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# MiTek<sup>®</sup>

# SERVICE BULLETIN

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Document ID:  
**SB210**

Title:  
**Upgrading PLC Firmware & Software on  
RX3i**

Affected machinery: RX3i model PLC

Distribution: Customers upon order

Applies to: Any equipment with RX3i model

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**CAUTION:**

MiTek recommends printing this document in high resolution using color ink. Many of the graphics may be unclear and may create an unsafe condition if this recommendation is not followed.

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|--------------------|-------------------|
| Part # and Rev.    | SB210 rev F       |
| Print Date         | 26 September 2023 |
| Revision Date      | 25 September 2023 |
| Revised By         | A. McIntire       |
| Orig. Release Date | 07 January 2015   |
| Created By         | R. Tucker         |
| Approved By        | R. Tucker         |

## Purpose and Scope

This service bulletin instructs how to upgrade the PLC firmware and software on any equipment that is using an RX3i PLC. The RX3i is referred to by the manufacturer as a Programmable Automation Controller but, for the purposes of this equipment, it is called a PLC.

The PLC firmware **MUST** be upgraded **BEFORE** the software is updated.

The firmware and software packages are stored on separate USB drives shipped with this service bulletin.

## Overview

### Parts Included

The parts included in this kit are shown in Table 1. Please make sure all parts and supplies are present before starting the procedure.

Table 1: Parts in SB210KIT

| Quantity | Description                     | Part # |
|----------|---------------------------------|--------|
| 1        | USB drive with updated firmware | 001301 |
| 1        | USB drive with updated software | 001302 |
| 1        | Service bulletin document       | SB210  |

If you have any questions, call MiTek Automation Support at 1-800-523-3380.



### Supplies Needed

- Supplied USB drives



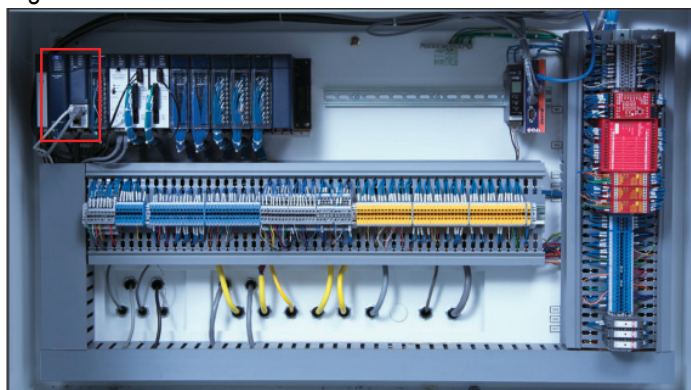
## Procedure

### Installing the Firmware from USB

|   |  |
|---|--|
|  |  <b>WARNING</b>   |
|   | <p><b>ELECTROCUTION AND CRUSHING HAZARD.</b></p> <p>All electrical work must be performed by a qualified electrician.</p> <p>If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and personal protective equipment.</p> <p>Whenever maintenance is performed while the equipment is electrically energized, there is a potential electric arc flash hazard. Refer to NFPA 70E for the personal protective equipment required when working with electrically energized components. Pneumatic and hydraulic components may move unexpectedly if not de-energized. Physically restrain any components capable of movement when working on or near those components.</p> |

1. Before beginning:
  - a) Locate the USB drive labeled as PLC firmware. It will be labeled as firmware.
  - b) Ensure the saw disconnect handle is in the ON position.
  - c) If the machine has a control computer (such as a touch screen), ensure it is powered on.
  - d) Close down any operating software.
2. Prepare the PLC CPU to accept the new firmware update using these steps:
  - a) Locate the PLC CPU (IC695CPE305) in the main electrical enclosure. The CPU for the BLADE saw is shown in Figure 5. Refer to your electrical drawings if you are uncertain where the CPU is.

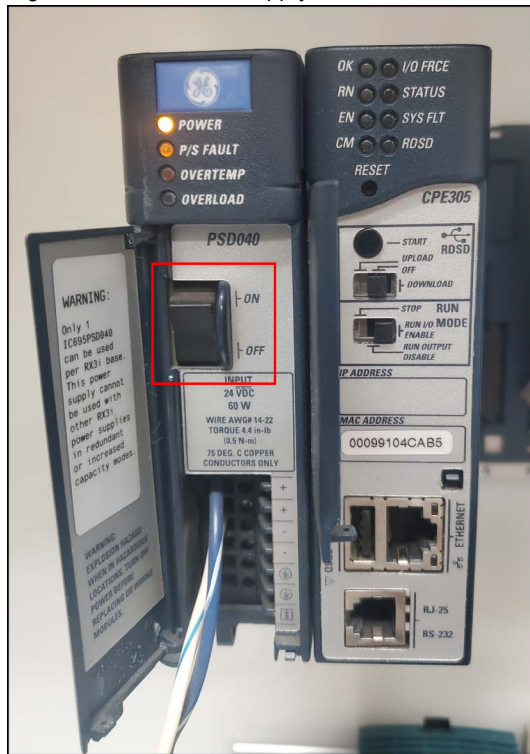
Figure 1: Location of PLC in the BLADE Saw



Bottom Half of Main Enclosure

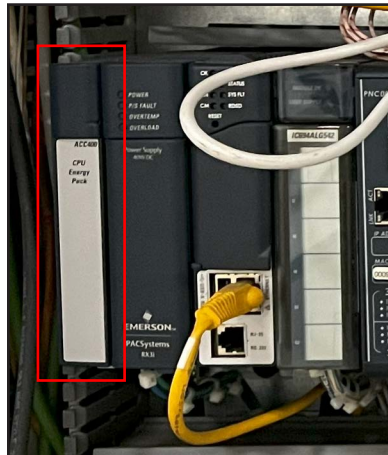
- b) Power down the PLC to be updated by flipping the switch to the off position.

Figure 2: PLC Power Supply



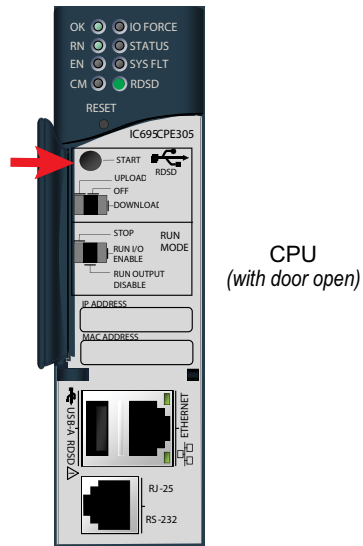
3. Disconnect the Energy Pack from the CPU.

Figure 3: Energy Pack Location



- Open the door just above the ETHERNET and USB- A RDSD ports and locate the button labeled **START** → .

Figure 4: Start Button on PLC CPU



- Press and hold the **START** button. While continuing to hold the START button, power up the PLC.

When the CPU completes its initialization (10-15 seconds), the RDS D LED will begin to blink red. Release the **START** button.

- Insert the firmware USB drive in the port labeled **USB-A RDSD**. Press and release the **START** button. The RDS D LED will blink green while the image is being copied to the CPU (15-20 seconds). When the copy has completed, the RDS D LED will stop blinking and turn off.

## NOTICE

It is imperative that power not be disrupted and the USB drive not be removed while the image copy is in progress as irreparable damage could occur to the CPU.

- If the RDS D indicator light turns **solid red**, the transfer has failed. Try repeating the entire process before contacting MiTek Automation Support for further assistance.
- Power down the PLC and remove the USB stick. Reconnect the Energy Pack that was disconnected in Step 3.
  - Power up the PLC. The PLC will power-up to normal operation with the new upgraded firmware.

## Installing the Software from USB

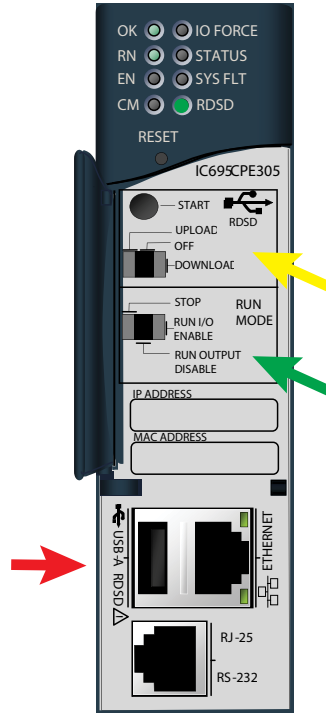
1. Locate the USB drive labeled as PLC software. It will be labeled as PLC version.
2. Prepare the PLC CPU to accept the new software update using these steps:



### NOTICE

If the USB drive is removed during data transfers to the CPU, the RX3i controller will generate a fatal fault (sequence store fault). You will need to clear the fault by power cycling the CPU with the Energy Pack disconnected before attempting to download again.

- a) Open the small door on the CPU to expose the switches as seen in Figure 3.

**Figure 5: PLC CPU on the BLADE Saw (With Door Open).**



- b) Plug the software USB drive into the USB-A RDSD slot. 
- c) Wait until the RDSD LED turns solid green. This indicates that the CPU has detected the USB drive and is ready for downloading.
- d) Switch the RUN MODE direction switch to the left (STOP) position. 

- e) Move the RDSD direction switch to the right (DOWNLOAD) position.



### NOTICE

Be very careful **NOT** to select Upload. To upload means the program on the CPU will be loaded onto the USB drive, thus corrupting the program you are trying to download. If by accident you upload, contact Automation Support for a new USB drive.

3. Momentarily depress the **START** pushbutton to begin transferring the program to the CPU. The start button is indicated in Figure 3.

### NOTICE

DO NOT remove the USB drive from the CPU during transfer! Transferring the software to the PLC could take up to 15 minutes depending on the type of USB drive.

- a) Notice the RDSD indicator light on the CPU.
- If the RDSD indicator light **blinks green**, the program is downloading and will become a solid green light once the download is complete. This could take several minutes, so please be patient. Once the download is complete, proceed to step a.
  - If the RDSD indicator light **blinks red**, this is acceptable. It has acknowledged that the program has a different name than what is currently loaded; momentarily depress the START pushbutton again. The RDSD indicator light should then blink green during the transfer.
  - If the RDSD indicator light turns **solid red**, the transfer has failed. Perform the following steps:
    1. Power down the PLC, wait a few minutes, then power it back up.
    2. Try repeating the entire process before contacting MiTek Automation Support for further assistance.
      - Errors are indicated when the RDSD LED becomes solid red (not blinking). All errors are reported in the Controller fault table and are written to a file on the USB drive. The fault tables are written to a file **plcfaultafter.dat** and **iofaultafter.dat** and can be viewed by MiTek Automation Support
- a) When the RDSD LED turns a solid green, the transfer has completed successfully. Perform these steps:
- Remove the USB drive from the CPU.
  - Return the CPU RDSD switch to OFF.
  - Return the RUN MODE switch to RUN I/O ENABLE.

3. Return all settings to default and verify they are accepted:
  - a) For the *Cyber A/T* saw, verify the following on the Profibus Master Module:
    - PROFIBUS OK LED is green.
    - NETWORK LED is yellow.
    - MOD STATUS LED is static on.
  - b) For the *BLADE* saw, verify the following on the transmitter module:
    - EXP OK LED is lit.
    - RN LED is solid green.
    - EN LED is solid green.
  - c) Verify on the HMI (operator interface) that the PLC version number has been updated. If the equipment being used is listed below, refer to this list for the name of the screen that shows the PLC version:
    - *Blade*<sup>™</sup> saw— Detailed Diagnostics screen
    - *Cyber A/T*<sup>®</sup> saw— PLC screen
    - *Cyber*<sup>®</sup> saw— PLC screen
    - *SmartSet Pro*<sup>®</sup> saw— Service screen
    - Horizontal Stacker— The PLC version is not displayed anywhere.
4. If the PLC was just upgraded to an RX3i PLC as described in Service Bulletin 208, the following equipment requires a calibration before operating it. Refer to the Equipment Manual for calibration instructions if necessary.
  - *Cyber A/T* saw
  - *Cyber* saw

**END OF SERVICE BULLETIN**