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SR/MR Serial Remotes/Synchronizers
Technical Manual
Contents

T5.0 CONNECTION DIAGRAMS

T6.0 Track Arming

T1.00 MACRO LIST

To change the macros **Root | Unit | Generic | Menu 26: Macro protection** must be set to 0=None as follows

```
MENU 26:- Macro Protection
0= None  1= Keyboard  2= Factory default
```

For more information see section 7.26 of the user manual.

A list of all user macro's available in table form. Macro's prefixed by * are only available with larger EPROM's

T1.01 MACRO'S 65-90	
No.	Description
65	BANK: The Bank key will select between blocks of record channels dependant on Root | Unit | Rec | Menu 07:- Track Arm Keys.
66	LOOP: Loop current machine between Record in and record Out
67	Assign Record keys to current Machine
68	Shifter Reset: The shifter is used as a temporary offset that is added to the current offset. The Shifter Reset key clears the shifter offset. **Store** followed by **Shifter Reset** will add the contents of the shifter memory to the current offset and clear the shifter.
69	Shifter Decrement:
70	Shifter Increment:
71	Locate Start:
72	LOCAL: (Disables 9 pin Input's when LED illuminated)
73	Mark: Grab current machine time **Store** Followed by **Mark** = Mark Sync **Recall** Followed by **Mark** = Find specified Mark point **Shift** Followed by **Mark** = Reset Mark Pointers
74	Instant Record: Locate -3 seconds and enter record
75	Cycle:Record Out Enable/Disable
76	Auto-Record:
77	Manual Record:
78	Review:
79	Auto-Rehearse:
80	LS Mute:
81	Auto/Manual Record:
82	Rehearse/Review:
83	All-Stop: All-Stop + All Chase Off
84	Locate (Was Ram Scrub see 168)
85	Set Generator
86	Variplay
87	Track Arm Keys: Follow Selected Mcn
88	Track Arm Keys: Follow Enabled Mcn
89	Sondor: Framing / Shift= Focus (Use with ID+ & ID- keys)
90	Erase ID: Erase DAT ID

T1.02 MACRO'S 91 - 120	
No.	Description
91	
92	PNO Erase: Erase PNO
93	Pno Find: Find DAT PNO
94	ID <-: (See Section T1.08)
95	ID ->: (See Section T1.08)
96	*Alt Disp: Alternate Display
97	*Show Dif: Display Reader-Serial Difference
98	*Constant Offset:Fix Offset
99	*48KHz: Set Sampling Freq. @ 48KHz
100	*44.1: Set Sampling Frequency @ 44.1KHz
101	
102	
103	Out Overlap: Used to extend the record out point Store followed by out overlap to set
104	Record Assign 1 (Use Store to set machine number)
105	Record Assign 2 (Use Store to set machine number)
106	Record Assign 3 (Use Store to set machine number)
107	Record assign 4 (Use Store to set machine number)
108	
109	Ready EE: Switch All Record Ready channels between Input and Replay Monitor
110	EE: Switch current machine between Input and Replay Monitor
111	Tape Mon: Switch current machine to Replay Monitor
112	FEET: Timecode Display / Footage Display (Shift followed by Feet = Local Time Display)
113	Reader: Display Timecode Reader, Recall followed by Reader will display Generator
114	Prev: Previous Loop
115	Next: Next Loop
116	Join: Join Loop
117	Insert: Insert loop
118	Generator: Display Generator, Recall followed by Generator will display Reader
119	Shuttle:
120	Jog:

T1.03 MACRO'S 121 - 150

No.	Description
121	I-Replay:Instant Replay
122	Record Ready 1: Assignable to any machine/track, enter the machine number as Seconds, the track number as frames followed by **Store** followed by Key.
123	Record Ready 2: as per Record Ready 1.
124	Record Ready 3: as per Record Ready 1.
125	Record Ready 4: as per Record Ready 1.
126	Step Forward +1:- To step fwd 1 frame hit once, to move fwd 5 frames hit 5 times.
127	Step Reverse -1: To step back 1 frame hit once, to move back 5 frames hit 5 times.
128	*Loc 1: Locate Memory 1
129	*Loc 2: Locate Memory 2
130	*Loc 3: Locate Memory 3
131	Reverse Play
132	AGAIN: Locate Last Playback Start (2 Levels)
133	AGAINP: Again with Play, Shift Again: Instant Loop, Loop from Play Start to here.
134	Wind @ *2: both fwd and rvs wind commands are converted to shuttle at 2* play speed.
135	Wind @ *4:
136	Wind @ *6:
137	Eject: Eject Current Machine, Shift followed by Eject = Eject All
138	Key Lock: Locks out the following keys:- Machine Selection, Chase On/ Off, Record Machine Selection(MR only)
139	Machines MR: Show Individual Machine status on 2 Line Display
140	Cue: Locate Record In
141	*Comm Enable: Communication Enable/Disable
142	Local Time:Select **LOCAL TIME/Timecode**
143	Rec Enable: Record Enable On/Off
144	*Red Light: Manual Red Light Switch
145	*Preview: Sony Preview Command
146	*Review: Sony Review Command
147	*S.Auto: Sony Auto Edit Command
148	*Pre-Roll: Sony Pre-Roll Command
149	*Set TG-1: TG-1 Set Reader
150	*Post Sync: One Key Post Sync 'D', Position Master so that the Timecode Slate is visible, Enter the timecode number displayed, hit this key and the offset is calculated for machine 'D', the current video position is set as Record In, and a Chase-On command is sent to Machine 'D'

T1.04 Macros 151 - 165	
No.	**Description**
151	***REC IN +1**: Add one minute to Record in, subtract one minute from all offsets, Locate new record in.
152	***Red Light OFF**: Disable Red Light output
153	***Red Light Auto**: Auto Red light
154	***Mute**: Mute Always
155	***Auto Mute Enable**: When enabled, mute output except as defined by **Root | Unit | Generic Menu 30: GP Output 3** (Note: after a hard reset Auto-Mute is Enabled)
156	*PARALLEL Command Enable: MR Only
157	*PARALLEL Record Command Enable: MR Only
158	*See 142
159	*Remote Enable: Serial A(E) INPUT
160	*Set Gen: Set Generator
161	*Standby:
162	*Edit Loops:
163	*Select Master: Select master (Used when programming User Macro's)
164	Sondor Focus Forward
165	Sondor Focus Reverse
166	Instant Loop: Loop from Last Playback Start to Here
167	
168	*Scrub: 7050/7040 Ram Scrub (Was Locate see 84)
169	*Sony: Sony Protocol:
170	*SX/D88: Sony SX/Tascam D88 Protocol:
171	*D827: Studer D820/D827 Protocol:
172	*TLS: Studer TLS 4000 Protocol:
173	*Lynx: Timeline Lynx/Ampex Protocol
174	*ES Bus: Audio Kinetics ES1.11 Protocol
175	*Clear Offsets: Shift= Clear All Offsets and Chase (Same as Shift Master-Chase/Offset)
176	*Field -: Previous Field Ampex Protocol
177	*Field +: Next Field Ampex Protocol
178	*Instant Lock: (Shift Chase)
179	*Make Master: (Shift Machine Key)
180	*Instant Fwd: Locate 10 Seconds ahead then Play (As Instant Replay)
181	*Play Seg: Doremi V-1 Play Segment
182	*Select Seg: Doremi V-1 Select Segment
183	*Define Seg: Doremi V-1 Define Segment

Macro's 184 - 200	
184	*Record Enable: Current Machine Record Enable/Disable
185	Record Track Map: Custom 1
186	Record Track Map: Custom 2
187	Record Track Map: Machine Map 1
188	Record Track Map: Machine Map 2
189	*Sync: Constant Offset Mode On/Off Shift,Sync: CMaster Chase On
190	*Cue: Locate In point
191	*Park: locate preroll before in point
192	*Insert: Video Streamer Insert On/Off (MR Only)
193	
194	
195	
196	
197	
198	*Dec Offset: Decrement Offset
199	*Inc Offset: Increment Offset
200	

T1.05 DAT Specific Macro's					
Description	Macro No.	Sony PCM-7030	Fostex D25	Fostex D30	
Auto-ID Write	88				
PNO Renumber	89	O.K.	YES		
Erase ID	90	O.K (Illegal)	YES		
Write Specified PNO	91	Start ID only	YES		
Erase Specified PNO	92		NO		
Find Specified PNO	93	O.K.	YES		
Previous ID	94	O.K.	YES		
Next ID	95	O.K.	YES		

T1.06 MR Video Streamer Specific Macro's	
192	All Insertions On/Off, **Shift** Macro = BVB Mode On/Off
193	Data Line On/Off
194	Previous Data
195	Next Data
196	Delete Current Cue, **Shift** Macro = Delete All Cues
197	Delete All Cues
Other Non Specific Macro's	
112	Feet: Change Insert to Feet
142	Local Time: Change Insert to Local Time

If The Record/Lock Flag is enabled on the Video Streamer then a Box will be inserted next to the timecode insert when the system is locked, a **R** will indicate when the system is in Record.

T1.07 ADR/Taker Specific Macros	
75	Record Out Enable:
76	Auto record
77	Manual Record
78	Review
79	Rehearse
81	Auto record: Shift Macro = Manual Record
82	Rehearse: Shift Macro = Review
94	Previous ID: When ADR Mode Active this becomes Previous Loop
95	Next ID: When ADR Mode is Active this becomes Next Loop
114	Previous Loop
115	Next Loop
116	Join Loop, Keep Current In- time and change Out-Time to Next Out Time
117	Insert Loop: Shift Macro: Delete Current Loop

T1.08 ID << / ID >>

These are multi-purpose keys that change their function dependant on various parameters, the logic used is as follows:-

[Shift] followed by [ID <<] or [ID >>] Display current in and out points

[ID <<] or [ID >>]

If	Auto record/Rehearse/Man/Review active or Loop displayed then Previous/Next Loop
Else-If	Current machine is type DAT1 or DAT2 then :-Previous/Next ID
Else-If	VARI-PLAY/Slow-motion is active then:- Reduce/Increase speed
Else-If	Doremi V1 Previous/Next Segment
Else-If	Sondor then adjust focus +/-
Else	Previous/Next Mark point

Not currently implemented:-

Else-If	MR System and Giant Display fitted then Decrease/Increase Brightness

T2.00 RECORD READY KEY'S

The Record Ready keys operate in three different ways as defined in **Root | Unit | Record | Menu 7: Track Arm Keys**

The three Settings are defined as follows:-

0= System Record Ready

The Record Ready keys may access any track on any machine controlled (Maximum 4) the bank key controls access to a maximum of 48 tracks. The number of banks is set by the setup menu.

1= Machine Record Ready

The Record ready keys control the currently selected machine only, the bank key allows access the tracks available on the currently selected machine.

2= Record Enabled Machine Ready

The record ready keys are assigned to the last record enabled machine selected.

T2.10 MACHINE RECORD/RECORD MACHINE READY BANK

The machine ready bank switch is used to access the all record tracks of the currently selected machine using Record Ready switches 1-T2.

MACHINE/RECORD MACHINE READY BANK SWITCH				
Record Command Type >	1= Analog	2= 8 Track	3= 16 Track	4= 24 Track
Bank 1	A1..A4+ Video	D1..D8	D1..D8	D1..D8
Bank 2	Not Available	A1..A4+ Video	D9..D16	D9..D16
Bank 3	Not Available	Not Available	A1..A4	D17..D24
Bank 4	Not Available	Not Available	Not Available	A1..A4

T2.20 SYSTEM READY BANK

The System ready bank key is used to access all the system record ready switches using the first eight record ready switches as follows:-

SYSTEM READY BANK SWITCH	
Bank 1	System Ready 1-8
Bank 2	System Ready 9-16
Bank 3	System Ready 17-24
Bank 4	System Ready 25-32
Bank 5	System Ready 33-40
Bank 6	System Ready 40-48

T2.30 SYSTEM RECORD READY track assignments

This controller will work with both Audio and Video machines, track assignment is complicated by this. The digital audio track assignment is simple, tracks 1-48 are numbered 1-4T2. The Video, Assemble and analog tracks are numbered as assigned in the table below.

Analog and Video Track Numbers					
Track	**Number**	**Track**	**Number**	**Track**	**Number**
Analog 1	49	Analog 3	51	Video	53
Analog 2	50	Analog 4	52	Assemble	54

System record ready switches may access any machine in the system. The machine and track are specified by entering the machine number as seconds and the track as frames followed by **STORE** then Record Ready key. For example to set up a Record Ready key 5 for machine **C** track **5** :-

[Keybd] 00:00:03:05
[Shift]
[Store]
Ready Key 5
Mc:Trk 00:00:03:05

RECALL Followed by a Record Ready key will display the selected Machine/Track for that key.
TRIM+ Followed by a System Record Ready key will increment the previous Track and store in the selected key.

T2.31 CRASH RECORD

Record Ready 56 is used as crash record Enable. When a crash record command (Record and Play from Stop) is issued ALL machines that are Crash Record Enabled (Analog+Video Track Arm 8) will enter Record. When terminated (Play or Stop) all machines that are in crash record will STOP, Crash record will then be disabled.

T3.00 Machine Connection

T3.01 RS422 Protocols

There are several different RS422 protocols available, the most common is Sony P2. This was developed to control and synchronize video machines, Video machines that are designed to be used with RS422 video editors they make very good slaves. No video machine with the exception of some non-linear machines have built in synchronizers.

T3.02 Audio Machines

Audio machines that have RS422 control will normally have built in synchroniser. These machines are often optimised using the built in synchroniser, the RS422 control can be very basic. When controlling a machine with a built in synchroniser the user has two choices.

1) Use the machine synchroniser: connect both the RS422 and timecode output of the SR to the timecode input of the machine.
2) Use the SR synchroniser: connect the RS422 only to the machine

Provided that the machine supports the appropriate commands the operation will be identical. In installations where only the RS422 connection is possible then the SR synchroniser must be used. Where the machine synchroniser is used it is preferable to use the timecode output of the SR. This will enable the operator to change the master machine without changing the timecode feed to the slave machines and allow group locates when selected.

The SR internal sync routines provide the user with a number of menu selections options and controls, these are described in section 10.43.. A single global setting (10.12 Use Master Timecode) will determine the use of Machine or SR synchroniser when a machine is initially connected.

T3.03 RS422 Inputs & Outputs

Every RS422 connector has both input and output connections, the Sony manual describes Controlling and Controlled devices. To simplify this we normally talk about RS422 inputs (Controlled Devices) and RS422 outputs (Controlling devices). The Controlling device (Editor, Synchroniser..) has an RS422 output, the controlled device (Machine) has an RS422 input.

To complicate matters the connectors on both controlling (output) and controlled (input) devices are nearly always a female. Some RS422 connections (SSL, CB SR port A, Akai, Avid, DAR ..) can be software switched between outputs (controlling) and inputs (Machine emulation). With these machines care must be taken with the connecting cable to ensure that Tx (Transmit) is connected to Rx (Receive). The options are as follows:-

1) Switch the Rx and Tx connections automatically:- Akai
2) Switch the Rx and Tx connections with Links:- CB SR-4/3
3) Provide special Machine emulation cables:- Avid
4) Require a Tx-Rx Invert cable: SSL, DAR

T3.04 SR-3 Port A

Port A on the SR may be configured as an Input or as an Output in software. as follows:-

1) Select **Root | Unit | Generic | Menu 27: Serial A Type** and select type 1= Input.

2) Either use a TX-Rx invert cable to connect to port A where the 4 internal links are configured as a SR-4 (Vertical to back panel), or Change the 4 internal links on Port A to be parallel to the back panel as per the diagram at the end of this manual.

Once configured as an input the following changes are made to the unit.

1) The controller connected to port A will control the currently selected master (B, C, D).
2) Key [A] will become a local Switch, when the LED is illuminated this will disable control from port A.

T3.05 Self Test

To check that port A is correctly configured as an input connect a machine to port B, configure as a master ([Shift} followed by [B]) and connect port A to port C (Use a Tx-Rx Invert cable if required). The machine on Port B may be then be controlled from either **B** or **C** on the SR-4. Note that when LED **A** is illuminated Local will be displayed when **C** is selected.

T4.00 MACHINE INTERFACE DETAILS

These notes are included for reference, they include some machine setup details and some SR Setup details, if the machine is correctly identified by the SR then there should be no need to change the setup unless the machine software has changed significantly.

T4.01 FOSTEX D-10

CHASE

The D-10 has no chase capability and must be used as a master only.

VIDEO SYNCS

The D-10 does not resolve to video syncs, it may only be used in systems with slaves that will chase timecode.

The D-10 is not recommended for video applications, if used as a master to a video machine then the lock will be +/- 1 frame.

MACHINE TYPE

DAT-1: Assemble record only audio + timecode, Returns A1, A2, A3 record ready at all times. Record ready keys are not normally required. The SR & MR remotes check that either A1, A2 or A3 record ready enables are active as record enables for the D10.

EDIT-ON

The D-10 ignores the **Edit-On** command, A **Record-On** command must be sent to enter Record! Enable Record-On instead of Edit-On command in the interface setup.

TIMECODE GENERATOR

The D-10 has no internal timecode generator, because of this it is recommended that great care should be taken when formatting DAT's. The Timecode generator must be referenced to video and the D-10 must be referenced to word clock derived from the same video syncs.

DEVICE ID

Returns the FOSTEX generic ID only

T4.02 FOSTEX D-20

D20

D20B

T4.03 FOSTEX D-25

Record Enable

1) Record enables A1, A2, A3, or assemble
2) Via the RS-422 it is possible to record on individual tracks, to enable on the SR/MR Set IFACE|General|Machine Type to 4= Dat2

RECORD TALLY BUG

The D-25 record tallies only appear on D1, D2 not on A1, A2, or A3.

Timer-1 Bug

Timer 1 position request reports timecode not timer.

Offset Command Bug

1) Offset commands cancel locates

Select-EE Status Bug

No Select-EE tally

Chase Command Bug

Does not support Chase until locked command

THIS MACHINE WILL NOT LOCK TO PULL-UP/DOWN CODE

VTR Emulation

000 FOSTEX	001 PCM-7050
002 PCM-7050	003 BVU-800
004 BVU-800	005 BVU-800

T4.04 FOSTEX D-30

RECORD MODES

1) Play & Record: A1 & A2 & A3 individually
2) Instant Start: No Record
3) Confidence Record: ASSEMBLE edit only!.
4) Sub ID Edit: A1, A2, & A3 individually available

RECORD COMMAND's

A1, A2 A3 only not D1 or D2

RECORD TALLIES

Remote A1/A2 record enable returns both A1/A2 and D1/D2 tally
Local A1/A2 record enable returns only D1/D2 tally
Remote D1/D2 record enable have no effect
Remote or Local A3 (Timecode) record enable returns A3 tally
Remote Assemble enable returns assemble tally
Local Assemble enable returns no tally (Insert flag Only)

TIMECODE STANDARD BUG

1) ID Data does not change with standard change unless he unit is powered down and up unless new standard is the same as recorded on the tape.

SERIAL PORT STARTUP

Serial port disconnection and reconnection can cause the Fostex Serial software to lock out, if this happens switch machine power off then on.

T4.05 TASCAM DA-88 / Sony PCM-800

VARI-PLAY/CHASE

Not all versions of the DA-88 software support vari-play commands. If your software does not operate correctly then DA-88's internal chase synchroniser must be used. To use the internal chase synchroniser the master timecode or timecode output of the SR-4 must be taken to the timecode input of the DA-88. VARI-PLAY commands issued from play intermittently cause the transport to stop.

TRACK ENABLE BUG

Earley Software Front panel track enable switches do not update the P2 Serial port! When Commands on the SR remote are disabled the record tallies on the remote will not reflect the current status of the machine. On Later software this is corrected!

EDIT STATUS BUG

The Edit status flag is not cleared on the RS422 port if you drop out of record on the machine, remote or due to lost lock. The Record tally operates correctly and is cleared.

UNLACED TALLY BUG

The DA-88 does not report its unlaced status when it unlaces due to timeout. To Lace the DA88 depress the stop key on the SR-4 before issuing a chase command.

LOCK TALLY BUG

1 The DA-88 Lock tally is removed when in record or edit. This can cause a problem with the Mute output when dropping out of record.
2 The Lock Tally is removed if TC Generate is enabled

SY-88 SWITCH SETTINGS

Switch settings:-

S1 Rear Panel
- #1 video 75R termination = down
- #2 Must be DOWN for RS422 (Switch Power Off & ON after changing)
- #3 Down = Rechase
- #4 Down = 1 sec, Up= 2 sec
- #5 Timecode Output timing Up = Digital Audio, Down= Analog Audio
- #6 Midi TC Source
- #7 Must be UP for Video Resolve

S3 SY-88 Nearest edge
- #1 OFF Tascam ID
- #2 OFF Tascam ID
- #3 OFF Tascam ID
- #4 ON Digital 1-8
- #5 OFF Digital 1-8
- #6 Shuttle Speed:- ON = 8*, OFF = 100*
- #7 ON Track Arming enabled from 9-pin
- #8

Version 4

Select TC display, Depress **^** and **v** together to enter setup
use the **^** and **v** keys to change a menu item, depress display to change menu.
1) Chase mode:- . . . . . ChS. rEch
2) Remote Enable:- . . . . . rent EnA
3) Device type:- . . . . . d. tASCAn
4) Track Arm On:- . . . . . trK.Arn.on
5) Track arm type:- . . . . . tn. d 1-8

PCM-800 Word Clock Input

PCM-800(UC) 20001+, PCM-800(CE) 50001+

The Wordclock input is level sensitive and will not work correctly with the word clock outputs from the PCM-7030 or PCM-7050 details from Sony APM95-049R 22nd Dec 1995

PCM-800 SYSCON PCB change R9 from 100R to 10K and Remove R10. Then use an external 75 Ohm Terminator. Or use a W/C distribution Amp!

T4.06 TASCAM DA98 Sys Ver 1.0, Sync Ver 1.0 Current version 1.2 for both

TRACK ARM TALLY BUG (Fixed in Sys version 1.2, Sync Ver 1.2)

The response to the track-arm tally request is inaccurate and its use must be disabled:-
Version 1.0 Select **Root/Iface/Record/Menu 41**:- Track Ready Tallies . . . . . 3= Stat

TRACK ARMING

Version 1.2 Track tallies are both accurate and valid.

OFFSET BUG (On Version 1.2)

This machine does not accept Negative offsets (>12:00:00:00) contact teac on www.teac.co.jp to complain.

To Setup a DA98,

1) Press **ESCAPE** to display **Select Menu Group**.
2) Select **Menu Group 6 9Pin(Emulation)** using the **cursor** keys, then use **ENTER** key to select the menu.
3) Set Tascam emulation as follows:-
   Select **Eml Dev** using the **cursor** keys
   Use the **ENTER** key to enable the adjust mode
   Select **TASCAM** using the **cursor** keys.
   Use the **ENTER** key to confirm the selection

4) Set the Track map as follows:-
   Select **Trk Map** using the cursor keys
   Use the **ENTER** key to enable the adjust mode
   Select the display as below using the cursor keys:-

```
            Track Mapping
      Ana
      Dig   1 2 3 4 5 6 7 8
      Trk   1 2 3 4 5 6 7 8
```

   Use the **ENTER** key to confirm the selection
5) Press **Escape** to return to Select Menu Group

6) Select **Menu Group 3 McnID,Ofst/Tmod/Rmt** using the **cursor** keys, then use the **ENTER** key to select this menu.
7) Select **Trk Arm** using the cursor keys, then use the **ENTER** key to select this menu>

8) Use the cursor keys to select Remote Track Arming enable, then confirm with the **ENTER** key.
9) Select **Ctrl Prt** using cursor keys, then use the **ENTER** key to select this menu:-

10) Use the cursor keys to select **9Pin**, then confirm with the **ENTER** key.

11) To use ABS/recorded timecode select **Menu Group 5**, **ENTER**, select **Tape TC**, **ENTER**, select **TC Track/ABS** as required.

Locking to Word Clock
Menu 5 video resolve on:- use front panel switch to enable word clock.

T4.07 Tascam DA-60

1) Does not like repeat locate commands, locate routine uses up o 2 seconds play into park. If a locate to current position is sent the machine will wind back two seconds and relocate. Must feed master timecode and use machine chase.

2) Track arming

Optimum Setup
Suggested setup:-

Menu 41: Chase Command type . . . . . 5=0
Menu 42: Start Up Delay . . . . . 6= Frames
Menu 43: Park Offset * 5 Frms8= (To minimise play to park)
Menu 44: No. of Attempts for zero error . . 4=
Menu 45: Acceptable Error . . . . . 1=
Menu 46: Locate Speed . . . . . 4=VSLOW
Menu 47: Slew Command Type . . . . 0= Vari-Play
Menu 48: Play+Lock before variplay . . 1= Yes
Menu 49: Chase Locate . . . . . 0= Wind then Locate

DA-60 Mark II
Use Analog track arming
Chase type 5/0
Reports $b4 in digital tracks 1-8 when any track is armed
Track 3 (Timecode) will only work when tracks 1&2 are disabled

T4.08 Tascam MMR-8 vERSION 3.

MMR-8 Setup
1) Depress Setup key
2) Depress the 0 key to select 000 Control Mode
2) Depress Trim key and adjust jog wheel until the display shows Editor
3) Depress the store key
4) Depress the setup key to exit

Connect the SR3/4 to the Editor 9 pin port on the rear of the MMR-8

Synchronisation
Software revision 4.2 includes the chase and set offset commands. Use chase type 0
It also seems to lock using chase type 4.

Serial protocol
The On-Line key must be illuminated for a servo lock tally.

T4.09 SONY PCM-3324S

TIMECODE

For accurate control it is recommended that the timecode output from the machine is connected to the SR timecode input and that this is used to update the position when valid. (Note: There is only one timecode reader per SR system, and one per box in an MR System).

TIMER MODE

Timer Mode must be switched to timecode

VIDEO SYNC LOCK ENABLE

For synchroniser to operate correctly Enable Timecode sync play on timecode board

CHASE COMMAND BUG

The RS422 Chase command does not work, returns undefined command

OFFSET COMMAND BUG

The RS422 Offset command inoperative, returns undefined command

POSITION REPORT BUG

Some 3324S's do not report there position correctly via the RS422 port, this causes problems when locking up. Typically the difference between the timecode and the time reported on the RS422 port varies from 0 to 10 frames or more!

If you have this problem then get a copy of the Sony Technical Memo APM95-005 from your local Sony service office. After this modification has been carried out the DABK-3322 9-pin interface board must be installed in the middle slot of the right hand three slots. This is shown as slot 2 on page 2-1 of the DABK-3322 manual.

LOCK STATUS BUG

The 3324 Reports Lock even in Vari-Play, or when the Play LED is flashing.

RECORD STATUS BUG

The 3324S does not report track 1-8 record status in the normal status data

TRACK ARM/E-E BUG

The 3324 will not drop out of Auto-E-E in play only stop

Tracks 1-8 will drop out of Edit when edit off is sent in stop after auto e-e command

Track arm commands upset the position reporting from the 3324

Rehearse/Auto Input bug

Once the auto input command is sent, there is no way of removing the auto input tally.

Sony Setup

Vari-Sync On/Off (Dip switch 4),

The optimum setting of this switch is 3324 software revision dependant! New software seems to work with Vari-Sync OFF

Advance Record Off

TCGEN set to EXTERNAL

Timecode sync play ON (Timecode Board)

Timer mode = Timecode

CB Setup

Chase Type 3

Start up Delay 7

Wait for code 9

Software version numbers

1) MC software is displayed on power-up 3.02
2) Servo card, 3.01 + 3.02A
3) DABK-3322 Option board on rear 3.02A

External Word Clock

When running to external word clock Programable Play will not work, **Root | IFace | Chase | Menu 47: Slew Commande** should be changed to 0= Vari-P, 2= Prog-P, or 3= V->PP cannot be used. As the 3324 is no longer locking to the video frame edge

Internal Synchroniser Free Mode/Address Mode

The internal synchroniser may only be used in Free Mode when using external word clock. In this mode the synchroniser will lock and release to external wordclock.

T4.10 SONY BETACAM

VARIPLAY

To slave a Betacam machine variplay must be ENABLED

VARIPLAY RANGE

To slave a Betacam in both forward and reverse, menu 301 Variplay Range for Synchronization on the Betacam should be set to -1.3 ~ +2.3. When shipped this menu cannot be selected, The System Setup Menu Select switch (S106 on machine tested) on the SY-61A system board must be on to allow access to this menu.

T4.11 Sony DVW-A500P

Digital Betacam

LOCATE

The A500 may be set in menu to **Stop** or **Still** at the end of a locate, this must be set to **Still** so that you may see the picture after a locate or when a slave.

Menu 401 "After Cue -> Still"

EE

The A500 does not respond to Full-EE ON or Full-EE OFF commands. The EE Flag in the status is not valid.

Machine ID

This may be set in maintenance mode to be different machines for different editors. Hold menu key down so that customise menu is enabled. Jog to the end, then hold the play key down and jog to F16 D-Type Modi and enable. Exit and re-enable the SETUP-1 Menu. use the JOG and PLAY keys at the end to access menu F-1T4.

Tracks 1..4 are Digital audio record
Track 49 or 50 are both cue
Track 51 is timecode

T4.12 Sony 7040 2.+

7040 Setup

Gen Out Regen NO
Sync Record Enable = ON

Other settings should be the same as the 7030

The machine ID of the 7040 may be changed on S302 which is an DIL 8 switch located at the rear left of the unit as follows

S302-3	S302-4	Device Type
OFF	OFF	7030
ON	OFF	7050
OFF	ON	7040
ON	ON	7040

T4.13a SONY PCM7030 5.1 Revision T110

PNO RECORD

Auto increment PNO numbers in Assemble ONLY

REHEARSE

If Root|Iface|Record|Menu 38: Command Reenforce is set to 2= Track Arm or 3= Both then Rehearse will not operate correctly it will switch once per second between input and tape!

AUDIO RECORD ENABLE

Audio 1 & 2 Record enable on **D1** or **D2** only. Stereo record only.

SUB CODE RECORD ENABLE

To record in the SUB CODE enable A3

CHASE SWITCH

For the Chase Enable/Disable to work correctly on the RS422 remote select the following in the 7030 menu:-

RE-CHASE ON 1 * Chase mode function
CHASE AU PLAY * Selects playback audio timing
CHASE-S ON * Use Chase switch to turn chase ON, Stop Switch to turn OFF
May be causing problems with record drop out? solved by using:- Chase On/Off

Edit Off will cause the 7030 to drop out of CHASE if it is in record, but not if it is in **PLAY!**. The solution is to send a **PLAY** command to drop out of Record! (Iface | Record | Menu 37, Record Command 1= RECORD / PLAY, this unfortunately stops the machine from dropping out of input monitor after a rehearse. **7030 revision 5.1 does not have this problem!**

A consequence of this is that the Rehearse will not work correctly. If you need the Rehearse function to work correctly then you must use the SR/MR synchroniser and select EDIT ON/OFF.

Note *= Factory Preset, != change from factory preset

SUGGESTED SETUP

Chase Type 0 or 4
Start Delay 5 frames
Park Offset 1 Second
Attempts 4
Acceptable error 1
Locate Speed 2= MED
Slew command 2= Prog Play
Record Command 1= Record / Play
Chase Edit On

For Wide Varispeed Operation Eg 4% Pull Up/Pull Down

Enable External Word Clock 'Sync Ext'

MAIN MENU

Sync err Off
Sync Pb Disable

T4.13b Sony PCM7030/7040/7050

Menu 42 Chase Type	Menu 37 Record Command Type	Sony PCM Menu	Limitations
0= Cmd	0= Edit On/Off	Chase-S on	Will drop out of Edit when receiving an Edit Off Command
0= Cmd	1= Record/Play	Chase-S on	Rehearse Off will not Function
0= Cmd	0= Edit On/Off	Chase-S on/off	Cannot take Sony PCM out of Chase Mode
4= +	0= Edit On/Off	Not Used	Longer to Lock Must use Video Not Wordclock

T4.14 SONY VO-9800/VO-9850

VO-9800 TRACK ENABLE

Audio-1 is permanently enabled, because of this the unit will initialise with Record disabled. To layback or record on Audio-1 use the serial setup to enable record commands to the machine.

VO-9850 TRACK ENABLE

The machine must be in EDIT (MODE SELECT SWITCH) for the EDIT commands to work.

CHASE

To slave this or any video machine ensure that the colour framing is turned OFF. The SR software will send a COLOUR frame off command to the machine on entry to play. On exit from play the SR-4 will send a "Set colour Framing to Switch" command.

TIMECODE

A timecode card must be fitted and the display selector must be set to TC in order for the locates to operate correctly.

LOW BAND TAPES

When Audio-1, Audio-2 or VITC only are used for timecode we recommend that the machine is modified to allow timecode track selection from the front panel. This allows the user to select Audio-1, Audio-2, code-track, or an external VITC to LTC converter as the timecode source for the internal timecode reader. This value is then updated by the tach if the timecode is not readable and allows the machine to perform timecode locates.

T4.15 STUDER TLS4000 Mk I

Local Control Unit

This must be disabled in order to use the RS422 remote!

RECORD TRACK ENABLES

Available for studer multi-track machines

The TLS Mk I programs the record enable for two channels with each command. There must be a time delay between each command. The commands include the monitor setting and mute status. The SR-4 will set each track between Record ready and Sync Replay, or Normal Replay dependant on the setup configuration.

Bug: Reports last serial command not actual tallies.

DEVICE TYPE

Will always report as TLS Mk 1

SHUTTLE & JOG

Not yet implemented

1) Hardware Switch at Rear

A	B
X	
	X
	X
	X

2) Middle Switch

OFF	1
ON	2

3) Baud rate links at Front Right hand side: Two Links as follows

```
1234567890
.xx.....x.
........x.
```

T4.16 STUDER TLS4000 Mk II

Local Control Unit
This must be disabled in order to use the RS422 remote!

Communication
The SR-4 will talk to one TLS4000 synchroniser only on each output port, RS422 communications using the native TLS format are used.

Record The TLS Mk II programs 4 channels with each command

DEVICE TYPE
Currently reports as TLS Mk 2

SHUTTLE & JOG
Not yet implemented

1) LEFT HAND SWITCH
   1 =ON \
   2= OFF > 38K4
   3= OFF /
   4= OFF \ EVEN PARITY, ONE STOP
   5= ON /
   6= ON \ RS422
   7= OFF /
   8= OFF

Both LED's OFF = NO COMMS
Left OFF, Right ON = OK

T4.17 STUDER D820

SHUTTLE & JOG
Not yet implemented

SETTINGS
The Internal Synchroniser must be selected (The Front Panel Lock key should operate)

RECORD TALLY BUG
Strange Track Record tallies are generated even when the machine is not in record if the machine drops out of record due to loss of lock. A special routine has been written to compensate for this. If the system locks up in stop with the record tally on then deselect the machine, and on the machine enter play, record on then off. Then reselect the machine. Alternatively turn the D820 off then on.

LOCK ERROR BUG
The D820 sometimes outputs its lock error without subtracting the offset. A Machine power cycle may cure this.

Internal Synchronise
Internal Synchroniser On
TC Lock Off

T4.18 DAR SABRE

CABLE: The 9 pin cable must have the Rx & Tx inverted (Section T5.02)

Reverse Play Bug
The Sabre will not accept reverse play commands

Chase Command Bug
Chase Not implemented
Record enable
Only when in stop, ignores reenforcement commands if enabled in any other mode and then stopped.

Menu, Full VTR Emulation/Emulation Timecode
VTR Emulation must be displayed on screen

DAR Soundstation Gold

Normal Mode
1) May not accept SR timecode
2) Does not issue Locates
3) Does not issue Record commands
4) No wind speed limits to work with non-linear video

VT Emulation
1) No Jog with Audio
2) Does not accept reverse play command
3) Front panel switched off, not possible to control both DAR and SR
4) No Machine ID , Auto Setup will not work, You will have to set all the parameters as follows:-
Chase Type . . . . . 5=0
Record tracks 8
5) Make sure that Video Lock is enabled on the DAR so that the Lock tally is returned.

T4.19 DAR OMR-8

The following commands are not implemented:-

1) Vari-play, Shuttle, Jog
2) Set Offset

The following tallies are not implemented:-
1) Local
2) Record tallies, if changed at the machine
3) Response to command request track ready status (43 30 02)

CHASE
Chase 0=Cmd must be used, offset must be set on the machine.

T4.20 AKAI DR-8

ID Request always reports as a BVW-75 FILM machine, Now switchable to DR-8 or BVW-7T1

POSITION REQUEST: Use 0= LTC or 3= LTC+VITC, Do Not use 4= L+V+T!

TRACK ENABLES are invalid if changed during record. The serial port reports correctly but the tracks are not enabled on the machine.

TRACK ENABLES are only possible when **SYNC** is enabled, track selection when the LTC input is enabled requires that the DR-8 is chasing an external source of timecode (SYNC ON). To use this machine as a stand alone recorder then the LTC input should be switched off.

TRACK ENABLE TALLIES are not updated to the serial port unless the **SYNC** is enabled.

The **SET OFFSET** command is not implemented on the serial port.

The **CHASE** command is not implemented on the serial port.

TO ENABLE/DISABLE THE LTC

1) **Sub Menu**, Select **SYNC**, display should read **SMPTE-LTC**, if not use inner jog wheel
2) Press **STORE/ENTER**, display should read **LTC OFF**, if not rotate outer jog wheel. Press **STORE/ENTER** to confirm selection.

To ENABLE and SELECT the MODE off the SERIAL port

1) **Sub Menu**, Select **SYNC**, display should read **RS422-MC**, if not use inner jog wheel
2) Press **STORE/ENTER**, display should read **FULL SLAVE**, if not rotate outer jog wheel. Press **STORE/ENTER** to confirm selection.
3) Display should now show **EBU 25F** or desired frame standard, if not use outer jog wheel. Press **STORE/ENTER** to confirm selection

The **SYNC** key may now be used to Enable/Disable the communications.

TRACK MAPPING

To enable the record track selects

1) **SUB MENU**, **SET UP** The display should read **RS422**, if not use the inner jog wheel to select **RS422**.
2) Press **STORE/ENTER**, use the inner jog wheel until the display shows **TRACK MAP**
3) Press **STORE/ENTER**, use the inner jog to display **DIG->ON** if the display shows **DIG->OFF** use the outer jog wheel to position the cursor under OFF, then use the inner jog wheel to change to ON.
4) Press **STORE/ENTER** to confirm selection.

T4.21 Akai DD8 V1.01

COMMS BUG

The Akai will not answer comms for several frames when starting and dropping in and out of record

STATIONARY CODE

Stationary Code causes, the unit to occasionally drop out of Chase

DD8 RS422 SETUP

1) Select RS422 Menu page
   SYSTEM : F6 MORE : F2 REMOTE : F2 RS422
2) Select FULL SLAVE
   MODE : Set Mode using DATA+/- to FULL SLAVE
3) Select RS422 ID
   F2 ID : Set RS422 ID using DATA+/- to DD8
4) Set Edit Delay
   F3 DELAY : Set Edit Delay to 2 frames(minimum) using DATA+/-
5) Set Track Arm
   F4 TRACK ASSIGN : Set A1..A4 OFF and DIGI ON using F1..F5 and DATA+/- keys
6) F6 EXIT : SYSTEM Then chose to save with Project or in Flash Rom
7) Set track Mode
   RECORD : F2 Setup : F5 Punch : Punch Mode :
   using DATA +/- Set to TRACK KEYS

DD8 Track arm Indication

Select RECORD on Keys below the Track Keys, Enable then Disable 9/Sync to enable 9-pin control

DD8 RS422 Remote Enable

Enable 9/SYNC

You should now have transport control and track arm.

To CHASE using the DD8 Synchroniser

DD8

1) SYSTEM
2) F2 SYNC:- Ext timecode source : select type using DATA+/-
3) F6 EXIT : SYSTEM Then chose to save with Project or in Flash Rom

SR

1) Menu 42:- Chase Type 0=
   Setup : MENU 01 ROOT : 2=IFace : 1= Chase : 0= CMD

To CHASE using the SR Synchroniser

DD8

1) SYSTEM
2) F2 SYNC:- Ext timecode source : select NONE using DATA+/-
3) F6 EXIT : SYSTEM Then chose to save with Project or in Flash Rom

SR

1) Select chase type 5:-
   Setup: ROOT: 3= I/F Type : 0= Sony : Chase Type 5= 0
2) Start up Delay = 1
3) Park Offset * 5 frms = 2
4) Attempts for ZERO error = 2
5) Acceptable Error = 2
6) Locate Speed = 0 TLESS
7) Slew Command Type = 2 Prog Play
8) Play+Lock before Variplay = 1

If the SR loses control of the DD8 toggle the 9/SYNC key on the DD8

Version 1.05 with GPIO card

1) Serial track arming and tallies do not work!
2) The DD8 loses communication for a frame after receiving the chase command

Tip: To check the directory status use DISC/UTILITY/ENTER+F1

T4.22 AKAI DD1500 (Version 2.00 a/a)

To Enable the VTR CONTROL connector as a INPUT use the following key sequence:-

SHIFT + **EXT M/C**
This displays the RS422 Machine Control Setup

^ + **v**
Select the **RS422 Mode**

DATA ENTRY/NUDGE +
Until **FULL SLAVE** is displayed

^ or **v**
Select the **RS422 ID**

DATA ENTRY/NUDGE +
Until **DD1500** is displayed

F1 TRACK ASSIGN
To access the RS422 TRACK ASSIGNMENT Menu

< or **>** Select **D1-16**

^ or **v** Select **D1-16 ON** to enable remote track enables

To enable external control of the track selects use the **EXT M/C** switch, external control is enabled when the LED is illuminated.

ID Request always reports as a BVW-75 FILM machine, Now switchable to DD-1500 or BVW-75

POSITION REQUEST: Use 0= LTC or 3= LTC+VITC, Do Not use 4= L+V+T!

CHASE BUG

The DD1500 will accept the RS422 **CHASE** command but unfortunately it does not exit when a **STOP** command is sent. This means that there is no way of exiting chase except by using the **EXT.TIME** switch on the DD1500. When the Chase (**EXT.TIME**) is enabled via the RS422 the DD1500 behaves differently in that when the external code stops or changes direction the DD1500 stops chasing.

RECORD BUG

If you use a RECORD ABORT (SHIFT RECORD) on the DL1500, the next time you enable a track via the 9 pin remote the system will enter **RECORD!!!!**.

TRACK ARM BUG

When in play the DD1500 will only accept the first track arm command. All subsequent track arming commands are ignored until you STOP the DD1500.

T4.23 SSL SCREENSOUND

1) 'SETUP' 'SERIAL' Enable Sony Slave STD Motion Record
2) 'NETWORK' 'MACHINES' OFF SIO Linked as controller
3) Use RX/TX invert cable

T4.24 SSL AXIOM

The Axiom serial interfaces have four different modes of operation as follows:-

1) Grey Master

All four serial ports may be grey masters, The Axiom acts as master and synchronises the attached machine to the Axiom Timeline. A grey master is always slaved to the Axiom timeline. This mode suits fast responsive machines. A stop command from play, reverse play or wind is translated to a '**LOCATE TO HERE**' command, when slow (film) machines receive this command they slow to a stop, reverse direction and locate to '**HERE**'.

2) Green Master

Only one port may be either a Sony Slave, Green Master or Red Master. The Axiom acts as master in play, but the Axiom timeline follows the Green Master position in wind. A Green Master is slaved to the Axiom timeline in play but acts as master to the Axiom timeline in wind. A stop from wind waits until the machine is stopped, then the timeline and all machines locate to this position. Stop commands from play or reverse play are still translated to '**LOCATE TO HERE**'

3) Red Master

Only one port may be either a Sony Slave, Green Master or Red Master. The Axiom commands the machine, the Axiom timeline follows the Red Master machine position in all modes. Stop from play or reverse play are still translated to '**LOCATE TO HERE**'

The optimum serial setup for both **Grey Master** and **Red Master** is as follows:-

Fixed adaptive lockup = 12 in PAL and 14 in NTSC

RECORD

* The Axiom record switch acts as a **RECORD MODE**, this may be enabled at any time, Every time a command is issued a **EDIT OFF** command followed by an **EDIT-PRESET** command is sent.
* If the controlled device is in PLAY and the RECORD MODE is enabled then provided that at least one channel is armed a series of **EDIT ON** commands will be sent until the device is in record.
* If the controlled device is put into record by another remote then the AXIOM will automatically take it out of record if the AXIOM is not in RECORD MODE.
* If the controlled device is taken out of record by another remote then the AXIOM will automatically put it into record if the RECORD MODE is enabled.
* The Edit On commands will start as soon as a play tally is present and will not wait for a lock tally or even lock with the Axiom

PLAY

The Play tally will stop flashing when the master is in frame lock with the Axiom, the Axiom will not wait for a Servo Lock tally.

4) Sony Slave

The Axiom timeline is controlled by an external controller only one port may be either a Sony Slave, Green Master or Red Master. The Axiom timeline is controlled in the same way as any machine by selecting Sony Slave mode. The optimum setup for controlling the Axiom from a CB product is as follows:-

1) **LOCATE ONLY**, Non linear audio a locate is always faster than Wind.
2) **Chase type '5'**
3) Locate speed: **Very Fast** (Locate 0)
4) **Record Ready Off**, the Sony command "EDIT PRESET SENSE" causes the AXIOM to lock out, to avoid this Edit Preset and Edit preset Sense commands must be turned off.

The lock after reverse play or reverse wind is slower than the lock after play or forward wind. The Axiom appears to take longer to start moving after reversing.

Note: The 9 pin cable must have the Rx & Tx inverted (See Section T5.02)

Note 1:

In all modes the Axiom timeline is either master or follows the Sony Slave, Red Master or Green master machine. The remaining three Grey master machines are slaved to the Axiom timeline and will therefore follow in all modes.

T4.25a AVID Audiovision

The SR-3 may be used as a multi-machine controller with the Avid, by using the timecode reader the Avid may also be slaved to an external source of timecode.

1) AVID Cables:-
   The Avid machine control cable (Male 'D') will work correctly with SR-4 only in Port-A if the Links are Horizontal (SR-3) position). This cable may be used in ALL modes.

   The Avid Emulation cable (Female 'D') will work correctly with the SR-4 when connected to any port, If connected to port A then the links must be vertical (SR-4). This cable will only work correctly in machine emulation mode.

2) Ensure that all parts of the system are locked to video syncs, (Avid, Micro-Lynx, CB MC-1 if used, SR-3)

3) Connect the Avid super clock input to a suitable source of 256 * Word Clock for example the Digi-Design Video Slave Driver or the Rosendahl WIF.

   If the Micro-Lynx is used then the clock rate must be manually as follows:-
   1) SETUP : 2) ACG
   3) Use + or - keys to select correct frequency
   4) SETUP The following preferences may help: Park Ahead On

AVID Transport Control Modes:-

LOCAL

No Interaction, The Avid Timecode output may be used as a master to the system, connect to SR/MR timecode input and select READER as Master.

AVID as MASTER to SR-3

MASTER

The SR-3 master machine will be controlled by the Avid. In play the Avid will lock to the SR-3 Master machine.

SLAVE

The Avid will follow the SR-3 master machine.

In this mode the SR-3 should be set as follows
Menu 27 Serial A type . . . . . Input
The **A** key will act as a Local/Remote switch for the system
Use **Shift** followed by **B, C, D** to select the Master

4.25b AVID as SLAVE to SR-3/4

REMOTE

Used in the Deck emulation mode. The SR-3/SR-4 can control the Audiovision. The Audiovision sends a NTSC VO9850 ident unless changed using set devicetypedata commands as below. When using the Avid in Local, positional information on the emulation port is only updated in stop!

Notes on PCI BUS Machine

1) Track arming only active when in stop

Setting the Avid ID number, the SR-4 will configure correctly if you select the 3324 id as follows, use getprop instead of set to check current settings:-

Windows

Console

Setting a PAL ID

set devicetypedata1 D1
set devicetypedata2 A8

Setting a NTSC ID

set devicetypedata1 D0
set devicetypedata2 A8

Park ahead used by remote mode

set slavedelay 80
set parkframes 85
set parkahead true
set VTRtriggerdelay 1.0 (Was 2.0)

BUG: Avid reports that the Video is always record armed

T4.26 AVID News Cutter

1) This is a DVW digital video workstation, designed to work as a stand alone system, it does not work with any other equipment. Although it can control an external machine for play in it cannot synchronise to an external RS422 or timecode.

2) There is no video emulation mode.

3) There is no timecode output.

4) There is no possibility of putting an external video machine into record.

The only way of getting program out of the system is to put the AVID into play and putting a video machine into CRASH RECORD using the internal timecode generator as the timecode source.

T4.27 CB BS-1/MC-1

TRACK ARMING (Available on MC-1 Only)
A1..A4, Video -> Port B
D1..D16, MC-1 Parallel track arm outputs 1..16

CHASE SETUP
Chase Type . . . . . 5= 0
Start up delay . . . . . 4= (Dependant on PACCN)
Park Offset * 5 Frms . . . . . 0=
Acceptable Error . . . . . 1= Frms
Locate Speed . . . . . 2= MED (Dependant on ACCN)
Slew Command Type . . . . . 1= Vari-Play
Wait for Code to Stabilise . . . . . 4=
Chase Locate . . . . . 1= Locate Only

Serial Position Request . . . 1= Start of frame (Old MC-1 Software)

T4.28 Doremi V1 Version 1.99z

1) Must have correct Video reference input selected to report Servo Lock

2) Offset Cmd Bug:- A Sony Offset command sets the timecode output value.

3) Ensure that Menu 03 is not selected to "Chase Serial TC", in this mode the RS422 port is an Output.

4) Setting the V-1 ID
Depress **OPTION** & **MENU** together
Select the Option Menu 19 "Emulate" using the **^** & **v** keys
Use the **--** and **++** keys to select V1 emulation
Exit using the Menu key.

5) Use Option Menu 04 "Save Yes" to save any new defaults if necessary.

The MR/SR provides 6 commands that enable the user to access the V-1 Segment commands:-

note: only available when the SR-4 displays Doremi as the machine type (see 4 above).

1) **Select Segment** . . . . **[Macro 181]** or **[Recall]** followed by **[ID >]**
Enter the segment number followed by **[Select Segment]** to locate the start of the segment
This sets Doremi Option Menu 8!
2) **Play Segment from Start** . . . . . **[Macro 182]**
This command will only operate if within the selected segment (Goto Segment) or the segment mode is off.
3) **Define Segment** . . . . . **[Macro 183]** or **[Store]** followed by **[ID >]**
Define the In and Out points on the SR then enter the desired Segment number followed by the Define Segment command.
4) **Select Next Segment** . . . . . **[ID >]**
eg, 4->5, 5->6, 6->7....255->256
5) **Select Previous Segment** . . . . . **[ID <]**
eg. 7->6, 6->5, 5->4...1->0
6) **Clear Segment Mode** . . **[Clear]** followed by 1) Goto Segment
This will Locate the start of the Recording

The User display will show the Segment number as a PNO Number. Tape End will be displayed if at start or end of segment.

T4.29 Fairlight MFX-3

BUGS

1) Reports timecode standard as 24 FPS
   Select **Root | iface | General | Menu 57: Timecode Standard 1= Use System**

2) Does not accept CHASE or SET OFFSET commands

Chase Setup

Chase Type = 5= -+ Current MFX software
Chase type = 4= + Older MFX Software
Park offset = 2 10 frames
Start Delay = 4
Slew Command Type 0=Variplay (1=Shuttle on very old software)

T4.30 Audio Kinetics ES-1.11/1.12

The SR-4 cannot improve the basic operation of the ES 1.11, It is essential to read the AK operation manual and parameter setup notes in order to optimise the AK 1.11.

a) Only one ES 1.11 may be connected to each serial port on the SR-4

b) Interface Cable

SR-4	ES 1.11
2	4
3	1
4	8
7	3
8	2

c) ES 1.11 Setup:-

1) Disable BUS
2) Set timeline reference as video: MENU SYSTEM MASTR Mas A
3) Set ES BUS address as 001: MENU SYSTEM ESbus
4) Set Mode to External: MODE mode<-Ext
5) Select user preferences as required, Play to park on/off, Record enable....
6) It may ne necssary to set MACH|PROG| 1014 (NoWild) to $FF

7) Enable Bus

d) SR4 Setup

1) Select Serial port A,B,C, or D
2) Select serial protocol "**Setup"** Root Menu, "2"= IFACE, "3"= Type "5"= AK

Bugs

a) The ES 1.11 will only report difference when in play mode
b) Offset commands cause the ES 1.11 display to flash

Emulation Mode
The AK1.11 may also be used in emulation mode
In Emulation mode the Local Setup menu LOCK should be set to Auto or Phase

1) Chase type 4

T4.30 Audio Kinetics ES-1.11/1.12 DEBUG MODE

A debug display is available as follows:-

1) LOCAL | Option | Parameter Protrction = Off
2) MACH | PROG | Parameter 1040 (testit) set to 53
3) LOAD
4) The debug display is enabled using the Mode Key and is changed using the Menu Key

System Position System Speed Difference
Machine Position Machine Speed VLTr25 TLSVC Last Cmd

System Position: t= timeline, c=chase, r= real Master
Machine Position: l= ltc, t= tach
VLTr25: V= VITC L=LTC T=Tach r=Record Enable 25= Standard
TLSVC: T= Timeline, L= Lock Active, S= Goto Active,
V= Fast Slew v=Slow Slew l= Servo Released p= vari play
C= Chase

The Menu key selects an alternative Display for the top line
TMS TMP 0f 06ts 10000000

TMS 41= Stop, 42= Variplay, 43= Play, 4c = Record, 61= FWD, 62= RWD
TMP 18= Chase, 44= Step(jog), 46= Shuttle, 4e= Search(Goto), 51= Lock, 53= LPRS, 5a= Calibrate
3rd digit 0= Trying, 1= Successful, 3= Failed

Logical machine commands:

00 Null	10 Lifter Normal
01 Play	11 Varispeed On
02 Stop	12 Varispeed Off
03 Crawl Stop	13 Pause
04 Record	14 Edit
05 Unrecord	15 Servo
06 Crawl Rvs	16 Rec Preset
07 Crawl fwd	17 Locate
08 Rvs Play	18 Step +
09 FFWD	19 Step -
0a FRVS	1a Un-Rehearse
0b Toggle Mode	1b Sync Play
0c Rehearse	1c Init
0d Lace	1d Rehearse mode Toggle
0e Unlace	
0f Lifter Defeat	

T4.31 AUGAN 2.96/77S

Working with AES/WORDCLOCK

By supplying resolved Video syncs and Wordclock the Augan may be operated in RS422 device remote provided that it is switches to Gen-Lock Mode.
1) Switch first to AES input and then to Video clock, the display should then indicate **GL** under the sample rate.
2) Check Parameter 40 (Digital Audio Sync Source),

On the Sync Page
1) F5 sync options: F6 External clock: Sync ON, this selects video reference to the timeline.
2) F1 Mode: device (This also inverts the inputs so that no TX-RX Invert cable is required)
4) F2 VI Type: V1

The SYNC key is a remote enable switch (The Local/Remote Tally is not implemented by the Augan)

AUGAN OFFSET BUG

Older Software

When an internal offset is set on the Augan the RS422 position in Stop will be different from the position in Play. To cure reset the offset to zero. (Now corrected)

Current Software (OS2.96/71S..)

If an internal offset is set, the position displayed on the SR/MR and on the Augan will be different. The offset is used to calculate the Augan displayed position, the offset is not used on the serial port.

1) Audio output in Jog and Variplay

The audio will be muted if a speed of more than +5% is requested ($4A), when in forward the audio will be un-muted when the speed is returned to play speed, In reverse once muted the audio is never un-muted, also the jog/varispeed is not correct in this mode.

CHASE SETUP
Chase Type . . . . . 5=
Start up delay . . . . . 5=
Park Offset * 5 Frms . . . . . 0=
Play before variplay . . . . . 0=
Acceptable Error . . . . . 1= Frms
Locate Speed . . . . . 0= TLESS
Slew Command Type . . . . . 1= Shuttle !!
Wait for Code to Stabilise . . . . . 2=
Chase Locate . . . . . 1= Locate Only
Max slew speed 6

T4.32 VPR-3 Version 7.3 PAL with Adrienne Interface (BVH-2K)

Suggested setup

Chase Type . . . . . 5= 0
Start up delay . . . . . 7= (Dependant on PACCN)
Park Offset * 5 Frms . . . . . 5=
Attempts for ZERO Error . . . . . 2= Trys
Acceptable Error . . . . . 1= Frms
Locate Speed . . . . . 2= MED (Dependant on ACCN)
Slew Command Type . . . . . 2= Vari-Play
Wait for Code to Stabilise . . . . . 4=
Chase Locate . . . . . 1= Locate Only
Sync Correction . . . . . 5= NONE

T4.33 TimeLine Lynx

Timecode
To use as a **MASTER** it is recommended that the machine timecode output is connected to the SR/MR timecode input. When using used as a Slave there is no problem. (Note: There is only one timecode input per SR system and one per box in a MR system.)

Lynx Setup
To enter the Lynx I setup menu hold the SET UP key depressed for approx 6 seconds, repeat to leave the setup menu.

To enter the Lynx II setup menu hold the Blue key on the left depressed and depress the **[SET UP]** key, repeat to leave the setup menu.

The MENU key is used to change the menu section, the FORW and BACK are used to select the item to be changed. The v, ^ and CLR keys are used to adjust the selected item.

Select the following:-
Editor 0
Address 1

Lynx Local/Remote
The **Tran Mode** switch on the Lynx is used as a local-remote switch.

SR/MR Lynx Protocol Select
Select the correct protocol on the SR/MR:
Root | Root | 2= Iface| 3= Type | Menu 63: Select protocol 4= Lynx

If **4= Lynx** does not appear on the select protocol menu then this protocol is not fitted to your system, contact your agent or CB Electronics to purchase the protocol upgrade.

Subframe Offsets
To set sub-frame offsets, enter the required sub frame offset followed by **Shift** followed by **Store**, Followed by **Chase/Offset**, use **Recall** followed by **Shift** followed by **Chase/Offset** to see the current sub-frame offset.

T4.34 FED Audio Solution II

This 4 track optical disc recorder can emulate a BVW40. The Sony P2 control input is on COM2 and requires a special cable. A1..A4 are used as the track enables.

COM2 is RS232, for long cable runs a RS422 to RS232 should be used, positioned next to the Audio Solution.

Cable details without RS422 to RS232 converter

SR-4	SR-4 FED COM-2	
Tx Data -	2	3
Rx Data -	8	2
Ground	4	5

T4.35 Nagra T

The connection to the Nagra T is made via the Nagra RS422 Remote Control interface **TA-RSA** We have tested the unit with software version ???? fitted to the TA-RSA interface.

RS422 Connection to Centre Connector- Remote C

The Nagra ID can be set to Nagra T using the Status Key to select the Menu, The + and - keys to step through the menu and the Mod key to change the parameter. Select T-Audio

Menu 44 Startup Delay . . . . . 2=
Menu 45 Park Offset * 5 frms . . . . . 5=
Track Arming = A1 and A2

BUG The Nagra Lock tally is only present in Insert Mode?
When switched to Insert Mode the Replay Head changes, Tracks should be enabled in stop to avoid losing lock.

T4.36 Sony DNW-A75/A100 SX Digital Video Hybrid

These machine use two different protocols one for the Tape and one for the Disk.
1) Program a key to Macro 163 or use Menu 63 (Root/Iface/Type) to enable/disable the special protocol.

Bugs
1) In Disk mode the machine will not accept variplay commands greater than +/- 1* play speed.

T4.37 FED V-MOD 100

SR-4 SETUP
When selected to 422DEV in the MASTER menu the V-Mod will answer with a BVW-40 ID, to change this select Odectics as described bellow. If this is not possible the following changes should be made to the standard BVW-40 setup:-

IFACE-CHASE
Menu 43 Chase command type . . . . . 5= 0
Menu 48 Locate Speed . . . . . 0= Tapeless
IFACE-GENERAL
Menu 56 Pause/Stop Command . . . . . 1= Stop

RECORD
The V-Mod will only accept crash record commands

TIMECODE
If the V-MOD does not have a timecode reader it will not record timecode with video. The best way to set timecode on the V-MOD is to record a video with burnt in timecode or with a slate mark. The V-MOD may then be set to this timecode after the video is recorded.

To record with serial timecode, select 422CON in the MASTER menu, connect to the playback machine via RS422. Then depress Record ([REC] and [>]) on the V-Mod, The V-Mod will start the playback machine and record audio, video and timecode.

BUG Timecode Standard
When set to Odetics protocol the V-Mod reports an IDENT of D8 01 this indicates that it is an NTSC machine with SMPTE 30 timecode. When set to RS422 protocol the V-Mod reports an Ident of 11 21 (BVW-40 PAL)

V-MOD SETUP
To Enter Setup
1) Depress LOCK & REC simultaneously

Enable the RS-422 on the V-MOD from Setup
2) Use the **<** and **>** to select the **MASTER** menu
3) Depress the **Enter(LOCK)** key to select the master menu
4) Use the **+** and **-** to select **MASTER: Odectics** (This sets the ID as V-Mod instead of BVW-40)
5) Depress the **Enter(LOCK)** key to return to **MASTER** menu

To Select External Video Sync from Setup
2) Use the **<** and **>** to select the **VIDEO** menu
3) Depress the **Enter(LOCK)** key to select the video menu
2) Use the **<** and **>** to select the **VIDEO SYNC** menu
4) Use the **+** and **-** to select **VIDEO SYNC:COMP**
5) Depress the **Enter(LOCK)** key to return to **MASTER** menu

To Preset the Timecode Number from Setup
2) Use the **<** and **>** to select the **Timecode** menu
3) Depress the **Enter(LOCK)** key to select the master menu
4) Use the **<** and **>** to select the Timecode digit to change
4) Use the **+** and **-** to select change the digit
5) Depress the **Enter(LOCK)** key to return to **MASTER** menu

T4.38 Publison CP+

1) This DAW has no emulation mode and can only be used as a master to the SR-3
2) The 9 pin connections are non-standard

Publison Female	SR-3 Male
1	2
2	7
3	3
4	8
5	4
6-9	
7-8	

T4.39 BTS DCR 500

This machine has two analog and four digital tracks, the digital tracks may be accessed as normal (D1..D4), A1 and A2 will access D1 and D2

There are no tallies from digital tracks 3 and 4!

T4.40 STUDER V-8 Software 2.0 10/30/98

1) Depress '**UTILITY**' repeatedly until "2 ONLINE SOURCE:" is displayed.
2) select using ^ or v until "2 ONLINE SOURCE: RS-422"
3) Depress 'UTILITY' and using **^** or **v** select "3 RS-422 Track Arm: On"
4) Depress 'UTILITY' and using **^** or **v** select "4 RS-422 Mapping: 1-2"
5) Enable the 'ONLINE' key

Record Tally Bug

No Record tallies! select record tallies NV on SR-4

Ident

Same Ident as BVH-2180 ($111C), this is good for us or we can supply an unused ident, I suggest for use with OLD Editors you allow the user to switch between two idents, one unique and one BVU950 or similar.

Comms bug

The RS422 port loses communication when ONLINE is off.

Offset Bug

The V-8 accept's a chase command but does not accept the Sony SET OFFSET command.

The V-8 will accept a Chase command or may be controlled by the SR-4 synchroniser, to use with offsets the SR-4 synchroniser must be used with the current V-8 software.

Multi-machine Record Enable

The V-8 will only record as an 8 track on the current software (2.3).

Note; The V-8 will report record inhibit if the first tape is record inhibited.

Typical Internal sync settings
43 Chase type 3=
44 Start up delay 9=
45 Park offset * 5 frames 5=

T4.41 Diva

Connections

Diva	SR-4
1	7
2	3
11	2
12	8
6,7	4

Emulates a BVW60 NTSC only, set to use System Standard with SR/MR systems
Current Problems
1) No Status Replys!
2) Locates not frame accurate in PAL (Frame accurate in SMPTE)
3) Does not accept Shuttle Commands
4) All commands other than STOP or JOG ignored when in PLAY

T4.42 Otari Radar-1 revision 1.46

Record Tally BUG

The Record tallies are offset by 8 tracks ie. Track 1 reports as track 9 etc.

Record/Edit On

Use Record and Play instead of EditOn and EditOff this will enable additional tracks to be dropped in and out of record.

Track Arming

Unlike a Video machines tracks that have not previously been in record may be armed whist the machine is in record and then may be dropped into record using a **RECORD** (Not Edit On) command. Tracks that have previously been in record will go back into record immediately when record armed.

Timecode Standard Bug

The Radar does not report the current timecode standard correctly, it will always report a timecode standard of 30 NON DROP, it never reports EBU or Drop

Machine ID

Auto setup not possible because there is no unique machine ID

This machine reports as a BVU950 and should be set up as follows:-

Menu	Function
34	Record tracks 4=24
35	Analog & Video 0=disable
38	Command Reenforce 2= Record (Until bug fixed)
41	Record tallies 4= NV (Not Valid)
43	Chase command type = 5
44	Start up delay =2
45	Park Offset = 2 (10 Frames)
48	Locate speed = 0 (Tapeless)
50	Wait for Stable code = 2 (4 frames)
54	Machine type = 2 (ATR)

T4.43a SSL G Series Computer (4K/5K)

1) Connections
   1) Connect S29 on RM-6 Hub to 'Multitrack' under patch on SSL Console (25 'D' Male - 25 'D' Female).
   2) Connect Timecode out from RM-6 Hub to Master Timecode input on SSL (S113).
   3) Connect S88 26 way ribbon cable (Maximum Length 2 meters) between SSL computer '78' Card Port 2 and RM-6 Hub

2) SSL Setup
   1) Type **SSL** Execute, the keyboard prompt should disappear, type the access code **BERNOULLI**, this will not be displayed but the keyboard prompt should re-appear
   2) Type **Setup** Execute and "Do you want to see more" should be displayed
   3) Type # and set the following
      Synchroniser type : 3
      Master Transport Selector : YES
   4) End End
   5) Setup Execute
   6) SSL Display's "Do you want to see more?" type "Y" to enter Engineer menu page.
   7) S for Session and set "Using VITC" to YES this will enable the SSL to read stationary timecode.
   8) End, End
   9) SSL Display's "Do you want to see more?" type "M" to enter Maintenance menu page.
   10) Type "T" to select tape machine.
   11) Select a spare tape machine position and type "Delete", answer Y
   12) Type in name (EG. SR-24 25FPS) followed by "Execute" and enter details as follows:-
      The Tach and Direction parameters will be constant as follows:-
      Forward direction sense (L/H) : HIGH
      Multiple Play speeds : NO
      Pulses/Second at std speed:
      25 fps EBU timecode, 5 pulses per second
      30 fps SMPTE timecode, 6 pulses per second
      Target Window : 0.0
      Orop Out Command Type : 1
      Drop In Command Type : 1
      Time for Startup : 1.20
      Time to be sure tape stopped : 1.10
      The other auto-locate parameters will depend on the machine to be controlled
   13) End
   14) Type the "SYNC" key to enter Sync Menu Page
   15) Type the "Setup" key to enter machine setup page and enter your machine name and select the Menu No.
   16) End
   17) Type I to select the interface menu
      Z8 interface No. : 2
   18) End
   19) Type the "SYNC" key to select the synchroniser options menu and set
      Maximum number of masters : 5
      Offsets may be read from synchronizer : YES
      Single Machine Mode : NO
      Timecode Generation : YES/NO Dependant on Machine
   20) End End

T4.43b SSL G Series Computer (4K/5K)

3) SSL Display
   1) Use the Large/Small key, or use sync execute to view the machine page
   2) The Down cursor key switches between Position & Time to Sync
   3) The Left or Right Cursor keys switch between Mark & Offset

4) SSL Commands
   1) AM{Execute} Sets Port-A as the Master
   2) SYNC ON Enable synchroniser
   3) Offsets:- use A at 00:00:00:00, B at 01:00:00:00
   4) Locate C goto 00:00:00:00 Execute
   5) ABC Setup Execute :- Toggle machine selection machines ABC
   6) Sub frame offsets :- B* 00 Execute
   7) Request Subframe offset :- B*? Execute

T4.44 Sony BVU-800 (Using timecode from an audio track)

The BVU-800 was the first timecode U-Matic, some early versions (I have found them in the USA, Germany and Russia) either have no timecode card fitted or have only a timecode amplifier fitted with no connection to the RS422 port. This technique may also be used when the timecode is not recorded on the timecode track.

If this is the case then the timecode reader on the SR/MR may be used to read the timecode as follows:-
   1) Select **Root | Unit | Code | Menu 23 TC Reader -> Port** and select the port to which the machine is selected
   2) Select the BVU800
   3) Select **Root | IFACE | General Menu 55 Position**
   4) Enable **4= L+V+T** (Request LTC, Video, and Tach)

T4.45 Ampex DCT-700

Sony Protocol
1) Reports Servo locked in all modes
   Servo lock flag removed during transition between edit and playback modes
   Servo lock flag removed during transition between Vari-Play and locked play

Ampex Protocol

T4.46 Sony PCM-3402

1) Start Delay = 13 Frames
2) Internal synchroniser is slow, and does not read stationary code
Menu 43 Chase type 3= -
Menu 44 Start up delay 9=

3) Digital Tracks 1 & 2, Analog tracks 1 & 2 (49 & 50) also arm Aux1 and Aux2

4.47 Protools 5.0 - USD

USD Setup: Position Reference LTC

Enable transport control window
Windows | Show Transport

Click on Transport = Machine or Transport = Pro Tools
Select machine or pro tools as required

Select Online Machine

T4.48 Studer D950

The D950 has a serial interface to the SR/MR system. The studer 9 pin output should be connected to a serial input on the SR/MR system (port A on four port Hubs (SR-3, SR-24) and Port E or F on 6 port Hubs (SR-24A, SR-32). The D950 should be set up as follows:-

C:\winnt\D950System.ini File
RS422Ports=N where N is the number of ports available
(SR-3/4 N=4, SR24A N=4)

RS422First=M where M is the number of the first machine port
(SR-3/4 M=2, otherwise M=1)

The Serial port should be defined as follows
5= {9} COM8 baud=38400 parity=0 data=8 stop=1

where {9} is the com port, ports 1-4 are standard IBM ports, 5-12 are stallion box ports Stallion 00 = COM5, 01= com6...

The cable connections are as follows:-

CB. 9'D' Male on Cable — Studer 25'D' Male on Cable

Link 3 to 18
Link 8 to 20

Ground 4 . . . . . 7 Ground
Tx+ 7 . . . . . 15 Rx+
Tx- 2 . . . . . 17 Rx-
Rx+ 3 . . . . . 19 Tx+
Rx- . . . . . 25 Tx-

D950 Status Display

Machine Status

# Machine Sony ID	RDY	REC	Lock	Status	Mst
1 avid D1.A8	YES	no	ok	ok	<-
2 BVW-75 21.24	no	no	ok	End	
3 A500	no	no	ok	ok	
4 OMR-8	no	no	ok	No Comm	

External names checked = names from SR/MR, not checked of user defined names

T4.49 Philips DCR 6024 Voodoo

Device ID= 0s E0 'HDD-1K' where s= Standard

Timecode Standard

This machine can record at 23.98, 24, 25 or 30 fps the device type tally follows the standard

Video Reference

When Insert/Assemble is enabled the voodoo will always reference to video input. When insert or Assemble is off the voodoo will switch to the selected reference.

Special Setup

To ensure correct record select **Menu 41**:- Track Ready Tallies 4=NV
To ensure that the machine follows exactly the track arming **Menu 38**: Command Reinforce 2= Track Arm.

Bugs in the Serial Protocol

1) Edit On with no tracks selected = Crash Record!

2) Video or Audio Inhibit sets the record inhibit flag in the P2 protocol

3) Track arm from RS422, all tracks are armed in pairs only, it is no possible to arm individual tracks.

CMD	Mcn	Tally
D1	D1 & D2	D1 & A1
D2	D3 & D4	D2 & A2
D3	D5 & D6	D3
D4	D7 & D8	D4
D5	D9 & D10	None!
D6	D11 & D12	None!
A1	Cue	None!
A2	Cue	None!
A3	LTC	A3
A4	Cue	None!
None	Crash Arm	A1,A2,A3,D1,D2,D3,D4,Video!

4) D1-D4 Tallies in status request byte 12

5) Edit Preset request 61 30 02
Voodoo Reply 71 30 AV should be 72 30 AV DD where AV = A1..A4 & Video Insert tally and DD = D1..D8 Insert Tally

T4.50 Midi Machine Control MMC

SR Midi Support
The SR currently only supports Midi Baud rates on the 'C' port, in future releases or by hardware modification of existing boards this will be extended to port D by disabling GP input 6.

The Midi interface requires an external midi adapter available from your supplier, this connects to the serial port. It is powered by fitting Link 2 (port C) or Link 1 (port D). On older units you should also fit a 220pF capacitor in position C20 on the PCB (if you solder to the top of the board it is not necessary to remove the PCB).

Using Midi on Port D
If Midi is enabled then we recommend the following mods to enable midi on port 'D' are carried out:-
1) Cut tracks to pins 37 and 38 off U12 (SCN26C92)
2) Link U12 pins 37,38 to U12 pin 39.
3) Cut the track to U13 pin 39.
4) Link the track that was connected to U12 pin 38 to U13 pin 39.

Midi Device ID
Root | 2=Iface | 3= Type | 6= Midi | Menu 64:= Midi ID Number allows you to select the midi ID number for commands from the SR-4. Some units require that the same ID number is set on the machine (Tascam DA-88) others do not check the command ID number (Tascam Mx-2424).

SR/MR MMC Protocol Select
Select the correct protocol on the SR/MR:
Setup | Root | 2= Iface| 3= Type | Menu 63: Select protocol 6= Midi

If **6= Midi** does not appear on the select protocol menu then this protocol is not fitted to your system, contact your agent or CB Electronics to purchase the protocol upgrade.

Sub-frame Offsets
To set sub-frame offsets, enter the required sub frame offset followed by **Shift** followed by **Store**, Followed by **Chase/Offset**, use **Recall** followed by **Shift** followed by **Chase/Offset** to see the current sub-frame offset.

T4.51a Tascam MX-2424 Using Midi Interface

1) Use with Midi Protocol and internal chase synchroniser only (section 4.50). The TL Bus is NOT Timeline Lynx compatible.

2) The MX-2424 will lock to MTC or LTC.

3) The Tascam MX-2424 will park ahead by 20 frames when parked to stationary code.

4) The Midi ID Device ID is not used by the MMC interpreter.

Bugs

1) The Lock Deviation always reports 0 Error, the Actual Offset always reports the current requested offset.

2) There is a 1 frame difference between the Midi Position out and the timecode output.

MX 2424 Setup
Menu 000 Control Mode = *Timecode Chase
Menu 001 Frame reference = * Video
Menu 004 Timecode Type =
Menu 301 MMC Tracks/ID = *24 [one ID]
Menu 340 Remote Assign = *RC-2424
Menu 900 Store Settings = *User Default : SAVE

T4.51b Tascam MX-2424 Using P2 on remote Port Software 2.XX or Later

Notes Version 3.01
1) Arming Digital tracks 1-4 tallies on Analog tracks 1-4.
2) Tascam ID = MMR-8 (8 Track) ID, requires non-standard request, now implemented.
3) 20 frame (25 frame SMPTE) park ahead when chase enabled
4) If Sample lock is flashing (No video Ref) then the track arming will not work from the remote but will work from the front panel.
5) No Lock Tally in Play, unless chasing to timecode
8) Does not accept Vari-play or Programable Play commands

SR/MR Setup
1) Root|IFACE|Chase| Menu 42:- Chase Type 0= CMD
   Using Chase type 5 locks in reverse play but not forward play!
2) Root|IFACE|Record| Menu 34:- Record Tracks 4=24

MX 2424 Setup
Menu 000 Control Mode = *Timecode Chase
Menu 001 Frame reference = * Video
Menu 004 Timecode Type
Menu 340 Remote Assign = *P2 In
Menu 360 P2 Device = *Tascam MX-2424
Menu 361 P2 Track Arm = *Digital Audio
Menu 362 P2 Punch Delay = *3 frames
Menu 364 P2 Chase Control = *Ensbled: LTC Software (3.XX or Later)
Menu 900 Store Settings = *User Default : SAVE

Tascam Software Comparison

Machine Control Function	2.11 P2 via Remote	3.01 Beta P2 via Remote	P2MMC 2.11 & 3.01
24 Track Arm	Yes	Yes	Yes
Capstan Lock Tally Play	No	No	Yes
Capstan Lock Tally Chase	Yes	Yes	Yes
Chase to Timecode On/Off	Yes	Yes (Menu 364)	Yes
Set Offset	Yes	Yes (Menu 364)	Yes
Video Editor (Chase using Vari-Play)	No	No	Yes
P2 Position Error (Request Middle of Frame)	-1	-1	
P2 Position Error (Request Start of Frame)	0	0	

T4.52 Tascam DA-78HR

1) Use with Midi Protocol and internal chase synchroniser only (section 4.50).

2) The DA-78HR will lock to MTC or LTC.

T4.53 JVC CR-600U

1): Will not Respond to two byte Jog/Shuttle commands
2): Play tally always active when tape in contact with head
3): Does not respond to offset status request
4): Device ID = BVU800
5): Hours Bit 7 set if negative timer

T4.54 Panasonic AG-DS850

1) Status bytes offset 0B,0C & 0D all respond as $FF

T4.55 360 Systems TCR-4, TCR-8

Use the Native protocol:
The native serial protocol is enabled by pressing Menu, then 0 for Setup, 3 for External Control, and 1 for RS 422 Emulation.
Use the Jog wheel to dial this to TCR NATIVE MODE, and press Enter.
Press Stop to return to normal operation.

T4.56a Pioneer DVD-V7300D

Advanced Setup
To Enable External Video Lock
1) Switch to **PAL** or **NTSC** on Rear of the DVD player, **NOT Auto**
2) Remove any disc in the unit
3) Using the infra-red remote Enter advanced setup by depressing setup for approx one second
4) Select **Baud Rate** using the down arrow key
5) Set to **9600bps** using the right arrow key
6) Select **Rev Step/Rev Play** using the down arrow key
7) Set to **Frame** using the Right arrow key
8) Select **External sync** using the down arrow key
9) Set to **PAL** or **NTSC** using the right arrow key
10) Select **AV Sync Compensate** using the down arrow key
11) Set to **Off** using the right arrow key
12) Turn off Advanced setup using the Setup key

The unit will display **Locking to External Sync** whilst locking. If a DVD is present when Video syncs are connected or the unit is switched on, it must be ejected to allow the DVD player to lock to video syncs.

Use **Shift** Followed by **Play** to select the fist title on the Disc.

Slaving a DVD
The DVD has a consistent start time, this is used to slave the unit
1) When Slaving a DVD to a DVD master no park offset is necessary (section 7.44)
2) When slaving a DVD to any other machine use a one second or more park offset (Section 7.44), ad a start advance of 1 frame (section 7.43).

T4.56b Pioneer Cable				
SR/MR 9 'D' Male Pin	SR/MR Function	Cable	Pioneer Function	Pioneer 15 'D' Male Pin
4	Ground	Screen	Ground	1
2	Rx Data -	Red	Tx data	2
8	Tx Data -	Black	Rx Data	3

T4.57 Sony MSW-M2000P Beta-Sp, Digi-Beta, Beta-SX, IMX

Record
1) 4 Track 24 Bit or 8 Track 16 Bit Digital Audio

Chase
1) Use Shuttle for reverse play lock

T4.58 Accom WSD/HD

Problems
1) Short Locates, does not perform very well
2) Jog is not very good at 24F
3) When set to 25 the screen position is not the same as the output timecode! the timecode at the output is a frame count, the timecode displayed is converted to real time at the original frame rate. This is correct for 24-30 but not for 24-25.
.

T4.59 SONY DMX-R100

This Console has 3 RS-422 ports, 1 input and 2 Outputs (Out 1 & Out 2) It also has Midi In/Out/Through and MTC connections)

You Can select one of 6 Machines using Out 1,2 or Midi.

To Assign A Machine to a Port
1) select **Machine Control** on the Touch Screen
2) The virtual key labled NC below the Virtual Machine key is used to select the output port.

LTC or MTC must be provided for the Automation.

FWD and RWD keys issue Fast Forward And Fast Rewind and not Shuttle commands and follow these tallies when the Machine control display is enabled.

T4.60 FEG Prima-SY2

This Synchroniser may be used in its Sony P2 Emulation Mode

Bug
This unit does not report servo lock when in play

Device ID: BVW-40

T4.61 Digi-Design Protools 5.1.1

Normal Build
Will operate as 8 Track only

CB3 Build
Will operate as 24 Track Only, suggested emulation Sony 3324

Track Arming
Possible In Stop Only, If it is not possible to track arm try to track arm protools directly in local as the error messages are not displayed in remote.

Quick Punch
This must be enabled when in Remote Mode
Operations/Quick Punch
When In stop the Record indication will be a Black P in a white circle
When in Play the Record indication will flash Red
When in record the Record indication will be solid Red.

Enable Remote
Setups/Peripherals/Machine Control/9-Pin Remote Enable
Select the Port and Emulation that you wish to use.

Set Timecode Standard
Windows/Show Session Setup
note: the Timecode Standard is not linked to the device name

Notes:
1) Use the special machine emulation cable or the standard machine cable with a Rx/Tx invert cable.
2) The correct stealth driver must be used.
3) Works on Modem or Printer Port or Griffin G port, **NOT** on Digi-Serial port.
4) Pro-control Record GPI input operate when Transport=Pro Tools. If Transport=Machine then

SR/MR Setup
1) Chase Type: 5= +-
2) Park Offset * 5 Frms 0=
2) Play Before Variplay: 1= On
3) Wait for code to stabalise 5=

T4.62 Fostex D-15

1) Always reports that Assemble is enabled
2) Always reports that Selected E-E Enabled
3) Defaults to NTSC with No tape or Blank Tape even with PAL video syncs connected
4) Does not support Sony PNO Number requests (Manual states that it should!)

This is a good machine for ADR Backup as it has a simple Auto-ID enable

T4.63 Harrison Series 12 and MPC

The Harrison automation can use either a timecode feed via the Harrison Timecode Reader or a Serial timecode feed from a SR/MR System.

Timecode Link
If timecode is used as the link to the automation then the WACTTransistion table will only work from Stop to Play or Play to Stop.

The Locked Play only (Timecode-2) output should be used (Timecode & GPI/O 25'D' pins 10 & 12, Ground pin 11) as the Harrison automation is confused by stationary timecode.

Serial Link
When Serial-E on the SR/MR Controller is specified as a Harrison Serial Link it may be used in place of the Harrison Timecode Reader. See table T5.09 for the connection details.

In this mode the WACT Transistion table is avialable in all transitions.

T4.64 Fairlight Vivid

Bugs
1) The Device type code includes incorrect timecode standard information.
2) This machine cannot be used as a slave.

T4.65 Leitch Video Server 420, 440

1) Use as master only, to slow a response to be used as slave
2) Insert edit/assemble edit not possible
3) ID incorrect 1st byte always $AA and does not include the standard
4) To perform a frame accurate crash record or assemble use Cue to record in command followed by Record or Edit On when source is 3 frames ahead of parked position.

T4.66 AMS Encore

Device ID Number $F13D, Connections to MC-1 port switch with in/out type

Use as 9 pin Master/Slave, using as master gives automation from stop.
1) Transport, MCS Preferences (Ctrl-F5)
2) Referece Source:- Slave to 9 Pin
3) Exit from Menu
4) Connect AMS MC-1 port to an Output port on the MR/SR system.

To use as 9 pin controller
1) Transport Group Select (F5)
2) Select Machine from list
3) Click on Assign Machine
4) Exit from Menu
5) Transport, MCS Preferences (Ctrl-F5)
6) Reference source:- 9 pin And Video
6) Ensure that Single machine follows timeline is not selected!
7) Exit from Menu
8) Connect AMS MC-1 port to an Input port on the MR/SR system
9) All control must now come from the AMS and not from SR/MR for the automation to work correctly.

Bugs
No Reverse direction tally
No Pre-Roll tally
variplay reverse gives vari-play+play+forward tallies
Shuttle Forward gives Fast forward+shuttle
Jog Forward gives Jog+Fast Forward

Genex 8500 FWareRev V2.08.06

Bugs
1) Does not read stationary timecode.
2) The Genex 8500 implements offsets from 00:00:00:00..11:59:59:24 correctly. Offsets from 12:00:00:00..23:59:59:24 (Negative Offsets) are not interpreted correctly, 12:00:00:00 is interpreted as 00:00:00:00, 13:00:00:00 as -01:00:00:00 and 23:00:00:00 as -13:00:00:00 ect.
3) The 8500 cannot calculate offsets through 24 hours eg master at 23:00:00:00 slave at 00:01:00:00
4) Insert tally always set in Edit Preset Tally (7x 30),
5) Assemble tally set in Status Tally (7x 20) if no tracks armed, insert tally set (correct) if tracks armed!
6) RS422 positional data offset by -1 frame
7) Status edit d1..d8 preset data not implemented

9) Slave machine can issue stop commands when not able to chase

Multiple Machines
1) Pre-stripe command does not work on multiple machines
2) Edit Mode Auto/All in from front panel
3) Ejet only morks on machine one (Front panel and serial remote!)
4) Lock between multiple Genex machines when running as master!

Notes
1) Use Chase command
2) ID $D1C6
3) Lock tally always Set

www.genexaudio.com

T4.100 SSL 4K/5K Computer

Hardware requirements

The Studio Computer must have a Z8 Communications Interface (82E78) or S88 interface card fitted. If you have an SSL Events Controller/Adams Smith interface/Motionworker this card will be fitted. A Z8 Computer and Master Transport Selector are not required.

S88 connection

The S88 interface card should be in the lower rack frame, connect the 26 way IDC to the centre of the three connectors.

S29E connection

The tape machine connection on the underside of the console should be taken to the s29 connection on the RM6

See Section 7 of the computer operators manual for more details on the software interface

The SSL menus are follow a simple tree structure with the root menu access using the SET UP key. Before the menu's are setup you must use a password to access the SSL setup and select the appropriate synchroniser system.

SSL Setup

SSL EXECUTE

The prompt should disappear, enter the password
'BERNOULLI' EXECUTE

SETUP
#

On the SSL setup page select

Synchroniser Controller **3**
Master Transport Selector **YES**

Then exit and restart system

END
Do you want to see more?N

BEGIN EXECUTE

SET UP EXECUTE

For the Engineer menu enter '**Y**'

Synchroniser Page

SET UP
Y
SYNC

Synchroniser in use **YES**
Resolve Master Machine **YES**
Slow Lock Mode **NO**
Group Locates **YES**

Session Page

SET UP
Y
S

Timecode Frames per Second **??**
Using VITC **YES**
Runup (Pre-roll) **?.??**

For the Maintenance menu enter '**M**'

Synchroniser Interface

SET UP
M
SYNC
I

Z8 interface no. **2**

This determines the hardware port number and may be 1, 2, or 3. 2 is the centre 26 way connector on the 82E78 card

Synchroniser Setup

SET UP
M
SYNC
SYNC

Maximum number of masters **5**
Offsets may be read from synchroniser **YES**
Single Machine Mode **YES**
Timecode Generation **YES**

Machine Setup

SET UP
M
T or **M**

Select machine number 16

The individual parameters for this machine must now be set as follows

Autolocate type
Autolocate decision interval
Forward direction sense **HIGH**
Muti play speeds **NO**
Pulses/second at std speed **5**
Target Window **0.00**
Drop out command type **1**
Drop in command type **1**
Time for machine to start up **1.2**
Time before sure tape stopped **1.1**
Pessimism factor (fwd)
Pessimism factor (bkwd)
Short locate time (secs)
Max stopping distance
Frames to stop from play
Frame jog card fitted

Only the items highlighted are used by the SSL

Machine Name Selection

SET UP
M
SYNC
SET UP

S88 Card fit the following links:-

J1
J7 between pins 1&2

T5.00 Cables

T5.01 Power Supply

The power may be connected via the 2.1mm power connector or via the 25 pin 'D' Timecode and GP In/Out connector.

The voltage should be between 12 and 18 volts with a current consumption which is both device and voltage dependant the SR-4 requires approx 200mA at 18v, the Sr-24 400mA.

T5.02 Video Sync's

Video syncs **MUST** be supplied to the unit, 1 volt Black and Burst or 1 volt Black only, the timing of the RS422 communications and the timecode generator are determined by the video sync input.

T5.03 RS422 (Sony 9 pin) CABLE
Use on SR-4/SR-24 Ports A, B, C, D as outputs
SR-24 ports E & F as inputs

Function SR-4 (Controller)	9 pin 'D' Male on cable (Both Ends)	Cable Colour	Function (Controlled Device)
	1		
Rx-	2	Red	Tx-
Tx+	3	Yellow	Rx+
Ground	4	Screen	Ground
	5		
	6		
Rx+	7	Blue	Tx+
Tx-	8	White	Rx-
	9		

T5.04 Tx-Rx Invert Sony 9 pin CABLE
Use On SR-24 port E when connected as an output to a machine,

Function SR-24 port E	9 pin 'D' Male on Cable	9 pin 'D' Male on cable	Cable Colour
	1	1	
Tx-	2	8	Red
Rx+	3	7	Yellow
Ground	4	4	Screen
	5	5	
	6	6	
Tx+	7	3	Blue
Rx-	8	2	White
	9	9	

T5.05 TASCAM DA-88 15 PIN CABLE			
DA-88 15 pin 'D' Male on cable	SR Remote 9 pin 'D' Male on cable	Cable Colour	Function Controlled Device
	1		
2	2	Red	Tx-
3	3	Yellow	Rx+
10	4	Screen	0v
	5		
	6		
1	7	Blue	Tx+
4	8	White	Rx-
11	9	Black	Break Input

T5.06 Audio Kinetics ES1.11/1.12 Cable			
ES 1.11/1.12 15 pin 'D' Female on cable	SR Remote 9 pin 'D' Male on cable	Colour	Function Controlled Device
	1		
4	2	Red	Tx-
1	3	Yellow	Rx
8	4	Screen	Ground
	5		
	6		
3	7	Blue	Tx+
2	8	White	Rx-
	9		

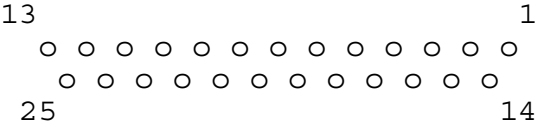
T5.07 GP PORT CONNECTIONS (25 pin Female 'D' on unit)			
Pin	Function	Pin	Function
1	Timecode I/P +	14	Timecode I/P -
2	Ground	15	Timecode O/P 1+
3	Timecode O/P 1- (2)	16	GP INPUT 5 (Rec-Off)
4	GP INPUT 6 (Record) (8)	17	GP OUTPUT 1 (Record)
5	GP OUTPUT 2 (Lock)	18	GP OUTPUT 3 (Red Light)
6	GP OUTPUT 4 (4)	19	GP OUTPUT 5 (4)
7	GP OUTPUT 6 (4)	20	GP INPUT 1 (Stop)
8	GP INPUT 2 (Play)	21	GP INPUT 3 (Rvs-Play) (5)
9	GP INPUT 4 (Rec-On)	22	Timecode O/P 2+ (3)
10	Timecode O/P 2- (3)	23	REGULATED +5v O/P
11	O/P GROUND	24	UNREGULATED +18v I/P
12	I/P GROUND	25	UNREGULATED +18v I/P
13	I/P GROUND		

Notes

(1) All GP Outputs are Active HIGH TTL Level
(2) On early units pin 3 is connected to Ground
(3) Timecode output 2, muted when master is **NOT** in locked play, Only available on later units. Suitable for automation.
(4) Menu section **7.33 GP Outputs 4,5 & 6** for functions of GP outputs 4,5,6.
(5) Menu section **7.34 GP Output 3** for function of GP Output 3
(6) All GP Inputs are Active LOW TTL Level
(7) GPI Inputs 1..5 are Momentary Inputs
(8) GPI Input 6 (Pin 4), is a Continuous Record Input for use with foot switch or Record Tally.
Record On command is issued on High to Low Transition
Record Off command is issued on Low to High Transition.

T5.07a Master Timecode Cable			
25 Pin 'D' Male On Cable	Pin	Colour	XLR?
Ground	2	Screen	1
Timecode Output 1 +	15	Red	2
Timecode Output 1 -	3	Black	3
T5.07b Locked Play Timecode Output			
Ground	11	Screen	1
Timecode Output 2 +	22	Red	2
Timecode Output 2 -	10	Black	3

View From Rear



T5.08 S29 Remote (SR24A Only)			
Pin	Function	Pin	Function
1		14	
2	Lamp Common (+5v)	15	Switch Common (0v)
3	Rewind Switch	16	Rewind Lamp
4	Forward Wind Switch	17	Forward Wind Lamp
5	Stop Switch	18	Stop Lamp
6	Play Switch	19	Play Lamp
7	Reverse Play Switch	20	Reverse Play Lamp
8	Record Switch	21	Record Lamp
9	Tacho Common (0v)	22	Tacho Pulse (TTL)
10	Direction Common (0v)	25	Direction (TTL)
11		24	
12		25	
13			

Other Commands may be implemented by combinations of switches or using diodes to drive multiple inputs from one switch as follows (Consult S29 Connection Diagram for further information):-

Crawl Forward . . . . . STOP+PLAY
AGAINP . . . . . STOP+FWD
Crawl Reverse . . . . . STOP+RVS-PLAY
INSTANT REPLAY . . . . . STOP+RWD

T5.09 SR/MR (6 Port) Harrison Computer Interface Disconnect the Harrison timecode reader from the Video Drawer, Connect to the same point from the port 'E' on the SR-24H Controller.		
6 port hub/Controller 9 pin 'E' Male on cable	Cable Colour	Harrison, Male 9 pin 'D' on cable.
1		
2 Tx-	Black	9 Rx Lo
3 Rx+		
4 Gnd	Screen	3 Gnd
5		
6		
7 Tx+	Red	8 Rx Hi
8 Rx-		

T5.10a RS422 9 pin to 15 pin CABLE With Power supply Use between CB RM-6HUB Rack mount unit and MR-6S/SR-5/SR-4-S Display unit				
Function SR-6 Port F	9 pin 'D' Male on cable	Cable Colour	15 pin 'D' Male on Cable	Function SR-5/SR-4 Display Unit
	1			
Tx-	2	Red	2	Rx-
Rx+	3	Yellow	3	Tx+
Ground	4	Screen	4	Ground
	6			
Tx+	7	Blue	10	Rx+
Rx-	8	Green	11	Tx-
Reset	9	White	12	FP Reset
	2.1mm Power Plug			
Power Ground	Outer	Black+Mauve	6,13,14	Power ground
+12v	Inner	Brown	7,8,15	+12v

T5.10b 15 pin 'D' RS422 Extension Cable With Power supply				
	15 pin 'D' Female on cable	Cable Colour	15 pin 'D' Male on Cable	Function SR-5/SR-4 Display Unit
Tx-	2	Red	2	Rx-
Rx+	3	Yellow	3	Tx+
Ground	4	Screen	4	Ground
Tx+	10	Blue	10	Rx+
Rx-	11	Green	11	Tx-
Reset	12	White	12	FP Reset
Power Ground	**6,13,14**	Black+Mauve	6,13,14	Power ground
+12v	7,8,15	Brown	7,8,15	+12v

T5.11 RS232 (PC Link) CABLE

Use on SR-4/SR-24 Ports A, B, C, D and SR-3 ports B, C, D with appropriate software.

Function SR-4	SR-4 9 pin 'D' Male on cable	Cable Colour	IBM 9 pin 'D' Female on Cable	Function IBM
	1			
Rx-	2	Red	3	Tx-
Tx+	3	No Connection		
Ground	4	Screen	5	Ground
	5			
	6			
Rx+	7	No Connection		
Tx-	8	Black	2	Rx-
	9			

T5.12 RS232 (PC Link) CABLE

Use on SR-24 Ports E, F or SR-3 port A with appropriate software.

Function SR-24 ports E & F	9 pin 'D' Male on Cable	9 pin 'D' Female on cable	Function On PC	Cable Colour
	1			
Tx-	2	2	Rx-	Red
Rx+	3	No Connection		
Ground	4	5	Ground	Screen
	5			
	6			
Tx+	7	No Connection		
Rx-	8	3	Tx-	Black
	9			

7.00 Multi Machine Synchronizer Set Up

The SR/MR series of synchronizers offer two forms of synchronisation using either the SR/MR synchronizer or where available the machines built in synchronizer. The user interface is identical. The decision "which type of synchronisation to use" depends on the users requirments and the technical details of the machine and the installation.

When a new machine is connected the a system parameter (**Unit | Chase | Menu 12 System Type**) determines which type of synchroniser to use if there is a choice. Once connected the user is free to change the synchroniser type. The user selection will only be changed after a hard reset or if the type of machine connected to the port is changed.

7.10 Deciding between the SR/MR Synchronizer or the Machine's built in synchroniser.

1) SR/MR Synchronizer

Synchronizing the machine directly using a combination of locate, variplay, shuttle, jog or programable play commands. All machines without internal synchronizers (eg. VTR's) must synchronized by this method.

2) Machine's Internal Synchronizer

Provide a master timecode feed to the machine then control the machine's internal synchronizer. Most audio machines and synchronizers may be controlled in this way (DA-88's, DAT's, A820 Digital dubbers, Lynx, TLS, AK ES1.11).

To provide the same functions as the SR/MR synchronizer the machine/external synchronizer must accept three commands **Chase On**, **Chase Off** (Stop), and **Set Offset**. providing that these three commands are available the choice of synchroniser will make no difference to the user interface.

3) Synchroniser performance

The SR/MR Synchroniser performance is governed by the available machine control. All professional video recorders must be controlled by their RS422 port in order to operate with video editors, no conventional video recorder will chase timecode. Modern audio Recorders are fitted with timecode synchronizers, although RS422 ports are fitted, in general they do not always provide the same level of control as found on video machines are always operated with RS422 control.

If the machine has a built in synchroniser then there will be several factors that determine the choice of synchroniser.

Determining Factors	Use SR/MR Synchronizer	Use Machine Synchronizer
No Synchronizer in Machine eg Tape based Video	Yes	No
No Master Timecode feed to machine	Yes	No
No Video Sync Feed to Machine	No	Yes
Using Wordclock Reference only	limited to +/- 1 frame lock accuracy	Yes
Using Wordclock Reference combnined with Video syncs	Only if machine resolves first to video syncs's then wordclock	Yes
Machine does not accept Chase On command or Set Offset command	Yes	No Remote control
Machine does not accept Variplay, shuttle or Programable play commands	No	
Machine does not report position accurately	No	
Machines internal synchronizer is very slow or has problems	Yes (PCM3324S)	No

7.20 Optimisation of the SR/MR Synchroniser.

Video recorders with their powerful servos do not need much optimisation, by default they are parked on the same frame as the master.

Audio recorders often need careful setup in order to achieve fast lockup times. To synchronise quickly is necessary to minimise the distance from lock once play speed has been achieved.

7.21 Sync type

There are 5 selections of Sync type **(IFace | Chase | Menu 43:- Chase Type)** as follows

0= Cmd The machines internal synchronizer is used, The machine must receive a feed of master timecode and accept **Chase On** and **Set Offset** commands.

1= Play This is a test mode used for setting the **Start-up Delay**, a **Play** command is sent at the appropriate point, but no attempt is made to synchronise the machine.

2= PS Not currently implemented

3= - Using vari-speed commands the machine is slewed to a relative position of -1 frame, the machine is then accelerated to be coincident with the master, at this point a **Play** command is issued and the machine is released to resolve to video syncs. If an error is detected within the first 5 seconds of lock the process is repeated.

4= + Using vari-speed commands the machine is slewed to a relative position of +1 frame, the machine is then decelerated to be coincident with the master, at this point a **Play** command is issued and the machine is released to resolve to video syncs. If an error is detected within the first 5 seconds of lock the process is repeated.

5= -+ Using vari-speed commands the machine is slewed to be coincident with the master, at this point a **Play** command is issued and the machine is released to resolve to video syncs. If an error is detected within the first 5 seconds of lock the process is repeated.

7.22 Park Ahead

Parking the audio machine ahead of the master machine allows for three common problems

1) Audio machines will unlace to protect their heads (eg. DA-88 after 7 seconds). As soon as movement is detected on the master machine the slave is instructed to lace-up, this can take as long as one second.

2) Allows the master timecode to stabilise and correct for any master locate error.

3) An advance play command can be sent earley to the slave and allow for any startup delay and acceleration time.

The SR/MR allows park ahead of 0 .. 45 frames in 5 frame increments. By default this is set to one second on tape based audio recorders.

7.23 Machine Start-up Delay (Play/Advance)

No mechanical system will start instantly, typically one to seven frames are required between receiving the **Play** command until the machine reaches play speed, on slow film systems this may be as long as 10 frames. When park ahead is used it is possible to issue a play command before the master and slave are coincident, but adjusting the play advance **(IFace | Chase | Menu 44:- Start up delay)** the difference between master and slave when the slave achieves play speed may be minimised.

To set the Park ahead set **Menu 43:- Chase type** to **1= P**, in this mode a play command will be issued at the appropriate point in time. Repeat using instant replay and adjust for +/- 1 frame error. The optimum error depends on the sync type used sync type 3 -1 frame, sync type 4 +1 frame, sync type 5 0 frames.

7.24 Pre-Roll

When more than one machine is used it will take time for all machinesto become synchronised after a play command is issued. A user defined pre-roll is used with the **[Auto]** and **[Rehearse]** commands and may also be used with the **[Locate]** commands. The **Pre-Roll** is set by entering the desired value then **[Store]** followed by **[<]** (Reverse Play). The default **[Locate]** is to locate with pre-roll, **[Shift]** followed by locate will locate without pre-roll. **Setup | Root | Generic | Menu 28: Locate with Pre-roll** may be used to reverse this.

7.25 Post Roll

Post-Roll is used to ensure that the exit from record is always clean. The Default post roll is 12 frames. Post-Roll may be set using **[Store]** followed by **[>]** (Play).

7.26 Delay

Delay is used to allow external machines or the Talent and even the operator time to catch up after a locate. The default delay is one second, to set the delay use **[Store]** followed by **[Stop]**.

7.30 Setting up the System

7.31 Defining the Master

Any machine on the system, the generator or the reader may be defined as the master. The master machine is defined using [**Shift**] followed by a machine key (**A, B, C, D, E (SR-24)**), [**Reader**] or [**Generator**]. Once the master has been defined and offsets set for all the slaves the master machine may be changed as required. Note: on MR systems only machines controlled directly by the controller may be defined as a master machine and not machines controlled by the MR-3's.

The master of a multi-machine system is the machine to which all commands are sent. The other chase enabled machines then follow the selected master.

The master is the machine over which the user has direct control. Each user has his own reasons for selecting a particular machine as master, here are some:-

1) Film because it is the slowest.
2) Video so that the user can jog the picture directly.
3) The record machine so that it is first to lock.
4) A machine that slaves badly or not at all.
5) The Generator as a perfect machine.
6) The Reader where the master is not directly controlled.

The system will only operate correctly if the selected master is resolved (locked) to video syncs.

Note. When configured as a SR-3, where [**A**] is an input ([**E**] on the SR-24) [**A**] should never be defined as the master. This is an input and not an output. Any controller connected to this input will controll the selected master machine.

Pefect Master Mode

The timecode generator may be selected as the master (**Shift** followed by **Gen** (Macro 118)) to enter the perfect machine mode. The generator may be used as a

timecode master in a tapeless studio. To set the value of the timecode generator use the Locate/Shift Locate command.

Remote Master Mode

The timecode reader may be selected as the master (**[Shift]** followed by **[Reader]**. This is used when you have a remote source of code only. Not the code should be resolved to the same video reference as the studio.

7.32 Defining a Machine as a Slave

A machine may be selected to be a slave by selecting the machine (**A, B, C, D or E**) and using [**Chase/Offset**] or [**Shift**] followed by [**Chase/Offset**]. When the shift key is used the current Master slave Positions are used to calculate the Slave Offset.

7.33 ENTERING A OFFSET

To enter an offset, first select the machine (**A, B, C, D or E**) then type in the offset required, this will be displayed on the lower right hand display. Then use the **Store** key followed by the **Chase/Offset** key. The display will confirm by displaying offset next to the displayed number.

7.34 TRIMMING A OFFSET

To trim an offset (or any other memory) first type in the trim required, this will be displayed on the right of the lower line. Then use the **Trim+** or **Trim-** key followed by the **Chase/Offset** key. The display will confirm by displaying the new offset.

7.35 ENTERING A NEGATIVE OFFSET

On the SR and MR series remotes all offsets are calculated on a twenty-four hour clock. To enter a negative offset either calculate the required offset by subtracting from 00:00:00:00 (-01:00:00:00 = 23:00:00:00) you can use the SR-4 to perform the calculation as follows:-

1) Zero the keyboard display: **Shift** followed by **Clear/0**
2) Zero the offset: **Store** followed by **Chase/Offset**.
3) Type the required negative offset.
4) Subtract: **Trim-** followed by **Chase/Offset**.

7.36 SR/MR TIMECODE GENERATOR OUTPUTS

The SR/MR timecode generator is an integral part of the synchronization system. The timecode value follows the position of the selected master machine (including the timecode reader). If Group Locates are enabled the timecode generator will jump to the Locate point allowing chase machines to locate individually. The timecode output is also used to roll over any drop-outs in the machine timecode.

Two separate outputs are avalable from the generator as follows:-

Output 1) This output is always available. and is used by chase sync machines.

Output 2) This output is enabled only when the Master is in locked play and is normally used for the automation system.

The timecode generator timecode value is calculated as follows:- [Timecode Output] = [Master Position] - [Master Offset]. Including the master offset in the calculation

allows the user to change the master without having to update the slave offsets, or change the settings for any other units connected to the SR-4 timecode output (Automation, Midi, Chase only slaves...).

7.37 Some Common Terms

a) Virtual Master / Perfect Machine

When a timecode Genearor is used as the master and all machines are slaved to the generator the term Virtusl Master of Perfect Machine is often used. The main advantage of the Virtual master is that it lockes instanstly when entering play. The disadvantage of a erfect master system is that all machines must be slaves.

b) Group Locates

When locating a number of machines there are two choices, either they can locate individually or they can all chase the current master machine. The main advantage of group locates is that locates are faster because the 'chasing machines do no have to wait until the master has cued.

T9.0 Video Synchroniser (VS-1) Interface

T9.01 Video Streamer Setup

1) The time taken by the wipe is calculated as Beats*60/BPM.
2) The Record/Lock display is enabled/disabled on the streamer by Mode | 5 | 5 | 4

T9.02 SR Wipe-length Setup

1) The Wipe length must be stored in keyboard memory Shift-9 in seconds and frames.
2) Wipes will be triggered to finish at the record in point and keyboard memory-9.

T9.03 Video Streamer Interface to the SR System

The VS-1 connects to the SR system via the GP Outputs and the master timecode output. The GP outputs on the SR are active High, the VS-1 has active low opto-isolator inputs. Diagram SR-VS1 shows a suitable interface circuit.

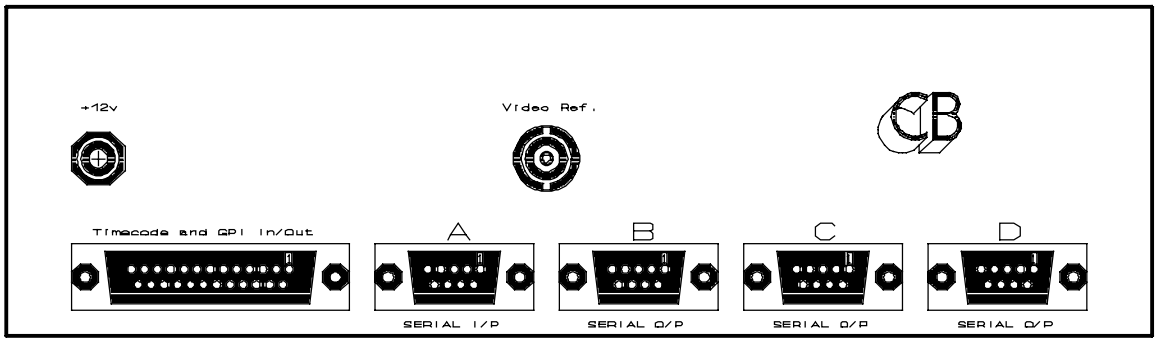
T9.04 Video Streamer Interface to the MR System

The VS-1 is connected to the MR-BUS Serial A and B are connected in parallel so that you may link the bus to other units.

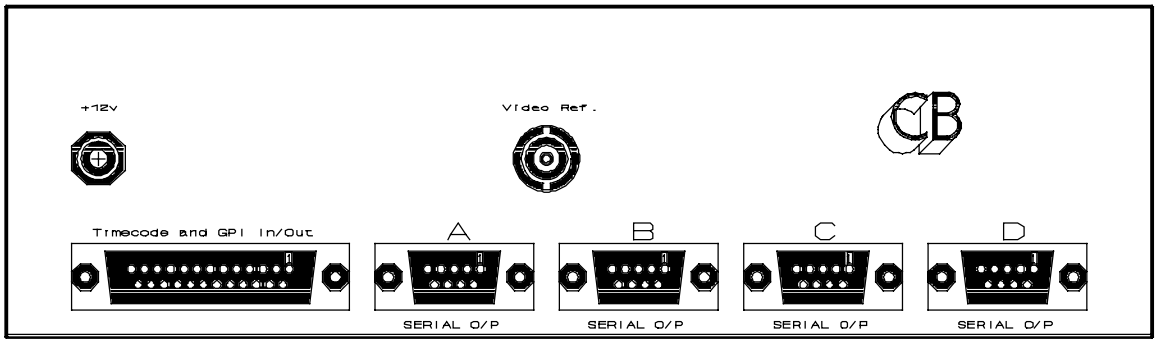
Note. The streamer will be activated on all cue points stored in its memory after the current in point.

SR-3 and SR-4 Connections

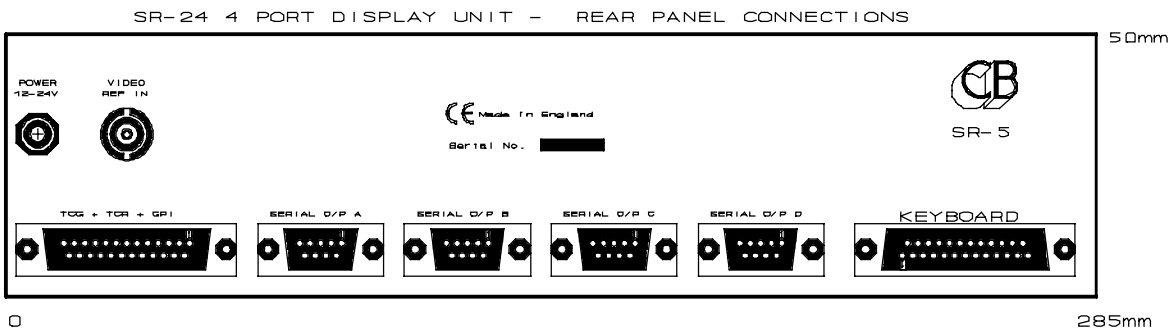
SR-3 REAR PANEL CONNECTIONS

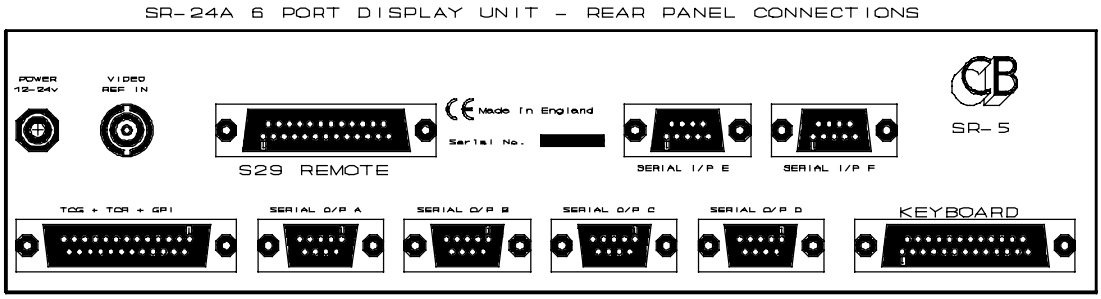


SR-4 REAR PANEL CONNECTIONS



SR-24 and SR-32 Connections





Note: Serial Ports A..D and connected as Outputs, E & F as Inputs

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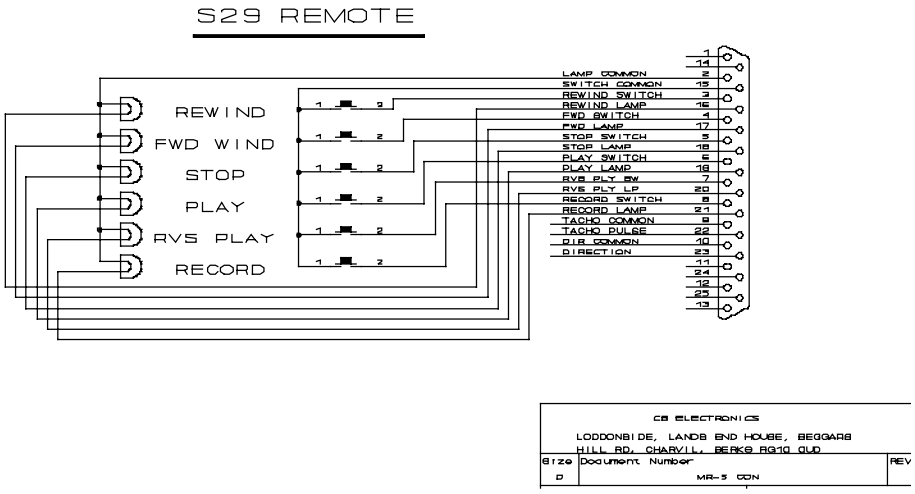
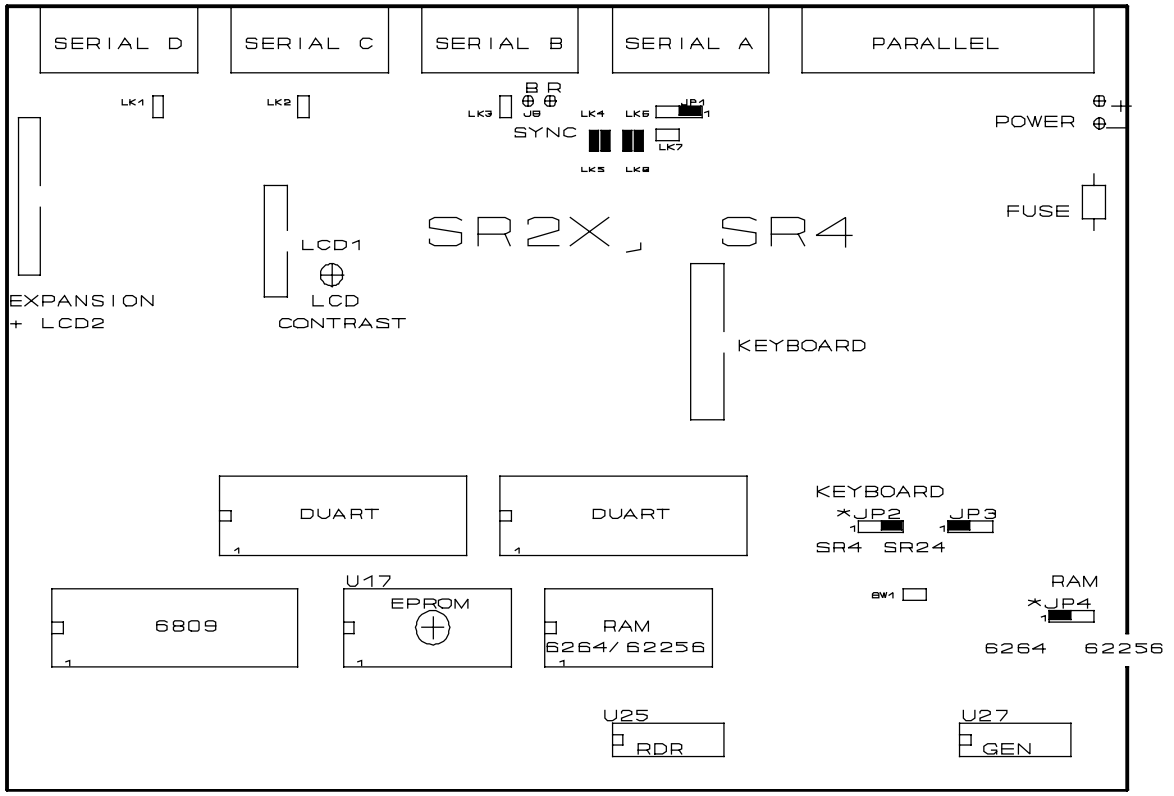
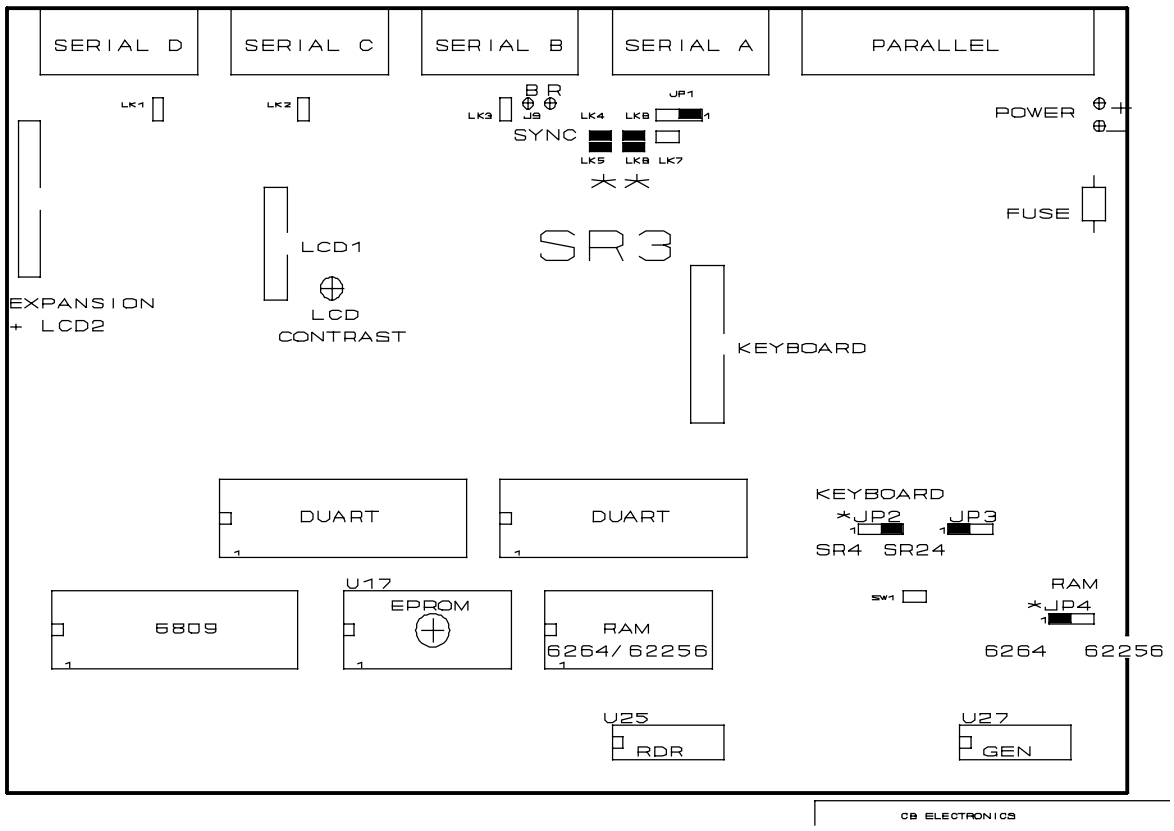
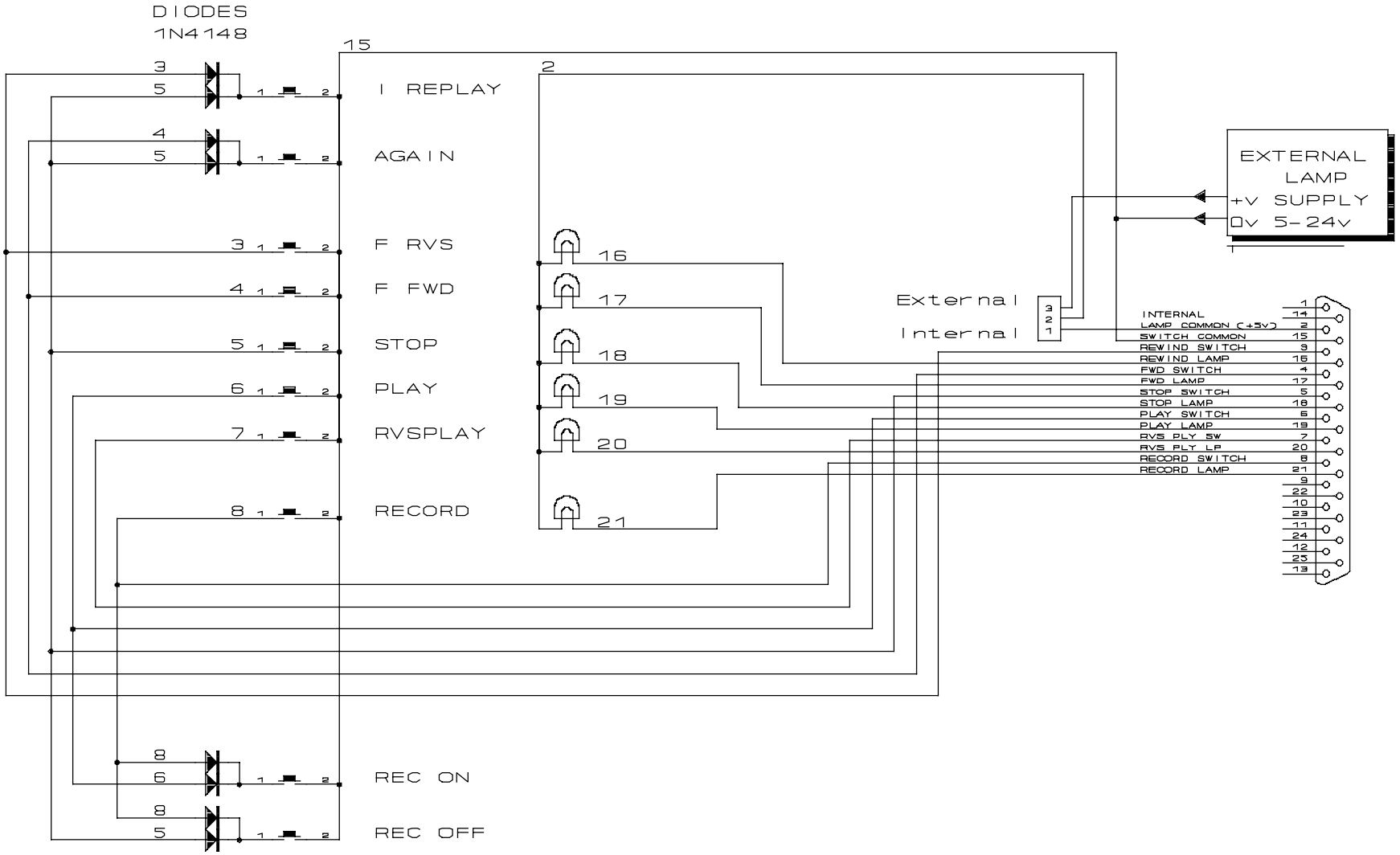


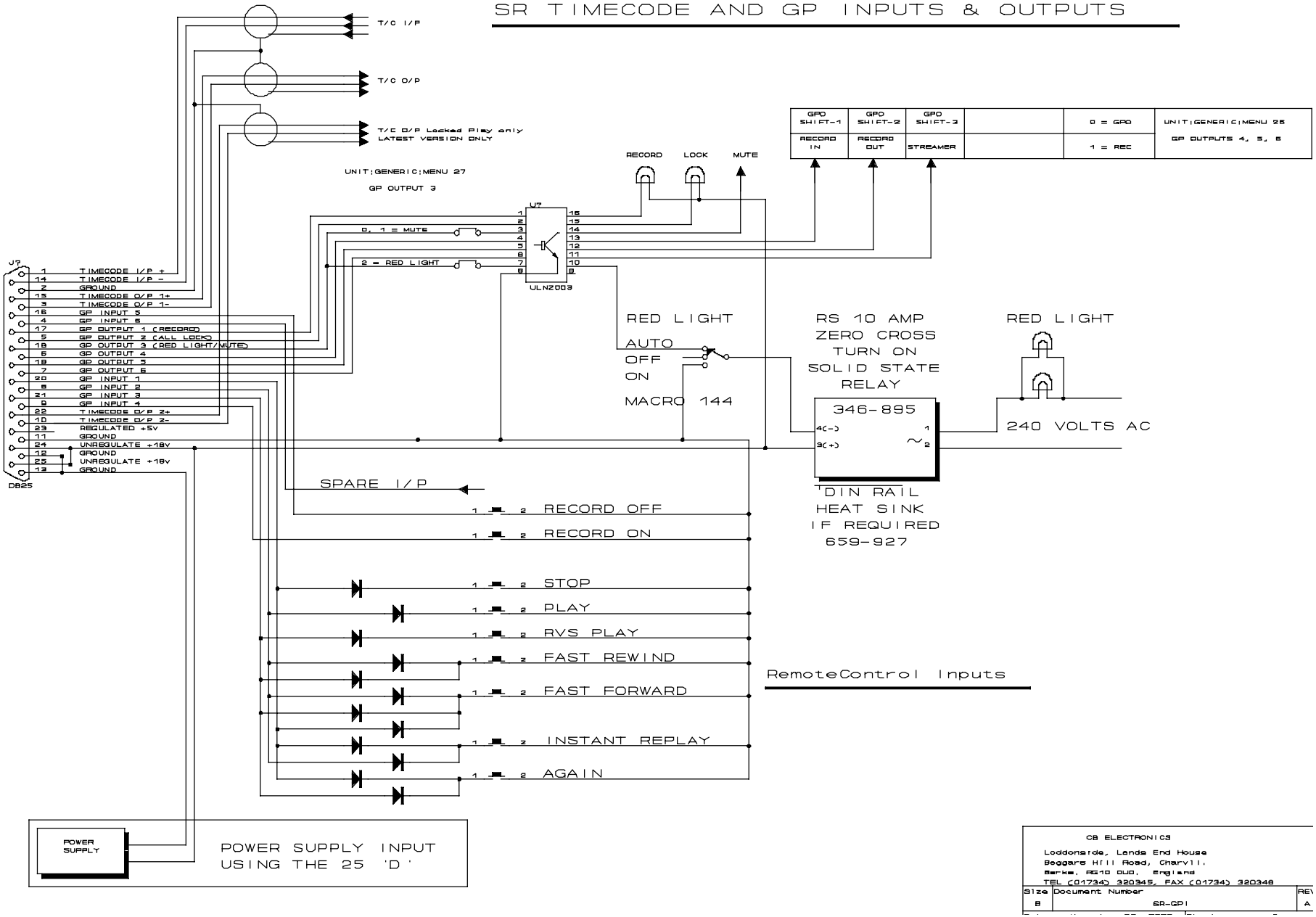
Link positions for SR-3 and SR-4







S29 Parallel remote Connections (SR-24A & SR-32 Only)


SR TIMECODE AND GP INPUTS & OUTPUTS
T/C I/P
T/C O/P
T/C O/P Locked Play only
LATEST VERSION ONLY
UNIT;GENERIC;MENU 27
GP OUTPUT 3
RECORD
LOCK
MUTE
GPO SHIFT-1
GPO SHIFT-2
GPO SHIFT-3
0 = GPO
UNIT;GENERIC;MENU 25
GP OUTPUTS 4, 5, 6
RECORD IN
RECORD OUT
STREAMER
1 = REC
0, 1 = MUTE
2 = RED LIGHT
ULN2003
J7
1 TIMECODE I/P +
14 TIMECODE I/P -
2 GROUND
15 TIMECODE O/P 1+
3 TIMECODE O/P 1-
16 GP INPUT 5
4 GP INPUT 6
17 GP OUTPUT 1 (RECORD)
5 GP OUTPUT 2 (CALL LOCK)
18 GP OUTPUT 3 (RED LIGHT/MUTE)
6 GP OUTPUT 4
19 GP OUTPUT 5
7 GP OUTPUT 6
20 GP INPUT 1
8 GP INPUT 2
21 GP INPUT 3
9 GP INPUT 4
22 TIMECODE O/P 2+
10 TIMECODE O/P 2-
23 REGULATED +5V
11 GROUND
24 UNREGULATE +18V
12 GROUND
25 UNREGULATE +18V
13 GROUND
DB25
RED LIGHT
AUTO
OFF
ON
MACRO 144
RS 10 AMP
ZERO CROSS
TURN ON
SOLID STATE
RELAY
346-895
RED LIGHT
240 VOLTS AC
DIN RAIL
HEAT SINK
IF REQUIRED
659-927
SPARE I/P
RECORD OFF
RECORD ON
STOP
PLAY
RVS PLAY
FAST REWIND
FAST FORWARD
INSTANT REPLAY
AGAIN
RemoteControl Inputs
POWER SUPPLY
POWER SUPPLY INPUT
USING THE 25 'D'
CB ELECTRONICS
Loddonside, Lands End House
Beggars Hill Road, Charvil,
Berks, RG10 0UD, England
TEL (01734) 320345, FAX (01734) 320348
Size
B
Document Number
SR-GPI
REV
A