



Chrono Podule

Description

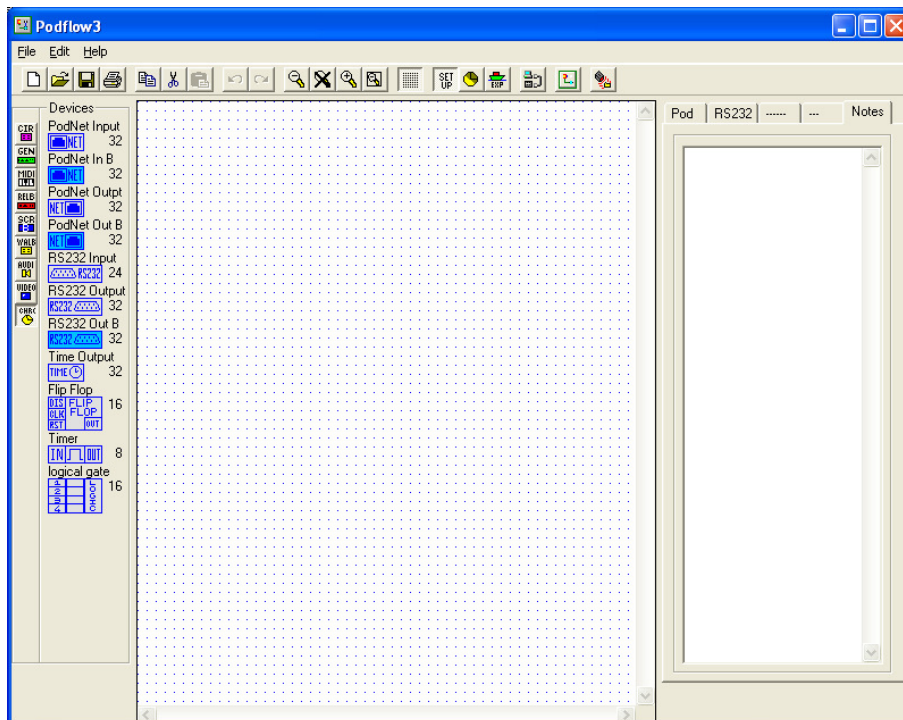
The Podule system evolved because of the need to control audio/video installations. Many of these installations required simple add on facilities such as switch detector, serial command generators, blind and screen controllers. Each of these required IKON AVS to design and produce a one off interface. To avoid this wasted effort the Podule range of interface units was born. Each Podule contains a collection of inputs and output, which can be configured by a user to implement various control functions.

The Chrono Pod is designed with a dual role of bridging between PodNet and RS232 as well as for scheduling events on both ports using the internal real time clock with automatic daylight saving.

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PodFlow 3 Software

Main PodFlow screen with Chrono Pod selected.



Refer to the PodFlow programmer's reference manual for full PodFlow 3 programming information.

Daylight Savings Time



Chrono pod will automatically compensate for daylight savings time, the settings are accessible by clicking the icon on the main toolbar. This will display the daylight savings editor.

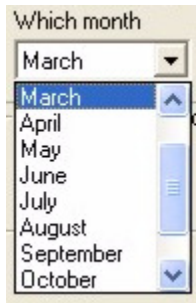
Change to daylight saving time on				
Which month	Which week	Which day	On/After this date	At this time
March	Last	Sunday	1	1 AM

Change to standard time at				
Which month	Which week	Which day	On/After this date	At this time
October	Last	Sunday	1	2 AM

The first time you start the editor it will default to European settings. The settings are stored in the pod file. If the settings are altered they will be used as the default settings for any new Chrono pod configurations.

The “Daylight savings” frame sets when the clocks go forward by 1 hour and the “standard time” frame sets when then clocks back 1 hour. The settings are

Which month



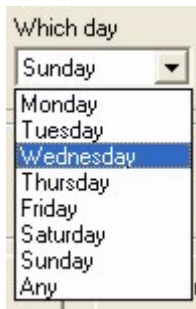
Clicking on which month will drop down the months list click on the desired month.

Which week



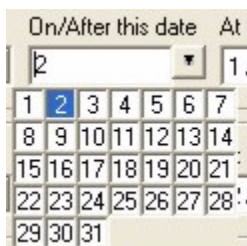
This sets which week the change is to occur. In Europe daylight saving occurs on the last Sunday of March. Other areas use first, second, etc.

Which day



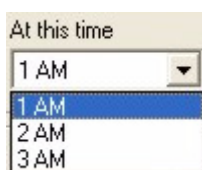
This sets which day the change is to occur. For areas that use a specific date to change time set this entry to “Any”.

On/after this date



For the majority of areas this should be left at the 1st. In areas that use specific dates set the “which day” to “Any” and enter the date here. Other areas use a specific day after a defined date.

At this time



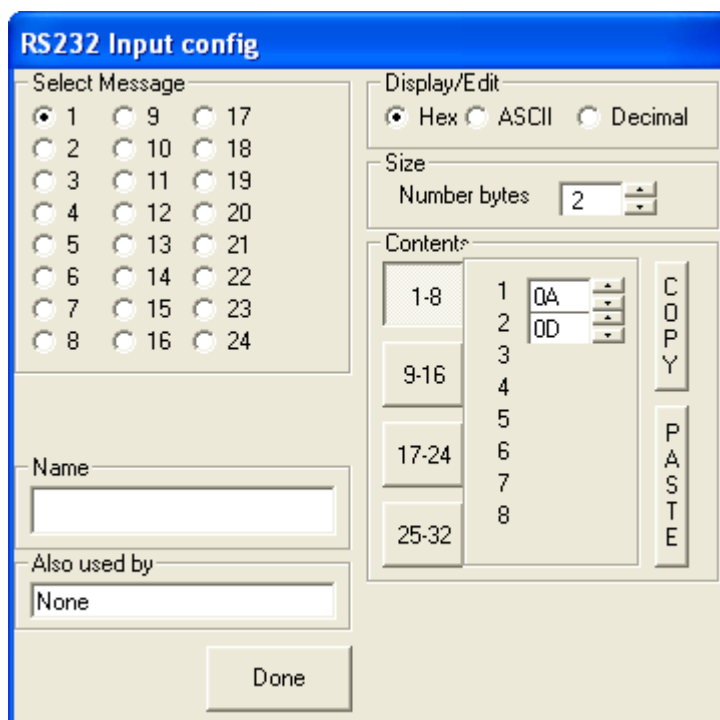
Sets the time at which the change occurs.

Device Reference

RS232 Input



Number of devices per POD:-	24 (up to 32 bytes each)
Input Trigger Level:-	RS232
Output Type:-	Edge triggered 0 to 1
Connections per input:-	1
Connections per output:-	>1



When the RS232 input Device symbol is double clicked it displays a 'Select Message' window allowing the assignment of the message it is to respond to.

When a message is selected a side window opens, this is a repeat of the RS232 Tab and allows the setting up, or verification of the message length and content. A warning is also given if the message is already assigned within the Podule.

RS232 Output



Number of devices per POD:- 64 (up to 32 bytes each)
Input Trigger Level:- Edge 0 to 1
Output Type:- RS232
Connections per input:- >1
Connections per output:- 1

The RS232 output is configured under one of two RS232 tabs each containing 32 messages. Each required message output will need a new RS232 Output device and these require configuring as to which message they are to transmit. The device supports multiple inputs.

Message	Character
1	s
2	t
3	a
4	r
5	t
6	
7	
8	

Double click on the RS232 Output Device to access the configuration screen.

Configuration is as per the inputs with the message transmitted when active. The On Level window configures transmission on a Low to High transition (1) or Hi to Low transition (0).

Multiple inputs can be connected to the device as it responds only to a level change and not a fixed level.

The above example has been set to transmit message 5 which is an ASCII code s,t,a,r,t, when the RS232 output receives a Logic Level 1 on its input.

PodNet Signals

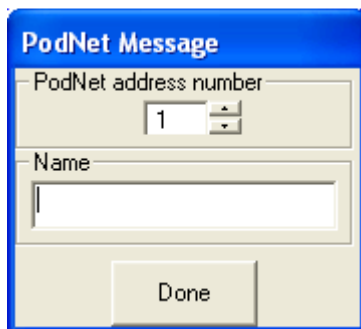
The PodNet currently supports up to 255 simultaneous messages with these a combination of Digital and Analog. The Chrono Podule only supports Digital PodNet messages. You should only have a single Podule originating the message but all Podules can receive it. On any Podule, if the status of a message is changed the Podule transmits this change immediately, or if the network is busy in the next available time slot, this is generally within 5mS.

All Podules automatically retransmit their locally originated PodNet messages at an interval of approximately 35 seconds to ensure complete synchronisation between units.

PodNet input



Number of devices per POD:-	64, as two groups of 32
Input Trigger Level:-	PodNet Data
Output Type:-	Digital
Connections per input:-	1 (PodNet data)
Connections per output:-	>1



PodNet Message

Enter the message number to be used either by typing in the message number or using the buttons.

For convenience you can give the PodNet input a suitable name.

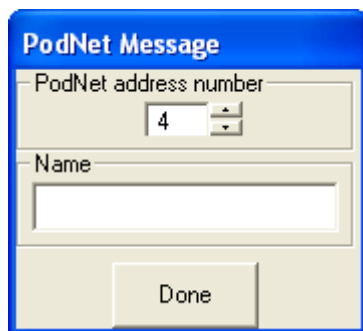
PodNet Output



Number of devices per POD -
Input Trigger:-
Output Type:-
Connections per input:-
Connections per output:-

64, as two groups of 32
Digital
Digital
1
1 (PodNet OUT)

PodNet Message



Enter the message number to be used either by typing in the message number or using the buttons.

For convenience you can give the PodNet input a suitable name.

Podules will not 'see' on their input a transmitted message that uses the same message number as a PodNet output used on the same Podule. This is to eliminate the possibility of creating an infinite feedback loop.

Note; PodNet outputs can take up to 30 seconds to settle after switch on.

Flip Flop



Number of devices per POD:-

16

Input Trigger Level:-

DIS = Level

CLK & RST = Edge 0 to 1

Output Type:-

Digital

Connections per input:-

>1

Connections per output:-

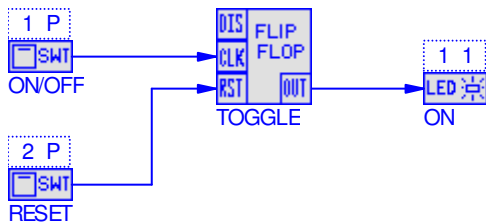
>1

Whilst similar to a normal 'D' type in many respects the Podule version has a number of specialised attributes.

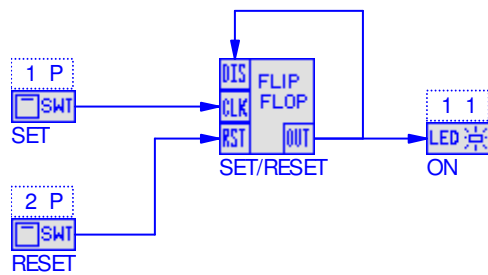
CLK The clock input, it will ignore static states and is only triggered by a Lo to Hi transition allowing multiple sources to be linked to it. On each transition the output will change state. This is unless DIS is tied to a Hi signal – see below.

RST The reset pin triggered by a Lo to Hi transition allowing multiple sources to be linked to it. When triggered it will force the output Lo.

DIS When High this disables the CLK input. This input is both transition and level sensitive and if connected to the Flip-Flop's output will change the operation to a Set and Reset type using CLK as set and RST as reset.



Flip-Flop connected for toggle action with reset.

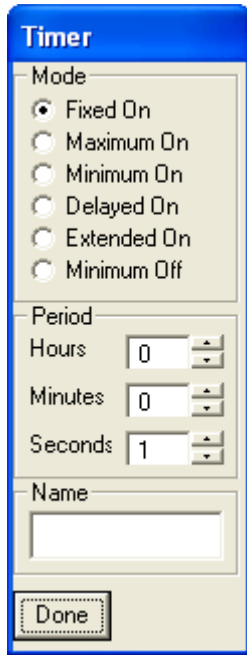


Flip-Flop connected for Set - Reset operation.

Timer Device



Number of devices per POD:-	8
Input Trigger Level:-	Edge 0 to 1 or 1 to 0 (see below)
Output Type:-	Digital
Connections per input:-	1
Connections per output:-	>1



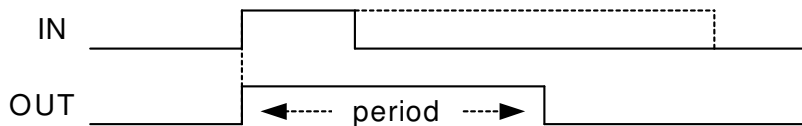
The device will only accept a single input for triggering and can be used in multiple timing modes. The time period can be set from 1 second to 18 hours.

The time period set along with the type of timer selected is displayed above the device.

Any name is shown below the device.

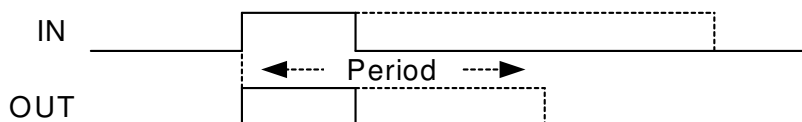
Fixed On

The output will follow the input state. It will remain High for the on timer period, independent of any other input changes.



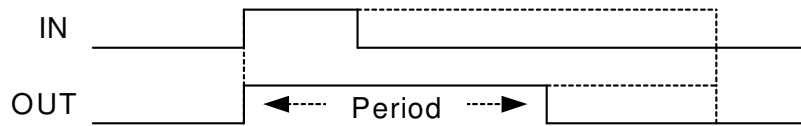
Maximum on

The output will follow the input state up to a maximum time set by the on timer.



Minimum On

On for a set time even if the trigger is removed. The output remains high whilst the input remains high, even if the time period has expired.



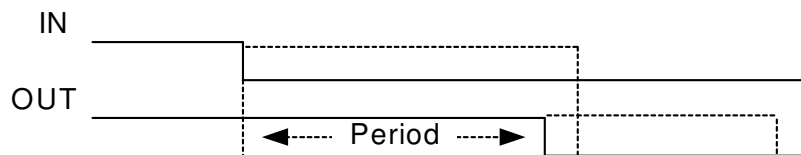
Delayed On

Output remains low for the set period after a Lo to Hi transition and then goes high whilst the input remains Hi.



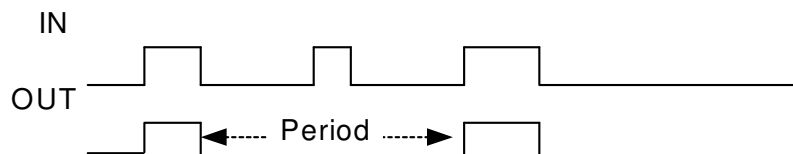
Extended On

Output remains High for the set period after a Hi to low trigger.



Min Off

Output will remain low for the set period, even if the input is re-triggered.



Period

Adjustable time in Seconds, Minutes or Hours


1 to 59 Seconds

1 to 59 Minutes

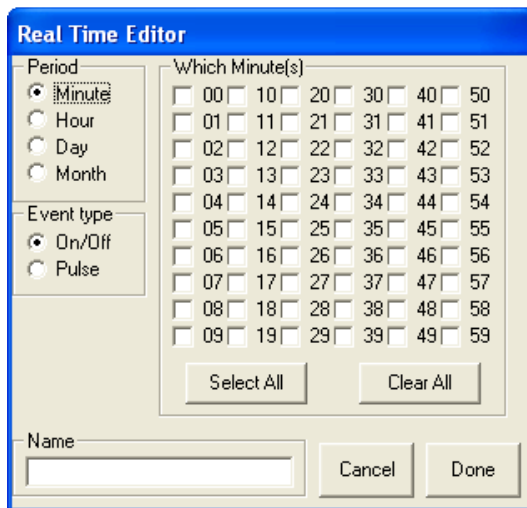
1 to 17 Hours

If no time is set it defaults to 1 second.

Time Output

On hours
H01 S00 E00
TIME 

Number of devices per POD:- 32
Output Type:- Digital
Connections per output:- >1

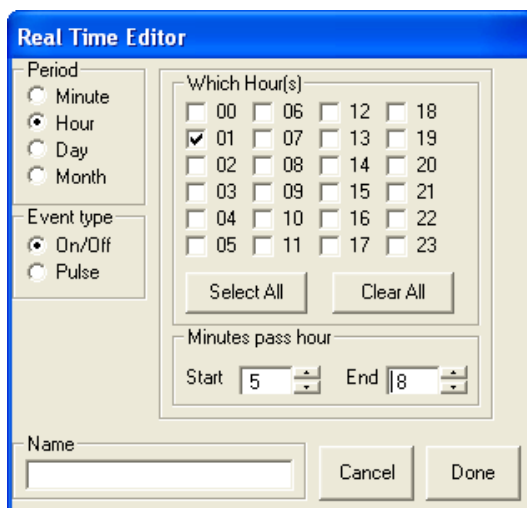


The Real Time Editor is used to set when a timed event is to occur.

In the 'Minute' screen you can select which minute or minutes of the hour you want an event to occur. If the event type is set for On/Off then the devices output will go Hi at the start of any selected minute and low again at the end of the selected minute. If consecutive minutes are selected the device output will go high at the start of the first minute and low at the end of the last.

When the Event Type is set for Pulse a 50mS pulse occurs on the device output at the start of any selected minute.

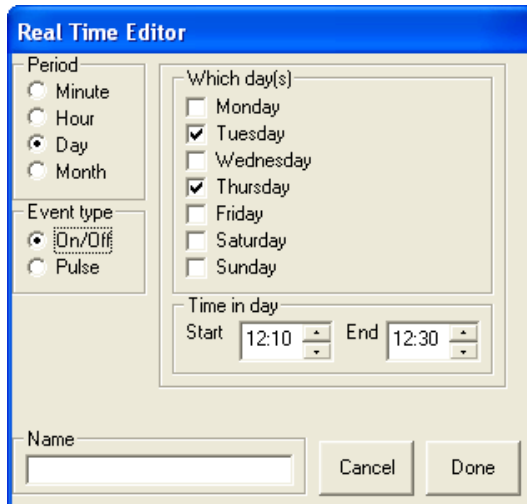
Any name entered is shown below the device.



In the 'Hour' screen you can select which hour of the day you want an event to occur and then use the 'Minutes past hour' to offset this time. In the example shown the event output occurs at 5 minutes past 1 AM each day.

If the event type is set for On/Off then the devices output will go Hi at the Start time and low again at the End time. In the example shown the output goes high at 1.05AM and low at 1.08AM.

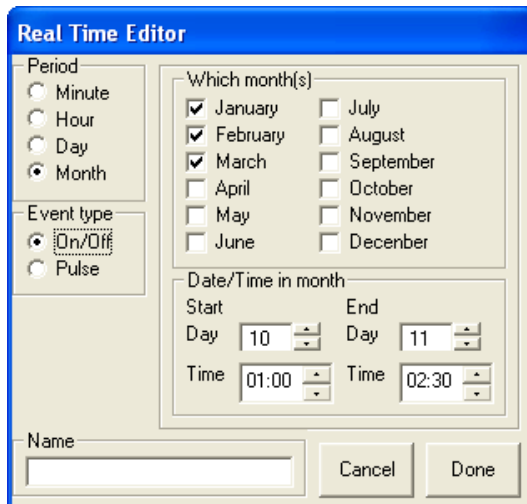
When the Event Type is set for Pulse only the Start time is shown and a 50mS pulse occurs at the set time.



In the 'Day' screen you can select which day of the week you want an event to occur and then use the 'Time in day' to offset this time. In the example shown the event output occurs at 10 minutes past 12 on Tuesday and Thursday.

If the event type is set for On/Off then the devices output will go Hi at the Start time and low again at the End time.

When the Event Type is set for Pulse only the Start time is shown and a 50mS pulse occurs at the set time.



In the 'Month' screen you can select which month you want an event to occur and then use the 'Date/Time in month' to offset this time. In the example shown the event output occurs at 1 AM on the 10th and lasts until 2.30 AM on the 11th during January, February and March.

If the event type is set for On/Off then the devices output will go Hi at the Start time and low again at the End time.

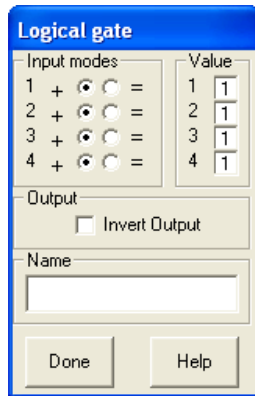
When the Event Type is set for Pulse only the Start time is shown and a 50mS pulse occurs at the set time.

Logical Gate Device

1	+1	LOGIC
2	+1	
3	+1	
4	+1	
		0

Number of devices per POD:-	16
Input Trigger Level:-	Level
Output Type:-	Digital
Connections per input:-	1
Connections per output:-	>1

Double click on the Logic Gate to configure as:-

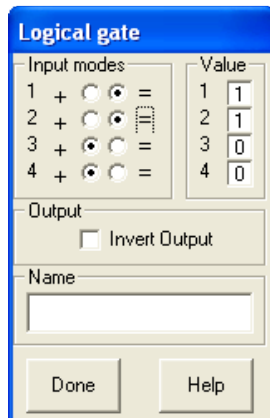


Each input can be set as an AND gate or an OR gate.

If, as shown, the + button is selected it is part of the OR gate.

As part of the OR gate the input will be active if the signal is equal to the number on the right. The example as shown, if any of the four inputs are Hi (1) for the gate output will be high.

The Invert Output box will change the status of the output from Hi to Lo when all inputs are Hi.



Inputs 3 & 4 are still part of the OR gate but looking for a low (0) to be valid - if unconnected effectively not used.

Inputs 1 & 2 have the = button selected and are part of the AND gate.

As part of the AND gate if either input goes high the output will be high.

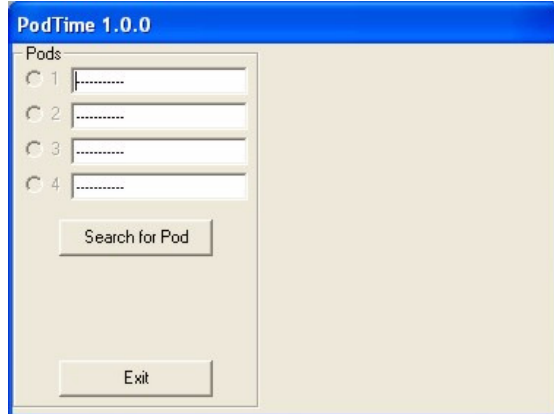
The Invert Output box will change the status of the output from Hi to Lo when either input 1 or 2 are Hi.

Appendix A

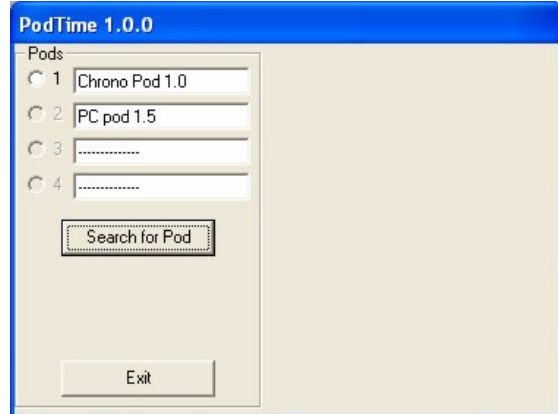
Pod Time Utility

This provides the tools to get/set the time on a Chrono Podule.

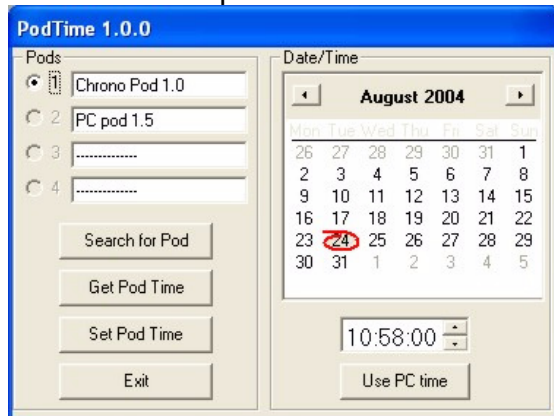
On Start



Click "Search for Pod"



Select Chrono pod



Then you can

Click "Get Pod Time" to obtain current date/time from Chrono pod, this will be displayed on right.

Set desired date/time on right, then click "Set Pod Time" to set Chrono Pod to displayed time. The pod will then reset and recalculate all its internal states based on the new time.

Clicking "Use PC time" will set the right hand pane to the current PC date/time.

Appendix B

Chrono Podule Specification

1 Serial Port

Up to 24 Different I/P Strings (up to 32 Bytes Long)
Up to 64 Different O/P Strings (up to 32 Bytes Long)

2 PodNet Ports

Up to 64 messages in and out

Internal Devices

16 x Flip/Flops
8 x Timers
16 x Logical Gates
32 x Time Outputs

Power Requirements

Voltage 24V DC, 18V Min, 30V max.

Current Requirements

Quiescent current 40mA (inrush current 120mA).
RS232 Tx, 12mA.

Mechanical Data

Chrono Podule 67mm (W) x 38mm (H) x 80mm (D) including
connectors.

Nett weight = 100g.

Appendix C

Pin out of Power, RS232 & PodNet

Programming Lead, PC to POD
Connection Details of "D" Type connectors

PC End

Female 9 way D

Pin 2
Pin 3
Pin 5

POD End

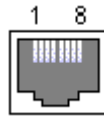
Female 9 way D

Pin 2
Pin 3
Pin 5

Podule RS 232 Pin OUT

Pin 2 Tx, Data O/P
Pin 3 Rx, Data I/P
Pin 5 Ground (0V)

PodNet Connector



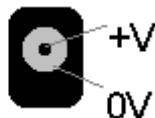
	IN/OUT	RJ 45 Patch
Pin 1	24VOut	Orange
Pin 2	24V Out	Orange/white
Pin 3	N/C	Green/White
Pin 4	CAN H	Blue
Pin 5	CAN L	Blue/White
Pin 6	N/C	Green
Pin 7	0V	Brown/White
Pin 8	0V	Brown

CAUTION DO NOT INTERCONNECT TO ETHERNET OR PERMANENT DAMAGE MAY OCCUR TO THE ETHERNET DEVICES.

DC Connector

2.1mm Centre pin +V

18-30V DC



Electromagnetic Compatibility

This equipment has been designed, manufactured and tested to conform to the European EMC directives EN55103-1 & EN55103-2 for classifications E2 and E4.

Limitations as to use: The specified equipment is not to be mounted adjacent to RF transmitting or receiving equipment.

Manufacturers Information

The iKON AVS Chrono PODULE is manufactured in England by Nebula Audio Ltd.

For service or warranty advice please initially contact your supplier. Alternatively contact the manufactures at:-

Nebula Audio Ltd
40 Saint Dunstons Close
Worcester
WR5 2AJ

Telephone: +44 (0) 1299 250991

Fax: +44 (0) 1299 250983

Website www.ikonavs.com

Technical support e-mail

support@ikonavs.com

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