



RF Exposure evaluation

FCC ID: 2AKWC-E35

Product: TPMS Sensor

Model No.: E35

Additional Model No.: N/A

Trade Mark: N/A

Issued for:

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According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

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

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})]$

$[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 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 calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 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 is applied to determine SAR test exclusion

$$\text{eirp} = \text{pt} \times \text{gt} = (\text{E} \times \text{d})^{2/30}$$

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, $---10^{((\text{dBuV/m})/20)/10^6}$,

d = measurement distance in meters (m)---3m,

$$\text{So pt} = (\text{E} \times \text{d})^{2/30/\text{gt}}$$



The worst case (refer to report E35 WSCT-NVLAP-R&E191200025A) is below:

For FM:

Mode	Pmax	Distance	f(GHz)	Calculati on Result	Standalone SAR test exclusion Threshold	SAR test exclusion
	(mW)	(mm)				
FM	0.00	<5.00	0.434	0.00	3.00	Yes

0.00<3.0 for 1-g SAR

So the SAR report is not required.

Note:

According to the RF report: E35 WSCT-NVLAP-R&E191200025A results 69.49 dBuV/m,

Plug it into the formula :

$$pt = (E \times d)^{2/30/gt}$$

$$=(10^{((dBuV/m)/20)}/10^6 \times 3)^{2/30/gt}$$

$$=0.0000027(W)$$

$$\text{So } P_{\max}=0.0000027 \times 10^3 =0.00 \text{ (mW)}$$