

Migrating MVI69-MNET to the Enhanced MVI69E-MBTCP CompactLogix® Modbus TCP/IP module

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Document Brief

This document describes how to migrate an existing MVI69-MNET Modbus TCP/IP Module for CompactLogix® to the new MVI69E-MBTCP CompactLogix® module using the "Legacy Mode" functionality. Legacy Mode allows you to replace an existing MVI69-MNET module with the MVI69E-MBTCP without any changes to the existing ladder logic. This feature is only supported with MVI69E-MBS firmware version 1.11.001 or later.

The existing user may also convert the existing MVI69-MNET PCB configuration to the MVI69E-MBTCP module in Legacy Mode. This conversion procedure is supported by PCB version 4.4.24.20.0302 or later.

The main differences between the MVI69-MNET module and the Enhanced MVI69E-MBTCP module in Legacy Mode are as follows:

- Configuration and Debug on the MVI69E-MBTCP is done via an Ethernet connection to the module instead of via an RS232 serial port connection that was available on the MVI69-MBS.
- The MVI69E-MBTCP Module supports a lower current draw (500 mA) and provides a greater power supply distance rating (4 slots) when compared to the MVI69-MNET module (800 mA and P/S distance rating of 2).

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I. What you will need...

- 1. A Computer with the following applications installed:
 - a. ProSoft Configuration Builder, version v4.4.24.20.0302 or later
- 2. MVI69-MNET Configuration file.
 - a. An offline version of the file saved on a PC can be used
 - b. If you need to upload the configuration file from a module you will need a Serial Debug port connecting cable – This is a combination of ProSoft Cable#14 and Cable#15 (supplied with MVI69-MNET at time of purchase) and an RS232-USB Conversion cable (if PC does not have a built in RS-232 Serial port).



II. Obtain Configuration file for MVI69-MNET module

To convert from the MVI69-MNET module to the MVI69E-MBTCP module operating in "Legacy Mode", you will need to open the configuration file in ProSoft Configuration Builder (PCB). If you have the current offline configuration file for the MVI69-MNET module, you may move on to the next step, however if you wish to upload the configuration file from a module follow the below described steps.

Connect one end of Cable#14 to the Debug Port of the MVI69-MNET module and connect the USB end of the RS232-USB converter to your PC.



If you need to know what COM port is being used by your PC you can look in the device manager and it will show you the COM port being used, as shown below:



Startup ProSoft Configuration Builder (PCB), select the MVI69-MNET module from the select module tree.

Choose Mod	ule Type				×
		Produ	ct Line Filter —		
C All	C PLX4000 C PLX5000 C MVI69E	C PLX6000 C PLX30 C MVI69L	C MVI46 MVI69 C PLX80	C MVI56 C MVI56E	O MVI71 O PTQ
STEP 1: : Search 2: MVI69-1 MVI69-1 MVI69-C MV	Select Module Tr y Product Number 01M 01S 04S 9FCM 9FNT 9H485 9FNT 9H485 9FNT 1H485 9FNT 1H485 9FC 1H5 1H5 1H5 1H5 1H5 1H5 1H5 1H5	Search	Module Type Module Defini	ion:	
				ОК	Cancel



Once you have the module selected, right click the module name and select "Upload from Device to PC" from the pop-up tree.

File View Project	Tools Help		
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🖃 📄 Default Project		Name	Status
🗄 🕞 Default Loca	ation	MVI69-MNET	Configured
	Delete	dule	Values OK
	Сору	et Client 0	Values OK
	Paste	et Servers	Values OK
		TIC ARP TABLE	Values OK
	View Configuration	nment	Values OK
	Write to Removable Media	, ТТСР	Values OK
	Export Configuration File(s)	
	Load Config File		
	Add External File		
	Add External File	le Information	
	Convert to Enhanced Mod	Change: Never	
	Download from PC to Dev	ice Download: Neve ication Rev:	r
	Upload from Device to PC	ev:	
	Diagnostics	Address:	
		" comingEdit Version:	4.5.0.0



From the window below, check the com port and select "UPLOAD"

-	Name Status Information	
Default Location	✓ MVI69-MNET Configured MVI69-MNET	
庄 🖷 MVI69-MNET	MVI69 MNT6 1.57	
	MNet Client 0 Values OK	
	MNet Servers Values OK	
	STATIC ARP TABLE Values OK	
	Comment Values OK	
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	# MC Upload files from module to PC	
	# L{	
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	# 03 (# L¢ ┌ STEP 1: Select Communication Path:	
	# MA # C Select Connection Type: Com 2 V Browse Device(s	
		_
	# MI Ethernet: Use Default IP	
	Mod CIPconnect: CIP Path Edit	
	Modi	
	Err(STEP 2: Transfer File(s):	
	Reat	
	Reat Reat UPLOAD Abort Test Connection	

This will upload the configuration from the MVI69-MNET module. Now would be a good time to "Save" the PCB file (or .ppf file).



III. Convert MVI69-MNET configuration to MVI69E-MBTCP

To convert the configuration file from your MVI69-MNET simply open the configuration file in version 4.4.24.20.0302 (or greater) of PCB, select the module and right mouse click. Select "Convert to Enhanced Mode" as shown below

File View Project	Tools Help	
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🖃 💼 Default Project		Name
🚊 📠 Default Locati	on	VI69-MNET
🕂 🚺 MV169-MN		MV/I60
	Delete	ile
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	Paste	C ARP
	View Configuration	nent
	Write to Removable Media	CP
	Export Configuration File(s))
	Load Config File	
	Add External File	e Inf
	Convert to Enhanced Mode	thang
	Download from PC to Devi	ce Downl
	Upload from Device to PC	V: Pev
	Diagnostics	ddres pEdit

This will automatically convert the configuration file to the MVI69E-MBTCP.



The configuration of the Ethernet port of the MVI69E-MBTCP module will be converted from the configuration file of the MVI69-MNET module. Open the "Ethernet 1" tab as shown below to set or change the IP Address of the module:

File View Project Tools H	elp						
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⊡ Default Project			Name		Status	Information	
🗄 📠 Default Location		$\overline{\mathbf{A}}$	Ethernet 1		All Tags Good		
🗄 🖩 📗 MVI69E-MBTCP					_		
🗄 📲 Module							
🗄 📲 MNET Client 0							
🗄 📲 MNet Servers							
🗄 💑 STATIC ARP TABL	E						
Ethernet 1	Edit - Ethernet 1						×
(隆 Ethernet 1							
⊡ <mark>க</mark> Comment	IP Address			192.168.0.	.250	IP Address	
	Gateway			192.168.0.	.1	102 168	0 250
	,					1 100	. 0 . 250
						Comment:	
						J	
						Definition:	
						Default private c	ass C address 🔺
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						,	
						Reset Tag	Reset All
						ОК	Cancel

The MVI69E-MBTCP module uses this IP address for downloading of the configuration file and diagnostics as well as communication with Ethernet devices. The default IP address of the module is the 192.168.0.250 as shown above.



IV. Placing MVI69E-MBTCP module in "Legacy Mode"

For the MVI69E-MBTCP module to support the configuration file of the MVI69-MNET module, you will need to open a web browser and select the "Legacy Mode" option from the webpage of the module. This can be done by connecting to the default IP address of the module as shown below:

- 1 Open the MVI69E-MBTCP webpage. For further information, please see *Error! Reference source not found.* in the User Manual for additional details.
- 2 Click on the *Advanced Settings* option.

FUNCTIONS Firmware Upgrade Set Date & Time 	Modbus TCP/ MVI69E-MBTCP	IP Module for Compac	tLogix RESOURCES
 Reboot Module Advanced Settings Technical Support Homepage 	Module Name Ethernet Address (MAC) IP Address Product Revision Firmware Version Date Serial Number Legacy Mode Status Uptime	MVI69E-MBTCP 00:0D:8D:03:35:12 192.168.0.250 1.10.012 2.6.33.7 #16 07/19/19 - 01 00024512 No Running 00:00:26	ProSoft Technology Modbus Organization



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3 In the *Advanced Settings* page, change the **LEGACY MODE** field to 'Yes', then click on the **UPDATE LEGACY MODE** button.

ProSoft [®]		
FUNCTIONS Firmware Upgrade Set Date & Time Reboot Module Advanced Settings Fichnical Support	Advanced Settings Warning All fieldbus devices should be placed in a fail-safe condition under direct supervision before continuing. Please refer to the user manual for aditional safety information. Selecting the "Update Legacy Mode" button will stop all module communication functions with network devices during the mode configuration procedure.	RESOURCES ProSoft Technology Modbus Organization
► Homepage	Legacy Mode: Yes Update Legacy Mode Cancel No - Backward compatible with previous releases of the MVI69E-MBS product. Yes - Backward compatible with the legacy MVI69-MCM product.	

4 Confirm the update by clicking **OK**.

	×
This site says	
Applying the settings will reboot applyed settings. Are you sure, yo	the module according to the ou want to continue?
ОК	Cancel



5 The module will reboot during the update process.



6 Once complete, the homepage displays Legacy Mode – Yes.





V. Download PCB Configuration to the MVI69E-MBTCP module

Now that the PCB configuration file for the MVI69-MNET module has been converted over to an MVI69E-MBTCP configuration and the MVI69E-MBTCP module is in a mode to accept the legacy configuration file, we can download the file to the module for operation.

1 Right-click on the *MVI69E-MBTCP* icon and select **DOWNLOAD FROM PC TO DEVICE**.



2 In the *Download files from PC to module* dialog, click on the **BROWSE DEVICE(S)** button. The ProSoft Discovery Service Utility searches for ProSoft devices on the network.

ownload files from PC t	o module	
STED 1. Calact Care		
Select Connection		Browso Doviso(a)
Select Connection		Browse Device(s)
Ethernet:	192 . 168 . 0 . 100	Use Default IP
CIPconnect:		CIP Path Edit
		RSWho
STEP 2: Transfer File	:(s):	
DOWNLOAD	Abort	Test Connection
	ОК	Cancel



3 Double-click on the module icon.

Download files from PC to module	×		
STEP 1: Select Communication Pat	h:		
Select Connection Type:	Ethe 🛗 Prosoft Discovery Service	_	Х
Ethernet: 192 . 168	· 0		C
CIPconnect: STEP 2: Transfer File(s): DOWNLOAD Abo	5r. 00024512 MVI69E-MBTCP 192.168.0.250		
Module Configuration			
odule] dule Type : MVI69E-MBTCP dule Name : MVI69E-MBTCP			
ror/Status Pointer	Click the search icon to begin the browse		

4 Click **DOWNLOAD**. When complete, the 'Module Running' message is displayed.

Jownload files from PC to module	×
Module Running	
j	
STEP 1: Select Communication Path:	
Select Connection Type: Ethernet 💌	Browse Device(s)
Ethernet: 192 . 168 . 0 . 250	Use Default IP
CIPconnect:	CIP Path Edit
	RSWho
STEP 2: Transfer File(s):	
DOWNLOAD Abort	Test Connection
ок	Cancel

Once complete, the MVI69E-MBTCP in Legacy Mode will operate similarly to the MVI69-MNET.



VI. Optional Add-On Instruction for the MVI69E-MBTCP module

So while the intent of the "Legacy Mode" operation is to allow the MVI69E-MBTCP module to operate as a direct drop-in replacement unit for the MVI69-MNET module (without any ladder logic changes), there is an optional Add-On Instruction that can be added to the MVI69-MBTCP ladder code.

The Optional AOI supports the following optional features:

- Read/Write IP Address
- Read/Write Date Time

Using controller tags, the Optional AOI allows you to request and set the module's IP address, date, and time. These optional features are not supported by the MVI69-MNET legacy module.

Note: The Optional AOI may be added to an existing legacy MVI69-MNET application to add the new functionality during a module replacement.

1 Add a new rung to the existing processor ladder logic. Right-click on the new rung and select *Import Rungs...*

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e	Ж	Cu <u>t</u> Rung	Ctrl +X	
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(End)	B	<u>P</u> aste	Ctrl+V	
		<u>D</u> elete Rung	Del	
		Add Rung	Ctrl+R	
		Ed <u>i</u> t Rung	Enter	
		Edit <u>R</u> ung Comment	Ctrl +D	
		I <u>m</u> port Rungs		
		E <u>x</u> port Rungs		6

2 Select the Optional AOI file: *MVI69E_MBTCP_Optional_AddOn_Rung.L5X*



👸 Import Rungs				x
Look jn:	MVI69E-MBT	rcp 🗸	G 🤌 📂 (
Recent Places	Name	TCP_LEGACY_Optional_AddOn_	Rung_v1_0.L5X	Date modified 1/21/2020 10:36
Desktop				
Cipraries				
Computer				
Network	File name:		nal AddΩn E ▼	Import
	Files of type:	RSLogix 5000 XML Files (*.L5X)	-	Cancel
	Files <u>c</u> ontaining:	H Rungs		Help
	Int <u>o</u> :	MainRoutine (MainProgram)	-	
	🔲 O <u>v</u> erwrite Sele	cted Rungs		

3 At the *Import Configuration* window, select the *Operation* parameter to **CREATE**. Then click **OK**.

Import Configuration						
Find: Find Within: Final Name	- A A	Eind/Replace				
Import Content: MainTask MainProgram MainReoutine (Rungs) MainReoutine (Rungs) Main	Configure Rung F Imported Rungs: Operation: Routine Propert Name: Description: Type: In Program:	Properties 1 Create () References will be imported as configured in the References folders ites MainRoutine Ladder Diagram MainProgram	after Rung 0			
۰ اس ال						
				OK Cancel Help		
Ready				h.		

4 The imported AOI rung is now in place.



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For further details on the use of the AOI for setting the IP address of the module, please refer to the MVI69E-MBTCP user manual for configuration and setup.