

OCR31x

USB OCR reader with optional MSR

OCR31x User Manual



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1. Introduction

The OCR31x series provides bi-directional OCR reading with optional MSR capabilities over a USB interface.

Drivers and utilities for the OCR31x series can be found on our downloads page at <http://downloads.access-is.com>

1.1. Device Overview

Model	OCR	MSR
OCR315	Yes	No
OCR316	Yes	Yes
OCR315e	Yes	No
OCR316e	Yes	Yes

The OCR315e and OCR316e use our second generation OCR310e engine to provide significantly better read performance.

1.2. 1st vs 2nd Generation OCR Engine

The following section provides details on the OCR310 generation differences.

Parameter	OCR310 Mk I	OCR310 Mk II
Swipe Speed	50cm/sec	127cm/sec
Decode Speed	< 2 seconds	< 1 second
CDC Mode PID	0x126	0x13C
Keyboard Mode PID	0x136	0x13D
Standard HID PID	0x137	0x13E
Legacy Mode PID	N/A	0x137
Current Consumption		
Standard Firmware Version	AKO CRS20A	AKO CRS50A

Legacy HID mode is unique to the Mk II engine which allows the device to be used as a direct replacement for the Mk I in existing systems where units are identified by PID rather than reading the report descriptors. It should be noted that this mode is deprecated for new customers and setups.

The structure of the HID interface has been changed between versions because the original structure did not fully comply with the HID standard. It also reduces the bandwidth needed for the interface which allows more devices to be plugged in at the simultaneously.

2. Installation

There are three operating modes available for this series:

1. HID – Data is output via the HID interface. The Access Serial Ports Driver (ASPS) is a configurable driver that can output data via virtual serial port or virtual keyboard (keystrokes). The data can be parsed and reformatted as required before being output. The virtual serial port created during the installation of ASPS will always be visible but only provides one way communication i.e. the port does not support being written to. This allows the simultaneous reading of multiple devices from the same virtual serial port.
2. CDC – A dedicated virtual serial port is created per connected CDC device. The virtual serial port works in the same way a standard serial port would with the only difference being that the virtual serial port will disappear when the device is unplugged. This mode supports both reading and writing.
3. KYB – Data is output as keystrokes using only the default Windows keyboard drivers. The device need only be plugged in before scanning documents.
4. HID Legacy – Please see the previous section on 1st vs 2nd generation OCR engines.

The first time the OCR31x device is connected to a spare USB port on the host computer, Windows should detect a new device and attempt to install the drivers for it. Provided the necessary drivers were already installed, Windows should notify you that the device is ready to use. While Windows will likely prompt you to restart the computer, you can instead simply repower the OCR31x device by unplugging and re-plugging it.

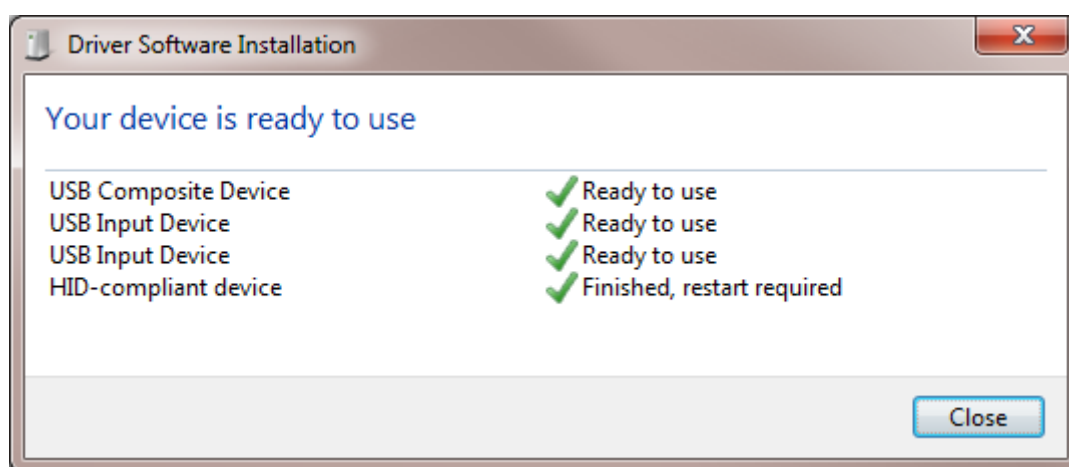


Figure 1. OCR316 in HID mode

3. Operation

The led, shown in figure 2, indicates the current status of the device.

- Red → Powered but not connected to an application
- Off → Connected to an application OR Unpowered
- Yellow → Firmware issue. Contact Access to resolve

When the OCR31x device is connected to the PC, the LED should light up red. As soon as an application connects to the device via a serial port or equivalent, the LED should go out. After scanning a document, the LED will flash green or red to indicate a good or bad read respectively. A sounder will also go off after a read, 1 short beep for a good read and 3 short beeps for a bad read. The LED and sounder can both be configured or even disabled.



Figure 2.

When scanning, ensure the document is flat against the bottom of the device as shown in figure 3. If you scan the document at an angle, there is a good chance the device will not read it correctly. The MRZ or magnetic stripe should be facing the opposite side of the LED as can be seen in figure 3.



Figure 3.

4. Configuration

Camel Tools is used to configure the OCR31x device series and can be found on our downloads page.

Ensure that:

- If the device is operating in CDC mode → The Access CDC drivers are installed.
- If the device is operating in HID or HID Legacy mode → The comserv service has been stopped. To stop comserv, start a command prompt with administrative privileges and use the following command: "**net stop comserv**" without the quotation marks. Comserv can be started again with the command "**net start comserv**" once configuration has been completed.

4.1. Switching Interface

Follow the instructions below to switch between the interface modes described in the installation section.

1. Click "Modify USB Interface"

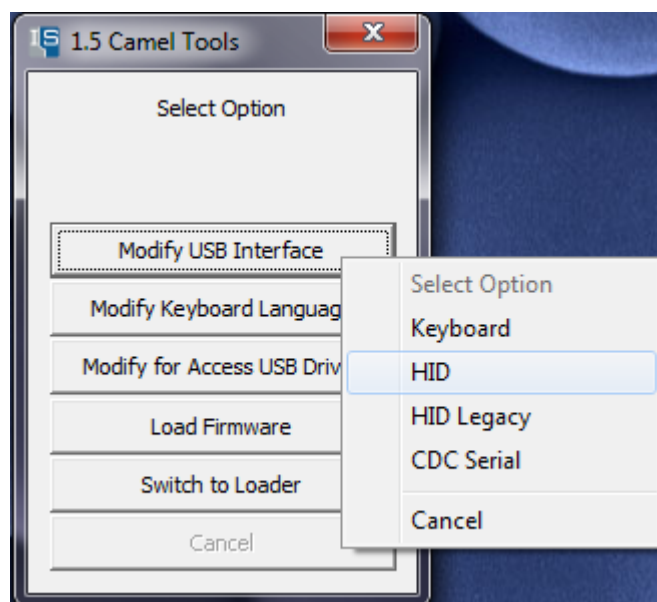


Figure 2.

2. You will be presented with the 4 possible USB modes (Keyboard, HID, HID Legacy, CDC Serial). Click one of them.
3. Wait until you see the message "Configuration Successfully Finished. Cycle power to use settings" at the top of Camel Tools.
4. Repower the device.

4.2. Switching Keyboard Language

If the device uses the Keyboard interface mode then it may be necessary to select the correct keyboard language.

1. Click “Modify Keyboard Language”

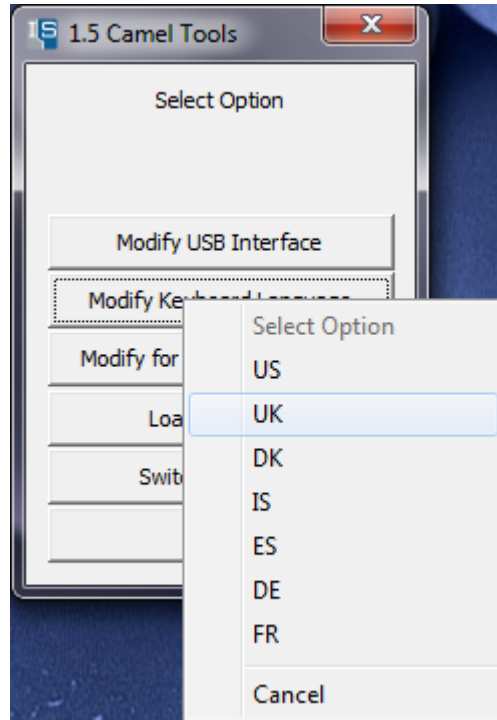


Figure 3.

2. You will be presented with the 7 possible languages. Select the one required.
3. Wait until you see the message “Configuration Successfully Finished. Cycle power to use settings” at the top of Camel Tools.
4. Repower the device.

5. Loading Firmware

5.1. Obtain Correct Firmware

If your part number is not listed here then contact Access quoting the serial / batch and part numbers of the device.

Device	Part Number	Firmware
OCR310 MK1	AKECAMAA391	20A-0032V
OCR312 315 316	AKECAMG8851 AKECAMKA281 AKECAMKA091	AKO CRS25A-0032V.frw
OCR310 MK2	AKECAMAA391	AKO CRS50A-0032A.frw
OCR315e	AKECAMKA561	AKO CRS67A-0032A.frw
OCR316e	AKECAMKA092	AKO CRS55A-0032A.frw

5.2. Preparation

If the ASPS driver is installed on the computer and the device is in HID or HID Legacy mode, the comserv service must be disabled. This can be achieved by opening a command prompt with administrative privileges and sending the command “**net stop comserv**” as shown in Figure 4.

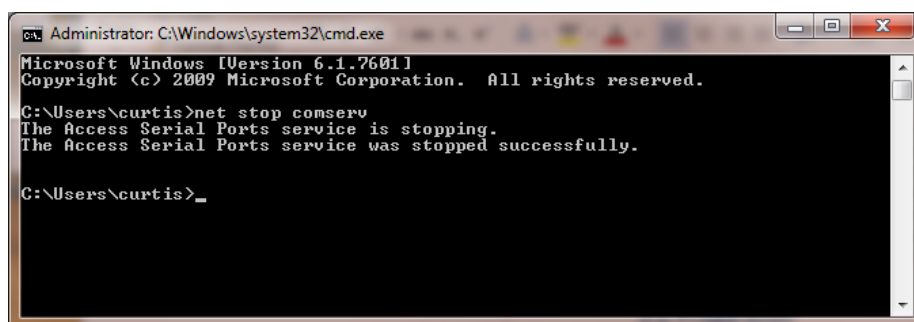


Figure 4.

5.3. Changing to Development Mode

To update the firmware, the device must first be changed to development mode.

1. Extract the CamelTools.zip file.
2. Open CamelTools.exe.
3. Select “Switch to Loader.”
4. After switching to the loader, drivers will be automatically installed. Wait for these drivers to install before continuing to load the firmware.

5.4. Loading the firmware

1. Select "Load Firmware."
2. Extract the firmware zip file.
3. Navigate to the **.frw** firmware file and click "Open." Camel Tools should proceed to program the device as shown in **Figure 2**.

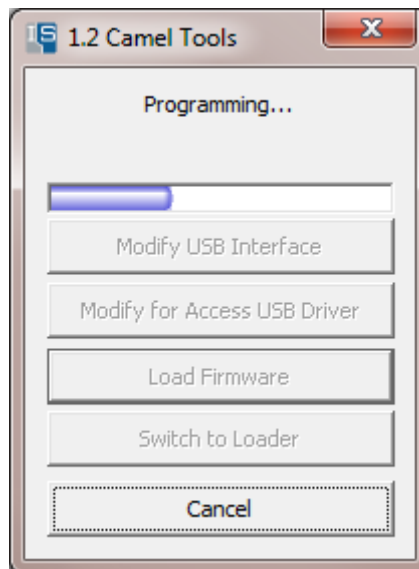


Figure 5.

4. Once the firmware has been updated successfully, the device should make an audible beep and Camel Tools will instruct you to repower the device.
5. Close Camel Tools.

6. Useful Documentation

OCR315/316 datasheet (including technical specification) → http://www.access-is.com/pdf/OCR315_316_OCR_Optional_MSR_Reader_Datasheet.pdf

7. Document History

Revision #	Approved By	Revision Details
1.0	CP	Initial release
1.1	CP	Added gen2 engine details and configuration options
1.2	CP	Updated for Camel Tools version 1.5

8. Radio Frequency Energy

European EMC directive 89/336/EEC

This equipment has been tested and found to comply with the limits for a class A computing device in accordance with the specifications in the European standard EN55022. These limits are designed to provide reasonable protection against harmful interference. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions may cause harmful interference to radio or television reception. However, there is no guarantee that harmful interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to correct the interference with one or more of the following measures (a) Reorient or relocate the receiving antenna. (b) Increase the separation between the equipment and the receiver. (c) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected. (d) Consult the supplier or an experienced radio / TV technician for help.



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.

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.

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