Sony 9 pin control - preliminary unformatted. Rev 3.

Designed to control professional video equipment using the Sony 9pin rs422 editing protocol.
omega video decks:
http://www.ffv.com/products.html
doremi players :
http://www.doremilabs.com/products/product.htm
sony broadcast products:
http://bssc.sel.sony.com/Professional/webapp/Category?m=0&p=16
jvc and panasonic products also support this format:•
http://www.panasonic.com/pbds/subcat/products/mnu_video_rec_players.html
http://pro.jvc.com/prof/main.jsp

The sony 9pin control panel gives you:

- manual control of Sony 9pin rs422 compatible decks.
- dmx control of PLAY PAUSE STOP REWIND FF, 'cue to timecode point' of decks through catalyst
- frame synchronisation of catalyst movies to the deck using the internal deck timecode over rs422.

You need a serial port that is able to do rs422 or an rs232 to rs 422 convertor that is capable of running at 38400 baud.
keyspan makes a internal pci card and a usb adaptor:
http://www.keyspan.com/products/SXPro/
http://www.keyspan.com/products/usb/USA28x/
Both of these products are rs422 compatible.

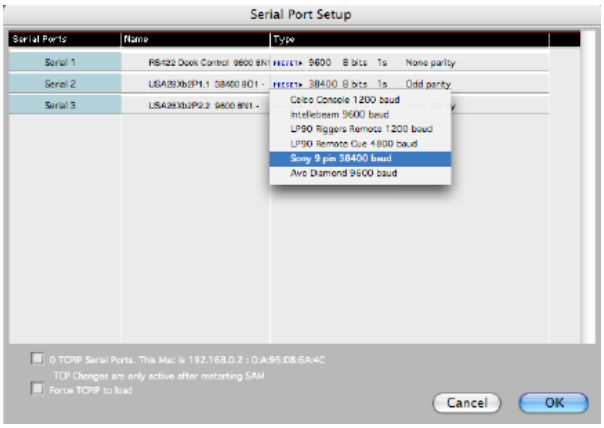
Addenda electronics makes rs422 cables that go from the serial ports to the decks.

http://www.addenda.com/product.htm
The sc-m/9m is a 20ft cable for doing this.

Setting up the serial port

The first thing you need to do is set up your deck serial port to use the correct format.

You must set your serial port to use 38400 odd parity no stop bits.
There is a preset to do this.



I have a Keyspan USB serial port connected to port 1 this is 'USA28Xb2P1.1 38400 8O1'
'USA28XbP2.2 9600 8N1' is port 2 on that device.
'RS422 Deck control 9600 8N1' is on my Decklink card - im not using this at the moment.

If both the tiny little green and blue indicators light up you have commands coming going to and coming from the device.

Now you should have control of your deck.

Manual control

Your deck may or may not have options, or switches to enable or disable remote control of deck functions using rs422.
My jvc br dv6000 has a local/remote switch on the front panel. [insert picture]

If you have a tape in the current timecode on the tape will be visible.

You can now manually control the deck, by clicking on the buttons in the gui.

play

stop

clicking on goto
enables you to enter a search time for the deck. when you press enter. the deck will search to that time and stop. This may take some time depending on the speed of your deck

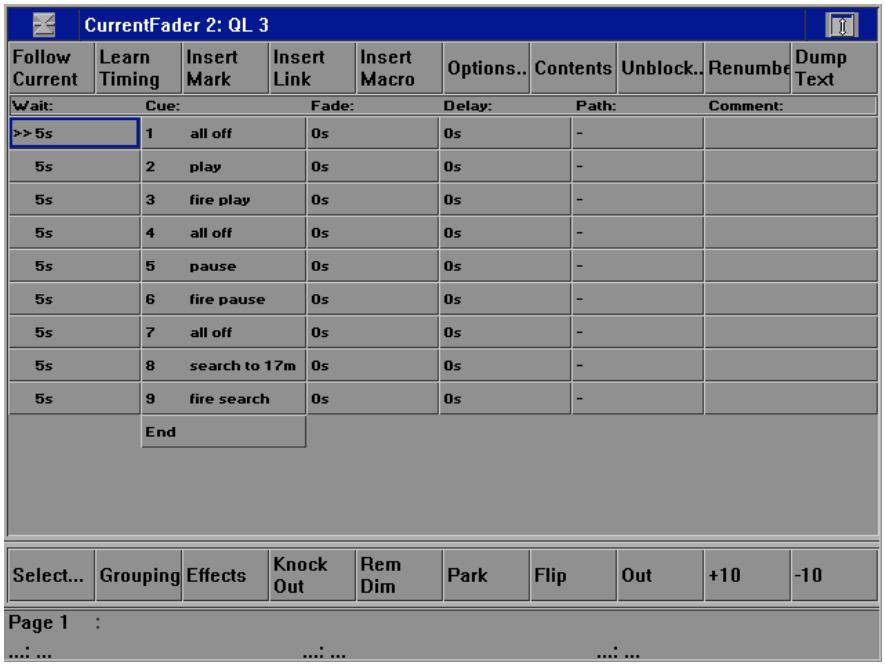
Working with DMX

To make DMX control the deck. you need to set one of the dmx inputs to Sony 9pin RS422

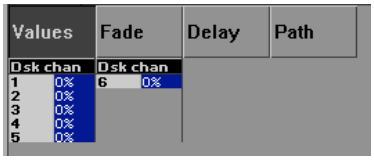
and set the channel number you want to use to control to dmx.

Controlling the deck requires 6 channels.

I programmed some cues on HogPC to show how this works

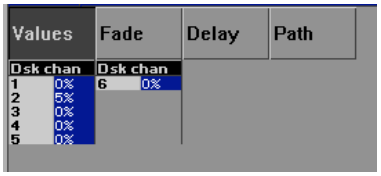


Cue 1 is



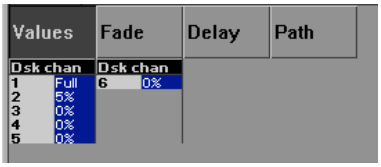
All Off[insert pics of what happen in catalyst gui]

Cue 2 is



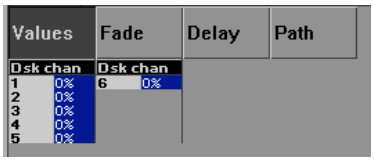
Play

Cue 3 is



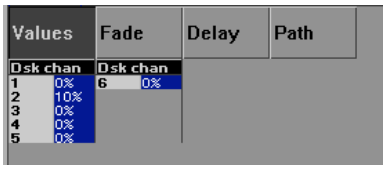
Trigger play by setting channel 1 to Full

Cue 4 is



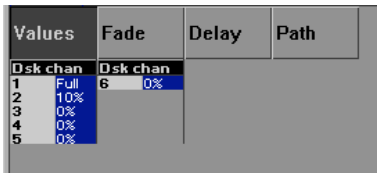
all off

Cue 5 is



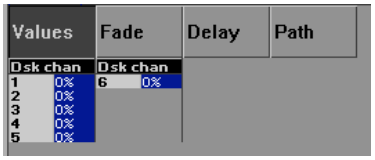
pause

Cue 6 is



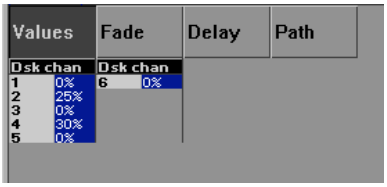
trigger pause by setting channel 1 to 100%

Cue 7 is



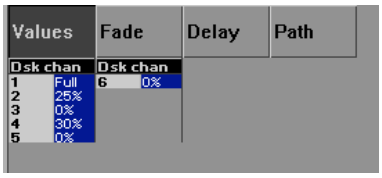
All off

Cue 8 is



Set cue up to timecode point

Cue 9 is



trigger cue up with timecode cue. Time here is 0hr 17min 0sec 0fr

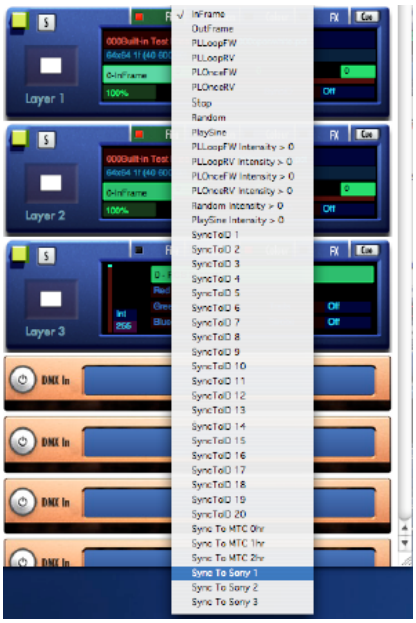
Controlling the deck requires a master enable channel. You have to change this value from 0% to FULL for the DMX channels to latch.
This is because sending too many commands to the deck is very dangerous.
Also you really should not use tracking with external devices.
Make sure you store all the values for all the channels - or turn any tracking off.

When you have dmx control all your state changes and inputs will be shown in the dmx info box on the deck control.

[insert pics of cat gui]

This status information tells you the state all the dmx input, whether it is enabled or armed, and the last command executed is indicated.

Syncing Catalyst to the deck.



If you want catalyst to follow the timecode on the deck - you now have another playmode.
Sync to Sony 1 play mode, takes the current frame from the sony decks.
If you want a negative offset use inframe value
If you need a positive offset use outframe value

Syncing ignores the hours setting because a 16 bit dmx value is only able to represent 44minutes at 25fps
Say you want the first frame of the movie in catalyst to play at time code point 0hr 1min 30sec 5 frames

Calculate frame offset (1min * 60 * 25) + (30secs * 25) + 5frames = 1500 + 750 + 5 = 2255
So we set the inframe value to 2255 and outframe to 0.
And select Sync to Sony 1.
If we play our deck, our catalyst movie should play and stay in sync with the deck.
If we stop our deck, our catalyst movie will stop.

If you want to sync to something with a timecode of 1hr 45min 0sec 0fr
we use the outframe to set a positive offset.
We need to round up to the nearest hour.
in this case we are 15 minutes before timecode 2hr.
So our positive offset is (15min * 60 * 25) = 22500
So we set the inframe value to 0 and the outframe value to 22500.

NB timecode offsets calculated with PAL settings.
For NTSC change 25fps to 30fps

Reference

Control of deck in this revision requires 6 channels.

channel 1 -- **master enable**. Command is only triggered when value changes from 0% to 100%
channel 2 -- the **command**

0 - 9 no action
10- 19 PLAY
20-29 Pause
30-39 Stop
40-49 REW
50-59 FF
60-69 Search or cue up to time. Decks may or may not actually get to the value you select.

**Values are channel values not percentages.

Channel 3 -- **hours** *
Channel 4 -- **minutes** *
Channel 5 -- **seconds** *
Channel 6 -- **frames** *

*Frames are 0-255 scaled from 0 to 59
You can draw up your own table to show this

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