

CE labs SW204HD Protocol

The protocol for SW204HD uses simple **ascii text** and can be easily operated from Hyper term or other similar terminal program.

To use terminal program:

Attach a **RS232** cable or **USB** cable between the SW204HD and the computer.

Set the switch "port select" on the back of the SW204HD unit to RS232 or USB to match the cable used.

Notes on using USB for first time with SW204HD:

When a USB cable is first plugged in between a Windows XP/Vista computer and the SW204HD, a "Found New Hardware" message could pop up. This indicates that the USB serial driver for the SW204HD needs to be installed. Simply, follow the Windows directions for installing the needed driver.

Once complete, the SW204HD can be used with USB. The USB device will appear as a COM device on the computer.

You may now use HyperTerm or similar terminal program to communicate with SW204HD. The serial settings are 19200,8,N,1. The settings are **same** whether using **USB or RS232**.

From terminal program **Press any key** will get prompt like:

```
"error"  
>
```

At this point you can use commands. Press 'h' key on terminal program to get information about the protocol as copied below:

Serial Port Commands

Commands are simple text followed by a carriage return and line feed. (the line feed may be omitted)

```
o1,i      - set output 1 to input i (i=1,2,3, or 4)  
o2,i      - set output 2 to input i (i=1,2,3, or 4)  
s1        - select next input for output 1  
s2        - select next input for output 2  
p0        - set power off  
p1        - set power on  
pt        - power toggle  
h or H or ? - this help screen  
d         - dump status info in form: o1Ao2BpC  
           A = currently set input (1,2,3,or 4) for output 1  
           B = currently set input (1,2,3,or 4) for output 2  
           C = power setting or learn mode active  
             0 for off, 1 for on, 2 for learn mode  
           ex. o12o23p1  output 1 set to input 2  
                       output 2 set to input 3  
                       power on  
           o11o24p0    output 1 set to input 1  
                       ouptut 2 set to input 4  
                       power is off  
           note: if power is off or learn mode is active  
                 then the outputs settings  
                 are those as last set when power was on  
v         - show version  
e0        - echo mode off, do not send back characters received on  
           serial port
```

e1 - echo mode on, send back each character received on serial port

Serial Communication Details

serial settings: **Baud=19200, Data Bits=8, Parity=None, Stop Bits=1**

command format: | **command** | **CR** | **LF** |
where **CR** = 13(0x0d), **LF** = 10(0x0a)

On receipt of a command, the SW204HD returns command-related data, a carriage return, a line feed, and a prompt character('>').

The SW204HD may also echo back each command character. The communications can operate in "echo on" or "echo off" modes.

With "**echo on**", each character received by the SW204HD is sent (**echoed**) back to sender. The "echo on" mode is generally good when controlling the SW204HD using a terminal program such as HyperTerm.

With "**echo off**", received characters are not sent back. The SW204HD defaults to "echo on" mode when power is applied.

The command responses as shown below assume that echo is off. Otherwise, each command character will be sent back as it is received prior to response

command response:

| **data** | **CR** | **LF** | > |

For most commands, the data field is not used in the response as shown below

| **CR** | **LF** | > |

example, **s1** command

command | **s** | **1** | **CR** | **LF** |
response | **CR** | **LF** | > |

example, **d** command

command | **d** | **CR** | **LF** |
response | **o** | **1** | **n1** | **o** | **2** | **n2** | **p** | **n3** | **CR** | **LF** | > |
where **n1** = selected input for output1 (1,2,3,or 4)
n2 = selected input for output2 (1,2,3,or 4)
n3 = 0 for power off, 1 for power on,
2 for learn mode

Invalid commands return the following.

| **e** | **r** | **r** | **o** | **r** | **CR** | **LF** | > |