



Haidar Technology, LLC.

Industrial Control Innovations Begin Here

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**ModBus Modules
RMC-C810**

**Reference Manual
REV 1.00**

Revision 1.00

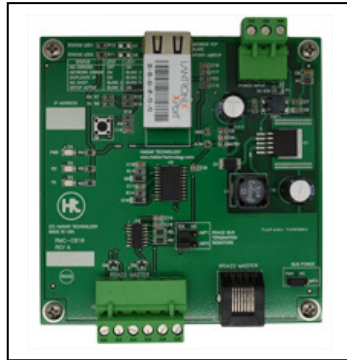
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1. Overview



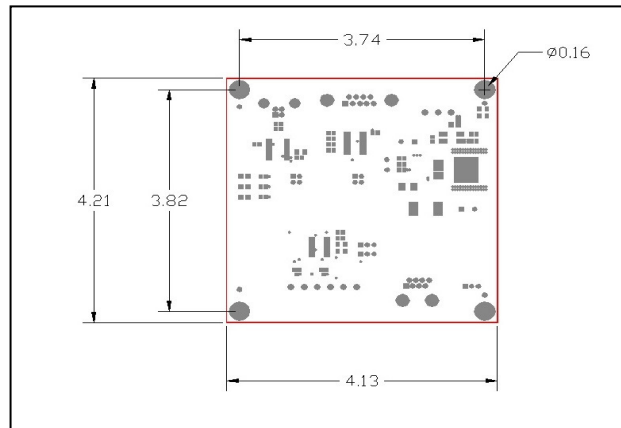
For more information about RMC Modbus modules, please refer to RMC Series Reference Manual

Haidar's RMC-C810 is ModBus network interface module used to convert Master Modbus TCP to full-duplex RS485.

2. Features

- Full-Duplex RS485 (RS422) output
- Master ModBus TCP input
- Supports 10/100 Mbps communication speed
- LED indicators for Power, RX and TX
- Plug-in terminal blocks
- RS422 RJ45 connector
- Data and Power (optional) over single RJ45 cable up to 1200 meters
- $\pm 80\text{V}$ fault and $\pm 8\text{KV}$ ESD protection on the RS422 lines
- Full industrial temperature from -40 to 85°C
- Optional DIN-RAIL mounting plate
- Communication speed fixed at 19.2Kb/sec
- Free Modbus test and simulation software

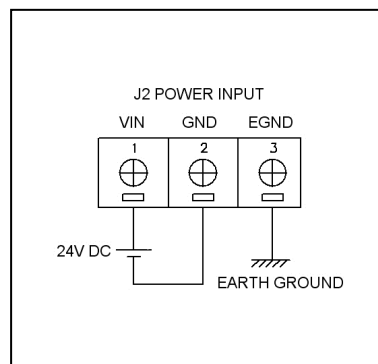
3. Board Dimensions



Width	4.21" (107mm)
Length	3.74" (95mm)
Depth	0.71" (18mm)

4. Supply Voltage (Vin)

Typical Supply Voltage (Vin)	24V DC
Supply Current	TBD



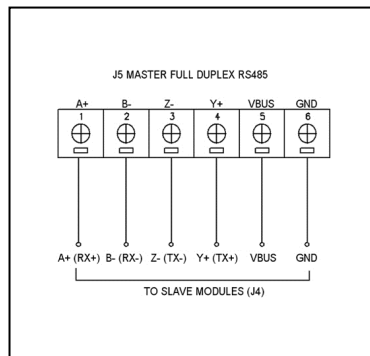
J1 Pin Number	Description
1	Supply Voltage Input (VIN)
2	Power Ground
3	Earth Ground

5. Full-Duplex RS485 (RS422) Connectors

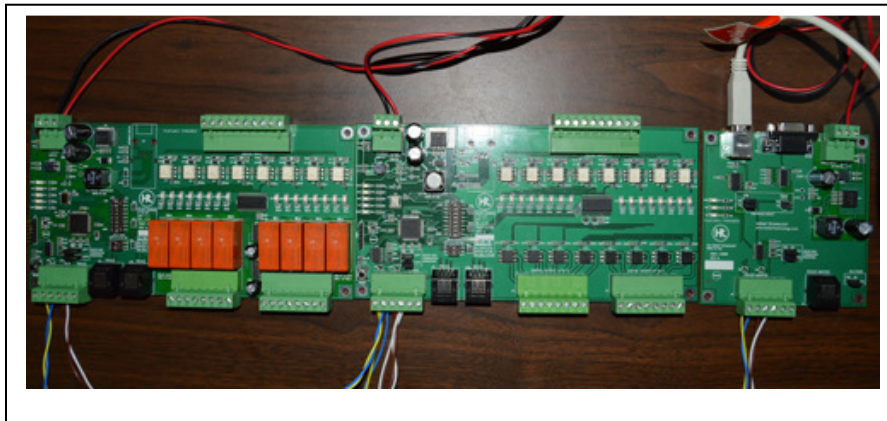
- Specifications

Driver	MAX13448E
Isolation	None
Fault Protection	±80V on the RS485 I/O Ports
ESD Protection	±8KV ESD Protection
Common Mode	-7V to +12V common-mode input voltage range
Data Rate	Max 250Kbps
Hot Swap	Yes
Slew Rate Limiting	Yes
True Fail-Safe	Yes
Bus Transceivers	Up to 256

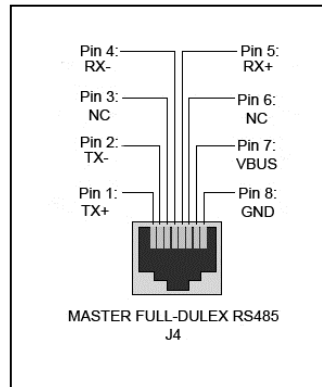
- J5 (6-pole screw terminal block)



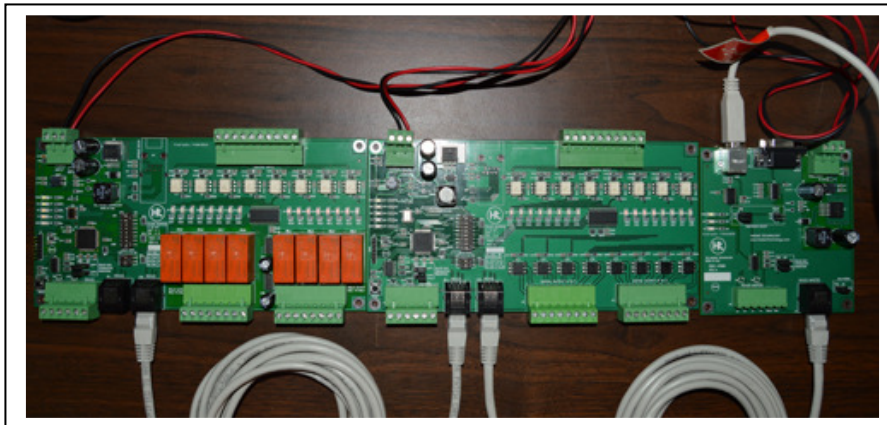
J5 Pin Number	Description
1	Slave Receiver + / Master Transmitter +
2	Slave Receiver - / Master Transmitter -
3	Slave Transmitter - / Master Receiver -
4	Slave Transmitter + / Master Receiver +
5	Optional Bus Voltage (Typical 24V DC). Not required for normal operation.
6	Common Ground



- RS422 J4 (RJ45)



J4 Pin Number	Description
1	Slave Receiver + / Master Transmitter +
2	Slave Receiver - / Master Transmitter -
3	Not Connected
4	Slave Transmitter - / Master Receiver -
5	Slave Transmitter + / Master Receiver +
6	Not Connected
7	Optional Bus Voltage (Typical 24V DC). Not required for normal operation.
8	Common Ground



6. ModBus TCP

- **Specifications**

Module	Lantronix XPort ModBus Bridge
Module Part #	XP1001000M-05R
Isolation	None
Ethernet Speed	10/100Mbit – Auto sensing
Connector	RJ45 with status LEDs
Status LED	Link and Activity
ModBus Protocol	RTU
Interface	RS232
Interface Speed	Fixed at 19.2Kb/sec
Interface Settings	8bit, No Parity , 2 Stop bits

- **Default Settings**

XPORT Setting Name	Setting Value
IP Address	192.168.1.0
Default Gateway	Not Set
Netmask	Not Set
Protocol	RTU, Slave
Serial Interface	19200, 8, N, 2, RS232
RTS/CTS Mode	Fixed
Slave Address	ModBus TCP Header
Broadcast	Disabled
Pipline	Enabled
TCP Exception codes	Disabled
Char, Message Time Out	50msec, 500msec
CP1 Function	Unused
CP2 Function	Unused
CP3 Function	Unused

- **IP Address Setup**

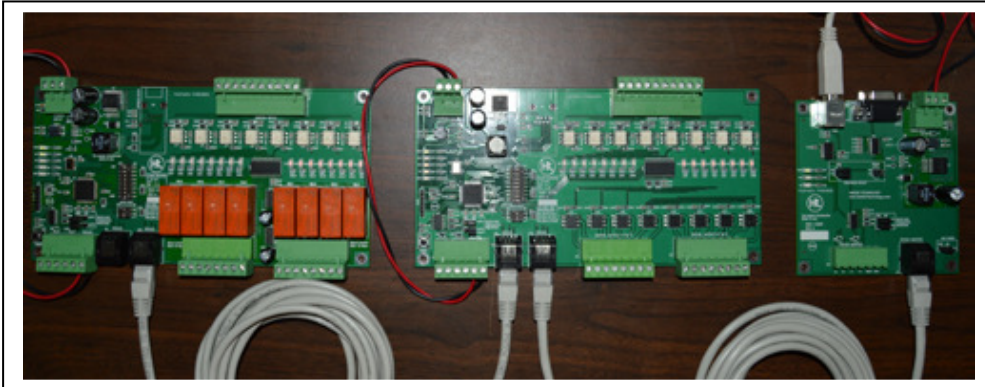
From Lantronix website, download and install Device Installer Configuration Utility. Power RMC-C810 board and connect it to your Ethernet network. Open Device Installer Configuration and wait until your board is detected at the default IP Address. Click on Telnet button to setup the IP address. Please see Lantronix document ModBus_Protocol_UG.pdf (ModBus Protocol User Guide) on how to configure the IP address. You can set the IP address, Gateway, Netmask and keep the other settings at their default values.

- **Serial Communication speed and Slave address**

Each slave connected to the network must be set to 19.2Kb/sec baud rate and must have unique slave address form 1 to 247.

7. Bus Power Jumper (JMP3)

Set JMP3 to PWR position to power the slave modules directly from the RS422 bus.



8. Bus Termination

For normal operation, JMP1 and JMP2 must be in TER position.

9. Manual Change History

Date	Revision	Change
10/3/2015	REV1.00	Initial version of this manual

10. Hardware Limited Warrnty

Haidar Technology, LLC. Warrants its hardware products to be free from manufacturing defects in materials and workmanship under normal use for a period of one (1) year from the date of purchase from H AidAR. This warranty extends to products purchased directly from H AidAR or an authorized H AidAR distributor. Purchasers should inquire of the distributor regarding the nature and extent of the distributor's warranty, if any. H AidAR shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended, or if it has been subjected to misuse, accidental damage, modification, or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced, or removed. This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall H AidAR be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. H AidAR is not liable for any claim made by a third party or made by the purchaser for a third party. H AidAR shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty. Except as expressly set forth in this warranty, H AidAR makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supercedes all previous warranties, and covers only the H AidAR hardware.

11. Returns and Repair Policy

No merchandise may be returned for credit, exchange, or service without prior authorization from. To obtain warranty service, contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number, and return address. Authorized returns must be shipped freight prepaid to H AidAR Technology with the RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. H AidAR reserves the right in its sole and absolute discretion to charge a 15% restocking fee, plus shipping costs, on any products returned with an RMA.

Return freight charges following repair of items under warranty shall be paid by H AidAR, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.