

*HAM RADIO*

*DELUXE*

# AUXILIARY SWITCHING

A GUIDE TO USING THE PARALLEL PORT



*Simon Brown, HB9DRV*  
*Programmer-in-Chief*

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Sponsor:



The IC-703s used in this project were supplied by Martin Lynch and Sons of London.

Special thanks are due to Chris Taylor for his friendly and efficient service.

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# INTRODUCTION

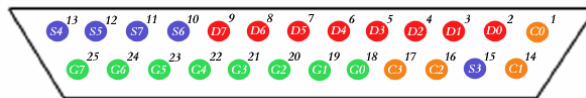
A standard PC comes equipped with an 8-bit parallel port which can be used to switch auxiliary equipment such as antennas, bandpass filters and power amplifiers.

Ham Radio Deluxe supports the parallel port via fully configurable manager and monitor displays.

Typical uses of this option are to switch antennas, either automatically as the frequency changes, or by selecting an option from the Parallel Port pane of the selection window.

# TECHNOLOGY

The parallel port sends 8 bits at a time. The layout of the parallel port pins is shown below.



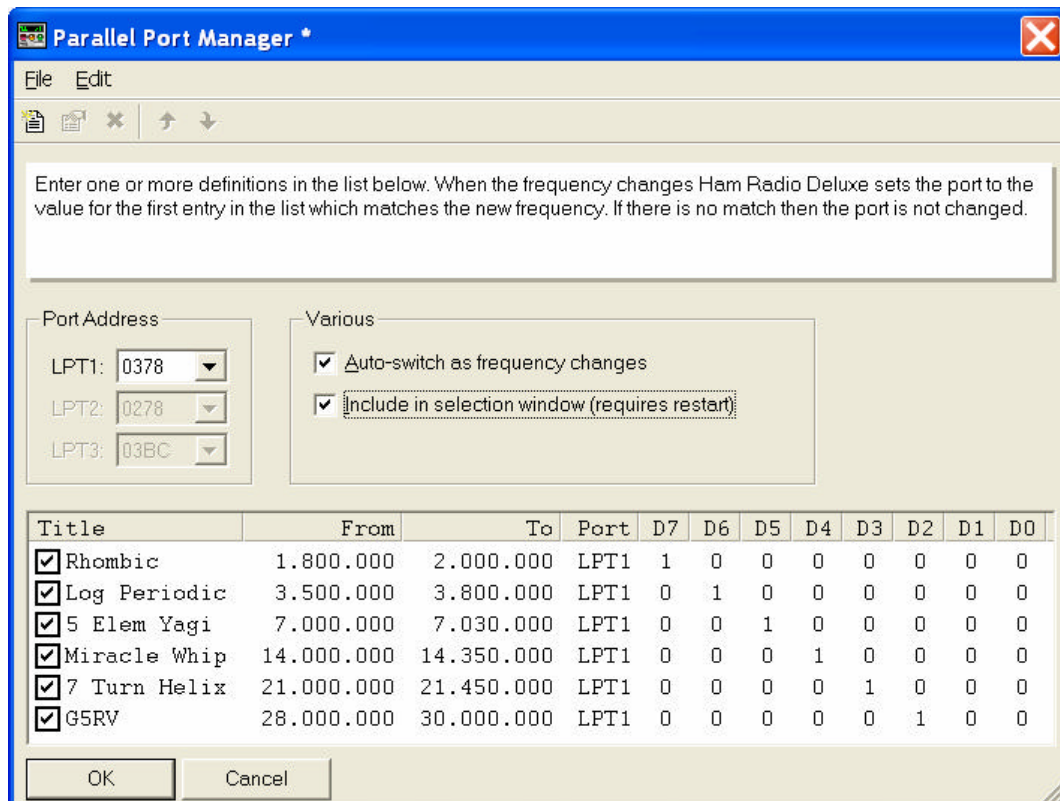
The data pins are shown in red; D0 is pin 2, D7 is pin 9.

To indicate that a bit has a value of 1, a charge of 5 volts is sent through the correct pin. No charge on a pin indicates a value of 0. This is a simple but highly effective way to transmit digital information over an analog cable in real-time.



# MANAGER

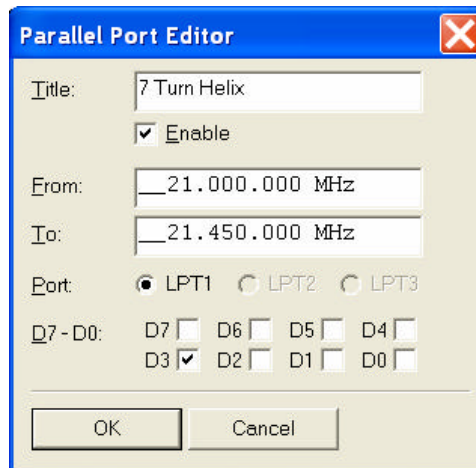
The manager window is invoked from the **Tools** **Parallel Port** menu.



## DEFINITIONS

Each definition consists of:

- Enabled selection – if *not* checked then the definition is ignored when Ham Radio Deluxe detects a new frequency. The definition is still shown in the selection window if this option is enabled.
- Title – a description of the antenna or component that will be switched when the entry is selected.
- From – the lower end of the frequency range.
- To – the upper end of the frequency range.
- Port – the LPT port to be switched by the definition.
- D0-D7 – the parallel port data bit settings, each bit is either 1 (on) or 0 (off). D0 is pin 2, D7 is pin 9.

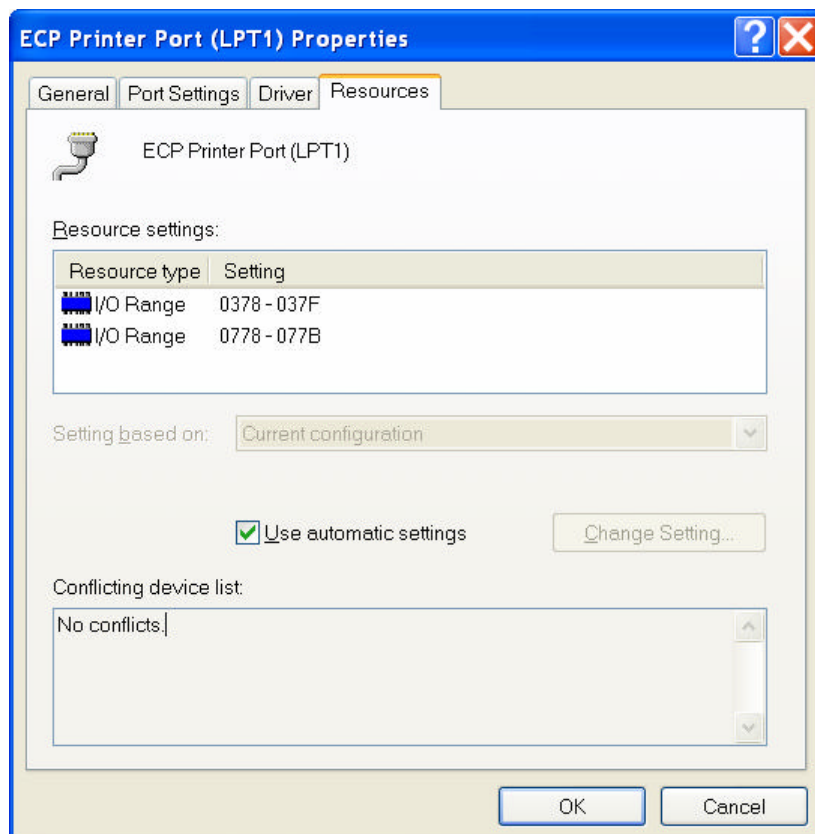


## PORT ADDRESS

The default port addresses for LPT1, LPT2 and LPT3 are 0378, 0278 and 03BC respectively. If your computer has a different configuration just select the address that corresponds to the port.

You will find the port address via the Device Manager settings display located in the System control panel applet.

In the Windows XP example below the base address is 0378.





## VARIOUS

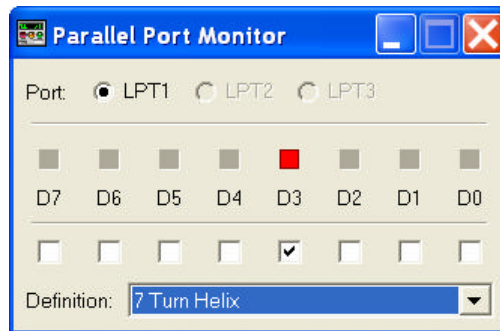
The options are:

- Auto-switch: as the frequency displayed by Ham Radio Deluxe changes a lookup is made against the parallel port definitions and the parallel port switched to the configuration for the first definition in the list which matches the new frequency.
- Selection window: displays a Parallel Port pane in the main Ham Radio Deluxe selection window.



# MONITOR

The monitor window is started from the **Tools** **Parallel Port** menu. The monitor shows the current state of the data pins for a selected parallel port, allows you to select a definition and also toggle the data pins directly.

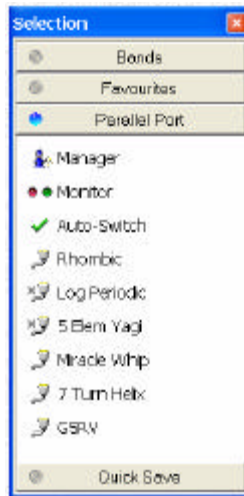


The *Definition* field shows the definition that matches the current pin selection (if any).





## SELECTION WINDOW

To display the selection window select the selection window option in the Parallel Port Manager.



The options are:

- Manager – starts the Parallel Port Manager.
- Monitor – starts the Parallel Port Monitor.
- Auto-switch – if enabled (tick) then a match is made with the first enabled definition when the frequency changes. If not enabled (cross) then a match is not made.
- Definitions – click on a definition to apply the definition to the port.

The icon  indicates a definition that has been enabled:  a definition that has been disabled. Disabled definitions can be selected in this window: they are only ignored when matching a new frequency against the list of definitions.





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**SIMON BROWN  
HB9DRV**

Postfach 159  
7031 Laax  
Switzerland

[simon@hb9drv.ch](mailto:simon@hb9drv.ch)  
[www.hb9drv.ch](http://www.hb9drv.ch)