

Sierra Radio Systems

# Ethernet Backpack Board

Reference Manual

Version 2

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- Ethernet backpack board

For more information, go to the Sierra Radio Systems web site at [www.sierraradio.net](http://www.sierraradio.net) or [www.hamstack.com](http://www.hamstack.com)

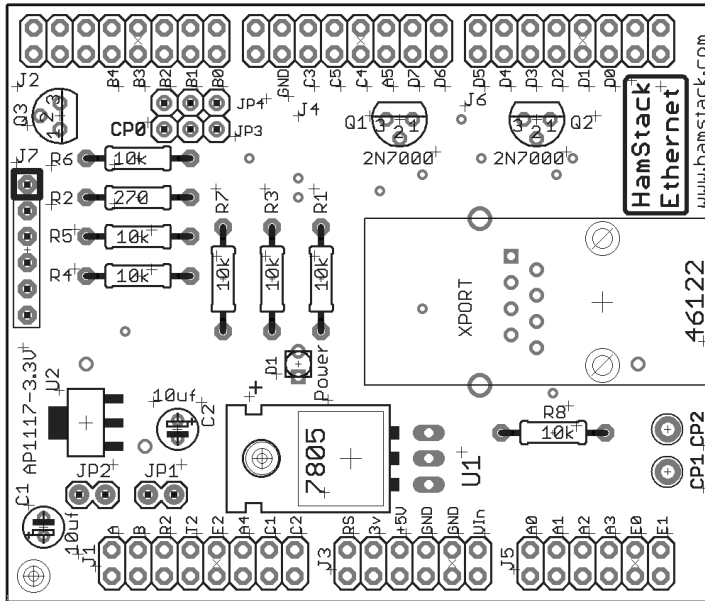
## Assembly

The HamStack and StationStack boards are easy to assemble. There is no particular assembly sequence required. Follow the parts placement diagram and insert the components and solder them in place. If there are special assembly instructions or configuration steps required, they are included in each section.

The HamStack Getting Started guide book provides more detailed suggestions for board assembly. While the instructions are written for the HamStack CPU board in particular, the sequence of assembly and tips to make the whole process go faster and smoother are generally applicable to all boards. Start with IC sockets, then resistors, then capacitors, etc...

The Getting Started guide can be downloaded from the HamStack web site.

# Ethernet Backpack Board



Note  
The pin marked CP1 is actually CP2 and the pin marked CP2 is actually CP3

## Overview

The HamStack ethernet board uses a Lantronix Xport and XPort Pro ethernet to serial modules. The board supports both the Evolution and Linux operating systems.

This board provides a convenient way to connect your HamStack project to the internet. HamStack project boards are often controlled by sending commands from a RS232 serial port to the serial port on the HamStack. Adding this ethernet board and a virtual serial port driver on your PC, you can put your HamStack board anywhere in the world and control it as if it were sitting next to your PC. All you need on the HamStack side is this board. On the PC side, you need to install the virtual com port software. There are several available on the internet. We recommend using the Lantronix Comport Redirector. This is available free from the Lantronix web site.

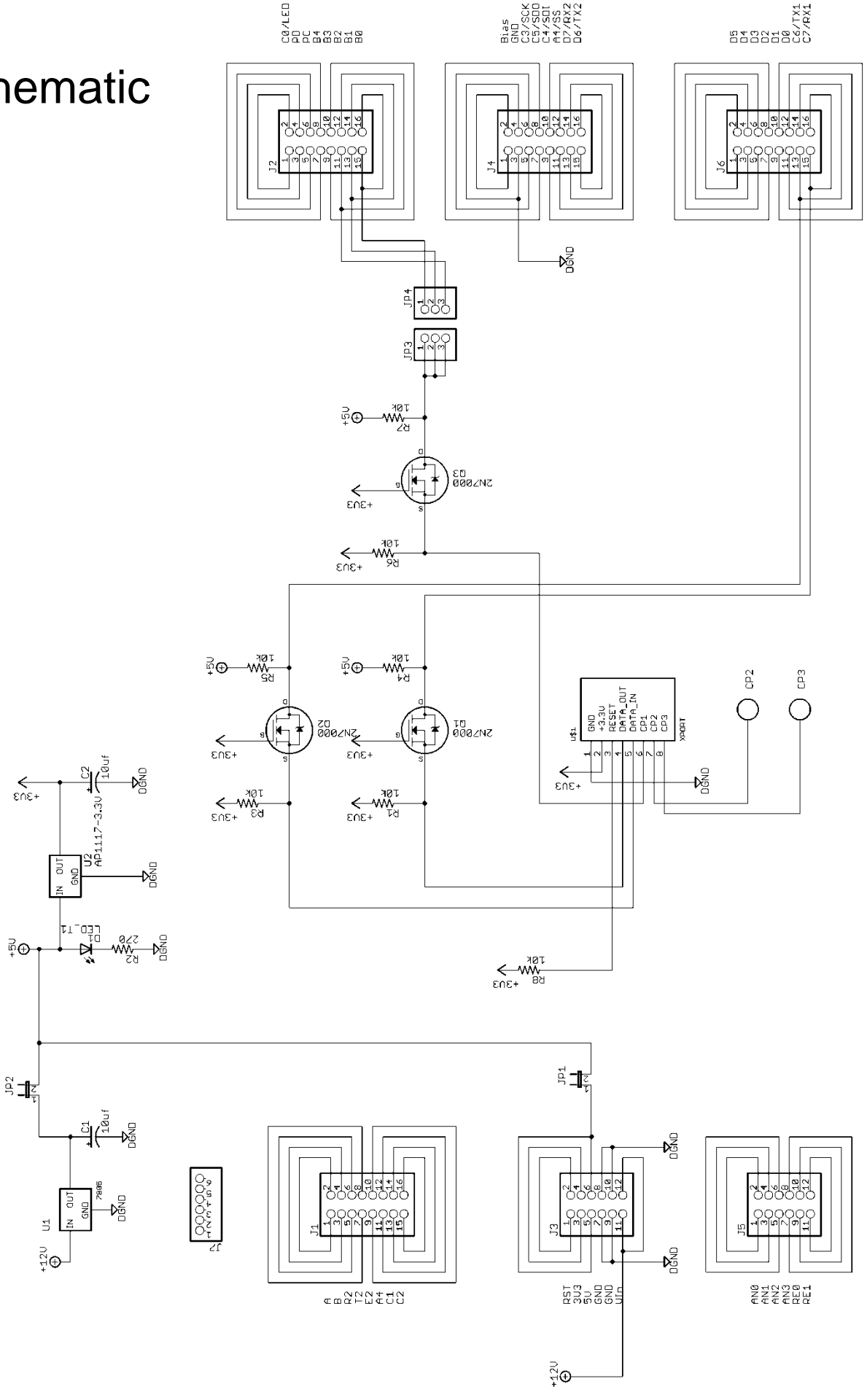
Lantronix Com Port Redirector PC software  
[http://ltxfaq.custhelp.com/app/answers/detail/a\\_id/928](http://ltxfaq.custhelp.com/app/answers/detail/a_id/928)

Lantronix Xport PRO web site  
<http://www.lantronix.com/device-networking/embedded-device-servers/xport-pro.html>

No hardware configuration is required. The jumper block JP2/JP3 is normally left open. If you want to use the Xport CP1 user programmable IO pin, you can jumper it to the HamStack CPU pins PORTB.0, or PORTB.1 or PORTB.2 using JP3/JP4 jumper blocks.

The SRS Ethernet board does not include the Lantronix module. The modules are sold separately. You can purchase them from SRS but you can get them at a lower price from Lantronix distributors such as Mouser Electronics.

# Schematic



# Ethernet Backpack Board

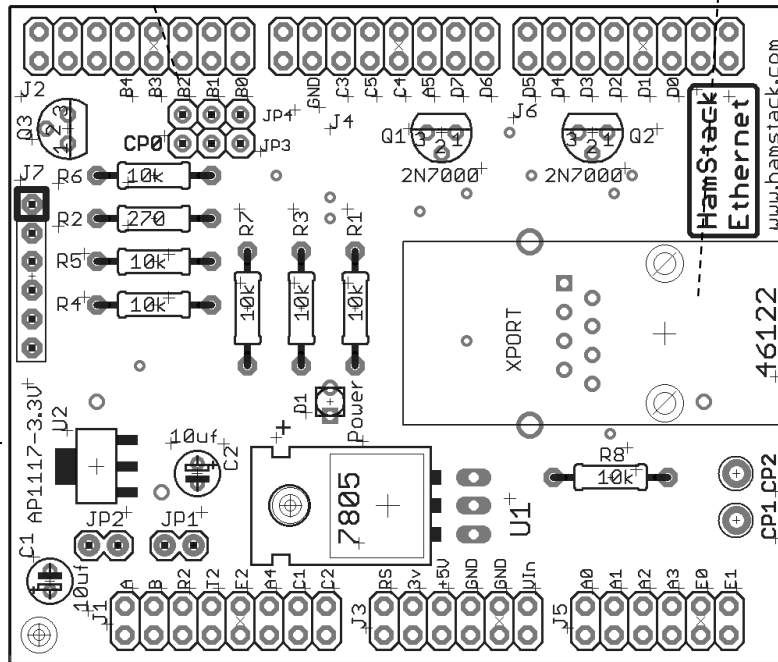
## Parts Placement

Relay selection jumper

Lantronix Xport or Xport PRO  
Ethernet module

Programming  
Jack

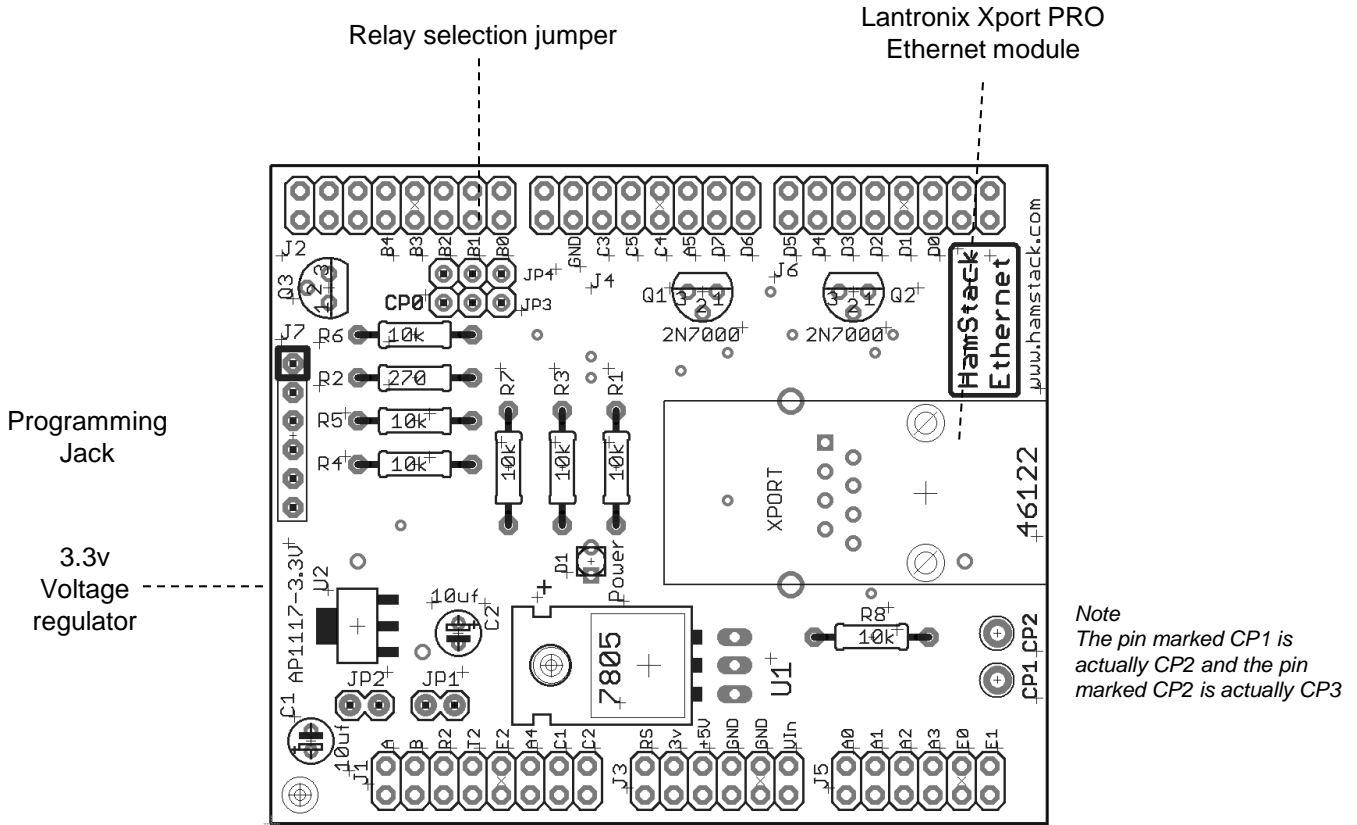
3.3v  
Voltage  
regulator



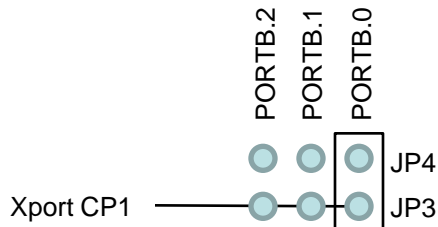
Note  
The pin marked CP1 is  
actually CP2 and the pin  
marked CP2 is actually CP3

- C1, C2 10 UF electrolytic capacitor
- D1 LED
- J1 2x8 Stacking header or male header pointing down
- J2 2x8 Stacking header or male header pointing down
- J3 2x6 Stacking header or male header pointing down
- J4 2x8 Stacking header or male header pointing down
- J5 2x7 Stacking header or male header pointing down
- J6 2x8 Stacking header or male header pointing down
- J7 2x6 Stacking header
- JP1 1x2 male header
- JP2 1x2 male header
- JP3/4 2x3 male header
- Q1, Q2, Q3 2N7000
- R1 10k
- R2 270
- R3 10k
- R4 10k
- R5 10k
- R6 10k
- R7 10k
- R8 10k
- S1 Push button
- U1 7805
- U2 AP1117-3.3v 3.3v voltage regulator
- XP0RT Lantronix Xport ethernet module

# Ethernet Backpack Board Connections



JP3/4 Connects the Xport's pin 6 CP1 user defined IO pin to all three pins in the JP3 row. The three pins in the JP3/4 row are connected to B0, B1, B2.



# Special Notes...

JP1 - Routes +5v from the interboard connector to the electronics on the ethernet board. This would be used if you are plugging it into a board stack that is powered from a project of GPIO board with a big 5v supply.

JP2 - Connects the on-board 5v regulator 7805 from the +12v bus on the interboard connectors to the power the ethernet circuits. This is an alternative to putting in JP1.

Choose either JP1 in or JP2 in but NOT both.

JP3 / JP4 - This jumper block optionally routes the user programmable pin CP1 from the Lantronix module to one of the HamStack CPU IO pins B0, B1 or B2.

Note: there is a mistake on the silkscreen. The pad labeled CP1 is actually CP2, and the pad labeled CP2 is actually CP3.