

Setting up Embedded Controllers and Mainframe Extenders as Non-Slot 0 Devices, Non-Resource Managers

This document describes how to configure various National Instruments VXI/VME controllers for non-slot 0, non-resource manager operation.

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VXIpc-800/700 Series (includes Vxipc-870 series)

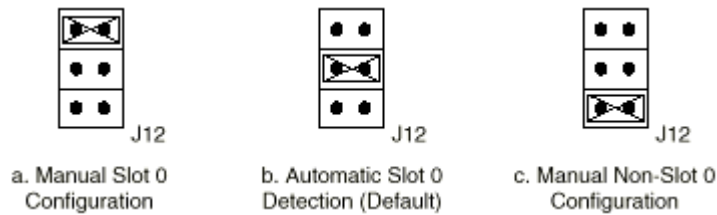
Hardware

No changes are necessary. By default the VXIpc-800/700 Series uses automatic Slot 0 detection. Install the board in a slot other than Slot 0.

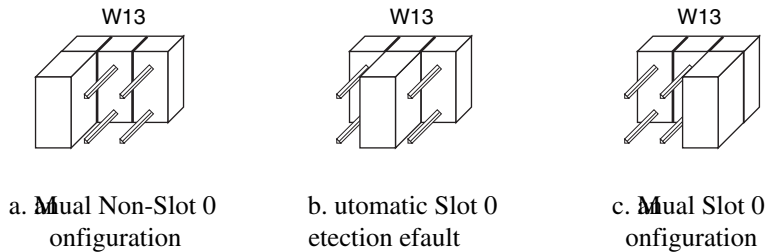
Optional Change:

It is possible to manually configure the VXIpc-800/700 Series for Slot 0 or Non-Slot 0 operation by changing jumper settings.

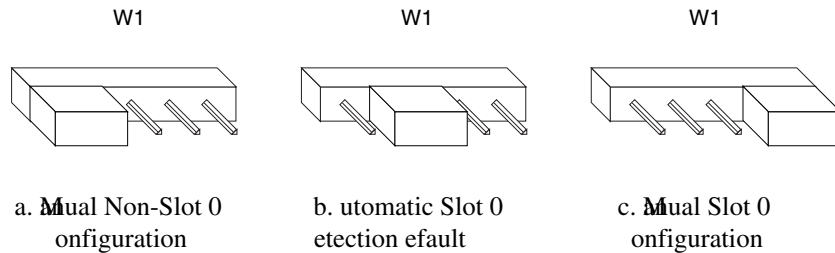
On the VXIpc-870 series, use jumper J12 to make this change as shown below.



On the VXIpc-800 Series, use jumper W13 to make this change.



On the VXIpc-700 Series, you can make this change with jumper W1.



Software

Note that installing a device in Slot 0 does not necessarily imply that it is also the Resource Manager device, and vice versa. A device that is not in Slot 0 can still perform the Resource Manager configuration, and conversely, a Slot 0 device does

not necessarily need to be Logical Address 0 (Resource Manager). Changing the logical address can be considered optional.

T&M Explorer:

1. Open the Hardware Configuration editor for the VXIpc by right clicking on its entry in Test and Measurement Explorer. Under the Device tab, change the **Logical Address** parameter from 0 to a non-zero value.
2. Under the VXI tab, change the **VXI Bus Timeout** parameter to **Disable**.
3. Save your changes in T&M Explorer and rerun Resman.

Note: You must be logged on with administrative privileges if you are using Windows NT.

Note: If your board is set up as a message-based device, it must wait for the Word Serial command *Begin Normal Operation* from the actual Resource Manager device (device at Logical Address 0).

Note: You do not need to run the Resman on the VXIpc if it is set up as a register based device.

Note: You can specify your device type (message or register based) by specifying the **Device Class** under the Device tab.

VXIedit/VXItdedit:

1. Open the VXIpc-Configuration Editor, and in the Logical Address Configuration Editor, change the **Logical Address** parameter from 0 to a non-zero value.
2. Switch to the Bus Configuration Editor and change the **VXI Bus Timeout** parameter to **DISABLE**.
3. Save your changes in VXIedit/VXItdedit and rerun VXIinit and Resman.

Note: If your board is set up as a message-based device, it must wait for the Word Serial command *Begin Normal Operation* from the actual Resource Manager device (at Logical Address 0).

Note: If your board is set up as a register-based device, you don't have to run Resman on it.

Note: To set whether your board is message based or register based, go into VXIedit/VXItdedit, open the VXIpc Configuration Editor, and in the Logical Address Configuration Editor, edit the **Device Type** field.
(MBD = Message Based Device, RBD = Register Based Device)

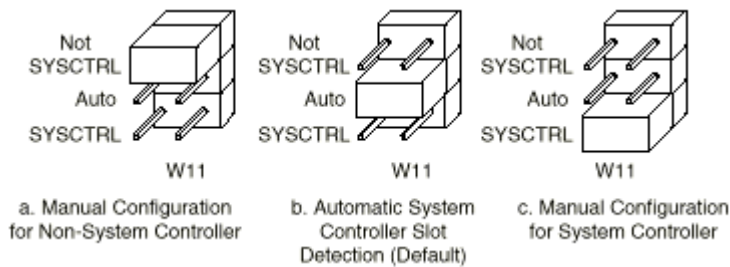
VXI/VMEpc-600 Series

Hardware

No changes are necessary. By default the VXI/VMEpc-600 Series uses automatic Slot 0 detection. Install the board in a slot other than Slot 0.

Optional Change:

It is possible to manually configure the VXI/VMEpc-600 Series for Slot 0 or Non-Slot 0 operation with jumper W11 as shown below.



Software

Note that installing a device in Slot 0 does not necessarily imply that it is also the Resource Manager device, and vice versa. A device that is not in Slot 0 can still perform the Resource Manager configuration, and conversely, a Slot 0 device does not necessarily need to be Logical Address 0 (Resource Manager). Changing the logical address can be considered optional.

T&M Explorer:

4. Open the Hardware Configuration editor for the VXIpc by right clicking on its entry in Test and Measurement Explorer. Under the Device tab, change the **Logical Address** parameter from 0 to a non-zero value.
5. Under the VXI tab, change the **VXI Bus Timeout** parameter to **Disable**.
6. Save your changes in T&M Explorer and rerun Resman.

Note: You must be logged on with administrative privileges if you are using Windows NT.

Note: If your board is set up as a message-based device, it must wait for the Word Serial command *Begin Normal Operation* from the actual Resource Manager device (device at Logical Address 0).

Note: You do not need to run the Resman on the VXI/VMEpc if it is set up as a register based device.

Note: You can specify your device type (message or register based) by specifying the **Device Class** under the Device tab.

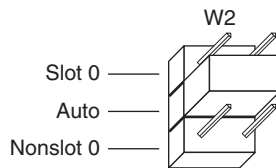
VXI-MXI-2 (Non-Slot 0)

Hardware

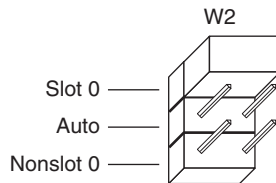
No changes are necessary. By default the VXI-MXI-2 uses automatic Slot 0 detection. Install the board in a slot other than Slot 0.

Optional Change:

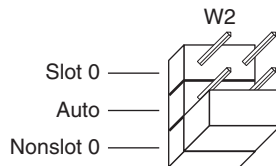
It is possible to manually configure the VXI-MXI-2 for Slot 0 or Non-Slot 0 operation by changing jumper W2 settings, as shown below.



a. Automatic Slot 0 Detection (Default)



b. Manual Slot 0 Configuration



c. Manual Nonslot 0 Configuration

Software

No changes are necessary.

VME-MXI-2 (Non-Slot 1)

Hardware

No changes are necessary. By default the VME-MXI-2 uses automatic VME Slot 1 detection. Install the board in a slot other than Slot 1.

Optional Change:

It is possible to manually configure the VME-MXI-2 for Slot 1 or Non-Slot 1 using VXIedit or Test and Measurement Explorer. This might be necessary if your VME chassis does not comply with the VME64 specification for automatic detection of the Slot 1 position. You must put the VME-MXI-2 in a VME 64 compliant chassis in order to set this option.

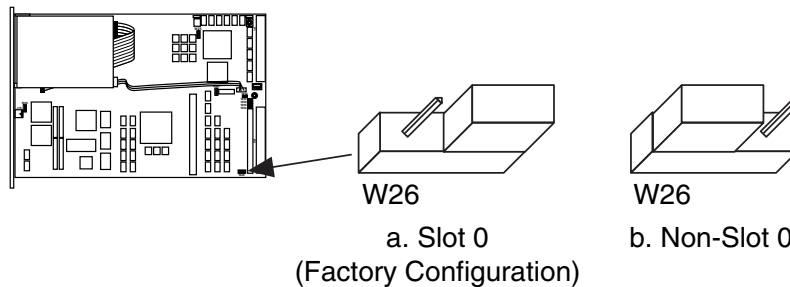
VXI-1394 and VXI-1394/G

NI VXI 2.0 does not support using VXI-1394 interfaces in a multi mainframe configuration and so there is no reason to put a VXI-1394 in any slot other than slot 0. Future revisions of NI-VXI may support this functionality

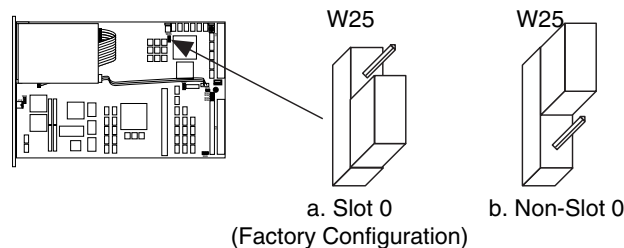
VXIpc-486 Model 500 Series

Hardware

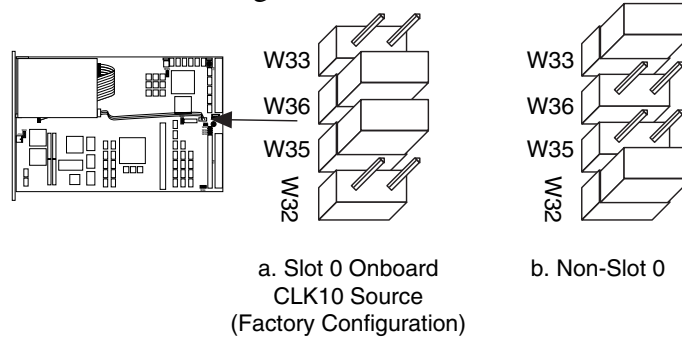
1. The W26 jumper controls the MODID signal termination setting. Move this jumper to the leftmost two pins as shown below.



2. The W25 jumper (underneath the hard drive) controls the System Controller setting. Move this jumper to the upper two pins as shown below.



3. Move the jumpers at W35 and W36 to W32 and W33 in the block of pins. These jumpers control the CLK10 setting for Slot 0/Non-Slot 0.



4. Install the board in a slot other than Slot 0.

Software

1. In VXIedit/VXIedit, open the Configuration Editor, and in the Logical Address Configuration Editor, change the **Logical Address** parameter from 0 to a non-zero value. Notice that installing a device in Slot 0 does not necessarily imply that it is also the Resource Manager device, and vice versa. A device that is not in Slot 0 can still perform the Resource Manager configuration, and conversely, a Slot 0 device does not necessarily need to be Logical Address 0 (Resource Manager). Changing the logical address can be considered optional.
2. Switch to the Bus Configuration Editor and change the **Local Bus Timeout** parameter to **DISABLE**.
3. In the Bus Configuration Editor, change the **VXI Bus Timeout** parameter to **DISABLE**.
4. Save your changes in VXIedit/VXIedit and rerun VXIinit and Resman.

Note: If your board is set up as a message-based device, it must wait for the Word Serial command *Begin Normal Operation* from the actual Resource Manager device (at Logical Address 0).

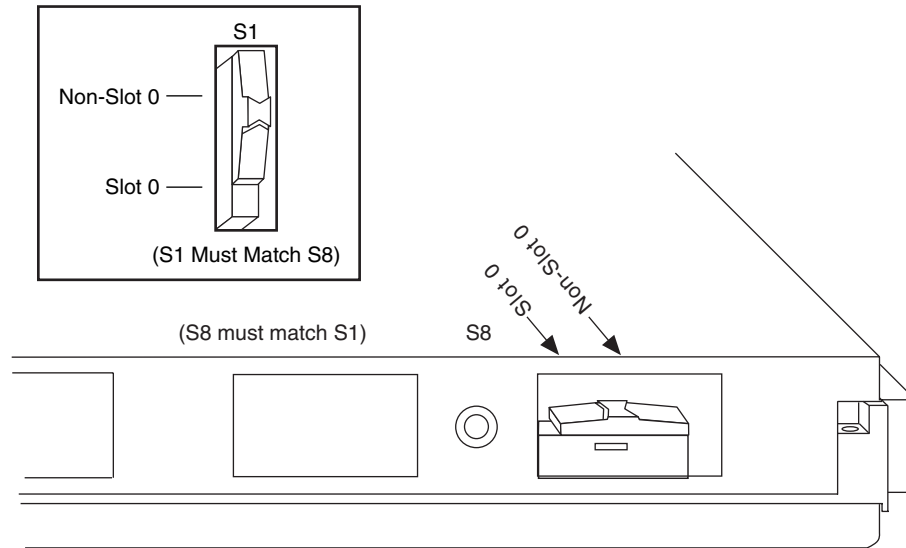
Note: If your board is set up as a register-based device, you don't have to run Resman on it.

Note: To set whether your board is message based or register based, go into VXIedit/VXIedit, open the Configuration Editor, and in the Logical Address Configuration Editor, edit the **Device Type** field.
(MBD = Message-Based Device, RBD = Register-Based Device)

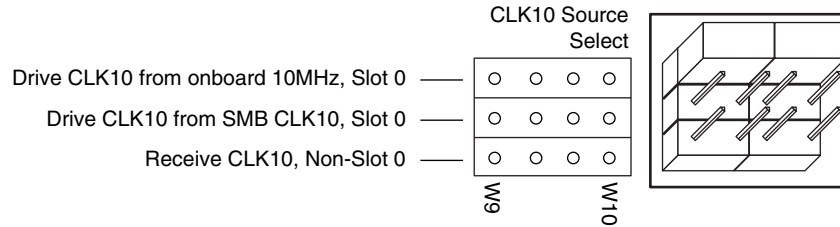
VXI-MXI (Non-Slot 0)

Hardware

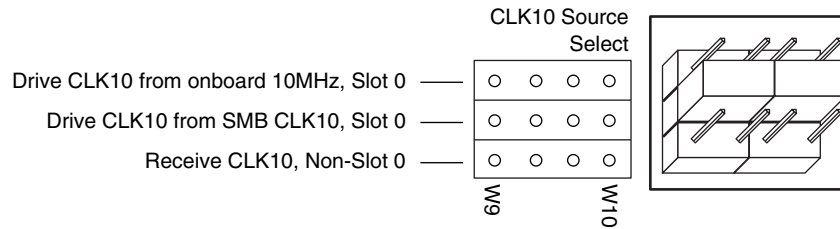
1. Move switch S1 to the upper position (Non-Slot 0 setting) as shown below.
2. Move switch S8 to the right position (Non-Slot 0 setting), as shown below. You must always ensure that the positions of S1 and S8 match. For Non-Slot 0, the dots on both switches need to be covered.



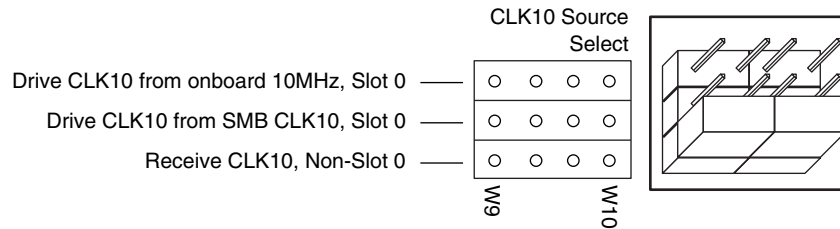
3. Move the CLK10 Source jumpers at W9 and W10 from the first row (figure a, below) to the third row (figure c) to the Receive CLK10, Non-Slot 0 setting.



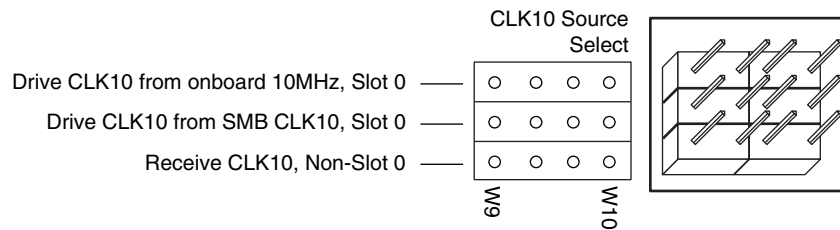
a. Onboard 10MHz VXI-MXI Installed in Slot 0 (Default Setting)



b. External Clock VXI-MXI Installed in Slot 0

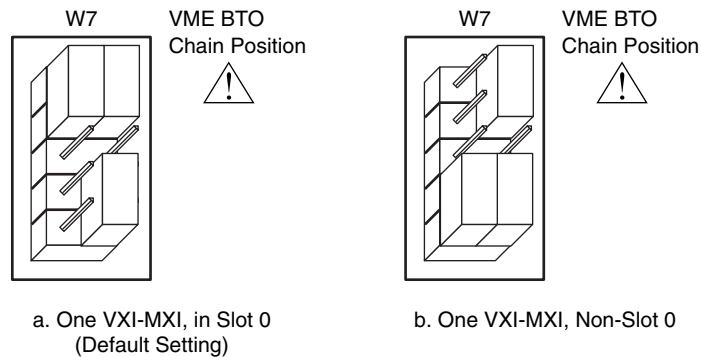


c. Do Not Source CLK10; VXI-MXI Not Installed in Slot 0



d. Source CLK10 from INTX VXI-MXI Installed in Slot 0

4. Move one of the three VMEbus Timeout Chain Position jumpers in the block of pins at W7 as shown below. This jumper controls the VMEbus Timeout Chain Position setting.

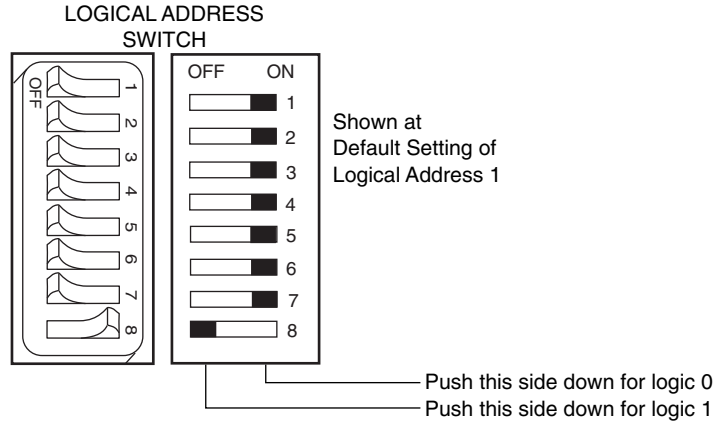


5. Install the board in a slot other than Slot 0.

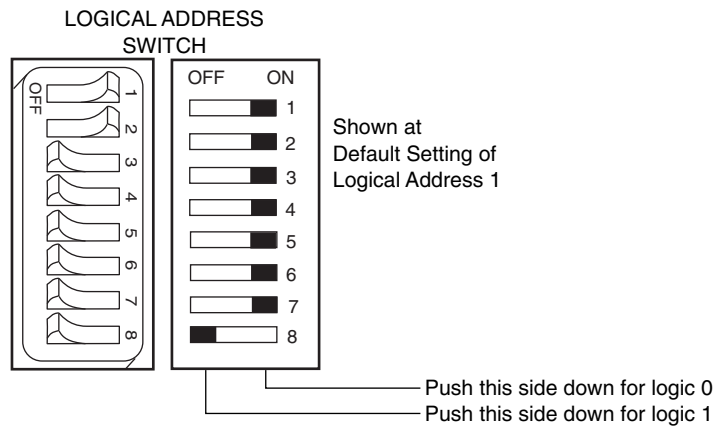
Optional Changes:

1. If you need to change the logical address of the VXI-MXI from its default value of 1, set the DIP switches to the new logical address. The DIP switches represent bits 7 to 0 in forming the VXI-MXI's logical address. DIP switch 1 represents bit 7 (decimal value of 128), DIP switch 2 represents bit 6 (decimal value of 64), and so on. Push down on the OFF side to set the bit.

Example: If DIP switches 1 and 2 are pushed down on the OFF side, the VXI-MXI is set to logical address hex C0, or decimal 192 (128 + 64 = 192).

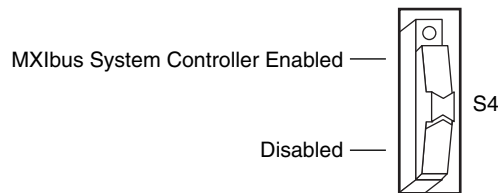


a. Switch Set to Default Setting Logical Address

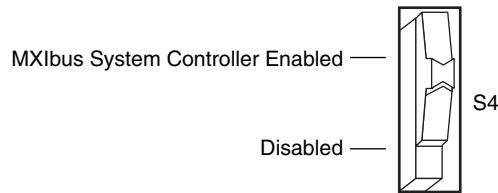


b. Switch Set to Logical Address hex C0

2. If the VXI-MXI needs to be the MXIbus System Controller, move switch S4 to cover the dot as shown below.

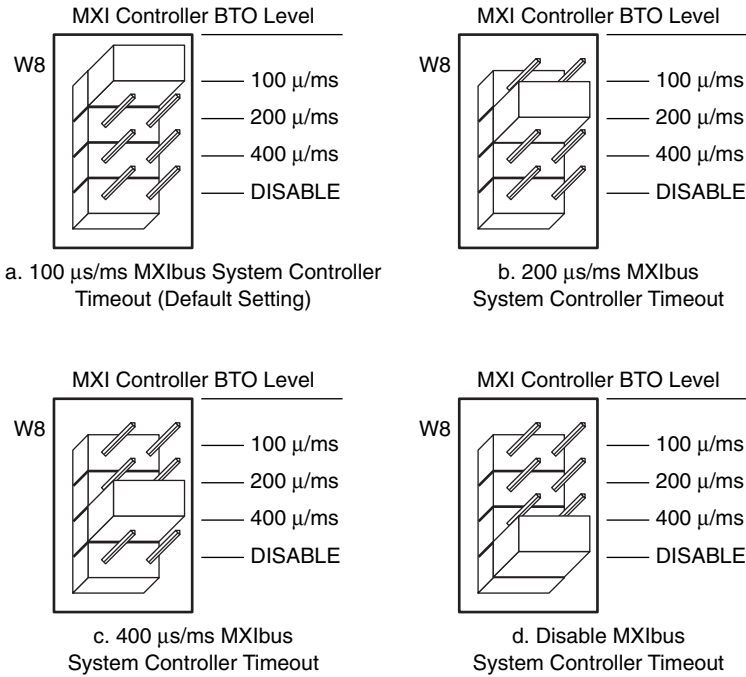


a. Not MXIbus System Controller (Default Setting)

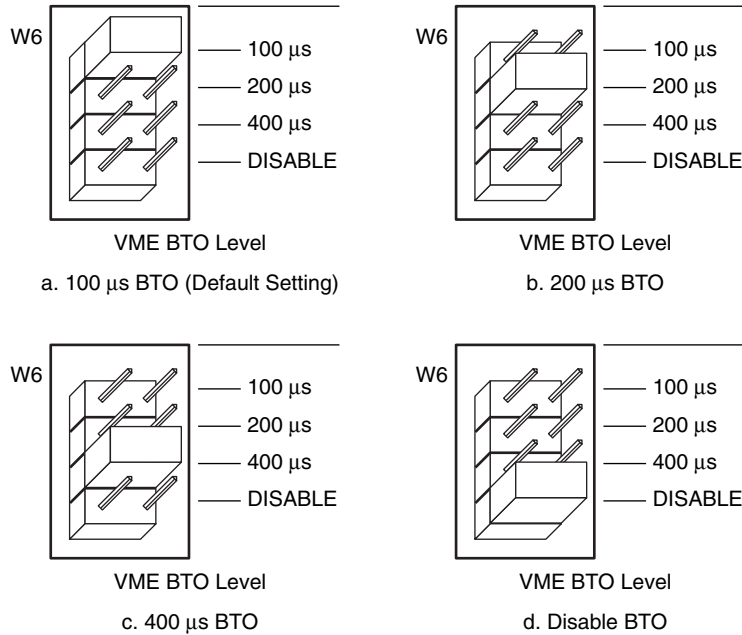


b. MXIbus System Controller

Note: If the VXI-MXI is the MXIbus System Controller, it sets the MXIbus System Controller Timeout value. You can change the timeout by moving the jumper at W8 from the default value of 100 μ s, as shown below.



3. If the VXI-MXI needs to stop performing the VMEbus Timeout function, move the jumper at W6 to the bottom (fourth) row of pins (labeled *DISABLE*).

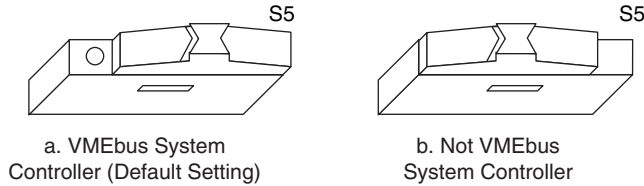


Note: You should let the VXI-MXI perform the VMEbus Timeout function, if at all possible, because this will generally allow MXIbus transfers more time to complete. If the VXI-MXI is performing the VMEbus Timeout function, make sure no other VXI devices are trying to perform this function. For example, if you have a National Instruments embedded controller in the mainframe, use its VXI Resource Editor, VXIedit/VXIedit, to set its **Local Bus Timeout** and **VXIbus Timeout** parameters to **DISABLE**.

VME-MXI-1 (Non-Slot 1)

Hardware

1. Move switch S5 to cover the dot. This position configures the VME-MXI to not be the VMEbus System Controller.

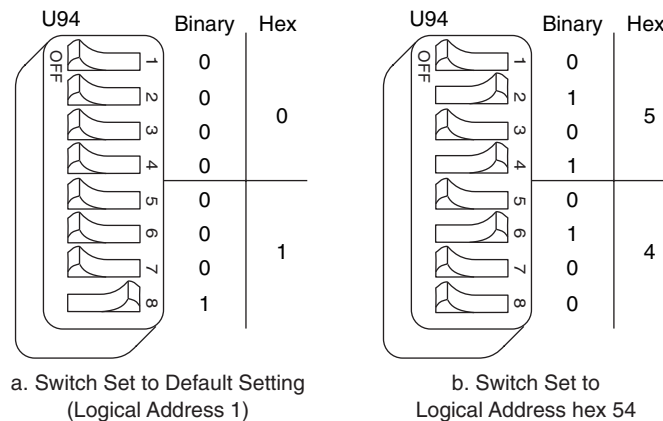


2. Install the board in a slot other than Slot 1.

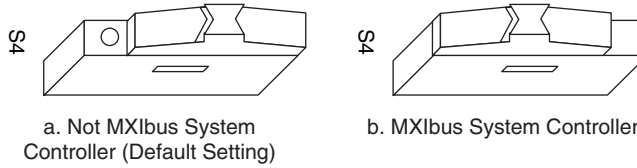
Optional Changes:

1. If you need to change the logical address of the VME-MXI from its default value of 1, set the DIP switches at U94 to a new logical address. The DIP switches represent bits 7 to 0 in forming the VME-MXI's logical address. DIP switch 1 represents bit 7 (decimal value of 128), DIP switch 2 represents bit 6 (decimal value of 64), and so on. Push down on the OFF side to set the bit.

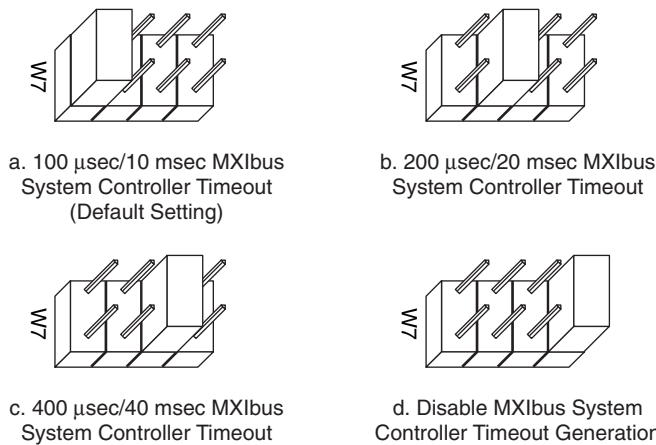
Example: If DIP switches 2, 4, and 6 are pushed down on the OFF side, the VME-MXI is set to logical address hex 54, or decimal 84 (64 + 16 + 4 = 84).



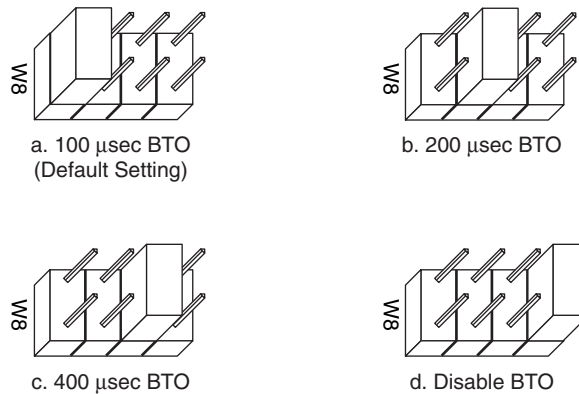
- If the VME-MXI needs to be the MXIbus System Controller, move switch S4 to cover the dot. This position configures the VME-MXI to be the MXIbus System Controller.



Note: If the VME-MXI is the MXIbus System Controller, it sets the MXIbus System Controller Timeout value. You can change the timeout by moving the jumper at W7 from the default value of 100 μ s.



- If the VME-MXI needs to stop performing the VMEbus Timeout function (possibly because another VME device cannot relinquish the VMEbus Timeout function), move the jumper at W8 to the set of pins farthest from the W8 inscription.

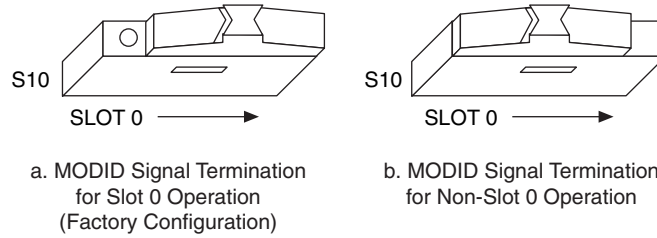


Note: You should let the VME-MXI perform the VMEbus Timeout function, if at all possible, because this generally allows MXIbus transfers more time to complete. If the VME-MXI is performing the VMEbus Timeout function, make sure no other VME devices are trying to perform this function.

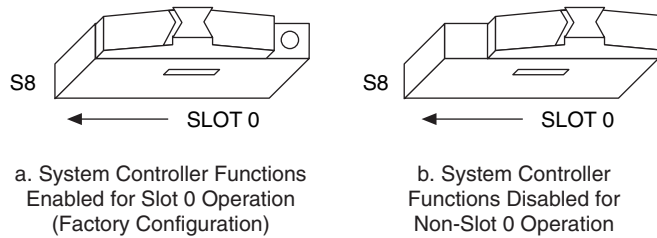
VXIcpu-030

Hardware

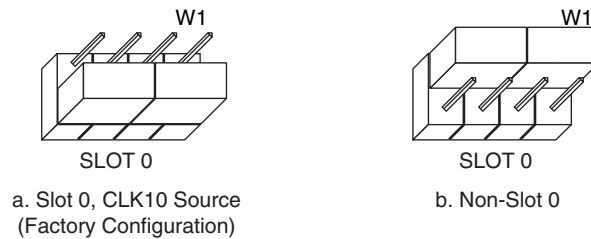
1. Move switch S10 *away* from the arrow to cover the dot. This setting configures the VXIcpu-030 MODID signal termination for Non-Slot 0.



2. Move switch S8 *away* from the arrow to cover the dot. This switch controls whether the VXIcpu-030 acts as the System Controller.



3. Move the jumper at W1 (located on the back side of the VXIcpu-030) to the column of pins farthest from the *SLOT 0* inscription). This jumper controls the backplane CLK10 setting.



4. Move switch S83 from its default position to expose the dot on the switch. This switch controls the CLK10 Source Selection setting.



a. Onboard 10-MHz sources CLK10
(Factory Configuration)



b. Front Panel CLK I/O
Sources CLK10

5. Install the board in a slot other than Slot 0.

Software

1. In VXIedit, open the Configuration Editor, and in the Logical Address Configuration Editor, change the **Logical Address** parameter from 0 to a non-zero value. Notice that installing a device in Slot 0 does not necessarily imply that it is also the Resource Manager device, and vice versa. A device that is not installed in Slot 0 can still perform the Resource Manager configuration and, conversely, a Slot 0 device does not necessarily need to be Logical Address 0 (Resource Manager). Changing the logical address can be considered optional.
2. Switch to the Bus Configuration Editor and change the **VXI Bus Timeout** parameter to 0 (disabled).
3. Save your changes in VXIedit and rerun VXIinit and Resman.

Note: If your board is set up as a message-based device, it must wait for the Word Serial command *Begin Normal Operation* from the actual Resource Manager device (at Logical Address 0).

Note: If your board is set up as a register-based device, you don't have to run Resman on it.

Note: To set whether your board is message based or register based, go to the Logical Address Configuration Editor, and edit the **Device Type** field. (2 = message-based device, 3 = register-based device).