

Migrating from the MVI46-MCM to the PLX31-EIP-MBS/4

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Important Note

The use of the PLX31-EIP-MBS/4 module requires an EtherNet/IP connection back to the SLC.

A SLC 5/05 is required when making this connection, it's the only SLC that offers EtherNet/IP.

Configuration

The configuration of the MVI46-MCM is stored in the Data Files within the .RSS file.

The configuration of the PLX31-EIP-MBS/4 is done using the ProSoft Configuration Builder (PCB) software.

Download Link: <u>https://www.prosoft-technology.com/Products/ProSoft-Software/ProSoft-Configuration-Builder</u>

YouTube link to PLX31-EIP-MBS/4 training video: https://www.youtube.com/watch?v=7_pOhn45OdA&t=7s



Configuring your port

The MVI46-MCM port configuration, going off the defaults are stored in the N10 data files.

N10:0 – N10:37 is Port 1, N10:30 – N10:67 is Port 2.

\overline Data File N10 (dec) MCM CFG MCM Module Configuration file 📃 📼 📼										
Offset	0	1	2	3	4	5	6	7	8	9
N10:0	0	0	0	0	0	2000	0	0	0	0
N10:10	1	0	0	0	0	0	9600	0	8	1
N10:20	0	0	0	0	0	0	0	0	0	10
N10:30	0	1100	1000	2	0	0	0	0	0	0
N10:40	1	1	0	0	0	0	9600	0	8	1
N10:50	0	0	0	0	1	0	0	0	0	0
N10:60	0	-1	0	0	0	0	0	0	0	0
N10:70	0	0	0	0	0	0	0	0	0	0
N10:80	0	0	0	0	0	0	0	0	0	0
N10:90	0	0	0	0	0	0	0	0	0	0
•										► -
N10:10 Radix Decimal										
Symbol: P1 ENABLE Columns: 10 -										
Desc: Pl Enable (O=disabled, l=enabled)										
N10 - Properties Usage Help										



The PLX31-EIP-MBS/4 will be setup in the ProSoft Configuration Builder.

Edit - Modbus Port 1		X
Enabled RS Interface Type Enron-Daniels Protocol Baud Rate Parity Data Bits Stop Bits RTS On RTS Off Use CTS Line Response Timeout Retry Count End of Message Delay Minimum Command Delay Error Delay Counter Command Control Reg	Yes RS-485 Master No RTU 19200 None 8 1 0 0 0 0 0 0 -1	Enabled Yes Comment: Definition: Port enable flag (Yes/No) Reset Tag Reset All
		OK Cancel



Master Command Configuration

The MVI46-MCM uses N11 (Port 1) and N12 (Port 2) to setup the commands.

🔀 Data File N11 (dec) P1 CMDS Command list for port 1										
Offset	Π	1	2	3	4	5	6	7	8	9
N11:0	1	200	0	50	0	1	3	0	0	0
N11:10	0	0	1	1	0	1	16	0	0	0
N11:20	0	0	0	0	0	0	0	0	0	0
N11:30	0	0	0	0	0	0	0	0	0	0
N11:40	0	0	0	0	0	0	0	0	0	0
N11:50	0	0	0	0	0	0	0	0	0	0
N11:60	0	0	0	0	0	0	0	0	0	0
N11:70	0	0	0	0	0	0	0	0	0	0
N11:80	0	0	0	0	0	0	0	0	0	0
N11:90	0	0	0	0	0	0	0	0	0	0
<u>۱</u>										
N11:0 Radix: Decimal 💌										
Symbol: Columns: 10 -										
Desc: Cmd 1 Enable code										
N11 - Properties Usage Help										



The PLX31-EIP-MBS uses the ProSoft Configuration Builder, under the Commands section.

Edit - Row 1		×
Enable Internal Address Poll Interval Reg Count Swap Code Node Address ModBus Function MB Address in Device Comment	Continuous 0 1 No Change 1 FC 3 - Read Holding Registers 0	Enable Continuous Definition: This field defines whether or not the command is to be executed and under what conditions. Disable (0) = The command is disabled and will not be executed in the normal polling sequence. Enable (1) = The command is executed each scan of the command list if the Poll Interval Time is set to zero. If the Poll Interval time is set, the reset Tag Reset Tag Reset All OK Cancel



Replacing backplane transfers with EtherNet/IP

You will want to identify the ladder logic in the SLC program that is responsible for transferring Modbus application data to-and-from the MVI46-MCM module. Both input and output is handled through the M1 table:



However, with the PLX gateway being a standalone unit, data transfer with the PLC program would have to be handled differently. You can recreate similar behavior with the EtherNet/IP Commands, and specifically, the Class 3 Client, SLC500 2 Address Field commands:





The offset into the M1 table servers as the Internal Address location within the ProSoft's memory database. Therefore, to recreate the backplane transfers shown above with Class 3 Client SLC500 2 Address Field commands, they could be configured as:



The Internal Address matches the offset into the M1 table. The Reg Count matches the Length of the COP command. Read/Write perspective is from the PLX gateway, so the Prot Typed Read command is for moving data into the PLX gateway. Therefore, the N table reference matches the first COP command which was moving data into the MVI46-MCM module. The Prot Typed Write command moves data into the PLC program and so uses the same N20 reference.

After configuring the Modbus RTU commands identically on both products, and then configuring equivalent EtherNet/IP Class 3 Client commands as shown above, the PLX3x-EIP-MBS/4 gateway should function essentially as a drop-in replacement for the MVI46-MCM module.