DAIKIN

# Operation Manual

**OM 1095**

Group: **Controls**
Part Number: **OM 1095**
Date: **November 2015**

# MicroTech® III Fan Coil Unit Controller

# Software Downloading Procedures and Troubleshooting Guide

- Fan Coil Unit Controller
- I/O Expansion Module
- BACnet® and LONWORKS® Communication Modules

LONMARK® 3.4

Member of BACnet International

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## Reference Documents

| Number | Company | Title | Source |
|---|---|---|---|
| OM 1111 | Daikin Applied | MicroTech® III Unit Controller for Fan Coil Unit Operations Manual | www.daikinapplied.com |
| IM 1012 | Daikin Applied | MicroTech III Fan Coil LONWORKS Communication Module Installation Manual | www.daikinapplied.com |
| IM 1013 | Daikin Applied | MicroTech III Fan Coil BACnet Communication Module Installation Manual | www.daikinapplied.com |
| ED 15135 | Daikin Applied | MicroTech III Fan Coil Unit Controller Protocol Information Manual | www.daikinapplied.com |

## Revision History

| Document Name | Date | Description |
|---|---|---|
| OM 1095 | October 2015 | Initial document release. |

**⚠ WARNING**

**Electric shock hazard. Can cause personal injury or equipment damage.**

This equipment must be properly grounded. Only personnel who are knowledgeable in the operation of the equipment being controlled must perform connections and service to the unit controller.

**⚠ CAUTION**

**Static sensitive components. Can cause equipment damage.**

Discharge any static electrical charge by touching the bare metal inside the control panel before performing any service work. Never unplug cables or control modules while power is applied to the unit controller.

**NOTICE**

This equipment generates; uses and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense. **Daikin Applied disclaims any liability resulting from any interference or for the correction thereof.**

# Introduction

MicroTech® III fan coil unit controllers ship with the necessary software required for unit operation. However, it may be necessary to install new or updated versions of software in the field. The purpose of this document is to describe how to download the software and verify that it has been installed correctly. This document also describes the download and configuration process for auxiliary MicroTech III controls options.

Auxiliary controls options include the I/O expansion module and BACnet® or LONWORKS® communication modules for network integration. It is assumed that all hardware is properly installed. Refer to the Reference Documents section for installation manual details.

This guide is organized into four main sections. The first three sections provide instructions for updating the specific files associated with each of the following:

1. Fan Coil Unit Controller and I/O Expansion Module
2. LONWORKS Communication Module
3. BACnet Communication Module

The fourth section is the Troubleshooting Guide. This is a helpful reference with tips on solving potential hardware and/or software issues, along with detailed descriptions of fan coil unit options and associated equipment configuration software jumper settings.

## Getting Started

Before proceeding, please refer to Figure 1 to verify the software numbers and corresponding versions. Note that a "Yes" indicates software compatibility among versions of unit controller and auxiliary unit controllers (I/O expansion module and/or communication modules).

*Figure 1.Software Compatibility Matrix*

| | | Fan Coil Unit Controller Software 2506905 | |
|---|---|---|---|
| **Auxiliary Unit controller Software Number** | **Version Number** | **1.0** | **1.1** |
| **I/O Expansion Module 2506906** | **1.0** | Yes | Yes |
| **LonWorks Module 2506907** | **1.0** | Yes | Yes |
| | **1.1** | Yes | Yes |
| **BACnet Module 2506908** | **1.0** | Yes | Yes |
| | **1.1** | Yes | Yes |

*Figure 2. Fan Coil Unit Controller Software Revision Label*

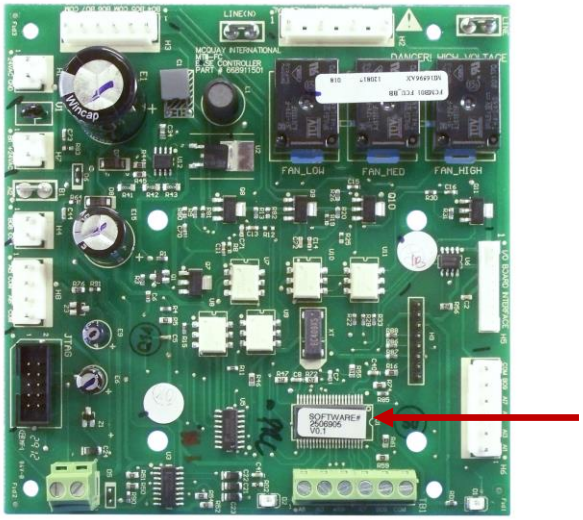



*Figure 3. BACnet MS/TP Communication Module Software Revision Label*

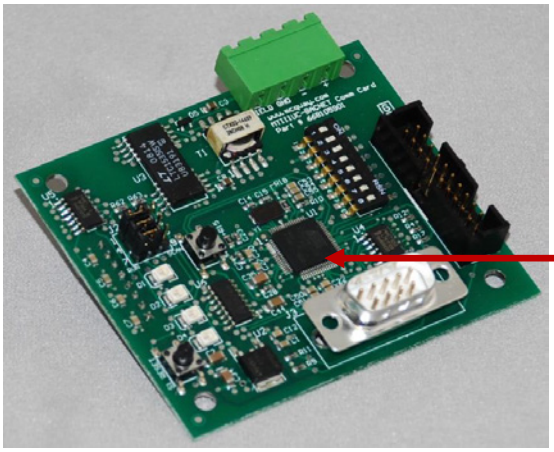



*Figure 4. LONWORKS Communication Module Software Revision Label*

# Downloading Unit Controller and I/O Expansion Module Software

## Introduction

The following section describes how to download and verify the MicroTech III fan coil unit controller and I/O expansion module using Flasher 5 hardware and Flasher software programming tools.

Joint Test Action Group (JTAG) is a common name for the IEEE (Institute of Electrical and Electronics Engineers) 1149.1 Standard, which was created for the development and testing of embedded interface devices such as the fan coil unit controller. The JTAG hardware and software tools referenced in this document are manufactured by Segger Microcontroller Systems. However, there are other manufacturers of JTAG-supported hardware and corresponding software interface tools that would also be acceptable.

## Getting Started

### Hardware and Software Requirements

You will need the following:

- Fan coil unit controller and I/O expansion module, if attached
- The latest version of Flasher 5 (5.05.01 or newer) hardware, available at www.segger-us.com/flasherprogrammer.htm
- Flasher 5 software available at www.segger.com/cms/downloads.html?pid=19
- Computer with Windows7 or newer operating system. Refer to www.segger.com for compatibility with older versions of Windows

  Fan coil unit controller and I/O expansion module .hex file. Contact the ATS Technical Support Team at 315-282-6434 to request a copy of this firmware file.

### Terminology

- **MicroTech III Fan Coil Unit Controller** - The baseboard that is attached to the fan coil and ships with the most current version of application software for unit operation.
- **I/O Expansion Module** - Used for secondary fan connections, emergency shutdown, economizer, and dehumidification unit control. The I/O expansion module is attached directly to unit controller when these options have been selected with the unit.
- **JTAG**: The hardware interface required for downloading unit controller and I/O expansion module firmware. JTAG refers to both the connector port attached to the unit controller as well as the cable used to download software to the BACnet communication module.
- **Flasher 5 Hardware**: The specific model of JTAG hardware used for unit controller downloading.
- **Flasher 5 Software:** The software that enables communication between the computer and the JTAG hardware.

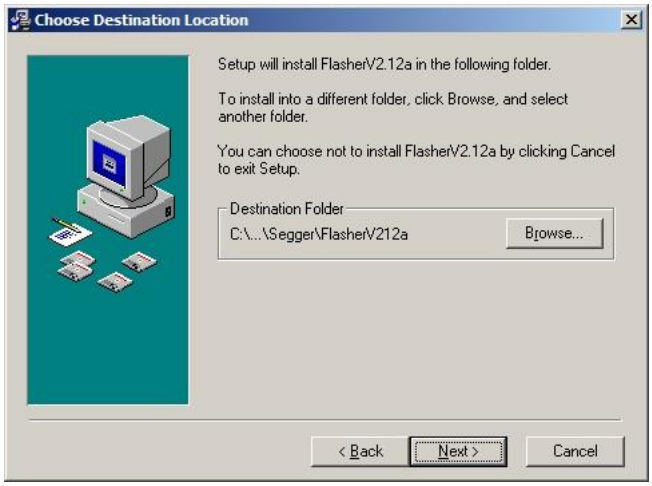
- **Fan coil unit controller and I/O expansion module .hex file**: The software file for the unit controller or I/O expansion module. A separate .hex file is required for each board.

### Installing the Flasher Software

Before the unit controller files can be downloaded, it is first necessary to install the Flasher software. If the software has been previously installed and configured, proceed to the Downloading Unit Controller and I/O Expansion Module Software section. Follow the steps below to install and configure Flasher:

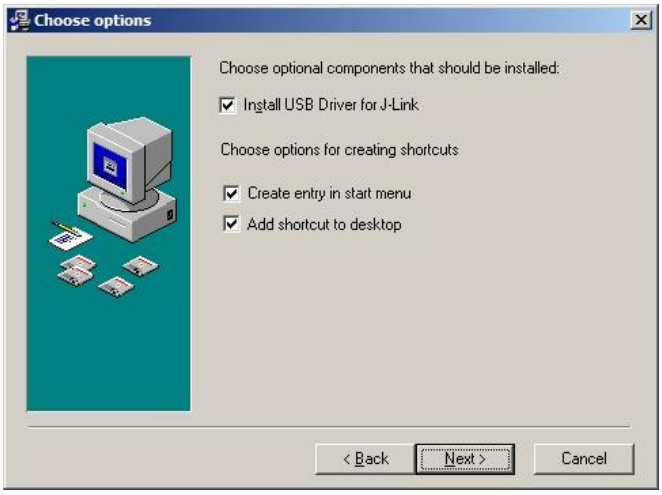
1. Download the newest version of Flasher software from the Segger website, http://www.segger.com/cms/downloads.html?pid=19 and save the file.
2. Run the SetupFlasher application and click Next at the Welcome screen. See Figure 5.

*Figure 5. Welcome Screen*




3. Select the default parameters to install the program on the appropriate location on the hard drive and click Next.
4. Check all three boxes for available options as shown in Figure 6 and click Next.
5. When prompted to begin installation, click Next and then Finish.

*Figure 6. Flasher Choose Options Menu*




## Download Fan Coil Unit Controller and I/O Expansion Module Software

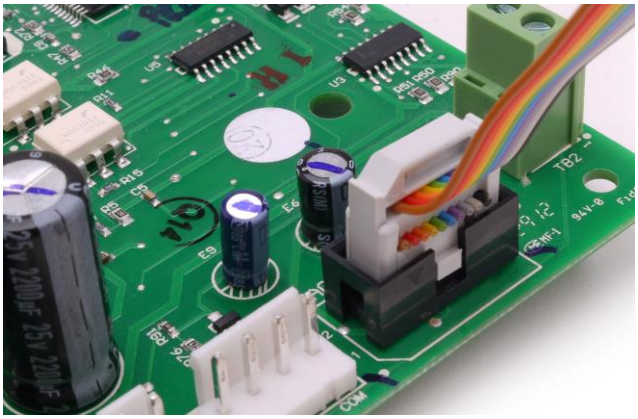
Once the Flasher software has been installed, follow the steps below to download the unit controller and I/O expansion module (if necessary). The unit controller and I/O expansion module have different software files and must be downloaded separately.

Although the following instructions refer to the unit controller, the same steps apply to the I/O expansion module as well. Refer to the Troubleshooting Guide and FAQ for a description of symptoms and recommended solutions to potential hardware or software issues.

**Note:** New unit controller firmware may be installed over an existing version. It is not necessary to uninstall firmware before loading a newer version.

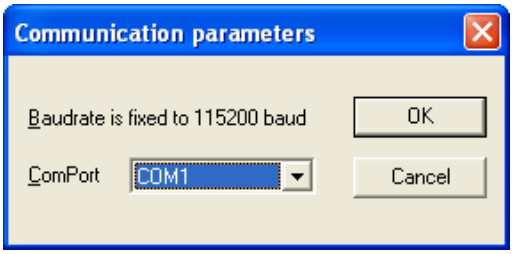
1. Refer to Figure 1 to verify the latest version of software.
2. Remove power to the unit controller and the BACnet or LONWORKS communication module (if attached).
3. Download the unit controller software, which is a ".hex" file type and save to the hard drive. To request a copy of the software file, contact the ATS Technical Response Team at 315-282-6434.
4. Connect the Flasher 5 hardware between the serial port on the computer (or a USB to serial converter) and the 10-pin connector on the unit controller or I/O expansion module. The connector housing is keyed. It only allows cable installation in one way, which is Pin 1 on the Flasher cable (brown wire) lined up with the Pin 1 on the unit controller. Refer to Figure 7.

*Figure 7. Flasher Cable Connection to Unit Controller or I/O Expansion Module*



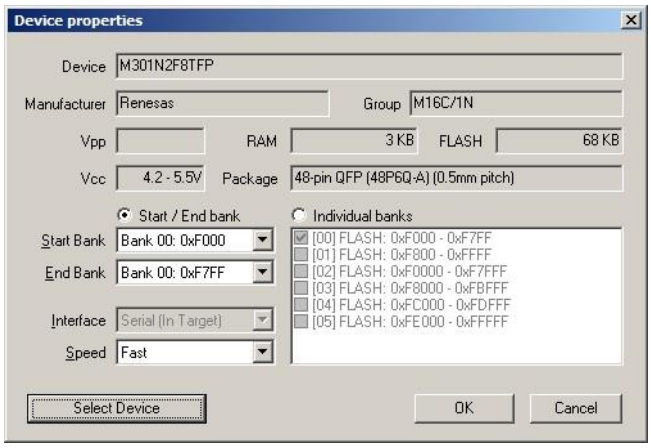
5. Connect power to the Flasher 5 hardware.
6. Prior to launching Flasher, check the communication port (i.e. COM1 or COM2) to which the Flasher hardware is connected. The port number is required for Step 8. Follow these steps to determine the port number:
7. Navigate to the Control Panel and select System/Hardware/Device Manager/Ports.
8. Verify the communication port shown (i.e. COM1, COM2, etc).
9. Launch the Flasher program from the desktop shortcut icon
10. If this is the first time downloading to the unit controller since installing the Flasher program, it is necessary to configure the software. If this has already been done, proceed to Step 19. Otherwise, follow Steps 11-18 below.
11. Go to the Options menu and select Communications. Select the communications port (as determined from Step 6) as shown in Figure 8 and then click OK.

*Figure 8. Communications Parameters Menu*




12. Navigate to the Options menu
    a. Click on Device.
    b. Click Select Device in the Device Properties window. See Figure 9.

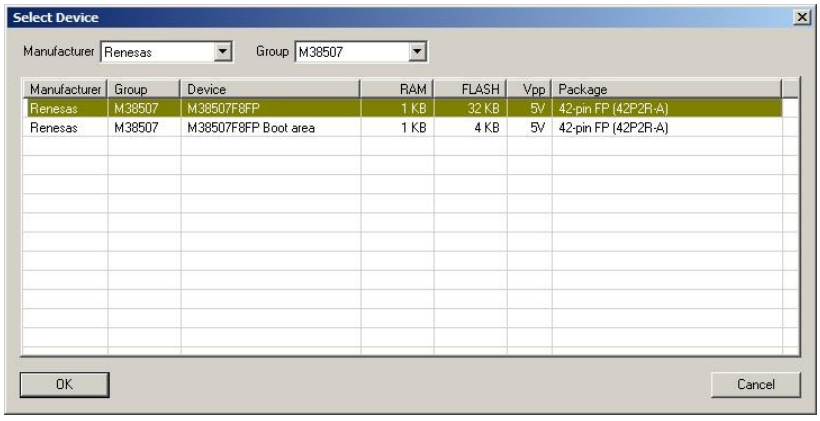
*Figure 9. Device Properties*




When the Select Device window shown in Figure 10 appears:

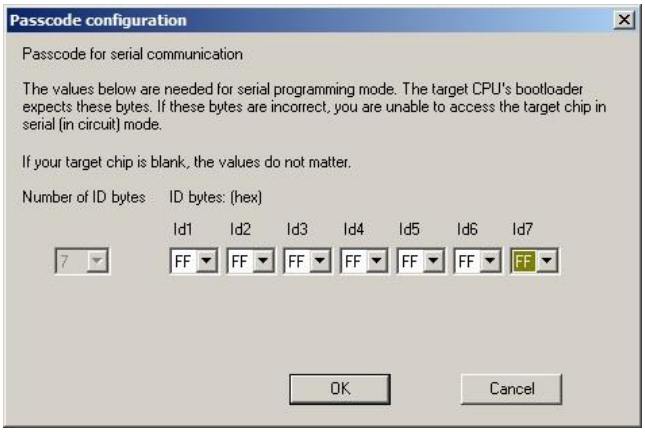
13. Select Renesas in the Manufacturer drop-down box.
14. Select M38507 in the Group drop-down box.
15. Highlight the device M38507F8FP with 1KB RAM and 32KB FLASH and then click the OK button twice.

*Figure 10. Select Device*



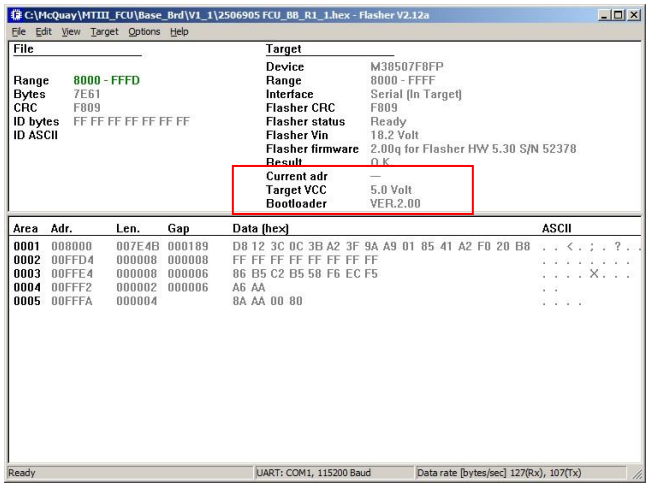

16. Navigate to the Options menu and select Passcode.
17. Verify that all seven fields are set to FF as shown in Figure 11.
18. Click the OK button.

*Figure 11. Flasher Passcode Configuration Menu*




19. Apply power to the unit controller. The Target VCC field should change to approximately 5.0 Volts as shown in Figure 12. If it does not, check the connection between the Flasher 5 hardware and unit controller to verify that the cable is installed properly.
20. Set the system mode to OFF. Note that the digital display sensor, which is used to set the system mode, functions only when power is applied to the unit controller.
21. Prepare the software file for downloading.
    a. Go to the File menu and select Open.
    b. Browse to the appropriate file and click OK. The screen should populate as indicated in Figure 12.

*Figure 12. Flasher Main Screen – Unit Controller when Applying Power and hex file is loaded*




22. To begin the download, select the Target menu and click Program and Verify. After a successful download, the screen shown in Figure 13 appears.

*Figure 13. Flasher Successful Download Screen*

23. Remove power from the unit controller and disconnect the Flasher 5 hardware.
24. Repeat steps 1-23 to complete this process for the I/O expansion module, if necessary.
25. Apply power to the unit controller and allow it to run for 30 seconds to verify that the new configuration has been saved properly.
26. Return the fan speed switch to the state it was in before Step 4 after both the unit controller and I/O expansion module have been programmed

**Note:** Contact the ATS Technical Response Team at 315-282-6434 with any questions about downloading the unit controller or I/O expansion module software.

# Downloading LONWORKS Communication Module Firmware Files

## Introduction

The following section describes how to download and commission the LONWORKS communication module firmware files (XIF - eXternal Interface File and NXE file) for the MicroTech III fan coil unit controller. This is done using industry-standard LONWORKS-specific software such as Echelon® LonMaker. This document assumes that the user has the application installed and is familiar with the use of LonMaker or equivalent software.

## Hardware and Software Requirements

You will need the following:

- LONWORKS communication module installed on the unit controller
- XIF/NXE files for "MicroTech III Fan Coil LONWORKS communication module", available on www.daikinapplied.com or www.lonmark.org
- LONWORKS application such as LonMaker-SR4 or OpenLNS CT, available from Echelon at www.echelon.com
- Twisted pair shielded cable with 3-pin connector
- Echelon TP/FT-10 to USB network interface, U10 or similar

### System Requirements

- Computer with Windows7 or newer operating system. Refer to www.echelon.com for compatibility with older versions of Windows
- Standard web browser for access to www.daikinapplied.com

## Getting Started

1. Verify that LONWORKS software such as LonMaker-SR4 is installed. If not, refer to www.echelon.com or the system administrator.
2. Verify that the LONWORKS communication module is properly installed on the unit controller (refer to IM 1012, available on www.daikinapplied.com).
3. Download the LONWORKS communication module XIF/NXE files to the hard drive. The files are available from www.daikinapplied.com or www.lonmark.org.
4. Connect TP/FT-10 network channel to the computer using the USB network interface.
5. Determine the LONWORKS Interface name for later reference. Do this by navigating to Control Panel/ LONWORKS Interfaces. See Figure 14.
6. Insert the other end of the TP/FT-10 connector to the LONWORKS communication module pins A and B. See Figure 15.
7. Apply power to the unit controller.

**Note:** If device has not been commissioned, the yellow Service LED flashes ON/OFF once every half second. See Figure 54 in the Troubleshooting Guide and FAQ section for more detailed descriptions of LED activity.

*Figure 14. LONWORKS Interface Name*

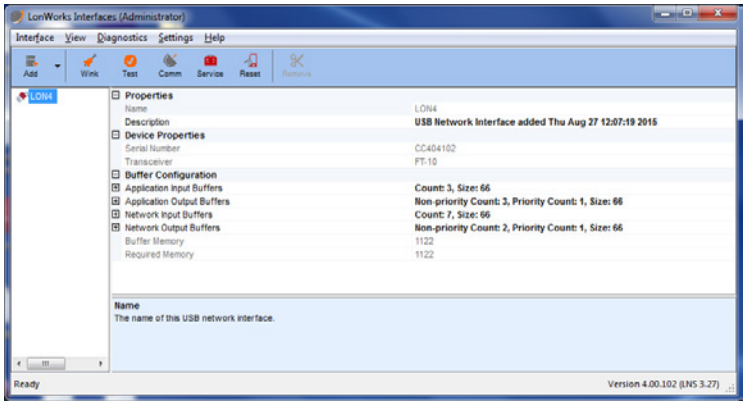
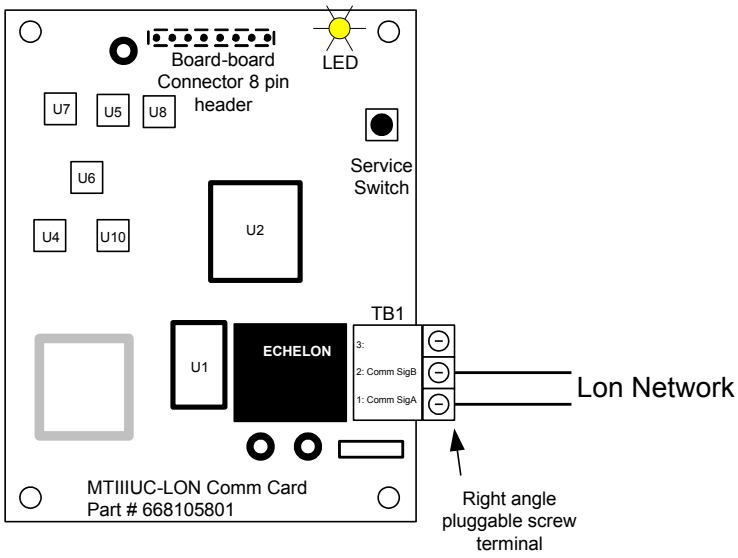



*Figure 15. LONWORKS Communication Module*



## Configuring the LonWorks Communication Network

The following section describes how to use LonMaker to create a LONWORKS communication network drawing, and import the Fan Coil Unit Device Template into the network.

1. Double-click on the LonMaker desktop icon and the Echelon LonMaker Design Manager appears as shown in Figure 16.
2. Either create a new network or select an existing network.
    a. To select an existing network:
        i. Select the network from the “Drawing directory” drop-down menu.
        ii. Press the “Open Network” button.
        iii. Proceed to the “Commissioning the LONWORKS Communication Module” section.
    b. To create a new network:
        i. Enter a name in the “Network name” field and then click the Create Network button.
        ii. Press the “Next” button when the screen shown in Figure 17 appears.

*Figure 16: Echelon LonMaker Design Manager*

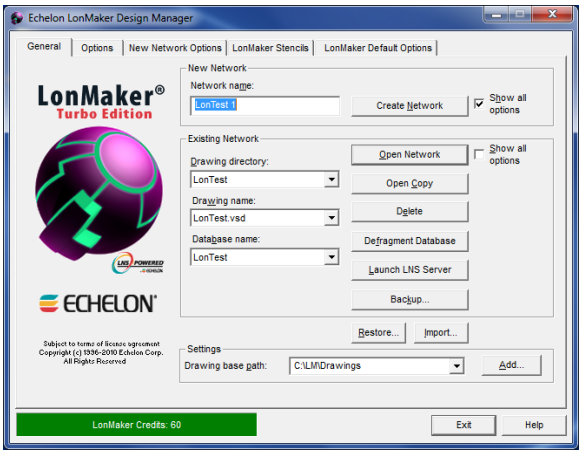
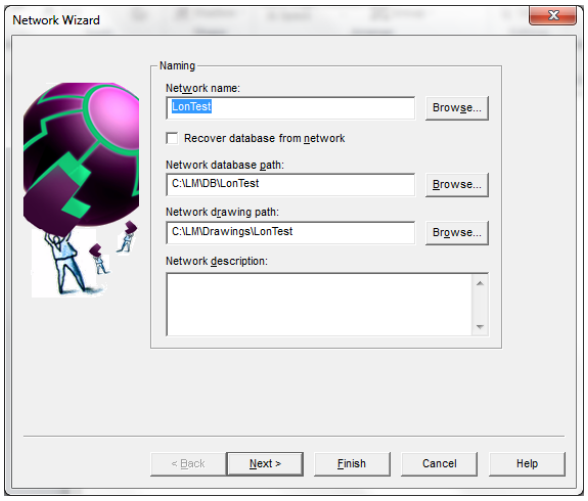


*Figure 17.Network Setup Screen*




3. Select the Network Interface Name (as determined in step 5 of the Getting Started section). See Figure 18.
4. Click Next.
5. Verify the Management Mode is “OnNet” and click “Finish”. See Figure 19.

*Figure 18. Network Interface Name Screen*

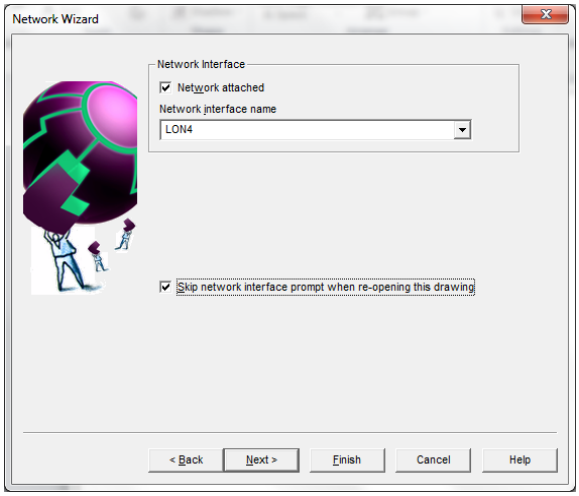
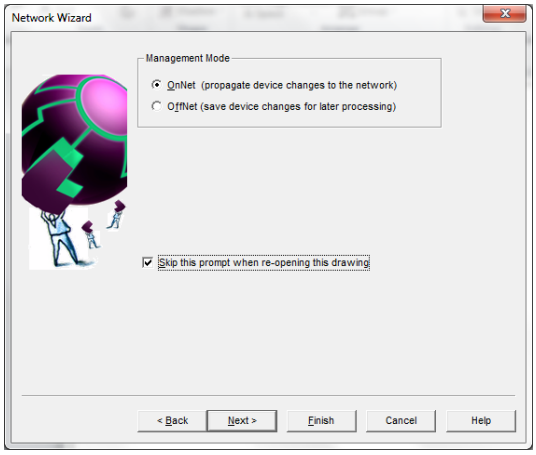
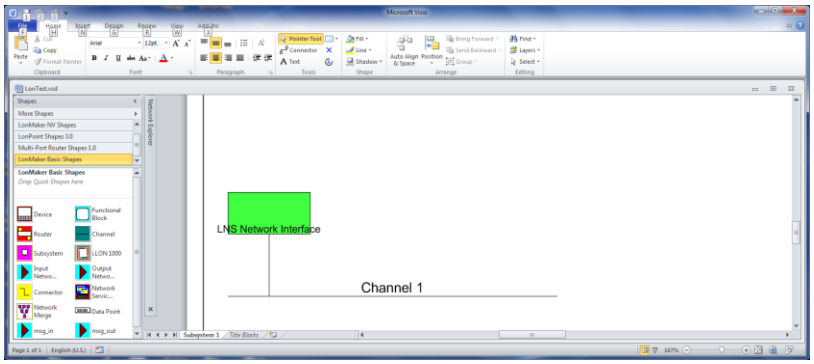


*Figure 19. Management Mode Screen*



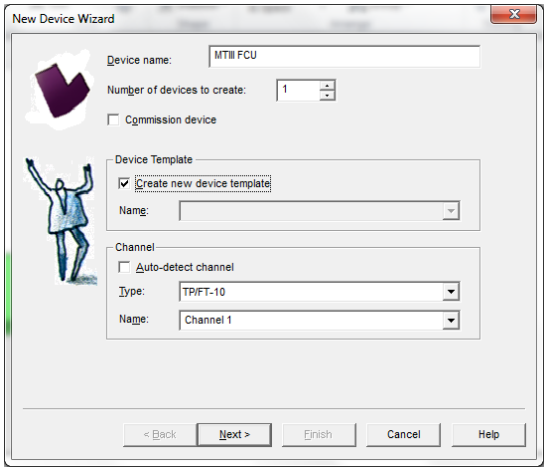

6. A screen similar to Figure 20 appears.
7. Drag the Device icon (shown on the left-hand side of the image in Figure 20) to the center of the screen.

*Figure 20: LNS Network Interface Screen*



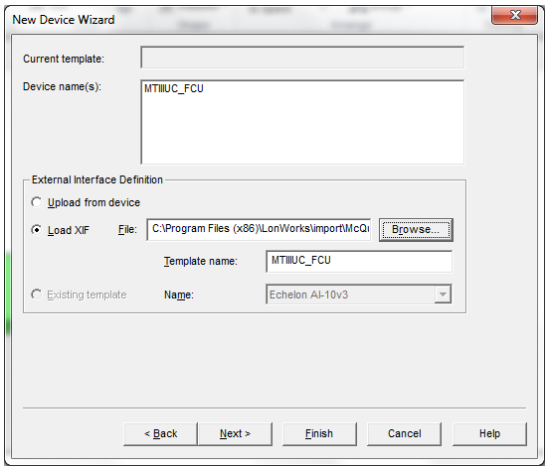

8. The New Device Wizard then opens. See Figure 21.
9. Provide a “Device name” and check “Create new device template”.

*Figure 21. New Device Template Screen*



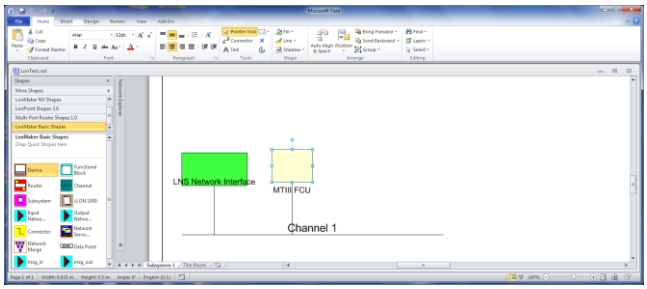

10. Click Next. The screen shown in Figure 22 appears.
11. Verify that “Load XIF” is selected.
12. Click Browse to locate the LONWORKS communication module XIF file from the hard drive and then click Finish.

*Figure 22. XIF Definition Screen*




13. The network drawing screen will then open as shown in Figure 23.
14. The “MTIII FCU” LonWorks device will be shown in yellow indicating the device is decommissioned.

*Figure 23. Network Drawing Screen*



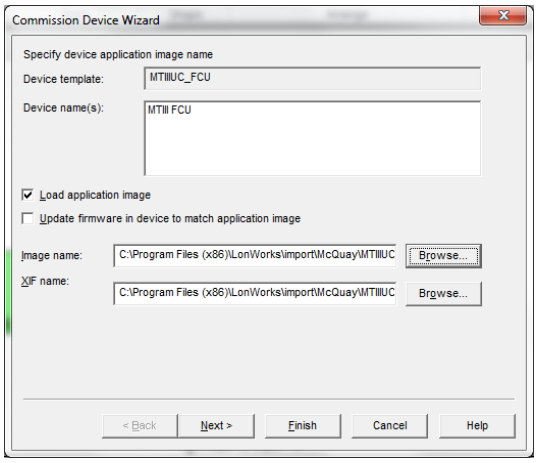

## Commissioning the LonWorks Communication Module

The LONWORKS communication module is ready for network commissioning after the Device Template has been properly loaded into LonMaker using the XIF file and an "FCU device" exists in the network drawing area as shown in Figure 23.

Follow these steps to begin the commissioning process:

1. Right click on the decommissioned LonWorks device and select "Commissioning" and left click on "Commission".
2. Check "Load application image" when the screen shown in Figure 24 appears.
3. Click Browse to locate the LONWORKS communication "NXE" Image file from the hard drive and then click Next.

*Figure 24. Application Image Details*




4. Verify that the following are all selected once the screen shown in Figure 25 appears:
    a. State setting is "Online"
    b. Source of CP Values setting is "Defaults" and "Include NV type CPs"
    c. Device Specific CPs setting is "Update with other CPs"
5. Press the Next button.
6. Ensure "Service pin" is selected and then click Finish. See Figure 26.

*Figure 25. Device Details*

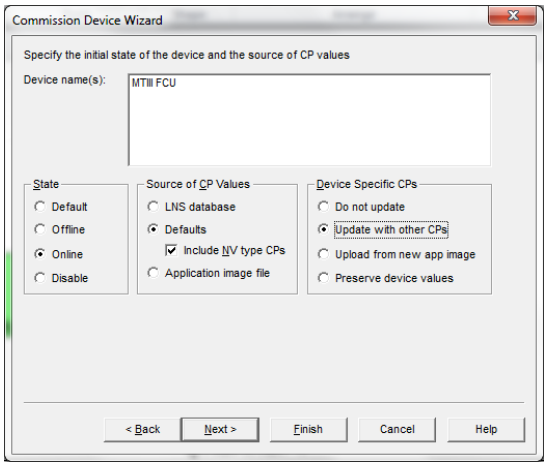
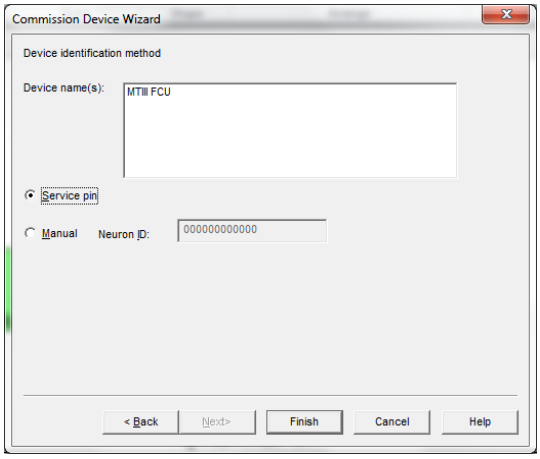
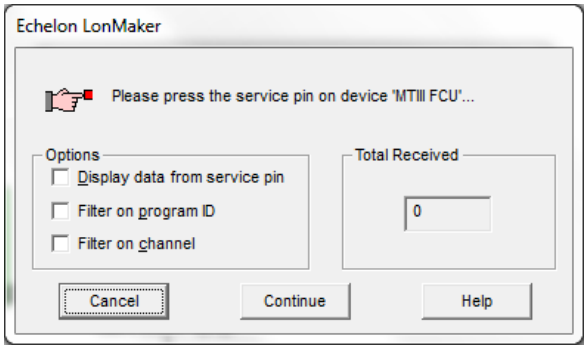



*Figure 26. Service Pin Screen*




7. The screen in Figure 27 appears.
8. Press the service pin button on the LONWORKS communication module. Refer to Figure 15 for the location of the service button.

*Figure 27. Service Pin Entry*



At this point, the application image starts loading and the LONWORKS communication module is then commissioned. This process takes approximately one minute. See Figure 28.

The “MTIII FCU device” changes color to green, which indicates successful commissioning. See Figure 29.

*Figure 28. Loading Application*

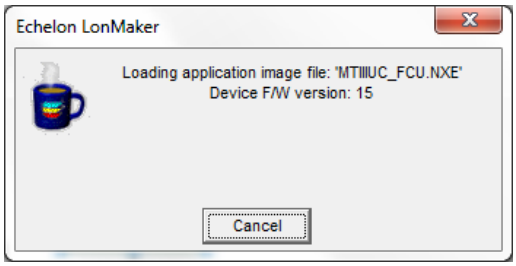
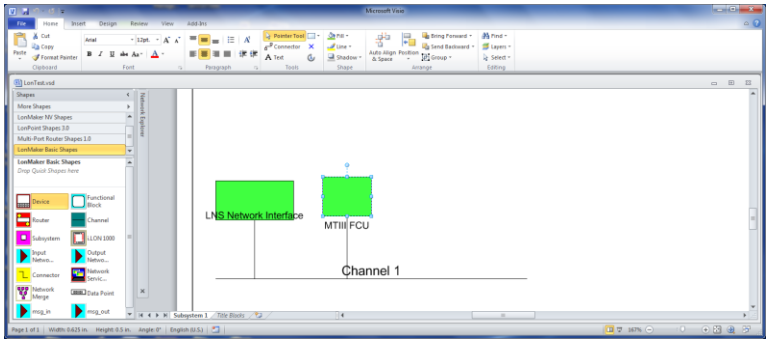



*Figure 29. LONWORKS Communication Module - Commissioned*




In order to program another LONWORKS device, it is necessary to first decommission the existing device by following these three steps:

1. Right click on the commissioned LONWORKS device.
2. Select Commissioning.
3. Left click on Decommission.

# Downloading BACnet Communication Module Firmware

The following section describes how to do the following:

1. Install the hardware and software tool sets required for downloading BACnet communication module firmware
2. Install and configure the BACnet communication module firmware itself

Successful download of the BACnet communication module firmware requires the use of a third-party tool. There are two recommended tool sets, both of which have separate hardware and software components. One of these must be installed prior to the BACnet communication module firmware.

- The first tool set is called Smart ARM Microcontroller – Boot Assistant (SAM-BA) software, which is used in conjunction with the ATMEL SAM-ICE hardware.
- The second tool set is called J-Flash software, which is used in conjunction with J-Link hardware.

The choice of one versus the other is user preference. While there may be other options available, these tools are both supported by the ATMEL® Corporation, the manufacturer of the microcontroller used in the BACnet communication module.

The instructions for using the ATMEL SAM-ICE hardware and SAM-BA software tool set is described first, followed by the instructions for using the J-Link hardware and J-Flash software tool set. The BACnet communication module firmware download process is also explained in each section.

## Downloading with ATMEL SAM–ICE Hardware and SAM-BA Software

### Hardware and Software Requirements

You will need the following:

- BACnet communication module installed on the fan coil unit controller
- ATMEL SAM-ICE hardware
    - Available at www.DigiKey.com. Reference part number: AT91SAM-ICE-ND or equivalent (see Figure 30.)
- The most current version of SAM-BA software
    - A free download is available at http://www.atmel.com/tools/ATMELSAM-BAIN-SYSTEMPROGRAMMER.aspx)
- Computer with a supported Windows operating system (refer to the ATMEL website for details)
- BACnet .bin file
    - Contact the Controls Customer Support group at 866-462-7829 to request a copy of this firmware file

### Terminology

- **ATMEL SAM-ICE**: The specific model of hardware used for BACnet communication module firmware downloading.
- **BACnet.bin file**: The BACnet communication module firmware.
- **JTAG**: The hardware interface required for downloading BACnet firmware. JTAG refers to both the connector port attached to the unit controller as well as the cable used to download software to the BACnet communication module.
- **Smart ARM Microcontroller – Boot Assistant (SAM-BA)**: The software that enables communication between the computer and the SAM-ICE hardware.

*Figure 30. ATMEL SAM-ICE Hardware & SAM-BA Software*

### Getting Started

1. Download the BACnet .bin file to the hard drive.
    a. Contact the ATS Technical Support Team at 315-282-6434 to request a copy of this firmware file.
2. Verify that the BACnet communication module is properly installed on the unit controller (see IM 1013 for details, available on www.daikinapplied.com).
3. Apply power to the unit controller.

### Download and Install the SAM-BA Software

It is first necessary to install the latest version of SAM-BA software before the BACnet communication module firmware file can be loaded. Follow the steps below to install and configure the latest version of SAM-BA software for Windows applications. Note that Windows7 uses v2.15 or newer.

1. Download the software from ATMEL's website: www.atmel.com/tools/ATMELSAM-BAIN-SYSTEMPROGRAMMER.aspx.
    a. Select the current version of SAM-BA for Windows installation files.
    b. Verify that the software is compatible with the computer's operating system.
2. Open the .exe file. Select the default parameters during installation.
3. Select both the "Create new entry in start menu" and "Add shortcuts to desktop" check boxes.

4. Restart the computer after installation is complete. A new desktop icon appears after successful software installation and start-up.

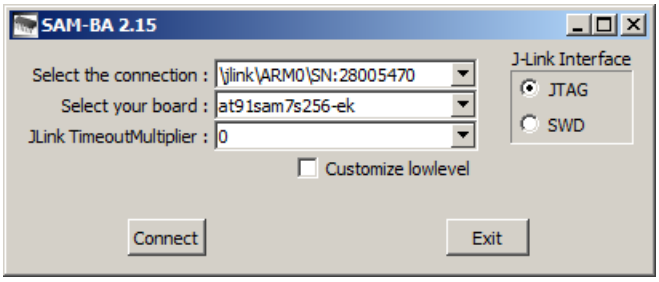
### Launch and Configure the SAM-BA Software

Once installed, SAM-BA must then be configured for use with the BACnet communication module. The following section describes this process.

**Note:** Performing this procedure returns all BACnet network parameters to default values. Record any previously configured settings before proceeding.

1. Connect the SAM-BA hardware between the USB port on the computer and the 20-pin connector on the BACnet communication module. The notch on the JTAG cable fits into an opening on the 20-pin connector on the BACnet communication module. See Figure 32.
2. Launch the SAM-BA program from the desktop icon.
    a. If the shortcut icon does not appear, navigate to the Start menu, located on the lower left-hand corner of the screen, then click Programs, Atmel Corporation, and then SAM-BA v2.1x.
3. Select “\jlink\ARM0\” from the “Select the connection” drop-down box as shown in Figure 31.

*Figure 31. Select Connection Type*




4. Select AT91SAM7S256-ek from the “Select your board” drop-down box. This is the ATMEL microcontroller chip part number used by the BACnet communication module. This part number is located on the top of the chip. See Figures 32 and 33.

**Note:** It may be necessary to download a J-Link USB driver in order for it to recognize the new hardware. If so, refer to www.segger.com/jlink-software for downloading instructions.

*Figure 32. BACnet Communication Module – Location of Important Features*

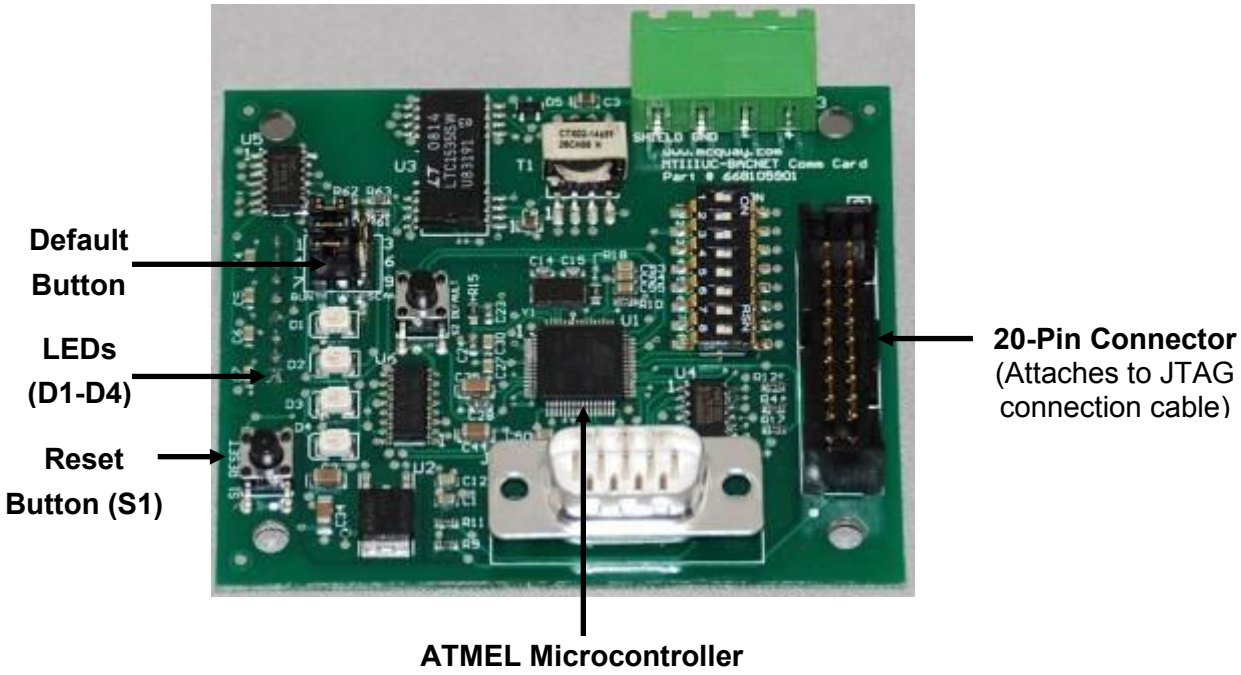
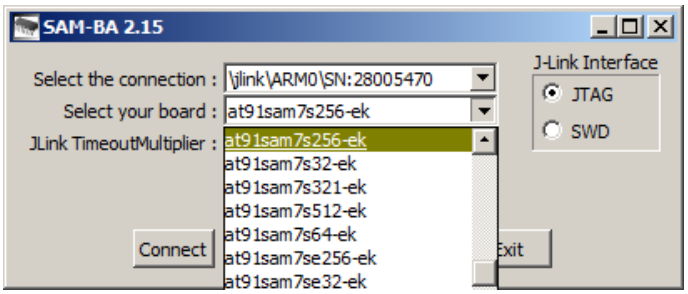
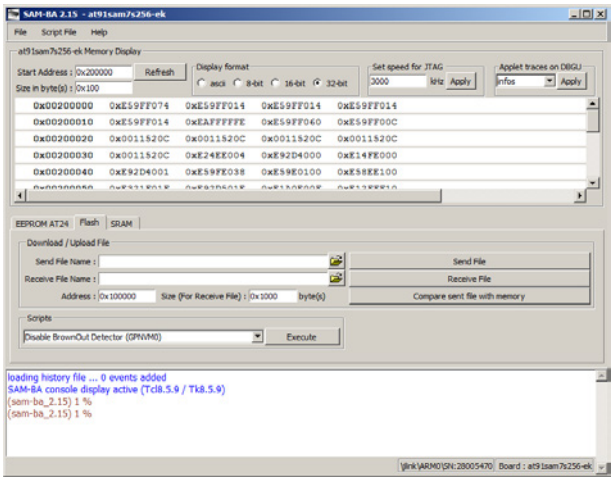



*Figure 33. Select the Microcontroller Part Number*




The screen shown in Figure 34 appears upon successful communication between the SAM-BA program and the BACnet communication module.

*Figure 34. Successful Communication*




## Download BACnet Communication Module Firmware

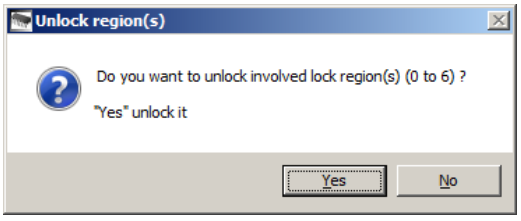
**⚠ CAUTION**

The following procedure returns all BACnet parameters to factory default values. It is recommended that existing parameters are saved prior to starting this process. See Appendix A in the MicroTech III Fan Coil BACnet Communication Module Installation Manual, IM 1013, and MicroTech III Fan Coil Protocol Document, ED 15135 (both available on www.daikinapplied.com) for additional information.

Once the configuration settings have been established, it is now possible to download the BACnet communication module firmware.

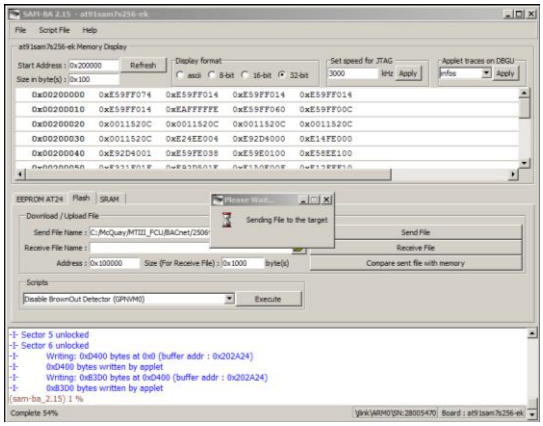
1. Click on the open folder icon in the Send File Name field. See Figure 34.
2. Browse to the location on the hard drive where the BACnet communication module .bin file has been saved.
3. Click the Send File button.
4. If the program prompts the user to unlock the involved lock region(s), click the Yes button to unlock the flash memory before performing the download. See Figure 35.

*Figure 35. Unlock Involved Flash Regions to Program*



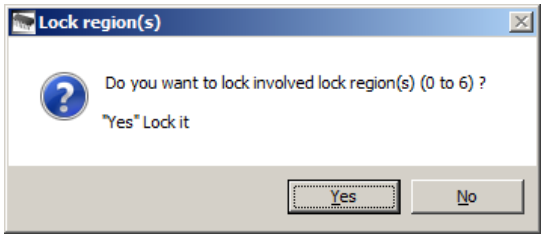

A dialog box appears and reports a “Sending File to the Target” message along with a scrolling status display of the items. See Figure 36.

*Figure 36. Sending File to Target*




5. When the program prompts the user to lock the involved lock region(s), click the Yes button after performing the download. See Figure 37.

*Figure 37. Lock Involved Flash Regions*




6. Select “Compare sent file with memory” after completing the download.

The program confirms that the file sent matches the file within the BACnet communication module, indicating that the firmware has been successfully downloaded.

7. Remove power from the unit controller.
8. Remove the JTAG cable connection from the BACnet communication module.
9. Press and hold the Default and Reset push buttons on the BACnet communication module. See Figure 32.
10. Apply power to the unit controller.
11. Release the Reset push button, and continue to hold the Default push button until all four BACnet communication module LEDs (D1 to D4) are on steady. See Figure 32.

12. Verify that the BACnet communication module properly runs the application by observing that:
    a. LED D1 flashes on and off approximately every half second, indicating application software is running
    b. LED D2 flashes in bursts approximately every half second, indicating communication between the unit controller and the BACnet communication module
    c. LED D3 flashes for each message transmitted to the MS/TP network
    d. LED D4 flashes for each message received from the MS/TP network

All BACnet communication parameters have now been returned to default settings. Reconfigure network values as required. See ED 15135, available on www.daikinapplied.com, for further details.

**Note:** Refer to the Troubleshooting Guide and FAQ section on page 37. If necessary, contact the Controls Customer Support group at 866-462-7829 for technical assistance.

## Downloading with J-Link Hardware and J-Flash Software

The following section describes how to install and set up the J-Link hardware and J-Flash software programming tools. It then explains how to download the BACnet communication module firmware once J-Link and J-Flash have been successfully configured.

**Note:** Contact the Controls Technical Support Team at 315-282-6434 assistance regarding the J-Link and J-Flash tools or the BACnet communication module firmware downloading process.

### Hardware and Software Requirements

You will need the following:

- BACnet communication Module installed on the unit controller
- The latest J-Link hardware (including JTAG cable), Model 8.08.00 or newer
- Available at www.segger-us.com/jlinkjtagemulator.htm
- J-Flash software
- Available at www.segger.com/cms/jlink-software.html
- Computer with compatible operating system (refer to the Segger website for details)
- BACnet ".hex" file
- Contact the ATS Technical Support Team at 315-282-6434 to receive the file

### Definitions

- **BACnet.hex file:** The firmware hex file of the BACnet communication module.
- **J-Flash Software:** The software that enables communication between the computer and the J-Link hardware.
- **J-Link:** The specific model of JTAG hardware used for the BACnet communication module firmware downloading.
- **JTAG**: The hardware interface required for downloading BACnet firmware. JTAG refers to both the connector port attached to the unit controller as well as the cable used to download software to the BACnet communication module.

### Getting Started

1. Download the BACnet .hex file to the hard drive.
2. Verify that the BACnet communication module is properly installed on the unit controller (refer to Reference Documents section for additional details.)
3. Apply power to the unit controller.

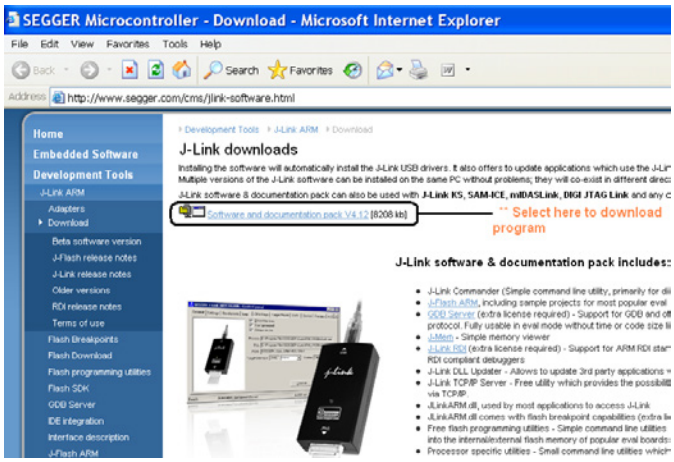
### Install the J-Flash Software

It is first necessary to install the latest version of J-Flash before the BACnet communication module firmware file can be uploaded. Follow the steps below to install and configure the latest version of J-Flash.

**Note:** J-Flash software is licensed and does not operate unless it is properly activated.

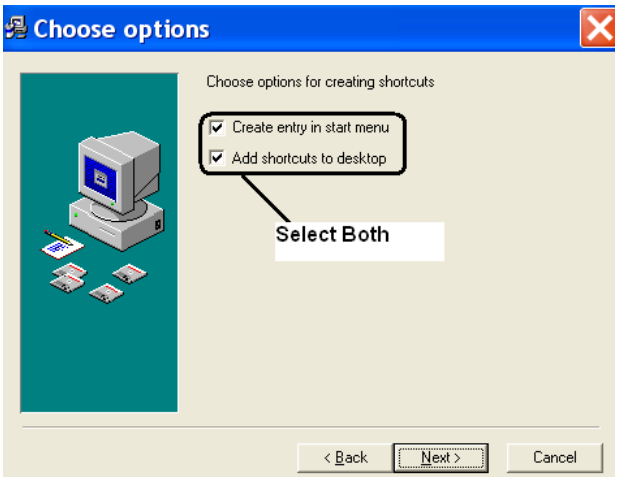
1. Navigate to the Segger Microcontroller web site www.segger.com/cms/jlink-software and select “software and documentation pack.” See Figure 38.

*Figure 38. Download J-Flash Software*




2. Double-click on the zip file that contains the installation application.
3. Select the default parameters during installation.
4. Select both the “Create new entry in start menu” and “Add shortcuts to desktop” check boxes as shown in Figure 39.

*Figure 39. J-Flash Choose Options Menu*



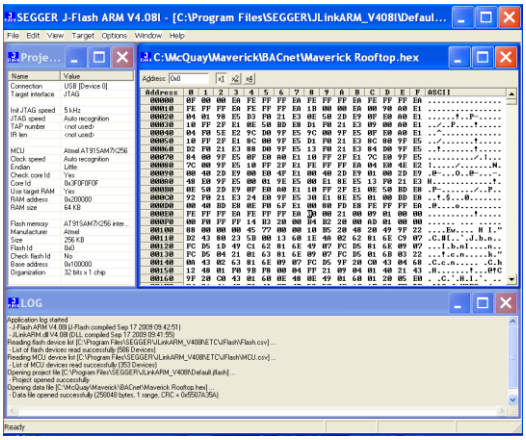

### Launch and Configure the J-Flash ARM Software

Once J-Flash ARM has been successfully downloaded and installed, it can then be opened and configured for use with the BACnet communication module.

**Note:** Performing the following configuration steps returns all BACnet network parameters to default values. Record any previously configured settings before proceeding.

1. Connect the J-Link hardware between the USB port on the computer and the 20-pin connector on the BACnet communication module. The notch on the J-Link cable fits into an opening on the 20-pin connector on the BACnet communication module. See Figure 32.
2. Launch J-Flash ARM from the desktop.
    a. If the desktop icon does not appear, open J-Flash ARM from the Start menu on the lower left-hand side of the screen. Navigate to Programs, SEGGER, then click on J-Flash ARM. The screen shown in Figure 40 then appears.

*Figure 40. J-Flash Initial Project Screen*

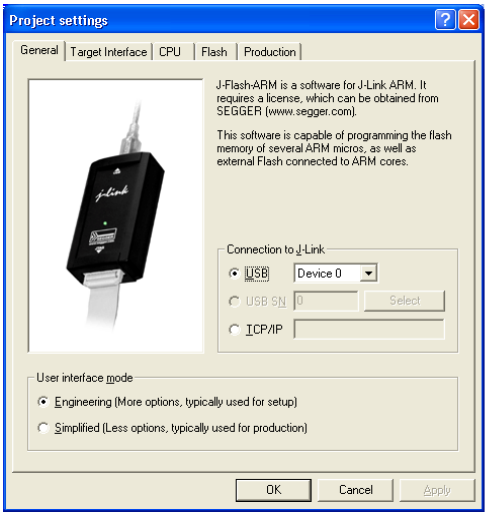



## Configure J-Flash ARM Software

Follow steps 3-10 below to establish the proper settings if J-Flash ARM has not been previously configured to download the BACnet communication module firmware.

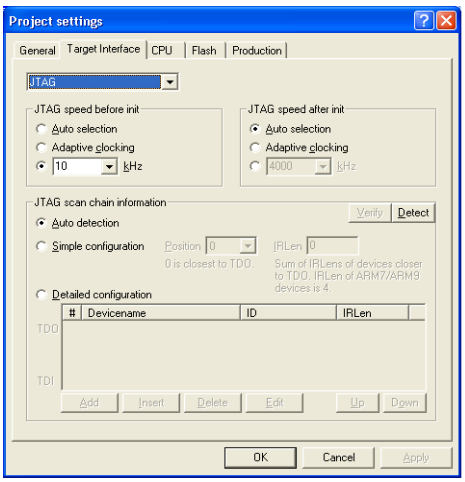
3. Navigate to the Options menu and select Project Settings.
4. Select USB Device 0 from the General tab. See Figure 41.
5. Select Engineering from the User interface mode.

*Figure 41. Project Settings – General Tab*



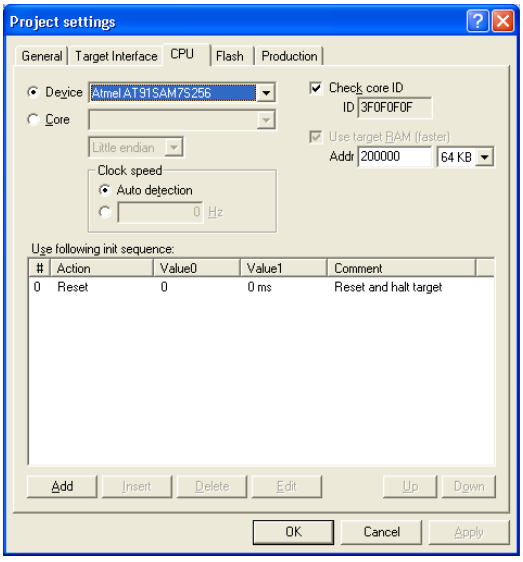
6. Click on the Target Interface tab. See Figure 42.
    a. Select JTAG from the drop-down box.
    b. Select 10 kHz from the JTAG speed before init drop-down box.

*Figure 42. Target Interface Tab*



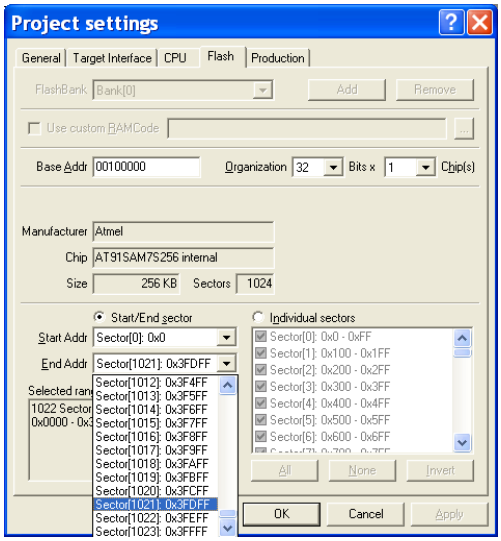

7. Click on the CPU tab. See Figure 43.
    a. Select Atmel AT91SAM7S256 from the Device drop-down menu.
    b. Enter 200000 in the Addr box and then select 64 KB from the drop-down menu.

*Figure 43. CPU Tab - Device Selection*



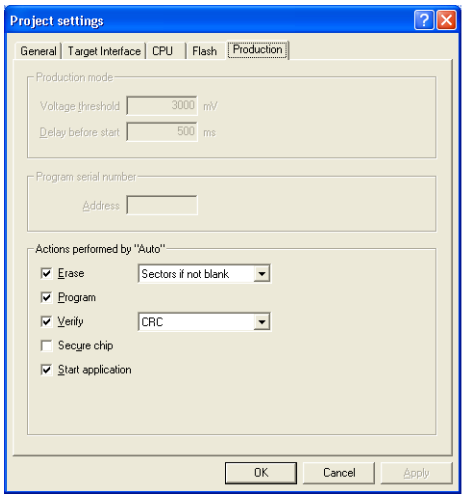

8. Click on the Flash tab. See Figure 44.
    a. Verify that the Base Addr is 00100000
    b. Verify Organization is set to 32
    c. Verify Bits x is set to 1
    d. Select the Start/End sector radio button
        i. Choose Sector[0]: 0x0 as the Start Addr
        ii. Choose Sector[1021]: 0x3FDFF as the End Addr

*Figure 44. Flash Tab*



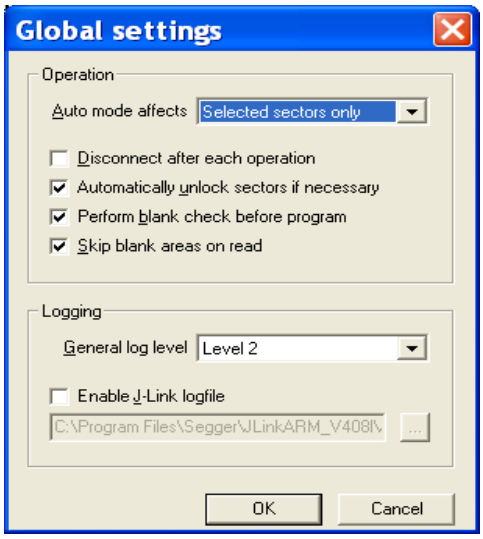

9. Select the Production tab. See Figure 45.
    a. Verify that Erase, Program, Verify, and Start application boxes are checked.
    b. Verify that Sectors if not blank is selected in the drop-down box.
    c. Verify that CRC is selected in the drop-down box.
    d. Click Apply and then OK to exit the Project Settings menu.

*Figure 45. Production Tab*




10. Navigate to the Options menu and select Global Settings. From the main J-Flash screen:
    a. Verify that all Operation and Logging parameters match those shown in Figure 46.
    b. Click OK.

*Figure 46. Global Settings*




## Download BACnet Communication Module Firmware

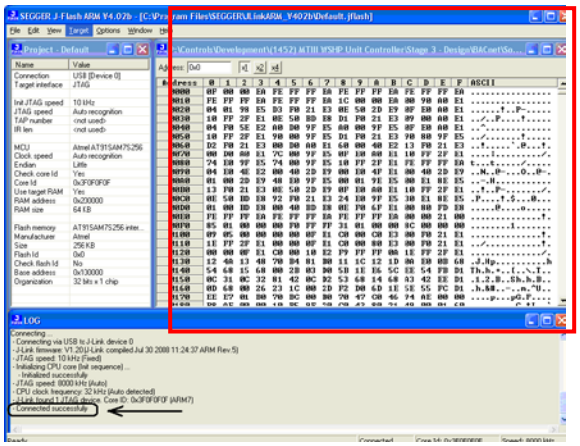
**⚠ CAUTION**

The following procedure returns all BACnet parameters to factory default values. It is recommended that existing parameters are saved prior to starting this process. See Appendix A in the MicroTech III Fan Coil BACnet Communication Module Installation Manual, IM 1013, and MicroTech III Fan Coil Protocol Document, ED 15135 (both available on www.daikinapplied.com) for additional information.

J-Flash is ready to use for downloading BACnet communication module firmware once the configuration settings have been established. Perform these steps to download the firmware:

1. Apply power to the unit controller.
2. Navigate to Target and select Connect from the main J-Flash screen.
3. Verify connection by viewing the log message at the bottom of the screen that indicates “Connected Successfully.”
4. Close any open data files like the one highlighted in red (see Figure 47).

*Figure 47. Successful Connection Message*



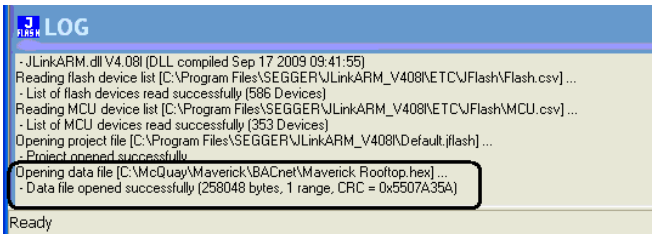
5. Select Open from the File menu in the main J-Flash screen.

6. Browse to the location on the hard drive where the BACnet communication module .hex file has been saved.

7. Click on the .hex file and select Open.

8. Verify that the Log screen message indicates the data file has opened successfully. See Figure 48.

*Figure 48. Successful Data File Open Message*

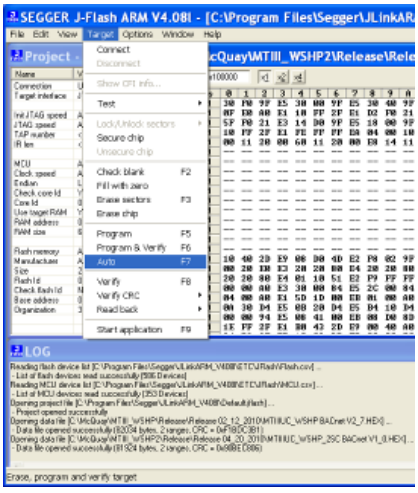



9. Apply power to the unit controller.

10. Remove (if connected) the jumper from pin 1 and pin 2 on J2 of the BACnet communication module.

11. Select Auto from the Target menu in the main J-Flash screen to begin the programming process. See Figure 49.

*Figure 49. Program & Verify Device Using the Auto Command*




12. Click OK once the screen shown in Figure 50 appears. The firmware has now been successfully downloaded.

*Figure 50. Successful Programming*

13. Remove power from the unit controller.
14. Remove the JTAG cable connection from the BACnet communication module.
15. Press and hold the Default and Reset push buttons on the BACnet communication module. See Figure 32.
16. Apply power to the unit controller.
17. Release the Reset push button, and continue to hold the Default push button until all four BACnet communication module LEDs (D1 to D4) are on steady. See Figure 32.
18. Verify that application is operating correctly by observing the following LED activity:
    a. LED D1 flashes on and off approximately every half second. This indicates that the application is running.
    b. LED D2 flashes in bursts approximately every half second. This indicates communication between the unit controller and the BACnet communication module.
    c. LED D3 flashes for each message transmitted to the MS/TP network.
    d. LED D4 flashes for each message received from the MS/TP network.
19. All BACnet communication parameters are at default values. Reset network values as required. See ED 15135, available on www.daikinapplied.com, for further details.

**Note:** Refer to the Troubleshooting Guide and FAQ section on page 37 or contact the Controls Customer Support group at 866-462-7829 for technical assistance.

# Troubleshooting Guide and FAQ

This guide is intended to be a helpful reference and source of supplemental information. It provides answers to common questions about the MicroTech III fan coil controls subjects covered in previous sections of this manual. The troubleshooting topics are organized into five categories: fan coil equipment configuration, unit controller and I/O expansion modules, BACnet or LonWorks communication modules, Flasher tools, and finally J-Link tools.

The bulleted items below link directly to the detailed information and solutions given within each of the five main subjects. Click a link to navigate quickly, or scroll through to the relevant section.

## Fan coil equipment configuration

- Verify the jumper settings based on the fan coil model and unit configuration
- Binary to hexadecimal conversions
- Three methods of setting equipment configuration:
  - Unit controller low level diagnostics
  - BACnet communication diagnostics
  - LonWorks interface

## Unit controller and I/O expansion module

- Room sensor is not responding properly

## BACnet and LonWorks communication modules

- Not able to write to Network Setpoint Inputs

**BACnet**

- No LEDs are lit
- All four LEDs are lit
- DI, D2 or D4 LED never blinks
- CRC error
- Communication module cannot be configured through the serial port

**LonWorks**

- Service Pin LED is not lit
- BAS does not “see” LonWorks configuration properties

## Flasher hardware and software

- Main screen does not populate
- Flasher LED is red
- Target VCC Field is not 5.1V
- Target VCC or Range fields are in red text
- Downloading error messages:
  - Target chip: busy does not react
  - Supply voltage too low
  - ID mismatch

## J-Link hardware and software

- Failed to connect error message

## Fan Coil Equipment Configuration

This section describes the equipment options that can be configured using software jumper settings for the unit controller and I/O expansion module. See Table 1 for option details. Table 2 provides a binary to hexadecimal conversion summary. Additionally, three methods for setting the fan coil equipment configuration are described in detail. An example of unit configuration is also included for reference.

*Table 1. Equipment Configuration Software Jumpers*

| Function | Bit / Binary Setting | Model / Feature |
|---|---|---|
| Service Test Mode | Byte 1: b0 | 0 = Normal Operation<br>1 = Service Test Mode |
| Continuous / Cycling Fan | Byte 1: b1 | 0 = Continuous Fan<br>1 = Cycling Fan |
| Setpoint Adjust – Temperature Range | Byte 1: b2 | 0 = Short Range (-5 to +5 °F)<br>1 = Long Range (55 to 95 °F) |
| IO Expansion Unit controller Selection | Byte 1: b3 | 0 = No IO Expansion Unit controller Present<br>1 = Enable IO Expansion Unit controller |
| Economizer Selection | Byte 1: b4 | 0 = No Economizer Present<br>1 = Enable Economizer Use |
| N.O. / N.C. Two Position Heating Valve | Byte 1: b5 | 0 = Normally Open Heating Valve<br>1 = Normally Closed Heating Valve |
| N.O. / N.C. Two Position Cooling Valve | Byte 1: b6 | 0 = Normally Open Cooling Valve<br>1 = Normally Closed Cooling Valve |
| Two Position / Modulating Valves | Byte 1: b7 | 0 = Two position Hydronic Valves<br>1 = Modulating Hydronic Valves |
| | | |
| Electric Heat Selection | Byte 2: b1=0, b0=0<br>Byte 2: b1=0, b0=1<br>Byte 2: b1=1, b0=0 | 00 = No Electric Heating<br>01 = One Stage Electric Heat<br>10 = Two Stage Electric Heat (Future)<br>11 = Not Valid |
| Hydronic Valves Selection | Byte 2: b4=0, b3=0, b2=0<br>Byte 2: b4=0, b3=0, b2=1<br>Byte 2: b4=0, b3=1, b2=0<br>Byte 2: b4=0, b3=1, b2=1<br>Byte 2: b4=1, b3=0, b2=0 | 000 = No Hydronic Valves<br>001 = 2-Pipe Heating Only<br>010 = 2-Pipe Cooling Only<br>011 = 2-Pipe Heat & Cool Changeover<br>100 = 4-Pipe Hydronic Heat & Cool |
| Fan Speed Selection | Byte 2: b6=0, b5=0<br>Byte 2: b6=0, b5=1<br>Byte 2: b6=1, b5=0 | 00 = 1Speed (Uses: High)<br>01 = 2Speed (Uses: Low, High)<br>10 = 3Speed (Uses: Low, Med, High) |
| Freeze Fault Detect Binary Input Selection | Byte 2: b7 | 0 = Disable Binary Input<br>1 = Enable Binary Input |
| | | |
| Emergency Shutdown Binary Input Selection | Byte 3: b0 | 0 = Disable Binary Input<br>1 = Enable Binary Input |
| Dirty Air Filter Binary Input Selection | Byte 3: b1 | 0 = Disable Binary Input<br>1 = Enable Binary Input |

*Table 2. Binary to Hexadecimal Conversions*

| Binary | Hexadecimal | | Binary | Hexadecimal |
|---|---|---|---|---|
| 0000 | 0 | | 1000 | 8 |
| 0001 | 1 | | 1001 | 9 |
| 0010 | 2 | | 1010 | A |
| 0011 | 3 | | 1011 | B |
| 0100 | 4 | | 1100 | C |
| 0101 | 5 | | 1101 | D |
| | 6 | | 1110 | E |
| 0111 | 7 | | 1111 | F |

### Equipment Configuration Example

LonWorks “nciSoftJumpers” are presently set to: FA, D0, 01, 00.

- Byte 1 (FA hexadecimal = 1111 1010 binary):
  b0=Normal Operation Mode; b1=Cycling Fan; b2=Short Range SP Adjust; b3=IO Expansion Unit controller is required; b4=Economizer is Enabled; b5=Normally Closed Two Position Heat Valve; b6=Normally Closed Two Position Heat Valve; b7=Modulating Hydronic Valves.
- Byte 2 (D0 hexadecimal = 1101 0000 binary):
  b0 to b1=No Electric Heating; b2 to b4=4-Pipe Hydronic Heating & Cooling; b5 to b6=3-Speed Fan; b7=Freeze Fault Detect binary input is enabled.
- Byte 3 (01 hexadecimal = 0000 0001 binary):
  b0=Emergency Shutdown binary input is enabled; b1=Dirty Air Filter binary input is disabled.
- Byte 4 (00 hexadecimal = 0000 0000 binary):
  Security Unlock byte set to 80 when performing a write operation; automatically clears to zero after write process is complete.

**Note**: Binary and hexadecimal displays are numeric values, thus the most significant numeric digit is always shown on the left, and the least significant numeric digit is always on the right.

### Methods to set the Fan Coil Unit Equipment Configuration

The fan coil equipment configuration is writable using one of the three following methods:

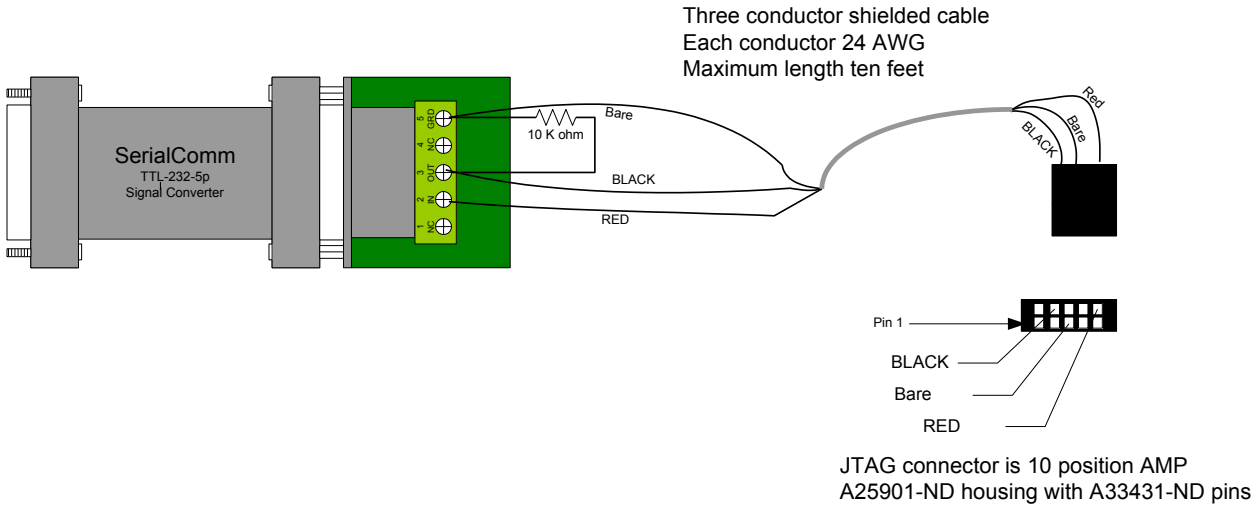
1. The unit controller low-level diagnostics serial port
2. BACnet communication module diagnostics serial port
3. LonWorks communication module network interface

*Method #1 Setting the Equipment Configuration Using Unit Controller Low-Level Diagnostics*

Hardware / Software Required:

- Computer with EIA-232 Serial Port Connection
- Terminal Emulator Program (e.g. Microsoft Windows HyperTerminal or PuTTY)
- Standard Serial Port Cable (Not a NULL Modem)
- JTAG Diagnostic Serial Port Cable Assembly (See Figure 51)

*Figure 51. JTAG Diagnostic Serial Port Cable Assembly*




The configuration procedures are as follows:

1. Connect the computer serial port to the unit controller serial port using the "JTAG Diagnostic Serial Port Cable Assembly" as shown in Figure 51.
2. Start the terminal emulator program.
3. Configure the terminal emulator serial communications for 19200 bps, 8 data bits, 1 stop bit, no parity, and no flow control.
4. Press the '?' key to view the software part and version numbers, along with the present equipment configuration settings. This step also verifies a solid communication link between the computer and the unit controller.
5. If the equipment configuration needs modification, continue on to the following steps:
    a. Enter the "@" key to inform the unit controller that four hexadecimal pairs will represent the new equipment configuration options.
    b. Enter three hexadecimal pairs as determined by the desired equipment configuration options, and always set the fourth byte pair to 80. An example of a valid configuration write string is "@FAD00180".
    c. Verify the first three bytes are echoed back correctly from the unit controller in the Config Settings message display. The new configuration response only occurs if the correct number of bytes are entered and unlocked properly. The fourth byte, which is the security byte, is automatically cleared to zero.

d. If the echoed equipment configuration settings are correct, press the "W" key. The diagnostic message, EE Write=Pass appears, indicating the write operation was successful.

e. Restart the unit controller. The diagnostic message, EE Read=Pass then appears, indicating the read operation was successful.

f. Verify the new equipment configuration options have been implemented, as indicated by the Config Settings diagnostic message.

g. Verify the Invalid Equipment Configuration alarm is not annunciated by the unit controller. This is indicated on the room sensor LED, through the network, or through the low-level alarm diagnostic message.

*Method #2 Setting the Equipment Configuration Using BACnet Module Diagnostics*

Hardware / Software Required:

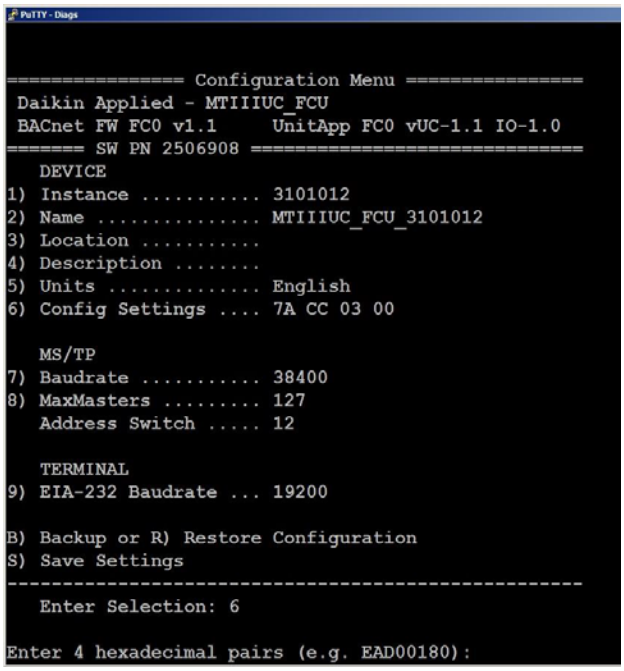
- Computer with EIA-232 serial port connection
- Terminal Emulator Program, e.g., Microsoft Windows HyperTerminal or PuTTY
- DB9 female-female Modem to Modem (DCE to DCE) Serial Port Crossover Cable

The configuration procedures are as follows:

1. Connect the computer serial port to the BACnet diagnostic serial port.
2. Start the terminal emulator program.
3. Configure the terminal emulator serial communications for 19200 bps, 8 data bits, 1 stop bit, no parity, and no flow control.
4. Press Enter to display the BACnet main diagnostic menu, along with the present equipment configuration settings. This step also confirms the communication link between the computer and the BACnet communication module.
5. If the equipment configuration requires modification, follow these steps:
    a. Press "6" to be prompted for the equipment configuration settings.
    b. Enter three hexadecimal pairs as determined by the desired equipment configuration options. Always set the fourth byte pair to 80, which is then followed by pressing Enter.
        i. Press Enter to display the BACnet Configuration Menu. See Figure 52.
        ii. Verify the first three bytes are echoed back correctly from the BACnet communication module in the Config Settings message display. The fourth byte is automatically cleared to zero.
    c. Wait ten seconds to allow the unit controller to receive the new configuration settings.
    d. Restart the unit controller.
    e. Verify the new equipment configuration options have been implemented, as indicated by the Config Settings diagnostic message.

f. Verify the Invalid Equipment Configuration alarm is not annunciated by the unit controller. This is indicated on the room sensor LED or through the network.

*Figure 52. BACnet Configuration Menu*




*Method #3 Setting the Equipment Configuration Using the LonWorks Network Interface*

This method uses the standard LonWorks network interface to read and write the equipment configuration properties using the “nciSoftJumpers” network variable.

The procedures are as follows:

1. Read the “nciSoftJumpers” configuration property through the network.
2. If the equipment configuration needs modification, continue on to the following steps:
    a. Write the “nciSoftJumpers” configuration property network variable to the new value, with the last of the four hexadecimal pairs always set to 80.
    b. Wait ten seconds allow the unit controller to receive the new configuration settings.
    c. Restart the unit controller using the LonWorks device management Reset command.
    d. Read the “nciSoftJumpers” configuration property values.
    e. Verify the first three hexadecimal pairs properly reflect the new equipment configuration options.
    f. Verify the Invalid Equipment Configuration alarm is not annunciated by the unit controller. This is indicated on the room sensor LED or through the network.

**Note:** Binary & Hexadecimal displays are numeric values, thus the most significant numeric digit is always shown on the left, and the least significant numeric digit is always on the right.

## Fan Coil Unit Controller and I/O Expansion Module

The following section describes issues and the corresponding troubleshooting steps for the fan coil unit controller with or without an I/O expansion module. Refer to OM 1111, available on www.daikinapplied.com, for complete details about LED activity, faults, and additional troubleshooting topics.

**Q: Room Sensor LED does not come on, or comes on for a little while, then goes out**

**A:** This could be caused by bad power to the unit controller, incorrect wiring from the unit controller to the room sensor LED, possibly defective hardware, or the unit is configured to operate in the service test mode.

- Verify that the unit controller has 24 VAC
- Verify that the unit is not operating in the service test mode
- Verify if the unit runs/communicates when the LED is off
- If it runs properly without the LED, check the LED wiring connection
- Download application code to the unit controller
- Replace hardware, if necessary

**Q: Unit has a room sensor and is constantly in cooling mode or the space temperature constantly reads higher than actual room temperature**

While the unit controller has separate connections for both return air and room temperature sensors, it is not possible for both to be used at the same time. Having both sensors connected will cause the room temperature to read higher than the actual temperature.
**A:** Disconnect the return air sensor.

## BACnet & LonWorks Communication Modules

The following section describes issues and the corresponding troubleshooting steps that apply to the BACnet or LONWORKS communication modules for network integration.

**Q: Cannot write to network setpoint input but space temp reads valid value**

**A:** The room sensor setpoint adjustment has been enabled.
For LONWORKS, set nciLocSetEnable to “Disable” or for BACnet, set MSV 12 to “1” (defaults are “Enable” and “2.”)

### Troubleshooting the BACnet Communication Module

The following section applies only to the BACnet MS/TP communication module.

#### Light Emitting Diodes (LEDs)

The BACnet communication module has four LEDs that indicate the status of the module, the connection to the unit controller and/or BACnet network. These LEDs are useful for verifying communication between the unit controller and the network, as well as diagnosing a potential problem. Figure 53 provides a description of the LED activity. For more details, see IM 1013, available on www.daikinapplied.com.

*Figure 53. BACnet Communication Module - LED Activity Details*

| LED | Function | Description |
|---|---|---|
| D1 | Program Running | Program main loop activity |
| D2 | Unit Controller Message | SPI Activity, LED on during unit controller message |
| D3 | MS/TP Transmit | Flashes on when transmitting a MS/TP message |
| D4 | MS/TP Receive | Flashes on when receiving a MS/TP message |

**Q: No LEDs are lit**

**A**: The communication module may not be properly installed or may not have the BACnet application software loaded.

- Remove the communication module and then reinstall it, verifying that the connector lands on all of the pins (it is very easy to either miss just one pin or all of the pins even with the standoffs.)
- If the communication module is properly installed, try it on a different unit and if the LEDs still do not function properly, replace the communication module.
- Re-download the BACnet software in the communication module**. Contact the Controls Customer Support group at 866-462-7829 before proceeding with this option.**

**Q: All four LEDs are lit**

**A:** The BACnet application software has not been properly downloaded.

- Re-download the BACnet software in the communication module
- Replace the BACnet communication module

**Q: Program LED (D1) never blinks**

**A:** The BACnet software is not running correctly in the communication module.

- Re-download the BACnet software in the communication module.
- Replace the BACnet communication module.

**Q: SPI Comm LED (D2) never blinks**

**A:** The communication module is not communicating with the unit controller.

- Verify that unit controller is controlling the fan coil unit
- Re-download the unit controller application code
- Re-download the BACnet software in the communication module
- Install the communication module on a different unit to determine if the problem is associated with the unit controller or the communication module

**Q: RX LED (D4) never blinks**

**A:** The communication module is communicating with the unit controller but not the network.

- Verify the BACnet MS/TP settings through the serial port on the communication module (check baud rate and any potential addressing conflicts)
- Re-download the BACnet software in the communication module
- If the network settings are correct and the application software is functioning properly, this could indicate a hardware defect. Replace the communication module, if necessary.

**Q: CRC errors**

**A:** The BAS indicates “CRC errors” at the workstation.

Solution - Upgrade the communication module to the newest version of BACnet software. It is not necessary to upgrade the unit controller or I/O expansion module software.

**Q: Communication module cannot be configured through serial port**

**A:** This could be caused by an incorrect or defective cable used to configure the communication module, software installation error, a previous change in the serial port settings, or potentially defective hardware.

- Verify that the communication module is connected with a DB9 female-female (modem-modem) serial cross-over cable. Refer to the MicroTech III Fan Coil Unit Controller Protocol Document, ED 15135, available on www.daikinapplied.com.
- Confirm that the serial terminal device application settings are correct. . Refer to the MicroTech III Fan Coil Unit Controller Protocol Document, ED 15135, available on www.daikinapplied.com.
- Verify that the LED activity is normal. See Figure 54.
- Try resetting the communication module back to original default settings.
- Re-download the BACnet software in the communication module.
- Replace the communication module, if necessary.

## Troubleshooting the LONWORKS Communication Module

The following section applies only to the LONWORKS communication module.

The LONWORKS communication module has an LED that indicates the status of the module itself, the connection to the unit controller, or the LONWORKS network. This LED is useful for verifying communication between the LONWORKS communication module and the network and for diagnostic purposes. Figure 54 provides a description of the LED activity. Refer to the LonWorks Communication Module Installation Manual, IM 1012, available on www.daikinapplied.com.

*Figure 54. LONWORKS Communication Module - LED Activity Details*

| LED Activity | Description |
|---|---|
| LED flashes once when power has been applied, or comes ON when pressing the Service switch | Normal operation for a commissioned LONWORKS communication module |
| LED is OFF continuously as soon as power is applied | Faulty hardware or power supply |
| LED is ON continuously, even when power is first applied | Faulty hardware or power supply |
| LED flashes when power is applied, goes OFF, then comes ON solid | Indicates the communication module does not have the application image (APB/NXE) and interface (XIF) files properly installed - reload application files, which can be found on www.daikinapplied.com or www.lonmark.org |
| LED flashes briefly once every second | The communication module could be experiencing an error with the application software or possibly the hardware - reload application files, which can be found on www.daikinapplied.com or www.lonmark.org |
| LED steadily blinks ON and OFF at ½ Hz Rate (1 Sec = ON; 1 Sec = OFF) | Normal operation if the communication module is decommissioned |

**Q: Service Pin LED does not light when pressed**

**A:** The communication module may not be installed properly, the hardware may be faulty, or the LED itself may be faulty.

- Remove the communication module and then re-install it, making sure the connector snaps into place on all four of the pins. Use caution as it is easy to either miss just one pin or all of the pins, even with the standoffs.
- Verify if the BAS recognizes the Neuron ID even if the LED is not lit.
- If the communication module is properly installed but no Neuron ID is broadcast, remove the communication module and install it on a different unit. If the LED does not function correctly and/or the BAS still does not recognize the Neuron ID, replace the communication module.

**Q: The BAS does not "see" some or all LONWORKS Configuration Properties**

**A:** The communication module uses multiple User-defined Configuration Property Types (UCPTs) to pass MicroTech III-specific unit information to the BAS. If the BAS can access other LONWORKS variables, then it is likely that the BAS is not allowing access to these user-defined configuration properties.

- The controls integrator should contact his/her technical support to determine how to allow the BAS to access configuration properties.
- The complete set of LONWORKS files required for BAS integration are available on www.daikinapplied.com or www.echelon.com should it be necessary to reinstall them.

Factory-installed LONWORKS communication modules are loaded with all application files required for network integration.

## Flasher

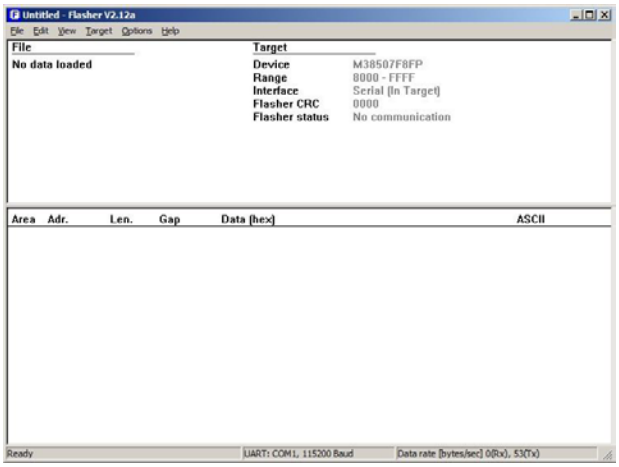
The following section summarizes common issues with Flasher tools and the corresponding solutions.

**Q: The main screen does not populate with the proper Flasher information**

**A:** See Figure 55. This may indicate a problem with the connection between Flasher and the computer

- Verify that the Flasher tool has power and that the Flasher serial cable is connected to the computer.
- Additionally, check that the communications port selected in the 'Communications' section of the 'Options' menu is set to the correct port (i.e. the port to which the Flasher tool is connected).

*Figure 55. Main Screen does not Populate*



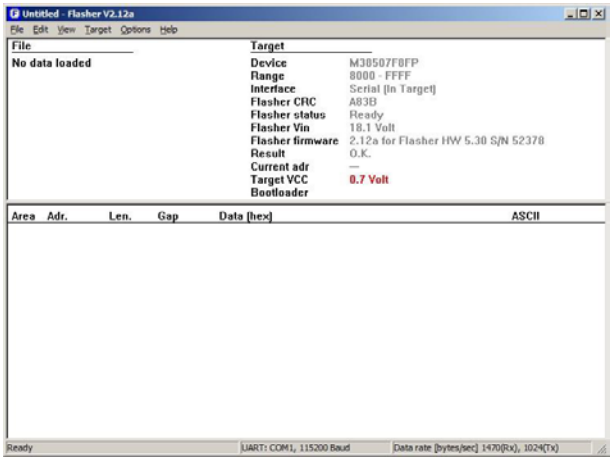

**Q: The Flasher tool's LED is red**

**A:** Disconnect and remove power from Flasher. After a few seconds, reapply power to Flasher. Connect it to the unit controller again, verifying that the triangle on the 10-pin connector of Flasher is properly installed on the keyed connector on the unit controller's 10-pin JTAG port (see Figure 32).

**Q: After applying power, the Target VCC field changes to a value that is too low**

**A:** See Figure 56. This could indicate a communication error between Flasher and the unit controller. Verify that the Flasher 10-pin connector is properly connected to the keyed 10-pin JTAG connector port on the unit controller. Also verify that the unit controller is connected and powered properly. See Figure 7.

*Figure 56. Incorrect Target VCC Value*




**Q: After preparing the file to be downloaded, the Range and/or Target VCC fields appear in red**

**A:** If the screen shown in Figure 57 appears, this indicates that the device has not been properly selected. Repeat Step 9 from the Flasher downloading procedure.

*Figure 57. Incorrect Range and Target VCC Fields*

**Q: After selecting Download and Verify, a "Busy does not react" error message appears**

**A:** If the message shown in Figure 58 appears verify that the Flasher 5 hardware is properly connected to the unit controller. Apply power and perform the download again.

*Figure 58. Download Error Message*

**Q: After selecting Download and Verify, a "supply voltage too low" error message appears**

**A:** If the message shown in Figure 59 appears, verify that the power supply is properly connected to the Flasher tool and that the power supply is plugged in to the power source.

*Figure 59. Download Error Message*

**Q: After selecting Download and Verify, an "ID mismatch" error message appears**

**A:** If the message shown in Figure 60 appears, perform the following steps:

1. Verify that the passcode has been set correctly in Step 17 on page 10.
2. Remove power from the unit controller.
3. Apply power to the unit controller.
4. Repeat the Flasher download procedure.

**Note**: Replace the unit controller if this problem persists after repeating the programming process.

*Figure 60. Download Error Message*

## J-Link/J-Flash ARM

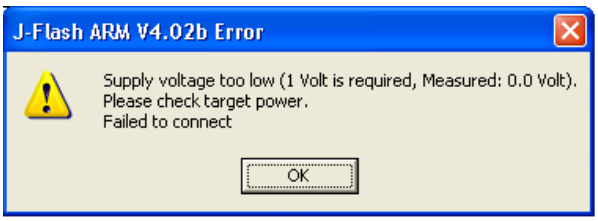
The following section summarizes common issues with J-Link tools and the corresponding solutions.

**Q: "Failed to connect" error message appears**

**A:** If the message shown in Figure 61 appears, follow these steps:

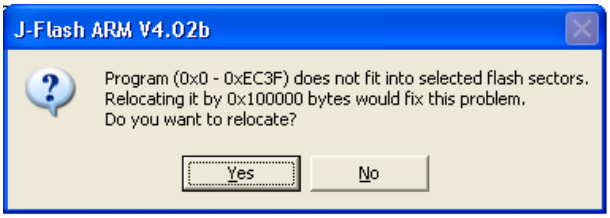
1. Verify that the unit controller has power.
2. Select Auto from the J-Flash Target tab.

*Figure 61. Failed to Connect Error Message*



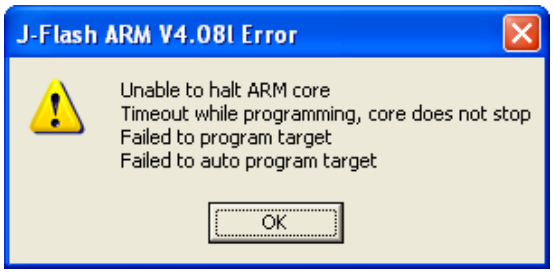

3. Click Yes if the message shown in Figure 62 appears.

*Figure 62. Relocate Message*



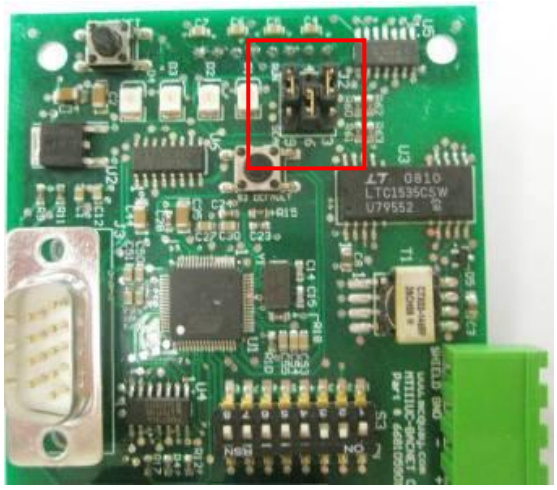

4. If the message shown in Figure 63 appears, the BACnet communication module flash memory must be manually erased by continuing to Step 5 below. If this message does not appear, proceed to the Download BACnet Communication Module Firmware section.

*Figure 63. Locked Program Error Message*




5. Remove the jumper from pin 4 and pin 5 on J2 of the BACnet communication module, if connected. See Figure 64.
6. With power applied to the unit controller, connect the jumper between pin 5 and pin 6 on J2 of the BACnet communication module as shown in Figure 64.

*Figure 64. Manual Erase Jumpers*



7. Remove power from the unit controller.
8. Remove the jumper from pin 5 and 6 on J2 of the BACnet communication module, replacing the jumper on pin 4 and pin 5 of the BACnet communication module, if previously connected.
9. Apply power to the unit controller. The flash memory has now been completely erased, so all configured settings return to default values.
10. Proceed to the Download BACnet Communication Module Firmware section.

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To find your local parts office, visit www.DaikinApplied.com or call 800-37PARTS (800-377-2787). To find your local service office, visit www.DaikinApplied.com or call 800-432-1342.

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