Quick install guide

For **pr 2.1.x** installer
v.7

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Picture 1 – PRMc ePassport Reader device

Picture 2 – MRZ Reader device

Picture 3 – Card Reader device

Package content

- 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
  - PR Demo application
- Passport Reader Device
- 12 V output power supply
- USB cable
- Glass cleaning wipes (3pcs)

Picture 4 – Passport Reader CD

System requirements

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

A, In case of Card Reader:

- Intel Pentium 500 MHz CPU or higher (or other fast x86 compatible CPU)
- 128 Mbytes of RAM or more
- Microsoft Windows 2000/XP/Vista/2003 operating system
- USB 2.0 port (on motherboard)
- VGA at min. 1024 x 768, 16 Bit colour depth

B, In case of MRZ Reader and PRMc series devices:

- Intel Pentium 1 GHz CPU or higher (or other fast x86 compatible CPU)
- 256 Mbytes of RAM or more
- Microsoft Windows 2000/XP/2003/Vista operating system
- Integrated USB 2.0 port (on motherboard)
- VGA at min. 1024 x 768, 16 Bit colour depth

NOTE: While the above is the strongly recommended minimum configuration, the Passport Reader may operate with lower performance PCs as well. However, the speed of image processing greatly depends on the type of hardware used. As a general rule, the shorter recognition time needed, the faster machine you are advised to use.

Hardware installation

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

1. Connect the PR device to one of the USB 2.0 port of the 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.

IMPORTANT! If "New Hardware Found" wizard for Plug and Play devices start, press ***Cancel***!

NOTE: It is strongly recommended to use the USB ports of the mother board. When connecting the USB cable to the front panel USB port, use shielded cable between the motherboard and the USB panels.

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

Picture 5 – USB certification label

Picture 6 – USB TID

In case of **laptop** it is recommended to use power supply. In case you use laptop powered from battery make sure that the Voltage is not less than 5V.

Software installation

The description bellow is for Windows operating systems.

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

- **IMPORTANT!** Before installing the PRM 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 start, press ***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.

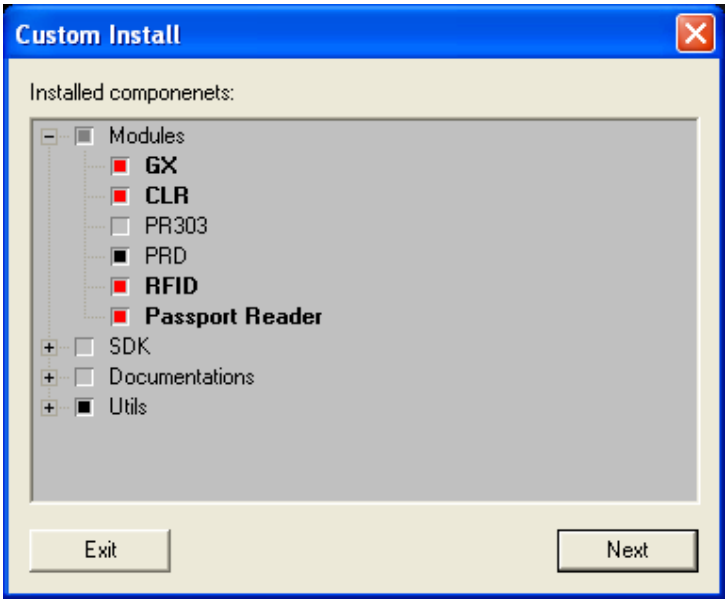
- The installation starts with the following window:

Picture 7 – Start Page of Passport Reader setup

- To start the installation choose “Install 32 bit version”. The following window will appear:

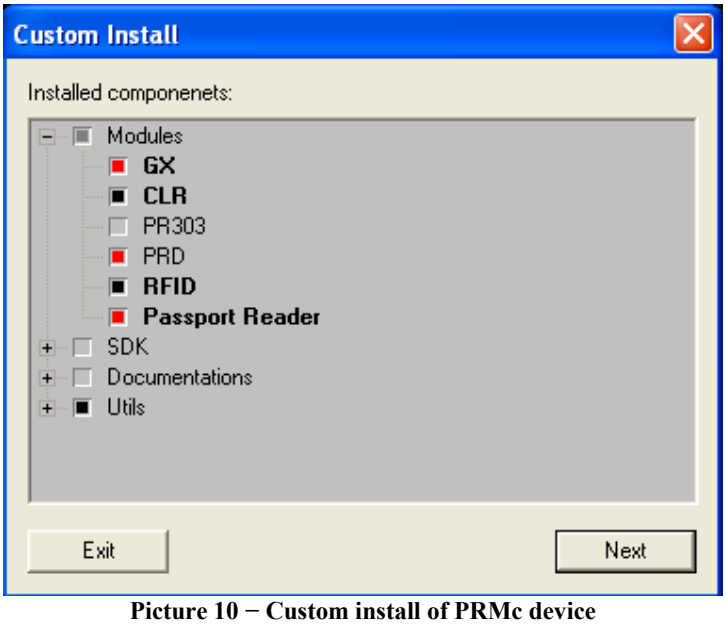
Picture 8 – Passport Reader Software Setup

- After you agree with the EULA/Click on Agree/ you can start the custom installation process by clicking on the Next button.
- In Custom Install window open the Modules branch.
- In case of MRZ Reader and Card Reader devices the GX, CLR, Passport Reader and RFID* modules must be checked with red squares. If the CLR and/or RFID* square is black it means the device is not recognized. Exit the setup, turn off & on the device (in case of devices without power button unplug & plug in the cable), and start the setup again.
  *only in case of devices with RFID module



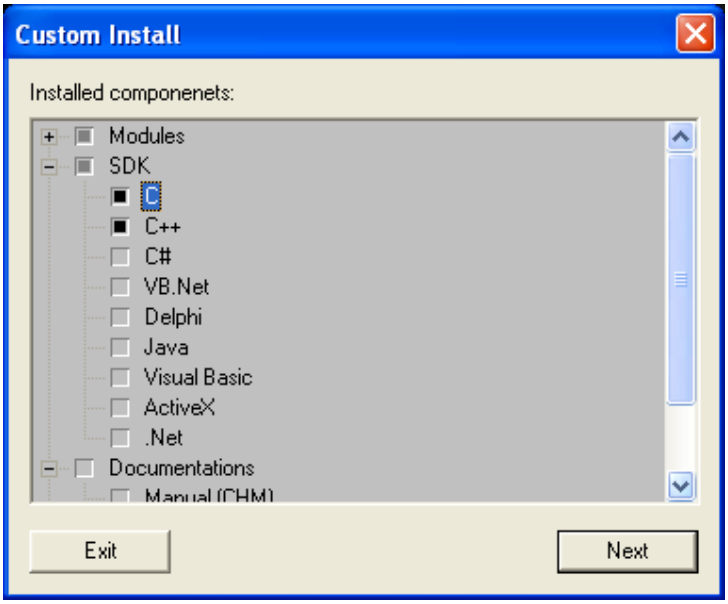
Picture 9 – Custom install of MRZ Reader device

- In case of PRMc device the GX, PRD and Passport Reader modules must be checked with red squares. If the PRD is black it means the device is not recognized. Exit the setup, turn off & on the device and start the setup again.



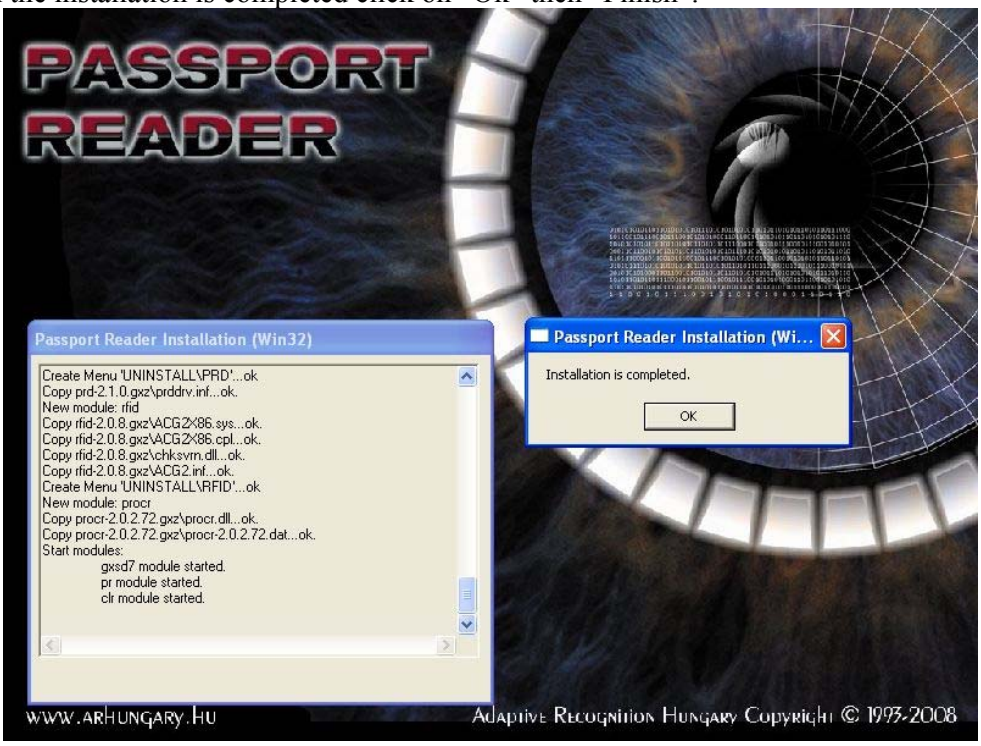
Picture 10 – Custom install of PRMc device

At this stage you can select which programming languages would you like to install. Open the SDK branch and choose any of the languages – the chosen language is signed with a black square. In the Documentation branch you can choose to install the Documentations in chm, or html format. In the Utilities you find the demo programs. (The demo programs are installed by default.) After selecting the components press "Next".



Picture 11 – Custom install of programming languages

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



Picture 12 – Installation is completed

- Finally exit from setup

Picture 13 – Exit from setup

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

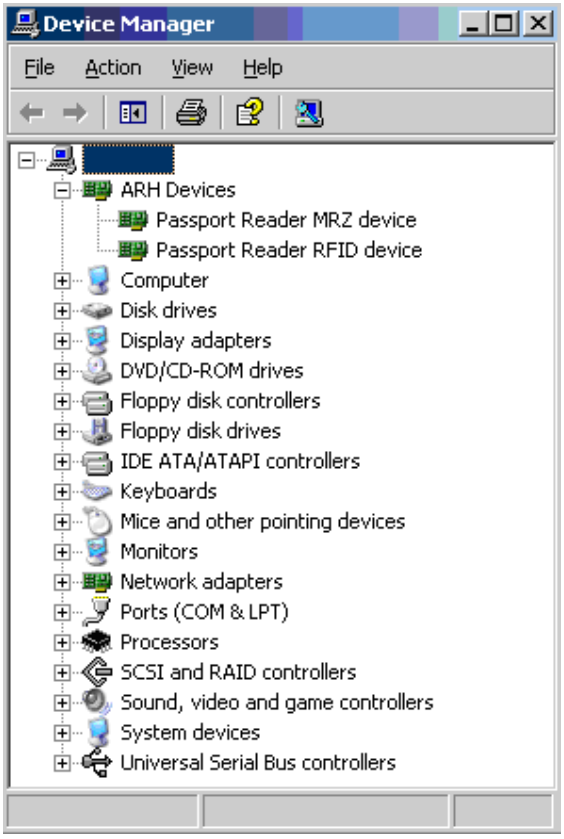
  A, In case of PRMc device –see Picture 14–
  - **Passport Reader PRMc device**

  B, In case of MRZ Reader device –see Picture 15–
  - **Passport Reader MRZ device**
  - **Passport Reader RFID device***

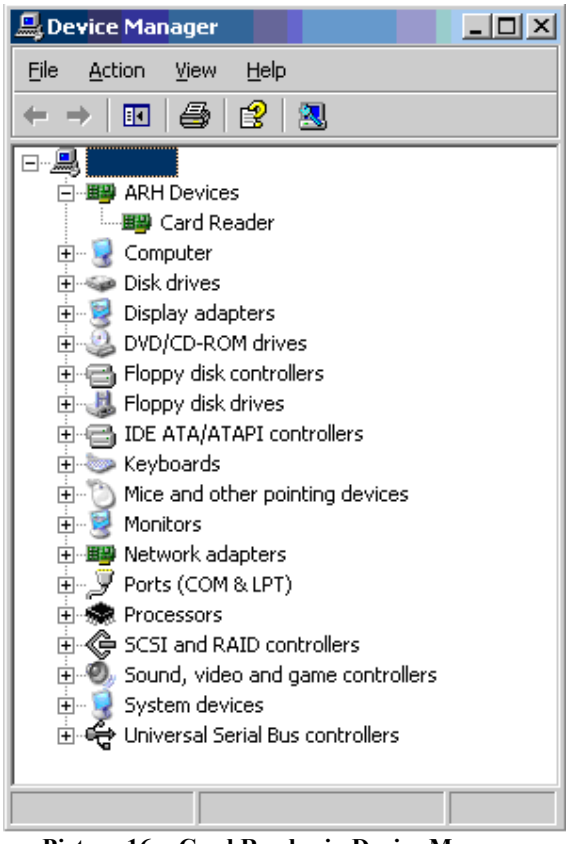
  * only in case of devices with RFID module

  C, In case of Card Reader device –see Picture 16–
  - **Card Reader**

Picture 14 – PRMc in Device Manager



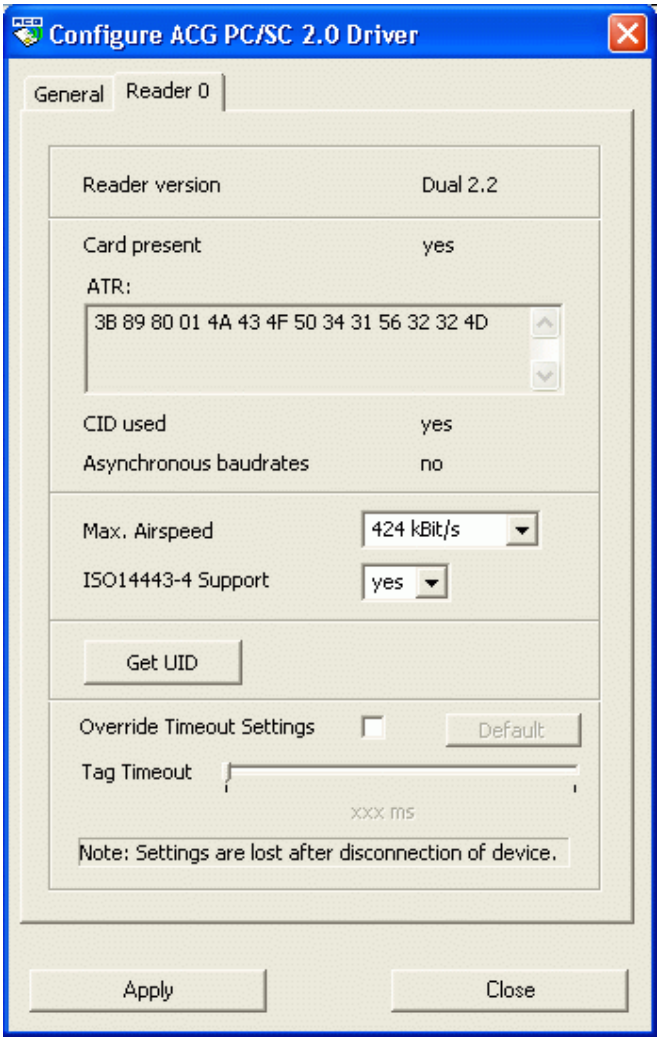
Picture 15 – MRZ Reader in Device Manager



Picture 16 – Card Reader in Device Manager

- In case of MRZ 121 RU device you may check the status of the RFID module in the Control Panel. Double click on the "ACG Applet 2.0" icon.

If you find the "Reader 0" tab the reader is installed. Select the "Reader 0" tab. Check, if the **"ISO14443-4 Support"** is "yes". Place an electronic passport on the reader and check, if the **"Card present"** changes to "yes".



Picture 17 – RFID module installed successfully

Troubleshooting

Problem	Problem cause	Remedy
There is a "!" beside the Passport Reader XXX device in the Device manager.	The driver of the controller(s) is not installed properly.	Refresh the drivers. In case the automatic refreshing fails full uninstall the software and install it again.
There is a "!" beside the Passport Reader RFID device*	The driver of the RFID controller is not installed properly.	Refresh the drivers. In case the automatic refreshing fails full uninstall the software and install it again.
You fail to install the drivers.	You have no administrator right.	You have to install the drivers with **administrator right**.
When starting Prdemo it displays: "…Weak device capability [prcap]"	You use USB 1.1 connection.	Change for USB 2.0 Under Windows 2000 install SP4 Under Windows XP install SP1
When trying to calibrate the following error message appears: *Calibration failed (Error(20088001) Image capture error)* and the controller cable is plugged	The USB bandwidth is too low	There are some USB controllers which manage the bandwidth in static way. When you plug more than one device, the USB host controller simply divides the available bandwidth into two, or more equal slices. The PR controllers have quite a huge bandwidth demand, so the captured images cannot be transferred to the PC. Contact ARH support team. **The PRMc is compatible with the 'static' USB controllers also.**
The device cannot read the RFID chip.	The 'Max. Airspeed' value is not properly set.	Open the ACG PCSC Driver* in the Control Panel. Click on the "Reader 0" tab. Set the value of "Max. Airspeed" 424 kbit/s. Then place an RFID chip on the window of the reader and see, if the value of "Card present" changes to "yes". If it remains "no" than change the " Max. Airspeed "value to 212 kbit/s.
You can install the RFID reader, but cannot configure it.	You have installed another type of RFID reader before.	Delete those oem*.inf files which contains information of the previously installed RFID reader from WINDOWS/INF directory. Refresh the RFID drivers.
The captured images are blurred.	The device is not calibrated properly	Recalibrate the device. Print out the appropriate calibration image (from c:\Program Files\GX\docs\ ) In Passport Reader Demo press Ctrl+R.
The UV image is too dark.	The UV tubes are not warmed up properly	Use the *UVLEDWARMING* mode. See in Reference Manual-> Device controlling-> Between captures.

*only MRZ121 RU device uses ACG PCSC driver

Technical Specifications

Technical specifications subject to change without prior notice

	PRMc123	***PRMc223***	***PRMc 233***	***MRZ Reader***	***Card Reader***
	Single step (full page) reader	Single step (full page) reader	Single step (full page) reader	Single step (MRZ) reader	ID1 size card reader
Illuminations					
Normal visible (white)	√	√	√	√	√
Infra Red (B900 spectrum)	√	√	√	√	√
UV-A	√	√	√	--	--
Options					
RFID module *(PRMc type R)*	available	available	available	available	--
Built-in USB HUB *(PRMc type U)*	available	available	available	available	--
High resolution (700PPI) photo camera *(PRMc type P)*	available			--	--
Also the combination of the above types are available. Ie: PRMc 123 RUP					
Optical Specifications					
Number of image sensors	1	2	2	1	1
Image sensor (effective pixels)	2048 * 1536	2048 * 1536	2048 * 1536	2048 * 650	1650 * 1024
Resolution	380 PPI	380 PPI	380 PPI	350 PPI	420 PPI
Photo camera resolution*	700 PPI			--	--
Image color depth	24 bits/pixels, RGB				
* only in case of PRMc type P devices					
Mechanical Data					
Size with cover (mm, inch)	213 x 173 x 179 mm 8,4" x 6,8" x 7.0"	213 x 173 x 179 mm 8,4" x 6,8" x 7.0"	213 x 173 x 179 mm 8,4" x 6,8" x 7.0"	179 x 240 x 92mm 7" x 9.4" x 3.6"	135 x 96 x 187mm 5.3" x 3.8" x 7.3"
Window size (mm, inch)	129 mm x 97 mm 5.08" x 3.82"			129mm x 43mm 5.08" x 1.69"	89 mm x 53 mm 3.5" x 2.09"
Case	ABS polycarbonate	ABS polycarbonate	ABS polycarbonate	ABS polycarbonate	ABS polycarbonate
Weight	2,35 kg, 5,5 lbs	2,35 kg, 5,5 lbs	2,35 kg, 5,5 lbs	1,1 kg, 2,43 lbs	0,6 kg, 1,32 lbs
Window glass	4 mm glass				
Operating temperature	min +10°C - max +40°C				
Humidity	0-95%				
Other Specifications					
Interface	USB 2.0				
Number of status LEDs	3	3	3	3	--
Digital Signal Processing (DSP) unit	√	√	√	--	--
Firmware upgrade through USB	√	√	√	--	--
Kensington ® security slot	√	√	√	--	--
Power	External power supply				From USB port

Software Development Kit (SDK)			
Supported OS	Windows 2000, XP, 2003, Vista, Linux*	**Programming languages**	C/C++, Visual Basic, Delphi, VB.NET, C#, Java
MRZ OCR reading	Included (ICAO 9303)	**Image format**	BMP, JPEG, JPEG2000, PNG
Self defined VIZ OCR reading*	Included (ICAO 9303)	**1D Barcode reading**	EAN8, EAN13, Code39, Code128, Interleaved 2 of 5
Document authentication	Included (ADAM)	**2D Barcode reading**	PDF417, Data Matrix*, QR Code*
Invisible Personal Information (JURA IPI®) verification*	Optional*	**Extended High Colour Fidelity****	ΔE < 10 according to CIE
Full processing time		A, epassport with BAC: average 7 sec (with ~20 KB data) B, epassport with EAC: average 12 sec (with ~40 KB data)	
* only in case of PRMc type P devices ** only in PRMc series			
Advanced Document Authentication Module (ADAM)			
MRZ checksum validation	Included	**B900 ink check**	Included
Expiry date check	Included	**UV dull paper check**	Included*
MRZ vs. VIZ comparing	Included	**Automatic pattern matching (under Normal, UV, IR light)**	Available in Q4 2008
MRZ vs. RFID comparing	Included	**Photo subsidiary check**	Included**
Background printing check	Included**	**Microprinting check**	Included**
* only in case of devices with UV light ** only in case of PRMc type P devices			
RFID Reading features where applicable			
One-Step Reading	Double size RFID antenna covering both Passport pages. Chip is detected in either cover. Ability to read printed MRZ lines and RFID in one step. No need for Passport replacement.		
Communication protocol between Card and Reader	ISO 14443 A/B	**Passive Authentication**	√
Baud rate	max 848Kbps	**Active Authentication**	√
Communication protocol, between PC and Reader	ISO 7816 (T=1, T=0)	**BAC support**	√
		EAC support	√

The compliances are listed in the Appendix.

Contacting ARH Support team

Should you have any problem during operating the Passport Reader devices, our support team (support@arhungary.hu) is at your disposal. Please try to explain the problem as detailed as possible and always send the following information for making it easier to help you:

- The exact type of the product you have.
- If you have problems during recognition, send images from the document taken with Passport Reader Demo.
- If there is any error code or message appearing, please write the code and the place where it occurs (sending a screenshot is much better).
- If you noticed the problem while running a Demo or a sample application, please write the name of the application you tested.
- If you have some problem while developing your own application, please name the programming language and compiler you use (version number!) and if possible please send a short part of the source code. Please write if you use ActiveX or DLL. Please try to determine the place where the error occurs (e.g. "when I call GetMrz() function for the second time, it always hangs…")

NOTE: before sending back a faulty device, always contact ARH Support Team.

IMPORTANT: Repairs may be executed by the manufacturer only!

Appendix: Compliances

CE certificates:

The ARH Passport Reader complies with the European CE requirements specified in the EMC Directive 89/336/EEC.

Emission:
EN 55022, EN 61000-3-2:2002
Immunity:
EN 61000-6-2:2001, EN 61000-4-2, -3, -4, -5, -6, -8, -11

Federal Communications Commission (FCC) Statement:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

WARNING: You are cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

IEC 62417 certification

The ARH Passport Reader complies with the optical radiation safety test according to IEC 62471.

Declaration of RoHS Compliance for Electrical and Electronic Products

Adaptive Recognition Hungary Limited by Shares ("the Company") hereby declares that the PRM Series passport reader family 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 homogenous 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.