

Annex 1: Measurement diagrams  
to  
**PARTIAL TEST REPORT**  
No.: 6-0542-14-3-2b

According to:

FCC Part 15.407

for

Bosch Security Systems BV

DICENTIS Wireless Access Point DCNM-WAP  
+  
FCC-ID: UX8-DCNMWAP

| Laboratory Accreditation and Listings                                                                                                                                                                                                                                                                                                      |                                                                                                                                                 |                                                                                                                                                                        |                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br><b>DAkkS</b><br>Deutsche<br>Akkreditierungsstelle<br>D-PL-12047-01-01                                                                                                                                                                               | <br><b>FCC</b><br>MRA US-EU 0003                             | <br>Industry Canada<br>Reg. No.: 3462D-1<br>Reg. No.: 3462D-2<br>Reg. No.: 3462D-3 | <br>Voluntary Controls for<br>Electromagnetic Emissions<br>Reg. No.:<br>R-2666 C-2914,<br>T-1967, G-301 |
| <br><b>WiFi</b><br>ALLIANCE<br>AUTHORIZED<br>RF LABORATORY                                                                                                                                                                                              | <br><b>CTIA Authorized Test Lab</b><br>LAB CODE 20011130-00 |                                                                                                                                                                        |                                                                                                                                                                                              |
| accredited according to DIN EN ISO/IEC 17025                                                                                                                                                                                                                                                                                               |                                                                                                                                                 |                                                                                                                                                                        |                                                                                                                                                                                              |
| <p><b>CETECOM GmbH</b><br/>Laboratory Radio Communications &amp; Electromagnetic Compatibility<br/>Im Teelbruch 116 • 45219 Essen • Germany<br/>Registered in Essen, Germany, Reg. No.: HRB Essen 8984<br/>Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964<br/>E-mail: info@cetecom.com • Internet: www.cetecom.com</p> |                                                                                                                                                 |                                                                                                                                                                        |                                                                                                                                                                                              |

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## 1. Measurement diagrams

### 1.1. Conducted EMI measurements on AC-mains port according 15.207, class B

#### Diagram 1.002\_EMI\_AC\_WAP\_Ch36

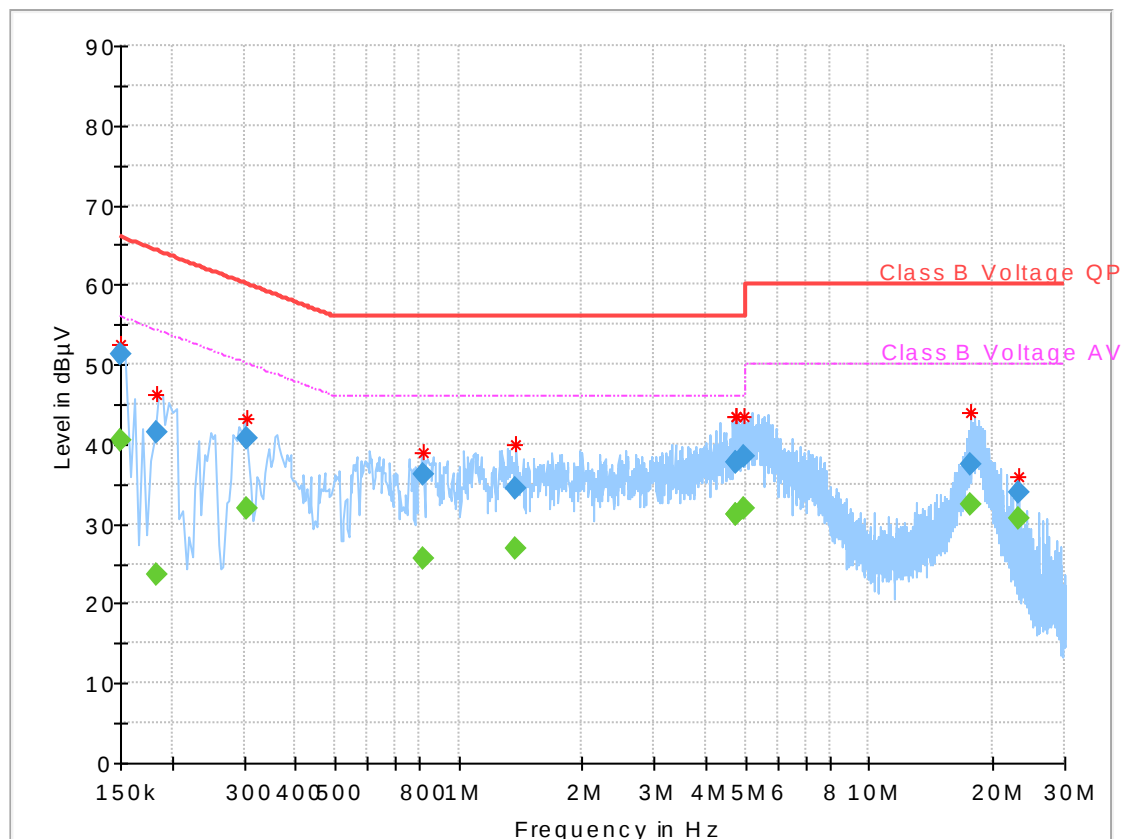
##### Common Information

|                           |                                                                   |
|---------------------------|-------------------------------------------------------------------|
| Test Description:         | Conducted Voltage Measurement Class B                             |
| Test Site & Location:     | Conducted Emission, CETECOM GmbH Essen                            |
| Test Software:            | R&S EMC32 v9.15                                                   |
| Test Specification:       | FCC 15.207                                                        |
| Operating Mode:           | TX, Channel 36 (5180 MHz) + Ping from Notebook to Router + to WAP |
| Measured on line:         | N/L1                                                              |
| Diagram details:          | Shows the peak values as a sum of measured ports in maxhold mode  |
| Environmental Conditions: | Humidity: 28%rH; Temperature: 21,4°C                              |
| Operator:                 | Lor                                                               |
| Comments:                 | MCS8, Ant0+1                                                      |

##### EUT Information

|                       |                                                  |
|-----------------------|--------------------------------------------------|
| Manufacturer:         | Bosch Security                                   |
| EuT:                  | DCNM-WAP                                         |
| Serial Number:        | 045888245831022003                               |
| Connected Interfaces: | AC adapter, 2 audio lines with load, CAT5e cable |
| Power Supply:         | 120V AC 60 Hz                                    |

Full Spectrum



**Final Result**

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) |
|-----------------|------------------|-----------------|--------------|
| 0.150000        | ---              | 40.59           | 56.00        |
| 0.150000        | 51.36            | ---             | 66.00        |
| 0.182656        | 41.59            | ---             | 64.36        |
| 0.182656        | ---              | 23.54           | 54.36        |
| 0.304844        | ---              | 31.89           | 50.11        |
| 0.304844        | 40.70            | ---             | 60.11        |
| 0.821563        | ---              | 25.75           | 46.00        |
| 0.821563        | 36.23            | ---             | 56.00        |
| 1.377969        | 34.53            | ---             | 56.00        |
| 1.377969        | ---              | 26.96           | 46.00        |
| 4.717188        | ---              | 31.26           | 46.00        |
| 4.717188        | 37.71            | ---             | 56.00        |
| 4.746250        | 37.69            | ---             | 56.00        |
| 4.746250        | ---              | 31.22           | 46.00        |
| 4.952813        | 38.39            | ---             | 56.00        |
| 4.952813        | ---              | 31.90           | 46.00        |
| 17.686563       | ---              | 32.31           | 50.00        |
| 17.686563       | 37.46            | ---             | 60.00        |
| 23.129063       | ---              | 30.78           | 50.00        |
| 23.129063       | 33.98            | ---             | 60.00        |

**Final Result**

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) |
|-----------------|------------------|-----------------|--------------|
| 0.150000        | ---              | 40.59           | 56.00        |
| 0.150000        | 51.36            | ---             | 66.00        |
| 0.182656        | 41.59            | ---             | 64.36        |
| 0.182656        | ---              | 23.54           | 54.36        |
| 0.304844        | ---              | 31.89           | 50.11        |
| 0.304844        | 40.70            | ---             | 60.11        |
| 0.821563        | ---              | 25.75           | 46.00        |
| 0.821563        | 36.23            | ---             | 56.00        |
| 1.377969        | 34.53            | ---             | 56.00        |
| 1.377969        | ---              | 26.96           | 46.00        |
| 4.717188        | ---              | 31.26           | 46.00        |
| 4.717188        | 37.71            | ---             | 56.00        |
| 4.746250        | 37.69            | ---             | 56.00        |
| 4.746250        | ---              | 31.22           | 46.00        |
| 4.952813        | 38.39            | ---             | 56.00        |
| 4.952813        | ---              | 31.90           | 46.00        |
| 17.686563       | ---              | 32.31           | 50.00        |
| 17.686563       | 37.46            | ---             | 60.00        |
| 23.129063       | ---              | 30.78           | 50.00        |
| 23.129063       | 33.98            | ---             | 60.00        |

## Diagram 1.003\_EMI\_AC\_WAP\_Ch134

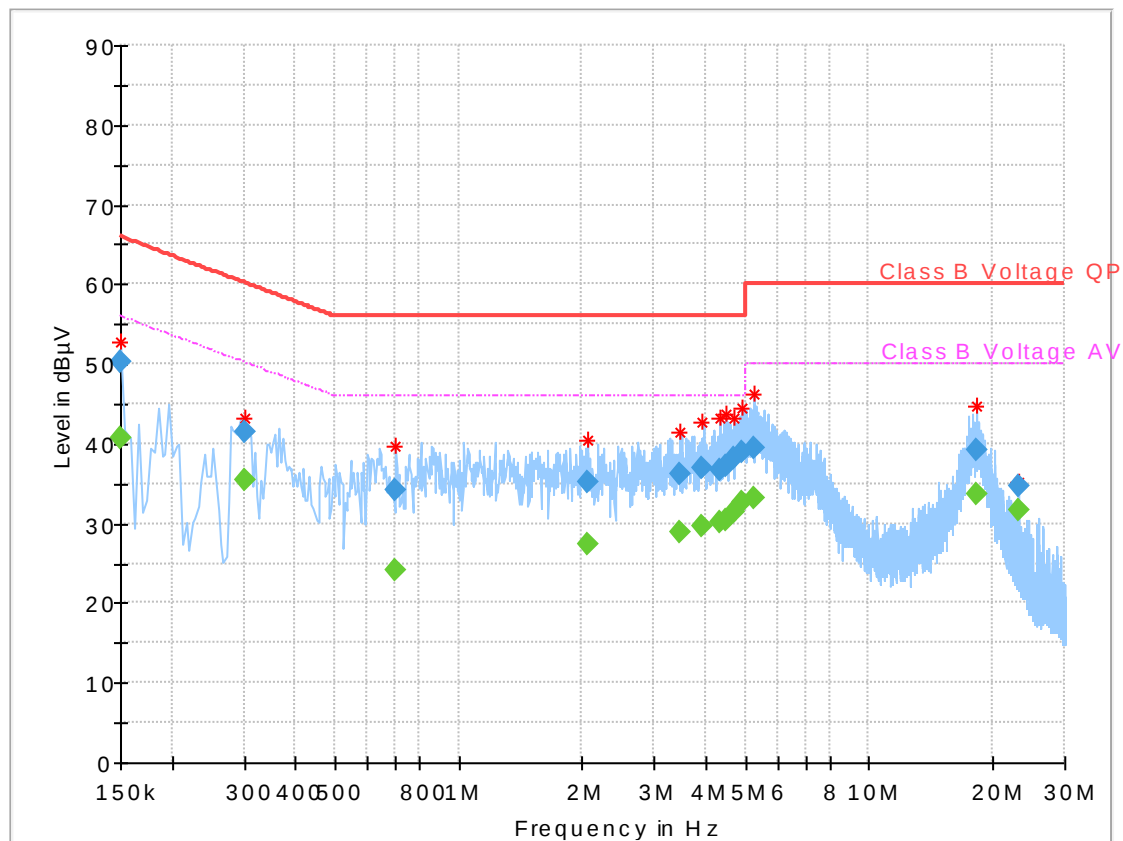
### Common Information

|                           |                                                                    |
|---------------------------|--------------------------------------------------------------------|
| Test Description:         | Conducted Voltage Measurement Class B                              |
| Test Site & Location:     | Conducted Emission, CETECOM GmbH Essen                             |
| Test Software:            | R&S EMC32 v9.15                                                    |
| Test Specification:       | FCC 15.207                                                         |
| Operating Mode:           | TX, Channel 134 (5660 MHz) + Ping from Notebook to Router + to WAP |
| Measured on line:         | N/L1                                                               |
| Diagram details:          | Shows the peak values as a sum of measured ports in maxhold mode   |
| Environmental Conditions: | Humidity: 28%rH; Temperature: 21,4°C                               |
| Operator:                 | Lor                                                                |
| Comments:                 | MCS8, Ant0+1                                                       |

### EUT Information

|                       |                                                  |
|-----------------------|--------------------------------------------------|
| Manufacturer:         | Bosch Security                                   |
| EuT:                  | DCNM-WAP                                         |
| Serial Number:        | 045888245831022003                               |
| Connected Interfaces: | AC adapter, 2 audio lines with load, CAT5e cable |
| Power Supply:         | 120V AC 60 Hz                                    |

Full Spectrum



**Final Result**

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) |
|-----------------|------------------|-----------------|--------------|
| 0.150000        | ---              | 40.61           | 56.00        |
| 0.150000        | 50.31            | ---             | 66.00        |
| 0.302031        | 41.53            | ---             | 60.19        |
| 0.302031        | ---              | 35.39           | 50.19        |
| 0.698281        | 34.28            | ---             | 56.00        |
| 0.698281        | ---              | 24.08           | 46.00        |
| 2.053750        | ---              | 27.45           | 46.00        |
| 2.053750        | 35.14            | ---             | 56.00        |
| 3.458906        | 36.09            | ---             | 56.00        |
| 3.458906        | ---              | 28.94           | 46.00        |
| 3.934375        | 36.90            | ---             | 56.00        |
| 3.934375        | ---              | 29.79           | 46.00        |
| 4.336094        | 36.82            | ---             | 56.00        |
| 4.336094        | ---              | 30.13           | 46.00        |
| 4.503438        | ---              | 30.46           | 46.00        |
| 4.503438        | 37.27            | ---             | 56.00        |
| 4.685938        | 38.29            | ---             | 56.00        |
| 4.685938        | ---              | 31.48           | 46.00        |
| 4.913594        | 39.05            | ---             | 56.00        |
| 4.913594        | ---              | 32.63           | 46.00        |
| 5.244688        | 39.44            | ---             | 60.00        |
| 5.244688        | ---              | 33.06           | 50.00        |
| 18.301563       | ---              | 33.81           | 50.00        |
| 18.301563       | 39.16            | ---             | 60.00        |
| 23.127969       | ---              | 31.78           | 50.00        |
| 23.127969       | 34.72            | ---             | 60.00        |

**Final Result**

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) |
|-----------------|------------------|-----------------|--------------|
| 0.150000        | ---              | 40.61           | 56.00        |
| 0.150000        | 50.31            | ---             | 66.00        |
| 0.302031        | 41.53            | ---             | 60.19        |
| 0.302031        | ---              | 35.39           | 50.19        |
| 0.698281        | 34.28            | ---             | 56.00        |
| 0.698281        | ---              | 24.08           | 46.00        |
| 2.053750        | ---              | 27.45           | 46.00        |
| 2.053750        | 35.14            | ---             | 56.00        |
| 3.458906        | 36.09            | ---             | 56.00        |
| 3.458906        | ---              | 28.94           | 46.00        |
| 3.934375        | 36.90            | ---             | 56.00        |
| 3.934375        | ---              | 29.79           | 46.00        |
| 4.336094        | 36.82            | ---             | 56.00        |
| 4.336094        | ---              | 30.13           | 46.00        |
| 4.503438        | ---              | 30.46           | 46.00        |
| 4.503438        | 37.27            | ---             | 56.00        |
| 4.685938        | 38.29            | ---             | 56.00        |
| 4.685938        | ---              | 31.48           | 46.00        |
| 4.913594        | 39.05            | ---             | 56.00        |
| 4.913594        | ---              | 32.63           | 46.00        |
| 5.244688        | 39.44            | ---             | 60.00        |
| 5.244688        | ---              | 33.06           | 50.00        |
| 18.301563       | ---              | 33.81           | 50.00        |
| 18.301563       | 39.16            | ---             | 60.00        |
| 23.127969       | ---              | 31.78           | 50.00        |
| 23.127969       | 34.72            | ---             | 60.00        |

## 1.2. Radiated field strength measurements accord. §15.209 (15.205) and §15.407

### 1.2.1. Magnetic field measurements $f < 30\text{MHz}$

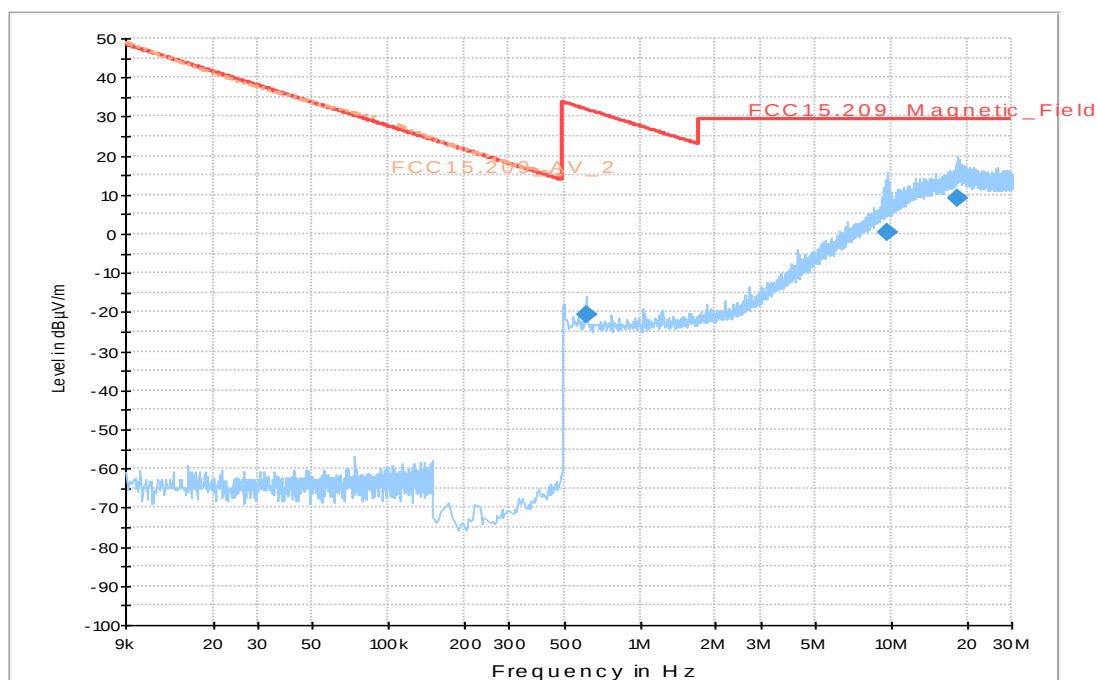
#### Diagram No. 2.06a\_Tx\_Ch36\_HT20\_MCS8

Date: 21.01.2015    Page 1 of 2  
 Test description: Magnetic Field Strength Measurement related to 30/300 m distance  
 Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance  
 Version of Testsoftware: EMC32 V8.51.0  
 Distance correction: used accord. table, pls. see test report  
 Technical Data: Please see page 2 for detailed data of measurement setup  
 Rec. antenna (pre-scan): height 1.00 m, parallel and 90° to EUT polarisation  
 Used filter: bypass  
 Test specification: FCC 15.205 § 15.209  
  
 Operator: Lor  
 Operating conditions: TX-on , continuous, modulation on, Channel 36  
 Power during tests: 120V AC/ 60Hz powered  
 Comment 1: Channel middle=5180MHz

#### EUT Information

Manufacturer: Bosch Security  
 EuT: DCNM-WAP  
 Serial Number: 045888245831022003  
 Connected Interfaces: AC adapter, 2 audio lines with load, CAT5e cable

FCC15.209\_magn hor+vert



#### Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|--------------|---------------|------------|-------------|----------------|
| 0.612000        | -20.7              | 1000.0          | 10.000          | V            | 119.0         | -35.5      | 52.60       | 31.90          |
| 9.612000        | 0.6                | 1000.0          | 10.000          | V            | 356.0         | -4.6       | 29.00       | 29.50          |
| 18.112000       | 9.2                | 1000.0          | 10.000          | H            | 212.0         | 3.1        | 20.30       | 29.50          |

## Diagram No. 2.08a\_Tx\_Ch134\_HT40\_MCS8

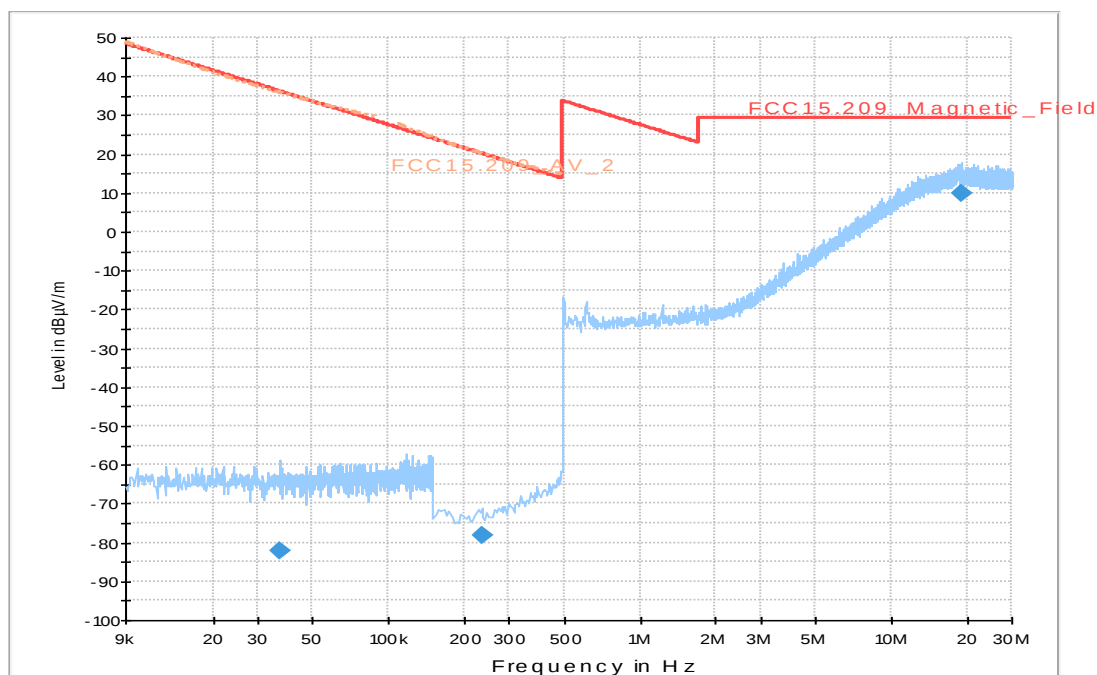
Date: 21.01.2015 Page 1 of 2  
 Test description: Magnetic Field Strength Measurement related to 30/300 m distance  
 Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance  
 Version of Testsoftware: EMC32 V8.51.0  
 Distance correction: used accord. table, pls. see test report  
 Technical Data: Please see page 2 for detailed data of measurement setup  
 Rec. antenna (pre-scan): height 1.00 m, parallel and 90° to EUT polarisation  
 Used filter: bypass  
 Test specification: FCC 15.205 § 15.209

Operator: Lor  
 Operating conditions: TX-on , continuous, modulation on, Channel 134  
 Power during tests: 120V AC/ 60Hz powered  
 Comment 1: Channel middle=5670MHz

### EUT Information

Manufacturer: Bosch Security  
 EUT: DCNM-WAP  
 Serial Number: 045888245831022003  
 Connected Interfaces: AC adapter, 2 audio lines with load, CAT5e cable

FCC15.209\_magn hor+vert



### Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|--------------|---------------|------------|-------------|----------------|
| 0.037000        | -82.2              | 1000.0          | 0.200           | H            | 332.0         | -96.0      | 118.5       | 36.20          |
| 0.234000        | -78.2              | 1000.0          | 10.000          | H            | 0.0           | -90.4      | 98.40       | 20.20          |
| ...             | ...                | ...             | ...             | ...          | ...           | ...        | ...         | ...            |

### 1.2.2. Field strength measurements 30MHz <f <1GHz

## Diagram No. 3.02a\_Tx\_Ch36

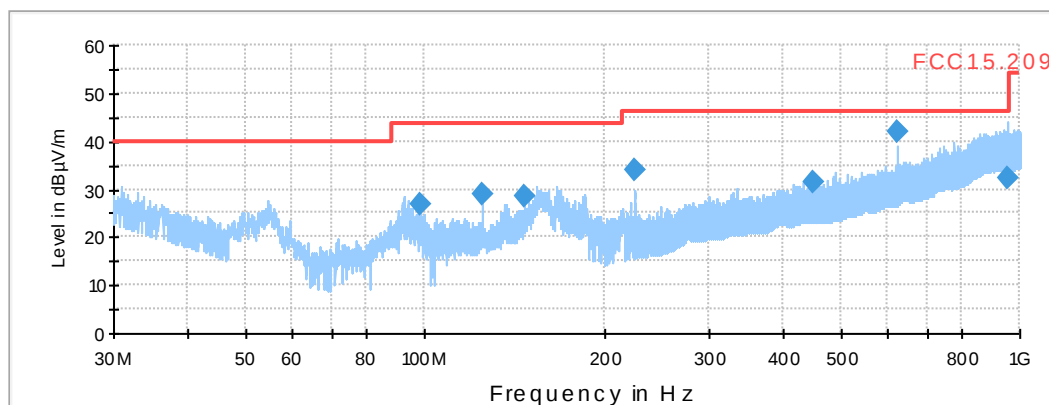
### Common Information

|                          |                                                                     |
|--------------------------|---------------------------------------------------------------------|
| Test description:        | Electric Field Strength Measurement                                 |
| Test site and distance:  | Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance |
| Version of Testsoftware: | EMC32 V8.51.0                                                       |
| Distance correction:     | not used                                                            |
| Used filter:             | not used                                                            |
| Technical Data:          | please see page 2 for detailed data of measurement setup            |
| Test specification.:     | FCC 15.209                                                          |
| Operator:                | Kta/Lor                                                             |
| Operating conditions:    | WLAN, channel 36, MCS8                                              |
| Power during tests:      | 120V/ 60Hz                                                          |

### EUT Information

|                       |                                                      |
|-----------------------|------------------------------------------------------|
| Manufacturer:         | Bosch Security                                       |
| EuT:                  | DCNM-WAP                                             |
| Serial Number:        | 045888245831022003                                   |
| Connected Interfaces: | AC adapter, 2 audio lines with load, CAT5e LAN cable |

01\_FCC15.209\_hor+vert\_KP0



### Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|-------------|--------------|---------------|------------|-------------|----------------|
| 98.310000       | 26.7               | 1000.0          | 120.000         | 148.0       | V            | 310.0         | 8.7        | 16.80       | 43.50          |
| 125.010000      | 29.0               | 1000.0          | 120.000         | 116.0       | V            | 40.0          | 8.3        | 14.50       | 43.50          |
| 147.450000      | 28.6               | 1000.0          | 120.000         | 105.0       | V            | 258.0         | 8.9        | 14.90       | 43.50          |
| 224.990000      | 34.0               | 1000.0          | 120.000         | 105.0       | H            | 130.0         | 12.7       | 12.00       | 46.00          |
| 449.990000      | 31.6               | 1000.0          | 120.000         | 116.0       | V            | 258.0         | 19.4       | 14.40       | 46.00          |
| 624.990000      | 41.9               | 1000.0          | 120.000         | 105.0       | H            | 303.0         | 22.8       | 4.10        | 46.00          |
| ...             | ...                | ...             | ...             | ...         | ...          | ...           | ...        | ...         | ...            |

## Diagram No. 3.02b\_Tx\_Ch36

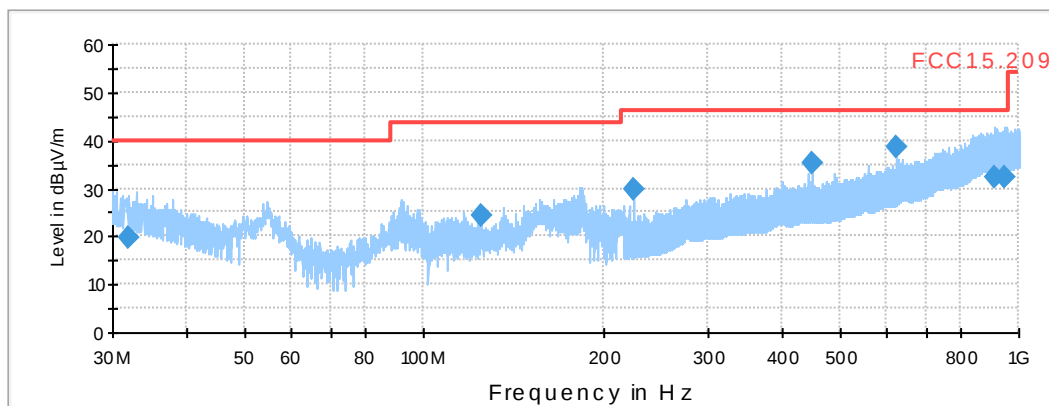
### Common Information

|                          |                                                                     |
|--------------------------|---------------------------------------------------------------------|
| Test description:        | Electric Field Strength Measurement                                 |
| Test site and distance:  | Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance |
| Version of Testsoftware: | EMC32 V8.51.0                                                       |
| Distance correction:     | not used                                                            |
| Used filter:             | not used                                                            |
| Technical Data:          | please see page 2 for detailed data of measurement setup            |
| Test specification:      | FCC 15.209                                                          |
| Operator:                | Kta/Lor                                                             |
| Operating conditions:    | WLAN, channel 36, MCS8                                              |
| Power during tests:      | 120V/ 60Hz                                                          |

### EUT Information

|                       |                                                      |
|-----------------------|------------------------------------------------------|
| Manufacturer:         | Bosch Security                                       |
| EuT:                  | DCNM-WAP                                             |
| Serial Number:        | 045888245831022003                                   |
| Connected Interfaces: | AC adapter, 2 audio lines with load, CAT5e LAN cable |

01\_FCC15.209\_hor+vert\_KP0



### Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|-------------|--------------|---------------|------------|-------------|----------------|
| 31.960000       | 19.5               | 1000.0          | 120.000         | 295.0       | V            | 177.0         | 21.1       | 20.50       | 40.00          |
| 125.020000      | 24.2               | 1000.0          | 120.000         | 174.0       | H            | 248.0         | 8.3        | 19.30       | 43.50          |
| 224.990000      | 30.0               | 1000.0          | 120.000         | 157.0       | V            | 56.0          | 12.7       | 16.00       | 46.00          |
| 450.000000      | 35.2               | 1000.0          | 120.000         | 165.0       | H            | 200.0         | 19.4       | 10.80       | 46.00          |
| 625.010000      | 38.5               | 1000.0          | 120.000         | 105.0       | H            | 314.0         | 22.8       | 7.50        | 46.00          |
| 908.620000      | 32.3               | 1000.0          | 120.000         | 157.0       | V            | 273.0         | 27.4       | 13.70       | 46.00          |
| ...             | ...                | ...             | ...             | ...         | ...          | ...           | ...        | ...         | ...            |

## Diagram No. 3.03a\_Tx\_Ch134

09.12.2014 Page 1 of 1  
 Test description: Electric Field Strength Measurement  
 Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance  
 Version of Testsoftware: EMC32 V8.51.0  
 Distance correction: not used  
 Used filter: not used  
 Technical Data: please see page 2 for detailed data of measurement setup  
 Test specification.: FCC 15.209

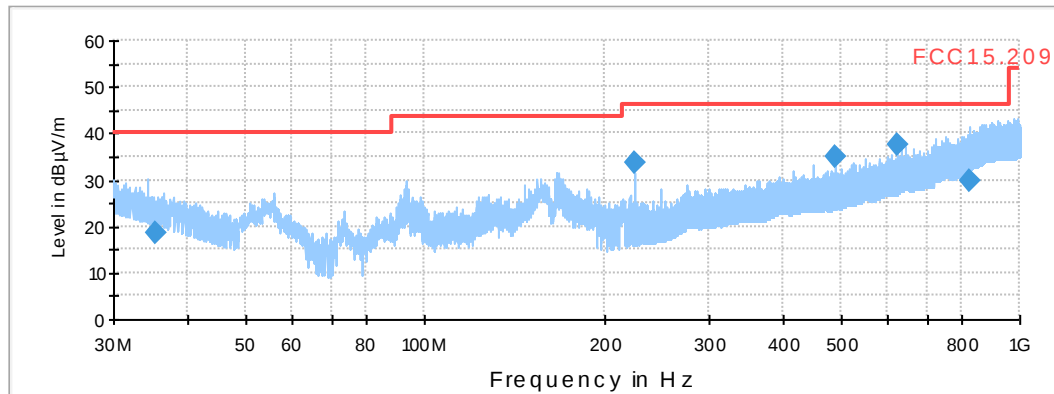
Operator: GAR  
 Operating conditions: WLAN 5GHz, Channel 134, HT40 Mode  
 Power during tests: 120V/ 60Hz

### EUT Information

Manufacturer: Bosch Security  
 EuT: DCNM-WAP

Serial Number: 045888245831022003  
 Connected Interfaces: AC adapter, 2 audio lines with load, CAT5e LAN cable

01\_FCC15.209\_hor+vert\_KP0



### Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|-------------|--------------|---------------|------------|-------------|----------------|
| 35.330000       | 18.8               | 1000.0          | 120.000         | 191.0       | H            | 235.0         | 19.5       | 21.20       | 40.00          |
| 224.970000      | 33.8               | 1000.0          | 120.000         | 105.0       | H            | 113.0         | 12.7       | 12.20       | 46.00          |
| 491.490000      | 35.1               | 1000.0          | 120.000         | 133.0       | H            | 222.0         | 19.7       | 10.90       | 46.00          |
| 625.000000      | 37.6               | 1000.0          | 120.000         | 105.0       | V            | 264.0         | 22.8       | 8.40        | 46.00          |
| 825.770000      | 29.7               | 1000.0          | 120.000         | 133.0       | V            | 102.0         | 25.8       | 16.30       | 46.00          |

## Diagram No. 3.03b\_Tx\_Ch134

09.12.2014 Page 1 of 1

Test description: Electric Field Strength Measurement  
 Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance  
 Version of Testsoftware: EMC32 V8.51.0  
 Distance correction: not used  
 Used filter: not used  
 Technical Data: please see page 2 for detailed data of measurement setup  
 Test specification.: FCC 15.209

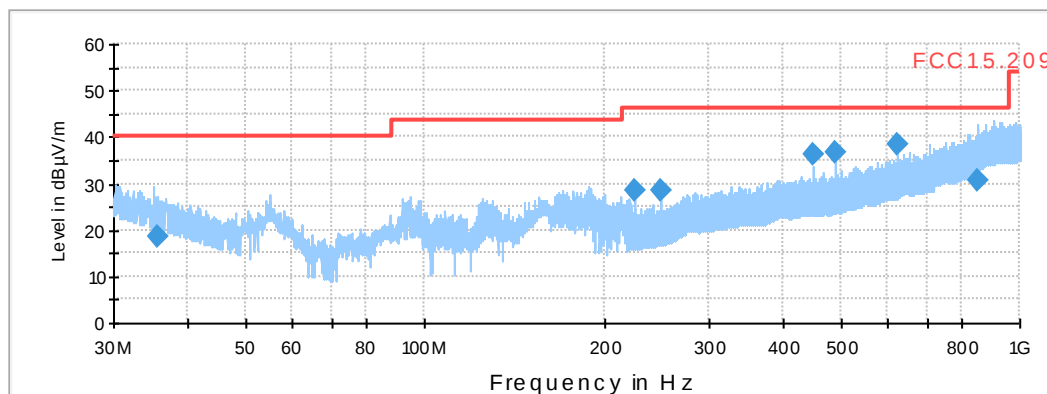
Operator: GAR  
 Operating conditions: WLAN 5GHz, Channel 134, HT40 Mode  
 Power during tests: 120V/ 60Hz

### EUT Information

Manufacturer: Bosch Security  
 EuT: DCNM-WAP

Serial Number: 045888245831022003  
 Connected Interfaces: AC adapter, 2 audio lines with load, CAT5e LAN cable

01\_FCC15.209\_hor+vert\_KP0



### Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|-------------|--------------|---------------|------------|-------------|----------------|
| 35.580000       | 18.5               | 1000.0          | 120.000         | 125.0       | H            | 298.0         | 19.4       | 21.50       | 40.00          |
| 225.000000      | 28.6               | 1000.0          | 120.000         | 105.0       | V            | 40.0          | 12.7       | 17.40       | 46.00          |
| 250.010000      | 28.6               | 1000.0          | 120.000         | 105.0       | H            | 72.0          | 13.3       | 17.40       | 46.00          |
| 449.990000      | 36.1               | 1000.0          | 120.000         | 149.0       | H            | 181.0         | 19.4       | 9.90        | 46.00          |
| 491.490000      | 36.9               | 1000.0          | 120.000         | 133.0       | H            | 217.0         | 19.7       | 9.10        | 46.00          |
| 625.000000      | 38.4               | 1000.0          | 120.000         | 105.0       | H            | 2.0           | 22.8       | 7.60        | 46.00          |
| 847.390000      | 30.5               | 1000.0          | 120.000         | 360.0       | V            | 95.0          | 26.0       | 15.50       | 46.00          |

### 1.2.3. Field strength measurements 1GHz < f < 18GHz

## Diagram No.:4.02a\_RSE\_5G\_CH36\_MCS8

### Common Information

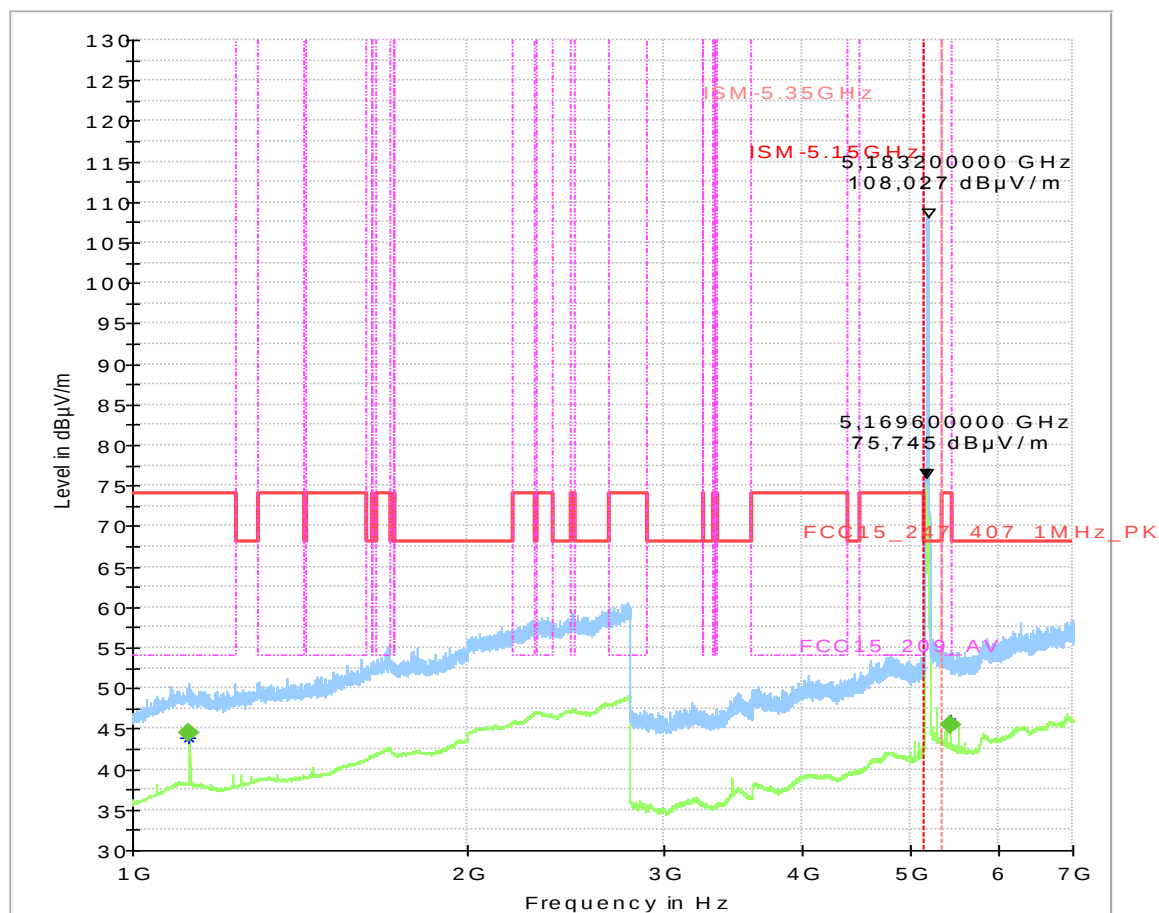
Test Description: Radiated field strength emission in 3m distance  
 Test Site: CETECOM GmbH Essen  
 Test Standard: FCC 15.407&15.209 Intentional Radiator  
 Antenna polarisation: horizontal/vertical

Operation mode: TX, continuous, 100%  
 Operator Name: Lor/MFr  
 Comment: Channel no. low=36, MCS8, HT20

### EUT Information

Manufacturer: Bosch Security  
 EuT: DCNM-WAP  
 Serial Number: 045888245831022003  
 Connected Interfaces: AC adapter, 2 audio lines with load, CAT5e cable  
 Power Supply: 120V AC 60 Hz

Full Spectrum



**Final\_Result**

| Frequency (MHz) | MaxPeak (dBμV/m) | AV (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Measurement Time | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Elevation (deg) |
|-----------------|------------------|-------------|----------------|-------------|------------------|-----------------|-------------|--------------|---------------|-----------------|
| 1125.050000     | ---              | 44.50       | 54.00          | 9.50        | 100.0            | 1000.000        | 155.0       | H            | 3.0           | 90.0            |
| 5440.000000     | ---              | 45.45       | 54.00          | 8.55        | 100.0            | 1000.000        | 155.0       | H            | 54.0          | 90.0            |

(continuation of the "Final\_Result" table from column 16 ...)

| Frequency (MHz) | Correction |
|-----------------|------------|
| 1125.050000     | 34.0       |
| 5440.000000     | 11.4       |

**Final\_Result**

| Frequency (MHz) | MaxPeak (dBμV/m) | AV (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Measurement Time | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Elevation (deg) |
|-----------------|------------------|-------------|----------------|-------------|------------------|-----------------|-------------|--------------|---------------|-----------------|
| 1125.050000     | ---              | 44.50       | 54.00          | 9.50        | 100.0            | 1000.000        | 155.0       | H            | 3.0           | 90.0            |
| 5440.000000     | ---              | 45.45       | 54.00          | 8.55        | 100.0            | 1000.000        | 155.0       | H            | 54.0          | 90.0            |

(continuation of the "Final\_Result" table from column 16 ...)

| Frequency (MHz) | Correction |
|-----------------|------------|
| 1125.050000     | 34.0       |
| 5440.000000     | 11.4       |

## Diagram No.:4.02b\_5G\_CH36\_MCS8

### Common Information

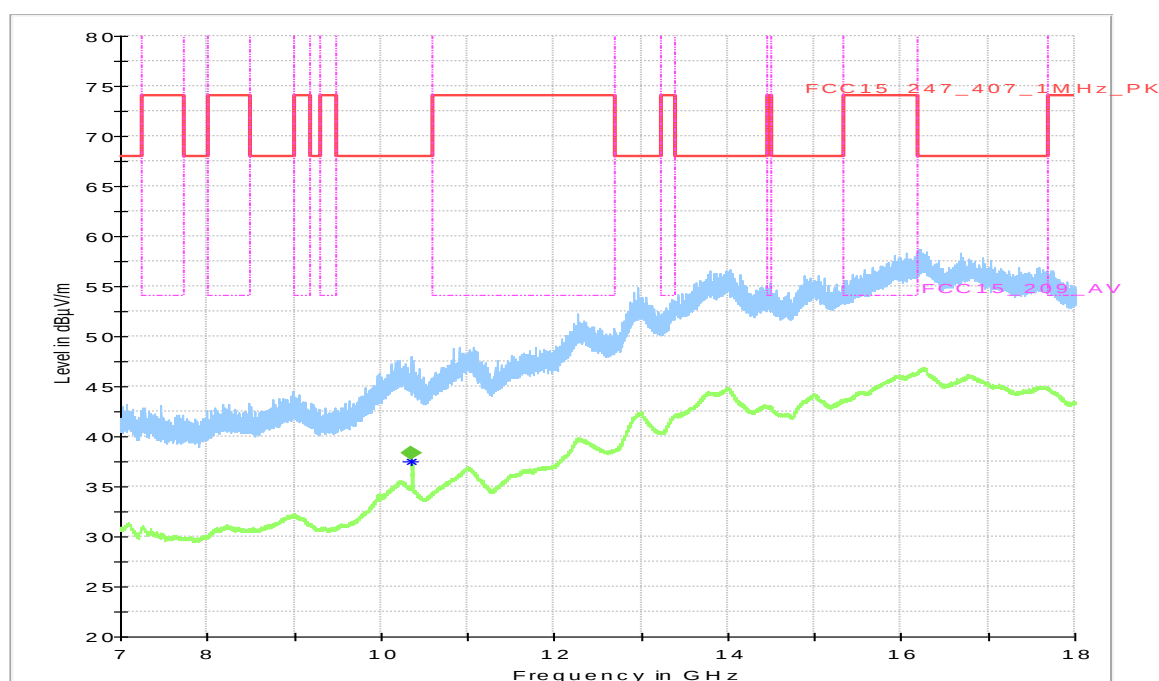
Test Description: Radiated field strength emission in 3m distance  
 Test Site: CETECOM GmbH Essen  
 Test Standard: FCC 15.407&15.209 Intentional Radiator  
 Antenna polarisation: horizontal/vertical

Operation mode: TX, continuous, 100%  
 Operator Name: MFr/Kru  
 Comment: Channel no. low=36, MCS8, HT20

### EUT Information

Manufacturer: Bosch Security  
 EuT: DCNM-WAP  
 Serial Number: 045888245831022003  
 Connected Interfaces: AC adapter, 2 audio lines with load, CAT5e cable  
 Power Supply: 120V AC 60 Hz

Full Spectrum



### Final Result

| Frequency (MHz) | MaxPeak (dBµV/m) | AV (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) |
|-----------------|------------------|-------------|----------------|-------------|------------|-----------------|-------------|-----|---------------|-----------------|
| 10360.550000    | ---              | 38.37       | 150.00         | 111.63      | 100.0      | 1000.000        | 155.0       | H   | 96.0          | 90.0            |

(continuation of the "Final Result" table from column 16 ...)

| Frequency (MHz) | Corr. |
|-----------------|-------|
| 10360.550000    | 9.8   |

### Final Result

| Frequency (MHz) | MaxPeak (dBµV/m) | AV (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) |
|-----------------|------------------|-------------|----------------|-------------|------------|-----------------|-------------|-----|---------------|-----------------|
| 10360.550000    | ---              | 38.37       | 150.00         | 111.63      | 100.0      | 1000.000        | 155.0       | H   | 96.0          | 90.0            |

(continuation of the "Final Result" table from column 16 ...)

| Frequency (MHz) | Corr. | Comment               |
|-----------------|-------|-----------------------|
| 10360.550000    | 9.8   | 14:21:40 - 10.12.2014 |

## Diagram No.:4.03a\_TX\_RSE\_Ch134\_MCS8

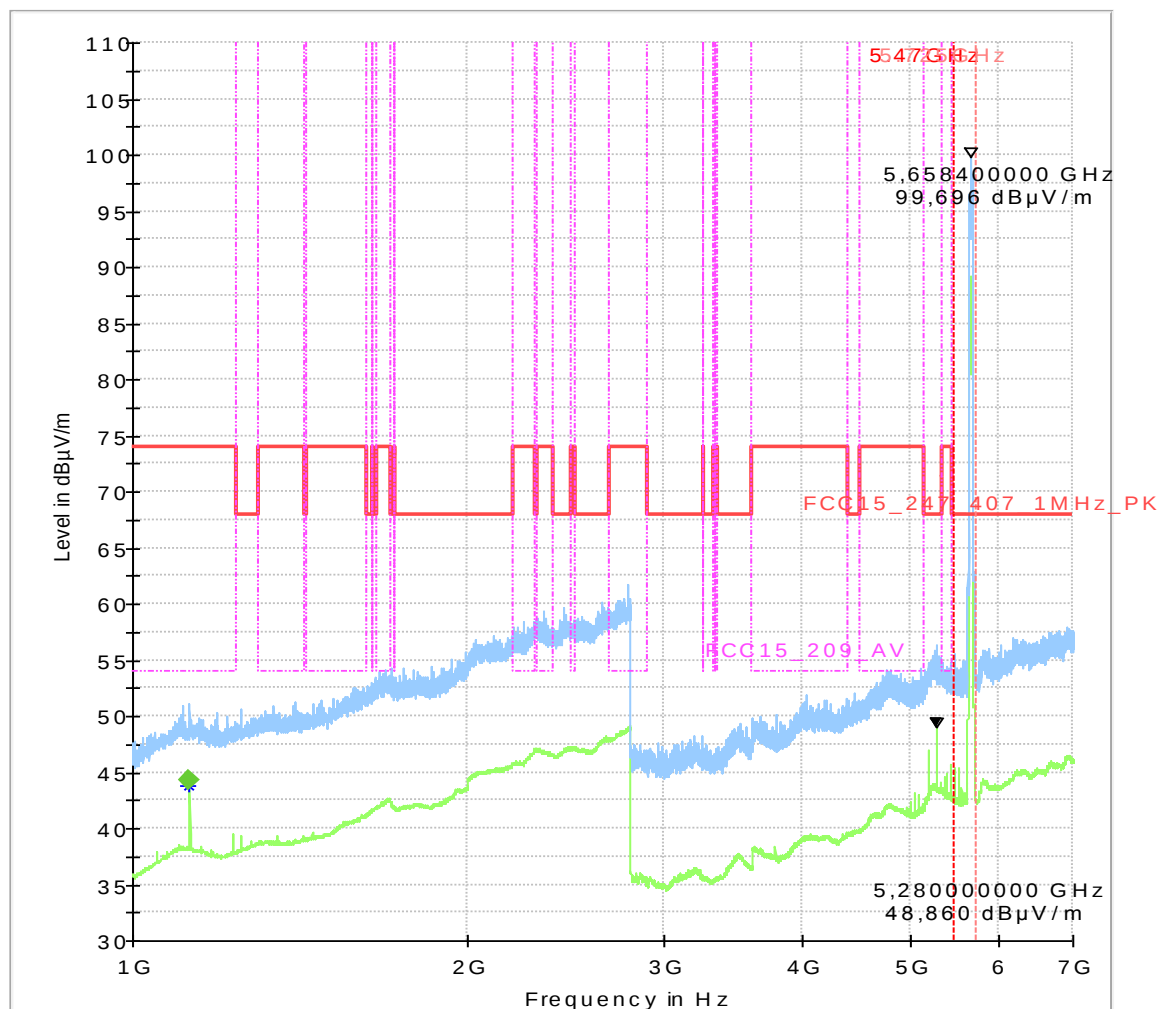
### Common Information

|                       |                                                 |
|-----------------------|-------------------------------------------------|
| Test Description:     | Radiated field strength emission in 3m distance |
| Test Site:            | CETECOM GmbH Essen                              |
| Test Standard:        | FCC 15.407&15.209 Intentional Radiator          |
| Antenna polarisation: | horizontal/vertical                             |
| Operation mode:       | TX, continuous, 100%                            |
| Operator Name:        | Lor                                             |
| Comment:              | Channel no. high=134, HT40, MCS8                |

### EUT Information

|                       |                                                  |
|-----------------------|--------------------------------------------------|
| Manufacturer:         | Bosch Security                                   |
| EuT:                  | DCNM-WAP                                         |
| Serial Number:        | 045888245831022003                               |
| Connected Interfaces: | AC adapter, 2 audio lines with load, CAT5e cable |
| Power Supply:         | 120V AC 60 Hz                                    |

Full Spectrum



### Final Result

| Frequency (MHz) | MaxPeak (dBµV/m) | AV (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) |
|-----------------|------------------|-------------|----------------|-------------|------------|-----------------|-------------|-----|---------------|-----------------|
| 1124.950000     | ---              | 44.24       | 54.00          | 9.76        | 100.0      | 1000.000        | 155.0       | H   | 179.0         | 0.0             |

(continuation of the "Final\_Result" table from column 16 ...)

| Frequency (MHz) | Corr . | Comment               |
|-----------------|--------|-----------------------|
| 1124.950000     | 34.0   | 09:03:13 - 10.12.2014 |

**Final\_Result**

| Frequency (MHz) | MaxPeak (dB $\mu$ V/m) | AV (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Meas . Time | Bandwidth (kHz) | Height (cm) | Po l | Azimuth (deg) | Elevation (deg) |
|-----------------|------------------------|-------------------|----------------------|-------------|-------------|-----------------|-------------|------|---------------|-----------------|
| 1124.950000     | ---                    | 44.24             | 54.00                | 9.76        | 100.0       | 1000.000        | 155.0       | H    | 179.0         | 0.0             |

(continuation of the "Final\_Result" table from column 16 ...)

| Frequency (MHz) | Corr . | Comment               |
|-----------------|--------|-----------------------|
| 1124.950000     | 34.0   | 09:03:13 - 10.12.2014 |

## Diagram No.: 4.03b

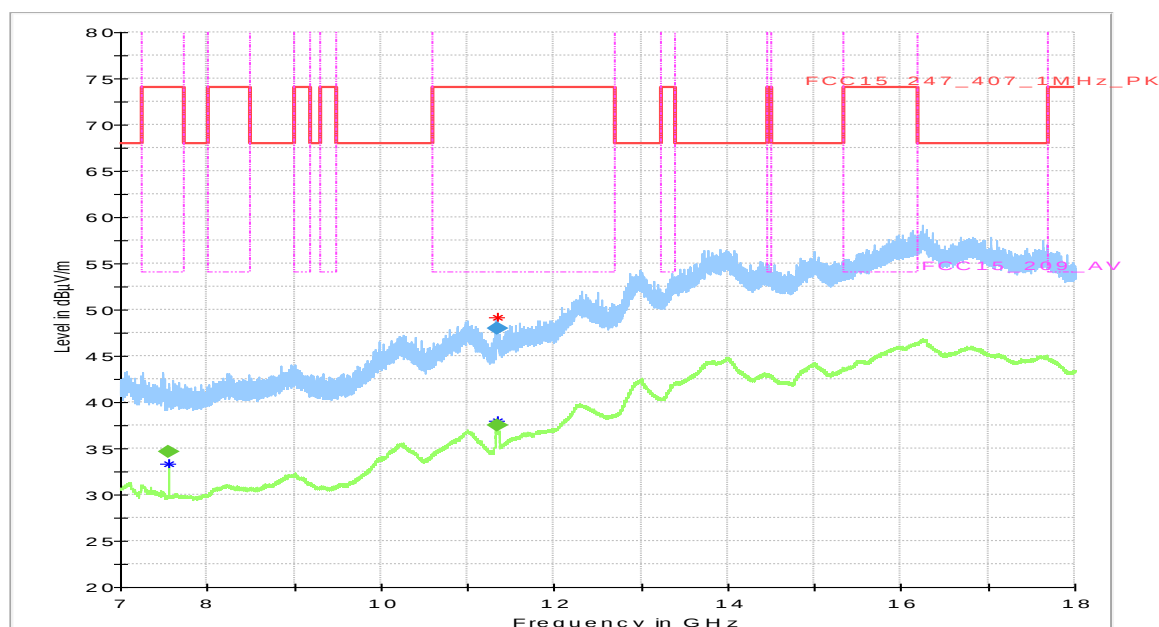
### Common Information

|                       |                                                 |
|-----------------------|-------------------------------------------------|
| Test Description:     | Radiated field strength emission in 3m distance |
| Test Site:            | CETECOM GmbH Essen                              |
| Test Standard:        | FCC 15.407&15.209 Intentional Radiator          |
| Antenna polarisation: | horizontal/vertical                             |
| Operation mode:       | TX, continuous                                  |
| Operator Name:        | Kmo                                             |
| Comment:              | Channel no. 134                                 |

### EUT Information

|                       |                                                  |
|-----------------------|--------------------------------------------------|
| Manufacturer:         | Bosch Security                                   |
| EuT:                  | DCNM-WAP                                         |
| Serial Number:        | 045888245831022003                               |
| Connected Interfaces: | AC adapter, 2 audio lines with load, CAT5e cable |
| Power Supply:         | 120V AC 60 Hz                                    |

Full Spectrum



### Final Result

| Frequency (MHz) | MaxPeak (dBµV/m) | AV (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) |
|-----------------|------------------|-------------|----------------|-------------|------------|-----------------|-------------|-----|---------------|-----------------|
| 7560.000000     | ---              | 34.69       | 54.00          | 19.31       | 100.0      | 1000.000        | 155.0       | V   | 16.0          | 90.0            |
| 11337.250000    | 48.00            | ---         | 74.00          | 26.00       | 100.0      | 1000.000        | 155.0       | H   | -36.0         | 90.0            |
| 11341.250000    | ---              | 37.51       | 54.00          | 16.49       | 100.0      | 1000.000        | 155.0       | H   | -35.0         | 90.0            |

(continuation of the "Final Result" table from column 16 ...)

| Frequency (MHz) | Corr. |
|-----------------|-------|
| 7560.000000     | 4.3   |
| 11337.250000    | 10.3  |
| 11341.250000    | 10.3  |

#### 1.2.4. Field strength measurements 18GHz < f < 40GHz

### Diagram No.: 4.02c\_5G\_Ch36\_MCS8

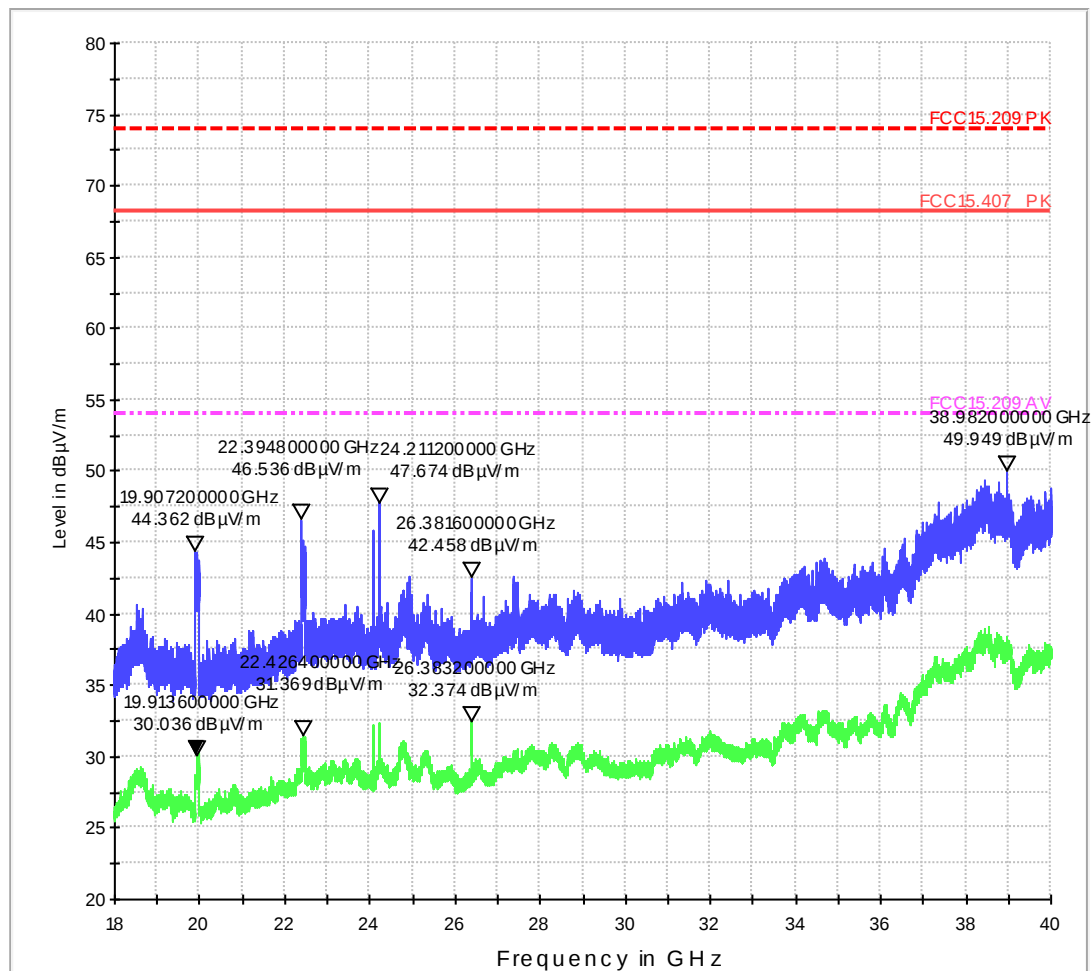
#### Common Information

|                            |                                                   |
|----------------------------|---------------------------------------------------|
| Test Description:          | Radiated field strength emission in 1m distance   |
| Test Site:                 | CETECOM GmbH Essen                                |
| Test Standard:             | 15.407&15.209 Intentional Radiator                |
| Antenna polarisation:      | horizontal/vertical                               |
| Distance correction factor | 3 to 1m: -10.5 dB applying to measurement results |
| SW-Version:                | EMC32 V8.53.0                                     |
| Operation mode:            | TX mode continuous                                |
| Operator Name:             | Lor                                               |
| Comment:                   | Channel no. low=36                                |

#### EUT Information

|                       |                                                  |
|-----------------------|--------------------------------------------------|
| Manufacturer:         | Bosch Security                                   |
| EuT:                  | DCNM-WAP                                         |
| Serial Number:        | 045888245831022003                               |
| Connected Interfaces: | AC adapter, 2 audio lines with load, CAT5e cable |

EMI Scan\_18\_40GHz\_Pre



## Diagram No.: 4.03c\_5G\_Ch134\_MCS8

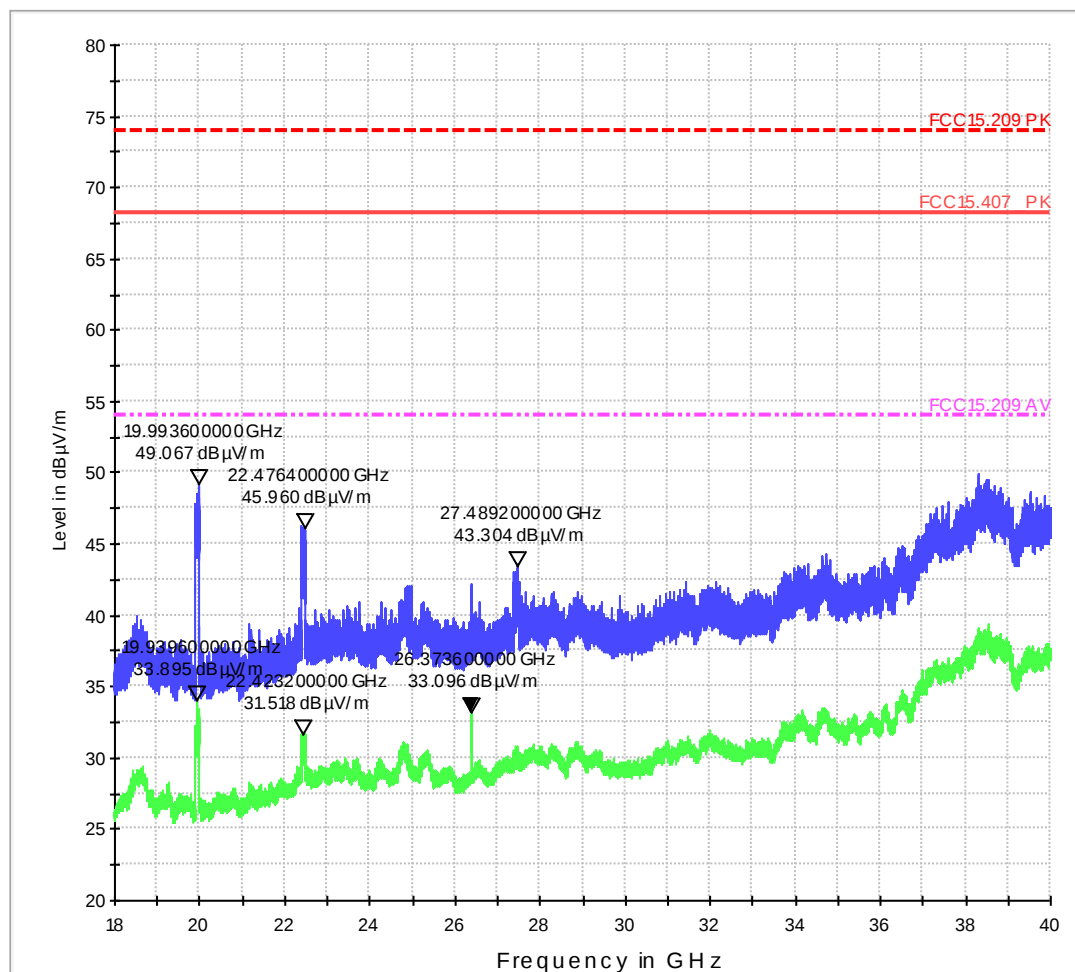
### Common Information

|                            |                                                   |
|----------------------------|---------------------------------------------------|
| Test Description:          | Radiated field strength emission in 1m distance   |
| Test Site:                 | CETECOM GmbH Essen                                |
| Test Standard:             | 15.407&15.209 Intentional Radiator                |
| Antenna polarisation:      | horizontal/vertical                               |
| Distance correction factor | 3 to 1m: -10.5 dB applying to measurement results |
| SW-Version:                | EMC32 V8.53.0                                     |
| Operation mode:            | TX mode continuous                                |
| Operator Name:             | Lor                                               |
| Comment:                   | Channel no. high=134                              |

### EUT Information

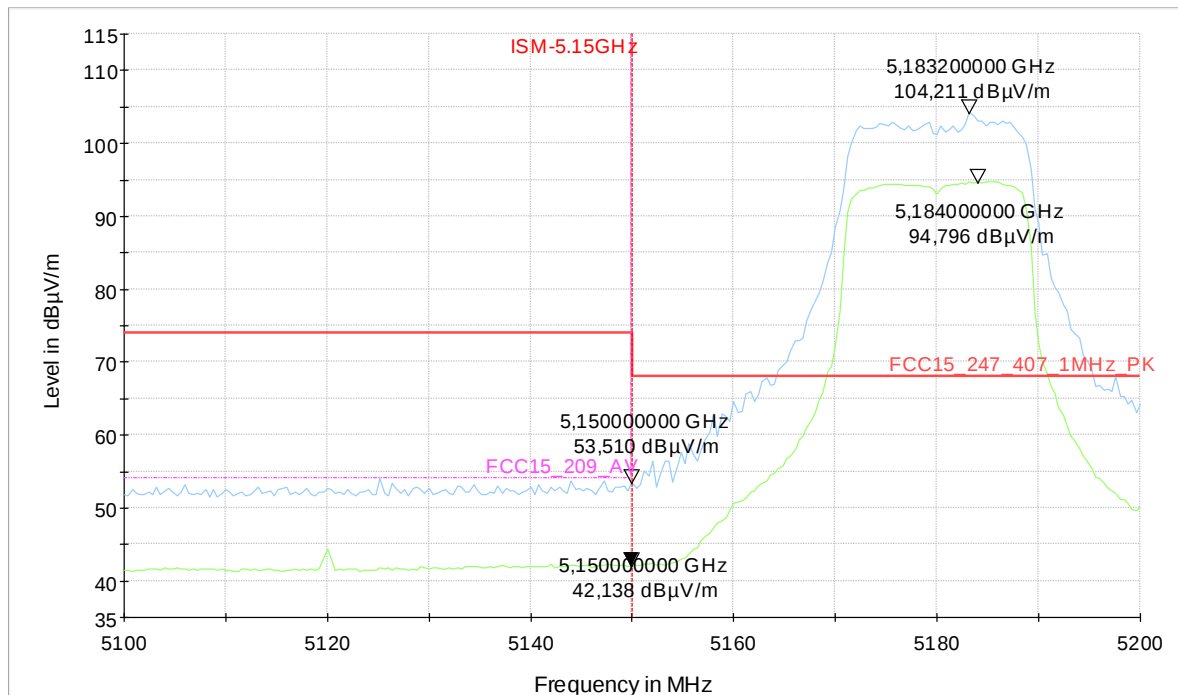
|                       |                                                  |
|-----------------------|--------------------------------------------------|
| Manufacturer:         | Bosch Security                                   |
| EuT:                  | DCNM-WAP                                         |
| Serial Number:        | 045888245831022003                               |
| Connected Interfaces: | AC adapter, 2 audio lines with load, CAT5e cable |

EMI Scan\_18\_40GHz\_Pre

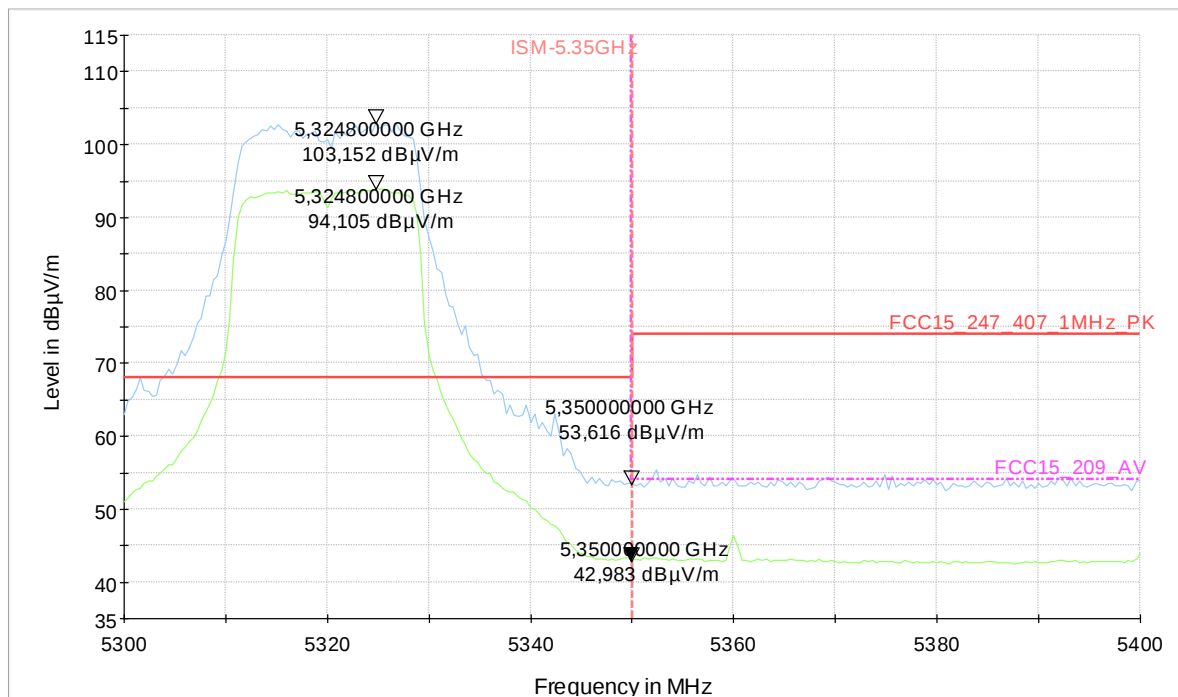


### 1.3. Radiated band-edge measurements accord. §15.205 (§15.209) and §15.407

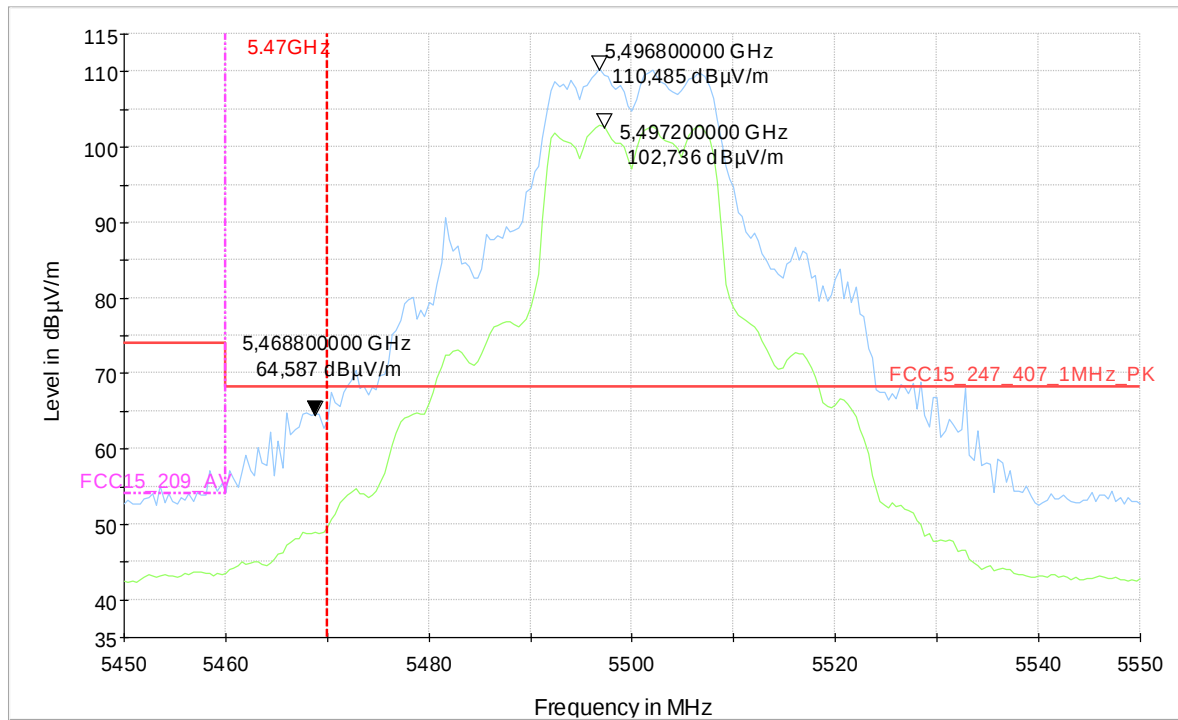
### 1.3.1. Channel 36 (20MHz Signal BW - left band edge)



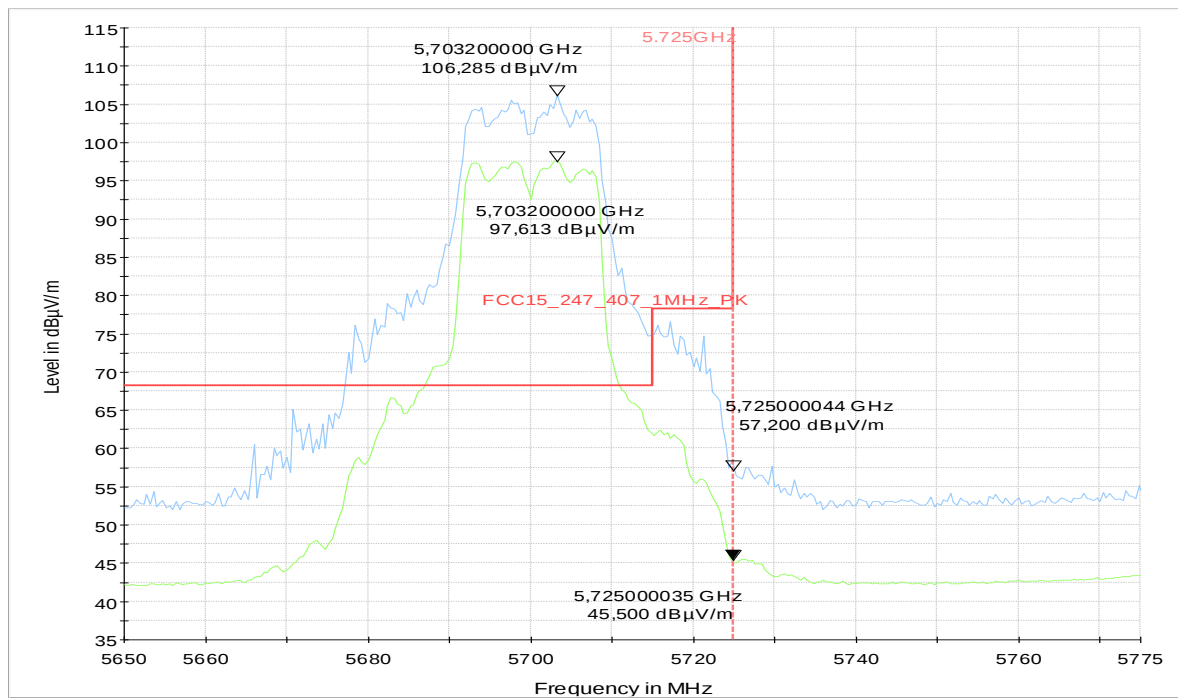
### 1.3.2. Channel 64 (20MHz Signal BW - right band edge)



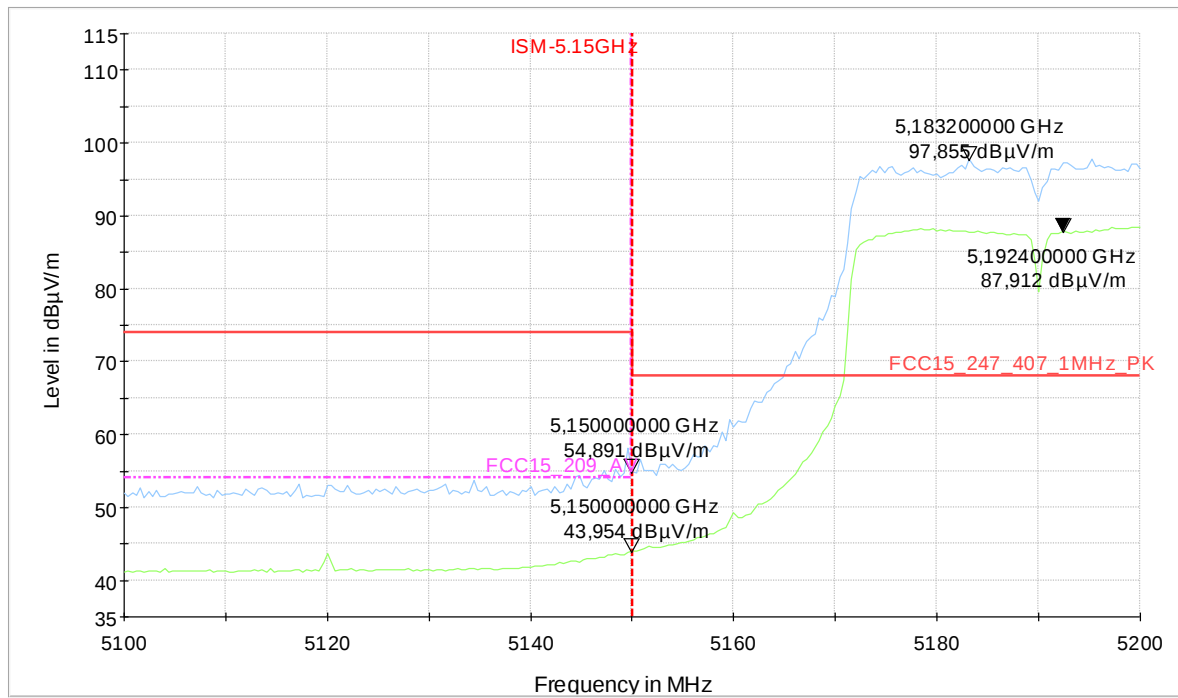
### 3.3. Channel 100 (20MHz Signal BW - left band edge)



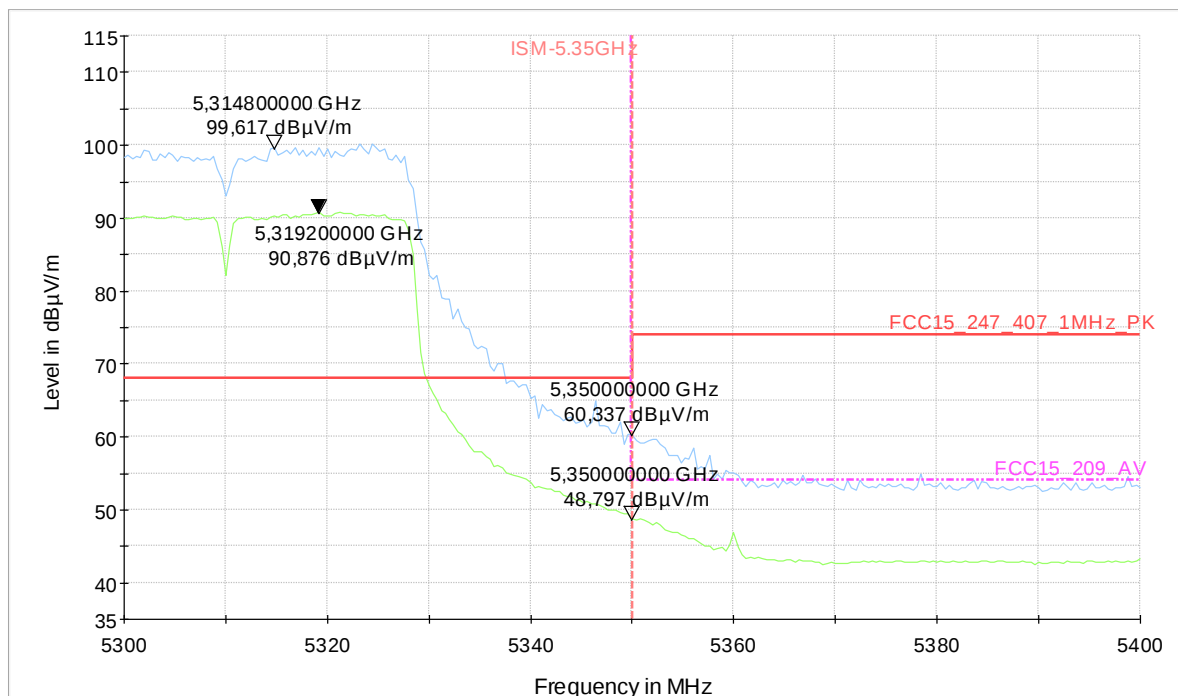
### 1.3.3. Channel 140 (20MHz Signal BW - right band edge)



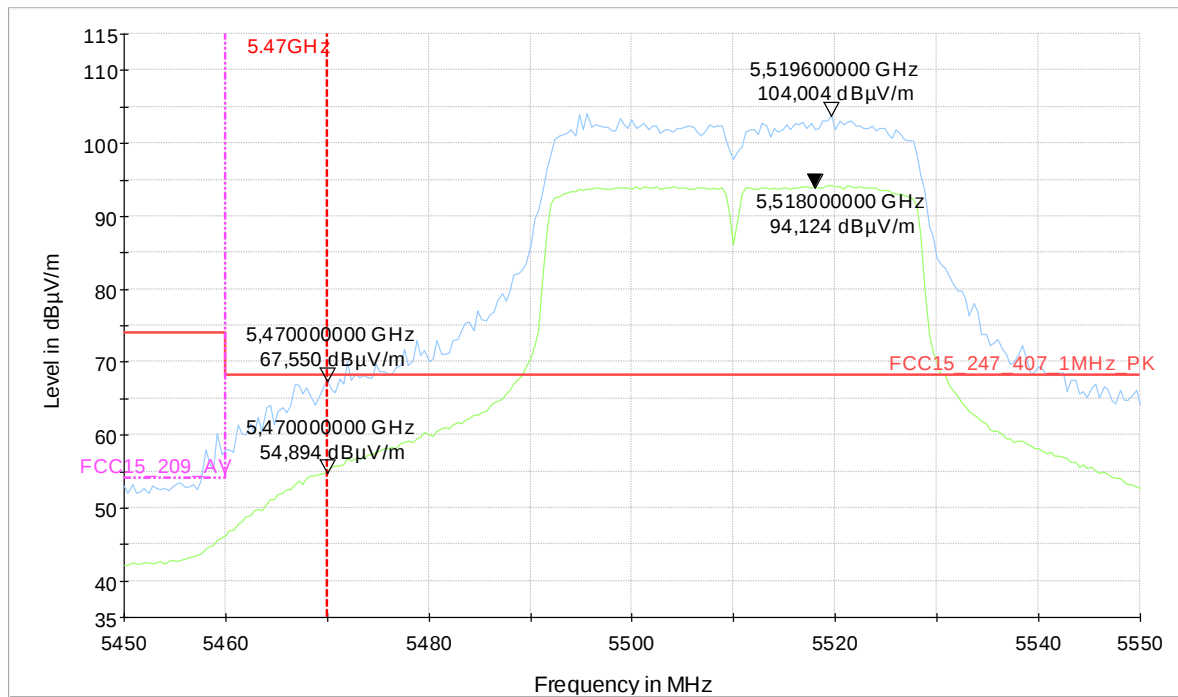
### 1.3.4. Channel 38 (40MHz Signal BW - left band edge)



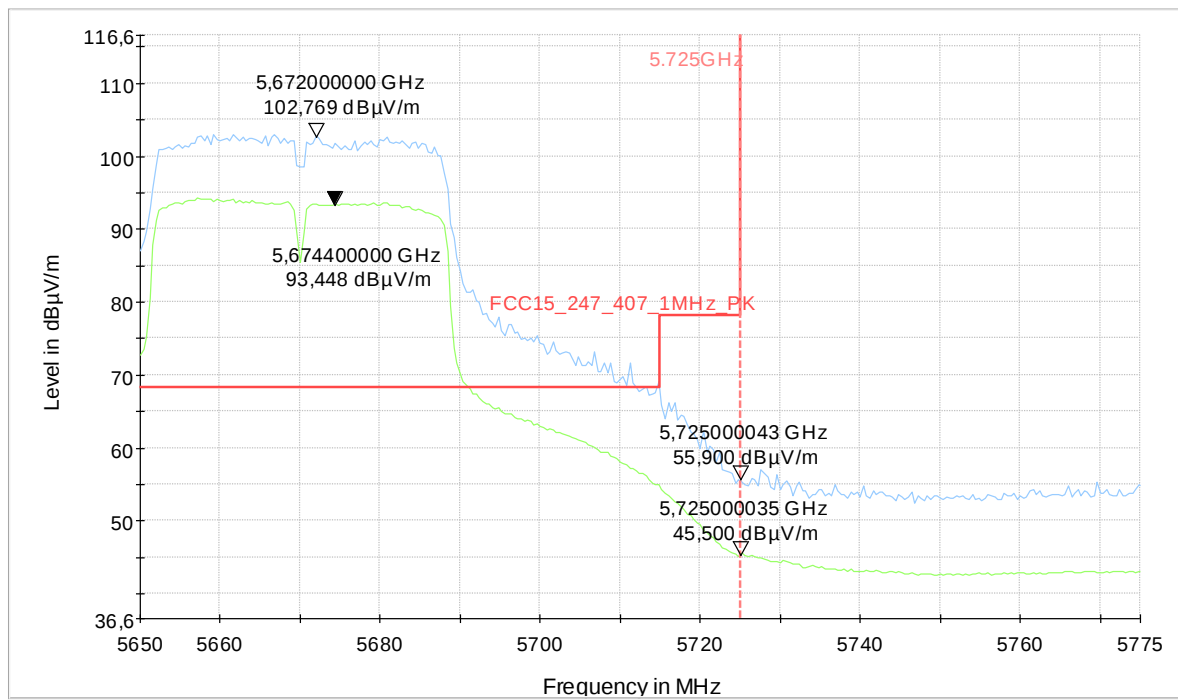
### 1.3.5. Channel 62 (40MHz Signal BW - right band edge)



### 1.3.6. Channel 102 (40MHz Signal BW - left band edge)



### 1.3.7. Channel 134 (40MHz Signal BW - right band edge)



## 1.4. Conducted RF-measurements on antenna port

### 1.4.1. Conducted RF-power (HT20-Mode)

| Operational bands:              | U-NII 1                 |                         |                         | U-NII-2A                |                         |                         | U-NII 2C                 |                          |                          |
|---------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
| Channel no.:                    | Channel 36<br>(5180MHz) | Channel 40<br>(5200MHz) | Channel 48<br>(5240MHz) | Channel 52<br>(5260MHz) | Channel 56<br>(5280MHz) | Channel 64<br>(5320MHz) | Channel 100<br>(5500MHz) | Channel 116<br>(5580MHz) | Channel 140<br>(5700MHz) |
| <b>Chain 0 only</b>             |                         |                         |                         |                         |                         |                         |                          |                          |                          |
| Max. Cond. Power<br>13MBit/MCS8 | 11,9                    | 11,9                    | 12,4                    | 18,2                    | 16,5                    | 17,9                    | 16,7                     | 16,1                     | 15,0                     |
| <b>Chain 1 only</b>             |                         |                         |                         |                         |                         |                         |                          |                          |                          |
| Max. Cond. Power<br>13MBit/MCS8 | 11,1                    | 11,6                    | 10,8                    | 17,0                    | 15,4                    | 16,8                    | 15,5                     | 15,4                     | 15,3                     |
| <b>Chain 0+1</b>                |                         |                         |                         |                         |                         |                         |                          |                          |                          |
| Max. Cond. Power<br>13MBit/MCS8 | 13,7                    | 13,9                    | 14,4                    | 19,6                    | 18,0                    | 18,6                    | 18,5                     | 18,1                     | 17,5                     |

| Operational bands:                                                 | U-NII 1             | U-NII-2A | U-NII 2C |
|--------------------------------------------------------------------|---------------------|----------|----------|
| <b>FCC-Limits<br/>[dBm]</b>                                        | 23,98               | 23,98    | 23,98    |
| <b>Limit Check:</b>                                                | <b>Limit Check:</b> |          |          |
| Highest conducted power<br>value over channels and<br>modulations: | 14,4                | 19,6     | 18,5     |
| Margin to Limit:                                                   | 9,58                | 4,38     | 5,48     |
| Verdict:                                                           | pass                | pass     | pass     |

#### 1.4.2. Conducted RF-power (HT40-Mode)

| Operational bands:              | U-NII-1                 |                         |                         | U-NII-2A                |                          | U-NII-2C                 |                          |      |
|---------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|------|
| Channel no.:                    | Channel 38<br>(5190MHz) | Channel 46<br>(5230MHz) | Channel 54<br>(5270MHz) | Channel 62<br>(5310MHz) | Channel 102<br>(5510MHz) | Channel 110<br>(5550MHz) | Channel 134<br>(5670MHz) |      |
| Set-up PWR-Level:               | 10                      | 7                       | 11,5                    | 17                      | 10                       | 10                       | 16                       | 16   |
| Chain 0 only                    |                         |                         |                         |                         |                          |                          |                          |      |
| Max. Cond. Power<br>13MBit/MCS8 | 14,3                    | 11,5                    | 15,4                    | 19,1                    | 13,5                     | 14,7                     | 16                       | 16,6 |
| Chain 1 only                    |                         |                         |                         |                         |                          |                          |                          |      |
| Max. Cond. Power<br>13MBit/MCS8 | 13,5                    | 9,7                     | 11,8                    | 17,1                    | 12,2                     | 14,9                     | 15,2                     | 15,3 |
| Chain 0+1                       |                         |                         |                         |                         |                          |                          |                          |      |
| Max. Cond. Power<br>13MBit/MCS8 | 13,8                    | 11,7                    | 15,5                    | 20,4                    | 12,3                     | 14,2                     | 18,1                     | 17,3 |

| Operational bands:                                                 | U-NII 1      | U-NII-2A | U-NII 2C |
|--------------------------------------------------------------------|--------------|----------|----------|
| FCC-Limits<br>[dBm]                                                | 23,98        | 23,98    | 23,98    |
| Limit Check:                                                       | Limit Check: |          |          |
| Highest conducted power<br>value over channels and<br>modulations: | 15,5         | 20,4     | 18,1     |
| Margin to Limit:                                                   | 8,48         | 3,58     | 5,88     |
| Verdict:                                                           | pass         | pass     | pass     |

#### **1.4.3. 6-dB Bandwidth**

The conducted measurements from the original report for the RF-Module should be re-used.

#### **1.4.4. 99% Occupied Bandwidth**

The conducted measurements from the original report for the RF-Module should be re-used.

#### **1.4.5. Power Spectral Density**

The conducted measurements from the original report for the RF-Module should be re-used.

## 1.5. MPE calculation

A minimum distance to the user of 20cm is assumed.

Following calculations show assumption with the limits. The maximum tolerance according the manufacturer was assumed to +2dB according the data sheet of the RF-module.

| Operation Mode                        | Frequency on channel<br>(MHz) | Declared maximum conducted output power<br>(dBm) | Max. antenna gain:<br>(dBi) | Max. positive tolerance according manufacturer<br>(dB) | Declared maximum output power (Measured+ Tune-up)<br>(dBm) | Duty cycle | Declared Maximum conducted output power<br>(W) | Equivalent conducted output power (maximum conducted output power x duty cycle)<br>(mW) |
|---------------------------------------|-------------------------------|--------------------------------------------------|-----------------------------|--------------------------------------------------------|------------------------------------------------------------|------------|------------------------------------------------|-----------------------------------------------------------------------------------------|
| W-LAN<br>5150-5250 MHz<br>(20 MHz BW) | 5180,0                        | 13,70                                            | 5,0                         | 2,00                                                   | 20,70                                                      | 100%       | 0,117                                          | 117                                                                                     |
|                                       | 5200,0                        | 13,90                                            |                             |                                                        | 20,90                                                      |            | 0,123                                          | 123                                                                                     |
|                                       | 5240,0                        | 14,40                                            |                             |                                                        | 21,40                                                      |            | 0,138                                          | 138                                                                                     |
| W-LAN<br>5250-5350 MHz<br>(20 MHz BW) | 5260,0                        | 19,60                                            | 5,0                         | 2,00                                                   | 26,60                                                      | 100%       | 0,457                                          | 457                                                                                     |
|                                       | 5280,0                        | 18,00                                            |                             |                                                        | 23,00                                                      |            | 0,200                                          | 200                                                                                     |
|                                       | 5320,0                        | 18,60                                            |                             |                                                        | 25,60                                                      |            | 0,363                                          | 363                                                                                     |
| W-LAN<br>5470-5700 MHz<br>(20 MHz BW) | 5500,0                        | 18,50                                            | 5,0                         | 2,00                                                   | 25,50                                                      | 100%       | 0,355                                          | 355                                                                                     |
|                                       | 5580,0                        | 18,10                                            |                             |                                                        | 25,10                                                      |            | 0,324                                          | 324                                                                                     |
|                                       | 5700,0                        | 17,50                                            |                             |                                                        | 24,50                                                      |            | 0,282                                          | 282                                                                                     |
| W-LAN<br>5150-5250 MHz<br>(40 MHz BW) | 5190,0                        | 14,30                                            | 5,0                         | 2,00                                                   | 21,30                                                      | 100%       | 0,135                                          | 135                                                                                     |
|                                       | 5230,0                        | 15,50                                            |                             |                                                        | 22,50                                                      |            | 0,178                                          | 178                                                                                     |
| W-LAN<br>5250-5350 MHz<br>(40 MHz BW) | 5270,0                        | 20,40                                            | 5,0                         | 2,00                                                   | 27,40                                                      | 100%       | 0,550                                          | 550                                                                                     |
|                                       | 5310,0                        | 13,50                                            |                             |                                                        | 20,50                                                      |            | 0,112                                          | 112                                                                                     |
| W-LAN<br>5470-5700 MHz<br>(40 MHz BW) | 5510,0                        | 14,90                                            | 5,0                         | 2,00                                                   | 21,90                                                      | 100%       | 0,155                                          | 155                                                                                     |
|                                       | 5550,0                        | 18,10                                            |                             |                                                        | 23,10                                                      |            | 0,204                                          | 204                                                                                     |
|                                       | 5670,0                        | 17,30                                            |                             |                                                        | 24,30                                                      |            | 0,269                                          | 269                                                                                     |

| Maximum calculated MPE value: |        |          |
|-------------------------------|--------|----------|
| MPE-Limit:                    | 1      | [mW/cm²] |
| Highest MPE value:            | 0,1093 | [mW/cm²] |
| Margin to limit               | 0,8907 | [mW/cm²] |