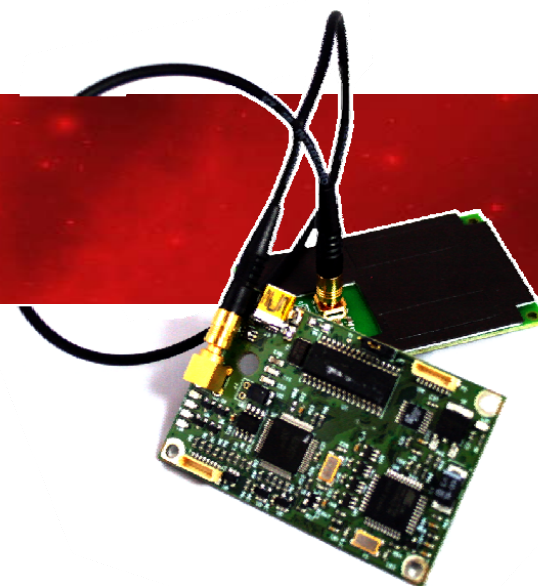




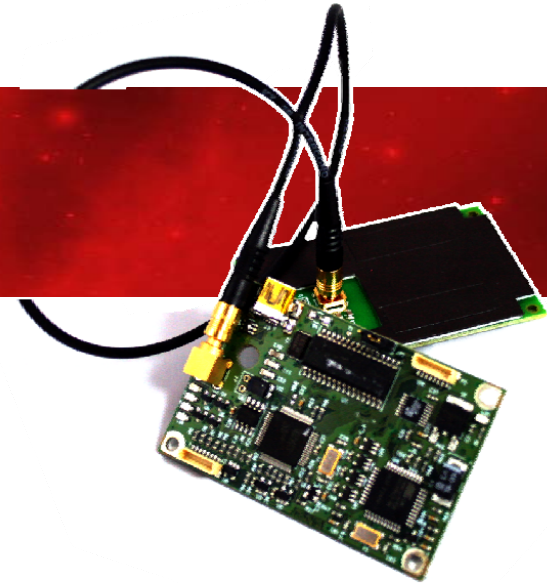
SpringCard

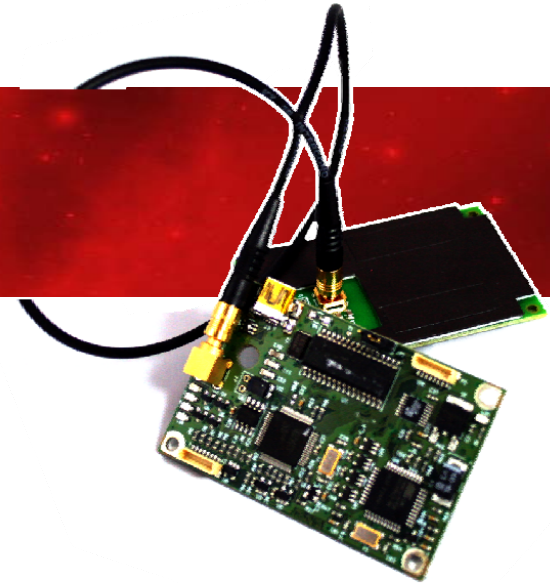
CrazyWriter

ISO 14443 (A&B) & ISO 15693
and Mifare
contactless reader / writer
+ 2 μ SIM / SAM

Agenda

- Product overview
- Demonstration
- Appendix : PC/SC or Legacy?





Product overview

CrazyWriter assets

Fits easily into :

- Card printers : card personalization
- Vending and ticketing machines
- Fare gates or validators
- Transportation networks

CrazyWriter is an OEM
contactless ISO 14443 & ISO 15693 and
Mifare
reader / writer

High performance

Full speed USB 2.0

CrazyWriter features 2 μ SIM / SAM slots for
secure applications

Easy to integrate

- PC/SC compliant
- 100% compliancy with earlier
products in Legacy mode
- Supports virtually any ISO/IEC
14443 A or B compliant
smartcard



**CrazyWriter is
detected as 3
different PCSC
readers !
(default mode)**

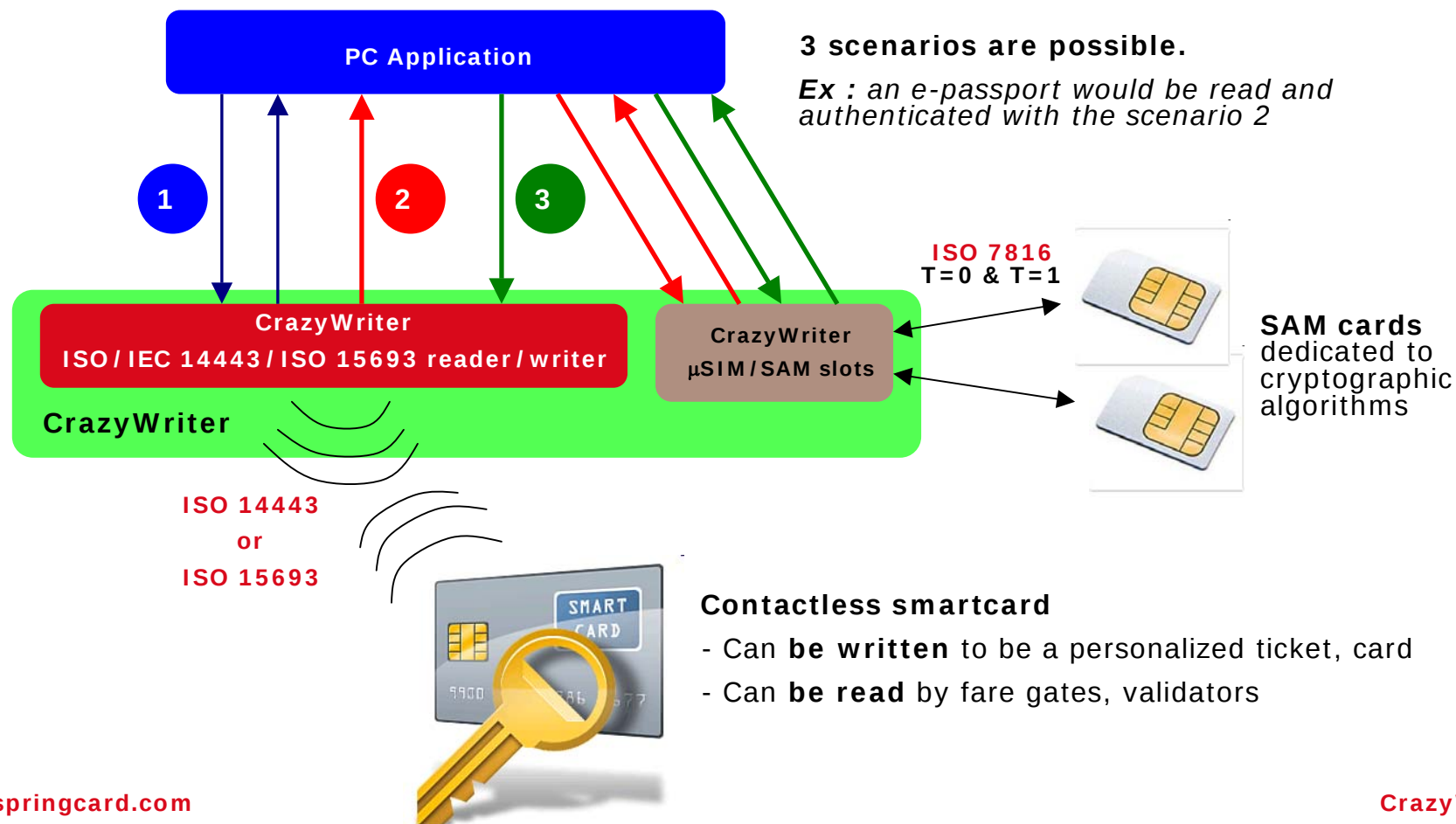


**Optional board :
RS-232 standard
serial interface
(DB9 female
connector)
+
motherboard power
supply**

***Documentation and softwares Free Download link :**

<http://www.springcard.com/download/crazywriter.html>

CrazyWriter functionalities



Product scope

CrazyWriter

- Is an **OEM contactless ISO 14443 & ISO 15693** and **Mifare** reader/writer
- Features **2 µSIM / SAM slots** (SAM smartcards for secure applications) handling **card**
- **USB interface** : supports **USB 2.0 full speed** (12Mbps), and **fastest smartcard bau.**
- **Serial interface JST:BM08B-SRSS-TB(LF)(SN)** : handles **baud rate up to 38400 bps (RFU)**
- Handles **any ISO 14443 (type A, B and B')** and **ISO 15693** compliant smartcards

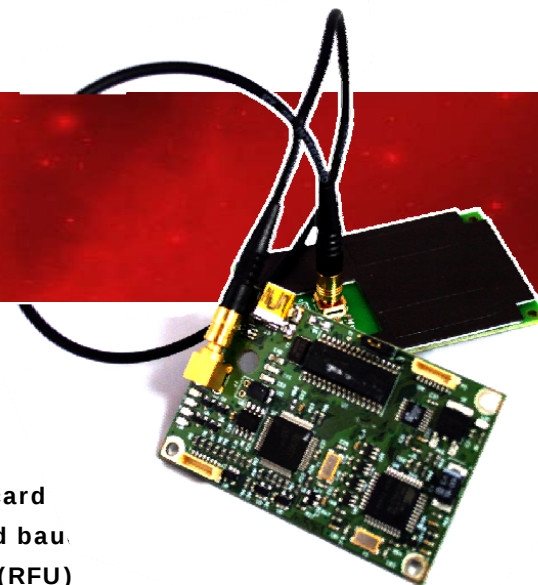
Supported contactless cards

- **NXP** (formerly Philips Semiconductors): **Mifare Classic & UltraLight, Desfire, ProX, SmartMX**
- **Infineon SLE66 family**
- **ST MicroElectronics SR, SRI, SRIX families**
- **ASK CTS256 / CTS512**
- **Calypso (CD97, CD21, GTML...)**

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

Supported RFID tags and labels

- **NXP ICODE1, ICODE-SLI**
- **Texas Instrument TagIT**
- **STMicroelectronics LRI**
- **AND MORE**



PC/SC mode and Legacy mode

PC/SC mode (only with USB interface)

CrazyWriter, compliant with PC/SC* version 2

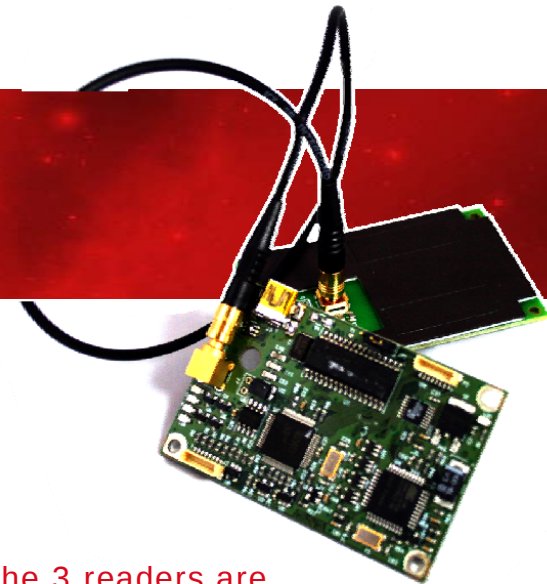
- Brings immediate contactless card support to existing PC/SC applications (interoperability of applications and readers).
- Is supported by major operating systems (Windows 2000/XP/Vista and Linux).
- Detected as a **USB smartcard reader** by the OS.

***PC/SC** : This standardized smartcard reader API, allows developers to work with contactless cards (including Mifare and other wired-logic chips) as easily as if they were classical T=0 or T=1 contact cards.

Legacy mode

CrazyWriter in Legacy mode is 100% compliant with earlier **SpringCard contactless couplers**, such as the popular CSB4 Mifare reader/writer.

- Allows a smooth migration without changing anything in existing software.
- Detected as a **virtual serial com. Port**



The 3 readers are
PC/SC and the
application is based
on the **PC/SC API**

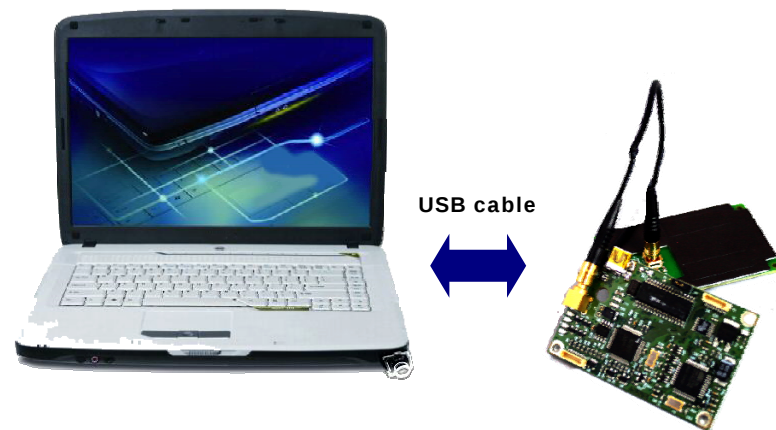
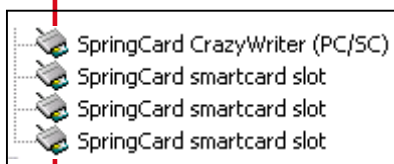
The 3 readers are
Legacy and the
application is based
on SpringCard
proprietary library
SpringProxAPI

How to start with CrazyWriter?

Setup Procedure

- 1/ Download * and install the SpringCard **csb6 family PC/SC driver**
- 2/ Connect the CrazyWriter to the PC/laptop through a USB cable
- 3/ When the hardware detection wizard pops up, select the manual installation mode and install the **SpringCard CrazyWriter (PC/SC)** driver that is listed
- 4/ **3 other wizards** will popup for the installation of the **3 slots** : the "virtual" contactless slot and the 2 SIM/SAM slots
For each slot, select the manual installation mode and install the **SpringCard smartcard slot** driver that is listed
- 5/ Launch your application or an example of application * provided by SpringCard

Your CrazyWriter is ready-to-use.



*Free download link :

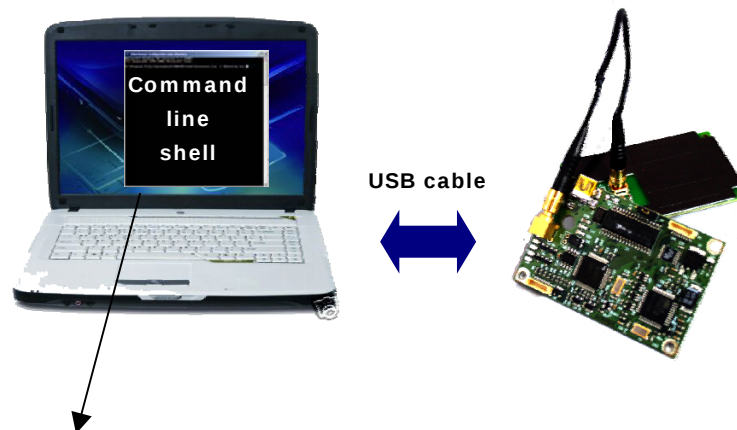
<http://www.springcard.com/download/crazywriter.html>

How to configure CrazyWriter into Legacy mode?

Procedure Legacy mode

- 1/ Follow the setup procedure steps 1 to 4
- 2/ Download* and install the SpringCard **csb6 family Legacy driver**
- 3/ Download* and install (default) the QuickStart for PCSC (it includes the configuration tool to switch to Legacy mode)
- 3/ Configure your CrazyWriter into Legacy mode by launching a command window and writing the command line :
C:\Program Files\SpringCard\SDD4C0>csb6_go_Legacy.exe
- 4/ *Disconnect and reconnect the CrazyWriter*
- 5/ When the hardware detection wizard pops up, select the manual installation mode and install the **SpringCard CrazyWriter (Legacy)** driver that is listed

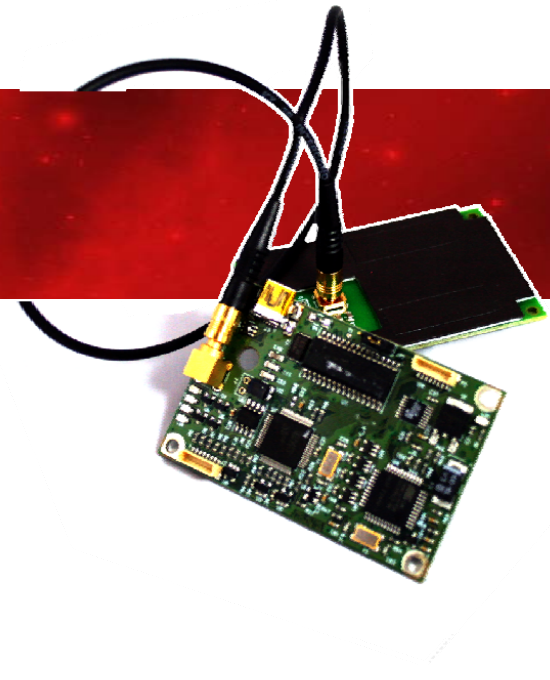
Your CrazyWriter is in Legacy mode !



C:\Program Files\SpringCard\SDD4C0>csb6_go_legacy.exe

*Free download link :

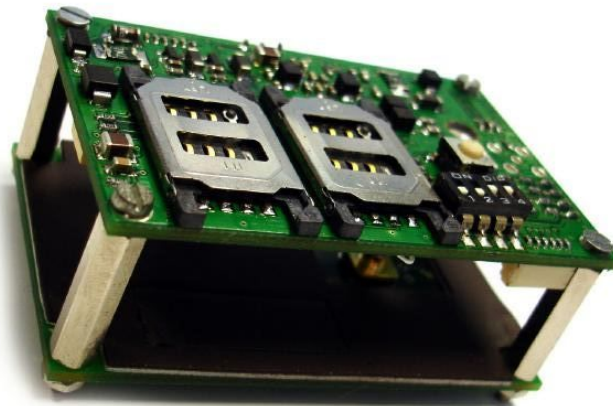
<http://www.springcard.com/download/crazywriter.html>



Demo time!

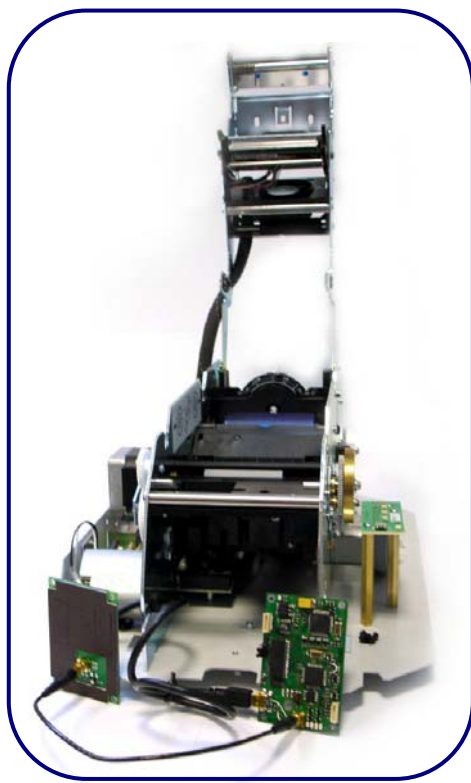
CrazyWriter

Example of implementation



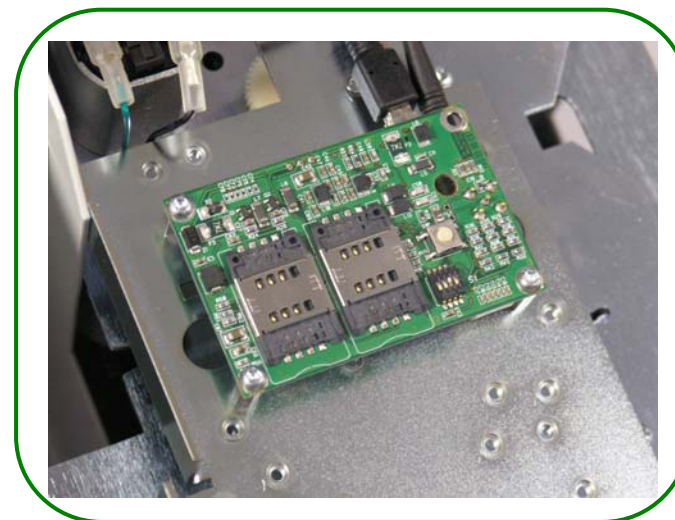
Contactless smartcard printer

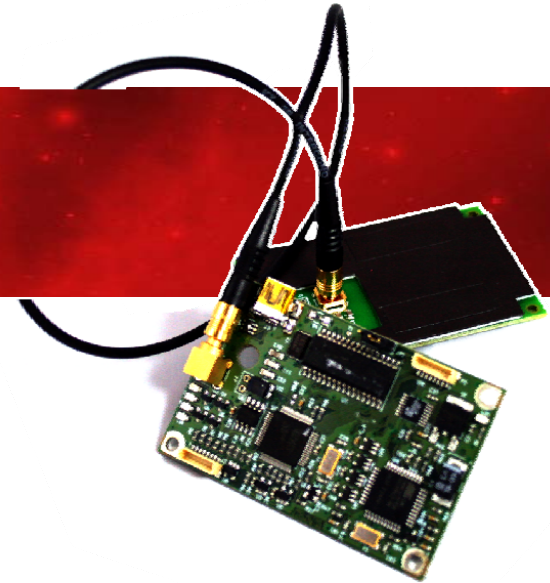
evOLIS



**CrazyWriter is used in PC/SC mode
=> USB interface**

- Card personalization printer
- Vending and ticketing machine





APPENDIX

PC / SC or SpringProxAPI?

What SpringProx API has less than PC/SC

Compared to PC/SC, more features are to be implemented in the application :

	SpringCard PC/SC reader + PC/SC stack	SpringCard legacy reader + SpringProx API
Abstraction of protocol	Reader	After T=CL activation only
Best protocol selection	Reader	Application
Chaining of TPDU	Reader	Reader
Retry and smart recovery	Reader	Reader
Card tracking	Reader + middleware	Application

What SpringProx API has more than PC/SC

The SpringProx API allows more flexibility than PC/SC, and working with memory cards is easier

	SpringCard PC/SC reader + PC/SC stack	SpringCard legacy reader + SpringProx API
Direct control of contactless interface parameters	No	Yes
Reading/writing Mifare memory cards	Indirect (APDU processor in reader with CLA=FF)	Direct and fast access to read/write primitives
Working with a currently unsupported memory card	Firmware upgrade needed	Transparent mode does the job
Exchanging arbitrary frames with the smartcard	Indirect (7816-4 format is mandatory in the stack)	Yes
Latency of card detection	500ms typ. (waiting on SCardGetStatusChange)	25ms typ. (busy loop on SPROX_Find)

Portability aspects (1 / 2)

PC/SC is not available everywhere – SpringProx API runs virtually on any target

	SpringCard PC/SC reader + PC/SC stack	SpringCard legacy reader + SpringProx API
Windows	Yes SpringCard (or MS) driver	Yes DLL or source code
Linux / some UNIX	Yes PCSC-Lite driver	Yes source code
Windows CE	Partial MS driver only	Yes DLL or source code
Pocket PC / Windows Mobile	No	Yes DLL or source code
MCU / Embedded CPU / Other OS	No	Yes source code or direct access

Portability aspects (2 / 2)

PC / SC is USB only – SpringProx API architected for serial (RS) communication

	SpringCard PC / SC reader + PC/SC stack	SpringCard legacy reader + SpringProx API
CSB6 family CrazyWriter, Prox'N'Roll, EasyFinger, CSB6U...	Yes	Yes Virtual comm port (USB CDC-ACM standard profile)
CSB4U or CSB5U	No	Yes Virtual comm. port (FTDI's USB to serial bridge)
CSB4S or CSB5S K531 (TLL or RS-232)	No	Yes « Real » comm. Port
SpringProx-CF, CF-UP, RC	No	Yes Compact Flash comm. port (Elan Digital's CF UART)

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