Passport Reader Install Guide

For versions from 2.1.5-12

Document version: 13.11.14

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Declaration of RoHS Compliance for Electrical and Electronic Products:

ARH Inc. ("the Company") hereby declares that the Passport Readers placed on the European Community market by the Company after 1st July 2006 are compliant with EC Directive 2002/95/EC on the Restrict of Certain Hazardous Substances in Electrical and Electronic Equipment (commonly known as the EU RoHS Directive.)

Compliance with RoHS means that where the product falls under the scope of the EU RoHS Directive, the product does not contain the following substances:

- Mercury (Hg) 0.1%
- Lead (Pb) 0.1%
- Cadmium (Cd) 0.01%
- Hexavalent Chromium (Cr+6) 0.1%
- Polybrominated Biphenyls (PBB) 0.1%
- Polybrominated Diphenyl Ethers (PBDE) 0.1%

above the indicated maximum concentration values by weight in homogeneous materials unless the substance is subject to an exemption specified in the Directive or in subsequent Commission Decisions.

This declaration represents the Company's best knowledge, which is partially based on information provided by third party suppliers.

Equipment modifications:

This equipment must be installed and used according with the instructions given in its documentation. This equipment contains no serviceable components. Unauthorized equipment changes or modifications cause warranty to void.

Product Views

Combo Series:



Combo Smart ePassport Reader device



Combo Scan device

Other devices:



PRMc ePassport Reader device



Package Contents

- Passport Reader Device
- Power Supply: UE60-120500SPA3 Switching Power Adaptor
  - Input: 100-240V ~ 50/60Hz
  - Input Current: 1.50A
  - Output: 12V – 5.0A
  - Output Power Max: 60W

  CAUTION! Do not operate the device with other type of power supply!
- USB 2.0 Hi-speed cable
- Glass cleaning wipes (3pcs)

Passport Reader CD contains:

- Drivers for Passport Reader devices
- Software Development Kit for C/C++, Visual Basic, Delphi, C#, VB.NET and Java programming languages
  - Interface files
  - Sample programs
  - Manual in HTML and CHM format
- Passport Reader Demo application
- Passport Reader Test program

System Requirements

The following is the recommended minimum system configuration to operate the Passport Reader devices:

- Intel Pentium 2 GHz CPU or higher (or equivalent x86 compatible CPU)
- 1 GB RAM or more (depending on application)
- 32 or 64-bit Microsoft Windows XP/Vista/7 operating system or Linux operating system (kernel version 3.2)
- Integrated USB 2.0 port (on motherboard)

NOTE: The speed of image processing highly depends on the type of hardware used. In general, the shorter recognition time is needed, the more powerful machine you are advised to use.

Hardware Installation

Please follow the next steps for connecting your PR device to the PC.

1. Connect the PR device to one of the USB 2.0 ports of your PC with the attached USB cable.
2. Connect the power supply* to the PR unit and switch the device on.**

*Only in case of devices with power supply.
**Only in case of devices with power button.

NOTE: It is strongly recommended to connect the PR device to motherboard USB port directly. Otherwise, always use shielded USB cable between the motherboard and the USB connector.

Make sure that the USB cable has a USB certification label on it, and/or a printed 8 character long TID number.



USB certification label



USB TID

In case of connecting the PR device to a **portable computer,** it is recommended to use external power supply. If you use e.g. a notebook running on battery, make sure that the Voltage of its USB port is not less than 5V.

IMPORTANT

To unplug the device (Combo Smart), firmly grasp the plug, not the cord, and pull it to disconnect as shown below:



1. Step



2. Step

It is highly recommended to not pull the cord according to the image below, in order to not tear the cable:



Do not operate the unit if it has a damaged cord or plug!

Software Installation on Windows Operating System

Installation on 32 bit Windows Operating System

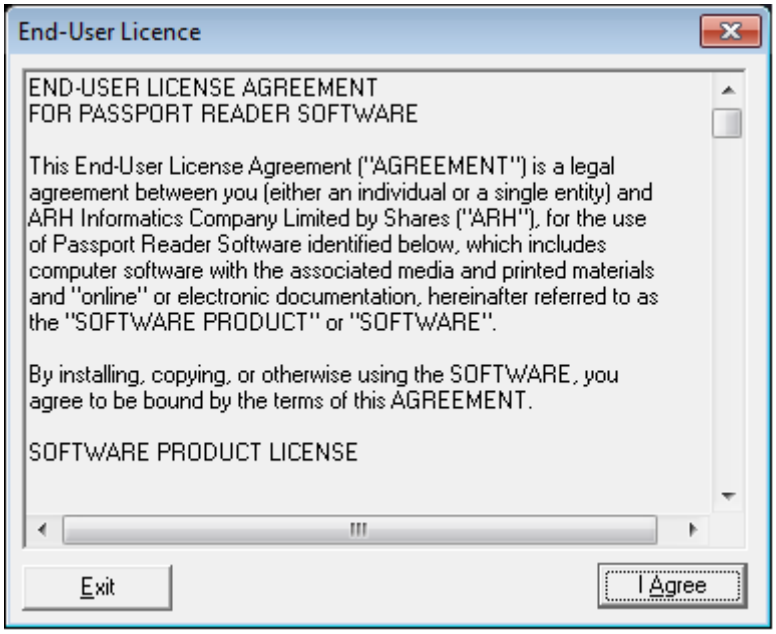
For the proper installation you should have **administrator rights**.

- Before installing the PR module, you have to remove previous versions of Passport Reader software**.** (Start menu→ Programs→ GX→ UNINSTALL→ - FULL UNINSTALL -).
- **Restart your computer.**
- **IMPORTANT!** If "New Hardware Found" wizard for Plug and Play devices starts, click ***Cancel***!
- After your operating system has started, insert the Passport Reader product CD.
- If Passport Reader setup does not start automatically, locate D:\setup.exe (assuming D:\ is your CD-ROM drive), and run it by double-clicking on it.
- The installation starts with the following window:



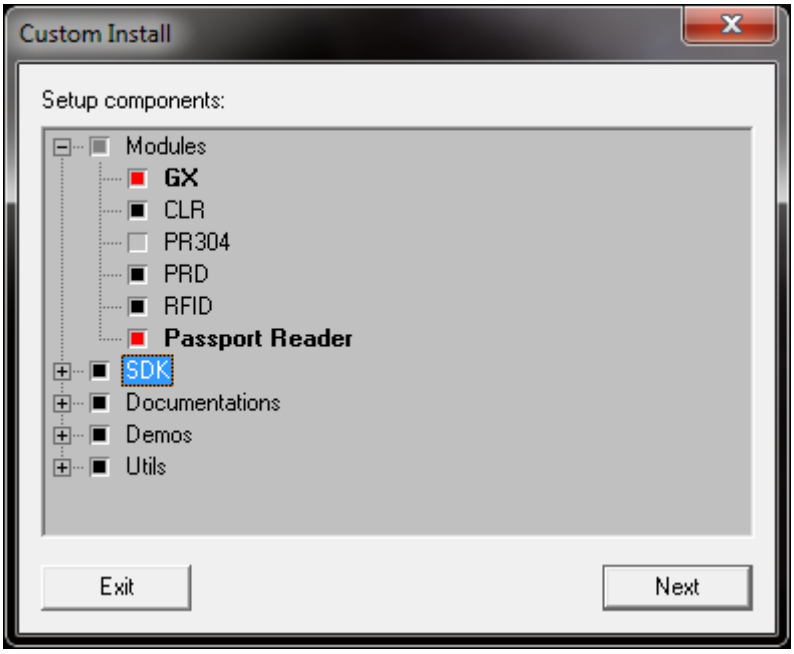
Start Page of Passport Reader setup

- To start the installation, select "**Install 32 bit version**". The following window will appear:



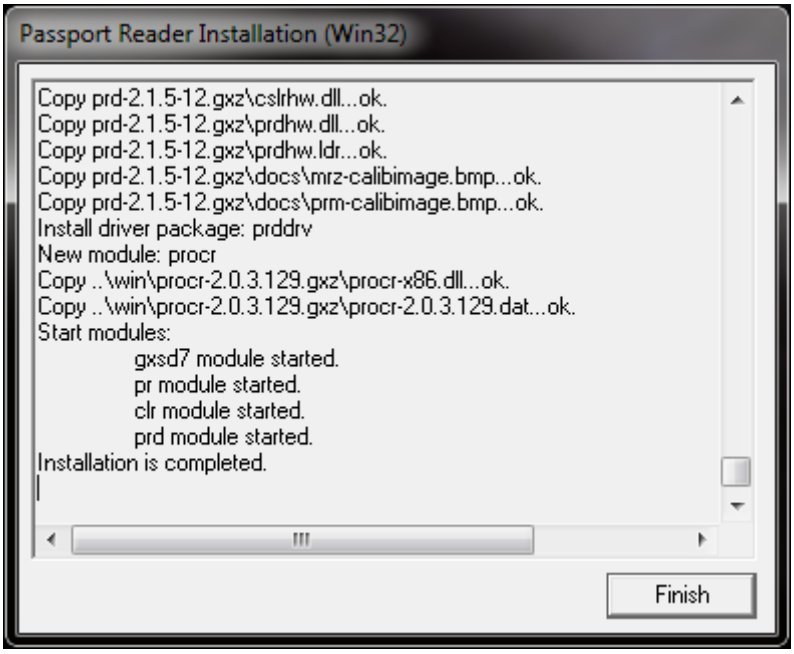
End-User Licence Agreement

- After you have agreed with the EULA (by clicking **I Agree**) you can start the custom installation process by clicking on the **Next** button.
- In the Custom Install window, open the Modules branch.
- The **GX** and the **Passport Reader** are essential parts. The **CLR** is required only for CLR, PRM, MRZ and Card Reader Devices while the **PRD** is necessary for Combo Smart, Combo Scan and PRMc devices. **The PR304** is required only for PR304 devices. The **RFID** driver is necessary only for those devices included in the CLR category that are equipped with RFID reading capability.
  The **SDK** includes the sample programs and the header files for the listed programming languages while the **Documentation** part contains the Reference and Programmer's Manuals.



Custom install of Combo Smart and PRMc device

- When the installation is completed click on **Ok** then **Finish**.



Installation is completed

- Finally, exit from setup.



Exit from setup

Installation on 64 bit Windows Operating System

NOTE: In case you are planning to use your PR application on 32-Bit processors (e.g. Pentium 4) or you intend to develop 32-Bit applications, then the 32-Bit version of the installer must be installed as well.

The installer contains 64 bit files as well. Note, that the 3rd party drivers (JURA support and RFID drivers for PRM and MRZ reader devices) and the .NET interface are 32-bit only.

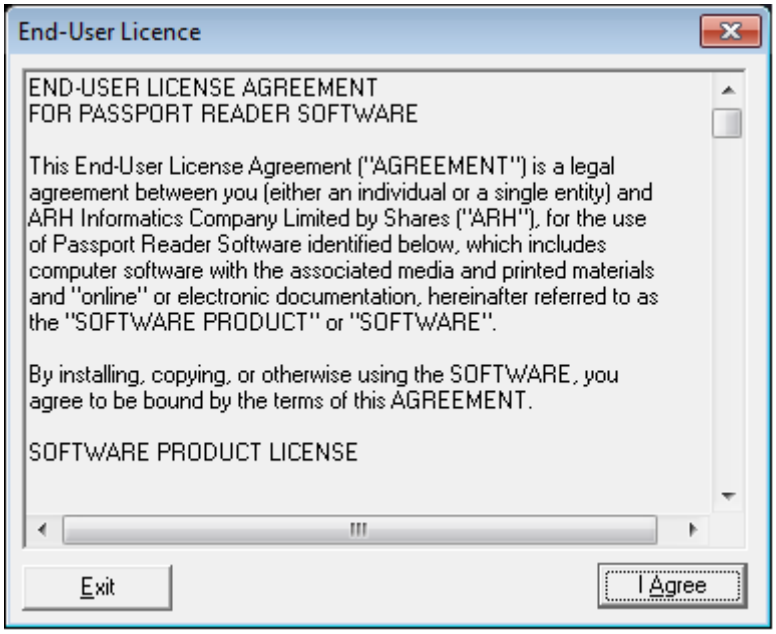
For the proper installation you should have **administrator rights**.

- Before installing the Passport Reader device you have to remove previous versions of Passport Reader software: (Start menu→ Programs→ GX→ UNINSTALL→ - FULL UNINSTALL -) **and**
  (Start menu→ Programs→ GX→ 32 bit version→ - FULL UNINSTALL -).
- **Restart your computer.**
- **IMPORTANT!** If "New Hardware Found" wizard for Plug and Play devices start, click ***Cancel***!
- After your operating system has started, insert the Passport Reader CD.
- If Passport Reader setup does not start automatically, locate D:\setup.exe (assuming D:\ is your CD-ROM drive), and run it by double-clicking on it.
- The installation starts with the following window. To start the installation, select **Install 64 bit version**. This option will install all the 64-bit files.



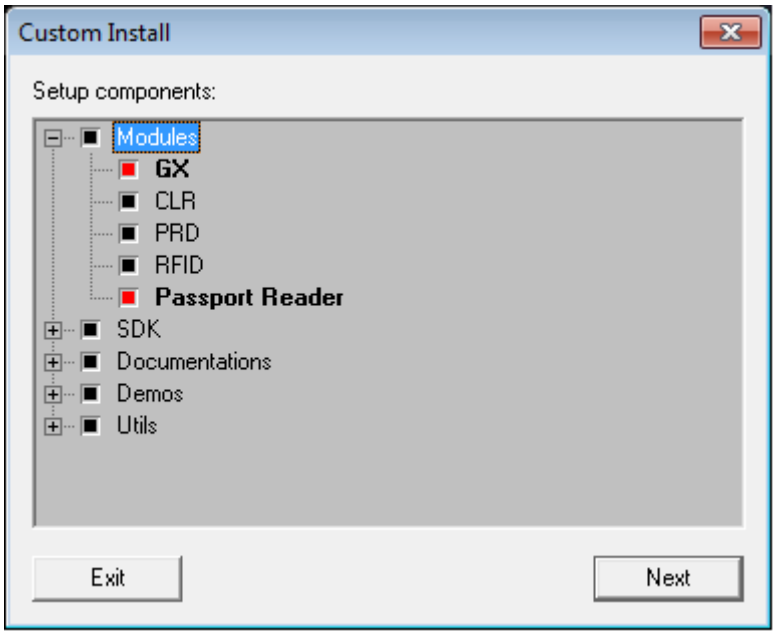
Start Page of Passport Reader x64 setup

- To start the installation, select "**Install 64 bit version**". The following window will appear:



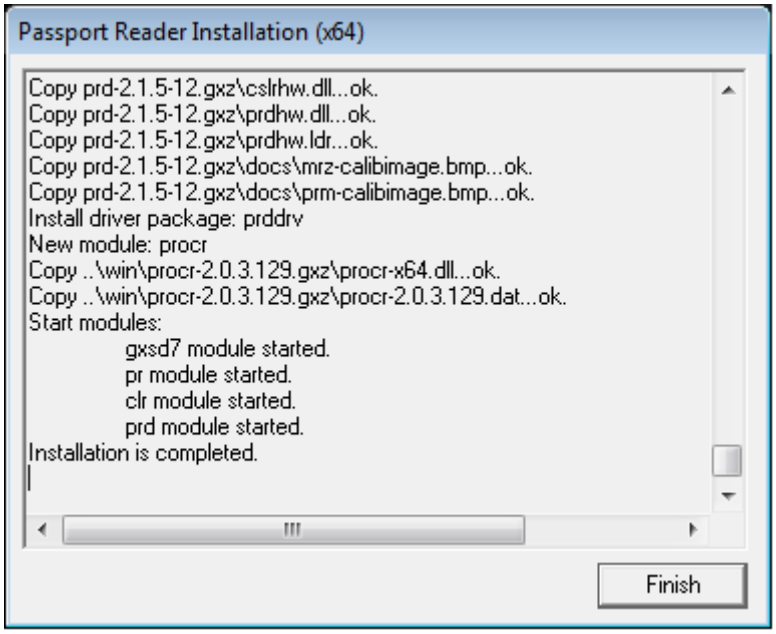
End-User Licence Agreement

- After you have agreed with the EULA (by clicking **I Agree**) you can start the custom installation process by clicking on the **Next** button.
- In the Custom Install window, open the Modules branch.
- The **GX** and the **Passport Reader** are essential parts. The **CLR** is required only for CLR, PRM, MRZ and Card Reader Devices while the **PRD** is necessary for Combo Smart, Combo Scan and PRMc devices. The **RFID** driver is necessary only for those devices included in the CLR category that are equipped with RFID reading capability.
  The **SDK** includes the sample programs and the header files for the listed programming languages while the **Documentation** part contains the Reference and Programmer's Manuals.



Setup Components

- When the installation is completed click on **Ok** then **Finish**.



Installation is completed

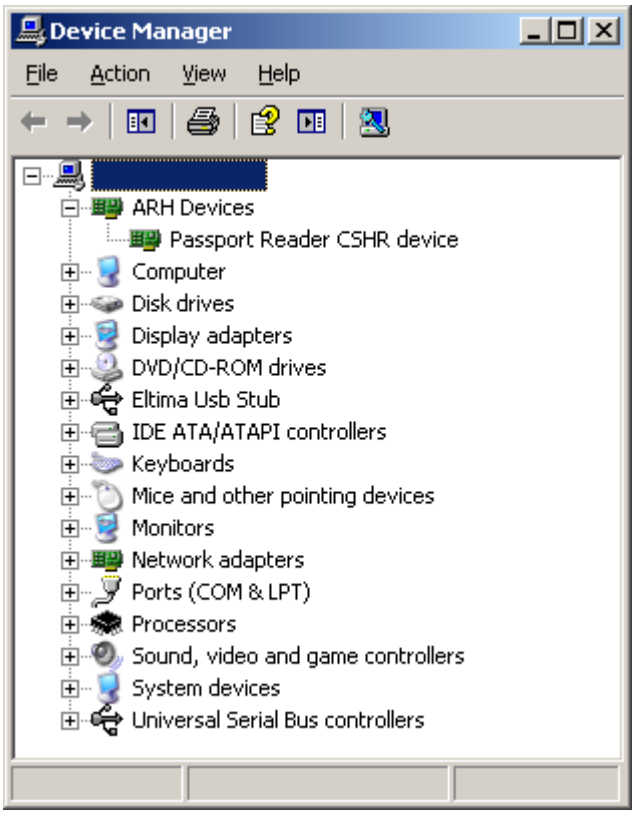
- Finally, exit from setup.



Exit from setup

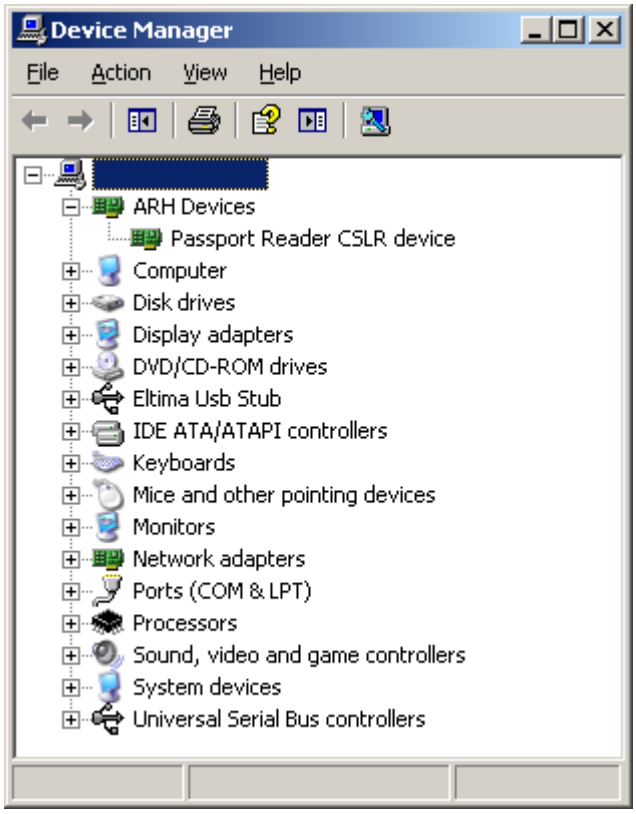
- After the installation is finished, open the Device Manager. If the installation was successful you will find the following devices:

A, In case of Combo Smart device:



Combo Smart in Device Manager

B, In case of Combo Scan device:



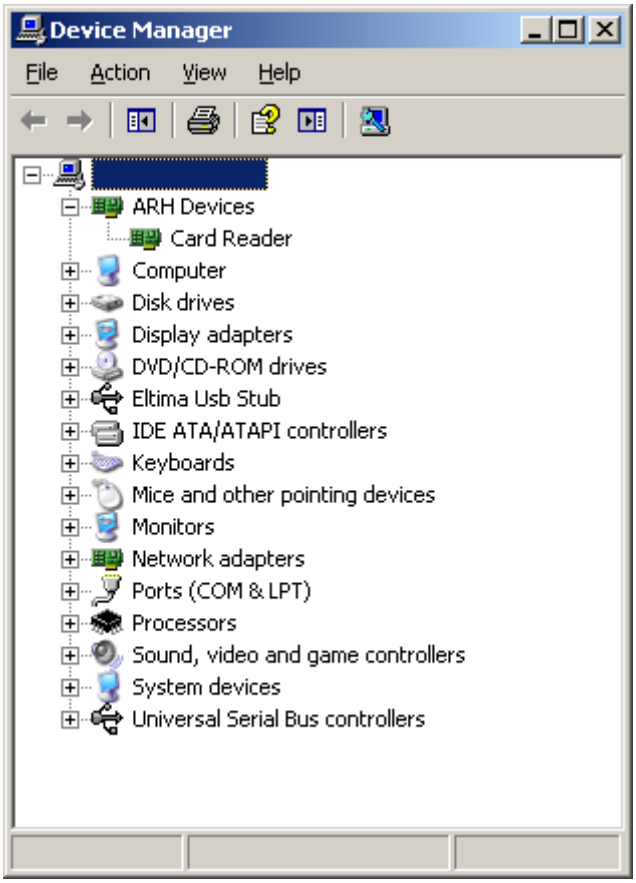
Combo Scan in Device Manager

C, In case of PRMc device:



PRMc in Device Manager

D, In case of ID1 KIOSK Reader device:



ID1 KIOSK in Device Manager

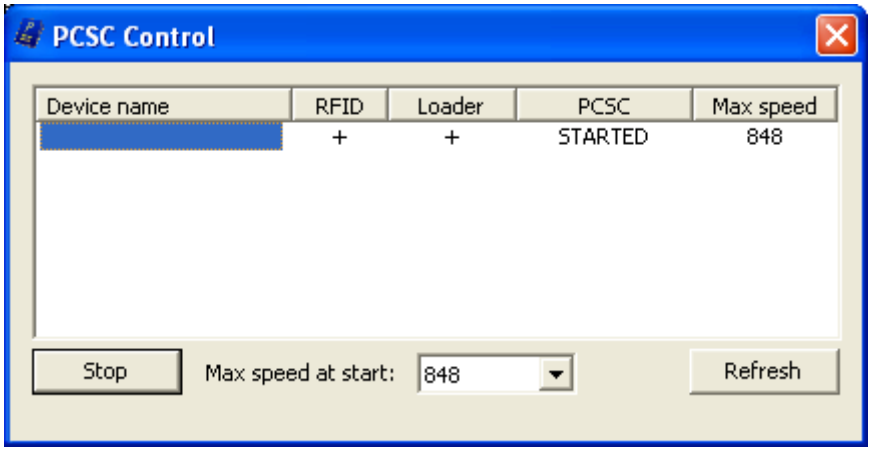
PC/SC Driver

The PC/SC driver is part of the Passport Reader installer package. The icon of the PC/SC driver can be found in the toolbar (near to the clock).



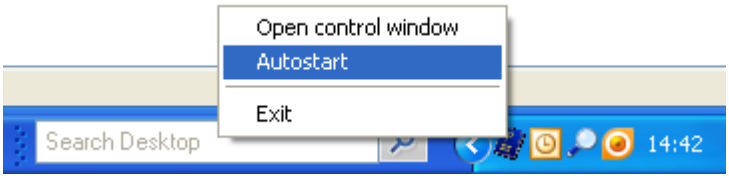
Windows toolbar

By double clicking on it, the PC/SC Control window appears. The default status is "STOPPED". It can be started by clicking on the **START** button.



PC/SC Control Utility

The PS/SC driver can be started automatically via the Autostart menu (right click on the PC/SC icon and tick the **Autostart** line).



PC/SC Menu

Software Installation on Linux Operating System

Introduction

The system was built on Debian 6.06 and has been tested on:

- Debian 7
- Ubuntu 10.04
- Ubuntu 12.04
- CentOS 6.3
- OpenSUSE 12.1

NOTE: Read the license agreement before installing the packages.

For the installation you need "GNU Make" (we have tested with "GNU Make 3.81"), "GNU C/C++" compiler (we have tested with "GNU C/C++ 4.6.3") and the corresponding GLIBC. The kernel headers and configuration files must be installed as well.

Contents of the Install Package

NOTE: The Linux installation package contains both the 32-bit and the 64-bit files. Files ending **without** x86 or x64 are necessary for **both** 32-bit and 64-bit installations.

32-Bit Package

GX

`gx-7.2.x-x-x86.tar.gz`	GX system
`gx-sdk-7.2.x-x.tar.gz`	SDK

Passport Reader

`pr-2.1.x-x-x86.tar.gz`	Passport Reader system
`prd-2.1.x-x-x86.tar.gz`	PRDDRV driver for Passport Reader devices
`clr-2.x.x-x-x86.tar.gz`	CLRDRV driver for Passport Reader devices
`procr-2.x.x-x.tar.gz`	OCR engine
`pr-sdk-2.1.x-x.tar.gz`	SDK
`pr-demo-2.x.x-x.tar.gz`	Full Page Reader demo application
`pr-udev-2.x.x-x.tar.gz`	Scripts and udev rules for automatic driver loading

64-Bit Package

GX

`gx-7.2.x-x-x64.tar.gz`	GX system
`gx-sdk-7.2.x-x.tar.gz`	SDK

Passport Reader

`pr-2.1.x-x-x64.tar.gz`	Passport Reader system
`prd-2.1.x-x-x64.tar.gz`	PRDDRV driver for Passport Reader devices
`clr-2.x.x-x-x64.tar.gz`	CLRDRV driver for Passport Reader devices
`procr-2.x.x-x.tar.gz`	OCR engine
`pr-sdk-2.1.x-x.tar.gz`	SDK
`pr-demo-2.x.x-x.tar.gz`	Passport Reader demo application
`pr-udev-2.x.x-x.tar.gz`	Scripts and udev rules for automatic driver loading

The Installation Procedure

1. Unpack and copy all files into your system:

- use `_install.sh [32|64|all]`

  Note, that optional parameters enforce the installation of the binaries.

  Dependencies:

  Please install the following libraries with your distribution package manager or manually (these libraries are apart from services):

- SDL (A library for portable low-level access to a video framebuffer, audio output, mouse, and keyboard)
- SDL ttf (A library that enables using TrueType fonts in your SDL applications)
- SDL net
- SDL gfx
- SDL image
- freetype (TrueType font rendering library)

  GX: none
  Passport Reader: GX

2. Compile kernel modules:

- Download a kernel source (e.g. 2.6.x) from http://www.kernel.org and unpack into /usr/src directory (2.6.x series recommended).

  If you have an older GX version in the kernel tree, please remove it manually by using the script `_uninstall.sh`.

  You can use the kernel source package of your distribution (e.g. Ubuntu 10.04 -> linux-kernel-headers)

- Or make sure that the kernel config files are installed. Check the /lib32/modules/$(KERNEL_VERSION)/build directory

- Compile device drivers:

  Compile the drivers with 'make' command in the following order:
  - `/usr/src/gx/kernel/gxsd`
  - `/usr/src/gx/kernel/clrdrv`
  - `/usr/src/gx/kernel/prddrv`

  NOTE: If you get a "No rule to make target..." error message by typing "make":

  if the output of "uname -i" is "unknown" and your system is either i386 or x86_64:

  make a symbolic link to e.g. b_prddrv.o by typing:

```
ln -s b_prddrv.o.i386 b_prddrv.o OR
ln -s b_prddrv.o.x86_64 b_prddrv.o
(ln -sf b_prddrv.o.i386
/usr/src/gx/kernel/prddrv/b_prddrv.o.GenuineIntel by me)
```

  according to your system.

3. Install new kernel modules:

For PRDDRV:

```
/sbin/insmod /usr/src/gx/kernel/gxsd/gxsd.ko
/sbin/insmod /usr/src/gx/kernel/prddrv/prddrv.ko
```

For CLRDRV:

```
/sbin/insmod /usr/src/gx/kernel/gxsd/gxsd.ko
/sbin/insmod /usr/src/gx/kernel/clrdrv/clrdrv.ko
```

4. Automatic driver loading is enabled by the pr-udev module.

This module enables the automatic installation of the driver modules upon connecting the reader to the pc, so you do not have to start the driver manually. In case you do not want this feature, you can remove the 98-arh.rules from /etc/udev/rules.d directory.

After Installation

After installation, you can find the manual for the GX and PR systems in /usr/share/doc/gx. The header files can be found in /usr/include/gx, the library files in /usr/lib32/gx (and /usr/lib64/gx on 64 bit systems).

The basic GX library is in /usr/lib32 and /usr/lib64 (libgxsd.so.7). The file containing the property data is /var/gx/gxsd.dat.

After the kernel modules were started, you can check the state of the running drivers in /proc/gx.

Sample programs can be found in /usr/src/gx in the examples directory.

You can use these environment variables:

- `LD_LIBRARY_PATH:` for shared objects (*.so)
  (/usr/lib32, /usr/lib64, /usr/lib32/gx, /usr/lib64/gx)
- `GX_VAR_PATH:` for properties (gxsd.dat) and global locks (/var/gx)
- `GX_SHARE_PATH:` for shared data (procr-2.xx.dat) (/usr/share/gx)

Installation of an Other Engine

The engine is packed to a .tar.gz file. Type the following command to start installation:

```
tar xvfz engine.tar.gz -C /
```

Uninstallation

If you want to uninstall the device driver files simply type:

```
rm -Rf /usr/include/gx /usr/lib32/gx /usr/lib64/gx /var/gx /usr/src/gx
rm -Rf /usr/share/gx /usr/share/doc/gx
rm -f /usr/lib32/libgx* /usr/lib64/libgx*
```

or use `_unistall.sh`

Device Entries in /dev Directory

Similar entries can be found in /dev if you connect the device and load the desired driver. This entry point will be created by udev in the new 2.6.x kernel series.

```
crw-rw---- 1 root root    189,   2 2009-11-26 15:49 usbdev1.3
crw-rw---- 1 root root    252,  14 2009-11-26 15:49 usbdev1.3_ep00
crw-rw---- 1 root root    252,  13 2009-11-26 15:49 usbdev1.3_ep81
crw-rw---- 1 root root    189,   5 2009-11-26 15:49 usbdev1.6
crw-rw---- 1 root root    252,  17 2009-11-26 15:49 usbdev1.6_ep00
crw-rw---- 1 root root    252,  15 2009-11-26 15:49 usbdev1.6_ep02
crw-rw---- 1 root root    252,  16 2009-11-26 15:49 usbdev1.6_ep84
```

Troubleshooting - Known Bug(s)

1. Permission denied failure

Solution:

```
/sbin/rmmod prddrv
/sbin/rmmod gxsd
/sbin/insmod /usr/src/gx/kernel/gxsd/gxsd.ko
/sbin/insmod /usr/src/gx/kernel/prddrv/prddrv.ko
```

Your feedback and comments are welcome.

Thank you,
ARH Linux Team

Troubleshooting

Problem	Problem cause	Solution
There is a "!" besides the Passport Reader {XXX} device in the Device manager.	The driver of the controller(s) is not installed properly.	Refresh the drivers. If automatic refreshing fails, full uninstall the software and install it again.
There is a "!" besides the Passport Reader RFID device*.	The driver of the RFID controller is not installed properly.	Refresh the drivers. If automatic refreshing fails, full uninstall the software and install it again.
You fail to install the drivers.	You have no administrator rights.	You have to install the drivers with **administrator rights**.
When starting Prdemo it displays: "…Weak device capability [prcap]"	You use USB 1.1 connection.	Change for USB 2.0. On Windows 2000 install SP4. On Windows XP install SP1.
The device cannot read the RFID chip.	Too high 'Max. Airspeed' value.	Change the value of the 'rfid/air_speed' property. The possible values are: 848, 424,212 and 106. (The default value is 848.)
Only the "Exit" option appears during the installation process.	The autorun.inf file is blocked by another program.	Please check your Antivirus program and allow the execution of the autorun.inf file.
TWAIN does not work on 64-bit operating system	lack of 64-bit Windows drivers	Copy the twaindsm.dll located in the PR install package to your Windows directory.

Technical Specifications

The technical specifications are subject to change without prior notice!

	PRMc 123	PRMc 223	PRMc 233	PRMc 133	Combo Scan	Combo Smart
Imaging						
Image sensor [Mpixels]	3	3	3	3	5	5
Resolution [DPI]	400	400	400	400	500	500
Active scan area [mm]	98 x 130	98 x 130	98 x 130	98 x 130	125 x 50	125 x 88
Active scan area [inch]	3,85 x 5,11	3,85 x 5,11	3,85 x 5,11	3,85 x 5,11	4,96 x 2,17	4,92 x 3,46
Automatic document detection	yes	yes	yes	yes	yes	yes
Illumination Sources						
Normal white light	yes	yes	yes	yes	yes	yes
Infra red (IR) light	yes	yes	yes	yes	yes	yes
UV-A light	-	-	yes	yes	-	optional
OCR Reading						
ICAO MRZ 1,2,3 line	yes	yes	yes	yes	yes	yes
ID 1 Document Type	yes	yes	yes	yes	yes	yes
ID 2 Document Type	yes	yes	yes	yes	no	yes
ID 3 Document Type	yes	yes	yes	yes	no	yes
Visual Inspection Zone (VIZ)/user defined	optional	optional	optional	optional	optional	optional
Barcode Reading						
1D UPC-A	yes	yes	yes	yes	yes	yes
1D EAN8	yes	yes	yes	yes	yes	yes
1D EAN13	yes	yes	yes	yes	yes	yes
1D Code39	yes	yes	yes	yes	yes	yes
1D Code128	yes	yes	yes	yes	yes	yes
1D ITF	yes	yes	yes	yes	yes	yes
2D PDF 417	yes	yes	yes	yes	yes	yes
2D Data Matrix	yes	yes	yes	yes	yes	yes
2D QR Code	yes	yes	yes	yes	yes	yes
2D Aztec Code	yes	yes	yes	yes	yes	yes
From paper and mobile device screen	yes	yes	yes	yes	yes	yes
AAMVA compliant PDF417 2D barcodes	yes	yes	yes	yes	yes	yes
RFID Reading						
RFID module	optional	optional	optional	optional	-	optional
RFID detection in any position	yes	yes	yes	yes	-	yes
Single-step reading	yes	yes	yes	yes	-	yes
Supporting ISO 14443 A/B compliant IC-s up to 848 Kbps	yes	yes	yes	yes	-	yes
Supporting ICAO D 9393 / LDS 1.7 IC-s	yes	yes	yes	yes	-	yes
Max. RFID speed data reading	yes	yes	yes	yes	-	yes
Supported RFID Authentications						
AA, PA	yes	yes	yes	yes	-	yes
BAC	yes	yes	yes	yes	-	yes
EAC (CA,TA)	yes	yes	yes	yes	-	yes
PACE (EAC2)	yes	yes	yes	yes	-	yes
Magnetic Stripe Reading						
Magnetic Stripe Reader Module	-	-	-	-	-	optional
Related ISO reading	-	-	-	-	-	yes
ANSI reading	-	-	-	-	-	yes
AAMVA reading	-	-	-	-	-	yes
Contact Smart Card Reading						
Contact Smart Card Module	optional	optional	optional	optional	-	optional
ISO 7816 & EMV2 2000 standards	yes	yes	yes	yes	-	yes
ISO 7816 Class A, AB and C (optional) card types	yes	yes	yes	yes	-	yes
Enhanced Photo Reading						
Photo Camera	-	-	-	yes	-	-
JURA IPI decoding	-	-	-	yes	-	-
Background printing check	-	-	-	yes	-	-
Microprinting check	-	-	-	yes	-	-

Authentication (ADAM*)						
MRZ checksum validation	yes	yes	yes	yes	yes	yes
MRZ comparing to VIZ	optional	optional	optional	optional	optional	optional
Expiry date check, B900 ink check	yes	yes	yes	yes	yes	yes
Automatic pattern matching under normal and IR light	optional	optional	optional	optional	optional	optional
Automatic pattern matching under normal, IR and UV light	-	-	optional	optional	-	optional
Comparing printed data to data in RFID chip	yes	yes	yes	yes	-	yes
UV dull paper check (UV required)	-	-	yes	yes	-	yes
Extended High Color Fidelity (XCF)						
Automatic color calibration	yes	yes	yes	yes	yes	yes
Outstanding deltaE value (ref. Q-60R2 Kodak Target)	-	-	-	yes	-	-
Operating Systems						
Windows 7 (32/64bit)	yes	yes	yes	yes	yes	yes
Windows Vista(32/64bit)	yes	yes	yes	yes	yes	yes
Windows XP (32/64bit)	yes	yes	yes	yes	yes	yes
Windows Server 2003 (32/64bit)	yes	yes	yes	yes	yes	yes
Windows Server 2008, R2 (32/64bit)	yes	yes	yes	yes	yes	yes
Linux	optional	optional	optional	optional	optional	optional
SDK						
C/C++	yes	yes	yes	yes	yes	yes
Visual Basic 6.0	yes	yes	yes	yes	yes	yes
Delphi	yes	yes	yes	yes	yes	yes
Java	yes	yes	yes	yes	yes	yes
VB.NET	yes	yes	yes	yes	yes	yes
C#	yes	yes	yes	yes	yes	yes
Accessible Images						
Visible	yes	yes	yes	yes	yes	yes
IR captured	yes	yes	yes	yes	yes	yes
UV induced	-	-	yes	yes	-	optional
OVD	-	-	-	-	yes	yes
Glare-free image (Reflection Removing Function)	-	-	-	-	yes	yes
Image formats						
Color depth (RGB)	24 bits/pixel	24 bits/pixel	24 bits/pixel	24 bits/pixel	24 bits/pixel	24 bits/pixel
BMP format	yes	yes	yes	yes	yes	yes
JPG format	yes	yes	yes	yes	yes	yes
JPG2000 format	yes	yes	yes	yes	yes	yes
PNG format	yes	yes	yes	yes	yes	yes
General Interfaces						
Twain	yes	yes	yes	yes	yes	yes
PC/SC (for devices with RFID)	yes	yes	yes	yes	-	yes
BioAPI 2.0 (for devices with RFID)	yes	yes	yes	yes	-	yes
Number of programmable status LEDs	2	2	2	2	2	3
Computer Connections						
USB 2.0 high speed	yes	yes	yes	yes	yes	yes
Extra USB2.0 port for connecting external device	-	-	-	-	-	yes
Physical Properties						
Width x Height x Depth mm	213 x 173 x 179	213 x 173 x 179	213 x 173 x 179	213 x 173 x 179	152 x 130 x 82	180 x 175 x 145
Width x Height x Depth inches	8.39 x 6.81 x 7.05	8.39 x 6.81 x 7.05	8.39 x 6.81 x 7.05	8.39 x 6.81 x 7.05	5.98 x 5.12 x 3.23	7.09 x 6.89 x 5.71
Weight kg	2,2	2,2	2,2	2,2	0,6	1,1
Weight pounds	4,85	4,85	4,85	4,85	1,32	2,43
Case	Sturdy ABS-PC plastic	Sturdy ABS-PC plastic	Sturdy ABS-PC plastic	Sturdy ABS-PC plastic	Sturdy ABS-PC plastic	Sturdy ABS-PC plastic
IP rate	IP 53	IP 53	IP 53	IP 53	IP 53	IP 53
Operating temperature Celsius	5 to 45	5 to 45	5 to 45	5 to 45	5 to 45	5 to 45
Operating temperature Fahrenheit	41 to 113	41 to 113	41 to 113	41 to 113	41 to 113	41 to 113
Operating humidity	0-95% (non-condensing)	0-95% (non-condensing)	0-95% (non-condensing)	0-95% (non-condensing)	0-95% (non-condensing)	0-95% (non-condensing)
External power supply (universal)	100-240V AC, 50/60Hz	100-240V AC, 50/60Hz	100-240V AC, 50/60Hz	100-240V AC, 50/60Hz	-	100-240V AC, 50/60Hz
Power from USB	-	-	-	-	yes	-

Conformity						
CE	yes	yes	yes	yes	yes	yes
FCC	yes	yes	yes	yes	yes	yes
RoHS	yes	yes	yes	yes	yes	yes
IEC 62471	yes	yes	yes	yes	yes	yes
Miscellaneous						
Firmware upgrade	yes	yes	yes	yes	yes	yes
SIO_2 glass	optional	optional	optional	optional	optional	optional
Flip-top cover	optional	optional	optional	optional	-	-
Easily accessible SAM slots	-	-	-	-	-	1
Secured SAM slots	-	-	-	-	-	1
Kensington security slot	yes	yes	yes	yes	yes	yes

Contact Information

Should you have any problem during operating the Passport Reader products, our support team is at your disposal. Please try to explain the problem as detailed as possible and do not forget to send the following information to make it easier to help you:

- The name of your company (for administration purposes).
- The **exact type** of the **product** you have (serial number is appreciated).
- If you have problems **during recognition, send images** in the original file format.
- If there is any **error code or message** appearing, please send us the code snippet where it occurs (a screenshot may also be helpful).
- If you noticed the problem while running a Demo or a sample application, please let us know the **name of the application** you tested.
- If you have some problem while **developing your own** application, please specify the followings:
    - your programming language
    - your operating system
    - the name and version number of the compiler you use
    - the programming technology (e.g. native C/C++ / ActiveX / .NET)
    - If possible please send a short part of the source code. Please try to determine the place where the error occurs (e.g. "the pr.recognize() causes exception").

IMPORTANT NOTES:

- **Before sending back a faulty device, always contact ARH Support Team.**
- **Repairs may be executed by the manufacturer only!**

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