RF Exposure Requirements

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.

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 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 ≤ 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.