

CARMEN[®] OCR

FOR UIC / DOT / ACCR



INSTALL GUIDE

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For Versions 7.3.1.10 and above

Document date: 2019-04-17

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1. INTRODUCTION

This documentation contains a step by step guide on how to install both the hardware and software components of CARMEN® OCR. It also gives a brief description on input image requirements.

This guide only details the installation procedure for **Windows** based systems.

2. HANDLING PRECAUTIONS

There are some standard precautions that should be followed when handling the Neural Network Controller (NNC) card or any other electronic hardware component:

1. Keep the card in its anti-static bag until it is ready to be installed.
2. Protect the card from static electricity by grounding your body and the equipment during installation. Wear a grounded wrist strap, or touch the metal case or chassis of the PC before touching the card.
3. Always grasp the card by its edges.
4. Do not touch the components on the card or the "gold finger" connectors plugged into the expansion slot. Instead, grasp the card by its mounting bracket.
5. Ensure the system power is completely turned-off before doing any installation work. In case of PCs with ATX power supplies, it is recommended to unplug the power cord before installation.

! Important

During hardware installation, exercise caution when handling hardware components as these might have sharp edges or protruding parts that can cause hand injuries.

3. PACKAGE CONTENTS

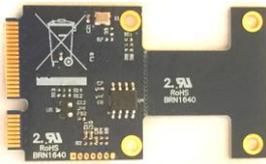
A CARMEN® OCR license has both hardware and software components. Hardware components are shipped physically via a courier service, software components are downloaded via the ARH Technical Support System (ATTS) following registration.

Software Components:

- Software development libraries
- Sample codes for all supported languages:
 - C/C++, C#, VB.NET and Java programming languages for Windows
 - C/C++ and Java for Linux
- Manual for the API in electronic format
- Drivers for the PCIe(x1) / USB port Neural Network Controller (NNC)
- OCR Demo software for Images (ODI)

Hardware components:

- One of the following Neural Network Controllers (NNC)

			
FXMC USB	FXMC Internal USB	FXMC PCIe	FXMC miniPCle

4. INSTALLING CARMEN® OCR

4.1. SYSTEM REQUIREMENTS

Minimum system requirements:

- Intel Pentium III 1GHz CPU or higher (or any other fast x86 or x64 compatible CPU)
- 512 Mbytes of RAM or more
- Free PCIe or miniPCIe slot with bus mastering option or USB 2.0 port
- Windows 8, 8.1, 10 32/64 bit operating system
- For CARMEN® OCR: image files (.jpg, .bmp, .png, .jpeg2000) loaded from a mass storage drive or directly from memory as input

In order to run CARMEN® OCR, you should either have a USB 2.0 port / internal USB NNC or PCIe / miniPCIe NNC. This is a form of HW protection for the software, the dongle includes the license.

4.2. HARDWARE INSTALLATION

4.2.1. Installation of the PCIe (x1) NNC

1. Turn the computer off and unplug the power cord.
2. Remove the cover from the computer (refer to the user's manual of the PC for specific instructions).
3. Locate an available empty PCIe expansion slot.
4. Remove the slot cover screw and slot cover if possible.
5. Open the antistatic protective sleeve of the CARMEN® NNC card, grasp the circuit board by the edge of its mounting bracket and take it out from the sleeve.
6. Insert the card into the empty PCIe expansion slot by its gold finger connectors and gently press down on the top edges of the board to ensure that all connecting points are seated securely. Fasten the mounting bracket of the board using the screw removed earlier.
7. Reinstall the cover of the PC and reconnect the power cord.
8. Turn the computer on.
9. During system boot, enter the BIOS setup program of the computer and check whether the **Bus mastering** option is enabled. If not, enable it. Save and exit setup. (This option is not available in every BIOS setup program; check the user's manual of the PC for specific information).
10. When the New Hardware Found wizard starts, click on **[Cancel]**.

4.2.2. Installation of the USB 2.0 port NNC

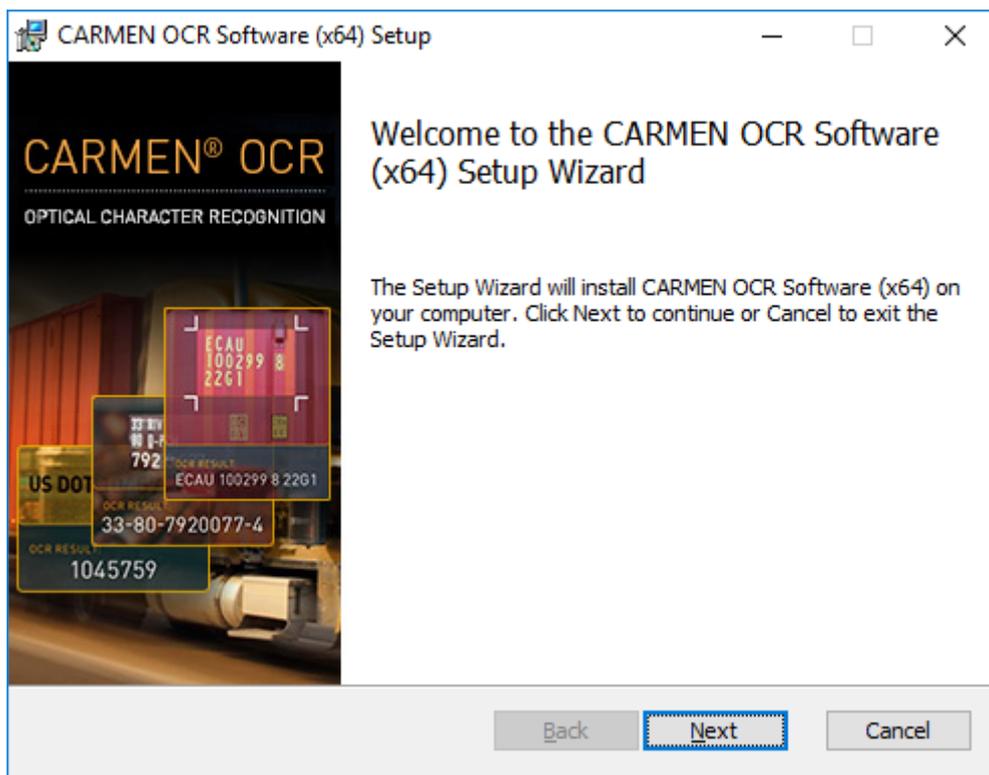
1. Connect the NNC to one of the USB 2.0 ports of the computer.
2. The key will only be detected and recognized once the software package has been installed.

4.3. SOFTWARE INSTALLATION

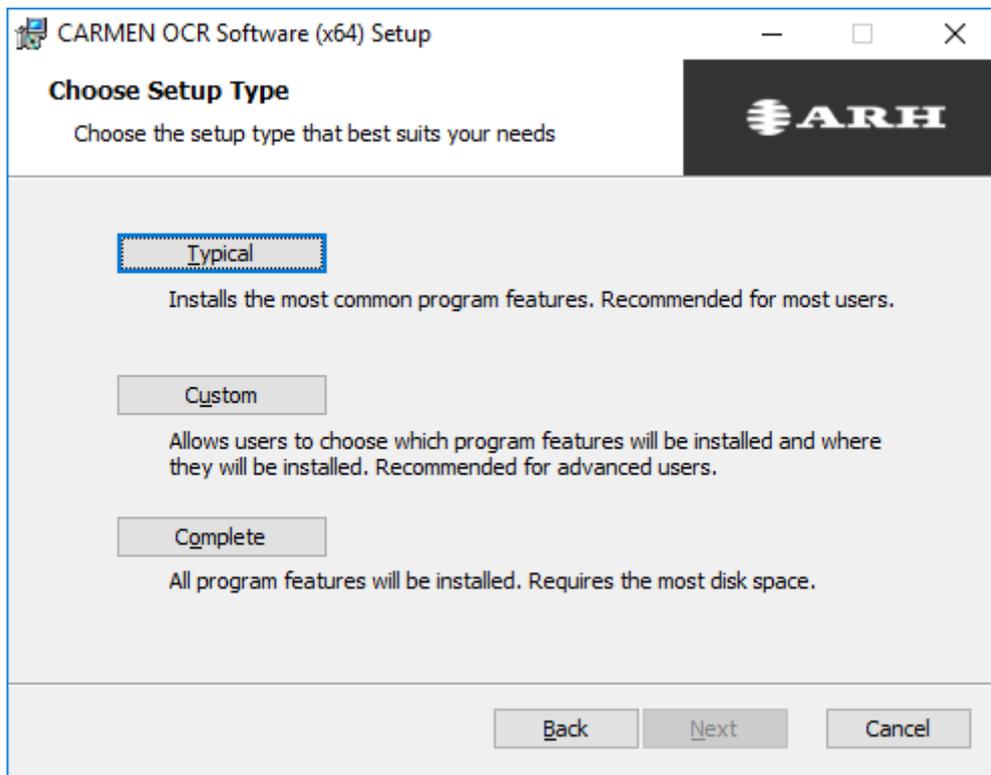
Download links for the CARMEN® Installation Package are distributed via the ARH Technical Support System (ATSS). The links are sent out automatically once your order is processed. If you did not receive a download link, please open a ticket in ATSS.

4.3.1. Installation on Windows platforms

1. Before installing a new CARMEN® OCR version, uninstall any previous versions of CARMEN® OCR from your system (if applicable) and reboot the computer.
2. Extract the received zip file to a folder on the hard disk of your computer.
3. CARMEN® setup does not start automatically; locate and double-click "**CARMEN OCR-7.3.X.XX-x86.msi**" (32bit version) or "**CARMEN OCR-7.3.X.XX-x64.msi**" (64bit version) within the Installation Package to start the installation.



4. Follow the installation steps and accept the END-USER LICENSE AGREEMENT
5. Once this is done, select the method of installation in the pop-up window.



Three options are available:

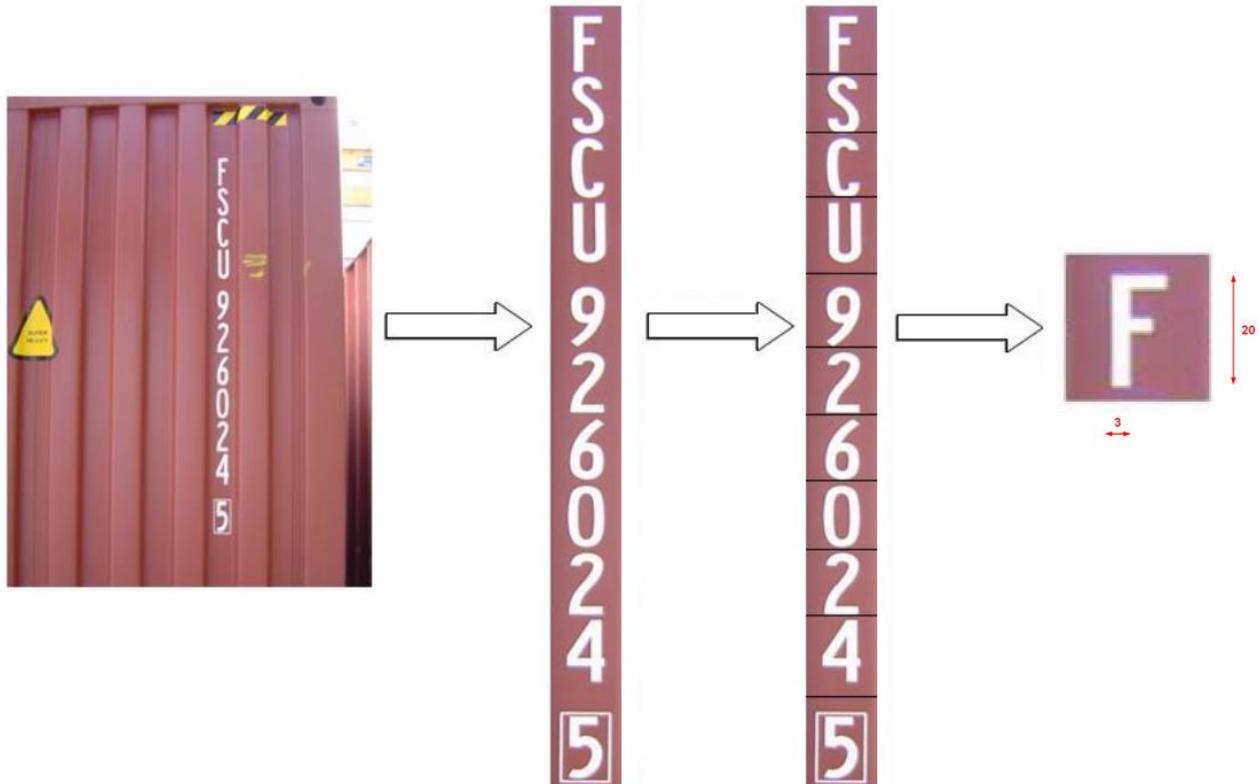
- a) Typical: Recommended for most users, installs the most common program features.
- b) Custom: Allows users to select or deselect components for installation.
- c) Complete: recommended for developers. Selecting this option will install the entire package on the PC.

6. Click on **[Next]** to start copying files to your computer.

7. Connect the USB or Express Card Hardware Key into the computer.

5. INPUT IMAGE REQUIREMENTS:

5.1. CHARACTER SIZE



Proper character sizes (in pixels) on a sample image of a container code (ACCR)

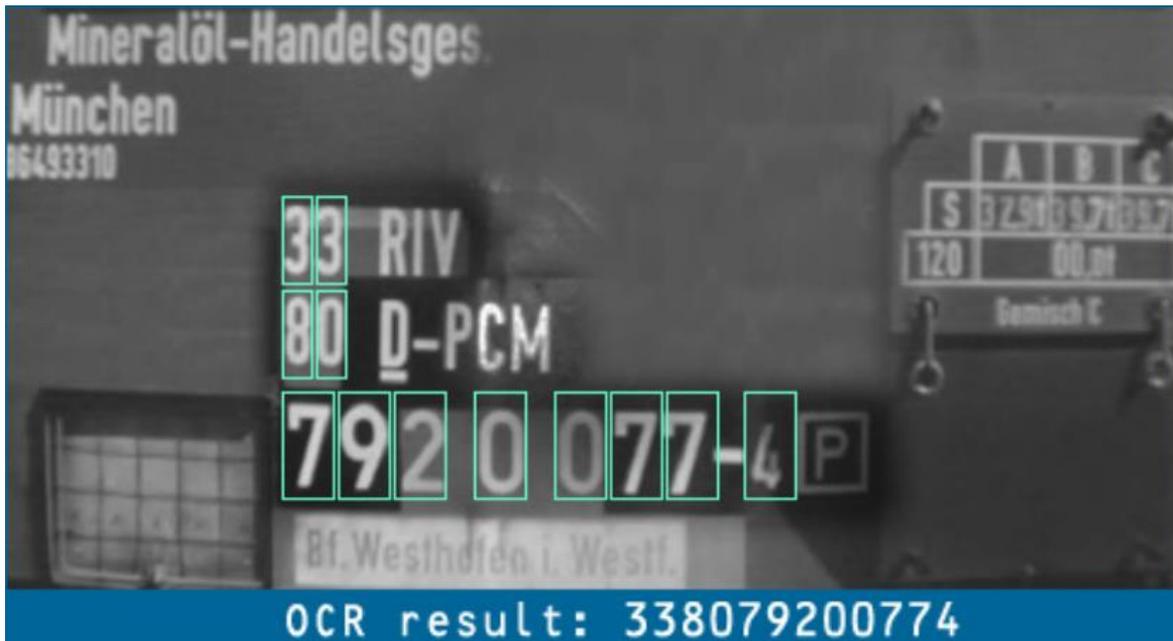
For optimal OCR results, the most important factor is the size of the characters on the image. For Latin characters it is recommended to have an average character height of at least 16 pixels. For optimum results, it is recommended to have characters that are at least 20 pixels in height.

Very low-resolution images are unusable for OCR, but so are very high-resolution images as well. Therefore, avoid settings where the character height is greater than 50 pixels. The line width of a character on the image should be at least 2-3 pixels.

Recommended character sizes in pixels:

- Height, Latin characters: 16-50 pixels (optimal 20-50)
- Line width: min. 2-3 pixels

Same character size requirements apply to UIC wagon codes and USDOT numbers.



CONTACT INFORMATION

HEADQUARTERS

ARH Inc.
Hungary, EU

Alkotás utca 41
Budapest, 1123
Hungary

Phone: +36 1 201 9650

Fax: +36 1 201 9651

Web: www.arh.hu

ARH AMERICA

Adaptive Recognition America Corp.
Florida, USA

28059 US Highway 19 North,
Suite 203
Clearwater, Florida 33761

Phone: +1 727 724 4219

Fax: +1 727 724-4290

Web: www.arh.hu

The ARH Technical Support System (ATSS) is designed to provide clients with fast and proficient assistance.

Information regarding hardware, software, manuals and FAQs are easily accessible for clients who are already registered in ATSS. In addition to offering assistance, the system is also designed to provide high levels of protection while managing your business information.

NEW USERS

If this is your first online support request, please create an account by clicking on this [link](#).

RETURNING USERS

All registered ATSS customers receive a personal access link by email. If you previously received a confirmation message from ATSS, it contains an embedded link that allows you to securely enter the support site.

If you need assistance with login or registration, please contact atsshhelp@arh.hu for help.