

SAR Exclusion Justification for FCC ID 2AB6OTX9601

Test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm
Guidance document reference: 447498 D01 General RF Exposure Guidance v05r01, page 11, paragraph 4.3.1(1).

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds

The test exclusions are applicable only when the minimum test separation distance is \leq 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is $<$ 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

SAR test exclusion analysis:

Assumptions: Since the exact separation distance may vary from sensor to sensor, the minimum separation distance of 5 mm is assumed per the guidance document.

Max. power of channel: 10 mW

Min. separation distance: 5 mm

Max. frequency: 0.46775 GHz

Calculation: $[(\text{Pwr}/\text{Dist}) * \text{Sqrt}(\text{Freq.})] = 1.367$, or rounded to 1.4

The result of the above SAR threshold calculation demonstrates that the result is less than the 1-g numeric threshold of 3 and the 10-g numeric threshold of 7.5.

Conclusion: The above analysis shows that the digital transmission system transceiver with FCC ID 2AB6OTX9601 qualifies for exemption from SAR testing.
