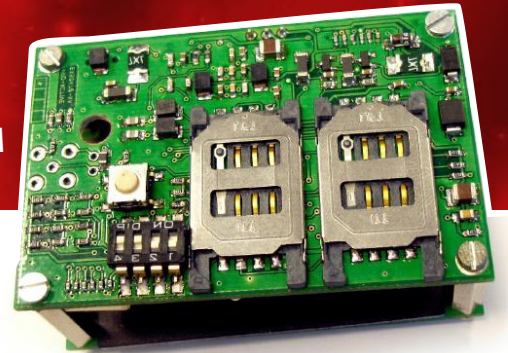# springcard®

CRAZY WRITER

OEM CONTACTLESS SMARTCARD READER + 2 µSIM/SAM

SpringCard CrazyWriter is a versatile ISO 14443 (A&B) and Mifare contactless reader/writer. Its 2 integrated µSIM/SAM couplers are ready to receive any SAM smartcard for advanced security.

KEY FEATURES

With a compact design and single bus-powered USB interface, CrazyWriter fits easily into card printers, vending or ticketing machines, fare gates or validators in transportation networks, and more.

PC/SC SMARTCARD READERS

SpringCard CrazyWriter is PC/SC compliant, and brings immediate contactless card support to existing PC/SC applications (the whole product is seen as 3 PC/SC readers : 1 contactless, and 2 SIM/SAM).

On the other hand, CrazyWriter may be configured for legacy, and is in this case 100% compatible with earlier products from SpringCard (CSB4, K531...).

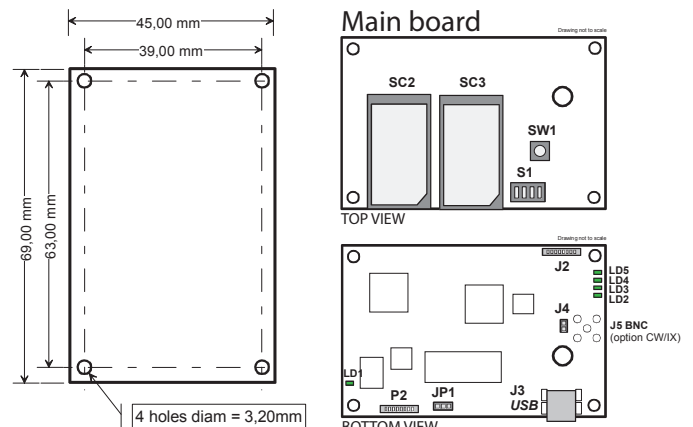## A FEW TYPICAL APPLICATIONS

- Card pre-personalisation and personalisation
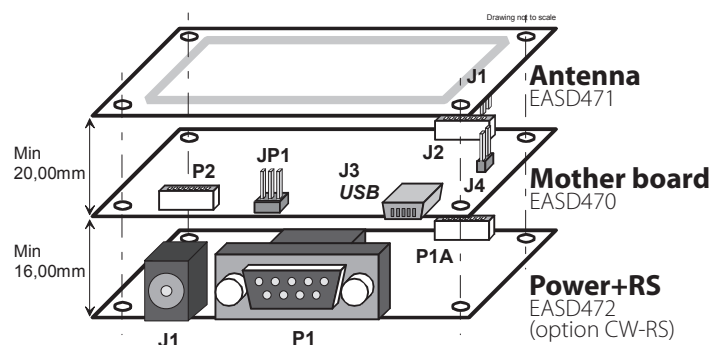- Vending or ticketing machines.

SPRINGCARD & PRO ACTIVE

Established in 2000, Pro Active is an innovative provider of smartcard related solutions, and one of the leaders on the contactless-reader market.
SpringCard has been created to distribute Pro Active's contact and contactless products worldwide, under a single brand name.

MECHANICAL SPECIFICATIONS

45,00 mm
39,00 mm
69,00 mm
63,00 mm
4 holes diam = 3,20mm

Same outside dimensions for the 3 boards
thickness = 1,6 mm - global tolerance = ± 0,1 mm

Main board
Drawing not to scale
SC2 SC3
SW1
S1
TOP VIEW

Drawing not to scale
J2
LD5
LD4
LD3
LD2
J4
J5 BNC
(option CW/IX)
LD1
P2 JP1 J3
USB
BOTTOM VIEW

Drawing not to scale
J1 **Antenna**
EASD471

Min 20,00mm
P2 JP1 J3 USB J2
J4
Mother board
EASD470

Min 16,00mm
P1A
Power+RS
EASD472
(option CW-RS)
J1 P1

Stack mounting
Please observe minimal distance between boards

springcard®
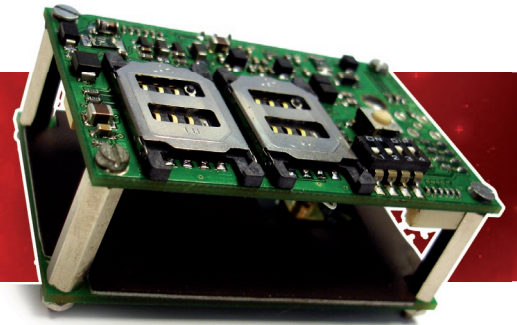
CRAZY WRITER
OEM CONTACTLESS SMARTCARD READER + 2 µSIM/SAM

TECHNICAL SPECIFICATIONS

Contactless smartcard interface	
Standards	ISO/IEC 14443 A and B, T=CL
RFID carrier	13.56 MHz
Operating distance	up to 8 cm depending on card and on environment
Card baud rate	106, 212, 424 or 848 kbit/s

Supported cards (partial list) :
- NXP (Philips) MIFARE Classic & UltraLight
- NXP (Philips) DESFIRE, SmartMX, ProX
- Infineon SLE66 family
- ST MicroElectronics SR, SRI, SRIX families
- ASK CTS256/CTS512
- Calypso (CD97, CD21, GTML…)[1]

And virtually any ISO/IEC 14443 A or B compliant smartcard.

[1] Calypso card operation is subject to an extra license fee. Contact us for information.

SIM / SAM interfaces	
Card format	ID-000 (µSIM)
Number of slots	2
Standards	ISO/IEC 7816, T=0 & T=1
Smartcard class	A and B (3V or 5V cards)
Clock frequency	3,6864 MHz
Card baud rate	Up to 115200 bps

Hardware specifications	
N.B. : This is an OEM product, sold as electronic parts, without housing	
Dimensions (LxWxH)	Each board = 69 x 45 x 1,6 mm
Max. distance antenna to mother board	2-wire twisted cable = 5 cm 50 Ω coaxial cable = 2 m

Environment and safety	
Operating temperature	0 →+70°C
Storage temperature	-40 →+85°C
Durability	10 000 SIM/SAM insertions
MTBF	500 000 hours
CE mark	EN50082 / EN55022 class B
Other standards	RoHS, FCC pending

USB interface	
Standard	USB 2.0 full speed (12Mbps)
Power supply	Bus powered (≈300mA under 5V)
Default configuration is PC/SC	

PC /CS mode	
Standard USB CCID profile	
Windows driver	2000/XP/Vista
Linux and others	Supported by pcsc-lite CCID driver
API and SDK	Full PS/SC - Free SDK available

Legacy mode	
USB virtual serial comm. port API compliant with existing products (SpringProx-CF, CSB4, CSB5, K531,...)	
Drivers	Windows, Linux
API and SDK	SpringProx API SDK sold separately

Optional serial Interface (CW-RS)	
Standard	RS-232 (DB9 female connector)
Power supply	9 to 12V DC - 500mA min.
Baud rate	38400 bps

ORDER CODES

PART #	Description
CW-30	**CrazyWriter USB** *USB cable not provided*
CW-RS	**RS232 interface for CrazyWriter** *Power supply not provided*

PRECAUTIONS FOR INSTALLATION
This device is a contactless reader; it uses inductive coupling (magnetic field) to power the cards and communicate with them. Precaution must be taken to keep the reader far from any source of perturbation (e.g. other readers, computers…). Installing the reader near a metal surface (aluminium or steel plate…) will lead to shorter operating distance and increased power consumption.
SpringCard has a long experience installing contactless couplers in various kind of devices. Do not hesitate to contact us if you need any assistance.

CUSTOM ANTENNA DESIGN
It is possible to replace CrazyWriter's default antenna by a custom design. Please refer to NXP's application note "Micore proximity antenna design" to design a 50Ω matched antenna. Note that K531 and CrazyWriter may share the same antenna. SpringCard has a long experience in designing antennas. Do not hesitate to contact us if you need any assistance.

www.springcard.com

A PRO ACTIVE BRAND