

Prototyping: Dummy Module

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As mentioned in the previous post, we've completed the construction of a "dummy" THAT module to use for current testing.

The "dummy" THAT module is a real hardware module consisting of the Atmel ATmega168 Microcontroller and Microchip ENC28J60 Ethernet controller IC. The microcontroller is running a modified version of the excellent [TCP/UDP stack](#) provided by Guido Socher and <http://www.tuxgraphics.org/>

Our "dummy" module has all the communication functionality that will be built into THAT modules, but lacks any useful input/output hardware (other than a couple LEDs). In addition, our dummy module is currently not power-over-ethernet (PoE) compatible. However, future module prototypes and all THAT modules will include PoE functionality.

"Dummy" Module Hardware

The basic layout of our dummy module follows the application example from the Microchip ENC28J60 datasheet as well as the schematic of the "AVR microcontroller based Ethernet device" designed and built by <http://www.tuxgraphics.org/> The schematic of the Ethernet device our dummy module is based off of can be seen here: <http://www.tuxgraphics.org/electronics/200606/article06061.shtml> . (For more information, see the tuxgraphics.org PDF here: <http://www.tuxgraphics.org/common/src2/article06061/eth-remote-device.pdf>

Note: All programming of the Atmel AVR microcontroller used in our "dummy" module was done using an Atmel STK500 programming / development board and a computer running Linux and AVR-GCC.

"Dummy" Module Photos

The dummy module we built (on breadboard) is shown in the following photos.



