



# **Replacing or Upgrading DiskOnChip Memory**

## **Objectives**

This document describes how to replace or upgrade DiskOnChip flash memory in a RAC6182 Industrial Computer.

## **European Union Compliance**

The RAC6182 Industrial Computer meets the European Union Directive requirements when installed within the European Union or EEA regions and has the CE mark. A copy of the Declaration of Conformity is available at the Rockwell Automation/Allen-Bradley Internet site: [www.ab.com](http://www.ab.com).



**ATTENTION:** The RAC6182 Industrial Computer is intended to operate in an industrial or control room environment, which utilizes some form of power isolation from the public low voltage mains. Some configurations may not comply with the EN 61000-3-2 Harmonic Emissions standard as specified by the EMC Directive of the European Union. Obtain permission from the local power authority before connecting any configuration that draws more than 75 watts of AC power directly from the public mains.

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## Safety Precautions

The RAC6182 Industrial Computer contains line voltages. Make sure you disconnect all power to the RAC6182 before removing covers or access screws.



**ATTENTION:** Disconnect all power from the RAC6182 before removing components. Failure to disconnect power could result in severe electrical shock or damage to the RAC6182 Computer.

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Internal RAC6182 computer components may be damaged by Electrostatic Discharge (ESD). Make sure you wear a grounding strap whenever handling circuit boards, memory modules or other internal components.



**ATTENTION:** Wear a wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the RAC6182 and components.

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## DiskOnChip Memory

The RAC6182 processor board contains a socketed DiskOnChip (DOC) flash memory device, which stores the Windows CE operating system and any loaded software applications and data. This DOC flash memory can be upgraded or replaced. A special Allen-Bradley DOC extraction tool is required to remove the original DOC device, and is included with the DOC removal/installation kit.



**ATTENTION:** Replacing the DOC will require you to re-install the operating system and re-load all software applications and data.

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The following DiskOnChip flash memory devices can be ordered from Rockwell Automation:

Part Number	Description
6189-2FL64	64MB flash DOC and chip extractor tool

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**ATTENTION:** The DOC memory is sensitive to ESD and requires careful handling. Hold the DOC by the package – do not touch the pins. After removing the DOC, place the device in an anti-static wrapper.

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## Preparing to Re-install the Operating System, Software Applications and Data Files

Replacing the DOC will require you to re-install the operating system and re-load all software applications and data. To accomplish this, you will need a bootable PC ATA memory card and a desktop computer with a PCMCIA drive.

The following bootable PC memory cards can be ordered from Rockwell Automation:

Part Number	Description
6189-ATA32	32MB ATA PC memory card
6189-ATA64	64MB ATA PC memory card

**Note:** You can also back up and replace software applications and data using a desktop PC running Microsoft ActiveSync. Please see the RAC6182 Users Manual for information about loading Microsoft ActiveSync onto a desktop PC and creating an ActiveSync connection between the RAC6182 Industrial Computer and a desktop PC.

## The Operating System

The Windows CE operating system is included on the RAC6182 Applications and Accessories CD-ROM, which was shipped with your RAC6182 Industrial Computer.

**Note:** This CD-ROM can be purchased separately. Consult your User Manual or Allen-Bradley distributor for ordering information.

To format the replacement DOC, you will need to copy the operating system binary file onto your bootable PC memory card:

**Important:** You must copy the operating system binary file to a bootable PC memory card. If you do not, you will not be able to format the replacement DOC or re-install the operating system.

1. Insert the bootable PC Memory Card in the PCMCIA drive of your laptop or desktop computer.
2. Insert the RAC6182 Applications and Accessories CD in the CD-ROM drive of your computer and open the folder called “Win CE 3.0 OS”.
3. Copy the operating system binary file, RAC6182-2.00p4.bin, from the RAC6182 Applications and Accessories CD-ROM to the PC Memory Card.
4. Rename the file RAC6182.bin.

To re-install Windows CE on the RAC6182, you must copy the system files to the PC Memory Card:

1. Insert the bootable PC Memory Card in the PCMCIA drive of your laptop or desktop computer.
2. Insert the RAC6182 Applications and Accessories CD in the CD-ROM drive of your laptop or desktop computer.
3. Copy the “Storage Card” folder from the RAC6182 Applications and Accessories CD-ROM to the PC Memory Card.

### **Software Applications**

The RAC6182 Recovery Media CD-ROM contains all the files and instructions needed to re-install RSView Machine Edition on the RAC6182. You must first upgrade the RAC6182 Operating System as described in this document before installing RSView Machine Edition.

You will have to locate the installation files for any other applications you may have installed on the RAC6182.

### **Application Data**

Before replacing the DOC, you must first back up all application data files from your RAC6182:

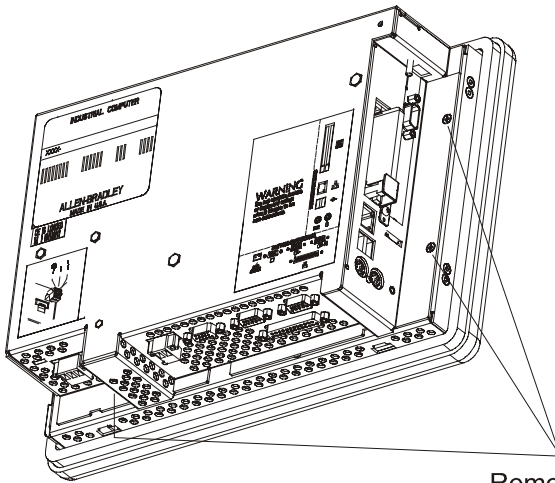
1. Insert the PC Memory Card into either RAC6182 PCMCIA slot.
2. Copy the necessary application data files to the PC Memory Card.

## Opening and Closing the Chassis

You will have to open and close the RAC6182 chassis to access internal components.

### To open and close the chassis (display versions):

1. Disconnect power from the RAC6182 .
2. Using a Phillips screwdriver, remove the 3 screws securing the chassis to the front bezel.



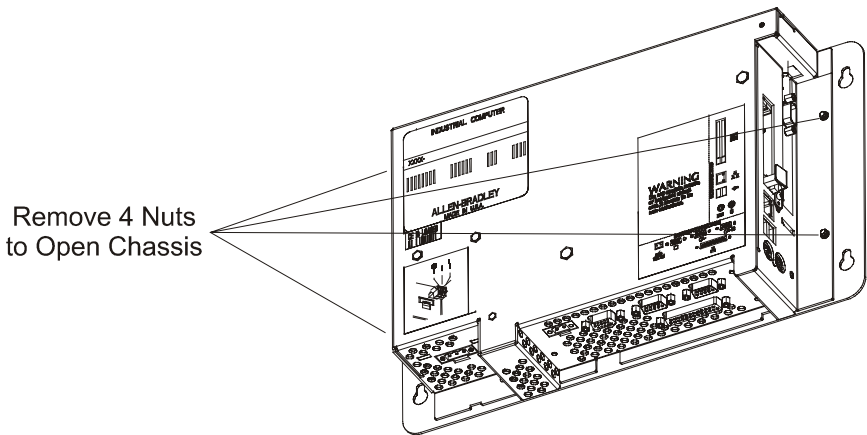
Remove 3 Screws to  
Open Chassis

3. Open the hinged chassis away from the front bezel. Be careful not to stress or disconnect the internal cables running between the chassis and front bezel.
4. To close the chassis, slowly pivot the chassis back against the front bezel. Be careful not to pinch the internal cables.

5. Reinstall the 3 screws to secure the chassis to the front bezel. Tighten the screws to a torque of 6 - 8 in-lbs (0.7 - 0.9 N•m).

**To open and close the chassis (non-display versions):**

1. Disconnect power from the RAC6182.
2. Remove the 4 nuts securing the chassis to the front plate.

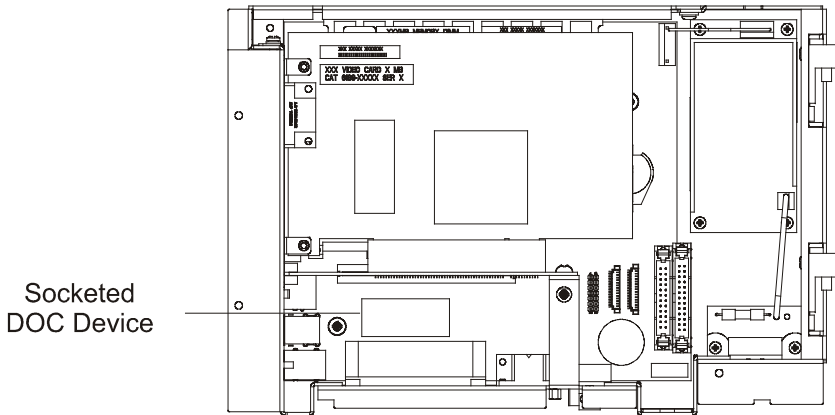


6. To close the chassis, reinstall the 4 nuts to secure the chassis to the front plate. Tighten the nuts to 6 - 8 in-lbs (0.7 - 0.9 N•m).

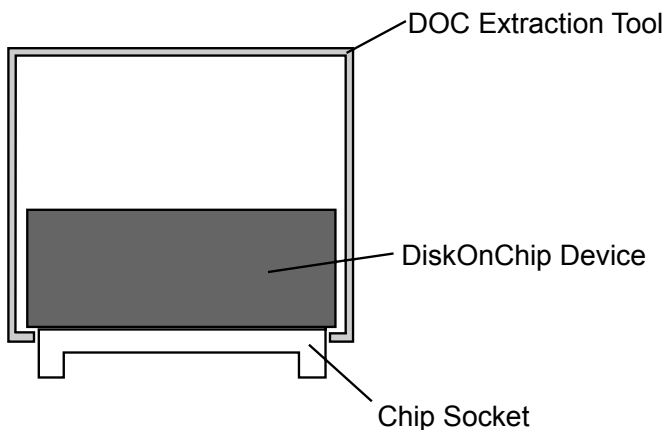


## Replacing the DiskOnChip Memory Device

1. Disconnect power to the RAC6182.
2. Follow the procedures on pages 7 - 8 to open the chassis.
3. Locate the DOC socket on the processor board, as shown on the diagram below.



4. Use the special DOC extraction tool to hook the edges of the DOC. Be careful to hook only the DOC with the extraction tool, and not the socket located directly below the DOC.



7. Remove the DOC from its socket. Pull the device straight up. Be careful not to bend or damage the DOC pins.

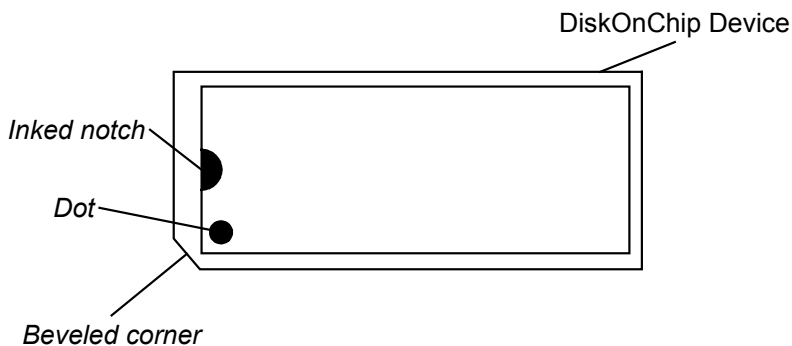


**ATTENTION:** Make sure to hook **only** the DOC with the extraction tool, and not the socket located directly below the DOC. **Do not pull the socket** from the printed circuit board assembly. **Irreparable damage will result.**

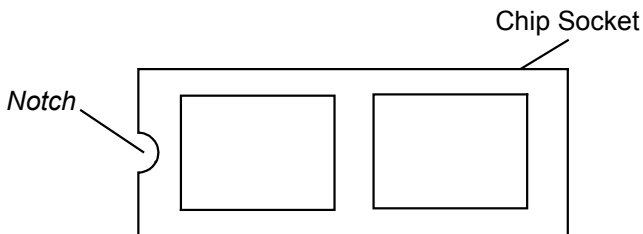
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8. Store the removed DOC memory chip in an anti-static wrapper.

9. Before installing the new replacement DOC memory chip, be sure it is properly oriented with regard to the chip socket. On one end of the DOC chip is a beveled corner, an inked notch, and a dot (see below).



The chip socket itself contains a notch on one end (see below).



Align the end of the DOC chip containing the inked notch, dot and beveled corner with the end of the chip socket containing the notch.

10. To install the DOC memory chip, carefully align all the pins with the chip socket. Gently push the pins into the socket until the chip is seated against the socket base. Make sure not to bend any pins.
11. Follow the procedures on pages 7 - 8 to close the chassis.

## Formatting the DiskOnChip Memory Device

1. With the RAC6182 still powered down, insert the bootable PC Memory Card containing the operating system binary file (RAC6182.bin) into either RAC6182 PCMCIA slot.
2. Reconnect power to the RAC6182, and turn it on.
3. From the Start Menu / Programs / Command Prompt, open the Command Prompt dialog box. You should see a window with the following text:

```
Pocket CMD v 3.0  
\>
```

4. In the Command Prompt dialog box, type the following command and press the Enter key:

```
\>format
```

5. It will take approximately 45 seconds for the RAC6182 to format the entire DOC. The RAC6182 will automatically reboot into the new operating system.
6. Rename or remove the RAC6182.bin file from the PC Memory Card.

**Important:** If you do not rename or remove the RAC6182.bin file from the PC Memory Card, this operating system will be loaded whenever the RAC6182 is booted with that memory card.

## Re-installing the Operating System

1. Using Windows Explorer (Start Menu / Programs / Windows Explorer), open the Storage Card2 folder, which is on the PC Memory Card.
2. Copy the Bin, Platform, and Windows folders from the PC Memory Card to the Storage Card folder on the RAC6182. Use the Windows Explorer “Copy” and “Paste” commands in the Edit menu.
3. Open the Storage Card folder. Open the Platform folder.
4. Run the khinit.exe program by double-clicking on the khinit icon. This program initializes the Keypad Handler file and path in the Windows CE registry.
5. When the khinit.exe program is completed, you will be prompted to reboot the RAC6182 computer. The operating system upgrade is complete.

## Re-installing Software Applications and Data Files

Re-install the necessary software applications according to their installation instructions. Copy application data files from the PC memory card to the appropriate file folders on the RAC6182.





[www.rockwellautomation.com](http://www.rockwellautomation.com)

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