

# **OCR316e**

USB OCR Reader  
Quick Start Guide

PLT-07047, A.0  
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## Contacts

For technical support, please contact [support@access-is.com](mailto:support@access-is.com).

## What's new

Date	Description	Revision
April 2023	Initial release.	A.0

A complete list of revisions is available in [Revision history](#).

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# Section 01

Overview

## 1.1 Introduction

The Access-IS™ OCR316e is a compact and robust Optical Character Recognition (OCR) reader. The device can be attached to a variety of handheld and ultra-mobile PCs, tablets, standard desktop keyboards and monitors, or act as a standalone unit as part of the data capture process, for example, Know Your Customer, age verification, and check-in. The track length and single slot design is optimized to ensure that passports and ID cards are correctly aligned for consistent and accurate reading. The OCR316e has an advanced recognition engine that provides highly accurate and fast document reading.

The OCR316e bidirectional reader can read:

- Machine Readable Passports (MRP).
- Machine Readable Visas (MRV).
- US and international residence permits.
- European and other national ID cards conforming to ICAO 9303 & ISO/IEC 7501-1 (two- and three-line Machine Readable Zone (MRZ)).
- ISO/IEC 18013-1 driving licenses (one-line MRZ).
- Credit and debit cards, loyalty cards, and frequent flyer cards.

### 1.1.1 Features

- Compact design and small footprint.
- USB 2.0 interface - USB Human Interface Device (HID), Communications Device Class (CDC) virtual serial and keyboard wedge options.
- Reads machine readable passports, visas and travel cards conforming to ICAO Document 9303.
- Rapid and accurate decoding using Access' established OCR decoding technology.
- Bidirectional OCR read.
- Three-track magnetic stripe reader (MSR) conforming to ISO 7811/2-5 tracks 1, 2 and 3.
- Bicolor LED and audible sounder providing good/bad read indication.
- Can be used as a free-standing unit, desk mounted or attached to a range of monitors and devices.
- Multiple cable lengths and exit positions.
- Firmware download/upgrade capability.



## 1.2 Regulatory compliance

### 1.2.1 Warnings

This manual contains important information regarding the installation and operation of the OCR316e. For safe and reliable operation of the imager, installers must ensure that they are familiar with, and fully understand, all instructions contained herein.

### 1.2.2 European EMC Directive 2014/30/EU

This product complies with the requirements of this directive by meeting the following standards:

- EN 55022:2010: Information technology equipment. Radio disturbance characteristics. Limits and methods of measurement.
- BS EN 55024:2010+A1:2015: Information technology equipment. Immunity characteristics. Limits and methods of measurement.



### 1.2.3 FCC Compliance Statement (United States)

This equipment generates, uses and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a class A computing device in accordance with the specifications in Subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area may cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

### 1.2.4 Canadian Department of Communications RFI statement

This equipment does not exceed the class A limits for radio noise emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le règlement sur le brouillage radioélectriques publié par le ministère des Communications du Canada.

# Section **02**

## Installation



## 2.1 Opening the box

Unpack the OCR316e and ensure that you have the following items:

- Advisory notice card.
- OCR316e device with attached USB cable.

Report any missing items or damage immediately to your sales representative.

## 2.2 Connecting the OCR316e to a Windows host

Connect the OCR316e directly to a USB port on the host computer. The OCR316e obtains power from the USB port. Ensure that the host is running Windows XP or later.

When you connect the OCR316e to a USB port, Windows automatically detects the device and, in most cases, installs the required standard Windows drivers, which may take a few minutes.

Virtual serial mode requires an additional driver, *Access/SUSBCDC.inf*, which you can download from the [HID Developer Portal](#).

If you are prompted to restart your computer, you can instead disconnect the OCR316e from the host and then reconnect it.

## 2.3 Interface options

The three interface options are compatible with all Linux and Windows operating systems from XP onwards.

### 2.3.1 Keyboard interface

The keyboard interface is a virtual keyboard (keyboard wedge) using Windows or Linux drivers.

The keyboard interface allows the device to operate without additional drivers, with the OCR316e emulating a keyboard. This is one-way communication; it is not possible to control the device directly in this mode.

The keyboard interface is slightly slower than the other options as it adds an inter-character delay when "typing" the OCR/MSR data. For higher throughput, consider using an HID or CDC interface.

Connect the USB cable from the OCR316e to a USB port on the computer.

Other operating systems, for example Android, may support USB HID keyboards. Please consult the documentation for the operating system you are using.

### 2.3.2 CDC interface

The CDC interface is a virtual serial mode using the Windows CDC driver.

The CDC interface assigns a COM port, and the device communicates as a virtual serial device. Due to the nature of CDC serial port drivers, the COM port disappears if the unit is unplugged.

To use the CDC interface, install the CDC drivers using the file *Access/SUSBCDC.inf*, which you can download from the [HID Developer Portal](#). The download includes full instructions for use.

Windows assigns a virtual COM port to the OCR316e device. You can find the COM port number in Windows Device Manager. You will require the port number to configure the OCR316e.

Other operating systems, for example Linux, may support USB CDC. Please consult the documentation for the operating system you are using.

### 2.3.3 USB HID interface

Access-IS recommends the use of the USB HID (Human Interface Devices) interface for reliability. A USB HID interface recovers properly in the event of accidental disconnects or system power fluctuations; a CDC interface may not recover in these situations.

**Note:** The "HID" abbreviation does not refer to HID Global. The USB Human Interface Devices (HID) specification is not designed or controlled by HID Global.

#### HID interface using the Access driver (Windows only)

**Note:** Ensure that you install the driver before connecting the OCR316e to the host.

The Access Serial Ports Service (ASPS) driver is fully configurable and outputs data in virtual serial or virtual keyboard. The output can be parsed and reformatted. The serial port is permanent and does not disappear if you unplug or hot swap the unit. This is one-way communication, so you cannot write to the port. This allows the simultaneous reading of multiple devices from the same virtual serial port.

To use the HID interface, you must first install the Access driver (Access Serial Ports Service (ASPS)), which you can download from the [HID Developer Portal](#). The download includes full instructions for use.

#### HID interface without the Access driver

This method is suitable only if you are familiar with HID programming.

It is possible to communicate directly with the OCR316e using the operating system's built-in HID drivers. In this instance, HID reports (exactly 64 bytes in length) are sent between the host and the OCR316e.

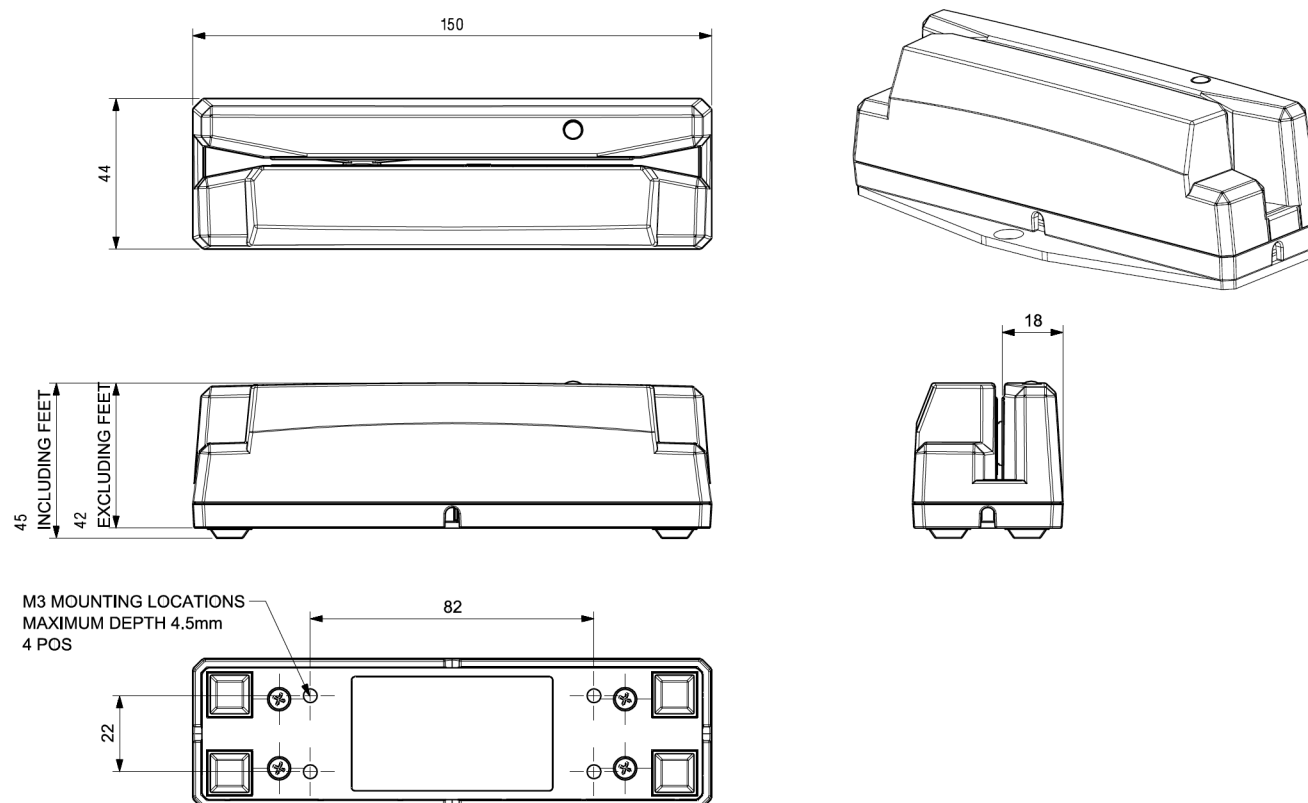
The implementation of this driver and the method of interaction will depend on the version of the host operating system. You should refer to the HID programming guide for the operating system you are using. See [HID reports](#) for details of the HID reports used with the OCR316e.

There is no additional driver required for this mode. Connect the USB cable from the OCR316e to a USB port on the computer.

Demo code is also available to use this mode with Android 3.1+. Please contact your Access-IS sales representative.

## 2.4 Mounting

The OCR316e can be used as a free-standing unit, desk-mounted or attached to a range of monitors and devices. Multiple cable exit positions are provided to suit different mounting arrangements. The standard cable length is 1.5 m (59 in) with other lengths available as an option.



## 2.5 Testing the device

Once you have connected the OCR316e, installed the relevant drivers (if applicable) and installed the software (see [Access-IS Document Reader Software](#)), you can test the device. To do this, scan an ID document and check that it is detected and read by the OCR316e. When using a document with an ICAO compliant MRZ, the document reader software should display a visual snapshot of the document's data. If the device fails to respond when connected to the host, see [2.7 Troubleshooting](#).

### 2.5.1 Status indicator

An LED located on the top of the OCR316e indicates the current status of the device.

LED color	Status
Red	Powered but not connected to an application. This only applies in CDC and HID modes. In Keyboard mode, the LED will flash and go off immediately.
Off	Connected to an application OR unpowered .
Yellow	Firmware issue. Contact Access-IS.

## 2.6 Configuration software

Connect to, and configure, the OCR316e using the Access-IS OCR316e Toolkit, which you can download from the [HID Developer Portal](#).

Other configuration tools may be used, although HID recommends the use of the OCR316e Toolkit.

## 2.7 Troubleshooting

If the OCR316e does not appear to be working, refer to the following table to help identify and resolve the problem. For further assistance, contact customer support ([support@access-is.com](mailto:support@access-is.com)). Alternatively, visit the [HID Technical Support](#) site.

**Note:** Do not attempt to disassemble the OCR316e if it does not operate correctly. Any attempt to do so may be dangerous and will invalidate the warranty.

Problem	Solution
Persistent 'bad reads'. A bad read is defined as more than 7 misread characters.	Ensure the document is flat against the bottom of the device. If you scan the document at an angle, there is a good chance the device will not read it correctly. Non-ICAO compliant documents may not read correctly.
Cannot read the MRZ or magnetic stripe on a document.	Ensure that the MRZ or magnetic stripe faces the opposite side of the LED.
The OCR316e is not reading a document.	Check that ADRS is ready. See <a href="#">3.5 Document reader software status messages</a> for more information.

## 2.8 Cleaning

Clean the OCR316e read head with the Access-IS Optical Head Reader Cleaner. This product is available from Access-IS in boxes of 50 using order code 'CARDCLEAN05'. Do not use abrasive cleaners.

## 2.9 Storage

Store the unit in its original box, at a temperature of -20°C to 60°C (-4°F to 140°F).

# Section **03**

Access-IS Document Reader Software

## 3.1 Introduction

The Access-IS Document Reader Software (ADRS) delivers an instant visual snapshot of document data, resulting in a more efficient and effective workflow. You can install the software before or after you connect the OCR316e to the host computer. For more information on how to configure ADRS, refer to the *ADRS User Guide* included in the installation.

## 3.2 Installing the software

Before you install ADRS, make sure that your computer meets the minimum hardware requirements:

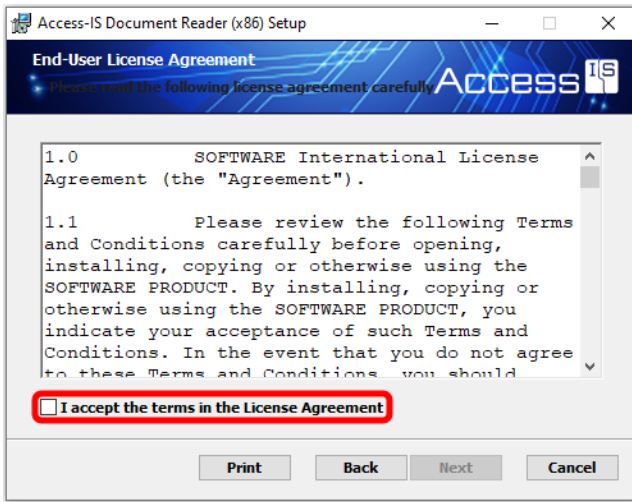
- Windows 7 or later, 32- or 64-bit.
- Pentium Core-i3, 2.1 GHz.
- 4 GB RAM.

To install ADRS:

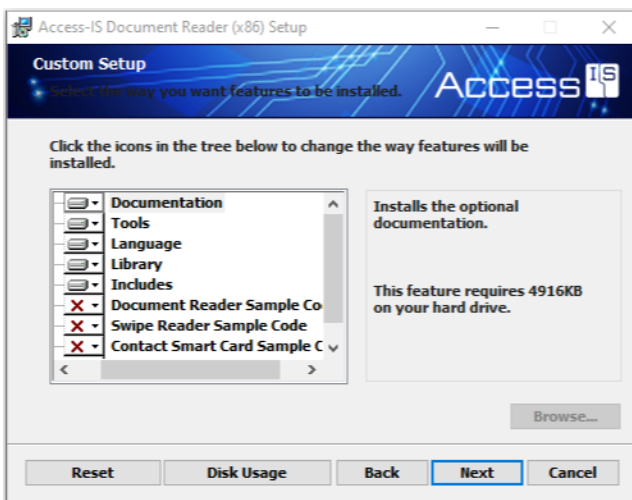
1. Download the latest version of ADRS.  
You can download the software from the [HID Developer Portal](#).
2. Extract the contents of the download file to a folder on your computer.
3. Run the *AccessISDocumentReaderx86.msi* or *AccessISDocumentReaderx64.msi* installer. The **Access-IS - Document Reader Setup** dialog box appears.



4. Click **Next** to continue and display the **End-User License Agreement** page.



5. Review the license agreement. Select **I accept the terms in the License Agreement** and click **Next** to continue.
6. On the **Custom Setup** page, select the components to install.

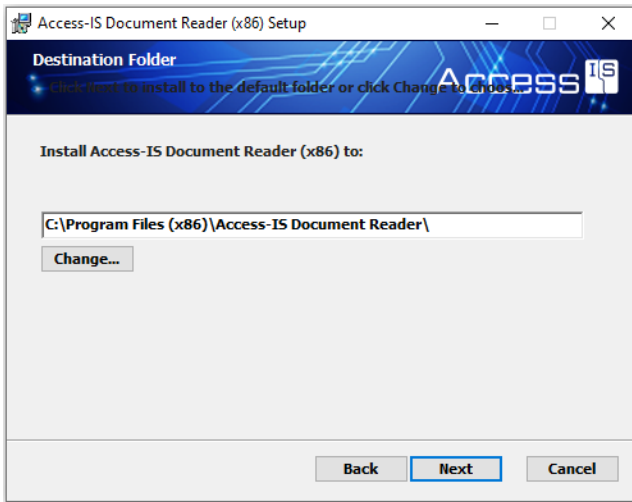


If you do not want to integrate the software into another system and will therefore not require the sample code, then you may clear the **Sample Code** check boxes.

7. Click **Next**.

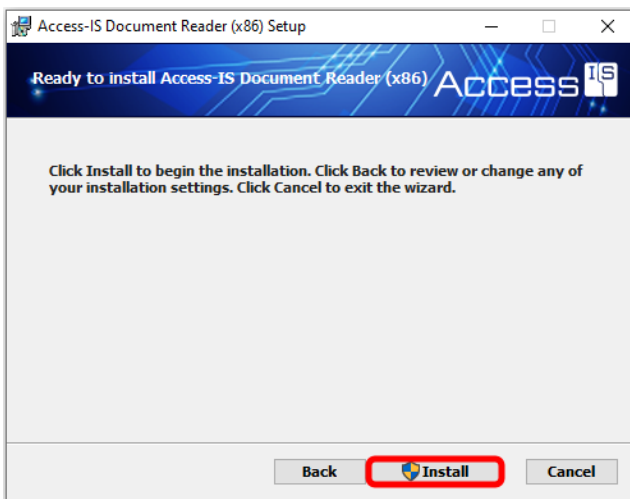


- On the **Destination Folder** page, select the installation folder.



A default location is provided. To install to a different location, click **Change** and select the folder that you want to use.

- Click **Install** to start the installation.



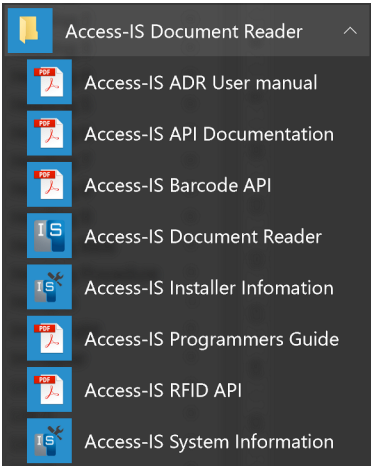
- When installation is complete, click **Next** and then click **Finish**.

### 3.2.1 What gets installed and where?

By default, the installer installs all the necessary software, API components, and documentation in:

- 64-bit: Program Files\Access-IS\Access-IS Document Reader
- 32-bit: Program Files (x86)\Access-IS\Access-IS Document Reader

You can access ADRS, the Software Development Kit (SDK), and other tools from the Access-IS Document Reader group on the Windows Start menu.



### 3.2.2 ADRS application, SDK, and tools

Application	Access-IS Document Reader	Opens the ADRS application.
SDK	Access-IS ADR User Manual	Describes how to configure and use ADRS.
	Access-IS API Documentation	Describes the VideoOCR API.
	Access-IS Programmer's Guide	Describes how to use the VideoOCR API to control the operation and data provided by a document reader.
	Access-IS MSR API documentation	Describes the OCR316e API.
	Access_IS_MSR.DLL	The software library required for OCR316e user development applications.
Tools	Access-IS Installer Information	Provides installation information and an option to uninstall the document reader and associated files.
	Access-IS System Information	Provides operating system information.

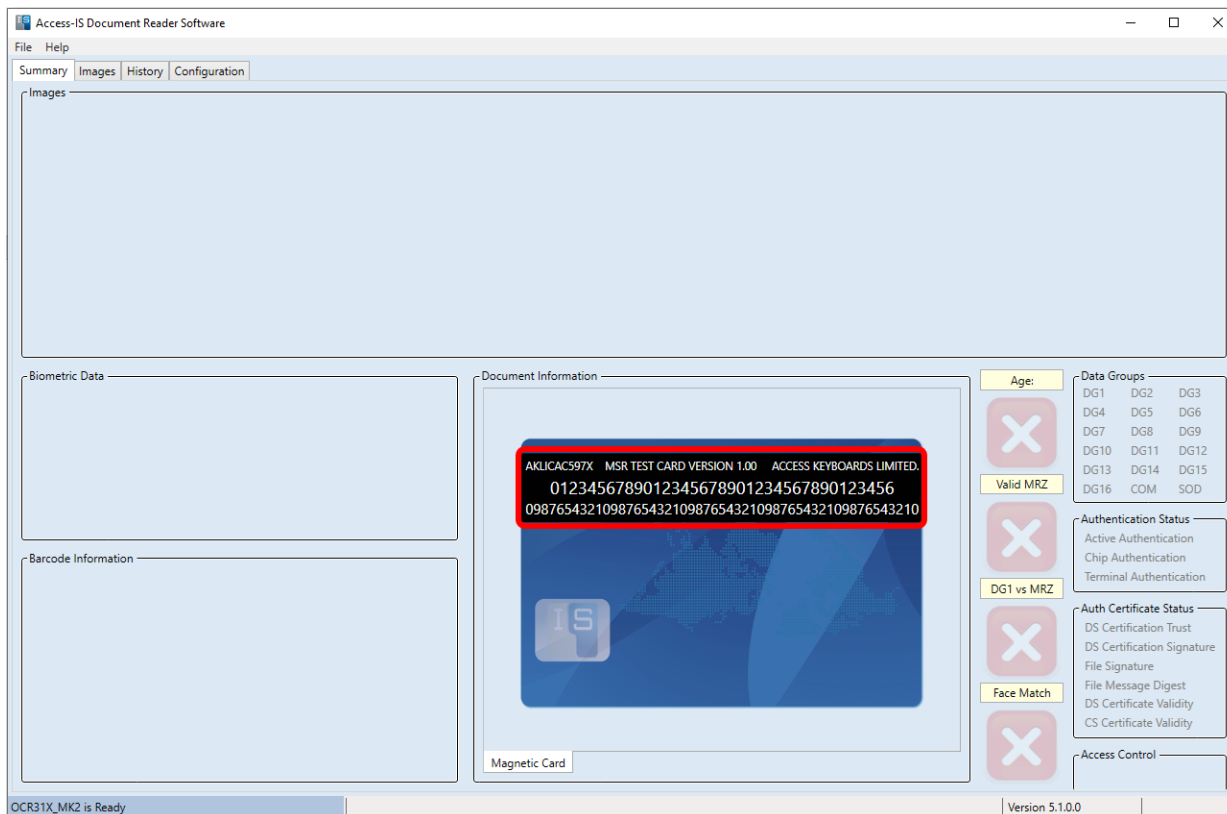
## 3.3 Starting the software

1. Connect the OCR316e to the host. See [2.2 Connecting the OCR316e to a Windows host](#) for details.
  2. Double-click the **Access-IS Document Reader** shortcut on the host desktop.  
The **Access-IS Document Reader** opens.
- Note:** If ADRS or a user-developed application is to be used, the Access Serial Port Service (ASPS) must be stopped.



### 3.4.1 Document information

If a card with a magnetic strip is swiped, it will display the information stored on the card:



### 3.5 Document reader software status messages

Messages appear in the bottom left corner of ADRS. Use these messages to check the status of the reader and software and to help diagnose problems.

Message	Description
OCR31X is ready	The OCR316e is connected to the host and ready to read a document.
Processing complete	The OCR316e has processed the document.
Automatic reader not started	An attempt to start the reader was made, but it failed. This generally indicates that the automatic detection of documents placed on the scanner is not enabled (on the <b>Configuration</b> tab). The setting is enabled by default.
No Document Reader Connected	The OCR316e is disconnected from the host and software; the camera will not work. Check USB and power connections.
Could not set Windows Handle for windows....	Another instance of ADRS is already running. Ensure that you close ADRS before restarting.
Initialised	The scanner is initialized, but the reader has not started correctly. Make sure the scanner is powered up and switched on.
MRZ decoding failed	The OCR316e has detected an MRZ string that is not correctly formatted. Move the mouse cursor over the MRZ summary icon to display details of the failure.

## 3.6 User application development

If you are required to develop your own application, refer to the *MSR API* document included in the ADRS installation.

# Section 04

## Specifications

## 4.1 Specifications

Specification	Details
Dimensions (L x W x H)	150 mm x 44 mm x 45 mm (5.9 in x 1.73 in x 1.77 in)
Weight	200 g (7.05 oz)
Cable length	40 cm and 1.5 m (15.7 in and 59 in) options
Environmental	Operating temperature: 0°C to 50°C (32°F to 122°F) Storage temperature: -20°C to 60°C (-4°F to 140°F) Humidity: 0 to 95% non-condensing
Body	Dark grey ABS (other colors by special order)
Power requirements	5 V DC, <250 mA via USB connection
Electrical interface	5 V USB
OCR read capabilities	Standard OCR font: OCR-B Machine Readable Passports (MRP): 2 lines of 44 characters Machine Readable Visas (MRV): 2 lines of 44 characters, 2 lines of 36 characters ID documents: 1 line of 30 characters, 2 lines of 36 characters, 3 lines of 30 characters
Magnetic stripe reading	Three-track magnetic cards complying with ISO7811/ 2-5
Beeper	Single beep for 'good read', three beeps for 'bad read'
Indicators	Power 'Good read' and 'bad read' LED indication
MTBF	85,000 hours
Approvals	Safety <ul style="list-style-type: none"> <li>EN 60950-1: 2006</li> </ul> EMC <ul style="list-style-type: none"> <li>FCC 47CFR Part 15 Class A</li> <li>EN 55022: 2006 + Amd1: 2007</li> <li>EN 55024: 1998 + Amd1: 2001 + Amd2: 2003</li> </ul>

# Appendix **A**

HID reports



## A.1 Receive data

Data received from the OCR Engine will be in a USB HID input report, structured as below:

	Bit							
Byte	7	6	5	4	3	2	1	0
0	1 if online	Length of data field returned 0..7						
1	Data from OCR (up to 7 bytes)							
..								
..								
..								
..								
7								

If more than 7 bytes are sent, multiple packets are received. If the online state changes, a packet with data length field set to zero is received with the new status.

### A.1.1 Example HID report sent by the device

	Bit							
Byte	7	6	5	4	3	2	1	0
0	[0x83]							
1	[0x02] [0x2A] [0x03] [0x00] [0x00] [0x00] [0x00]							
..								
..								
..								
..								
7								

## A.2 Send commands

To send commands to the OCR, use a USB HID output report with the following structure:

	Bit							
Byte	7	6	5	4	3	2	1	0
0	1 to set OCR online	Length of following data 0..7						
1								
..								
..								
..								
..								
7								
Output data (up to 7 bytes)								

### A.2.1 Example output report to request the firmware version

	Bit							
Byte	7	6	5	4	3	2	1	0
0	[0x83]							
1	[0x1B] [0x4C] [0xE5] [0x00] [0x00] [0x00] [0x00]							
..								
..								
..								
..								
7								

### A.2.2 Example output report to enter the setup menu

	Bit							
Byte	7	6	5	4	3	2	1	0
0	[0x83]							
1	[0x1B] [0x4C] [0x7E] [0x00] [0x00] [0x00] [0x00]							
..								
..								
..								
..								
7								

## Revision history

Date	Description	Revision
April 2023	Initial release.	A.0



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For technical support, please visit: <https://support.hidglobal.com>

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