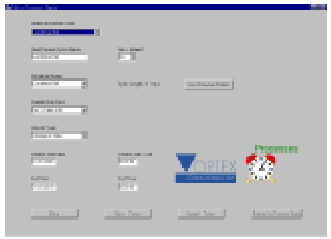
SchedulePak UNIVERSAL PROGRAMMABLE TIMER

Create an *Event*

An *Event* may have both On- and Off-times or On-times only for triggering a fixed length "Pulse" output.

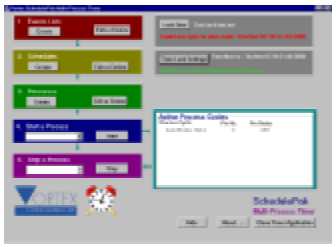
Create a *Schedule*

A *Schedule* combines a group of events which will then be repeated either daily (including for 1 day only), weekly or monthly.



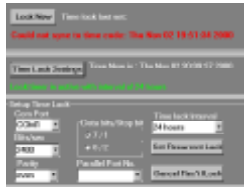
Create a *Process*

A *Process* allocates a Schedule to an output Pin on the SchedulePak POD (connected to the parallel port of the PC). An output may have a pro-grammed On-time and programmed Off-time, or to switch on for a duration programmable in 1/10 seconds ("Pulse"). A *Process* can be scheduled only to run between two dates / times.



Run a *Process*

Up to 8 Processes may be run at the same time which can be started and stopped manually, or programmed to start automatically at re-boot.



PC Timing

ClockLok automatically locks the PC's clock to the serial data from the Vortex 482 and 4850 Master Clocks. Indication is given when ClockLok fails.

Ordering Information

SchedulePak-1 provides 1x relay contact closure. (incl with 4850 & /Serial)
SchedulePak-8 provides 2x relay contact closure and 6x logic O/Ps

The information contained in this manual is intended as a guide to the operation of the equipment described. This information may be general, and may describe functions not available in the equipment which the manual accompanies. Every effort has been made to present the information accurately and in a clear manner. No responsibility is accepted for inaccuracies or omissions in the description of a product. Any feedback on the content of this manual is welcome.

VORTEX
Communications Ltd

WWW.VTX.CO.UK

VORTEX
Communications Ltd

SchedulePak Universal Programmable Timer Package

Operations Manual
Revision 1.1
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Vortex Communications Ltd, 75 The Grove, Ealing, London W5 5LL
Telephone: (+44) 020 - 8579 2743
Fax: (+44) 020 - 8840 0018
E-mail: info@vtx.co.uk
Web: www.vtx.co.uk

OVERVIEW

SchedulePak Universal Timer runs on a PC and provides relay contact closures and logic level changes at times which may be freely programmed up to many years ahead. The package consists of a Windows™ Software Module with graphical user interface (GUI) through which all data is entered, plus an Output Module which plugs into the parallel port of the PC to provide the relay contact closures and logic level outputs. **As part of the package, ClockLok software is provided** to slave the PC's internal clock to the serial output of Vortex 482 and 4850 Master Time Reference Clock Systems. **The following example describes the operation.** An *Event* may be to ring an alarm bell which may need to ring at different times on different days. Different *Events* are created for each day which could be called Bell Monday, Bell Tuesday, Bell Wednesday and so on. Each *Event's* schedule may have any number of On-times and an Off-times which may be edited. **A number of *Events*** may then be combined to form a *Schedule* which may be repeated every day, every week or every month. Taking our example, the "Alarm Bell Weekly *Schedule*" may consist of 7 *Events* which would be "Bell Monday", "Bell Tuesday" and so on. **A *Schedule* is then assigned** to a relay or logic output to activate the *Process* - in this case to "Ring the Bell". This may be programmed to run only between certain dates and times - for example only ringing the bell during term time and not during the holidays starting next term.

Two versions are available. Please check which version you have.

SchedulePak-1 One relay contact closure between pins 2 / 14

SchedulePak-8 Two relay contact closures between pins 2 / 14 and 3 / 15
Six further Logic outputs* Pins 4,5,6,7,8,9.

* WARNING - BE VERY CAREFUL - THESE ARE THE PC's PARALLEL PORT PINS AND CARE SHOULD BE TAKEN NOT TO BLOW UP THE PORT BY OVERLOADING OR MISCONNECTION

Read-me file for Vortex Multi-Process Timer

1. Product information

Name: Vortex Multi-Process Timer Version: 1.0 released 31 July, 2000
Product Owner: Vortex Communications Ltd , London, UK
Copyright Owner: Vortex Communications Ltd
Warranty: This product has no Warranty

2. Product Summary

A Single Output set of timer software is provided free of charge to purchasers of Vortex 4850 and 482/serial master clocks. It provides independent software timers to help users to control up to eight concurrent timed processes. The full version is available for purchase, providing 2 relay contact cosure outputs and 6 additional logic level outputs.

For each process, the output from its associated software timer is the voltage level on a specific pin on the parallel port of a Win 95 and above PC. The output can be either a pulse (of user defined duration) or a change of state (to or from ON/OFF). Optionally, the user can recurrently reset the system clock from time code data from a Vortex Master Clock connected to one the PC's serial ports.

3. Installation

The Vortex Multi-Process Timer requires a PC running Windows 95 and above and at least 720 KB of free disk space.

To install the Timer software:

- Insert the Vortex diskette into the a: drive
- Click Start then Run
- Type a:\setup.exe and click on OK
- Follow the instructions on the screen

The installation process will automatically add a folder to the Windows Start Menu.

The user may also wish to add the timer program to the Windows Start Up Folder so that the Timer software will be automatically loaded every time Windows is started. To do so, follow the instructions contained in the Windows Help file under 'starting programs at start up'.

4. Using the Multi-Process Timer

Selecting the Parallel Port

On PCs with more than one parallel port it will be necessary for the user the select the port to be used for Timer output. This selection need only be performed once when the Timer is first used. To select the port:

- Click on the Time Lock Settings button on the Timer's main form
- Select the port (LPT1 , LPT2 etc) from the drop down list labelled 'Parallel Port No.'

Starting the Timer Package

When the Timer is first invoked during a Windows session, the main Timer control window will be shown. In addition a small icon will be placed on the task bar in the bottom rhs of the screen. The main Timer window can be hidden by clicking on its Hide button. The Timer will continue to operate as a background task and the Timer's main window can be re-invoked by clicking with the rh mouse button on the task bar icon.

Setting up a timed Process

Before a timed process can be run, the user will need to perform three activities.

a) Set up one or more Daily Events lists.

A daily events list is the set of ON & OFF times that the user wants to apply to a single day in a timed process.

To set up a Daily Event:

- click on the 'Create a New Daily Events List' button on the Timer's main form.
- enter up 96 separate ON & OFF times (format hh:mm:ss)
- give the Daily Events List a name
- <Save> or <Save & Return>

The ON & OFF times need not be entered in any particular order or position. A Daily Events List can contain no times (ie be NULL), but must be named.

b) Set up a Schedule of Daily Events

A Schedule is sequential combination of Daily Events Lists. A Schedule's cycle can be one, seven or thirty one days in length.

To set up a Schedule:

- click on the 'Build a New Schedule' button on the Timer's main form
- Select the desired cycle length for the Schedule by checking the appropriate radio button
- Select a named Daily Events List for each day in the schedule from the drop-down edit boxes
- give the Schedule a name
- <Save> or <Save & Return>

c) Define a Process Cycle

A Process Cycle is a definition of how the user wants to tailor a Schedule to meet specific needs. A Schedule can be the basis for several different Process Cycles.

To define a process cycle:

- Click on the 'Define a New Process Cycle' button on the Timer's main form
- Define whether or not this cycle is to be automatically initiated, by selecting 'yes' or 'no' in the Auto Initiate? drop down box. An auto-initiated cycle will be started automatically every time the Timer is started. Non-auto initiated cycles must be started manually from the main form
- Select a pre-defined Schedule to be the basis for this cycle, from the drop down list of named schedules.
- Select the number of the parallel port pin to which the output from this Process Cycle will be directed
- Select an Interval Type for this cycle. If <Pulse> is selected you will be asked to select the Pulse Duration (in increments of 0.1 secs) for which the output pin will be raised to 'high'. With Pulse intervals the 'OFF' times in the component Daily Events Lists are ignored. If <Change of State> is selected the parallel pin will be raised to 'high' when an ON time is reached, and will remain high until an OFF time is reached.
- Reset if desired, the default Start/End Times/Dates which represent the time window in which a Process Cycle is allowed to be active.
- Give the Process Cycle a name.
- <Save> or <Save & Return>

5. Using the Time Lock function

The SchedulePak uses the PC's system clock to provide timer functionality. The PC's clock can drift, especially over long timer periods and its accuracy can be improved by resetting it occasionally or regularly using more accurate time code data from an external time code generator. The SchedulePak Timer can collect time code data from a Vortex 482 Master Clock equipped with the serial output option configured to the correct time data format (serial data format 0 / option 4=0) or from a Vortex 4850 set to provide serial code format 01, connected to a serial port to update the PC's system clock.

To set up and operate the Timer's Time Lock function:

- Click on the Time Lock Settings button on the Timer's main form to show the Setup Time Lock box. Ddefine the Com Port settings for the link to the Master Clock (ie Com Port number, bits/sec, parity, data/stop bits)
- Set the desired frequency of time re-locking by selecting one of the three intervals and then click the <Set Recurrent Lock> button . The software will immediately attempt to lock onto the serial port time code data and if successful, will update the system clock. Locking will be attempted subsequently at the chosen intervals. The results of each locking attempt are shown in labels situated just above the Setup Time Lock box. Recurrent Locking to the external time code can be cancelled by clicking on the <Cancel Rec't Lock> button. One-off, non recurrent locking can be performed by clicking the <Lock Now> button on the Timer's main form.