

SAR Evaluation

According to RSS-102 Issue 2.5 Section 2.5.1 Exemption Limits for Routine Evaluation –Exemption Limits for Routine Evaluation — SAR Evaluation

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1.

| Table 1: SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance ^{4,5} | | | | | |
|---|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Frequency (MHz) | Exemption Limits (mW) | | | | |
| | At separation distance of ≤5 mm | At separation distance of 10 mm | At separation distance of 15 mm | At separation distance of 20 mm | At separation distance of 25 mm |
| ≤300 | 71 mW | 101 mW | 132 mW | 162 mW | 193 mW |
| 450 | 52 mW | 70 mW | 88 mW | 106 mW | 123 mW |
| 835 | 17 mW | 30 mW | 42 mW | 55 mW | 67 mW |
| 1900 | 7 mW | 10 mW | 18 mW | 34 mW | 60 mW |
| 2450 | 4 mW | 7 mW | 15 mW | 30 mW | 52 mW |
| 3500 | 2 mW | 6 mW | 16 mW | 32 mW | 55 mW |
| 5800 | 1 mW | 6 mW | 15 mW | 27 mW | 41 mW |

| Frequency (MHz) | Exemption Limits (mW) | | | | |
|-----------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|
| | At separation distance of 30 mm | At separation distance of 35 mm | At separation distance of 40 mm | At separation distance of 45 mm | At separation distance of ≥50 mm |
| ≤300 | 223 mW | 254 mW | 284 mW | 315 mW | 345 mW |
| 450 | 141 mW | 159 mW | 177 mW | 195 mW | 213 mW |
| 835 | 80 mW | 92 mW | 105 mW | 117 mW | 130 mW |
| 1900 | 99 mW | 153 mW | 225 mW | 316 mW | 431 mW |
| 2450 | 83 mW | 123 mW | 173 mW | 235 mW | 309 mW |
| 3500 | 86 mW | 124 mW | 170 mW | 225 mW | 290 mW |
| 5800 | 56 mW | 71 mW | 85 mW | 97 mW | 106 mW |

Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power. For controlled use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 5. For limb-worn devices where the 10 gram value applies, the exemption limits for routine evaluation in Table 1 are

multiplied by a factor of 2.5. If the operating frequency of the device is between two frequencies located in Table 1, linear interpolation shall be applied for the applicable separation distance. For test separation distance less than 5 mm, the exemption limits for a separation distance of 5 mm can be applied to determine if a routine evaluation is required.

For medical implants devices, the exemption limit for routine evaluation is set at 1 mW.

The output power of a medical implants device is defined as the higher of the conducted or e.i.r.p to determine whether the device is exempt from the SAR evaluation.

Result:

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 mm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, $r=5\text{mm}$, as well as the gain of the used antenna is 0dBi.

Exemption Limits :

| Frequency MHz | At separation distance of At 5 mm |
|------------------|--|
| 189.6 | 71mW |
| 205.8 | 71mW |

| ØT | | | | |
|--------------------------|--------------------|-------------------|-------------|------|
| Frequency MHz | Output power (dBm) | Tolerance (dB) | MAX (dB) | NOTE |
| Channel 01 (189.6MHz) | 0.364 | 0±1 | 1 | |

Max. Output Power = 1dBm = 1.259 mw <17mw

3. Conclusion

The maximum evaluation power is much lower than Exemption Limits, so an exemption is obtained, so there is no SAR requirement