



# S-KEY™

Simple. Safe. Secure.

## Product Overview & Datasheet

Last Revision: September 2023

For more information on S-Key, contact us: [info@freevolt.tech](mailto:info@freevolt.tech) / +44 203 176 2350

FREEVOLT™ is a registered trademark of Freevolt Technologies Limited or its Affiliates (together 'Freevolt') and their licensors, in the UK and other countries. All other trademarks are the property of their respective owners. All intellectual property in, related to or disclosed by this document or any information, software, hardware, product or service described herein ('Information') is the property of Freevolt or its licensors; no right in or title to the same is granted to any person by provision of this Information which is provided 'as is' for information purposes only. To the extent allowed by law, Freevolt gives no warranty or representation regarding the Information, and disclaims all express and implied warranties regarding the same including without limitation regarding accuracy, performance, or fitness for purpose. Freevolt assumes no duty to any person by providing the Information and to the extent allowed by law excludes all liability relating to such provision or reliance by any person, including without limitation any direct loss or indirect or consequential loss even if advised of the possibility of the same.



## Overview: S-Key Biometric Access Control Cards

Recent studies have shown that **biometric access is five times more secure than 4-digit pins**, the most common form of two-factor authentication for access control systems. S-Key aids organisations by significantly increasing their physical security levels, without the substantial investment typically required for changing existing infrastructure.

### Business & Employee Benefits:

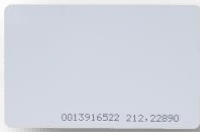
- MIFARE-based solution which works with NFC systems (e.g. HID, Salto, Paxton)
- Seamless integration with existing infrastructure: ISO14443 (NFC) compliant
- Removes risk of biometric data loss from centralised databases
- Elimination of security risk from lost or stolen cards
- Convenient and user-friendly solution

*“The average total cost of a physical security breach was \$3.96 million in 2022.”*

 IBM Security 2022 Report

### Typical Access Control Transaction:

#### Current Access Control Solutions



Tap your card on the reader at your office, secure area, etc.

Tap your card...



If your system requires a pin (not all do), enter 4-digit pin

Enter 4-digit pin...



Access system allows access depending on your permissions

Access Granted!



#### **S-KEY** Simple. Safe. Secure Access Solution



Place your finger on the sensor of the card and tap the reader

Hold your finger...



The reader powers the card and your fingerprint is verified

Tap your card...









If the fingerprint matches, depending on your permissions access will be granted

Access Granted!



### S-Key is easy to use, low cost and [Available to Buy Now](#)

-  **Tighter Control:** maintain 2-Factor Authentication, with additional security layer possible (3FA)
-  **Removes Threat from Lost or Borrowed Cards:** only named individual can use the card to gain access
-  **Scalable & Easy to Adopt:** works with existing access control systems, no changes required
-  **No Recharging or Changing Batteries:** it works whenever in the vicinity of an access reader
-  **Better Privacy & GDPR Compliance:** fingerprint hashed & stored on the card (never leaves the card)
-  **Improved Hygiene:** secure, contactless entry now possible post COVID-19 pandemic

For more information on S-Key, contact us: [info@freevolt.tech](mailto:info@freevolt.tech) / +44 203 176 2350

**S-KEY**

Simple. Safe. Secure

## Technical Information

### MECHANICAL DATA

Card Material	PVC Plastic
Card Dimensions	85.7 x 54.0 x 0.95 mm
Inlay Substrate Material	Thin film polyimide
Lamination Process	Proprietary cold lamination

### ELECTRICAL DATA

Antenna Type	Modified ISO1443 Class 1A
Passive/Active Components	Passive, no on-board power source
Operating Frequency	13.56 MHz
Supported Protocols	NFC ISO 14443A
Power Source	Freevolt Gen3 RFEH
Battery	No, powered by NFC field

### FREEVOLT ENERGY HARVESTING

Optimum Output Voltage	2.0 V
Peak Current	64 mA
Communications Range	0 – 75 mm

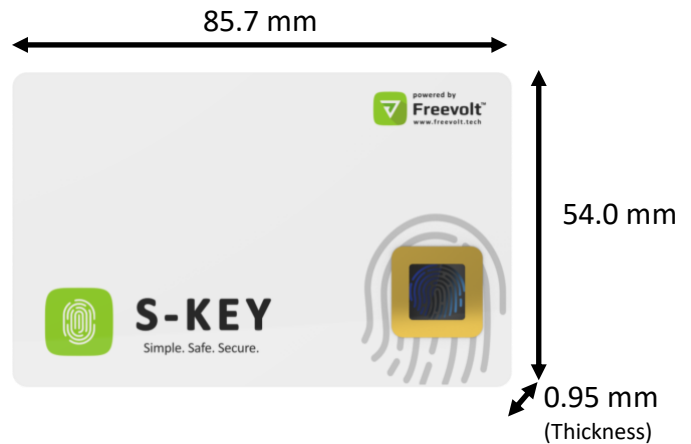
### TESTED CONDITIONS

Environment	Factory/Lab
NFC Reader	HID OmniKey 5427, HID iClass R10
Testing Range	0 – 80 mm
Bend Test	Derived from EMVCo standard
Torsion Test	Derived from EMVCo standard
Water Resistant	Yes
Operating Temperature	-25 °C to +70 °C
Storage Temperature	-40 °C to +80 °C

### CARD HOLDERS

Badge Holders	Works with existing ID card holders
---------------	-------------------------------------

### PRODUCT DIMENSIONS



### BIOMETRICS STORAGE

Sensor	Fingerprint Cards FPC1321 / 1323
Applications processor	Nordic nRF52
External access to biometric data	None
Enrolment	On-card using NFC source for power
Rewritable	No, single enrolment only (Re-enrolment coming H2 2023)

### COMMUNICATIONS SUPPORTED

MIFARE Classic	EV1 all sizes
MIFARE DESFire	EV1/2/3 all sizes
LEGIC	ADVANT ATC4096-MP311 V2
HID iClass	Arriving 2023
Other	Secure Elements and other NFC chips on request

### ARTWORK/CUSTOMIZATION

Custom Artwork	Available as part of lamination process, RGB colours supported. MOQs apply
Card Printers Supported	DTC and Retransfer, contact for model information

For more information on S-Key, contact us: [info@freevolt.tech](mailto:info@freevolt.tech) / +44 203 176 2350

FREEVOLT™ is a registered trademark of Freevolt Technologies Limited or its Affiliates (together 'Freevolt') and their licensors, in the UK and other countries. All other trademarks are the property of their respective owners. All intellectual property in, related to or disclosed by this document or any information, software, hardware, product, or service described herein ('Information') is the property of Freevolt or its licensors; no right in or title to the same is granted to any person by provision of this Information which is provided 'as is' for information purposes only. To the extent allowed by law, Freevolt gives no warranty or representation regarding the Information, and disclaims all express and implied warranties regarding the same including without limitation regarding accuracy, performance, or fitness for purpose. Freevolt assumes no duty to any person by providing the Information and to the extent allowed by law excludes all liability relating to such provision or reliance by any person, including without limitation any direct loss or indirect or consequential loss even if advised of the possibility of the same.