Film-Tech

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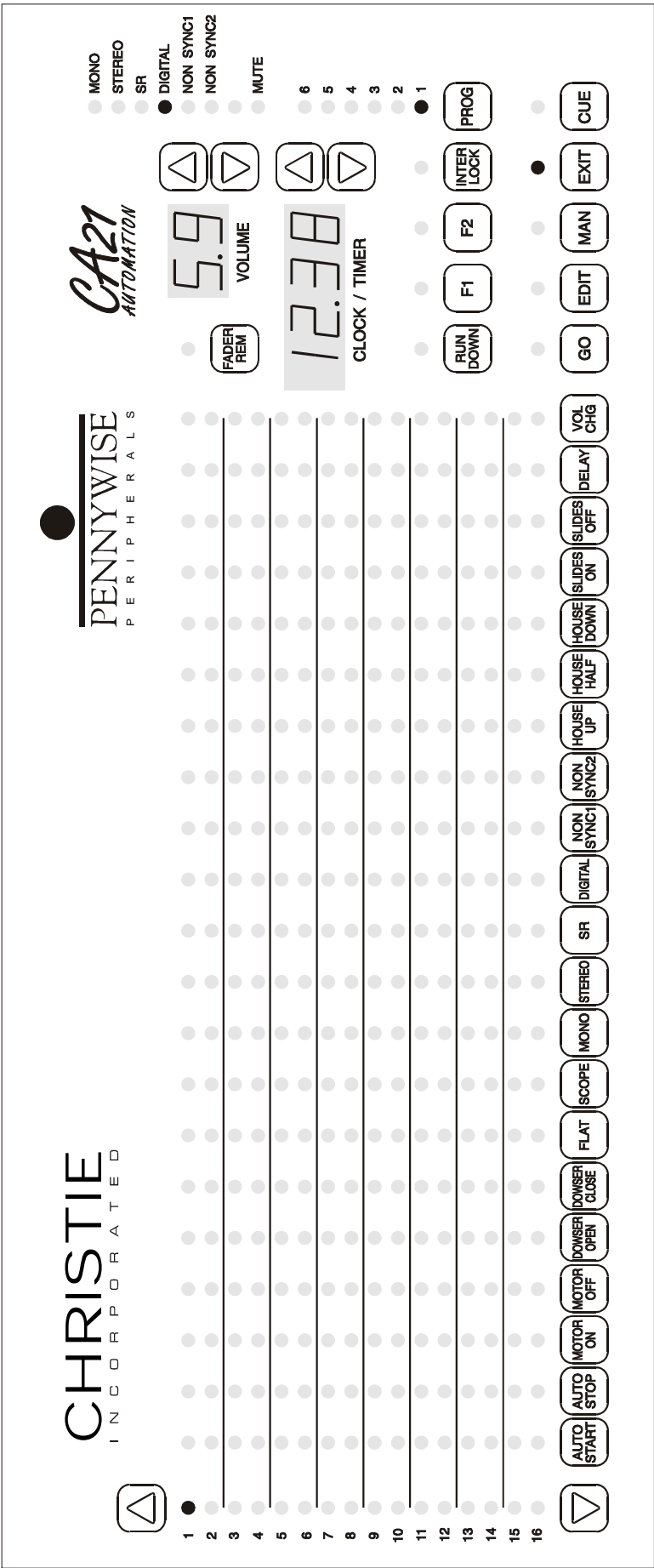
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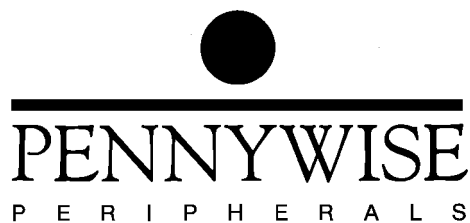
CA21 Cinema Automation
Configuration for Christie Inc

CAPIO Version

11th April 2002

Christe Front Panel

Front Panel Operations for Christie CAPIO CA21

Auto Start
Auto Stop
Motor On
Motor Off
Dowser Open
Dowser Close
Flat
Scope
Other/Mono
Stereo
SR
Digital
Non Sync 1
Non Sync 2
House Up
House Half
House Down
Slide On
Slide Off
Delay
Volume Change

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518 Camberwell Rd, Camberwell, Vic, 3124, Australia.

Relay Allocation

1	Masking Cinema Scope	25	House Lights Preset 2
2	Curtain Close	26	House Lights Preset 1
3	Two Lens Flat	27	Spare Relay 2
4	Turret/Focus-Framing Select	28	Three Lens Flat (W/S)
5	Two Lens Cinema Scope	29	Three Lens Other (1.66)
6	TFF Projector 1/2 Select	30	Three Lens Scope
7	Focus/Framing Select	31	Slide Power
8	Curtain Open	32	Slide Lamp
9	Masking Other	33	Slide Advance
10	Masking Flat	34	Slide Cycle
11	Motor Off.	35	Tape Start
12	Motor On.	36	Tape Stop
13	Dowser Open.	37	Tape Rewind
14	Dowser Close.	38	Foyer Relay
15	Exciter On/Off.	39	Spare Relay 3
16	Slide Power (proj. connector)	40	Spare Relay 4
17	Spare Relay 1		
18	Change Over		
19	Door Lock		
20	Exit Light		
21	House Lights Down		
22	House Lights Up		
23	Stage Lights Up		
24	Stage Lights Down		

Relays are rated at 1A. They should only be used to switch low voltages (24V). To switch higher voltages use intermediate relays.

All pulsed relays operate for 0.5 seconds unless stated otherwise. In particular the turret motor control relays are pulsed for a preset time, or less if current control is enabled.

Input Use

1	Remote Stop
2	Xenon Fail
3	Panic
4	Motor Feedback
5	Remote Start
6	Film Break
7	Film Cue
8	Last Slide Cue/PR2 Film Cue
9	Tape Cue/PR2 Film Break
10	PR2 Xenon Fail
11	Spare Input 1
12	Spare Input 2
13	Spare Input 3
14	Spare Input 4
15	+24V ok
16	Turret Stall Detect

Notes on Inputs

Film Cue   When the CA21 is running a session a film cue causes the next step in the program to be executed.

Slide Cue   This cue normally comes from the carousel on the slide projector and indicates the last slide is being shown. When a slide cue is received and the slide projector is on, the cue behaves like a film cue and causes the next step of the program to be executed. Otherwise the slide cue is ignored.

Fire   This input when activated executes the emergency sequence.

Film Break   This input is activated to indicate the film has broken or ended.

Xenon Fail   This input is activated when the xenon is off and deactivated to indicate the xenon is on. It is commonly driven from a light dependent resistor.

Remotes   These two inputs enable sessions to be started and stopped. The behaviour depends on the AG (Auto Go) option in Setup. See the description after the Section on Setup Options.

Motor On   This input is fed from the motor relay coil (<24V). It provides feedback to the CA21 so that motor control of interlocked projectors will work even if a projector motor is operated from the projector consol (ie external to the CA21). Leaving the input unconnected will ignore this feature.

Setup Options (PIN 3124)

The following is a list of the CA21 setup options. The mnemonic, min, max, default and description are shown.

Note on setting defaults: The default values for ALL setup options may be set by selecting the "CP" setup option and then pressing and holding down the CA21 PROG button until "Set" is displayed in the timer display.

CP	Clear Programs	min: 0	max: 0	default: 0

This option does one of three things as follows:
- When CUE is pressed all 6 programs are cleared.
- When the program line down button is pressed all the LEDs on the CA21 front panel are lite. Pressing the button again clears the LEDs and allows normal CA21 operation to resume.
- When the CA21 PROG buttons is pressed, and held until "Set" is displayed in the timer display, all setup options will be set to their default values.

Cn	Cinema Number	min: 0	max: 40	default: 0

This option is the Cinema number (1 to 40) for use with the SP1 Status Panel and CA-Link central computer control. Setting to 0 (zero) disables communication with CA-Link and status panels.

CA	CA-Link mode	min: 0	max: 1	default: 1 (enabled)

This option is used to enable operation with CA-Link computer control or the SP1 Status Panel at its high baud rate. Normally this option should be set to one.

AG	Auto-Go mode	min: 0	max: 1	default: 0 (disabled)

If this option is zero, pressing GO will enter run but will not start the session until CUE is pressed. If Auto Go is set to one, pressing GO on the CA21, without first setting a starting time on the clock, will start the session immediately. It is not necessary to press GO and then CUE. Auto Go also affects the operation of the Remote Start and Remote Stop inputs. (See the next Section.)

FS	Fader Slew Rate	min: 0	max: 8	default: 0

This option sets the Fader Slew Rate, that is the rate at which the fader setting changes after a VOL CHG occurs. Zero is the fastest rate and 8 is the slowest.

FI	Initial Fader Setting	min: 0.0	max: 9.9	default: 5.0

This option is the initial setting for the fader when the CA21 is powered on.

CC	Curtain close to screen up delay.	min: 0 sec	max: 20 sec	default: 5 sec

This option is the delay in Auto-Stop from when the curtain start to close until the screen lights are turned up. The delay is in 1 second steps.

HP	House preset to curtain open delay.	min: 0 sec	max: 20 sec	default: 5 sec

This option is the delay in Auto-Slides from when the curtain starts to open until the sound slide track starts. The delay is in 0.5 second steps.

nL	Number of lenses	min: 2	max: 3	default: 2

Used to configure the CA21 for either 2 or 3 lens turrets

Ld	Picture off to lens change delay.	min: 0.0 sec	max: 2.0 sec	default: 0.5 sec

This option is the delay from when the picture is turned off until the lens change relay (normal, wide screen, etc) is pulsed. The delay is in 0.1 second steps.

dd	Delay from lens change until dowser open	min: 0.5 sec	max: 6.0 sec	default: 3.5 sec

For three lens operation (NL = 3), this option is the delay from turret rotate to dowser open, that is the delay from when the lens change relay (normal, wide screen, etc) is pulsed until the change over shutter is opened again. The delay is in 0.1 second steps. This option is ignored for 2 lens operation.

tF	Max. turret motor drive time for Flat/WS	min: 1.0 sec	max: 6.0 sec	default: 3.5 sec

This option is the maximum time the turret motor is driven to change the lens to Flat (Wide Screen). If the current sensing electronics detects the current rise when the turret motor stalls upon reaching its destination, then the motor will be turned off earlier.

tP	Max. turret motor drive time for Cinema-Scope	min: 1.0 sec	max: 6.0 sec	default: 3.5 sec

This option is the maximum time the turret motor is driven to change the lens to cinemascope. If the current sensing electronics detects the current rise when the turret motor stalls upon reaching its destination, then the motor will be turned off earlier.

tH	Turret motor hold time	min: 1.0 sec	max: 6.0 sec	default: 2.0 sec

This option is an initial delay to allow the turret motor to come up to speed and stabilise before its current is sensed. If a current overload is then detected the turret is assumed to have rotated to its final position and the motor will be turned off. However the motor will never be run longer than "tF" or "tP".

To simply rotate the turret for a preset time set "tH" to be greater than "tF" or "tP". Current sensing will then be disabled.

tA	Allow "tweeking"	min: 0	max: 1	default: 1 (enabled)

Setting this option to 1 allows the aperture and turret motors to be tweeked for 0.1 secs each time the SCOPE or FLAT keys are pressed in idle.

Er	Exciter relay function	min: 0	max: 1	default: 0

This option is used to select the function of the exciter relay:
0 - The exciter relay is used for the normal exciter function.
1 - The exciter relay is used for the door close function.

Sr	Slide relay function	min: 0	max: 1	default: 0

This option is used to select the function of the slide relay:
0 - The slide relay is used for the normal slide function.
1 - The slide relay is used for signalling an un-threaded condition .

tt	Timed slide interval	min: 0 sec	max: 30 sec	default: 15 sec

This option sets how long a timed slide will be shown for. Setting tt = 0 stops slide advancing all together.

SP	Sound Processor Type	min: 0	max: 7	default: 7 (CP650)

This option selects the type of sound processor interface to be used on the CA21. Note that CAPIO version of CA21 no longer uses SP settings of 1, 2 or 3. Setting SP to one of these values will result in no sound processor control.

Note that when the Pennywise DF1 Digital Fader attachment is used with a CAPIO CA21 to allow analog control of a sound processor fader, SP should be set to 5.

If "SP" = 0 relays are driven to select the required sound format and the CA21 sound format status LEDs are driven by the format selected by the CA21. No status information is used from the sound processor. No analog fader control is available.

If "SP" = 4 the CP500 sound processor can be driven serially. Sound format, sound level and sound format status are all conveyed via the serial port.

If "SP" = 5 the Panastereo sound processor can be driven serially. Sound format, sound level and sound format status are all conveyed via the serial port.

If "SP" = 6 the Sony DFP-D3000 sound processor can be driven serially. Sound format, sound level and sound format status are all conveyed via the serial port. For correct operation of the DFD-D3000 serial interface the serial number of the DFP-D3000 being controlled must be entered into the CA21 "d1" and "d2" setup options. "d1" is set to the most significant two digits of the serial number and "d2" is set to the least significant three digits of the serial number.

If "SP" = 7 the CP650 sound processor can be driven serially. Sound format, sound level and sound format status are all conveyed via the serial port.

NOTE:

The six setup options nn, dA, dS, dG, n1 and n2 are used to configure the soft-key mapping for each CA21 sound format. For each CA21 sound format you can select one of the 8 available sound processor formats. Note that the sound format selection is only available for the Dolby CP500, Dolby CP650 and Sony DFP-D3000 sound processors.

nn	Mono softkey	min: 1	max: 8	default: 1

This setup option is used to select the picture control and sound processor soft-key for the CA21 MONO operation. Normally the CA21 MONO operation would select the sound processor "mono" soft-key but if required you can map the CA21 MONO operation to another format such as soft-key 8 for the selection of Dolby EX on a CP500.

dA	Stereo softkey	min: 1	max: 8	default: 2

This setup option is used to select the picture control and sound processor soft-key for the CA21 STEREO operation.

dS	SR softkey	min: 1	max: 8	default: 3

This setup option is used to select the picture control and sound processor soft-key for the CA21 SR operation.

dG	Digital softkey	min: 1	max: 8	default: 4

This setup option is used to select the picture control and sound processor soft-key for the CA21 DIGITAL operation.

n1	Non-Sync1 softkey	min: 1	max: 8	default: 7

This setup option is used to select the picture control and sound processor soft-key for the CA21 NON-SYNC1 operation.

n2	Non-Sync2 softkey	min: 1	max: 8	default: 8

This setup option is used to select the picture control and sound processor soft-key for the CA21 NON-SYNC2 operation.

NOTE:

The following "d1" and "d2" setup options are only used when "SP" is set to 6 and a Sony DFP-D3000 sound processor is being controlled serially. When "SP" is set to a value other than 6 the values of "d1" and "d2" are unimportant.

d1	Sony D3000 serial number (most significant)	min: 00	max: 99	default: 00
	This option is used to enter the most significant two digits of the Sony DFP-D3000 sound processor serial number.			

d2	Sony D3000 serial number (least significant)	min: 000	max: 999	default: 000
	This option is used to enter the least significant three digits of the Sony DFP-D3000 sound processor serial number.			

b1	Cue and Alarm beeper level	min: 0	max: 10	default: 5
	This option sets the beeper level for cues/alarms where 0 is silent and 10 is loudest.			

b2	Key click beeper level	min: 0	max: 10	default: 1
	This option sets the beeper level for key clicks where 0 is silent and 10 is loudest.			

Ft	Enable/Disable fade to zero while rotating turret	min: 0	max: 1	default: 0 (fade to zero (mute) enabled)
	This option is used to enable/disable the fading of the sound to zero while the turret is rotating." Zero" enables the fade (muting) and "one" disables the fade to zero.			

NOTES:

Remote Control of Sessions

The two inputs Remote Stop and Remote Start together with the Setup option Auto Go ("AG") allow sessions to be controlled remotely. The operation of the remote inputs is summarised in the tables below.

Note that Auto Go also affects the operation of the GO key when starting a session without the use of the timer.

If GO is pressed with Auto Go = 0, the CA21 enters run state but the first step of the program is not performed until a CUE is received, usually by pressing the CUE key.

If GO is pressed with Auto Go = 1, the CA21 enters run and starts the program automatically. It is not necessary to generate a CUE to perform the first step.

Operation of Remote inputs with Auto Go = 0

CA21 State	Remote Start	Remote Stop
Idle	No action	No action
Run waiting for timer	Starts the session immediately (like CUE)	Clears the timer but stays in run
Run waiting for first CUE	Starts the session (like CUE)	No action
Running a session	No action	No action

Operation of Remote Inputs with Auto Go = 1

CA21 State	Remote Start	Remote Stop
Idle but film not loaded	No action	No action
Idle with film loaded	Enters run and starts a session immediately using the selected program (like pressing GO)	No action
Run waiting for timer	Starts the session immediately (like CUE)	Aborts the session and returns to idle (like EXIT)
Running a session	No action	Aborts the session and returns to idle (like EXIT)

Functions

Auto Start

     (Slide Off can be included in the program step)
     Motor On (12)
     House Half (25/26)
     Stage Down (24)
     House Preset Delay (HP in setup)
     Curtain Open (8)
     Dowser Open (13)
     If setup option "Er" = 1 (Exciter relay NOT used for door control)
          Exciter on (close 15)
     Select Stereo

Auto Stop

     Curtain Close (2)
     Curtain Close Delay (CC in setup)
     House Lights Up (22)
     Stage Lights Up (23)
     Dowser Close (14)
     If setup option "Er" = 0 (Exciter relay NOT used for door control)
          Exciter off (open 28)
     Select Non Sync 1
     (Slide On can be included in the program step)
     (The motor is turned off when the film runs out)

Motor On

     Pulse relay 12

Motor Off

     Pulse relay 11

Dowser Open

     Pulse relay 13
     If setup option "Er" = 0 (Exciter relay NOT used for door control)
          Close relay 15 (exciter on)

Dowser Close

     Pulse relay 14
     If setup option "Er" = 0 (Exciter relay NOT used for door control)
          Open relay 15 (exciter off)

Flat

        Masking Flat (10)

        If the turret is already positioned at Flat do nothing more

        Otherwise if the dowser is open
                Volume = 0.0
                Dowser Close (14)
                Lens Delay (Ld in setup)
                Lens Flat (pulse 3 for required time - see setup)
                Wait till relay 3 pulse completed
                Dowser Open (13)
                Restore volume
        else
                Lens Flat (pulse 3 for required time - see setup)

Scope

        Masking Scope (1)

        If the turret is already positioned at Scope do nothing more

        Otherwise if the dowser is open
                Volume = 0.0
                Dowser Close (14)
                Lens Delay (Ld in setup)
                Lens Scope (pulse 5 for required time - see setup)
                Wait till relay 5 pulse completed
                Dowser Open (13)
                Restore volume
        else
                Lens Scope (pulse 5 for required time - see setup)

Mono

        Send command to sound processor to select Mono

Stereo

        Send command to sound processor to select Stereo

SR

        Send command to sound processor to select SR

Digital

        Send command to sound processor to select Digital

Non Sync 1

> Send command to sound processor to select NS1

Non Sync 2

> Send command to sound processor to select NS2

House Up

> Pulse relay 22
> Pulse relay 23 (stage up)
> If setup option "Er" = 1 (Exciter relay used for door control)
>> Relay 15 on

House Preset 1 (select when house being switched to preset from up)

> Pulse relay 26
> Pulse relay 24 (stage down)
> If setup option "Er" = 1 (Exciter relay used for door control)
>> Relay 15 off

House Preset 2 (select when house being switched to preset from down)

> Pulse relay 25
> Pulse relay 24 (stage down)
> If setup option "Er" = 1 (Exciter relay used for door control)
>> Relay 15 off

House Down

> Pulse relay 21
> Pulse relay 24 (stage down)
> If setup option "Er" = 1 (Exciter relay used for door control)
>> Relay 15 off

Slide On Sequence

> Curtain Open (8)
> If setup option "Sr" = 0 (Slide relay NOT used for un-threaded sign)
>> Slide Projector On (close 16)
> Run "timed slides" routine
> Curtain Close Delay (CC in Setup)
> Pulse Spare Relay 35 (tape start)

Timed Slides

> Slide Power On (relay 31 on)
> Wait 5 seconds
> Slide Lamp On (relay 32 on)
> If slide count not equal zero
> > While slide count no equal zero
> > > Wait setup option "tt" seconds
> > > Advance slide
> > Generate CUE

Slide Off Sequence

> Tape stop (pulse 36)
> Curtain Close (pulse 2)
> Curtain Close Delay (CC in Setup)
> If setup option "Sr" = 0 (Slide relay NOT used for un-threaded sign)
> > Slide Projector Off (open 16)
> Stop any timed slides loop
> Slide Lamp off (relay 32 off)
> Cycle slides (pulse relay 34)
> Arrange for slide power off (relay 31 off) after 5 minutes

Film Break and Xenon Fail Fault Sequence

> Motor Off (11)
> Dowser Close (14)
> If setup option "Er" = 0 (Exciter relay NOT used for door control)
> > Exciter Off (open 15)
> House Lights Up (22)
> Stage Lights Up (23)
> Select Non Sync 1

Fire Sequence

> Motor Off (11)
> Dowser Close (14)
> If setup option "Er" = 0 (Exciter relay NOT used for door control)
> > Exciter Off (open 15)
> House Lights Up (22)
> Stage Lights Up (23)
> Select Non Sync 1
> Volume = 0

Abort Session (by pressing EXIT or activating Remote Stop)

> Perform Slides Off (see above)
> Motor Off (11)
> Dowser Close (14)
> If setup option "Er" = 0 (Exciter relay NOT used for door control)
> > Exciter Off (open 15)
> House Lights Up (22)
> Stage Lights Up (23)
> Select Non Sync 1