



# Multi-Port for Modbus

Mille Applied Research Co., Inc.  
[www.Mille.com](http://www.Mille.com)

## MULTII-PORT CONNECTOR PIN OUT AND JUMPER OPTIONS FOR MODBUS APPLICATIONS

Terminal Strip	9-pin D	RS232	RS422	RS485
1	1	DCD (in)	TX+	TRD+
2	6	DSR (in)	RX+	TRD+
3	2	RXD (in)	TX-	TRD-
4	7	RTS (out)	RX-	TRD-
5	3	TXD (out)	TX+	TRD+
6	8	CTS (in)	RX+	TRD+
7	4	DTR (out)	TX-	TRD-
8	9	RI (in)	RX-	TRD-
9	5	GND	GND	GND

**NOTE:** The Multii-Port power supply circuit board is used in both the MARC Omnii-Comm and Multii-Port products. **When used in the Multii-Port applications, the connector and jumper identification marks on the board silkscreen are reversed for the Multii-Port operation.**

Silkscreen ID	Multii-Port ID
P1	P4
P2	P3
P3	P2
P4	P1

P1, P2, P3 and P4 can be configured for RS232/RS422 or RS485 operation. The selection is determined by a 9-position jumper located near each connector.

### PORTS 1-4 ARE DEFAULT 2-WIRE 485

P5 Configuration port is RS232

RS232 operation is selected by connecting the 9-position jumper for the selected port between the center position and the pins on the left side.

RS422/RS485 operation is selected by connecting the 9-position jumper for the selected port between the center position and the pins on the right side.

If operating in RS422/RS485 mode, install a jumper between pins 10 and 13 of the appropriate 9-position jumper.

If operating in RS422/RS485 mode, additional options are configured by adding or removing jumpers located along the upper edge of the module. There are 4 6-position jumpers, one for each port. If the port is configured for RS232 operation the jumpers are not used.

RS422 Jumper Options	
1-2	TX Termination (120 ohms)
9-10	TX+ Pull UP
3-4	TX- Pull DOWN
7-8	RX Termination (120 ohms)
11-12	RX+ Pull UP
5-6	RX- Pull DOWN

RS485 Jumper Options	
3-5, 7-9	RS485 Enable (connects TX+ to RX+ and TX- to RX-)
1-2	Termination Enable (120 ohms)
11-12	TRD+ Pull UP
6-8	TRD- Pull DOWN

Jumpers J8, J7 and J6 are 3-position jumpers located near the upper right side of the board. J8 is on the left, J7 is in the center and J6 is on the right. *Jumpers J6 and J7 are for factory use only.* Jumper J8 is used to select the mode of operation of the reset switch. If J8 is installed 1-2 pressing the reset switch stops the Omnii-Comm operation and forces the P5 connector to be a Configuration port. If J8 is installed 2-3 then pressing the reset switch forces a hard reset and the Omnii-Comm will restart its program just as if power had been cycled.

**NOTE:** Connector P1 is the "Common" Connector. Connect P1 to the Modbus Slave or Slaves. Connect P2, P3, and P4 to Modbus Master(s). Connector P5 is not used for Modbus communication.

## Changing Serial Port Parameters

The serial port communication parameters can be changed to meet system requirements. To make changes:

- Connect a PC serial port to connector P5.
- Use a "Null Modem" cable (2 and 3 swapped) to connect to the PC.
- Start up a terminal program on the PC. This could be Putty, Procomm or any Telnet program.
- Set the communication parameters to 9600,8,N,1.
- Power up the MultiPort Module.
- Wait until the green "active" LED starts to blink at a steady rate.
- Press the black reset button located near connector P5
- You should get a help screen detailing how to make the changes. The screen should look like this:

```
MultiPort>?  
? is Show this help screen  
MARC DIN Omnii MultiPort -- Available Commands:  
? Show this help screen          A Show status All connectors  
C Select connector                B Change baud rate  
P Change parity                   S Change stop bits  
H Change handshake lines         T Set Time Out (hex)  
M Set Timer Multiplier  
R Restart MultiPort operation when changes finished
```

\*\*\*\*\*Select Connector before making changes\*\*\*\*\*

**A will show status of All connectors**

```
MultiPort>A  
Connector 1: 9600 baud 8N1 Common Port  
Connector 2: 9600 baud 8N1 passthru to: 1  
Connector 3: 9600 baud 8N1 passthru to: 1  
Connector 4: 9600 baud 8N1 passthru to: 1  
Connector 5: 9600 baud 8N1 Configuration Port
```

**C Selects connector 1-4 select which port you want to change**

```
MultiPort>C  
Select Connector 1,2,3,4: 1
```

**1 will select the common port**

```
Connector 1: 9600 baud 8N1 Common Port
```

**B will change the baud rate for port selected**

```
MultiPort>B  
Select Baud Rate:  
1=300,2=600,4=1200,6=2400,7=4800,8=9600,9=19.2K: 9
```

**9 will change the port to 19.2 baud**

```
Connector 1: 19.2K baud 8N1 Common Port
```

**A will show the status of all ports**

```
MultiPort>A  
Connector 1: 19.2K baud 8N1 Common Port  
Connector 2: 9600 baud 8N1 passthru to: 1  
Connector 3: 9600 baud 8N1 passthru to: 1  
Connector 4: 9600 baud 8N1 passthru to: 1  
Connector 5: 9600 baud 8N1 Configuration Port
```

# MULTI-PORT JUMPER LOCATIONS

