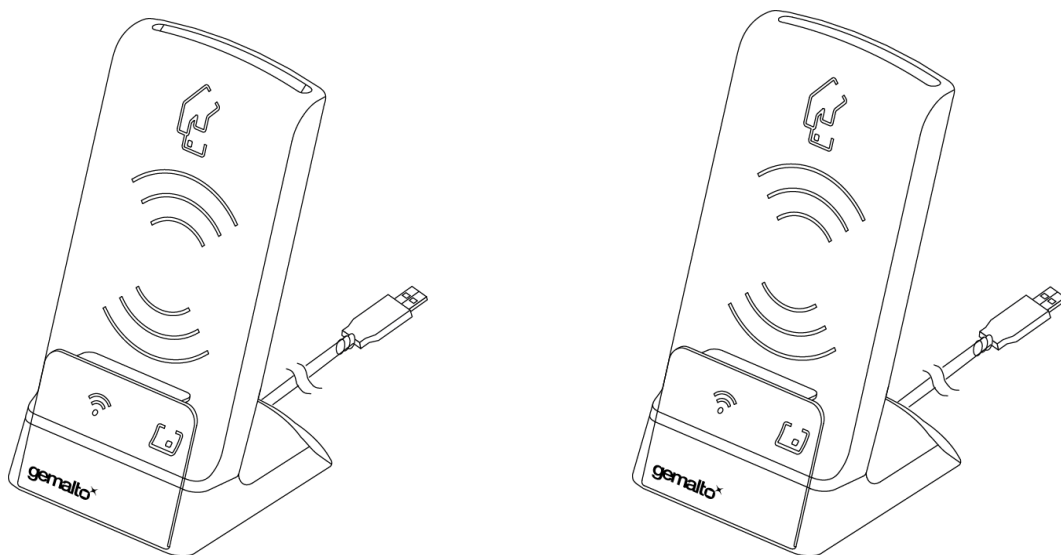


# Prox-DU & Prox-SU

## Dual interface USB smart card reader

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### Release Notes





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**Prox-DU & Prox-SU**

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**REVISION HISTORY**

Date	Release	Comments
March 2010	A	First release for V1.04-GXD01 version
September 2010	B	Support for new operating systems - Windows CE - Linux - Mac TA1=97h smart cards not supported by the Microsoft CCID driver for Windows XP The firmware release is the same: V1.04-GXD01
May 2011	C	Upgrade after BSI TR-03119 certification The firmware release is V1.07-GXD01 Information on the firmware upgrade BSI TR-03119 conformity paragraph added

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# Introduction

This document provides informations for the different firmware releases and the known issues and limitations related to the use of the Prox-DU and Prox-SU dual interface (contactless and contact) USB smart card reader/writer.

This document is applicable to the following references, revision C and later:

Model	Reference	Comments
Prox-DU	HWP118184	Dual interface USB smart card reader Contact & contactless
Prox-SU	HWP118185	Contactless interface USB smart card reader With optional SIM/SAM slot
Prox-DU with stand	HWP118830	Prox-DU with a stand for vertical use
Prox-SU with stand	HWP118831	Prox-SU with a stand for vertical use

Table 1 – Dual interface USB smart card reader/writer models

For information on how to use the smart card reader/writer, please refer to the “*Reference Manual*” document.

## Who should read this book

This installation guide is designed for developers of PC/SC smart card application or solution integrators.

## Contact our hotline

If you do not find the information you need in this document, or if you find errors, contact the Gemalto hotline at <http://support.gemalto.com/>. Please note the document reference number, your job function, and the name of your company. (You will find the document reference number at the bottom of the document.)

# Overview

## Description

The Prox-DU and the Prox-SU are Gemalto smart card reader/writers embedding the Prox and the GemCore technologies developed by Gemalto to interface contactless and contact smart cards:

- The Prox-DU is a **dual interface (contact and contactless)** USB smart card reader/writer:

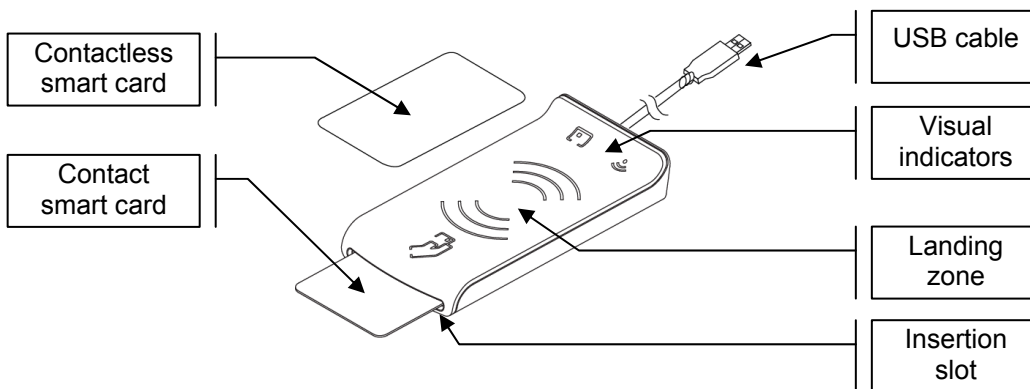


Figure 1 – Prox-DU view

- The Prox-SU is a **contactless interface** USB smart card reader including an internal SIM/SAM card slot:

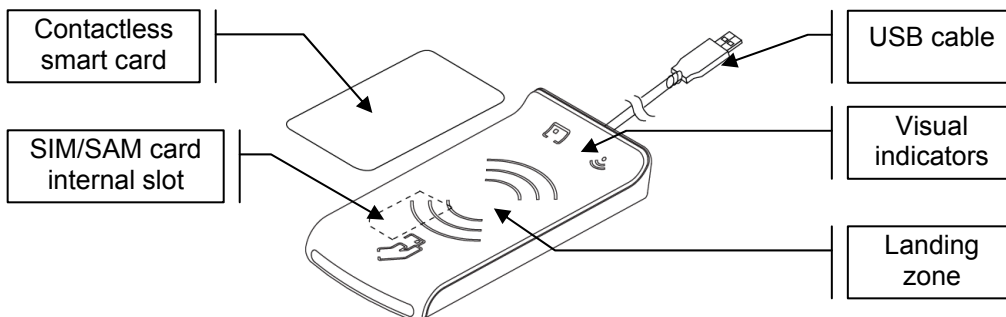


Figure 2 – Prox-SU view

The Prox technology complies with ISO14443 standard related to proximity cards applicable to type A and type B contactless smart cards.

The Prox technology uses MIFARE® (a registered trademark of NXP) technology as part of its integrated solution.

The GemCore technology complies with ISO7816 and EMV standard related to contact smart cards.

Both technologies also provide visual feedback for each smart card interface.

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Prox-DU & Prox-SU

A stand can be delivered for vertical use:

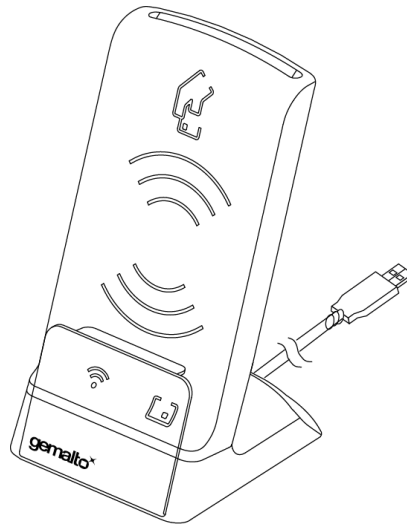


Figure 3 – Prox-DU with the stand for vertical use



## BSI TR-03119 Conformity

The BSI TR-03119 certificate N° BSI-K-TR-0078-2010 recognizes the ability of the Gemalto Prox-SU and Prox-DU smart card readers to interface with the new German electronic identity cards called nPA (neue Personalausweis) as a “Basic Chip Card Reader Category B”.

This certification includes a compliance with the next specifications:

- BSI TR-03105 Part 4 specification related to the test plan for ICAO compliant Proximity Coupling Device (PCD) on layer 2-4,
- Additional environmental and safety tests according to BSI TR-03119 attachment B.1,
- Functional tests according to BSI TR-03119 attachment B.2:
  - Installation of the smart card reader on different operating systems
  - Functional tests related to the use of the nPA smart card as card recognition, secret code input or change, or online authentication.

The conformity of the product Prox-SU / Prox-DU (with or without the stand) to the Technical Guideline BSI TR-03119 has been evaluated by evaluation facilities recognized according to DIN ISO/IEC 17025 and was confirmed by the German Federal Office for Information Security (BSI).



The following Test Standards have been applied for the performance of the conformity evaluation:

**BSI TR-03119** – Anforderungen an Chipkartenleser mit ePA Unterstützung (Requirements for Chipcard Reader Devices with ePA support), Version 1.1.

The product meets the requirements of the Technical Guideline BSI TR-03119.

## Main features

The Prox-DU and The Prox-SU have the following common features:

- Up-to-date architecture using the Gemalto Prox and GemCore technologies
- Ability to drive any type of ISO14443-A&B T=CL contactless smart cards
- Ability to drive any type of MIFARE® contactless smart cards
- Ability to drive any type of ISO7816 contact smart card or SIM/SAM card
- Support for smart card with a higher baud rate (contact and contactless)
- Easily upgradeable download of the latest features
- Standard USB Full speed interface, bus powered (no external power supply required)
- Unique USB serial number which enables that the device can be plugged into any USB slot on a computer without having to re-install the driver
- Standard CCID interface for both smart card slot (contact and contactless)
- Standard HID interface for device administration
- No need of a proprietary USB driver. The standard CCID and HID drivers of the computer can be used
- PC/SC V2.0 compliant
- Embedded protection against dual interface smart card damage with switch feature to select the active interface (contact or contactless)

Prox and GemCore are Gemalto proprietary technologies developed for contactless and contact reader/writers. It is based on a specific operating system that interfaces with contactless and contact smart cards.

## Firmware versioning rules

The string of the reader firmware version is composed of several fields:

<Name> <separator> <Release version> <separator> <Customer> <separator>  
<Casing/usage> <Order number>

Name:	"Gemalto_Pro_DU"	product name of Prox Dual reader
	"Gemalto_Prox_SU"	product name of Prox SU reader
Separator:	"-"	
Release version:	"Vx.yz"	release version number x.yz
Separator:	"-"	
Customer:	"G"	Gemalto
Casing/Usage:	"XD"	Official release
	"W"	working release
Order number:	"nn"	incremental number for each version. "00" to "99"
		It restarts to 00 when the release version number is incremented

For an easy reading, only the version string Vx.yz-GXDnn is given in the next tables below.

# Known issues and limitations with all the operating systems

The Prox-DU and the Prox-SU devices have the following limitations for all the operating systems:

- The contactless interface will only support the T=1 protocol.

**Consequently any connection requiring the T=0 protocol will not be accepted by the contactless interface.**

- Multi-activation of contactless smart cards is not supported.

**Consequently the first smart card detected in front of the reader/writer will be activated. The remaining smart cards will be ignored.**

- The communication with the contactless interface and the contact interface shall be exclusive.

**Consequently the application shall not use the two interfaces simultaneously. Else communication errors can occur.**

The next tables give a list of the known issues and limitations depending on the operating system used. For each issue a workaround is given.

# Known issues and limitations with Windows operating systems

The Prox-DU and the Prox-SU devices have the following limitations when operating with Windows operating systems:

Version String	Operating System	Known issue	Workaround
V1.07-GXD01	Windows XP Vista Seven	Prox-DU & Prox-SU: Simultaneous use of the contact and the contactless interface may freeze the device	Prox-DU: Do not use the the dual interface card protection in off mode  Prox-SU: Do not use the two interfaces simulatneously  When the device is frozen, unplug and replug the USB cable to recover a proper operation
	Windows XP	Prox-SU: When the computer is restarting it may happen the internal SIM/SAM card is not detected by the device	Unplug and replug the USB cable to recover a proper operation
	Windows XP Vista Seven	Prox-SU: Enabling/Disabling the USB smart card reader ,  Installing/Uninstalling the USB smart card reader,  from the Device Manager window may cause an issue	These operations should be done from the composite device and not the USB smart card reader
	Windows Vista	Prox-SU: When the computer is restarting or rebooting, the contactless card notification event may not be detected	Unplug and replug the USB cable to recover a proper operation

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	Windows Seven	<p>Prox-DU:</p> <p>Some "exotic" contactless cards may not be recognized by the device</p> <p>Some "exotic" dual cards may not be recognized by the device</p>	Unplug and replug the USB cable to recover a proper operation
	Windows XP	<p>Prox-DU &amp; Prox-SU:</p> <p>High speed contact smart cards (supporting TA1=97h ISO7816 parameter) are not recognized</p>	<p>The Microsoft CCID driver does not support high speed contact smart cards (with TA1=97h parameter).</p> <p>Please contact the Gemalto support website <a href="http://support.gemalto.com/">http://support.gemalto.com/</a>.</p>

Table 2 – Known issues and limitations (Windows OS)

# Known issues and limitations with Linux operating systems

The Prox-DU and the Prox-SU devices have the following limitations when operating with Linux operating systems:

Version String	Operating System	Known issue	Workaround
V1.07-GXD01	Linux	Prox-DU & Prox-SU: The reader can be frozen when both interfaces (contact & contactless) are used simultaneously.	Use libccid driver version 1.4.0 minimum. The libccid source code is available on the following web site: <a href="http://pcsclite.alieth.debian.org/ccid.html">http://pcsclite.alieth.debian.org/ccid.html</a>

Table 3 – Known issues and limitations (Linux OS)

## Known issues and limitations with Mac operating systems

Please note the following issues and limitations related to **PCSC-Lite** included into the MAC OS X operating systems:

Operating System	Known issue For PCSC-Lite	Workaround
Mac OS X Tiger (10.4)	SCardControl() issue: PC/SC SCardControl() command requires two arguments at least.	To compile and use a C source code using SCardControl() command, please use the reader.h file delivered with the "Secure Pin Entry sample code" available in the website <a href="http://support.gemalto.com/?id=63">http://support.gemalto.com/?id=63</a>
Mac OS X Tiger (10.4)	Dual protocol card issue: For dual protocol cards (T=0 and T=1) the connection will be used in T=0 (default protocol). pcsc-lite will not switch the card to T=1 as it is required for contactless cards.	If the application needs to use the contactless interface the connection should be made using the T=1 protocol only.
Mac OS X Leopard (10.5) Snow Leopard (10.6)	"Ghost" reader: After the connection 3 PC/SC readers will be displayed instead of 2: The second reader (contact) will be displayed twice (A "ghost" contact reader will be displayed)	Both contact readers are the same.
Mac OS X Leopard (10.5) Snow Leopard (10.6)	"Ghost" reader: After the device is disconnected one "ghost" PC/SC reader will still be displayed.	This PC/SC reader is no more available.

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<p>Mac OS X Leopard (10.5) Snow Leopard (10.6)</p>	<p>“Ghost” reader: After a Suspend / Wakeup cycle only the PC/SC contactless reader will be displayed correctly. The PC/SC contact reader is displayed but is no more useable. The “ghost” PC/SC contact reader is still present.</p>	<p>Unplug and Replug the reader.</p>
<p>Mac OS X Tiger (10.4) Leopard (10.5) Snow Leopard (10.6)</p>	<p>SCardStatus() issue: The pdwProtocol parameter is not correct with the contact reader. Returned value is 0 (SCARD_PROTOCOL_U NDEFINED)</p>	<p>No workaround</p>

Table 4 – PCSC-Lite known issues and limitations (Mac OS X)



# Revision History Table

The next table gives a list of all the versions delivered for the Prox-DU and Prox-SU devices.

Version String	Comments	Date
V1.04-GXD01	Initial release	March 2010
V1.05-GXD01	BSI TR-03119 certified initial release: <ul style="list-style-type: none"> <li>- Extended APDU support added</li> <li>- RF Reset is performed when the card is deselected</li> <li>- BSI TR-03105 Part 4 RF tuning:  <ul style="list-style-type: none"> <li>Type B modulation index correction</li> <li>Bit duration correction for 212-424 kbps</li> </ul> </li> <li>Analog tests added for baud rate test</li> </ul>	October 2010
V1.06-GXD05	BSI TR-03119 certified final release: <ul style="list-style-type: none"> <li>- Extended APDU support improvement (bug fix to handle up to 65536 bytes)</li> <li>- USB engine improvement (enumeration process and power management)</li> <li>- RF reset performed during the polling loop for a proper smart card power up</li> </ul>	December 2010
V1.07-GXD01	BSI TR-03119 maintenance certification: <ul style="list-style-type: none"> <li>- USB engine improvement for a correct operation with high speed USB Hub</li> <li>- Contactless chip revision considered</li> </ul>	May 2011

Table 5 – Revision history

End of Document