

RF Exposure requirements

Product name	SMART KEY READER
Model number	A241
FCC ID	ZE8-A241
Radio specification	2.4 GHz ZigBee transceiver, 125 kHz RFID transmitter
Antenna	2.4 GHz, integral SMD chip antenna, 125 kHz, integral loop coil antenna
Power source	DC 12 V or 24 V battery in a vehicle

According to the KDB 447498, the following standalone SAR test exclusion was considered to qualify for the SAR test exclusion.

Tx frequency range	2405 MHz
Device category	Device installed in a vehicle
Maximum conducted output power	0.39 mW (-4.07 dBm)
Limit	10 mW (distance = 5 mm)

SAR test exclusion thresholds:

$$[(\text{max. power of channel, mW}) / (\text{min. separation distance, mm})] \cdot \sqrt{f_{\text{(GHz)}}} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$

MHz	5	10	15	20	25	30	35	40	45	50	test separation distance (mm)
2450	10	19	29	38	48	57	67	77	86	96	SAR test exclusion threshold (mW)

The source-based time-averaged maximum conducted output power of the RF channel is less than 10 mW, and therefore the transmitter complies with the RF exposure requirements and the SAR is not required.