

Project F157

MININODE

This project was designed to automate house lights that are controlled by more than one wall switch, as in hallway and stair case lights. It was designed so that the original wall switches would continue to operate normally even when the automation controller is out of service.

The chip used in this project was the MC68HC908QT4, but its software is less than 500 bytes.

The Gateway

I have a few custom SBC units left over from an old project. They contain an MC68HC811E2 processor as well as a dual UART chip. That gave me the gateway between the main HCS RS-485 network and the Mini Nodes' RS-485 sub network with an extra serial port for the HC11's Buffalo monitor/debugger.

The HC11 SBC gateway is given a name and number that are supported by the HCS-II protocol, in my case, DIO1 and DIO2. Each HC11 has four Mini Nodes attached to its sub RS-485 network, with each Mini Node having one input and one output, that gives each HC11 eight bits of I/O, just like any other DIO.

In Xpress programs, when using the HC11 and its Mini Nodes, the even bits are the inputs and the odd bits are the outputs. The PLIX on the HCS-II Supervisory Controller listens to the X-10 activities and reports received commands to the Xpress program. All I had to do was pair a Mini Node controlled light with an X-10 module name and I got my X-10 transmitters controlling Mini Node connected lights.

```
DEFINE XHallLight = Module(K6) ! X-10 module

DEFINE IHallLight = Netbit(8) ! Mininode 1, DIO1 input
DEFINE OHallLight = Netbit(9) ! Mininode 1, DIO1 output

.
.

If XHallLight = on          ! Read X-10 status
    OHallLight = on        ! Set Mininode accordingly
Else
    OHallLight = off
End
```

Listing 1

Listing 1 works well when controlling lights with an X-10 transmitter or when I need to randomly light some rooms in the house when we are out. It is also used when lights need to flash as a

result of a break-in. Listing 2 is what I use to copy the status of controlled lights into the X-10 memory area of the HCS-II.

```
If IHallLight = on           ! Read Mininode status
    XHallLight = on         ! Set X-10 status accordingly
Else
    XHallLight = off
End
```

Listing 2





