

# RF Exposure Requirements

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## 1.1 Product Description for Equipment Under Test (EUT)

### Client Information

Applicant: Kool Brands, LLC.  
Address of applicant: 1450 Vassar Street, RENO, NV 89502, USA

Manufacturer: Shenzhen Auzmichain Electronic Co.,Ltd  
Address of manufacturer: 3/F, Building 2, YongQi Science&Technology industrial park, Xixiang, BaoAn, Shenzhen, China

General Description of EUT	
Product Name:	Switch Bluetooth Wireless Controller
Brand Name:	AXV
Model No.:	KMD-NS-1144
Adding Model(s):	KMD-NS-1151
Rated Voltage:	DC 5V From USB or DC 3.7V From Battery
Battery Capacity:	600mAh
Software Version:	/
Hardware Version:	/
Serial Number:	67322ji90
FCC ID:	2A78RKMD-NS

Technical Characteristics of EUT	
Bluetooth Version:	V4.2 (BDR/EDR mode)
Frequency Range:	2402-2480MHz
RF Output Power:	3.90dBm (Conducted)
Data Rate:	1Mbps, 2Mbps, 3Mbps
Modulation:	GFSK, Pi/4 QDPSK, 8DPSK
Quantity of Channels:	79
Channel Separation:	1MHz
Type of Antenna:	PCB
Antenna Gain:	-1.43dBi

## 1.2 Standard Applicable

According to §1.1307(b)(1) and KDB 447498 D01 General RF Exposure Guidance v06, the following RF exposure evaluation shall to demonstrate RF exposure compliance.

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$

Where

-f(GHz) is the RF channel transmit frequency in GHz

-Power and distance are rounded to the nearest mW and mm before calculation

-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 4.1 f) is applied to determine SAR test exclusion.

## 1.3 Calculation Method

### Bluetooth

Tx frequency range: 2402~2480MHz

Min. test separation distance: 5mm

Maximum Tune-up Conducted Output Power: 4.0dBm

RF channel transmit frequency: 2402MHz

Result: 0.78

Limit: 3.0

So the transmitter complies with the RF exposure requirements and the SAR is not required.