

Modifying the standard Heath H8-4 Serial Card to use 16550 UART

The Heath H8-4 serial card is designed to use the INS8250 UART. This chip will only work up to about 4 MHz. To use Norberto's H8 Speed Card to run at 2, 4, 8, and 10 MHz, the UARTs need to be changed to a faster chip. The 16550 UART is very close to the same pin out but does differ on a couple of pins.

INS8250		16550	
<u>pin #</u>	<u>description</u>	<u>pin #</u>	<u>description</u>
24	CSout	24	$\overline{\text{TXRDY}}$
29	NC	29	$\overline{\text{RXRDY}}$

The CSout signal is needed but not supplied by the 16550 UART. The signals on pins 24 and 29 of the 16550 are used for FIFO operation which is not implemented on the Heath. Therefore, we have to do some modification to use the faster UART.

On the reverse (foil side) of the H8-4 Serial Board, we need to provide a signal to pin 24 to substitute for the CSout signal that is no longer available from the 16550 UART. This is accomplished by connecting a wire between the interconnected pins 11 and 12 to pin 24 of the UART socket pins (see picture below). Then we need to bend pins 24 and 29 of the 16550 UART out slightly so that they will not enter the socket.

