

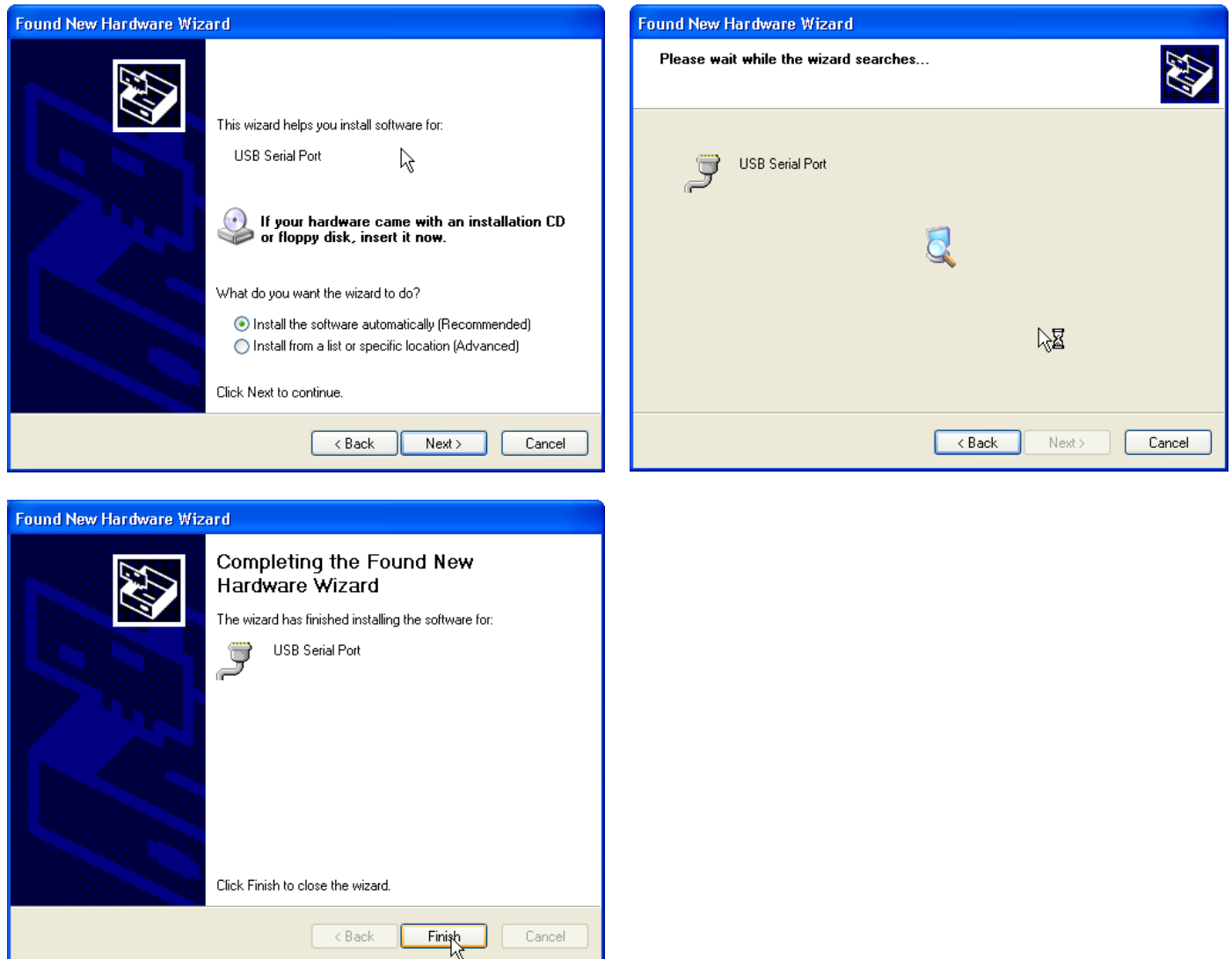
USB Serial Interface

The clock is also equipped with a USB Serial hardware interface. The clock can be programmed and firmware updated via this interface.

Setting up the USB Interface on a PC

The following describes the basic procedure on a PC running Windows XP with an Internet connection.

When you connect the clock to the PC, the interface should auto-detect and try to find a driver. You will be asked if you wish to search for the driver automatically. Check this box and click next. The system should search for the driver and install it. You should then see a pop-up from your taskbar tray that says the hardware is ready to use.



If this procedure fails, the device driver may be downloaded from ftdichip.com. See next paragraph for further information.

Setting up the USB Interface on other Operating Systems

The USB Serial chip used is the FT232R from ftdichip.com. You can visit their site to download drivers for other operating systems. The VCP version of the driver is recommended.

Connecting to the clock using terminal emulator software

Once the USB Serial driver is installed, any terminal emulator program can be used to communicate with the clock.

On a PC, You need to open Control Panel->System->Hardware->Device Manager. Under Ports (COM & LPT), you should see a new entry "USB Serial Port (COMx)" where x is the port number. Take note of this number. You may then use either the Hyperterminal application or a third party terminal emulator to access the clock's command line interpreter (CLI). Set to the Application to the following:

COM Port Number	The one found in the step above
Bit Rate	57600
Data Bits	8
Parity	None
Flow Control	None

Serial Command Interface

Once connected, to the clock via the terminal emulation software, the clock should initialize. On the serial interface the following message should appear:

```
: Cogwheel Nixie System  
: Ver:x.x, Build:xxxx, dd-mm-yyyy hh:mm:ss  
: (C)2010 Cogwheel, Inc.
```

Command Set

Commands consist of a 3 character name followed by a space, followed by one or more arguments, followed by a carriage return. If the command name is entered without arguments followed by a carriage return, the current status of that command will be reported.

Most commands set configuration parameters and are the same as their corresponding configuration parameters accessible via the buttons.

COM-MAND	ARGUMENT(S)	DESCRIPTION	EXAMPLE
ala	[0..23]:[0..59]	Set Alarm.	To disable: "ala 00:00". Set for 7:30 "ala 07:30"
bla	[0..1]	Blank Display.	Off: "bla 1", On: "bla 0"
bri	[0..15]	Brightness.	Dim: "bri 4" Bright: "bri 15"

cfa	[0..1]	Cross-fade enable/disable	Disable: "cfa 0", enable: "cfa 1"
chi	[0..3]	Chime 0:off 1:hourly 2:2x/hr 3:4x/hr	Chime once hourly: "chi 1"
dcy	[0..4]	Display Cycle 0:off 1:60s 2:20s 3:30s 4:10s	Cycle once per minute: "dcy 1"
dor	[0..1]	Display Order Date; 0 - 'mm dd yyyy', 1 - 'yyyy mm dd'	Order mm dd yy: "dor 0"
dow	[1..7]	Day of Week 1=Sunday	Wednesday "dow 4"
dse	[0..1]	Daylight Savings Time Enable	Enable: "dse 1"
dst	[...]	Daylight Savings Time Set.Takes 6 parameters: start week number, start day of week, start month, end week, end day of week, end month.	Set DST to USA rules: (Starts second Sunday in March, Ends First Sunday in November: "dst 2 1 3 1 1 11"
hel	[c,b]	Help on c)ommands or b)uttons	Display help with buttons: "hel b"
oft	[0..23]	Off Time. Disabled if on time and off time are the same	Turn display off at midnight: "oft 0"
ont	[0..23]	On Time. Disabled if on time and off time are the same	Turn display on at 5 am: "ont 5"
rep		Report all option states	"rep"
tfx	[0..4]	Transition Effects:0:None 1:Blink 2:Fade 3:Wipe-off 4:Wipe-slot	Set for wipe slot: "tfx 4"
tim	hh:mm:ss.t [a,p]	Set Time. For 12h end w/ a or p for am or pm.	Set time to 23:50: "tim 23:50"
ver		Show Version	
wis	[0..4]	Wipe Style : 0:Right>Left 1:Left>Right 2:Toggle-dir 3:Random. Note tfx must be set to a wipe type for wipe style to have any effect.	Set wipe style to
wir	[1..8]	Wipe Rate : 1:Fastest 8:Slowest. Note tfx must be set to a wipe type for wipe style to have any effect.	
ymd	yyyy/mm/dd	Set year, month, day	