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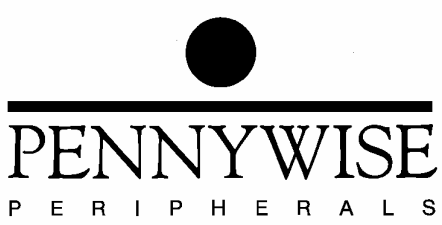

Pennywise™ DCA21 Cinema Automation Operating Manual

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Introduction

This manual describes how to operate the Pennywise DCA21 Cinema Automation Unit.

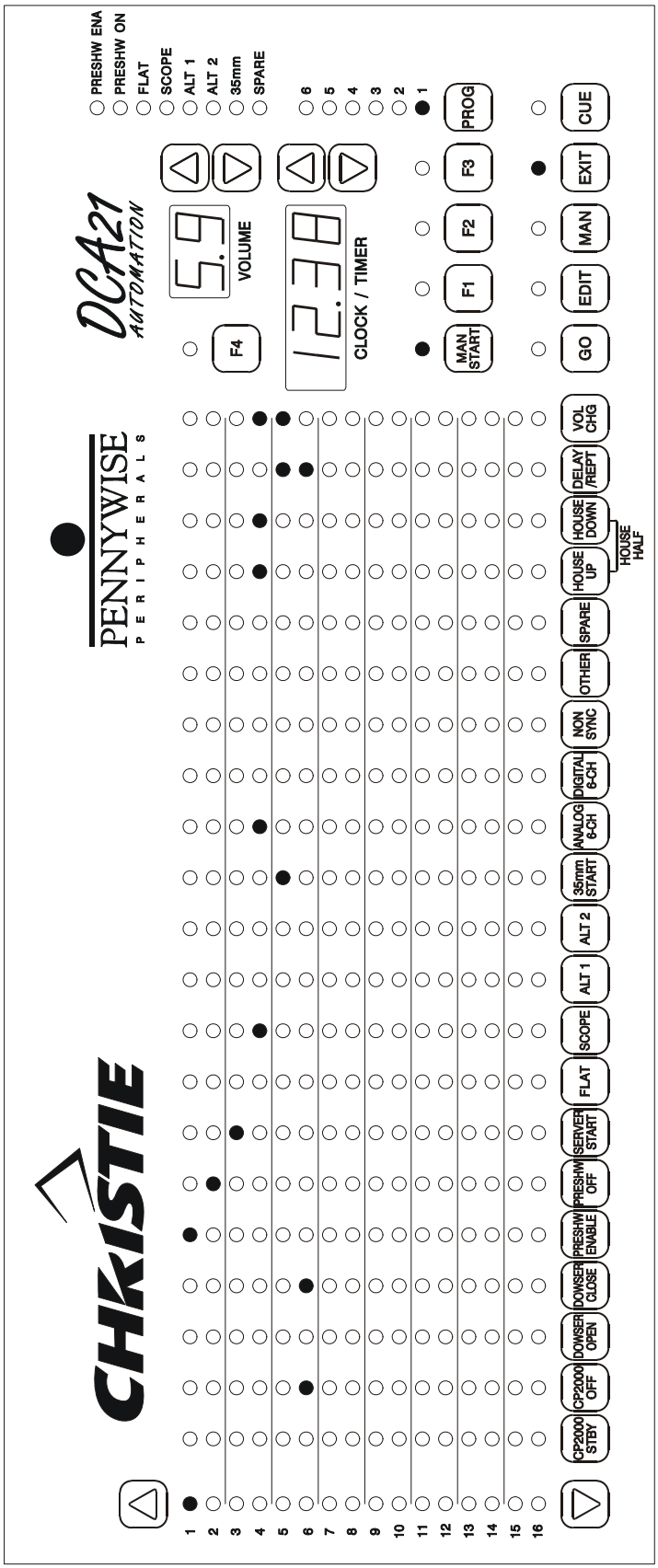
The DCA21 enables movie sessions to be run automatically. It controls the Preshow system, the D-cinema Server and CP2000 projector, the 35mm Show Controller, the Sound Processor and Auditorium functions such as House Light and Curtains. The DCA21 may be programmed with a predetermined sequence of operations call a program.

Six different programs each of up to 16 steps can be stored in the DCA21. Each program step defines a set of operations to be performed in response to a cue.

Cues can be generated by the Preshow Controller, by the D-Cinema Server, by the 35mm Show Controller, by time delays built into program steps, or manually by pressing the CUE key on the DCA21.

Typical operations in program steps are DOWSER OPEN, SERVER START, SCOPE, NON_SYNC, SET FADER TO 7.2.

By choosing the operations in each step of the program, including any delays, the projectionist controls how a session will proceed. Effectively the DCA21 integrates all the cinema equipment together.


CHRISTIE
PENNYWISE
PERIPHERALS
DCA21
AUTOMATION
PRESHW ENA
PRESHW ON
FLAT
SCOPE
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ALT 2
35mm
SPARE
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ANALOG 8-CH
DIGITAL 8-CH
NON SYNC
OTHER
SPARE
HOUSE UP
HOUSE DOWN
DELAY /REPT
VOL CHG
HOUSE HALF

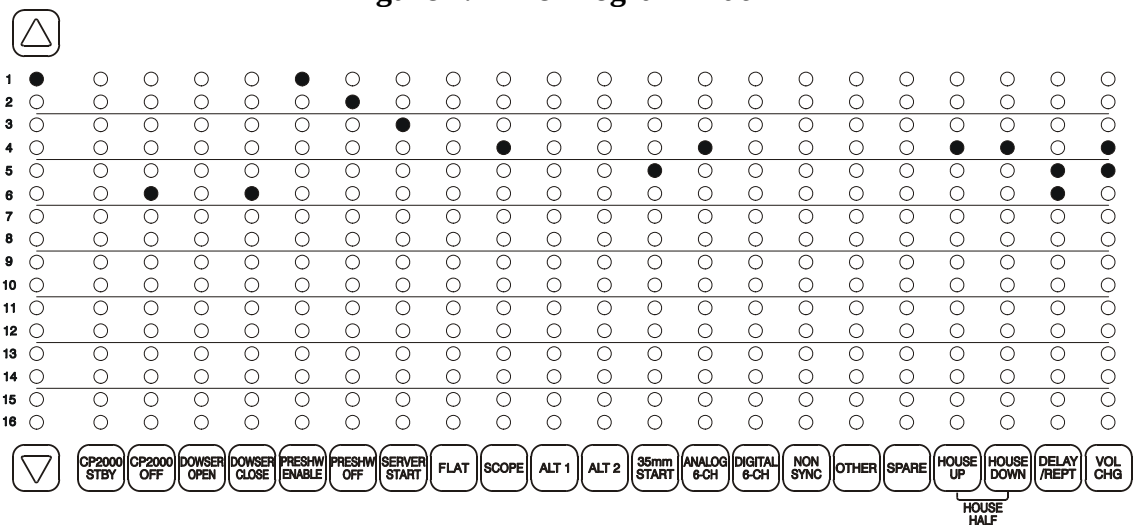
1.0 DCA21 Front Panel Controls

A diagram of the front panel of the DCA21 is shown on the previous page.

1.1 The Program Matrix

The main area of the front panel is a 16 row by 21 column LED matrix. These LEDs display the details of the program currently selected.

Figure 1.1 The Program Matrix



On the left of the panel is a single column of LEDs numbered from 1 to 16, with an arrow key at the top and bottom. These LEDs indicate the step which is currently selected. The step selected in the diagram is number 1.

The current step is the one to be executed next when a session is running, or the step being modified when editing a program. The two arrow keys can be used to change the current step.

At the bottom of the LED matrix are the operation keys. Their names define the cinema control operations they perform. These keys are used to set operations in program steps (edit programs) or to control the cinema manually. Many of these keys, such as PRESHOW-ENABLE, FLAT, SCOPE, ALT1 and ALT2 are, are used to set values when the DCA21 is idle. For example pressing the FLAT key in idle mode allows setting the CP2000 TPC Channel, Lamp Power, and Masking Format used by the FLAT function.

In the LED matrix, an operation is set in a program step if the LED in the row of the step and column of the operation is illuminated. For example, in the program shown in the diagram, step number 4 causes the CP2000 picture to be shown. This step contains the operations SCOPE (selects Scope format CP2000 picture), ANALOG 6-CH (selects 6 track analog sound), HOUSE UP & HOUSE DOWN (both together selects House Half) and VOL CHG (new volume setting).

1.2 The Program Number Selection LEDs and Key

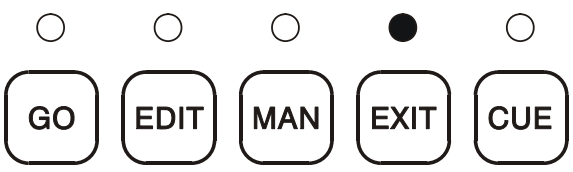
The number of the selected program is shown by the six LEDs on the right of the panel above the PROG key. Pressing the PROG key cycles through the six different programs. The LED matrix will be updated each time to display the selected program. In the diagram program number 1 is selected.

Figure 1.2 Program Number Selection

1.3 The Control Keys

The keys labelled GO, EDIT, MAN and EXIT are used to control the overall operation of the DCA21. GO is used to run a session, EDIT is used to edit a program, MAN is used to operate cinema equipment manually, and EXIT is used to terminate these functions and return the DCA21 to the idle or exit state.

Figure 1.3 Keys Which Control DCA21 Operation

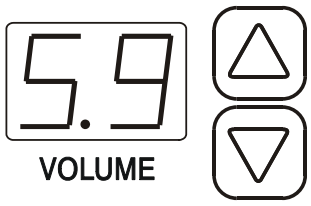


The key labelled CUE can be used to generate a cue manually when a session is running. CUE is also used sometimes as an enter key, for example when setting the time of day clock.

1.4 The Volume Display and Adjustment Keys

The two-digit display labelled VOLUME indicates the volume set on the sound processor which is controlled by the DCA21. The two arrow keys on the right of the display are used to program a volume setting into a program step or to adjust the current volume manually. The volume is currently set to 5.9.

Figure 1.4 Sound Processor Fader



1.5 The Timer Display and Adjustment Keys

When the timer display is not otherwise busy it will be showing the current time of day in 24 hour mode. It can also be used to specify the session start time although the session is typically manually started and the session will wait for the Pre-show controller to define the actual start time. It is also used to handle delays which have been set in program steps.

The two arrow keys to the right of the timer are used to change the value in the timer display. For example they may be used to set a delay time in a program step.

Figure 1.5 The Clock

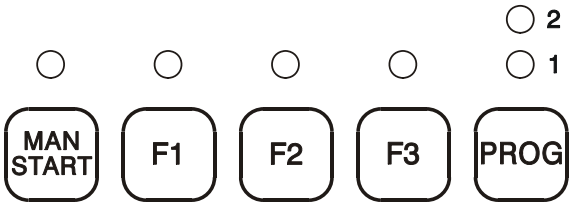
1.6 The Special Function Keys

The row of keys above EXIT, and with PROG on the right, select special functions. Their actual use may vary from one version of the DCA21 to another.

The MAN START key is normally present. It is used to both select manual/auto start of the feature and to signal that the manual start show should proceed. The manual/auto start mechanism is described in more detail later.

The operation of F1, F2 and F3 keys are not defined on the generic DCA21.

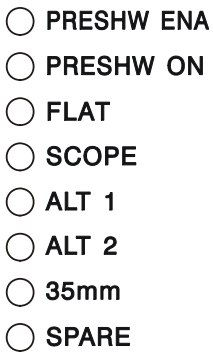
Figure 1.6 Special Function Keys



1.7 The Mode Status Display

The DCA21 has a column of LEDs which displays the current operating mode.

Figure 1.7 DCA21 Mode Status Display



1.7.1 Preshow Enable Mode LED

The PRESHW ENA mode LED is on when the DCA21 has enabled the Preshow controller. This means that the DCA21 is waiting for a cue from the Preshow controller to execute the next program line.

1.7.2 Preshow on Mode LED

The PRESHW ON mode LED is on when the DCA21 has executed a PRESHOW-ENABLE function. This means that the preshow is now running (picture on screen) and the DCA21 is waiting for a cue from the Preshow controller.

1.7.3 Flat Mode LED

The FLAT mode LED is on when the D-cinema show has picture on screen in the FLAT format.

1.7.4 Scope Mode LED

The SCOPE mode LED is on when the D-cinema show has picture on screen in the SCOPE format.

1.7.5 Alternate content 1 Mode LED

The ALT1 mode LED is on when the D-cinema show has picture on screen in the ALT1 format. This format is typically some alternate content from a source other than the D-cinema server.

1.7.6 Alternate content 2 Mode LED

The ALT2 mode LED is on when the D-cinema show has picture on screen in the ALT2 format. This format is typically some alternate content from a source other than the D-cinema server.

1.7.7 35mm Mode LED

The 35mm mode LED is on when the 35mm show controller is running. The DCA21 will be waiting for a cue from the 35mm show controller to signal the 35mm show end.

1.7.8 Spare Mode LED

The function of the SPARE mode LED is currently undefined.

2.0 Getting Started

2.1 Self Test

When the DCA21 is first switched on it carries out a self test and displays its software version.

After the LEDs are scanned the release date of the software is displayed in the volume and timer displays. The volume display shows the last two digits of the year and the timer shows the day and month, e.g. 2004 means the 20th April.
The DCA21 then checks its programs in memory to see if any have been corrupted. If so it will flash the number of the faulty program.

If a program number LED flashes, press EDIT and check the program, repairing it if necessary. Then press EXIT. Repeat this process for each damaged program. (More will be said later about editing programs and the reasons for them becoming corrupted.)

2.2 Setting the Time of Day Clock

Assuming the self test has found no problems the DCA21 will start up in the idle state with the LED above the EXIT key on.

The DCA21 will display a program and show the time of day.

After a short time the volume will change to the initial setting. The initial setting is normally a setup option.

The correct time is maintained by a battery when the DCA21 is powered off. However the clock should be checked when the DCA21 is powered on and adjusted if necessary.

To set a new time of day in the clock the DCA21 must be idle as indicated by the led above the EXIT key. If the DCA21 is not idle, press EXIT.

(1) Use the two arrow keys on the right of the clock display to set the new time. Holding a key down will cause the time to change in larger steps.

(2) While the time is being set the decimal point on the clock stops flashing.

(3) Once the new time has been set, press the CUE key twice. The clock will start from the new time on the second press of CUE and the decimal point will start flashing again.

(4) If EXIT is pressed before CUE is pressed twice, the new setting will be aborted. The clock will revert to its original time and the decimal point will start flashing again.

2.3 When the DCA21 is Idle

The DCA21 is idle when the LED above the EXIT key is on. Pressing EXIT one or more times will return the DCA21 to idle and terminate whatever else it was doing. The DCA21 pictured in the diagram on page 2 is idle.

When the DCA21 is idle many of the front panel keys will not do anything. In particular most of the operation keys below the program matrix will not respond. However, some of the keys are used to enter configuration parameters in the idle state. For example, when the FLAT key is pressed in idle, the CP2000 TPC Channel, Lamp Power, and Masking Format to be used by the FLAT function can be configured.

The keys that support idle mode parameter setting are:

- PRESHOW ENABLE
- FLAT
- SCOPE
- ALT1
- ALT2

See the “DCA21 Cinema Automation Configuration” document for the parameter lists.

The LEDs above some of the special function keys may indicate the state of their functions. For example if the LED above the MAN START key is on, the DCA21 is set for a manual start after the pre-show is finished..

The sound processor fader can be changed using the DCA21 VOLUME arrow keys. If the sound processor is driven by a serial interface, volume changes made using the DCA21 arrow keys will cause the volume displayed on the sound processor to change in the same way.

3.0 Manual Operation of Equipment from the DCA21

3.1 Manual Operation from Idle

If the MAN key is pressed when the DCA21 is idle the DCA21 enters manual. The LED above the MAN key will be illuminated.

In manual, cinema equipment can be operated directly by pressing the operation keys at the bottom of the program matrix.

For example, you can operate the control the CP2000 dowser by pressing the DOWSER OPEN to open it and DOWSER CLOSE to close it.

The two keys DELAY and VOL CHG do not function manually. They are only used when editing programs (as described in the next Sections).

To return the DCA21 to idle press the EXIT key.

3.2 Performing Manual Operations from Run

When the DCA21 is running a program it is possible to branch out of run temporarily, go to manual, and then return again. (It is also possible to branch to edit as described in the next Section.)

(1) To enter manual from run press the MAN key. The LED above MAN will turn on but the LED above the GO key will remain on.

(2) Operations can then be performed manually in the same way as entering manual form idle.

(3) To return to the running program at the original point press EXIT once. The LED above the MAN key will then go out leaving only the LED above GO on.

Note that when the DCA21 is in manual it will not respond to cues from any source. Any programmed delay will keep counting down but if it reaches zero when the DCA21 is still in manual the cue will be lost.

3.3 Manual Operation of House Lights

The manual operation of House Lights works a little differently as the House Half function is selected when both House Up and House Down are selected. As the DCA21 cannot detect the simultaneous pressing of two buttons the manual House Half must be done a little differently as follows:

After pressing either the House Up or House Down button in manual mode the DAC21 will wait two seconds to see if the other house lights function key is then pressed. If the other key is pressed within the two second then a House Half is performed. Otherwise the function of the first pressed key will be performed.

This means that the operation of the House Lights functions in manual mode will be delayed by two seconds.

4.0 Editing Programs

4.1 Editing Simple Operations

Before the DCA21 can be used to control a session a suitable program must be set up in its memory. This process is called editing.

An operation is included in a program step when the LED in the step's row and the operation's column is on. For example in the diagram on page 2 the first step contains the operations SOUND SLIDES, HOUSE UP, and a VOLUME CHANGE.

To edit a program, use the following procedure. The DELAY and VOL CHG (volume change) operations are a little more involved and are described in the following Sections.

(1) Select edit by pressing the EDIT key whilst the DCA21 is idle. The LED above the EDIT key will then turn on.

(2) Select the program to be edited using the PROG key. Once editing has started, it is not possible to select a different program. It is necessary to return to idle by pressing EXIT and then to re-enter edit state by pressing EDIT again.

(3) Select the step to be edited using the two arrow keys.

(4) To include or exclude an operation in the step, press the operation key at the bottom of the LED matrix. When the LED in the step's row and the operation's column is on, the operation is included in the step. When the LED is off the operation is not included in the step.

(5) A check is built in to prevent conflicting operations being set in a program. For example it is not possible to set DOWSER OPEN and DOWSER CLOSE in the same step.

4.2 Editing Delays

Delays are used during a session to execute steps automatically after a certain time. They effectively cause a cue to be generated after the delay time.

When a session is running and a step is performed which contains a delay, the next step of the program will be performed after that delay.

A step contains a delay if the LED is on in the DELAY column of the program matrix. In edit the size of the delay will be displayed in the timer in minutes and seconds. If there is no delay in the current step, "0.00" will be displayed in the timer.

When a session is running and a delay is in progress, the timer counts down in seconds to indicate how much of the delay remains. When there is no delay active the timer shows the time of day.

Setting a delay in the current step involves the use of the DELAY operation key in conjunction with the timer display.

(1) Set the size of the delay in minutes and seconds using the TIMER/CLOCK arrow keys. Holding down an arrow key will cause the delay to change in large steps.

(2) Press the DELAY key. If there was no delay in the step previously, the LED in the DELAY column of the current step will turn on. If there was a delay there previously, the LED with go out briefly and then come back on.

To remove a delay from a step, simply press the DELAY key without first touching either of the two arrow keys. The LED in the matrix will then go out and the timer display will return to 0.00 to indicate the delay has been removed.

Note that the delay increment varies when the delay changes from the minimum of 1 second up to a maximum delay setting of 77 minutes.

4.3 Special Delay Setting for Program Repeat

The delay function has a special setting that allows the automatic repeat of a program. To select this, attempt to enter a delay one beyond the maximum value of 77 minutes, and “rEPt” for “repeat” will be displayed in the timer display.

Typically this “repeat” special delay would be programmed on the last line of the program to automatically repeat the current program.

4.4 Editing Volume Changes

Where a LED is on in the VOL CHG column, it indicates that a fader setting has been specified in the step. When a session is running and that step is executed, the sound processor fader will be set to the new setting.

In edit the volume display shows the volume level programmed at the current step. In other states the volume display shows the sound level currently set on the sound processor.

There does not have to be a volume change in every step of a program. If the current step does not contain a volume change but there is a change programmed into an earlier step, then the volume display will show the setting from that earlier step.

In other words, in edit, the volume display shows the volume which would be set at each step if the program has been run up to that point.

If the volume display is blank, it means that no volume has been set in the current step or any of the previous steps.

To insert a volume change in the current step, or alter an existing volume change in the step, proceed as follows.

(1) Set the volume display to the desired value using its arrow keys.

(2) Press the VOL CHG key. If there was no volume change in the step previously, the LED in the VOL CHG column of the current step will turn on. If there was a volume change there previously, the LED with go out briefly and then come back on.

To remove a volume change from a step simply press the VOL CHG key without first touching either of the two arrow keys. The LED in the matrix will then go out and the volume display will change to display the nearest setting in an earlier step.

4.5 Inserting and Deleting Whole Steps

It is sometimes useful to be able to delete a complete step from a program or to create space to insert an additional step.

When a step is deleted, all the following steps move up one to replace the deleted step. The last step (16) is cleared.

When a step is to be inserted, all the following steps move down one to make room for the new step. The new step will be blank and the last step is shifted off the bottom of the program and lost.

To insert or delete a step the DCA21 must be in edit.

(1) Set the current step to where the insertion/deletion is to take place and press the EDIT key. The current step LED will start flashing.

(2) To delete the current step, press the up arrow key. All the lower steps will then move up one.

(3) To create space for a new step at the current one, press the down arrow key. All the lower steps, including the current one, will then move down to leave the current step blank.

If you press EDIT and the step LED starts flashing but you decide you do not want to proceed with an insertion or deletion, press any key other than the step arrow keys. The step LED will then stop flashing but nothing else will change.

4.6 Editing When in Run

When the DCA21 is running a program it is possible to branch out of run temporarily and go to edit.

(1) To enter edit from run press the EDIT key. The LED above EDIT will turn on but the LED above the GO key will remain on.

(2) Once in edit, a different program can be selected and the current step can be changed. All normal editing functions can be performed.

(3) To return to the running program at the original point press EXIT once. The LED above the EDIT key will then go out leaving just the LED above GO on. The program which had been running will be selected again at its current step.

Note that when the DCA21 is in edit it will not respond to cues from any source. Any programmed delay will keep counting down but if it reaches zero when the DCA21 is still in edit the cue will be lost.

5.0 Running Sessions

5.1 What Happens During a Session

When a session is running the DCA21 operates the equipment in the cinema automatically as specified by the selected program. The led above GO is on.

The DCA21 waits until a cue is received (for example from the D-Cinema Server) and then performs the operations in the current program step. The current step advances by one and the DCA21 waits for a cue again.

This process continues until all of the remaining steps in the program are empty. The DCA21 then returns to idle.

Note that the DCA21 will re-run the current program if a “REPEAT” delay setting is encountered at any step of the program.

The session can be aborted at any time by pressing EXIT.

5.2 Ways of Starting Sessions

Sessions can be started in the following ways.

(1) Directly by pressing GO.

(2) By scheduling a starting time using the timer.

(3) By re-running the previous session using the repeat setting of the DELAY function.

5.3 Starting a Session Directly

This is the normal way to start a session on the DCA21. To start a session directly, first ensure the DCA21 is idle. Pressing EXIT will return it to the idle state.

(1) Select the program to be used for controlling the session by pressing the PROG key.

(2) Select the step where the program is to start. Normally this will be step 1.

(3) Press the GO key. The LED above the GO key will turn on indicating the DCA21 is in run.

5.4 Starting a Session Using the Timer

To start a session at a specified time, set the timer to the starting time and press GO. The timer then starts counting down.

Timing can be aborted at any time by pressing EXIT.

(1) First ensure the DCA21 is idle. Press EXIT if necessary.

(2) Select the program to be used for controlling the session by pressing the PROG key.

(3) Select the step where the program is to start.

(4) Set the starting time in the timer by using the arrow keys. A starting time can be set anywhere within the next 24 hours. To change the timer in larger jumps, hold an arrow key down.

(5) Press the GO key but do not press CUE.

(6) The led above GO will start flashing and the timer will show the time remaining and start counting down. The time remaining is displayed in hours and minutes except during the final minute when seconds are displayed.

(7) When the timer reaches zero, the first step of the program will be performed automatically.

If the timer is counting down but you want to start the session early, simply press CUE.

The timer can be aborted by pressing EXIT.

5.5 Repeating the current session with the “repeat” function

Often is it is required to continuously repeat the current program/session. This is done by inserting a special delay on the last line of the program. The Delay function allows setting delays between 2 seconds and 77 minutes. If you try and set a delay one beyond the max of 77 minutes “rEPt” will be displayed in the timer display. This indicates that this is a special repeat function and when executed the DCA21 will be put back to line one of the current program and remain in GO mode.

Note that line one will not be executed. Normally the repeat function is used with the preshow advertising system. The DCA21 will have a Preshow Enable on line one that will tell the Preshow system that the DCA21 is ready to start the next show. Line one will be executed when a cue is received form the Preshow system.

6.0 Driving the Cinema Equipment

The actual operations provided on the DCA21 can vary from one installation to another, depending on the cinema equipment used and the preferred operating procedures of the cinema.

An additional "Configuration Manual" is normally provided with the DCA21. This manual defines the exact functions performed by each front panel operation key for your particular configuration.

6.1 Controlling the PreShow Advertising System

The DCA21 can work with a Preshow advertising system. The DCA21 effectively starts (or allows to start) the Preshow system. The DCA21 has a setup option to set the PreShow type (see the DCA21 Configuration Document for a description of the setup options):

Type 1: Preshow with serial command interface to a server (e.g. NCM). The DCA21 only allows the NCM server to screen in a "Preshow Enable" state and waits for a serial command (end cue) from the NCM PreShow system to say it is finished at which time it is locked out.

Type 2: PreShow with low voltage Slide Relay interface. The DCA21 provides a "normally closed" relay which can be opened to disable the PreShow.

The DCA21 uses the PRESHW ENA (Preshow-Enable) and PRESHW OFF (Preshow-Off) functions to do this.

6.1.1 Type 1 PreShow Control Functions (Serial PreShow Control)

6.1.1.1 Type 1 PRESHW ENA (PreShow-Enable)

The PRESHW ENA function performs two duties. One is a true Preshow enable and the second is really the Preshow Start. The PreShow Enable is normally in the first line of the program.

When the DCA21 encounters a PRESHW ENA function on a program line it instructs the Preshow System that it is allowed to start and that the DCA21 is waiting for a cue. During this time the PRESHW ENA mode LED will be on and the PRESHW ENA function LED will flash. This can be considered a "standby" or "waiting for PreShow" state. Note that during this time the DCA21 is waiting at the program step containing the PRESHW ENA. This step has not yet been executed.

When the DCA21 eventually receives the cue from the Preshow System, this program step will be executed with the PRESHW ENA being executed and performing the Preshow Start function.

The Preshow Start function will power the CP2000 lamp up, select the required channel, select the required lamp power and turn picture on. The DCA21 then waits for a second "serial cue" from the Preshow System. This cue will execute the next DCA21 program line which might be:

- A further program step to do something simple as adjust the House Lights.
- Or a program step to execute a PRESHW OFF to end the Preshow.

6.1.1.2 Type 1 PRESHW OFF (Serial Controlled PreShow)

The PRESHW OFF first disables the Preshow System and then does either a manual start or an automatic start:

6.1.1.3 Type 1 PRESHW OFF with Manual Start

The MAN START function is used to give the operator (Projectionist) control of when the feature starts after the PreShow is finished. The operator may enable, or disable the manual start mechanism. When the LED above MAN START is on, manual start is enabled.

Many digital video PreShow systems play a program through once and then stop at a "freeze frame" screen. At this time they provide a serial command to the DCA21, signalling the end of the preshow presentation. The DCA21 may then either automatically continue program execution and start the feature, or first wait for a "manual start" button press from the operator before continuing program execution.

If manual start is enabled when a PRESHW OFF is executed, then the next DCA21 program line will not be executed until the operator presses the MAN START button. While the DCA21 is waiting for the MAN START button press, all LEDs for the active functions in the DCA21 program line after the line with the PRESHW OFF will flash. The MAN START LED will also flash.

Once the MAN START button is pressed program execution continues and the LEDs stop flashing.

6.1.1.4 Type 1 PRESHW OFF without Manual Start

If manual start is not enabled when a PRESHW OFF is executed, then the next DCA21 program line will be automatically executed and the program will continue without operator intervention.

6.1.2 Type 2 PreShow Control Functions (Relay Controlled PreShow)

6.1.2.1 Type 2 PRESHW ENA (PreShow-Enable)

The DCA21 controls the Slide Projector using the normally closed contact of a relay. When the DCA21 is off, or when it is first turned on, this relay contact will be closed and the slide preshow will be enabled. The PRESHOW ENABLE function is used to close this contact after a PRESHOW OFF has opened it. The PRESHOW ENABLE is normally in the last line of a program to re-enable the PreShow after the feature is finished.

6.1.2.2 Type 2 PRESHW OFF (PreShow Off)

For systems interfacing with Slide Projector type Preshows, The PRESHOW OFF functions drives a normally closed relay open (usually for the duration of a digital cinema feature). The relay will stay open (Slide Projector disabled) until:

- The DCA21 executes a PRESHOW OFF (often in the first line of the program).
- The DCA21 exits to idle mode
- The DCA21 is turned off

6.1.2.3 Type 2 PreShow Manual Starts

When type 2 PreShow control is selected there are two methods of executing the first line of the program: One is with the manual start mechanism and one is without.

6.1.2.4 Type 2 PreShow with Manual Starts

In most cases, slide relay preshow systems will be playing a loop of content, and the Manual Start will be used to start the feature and disable the slide projector.

When manual start is enabled, and the DCA21 is in GO mode and on line one of a program, all the function LEDs in line one will flash as well as the MANUAL START LED. At the required time, the operator would then press the MANUAL START button to start the show.

6.1.2.5 Type 2 PreShow without Manual Starts

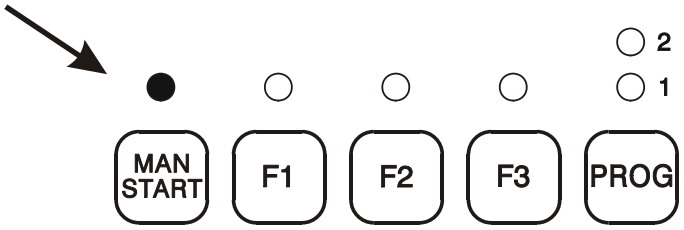
When manual starts are not enabled then the DCA21 will stay on line one of the program, with the slide presentation running, until a cue is received. Typically the operator will enter a start time on entering go mode, and the first step of the program will be executed when the start time is reached (effectively a cue is generated when the start time is reached)..

6.1.3 MAN START Special Function Button

When the LED above the MAN START special function button is flashing, a manual start must be performed by the operator to continue the show.

The DCA21 has a “bP” setup option which must be set to “1” to enable manual starts. When “bP” = 1 a “Button Press” is required to continue the program. See the DCA21 Configuration document for further details.

Figure 6.1 MAN START and its LED



6.2 Controlling the D-cinema system

The D-cinema system is controlled by the DCA21 using the SERVER START, FLAT, SCOPE, ALT1 and ALT2 functions.

6.2.1 The D-Cinema SERVER START function

The SERVER START function commands the D-cinema server to start and sets the DCA21 looking for a cue from the D-cinema server. When the DCA21 sees the cue it executes the next program line.

6.2.2 The D-cinema FLAT, SCOPE, ALT1 and ALT2 functions

The FLAT, SCOPE, ALT1 and ALT2 functions turn the CP2000 lamp on, set the lamp power, select the TPC channel and turn the CP2000 picture on.

6.3 Controlling the CP2000 projector

Some of the control of the CP2000 projector is build into DCA21 functions such as PRESHW ENA, FLAT, SCOPE, ALT1 and ALT2. Explicit control is also available with the CP2000 SBY, CP2000 OFF, DOWSER OPEN and DOWSER CLOSE functions.

6.3.1 CP2000 SBY

The CP2000 SBY function ensures that the CP2000 is powered on and the picture off.

6.3.2 CP2000 OFF

The CP2000 OFF function ensures that the CP2000 picture and power are off.

6.3.3 CP2000 DOWSER OPEN

The CP2000 DOWSER OPEN function turns the CP2000 picture on.

6.3.4 CP2000 DOWSER CLOSE

The CP2000 DOWSER CLOSE function turns the CP2000 picture off.

6.4 Controlling the 35mm projection system

The DCA21 uses the 35mm START function to control the 35mm system. The 35mm START function commands the 35mm system to start and sets the DCA21 looking for a cue from the 35mm system. When the DCA21 sees the cue it executes the next program line.

6.5 Controlling the Sound System

The DCA21 uses the ANALOG 6-CH, DIGITAL 6-CH and NON SYNC functions to select the required sound format.

The DCA21 can also control the sound level when used with a serially controlled sound processor such as the CP500 and CP650.

6.6 The DCA21 PANIC Input

The DCA21 monitors an input to detect a PANIC condition. Typically the PANIC signal is from the Cinema fire evacuation system.

When the DCA21 detects a PANIC it typically does such things as shutting down the projector and muting the sound.

See the “DCA21 Cinema Automation Configuration” document for the exact functions performed.

7.0 Setup

This is a special state which can be used to perform privileged functions, such as clearing all programs, and to set configuration values such as power on volume setting.

To restrict access to setup, a PIN security scheme is provided. Each digit of the PIN is set as a step number and then entered by pressing the CUE key as follows. The default for number PIN for the DCA21 is 3124.

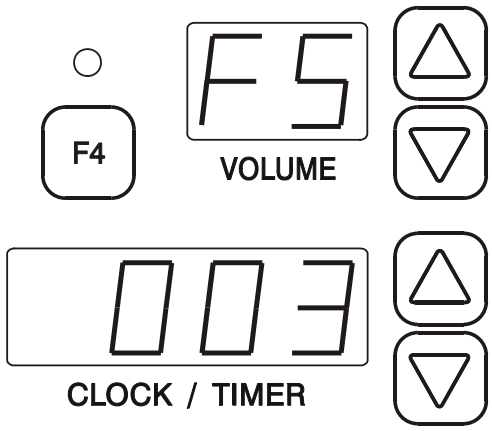
(1) With the DCA21 in idle state set the step number to the first digit of the PIN and press CUE.

(2) Set the step to the second digit of the PIN and press CUE.

(3) Repeat this procedure for the remaining digits of the PIN.

If the PIN is verified by the DCA21, setup will be entered and indicated by blanking out all the LEDs above GO, EDIT, MAN, and EXIT. The volume and timer displays will also change.

Figure 8.1 Setup Option "FS" with a Value of 3



Each setup function is identified in the volume display by a two-character code. Pressing the volume arrow keys will step through the various functions which are available.

At the same time any value associated with the function will be displayed in the timer digits. Pressing the timer arrow keys will step through the permitted range of values.

If the CUE key is pressed, the function whose code is displayed will be selected. For example if the function enables a time to be set, the value currently displayed in the timer digits will be entered. If the function clears all programs, pressing CUE will erase all the steps of all programs.

Once a value has been entered using setup, the value remains stored in the DCA21. It is preserved even when the CA21 is switched off. Of course the stored value may be changed at some later date by re-entering setup.

After CUE is pressed to perform a function, setup will display the next available function.

To leave setup, press the EXIT key. The LED above EXIT will then illuminate to indicate the DCA21 has returned to the idle state.

In setup most of the functions performed will depend on the actual configuration of the DCA21 provided. However, two functions are normally always present.

(1) Clearing all programs, (volume display shows "CP"),

(2) Setting the fader slew rate, (volume display shows "FS"). The fader slew rate is determined by a number from 0 to 6. A value of 0 gives the fastest slew rate and 8 the slowest.

Figure 8.1 above shows how the option to set the fader slew rate will appear.

8.0 Checks on Stored Programs

The memory used to store the six programs and setup values is checked regularly to ensure nothing has been corrupted. If the battery used to backup the memory goes flat, the memory contents can get damaged. The battery is a long life lithium cell and should last at least five years.

If the DCA21 detects that a program has been corrupted it flashes the number LED of the damaged program. The EDIT key must then be used to select edit state. The program can be checked and corrected if necessary. Nevertheless when EXIT is pressed to return to idle the fault condition on that program will be cleared.

The above procedure must be repeated for all programs which have been corrupted.

If the programs are severely corrupted as they will normally be after changing or disconnecting the battery, they can be cleared by executing the "clear all programs" function described above in setup. However, errors in the individual programs will have to be remedied first as just described.