

ID-Star 4054 ePassport Reader

Instruction manual

Bedienungsanleitung

Revision 0.91



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1 Introduction

This manual provides general operating instructions and information on how to correctly operate the ID-Star 4054 ePassport Reader. A separate document describes how to integrate the ID-Star 4054 ePassport Reader into a software application.

In keeping with its features and general applications, the ID-Star 4054 ePassport Reader is also referred to as the ID-Star ePR, where ePR stands for ePassport Reader. This is to express that the device has the capability to read so called ePassports. The ID-Star ePR is a device alternative of the ID-Star 4054 CSR (Color Security Reader).

The ID reader is activated and controlled by a software application. Therefore, it is important to read through the software documentation for your given application in order to operate the system and understand the display elements.

1.1 System overview of ID-Star 4054 ePassport Reader

The ID-Star ePR is a device to collect data from travel documents. It integrates a scanner unit to capture the optical properties of the documents and a RFID reader to give access to the optional RFID components in modern passports. The device combines the benefits of a compact design with state-of-the-art technology and the simplest ease of use. Collecting both types of data is done in a single pass operation, that means the passport has to be placed only once on the reader to read both properties of the document.



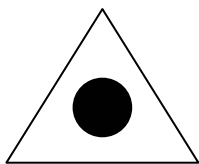
Figure 1: The ID-Star 4054 ePR system in action

The scanner section of the ID-Star 4054 is designed to create color images of all kinds of documentation, particularly travel documents. Various types of light can be used to illuminate documents when imaging. By using various illuminations, you can capture documents in compliance with standards as well as perform various authentication checks. The images are transferred using a FireWire interface to a PC for further processing. All additional processing takes place on the PC and includes features such as real-time verification of document authenticity, character recognition (document reading)

and archiving. In particular, the ID-Star 4054 provides you with fast and extremely reliable recognition of travel documents. This feature has been developed in accordance with the [ICAO standard](#) (International **C**ivil **A**viation **O**rganisation).

In parallel to the optical scanning and processing of the document the integrated RFID-reader can be used to read the data from the chip. The ID-4054 ePR contains an antenna which was developed specially for this device and makes it possible to collect the chip data independent of its location in the passport. By this technology it is possible to read and verify all data from the passport by placing it only once on the ID-Star. The RFID-reader can automatically read all kind of chips (e.g. ISO 14443 type A and type B) which are compliant with the [standards of ICAO](#) (see chapter 6.2 regarding the regulation concerning reading of ePassports). The software development kit (SDK) which is part of the product delivery supports all common standards like e.g. BAC, secure messaging, active authentication.

1.2 Safety instructions



ATTENTION: The ID-Star 4054 ePassport Reader contains sensitive, precision optical equipment. The sensitive components may be damaged if the device is dropped or subjected to severe vibrations. Exercise caution when handling the ID-Star 4054 ID-reader.



WARNING: NEVER open the housing on the ID-Star or power supply. If you experience difficulties with your ID-reader, please return it to the factory or authorised service partner for inspection. For information on customer service, see chapter "[Customer services addresses](#)".



WARNING: Opening the housing may expose you to voltages higher than 24 V / SELV.



WARNING: For safety reasons, only use the original power supply included in the delivery.



WARNING: The device is not protected against moisture. Never submerge the device or any of the components in water. Take care to protect the device from being splashed.



Note: In cases of emergency (for instance, damage to housing, controls or power cable, or exposure liquids or foreign substances), immediately switch off the device, unplug the power and contact our customer service department. (chapter "[Customer services addresses](#)")



Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

NOTE: The ID-Star can be operated with laptops, desktops and PC towers that meet the system requirements (see chapter "[ID-Star 4054 ePR data sheet](#)").

1.3 Scope of delivery

The ID-Star 4054 ePR document reader system comprises the following components:

- ID-Star 4054 ePassport Reader unit
- Desktop power supply
- 6/6-pin IEEE 1394 FireWire cable
- USB 2.0 A-B cable

Optional components:

- FireWire PCI board
- FireWire PCMCIA adaptor
- Power cable for connecting the desktop power supply to the power outlet (only selected cables available)

1.4 Performance features

For performance features, please see chapter "[ID-Star 4054 ePR data sheet](#)".

2 Installation and set-up instructions

Please pay attention to the safety instructions contained in the previous chapter.

2.1 Before installation

Before connecting the ID-Star 4054, please ensure the following:

1. The packaging is not damaged
2. The ID-Star 4054 ePR is complete
3. Your system meets the system requirements (see chapter: [ID-Star data sheet](#))

Contact your dealer immediately if the delivery is damaged or incomplete!

We recommend that you do not dispose of the original packaging. Please retain it in case you need to return the device.

2.2 Electrical connection conditions

For safety reasons, only use the original power supply included in the delivery.

The ID-Star 4054 ePassport Reader power supply is only intended for operation with AC voltages. The following conditions must be maintained:

Input voltage: 100 V to 240 VAC
Power frequency: 50 Hz to 60 Hz



Figure 2: Power supply

Once you have checked the input voltage, the power supply may be attached to the power outlet using the appropriate cable. For some countries, the device is delivered with the appropriate cable.

If not included in the delivery, you should obtain a suitable cable. Please ensure that the cable is approved for use in the country of operation.

The following connection values apply for the scanner:

Nominal voltage:	24 VDC
Nominal current:	2.5 A

For safety reasons, only use the original power supply included in the delivery.

2.3 Setting up the scanner

The ID-Star 4054 ePassport ID reader is designed for operation either indoors or in covered areas outside.

Condensation may form if the device is moved inside from a cold environment. If this is the case, please wait until the temperature differential has balanced out and the device is completely dry before attempting to operate it.

Never place the power supply on a surface that is sensitive to heat.

Never obscure the ventilation slots on the power supply.

Protect the system from dust, humidity and heat.

Do not place any heavy objects on the ID-Star 4054 ePR or on the power supply.

Please organise the work place so that the glass screen on the image capture unit is not subjected to glare from direct light (harsh light sources in the viewing direction) or reflections.

The image quality of your scanning results may suffer if harsh light sources point directly into the scanner. The same applies to highly reflective surfaces positioned in the same direction.

The illustration below is an example of an inappropriate position!

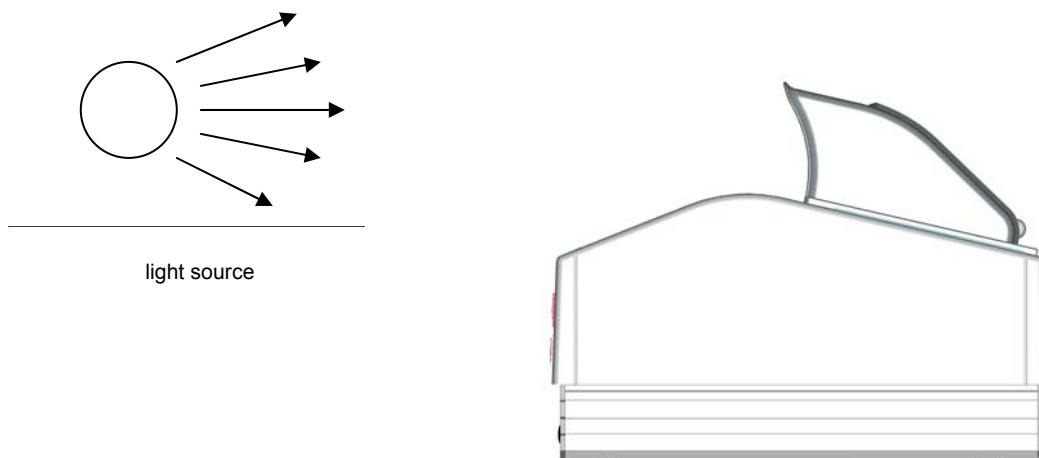


Figure 3: Set-up installation instructions

To avoid fatigue while sitting or standing to operate the device, we recommend positioning the scanner so that it is at the same level as your elbows. This way, you can easily reach the scanner by bending your lower arm.

2.4 Connecting the ID-Star 4054 ePassport Reader to a PC



Figure 4: Connections on the ID-Star 4054 ePassport Reader

Connect the power supply to the nine-pin socket on the ID-Star 4054 ePassport Reader and screw it in place.

Then connect a suitable power cable to the power supply.

Connect the cable to the outlet.

You can now connect the ID-Star 4054 ePR to the FireWire connection on your PC using a suitable FireWire cable.

Now you are ready to connect the USB socket of the ID-Star 4054 ePR with the intended USB socket of the PC.

Note: The ID-Star 4054 ePR is a „high-power bus-powered functions“ device according to the USB specification. That means, the RFID section of the ID-Star ePR is powered from the USB-cable. Therefore the USB-port of the PC has to be able to deliver current to the USB-Bus. Should a certain PC not be able to deliver power to the USB-Bus (what is a real exception), a self powered USB-hub between the PC and the ID-Star can be used to provide current to the ID-Star ePR.



Figure 5: ID-Star 4054 ePR with power supply and attached interface cables.

2.5 Installing device drivers

To operate the ID-Star 4054 ePassport Reader, you must first install the necessary drivers on the PC. Please follow the instructions contained in the description of your application software. This should contain a chapter that describes software and driver installation.

The operating system will ask you to install the device drivers the first time you connect and/or activate the ID-Star 4054 ePR. Insofar as your software manufacturer has not taken any special measures, you will need to install a driver each time you connect either a new or another scanner to your PC.

3 Operating instructions

3.1 Switching on the device

The system is ready for operation as soon as the following is complete: the device is connected as described in [Chapter 2](#), the PC and the scanner are connected to the power outlet using the power supply (see below) and the application software is loaded and started. Please ensure that the scanner's glass panel is not covered when switching on the device.



Figure 6: The position of the switch on the power supply

To switch on, move the switch to the position shown in Figure 7 by pressing “-”.



Figure 7: Switch in the 'ON' position

If the power supply has been switched on and correctly connected to the outlet via a suitable cable, an LED will light up on the power supply. The LED is located opposite the switch.



Figure 8: Status LED on the power supply

3.2 ID-Star 4054 ePassport Reader display

A display is integrated in the ID-Star 4054 ePR housing that can be used for guidance.

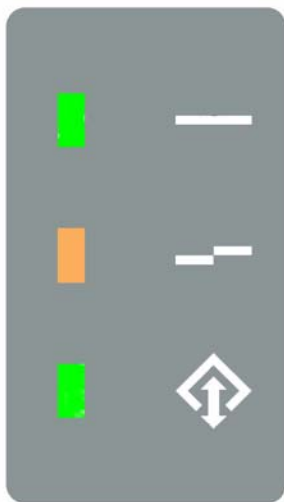


Figure 9: LED display on the scan unit

All three LEDs are controlled by the application software. The meaning of the LED status depends on the application software and you will find this in the documentation specific to your application software.

Once the scanner has been switched on, all three of the scanner's operating LEDs are initially dark. This is because they are controlled exclusively by the appropriate application software.

3.3 Reading documents

The specific application software determines whether scanning starts automatically when a new document is placed on the scanner or whether the user needs to carry out further steps. Please check your software manual to see which operation mode is active in your case.

The following illustrations demonstrate how to place a document on the scanner:



Hold the document
in your hand ...



Place the
document on the
upper area of the
scanner and on the
glass panel



Slide the document
down



Until the front edge
of the document
touches the catch
rail

Figure 10: Placing a document on the scanner

The document must remain still on the glass panel for the duration of the scan.

3.4 Switching off the system

To switch off the system, please use the switch on the power supply. To do this, push “0” to the position shown in Figure 11.



Figure 11: Switch in the 'OFF' position

3.5 Verification of document using the UV-illumination

If your application checks the documents using the UV-light source, it is possible that the operator will come in contact with UVA-light. The irradiation used hereby is harmless and within the legal limits.

4 Maintenance and care

The ID-Star 4054 ePassport Reader system does not require maintenance.

However, dirt on the glass plate of the scanner may impair the scanning and recognition results.

It is therefore recommended that you clean the glass plate on a regular basis.

To clean the glass plate, we recommend you use regular glass cleaner.

5 Safety precautions

Only authorized qualified personnel should carry out repairs on the device. Unauthorized opening of the housing and improper repairs may endanger the user (risk of electric shock or fire).

5.1 Trouble shooting

What should I do if...

1. ... the application cannot find the scanner
 - ⇒ Check whether the adapter is switched on and that the main power cable is firmly attached to the scanner and power supply.
 - ⇒ Check the FireWire connection.
 - ⇒ Ensure that the application has only been started once and/or that only one piece of application software is using ID-Star 4054 ePassport Reader.
2. ... the reader system produces poor recognition results

Possible causes:

 - The original document moved during the scan.
 - ⇒ Repeat the read process while ensuring that the original document does not move.
 - The glass plate of the scanner is dirty.
 - ⇒ Clean the glass.
 - The document does not conform with the ICAO norm.
3. ... placing a document on the scanner does not trigger scanning
 - ⇒ Please read the operating manual relevant to your application. The application software determines whether the reader triggers scanning automatically or if it has to be started manually.
 - ⇒ When switching on the device, an original document had been placed on the glass plate and the scanner could not be scaled correctly.
 - ⇒ Please check whether the ball in the lid is dirty or whether there are other reasons why it cannot be recognized.
4. ... slight clattering noise can be heard while moving or placing the ID-Star 4054 ePR.
 - ⇒ This is not a fault on the device. For technical reasons, one of the components used inside the device produces this noise. This may result in a light clatter in some devices but should not be a cause for concern.

6 Additional technical information

6.1 Travel document specification according to the ICAO standard

The personal documents to be read must conform with the applicable guidelines in the ICAO norm.

You can obtain a copy of the International Civil Aviation Organisation paper entitled *Machine Readable Travel Documents*, from:

Document Sales Unit
International Civil Aviation Organization
1000 Sherbrooke Street West, Suite 400
Montreal, Quebec
Canada H3A 2R2
Tel.: +1 (514) 2 85 – 82 19
Fax: +1 (514) 2 88 – 47 72
<http://www.icao.int>

Travel documents are dealt with in the ICAO publication doc9303.

6.2 Applicable regulations concerning reading of ePassports

The ePassports to be read must conform with the standards for ePassports. The most important standards in this scope are:

- ICAO Technical Report "Biometrics Deployment of Machine Readable Travel Documents V2.0"
- ICAO Technical Report "Development of a Logical Data Structure -LDS for Optional Capacity Expansion Technologies" Revision 1.7
- ICAO Technical Report "PKI for Machine Readable Travel Documents offering ICC read-only access V1.1"

In addition all the standards referenced in the above mentioned documents (e.g. ISO 14443 A/B part 1 – 4) are preconditions for proper reading of the documents.

These three documents are published by ICAO. They (amongst others) can be downloaded from the website of ICAO: <http://www.icao.int/mrtd/Home/Index.cfm>

6.3 Device dimensions

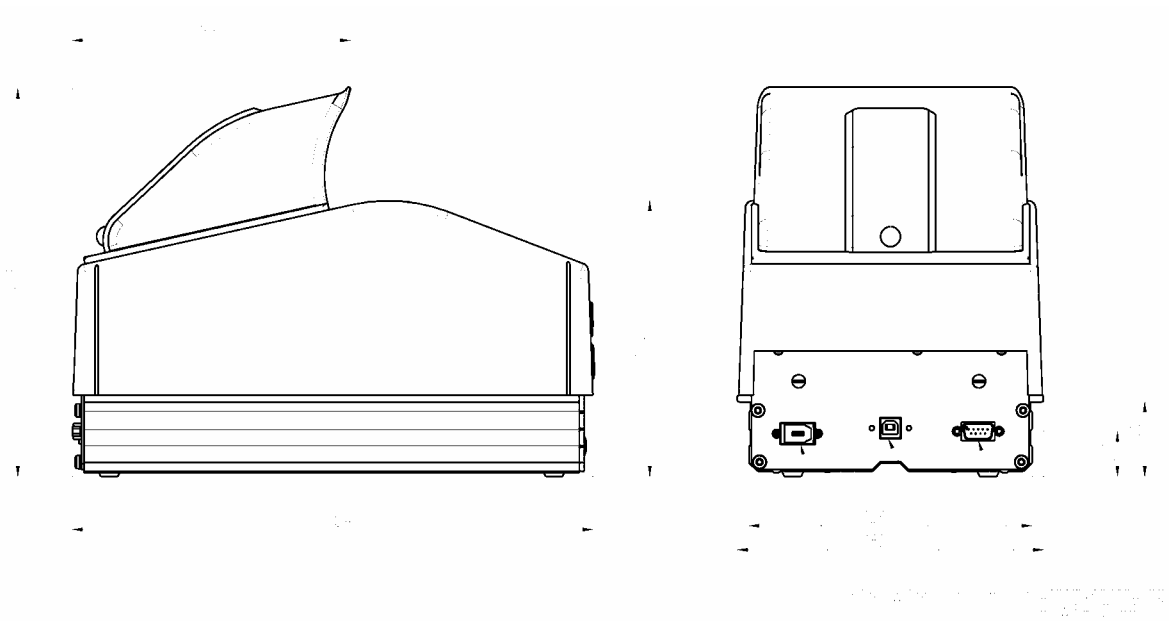


Figure 13: Device dimensions

6.4 ID-Star 4054 ePassport Reader data sheet

Application	Special scanner designed to capture documents, especially travel IDs including functionality to read ePassports (passports containing RFID technology)
Subsystem optical scanning and character recognition	
Illumination included	<p>B900 infrared band Neutral white light</p> <p>UV *1) Special illumination for taking images of documents with Confirm Security Laminate *1)</p> <p>*1) the presence of these illuminations is dependent on the product configuration</p>
Imaging technology	Area sensor
Optical resolution	320 dpi * 320 dpi
Image size	150 mm * 95 mm (width * height)
Character recognition software	<p>The SDK includes proprietary ODT character recognition software for reading the machine readable zone</p> <p>Additional character recognition software can be used to read other areas on documents. Recommendation: Océ Document Technologies character recognition software</p>
Time required to read a document	< 1 sec (reading the MRZ using the image coming from the infrared illumination)
Types of documents read	<p>The following are recognised automatically: Passports (ICAO DOC9303 part 1) Visas (ICAO DOC9303 part 2) ID-cards (TD1 and TD2) (ICAO DOC9303 part 3)</p> <p>Even visa labels that are askew can be read</p>
Real-time verification	<p>The read function verifies check digits in the MRZ</p> <p>Further real-time verification checks can be integrated in the software.</p>

Image output	Color and grey-scale images of the documents are transferred to the software using the TIF format
Subsystem reading of ePassports	
Position of RFID unit in the document	Reading of the data in the chip can be done independent of the location of the chip in the passport.
Max. transfer rate	up to 848 kbps
Max. data volume	The reader does not limit the amount of data which can be read from the chip
Implemented document standards	see section Applicable regulations concerning reading of ePassports LDS 1.7, PKI 1.1, more details in section 6.2
Supported ISO Standards	ISO 14443 A/B Part 1 - 4
Complete unit	
ID-Star 4054 ePR electrical data	Nominal voltage: 24 VDC Nominal current: 2.5 A
Power supply	Power supplied by the desktop power supply included in the delivery For safety reasons, only use the original power supply included in the delivery.
Desktop power supply input voltage range	100 to 240 VAC 50 to 60 Hz
Dimensions	310 mm x 185 mm x 235 mm (L * W * H) (see chapter "device dimensions")
Weight	3700 g (ID-Star 4054 ePR) 700 g (power supply)
Operating temperature	0°C to 50°C
PC connection	optical scanner part via FireWire interface, IEEE 1394a RFID reader is connected using USB 2.0 (compatible with USB 1.1) The ID-Star 4054 ePR is a device of the class "high-power bus-powered functions)

PC requirements	<p>Clock rate \geq 900 MHz RAM \geq 256 MB OHCI-compatible FireWire interface</p> <p>The imaging and processing time is longer when using a less powerful PC</p> <p>OHCI compliant Firewire interface USB interface with the ability to supply current (see chapter 2.4)</p>
Supported operating systems	Windows 2000, XP
Software integration	<p>Integrated using the software development kit (SDK) supplied according to respective customer requirements</p> <p>The application software is not included in the delivery</p> <p>The library contains functions for controlling the device and reading documents in line with ICAO doc9303</p>
Operator guidance	The device contains 3 LED's which can be used by the application to give hints to the operator.

7 Regulatory Compliance Statements

7.1 CE certificate



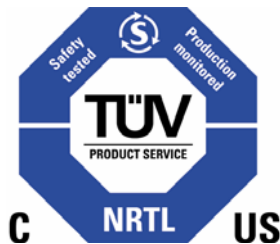
The shipped version of this device complies with the requirements of the EEC directives 89/336&EEC “Electromagnetic compatibility” and 72/23/ECC “Low voltage directive”.

7.2 Verification of the declared compliance

The compliance of the product with the regulations was verified by TÜV PRODUCT SERVICE and the certificate with the No. Z1A 04 04 40845 011 was assigned.



In addition the product was verified to be compliant to the regulatory defined by OSHA and the certificate with No. U8 04 04 40845 012 was assigned.



Organizations Currently Recognized By OSHA as NRTLs (National Recognized Testing Laboratories) can be found on <http://www.osha.gov/dts/otpc/nrtl/nrtllist.html> .

7.3 Declaration of FCC conformity

Note: 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.

Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The Grantee Code **T7F** was assigned by FCC, the product code is **IDS4054EPR**.

Form for readers' letters

To

Océ Document Technologies GmbH

– Abteilung FS 3 –

Postfach 10 01 54

D-78401 Konstanz

From

Name

Company

Street

Town, postcode/ZIP

Country

Phone

Data

Readers' letter on the manual
ID-Star 4054 ePassport Reader
Instruction manual
Revision 0.91

Document no.
L93123-N11-X-*-7419
Order no.
440 246

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Page

Criticisms/comments/corrections/suggestions



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