

# Radio Test Report

Report No.: STS2310324H01

Issued for

Superior Electronics Corporation

No 10, Lane 31, Chongde St., Sinyi District. Taipei City 110.  
Taiwan

Product Name: Outdoor Access Control Keypad with  
Proximity Card Reader

Brand Name: ENFORCER

Model Name: SK-1123-SPQ

Series Model(s): N/A

FCC ID: K4E1123SPQ

Test Standard: FCC 47CFR §2.1091

Any reproduction of this document must be done in full. No single part of this document may be reproduced without permission from STS, all test data presented in this report is only applicable to presented test sample.



TEST REPORT

**Applicant's Name**..... : Superior Electronics Corporation  
 Address ..... : No 10, Lane 31, Chongde St., Sinyi District. Taipei City 110. Taiwan  
**Manufacturer's Name** ..... : Superior Electronics Corporation  
 Address ..... : No 10, Lane 31, Chongde St., Sinyi District. Taipei City 110. Taiwan

**Product Description**

Product Name..... : Outdoor Access Control Keypad with Proximity Card Reader  
 Brand Name ..... : ENFORCER  
 Model Name ..... : SK-1123-SPQ  
 Series Model(s) ..... : N/A

**Test Standards**..... : FCC 47CFR §2.1091  
 447498 D04 Interim General RF Exposure Guidance v01

This report shall not be reproduced except in full, without the written approval of STS, this document only be altered or revised by STS, personal only, and shall be noted in the revision of the document.

**Date of Test**..... :

Date of receipt of test item ..... : 18 Oct. 2023  
 Date (s) of performance of tests..... : 18 Oct. 2023 ~ 25 Oct. 2023  
 Date of Issue..... : 25 Oct. 2023  
 Test Result..... : **Pass**

Testing Engineer : Aaron Bu.  
 (Aaron Bu)

Technical Manager : Chris Chen  
 (Chris Chen)

Authorized Signatory : Bovey Yang  
 (Bovey Yang)





## TABLE OF CONTENTS

<b>1. GENERAL INFORMATION</b>	<b>5</b>
1.1 GENERAL DESCRIPTION OF THE EUT	5
1.2 TEST FACTORY	6
<b>2. FCC 47CFR §2.1091 REQUIREMENT</b>	<b>7</b>
2.1 TEST STANDARDS	7
2.2 LIMIT	7
2.3 TEST RESULT	8



**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	30 Oct. 2023	STS2310324H01	ALL	Initial Issue



## 1. GENERAL INFORMATION

### 1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Outdoor Access Control Keypad with Proximity Card Reader	
Brand Name	ENFORCER	
Model Name	SK-1123-SPQ	
Series Model(s)	N/A	
Model Difference	N/A	
Product Description	The EUT is Outdoor Access Control Keypad with Proximity Card Reader	
	Operation Frequency:	125KHz
	Modulation Type:	GFSK
	Antenna gain:	0dBi
	Antenna Designation:	Internal Antenna
Power Rating	Input: 12-24V DC/AC	
Hardware Version	V1.0	
Software Version	V1.0	



## 1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01



## 2. FCC 47CFR §2.1091 REQUIREMENT

### 2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

### 2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula:  $Pd = (Pout * G) / (4*pi*r^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.



2.3 TEST RESULT

Turn up

Mode	Detector	Turn up Power
125KHz	AV	-33±1dBm

Protocol	Fre. (GHz)	Separation distance (cm)	Max Turn up power (dBm)	ANT Gain (dBi)	Max ERP (dBm)	Max ERP (mW)	Limit (mW/c m <sup>2</sup> )	Result
125KHz	0.0125	20	-32	0	-34.15	0.0003845918	1.00	Pass

Note: 1. The Maximum power is less than the limit, complies with the exemption requirements.

2. ERP = EIRP - 2.15

\*\*\*\*\*END OF THE REPORT\*\*\*\*\*