



## UR422: universal RS422 remote

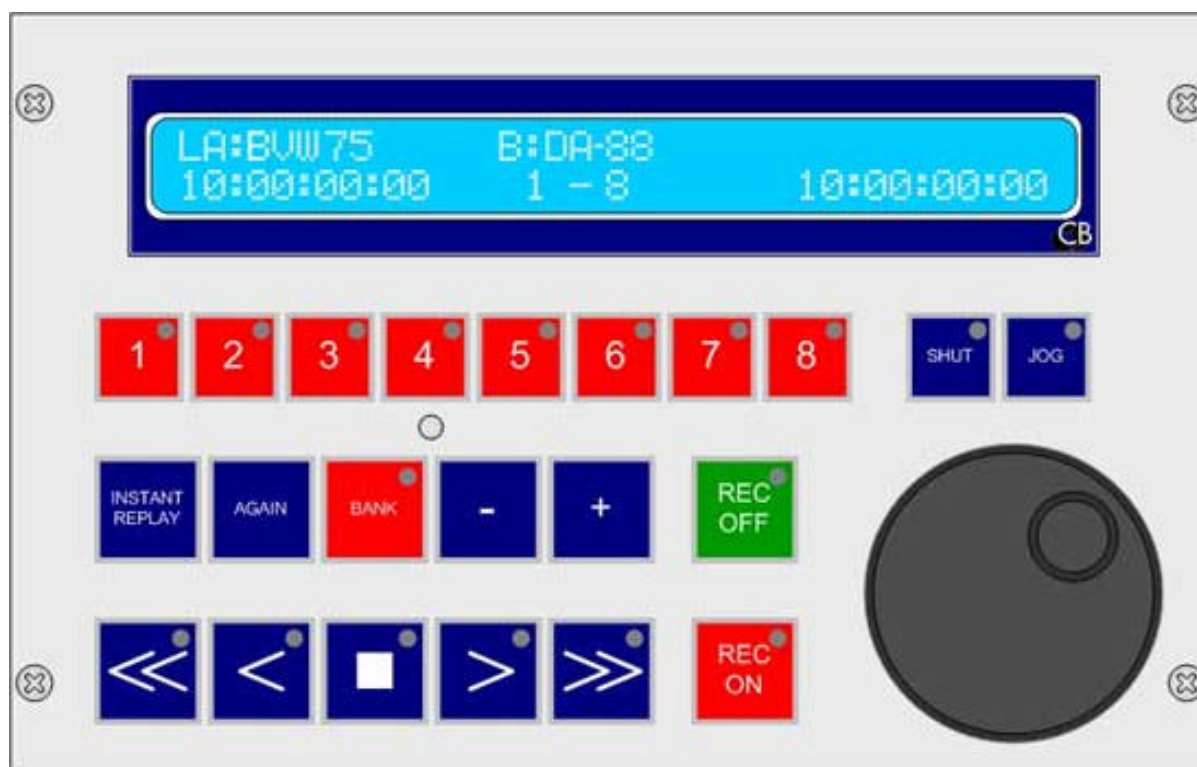
- Two RS422 ports.....Two Outputs or One Input and One Output
- Plug & Play.....Recognises connected machines and Configurs automaticaly
- Large Display.....2 line by 40 character display
- 22 User Definable keys with LED's.....All keys are user definable via PC Program
- Field software update.....Software may be updated by user using PC with serial port
- Key functions include.....Track Arm, Monitor, Edit, Locate, Loop's, Macro's
- Special CB Macro functions.....Instant Replay, Instant Forward, Again
- Two packages .....Low Profile Desktop or 2U Rack Mount with tilting panel
- Jog Wheel.....Precision weighted Low Profile Jog Wheel
- Midi MMC Protocol.....MMC or OEM Generic, requires Midi Interface Card

\* Option 1..... High Profile Jog Wheel

The UR422 is a two port RS422 controller with user definable keys. Port A may be selected as an input or output, Port B is always an output. The keyboard may be configured to suit specific applications.

When configured with input and output the controller may be connected to a DAW to provide track arming and a Jog/shuttle machine control interface.

When configured with two outputs, one may be used to control the video and the other to control track arming and master record on/off on a multi-track hard disk or tape.



The keys, and thus there lables, are user definable we have used the layout above as reference for the key names in this manual.

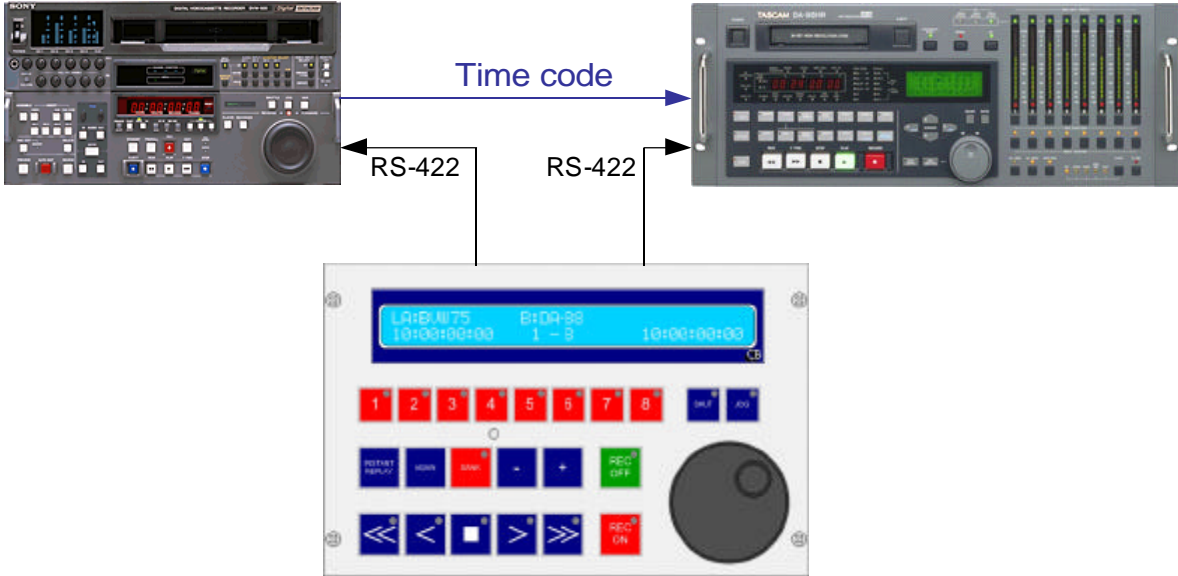
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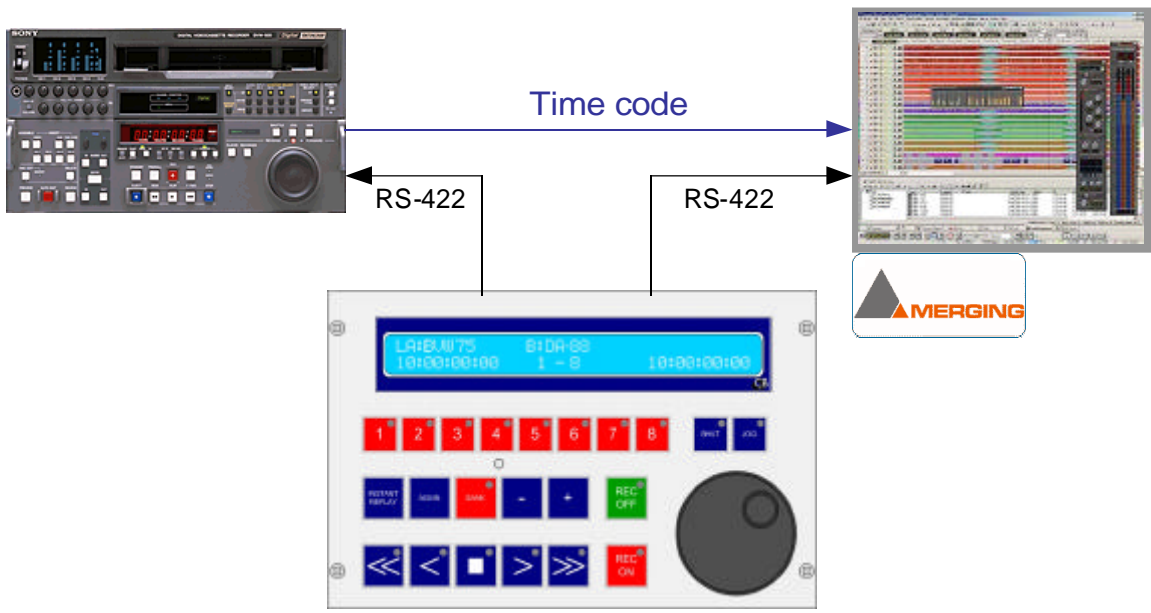
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# 1.0 Examples

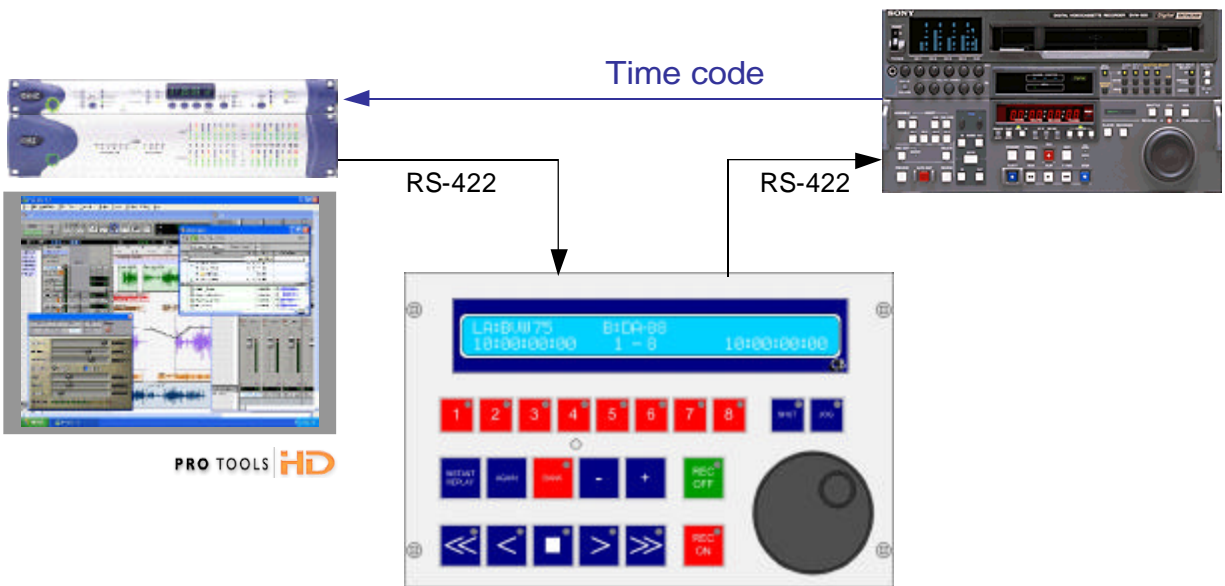
## 1.1 Controlling a Video and recording on a DA-98 with the UR-422



## 1.2 Controlling a Video and recording on a DAW(Pyramix) with the UR-422

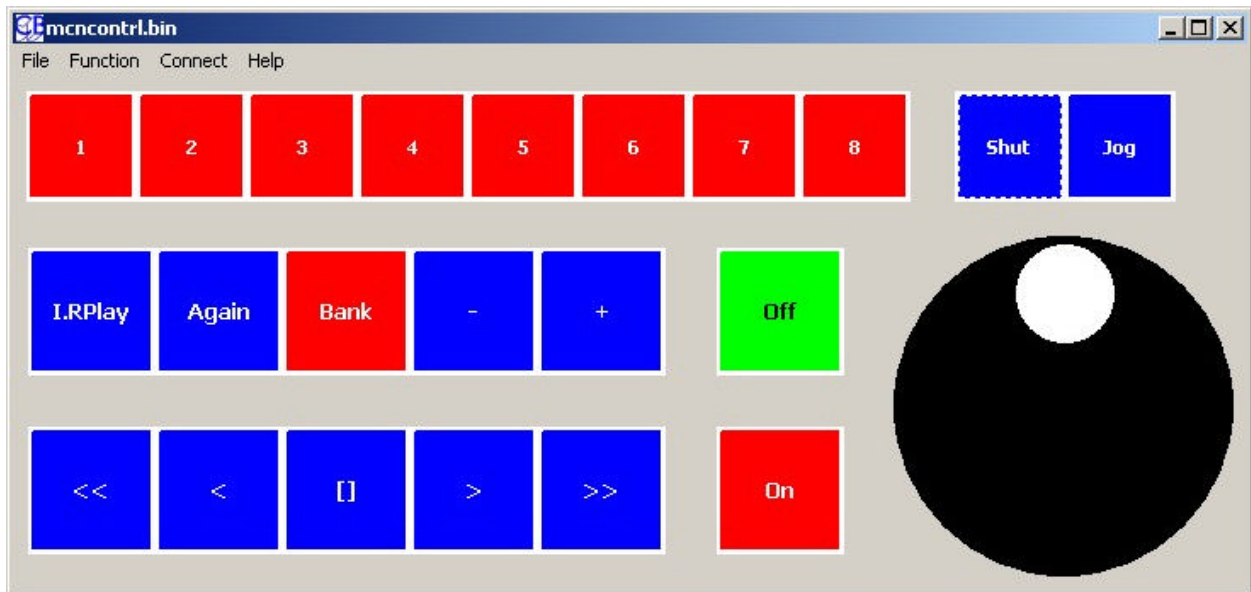


## 1.3 Using the UR422 in line between a DAW and Video



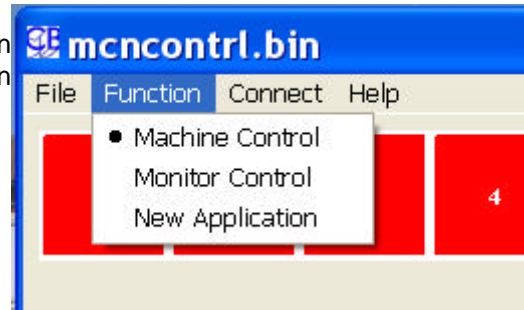
## 2.0 Programming the UR422 key functions

All the keys on the UR422 are user programmable, a free visual programming tool is available from web site [www.colinbroad.com](http://www.colinbroad.com).



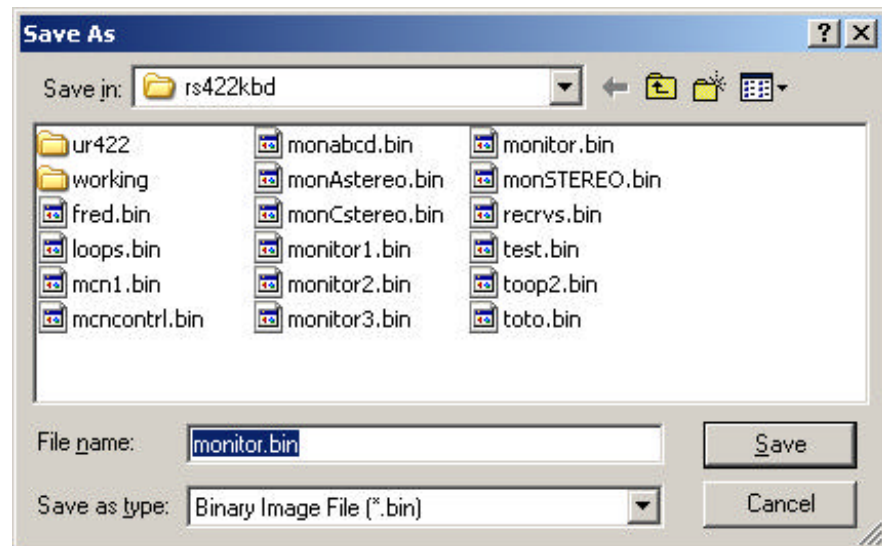
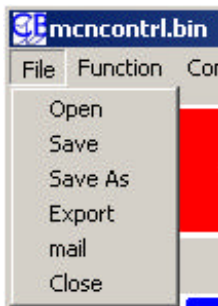
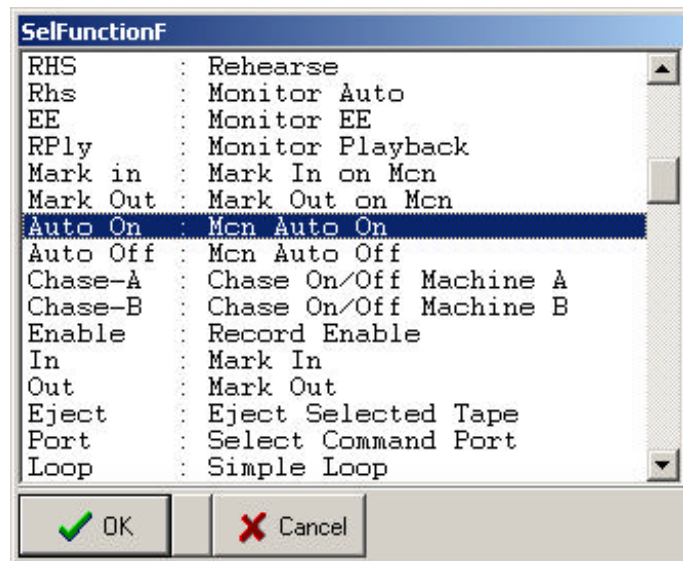
1. Install the ur422 keyboard definition program on your computer.
2. Launch the program.

- In the menu select 'Machine Control' from the function column, select monitor control when defining the keys on our new Monitor Control Unit.



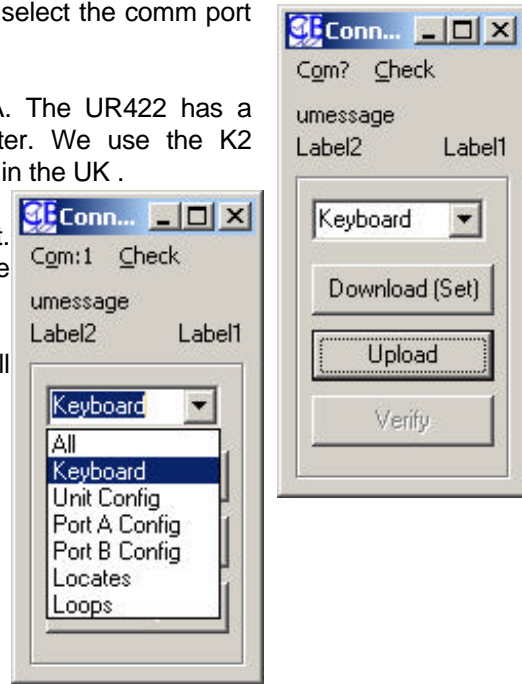
You are now ready to define the keys.

- Right clicking on any key will bring up a key definition window, select the function for that key.
- The paper key labels may be changed to suit your desired keyboard layout.
- For exhibition and fixed locates the loops and fixed locate points may be programmed by left clicking on the appropriate keys.
- Once your keyboard definition file is finished you should save it to disk using 'Save As' . Alternatively you can load and modify an existing file
- Once you have named or loaded a named file the file name is shown in the title bar.



- Once your keyboard definition file is finished click on 'Connect' in the menu to display the download window.

7. The first time that you use the program you will need to select the comm port number, Click on 'Com' to set, usually '1'.
8. Connect your computer to the UR422 interface port A. The UR422 has a RS422 port, you will need an RS232-RS422 converter. We use the K2 Systems part, these are available from Rapid Electronics in the UK .
9. Ensure that the A port on the UR422 is selected to Input. With the K2 RS422 converter use the Tx-Rx Invert cable at the end of this manual.
10. When sending data to the keyboard (Download) either all data or one section of data may be sent.



## 2.1 Operation

The keyboard layout may be user defined to suit the application for which you need the remote. As this may be changed at any time, you do not have to get it right first time, but it helps. The Menu may also be used to change the way in which the unit operates, however if you are switching between the two ports continuously then fit a port select key!

## 2.2 Transport control

The transport commands may be sent to either output port or to both at the same time. Basic Transport functions include

Fast Reverse, Reverse Play, Stop, Pause, Play, Fast Forward, Jog, Shuttle

## 2.3 Locate Commands

The user may select different locate functions as follows

### 2.3.1 Again Play

Locate to the last point at which a play command was issued and go into play.

### 2.3.2 Instant Replay

Go back 10 Seconds and Enter play

### **2.3.3 Locate to entry**

Two locate to entry keys are provided Locate 1(In) and Locate 2 (Out) these keys are also used to define the Loop in and loop out points.

First depression selects keyboard entry and flashes LED, enter the required timecode value using the top row of keys (1..8, 9, 0). Depress the locate key again to locate the displayed value. Double clicking the Locate key will repeat locates.

Note: It is not possible to use these keys in the top row as they require the use of the number keys!

To fit multiple locate keys use one locate key as a locate to entry and program the other keys as a locate to cue (The top row of keys may be programmed as locate to cue), To program the locate to cue keys, enter a locate point, perform the locate and then capture the point by depressing and holding the locate to cue key.

### **2.3.4 Set In, Set Out**

The first depression captures the current position and enables editing (The LED will flash), the second saves the selected value and sends a set in command to the machine (The LED will go out). A double click on these keys will capture the current position and send to the machine.

### **2.3.5 Loop's**

Up to 12 Loop keys may be fitted, These loops are held in EEPROM and may be downloaded from the keyboard definition program or from the keyboard. To define a loop use the locate to entry or mark keys to define the Record In and Record Out. Then depress and hold the Loop key to transfer these values to the Loop memory.

### **2.3.6 Step Forward**

Locate to the next frame

### **2.3.7 Step Reverse**

Locate to the previous frame

### **2.3.8 Cue to In**

Locate to a pre-defined record in point (Define using the [Mark In] key).

### **2.3.9 Preroll**

Locate to pre-roll before the record in point.

### **2.3.10 Locate to Cue (1-8)**

Eight keys that may be used as cue and locate keys. Hold the key depressed to capture the current timecode value. Depress and release to locate the stored value.

By selecting to display the Goto Bank up to 32 cues may be accessed using a combination of cue1..cue 8 and the bank key.

### **2.3.11 SR/MR Macro keys**

When used with CB Electronics SR & MR systems four keys may be programmed with macro command numbers. To Set the number depress and hold the key for approx three seconds and enter the macro number required.

Note: When using the Numeric keys as Macro keys the macro number must be set via the windows

software.

## 2.4 Track arming

The Track arming is determined by both key selection and by the setup menu.

### 2.4.1 Assignable Record Keys

Record keys 1-8 are assignable, their function is determined by the menu entries for each port ('Record Tracks' and 'Analog and Video Record Ready'), the Unit 'Record Cmds' menu, and the Record Bank key. The Record Bank key will cycle through the available tracks on one or both ports dependant on these settings.

Use these keys if you record on more than eight tracks.

### 2.4.2 Fixed Record Keys

Keys A-1..A8, A-A1, A-A2, A-TC, A-A4, A-Video, A-Asmb and B-1..B8, B-A1, B-A2,BA-TC, B-A4, B-Video, B-Asmb are port specific and permanently assigned to the specified track. Use these keys if you record on a limited number of tracks.

### 2.4.3 Port Record Keys

Keys M-1..M8, M-A1, M-A2, M-TC, M-A4, M-Video, M-Asmb are permanently assigned to the specified track but switch to the current machine port. Use these keys if both machines are the same and you are recording on more that 4 tracks per machine.

## 3.0 Setup Menu

The menu is controlled by the top row of keys, the eight keys to the left are the 1-8 numeric keys, the two keys to the right are previous and next keys.

To enter the menu depress the two keys to the right simultaneously ([Jog] & [Shuttle] by default).

To step forward through the menus use the next (right key) key.

To step backward through the menus use the previous (left key).

To return to the Root menu depress next & previous (the two keys to the right) simultaneously

To Exit from the menu depress next & previous (the two keys to the right) simultaneously when in the root menu.

### 3.1 Root Menu

Root Menu, Hyperlink to different menu sections, depress previous & next together to exit from setup menu.

Menu 1 - ROOT: Select Setup Required  
1= Unit 2= Port-A 3= Port-B 4= Bonsai

## 3.2 Unit Parameters

The unit parameters control the operation of the unit.

### 3.2.1 Serial Port A

Serial Port A, This port may be configured as an input (Machine Emulation) or as an output (Controller).

Menu 2 - Port A type  
1= O/P 2= I/P 3= Generic

1. O/P Sony P2 or Midi Machine Control as specified in Port A setup
2. I/P Sony P2 protocol only, commands passed to Port B
3. Generic Option: Midi Protocol only, see generic protocol documentation. Key depression, and jog wheel incremental data transmitted. Received data used to illuminate LED's and write to LCD.

### 3.2.2 Transport Commands

The transport commands may be sent to either or both machines

Menu 3 - Transport Cmds  
1= Port-A, 2= Port-B, 3= Ports A&B

### 3.2.3 Record Cmds

This selects the range of the record bank key.

Menu 4 - Record Cmds  
1=Off 2=Port-A 3=Port-B 4=Ports A&B

### 3.2.4 Wind Speed

This controls the command sent to the machine when the FWD and RWD keys are depressed.

Menu 5 - Wind Speed  
1= Wind, 2= 4\*, 3= 6\*, 4= 8\*, 5= 10\*

### 3.2.5 Jog Response

This controls the response of the jog wheel,

Menu 6 - Jog Response  
1= 2= 3= 4= 5= 6= 7= 8=

### 3.2.6 Jog Wheel

This enables the jog wheel to activate jog when touched.

Menu 7 - Jog Wheel 1= On Cmd 2= Always
-------------------------------------------

### 3.2.7 Display/Bank type

Menu 8 – Display/Bank 1= Rec 2= TwoMcn, 3= Goto, 4= Loop, 5=SR
-------------------------------------------------------------------

This menu determines the display layout and the function of the Red 1..8 switches under the display.(If defined as Record Track/Goto/Clip 1..8).

The current controlled machine name and position is always displayed on the left of the display, keyboard and error messages are always displayed on the right. The centre section of the display is user selectable as follows

Display:

1. **Rec:** The current record machine name and record bank
2. **TwoMcn:** The Second Machine and Position
3. **Goto:** Locate points 1-32
4. **Loop:** Loop Memories 1-16
5. **SR:** SR Macro

Switches

1. **Rec:** Record Enable
2. **TwoMcn:** Record Enable
3. **Goto:** Locate points 1-32
4. **Loop:** Loop Memories 1-16
5. **SR:** SR Macro keys

### 3.2.8 Locate Keys

Menu 9 – Timecode Capture 1= Normal 2= Locked
--------------------------------------------------

The action of the Locate to Cue keys is modified by this memory

- 1) Depress and hold for three seconds will capture the current position for future locates
- 2) Depress and hold capture is locked out, an error message will be displayed

### 3.2.9 Test Display

Used to check the keyboard and jog wheel for faults

Menu 10 - Test Display 1= Normal, 2= Keys, 3= Jog
------------------------------------------------------

## 3.3 Port Parameters

The port parameters are set individually for each port. The port parameters are set from the factory setup

when a new machine is discovered, they may then be modified by the user.

### 3.3.1 Record Tracks

This value is used by the bank switch to determine how many record tracks to display. The Track armring command and track arm data request are also controlled by this command.

Menu 11 - Record Tracks 1=Off 2=Alg 3=8 4=16 5=24 6=32 7=40 8=48
---------------------------------------------------------------------

### 3.3.2 Analog and Video Rec Rdy

Enable or mask record commands to analog and video tracks.

Menu 12 - Analog and Video Rec Rdy 1= Disable 2= A1-A2 3= A1-A2+V 4=Asmb
-----------------------------------------------------------------------------

### 3.3.3 Position

This menu selects the position request command sent to the machine and will determine the displayed position of the machine.

Menu 13 - Position 1= LTC 2= VITC 3= L+V 4= Tim-1 5= L+V+T
---------------------------------------------------------------

### 3.3.4 Protocol

This menu selects the position request command sent to the machine and will determine the displayed position of the machine.

Menu 14 - Protocol 1= Sony P2 2= MMC
-----------------------------------------

## 3.4 Bonsai (Option)

This menu is only used with the Bonsai hard disk video recorder. The menu setting keys on the UR422 may be used to access and activate the menus on the Bonsai. If the Bonsai is programmed to use the [+] & [-] keys as Next and Previous Clip then this menu may be used for clip selection.

Menu 15 - Bonsai Remote Keys < - [] + > Rec Menu
-----------------------------------------------------

Note: If a one to one 9 pin cable is used the Bonsai may be used to power the UR422 when connected to port A.

## 4.0 Software updates

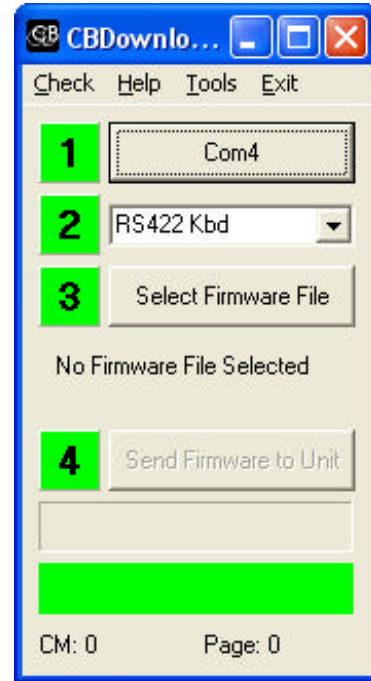
The flash rom of the UR422 may be programmed via the serial port. Software updates will be available on the [www.colinbroad.com](http://www.colinbroad.com) web site.

Use the Download program distributed with this program to update the software via serial port 'A'.

1. Select Serial Port
2. Select UR422 Kbd
3. Select firmware file to download
4. Download firmware file

The progress bar will show current progress  
The Status bar will show error messages (Red) or current status (Green).

If there is a problem and download was interrupted then powerup or reset the unit with the Jog&Shuttle key depressed. The unit will then enter a download mode. On the latest boot software (units sold after Oct 2005) the [4] indicator will light up Yellow at this point.



### 4.1 Common reasons for download failure are as follows:-

- 1) Using RS232 instead of RS422, solution use the CB Electronics USB-422 adaptor or the K2 systems RS232 to RS422 Converter.
- 2) Not Selecting port A to input in the menu.
- 3) Incorrect connections: when using the CB USB-422 adaptor use Port A set as input when connecting directly, or as an Output when using the Tx-Rx Invert adaptor. When using the K2 systems RS232 to RS422 converter use the Tx-Rx Invert adaptor.

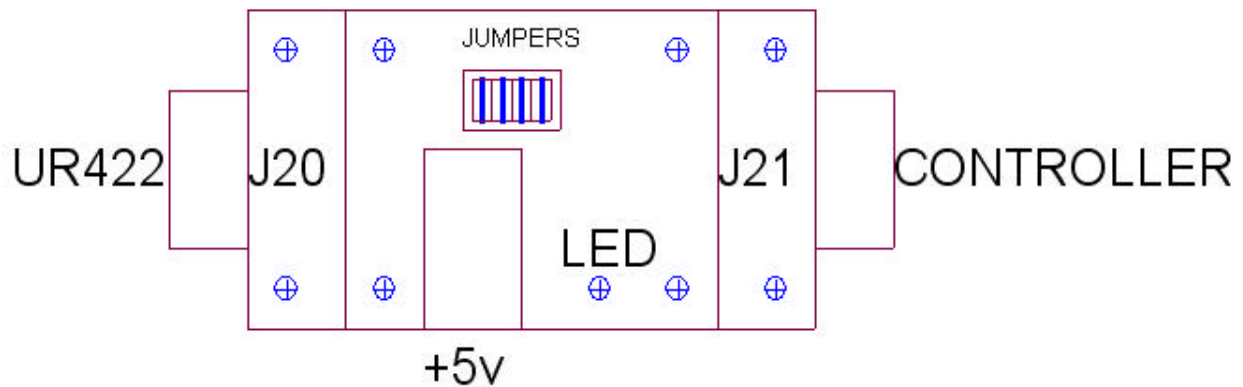
## 5.0 TX-RX Invert and Power Adaptor

The power supply adaptor provides two functions

- Power input reducing the number of cables connected directly to the UR422
- Port A is connected as a controller, the jumpers provide a Tx-Rx invert to allow connections as either a controller or as a device.

Note: we recommend that you tywrap the power lead to one of the 9 pin cables to prevent acidental disconnection.

### 5.1 Serial-A: Input power adaptor jumpers when connected to a controller



### 5.2 Serial-A: Output: power adaptor jumpers when connected to a device

