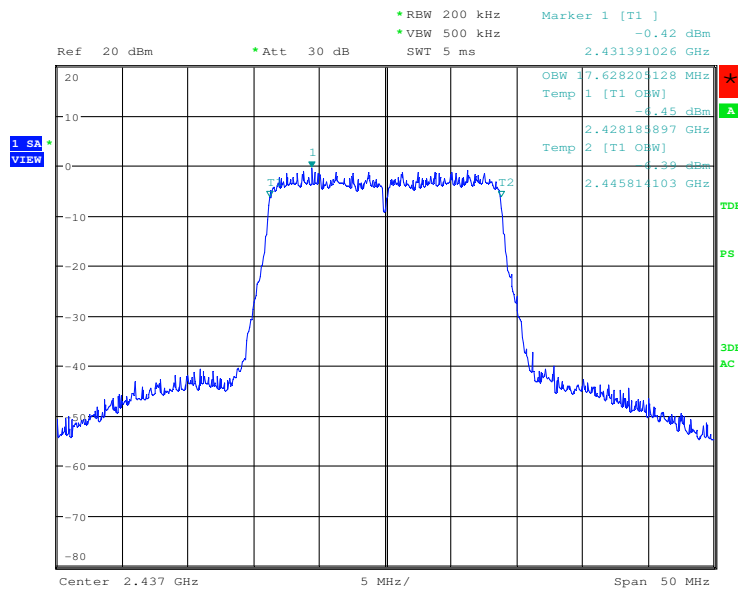
**Table 18: 99% Bandwidth, 11n(20HT)\_Antenna 0**

| Operating Frequency [MHz] | 99% Bandwidth [MHz] |
|---------------------------|---------------------|
| 2412MHz                   | 17.63               |
| 2437MHz                   | 17.63               |
| 2464MHz                   | 17.63               |

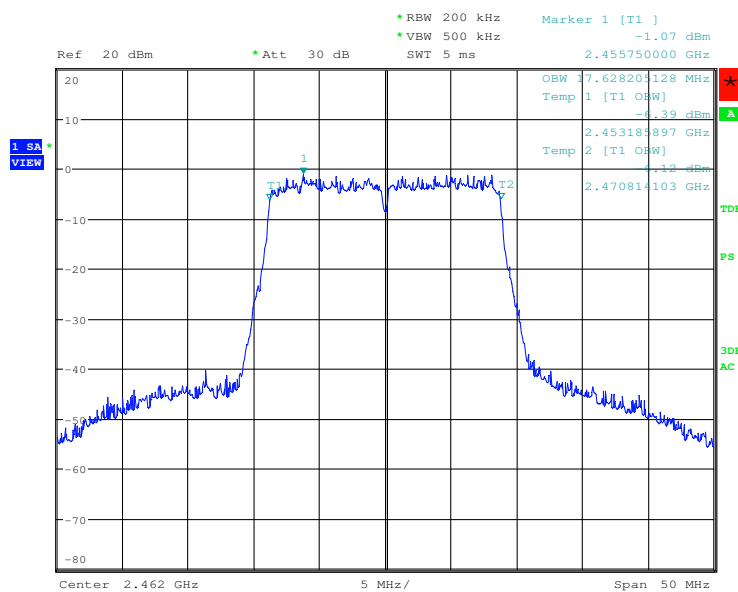
**Figure 26: 99% Bandwidth, Mode A (2412MHz), 11n(20HT)\_Antenna 0**


99% bandwidth, mode 11n(20HT), 2412MHz

Date: 2.NOV.2015 17:50:41

**Figure 27: 99% Bandwidth, Mode B (2437MHz), 11n(20HT)\_Antenna 0**

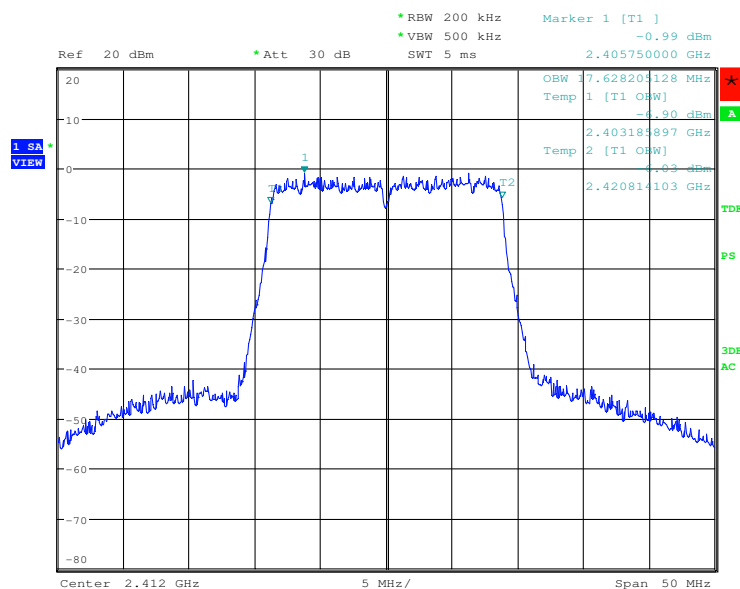
99% bandwidth, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 17:47:22

**Figure 28: 99% Bandwidth, Mode C (2462MHz), 11n(20HT)\_Antenna 0**

99% bandwidth, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 17:42:34

**Table 19: 99% Bandwidth, 11n(20HT)\_Antenna 1**

| Operating Frequency [MHz] | 99% Bandwidth [MHz] |
|---------------------------|---------------------|
| 2412MHz                   | 17.63               |
| 2437MHz                   | 17.63               |
| 2464MHz                   | 17.63               |

**Figure 29: 99% Bandwidth, Mode A (2412MHz), 11n(20HT)\_Antenna 1**


99% bandwidth, mode 11n(20HT), 2412MHz, Ant1

Date: 2.NOV.2015 18:25:53

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Figure 30: 99% Bandwidth, Mode B (2437MHz), 11n(20HT)\_Antenna 1

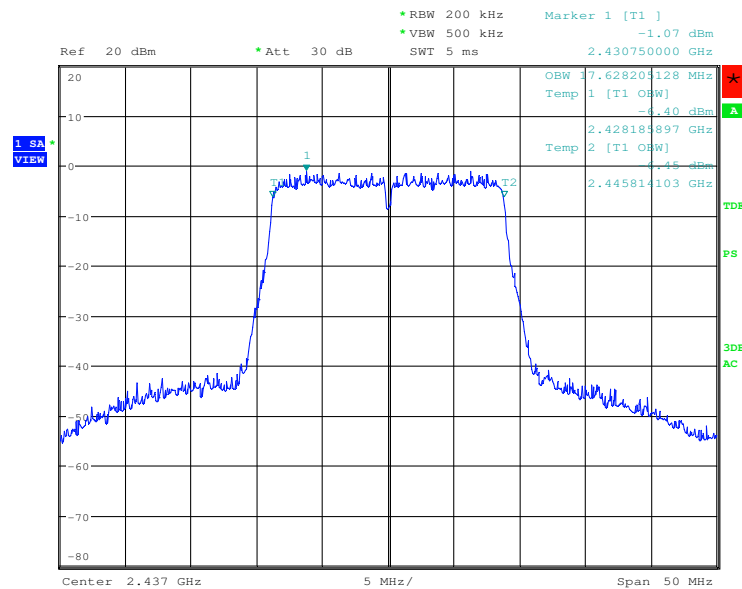
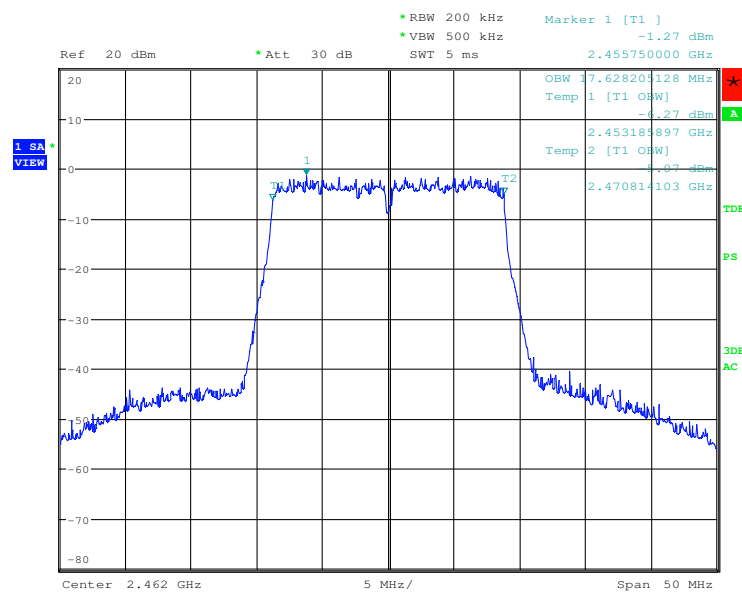
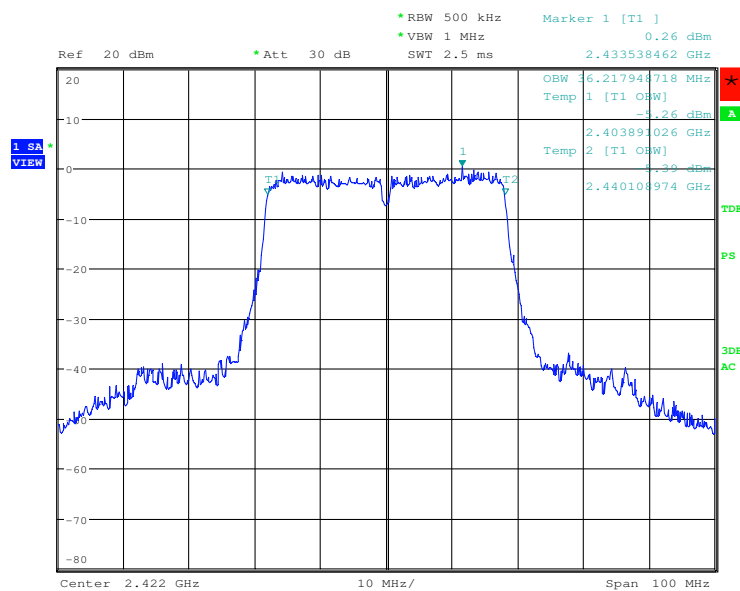
99% bandwidth, mode 11n(20HT), 2437MHz, Ant1  
Date: 2.NOV.2015 18:28:12

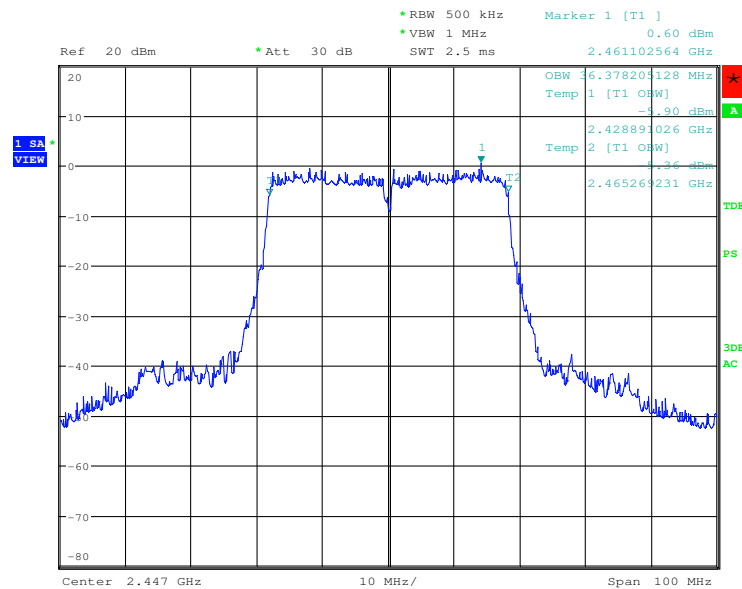
Figure 31: 99% Bandwidth, Mode C (2462MHz), 11n(20HT)\_Antenna 1

99% bandwidth, mode 11n(20HT), 2462MHz, Ant1  
Date: 2.NOV.2015 18:30:17

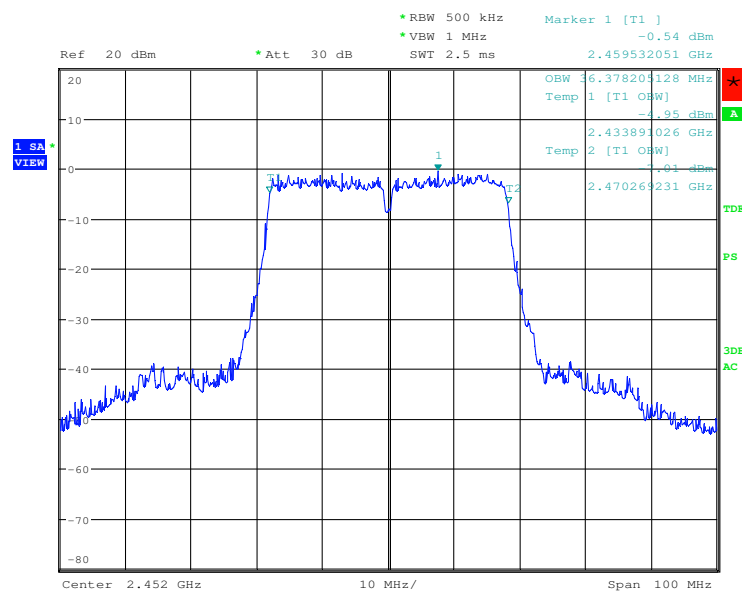
**Table 20: 99% Bandwidth, 11n(40HT)\_Antenna 0**

| Operating Frequency [MHz] | 99% Bandwidth [MHz] |
|---------------------------|---------------------|
| 2422MHz                   | 36.22               |
| 2437MHz                   | 36.38               |
| 2452MHz                   | 36.38               |

**Figure 32: 99% Bandwidth, Mode A (2422MHz), 11n(40HT)\_Antenna 0**

 99% bandwidth, mode 11n(40HT), 2422MHz  
 Date: 2.NOV.2015 18:06:46

**Figure 33: 99% Bandwidth, Mode B (2447MHz), 11n(40HT)\_Antenna 0**

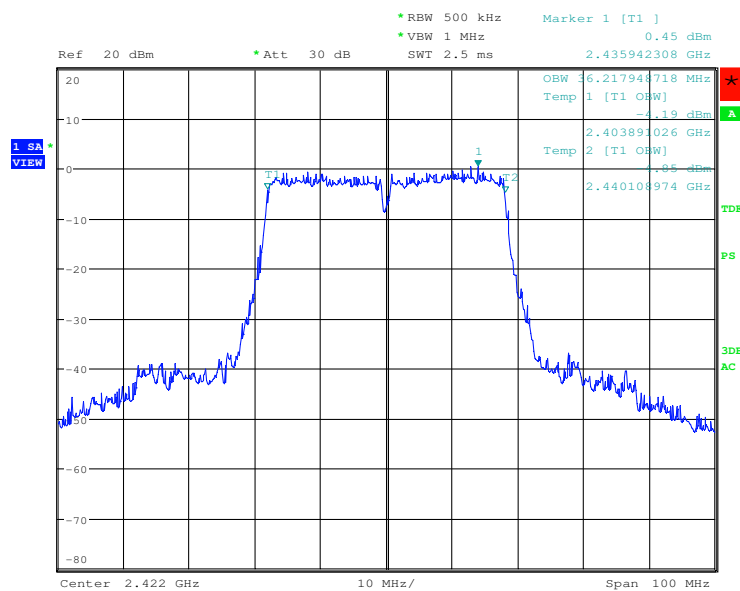
99% bandwidth, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 18:10:02

**Figure 34: 99% Bandwidth, Mode C (2452MHz), 11n(40HT)\_Antenna 0**

99% bandwidth, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 18:12:46

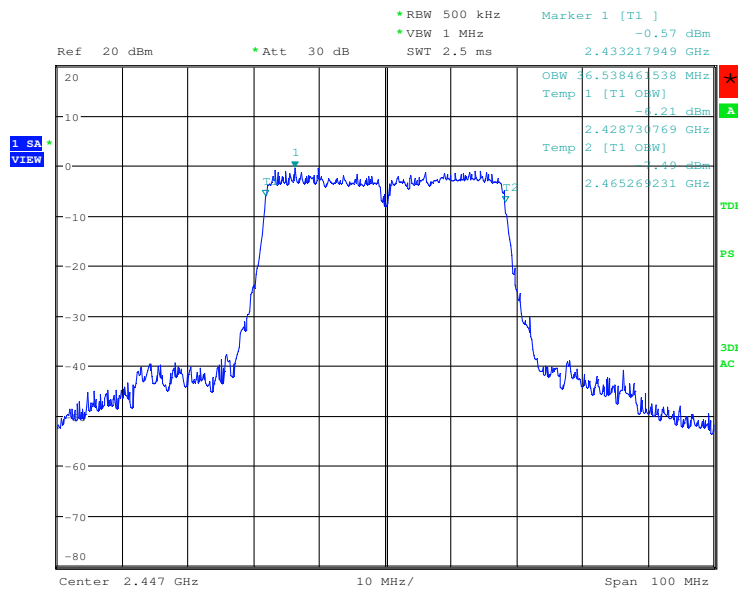
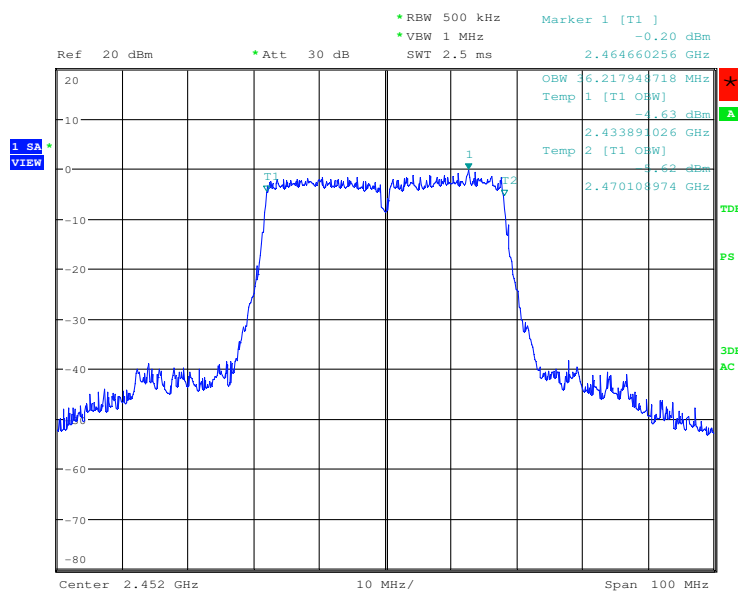
**Table 21: 99% Bandwidth, 11n(40HT)\_Antenna 1**

| Operating Frequency [MHz] | 99% Bandwidth [MHz] |
|---------------------------|---------------------|
| 2422MHz                   | 36.22               |
| 2447MHz                   | 36.54               |
| 2452MHz                   | 36.22               |

**Figure 35: 99% Bandwidth, Mode A (2422MHz), 11n(40HT)\_Antenna 1**


99% bandwidth, mode 11n(40HT), 2422MHz, Ant1

Date: 2.NOV.2015 18:21:49

**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 44 von 123  
Page 44 of 123**Figure 36: 99% Bandwidth, Mode B (2447MHz), 11n(40HT)\_Antenna 1**99% bandwidth, mode 11n(40HT), 2447MHz, Ant1  
Date: 2.NOV.2015 18:19:04**Figure 37: 99% Bandwidth, Mode C (2452MHz), 11n(40HT)\_Antenna 1**99% bandwidth, mode 11n(40HT), 2452MHz, Ant1  
Date: 2.NOV.2015 18:16:25

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**5.2.4 Conducted Spurious Emissions**
**RESULT:**
**PASS**

Date of testing: 2015-11-02  
 Ambient temperature: 24°C  
 Relative humidity: 46%  
 Atmospheric pressure: 1012hPa

**Requirements:**

FCC 15.247(d) and RSS-247 5.5

In any 100kHz bandwidth outside the frequency band in which the intentional radiator is operating, the RF power shall be at least 20dB below that of the maximum in-band 100kHz emission.

**Test procedure:**

ANSI C63.10-2013, RSS-Gen 6.13 and KDB Publication No. 558074 D01.

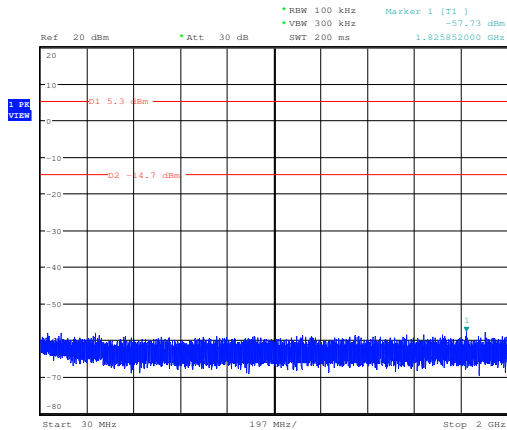
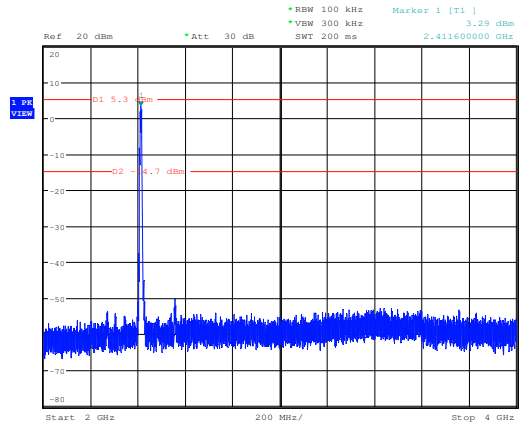
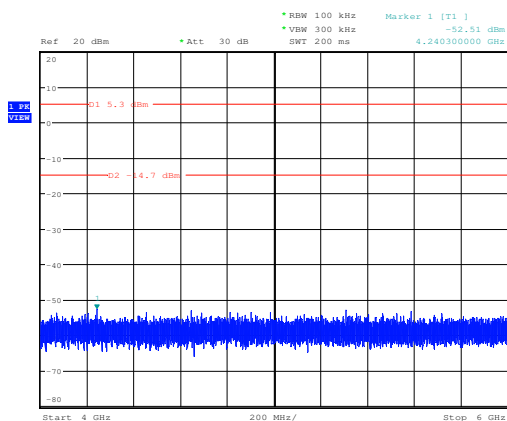
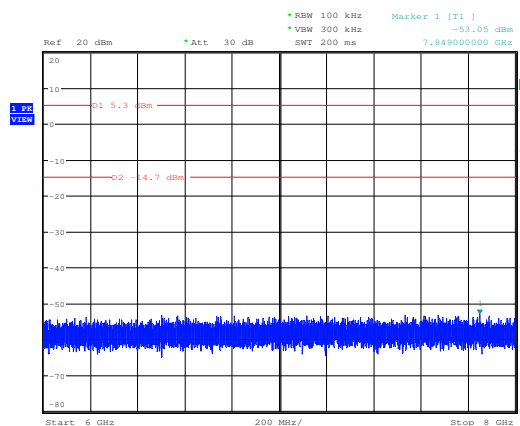
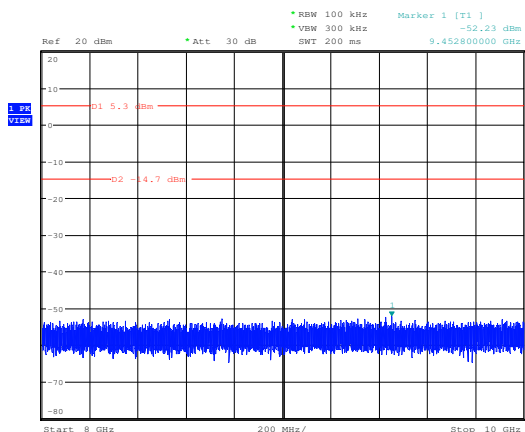
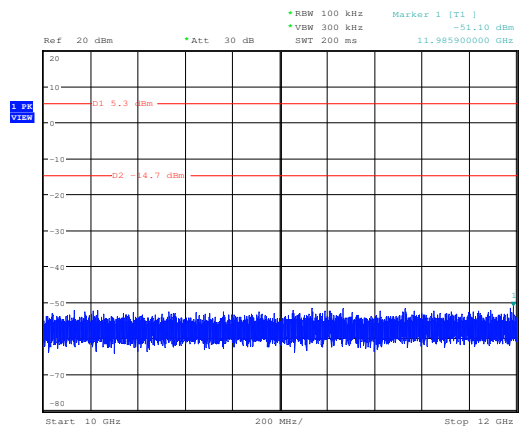
The conducted spurious emissions were measured at the antenna port with a spectrum analyzer using a peak detector. The resolution bandwidth was set to 100kHz and the video bandwidth to 300kHz. Measurements were performed from 30MHz to 25GHz (10<sup>th</sup> harmonics).

The readings of the measurements take into account the loss generated by all the involved cables.

**Table 22: Conducted Spurious Emissions in Non-Restricted Frequency Bands**

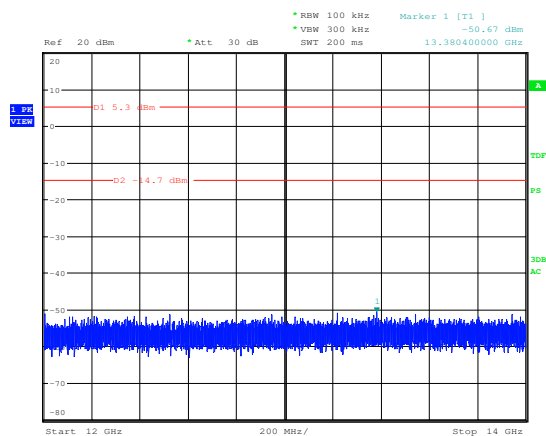
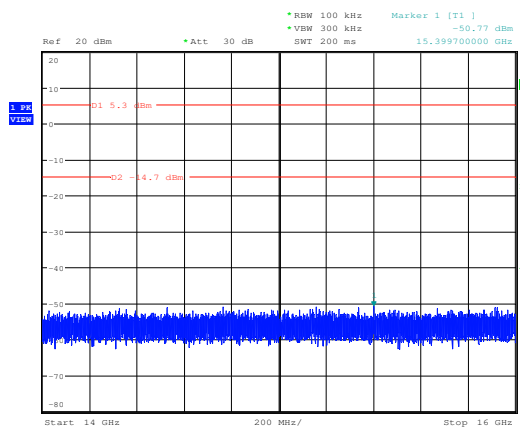
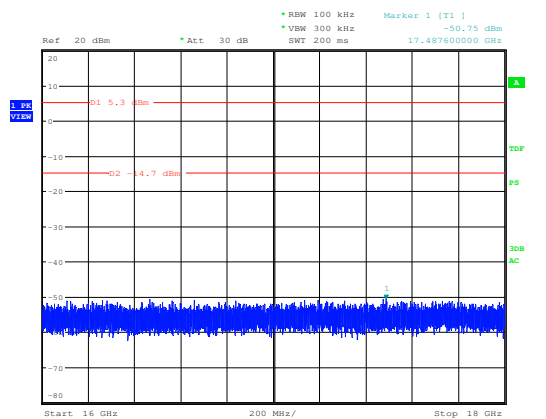
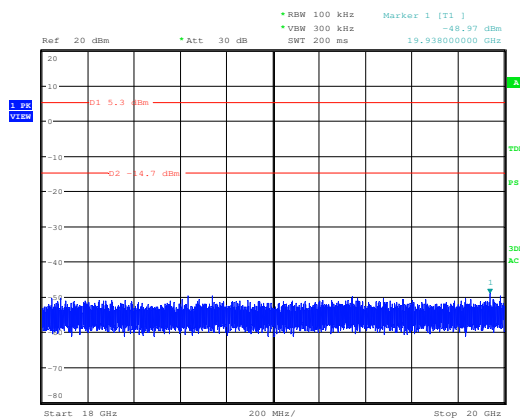
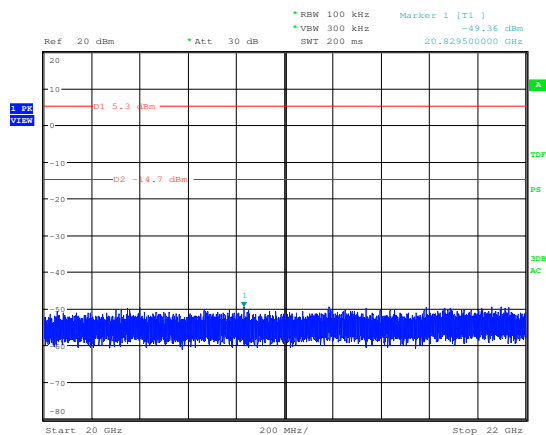
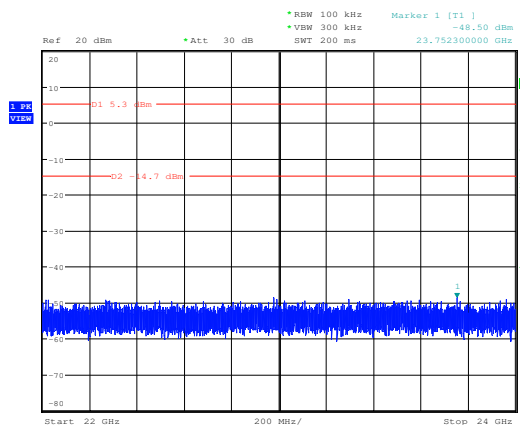
| Protocol  | Antenna Port for Final Measurement | Frequency [MHz] | Worst Case Margin [dB] |
|-----------|------------------------------------|-----------------|------------------------|
| 11b       | Antenna 0 (*)                      | 2412            | >20dB                  |
| 11b       | Antenna 0 (*)                      | 2437            | >20dB                  |
| 11b       | Antenna 0 (*)                      | 2462            | >20dB                  |
| 11g       | Antenna 0 (*)                      | 2412            | >20dB                  |
| 11g       | Antenna 0 (*)                      | 2437            | >20dB                  |
| 11g       | Antenna 0 (*)                      | 2462            | >20dB                  |
| 11n(20HT) | Antenna 0 (*)                      | 2412            | >20dB                  |
| 11n(20HT) | Antenna 0 (*)                      | 2437            | >20dB                  |
| 11n(20HT) | Antenna 0 (*)                      | 2462            | >20dB                  |
| 11n(40HT) | Antenna 0 (*)                      | 2422            | >20dB                  |
| 11n(40HT) | Antenna 0 (*)                      | 2447            | >20dB                  |
| 11n(40HT) | Antenna 0 (*)                      | 2457            | >20dB                  |

(\*) Antenna 0 was worst case for result.

**Figure 38: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode A (2412MHz), 11b\_Antenna 0**Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:35:59Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:37:01Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:37:33Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:37:54Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:38:20Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:38:55

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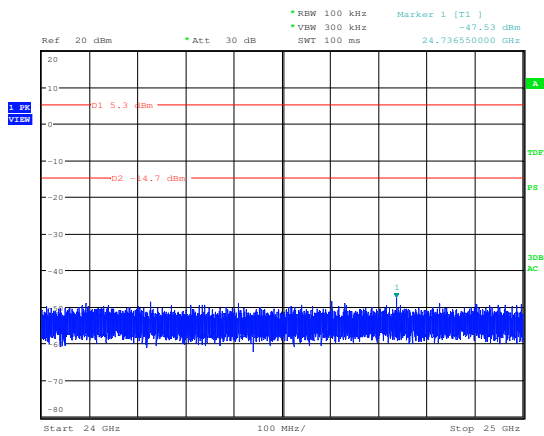
50027424 001

Seite 47 von 123  
Page 47 of 123Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:39:30Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:40:25Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:40:48Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:41:22Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:41:57Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:42:30

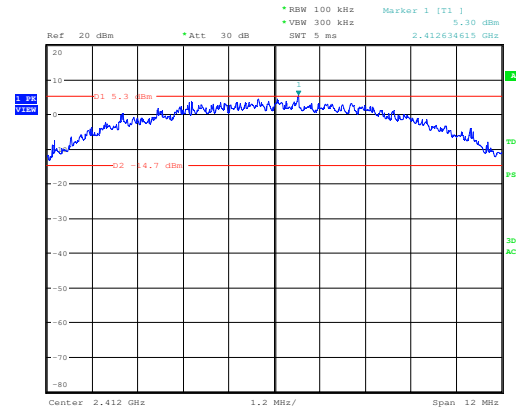
Produkte  
Products

**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:

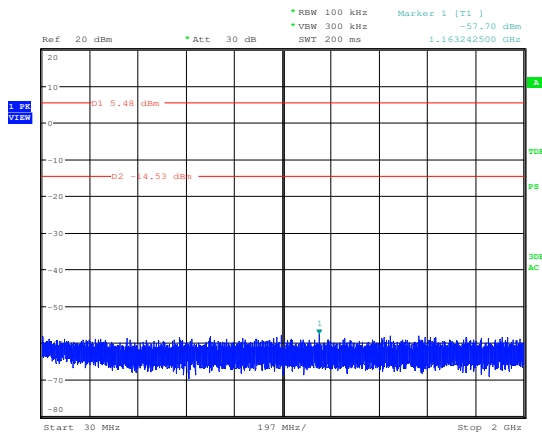
**Seite 48 von 123**  
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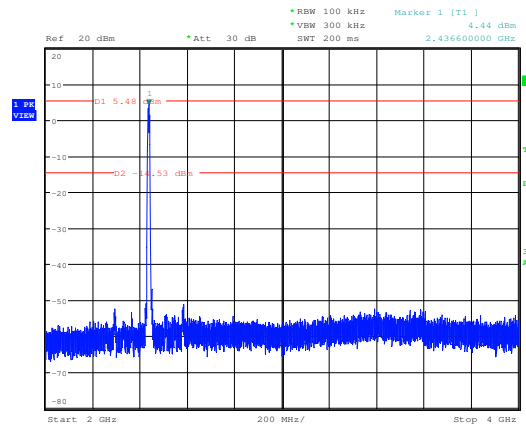
Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:42:54



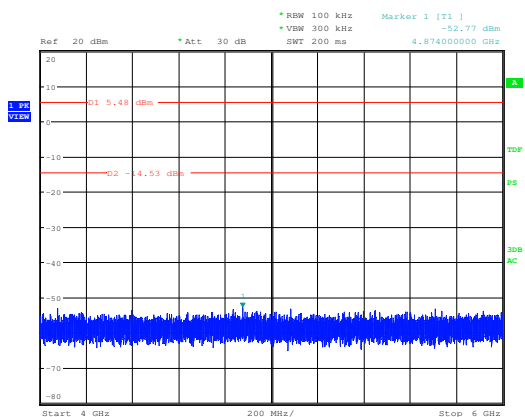
Conducted spurious emissions, mode 11b, 2412MHz  
Date: 2.NOV.2015 19:35:21

**Figure 39: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode B (2437MHz), 11b\_Antenna 0**

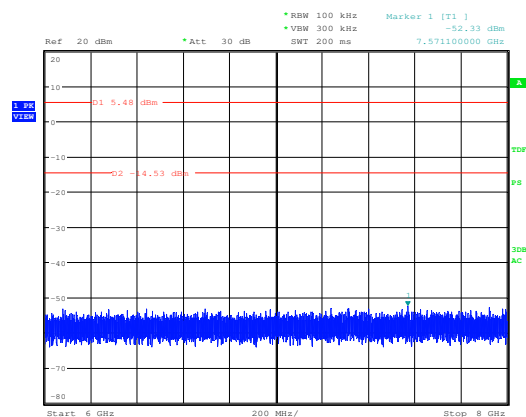
Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:27:30



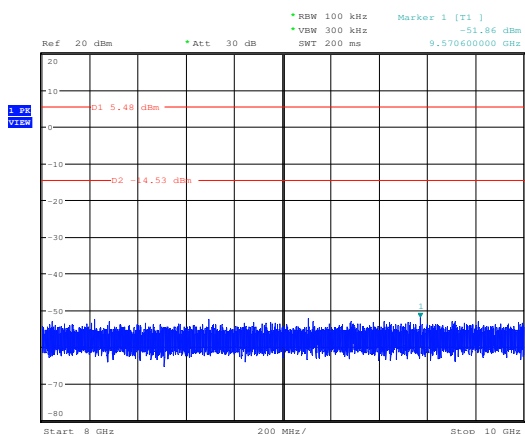
Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:27:58



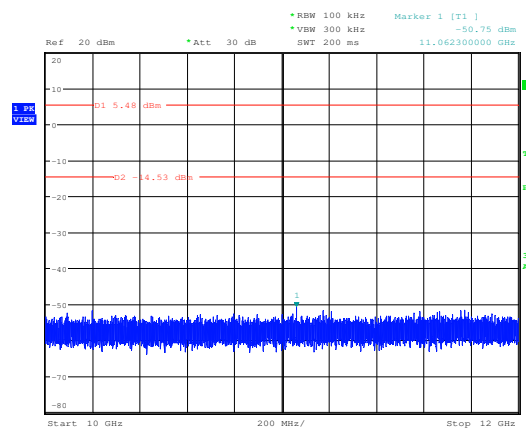
Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:28:32



Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:29:14



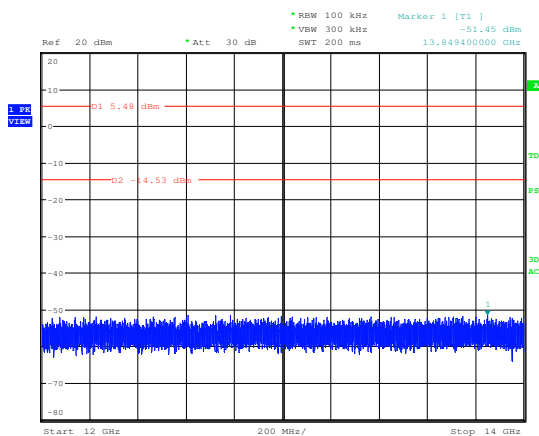
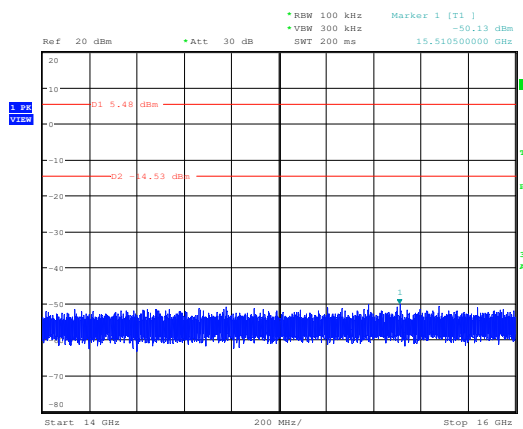
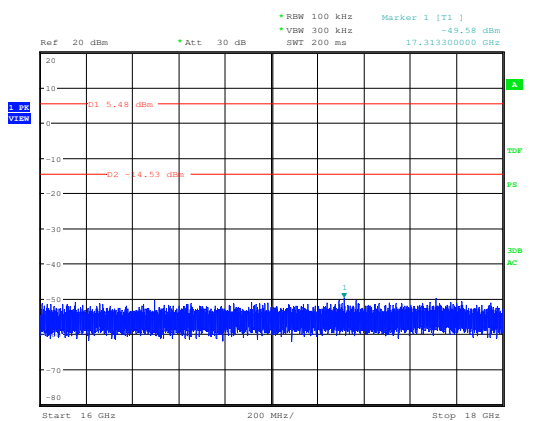
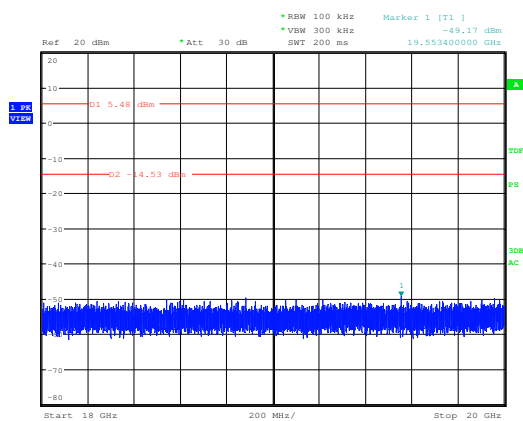
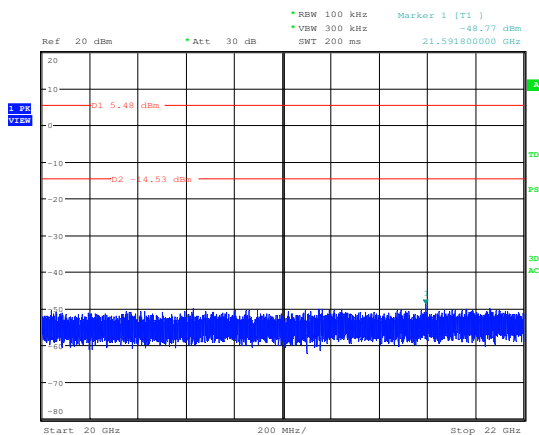
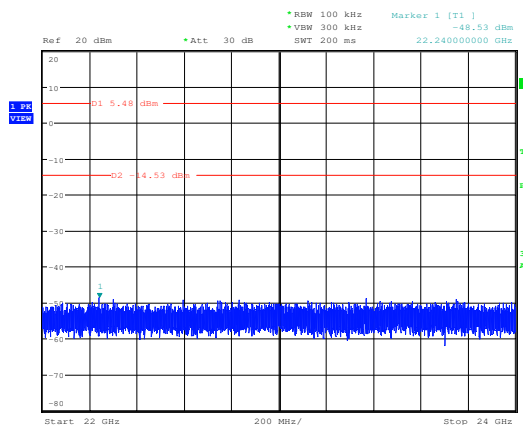
Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:29:46

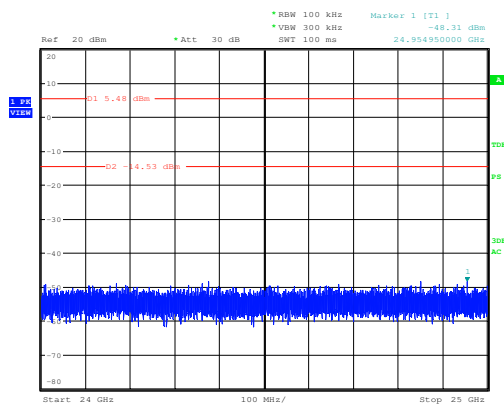
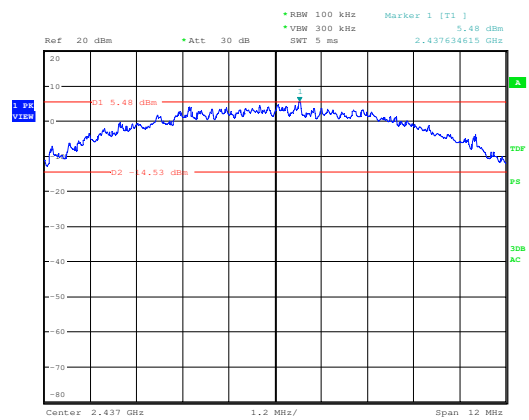


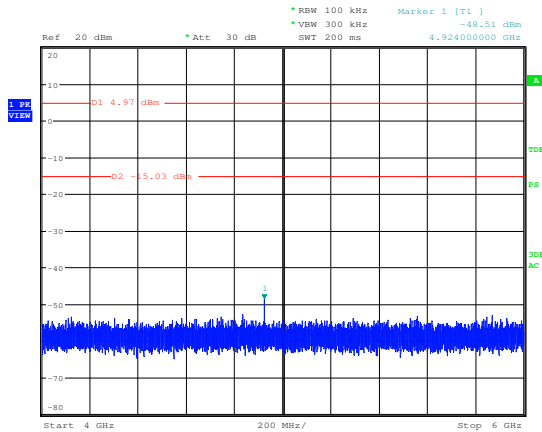
Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:30:34

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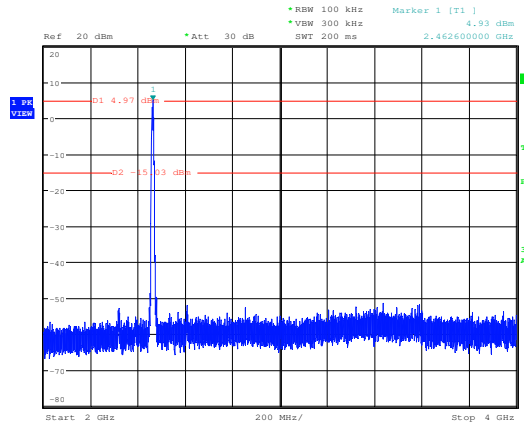
50027424 001

Seite 50 von 123  
Page 50 of 123Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:31:04Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:31:51Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:32:13Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:32:35Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:33:07Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:33:34

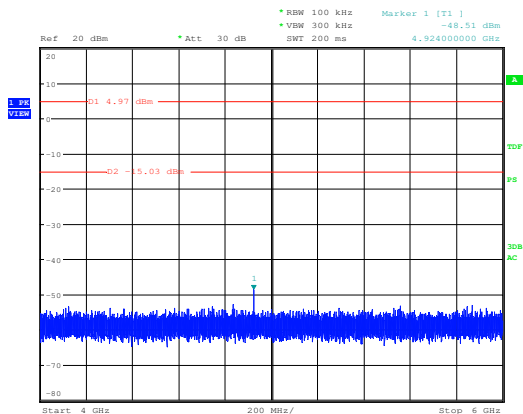
**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 51 von 123  
Page 51 of 123Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:33:51Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:27:14

**Figure 40: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode C (2462MHz), 11b\_Antenna 0**

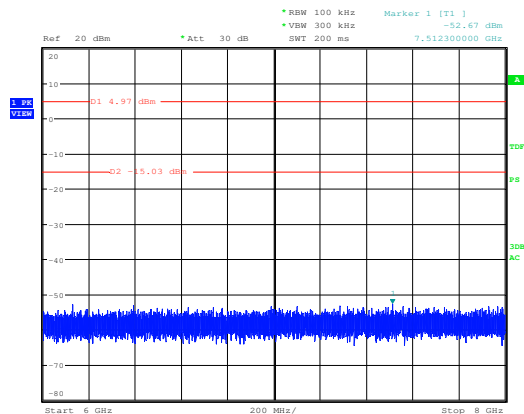
Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:20:28



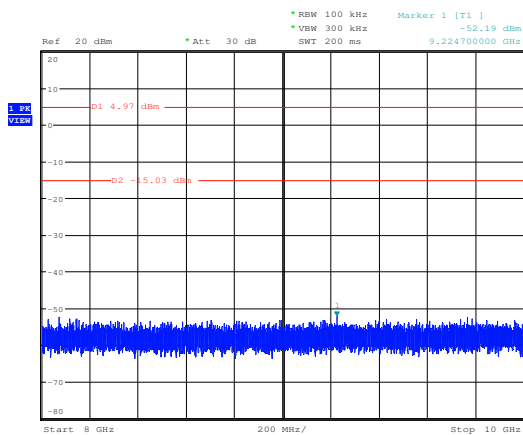
Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:20:09



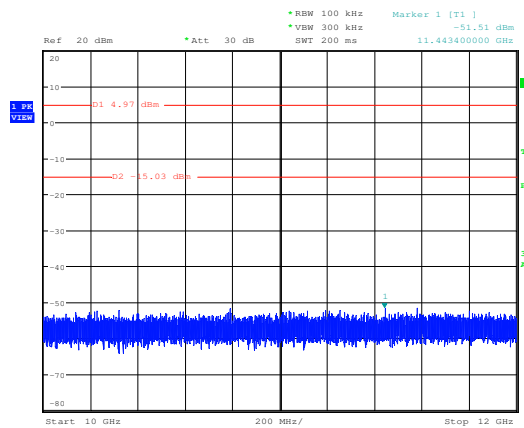
Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:20:28



Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:20:59



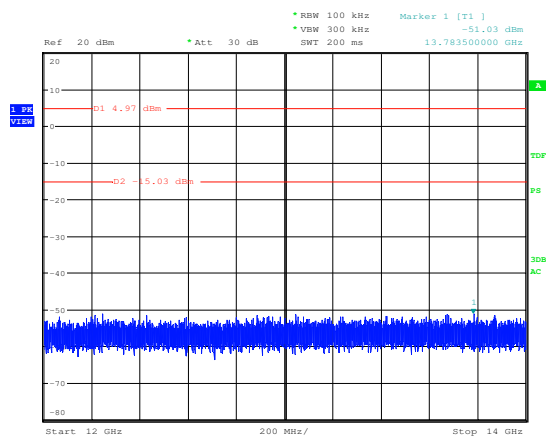
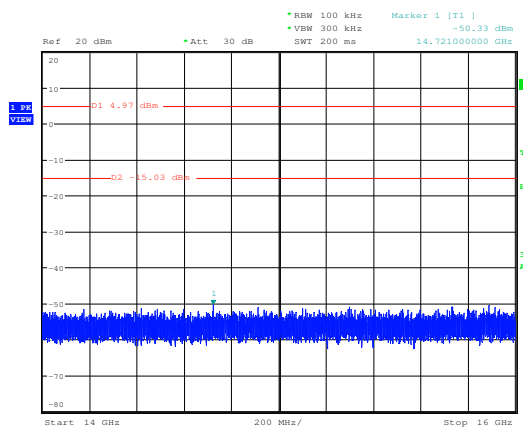
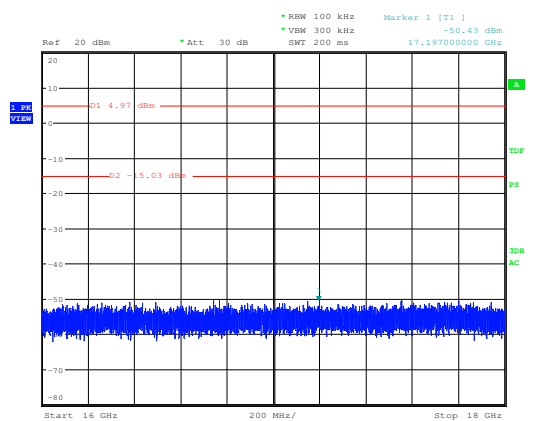
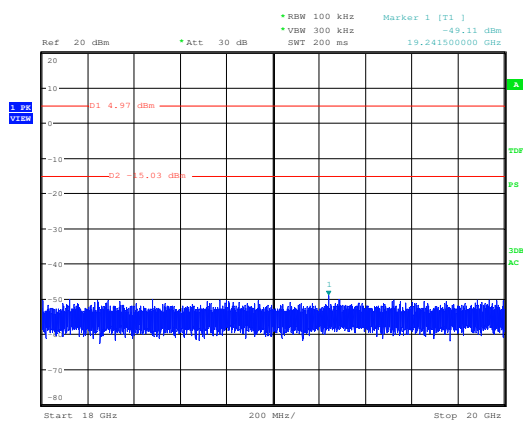
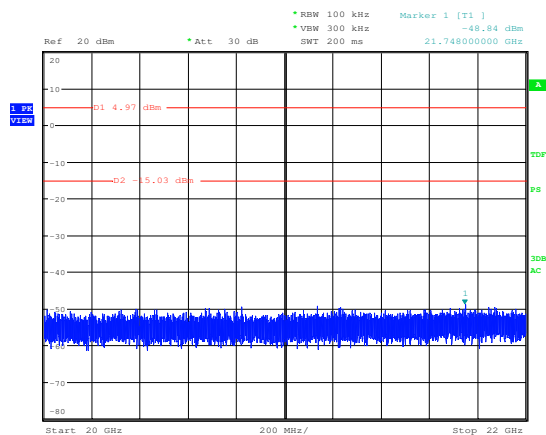
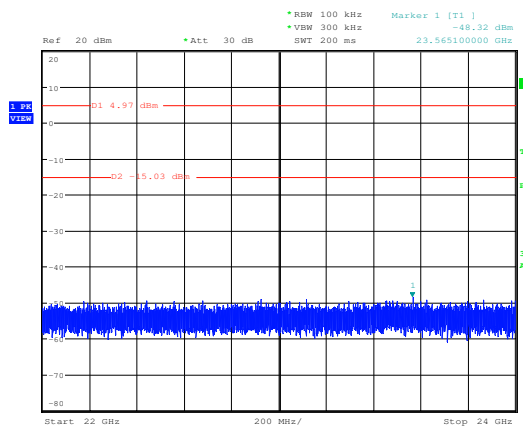
Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:21:45



Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:22:23

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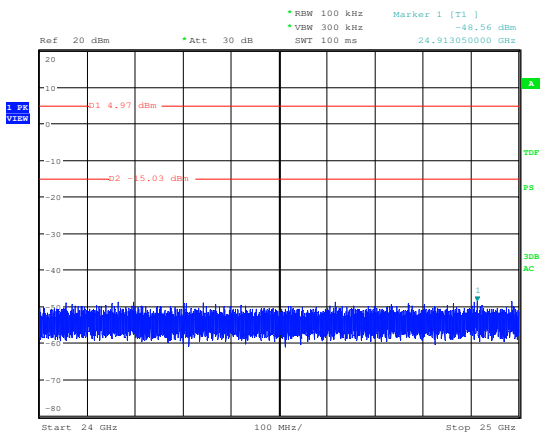
50027424 001

Seite 53 von 123  
Page 53 of 123Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:22:42Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:22:56Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:23:35Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:24:05Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:24:39Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:25:02

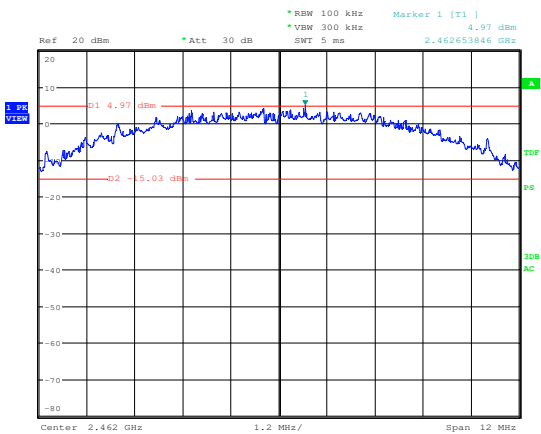
Produkte  
Products

Prüfbericht - Nr.: 50027424 001  
Test Report No.:

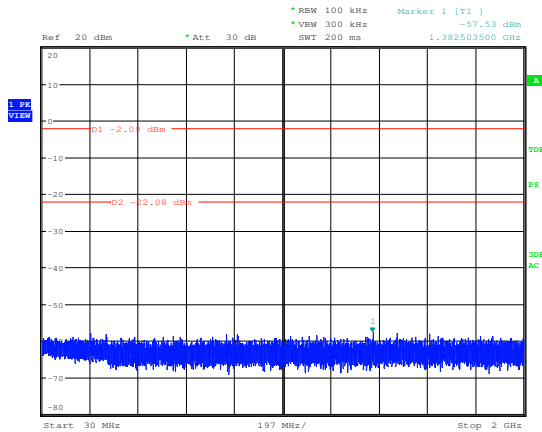
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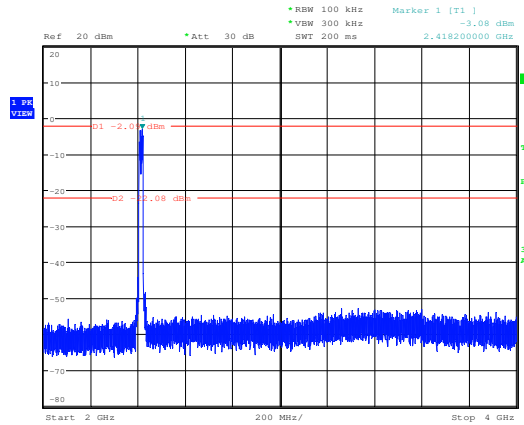
Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:29:30



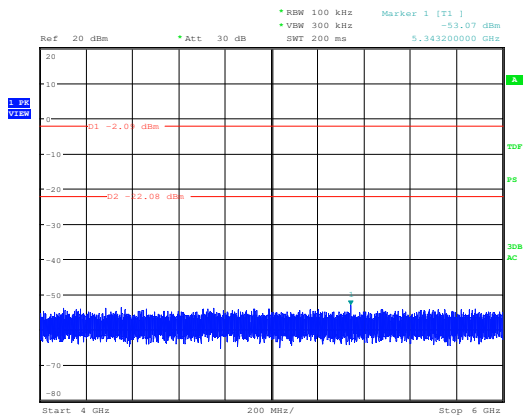
Conducted spurious emissions, mode 11b, 2462MHz  
Date: 2.NOV.2015 19:19:11

**Figure 41: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode A (2412MHz), 11g\_Antenna 0**

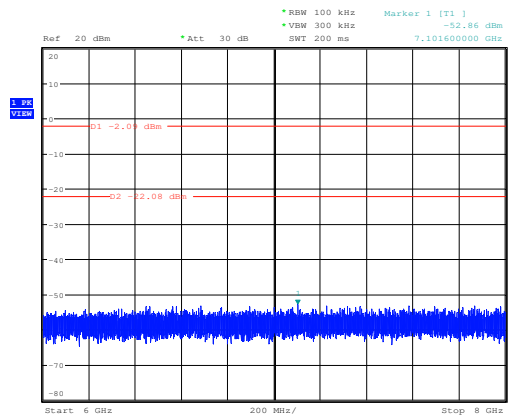
Conducted spurious emissions, mode 11g, 2412MHz  
Date: 2.NOV.2015 18:52:34



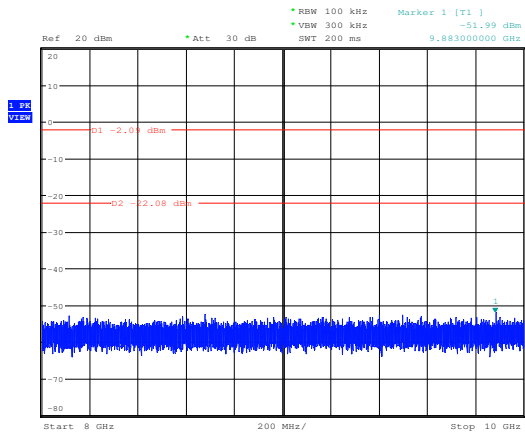
Conducted spurious emissions, mode 11g, 2412MHz  
Date: 2.NOV.2015 18:52:50



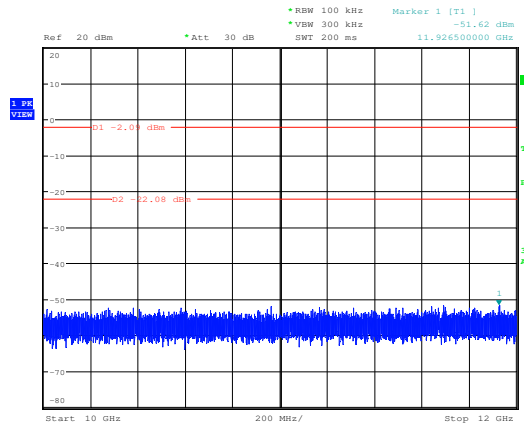
Conducted spurious emissions, mode 11g, 2412MHz  
Date: 2.NOV.2015 18:53:03



Conducted spurious emissions, mode 11g, 2412MHz  
Date: 2.NOV.2015 18:53:18



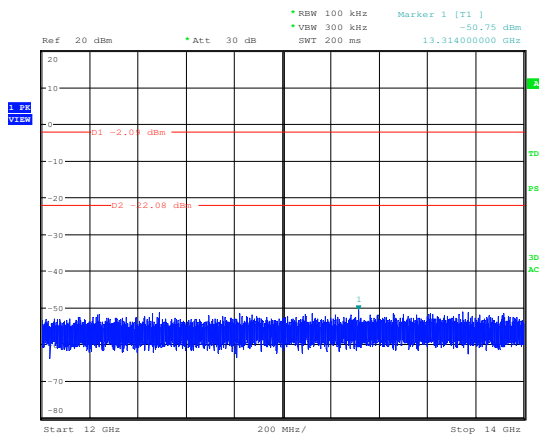
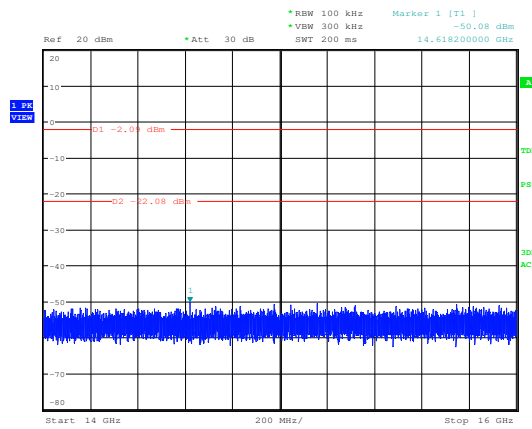
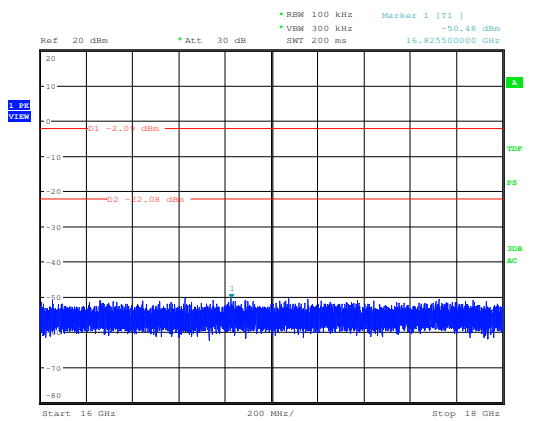
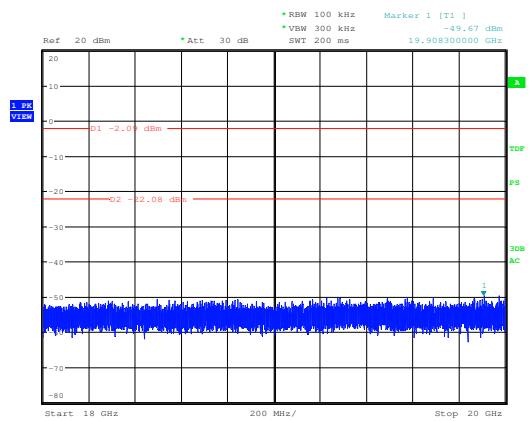
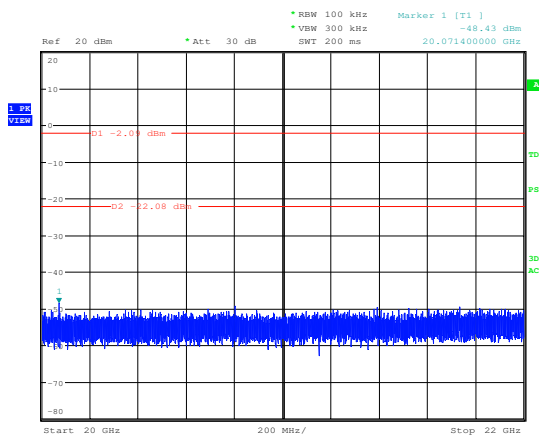
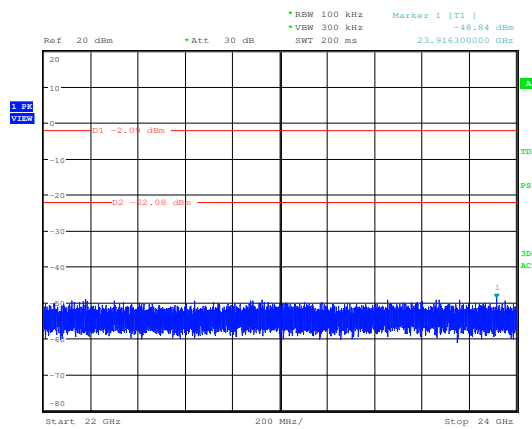
Conducted spurious emissions, mode 11g, 2412MHz  
Date: 2.NOV.2015 18:53:33

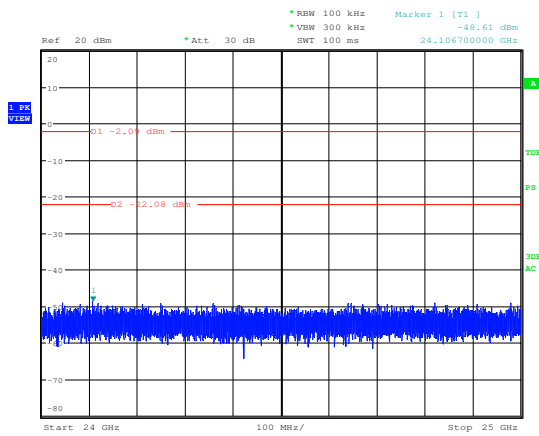
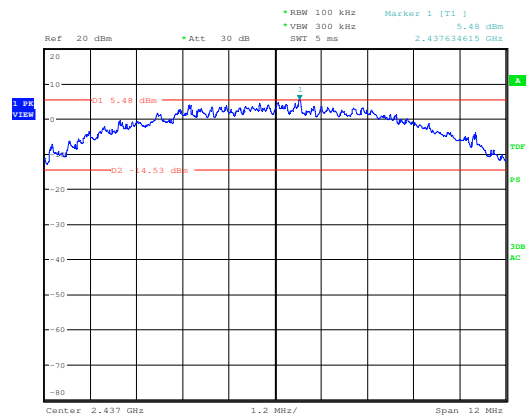


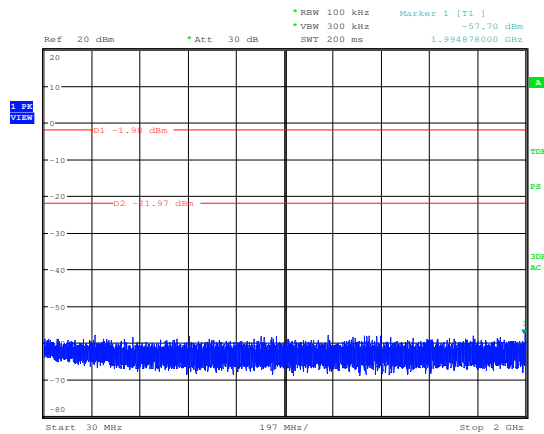
Conducted spurious emissions, mode 11g, 2412MHz  
Date: 2.NOV.2015 18:53:49

Prüfbericht - Nr.:  
Test Report No.:

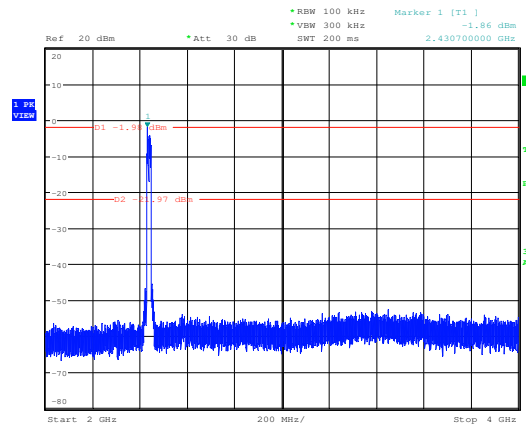
50027424 001

Seite 56 von 123  
Page 56 of 123Conducted spurious emissions, mode 1lg, 2412MHz  
Date: 2.NOV.2015 18:54:04Conducted spurious emissions, mode 1lg, 2412MHz  
Date: 2.NOV.2015 18:54:34Conducted spurious emissions, mode 1lg, 2412MHz  
Date: 2.NOV.2015 18:54:53Conducted spurious emissions, mode 1lg, 2412MHz  
Date: 2.NOV.2015 18:55:15Conducted spurious emissions, mode 1lg, 2412MHz  
Date: 2.NOV.2015 18:55:36Conducted spurious emissions, mode 1lg, 2412MHz  
Date: 2.NOV.2015 18:55:50

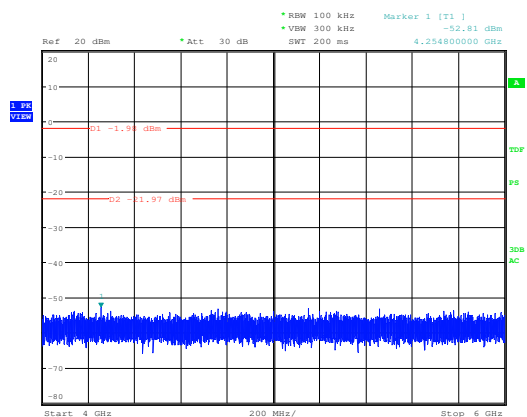
**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 57 von 123  
Page 57 of 123Conducted spurious emissions, mode 11g, 2412MHz  
Date: 2.NOV.2015 18:56:24Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:27:14

**Figure 42: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode B (2437MHz), 11g\_Antenna 0**

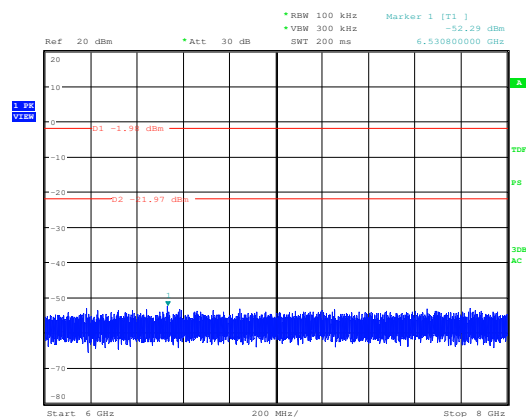
Conducted spurious emissions, mode 11g, 2437MHz  
Date: 2.NOV.2015 18:59:10



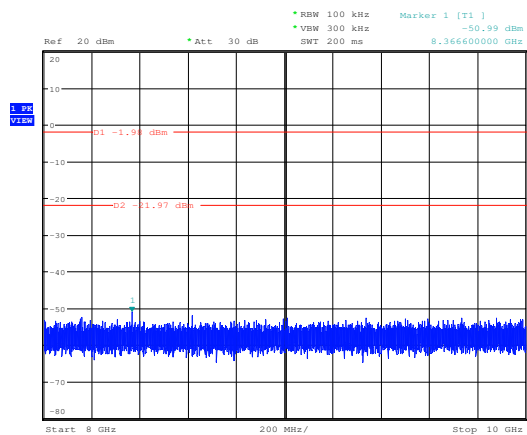
Conducted spurious emissions, mode 11g, 2437MHz  
Date: 2.NOV.2015 18:59:42



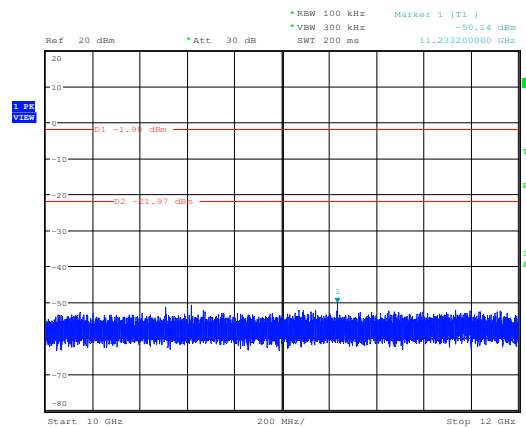
Conducted spurious emissions, mode 11g, 2437MHz  
Date: 2.NOV.2015 19:00:10



Conducted spurious emissions, mode 11g, 2437MHz  
Date: 2.NOV.2015 19:00:37



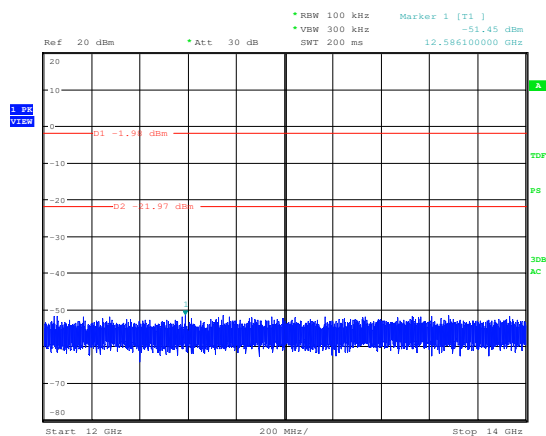
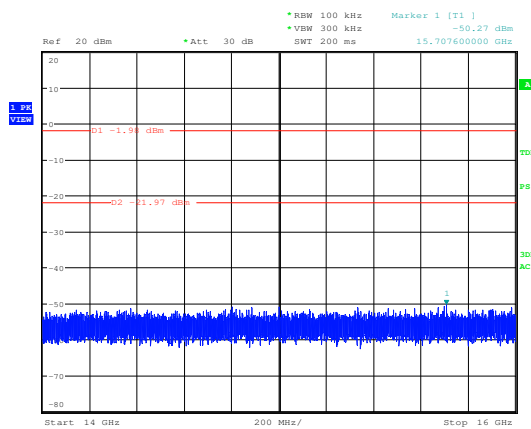
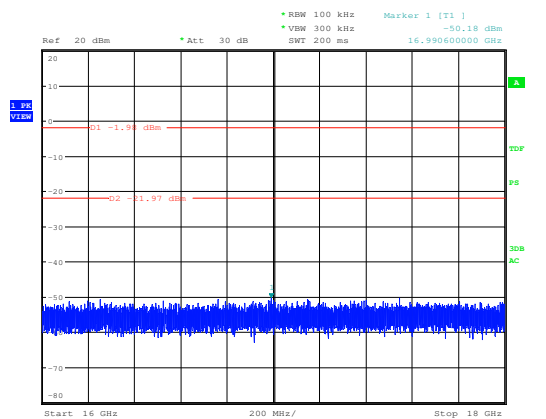
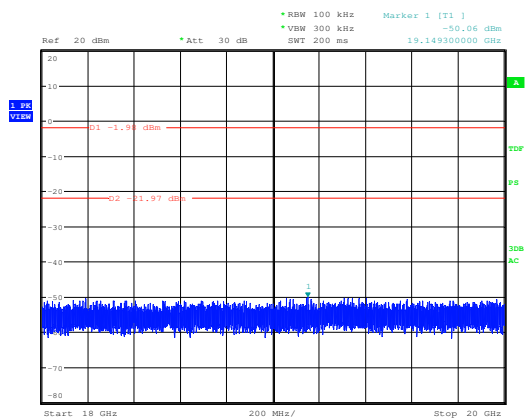
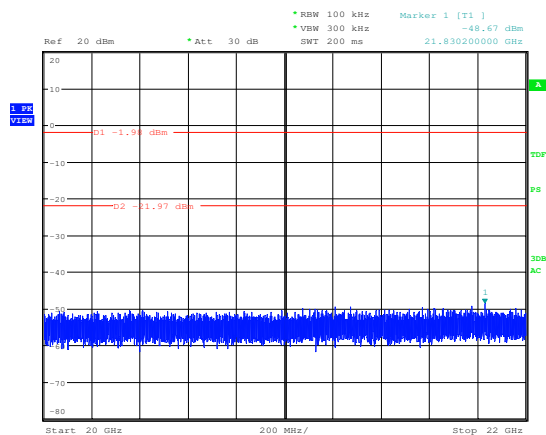
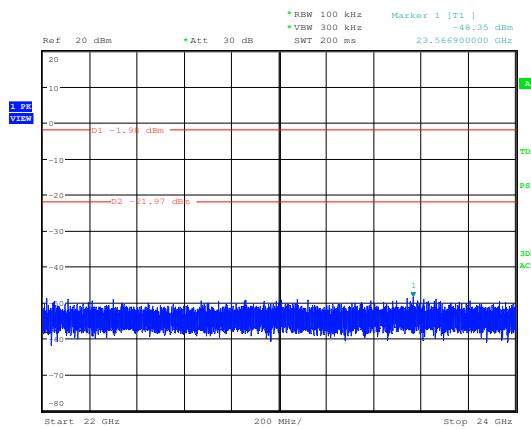
Conducted spurious emissions, mode 11g, 2437MHz  
Date: 2.NOV.2015 19:00:57

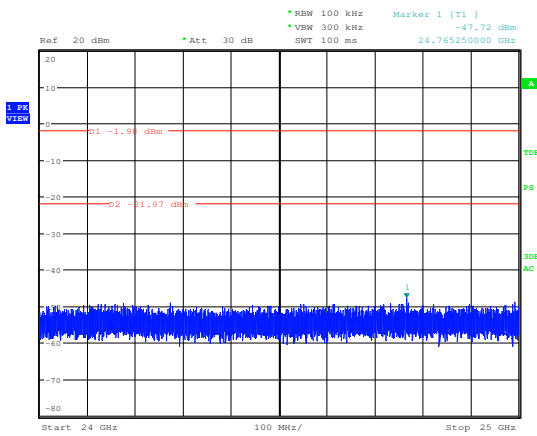
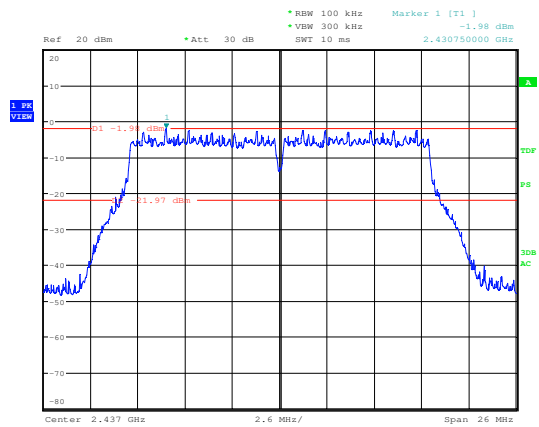


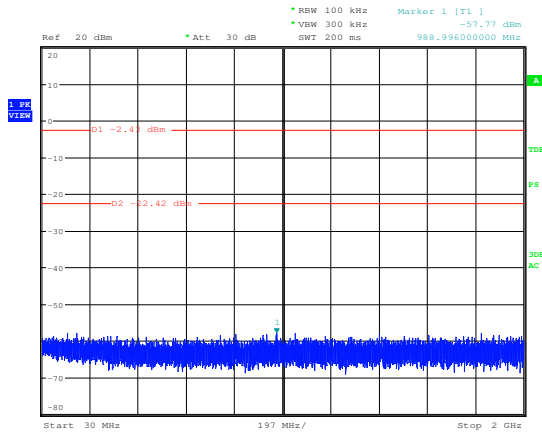
Conducted spurious emissions, mode 11g, 2437MHz  
Date: 2.NOV.2015 19:01:13

Prüfbericht - Nr.:  
Test Report No.:

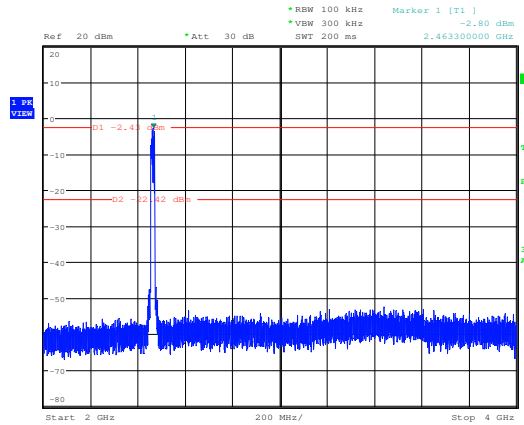
50027424 001

Seite 59 von 123  
Page 59 of 123Conducted spurious emissions, mode 1lg, 2437MHz  
Date: 2.NOV.2015 19:01:27Conducted spurious emissions, mode 1lg, 2437MHz  
Date: 2.NOV.2015 19:01:40Conducted spurious emissions, mode 1lg, 2437MHz  
Date: 2.NOV.2015 19:01:56Conducted spurious emissions, mode 1lg, 2437MHz  
Date: 2.NOV.2015 19:02:13Conducted spurious emissions, mode 1lg, 2437MHz  
Date: 2.NOV.2015 19:02:37Conducted spurious emissions, mode 1lg, 2437MHz  
Date: 2.NOV.2015 19:02:55

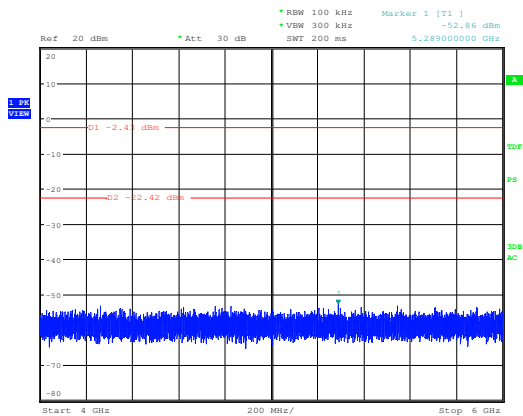
**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 60 von 123  
Page 60 of 123Conducted spurious emissions, mode 1lg, 2437MHz  
Date: 2.NOV.2015 19:03:13Conducted spurious emissions, mode 1lg, 2437MHz  
Date: 2.NOV.2015 18:58:48

**Figure 43: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode C (2462MHz), 11g\_Antenna 0**

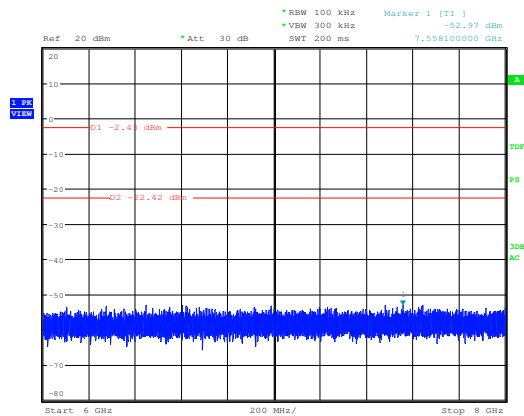
Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:04:37



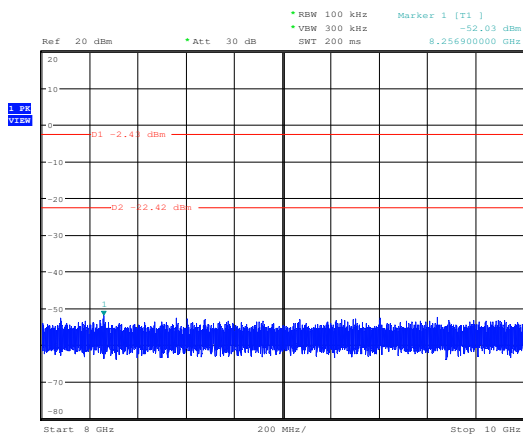
Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:04:57



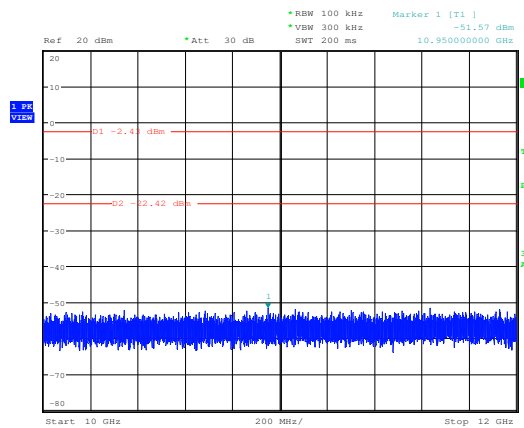
Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:05:10



Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:05:34



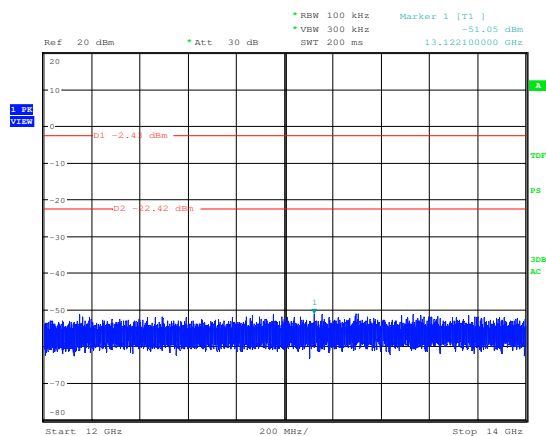
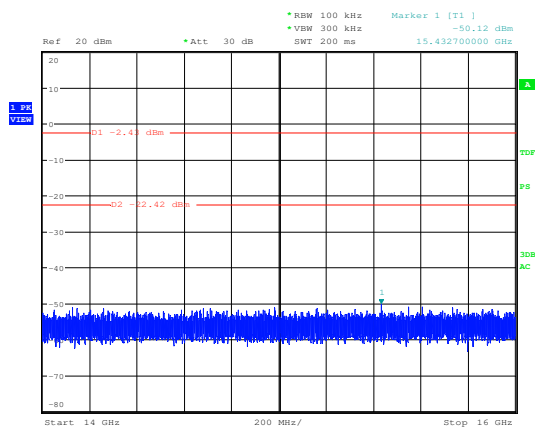
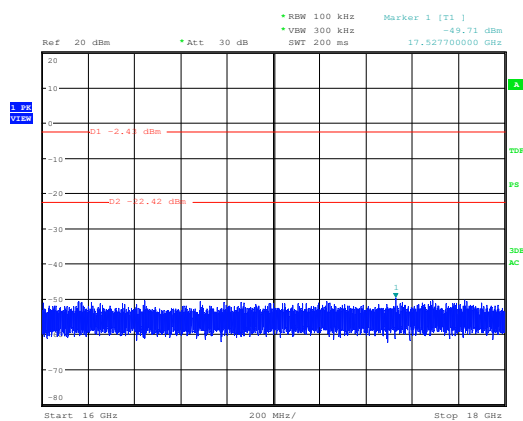
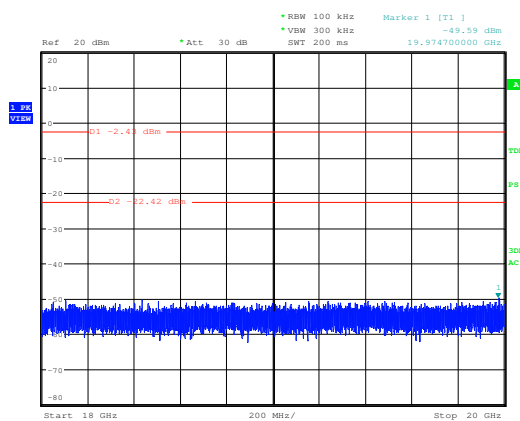
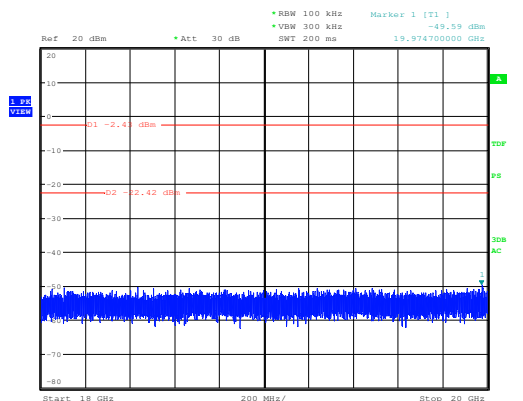
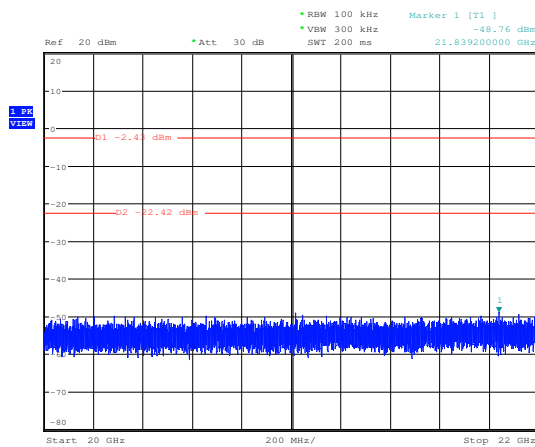
Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:05:51

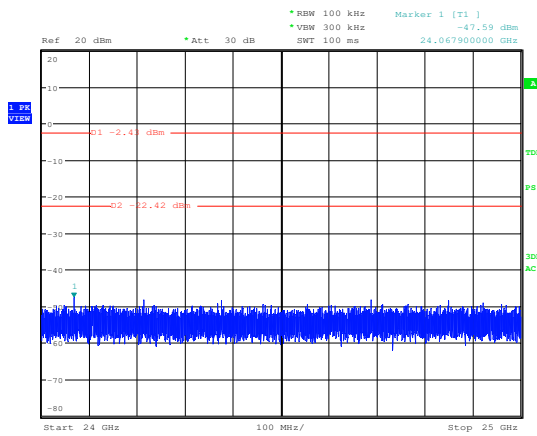
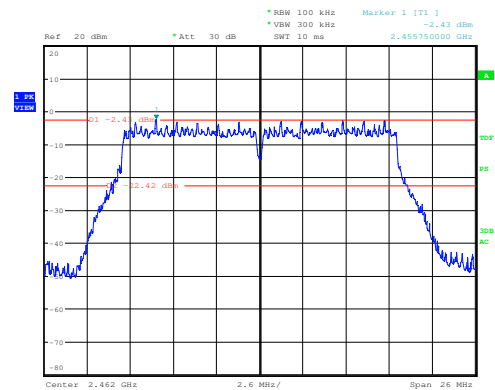


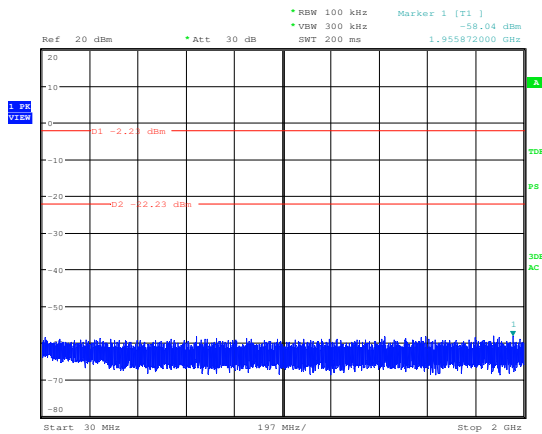
Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:06:05

Prüfbericht - Nr.:  
Test Report No.:

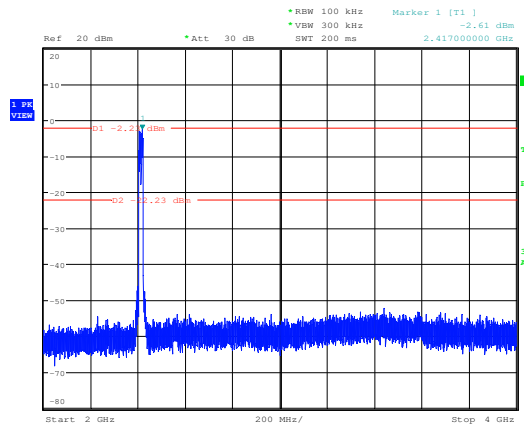
50027424 001

Seite 62 von 123  
Page 62 of 123Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:06:19Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:06:36Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:06:55Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:07:15Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:07:15Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:07:42

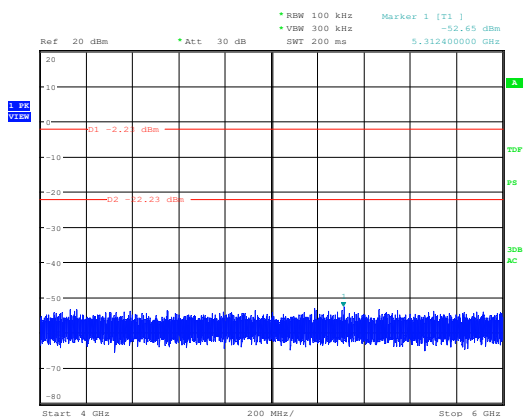
**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 63 von 123  
Page 63 of 123Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:08:34Conducted spurious emissions, mode 11g, 2462MHz  
Date: 2.NOV.2015 19:04:18

**Figure 44: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode A (2412MHz), 11n(20HT)\_Antenna 0**

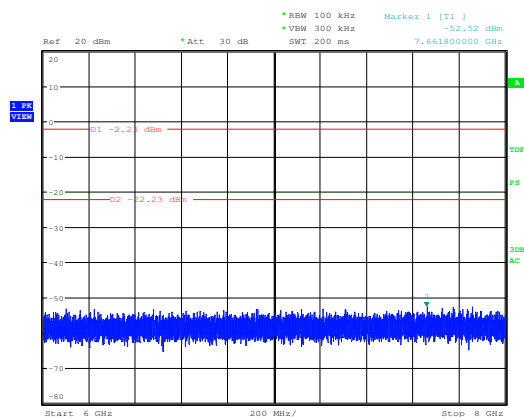
Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:46:19



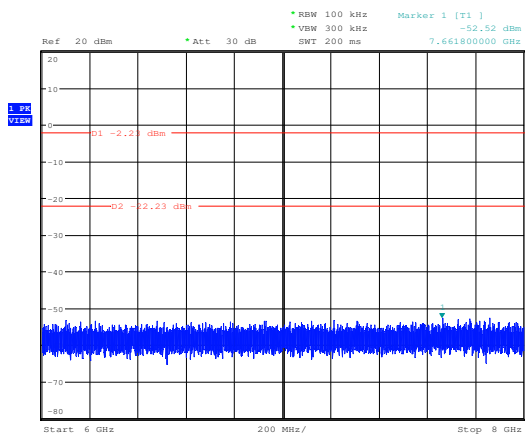
Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:46:35



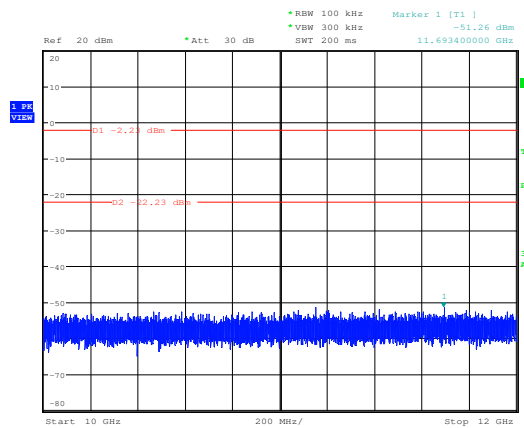
Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:46:50



Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:47:09



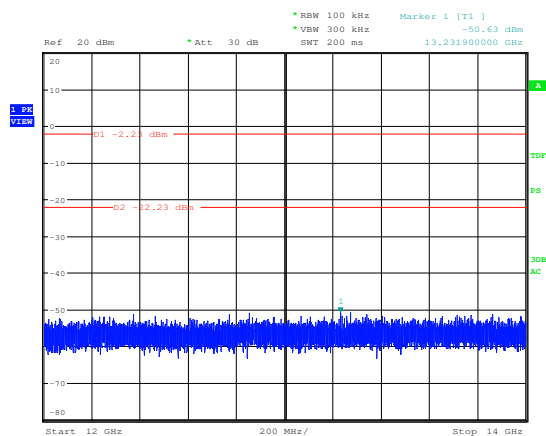
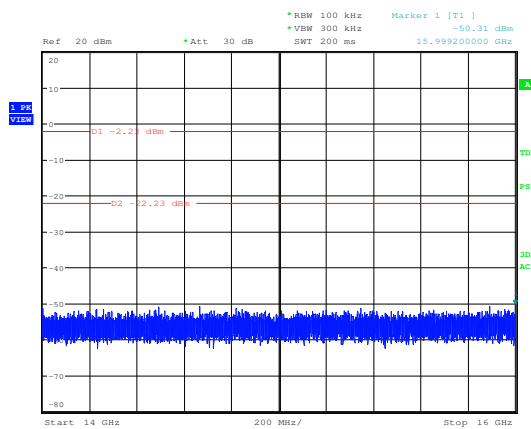
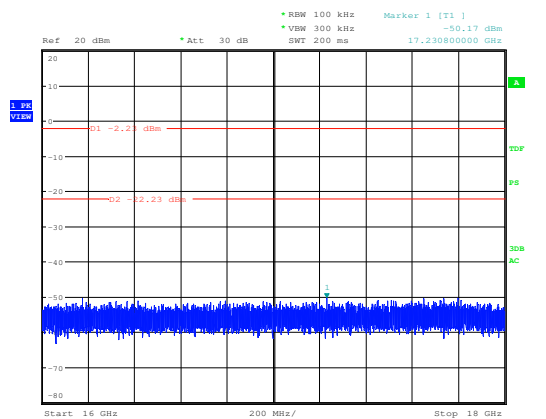
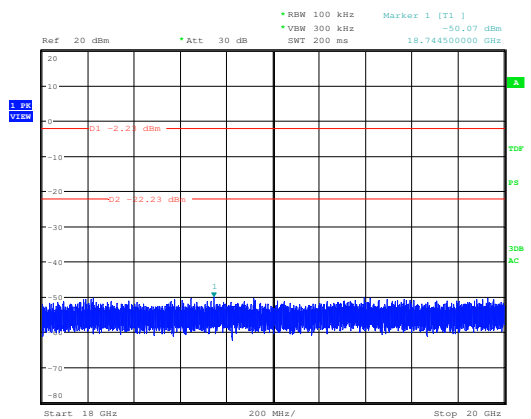
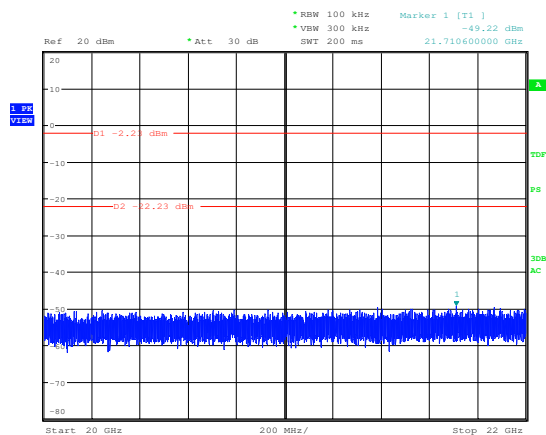
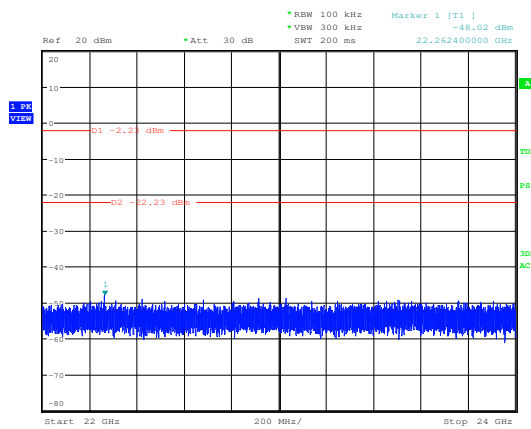
Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:47:09

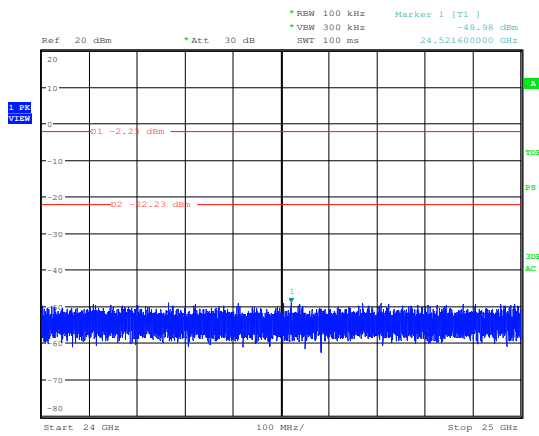
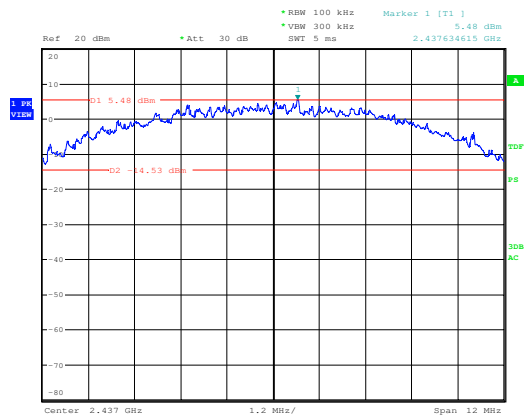


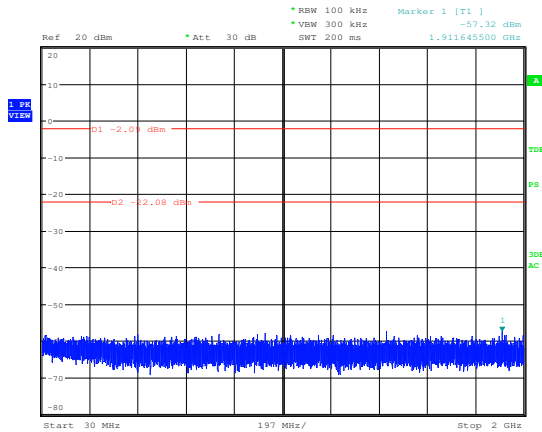
Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:47:45

Prüfbericht - Nr.:  
Test Report No.:

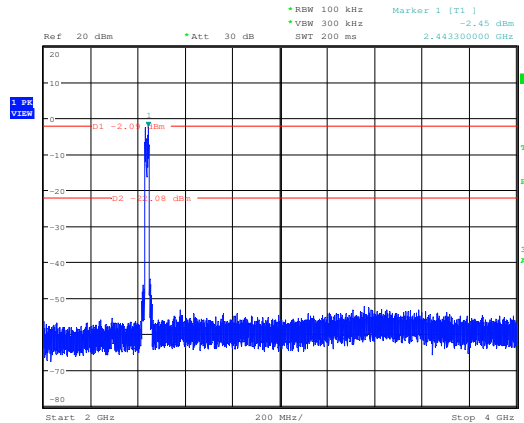
50027424 001

Seite 65 von 123  
Page 65 of 123Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:48:04Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:48:19Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:48:39Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:49:04Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:49:17Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:49:37

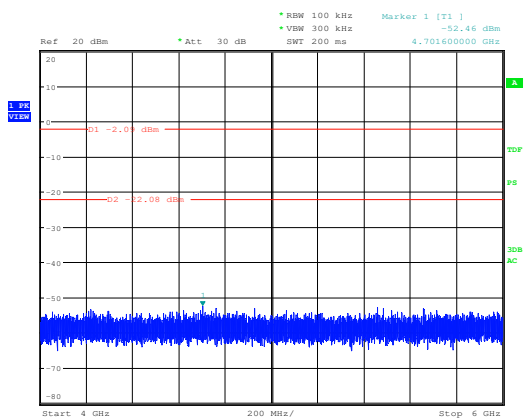
**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 66 von 123  
Page 66 of 123Conducted spurious emissions, mode 11n(20HT), 2412MHz  
Date: 2.NOV.2015 18:49:59Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:27:14

**Figure 45: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode B (2462MHz), 11n(20HT)\_Antenna 0**

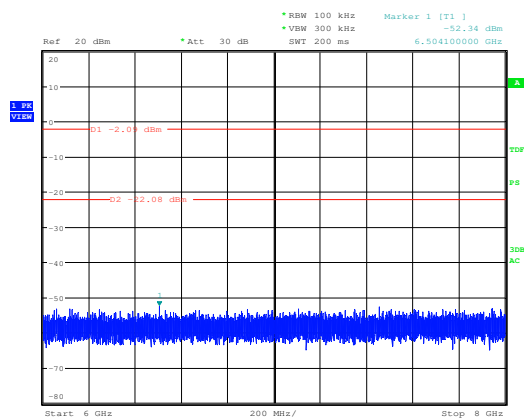
Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:41:32



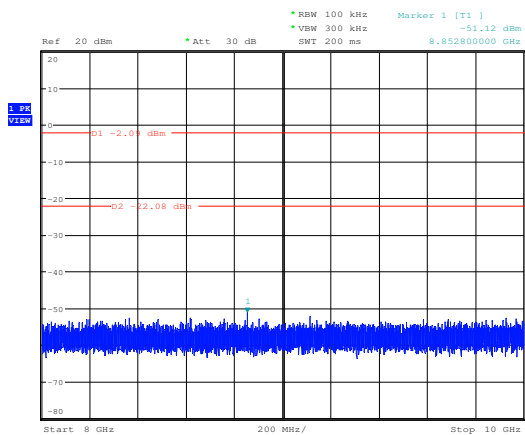
Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:41:45



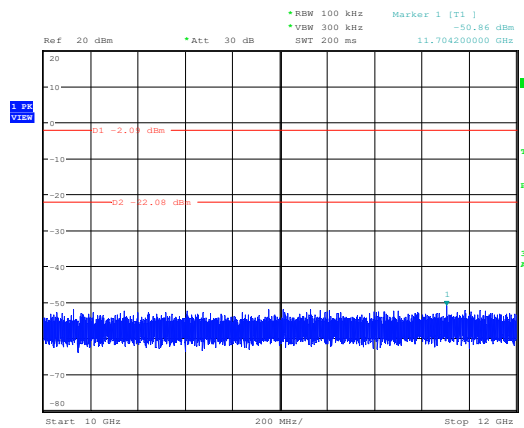
Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:41:59



Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:42:14



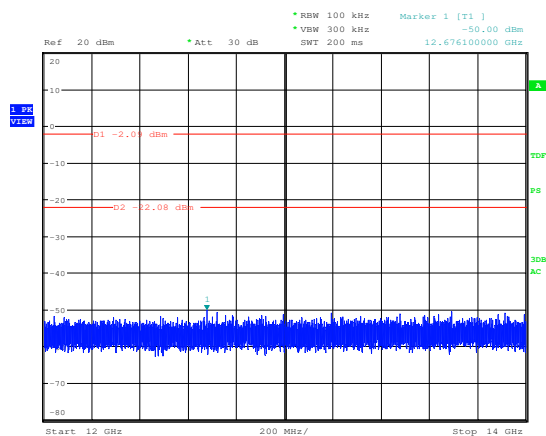
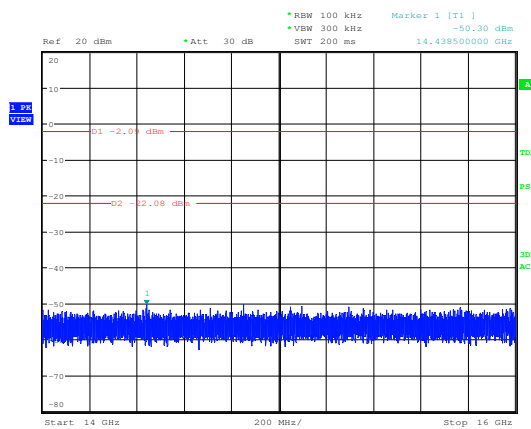
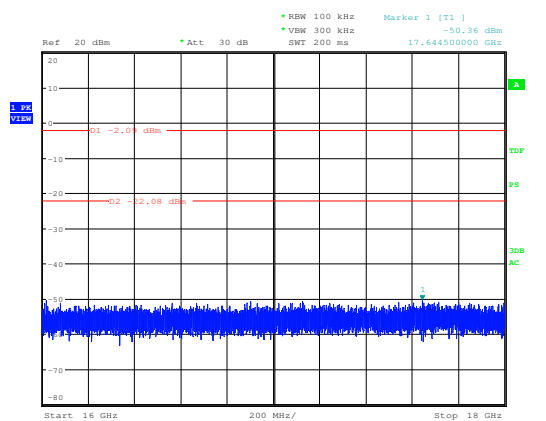
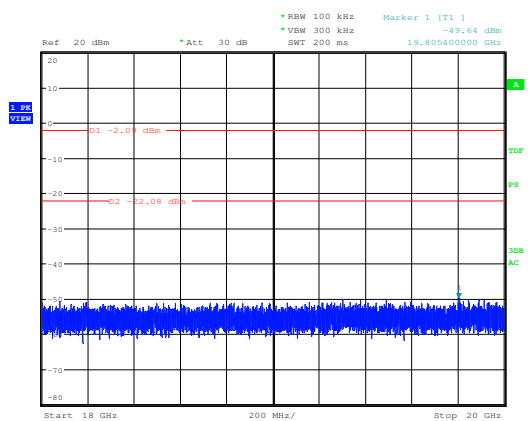
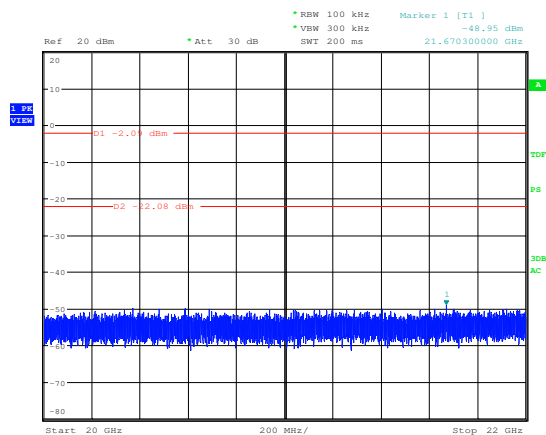
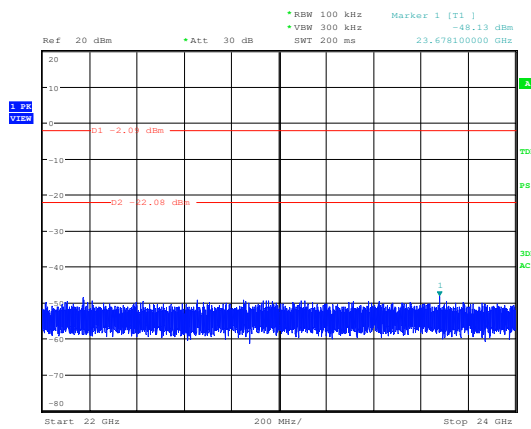
Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:42:29



Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:42:46

Prüfbericht - Nr.:  
Test Report No.:

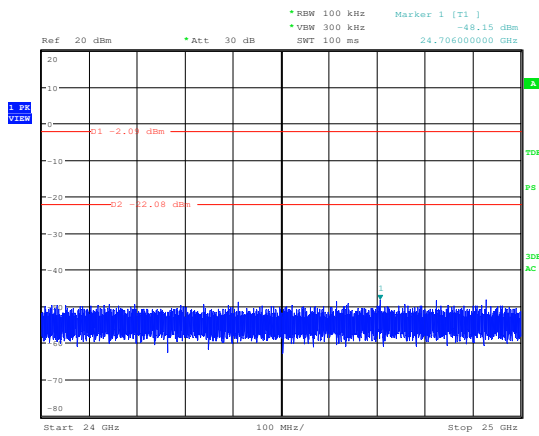
50027424 001

Seite 68 von 123  
Page 68 of 123Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:43:06Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:43:23Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:43:39Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:43:55Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:44:10Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:44:25

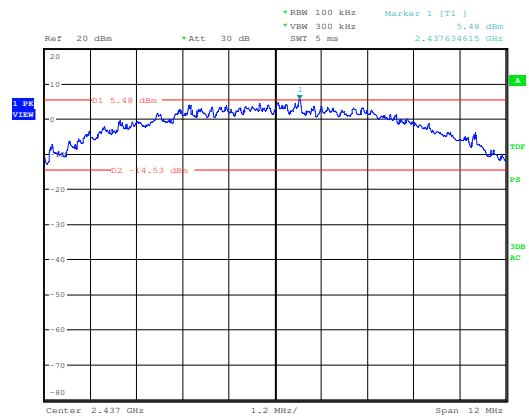
Produkte  
Products

**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:

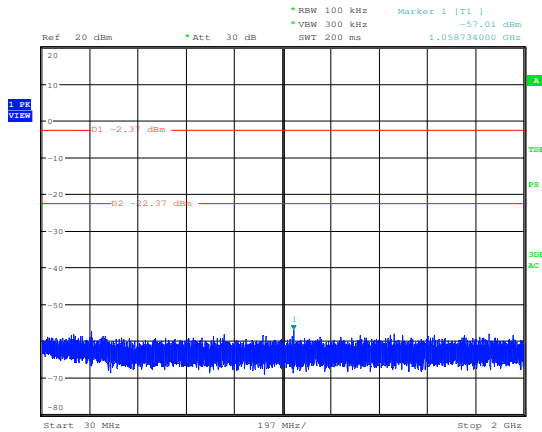
**Seite 69 von 123**  
Page 69 of 123



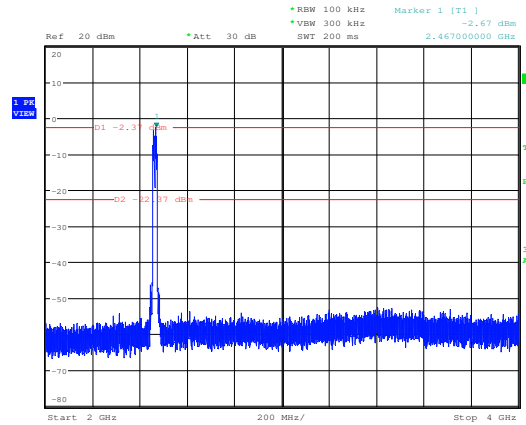
Conducted spurious emissions, mode 11n(20HT), 2437MHz  
Date: 2.NOV.2015 18:44:40



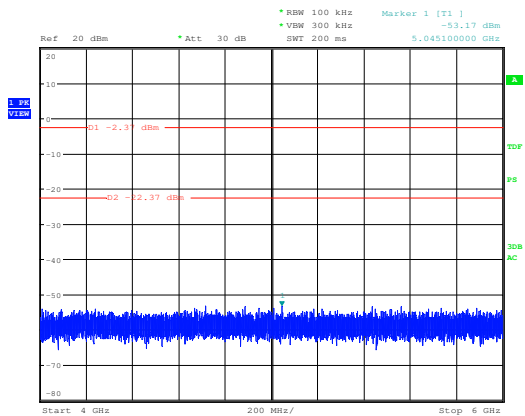
Conducted spurious emissions, mode 11b, 2437MHz  
Date: 2.NOV.2015 19:27:14

**Figure 46: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode C (2462MHz), 11n(20HT)\_Antenna 0**

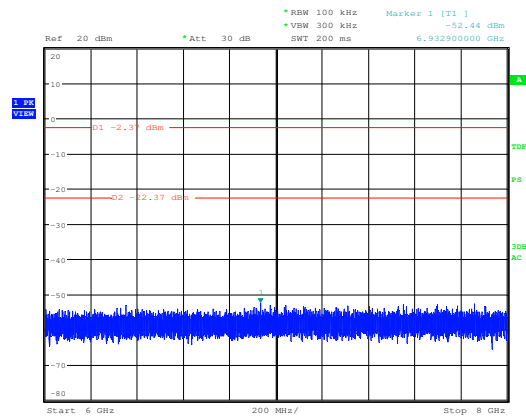
Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:35:10



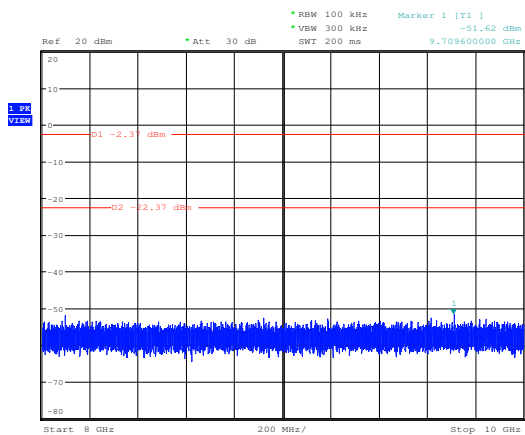
Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:35:24



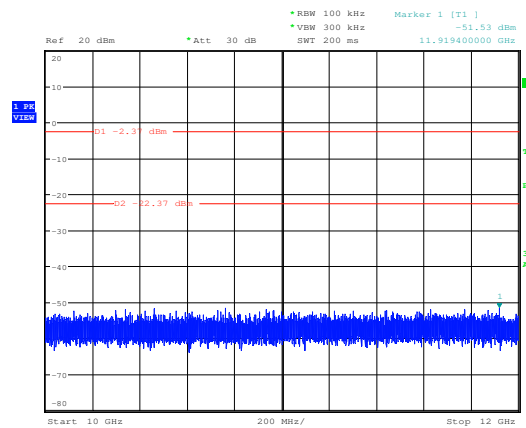
Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:35:35



Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:35:48



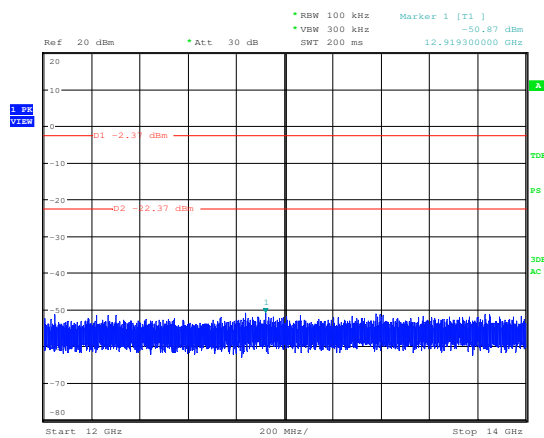
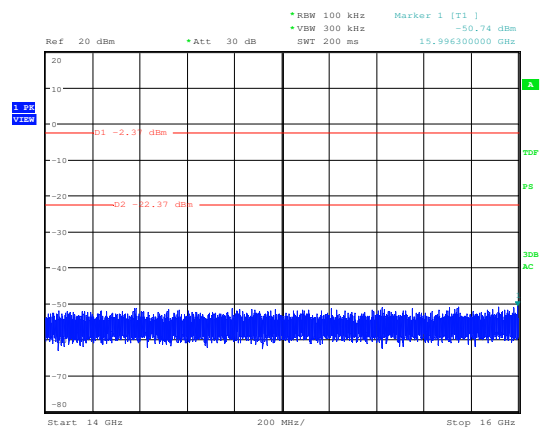
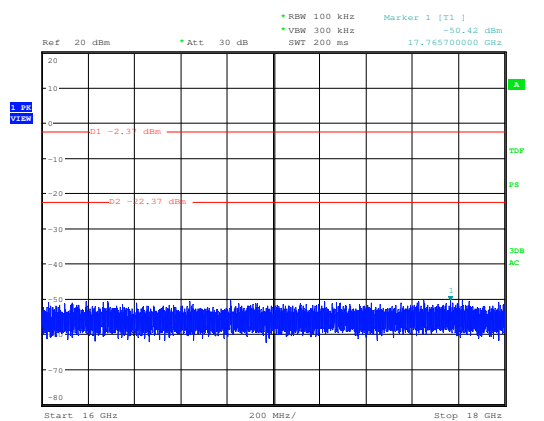
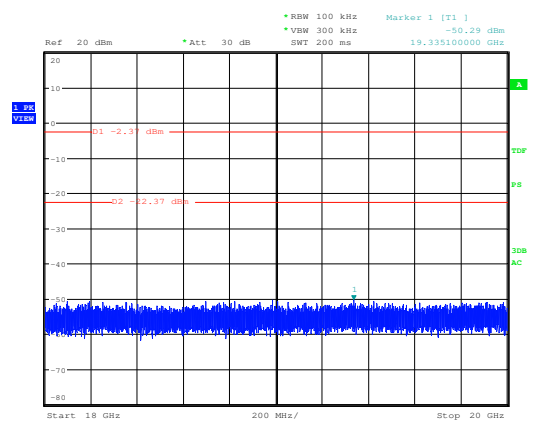
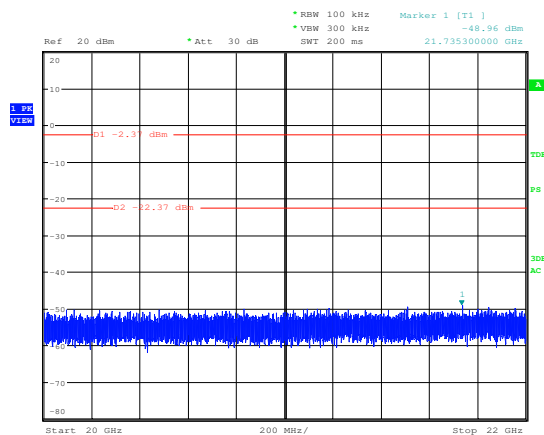
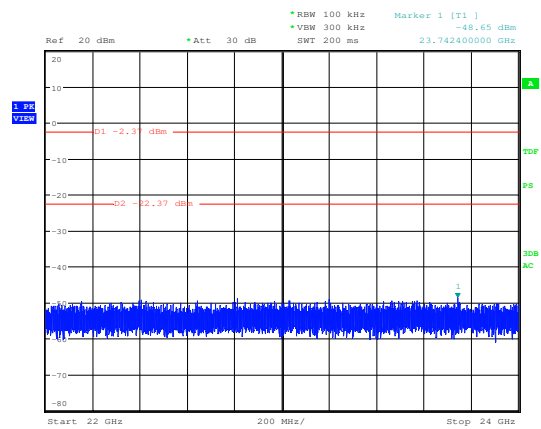
Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:36:01

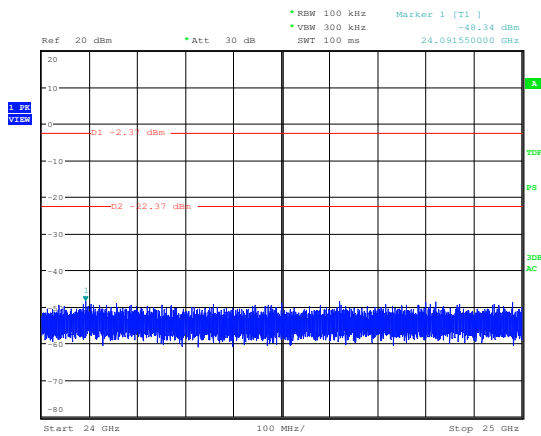
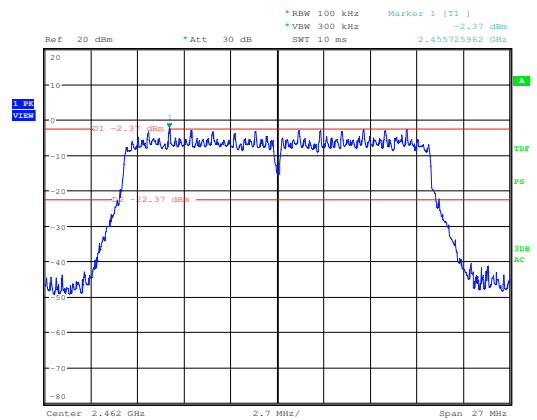


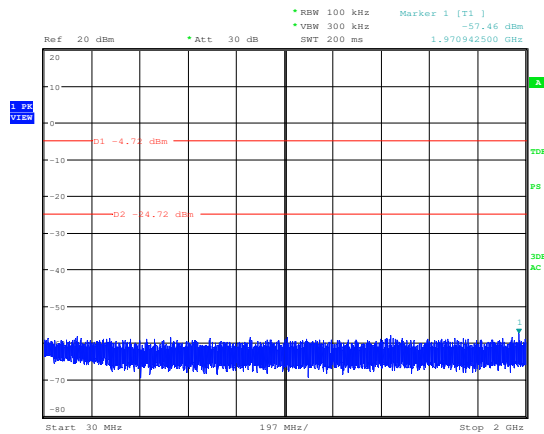
Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:36:13

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Test Report No.:

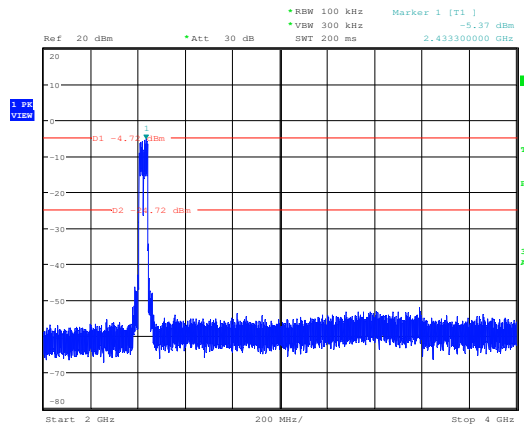
50027424 001

Seite 71 von 123  
Page 71 of 123Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:36:29Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:36:40Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:36:53Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:37:08Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:37:21Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:37:35

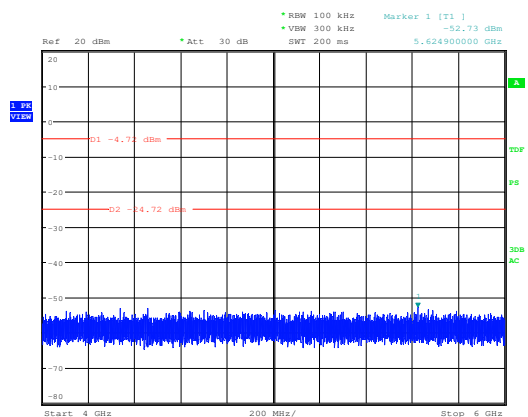
**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 72 von 123  
Page 72 of 123Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:37:49Conducted spurious emissions, mode 11n(20HT), 2462MHz  
Date: 2.NOV.2015 18:34:58

**Figure 47: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode A (2422MHz), 11n(40HT)\_Antenna 0**

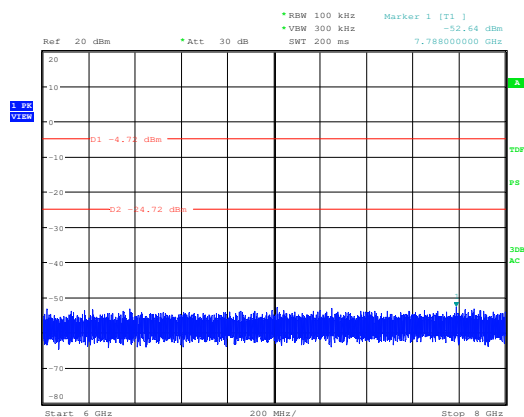
Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:14:27



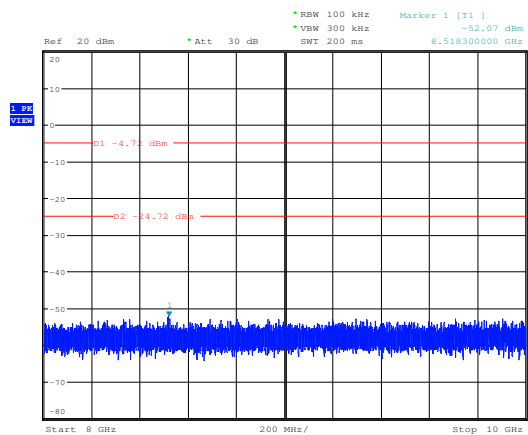
Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:14:57



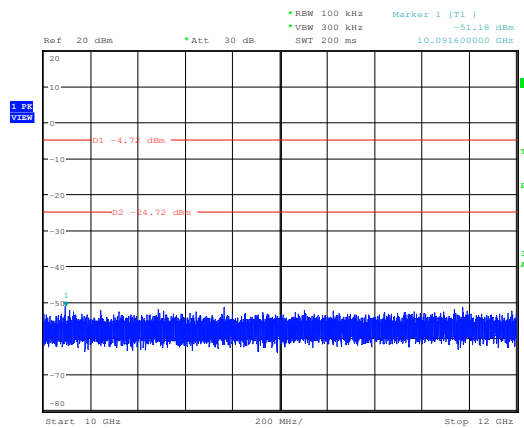
Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:15:18



Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:15:38



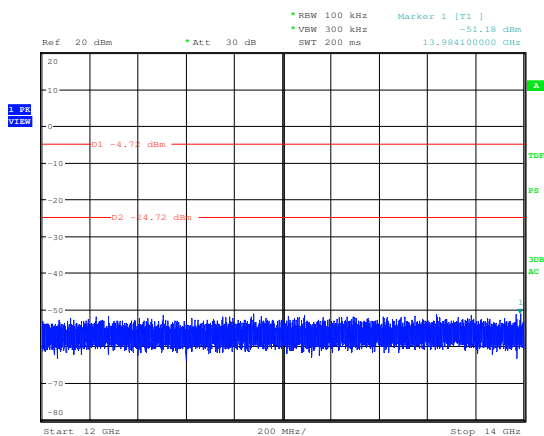
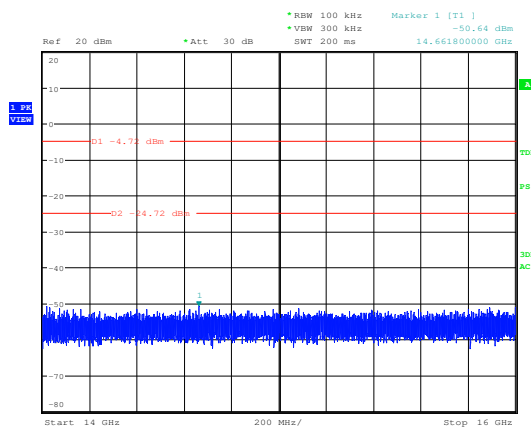
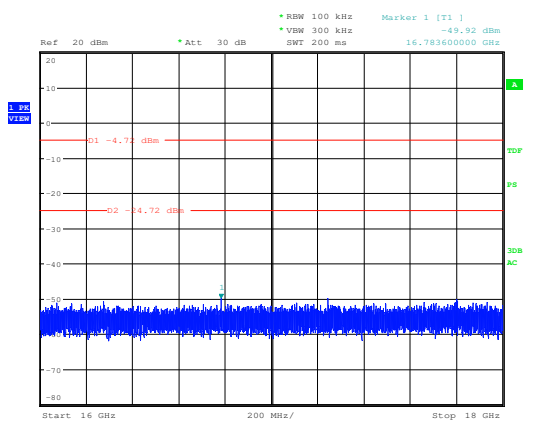
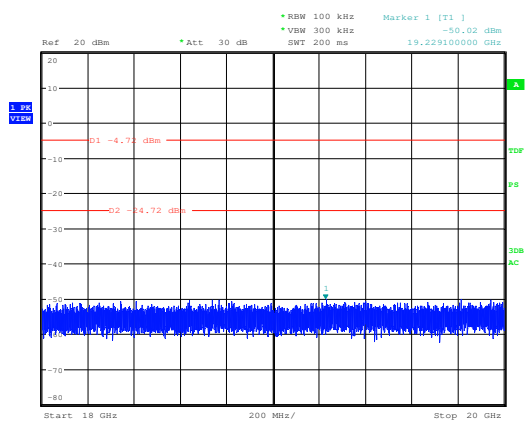
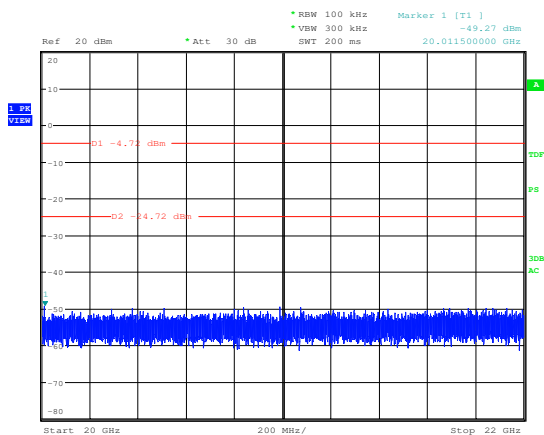
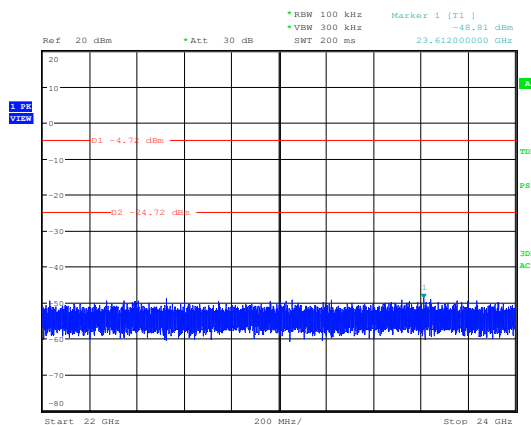
Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:16:01

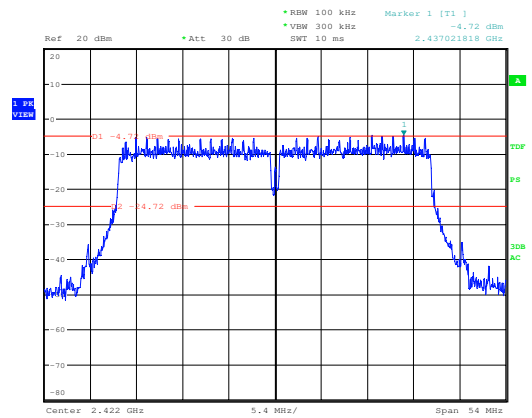
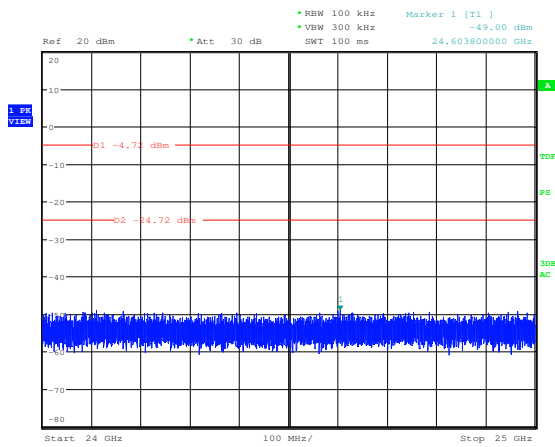


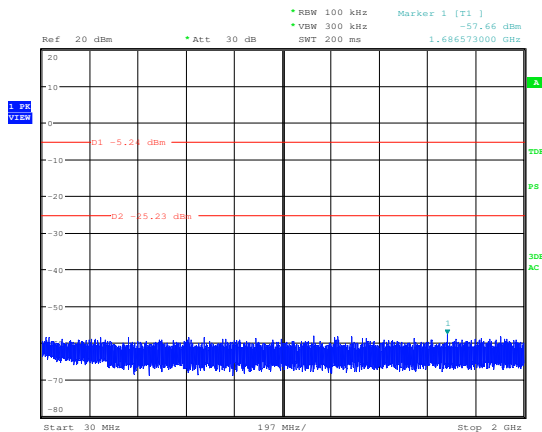
Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:16:25

Prüfbericht - Nr.:  
Test Report No.:

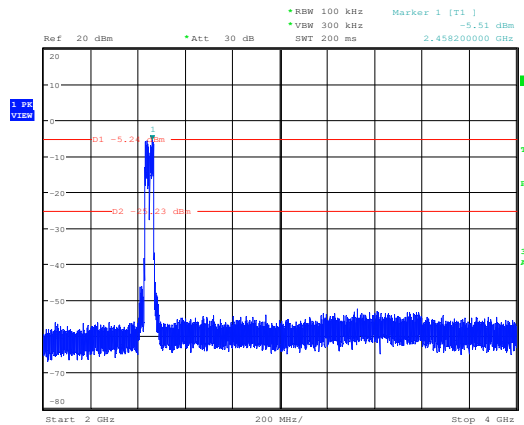
50027424 001

Seite 74 von 123  
Page 74 of 123Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:16:49Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:17:20Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:17:50Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:18:09Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:18:26Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:18:42

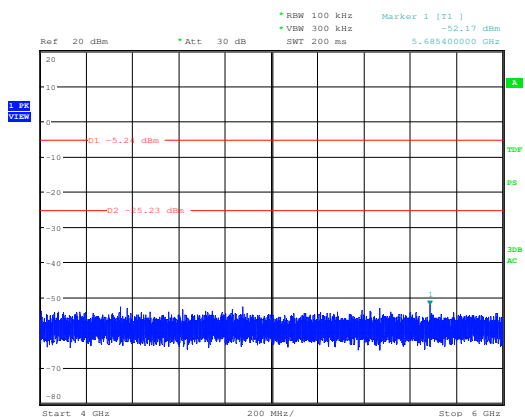
**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 75 von 123  
Page 75 of 123Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:19:06Conducted spurious emissions, mode 11n(40HT), 2422MHz  
Date: 2.NOV.2015 20:14:07

**Figure 48: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode B (2437MHz), 11n(40HT)\_Antenna 0**

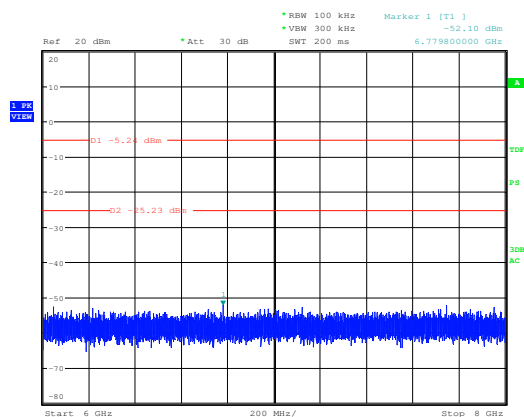
Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:20:25



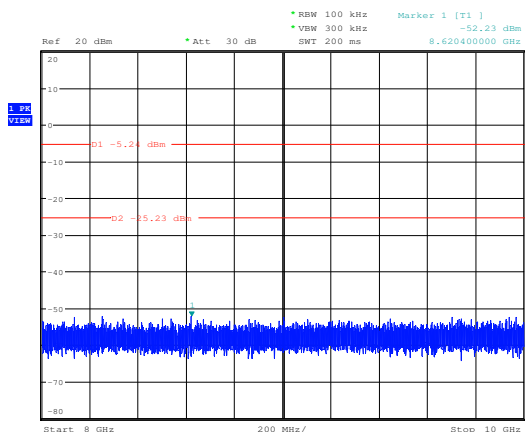
Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:20:48



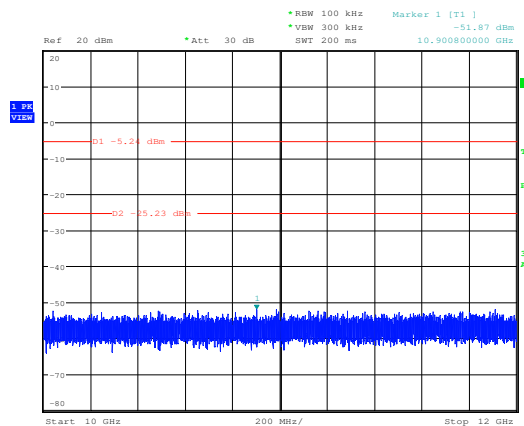
Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:21:05



Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:21:19



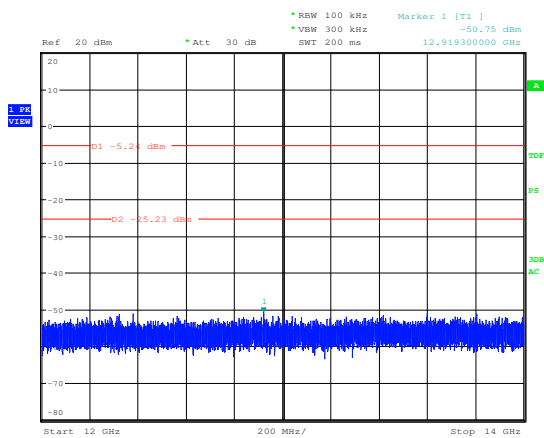
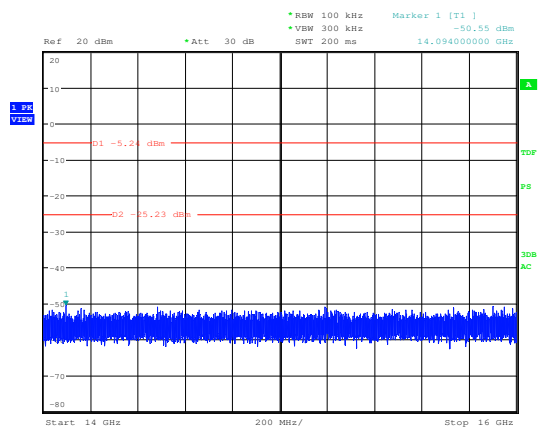
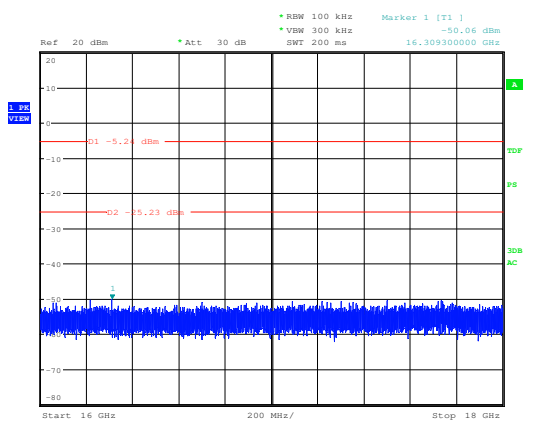
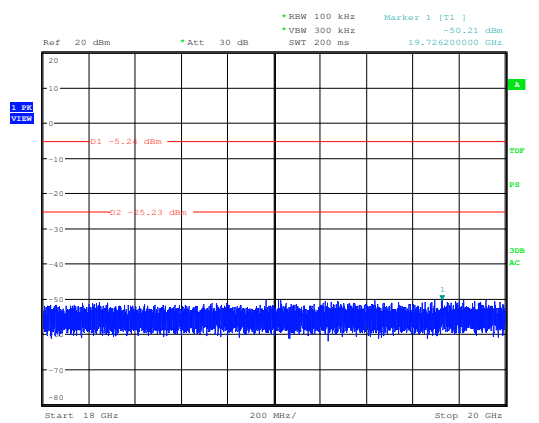
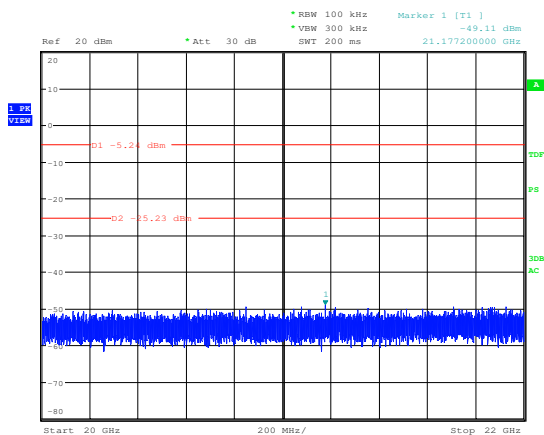
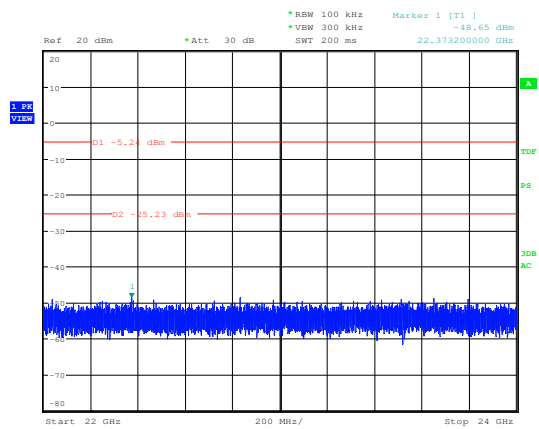
Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:21:37

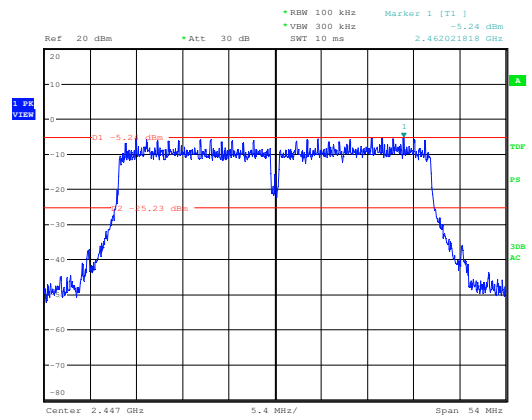
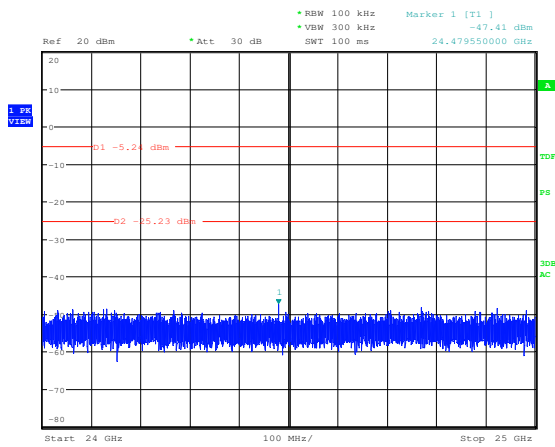


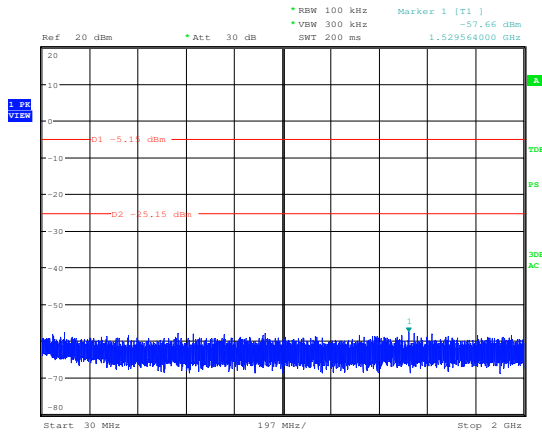
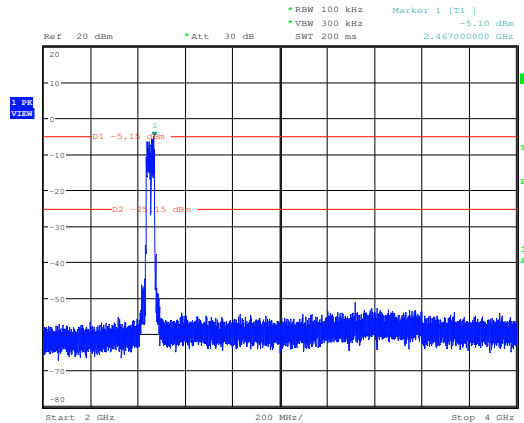
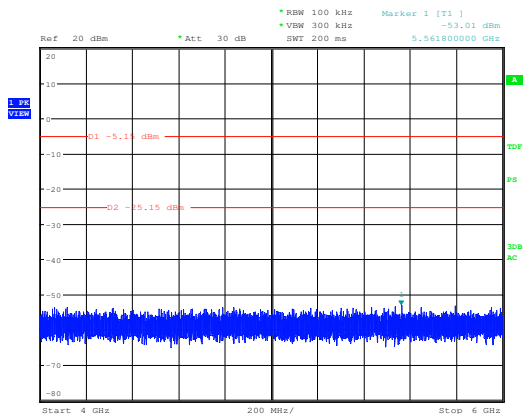
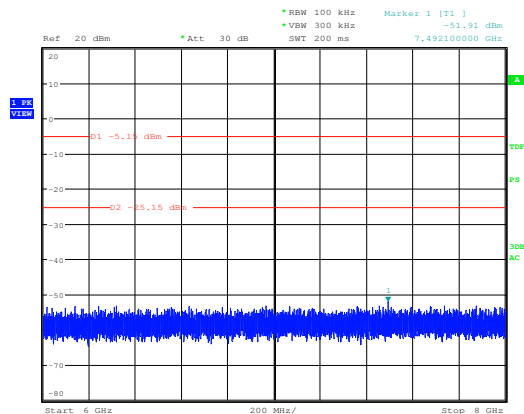
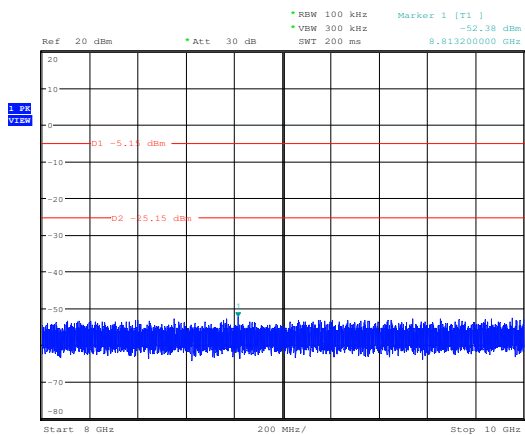
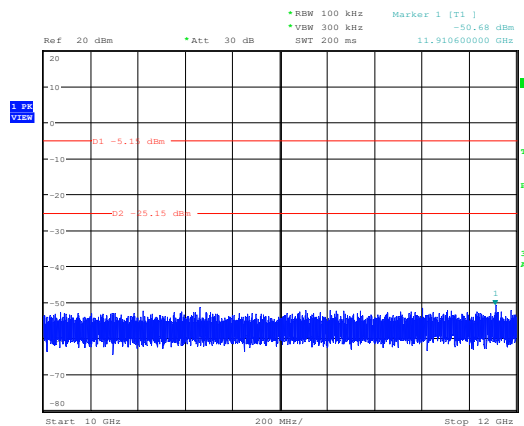
Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:21:57

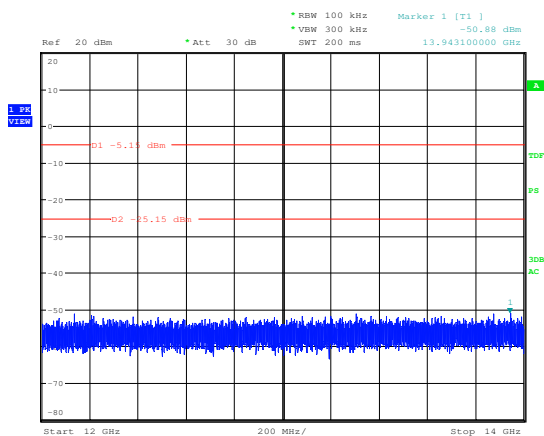
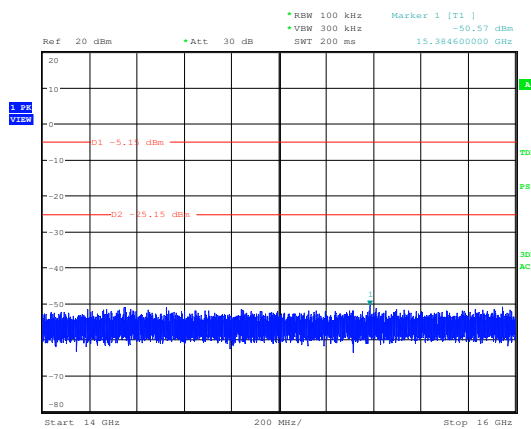
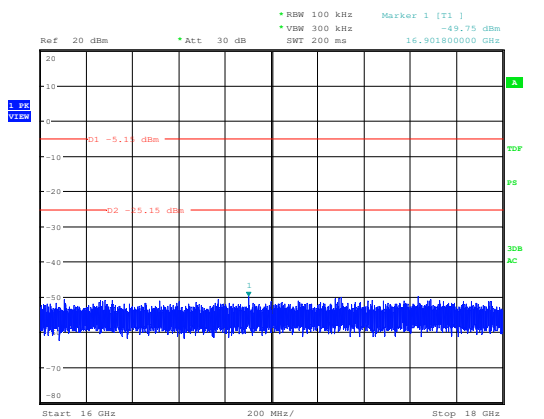
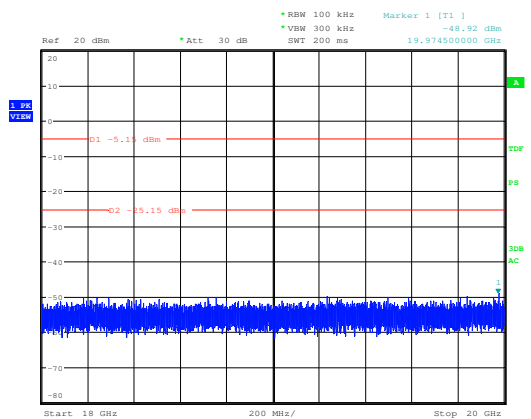
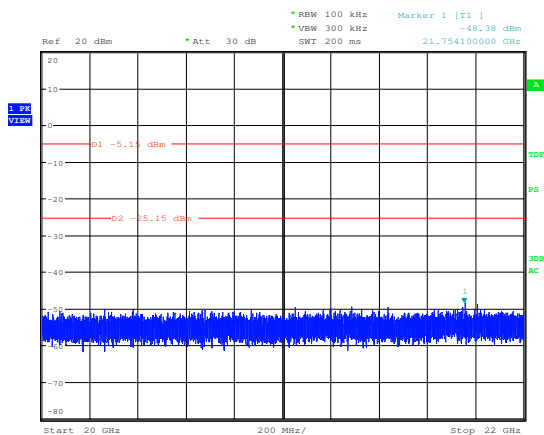
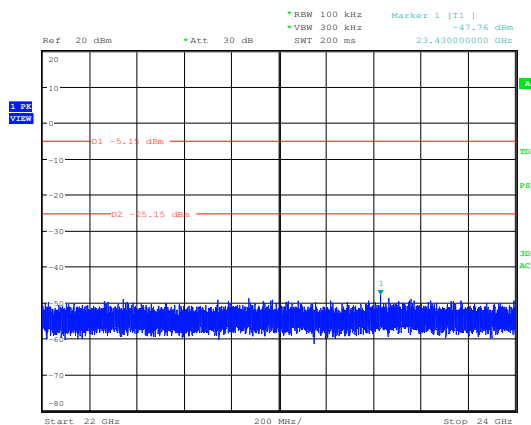
Prüfbericht - Nr.:  
Test Report No.:

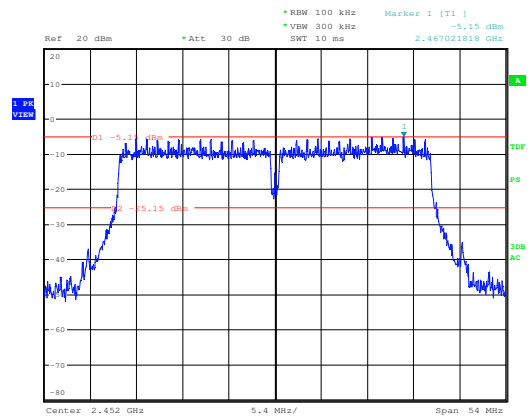
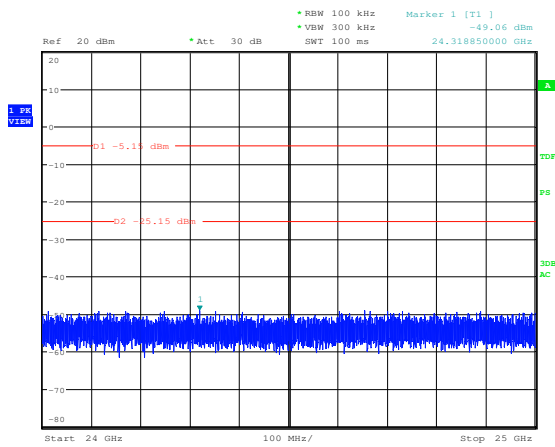
50027424 001

Seite 77 von 123  
Page 77 of 123Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:22:16Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:22:37Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:22:50Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:23:03Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:23:16Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:23:32

**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 78 von 123  
Page 78 of 123Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:23:47Conducted spurious emissions, mode 11n(40HT), 2447MHz  
Date: 2.NOV.2015 20:20:12

**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 79 von 123  
Page 79 of 123**Figure 49: Conducted Spurious Emissions in Non-Restricted Frequency Bands, 30MHz - 25GHz, Mode C (2452MHz), 11n(40HT)\_Antenna 0**Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:00:41Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:00:54Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:01:27Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:01:42Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:01:54Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:02:10

**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 80 von 123  
Page 80 of 123Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:02:37Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:03:09Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:03:28Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:03:47Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:04:01Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:04:19

**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 81 von 123  
Page 81 of 123Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:04:35Conducted spurious emissions, mode 11n(40HT), 2452MHz  
Date: 2.NOV.2015 20:00:26

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Test Report No.:

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**5.2.5 Peak Power Spectral Density****RESULT:****PASS**

Date of testing: 2015-11-02

Ambient temperature: 24°C

Relative humidity: 46%

Atmospheric pressure: 1012hPa

## Requirements:

FCC 15.247(e) and RSS-247 5.2 (2)

For digitally modulated systems, the power spectral density (PSD) conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

## Test procedure:

ANSI C63.10-2013, KDB Publication No. 558074 D01 and KDB Publication No. 662911 D01.

The peak power spectral density was measured at the antenna port with a spectrum analyzer using a peak detector with a resolution bandwidth of 3kHz and a video bandwidth of 10kHz.

The readings of the measurements take into account the loss generated by all the involved cables.

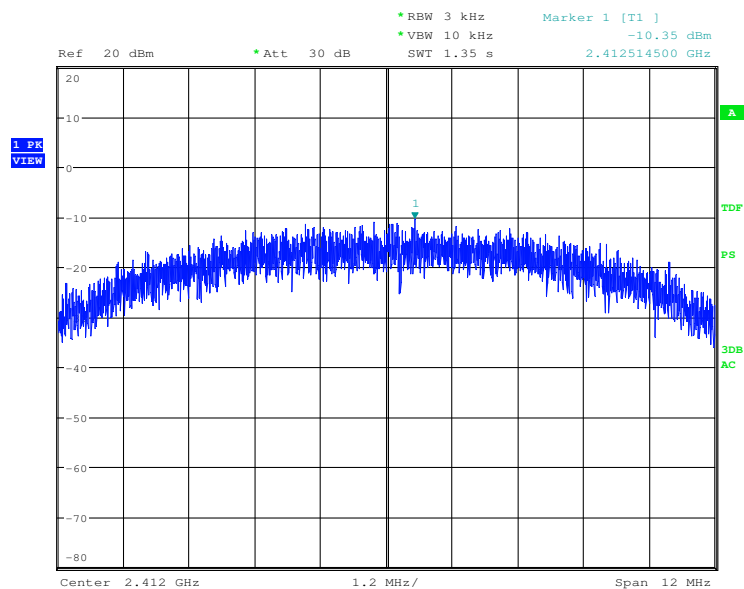
## Note:

Directional gain =  $2.17\text{dBi} + 10\log(2) = 5.18\text{ dBi} < 6\text{ dBi}$ , so the power density limit shall be 8 dBm.

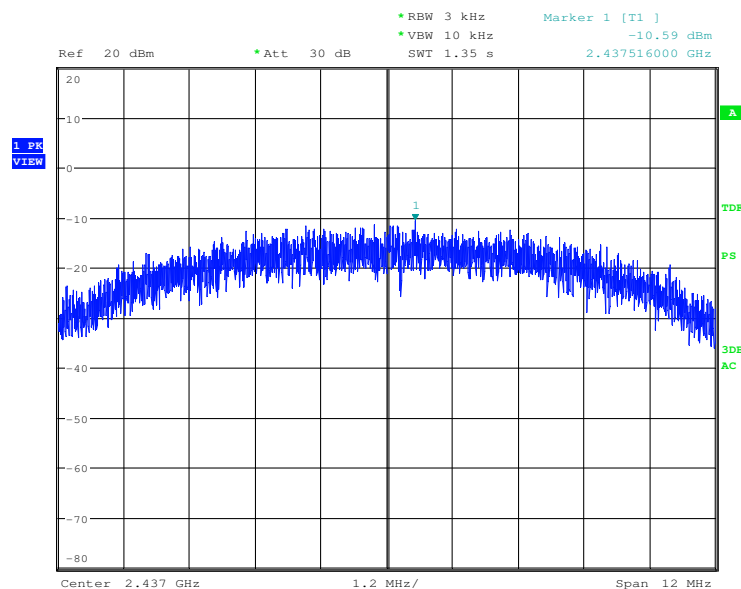
For protocols IEEE 802.11b and g, final measurements were carried out on Antenna 0, selected as the worst case antenna port, since Antenna 0 shows the highest data for Conducted Output Power.

**Table 23: Peak Power Spectral Density, 11b\_Antenna 0**

| Operating Frequency [MHz] | Max PSD Frequency [MHz] | Max PSD [dBm] | Limit [dBm] | Margin [dB] |
|---------------------------|-------------------------|---------------|-------------|-------------|
| 2412MHz                   | 2412.51                 | -10.35        | 8           | 18.35       |
| 2437MHz                   | 2437.51                 | -10.59        | 8           | 18.59       |
| 2462MHz                   | 2461.51                 | -10.74        | 8           | 18.74       |

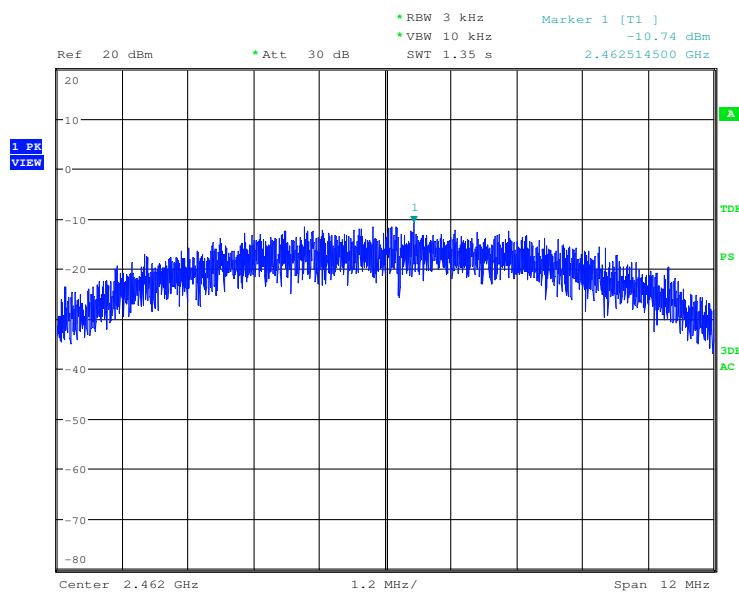
**Figure 50: Power Spectral Density, Mode A (2412MHz), 11b\_Antenna 0**


Peak power spectral density, mode 11b, 2412MHz  
 Date: 2.NOV.2015 16:44:08

**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 84 von 123  
Page 84 of 123**Figure 51: Power Spectral Density, Mode B (2437MHz), 11b\_Antenna 0**

Peak power spectral density, mode 11b, 2437MHz

Date: 2.NOV.2015 16:56:36

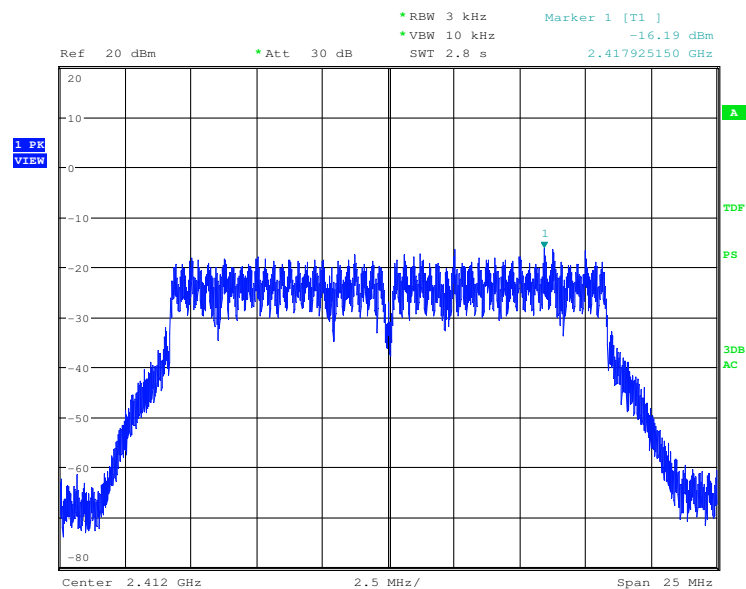
**Figure 52: Power Spectral Density, Mode C (2462MHz), 11b\_Antenna 0**

Peak power spectral density, mode 11b, 2462MHz

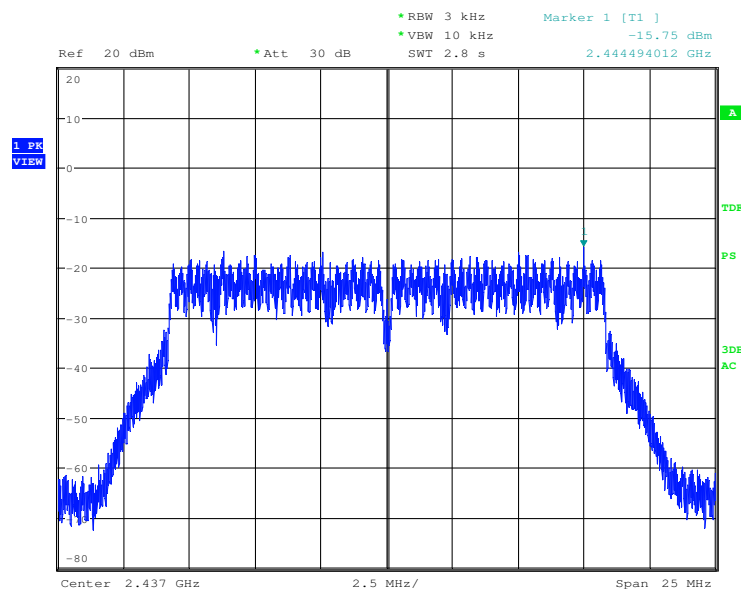
Date: 2.NOV.2015 17:04:15

**Table 24: Peak Power Spectral Density, 11g\_Antenna 0**

| Operating Frequency [MHz] | Max PSD Frequency [MHz] | Max PSD [dBm] | Limit [dBm] | Margin [dB] |
|---------------------------|-------------------------|---------------|-------------|-------------|
| 2412MHz                   | 2417.92                 | -16.19        | 8           | 24.19       |
| 2437MHz                   | 2444.49                 | -15.75        | 8           | 23.75       |
| 2462MHz                   | 2467.65                 | -15.66        | 8           | 23.66       |

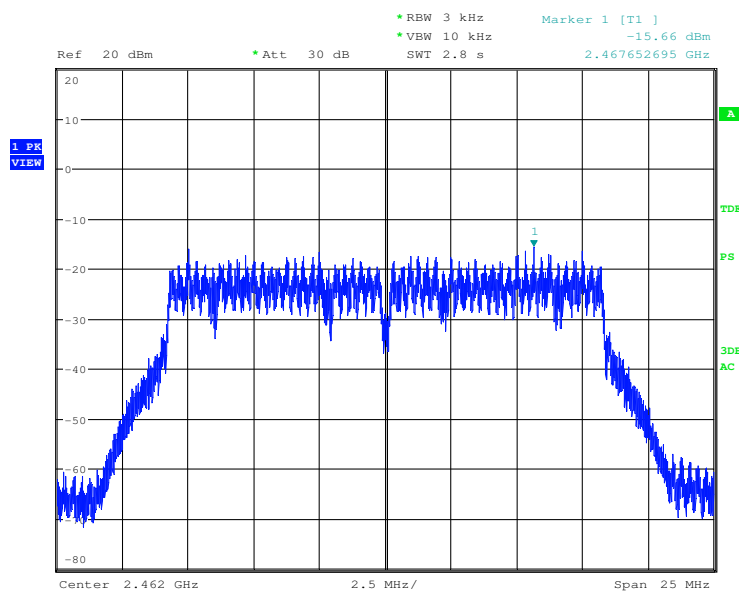
**Figure 53: Power Spectral Density, Mode A (2412MHz), 11g\_Antenna 0**


Peak power spectral density, mode 11g, 2412MHz  
 Date: 2.NOV.2015 17:55:04

**Figure 54: Power Spectral Density, Mode B (2437MHz), 11g\_Antenna 0**

Peak power spectral density, mode 11g, 2437MHz

Date: 2.NOV.2015 17:17:03

**Figure 55: Power Spectral Density, Mode C (2462MHz), 11g\_Antenna 0**

Peak power spectral density, mode 11g, 2462MHz

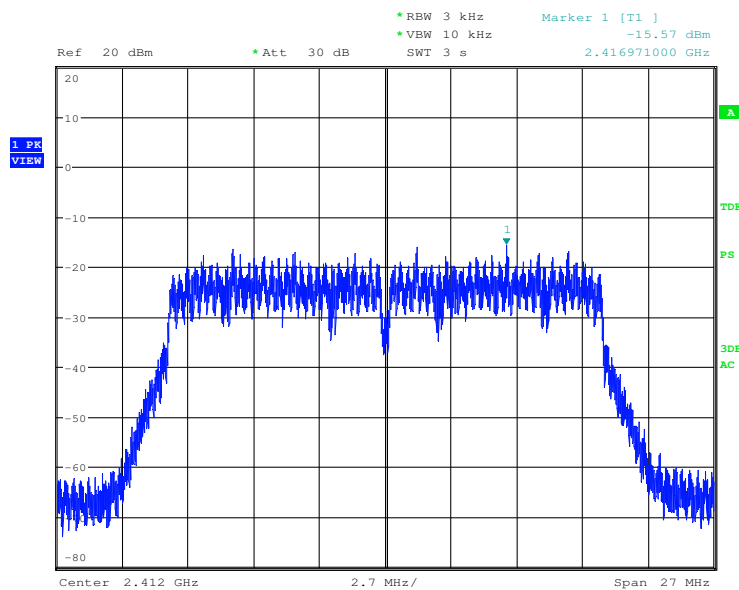
Date: 2.NOV.2015 17:39:07

**Table 25: Peak Power Spectral Density, 11n(20HT)\_Antenna 0**

| Operating Frequency [MHz] | Max PSD Frequency [MHz] | Max PSD Reading [dBm] | Antenna Factor [dB] | Max PSD [dBm] | Limit [dBm] | Margin [dB] |
|---------------------------|-------------------------|-----------------------|---------------------|---------------|-------------|-------------|
| 2412MHz                   | 2416.97                 | -15.57                | 3.01                | -12.56        | 8           | 20.56       |
| 2437MHz                   | 2443.28                 | -13.28                | 3.01                | -13.27        | 8           | 21.27       |
| 2462MHz                   | 2468.28                 | -13.38                | 3.01                | -13.37        | 8           | 21.37       |

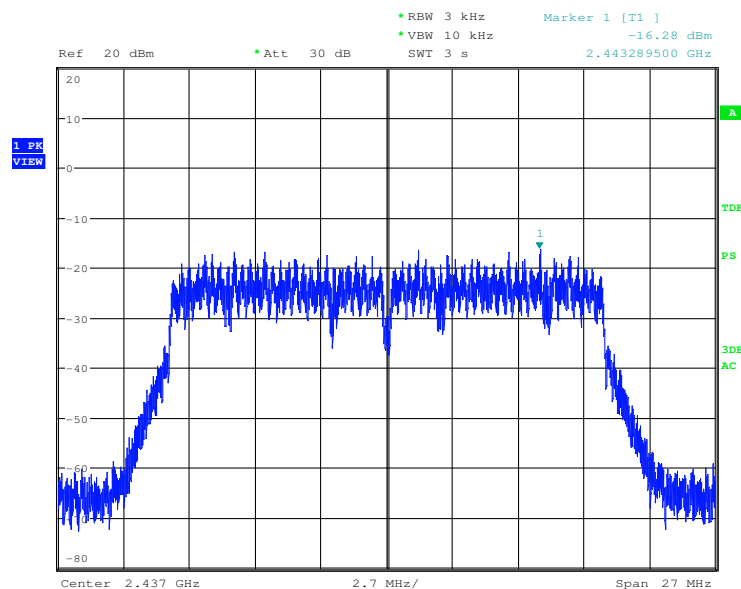
Note:

Antenna Factor = 2 antenna system correction factor =  $10 \times \log(2)$   
 Max PSD = Max PSD reading + Antenna factor

**Figure 56: Power Spectral Density, Mode A (2412MHz), 11n(20HT)\_Antenna 0**


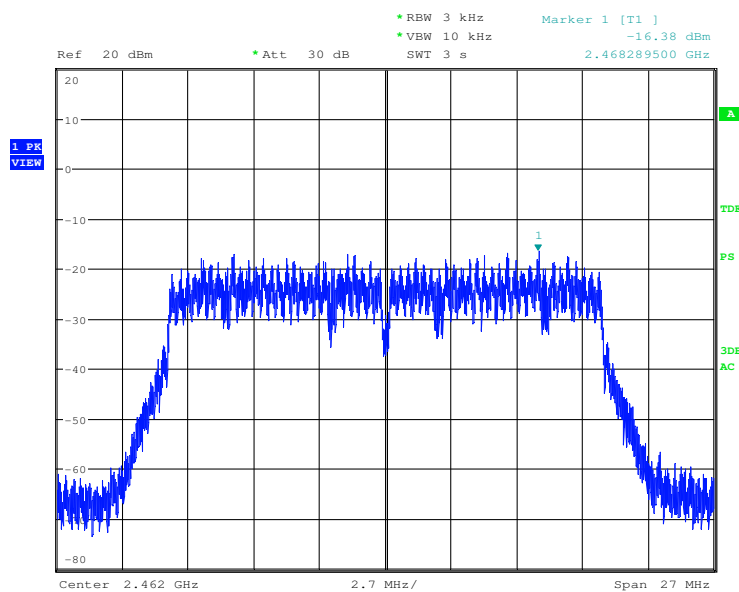
Peak power spectral density, mode 11n(20HT), 2412MHz

Date: 2.NOV.2015 17:51:33

**Prüfbericht - Nr.: 50027424 001**  
Test Report No.:Seite 88 von 123  
Page 88 of 123**Figure 57: Power Spectral Density, Mode B (2437MHz), 11n(20HT)\_Antenna 0**

Peak power spectral density, mode 11n(20HT), 2437MHz

Date: 2.NOV.2015 17:48:04

**Figure 58: Power Spectral Density, Mode C (2462MHz), 11n(20HT)\_Antenna 0**

Peak power spectral density, mode 11n(20HT), 2462MHz

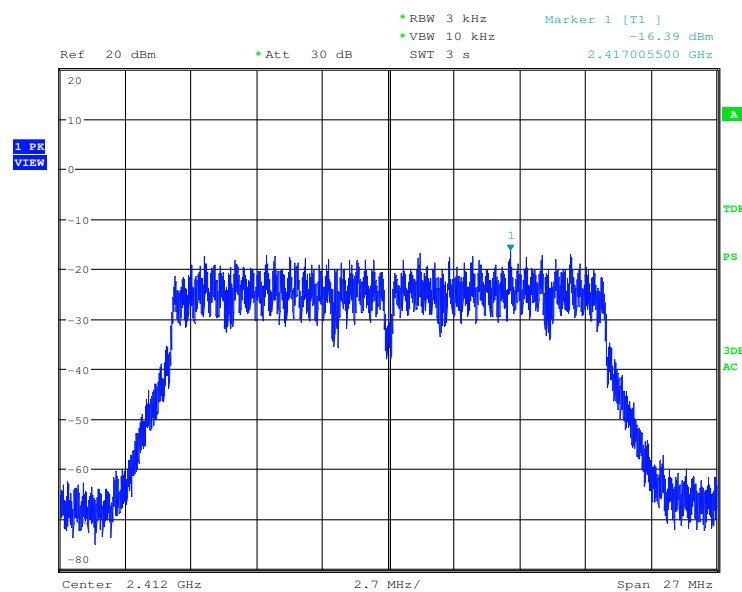
Date: 2.NOV.2015 17:43:14

**Table 26: Peak Power Spectral Density, 11n(20HT)\_Antenna 1**

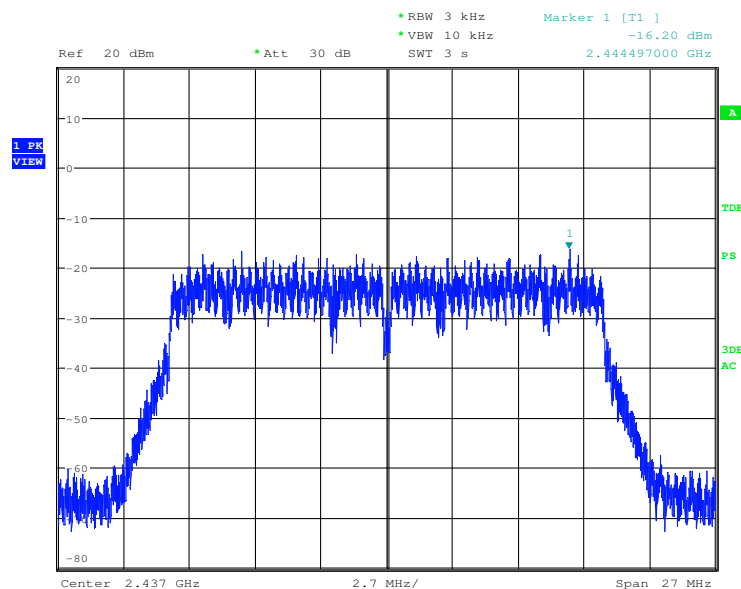
| Operating Frequency [MHz] | Max PSD Frequency [MHz] | Max PSD Reading [dBm] | Antenna Factor [dB] | Max PSD [dBm] | Limit [dBm] | Margin [dB] |
|---------------------------|-------------------------|-----------------------|---------------------|---------------|-------------|-------------|
| 2412MHz                   | 2430.74                 | -16.39                | 3.01                | -13.38        | 8           | 23.38       |
| 2437MHz                   | 2461.99                 | -16.20                | 3.01                | -13.19        | 8           | 23.19       |
| 2462MHz                   | 2435.78                 | -16.61                | 3.01                | -13.60        | 8           | 21.60       |

Note:

Antenna Factor = 2 antenna system correction factor =  $10 \times \log(2)$   
 Max PSD = Max PSD reading + Antenna factor

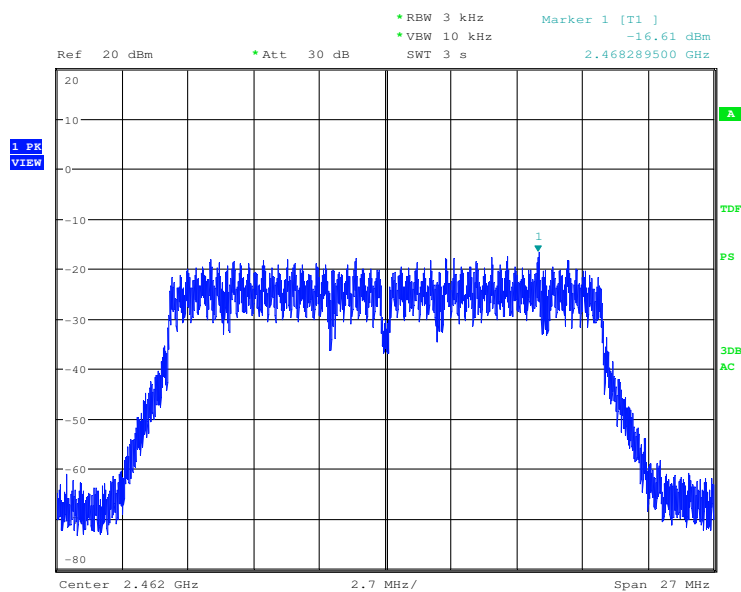
**Figure 59: Power Spectral Density, Mode A (2412MHz), 11n(20HT)\_Antenna 1**


Peak power spectral density, mode 11n(20HT), 2412MHz, Ant1  
 Date: 2.NOV.2015 18:26:36

**Figure 60: Power Spectral Density, Mode B (2437MHz), 11n(20HT)\_Antenna 1**

Peak power spectral density, mode 11n(20HT), 2437MHz, Ant1

Date: 2.NOV.2015 18:28:51

**Figure 61: Power Spectral Density, Mode C (2462MHz), 11n(20HT)\_Antenna 1**

Peak power spectral density, mode 11n(20HT), 2462MHz, Ant1

Date: 2.NOV.2015 18:30:56

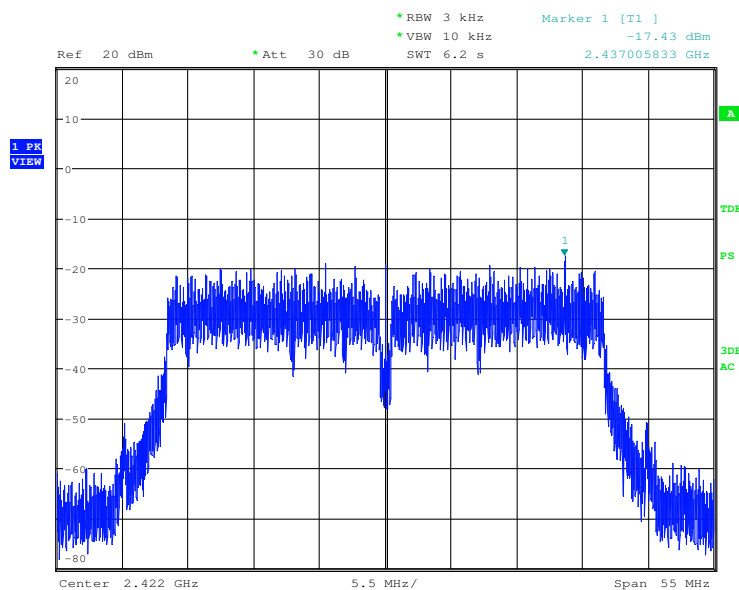
**Table 27: Peak Power Spectral Density, 11n(40HT)\_Antenna 0**

| Operating Frequency [MHz] | Max PSD Frequency [MHz] | Max PSD Reading [dBm] | Antenna Factor [dB] | Max PSD [dBm] | Limit [dBm] | Margin [dB] |
|---------------------------|-------------------------|-----------------------|---------------------|---------------|-------------|-------------|
| 2422                      | 2437.00                 | -17.43                | 3.01                | -14.42        | 8           | 22.42       |
| 2447                      | 2459.46                 | -19.01                | 3.01                | -16.00        | 8           | 24.00       |
| 2452                      | 2466.99                 | -18.03                | 3.01                | -15.02        | 8           | 25.02       |

Note:

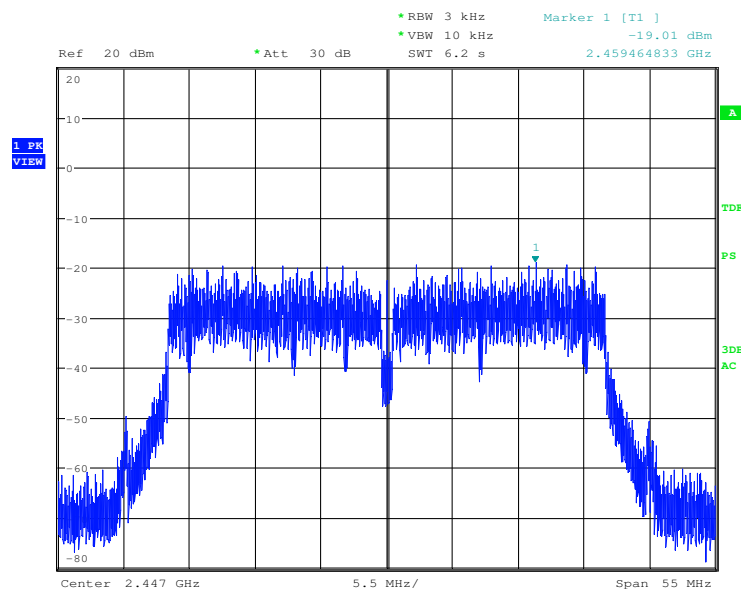
 Antenna Factor = 2 antenna system correction factor =  $10 \times \log(2)$ 

Max PSD = Max PSD reading + Antenna factor

**Figure 62: Power Spectral Density, Mode A (2422MHz), 11n(40HT)\_Antenna 0**


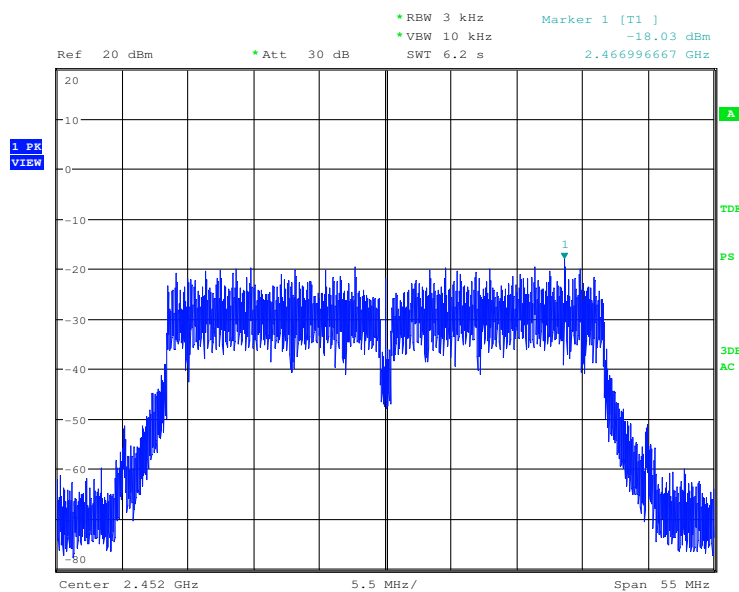
Peak power spectral density, mode 11n(40HT), 2422MHz

Date: 2.NOV.2015 18:07:36

**Figure 63: Power Spectral Density, Mode B (2447MHz), 11n(40HT)\_Antenna 0**

Peak power spectral density, mode 11n(40HT), 2447MHz

Date: 2.NOV.2015 18:10:48

**Figure 64: Power Spectral Density, Mode C (2452MHz), 11n(40HT)\_Antenna 0**

Peak power spectral density, mode 11n(40HT), 2452MHz

Date: 2.NOV.2015 18:13:26

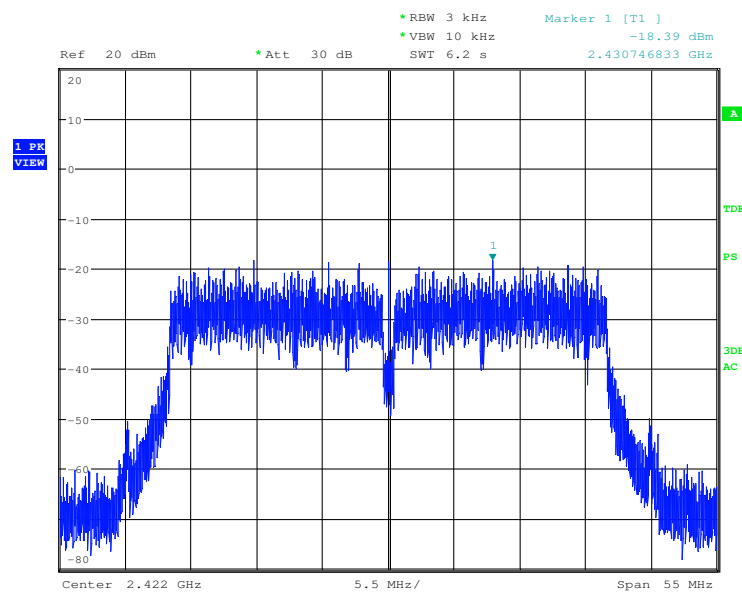
**Table 28: Peak Power Spectral Density, 11n(40HT)\_Antenna 1**

| Operating Frequency [MHz] | Max PSD Frequency [MHz] | Max PSD Reading [dBm] | Antenna Factor [dB] | Max PSD [dBm] | Limit [dBm] | Margin [dB] |
|---------------------------|-------------------------|-----------------------|---------------------|---------------|-------------|-------------|
| 2422                      | 2430.74                 | -18.39                | 3.01                | -15.38        | 8           | 23.38       |
| 2447                      | 2461.99                 | -18.52                | 3.01                | -15.51        | 8           | 23.51       |
| 2452                      | 2435.78                 | -18.72                | 3.01                | -15.71        | 8           | 23.71       |

Note:

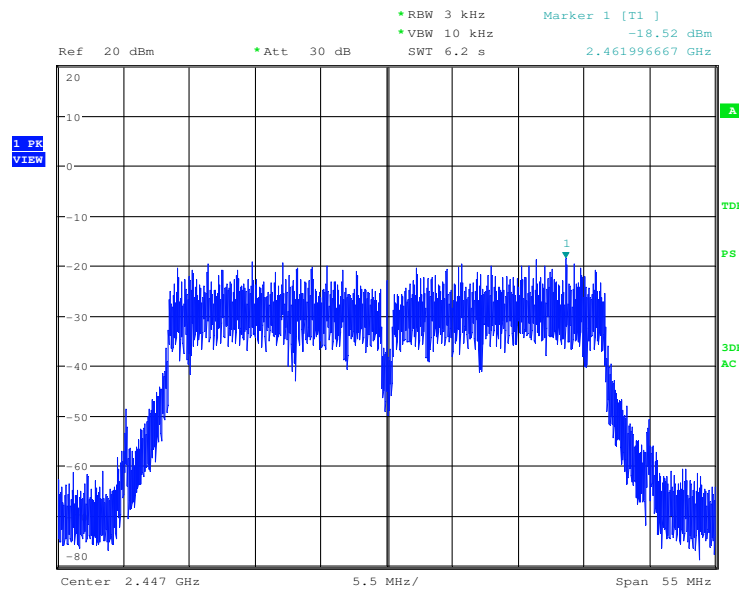
 Antenna Factor = 2 antenna system correction factor =  $10 \times \log(2)$ 

Max PSD = Max PSD reading + Antenna factor

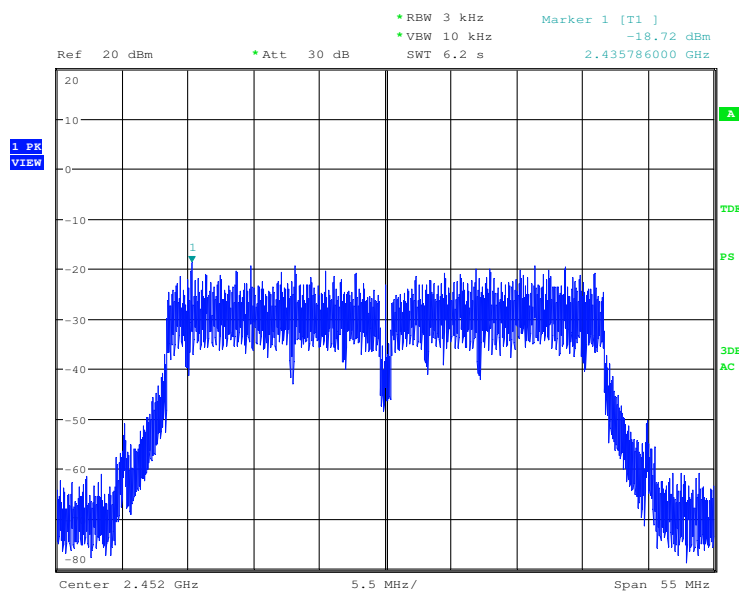
**Figure 65: Power Spectral Density, Mode A (2422MHz), 11n(40HT)\_Antenna 1**


Peak power spectral density, mode 11n(40HT), 2422MHz, Ant1

Date: 2.NOV.2015 18:22:28

**Figure 66: Power Spectral Density, Mode B (2447MHz), 11n(40HT)\_Antenna 1**

Peak power spectral density, mode 11n(40HT), 2447MHz, Ant1  
Date: 2.NOV.2015 18:19:46

**Figure 67: Power Spectral Density, Mode C (2452MHz), 11n(40HT)\_Antenna 1**

Peak power spectral density, mode 11n(40HT), 2452MHz, Ant1  
Date: 2.NOV.2015 18:17:09

## 5.3 Radiated Measurements

### 5.3.1 Radiated Spurious Emissions of Transmitter

**RESULT:****PASS**

Date of testing: 2015-05-25, 2015-05-26, 2015-05-27,  
2015-05-28, 2015-06-04  
Ambient temperature: 21, 21, 22, 21, 21°C  
Relative humidity: 25, 25, 26, 25, 25%  
Atmospheric pressure: 1010, 1009, 1009, 1011, 1008hPa

**Requirements:**

FCC 15.205, FCC 15.209, FCC 15.247(d), RSS-Gen 8.9 and 8.10 and RSS-247 3.1

Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a) and RSS-Gen 8.10 (table 6), must comply with the radiated emission limits specified in FCC 15.209(a) and RSS-Gen 8.9 (tables 4 and 5).

Radiated emissions which fall outside the operation frequency band and outside restricted bands shall either meet the limit specified in FCC 15.209(a) and RSS-Gen 8.9 or be attenuated at least 20dB below the power level in the 100kHz bandwidth within the band that contains the highest level of the desired power (the less severe limit applies).

**Test procedure:**

ANSI C63.10-2013 RSS-Gen 6.13 and 8.1 and KDB Publication No. 558074 D01.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Before final measurements of radiated emissions were performed, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the EUT orientation (X, Y) were varied in order to ensure that maximum emission amplitudes were attained.

The spectrum was examined from 9kHz to the 10th harmonic of the highest fundamental transmitter frequency (25GHz). Final radiated emission measurements were made at 3m distance.

At each frequency where a spurious emission was found, the EUT was rotated 360° and the antenna was raised and lowered from 1 to 4m in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

For emissions between 30MHz and 1GHz, measurements were performed with a test receiver operating in the CISPR quasi-peak detection mode. The receiver's 6dB bandwidth was set to 120kHz. For emissions above 1GHz, measurements were performed with a spectrum analyzer using the following settings: for peak field strength: RBW = 1MHz & VBW ≥ 1MHz; for average field strength: RBW = 1MHz & VBW = 10Hz.

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Absorbers have been placed on the floor between the EUT and the measuring antenna for testing above 1GHz.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Emissions other than those mentioned are small or not detectable.

No spurious emission was found in the range 9kHz - 30MHz.

Prechecks for all test modes were carried out, and the final test were carried out for the worst case mode, reported here below.

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**Table 29: Radiated Emissions, Quasi Peak Data, 30MHz - 1GHz, Horizontal and Vertical Antenna Orientations, Mode A (2412MHz), 11b**

| Freq. [MHz] | EUT /<br>Antenna<br>Orientation | Reading<br>QP [dBμV] | Factor<br>[dB(1/m)] | Level QP<br>[dBμV/m] | Limit<br>[dBμV/m] | Margin<br>QP [dB] | Height<br>[cm] | Angle<br>[°] |
|-------------|---------------------------------|----------------------|---------------------|----------------------|-------------------|-------------------|----------------|--------------|
| 38.459      | Y/V                             | 51.0                 | -17.5               | 33.5                 | 40.0              | 6.5               | 108            | 191          |
| 41.074      | Y/V                             | 53.5                 | -18.1               | 35.4                 | 40.0              | 4.6(*)            | 100            | 172          |
| 56.891      | Y/V                             | 49.0                 | -15.9               | 33.1                 | 40.0              | 6.9               | 103            | 254          |
| 165.886     | Y/H                             | 49.7                 | -14.7               | 35.0                 | 43.5              | 8.5               | 100            | 115          |
| 167.939     | Y/V                             | 50.5                 | -14.8               | 35.7                 | 43.5              | 7.8               | 100            | 94           |
| 188.417     | Y/H                             | 52.2                 | -16.6               | 35.6                 | 43.5              | 7.9               | 139            | 117          |
| 541.289     | Y/V                             | 35.8                 | -6.8                | 29.0                 | 46.0              | 17.0              | 100            | 320          |
| 643.071     | Y/H                             | 44.4                 | -5.4                | 39.0                 | 46.0              | 7.0               | 108            | 56           |
| 719.995     | Y/V                             | 44.4                 | -5.3                | 39.1                 | 46.0              | 6.9               | 155            | 82           |

Note: Level QP = Reading QP + Factor

(\*) Note: For measured result(s) below the specification limit by a margin less than the measurement uncertainty as shown in " Table 2: Emission Measurement Uncertainty"; it is therefore not possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a high probability that the tested product complies with the specification limit.

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**Table 30: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode A (2412MHz), 11b**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4823.988    | Y/H                       | 48.7              | -7.1             | 41.6              | 54             | 12.4           | 165         | 92        |
| 9647.960    | Y/H                       | 50.7              | -8.7             | 42.0              | 54             | 12.0           | 171         | 232       |
| 23264.778   | Y/H                       | 38.6              | -11.9            | 26.7              | 54             | 27.3           | 181         | 135       |

Note: Level AV = Reading AV + Factor

**Table 31: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode A (2412MHz), 11b**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4823.988    | Y/H                       | 55.3              | -7.1             | 48.2              | 74             | 25.8           | 165         | 92        |
| 9647.960    | Y/H                       | 55.9              | -8.7             | 47.2              | 74             | 26.8           | 171         | 232       |
| 23264.778   | Y/H                       | 52.6              | -11.9            | 40.7              | 74             | 33.3           | 181         | 135       |

Note: Level PK = Reading PK + Factor

**Table 32: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2437MHz), 11b**

| Freq. [MHz] | EUT Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|-----------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4874.05     | Y/H             | 53.3              | -7.2             | 46.1              | 54             | 7.9            | 175         | 87        |
| 9747.96     | Y/H             | 49.8              | -7.8             | 42.0              | 54             | 12.0           | 158         | 215       |

Note: Level AV = Reading AV + Factor

**Table 33: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2437MHz), 11b**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4874.05     | Y/H                       | 58.2              | -7.2             | 51.0              | 74             | 23.0           | 175         | 87        |
| 9747.96     | Y/H                       | 55.2              | -7.8             | 47.4              | 74             | 26.6           | 158         | 215       |

Note: Level PK = Reading PK + Factor

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**Table 34: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode C (2462MHz), 11b**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4924.007    | Y/H                       | 56.5              | -7.1             | 49.4              | 54             | 4.6            | 170         | 88        |
| 9847.970    | Y/H                       | 50.2              | -7.6             | 42.6              | 54             | 11.4           | 159         | 222       |
| 21374.480   | Y/H                       | 37.7              | -11.0            | 26.7              | 54             | 27.3           | 100         | 146       |

Note: Level AV = Reading AV + Factor

**Table 35: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode C (2462MHz), 11b**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4924.007    | Y/H                       | 60.4              | -7.1             | 53.3              | 74             | 20.7           | 170         | 88        |
| 9847.970    | Y/H                       | 55.0              | -7.6             | 47.4              | 74             | 26.6           | 159         | 222       |
| 21374.480   | Y/H                       | 52.0              | -11.0            | 41.0              | 74             | 33.0           | 100         | 146       |

Note: Level PK = Reading PK + Factor

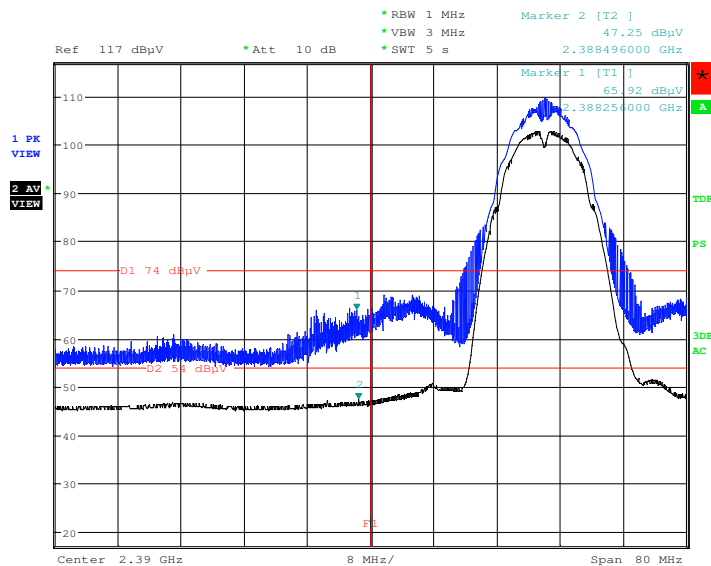
**Table 36: Radiated Emissions at Band Edge, Average and Peak Data, Horizontal and Vertical Antenna Orientations, Modes A (2412MHz) and C (2462MHz), 11b**

| Operating Frequency [MHz] | EUT / Antenna Orientation | Level AV [dBμV/m] | Level PK [dBμV/m] | Limit AV [dBμV/m] | Limit PK [dBμV/m] | Margin AV [dB] | Margin PK [dB] |
|---------------------------|---------------------------|-------------------|-------------------|-------------------|-------------------|----------------|----------------|
| 2388.496                  | Y/H                       | 47.25             | -                 | 54                | -                 | 6.75           | -              |
| 2388.256                  | Y/H                       | -                 | 65.92             | -                 | 74                | -              | 8.08           |
| 2448.236                  | Y/H                       | 47.42             | -                 | 54                | -                 | 6.58           | -              |
| 2487.164                  | Y/H                       | -                 | 65.59             | -                 | 74                | -              | 8.41           |

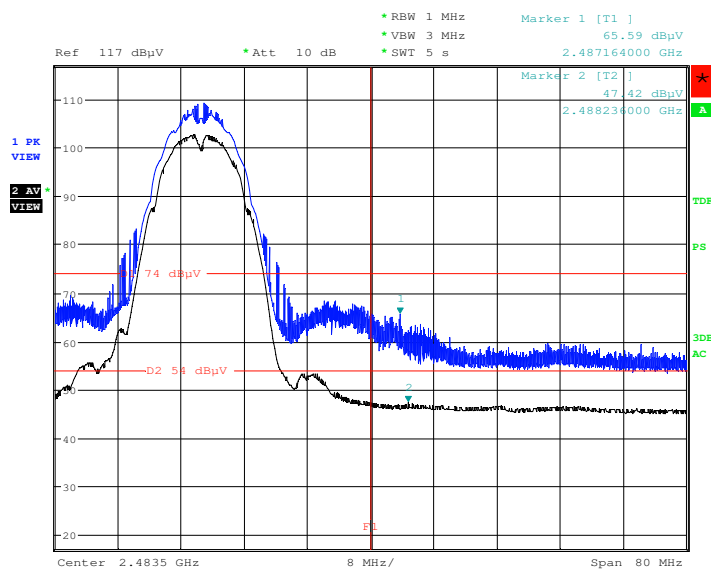
Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Average limit in dBμV/m is calculated as follows: Average limit = 20 x log(500μV/m).

Peak limit in dBμV/m is calculated as follows: Peak limit = Average limit + 20dB.

**Figure 68: Radiated Spurious Emissions at Band Edge, Mode A (2412MHz), 11b**

 BE, 11b, ModeA, Y, H,150  
 Date: 26.MAY.2015 19:36:31

Note: The upper trace shows the peak value and the lower trace shows the average value.

**Figure 69: Radiated Spurious Emissions at Band Edge, Mode C (2462MHz), 11b**

 BE, 11b, ModeC, Y, H,150  
 Date: 26.MAY.2015 19:41:54

Note: The upper trace shows the peak value and the lower trace shows the average value.

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**Table 37: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode A (2412MHz), 11g**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4824.280    | Y/H                       | 38.3              | -7.1             | 31.2              | 54             | 22.8           | 129         | 339       |
| 9647.970    | Y/H                       | 51.1              | -8.7             | 42.4              | 54             | 11.6           | 101         | 213       |
| 21769.334   | Y/H                       | 37.7              | -11.0            | 26.7              | 54             | 27.3           | 132         | 273       |

Note: Level AV = Reading AV + Factor

**Table 38: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode A (2412MHz), 11g**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4824.280    | Y/H                       | 52.5              | -7.1             | 45.4              | 74             | 28.6           | 129         | 339       |
| 9647.970    | Y/H                       | 55.9              | -8.7             | 47.2              | 74             | 26.8           | 101         | 213       |
| 21769.334   | Y/H                       | 51.8              | -11.0            | 40.8              | 74             | 33.2           | 132         | 273       |

Note: Level PK = Reading PK + Factor

**Table 39: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2437MHz), 11g**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4874.340    | Y/H                       | 53.0              | -7.2             | 45.8              | 54             | 8.2            | 173         | 90        |
| 9748.120    | Y/H                       | 48.9              | -7.8             | 41.1              | 54             | 12.9           | 155         | 219       |

Note: Level AV = Reading AV + Factor

**Table 40: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2437MHz), 11g**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4874.340    | Y/H                       | 57.9              | -7.2             | 50.7              | 74             | 23.3           | 173         | 90        |
| 9748.120    | Y/H                       | 54.5              | -7.8             | 46.7              | 74             | 27.3           | 155         | 219       |

Note: Level PK = Reading PK + Factor

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**Table 41: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode C (2462MHz), 11g**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4924.099    | Y/H                       | 45.8              | -7.1             | 38.7              | 54             | 15.3           | 104         | 95        |
| 9847.960    | Y/H                       | 49.7              | -7.6             | 42.1              | 54             | 11.9           | 106         | 205       |
| 24062.060   | Y/H                       | 40.0              | -12.4            | 27.6              | 54             | 26.4           | 125         | 338       |

Note: Level AV = Reading AV + Factor

**Table 42: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode C (2462MHz), 11g**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4924.099    | Y/H                       | 59.7              | -7.1             | 52.6              | 74             | 21.4           | 104         | 95        |
| 9847.960    | Y/H                       | 54.6              | -7.6             | 47.0              | 74             | 27.0           | 106         | 205       |
| 24062.060   | Y/H                       | 53.7              | -12.4            | 41.3              | 74             | 32.7           | 125         | 338       |

Note: Level PK = Reading PK + Factor

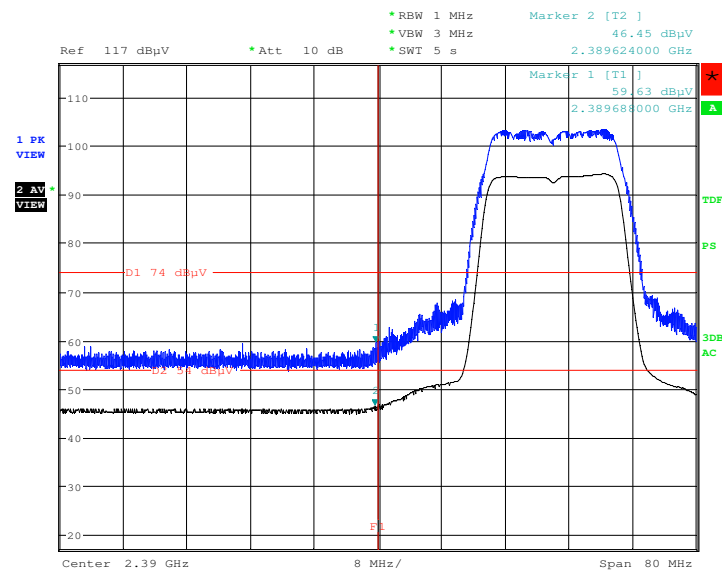
**Table 43: Radiated Emissions at Band Edge, Average and Peak Data, Horizontal and Vertical Antenna Orientations, Modes A (2412MHz) and C (2462MHz), 11g**

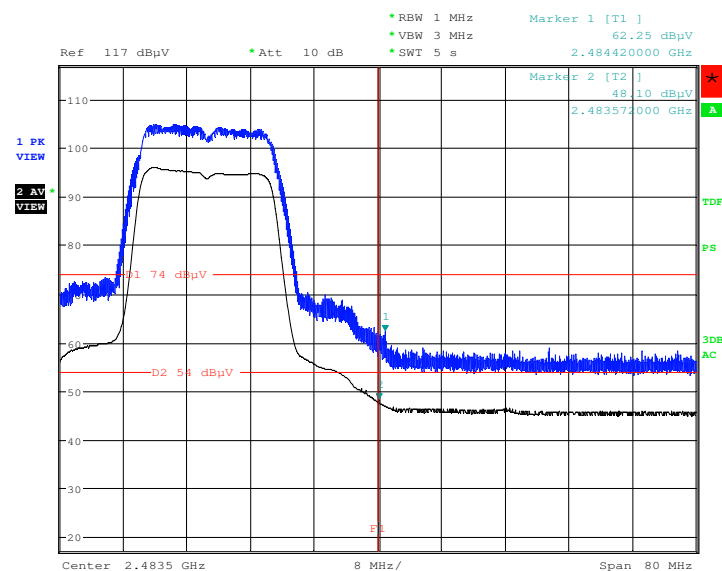
| Operating Frequency [MHz] | EUT / Antenna Orientation | Level AV [dBμV/m] | Level PK [dBμV/m] | Limit AV [dBμV/m] | Limit PK [dBμV/m] | Margin AV [dB] | Margin PK [dB] |
|---------------------------|---------------------------|-------------------|-------------------|-------------------|-------------------|----------------|----------------|
| 2389.624                  | Y/H                       | 46.45             | -                 | 54                | -                 | 7.55           | -              |
| 2389.688                  | Y/H                       | -                 | 59.63             | -                 | 74                | -              | 14.37          |
| 2483.572                  | Y/H                       | 48.10             | -                 | 54                | -                 | 5.90           | -              |
| 2484.420                  | Y/H                       | -                 | 62.25             | -                 | 74                | -              | 11.75          |

Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Average limit in dBμV/m is calculated as follows: Average limit = 20 x log(500μV/m).

Peak limit in dBμV/m is calculated as follows: Peak limit = Average limit + 20dB.

**Figure 70: Radiated Spurious Emissions at Band Edge, Mode A (2412MHz), 11g**

 BE, 11g, ModeA, Y, H,150  
 Date: 26.MAY.2015 20:08:46

**Figure 71: Radiated Spurious Emissions at Band Edge, Mode C (2462MHz), 11g**

 BE, 11g, ModeC, Y, H,150  
 Date: 26.MAY.2015 20:12:04

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**Table 44: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode A (2412MHz), 11n(20HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4824.893    | Y/H                       | 38.4              | -7.1             | 31.3              | 54             | 22.7           | 196         | 347       |
| 9847.961    | Y/H                       | 49.1              | -7.6             | 41.5              | 54             | 12.5           | 100         | 207       |
| 23751.132   | Y/H                       | 40.1              | -12.4            | 27.7              | 54             | 26.3           | 125         | 121       |

Note: Level AV = Reading AV + Factor

**Table 45: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode A (2412MHz), 11n(20HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4824.893    | Y/H                       | 52.3              | -7.1             | 45.2              | 74             | 28.8           | 196         | 347       |
| 9847.961    | Y/H                       | 54.2              | -7.6             | 46.6              | 74             | 27.4           | 100         | 207       |
| 23751.132   | Y/H                       | 54.0              | -12.4            | 41.6              | 74             | 32.4           | 125         | 121       |

Note: Level PK = Reading PK + Factor

**Table 46: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2437MHz), 11n(20HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4873.950    | Y/H                       | 52.9              | -7.2             | 45.7              | 54             | 8.3            | 54          | 174       |
| 9747.960    | Y/H                       | 49.4              | -7.8             | 41.6              | 54             | 12.4           | 155         | 214       |

Note: Level AV = Reading AV + Factor

**Table 47: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2437MHz), 11n(20HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4873.950    | Y/H                       | 57.7              | -7.2             | 50.5              | 74             | 23.5           | 74          | 174       |
| 9747.960    | Y/H                       | 55                | -7.8             | 47.2              | 74             | 26.8           | 155         | 214       |

Note: Level PK = Reading PK + Factor

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**Table 48: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode C (2462MHz), 11n(20HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4924.241    | Y/H                       | 39.6              | -7.1             | 32.5              | 54             | 21.5           | 135         | 92        |
| 9847.961    | Y/H                       | 49.1              | -7.6             | 41.5              | 54             | 12.5           | 100         | 207       |
| 20701.660   | Y/H                       | 37.6              | -10.8            | 40.6              | 54             | 27.2           | 100         | 6.2       |

Note: Level AV = Reading AV + Factor

**Table 49: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode C (2462MHz), 11n(20HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4924.241    | Y/H                       | 55.3              | -7.1             | 74                | 74             | 25.8           | 135         | 92        |
| 9847.961    | Y/H                       | 54.2              | -7.6             | 46.6              | 74             | 27.4           | 100         | 207       |
| 20701.660   | Y/H                       | 51.4              | -10.8            | 40.6              | 74             | 33.4           | 100         | 6.2       |

Note: Level PK = Reading PK + Factor

**Table 50: Radiated Emissions at Band Edge, Average and Peak Data, Horizontal and Vertical Antenna Orientations, Modes A (2412MHz) and C (2462MHz), 11n(20HT)**

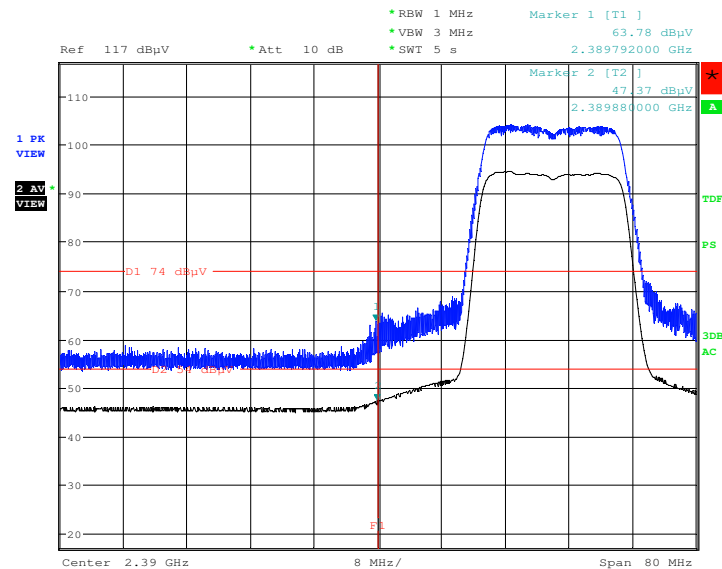
| Operating Frequency [MHz] | EUT / Antenna Orientation | Level AV [dBμV/m] | Level PK [dBμV/m] | Limit AV [dBμV/m] | Limit PK [dBμV/m] | Margin AV [dB] | Margin PK [dB] |
|---------------------------|---------------------------|-------------------|-------------------|-------------------|-------------------|----------------|----------------|
| 2389.880                  | Y/H                       | 47.37             | -                 | 54                | -                 | 6.63           | -              |
| 2389.792                  | Y/H                       | -                 | 63.78             | -                 | 74                | -              | 10.22          |
| 2484.972                  | Y/H                       | 49.40             | -                 | 54                | -                 | 4.6 (*)        | -              |
| 2483.636                  | Y/H                       | -                 | 65.19             | -                 | 74                | -              | 8.81           |

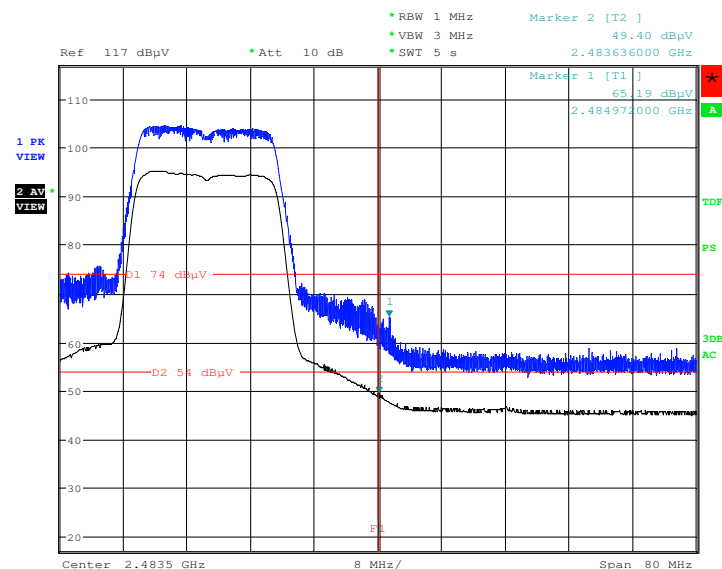
Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Average limit in dBμV/m is calculated as follows: Average limit = 20 x log(500μV/m).

Peak limit in dBμV/m is calculated as follows: Peak limit = Average limit + 20dB.

(\*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is therefore not possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a high probability that the tested product complies with the specification limit.

**Figure 72: Radiated Spurious Emissions at Band Edge, Mode A (2412MHz), 11n(20HT)**

 BE, 11n 20, ModeA, Y, H,150  
 Date: 26.MAY.2015 20:31:25

**Figure 73: Conducted Spurious Emissions at Band Edge, Mode C (2462MHz), 11n(20HT)**

 BE, 11n 20, ModeC, Y, H,150  
 Date: 26.MAY.2015 20:28:14

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**Table 51: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode A (2422MHz), 11n(40HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4868.084    | Y/H                       | 38.1              | -6.0             | 32.1              | 54             | 21.9           | 108         | 126       |
| 7236.000    | Y/H                       | 37.8              | 1.2              | 39.0              | 54             | 15.0           | 100         | 222       |
| 7326.000    | Y/V                       | 37.8              | 1.5              | 39.3              | 54             | 14.7           | 100         | 353       |
| 9687.969    | Y/H                       | 49.1              | -8.3             | 40.8              | 54             | 13.2           | 106         | 328       |
| 23056.350   | Y/V                       | 38.9              | -11.8            | 27.1              | 54             | 26.9           | 100         | 10        |

Note: Level AV = Reading AV + Factor

**Table 52: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode A (2422MHz), 11n(40HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4868.084    | Y/H                       | 52                | -6               | 46                | 74             | 28             | 108         | 126       |
| 7236.000    | Y/H                       | 50.8              | 1.2              | 52                | 74             | 22             | 100         | 222       |
| 7326.000    | Y/V                       | 51.7              | 1.5              | 53.2              | 74             | 20.8           | 100         | 353       |
| 9687.969    | Y/H                       | 55.2              | -8.3             | 46.9              | 74             | 27.1           | 106         | 328       |
| 23056.350   | Y/V                       | 53.1              | -11.8            | 41.3              | 74             | 32.7           | 100         | 10        |

Note: Level PK = Reading PK + Factor

**Table 53: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2447MHz), 11n(40HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4872.980    | Y/H                       | 52.8              | -7.2             | 45.6              | 54             | 8.4            | 175         | 88        |
| 9747.540    | Y/H                       | 49.2              | -7.8             | 41.4              | 54             | 12.6           | 156         | 216       |

Note: Level AV = Reading AV + Factor

**Table 54: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2447MHz), 11n(40HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4872.980    | Y/H                       | 57.7              | -7.2             | 50.5              | 74             | 23.5           | 175         | 88        |
| 9747.540    | Y/H                       | 55.0              | -7.8             | 47.2              | 74             | 26.8           | 156         | 216       |

Note: Level PK = Reading PK + Factor

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**Table 55: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode C (2452MHz), 11n(40HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading AV [dBμV] | Factor [dB(1/m)] | Level AV [dBμV/m] | Limit [dBμV/m] | Margin AV [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4903.955    | Y/H                       | 38.7              | -6.1             | 32.6              | 54             | 21.4           | 100         | 150       |
| 7356.100    | Y/H                       | 37.9              | 1.5              | 39.4              | 54             | 14.6           | 100         | 51        |
| 9807.970    | Y/H                       | 49.1              | -7.6             | 41.5              | 54             | 12.5           | 101         | 202       |
| 23099.262   | Y/H                       | 38.9              | -11.9            | 27.0              | 54             | 27.0           | 128         | 288       |

Note: Level AV = Reading AV + Factor

**Table 56: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, Mode C (2452MHz), 11n(40HT)**

| Freq. [MHz] | EUT / Antenna Orientation | Reading PK [dBμV] | Factor [dB(1/m)] | Level PK [dBμV/m] | Limit [dBμV/m] | Margin PK [dB] | Height [cm] | Angle [°] |
|-------------|---------------------------|-------------------|------------------|-------------------|----------------|----------------|-------------|-----------|
| 4903.955    | Y/H                       | 53.0              | -6.1             | 46.9              | 74             | 27.1           | 100         | 150       |
| 7356.100    | Y/H                       | 51.8              | 1.5              | 53.3              | 74             | 20.7           | 100         | 51        |
| 9807.970    | Y/H                       | 54.2              | -7.6             | 46.6              | 74             | 27.4           | 101         | 202       |
| 23099.262   | Y/H                       | 52.7              | -11.9            | 40.8              | 74             | 33.2           | 128         | 288       |

Note: Level PK = Reading PK + Factor

**Table 57: Radiated Emissions at Band Edge, Average and Peak Data, Horizontal and Vertical Antenna Orientations, Modes A (2422MHz) and C (2452MHz), 11n(40HT)**

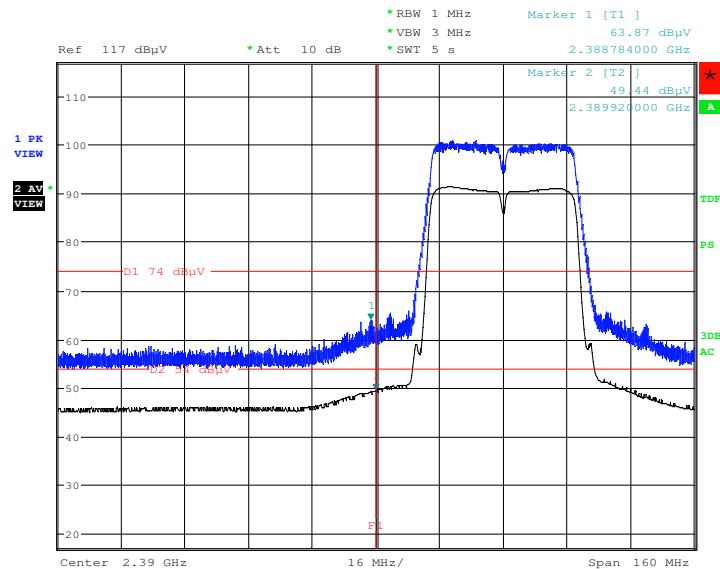
| Operating Frequency [MHz] | EUT / Antenna Orientation | Level AV [dBμV/m] | Level PK [dBμV/m] | Limit AV [dBμV/m] | Limit PK [dBμV/m] | Margin AV [dB] | Margin PK [dB] |
|---------------------------|---------------------------|-------------------|-------------------|-------------------|-------------------|----------------|----------------|
| 2389.920                  | Y/H                       | 49.44             | -                 | 54                | -                 | 4.56 (*)       | -              |
| 2388.784                  | Y/H                       | -                 | 63.87             | -                 | 74                | -              | 10.13          |
| 2488.140                  | Y/H                       | 50.19             | -                 | 54                | -                 | 3.81 (*)       | -              |
| 2483.740                  | Y/H                       | -                 | 62.43             | -                 | 74                | -              | 11.57          |

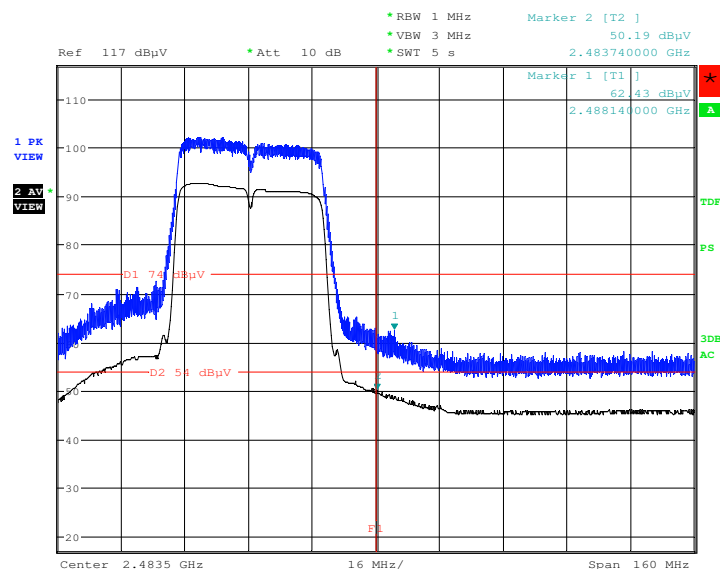
Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Average limit in dBμV/m is calculated as follows: Average limit = 20 x log(500μV/m).

Peak limit in dBμV/m is calculated as follows: Peak limit = Average limit + 20dB.

(\*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is therefore not possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a high probability that the tested product complies with the specification limit.

**Figure 74: Conducted Spurious Emissions at Band Edge, Mode A (2422MHz), 11n(40HT)**

 BE, 11n 40, ModeA, Y, H,150  
 Date: 26.MAY.2015 21:03:06

**Figure 75: Conducted Spurious Emissions at Band Edge, Mode C (2452MHz), 11n(40HT)**

 BE, 11n 40, ModeC, Y, H,150  
 Date: 26.MAY.2015 21:06:47

## 5.4 AC Power Line Conducted Measurements

### 5.4.1 AC Power Line Conducted Emission of Transmitter

**RESULT:****PASS**

Date of testing: 2015-11-04

Ambient temperature: 22°C

Relative humidity: 40%

Atmospheric pressure: 1029hPa

Frequency range: 0.15 - 30MHz

Kind of test site: Shielded Room

## Requirements:

FCC 15.207 and RSS-Gen 8.8

The AC power line conducted emission on any frequency within the band 150kHz to 30MHz shall not exceed the limits specified in FCC 15.207 and RSS-Gen 8.8 (table 3).

## Test procedure:

ANSI C63.10-2013 and RSS-Gen 8.1

The EUT was placed on a wooden table raised 80cm above the reference ground plane. A vertical conducting plane of the screened room was located 40cm to the rear of the EUT. The EUT was connected to a Line Impedance Stabilization Network (LISN).

The physical arrangement of the test system and associated cabling was varied to determine the effect on the EUT's emissions in amplitude and frequency in order to ensure that maximum emission amplitudes were attained.

The measurements were performed with a test receiver operating in the CISPR quasi-peak and average detection modes. The receiver's 6dB bandwidth was set to 9kHz.

Disturbances other than those mentioned are small or not detectable.

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**Table 58: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode A (2412MHz), 11b**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.64911     | L1    | 29.2              | 13.2              | 9.6         | 38.8            | 22.8            | 56.0            | 46.0            | 17.2           | 23.2           |
| 0.15127     | L1    | 40.5              | 20.2              | 9.6         | 50.1            | 29.8            | 65.9            | 55.9            | 15.8           | 26.1           |
| 19.45184    | N     | 29.1              | 23.7              | 10.1        | 39.2            | 33.8            | 60.0            | 50.0            | 20.8           | 16.2           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

**Table 59: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode B (2437MHz), 11b**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15103     | L1    | 40.2              | 19.9              | 9.6         | 49.8            | 29.5            | 65.9            | 55.9            | 16.1           | 26.4           |
| 0.64852     | L1    | 29.4              | 13.4              | 9.6         | 39.0            | 23.0            | 56.0            | 46.0            | 17.0           | 23.0           |
| 19.45752    | N     | 28.7              | 23.2              | 10.1        | 38.8            | 33.3            | 60.0            | 50.0            | 21.2           | 16.7           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

**Table 60: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode C (2462MHz), 11b**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15140     | L1    | 39.9              | 19.6              | 9.6         | 49.5            | 29.2            | 65.9            | 55.9            | 16.4           | 26.7           |
| 0.64997     | L1    | 29.3              | 13.0              | 9.6         | 38.9            | 22.6            | 56.0            | 46.0            | 17.1           | 23.4           |
| 20.0378     | N     | 29.4              | 23.9              | 10.2        | 39.6            | 34.1            | 60.0            | 50.0            | 20.4           | 15.9           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

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**Table 61: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode A (2412MHz), 11g**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15068     | L1    | 40.1              | 19.8              | 9.6         | 49.7            | 29.4            | 66              | 56              | 16.3           | 26.6           |
| 0.64437     | L1    | 29.5              | 12.6              | 9.6         | 39.1            | 22.2            | 56              | 46              | 16.9           | 23.8           |
| 20.04984    | N     | 29.4              | 23.9              | 10.2        | 39.6            | 34.1            | 60              | 50              | 20.4           | 15.9           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

**Table 62: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode B (2437MHz), 11g**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15050     | L1    | 39.8              | 19.5              | 9.6         | 49.4            | 29.1            | 66              | 56              | 16.6           | 26.9           |
| 0.64545     | L1    | 29.7              | 13.0              | 9.6         | 39.3            | 22.6            | 56              | 46              | 16.7           | 23.4           |
| 20.04436    | N     | 30.0              | 24.4              | 10.2        | 40.2            | 34.6            | 60              | 50              | 19.8           | 15.4           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

**Table 63: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode C (2462MHz), 11g**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15000     | L1    | 40.0              | 19.6              | 9.6         | 49.6            | 29.2            | 66              | 56              | 16.4           | 26.8           |
| 0.64922     | L1    | 29.5              | 12.8              | 9.6         | 39.1            | 22.4            | 56              | 46              | 16.9           | 23.6           |
| 20.43404    | N     | 29.6              | 24.0              | 10.2        | 39.8            | 34.2            | 60              | 50              | 20.2           | 15.8           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

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**Table 64: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode A (2412MHz), 11n(20HT)**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15069     | L1    | 39.7              | 19.3              | 9.6         | 49.3            | 28.9            | 66              | 56              | 16.7           | 27.1           |
| 0.64922     | L1    | 29.5              | 12.8              | 9.6         | 39.1            | 22.4            | 56              | 46              | 16.9           | 23.6           |
| 20.23796    | N     | 30.2              | 24.5              | 10.2        | 40.4            | 34.7            | 60              | 50              | 19.6           | 15.3           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

**Table 65: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode B (2437MHz), 11n(20HT)**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15000     | L1    | 40.0              | 19.6              | 9.6         | 49.6            | 29.2            | 66              | 56              | 16.4           | 26.8           |
| 0.64922     | L1    | 29.5              | 12.8              | 9.6         | 39.1            | 22.4            | 56              | 46              | 16.9           | 23.6           |
| 20.43404    | N     | 29.6              | 24.0              | 10.2        | 39.8            | 34.2            | 60              | 50              | 20.2           | 15.8           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

**Table 66: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode C (2462MHz), 11n(20HT)**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15046     | L1    | 39.6              | 19.3              | 9.6         | 49.2            | 28.9            | 66              | 56              | 16.8           | 27.1           |
| 0.64578     | L1    | 29.7              | 13.1              | 9.6         | 39.3            | 22.7            | 56              | 46              | 16.7           | 23.3           |
| 19.89848    | N     | 29.7              | 24.3              | 10.1        | 39.8            | 34.4            | 60              | 50              | 20.2           | 15.6           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

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| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15236     | L1    | 39.3              | 18.9              | 9.6         | 48.9            | 28.5            | 65.9            | 55.9            | 17.0           | 27.4           |
| 0.64864     | L1    | 29.6              | 12.9              | 9.6         | 39.2            | 22.5            | 56.0            | 46.0            | 16.8           | 23.5           |
| 20.14376    | N     | 30.2              | 24.7              | 10.2        | 40.4            | 34.9            | 56.0            | 46.0            | 19.6           | 15.1           |
| 22.45564    | N     | 27.7              | 22.4              | 10.2        | 37.9            | 32.6            | 56.0            | 46.0            | 22.1           | 17.4           |
| 26.86748    | N     | 21.2              | 16.3              | 10.2        | 31.4            | 26.5            | 56.0            | 46.0            | 28.6           | 23.5           |
| 16.65236    | N     | 19.1              | 12.1              | 10.1        | 29.2            | 22.2            | 56.0            | 46.0            | 30.8           | 27.8           |
| 11.73108    | N     | 17.6              | 12.4              | 10.0        | 27.6            | 22.4            | 56.0            | 46.0            | 32.4           | 27.6           |
| 0.18893     | L1    | 34.3              | 12.7              | 9.6         | 43.9            | 22.3            | 64.1            | 54.1            | 20.2           | 31.8           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

**Table 68: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode B (2447MHz), 11n(40HT)**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15810     | L1    | 38.4              | 17.0              | 9.6         | 48.0            | 26.6            | 65.6            | 55.6            | 17.6           | 29             |
| 0.64297     | L1    | 29.4              | 12.7              | 9.6         | 39.0            | 22.3            | 56.0            | 46.0            | 17.0           | 23.7           |
| 20.11848    | N     | 30.2              | 24.6              | 10.2        | 40.4            | 34.8            | 60.0            | 50.0            | 19.6           | 15.2           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

**Table 69: AC Power Line Conducted Emission, Quasi Peak and Average Data, 0.15 - 30MHz, Phase N (N) and L1 (L), Mode C (2452MHz), 11n(40HT)**

| Freq. [MHz] | Phase | Reading QP [dBμV] | Reading AV [dBμV] | Factor [dB] | Level QP [dBμV] | Level AV [dBμV] | Limit QP [dBμV] | Limit AV [dBμV] | Margin QP [dB] | Margin AV [dB] |
|-------------|-------|-------------------|-------------------|-------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| 0.15130     | L1    | 39.5              | 19.1              | 9.6         | 49.1            | 28.7            | 65.9            | 55.9            | 16.8           | 27.2           |
| 0.64804     | L1    | 29.6              | 13.0              | 9.6         | 39.2            | 22.6            | 56.0            | 46.0            | 16.8           | 23.4           |
| 20.25960    | L1    | 29.9              | 24.2              | 10.1        | 40.0            | 34.3            | 60.0            | 50.0            | 20.0           | 15.7           |

Note: Level QP = Reading QP + Factor, Level AV = Reading AV + Factor

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