

Report on the Testing of the

ELK Products, Inc.
E27-RF2

FCC ID: ELK-E27RF9
IC: 4353A -E27RF9

Prepared for: ELK Products, Inc.
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America

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SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Sean Sellergren	Sr EMC Engineer	Authorized Signatory	05 October 2021

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD America, Inc. document control rules.

FCC Accreditation Innovation, Science, and Economic Development Canada
Designation Number US1148 New Brighton, MN Test Accreditation
Laboratory Site Number 4512A New Brighton, MN Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with the standards listed above.



A2LA Cert. No. 2955.11

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1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Table 1.1-1 – Modification Record

Issue	Description of Change	Date of Issue
1	First Issue	30 AUG 2021
2	Z-wave module FCC ID corrected.	06 OCT 2021



General Information:

Applicant: ELK Products, Inc.
 Device Category: Fixed
 Environment: General Population/Uncontrolled Exposure

Technical Information: E27-RF2

FCC ID: ELK-E27RF9
 IC: 4353A -E27RF9
 Antenna Type: Monopole
 Antenna Gain: 0.0 dBi
 Exposure Conditions: ≥ 20 centimeters

Frequency Band (MHz)	Exposure Condition (cm)	EIRP (dBm)	EIRP (mW)
903-927 MHz	≥ 20	14.57	28.64

Technical Information: WiFi module

FCC ID: 2AB9Y-GT141GT202
 IC: 4104A-QCASP141
 Antenna Type: Monopole
 Antenna Gain: 2.5 dBi
 Exposure Conditions: ≥ 20 centimeters

Frequency Band (MHz)	Exposure Condition (cm)	EIRP (dBm)	EIRP (mW)
2.412 – 2.462 MHz	≥ 20	26.59	456.037

Technical Information: Zwave module

FCC ID: UTH-ZW1512
 Antenna Type: PCB Trace/Integral
 Antenna Gain: 0.0 dBi
 Exposure Conditions: ≥ 20 centimeters

Frequency Band (MHz)	Exposure Condition (cm)	Field Strength (dBuV/m)	ERP @ 3m (dBm)	EIRP (dBm)	EIRP (mW)
908.4-916 MHz	≥ 20	91.70	-5.68	-3.53	0.444



MPE Calculation FCC

The Power Density (mW/cm²) is calculated as follows:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Table 1: MPE Calculation - FCC

Radio	Transmit Frequency (MHz)	Power EIRP (mW)	Power Density (mW/cm ²)	Uncontrolled Exposure Limit (mW/cm ²)	Limit Ratio (%)	MPE Distance
E27-RF2	903-927	28.64	0.0006	0.602	0.10%	20 cm
WiFi module	2.412 - 2.462	810.96	0.0161	1.000	1.61%	20 cm
Zwave module	908.4-916	0.44	0.000	0.606	0.001%	20 cm
Total:					1.711%	20 cm



MPE Calculation ISED

The Power Density (W/m²) is calculated as follows:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = power density (in appropriate units, e.g. W/m²)

P = power input to the antenna (in appropriate units, e.g., W)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., m)

Table 1: MPE Calculation - FCC

Radio	Transmit Frequency (MHz)	Power EIRP (mW)	Power Density (W/m ²)	Uncontrolled Exposure Limit (W/m ²)	Limit Ratio (%)	MPE Distance
E27-RF2	903-927	28.64	0.006	2.79	0.22%	20 cm
WiFi module	2.412 - 2.462	810.96	0.161	5.47	2.94%	20 cm
Total:					3.16%	20 cm

Note: The Z-wave module is not included in the product when sold in Canada.