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# TEST REPORT

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Report No.: SRTC2014-H024-E0030

Product Name: GSM/GPRS/EDGE/UMTS

Digital Mobile Phone with Bluetooth and WiFi

Product Model: 6037I

Applicant: TCT Mobile Limited

Manufacturer: TCT Mobile Limited

Specification: FCC Part 15, Subpart C (October 9, 2012 edition)

FCC ID: RAD458

The State Radio\_monitoring\_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-68009202 Fax: 86-10-68009205

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## 1. General information

### 1.1 Notes of the test report

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The test results relate only to individual items of the samples which have been tested.

### 1.2 Information about the testing laboratory

Company: The State Radio\_monitoring\_center Testing Center (SRTC)  
Address: No.80 Beilishi Road, Xicheng District, Beijing China  
City: Beijing  
Country or Region: China  
Contacted person: Wang Junfeng  
Tel: +86 10 68009181 +86 10 68009202  
Fax: +86 10 68009195 +86 10 68009205  
Email: wangjf@srrc.org.cn / wangjunfeng@srtc.org.cn

### 1.3 Applicant's details

Company: TCT Mobile Limited  
Address: 5F, C building, No. 232, Liang Jing Road ZhangJiang  
High-Tech Park, Pudong Area  
City: Shanghai  
Country or Region: P.R.China  
Grantee Code: RAD  
Contacted person: Gong Zhizhou  
Tel: +86-21-61460890  
Fax: +86-21-61460602  
Email: zhizhou.gong@tcl.com

### 1.4 Manufacturer's details

Company: TCT Mobile Limited  
Address: 5F, C building, No. 232, Liang Jing Road ZhangJiang  
High-Tech Park, Pudong Area  
City: Shanghai  
Country or Region: P.R.China  
Contacted person: Gong Zhizhou  
Tel: +86-21-61460890  
Fax: +86-21-61460602  
Email: zhizhou.gong@tcl.com

## 1.5 Application details

Date of reception of test sample: 31<sup>st</sup> March 2014

Date of test: 9<sup>th</sup> April 2014 to 28<sup>th</sup> May 2014

## 1.6 Reference specification

FCC Part 15, Subpart C (October 9, 2012 edition)

## 1.7 Information of EUT

### 1.7.1 General information

|                               |                                                                                                                                                                                                                                         |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name of EUT                   | GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi                                                                                                                                                                         |
| FCC ID                        | RAD458                                                                                                                                                                                                                                  |
| Frequency Range               | 2.4GHz~2.4835GHz                                                                                                                                                                                                                        |
| Number of Channel             | 11                                                                                                                                                                                                                                      |
| Modulation Type               | DBPSK/DQPSK/CCK/BPSK/QPSK/16QAM/64QAM                                                                                                                                                                                                   |
| Duplex Mode                   | TDD                                                                                                                                                                                                                                     |
| Channel Spacing               | 5MHz                                                                                                                                                                                                                                    |
| Data Rate                     | 1Mbps/2Mbps/5.5Mbps/11Mbps/6Mbps/9Mbps/12Mbps<br>/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps/6.5Mbps<br>/13.0Mbps/13.5Mbps/19.5Mbps/26.0Mbps/27.0Mbps<br>/39.0Mbps/40.5Mbps/52.0Mbps/58.5Mbps/65Mbps<br>/81.0Mbps/108.0Mbps/121.5Mbps/135.0Mbps |
| Transmit Mode                 | Continuously                                                                                                                                                                                                                            |
| Duty Cycles                   | 98%                                                                                                                                                                                                                                     |
| Antenna Type                  | Fixed Internal                                                                                                                                                                                                                          |
| Power Supply                  | Battery or Charger                                                                                                                                                                                                                      |
| Rated Power<br>Supply Voltage | 3.8V                                                                                                                                                                                                                                    |
| HW Version                    | PIO                                                                                                                                                                                                                                     |
| SW Version                    | v3EHG-US                                                                                                                                                                                                                                |

## 1.7.2 EUT details

| Product Name                                                    | Product Model | IMEI            |
|-----------------------------------------------------------------|---------------|-----------------|
| GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi | 6037I         | 864191020900314 |

## 1.7.3 Auxiliary equipment details

| Equipment      | Charger                          |
|----------------|----------------------------------|
| Manufacturer   | HUIZHOU BYD ELECTRONIC CO., LTD. |
| Model Number   | one touch UC12US                 |
| Input Voltage  | 100V-240V a.c.                   |
| Output Voltage | 5.0V d.c.                        |
| Frequency      | 50/60Hz                          |

| Equipment      | Charger                          |
|----------------|----------------------------------|
| Manufacturer   | HUIZHOU BYD ELECTRONIC CO., LTD. |
| Model Number   | one touch UC12EU                 |
| Input Voltage  | 100V-240V a.c.                   |
| Output Voltage | 5.0V d.c.                        |
| Frequency      | 50/60Hz                          |

| Equipment      | Charger                          |
|----------------|----------------------------------|
| Manufacturer   | HUIZHOU BYD ELECTRONIC CO., LTD. |
| Model Number   | one touch UC12UK                 |
| Input Voltage  | 100V-240V a.c.                   |
| Output Voltage | 5.0V d.c.                        |
| Frequency      | 50/60Hz                          |

| Equipment     | Battery                             |
|---------------|-------------------------------------|
| Manufacturer  | SCUD (FUJIAN) Electronics Co., Ltd. |
| Model Number  | TLp020C2                            |
| Capacity      | 2000mAh                             |
| Rated Voltage | 4.35V d.c.                          |

| Equipment    | Data Cable                          |
|--------------|-------------------------------------|
| Manufacturer | Huizhou Shenghua Industry Co., Ltd. |
| Model Number | CDA0000025C1                        |

| Equipment    | Data Cable                           |
|--------------|--------------------------------------|
| Manufacturer | Shenzhen Juwei Electronics Co., Ltd. |
| Model Number | CDA0000025C2                         |

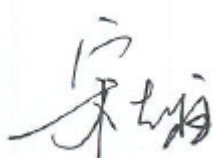
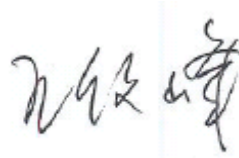
Note: As the information described above, there are three different models of charger manufactured by the same company and two different models of data cable manufactured by two different companies.

The relevant tests have been performed in order to verify in which combination case (EUT exercised by only one model of charger and one model of data cable) the EUT would have the worst features. So all the tests shown in this test report are performed when the EUT exercised by the charger one touch UC12US and the data cable CDA0000025C1.

## 2. Test information

### 2.1 Summary of the test results

| No. | Test case                          | FCC reference             | Verdict |
|-----|------------------------------------|---------------------------|---------|
| 1   | Peak Power Output                  | 15.247(b)(3)              | Pass    |
| 2   | Occupied Bandwidth                 | 15.247(a)(2)              | Pass    |
| 3   | Transmitter Power Spectral Density | 15.247(e)                 | Pass    |
| 4   | Spurious RF Conducted Emissions    | 15.247(d)                 | Pass    |
| 5   | Spurious Radiated Emissions        | 15.247(d)/15.35(b)/15.209 | Pass    |
| 6   | Band Edge Compliance               | 15.247(d)                 | Pass    |
| 7   | AC Power line Conducted Emission   | 15.207                    | Pass    |

|                                                                                                                                                                           |                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>This Test Report Is Issued by:<br/>Mr. Song Qizhu<br/>Director of the test lab</p>  | <p>Checked by:<br/>Mr. Wang Junfeng<br/>Deputy director of the test lab</p>  |
| <p>Tested by:<br/>Mr. Zhang Wentao<br/>Test engineer</p>                               | <p>Issued date:</p> <p><b>2014.05.28</b></p>                                                                                                                      |

## 2.2 Test result

### 2.2.1 Peak Power Output

#### 2.2.1.1 Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 22°C        | 40%               | 101.1kPa |

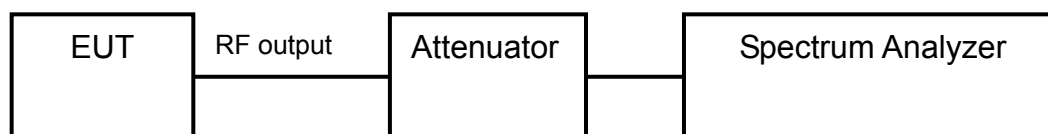
#### 2.2.1.2 Test Description

The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 9.1.1.

WIFI is operating in 98% Duty Factor mode.

- a) Set the RBW  $\geq$  DTS bandwidth.
- b) Set VBW  $\geq 3 \times$  RBW.
- c) Set span  $\geq 3 \times$  RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

The used resolution bandwidth in output power measuring is 20MHz for 802.11b/802.11g/802.11n(HT20) and 40MHz for 802.11n(HT40).



#### 2.2.1.3 Test limit

FCC Part15.247(b)(3):

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

Used conversion factor: Limit (dBm) =  $10 \log (\text{Limit (W)}/1\text{mW})$

==> Maximum Output Power: 30 dBm



#### 2.2.1.4 Test result

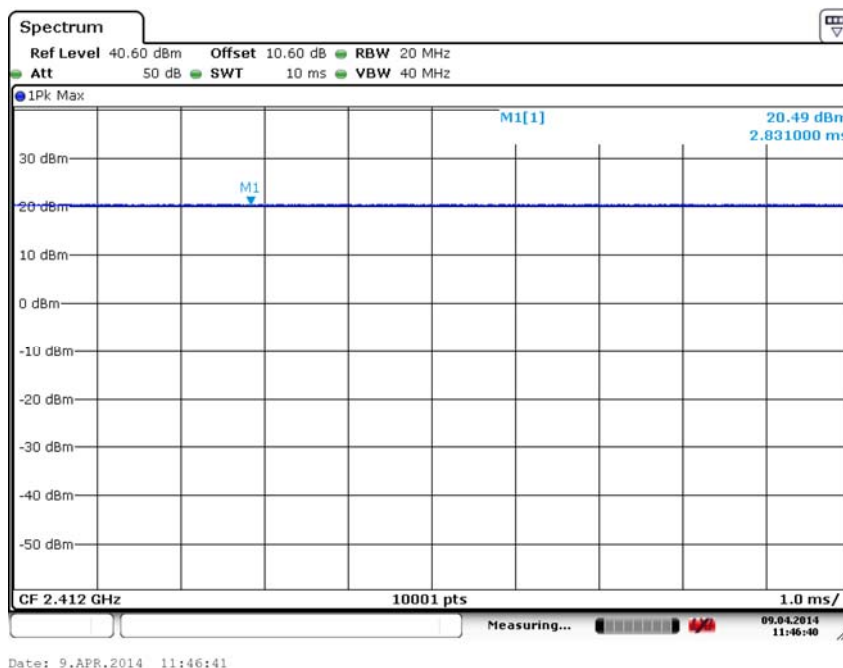
| Modulation type |           | Average power output (dBm) |                  |                   |
|-----------------|-----------|----------------------------|------------------|-------------------|
|                 |           | 2412MHz<br>(Ch1)           | 2437MHz<br>(Ch6) | 2462MHz<br>(Ch11) |
| 11b             | 1 Mbps    | 17.23                      | 17.48            | 17.67             |
|                 | 2 Mbps    | 17.11                      | 17.24            | 17.53             |
|                 | 5.5 Mbps  | 17.18                      | 17.23            | 17.57             |
|                 | 11 Mbps   | 16.67                      | 17.04            | 17.27             |
| 11g             | 6 Mbps    | 13.74                      | 14.12            | 14.42             |
|                 | 9 Mbps    | 13.57                      | 13.97            | 14.23             |
|                 | 12 Mbps   | 13.31                      | 13.81            | 14.04             |
|                 | 18 Mbps   | 13.04                      | 13.45            | 13.54             |
|                 | 24 Mbps   | 12.64                      | 13.08            | 13.12             |
|                 | 36 Mbps   | 12.13                      | 12.58            | 12.59             |
|                 | 48 Mbps   | 11.41                      | 11.83            | 12.14             |
|                 | 54 Mbps   | 11.32                      | 11.65            | 11.98             |
| 11n<br>HT20     | 6.5 Mbps  | 14.72                      | 15.12            | 15.46             |
|                 | 13 Mbps   | 14.55                      | 14.94            | 15.27             |
|                 | 19.5 Mbps | 13.94                      | 14.49            | 14.63             |
|                 | 26 Mbps   | 13.61                      | 14.03            | 14.07             |
|                 | 39 Mbps   | 13.07                      | 13.51            | 13.57             |
|                 | 52 Mbps   | 11.51                      | 11.91            | 12.21             |
|                 | 58.5 Mbps | 11.32                      | 11.72            | 12.08             |
|                 | 65 Mbps   | 10.23                      | 10.49            | 10.61             |

| Modulation type |            | Average power output (dBm) |                  |                   |
|-----------------|------------|----------------------------|------------------|-------------------|
|                 |            | 2422MHz<br>(Ch3)           | 2437MHz<br>(Ch6) | 2462MHz<br>(Ch11) |
| 11n<br>HT40     | 13.5 Mbps  | 14.13                      | 14.28            | 14.58             |
|                 | 27 Mbps    | 13.24                      | 13.65            | 13.71             |
|                 | 40.5 Mbps  | 12.71                      | 12.88            | 13.18             |
|                 | 54 Mbps    | 12.33                      | 12.45            | 12.82             |
|                 | 81 Mbps    | 11.62                      | 11.81            | 12.11             |
|                 | 108 Mbps   | 10.19                      | 10.31            | 10.67             |
|                 | 121.5 Mbps | 9.98                       | 10.08            | 10.44             |
|                 | 135 Mbps   | 8.94                       | 9.02             | 9.36              |

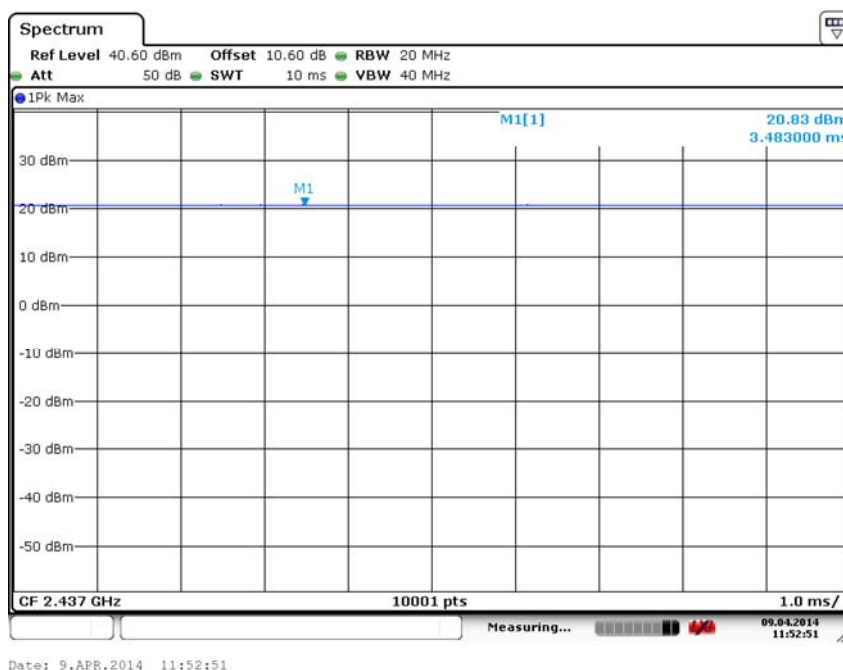
| Modulation type |                 | Peak power output (dBm) |                  |                   |
|-----------------|-----------------|-------------------------|------------------|-------------------|
|                 |                 | 2412MHz<br>(Ch1)        | 2437MHz<br>(Ch6) | 2462MHz<br>(Ch11) |
| 11b             | <b>1 Mbps</b>   | <b>20.49</b>            | <b>20.83</b>     | <b>21.11</b>      |
|                 | 2 Mbps          | 20.47                   | 20.70            | 20.98             |
|                 | 5.5 Mbps        | 20.42                   | 20.65            | 20.93             |
|                 | 11 Mbps         | 20.35                   | 20.66            | 20.94             |
| 11g             | <b>6 Mbps</b>   | <b>23.20</b>            | <b>23.52</b>     | <b>23.77</b>      |
|                 | 9 Mbps          | 23.15                   | 23.44            | 23.71             |
|                 | 12 Mbps         | 23.11                   | 23.43            | 23.72             |
|                 | 18 Mbps         | 23.09                   | 23.50            | 23.74             |
|                 | 24 Mbps         | 23.19                   | 23.43            | 23.72             |
|                 | 36 Mbps         | 23.13                   | 23.45            | 23.69             |
|                 | 48 Mbps         | 23.17                   | 23.49            | 23.67             |
|                 | 54 Mbps         | 23.16                   | 23.43            | 23.70             |
| 11n<br>HT20     | <b>6.5 Mbps</b> | <b>23.30</b>            | <b>23.57</b>     | <b>23.90</b>      |
|                 | 13 Mbps         | 23.31                   | 23.56            | 23.84             |
|                 | 19.5 Mbps       | 23.28                   | 23.55            | 23.89             |
|                 | 26 Mbps         | 23.26                   | 23.56            | 23.86             |
|                 | 39 Mbps         | 23.27                   | 23.52            | 23.84             |
|                 | 52 Mbps         | 23.18                   | 23.46            | 23.73             |
|                 | 58.5 Mbps       | 23.15                   | 23.42            | 23.72             |
|                 | 65 Mbps         | 22.89                   | 23.16            | 23.50             |

| Modulation type |                  | Peak power output (dBm) |                  |                   |
|-----------------|------------------|-------------------------|------------------|-------------------|
|                 |                  | 2422MHz<br>(Ch3)        | 2437MHz<br>(Ch6) | 2462MHz<br>(Ch11) |
| 11n<br>HT40     | <b>13.5 Mbps</b> | <b>23.09</b>            | <b>23.33</b>     | <b>23.59</b>      |
|                 | 27 Mbps          | 23.05                   | 23.37            | 23.55             |
|                 | 40.5 Mbps        | 22.89                   | 23.30            | 23.57             |
|                 | 54 Mbps          | 23.04                   | 23.20            | 23.39             |
|                 | 81 Mbps          | 23.06                   | 23.28            | 23.54             |
|                 | 108 Mbps         | 22.62                   | 22.64            | 23.06             |
|                 | 121.5 Mbps       | 22.59                   | 23.28            | 23.15             |
|                 | 135 Mbps         | 22.05                   | 22.04            | 22.89             |

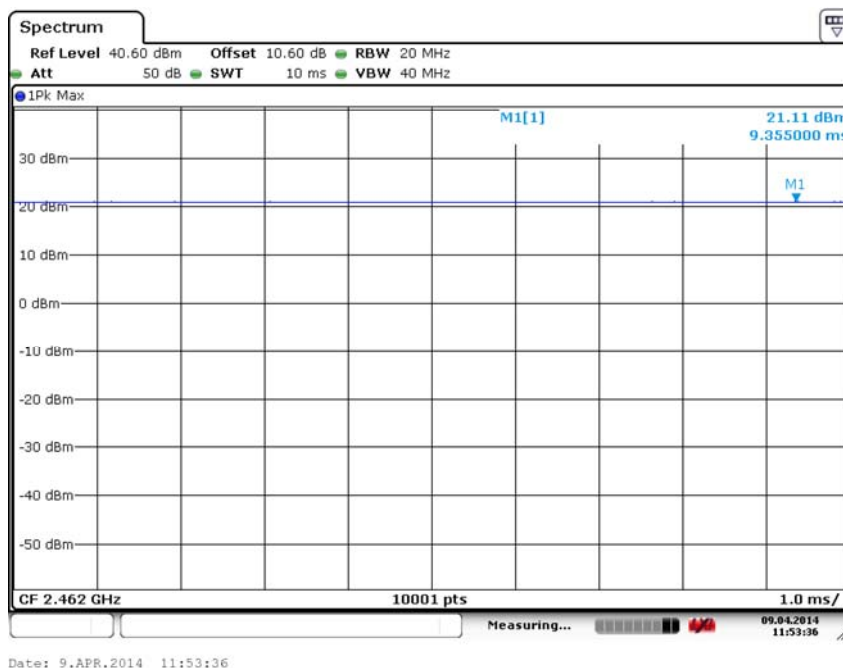
\* The data rate 1Mbps, 6Mbps, 6.5Mbps, 13.5Mbps are selected as worse condition, and the following cases are performed with this condition.



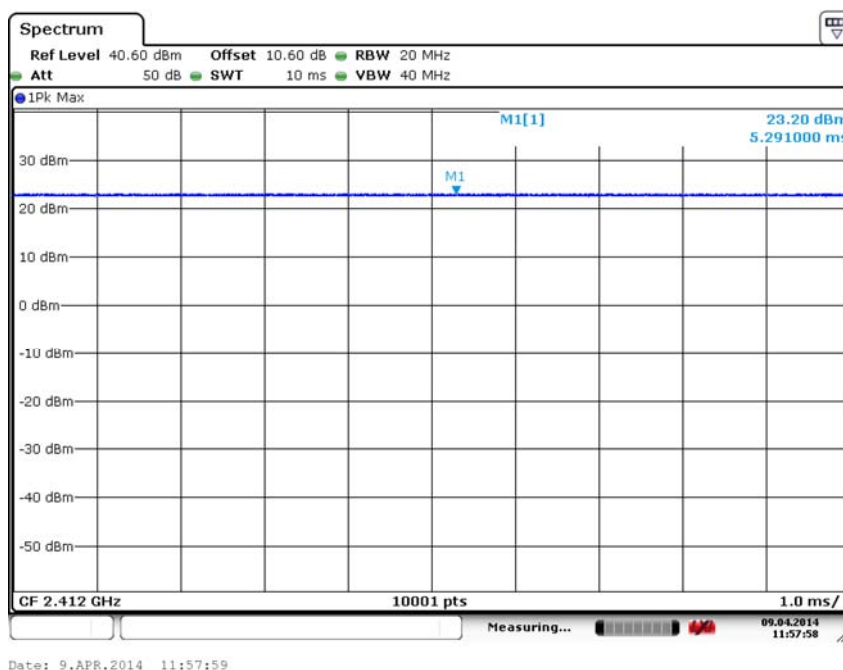
Carrier frequency (MHz): 2412  
Channel No.:1  
Test Mode: 802.11b



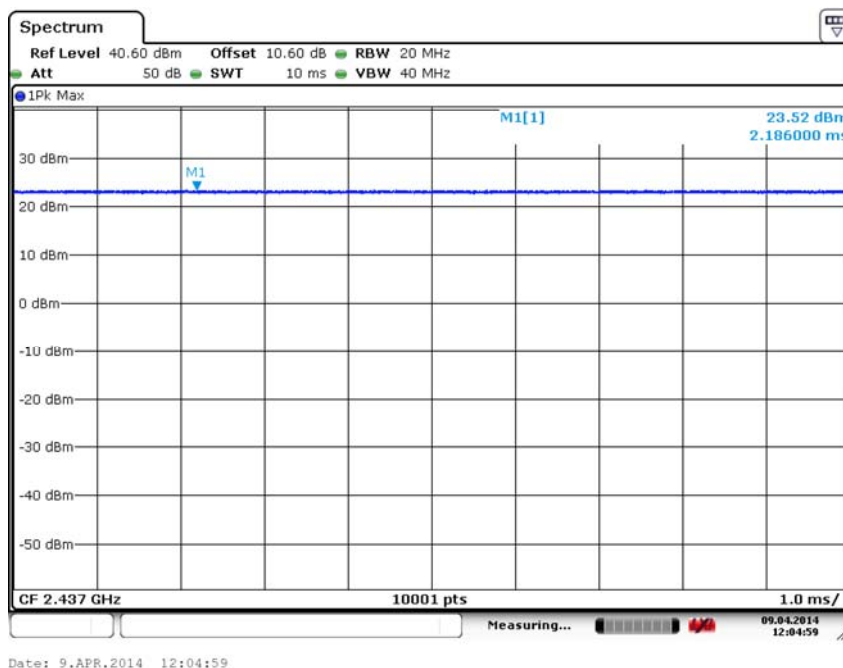
Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11b



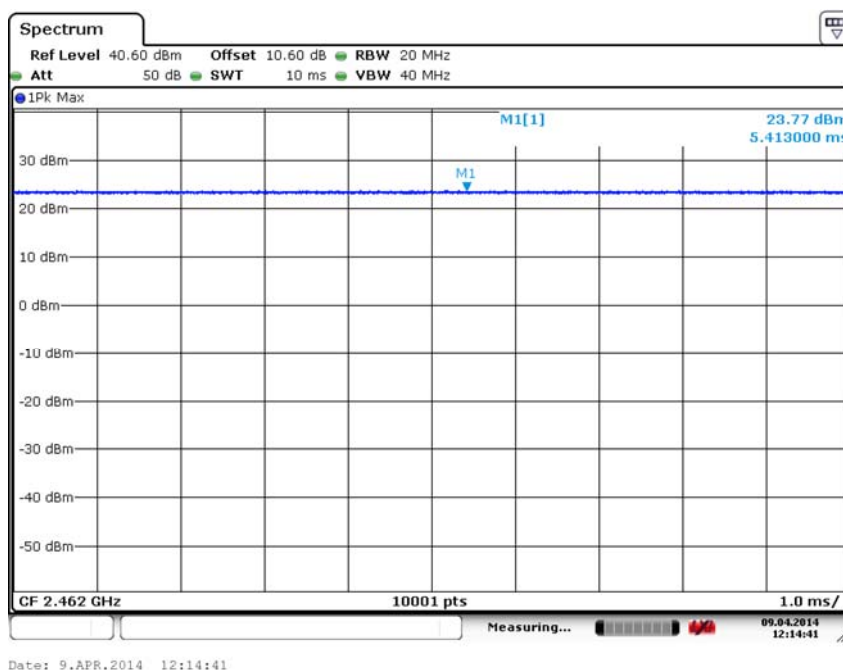
Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11b



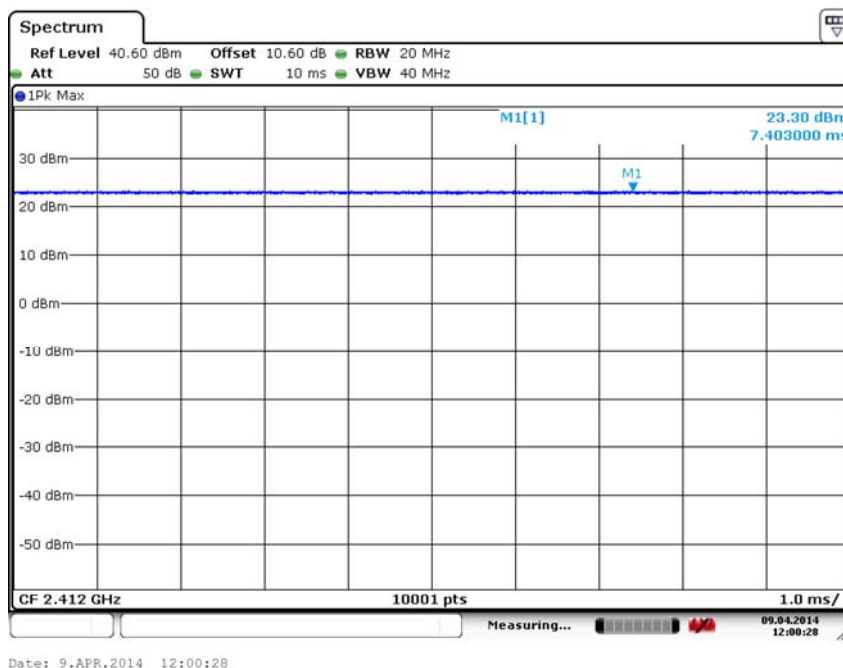
Carrier frequency (MHz): 2412  
Channel No.:1  
Test Mode: 802.11g



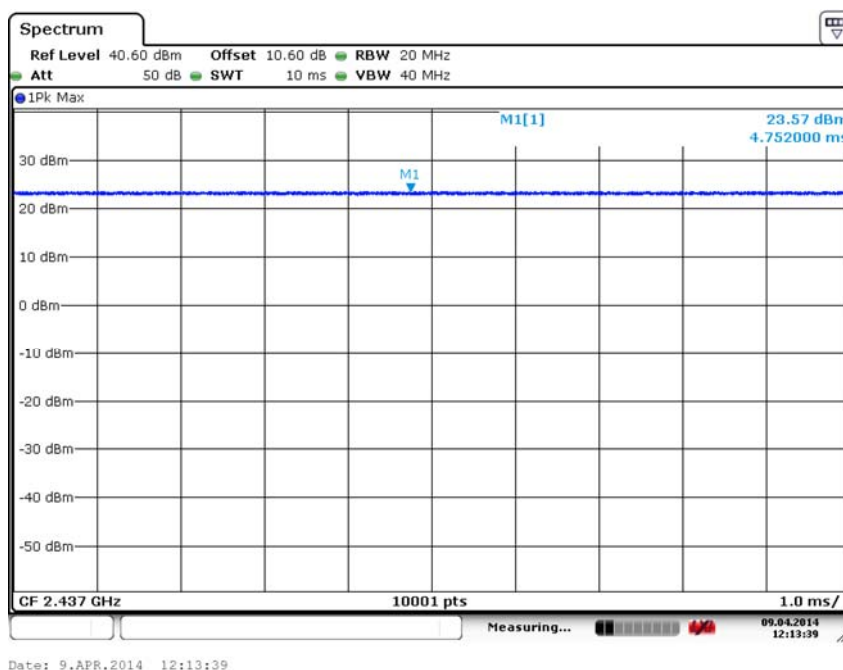
Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11g



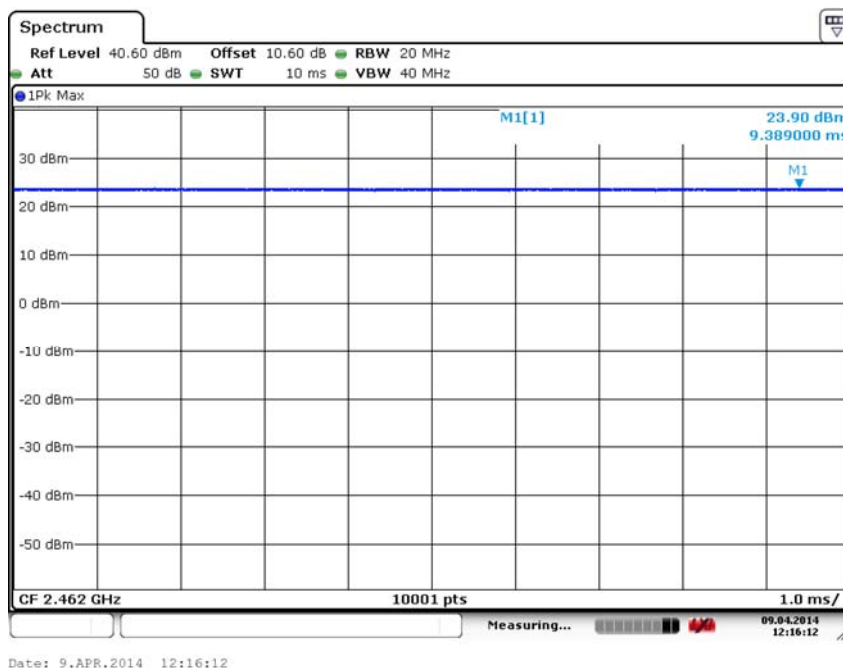
Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11g



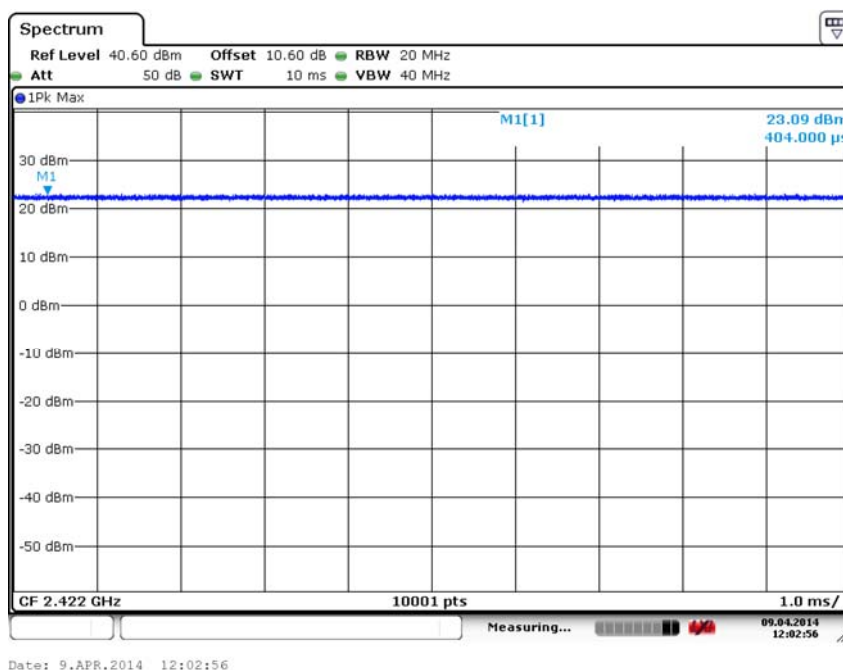
Carrier frequency (MHz): 2412  
Channel No.:1  
Test Mode: 802.11n(HT20)



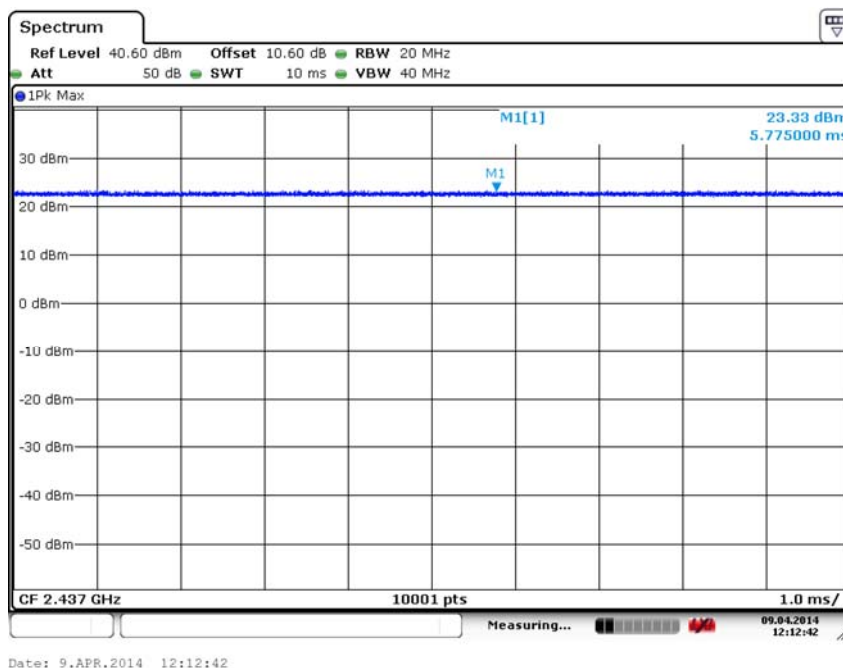
Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11n(HT20)



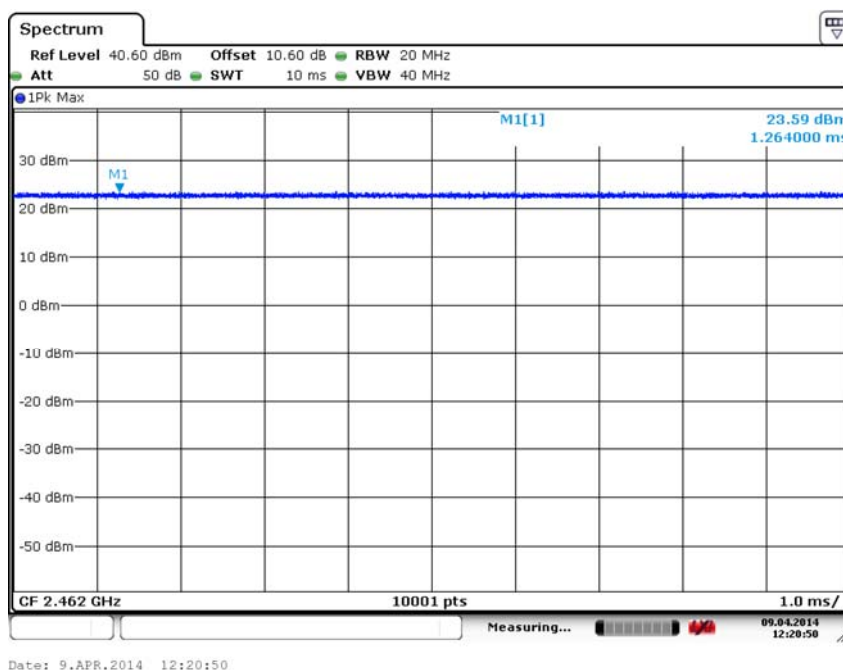
Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2412  
Channel No.:3  
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11n(HT40)



## 2.2.2 Occupied Bandwidth

### 2.2.2.1 Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 22°C        | 40%               | 101.1kPa |

### 2.2.2.2 Test Description

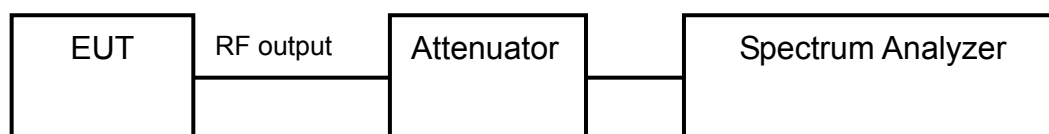
The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 8.1.

The Equipment Under Test (EUT) was setup in a shielded room to perform the occupied bandwidth measurements.

The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

The results recorded were measured with the modulation which produces the worst-case (widest) occupied bandwidth.

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



### 2.2.2.3 Test limit

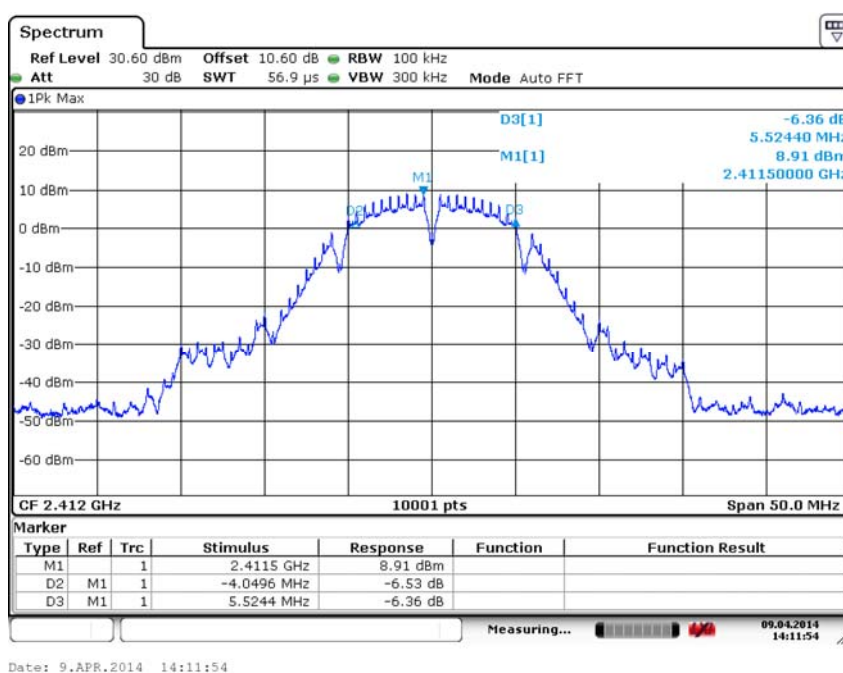
FCC Part15.247(a)(2)

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500kHz.

### 2.2.2.4 Test result

Test Mode: 802.11b

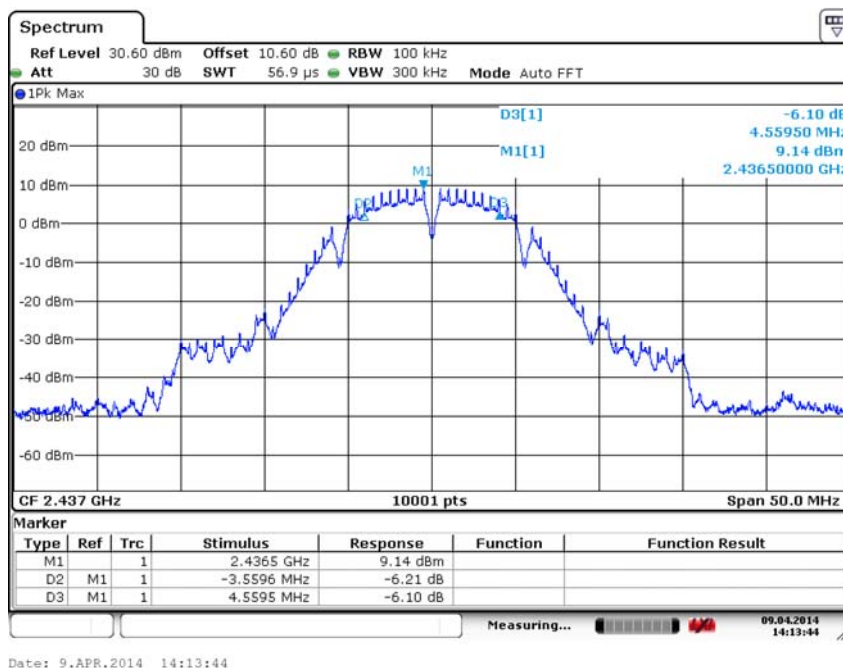
| Carrier frequency (MHz) | Channel No. | 6 dB bandwidth(MHz) |
|-------------------------|-------------|---------------------|
| 2412                    | 1           | 9.57                |
| 2437                    | 6           | 8.12                |
| 2462                    | 11          | 8.14                |



Carrier frequency (MHz): 2412

Channel No.:1

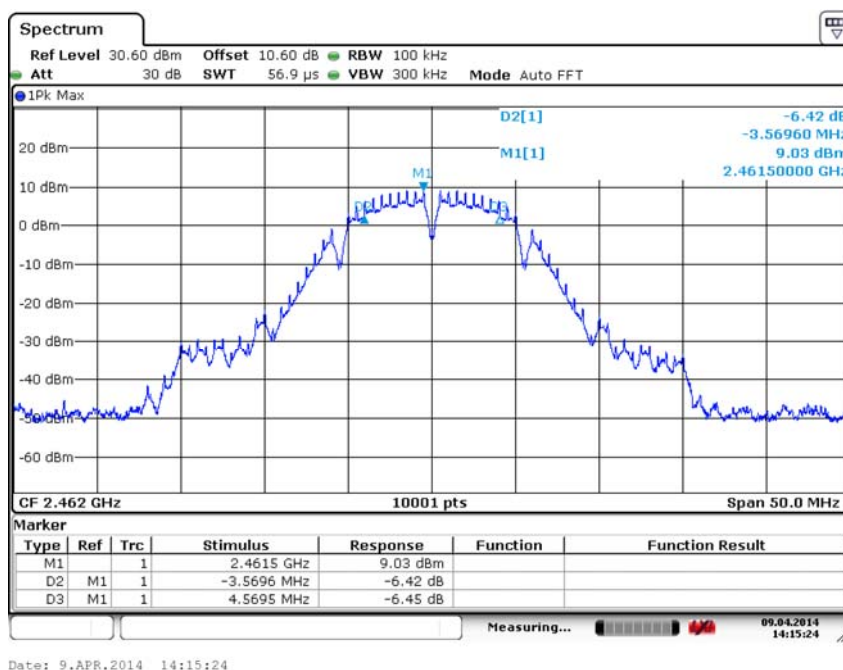
Test Mode: 802.11b



Carrier frequency (MHz): 2437

Channel No.:6

Test Mode: 802.11b



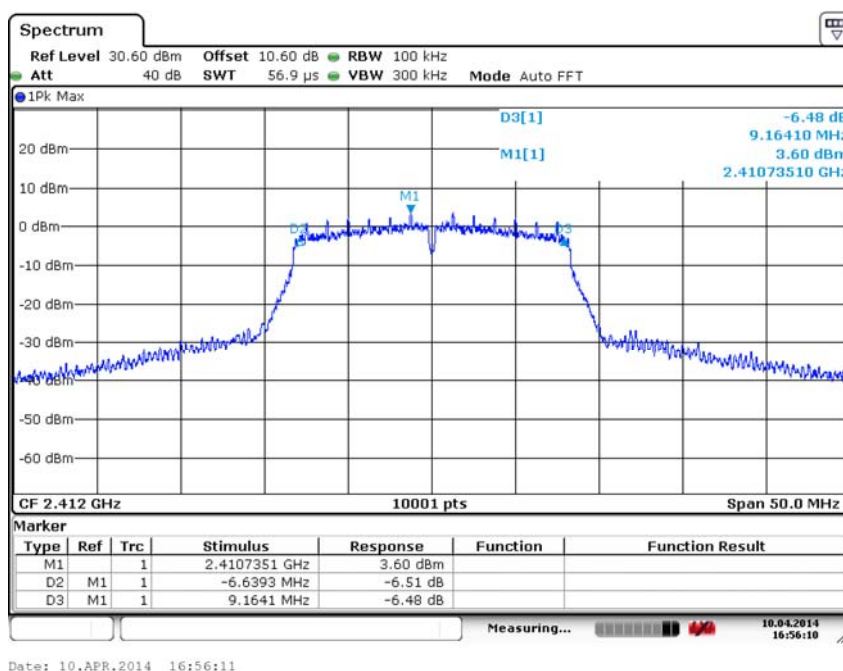
Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11b

Test Mode: 802.11g

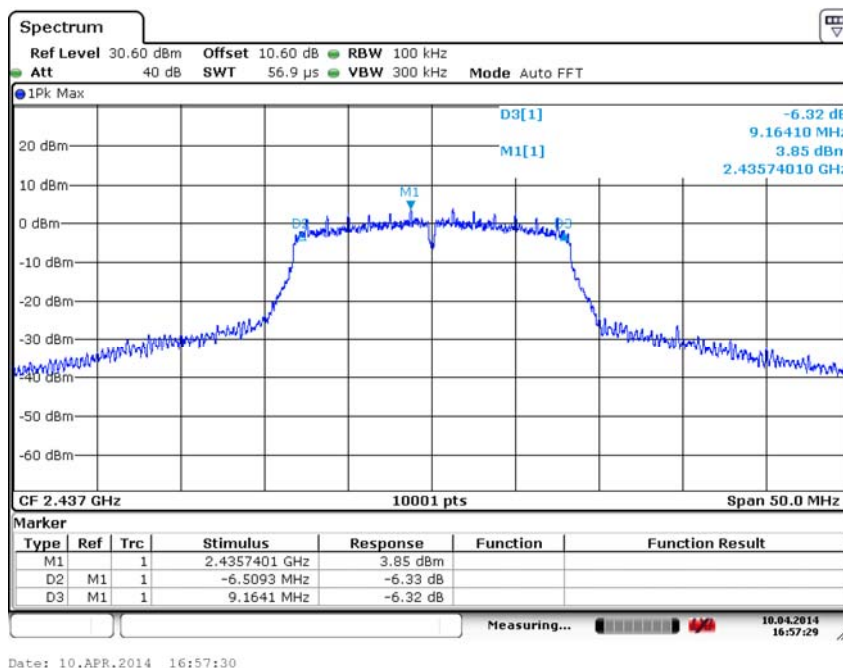
| Carrier frequency (MHz) | Channel No. | 6 dB bandwidth(MHz) |
|-------------------------|-------------|---------------------|
| 2412                    | 1           | 15.80               |
| 2437                    | 6           | 15.67               |
| 2462                    | 11          | 15.56               |



Carrier frequency (MHz): 2412

Channel No.:1

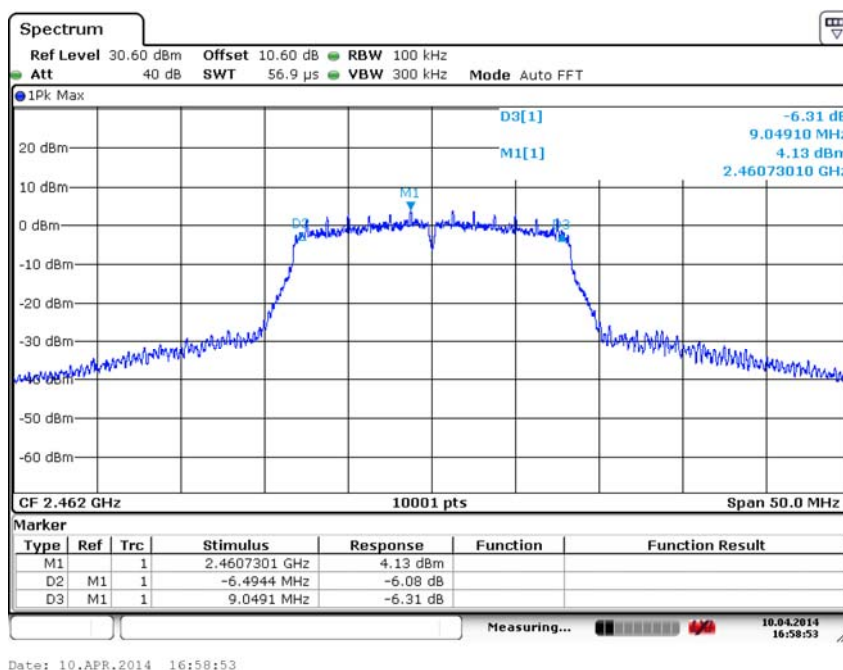
Test Mode: 802.11g



Carrier frequency (MHz): 2437

Channel No.:6

Test Mode: 802.11g



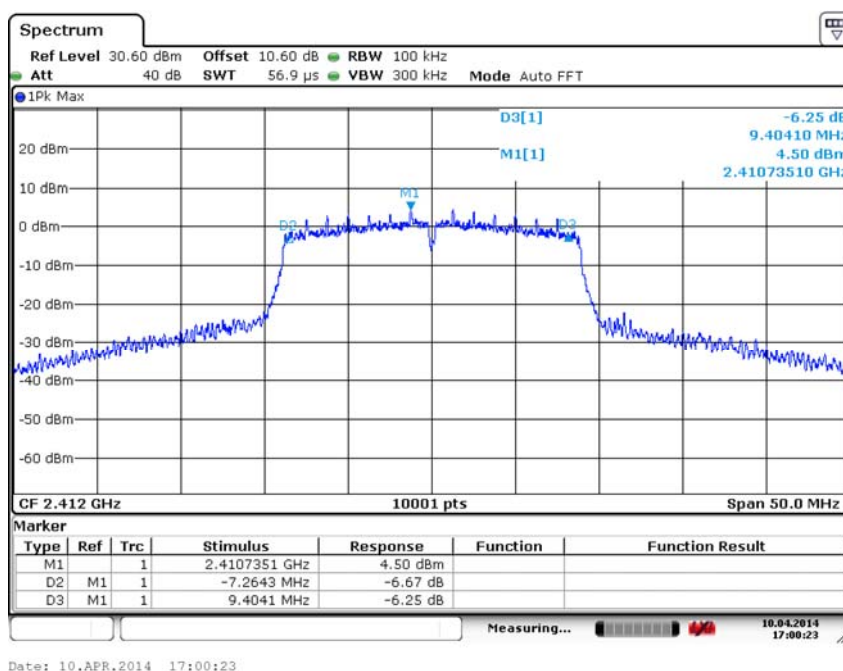
Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11g

Test Mode: 802.11n(HT20)

| Carrier frequency (MHz) | Channel No. | 6 dB bandwidth(MHz) |
|-------------------------|-------------|---------------------|
| 2412                    | 1           | 16.67               |
| 2437                    | 6           | 16.91               |
| 2462                    | 11          | 17.40               |

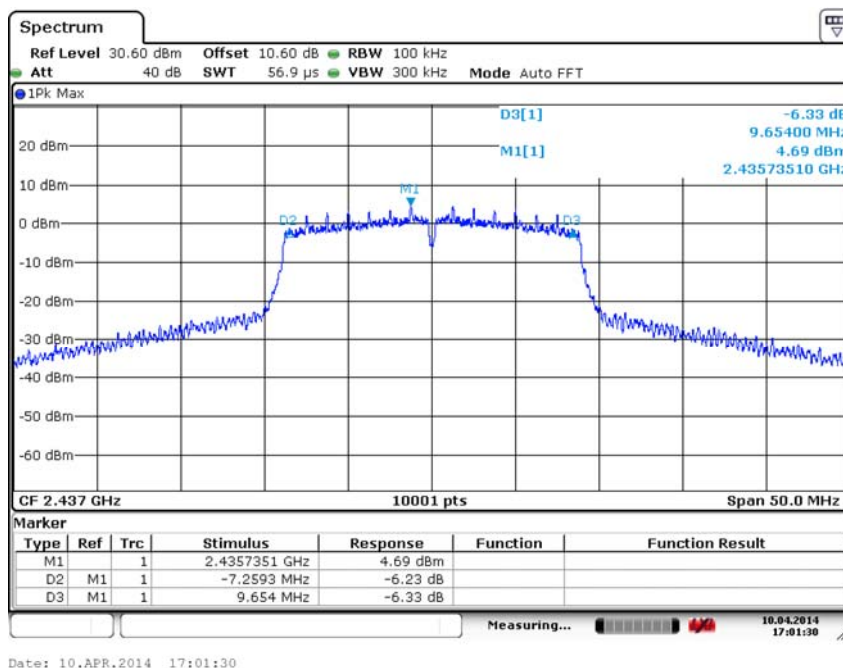


Date: 10.APR.2014 17:00:23

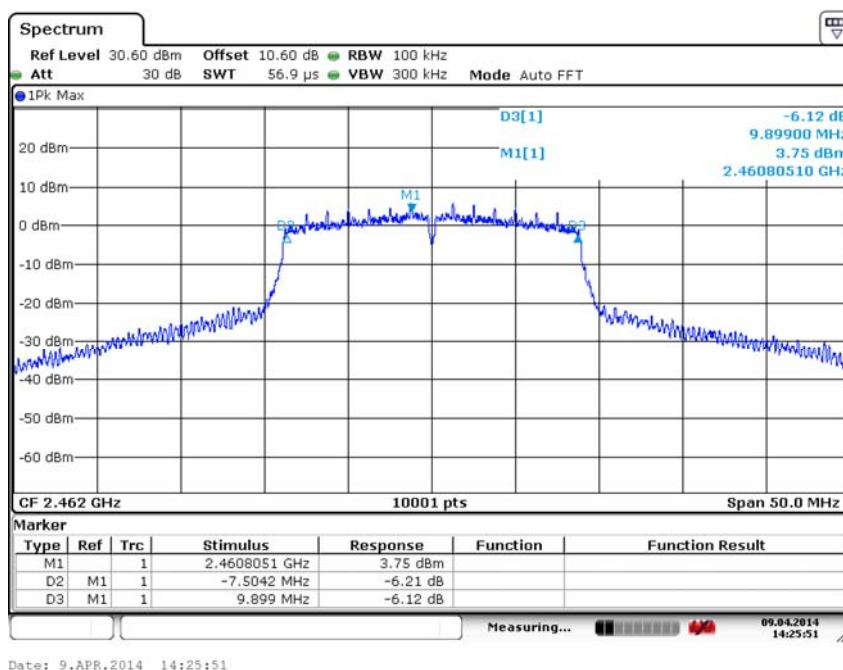
Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11n(HT20)



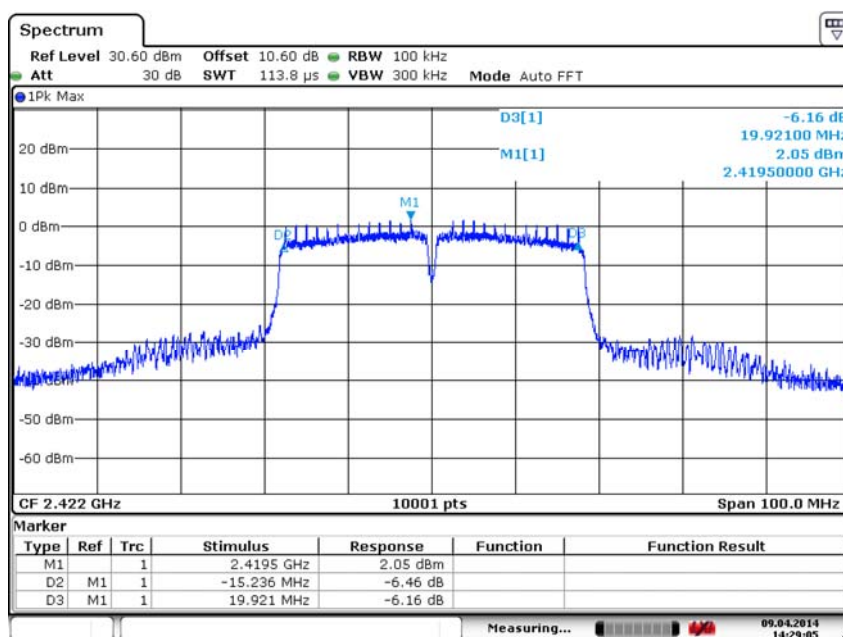
Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11n(HT20)

Test Mode: 802.11n(HT40)

| Carrier frequency (MHz) | Channel No. | 6 dB bandwidth(MHz) |
|-------------------------|-------------|---------------------|
| 2422                    | 3           | 35.15               |
| 2437                    | 6           | 35.33               |
| 2462                    | 11          | 35.16               |



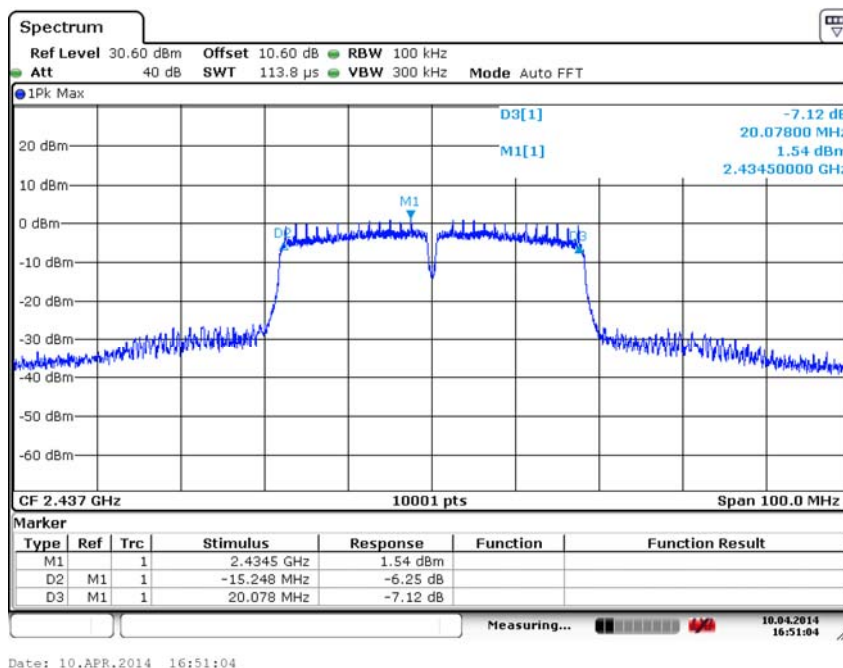
Date: 9.APR.2014 14:29:05

Carrier frequency (MHz): 2422

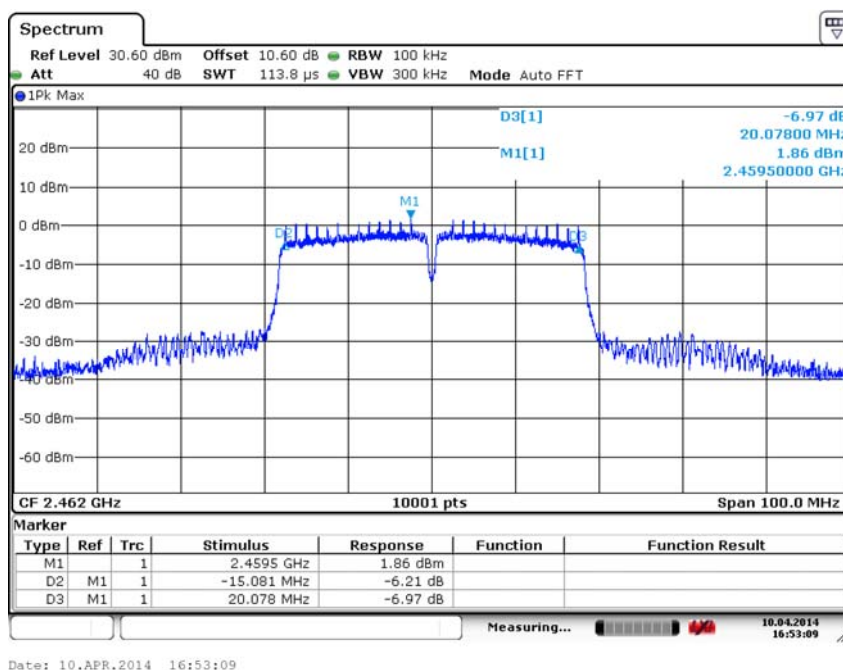
Channel No.:3

Test Mode: 802.11n(HT40)





Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11n(HT40)

## 2.2.3 Transmitter Power Spectral Density

### 2.2.3.1 Ambient condition

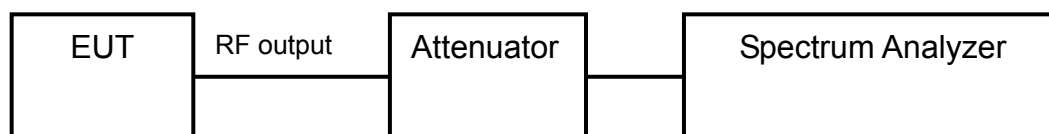
| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 22°C        | 40%               | 101.1kPa |

### 2.2.3.2 Test Description

The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 10.2.

The EUT was connected to the spectrum analyzer and WiFi set via a attenuator with a known loss.

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- Set the VBW  $\geq 3 \times \text{RBW}$ .
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



### 2.2.3.3 Test limit

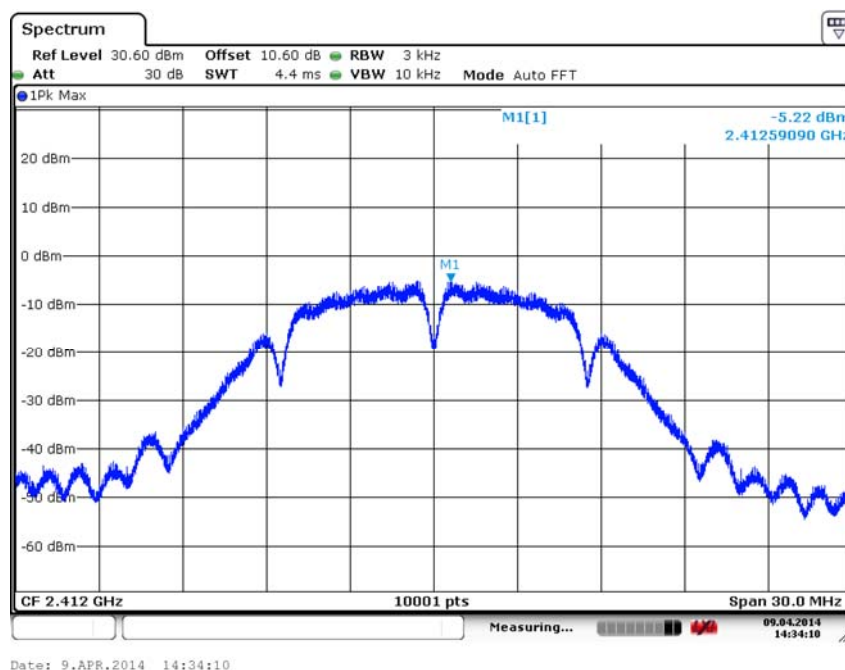
FCC Par15.247(e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

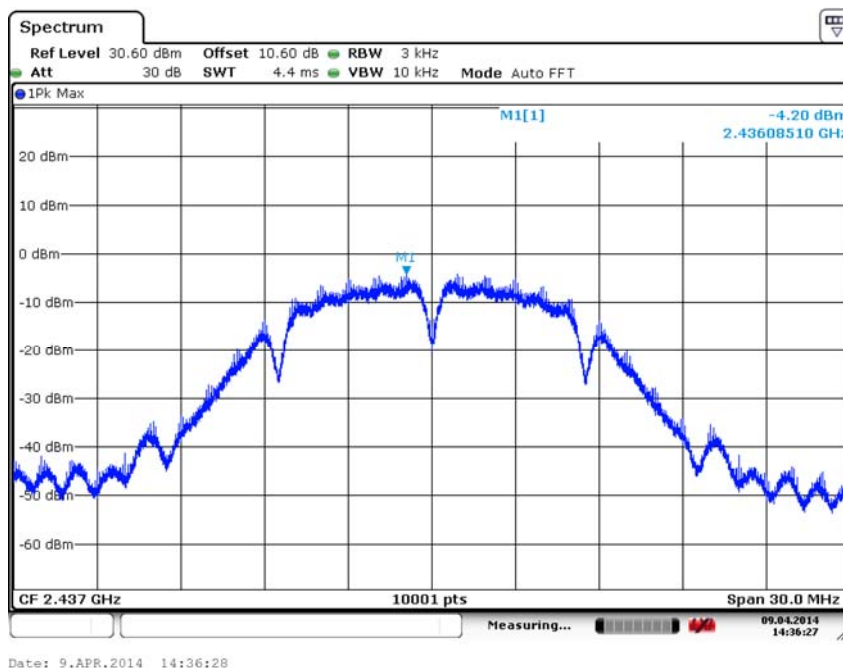
## 2.2.3.4 Test result

Test Mode: 802.11b

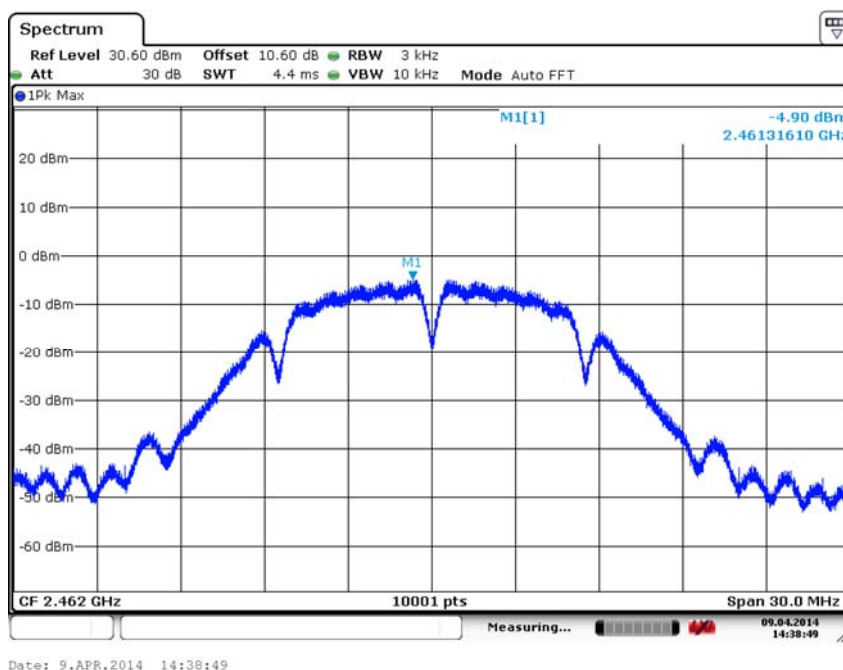
| Carrier frequency (MHz) | Channel No | Power Density |
|-------------------------|------------|---------------|
| 2412                    | 1          | -5.22         |
| 2437                    | 6          | -4.20         |
| 2462                    | 11         | -4.90         |



Carrier frequency (MHz): 2412  
Channel No.1  
Test Mode: 802.11b



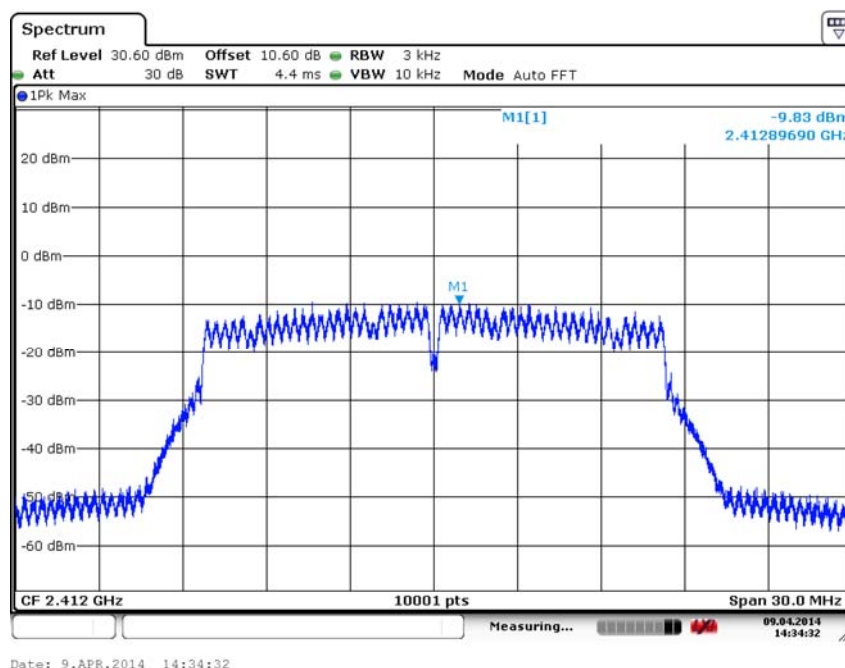
Carrier frequency (MHz): 2437  
Channel No.6  
Test Mode: 802.11b



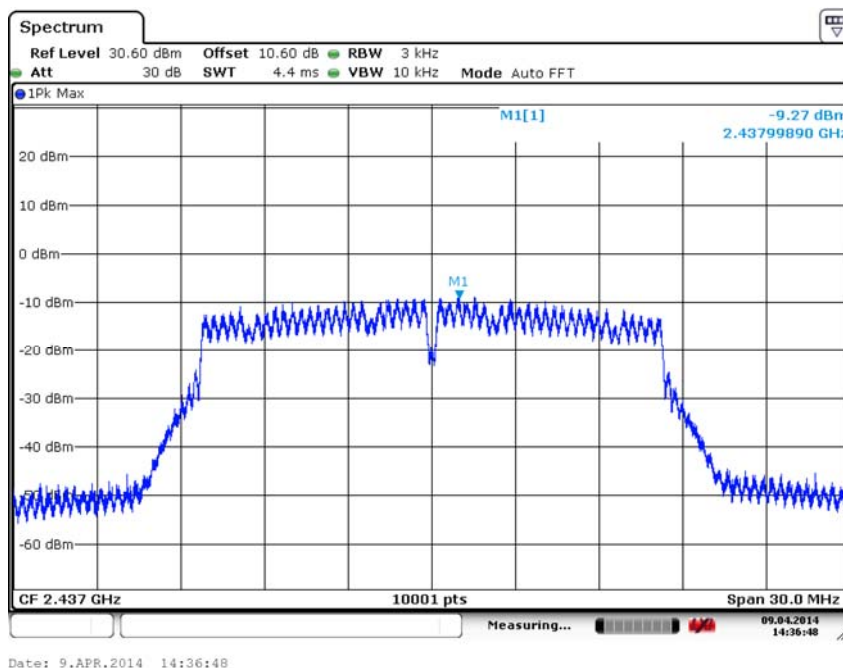
Carrier frequency (MHz): 2462  
Channel No.11  
Test Mode: 802.11b

Test Mode: 802.11g

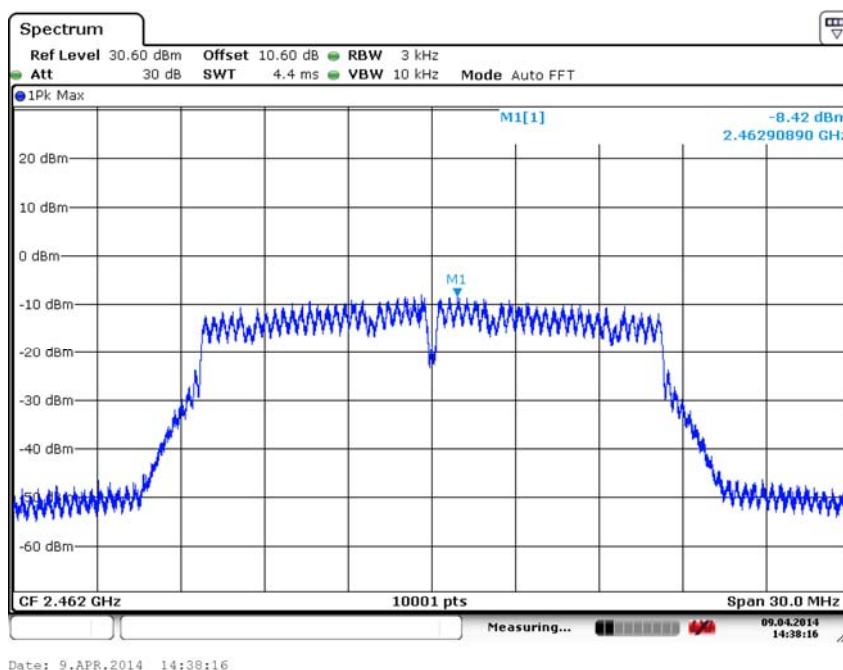
| Carrier frequency (MHz) | Channel No | Power Density |
|-------------------------|------------|---------------|
| 2412                    | 1          | -9.38         |
| 2442                    | 6          | -9.27         |
| 2472                    | 11         | -8.42         |



Carrier frequency (MHz): 2412  
Channel No.1  
Test Mode: 802.11g



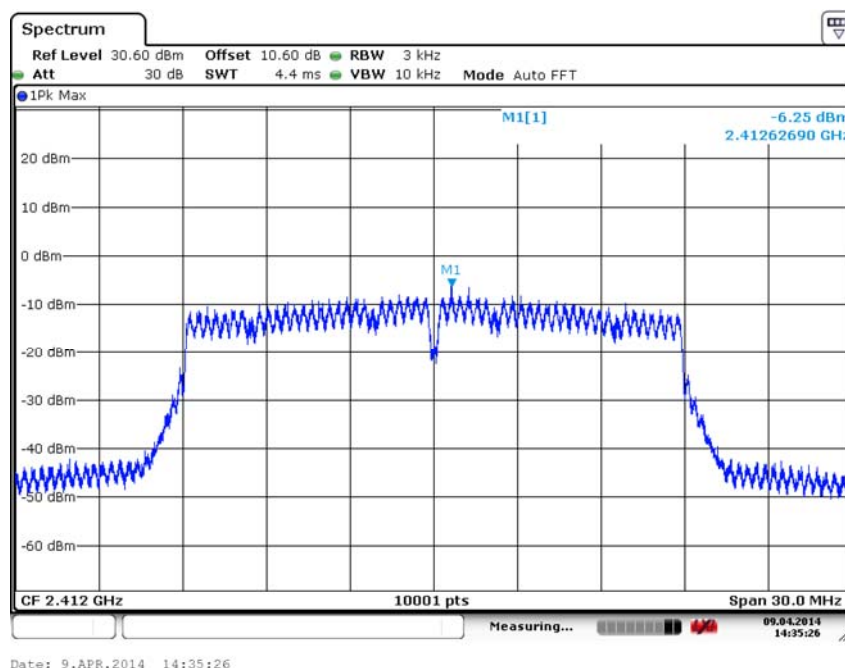
Carrier frequency (MHz): 2437  
Channel No.6  
Test Mode: 802.11g



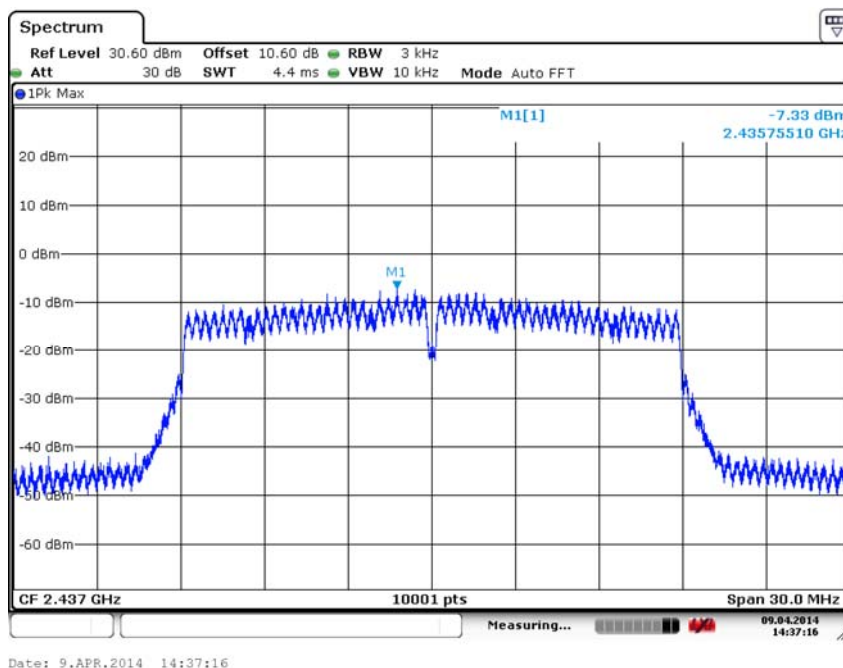
Carrier frequency (MHz): 2462  
Channel No.11  
Test Mode: 802.11g

Test Mode: 802.11n(HT20)

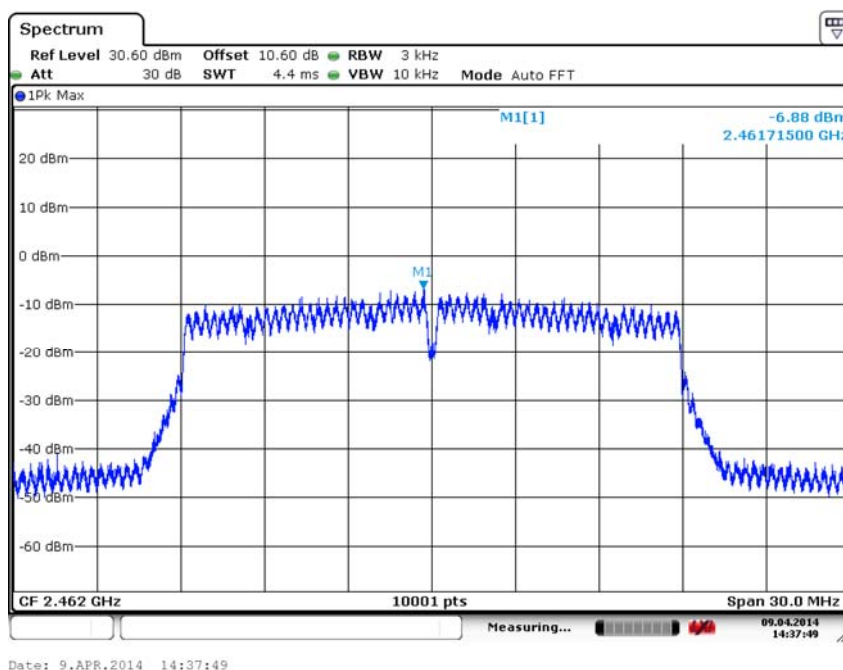
| Carrier frequency (MHz) | Channel No | Power Density |
|-------------------------|------------|---------------|
| 2412                    | 1          | -6.25         |
| 2437                    | 6          | -7.33         |
| 2462                    | 11         | -6.88         |



Carrier frequency (MHz): 2412  
Channel No.1  
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2437  
Channel No.6  
Test Mode: 802.11n(HT20)

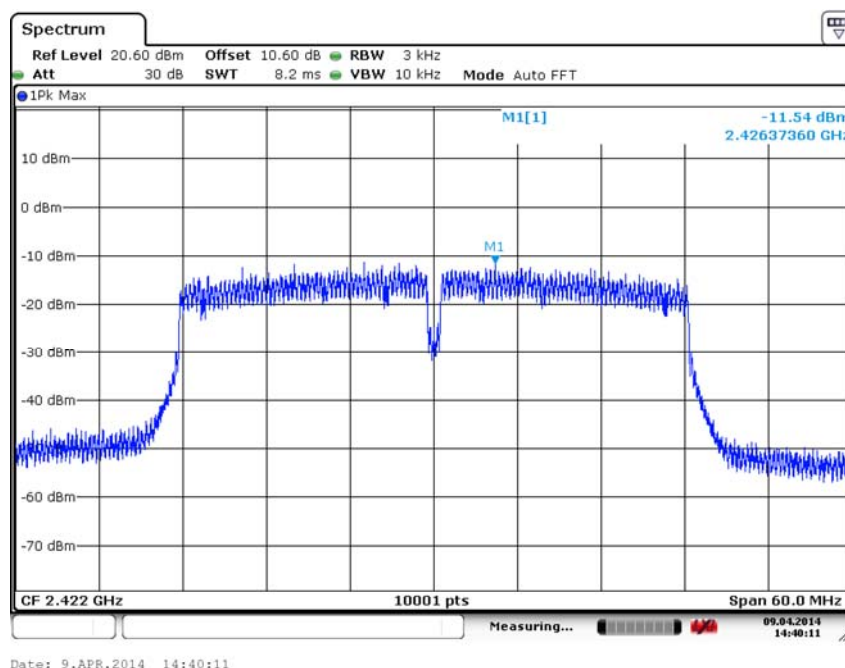


Carrier frequency (MHz): 2462  
Channel No.11  
Test Mode: 802.11n(HT20)

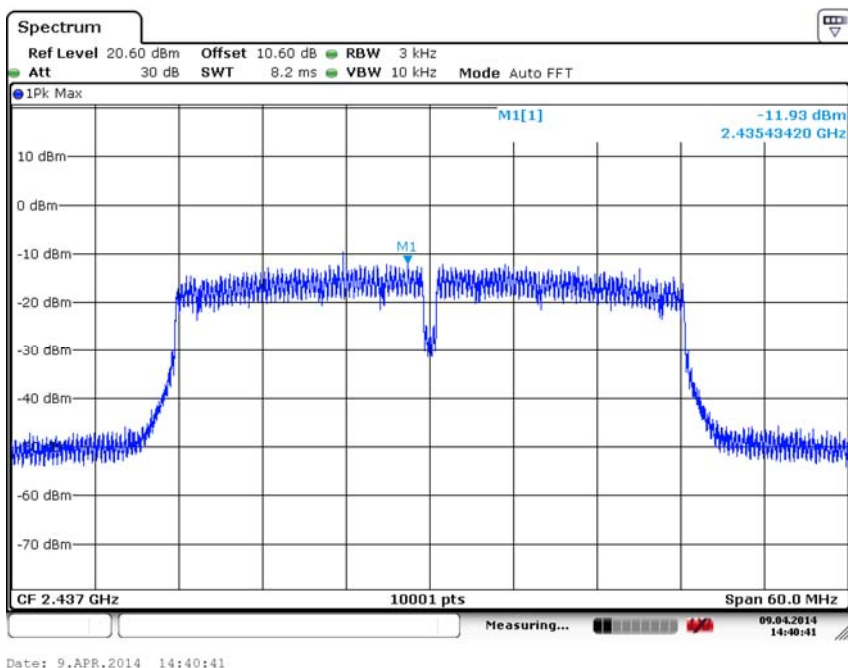


Test Mode: 802.11n(HT40)

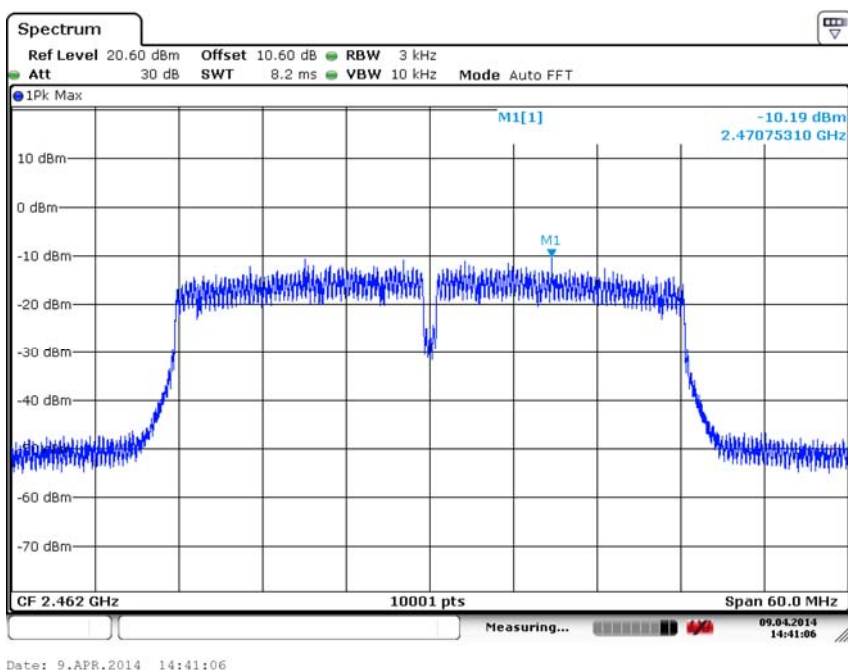
| Carrier frequency (MHz) | Channel No | Power Density |
|-------------------------|------------|---------------|
| 2422                    | 3          | -11.54        |
| 2437                    | 6          | -11.93        |
| 2462                    | 11         | -10.19        |



Carrier frequency (MHz): 2422  
Channel No.3  
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2437  
Channel No.6  
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2462  
Channel No.11  
Test Mode: 802.11n(HT40)

## 2.2.4 Spurious RF Conducted Emissions

### 2.2.4.1 Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 22°C        | 40%               | 101.1kPa |

### 2.2.4.2 Test Description

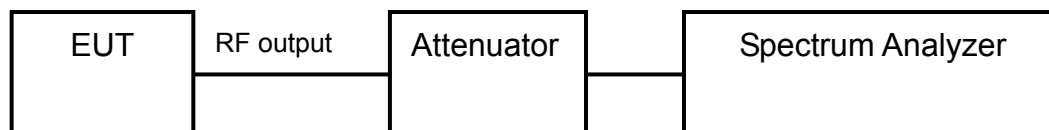
The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 11.3.

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements.

The EUT was connected to the spectrum analyzer and WiFi set via a attenuator with a known loss.

- Set the center frequency and span to encompass frequency range to be measured.
- Set the RBW = 1 MHz.
- Set the VBW  $\geq 3 \times$  RBW.
- Detector = peak.
- Ensure that the number of measurement points  $\geq$  span/RBW
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

The reference value for the measurement of the spurious RF conducted emissions is determined during the test “band edge compliance” (cf. chapter 4.5). This value is used to calculate the 20 dBc limit.



### 2.2.4.3 Test limit

FCC Part15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

### 2.2.4.4 Test result

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11b

| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

Carrier frequency (MHz): 2437

Channel No.:6

Test Mode: 802.11b

| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

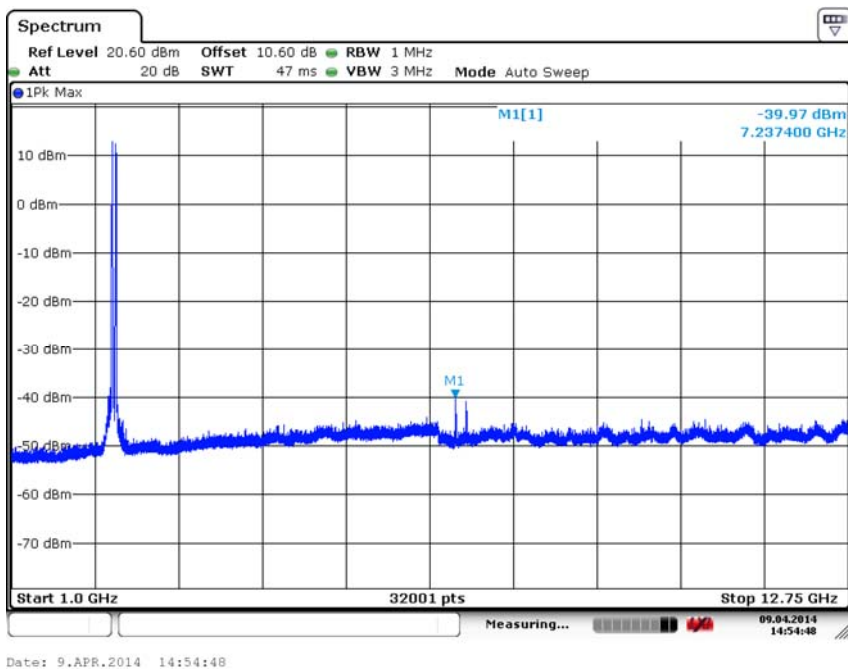
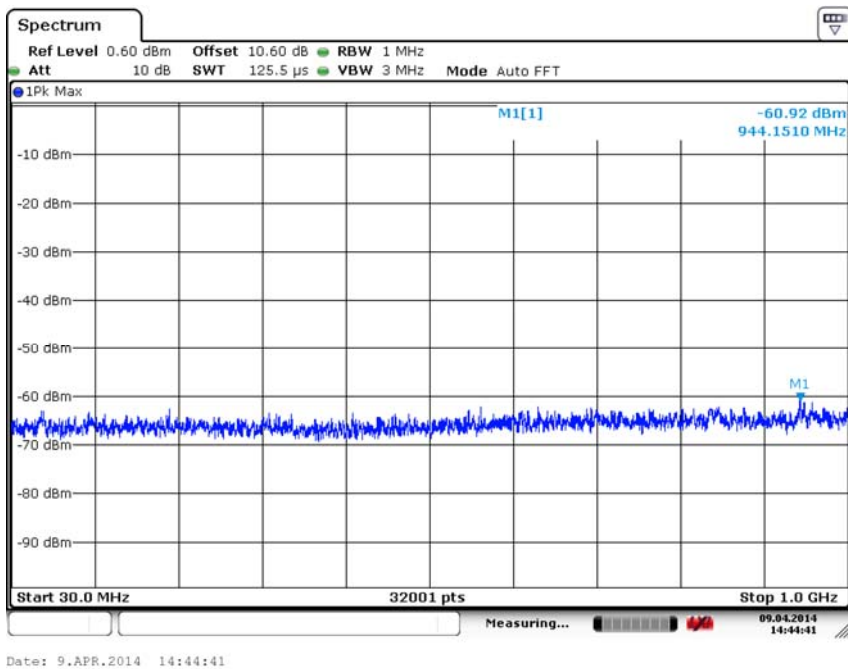
Carrier frequency (MHz): 2462

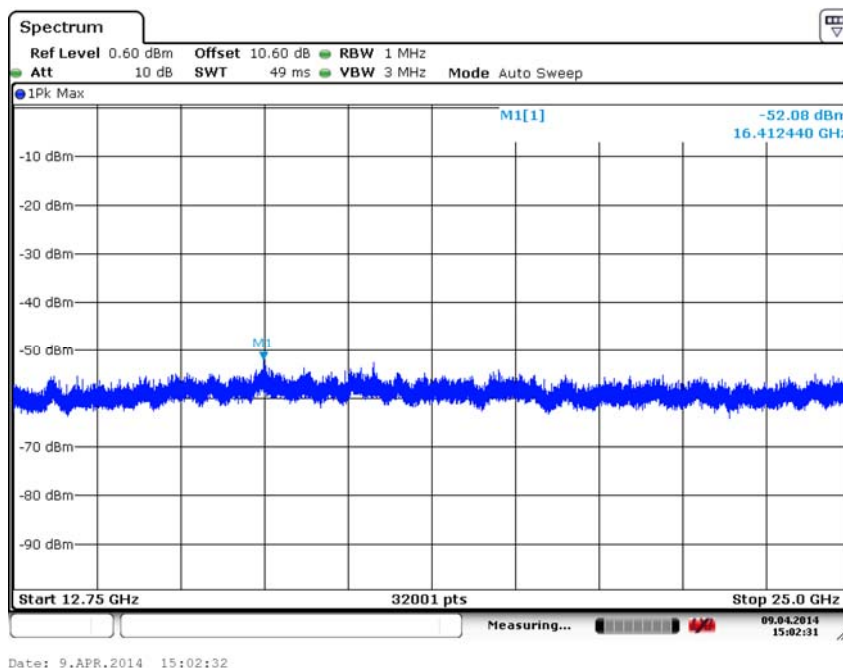
Channel No.:11

Test Mode: 802.11b

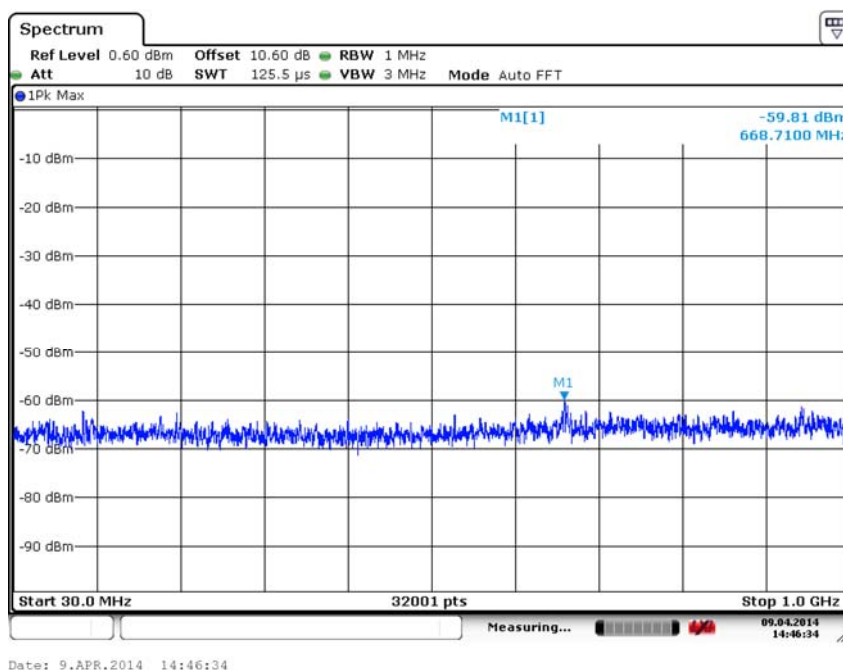
| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

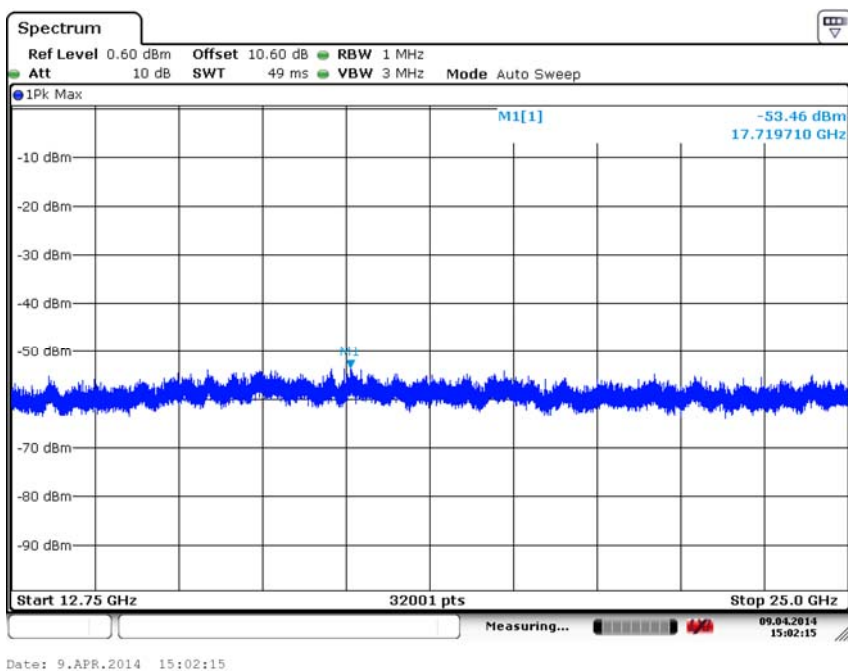
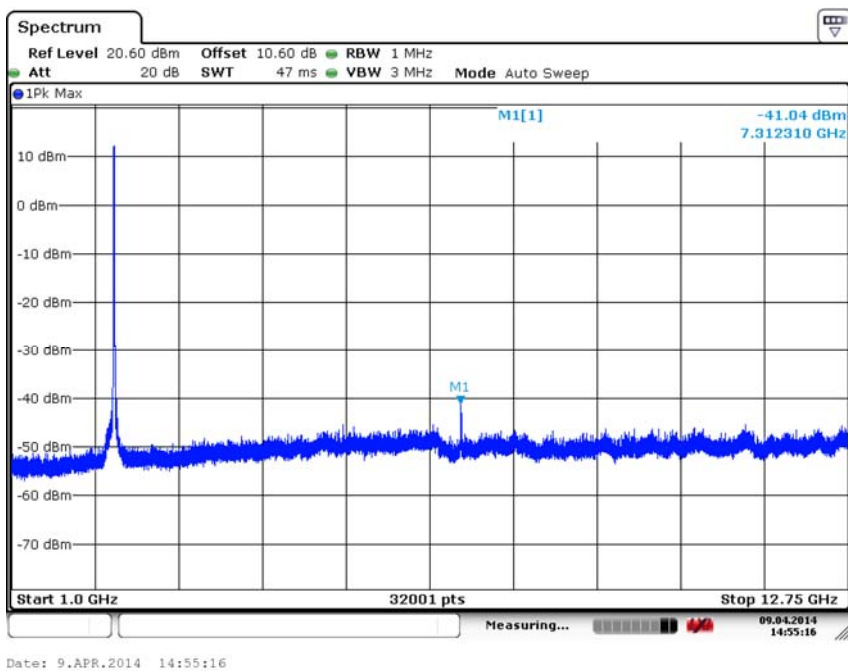
Note: The Reference value see 2.2.6 Band edge compliance



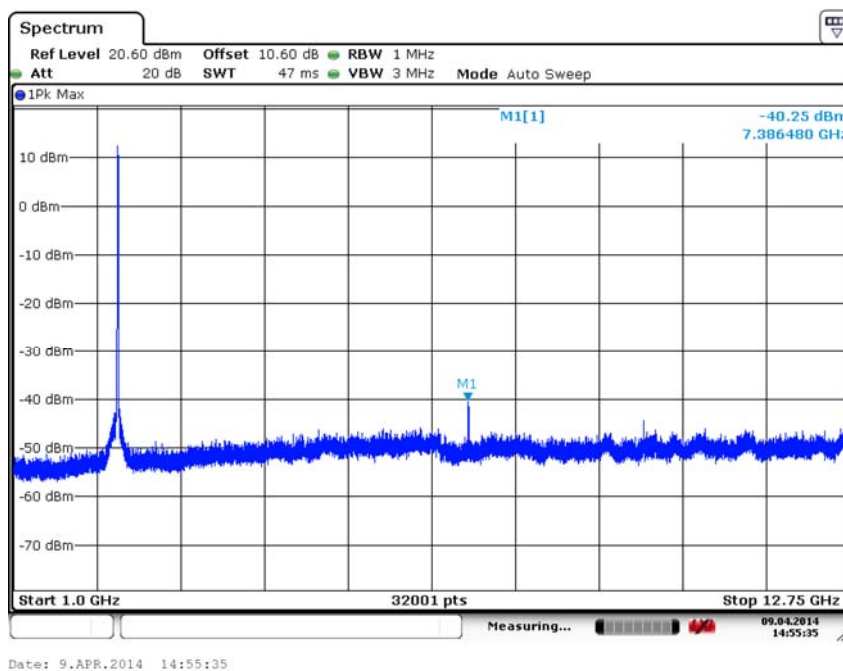
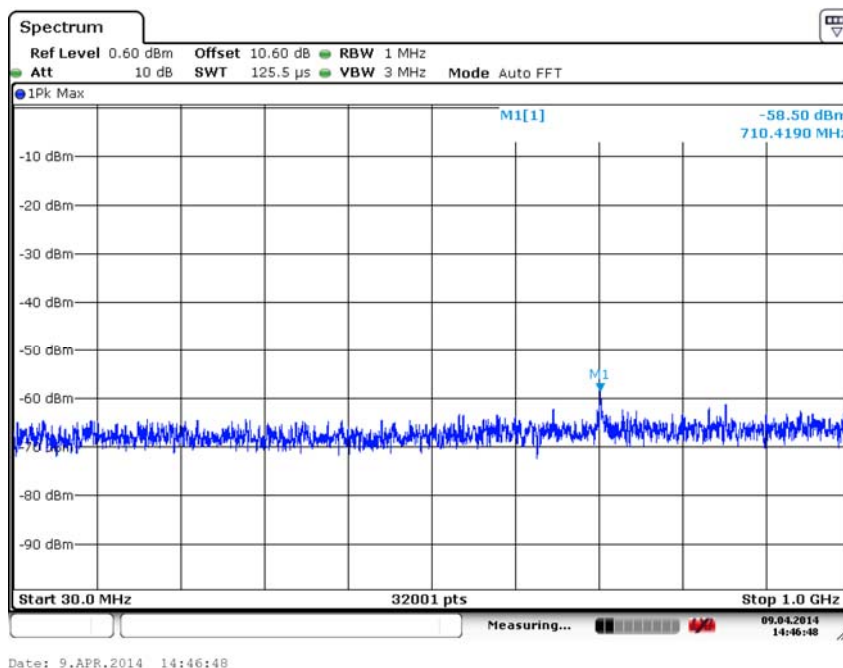


Carrier frequency (MHz): 2412  
Channel No.:1  
Test Mode: 802.11b

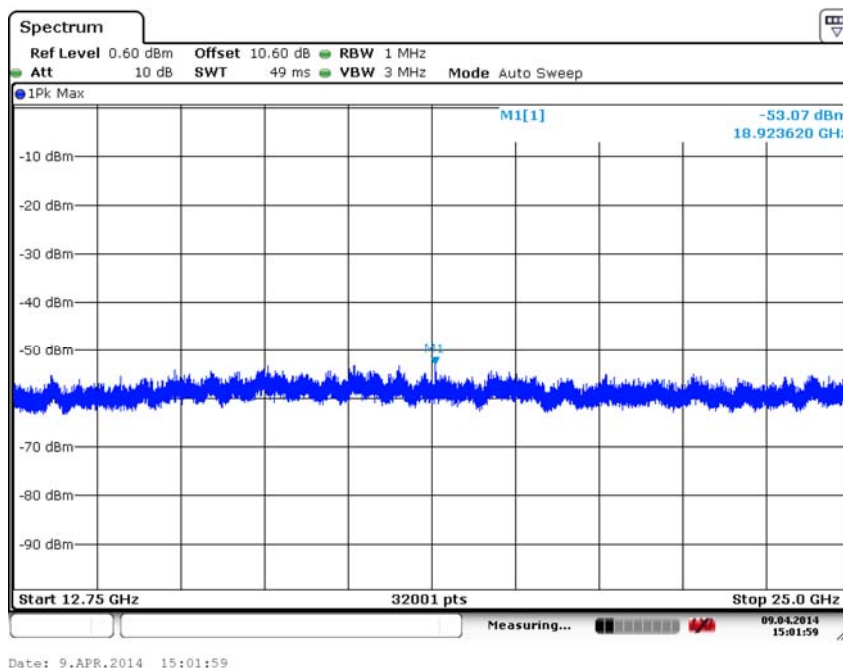




Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11b







Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11b

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11g

| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

Carrier frequency (MHz): 2437

Channel No.:6

Test Mode: 802.11g

| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

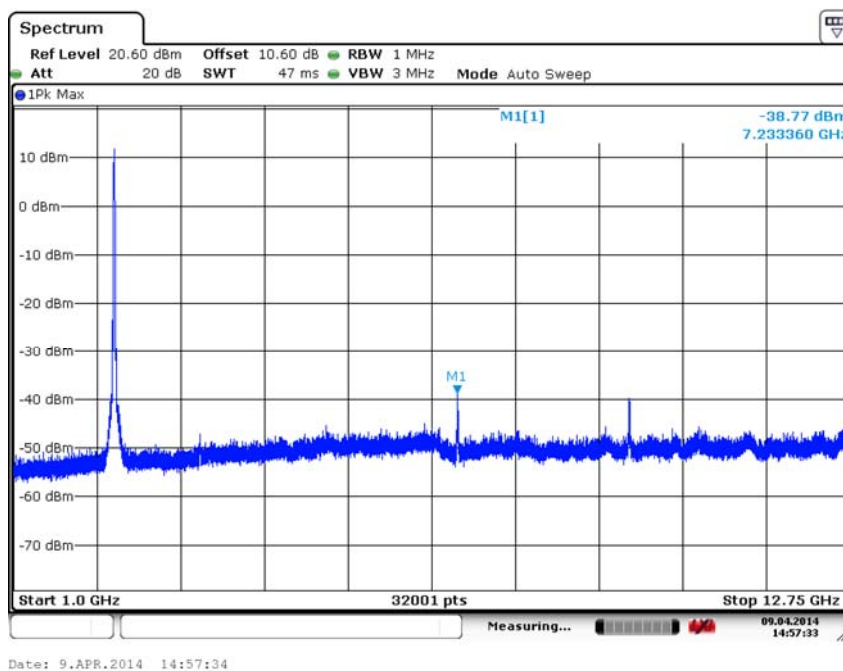
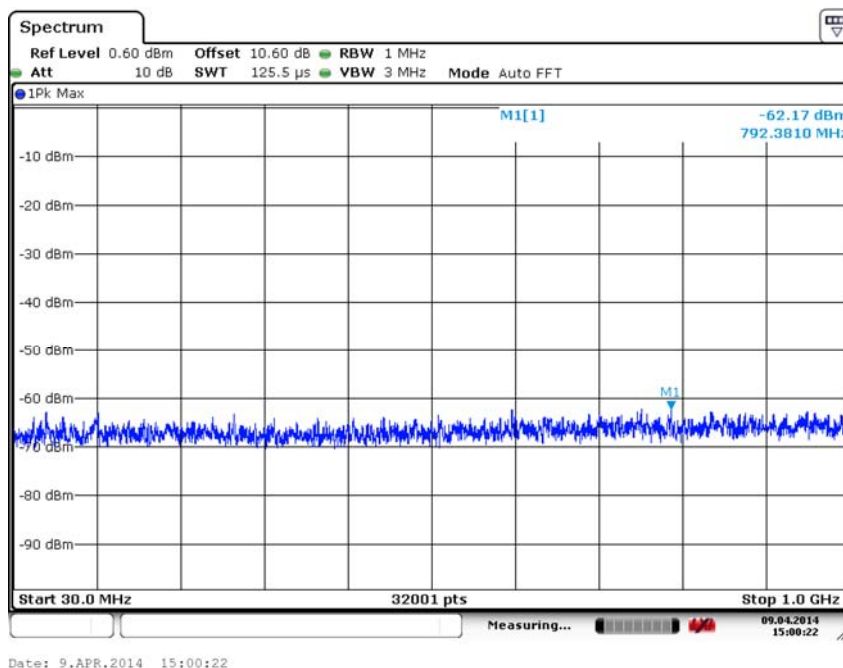
Carrier frequency (MHz): 2462

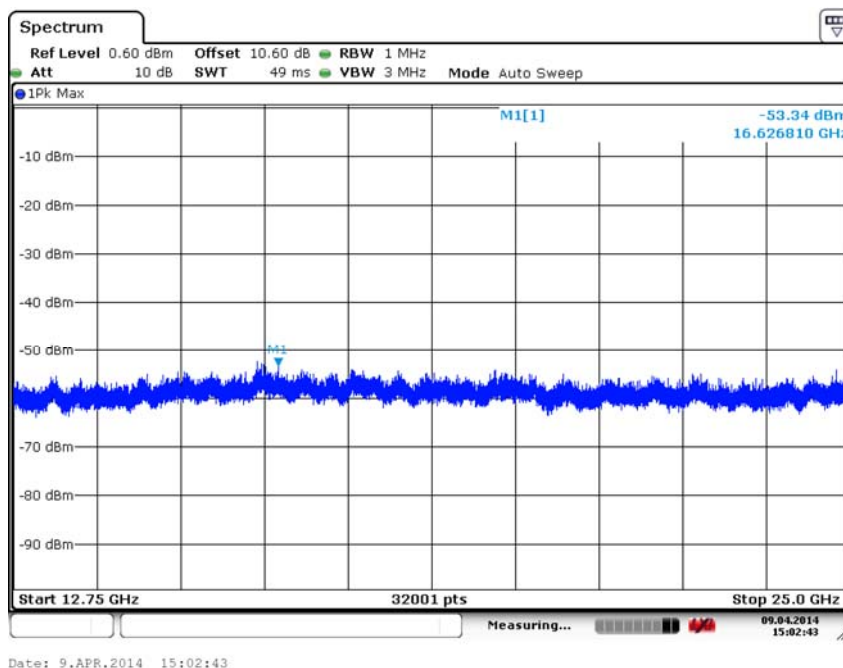
Channel No.:11

Test Mode: 802.11g

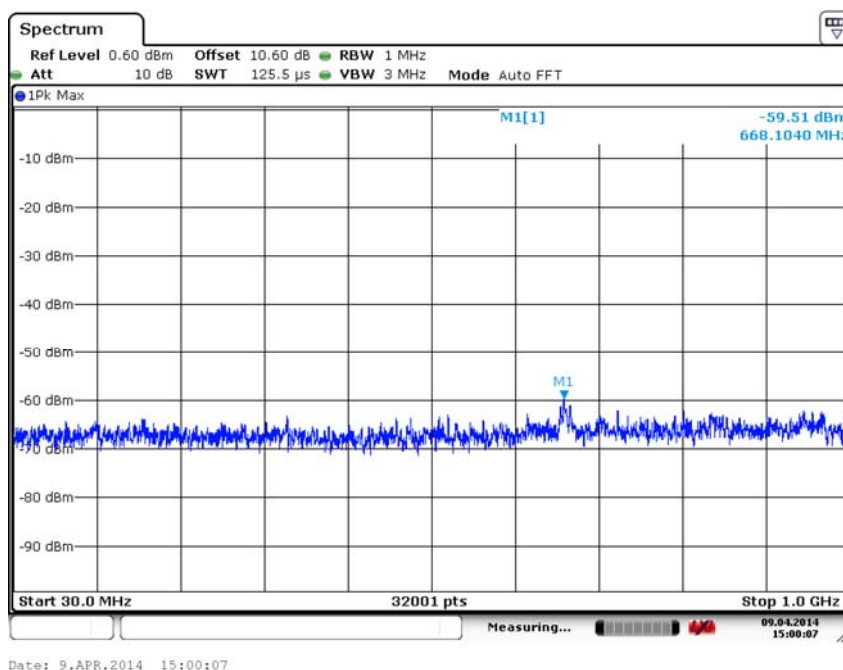
| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

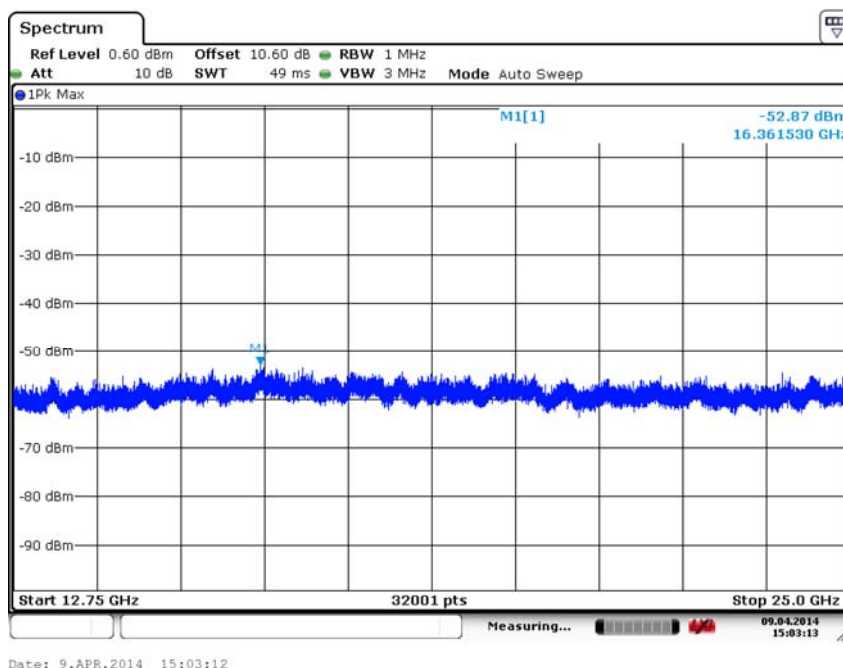
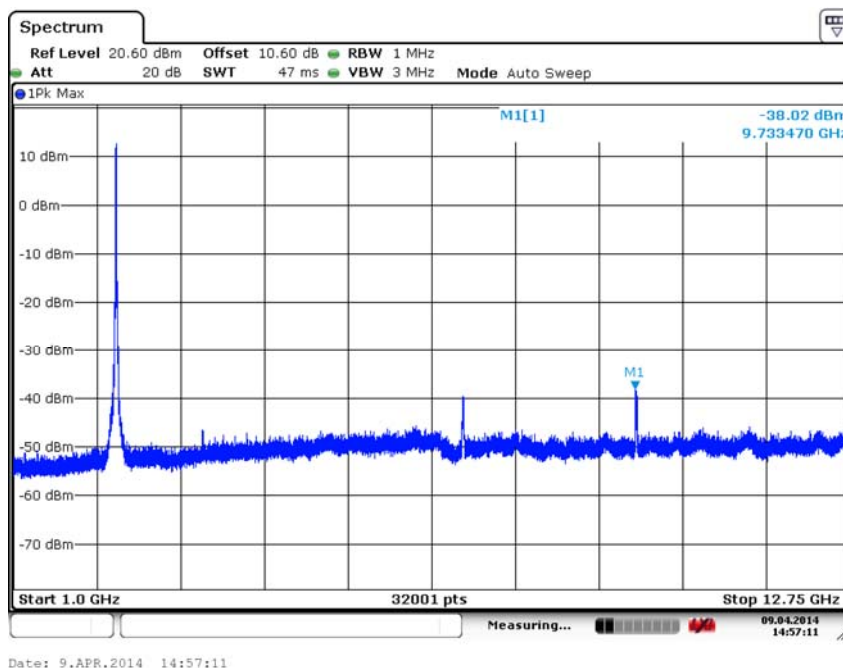
Note: The Reference value see 2.2.6 Band edge compliance



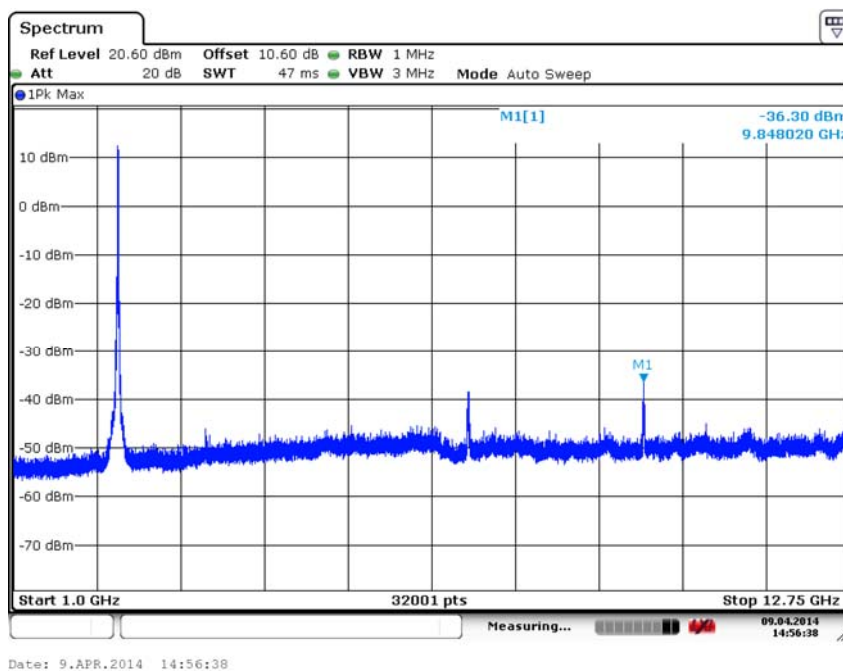
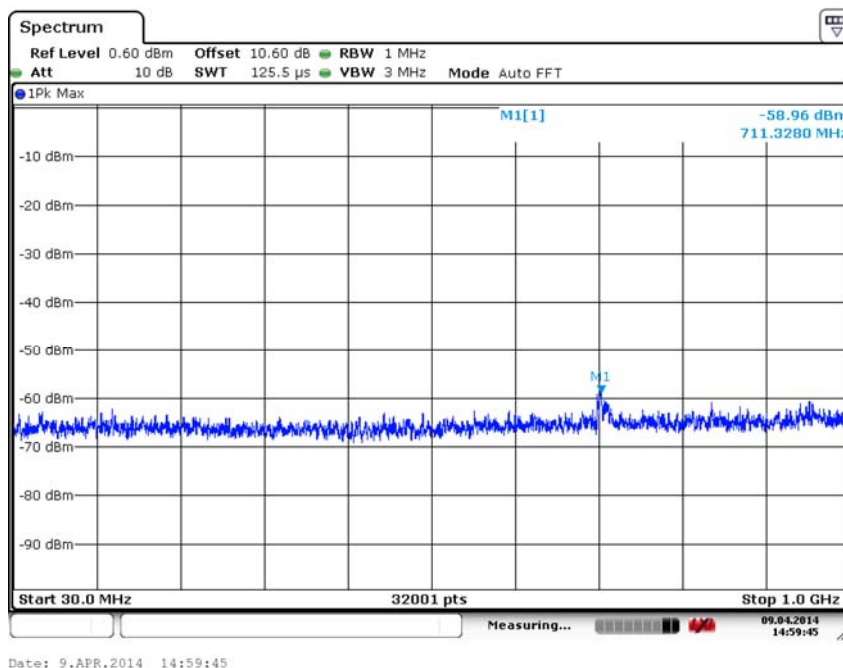


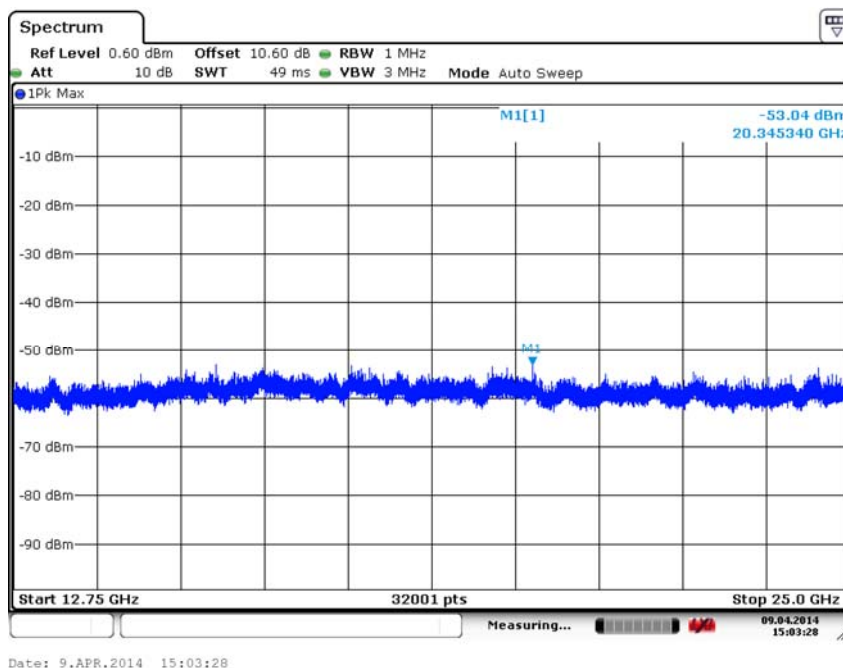
Carrier frequency (MHz): 2412  
Channel No.:1  
Test Mode: 802.11g





Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11g





Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11g

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11n(HT20)

| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

Carrier frequency (MHz): 2437

Channel No.:6

Test Mode: 802.11n(HT20)

| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

Carrier frequency (MHz): 2462

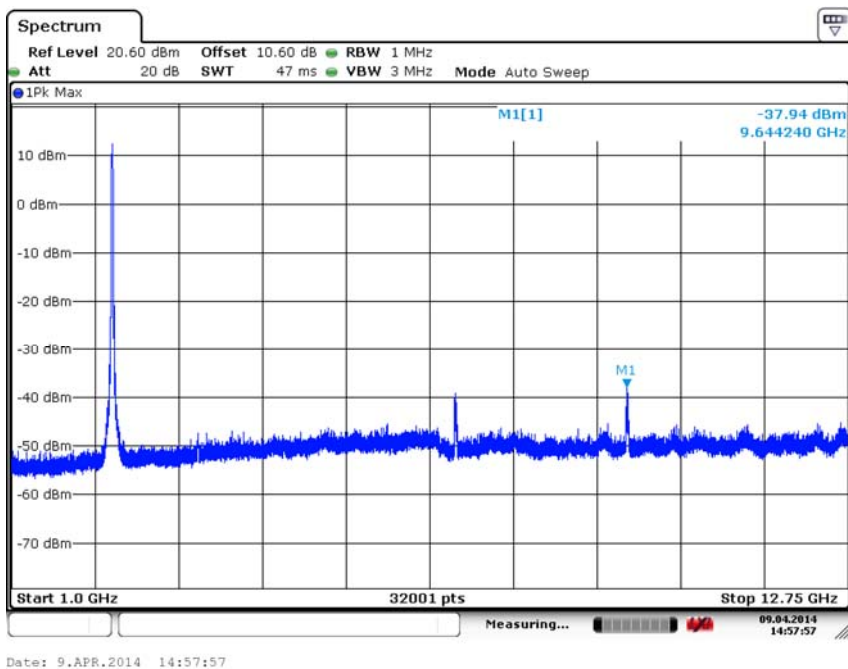
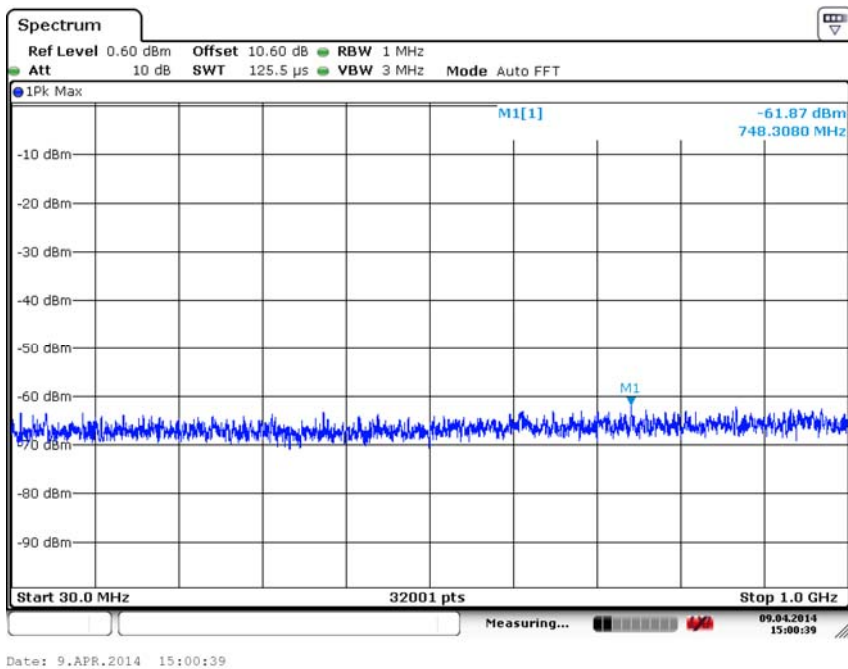
Channel No.:11

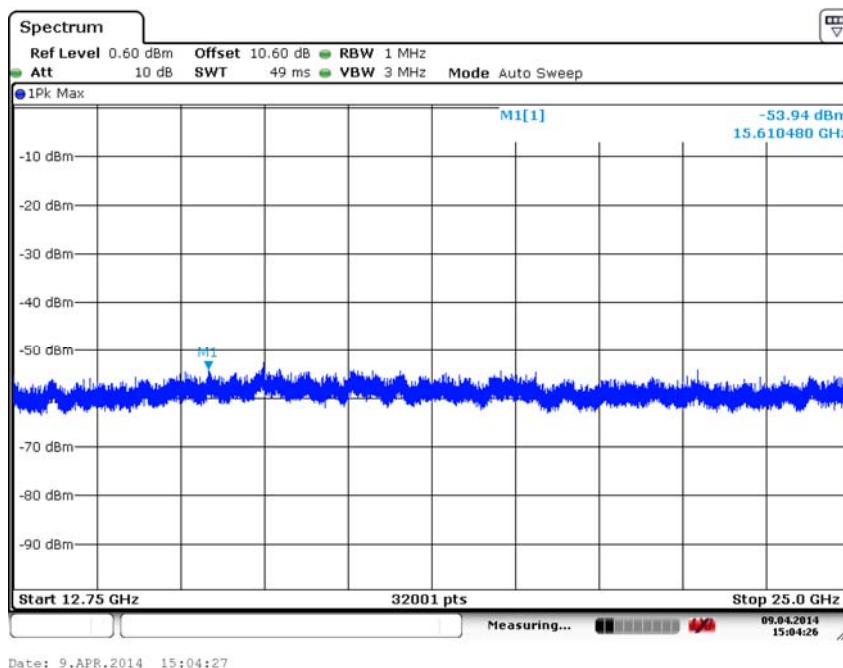
Test Mode: 802.11n(HT20)

| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

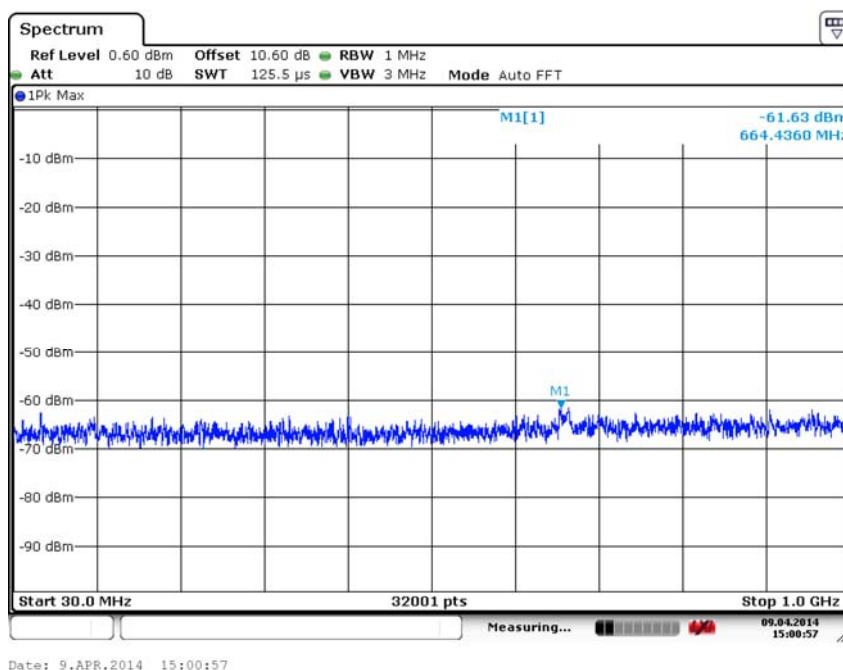
Note: The Reference value see 2.2.6 Band edge compliance

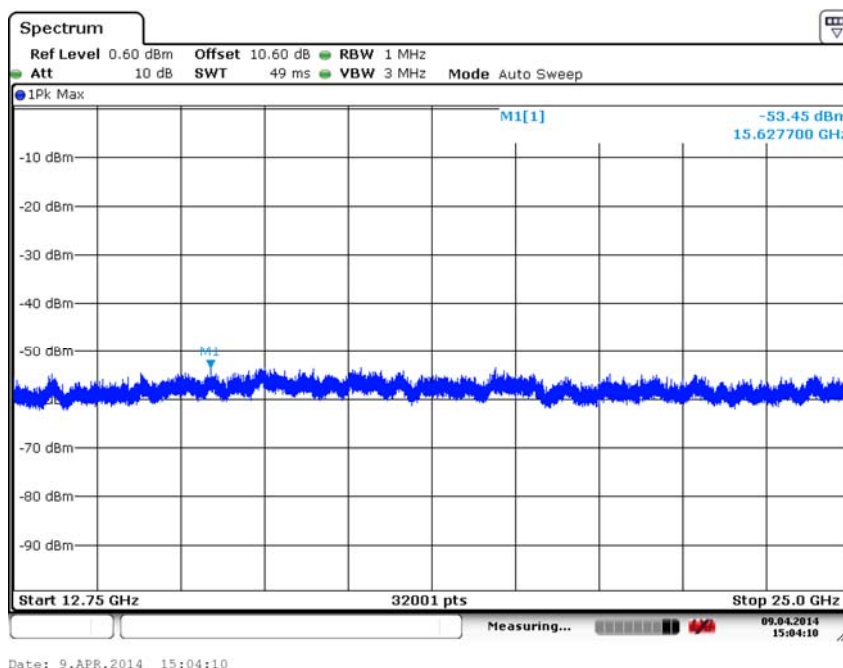
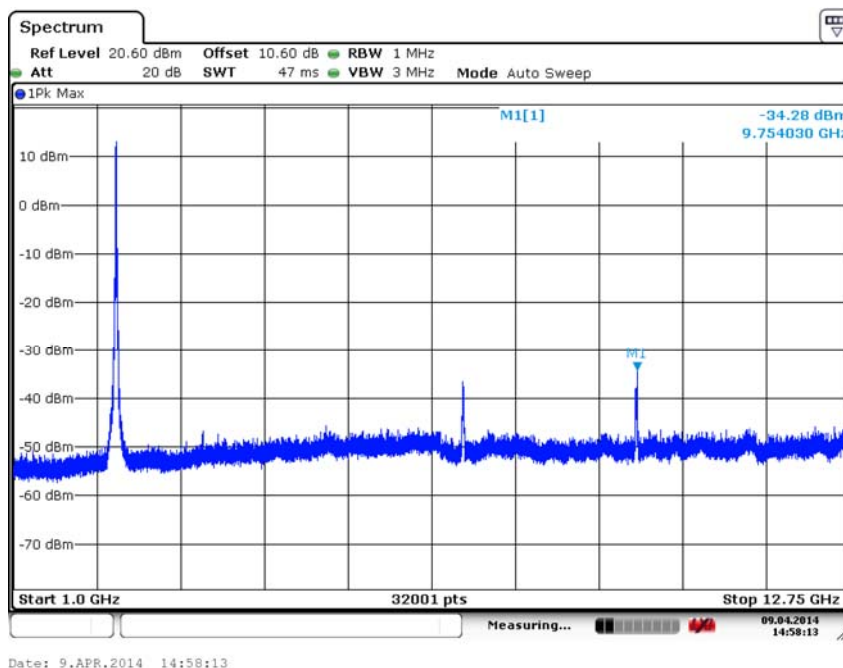




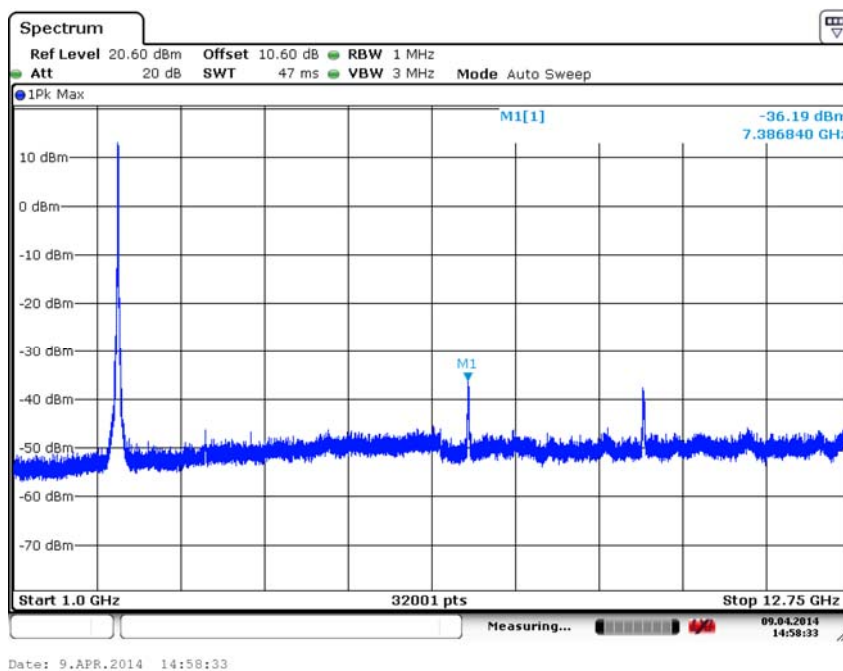
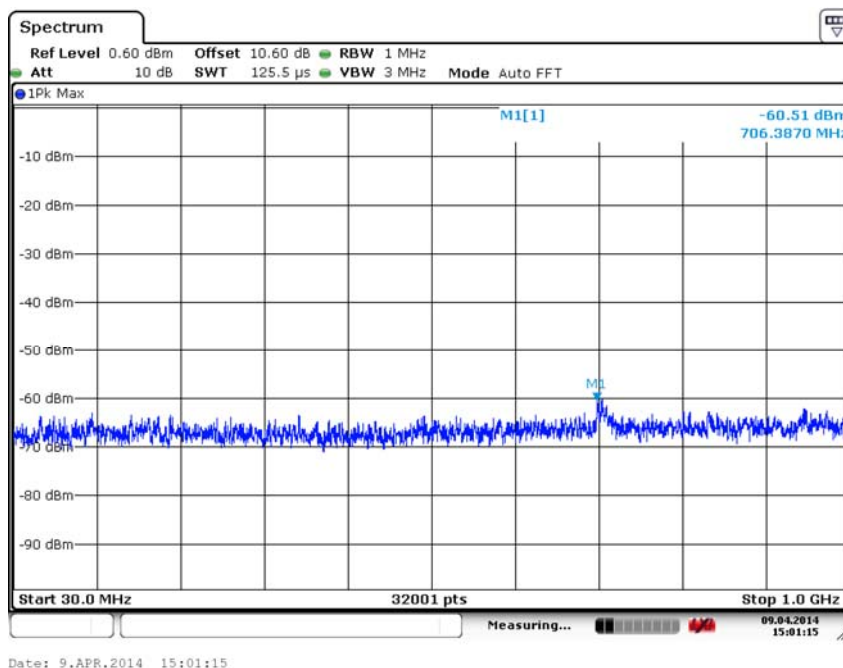


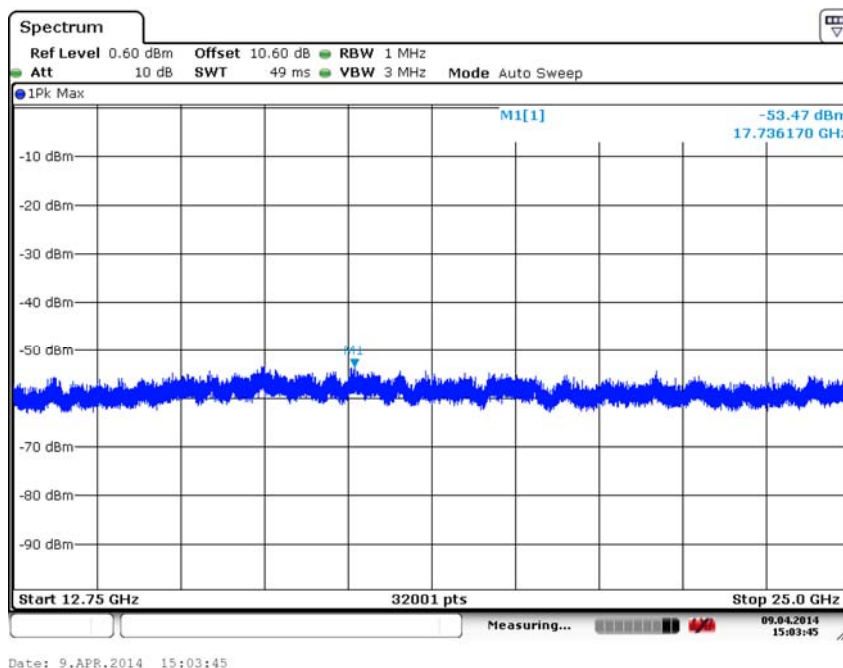
Carrier frequency (MHz): 2412  
Channel No.:1  
Test Mode: 802.11n(HT20)





Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11n(HT20)





Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11n(HT20)

Carrier frequency (MHz): 2422

Channel No.:3

Test Mode: 802.11n(HT40)

| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

Carrier frequency (MHz): 2437

Channel No.:6

Test Mode: 802.11n(HT40)

| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

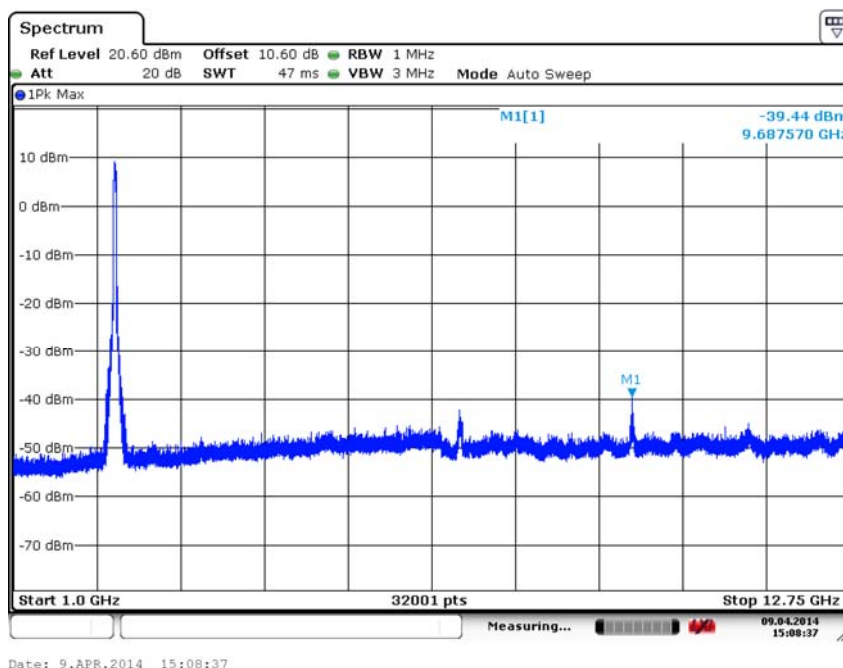
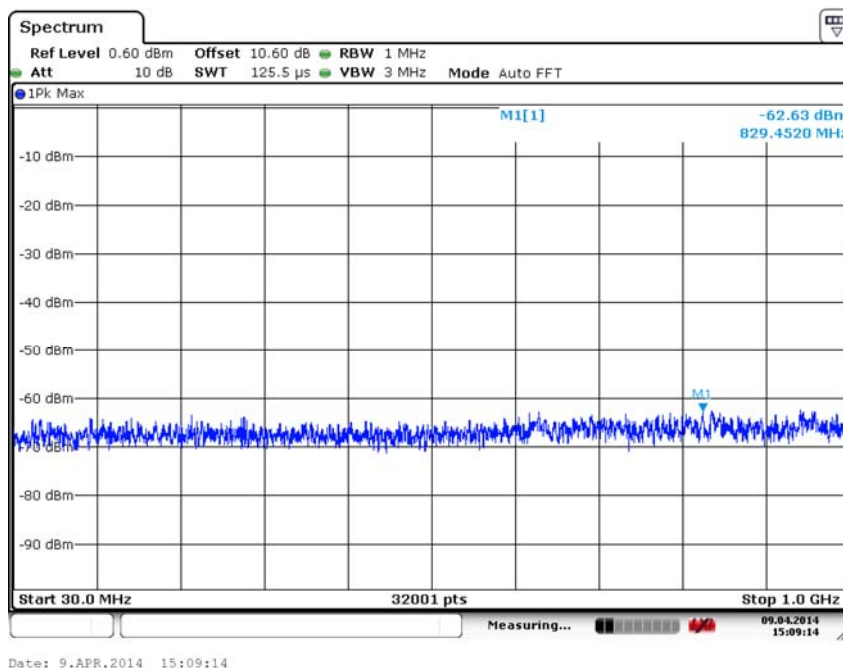
Carrier frequency (MHz): 2462

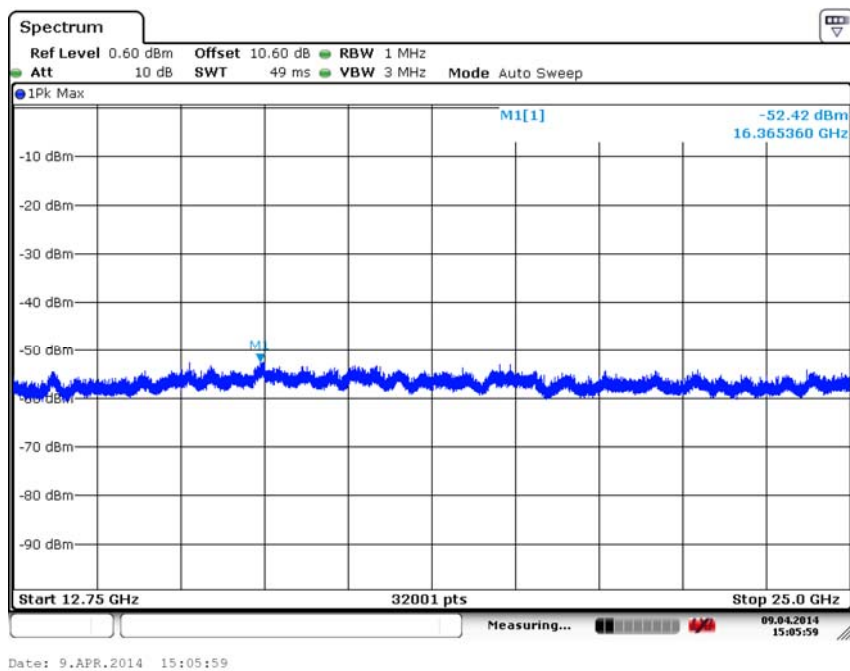
Channel No.:11

Test Mode: 802.11n(HT40)

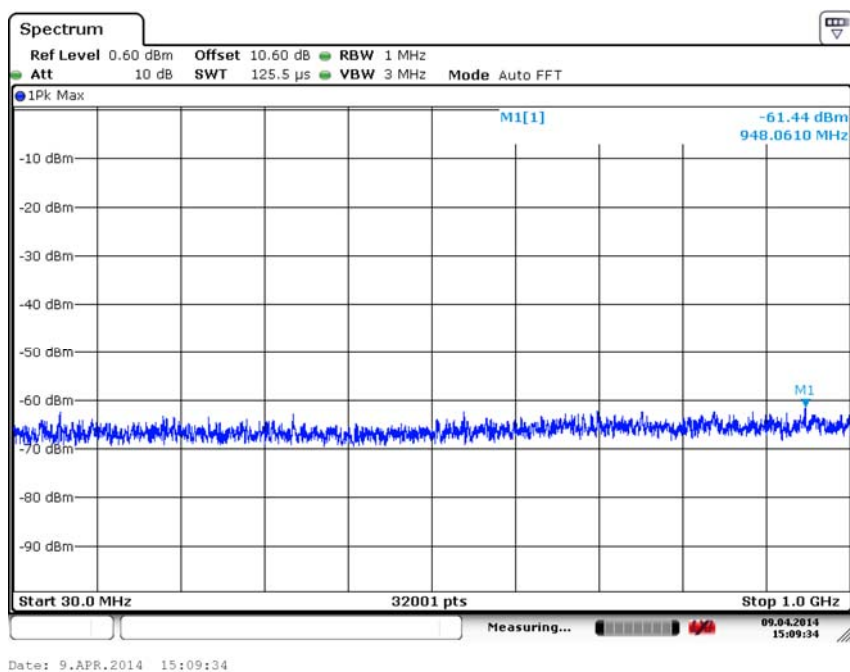
| Frequency<br>MHz | Corrected<br>measurement value<br>dBm | Reference value<br>dBm | Limit<br>dBm | Delta<br>dB |
|------------------|---------------------------------------|------------------------|--------------|-------------|
| ---              | ---                                   | ---                    | ---          | ---         |
| ---              | ---                                   | ---                    | ---          | ---         |

Note: The Reference value see 2.2.6 Band edge compliance

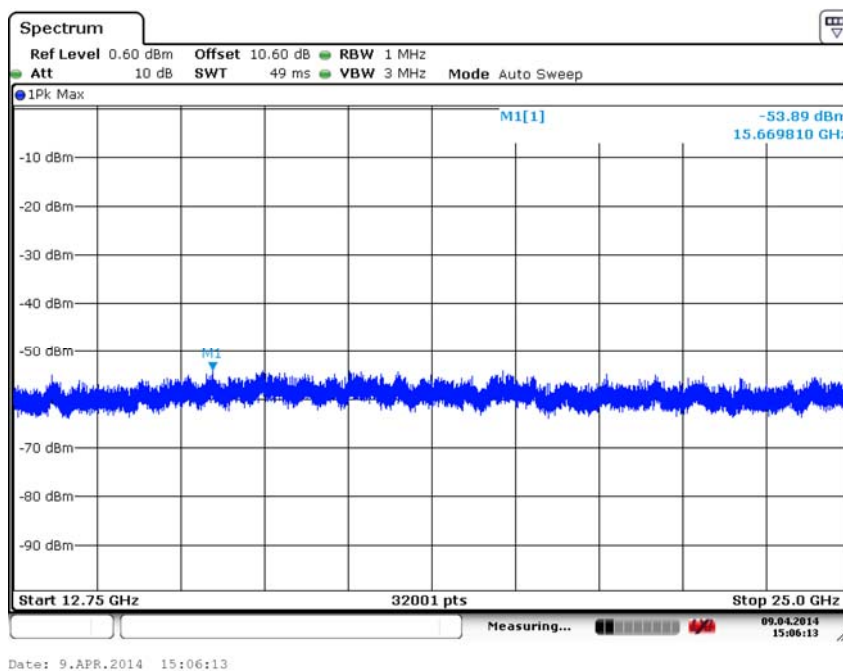
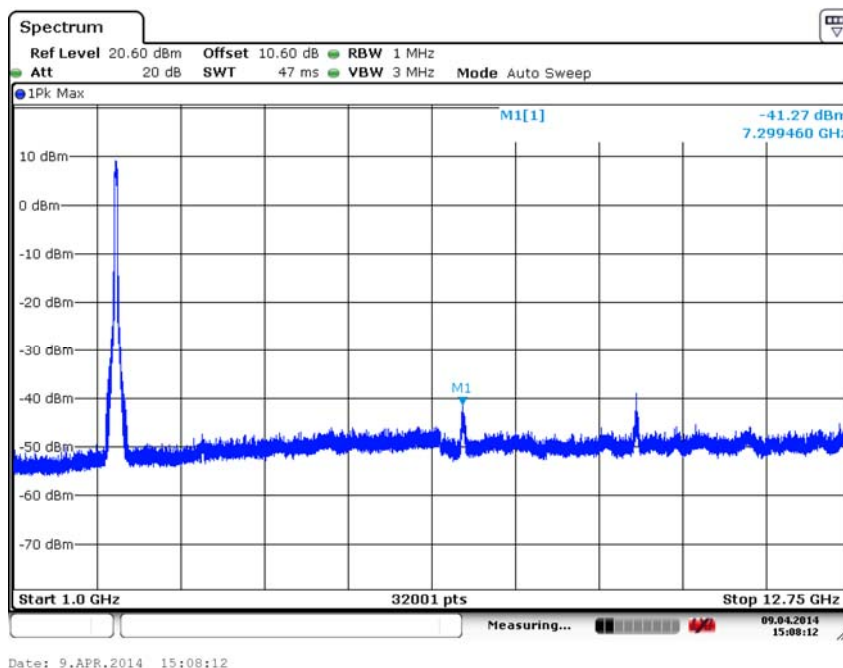




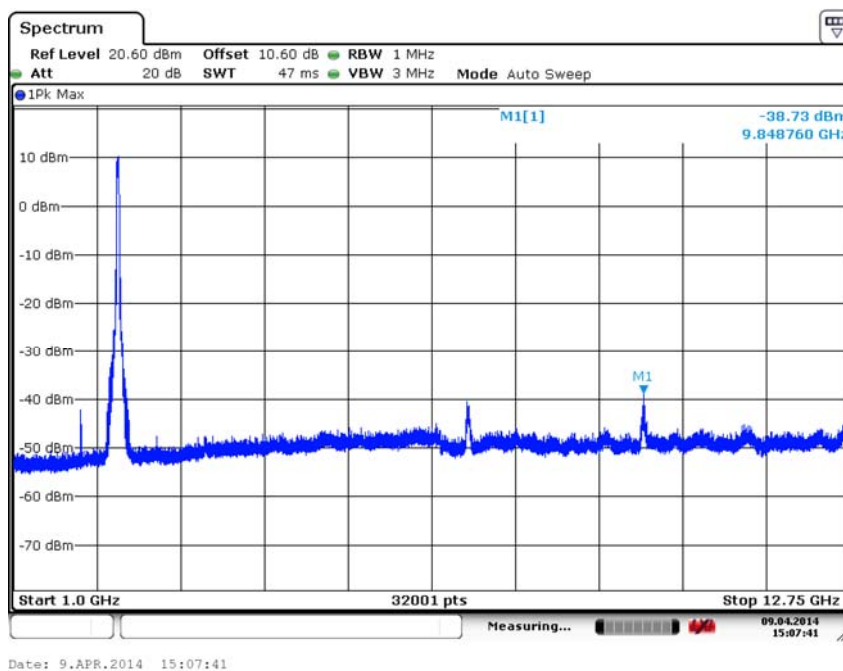
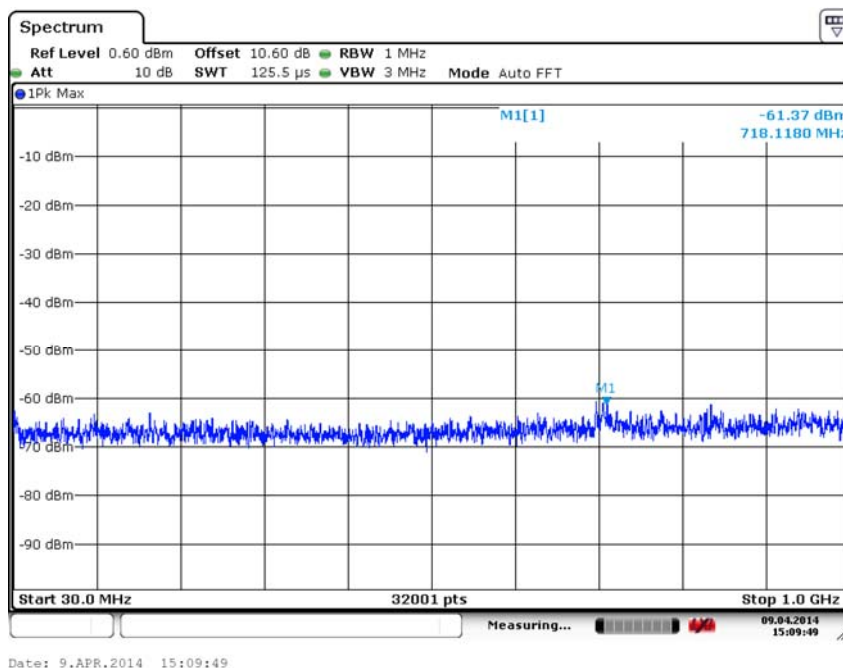
Carrier frequency (MHz): 2422  
Channel No.:3  
Test Mode: 802.11n(HT40)

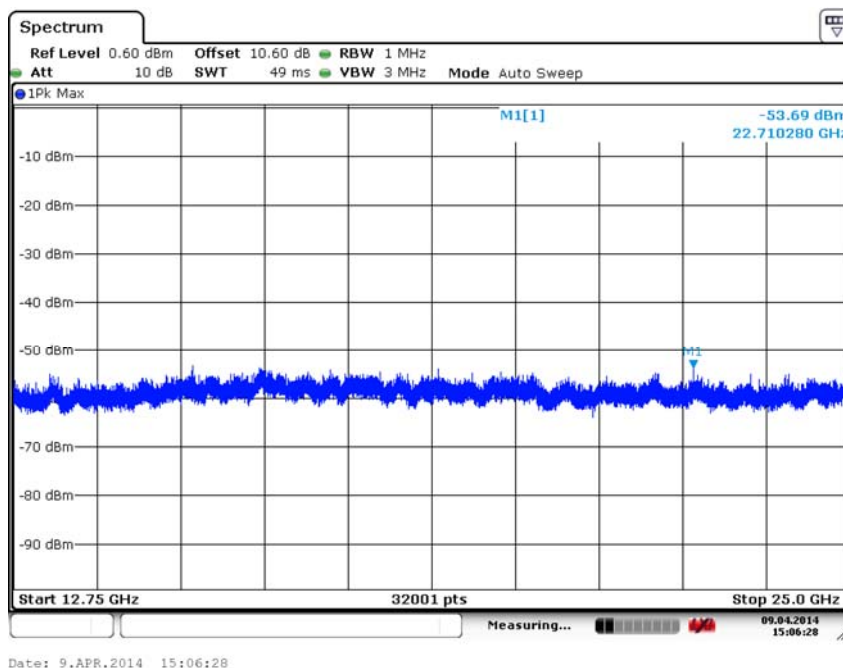






Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11n(HT40)





Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11n(HT40)

## 2.2.5 Spurious Radiated Emissions

### 2.2.5.1 Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 20°C        | 35%               | 101.4kPa |

### 2.2.5.2 Test Description

The measurement is made according to ANSI C63.4-2009 Section 8.3 and KDB 558074 D01 DTS Meas Guidance v03r01 Section 12.2, 13.3.

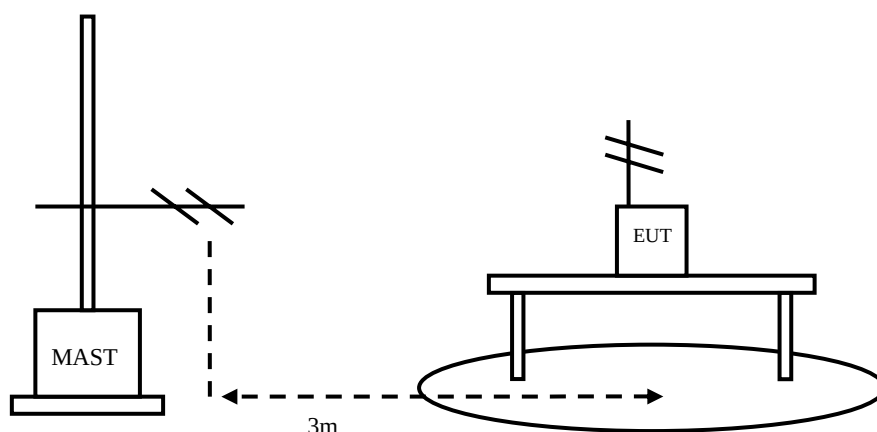
The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.

The radiated emissions measurements were made in a typical installation configuration.

Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz or above, using receive log period antenna HL562 or Ridge horn antenna HF906.

During the test, the height of receive antenna shall be moved from 1 to meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The results (reference to 2.2.5.4) shall be showed the worst case of the three orthogonal axes.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.



#### Test Procedures Used

KDB 558074 v03r01 – Section 12.2.5 (average power measurements)

KDB 558074 v03r01 – Section 12.2.4 (peak power measurements)

#### Test Settings

Average Field Strength Measurements per Section 12.2.5.1 of KDB 558074 v03r01

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be  $> 2 \times \text{span/RBW}$ )
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces

Peak Field Strength Measurements per Section 12.2.4 of KDB 558074 v03r01

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

#### 2.2.5.3 Test limit

FCC Part15.247(d):

... In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

FCC Part15.209:

Radiated Emission Limits

| Frequency of Emission(MHz)                                              | Limits     |                     |
|-------------------------------------------------------------------------|------------|---------------------|
|                                                                         | Detector   | Unit (dB $\mu$ V/m) |
| 30~88                                                                   | Quasi-peak | 40.0                |
| 88~216                                                                  | Quasi-peak | 43.5                |
| 216~960                                                                 | Quasi-peak | 46.0                |
| 960~1000                                                                | Quasi-peak | 54.0                |
| 1000~5th harmonic of the highest frequency or 40GHz, whichever is lower | Average    | 54.0                |
|                                                                         | Peak       | 74.0                |

FCC Part15.35(b):

..., there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit....

Used conversion factor: Limit (dB $\mu$ V/m) = 20 log (Limit ( $\mu$ V/m)/1 $\mu$ V/m)

#### 2.2.5.4 Test result

A “reference path loss” is established and the  $A_{Rpl}$  is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

Result=  $P_{mea} + A_{Rpl}$

The worst case attitude: The mobile lay down.

For 802.11b

| Frequency(MHz) | Result(dBuV/m) | A <sub>Rpl</sub> (dB) | P <sub>mea</sub> (dBuV/m) | Polarity |
|----------------|----------------|-----------------------|---------------------------|----------|
| 37.43          | 12.3           | 15.7                  | -3.40                     | Vertical |
| 65.49          | 17.1           | 6.2                   | 10.90                     | Vertical |
| 79.52          | 13.7           | 7.6                   | 6.10                      | Vertical |
| 174.55         | 7.0            | 7.7                   | -0.70                     | Vertical |
| 184.17         | 25.9           | 7.9                   | 18.00                     | Vertical |
| 943.89         | 23.4           | 24.4                  | -1.00                     | Vertical |

For 802.11g

| Frequency(MHz) | Result(dBuV/m) | A <sub>Rpl</sub> (dB) | P <sub>mea</sub> (dBuV/m) | Polarity |
|----------------|----------------|-----------------------|---------------------------|----------|
| 39.82          | 12.7           | 15.8                  | -3.10                     | Vertical |
| 64.79          | 15.3           | 6.1                   | 9.20                      | Vertical |
| 85.41          | 15.8           | 8.0                   | 7.80                      | Vertical |
| 174.55         | 7.2            | 7.7                   | -0.50                     | Vertical |
| 184.17         | 26.0           | 7.9                   | 18.10                     | Vertical |
| 897.80         | 22.7           | 23.9                  | -1.20                     | Vertical |

For 802.11n(HT20)

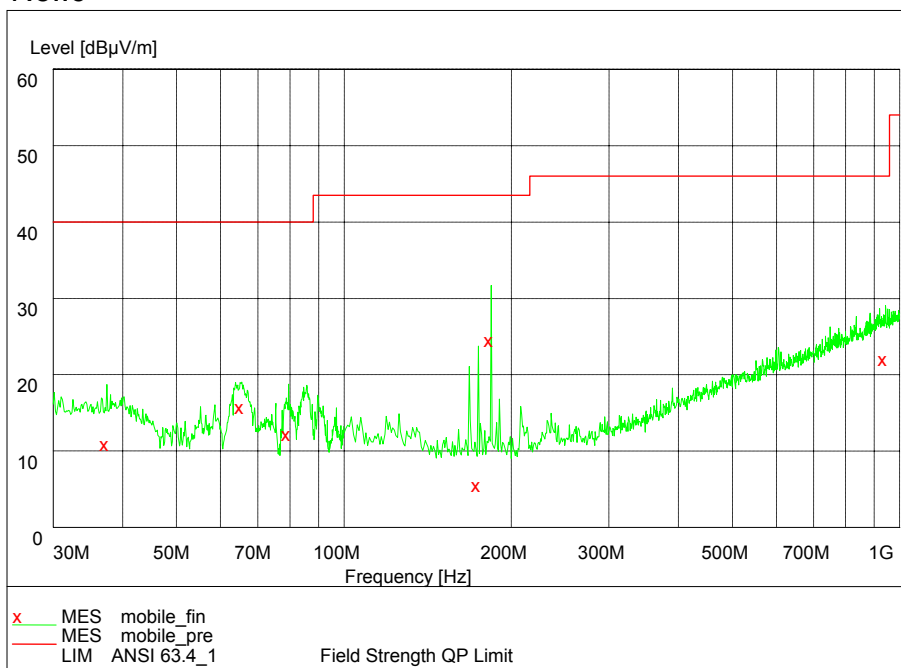
| Frequency(MHz) | Result(dBuV/m) | A <sub>Rpl</sub> (dB) | P <sub>mea</sub> (dBuV/m) | Polarity |
|----------------|----------------|-----------------------|---------------------------|----------|
| 65.21          | 17.8           | 6.1                   | 11.70                     | Vertical |
| 85.83          | 16.2           | 8.0                   | 8.20                      | Vertical |
| 168.14         | 12.7           | 7.4                   | 5.30                      | Vertical |
| 174.55         | 7.0            | 7.7                   | -0.70                     | Vertical |
| 184.17         | 26.4           | 7.9                   | 18.50                     | Vertical |
| 949.90         | 23.4           | 24.4                  | -1.00                     | Vertical |

For 802.11n(HT40)

| Frequency(MHz) | Result(dBuV/m) | A <sub>Rpl</sub> (dB) | P <sub>mea</sub> (dBuV/m) | Polarity |
|----------------|----------------|-----------------------|---------------------------|----------|
| 65.35          | 17.4           | 6.1                   | 11.30                     | Vertical |
| 85.69          | 15.7           | 8.0                   | 7.70                      | Vertical |
| 168.14         | 13.4           | 7.4                   | 6.00                      | Vertical |
| 174.55         | 7.0            | 7.7                   | -0.70                     | Vertical |
| 184.17         | 26.0           | 7.9                   | 18.10                     | Vertical |
| 872.75         | 22.3           | 23.5                  | -1.20                     | Vertical |

Carrier frequency (MHz): 2437

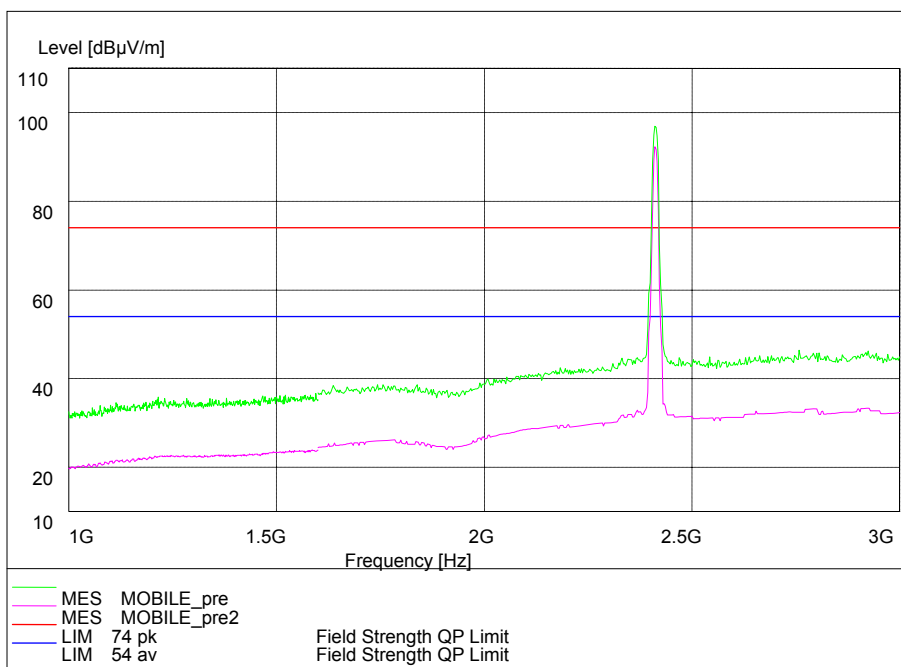
Channel No.:6



Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11b

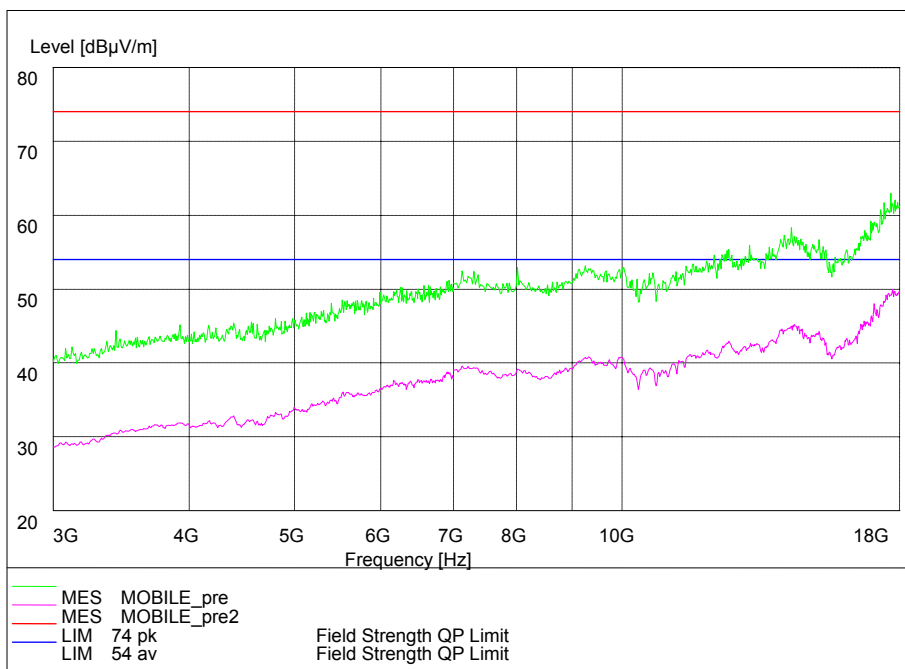


Frequency Range: 1GHz -3GHz

Detector: Av mode and PK mode

Modulation type: 802.11b

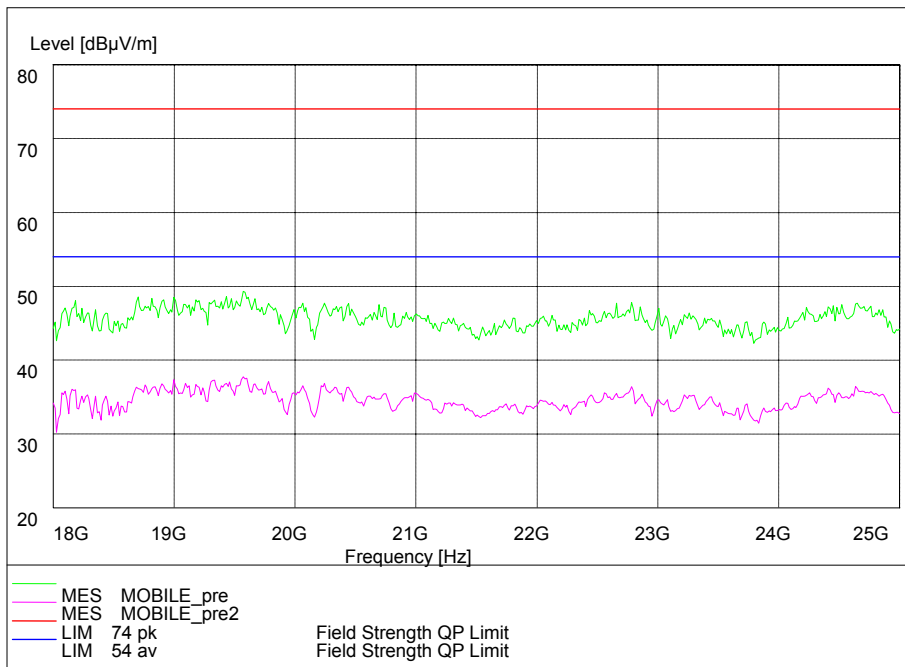




Frequency Range: 3GHz -18GHz

Detector: Av mode and PK mode

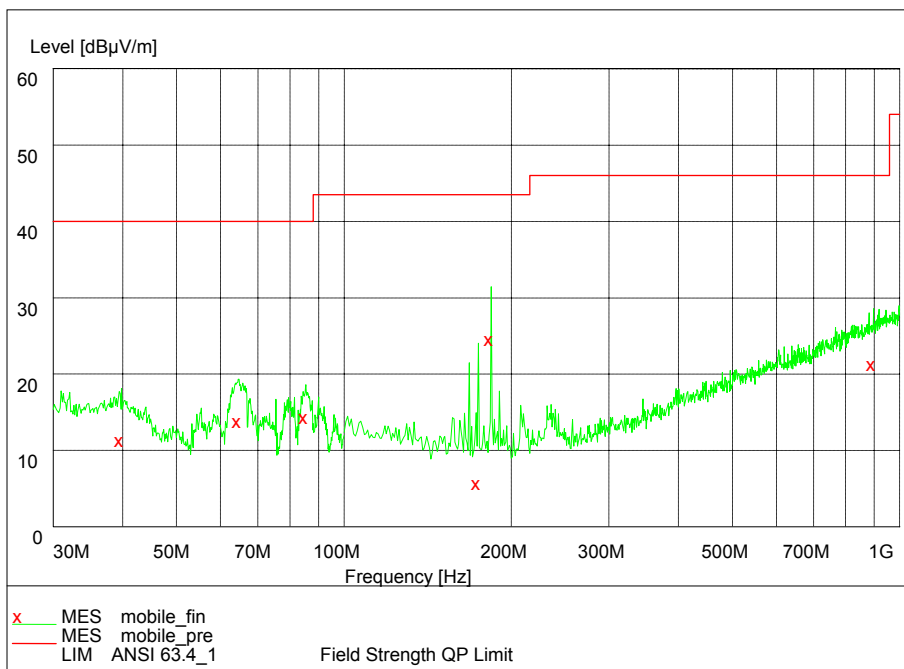
Modulation type: 802.11b



Frequency Range: 18GHz -25GHz

Detector: Av mode and PK mode

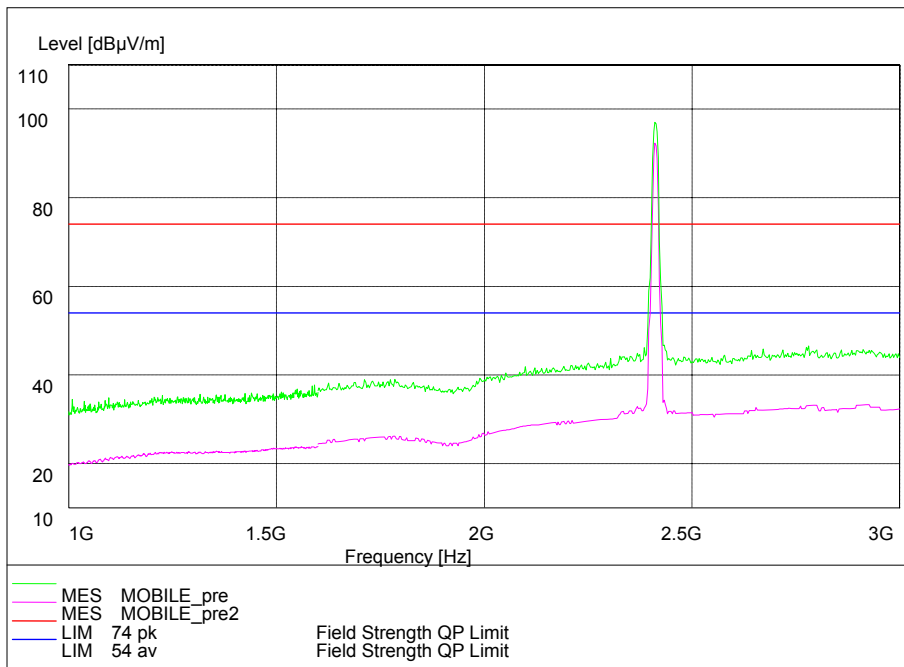
Modulation type: 802.11b



Frequency Range: 30MHz -1GHz

Detector: QP mode

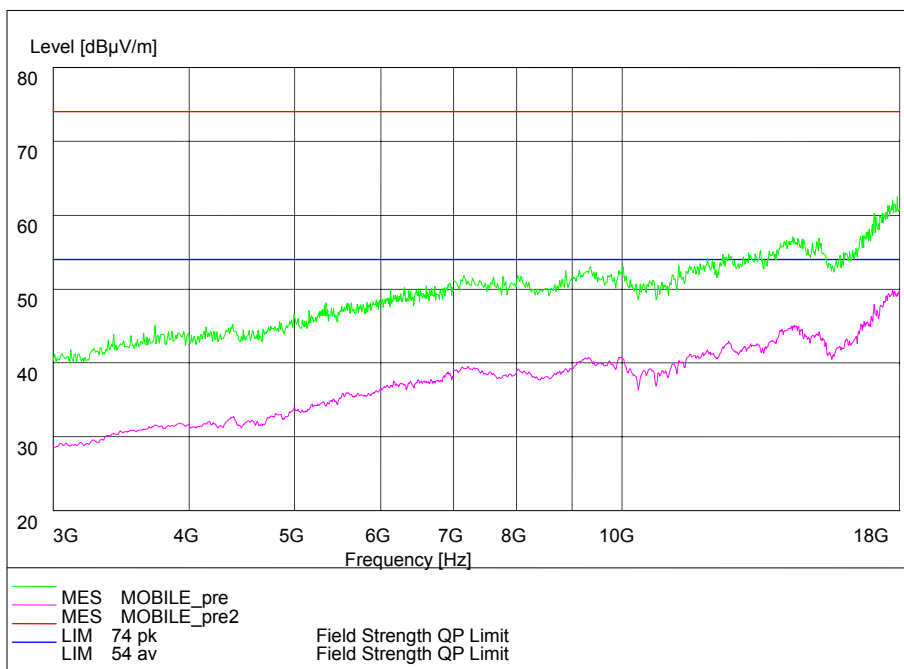
Modulation type: 802.11g



Frequency Range: 1GHz -3GHz

Detector: Av mode and PK mode

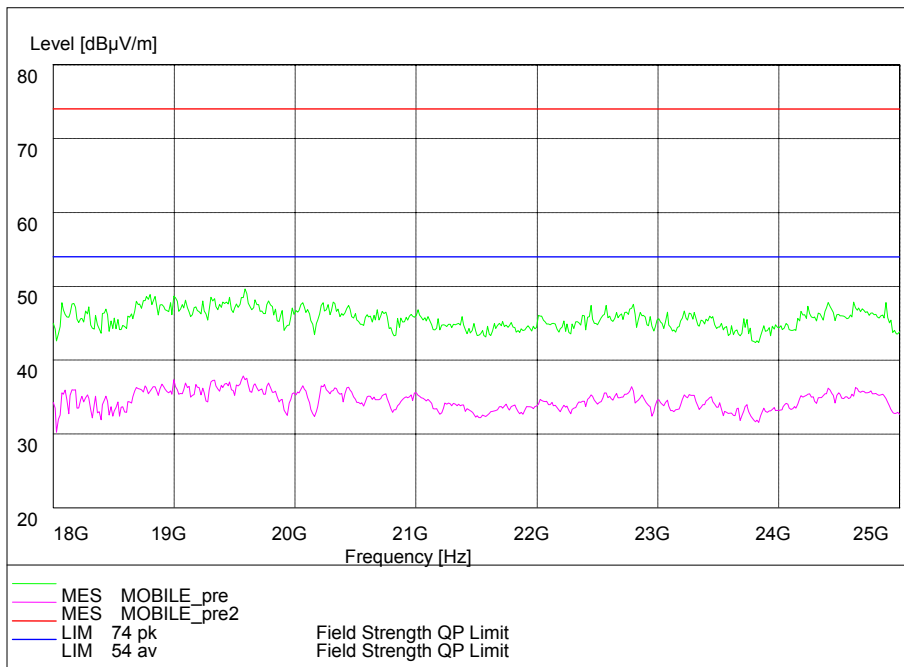
Modulation type: 802.11g



Frequency Range: 3GHz -18GHz

Detector: Av mode and PK mode

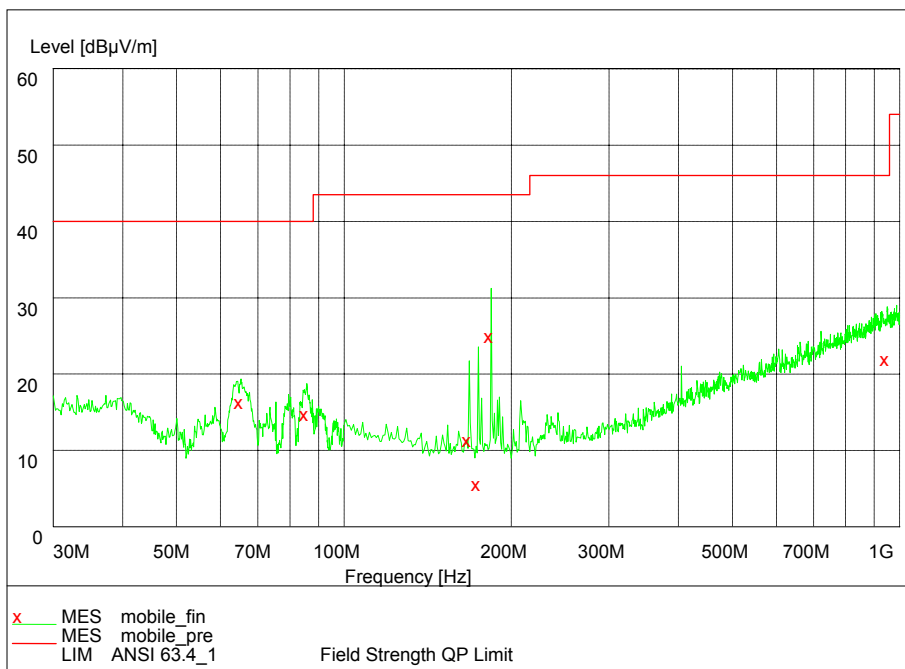
Modulation type: 802.11g



Frequency Range: 18GHz -25GHz

Detector: Av mode and PK mode

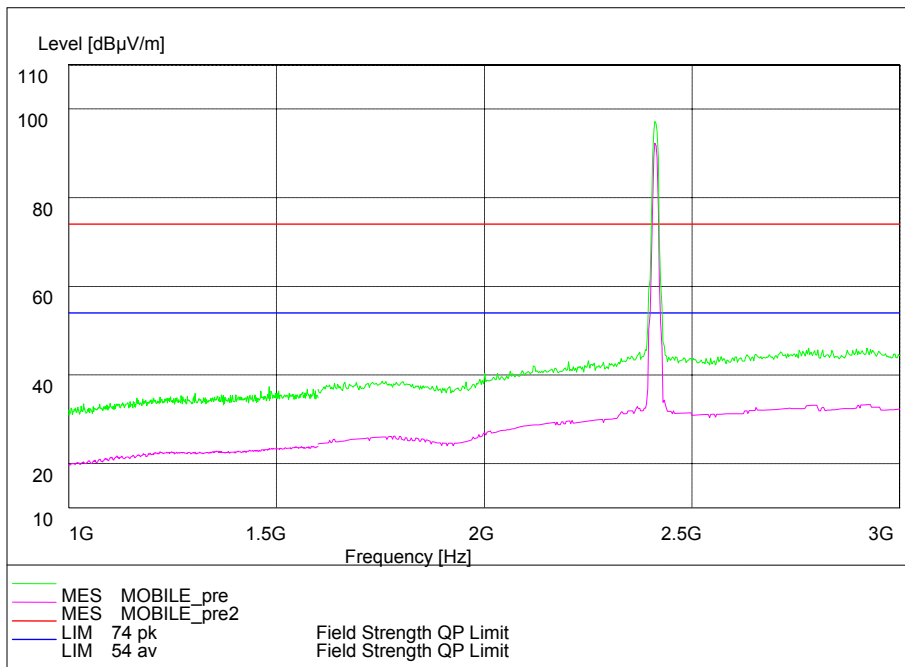
Modulation type: 802.11g



Frequency Range: 30MHz -1GHz

Detector: QP mode

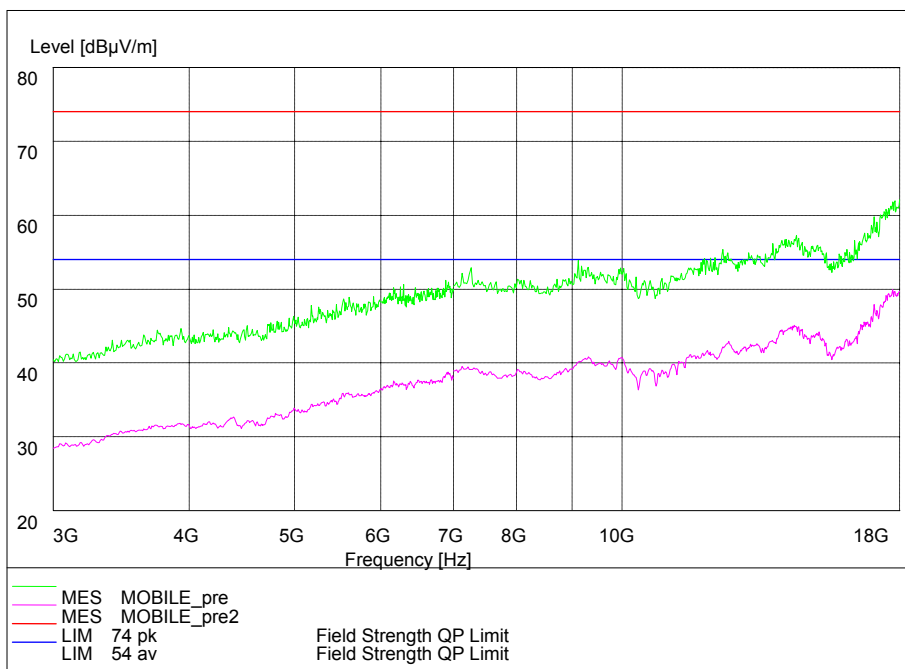
Test Mode: 802.11n(HT20)



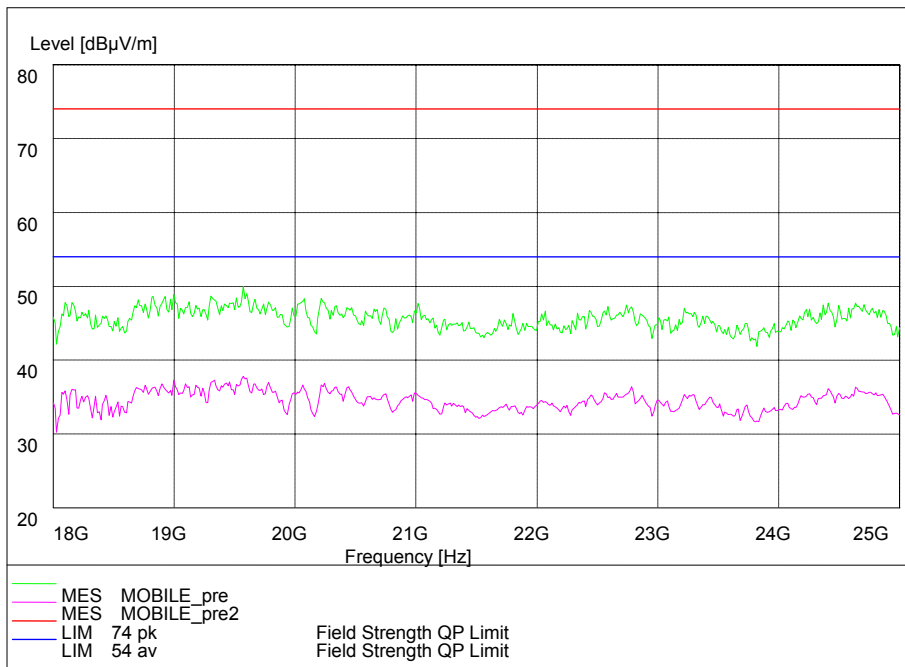
Frequency Range: 1GHz -3GHz

Detector: Av mode and PK mode

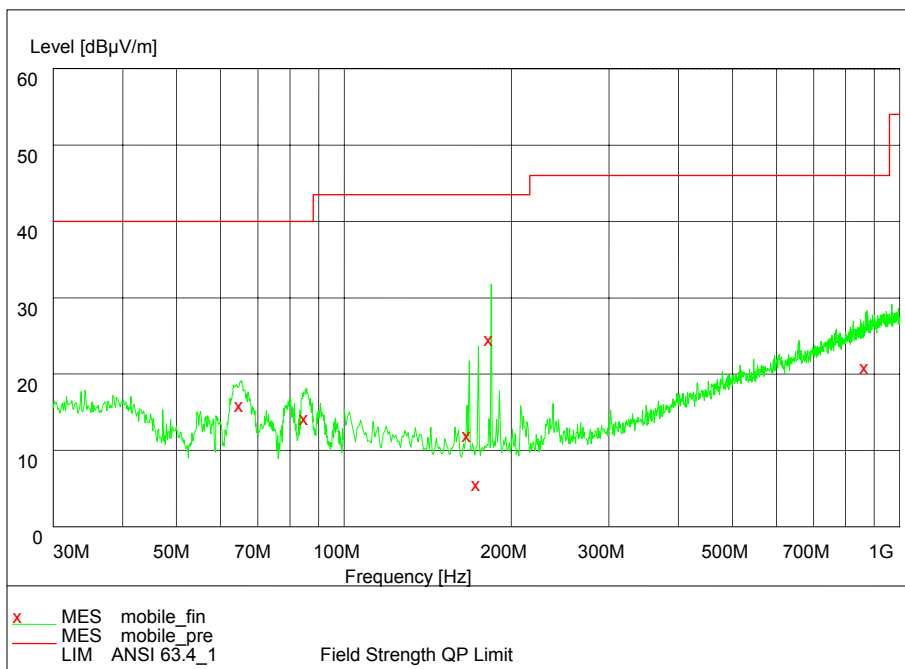
Modulation type: 802.11n(HT20)



Frequency Range: 3GHz -18GHz  
Detector: Av mode and PK mode  
Modulation type: 802.11n(HT20)



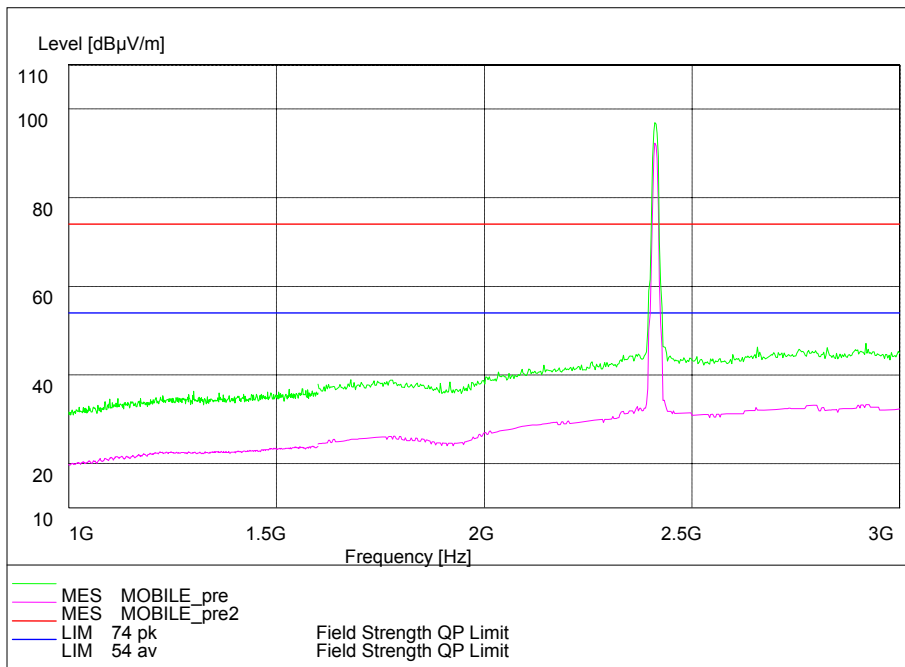
Frequency Range: 18GHz -25GHz  
Detector: Av mode and PK mode  
Modulation type: 802.11n(HT20)



Frequency Range: 30MHz -1GHz

Detector: QP mode

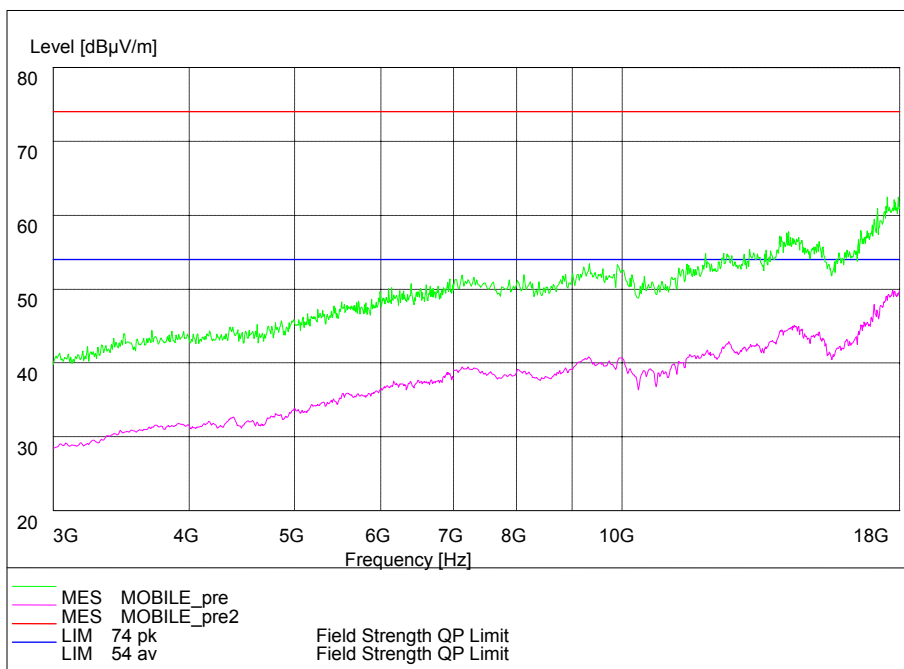
Modulation type: 802.11n(HT40)



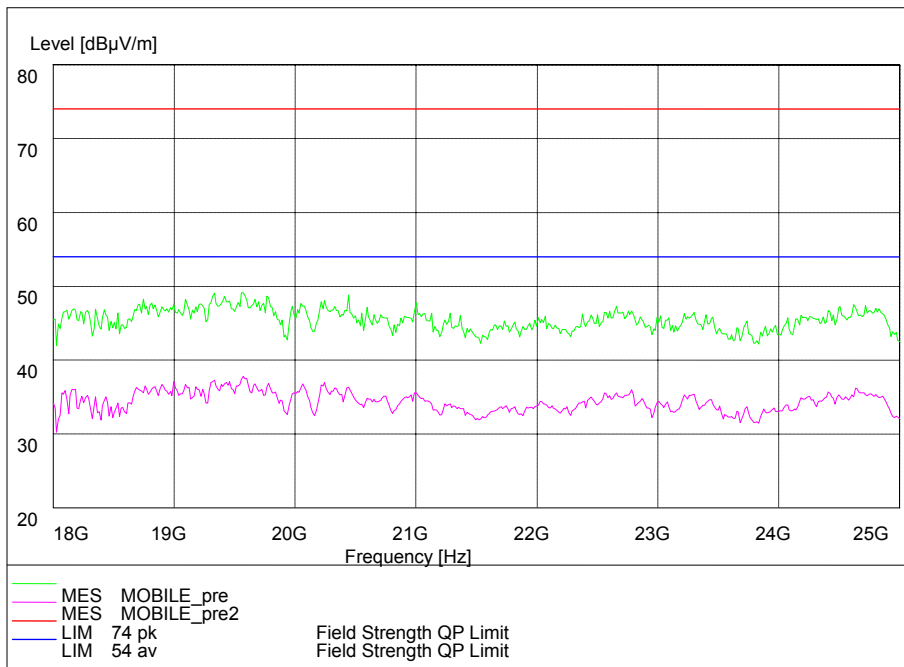
Frequency Range: 1GHz -3GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT40)



Frequency Range: 3GHz -18GHz  
Detector: Av mode and PK mode  
Modulation type: 802.11n(HT40)



Frequency Range: 18GHz -25GHz  
Detector: Av mode and PK mode  
Modulation type: 802.11n(HT40)

## 2.2.6 Band Edge Compliance

### 2.2.6.1 Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 22°C        | 40%               | 101.1kPa |

### 2.2.6.2 Test Description

The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 13.3.

#### 2.2.6.2.1 RF Conducted Measurement

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements.

The EUT was connected to the spectrum analyzer and WiFi test set via a power splitter with a known loss.

For the first measurement the EUT is set to transmit on the lowest channel (2412 MHz). The lower band edge is 2400 MHz.

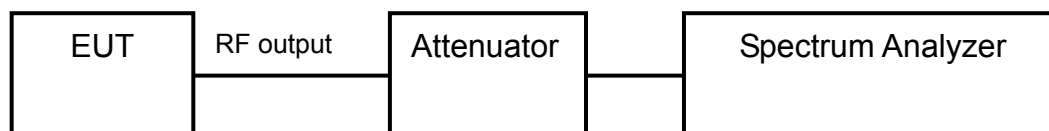
Analyzer settings:

- Detector: Peak
- RBW= 100 kHz
- VBW= 300 kHz

For the second measurement the EUT is set to transmit on the highest channel (2462MHz). The higher band edge is 2483.5 MHz.

Analyzer settings:

- Detector: Peak
- RBW= 100 kHz
- VBW= 300 kHz



#### 2.2.6.2.2 Radiated Measurement

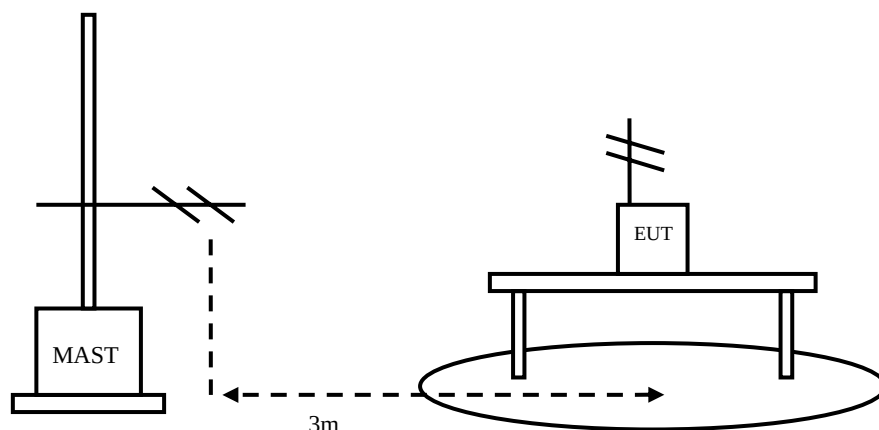
The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.



The radiated emissions measurements were made in a typical installation configuration.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The results (reference to 2.2.6.5) shall be showed the worst case of the three orthogonal axes.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.



#### Test Procedures Used

##### KDB 558074 v03r01 – Section 13.3 Integration method

The following procedures may be used to determine the peak or average field strength or power of an unwanted emission that is within 2 MHz of the authorized band edge. If a peak detector is utilized, use the procedure described in 13.2.1. Use the procedure described in 13.2.2 when using an average detector and the EUT can be configured to transmit continuously (i.e., duty cycle  $\geq 98\%$ ). Use the procedure described in 13.2.3 when using an average detector and the EUT cannot be configured to transmit continuously but the duty cycle is constant (i.e., duty cycle variations are less than  $\pm 2$  percent). Use the procedure described in 13.2.4 when using an average detector for those cases where the EUT cannot be configured to transmit continuously and the duty cycle is not constant (duty cycle variations equal or exceed 2 percent).

### 2.2.6.3 Test limit

FCC Part15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

### 2.2.6.4 Test result

#### 2.2.6.4.1 RF Conducted Measurement

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11b

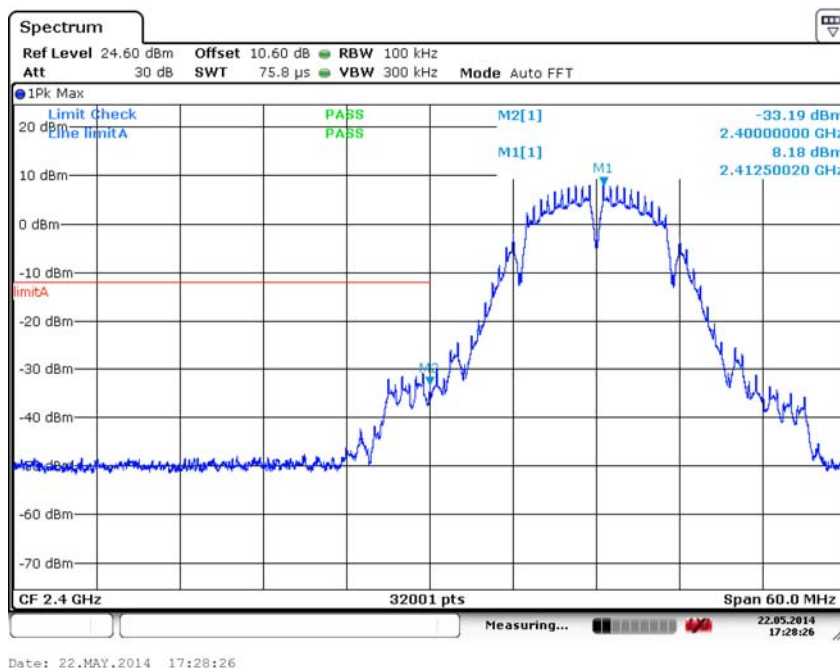
| Frequency<br>MHz | Measured value<br>dBm | Reference value<br>dBm | Limit<br>dBm |
|------------------|-----------------------|------------------------|--------------|
| 2400             | -33.19                | 8.18                   | -11.82       |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11b

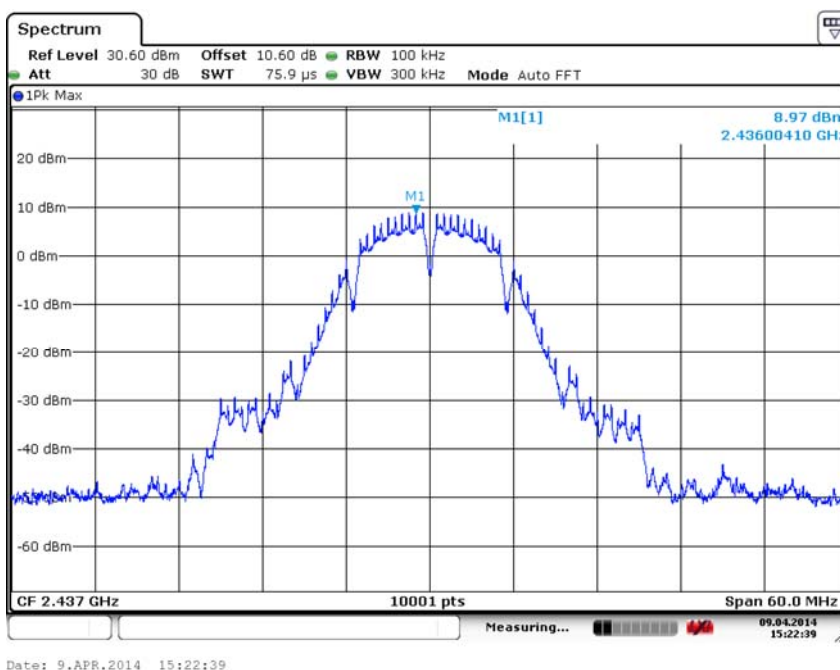
| Frequency<br>MHz | Measured value<br>dBm | Reference value<br>dBm | Limit<br>dBm |
|------------------|-----------------------|------------------------|--------------|
| 2483.5           | -46.53                | 9.11                   | -10.89       |



Carrier frequency (MHz): 2412

Channel No.:1

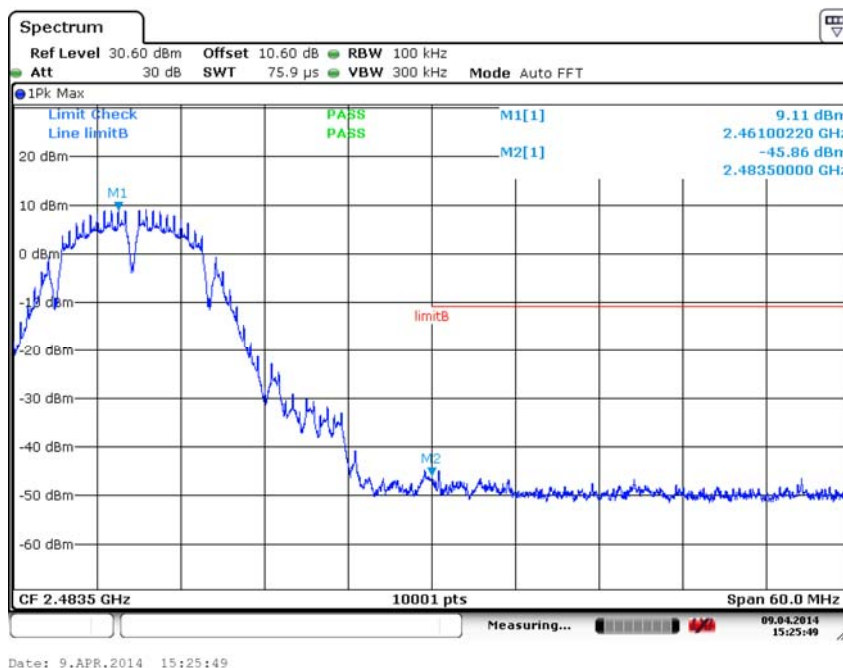
Test Mode: 802.11b



Carrier frequency (MHz): 2437

Channel No.:6

Test Mode: 802.11b



Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11b

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11g

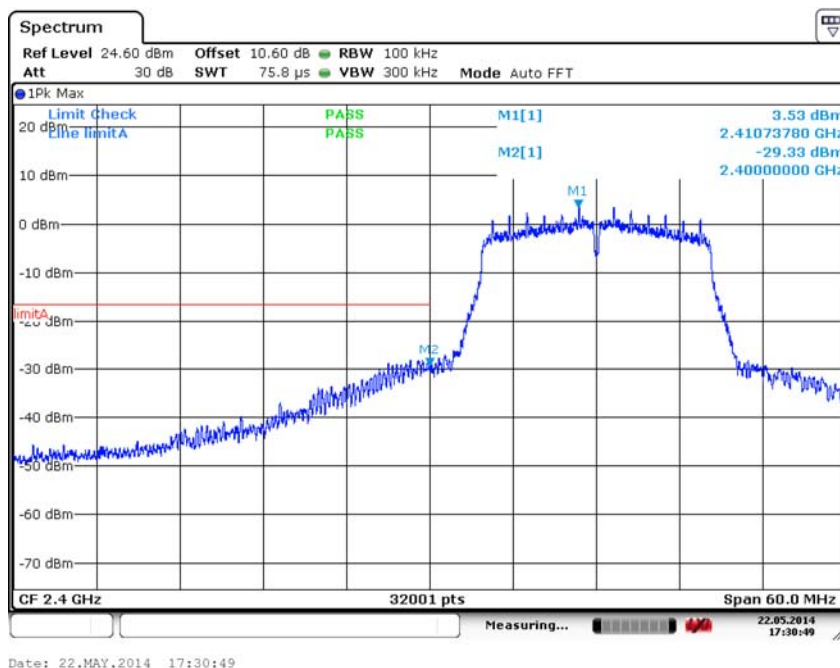
| Frequency<br>MHz | Measured value<br>dBm | Reference value<br>dBm | Limit<br>dBm |
|------------------|-----------------------|------------------------|--------------|
| 2400             | -29.33                | 3.53                   | -16.47       |

Carrier frequency (MHz): 2462

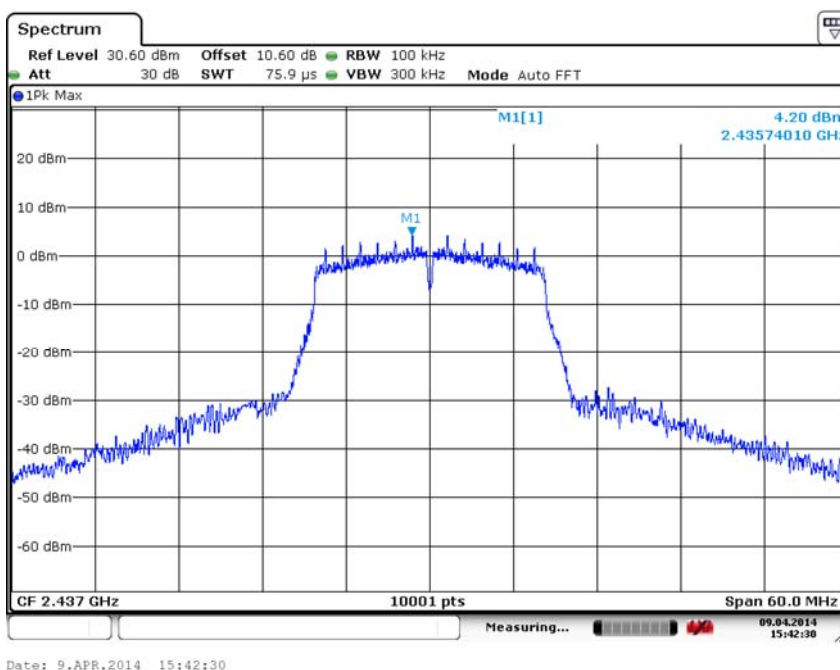
Channel No.:13

Test Mode: 802.11g

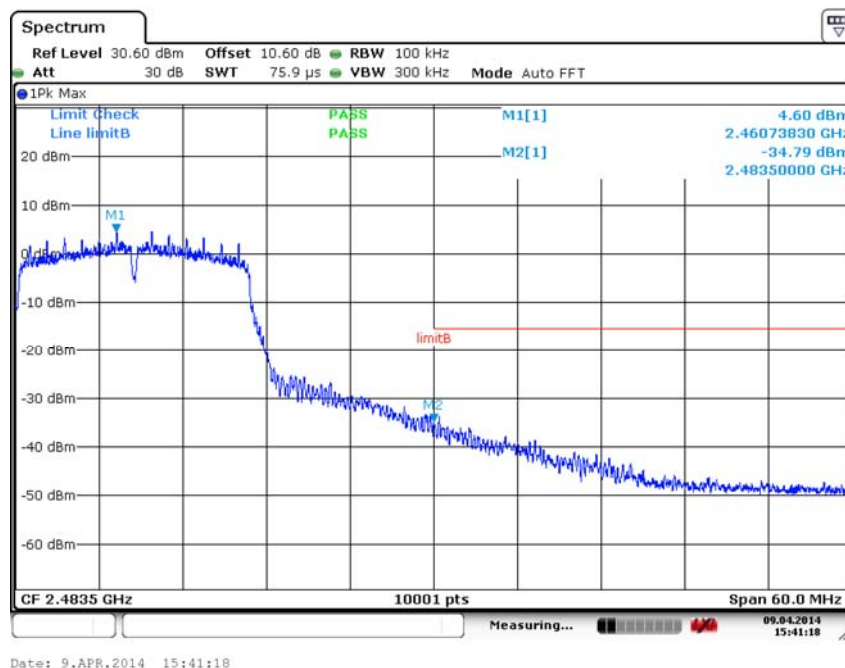
| Frequency<br>MHz | Measured value<br>dBm | Reference value<br>dBm | Limit<br>dBm |
|------------------|-----------------------|------------------------|--------------|
| 2483.5           | -34.79                | 4.60                   | -15.41       |



Carrier frequency (MHz): 2412  
Channel No.:1  
Test Mode: 802.11g



Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11g



Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11g

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11n(HT20)

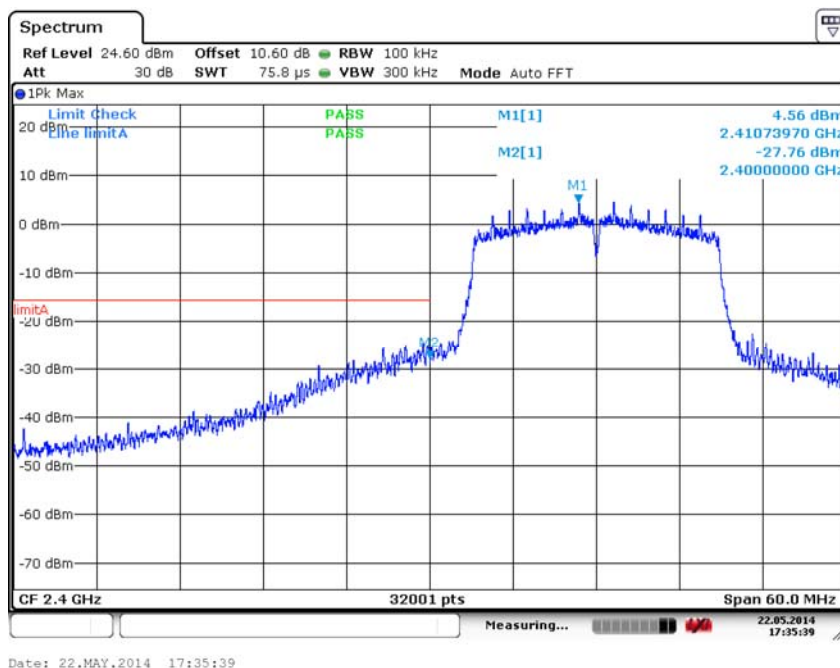
| Frequency<br>MHz | Measured value<br>dBm | Reference value<br>dBm | Limit<br>dBm |
|------------------|-----------------------|------------------------|--------------|
| 2400             | -27.76                | 4.56                   | -15.44       |

Carrier frequency (MHz): 2462

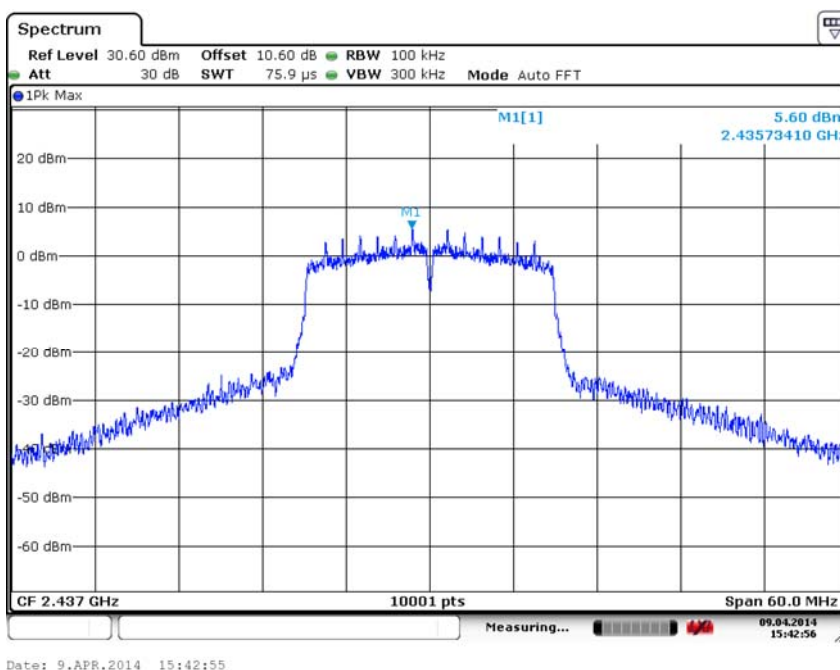
Channel No.:11

Test Mode: 802.11n(HT20)

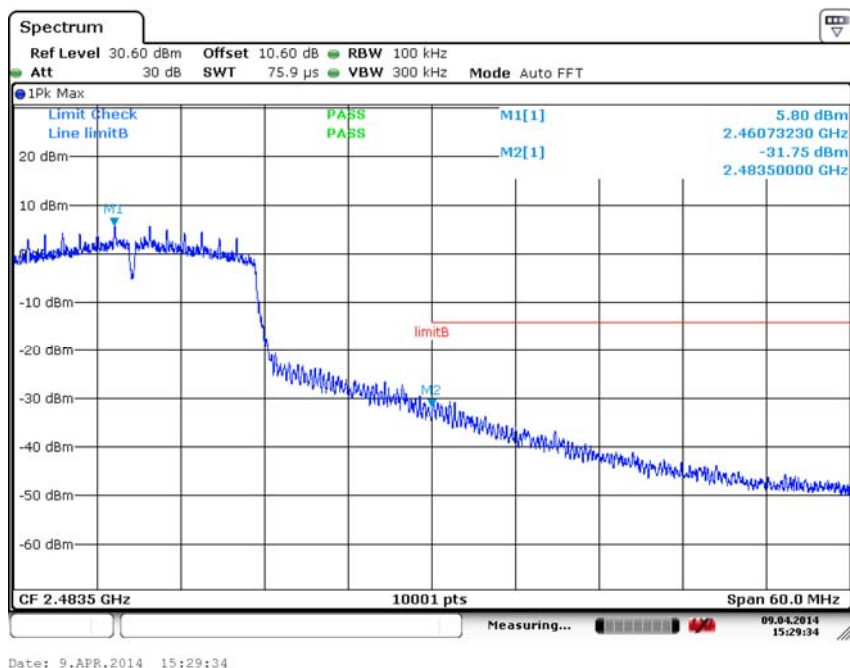
| Frequency<br>MHz | Measured value<br>dBm | Reference value<br>dBm | Limit<br>dBm |
|------------------|-----------------------|------------------------|--------------|
| 2483.5           | -31.75                | 5.80                   | -14.20       |



Carrier frequency (MHz): 2412  
Channel No.:1  
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11n(HT20)

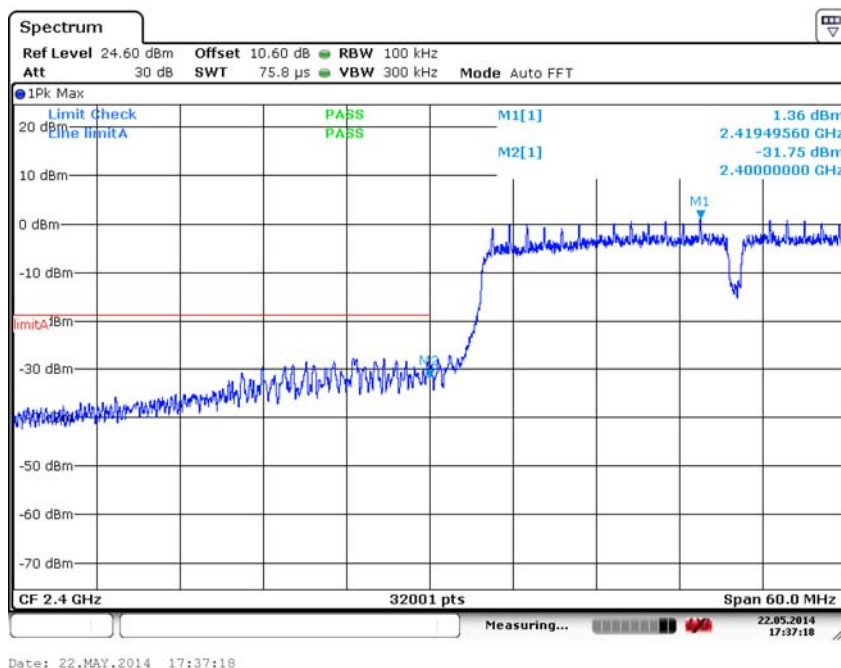
Carrier frequency (MHz): 2422  
Channel No.:3  
Test Mode: 802.11n(HT40)

| Frequency<br>MHz | Measured value<br>dBm | Reference value<br>dBm | Limit<br>dBm |
|------------------|-----------------------|------------------------|--------------|
| 2400             | -31.75                | 1.36                   | -18.64       |

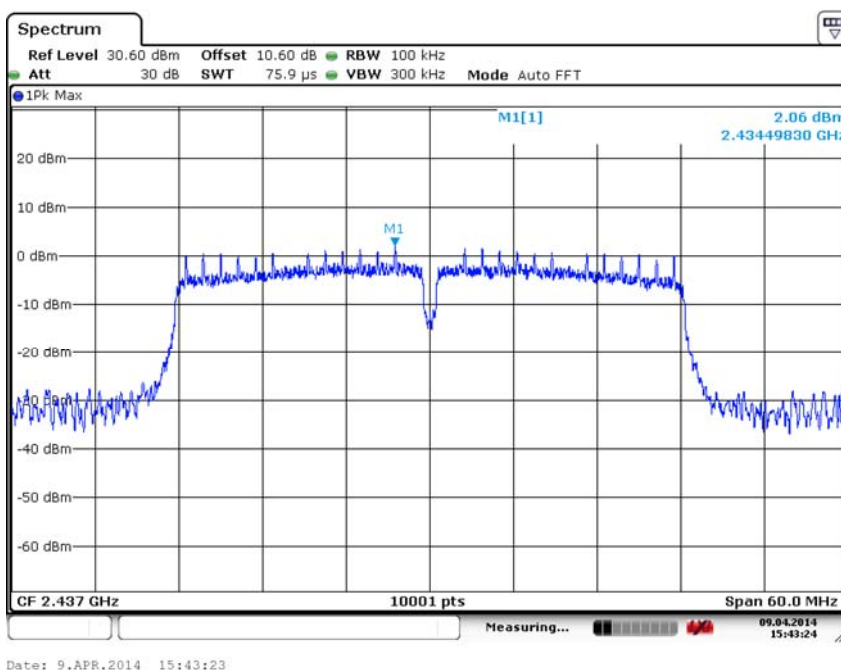
Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11n(HT40)

| Frequency<br>MHz | Measured value<br>dBm | Reference value<br>dBm | Limit<br>dBm |
|------------------|-----------------------|------------------------|--------------|
| 2483.5           | -30.07                | 2.21                   | -17.79       |

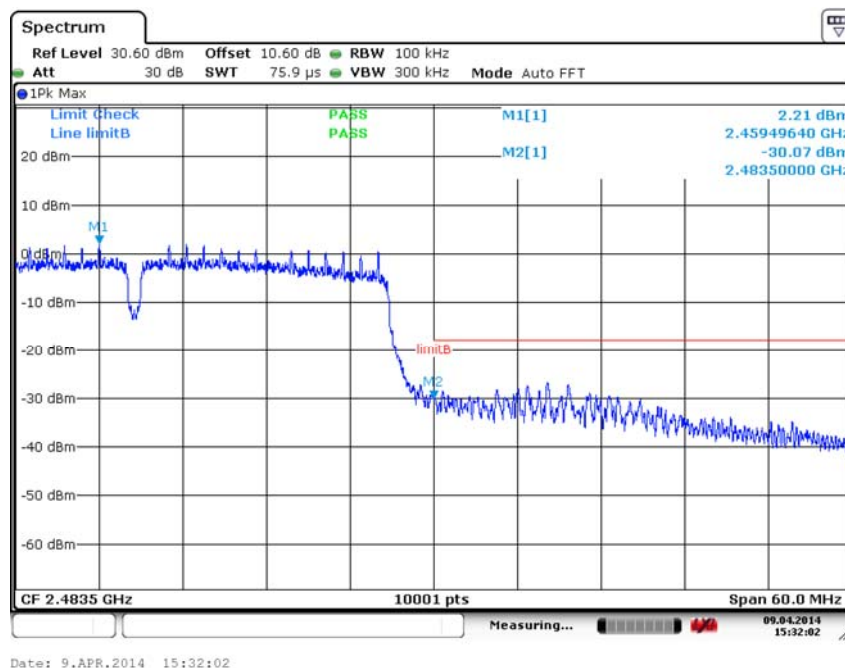




Carrier frequency (MHz): 2422  
Channel No.:3  
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2437  
Channel No.:6  
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2462  
Channel No.:11  
Test Mode: 802.11n(HT40)

## 2.2.6.4.2 Radiated Emission Band Edge

The worst case attitude: The mobile lay down.

Peak detector: RBW=1MHz,VBW=3MHz,sweep time= auto;  
Average detector: RBW=1MHz,VBW=3MHz,sweep time=auto;

Carrier frequency (MHz): 2412  
Channel No.:1  
Test Mode: 802.11b  
Polarity:Vertical  
Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 105.36                 | 71.36                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 57.54                  | 23.54                | -16.46          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11b

Polarity:Horizontal

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 98.82                  | 64.82                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 55.97                  | 21.97                | -18.03          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11b

Polarity:Vertical

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 93.54                  | 59.54                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 36.41                  | 2.41                 | -17.59          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11b

Polarity:Horizontal

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 87.83                  | 53.83                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 37.87                  | 3.87                 | -16.13          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11b

Polarity:Vertical

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 103.63                 | 69.63                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 56.98                  | 22.98                | -17.02          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11b

Polarity:Horizontal

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 98.31                  | 64.31                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 54.67                  | 20.67                | -19.33          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11b

Polarity:Vertical

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 92.46                  | 58.46                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 40.43                  | 6.43                 | -13.57          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11b

Polarity:Horizontal

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 89.28                  | 55.28                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 37.43                  | 3.43                 | -16.57          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11g

Polarity: Vertical

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 103.74                 | 69.74                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 58.25                  | 24.25                | -15.75          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11g

Polarity:Horizontal

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 97.35                  | 63.35                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 58.38                  | 24.38                | -15.62          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11g

Polarity: Vertical

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 91.27                  | 57.27                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 44.31                  | 10.31                | -9.69           | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11g

Polarity:Horizontal

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 86.37                  | 52.37                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 43.85                  | 9.85                 | -10.15          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11g

Polarity: Vertical

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 103.86                 | 69.86                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 58.78                  | 24.78                | -15.22          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11g

Polarity:Horizontal

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 98.98                  | 64.98                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 58.34                  | 24.34                | -15.66          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11g

Polarity: Vertical

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 90.64                  | 56.64                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 40.31                  | 6.31                 | -13.69          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11g

Polarity:Horizontal

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 86.13                  | 52.13                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 38.57                  | 4.57                 | -15.43          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11n(HT20)

Polarity: Vertical

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 102.74                 | 68.74                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 57.52                  | 23.52                | -16.48          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11n(HT20)

Polarity:Horizontal

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 97.68                  | 63.68                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 56.41                  | 22.41                | -17.59          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11n(HT20)

Polarity: Vertical

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 92.63                  | 58.63                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 41.65                  | 7.65                 | -12.35          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2412

Channel No.:1

Test Mode: 802.11n(HT20)

Polarity:Horizontal

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2412            | 88.34                  | 54.34                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 40.53                  | 6.53                 | -13.47          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11n(HT20)

Polarity: Vertical

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 97.24                  | 63.24                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 58.35                  | 24.35                | -15.65          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11n(HT20)

Polarity:Horizontal

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 101.81                 | 67.81                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 58.76                  | 24.76                | -15.24          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11n(HT20)

Polarity: Vertical

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 90.23                  | 56.23                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 39.47                  | 5.47                 | -14.53          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11n(HT20)

Polarity:Horizontal

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 88.12                  | 54.12                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 38.35                  | 4.35                 | -15.65          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2422

Channel No.:3

Test Mode: 802.11n(HT40)

Polarity: Vertical

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2422            | 101.36                 | 67.36                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 57.86                  | 23.86                | -16.14          | 74.00          | 8.90            | 25.10               |



Carrier frequency (MHz): 2422

Channel No.:3

Test Mode: 802.11n(HT40)

Polarity:Horizontal

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2422            | 102.46                 | 68.46                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 58.63                  | 24.63                | -15.37          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2422

Channel No.:3

Test Mode: 802.11n(HT40)

Polarity: Vertical

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2422            | 91.87                  | 57.87                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 38.43                  | 4.43                 | -15.57          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2422

Channel No.:3

Test Mode: 802.11n(HT40)

Polarity:Horizontal

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2422            | 90.31                  | 56.31                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2390            | 39.84                  | 5.84                 | -14.16          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11n(HT40)

Polarity: Vertical

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 101.87                 | 67.87                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 59.39                  | 25.39                | -14.61          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11n(HT40)

Polarity:Horizontal

Detector: Peak

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 99.98                  | 65.98                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 58.76                  | 24.76                | -15.24          | 74.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.:11

Test Mode: 802.11n(HT40)

Polarity: Vertical

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 90.43                  | 56.43                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 38.35                  | 4.35                 | -15.65          | 54.00          | 8.90            | 25.10               |

Carrier frequency (MHz): 2462

Channel No.11

Test Mode: 802.11n(HT40)

Polarity:Horizontal

Detector: Average

| No | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | cable loss (dB) | antenna factor (dB) |
|----|-----------------|------------------------|----------------------|-----------------|----------------|-----------------|---------------------|
| 1  | 2462            | 89.11                  | 55.11                | N/A             | N/A            | 8.90            | 25.10               |
| 2  | 2483.5          | 38.76                  | 4.76                 | -15.24          | 54.00          | 8.90            | 25.10               |

## 2.2.7 AC Power line Conducted Emission

### 2.2.7.1 Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 20°C        | 35%               | 101.4kPa |

### 2.2.7.2 Test limit

FCC Part15.207

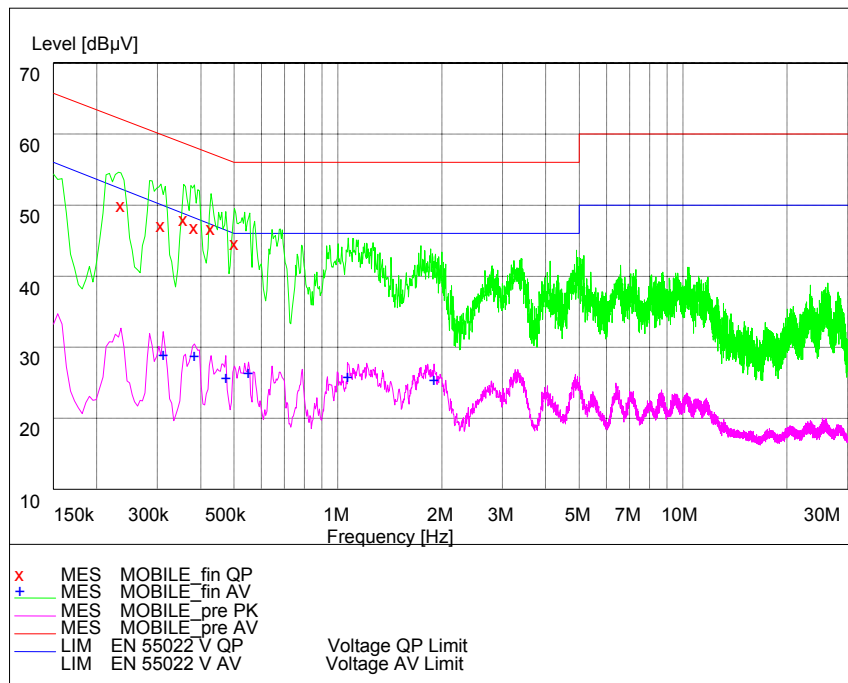
| Frequency of Emission<br>(MHz) | Conducted Limit (dBuV) |            |
|--------------------------------|------------------------|------------|
|                                | Quasi-peak             | Average    |
| 0.15-0.5                       | 66 to 56 *             | 56 to 46 * |
| 0.5-5                          | 56                     | 46         |
| 5-30                           | 60                     | 50         |

\* Decreases with the logarithm of the frequency.

The measurement is made according to ANSI C63.4-2009

### 2.2.7.3 Test result

#### Noise Level of the Measuring Instrument



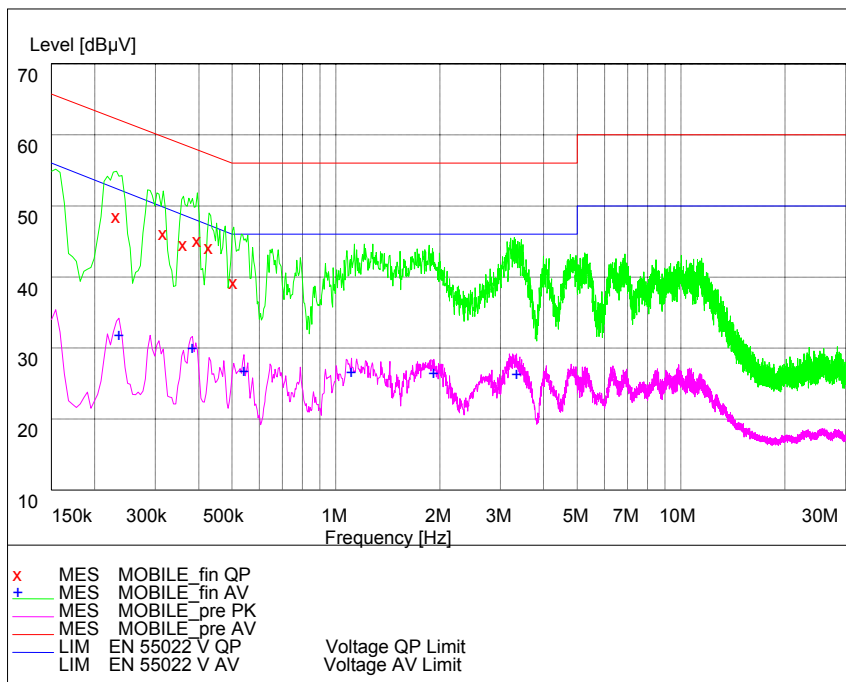
L Line

#### MEASUREMENT RESULT: "MOBILE\_fin AV"

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.312000         | 30.50         | 20.2         | 50            | 19.4         | ---  | --- |
| 0.384000         | 30.40         | 20.2         | 48            | 17.8         | ---  | --- |
| 0.474000         | 27.20         | 20.3         | 46            | 19.2         | ---  | --- |
| 0.550500         | 28.00         | 20.3         | 46            | 18.0         | ---  | --- |
| 1.068000         | 27.40         | 20.2         | 46            | 18.6         | ---  | --- |
| 1.900500         | 27.00         | 20.2         | 46            | 19.0         | ---  | --- |

#### MEASUREMENT RESULT: "MOBILE\_fin QP"

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.235500         | 51.60         | 20.2         | 62            | 10.5         | ---  | --- |
| 0.307500         | 48.90         | 20.2         | 60            | 11.1         | ---  | --- |
| 0.357000         | 49.60         | 20.2         | 59            | 9.1          | ---  | --- |
| 0.384000         | 48.50         | 20.2         | 58            | 9.7          | ---  | --- |
| 0.429000         | 48.30         | 20.3         | 57            | 9.0          | ---  | --- |
| 0.501000         | 46.30         | 20.3         | 56            | 9.7          | ---  | --- |



N Line

**MEASUREMENT RESULT: "MOBILE\_fin AV"**

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.235500         | 33.40         | 20.2         | 52            | 18.9         | ---  | --- |
| 0.384000         | 31.60         | 20.2         | 48            | 16.6         | ---  | --- |
| 0.541500         | 28.40         | 20.3         | 46            | 17.6         | ---  | --- |
| 1.108500         | 28.20         | 20.2         | 46            | 17.8         | ---  | --- |
| 1.923000         | 28.00         | 20.2         | 46            | 18.0         | ---  | --- |
| 3.336000         | 27.90         | 20.3         | 46            | 18.1         | ---  | --- |

**MEASUREMENT RESULT: "MOBILE\_fin QP"**

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.231000         | 50.20         | 20.2         | 62            | 12.0         | ---  | --- |
| 0.316500         | 47.80         | 20.2         | 60            | 11.9         | ---  | --- |
| 0.361500         | 46.20         | 20.2         | 59            | 12.4         | ---  | --- |
| 0.397500         | 46.80         | 20.2         | 58            | 11.0         | ---  | --- |
| 0.429000         | 45.70         | 20.3         | 57            | 11.5         | ---  | --- |
| 0.505500         | 40.90         | 20.3         | 56            | 15.1         | ---  | --- |

### 2.3. Measurement Uncertainty

| Items                              | Uncertainty    |        |
|------------------------------------|----------------|--------|
| Occupied Bandwidth                 | 3kHz           |        |
| Peak power output                  | 0.67dB         |        |
| Band edge compliance               | 1.20dB         |        |
| Transmitter Power Spectral Density | 0.75dB         |        |
| Spurious emissions                 | 30MHz~1GHz     | 2.83dB |
|                                    | 1GHz~12.75GHz  | 2.50dB |
|                                    | 12.75GHz~25GHz | 2.75dB |

## 2.4. List of test equipment

| No. | Name/Model                                     | Manufacturer  | S/N        | Cal Due date |
|-----|------------------------------------------------|---------------|------------|--------------|
| 1.  | Spectrum Analyzer FSV                          | ROHDE&SCHWARZ | 101065     | 2014.8       |
| 2.  | Signal Generator MG3700A                       | Anritsu       | 6200677084 | 2014.8       |
| 3.  | Attenuation 6810.17.B                          | HUBER+SUHNER  | 768710     | 2014.8       |
| 4.  | Cable 104EA                                    | SUCOFLEX      | 9272/4EA   | 2014.8       |
| 5.  | Cable 104EA                                    | SUCOFLEX      | 9266/4EA   | 2014.8       |
| 6.  | 12.65m×8.03m×7.50m<br>Fully-Anechoic Chamber   | FRANKONIA     | ----       | ----         |
| 7.  | 23.18m×16.88m×9.60m<br>Semi-Anechoic Chamber   | FRANKONIA     | ---        | ----         |
| 8.  | Turn table Diameter:1m                         | HD            | ----       | ----         |
| 9.  | Turn table Diameter:5m                         | HD            | ----       | ----         |
| 10. | Antenna master FAC(MA4.0)                      | MATURO        | ----       | ----         |
| 11. | Antenna master SAC(MA4.0)                      | MATURO        | ----       | ----         |
| 12. | 9.080m×5.255m×3.525m<br>Shielding room         | FRANKONIA     | ----       | ----         |
| 13. | HF 906 Double-Ridged<br>Waveguide Horn Antenna | R&S           | 100030     | 2014.8       |
| 14. | HF 906 Double-Ridged<br>Waveguide Horn Antenna | R&S           | 100029     | 2014.8       |
| 15. | HL562 Ultra log antenna                        | R&S           | 100016     | 2014.8       |
| 16. | 3160-09 Receive antenna                        | SCHWARZ-BECK  | 002058-002 | 2014.8       |
| 17. | ESI 40 EMI test receiver                       | R&S           | 100015     | 2014.8       |
| 18. | Radio tester                                   | CMU 200       | 114667     | 2014.8       |
| 19. | ESCS30 EMI test receiver                       | R&S           | 100029     | 2014.8       |
| 20. | HL562 Receive antenna                          | R&S           | 100167     | 2014.8       |
| 21. | ESH3-Z5 LISN                                   | R&S           | 100020     | 2014.8       |

## Appendix

### Appendix1 Test Setup