

#### 4.6. MPE calculation

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

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

| Operation Mode      | Frequency on channel<br>(MHz) | Declared maximum conducted output power<br>(dBm) | Antenna Gain Max.<br>(dBi) | Max. positive tolerance according manufacturer<br>(dB) | Declared maximum output power (Measured+ Tune-up)<br>(dBm) | Duty cycle | Declared Maximum conducted output power<br>(W) | Equivalent conducted output power (maximum conducted output power x duty cycle)<br>(mW) |
|---------------------|-------------------------------|--------------------------------------------------|----------------------------|--------------------------------------------------------|------------------------------------------------------------|------------|------------------------------------------------|-----------------------------------------------------------------------------------------|
| W-LAN 2.4GHz (HT20) | 2412,0                        | 15,48                                            | 3,00                       | 2,00                                                   | 20,48                                                      | 100%       | 0,112                                          | 112                                                                                     |
|                     | 2437,0                        | 15,10                                            | 3,00                       |                                                        | 20,10                                                      |            | 0,102                                          | 102                                                                                     |
|                     | 2462,0                        | 15,02                                            | 3,00                       |                                                        | 20,02                                                      |            | 0,100                                          | 100                                                                                     |
| W-LAN 2.4GHz (HT40) | 2422,0                        | 15,79                                            | 3,00                       | 2,00                                                   | 20,79                                                      | 100%       | 0,120                                          | 120                                                                                     |
|                     | 2437,0                        | 15,84                                            | 3,00                       |                                                        | 20,84                                                      |            | 0,121                                          | 121                                                                                     |
|                     | 2452,0                        | 14,58                                            | 3,00                       |                                                        | 19,58                                                      |            | 0,091                                          | 91                                                                                      |

| Maximum calculated MPE value: |        |                       |
|-------------------------------|--------|-----------------------|
| MPE-Limit:                    | 1      | [mW/cm <sup>2</sup> ] |
| Highest MPE value:            | 0,0241 | [mW/cm <sup>2</sup> ] |
| Margin to limit               | 0,9759 | [mW/cm <sup>2</sup> ] |

| Operation Mode                 | Frequency on channel<br>(MHz) | Declared maximum conducted output power<br>(dBm) | Max. antenna gain:<br>(dBi) | Max. positive tolerance according manufacturer<br>(dB) | Declared maximum output power (Measured+ Tune-up)<br>(dBm) | Duty cycle | Declared Maximum conducted output power<br>(W) | Equivalent conducted output power (maximum conducted output power x duty cycle)<br>(mW) |
|--------------------------------|-------------------------------|--------------------------------------------------|-----------------------------|--------------------------------------------------------|------------------------------------------------------------|------------|------------------------------------------------|-----------------------------------------------------------------------------------------|
| W-LAN 5725-5750 MHz (20MHz BW) | 5745,0                        | 19,21                                            | 5,0                         | 2,00                                                   | 26,21                                                      | 100%       | 0,418                                          | 418                                                                                     |
|                                | 5785,0                        | 18,89                                            |                             |                                                        | 25,89                                                      |            | 0,388                                          | 388                                                                                     |
|                                | 5825,0                        | 18,34                                            |                             |                                                        | 25,34                                                      |            | 0,342                                          | 342                                                                                     |
| W-LAN 5725-5750 MHz (40MHz BW) | 5755,0                        | 19,76                                            | 5,0                         | 2,00                                                   | 26,76                                                      | 100%       | 0,474                                          | 474                                                                                     |
|                                | 5815,0                        | 19,66                                            |                             |                                                        | 26,66                                                      |            | 0,463                                          | 463                                                                                     |

| Maximum calculated MPE value: |        |                       |
|-------------------------------|--------|-----------------------|
| MPE-Limit:                    | 1      | [mW/cm <sup>2</sup> ] |
| Highest MPE value:            | 0,0944 | [mW/cm <sup>2</sup> ] |
| Margin to limit               | 0,9056 | [mW/cm <sup>2</sup> ] |