Application Note

Topic: **MODSOFT Modbus TCP/IP Access of PLCs via MB+** **APN-MEBTCP-02**
Product: **MEB-TCP** **03 November, 1997**
Author: **Scott Henson**

Abstract

The MEB-TCP may be used to connect personal computers running MODSOFT® (Ver. 2.4 or later with the Ethernet TCP/IP stack) or Concept to Modicon PLCs using Ethernet and Modbus Plus (MB+).

Introduction

MODSOFT version 2.4 or later and Concept allow the option of using TCP/IP as the transport for programming the TSX Quantum Automation Series PLCs through the Modicon NOE TCP/IP Ethernet Module. The Niobrara MEB-TCP may be used to provide a gateway between Modbus TCP/IP Ethernet to MB+. This allows MODSOFT and Concept computers on the Ethernet to be able to program non-Ethernet PLCs by way of MB+.

Setup

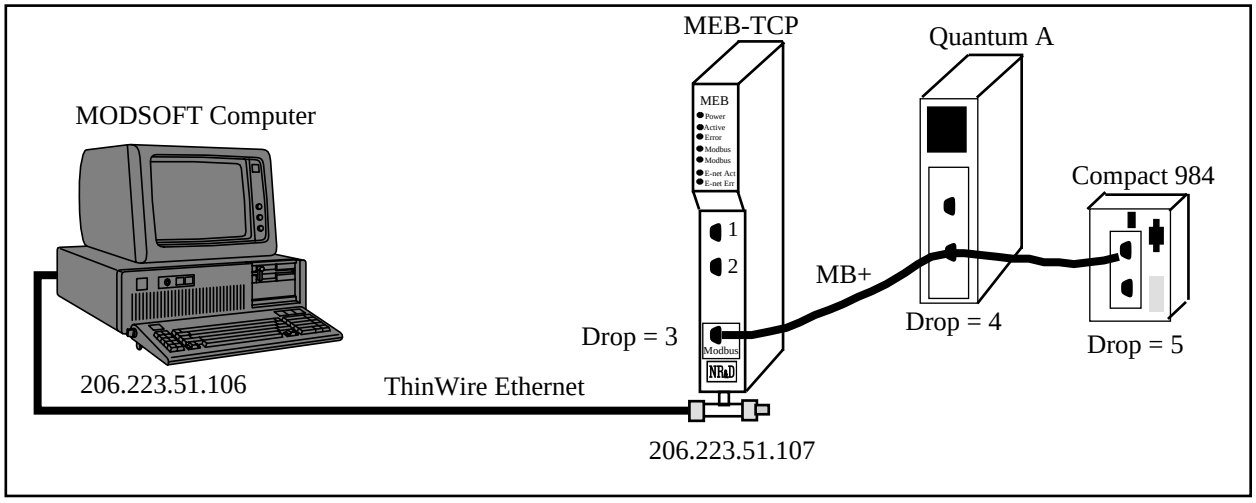
The figure below shows a MODSOFT computer with and IP address of 206.223.51.106. On the same subnet is an MEB-TCP with an IP address of 206.223.51.107. The Subnet Mask is set to 255.255.255.0 and the Default Gate is set to 0.0.0.0 since they are on the same subnet. (These settings would be modified for a particular network configuration.) The MEB-TCP listens on TCP Port 502.

The MB+ port of the MEB-TCP is connected to a Quantum PLC and a Compact 984 PLC. The MEB's port is set for MB+ drop number 03 while the Quantum is set for drop 04 and Compact is set for drop 05

The MEB-TCP is mounted in an NR&D **NRK2** single slot rack with built-in power supply. The MEB-TCP is configured using the MEBSW.EXE application through one of its serial ports with an **SC902** RS-232 <> RS-422 converter cable.

Modbus Routing

This application makes use of the MEB-TCP as a Server with the MODSOFT computer being the Client. The Modbus Server Routing Table for the MEB's Ethernet port must be configured to translate the Destination Index from the Modbus TCP/IP messages into downstream MB+ routes. The MEB-TCP supports up to 255 entries in its Modbus Index Look-up table.



For this example, two entries are required as shown below:

Index	Route
0	3,4
1	3,5
2	NONE
4	NONE
etc.	

The first drop in the Route is the drop number of the MEB's MB+ port. The second drop is the target device on the MB+ network. Additional drops may be added to the route to pass through Bridge Plus, Bridge Mux, MEBs, or other MB+ routers. A maximum of 6 drops may be placed in this route when pointing to the MB+ port

The MODSOFT application will be configured to send Modbus TCP/IP messages to the MEB-TCP's IP address with a Dest_Index of 0 for the Quantum and 1 for the Compact 984. The Dest_Port will be set to 502

The MEB-TCP is capable of having multiple MODSOFT programmers connected at the same time. It may also act as a TCP/IP Client to route messages from the MB+ to other Modbus TCP/IP Servers simultaneously.

Summary

The Niobrara MEB-TCP provides a simple interface to allow programmer applications using Modbus TCP/IP Ethernet to access devices on a MB+ network.