

**Unleash  
The Power**

Lighting Systems



**LSC**

# ATOM

## LIGHTING CONTROL DESK OPERATOR MANUAL



Software Version 1.21  
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## QUICK REFERENCE

**Note:** When the **RECORDING** or **PREVIEW/EDITING**, all Submasters flash twice, then Submasters containing Scenes are lit, Submasters containing Chases flash and empty Submasters are not lit..

### RECORD A SCENE

To record the current output as a Scene into the current page, press: [RECORD], (SCENE)  
[S/A] (Scene number) (any of the RED preset Solo/Assign keys)

### GRAB THE OUTPUT IN GRAB MASTER

To record the current output into the Grab master, press: [RECORD], (SCENE)  
[S/A] (Grab master)

### RECORD A CHASE

To record a Chase in the current page, press: [RECORD], (CHASE)

[S/A] (Chase number) (any of the RED preset Solo/Assign keys or the Grab S/A key)

Each step of a Chase consists of a snapshot of the output which is taken as that step is "added".

Create the look for the first step on the output, then to record it as the first step, press;

[RECORD], (ADD STEP)

Create the next look on the output.

To record this step, press;

[RECORD], (ADD STEP)

Continue to create and record steps as above.

When all steps have been recorded, complete the chase by pressing;

[RECORD], (END CHASE)

### PLAYBACK A CHASE or SCENE

If not already in SCENE mode, press [MODE] until the "Scene" mode LED lights.

Fade up the Submaster containing the recorded chase or scene and also the Red preset master.

### CONTROLLING A CHASE

To control a chase you must edit that chase.

Press [PREVIEW/EDIT]

[S/A] (Chase number)

- To control the **RATE** rotate the edit wheel.
- To **BASS STEP** the chase (Sound To Light), set the rate below 0 BPM. (See also "BASS LEVEL", below).
- To change the **FADE** between steps, press [FUNCTION] until IN & OUT light, then rotate the edit wheel.
- To change the **MODE** or **DIRECTION** use the 3 keys below the Edit wheel as described below.

### KEYS

### ACTION

[STOP/STEP]

**STOPS** a running chase.

**STEPS** a *stopped* chase.

[>] (Forward)

**STARTS** a stopped chase and runs it forward.

Changes the **DIRECTION** of a reverse running chase (runs it forward).

SNAPS a forward running chase to the next step.

[<] (Reverse)

**STARTS** a stopped chase and runs it backwards.

Changes the **DIRECTION** of a forward running chase (runs it backwards).

SNAPS a backward running chase to the next step.

Hold [>], Tap [<]

Selects **BOUNCE** mode.

Hold [<], Tap [>]

Also selects Bounce mode.

[>]

Deselects Bounce mode (runs forward).

[<]

Deselects Bounce mode (runs reverse).

Hold [Stop/Step], Tap [>]

Selects **SINGLE SHOT** mode.

[>]

Runs a Single Shot in the forward direction (see also below).

[<]

Runs a Single Shot in the reverse direction (see also below).

Hold [Stop/Step], Tap [<]

De-selects single shot mode.

- When finished, press [PREVIEW/EDIT] (to de-select it). **The latest settings are automatically saved.**

In **normal mode** (not in Preview/Edit);

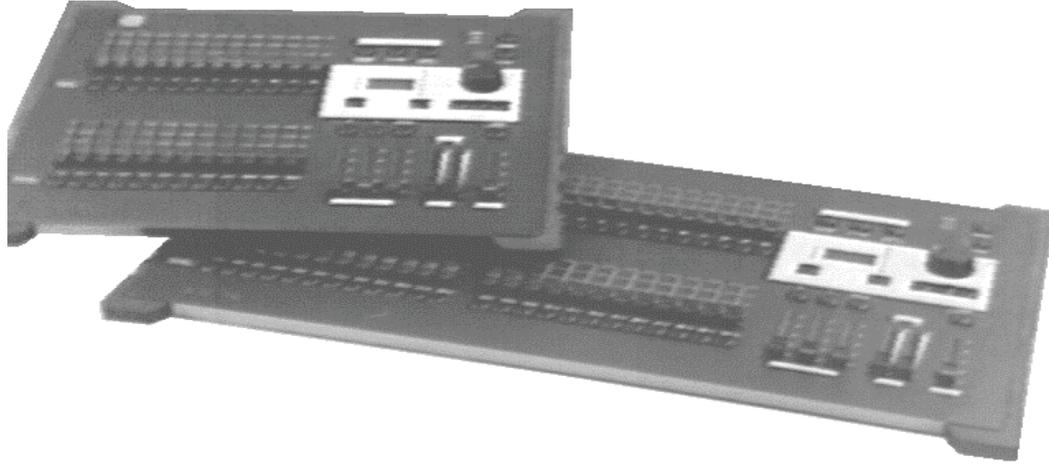
- To run a chase that has been set in **single shot** mode, press; [S/A] (Chase number).
- To adjust the **BASS STEP** audio level, press [FUNCTION] tap [S/A 12] (**BASS LEVEL**), then rotate the edit wheel. When the chase is satisfactorily stepping to the beat, press; [YES] to save the setting. The STEP LED flashes and the chase steps on each beat of the music. (See also "BASS STEP", above).

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## 1.0 INTRODUCTION

The *Atom* is a simple to use yet powerful lighting control desk that is suited to a wide range of applications. It is available in the 12/24 channel model and the 24/48 channel model, both of which have similar features and vary only in the number of channels and Submasters that they support.



Atom 12/24

Atom 24/48

### 1.1 Features

The *Atom* incorporates the following features;

- Manual faders for all channels with associated Solo keys.
- Red, Yellow and Grab Preset masters with associated Solo keys.
- Yellow Preset master may be inverted.
- "Preset", "WIDE" preset and "Scene" modes of operation.
- In Scene mode, the red faders become Submasters that may be used for scenes or chases.
- 9 pages of memory for the Submasters.
- Separate In (up) and Out (down) fade times (0 to 120 seconds).
- Scene Fade Times can be derived from the Time Faders or from Memory.
- Solo level fader, with associated Add or Kill mode key.
- Large storage capacity for Scenes and Chases.

	ATOM 12/24	ATOM 24/48
Channels -Preset Mode	12	24
Channels -Wide Mode	24	48
Submasters -Scene Mode	12	24
Pages of memory	9	9
Scenes	up to 108	up to 216
Chases	up to 108	up to 216
Steps per chase	99	99
Active chases	13	25

- Extensive **Recording Editing** and **Previewing** facilities for Scenes & Chases.
- Utilises "battery backed up" memory.
- User prompts are scrolled on the display and active keys flash to make operations simple.
- Information may be displayed on a VGA monitor (optional), Video Terminal or Personal Computer.
- Memory contents may be down loaded to a serial printer or a computer
- DMX 512/1990 output signal.
- Inbuilt Softpatch.
- Power supply is user selectable, 85–130 volts or 170–260 volts.

## 1.2 Options

- 3.5" PC compatible floppy disk drive for show back-up and transportation.
- VGA video monitor output (monitor not included).
- 12V halogen gooseneck desk lamp.
- Analog output(s) in a variety of connectors (+ve or -ve, 0 to 10 volt) to drive analog dimmers.
- Flight case.

## NEW FEATURES

### Version 1.1

- Chases may have timed crossfades between steps. As well as providing a useful variation for traditional chases, it is invaluable when controlling moving lights.
- VGA video output provides OUTPUT, PREVIEW and SOFTPATCH screens plus quick reference HELP pages.
- Shows recorded on floppy disk are interchangeable between both models of the Atom.
- Complies with relevant CE regulations.

### Version 1.2

- Chase stepping may be synchronised to the bass beat of an audio input signal (BASS STEP).

## 1.3 Caring For Your Atom

The Atom is manufactured from quality components and will give many years of service if you take some basic precautions.

- Do not allow any liquids or foreign objects to enter the Atom. If any liquids are spilt onto the Atom, the inside should be cleaned and dried as soon as possible. Only suitably qualified personnel should remove the covers and perform any such maintenance.
- Do not apply excessive force to any of the controls. Spare parts and service are available from your LSC agent, but prevention is better than cure.
- When connecting any devices to the Atom, make sure that all connections are correct before switching on the power. If any doubt exists, obtain the assistance of qualified personnel.
- If your Atom is to be used "on the road", you should use a flight case to protect the desk. Transport the Atom with all faders in the fully down position. This gives the faders maximum protection from damage.
- The Atom contains a replaceable lithium battery.

### CAUTION

Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type recommended by the manufacturer.  
Dispose of used batteries according to manufacturer's instructions.

## 1.4 Labeling Your Atom

Areas are provided below the faders for you to write identifying labels. To prevent permanent marking of your Atom, LSC recommends that you write place strips of "write on" tape in these areas.

## 1.5 Models

This manual covers both models of the Atom. They are the:

### **Atom 12/24 and Atom 24/48**

The Atom may be operated in any of three modes and the model numbers above refer to the number of channels that may be controlled with *individual channel faders* in the different modes.

See the "MODES OF OPERATION" chapter for details.

### **ATOM 12/24**

In "Preset" and "Scene" modes, there is an individual channel fader for channels 1 to 12.

In "WIDE preset" mode, there is an individual channel fader for **every** channel, 1 to 24.

### **ATOM 24/48**

In "Preset" and "Scene" modes, there is an individual channel fader for channels 1 to 24.

In "WIDE preset" mode, there is an individual channel fader for **every** channel, 1 to 48.

At any point in this manual where the model affects the operational description, the text will describe the 12/24 channel model followed by the other model in brackets.

For example,

“The Yellow preset has faders for channels 1 to 12 (24)”.

In both models, the lower half of the channels are referred to as the low channels and the upper half are referred to as the high channels

For example, in an Atom 12/24, channels 1 to 12 are the low channels and channels 13 to 24 are the high channels.

## 1.6 Keystroke Terminology

Certain keystroke terminology is used throughout this manual to describe the particular operations being undertaken. Any text enclosed in these symbols, [ ], refers to when that particular key needs to be **pressed**. For example; Press [PAGE], means to press the page key located near the top right of the Atom.

SOLO/ASSIGN keys are often abbreviated to S/A. If the key to be pressed is a SOLO/ASSIGN key (of which there are many) then it will be identified by naming it as follows;

[SOLO/ASSIGN] (Name) or the shortened version, [S/A] (Name).

For example;

Press [S/A] (GRAB), refers to the Grab master's SOLO/ASSIGN key.

or; Press [S/A] (5), refers to the channel 5 SOLO/ASSIGN key.

Any information that appears on the 7 segment displays is printed in “quotes”.

## SECONDARY FUNCTIONS

- Red preset S/A keys have **secondary functions** that are activated by holding down the FUNCTION key and tapping the S/A key. These secondary functions are printed on the front panel below their S/A keys. For example; Press and hold [FUNCTION], tap [S/A] (PRINT), refers to the SOLO/ASSIGN key in the bottom left corner of the Atom.
- Some Yellow preset solo keys have hidden **secondary functions** that are activated by holding down the FUNCTION key and tapping the S/A key. These secondary functions are not labelled but are described in the “Diagnostics” section of the “UTILITIES” chapter.
- There are 3 RECORD keys described as:  
 [RECORD] (Scene)                      [RECORD] (Chase)                      [RECORD] (Copy)  
 These keys have **secondary functions** that become active when recording or editing Chases. They are respectively;  
 [RECORD] (Add Step)                      [RECORD] (End Chase)                      [RECORD] (Delete Step)
- The < and > keys below the Edit wheel have **secondary functions** in that they are used to answer either “Yes” or “No” respectively to questions that appear on the display when you are performing certain actions. They are typically used to *confirm* the action that you have selected.  
 For example;  
 To perform a SYSTEM RESET;  
 Press and hold [FUNCTION], tap [S/A] (RESET), release [FUNCTION].  
 The display asks “System Reset?”. Press [YES]

## 1.7 Software

LSC has a policy of continuous improvement of its products. As the Atom is a computerised lighting desk, its software is subject to this policy as new features are added and existing features improved.

The software version of your Atom is momentarily displayed on the LED display when the Atom is switched on. This manual covers software version **1.2**

The operating software of the Atom and the contents of this manual are copyright.

All Trademarks referred to in this manual are the registered names of their respective owners.

Whilst every care is taken in the preparation of this manual, LSC takes no responsibility for any errors or omissions.

## 2.0 GETTING CONNECTED

### 2.1 Mains Input

An IEC mains input socket is located on the rear panel and a mains lead is provided. The Atom will operate from a variety of mains voltages. Before switching on, ensure that the voltage setting is correct for your local mains supply. The voltage setting is indicated in a window on the fuse holder located in the base of the mains input socket.

- The 120 position enables the Atom to operate on a voltage range from 85 to 130 Volts AC, 50 or 60 cycles per second (Hz)
- The 240 position enables the Atom to operate on a voltage range from 170 to 260 Volts AC, 50 or 60 cycles per second (Hz)

If the setting is incorrect, remove the power lead then squeeze the tabs on the side of the fuse holder and slide it out. Rotate the voltage select insert to reveal the correct voltage setting in the window. Replace the holder.

Plug the mains lead into the MAINS INPUT socket and connect it to a source of mains power.

### 2.2 Digital Output (DMX 512/1990) Connector

Connect a data cable from the DMX512 output of the Atom to the DMX512 input of your equipment (dimmers) and set the required channel address on your equipment.

**Note:** *DMX512/1990 together with some typical setups and address settings are described in “Appendix A” at the end of this manual.*

**Hint:** *The Atom provides control for 24 (48) channels, however by utilising the Atom’s softpatch functions, you can control any dimmer output number from 1 up to 99. Refer to the “Patch” chapter for details.*

### 2.3 Video Monitor

If your Atom is fitted with the VIDEO option, connect a VGA (or better) computer monitor to the 15 pin “VIDEO” connector on the rear of the Atom.

### 2.4 Switching On

At this point, with the mains power and DMX connected, the Atom is ready to be operated. Simply switch on the “POWER” switch located beside the mains input connector. The inbuilt neon in the switch will glow and the Atom will commence its startup procedures. After briefly displaying the opening message, the Atom will commence operating in exactly the same state that it was in when it was last switched off. All the scenes, chases, patches etc will be as they were.

**Hint;** *If you are starting a new lighting session, LSC recommends that you perform a “TOTAL RESET” of the Atom. This will erase all previously recorded memories and will prevent you being confused by previous recordings and settings. See the “QUICKSTART TUTORIAL” or “UTILITIES” chapters for details.*

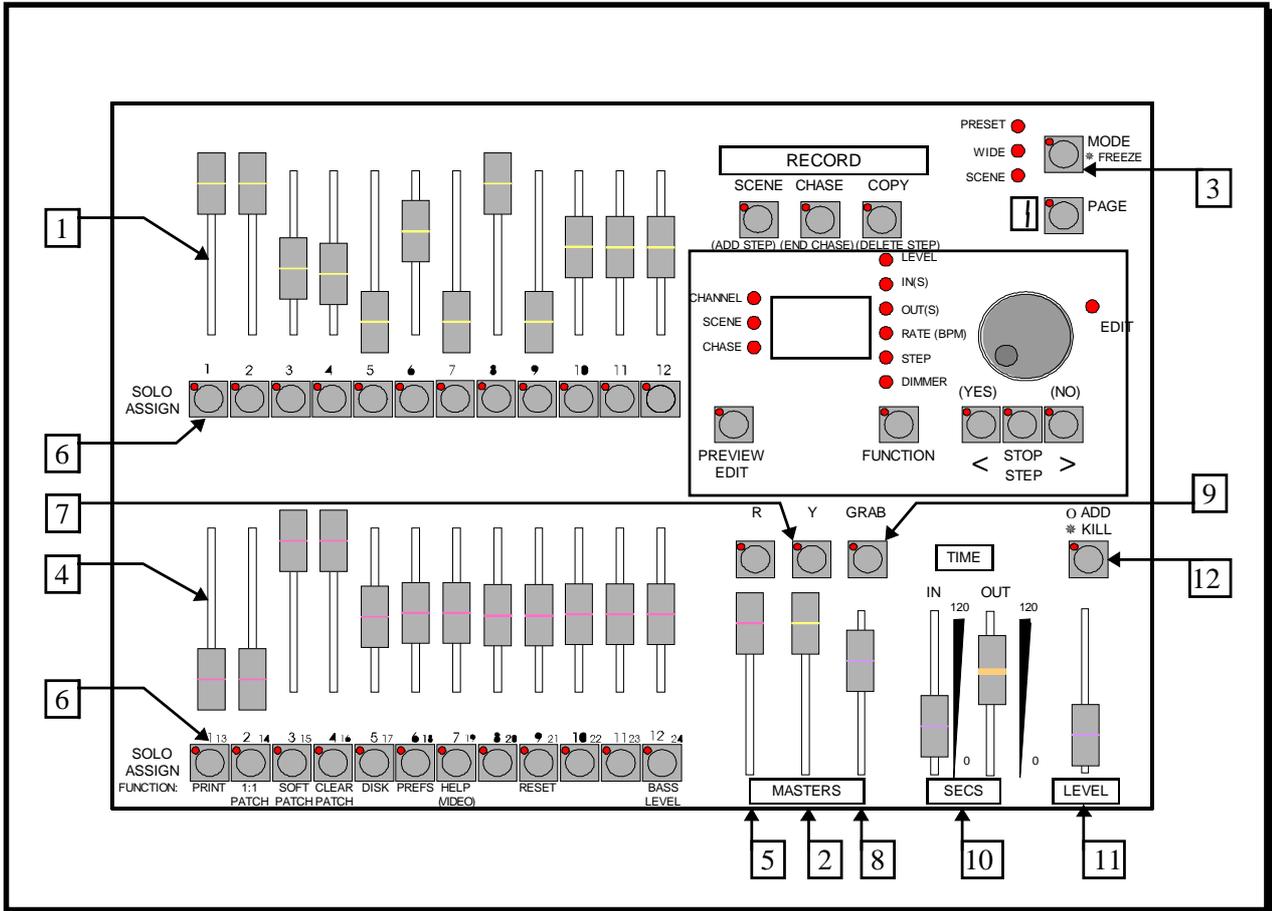
You are now ready to start controlling your lights as described in the “QUICKSTART TUTORIAL” chapter, but before you do, the next chapter gives you a guided tour of the front panel controls of the Atom and this is followed by a brief description of the three modes of operation.

# 3.0 LAYOUT

The front panel of the Atom is divided into two main areas;

- The **fader** section on the left.
- The **mastering** and **recording** section on the right.

**Note: The size of the fader bank area varies depending upon the model, as it provides a fader for every channel (24 or 48). The mastering and programming section is identical for both models.**



Front panel layout of an Atom 12/24.

Many of the keys listed below perform more than one function. The current function depends upon what the operator is doing at the time. Each of these different functions is described under the relevant key below.

### 1. YELLOW PRESET FADERS

Control the levels of channels 1 to 12 (24) respectively.

### 2. YELLOW PRESET MASTER

- Controls the overall level of the Yellow preset faders (the low channels).
- In WIDE Preset mode, it controls the overall level of the single wide preset consisting of the Yellow preset faders (the low channels) and the Red preset faders (the high channels).

### 3. MODE KEY

Selects the current function for the RED preset faders. The choices are;

- PRESET mode.
- WIDE Preset mode.
- SCENE mode.

**Note; In WIDE Preset mode, both the WIDE and PRESET indicators are lit.**

### 4. RED PRESET FADERS

The Red bank of faders have different functions depending upon the current "MODE" of the Atom as selected by the MODE key.

- PRESET mode. The Red bank of faders control the levels of channels 1 to 12 (24). (A duplicate of the Yellow preset).
- WIDE Preset mode. The Red bank of faders control the levels of channels 13 (25) to 24 (48). (The high channels).
- SCENE mode. The Red bank of faders become SUBMASTERS. Each Submaster can control the level of a recorded **Scene** or **Chase** or it may be **empty** (does nothing). There are 9 pages of memory for the Submasters and the function of each submaster depends upon the contents of the currently selected page. You determine what each page contains when you **record** (or copy) scenes or chases into them.

## 5. RED PRESET MASTER

- In PRESET mode, it controls the overall level of the Red preset (the low channels).
- In WIDE Preset mode it has no function.
- In SCENE mode it controls the overall level of the Red preset (Scenes or Chases).

## 6. SOLO/ASSIGN (S/A) KEYS

Below each fader in the fader section is a SOLO/ASSIGN key with an integral red indicator LED.

As their name implies, these are multi purpose keys.

They may be used to:

- SOLO (flash or bump) the contents of their particular fader, be it a channel, chase or a scene. (See also SOLO level and ADD/KILL key below).
- Run a chase if the chase is in "Single Shot" mode.
- Provide a NUMERIC ENTRY function. When the "number" of a channel, scene, chase, etc needs to be entered, the appropriate Solo/Assign key "number" is pressed. To assist you in making a selection, valid keys will flash when an entry is required.
- In conjunction with the FUNCTION key, select various *secondary functions* such as PRINT, 1:1 PATCH etc as indicated **below** the RED S/A keys.

## NUMBERING

Between each fader in the **Yellow** fader bank and its associated S/A key is a number that indicates the channel that the fader and S/A key control.

Between each fader in the **Red** fader bank and its associated S/A key are two numbers;

- In PRESET mode the **LARGER** font indicates the channel number of the fader and S/A key.
- In WIDE Preset mode the **SMALLER** font indicates the channel number of the fader and S/A key.
- In SCENE mode the **LARGER** font indicates the number a particular SCENE or CHASE.
- The **SMALLER** font also indicates **channel numbers** when editing scenes or chase steps, when viewing channel levels on the SOLO/ASSIGN key LED indicators (refer below) or when "Softpatching".

The LED indicators in each S/A key are also multi purpose.

### CHANNEL LEVEL INDICATORS:

The brightness of each indicator is proportional to the level of its channel. The yellow bank indicates the level of the low channel numbers and the red bank indicates the level of the high channel numbers (printed in the **SMALLER** font).

- In normal operation, they indicate the level of their particular channel at the *output* of the Atom.
- In Preview mode they indicate the level of their particular channel in the Scene, Grab or Step of a Chase that is being previewed.

### VALID ENTRY KEY INDICATORS:

When you are required to make a numeric entry or Secondary Function selection, only valid keys will be active and their LED indicators will light to indicate to you that an entry is required.

### FADE IN PROGRESS INDICATORS:

The indicator for with each Submaster (Scene mode) flashes *slowly* whilst a timed fade is in progress.

## 7. PRESET MASTER SOLO/ASSIGN KEYS

Used to SOLO (flash or bump) the contents of their particular master. (See also SOLO level and ADD/KILL key below). The brightness of their LED indicators shows the level of the master at the output of the Atom. It also will flash *slowly* whilst a timed fade is in progress.

## 8. GRAB MASTER

Controls the overall level of the contents of the Grab master. This may be a Grab, a Scene or a Chase.

### 9. GRAB SOLO/ASSIGN KEY

Solo's (flashes or bumps) the contents of the Grab master. (See also SOLO level and ADD/KILL key below). In conjunction with the RECORD (SCENE) key, it performs the "GRAB" function, or selects the grab master when required for other various functions. The brightness of its LED indicator shows the level of the Grab master at the output of the Atom. It also will flash *slowly* whilst a timed fade is in progress.

### 10. IN AND OUT TIME FADERS

Control the IN and OUT fade times of the Preset masters and the Grab master. They may also be individually assigned to control the IN or OUT fade times of any scene. The current time setting of each fader is shown on the display when its fader is moved or presses of the FUNCTION key will toggle through the two time settings.

### 11. SOLO LEVEL MASTER

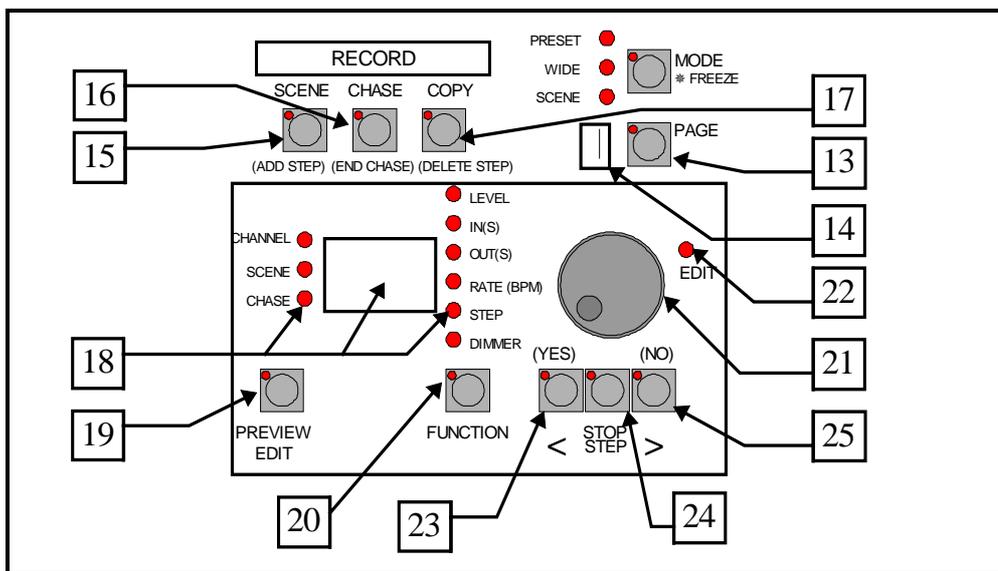
Sets the level to which any Channels, Submasters, Preset masters, or the Grab master, will be flashed when their respective SOLO/ASSIGN key is pressed.

### 12. ADD/KILL KEY

Toggles the Add/Kill mode between "Add" and "Kill" as shown by a red indicator in the Add/Kill key.

- In ADD mode, when a SOLO/ASSIGN key is pressed, the channels that are being flashed will come on (at the level of the SOLO level master), and the normal output of the Atom is not affected.
- In KILL mode, when a SOLO/ASSIGN key is pressed, the channels that are being flashed will come on (at the level of the SOLO level master), and the normal output of the Atom will be killed (blacked out), leaving only the channels that are being flashed on stage.

**Note: Multiple Solo/Assign keys may be pressed at the one time.**



RECORD & PREVIEW/EDIT Section (common to both models).

### 13. PAGE KEY

- In SCENE mode it is used to select the current page (1 to 9) of memory that is loaded into the Submasters.
- When recording, previewing or editing scenes or chases, it is used to select the required page (1 to 9) for the scene or chase.
- It is also used to Preview channel levels (Page C) and to Preview/Edit the patch when enabled (Page P). Repeated presses of the Page key will step through the pages. To *directly* select a page; Hold [PAGE] then tap [S/A] (Page Number) or [S/A] (Red 10) for page "C" or [S/A] (Red 11) for page "P". Pages C and P only appear when in preview mode.

### 14. PAGE DISPLAY

Displays the page number selected by the Page key.

### 15. RECORD SCENE (ADD STEP) KEY

Used to record the current output into a Scene, or into the Grab master or to Add (record) steps in a chase.

### 16. RECORD CHASE (END CHASE) KEY

- Used to select RECORD CHASE mode.
- Also used to complete the recording of a chase when all the desired steps have been added.

### 17. RECORD COPY (DELETE STEP) KEY

- Used to copy scenes or chases to different Submasters and/or Pages or to (or from) the Grab master.
- Also used to delete steps in a chase when recording or editing.

### 18. SEVEN SEGMENT DISPLAY AND LEDS

The display is used to scroll messages and prompts and to show numbers. The nine labelled LEDS beside the display are used to *define* the numbers shown on it. For example;

- If the CHANNEL LED is lit, then the number displayed is a *channel* number.
- If the CHANNEL and LEVEL LEDs are lit, then the number displayed is a *channel level* (and the channel number will be indicated by its S/A key flashing).

Comprehensive information including the messages and prompts is also shown on the optional VGA screen.

### 19. PREVIEW/EDIT KEY

- When pressed, it places the Atom in Preview /Edit mode. You may then choose to Preview or Edit any Channel, Scene, Chase, the Patch (if selected) or the contents of the Grab master.
- Double clicking [PREVIEW/EDIT] shows the current output on a video display (if connected).

### 20. FUNCTION KEY

- When pressed during normal operations, it causes the display to momentarily show the current time settings of the time faders. One press momentarily shows the IN time and a second press (whilst the IN time is still displayed) will change the display to the OUT time.
- When editing, it toggles through the various functions indicated on the column of LEDS above it.
- It accesses the secondary functions indicated **below** the red SOLO/ASSIGN keys. To perform secondary functions; Press and hold [FUNCTION] then tap [S/A] (Secondary Function).

### 21. EDIT WHEEL

Continuously rotatable in either direction and can be used to:

- Set fade times when recording.
- Adjust the level of channels or set fade times when editing.
- Adjust chase RATE when recording or editing.
- Select dimmer numbers when softpatching.

### 22. EDIT WHEEL INDICATOR

- Lights when the Edit Wheel is active.
- When editing, it flashes **quickly** when a parameter is varied **above** its recorded value and flashes **slowly** when a parameter is varied **below** its recorded value. It remains steady if the parameter is set back to its previously recorded value.

### 23. > (YES) KEY

- Runs a chase in the FORWARD direction.
- Increments through the dimmer numbers when Softpatching.
- Answers "YES" to a request from the Atom.

### 24. < (NO) KEY

- Runs a chase in the REVERSE direction.
- Decrements through the dimmer numbers when Softpatching.
- Answers "NO" to a request from the Atom.

### 25. STOP STEP KEY

Used to STOP a chase or STEP a stopped chase.

**Note; Combinations of keys 23, 24 and 25 are used to set and control various chase modes such as bounce and single shot. See the "CHASE" chapter or the "QUICK REFERENCE" for details.**

## 4.0 MODES OF OPERATION

### 4.1 Overview

The Atom has two banks of faders known as presets.

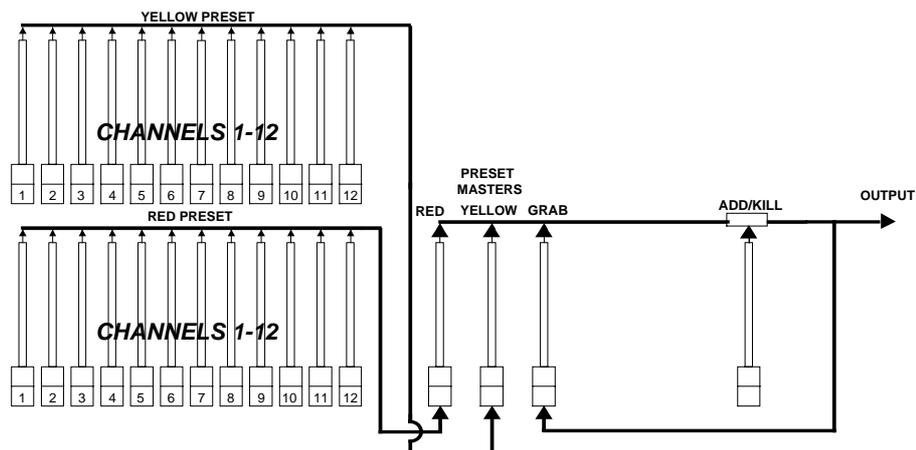
- The Yellow preset controls the levels of channels 1 to 12 (24).
- The Red preset has different functions depending upon the current “MODE” of the Atom as selected by the MODE key. These modes are;
  - PRESET mode. The Red preset controls the levels of channels 1 to 12 (24). (A duplicate of the Yellow preset).
  - WIDE Preset mode. The Red preset controls the levels of channels 13 (25) to 24 (48). (The high channels).
  - SCENE mode. The Red preset faders become SUBMASTERS and control the levels of Scenes or Chases.

You may freely change modes at any time during your operation of the Atom and the current mode is **always shown** by the red “LED” MODE indicators beside the MODE key.

Each mode has its particular advantage for different types of operations.

### 4.2 Preset Mode

Two identical presets (Yellow and Red) provide duplicate faders for the low channels, 1 to 12 (24). The output of each preset is controlled by its own Preset master.



*Simplified block diagram of a 12/24 Atom in **PRESET** mode.*

You create a lighting look by fading up your required channels on one of the colour coded presets and fading up the same colour preset master. By keeping the other preset master faded down, another look can be preset on the duplicate set of channel faders without the channels being revealed on stage. At the appropriate time, the new look is revealed by fading up its Preset master whilst the first look is faded down with its Preset master. The *next* look may now be prepared on the preset that has just been faded down.

The fade times of the preset masters are set by the IN and OUT time faders.

#### ADVANTAGE

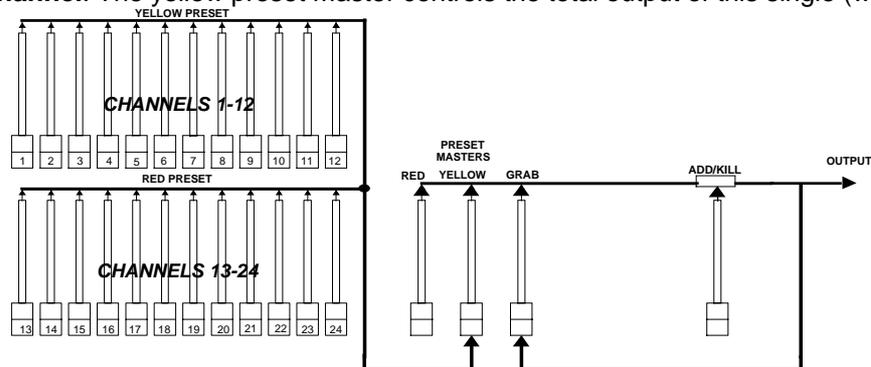
This simple mode of operating is most useful in unrehearsed situations where the next “look” needs to be created “on the fly”. The channel faders provide instant “hands on” control of any channel level.

#### DISADVANTAGE

Only the low channels can be controlled and any look that needs to be used at a later time must be manually reproduced with the channel faders (unless you record the look that you create as a scene). (See “Scene Mode” below).

### 4.3 Wide Preset Mode

Wide preset mode utilises both the red *and* yellow fader banks as a *single* manual preset of 24 (48) channels. The yellow faders control the low channels and the red faders control the high channels. There is an individual fader for **every channel**. The yellow preset master controls the total output of this single (wide) preset.



Simplified block diagram of a 12/24 Atom in **Wide** preset mode.

As in Preset mode, you can “balance” the look that you are creating by adjusting the intensities of the individual channels with their channel faders. You may fade this “look” up and down with the Yellow Preset master and of course, you may use the In and OUT time faders to set the fade times.

#### ADVANTAGE

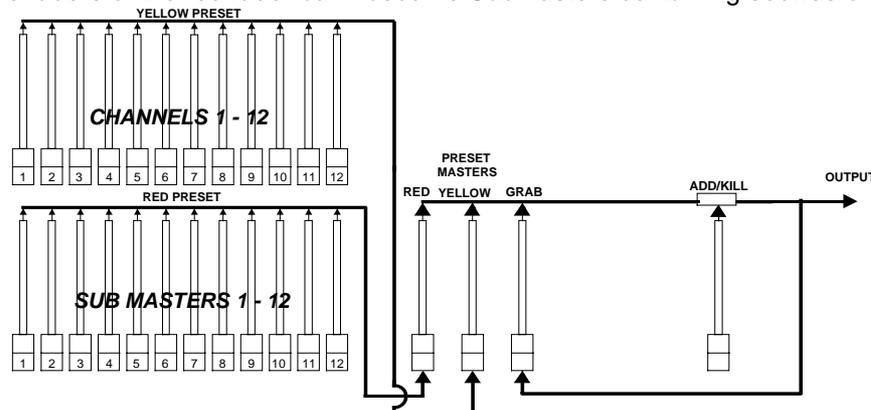
You have access to **all** of the **channels** that are available on the Atom. This is most useful when you are RECORDING scenes as you can utilise all channels to create your scenes. (See “Scene Mode” below).

#### DISADVANTAGE

You do not have a second preset on which to create the next look although you can perform crossfades to another “look” by utilising the Grab master as a “phantom” preset. See the “GRAB MASTER” chapter for details.

### 4.4 Scene Mode

In Scene mode the faders of the red fader bank become Submasters containing **scenes** or **chases**



Simplified block diagram of a 12/24 Atom in **SCENE** mode.

Scenes and chases can be *recorded, previewed or edited* whilst operating in any of the three modes but the Red preset may only be used to *replay* scenes and chases in Scene mode.

#### ADVANTAGE

During rehearsal (in any mode), each lighting look can be created and “recorded” into a Scene, (with its own IN and OUT fade times if required). During the performance (in scene mode), the Submaster containing each scene is simply faded up when required. The Atom remembers (in battery backed up memory) all the channels and their levels together with the fade times for all of the scenes. You may also use the Submasters to play chases that you have recorded.

## 5.0 QUICKSTART TUTORIAL

It is assumed that you have your Atom connected and turned on as described earlier and that you are familiar with basic lighting terminology. If not, then terminology is explained in Appendix C.

### 5.1 Reset

When the Atom is switched on, it displays an initial message on the display and then configures itself exactly as it was when it was last switched off. All the scenes, chases, patches, mode etc will be exactly as they were.

**Note: This feature is extremely useful in the case of unexpected power failures. As soon as the power is restored, you may immediately continue with your show.**

When you start a **new lighting session** it is preferable to perform a TOTAL RESET of the Atom so that you are not confused by any previous recordings or settings that may have been made. A TOTAL RESET will **erase everything** that has been "RECORDED" into the Atom and select Preset mode. If the current recordings are needed in the future, you should save them onto the floppy disk (if fitted) before resetting.

To perform a TOTAL reset;

Press and hold [FUNCTION], tap, [S/A] (RESET).

Release [FUNCTION]

The display asks you, "System Reset?". Press [NO].

The display asks you, "Total Reset?". Press [YES].

The display asks you, "Do it?". Press [YES].

All memories are erased, the opening message scrolls through and Preset mode is selected.

### 5.2 Controlling Lights

#### Creating A "Look" On Stage

Pull every fader on the Atom to its lower limit. Now fade up the Yellow Preset master to maximum (top). Fade up channel 1 on the Yellow fader bank. The fixture(s) connected to dimmer output 1 fades up on stage. Fade up channel 3 on the Yellow fader bank and the fixture(s) connected to dimmer output 3 come on. You can "balance" the look that you are creating by adjusting the intensities of the individual channels. This is done by setting the positions of the individual channel faders of the yellow preset. The brightness of the red indicator in each channels S/A key also gives you a visual indication of that channels intensity. You have now created your first lighting "look". You can control the overall level of this look with the Yellow Preset master.

#### Presetting The Next Look

The next look can now be "preset" on the Red preset which in "Preset mode" provides a *duplicate* set of channel faders. As the Red Preset master is faded down, any channels that are faded up on the Red preset will not be revealed on stage. Fade up channels 2 and 5 on the Red preset and set them to the levels that you desire.

#### Crossfading To The Next Look

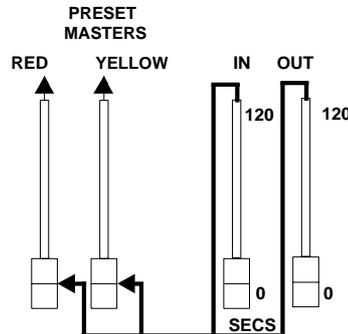
To perform a crossfade from the Yellow preset to the Red preset, simply fade UP (in) the Red Preset master and, at the same time, fade DOWN (out) the Yellow Preset master. Channels 2 and 5 will fade up on stage whilst channels 1 and 3 will fade down.

As the Yellow Preset master is now down, the next look may be preset on the Yellow channel faders without being revealed on stage. On the Yellow preset, fade down channels 1 and 3 and fade up channels 4 and 7. Crossfade to this new look by fading UP the Yellow Preset master and fading DOWN the Red Preset master. In this manner, whilst one preset is faded UP, a new look can be created on the preset that is faded DOWN and then the crossfade to the next look is performed with the Preset masters. The entire show may be performed by fading between the varying looks on the red preset and the yellow preset.

**Hint: You can obtain different effects by simply varying the timing of your IN fades and OUT fades. If you fade IN fully before commencing your OUT fade, you will have a period where both looks are on at the same time. If you fully fade OUT before commencing your IN fade, then the stage will dip to black between the two looks. The most pleasing crossfades are often accomplished by starting with the IN fade, then commencing the OUT fade when the incoming look is just starting to become visible on stage.**

## Timed Fades Between Presets

The fades that you have been performing on the Red and Yellow Preset masters have been “manual” fades. That is, they have directly followed the actual positions of the Red and Yellow Preset masters. The speed that you move the fader determines the time of the fade. This is because the IN and OUT time faders were set to 0 seconds. You can **accurately** control the IN time and the OUT time of these fades by using the IN and OUT time faders to set the required durations. The IN and OUT time faders are ALWAYS ACTIVE on the Preset masters.



When a Master is moved in an upward direction, the fade will always progress toward the current position of that Master at a rate determined by the IN time fader. When a Master is moved in a downward direction, the fade will always progress toward the current position of that Master at a rate determined by the OUT time fader. If the IN time fader is set to say 5 seconds, and a Master is quickly faded from fully down to fully up, then the actual fade up will take 5 seconds. If you do not bring the Master fully up, then the fade will only fade up to the level of the Master and then stop. If the Master was only faded up half way, and the IN time fader was set to 5 seconds, then the fade up would reach the Masters position and stop in 2.5 seconds. The manual fades that you performed earlier were achieved by simply setting the IN and OUT time faders to a time of 0 seconds. At 0 seconds, the fades will *instantly* follow the position of the Preset masters.

When a Time fader is moved, the display automatically shows its setting.

Set the IN time fader to 3 seconds and the OUT time fader to 5 seconds.

**Hint: To check the current time settings of the Time faders, press the [FUNCTION] key. One press momentarily shows the IN time and a second press (whilst the IN time is still displayed) will change the display to the OUT time.**

Quickly perform a crossfade between the Red and Yellow Preset masters. The INcoming preset fades up in 3 seconds whilst the OUTgoing preset fades down in 5 seconds.

Notice that the LED's in the S/A keys for the Red and Yellow Preset masters flash whilst the crossfade is occurring. The flashing indicates that a timed fade is in progress.

**Note: Preset masters, Submasters and the Grab master all flash their SOLO/ASSIGN keys when they have a timed fades in progress. This flashing is especially useful when a LONG fade time is being executed, because the physical position of a master does not necessarily represent the actual level of the masters output. If you have some unexplained output from the Atom, check to see if any master's SOLO/ASSIGN key is flashing, indicating that a timed fade is in progress.**

**Hint: You can invert the operation of the Yellow Preset master so that its output is faded up when it is in the down position and faded down when it is in the up position. With this inverted configuration, you may now perform crossfades by pushing both faders up and down side by side (with just one hand). Refer to the “Utilities” chapter for details.**

All of the “looks” that you have created have been made on a “one off” basis. That is, they have not been recorded into the memory of the Atom. If you needed to re-use a look that you had previously created, then you need to take a note all of the channels and their respective levels together with the fade times (if any), and then manually setup the faders for the look and fade times.

The Atom allows you to “RECORD”, (also known as “store” or “program” on some desks), any of the looks and fade times that you create. When you record a look it is known as a **Scene** and it may be replayed from memory.

## 5.3 Recording A Scene

Scenes are created on the Atom by establishing the lighting look that you require on the OUTPUT and then recording this look into the memory in a selected page and scene number.

**Note; Recording a scene in a different page of memory is not covered in this “QUICKSTART TUTORIAL”. See the “MEMORY STRUCTURE” and “SCENES” chapters for details.**

### Rapid Scene Recording

To Record a Scene, first create a look on the output as described earlier, then press;

[RECORD] (SCENE).

You will also notice that the S/A keys below the Red fader bank will flash twice. They indicate possible scene *numbers* and they flash to prompt you to select a scene number. The display also prompts you.

To complete the recording as scene 1, press;

[S/A] (1) (Red preset).

The display briefly displays “1.01” (the recorded Page/Scene number) confirming the recording.

This is the quickest method of recording a scene. It uses the **default values** of;

- Page number           the current page.
- IN fade time           controlled by the IN time fader.
- OUT fade time         controlled by the OUT time fader.

### Scene Recording With Fade Times

When you record a scene, you may set exclusive IN and OUT fade times for that scene (independent of the Time faders). Create another “LOOK” using the channel faders.

We will now record it in Page 1, Scene 2 with a **recorded** IN time of 5 second and OUT time of 10 seconds.

Press; [RECORD] (SCENE)

Press; [FUNCTION]

The “IN(S)” LED lights and the display reads “Fad” indicating that the display shows the IN time as being controlled by the IN Time “Fad”er.

Rotate the EDIT wheel and “Fad” changes to a seconds reading. Use the Edit wheel to set the IN time to 5.0 seconds.

Press; [FUNCTION]

The “OUT(S)” LED lights and the display reads “Fad” indicating that the display shows the OUT time as being controlled by the OUT Time “Fad”er.

Rotate the EDIT wheel and “Fad” changes to a seconds reading. Use the Edit wheel to set the OUT time to 10 seconds.

To complete the recording, give the scene a number by pressing;

[S/A] (2)

The display briefly displays “1.02”(the recorded Page/Scene number).

**Note; When the RECORD key is pressed, all Submasters flash twice, then Submasters already containing Scenes light up, Submasters containing Chases flash rapidly and empty Submasters are not lit. This assists you in selecting unused numbers and not recording over used numbers.**

## 5.4 Replaying A Scene

To playback any of the scenes that you have recorded, you must select SCENE mode. This changes the faders of the Red preset into SUBMASTERS. The function of each Submaster depends upon the contents of the currently selected page. You determine what each page contains when you **record** (or copy) scenes or chases into them, hence each Submaster may control a **scene** or a **chase** or it may be **empty** (does nothing). When you select scene mode or change pages in Scene mode, the scenes (and/or chases) in the selected page are assigned, in order, to their respective Submasters, 1 to 12 (24).

The output from all of the Submasters is under the control of the Red Preset master.

Fade down all of the faders on the RED preset and both of the Time faders to their lower limit.

To change to SCENE mode, repeatedly press; [MODE] until the SCENE indicator is lit.

Earlier you recorded scenes in Page 1 Scene 1 (1.01) and Page 1 Scene 2 (1.02) . These scenes are now available on Submasters 1 and 2 respectively because Page 1 is shown as the current page. Fade up the Red Preset master, then to reveal scene 1.01 on stage, fade up Submaster 1(Red fader 1).

Scene 1.01 uses the IN and OUT time faders as its time sources for fades. Scene 1.02 has recorded fade times. To crossfade from scene 1.01 to scene 1.02, quickly fade up Submaster 2, whilst at the same time fading down Submaster 1. Scene 1.02 ignores the Time fader settings and uses its own recorded fade times. Notice that Submaster S/A keys flash whilst a timed fade is in progress.

The Atom also provides the following facilities when working with scenes;

- Scenes may be previewed prior to fading them up on stage.

- The channel levels and the fade times in a scene may be edited (modified).
  - Scenes may be copied to other Submasters and /or pages and to or from the Grab master.
- For descriptions of these operations, see the “SCENES” and “GRABMASTER” chapters.

## 5.5 Recording A Chase

Each step in a chase consists of a snapshot of the output of the Atom which is taken when the “ADD STEP” key is pressed whilst in “RECORD CHASE” mode.

To record a Chase, press;

[RECORD] (CHASE)

Choose a Submaster on which to record the chase, press;

[S/A] (Chase number) (Red preset)

Use the faders to create the look on the output for the first step of the chase then press;

[RECORD] (ADD STEP)

Use the faders to create the look for the second step of the chase then press;

[RECORD] (ADD STEP)

Continue to create and add steps until all desired steps have been recorded, then press;

[RECORD] (END CHASE)

Record a 6 step chase in Submaster 12 using the above steps. For simplicity, record a single channel as the look in each step. Make step 1 channel 1, step 2 channel 2, etc. etc. You can use this chase to experiment with the various ways of playing a chase as described below.

## 5.6 Replaying A Chase

Chases are replayed in Scene mode.

When you select scene mode or change pages in Scene mode, the chases (and/or scenes) in the selected page are assigned, in order, to their respective Submasters, 1 to 12 (24).

To replay a chase, ensure that you are in Scene mode and that the Red Preset master is up. To reveal the chase, fade up its Submaster.

### Controlling A Chase

You may change the way that a chase is playing (Rate, Mode, Direction, Fade and State) by editing the chase. Changes that you make will be automatically stored in memory so that the next time the chase is used, it will be in its most recent form.

To change any of these parameters, press;

[PREVIEW/EDIT]

[S/A] (Chase number)

To change the **Rate** of the chase, simply rotate the Edit wheel.

To **STOP** the chase press; [STOP/STEP]

To manually **STEP** the stopped chase press; [STOP/STEP]

To **RUN** the chase choose either; [>] (Forward) or [<] (Reverse)

When finished editing, press; [PREVIEW/EDIT]

The Atom also provides the following facilities when working with chases;

- Chases may be run in “Bounce” mode or as “Single Shot” chases.
- The transition between steps may be set as a crossfade.
- Chases stepping may be synchronised to the bass beat of an audio input signal.
- Chases may be previewed prior to fading them up on stage.
- The channel levels in each step may be edited (modified).
- Steps may be inserted or deleted.
- Chases may be created or run on the Grab master.
- Chases may be copied to other Submasters and /or pages and to or from the Grab master.

For descriptions of these operations, see the “CHASES” and “GRABMASTER” chapters.

## 6.0 MEMORY STRUCTURE

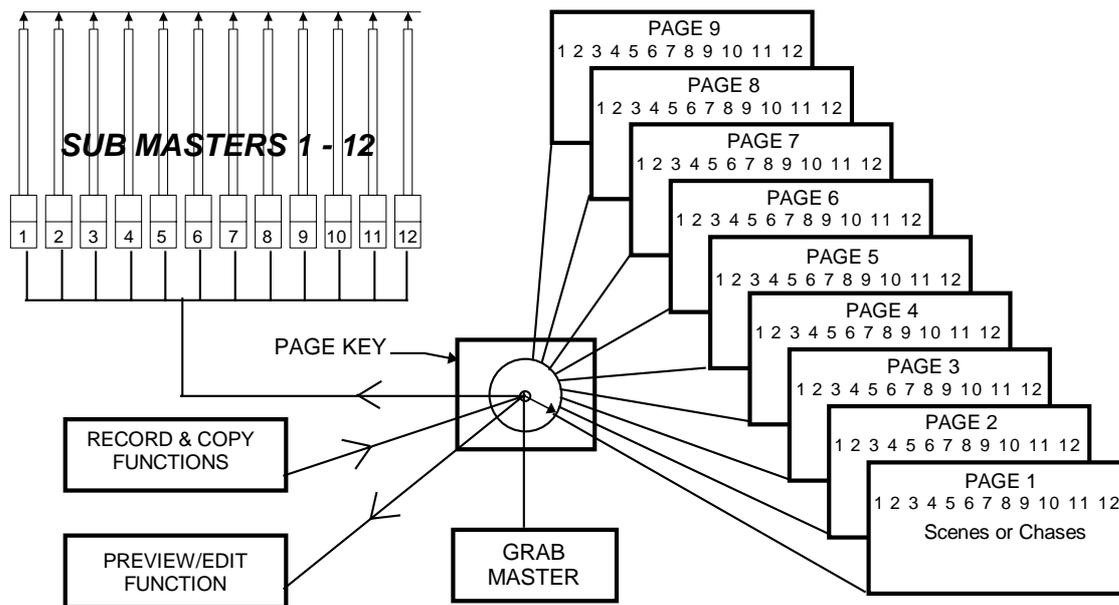
Scenes and Chases are stored in battery backed up memory. There are 9 pages of memory available and 12 (24) memory (submaster) numbers in each page. The PAGE key selects the page and the Red S/A keys select the memory numbers. The **contents** of each number in each page is determined by what you **record** (or copy) into them. It may be a Scene or a Chase or it may be empty.

The memory capacity of each model is;

- Atom 12/24; 9 (pages) x 12 (S/A numbers) = 108 (max) scenes or chases.
- Atom 24/48; 9 (pages) x 24 (S/A numbers) = 216 (max) scenes or chases.

Scenes and Chases share the same area of memory. If a Page/Scene number has been used for a Scene, then it cannot be used for a Chase. A Chase recorded in the same number would overwrite the Scene.

Likewise, if the number has been used for a Chase, it cannot be used for a Scene. A Scene recorded in the same number would overwrite the Chase.



Page structure of an Atom 12/24. (An atom 24/48 has 24 Scenes or Chases in each page).

- In any mode, when a RECORD key is pressed, a Scene or Chase may be recorded (or copied) into any number in any page.
- In Scene mode, any one of the 9 pages may be selected as the current page and the scenes or chases in that page are assigned, in order, to their respective Submasters, 1 to 12 (24).
- In any mode, when the PREVIEW/EDIT key is pressed, the contents of any number in any page may be Previewed or Edited.
- The contents of any number in any page may also be copied to or from the Grab master.

**Note; The PAGE key is also used to Preview Channel levels (Page C) (see below) and to Preview/Edit the Softpatch (Page P) (see the PATCH chapter).**

### 6.1 Mode/Page Freeze

A "MODE/PAGE FREEZE" feature prevents the contents of any Red preset fader (be it a channel or Submaster) from being changed if its fader is above a level of about 5% when a different MODE (Preset, WIDE Preset or Scene) is selected or if the PAGE is changed. The current contents of any active fader is held until such time as the fader in question is faded down below about 5%. When it is faded down below about 5%, it will be automatically updated with its pending assignment for the new mode or page.

This prevents scenes, chases or channels "crashing in" on stage if their fader is contributing to the output when a different mode or page is selected.

**Note; Whenever there is a pending scene, chase or channel change due to a 'Mode or Page freeze', the "FREEZE" indicator in the MODE key will flash and on the VGA monitor the pending submaster will turn RED. This acts as a warning to you that the contents of a fader on the Red preset may change when it is faded below about 5%.**

## 7.0 FADE TIMES AND CHANNEL LEVELS

### 7.1 Overview Of Fade Times

- All individual channel faders perform manual fades.
- The In and Out fade times of the two Preset masters are **always** controlled by the Time faders.
- When a Submaster contains a **Scene**, its In and Out fade times may be controlled by the Time faders (default) or its In and Out fade times may be recorded in memory as part of the scene.
- When a Submaster contains a Chase, its In and Out fade times are controlled manually. The transitions between steps of a chase may be instantaneous (snaps) or crossfades.
- When the Grab master contains a “grab”, its In and Out fade times are controlled by the Time faders but you may Preview/Edit the Grab master to set individual times as with scenes.
- When a “Scene” is copied to the Grab master, its In and Out fade times are controlled by the settings recorded in that scene.

#### **Time Faders**

The time faders allow individual IN (up) and OUT (down) fade times to be set. The times may range from 0 seconds up to 120 seconds (2 minutes).

- When either Time faders is moved, its current time setting is shown on the display.
- Tapping [FUNCTION] will briefly display the current time setting of the IN time fader.
- Tapping [FUNCTION] a second time *whilst the IN time is still displayed* will briefly display the current time setting of the OUT time fader.

#### **Timed Fades**

When a Preset master or Submaster is moved, the output level of that master will always progress towards the current physical position of that master at a rate set by the relevant time setting.

- On *upward* movements of masters the IN time will be used
- On *downward* movements of masters the OUT time will be used.

For example, if an IN fade time of 3 seconds has been set, then to execute a fade in exactly 3 seconds, the master must be moved from bottom to top in less than 3 seconds. If you take longer than 3 seconds to move the master, then the fade will keep pace with the fader movement. If the master was only faded to the half way position, then the fade would take 1.5 seconds to reach that point and then stop. If the master was then moved to the end of its travel, the fade would take another 1.5 seconds to complete.

#### **Manual Fades**

A fully manual fade is achieved by setting the fade times to 0 seconds. The fade will then *instantly* follow the position of the faders movement.

#### **Fading Chases**

Chases may snap (instantly switch) or crossfade from step to step. See the “CHASES” chapter for details.

### 7.2 Channel Capacity

In all 3 modes of operation, the maximum number of channels, 24 (48) will always be *available* on the output. In Preset or Scene mode where only the low channels may be controlled with manual faders, **both low and high** channels may still appear on the output in the form of **scenes**, **chases**, or **grabs** and the level of *any* channel in a scene, grab or chase may always be controlled by editing it with the Edit wheel.

#### **Channel Levels**

A special page of memory, Page “C” (Channels) allows you to read the level of any channel (as a value between 0 and 100 %) at the output of the Atom and also to see which dimmer(s) are patched to a channel if the Softpatch is selected. See the “PATCH” chapter for details on “Dimmers patched to Channel”.

To read the level of a channel at the output, press; [PREVIEW/EDIT]  
Press and hold [PAGE], tap [S/A] (Red 10). This directly selects page “C”;  
Press; [S/A] (Channel number).

The level of the channel is shown on the LED display. To read other channel levels, simply press other S/A keys. When finished reading levels, press; [PREVIEW/EDIT].

If a VGA monitor is fitted (optional), all channel levels are displayed on the monitor.

**Hint; If a Video terminal or computer is connected to the RS232C port, double click [PREVIEW/EDIT] to display the current output levels.**

## 8.0 SCENES

### 8.1 Overview

A SCENE is a recorded snapshot of the Atoms **output**, together with In and Out fade time settings, that is stored in battery backed up memory.

Scenes are recorded by Page and Scene number. Page numbers are selected with the page key and Scene numbers are selected with the red S/A keys. Scenes may be randomly recorded into any page and scene number and at any time, irrespective of the current "MODE" (Preset, Wide Preset or Scene).

Scenes may be created "blind" (not appearing on the output) using the "PREVIEW/EDIT" function.

Scenes are replayed in Scene mode. When Scene mode is selected, any scenes recorded in the selected page are automatically assigned to their respective Submaster (1 to 12(24)). If a different page is selected, the scenes and chases from that page are assigned. A scene may be *copied* onto another Page/Submaster or onto or from the **Grab** master.

See the "MEMORY STRUCTURE" chapter for more details on "Pages".

Scene Submaster fade times may come from the Time faders or may be recorded in memory as part of the scene. Individual IN, and OUT fade times may be recorded for every scene.

### 8.2 Recording Scenes

The Atom provides a *variable* method of recording scenes. The fastest method takes just 2 keystrokes and uses the default parameters. The longest method lets you select a different page in memory and also record separate IN and OUT fade times.

As you record a scene, you may select and set each parameter (Page, IN time and OUT time) for the scene.

**You complete the recording by giving the scene a number** (via the Red S/A keys).

You can complete the recording at any time in the process regardless of whether you have set each parameter or not. If a parameter has not been set, it will be recorded with its default value.

The **DEFAULT** values are;

- Page                      The number on the Page Indicator when [RECORD] (SCENE) is pressed.
- IN fade time            Controlled by the IN time fader.
- OUT fade time          Controlled by the OUT time fader.

#### **Rapid Scene Recording**

To record a scene with the default settings (above), create the desired look on the output then press;

[RECORD] (SCENE)

[S/A] (Scene number) (Red S/A keys)

The display briefly confirms the recorded Page/Scene number.

#### **General Description**

To record a scene, create the desired look on the output then press;

[RECORD] (SCENE)

The Record Scene key flashes and the display asks "Scene no" (Scene number).

The PAGE indicator shows the current page, the PAGE and FUNCTION keys flash to show that they are active. All Submasters will flash twice to indicate possible choices, then Submasters already containing scenes in that page will light. (Submasters containing chases flash quickly and empty submasters are not lit.) This acts as a warning to you of existing scene (and chase) numbers and unused numbers in each page.

#### **Page Selection**

Repeated presses of the PAGE key will cycle through the 9 pages of memory.

To switch *directly* to a page;

Press and hold [PAGE], tap [S/A] (Page number).

As you select each page, all Submasters will flash twice then indicate their contents as above.

Choose a Page number for the scene

### **Fade Times**

Both the IN time and the OUT time may be individually recorded as being controlled by their respective Time fader (default setting) or they may have a time set in memory.

- If a time is recorded as being set by the Time fader, then when the scene is replayed, the submaster controlling the scene will use the current setting of the appropriate time fader. This allows you to use the IN and OUT Time faders to adjust fade times “on the fly”.
- If a set time is recorded, this is a fixed time exclusive to the scene. A scene may even have a set IN time and a Fader OUT time or vice versa.

See “FADE TIMES” in the “FADE TIMES AND CHANNEL LEVELS” chapter for more details on the operation of fade times.

Repeated presses of [FUNCTION] will cycle the display through the IN time setting, the OUT time setting and the prompt for you to enter a Scene number. When either of the time settings are indicated, the EDIT wheel lights to show that it is active. Rotate the EDIT wheel to set the desired time. The maximum time is 120 seconds (2 minutes) and the minimum time is 0 seconds. When a time is set *lower* than 0 seconds, it reverts to “Fad” (IN or OUT time Fader) control.

Set the desired times then ensure that the lighting “Look” on the output of the Atom is as you require and complete the recording (take a snapshot of the Atom’s output), by pressing;

[S/A] (Scene number)

The display briefly displays the recorded Page/Scene number.

**Note; Recording over an existing chase or scene number will erase the previous contents.**

**Hint; Comprehensive recording of scenes as described above takes several keystrokes to complete and would be time consuming when time is short, such as in a fast moving rehearsal where you need to quickly create a look, record it as a scene and immediately create the next look. If this is the case, you may use the rapid recording method described above and then when time permits, edit the scenes to set the desired fade times.**

**Hint; You may connect a VGA monitor (optional), Video Terminal or a Computer to the Atom. When a scene is recorded, the display automatically displays the times and channel levels of the new scene.**

### **Abandoning A Recording**

When you have created your look, pressed [RECORD] (SCENE), set the fade times and/or selected a page, you still have one last chance to abandon the scene you are recording with out destroying any previous contents of the scene.

To abandon RECORD SCENE without making any changes press;

[RECORD] (SCENE) a second time.

### **Blind Recording**

Scenes may be created blind (not appearing on the output) by editing a scene number that is no longer required. Simply PREVIEW/EDIT the scene number and *create* the scene by setting channel levels and fade times using the *editing* functions. See “EDITING A SCENE” below for details.

**Hint; If you might be required to record several “blind” scenes during a performance, make some preparations by recording a blank scene (no channels on) in a spare scene number, say page 9 scene 12. When a blind recording is needed, copy your blank scene to the page/scene for the blind recording then turn on the required channels by Preview/Editing the copy of the blank scene.**

## **8.3 Replaying Scenes**

Scenes may be replayed on the Submasters (in Scene mode) or on the Grab master (in any mode).

### **Scene Mode**

When you select scene mode or change pages whilst in scene mode, the scenes or chases in the selected page are assigned, in order, to their respective Submasters, 1 to 12 (24).

**Note; Mode/Page freeze rules apply. See the “MEMORY STRUCTURE” chapter for more details.**

Any one of the 9 pages may be selected as the *current* page by using the PAGE key.

Press [PAGE] to increment to the next page, or to switch *directly* to a page;

Press and hold [PAGE], Tap [S/A] (Page number).

To reveal a scene on the output;

- ensure that you are in Scene mode.
- select the page that contains the scene.
- fade up the RED Preset master.
- fade up the Submaster for the scene number.

### **Grab Master As A Scene Master**

A scene may be copied to the Grab master allowing it to act like a Submaster containing a scene. See the "GRABMASTER" chapter for details.

## **8.4 Previewing and/or Editing A Scene**

You may **Preview** the recorded channels (on the S/A key LED indicators) and the fade times contained in any scene without revealing the scene on the output of the Atom.

**Editing** a scene is an extension of Previewing a scene. Whilst you are previewing a scene, you may edit the channel levels (including channels not already on in the scene), and you may also edit the fade times.

- To Preview a scene (in the current page), press;  
[PREVIEW],  
[S/A] (Scene number).

- To Preview a scene (in the Grab master), press;  
[PREVIEW],  
[S/A] (Grab master)

- To Preview a scene in a different page, or to Preview a scene when NOT in scene mode, press;  
[PREVIEW],  
[PAGE], (repeated presses until desired page is shown), or hold [PAGE] tap [S/A] (page number).

As each page is selected, all Submasters containing scenes in that page will light. (Submasters containing chases flash quickly and empty sub masters are not lit.)

To preview a scene in the selected page, press;  
[S/A] (Scene number).

When a scene is previewed, the display shows the Page/Scene number and the indicators in the channel S/A keys of any channels recorded in that scene will light. Their *intensity* reflects the levels of those channels in the scene.

The FUNCTION key flashes to show that it is active. It allows you to read and edit actual channel levels and fade times for the scene (see below). Repeated presses of the FUNCTION key will cycle the display through channel LEVEL(%), IN time setting, OUT time setting and the Page/Scene number.

When the Page/Scene number is displayed, you can preview other scenes in the current page by simply pressing their S/A keys or preview scenes in other pages by using the page key to select the required page, then pressing the S/A key of the required scene.

### **Channel Levels**

To read and/or edit the level of any channel in a scene, preview the scene (above) then press;  
[FUNCTION].

The "SCENE", "CHANNEL" and "LEVEL" LED indicators beside the display show that it will read the LEVEL (%) of a CHANNEL in a SCENE.

To see the level of any channel, press;  
[S/A] (channel number).

Whilst the channels S/A key is held down, the display shows the channel number.

When the S/A key is released, the display shows the level of that channel in the scene. The channel's S/A indicator flashes to show which channel's level is being displayed.

To edit the level of the selected channel, rotate the EDIT wheel.

If the level is varied from its recorded level, the Edit wheel indicator flashes. It flashes **quickly** when a parameter is varied **above** its recorded value and flashes **slowly** when a parameter is varied **below** its recorded value. If the level is restored to its original value, the edit indicator remains steady.

Press and release further channel S/A keys to read and/or edit their levels.

### **Fade Times**

To read and/or edit the IN or OUT fade times in a scene, **preview** the scene as described above then use the function key to select each time.

**IN time;** Repeatedly press;  
[FUNCTION]

until the IN(S) indicator lights. The display shows the IN fade time. The fade time may be edited by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it reverts to “IN Fader” time.

**OUT time;** Repeatedly press;  
[FUNCTION]

until the OUT(S) indicator lights. The display shows the OUT fade time. The fade time may be edited by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it reverts to “OUT Fader” time.

If a time is varied from its recorded level, the Edit wheel indicator flashes. It flashes **quickly** when a parameter is varied **above** its recorded value and flashes **slowly** when a parameter is varied **below** its recorded value. If the level is restored to its original value, the edit indicator remains steady.

### **Ending Preview / Edit**

Preview / Edit may be deselected at any time by pressing;  
[PREVIEW/EDIT]

**Any changes that you have made will automatically be saved in memory.**

***Hint: You may connect a VGA monitor (optional), Video Terminal or a Personal Computer to the Atom. When a scene is previewed, the screen automatically displays the times and channel levels of the scene.***

## **8.5 Copying A Scene**

Any scene may be copied to any other page / scene number.

To copy a scene press;

[RECORD] (COPY). The display reads “CPy”.

Use the PAGE key and the scene S/A keys to select the **source** page and scene number.

When the source scene number S/A key is pressed, the display will briefly scroll, “Scn”, “x.yy” (page/scene number), “to”

Use the PAGE key and the scene S/A keys to select the **destination** page and scene number.

Submasters containing Scenes are lit . Submasters containing Chases flash rapidly. Empty Submasters are not lit. This acts as a warning to you of existing scene and chase numbers in each page.

When the destination scene number S/A key is pressed, the display will briefly confirm the page and scene number of the copy.

***Note; When you make a copy of a scene, any scene (or chase) that is currently in the destination number will be overwritten by the copy.***

The copy process may be abandoned at any time prior to entering the destination scene number by pressing; [RECORD], (COPY) a second time. That is, deselecting it.

***Hint; In a show or performance, the transition from one scene to the next will often only involve a change of a few channels. The majority of channels will remain the same. If this is the case, it is quickest to make a copy of the first scene and then edit the copy to create the next scene. This method ensures that any channels that are to be the same in both scenes will have identical levels.***

## **8.6 Deleting A Scene**

To delete a scene;

Press and Hold; [RECORD] (SCENE).

If required, repeatedly press [PAGE] until the required page number is displayed, then;

Tap [S/A] (Scene number) of the scene to be deleted. Release [RECORD] (SCENE).

The display asks you to confirm your action. Press [YES].

## 9.0 CHASES

### 9.1 Overview

A chase is a recorded list of steps that are to be replayed in order, stepping continuously from one step to the next and automatically repeating the list when it has reached the end. Chases are stored in battery backed up memory.

Each step in a chase consists of a snapshot of the output which is taken when that step is added to the chase. Up to 99 steps may be added (recorded) for each chase and up to 108 (216) separate chases may be recorded into the memory.

Chases are recorded by page and chase number. Page numbers are selected with the page key and chase numbers are selected with the red S/A keys. Chases may be randomly recorded into any page and chase number. They may also be recorded directly into the Grab master.

Chases are replayed in Scene mode. When Scene mode is selected, any chases that have been recorded in the selected page are automatically assigned to their respective Submaster (1 to 12 (24)). If a different page is selected, the chases and scenes from that page are assigned. A chase may be *copied* onto another Page/Submaster or onto or from the Grab master.

See the "MEMORY STRUCTURE" chapter for more details.

Up to 13 (25) simultaneous chases may be running at the one time.

Chases may be run in any of the following modes;

- FORWARD
- REVERSE
- BOUNCE (Auto reverse at each end)
- SINGLE SHOT (Run once and stop) (in either direction)
- STOPPED
- MANUALLY STEPPED FORWARD
- MANUALLY STEPPED REVERSE

The chase RATE is recorded into memory in BPM (Beats Per Minute). You may smoothly take manual control of the rate of any chase with the Edit wheel.

Chase stepping may be synchronised to the bass beat of an audio input signal (Sound To Light).

Traditionally, chases will snap (instantly switch) from step to step but in the Atom you may also elect to record a FADE time for the chase so that the chase will crossfade from step to step.

A chase may be previewed and edited. The contents of any step may be changed, the rate varied and steps may be inserted or deleted.

### 9.2 Recording Chases

#### ***Rapid Method***

To record a Chase in the current page (running forward at 230 BPM), press;

[RECORD], (CHASE)

[S/A] (Chase number) (any of the RED S/A keys)

Each step of a Chase consists of a snapshot of the output which is taken when that step is "added".

Create the first look on the output, then to record it as the first step, press;

[RECORD], (ADD STEP)

Create the next look on the output.

To record this step, press;

[RECORD], (ADD STEP)

Continue to create and record steps as above.

When all desired steps have been recorded, complete the chase by pressing;

[RECORD], (END CHASE)

### **General Description**

To record a Chase, press;

[RECORD] (CHASE)

The Record Chase key flashes and the display asks "Chase no" (Chase number).

### **Page Selection**

Chases can be recorded in any submaster in any of the 9 pages of memory. Repeated presses of the PAGE key will cycle through the 9 pages of memory.

To switch *directly* to a page;

Press and hold [PAGE], Tap [S/A] (Page number).

As you select each page, all Submasters will flash twice, indicating that they are a valid choice, then Submasters containing chases will **flash quickly**. (Submasters containing scenes remain lit and empty sub masters are not lit.) This acts as a warning to you of existing chase (and scene) numbers and unused numbers in each page.

After choosing a Page number give the chase a number by pressing;

[S/A] (Chase number), (any Red preset S/A key) or press

[S/A] (Grab), to record the chase on the Grab master.

**Note; Recording over an existing chase or scene number will erase the previous contents.**

The display will briefly display the Page/Chase number (or "Grb" if the chase is recorded on the Grab master) and it will then scroll "Add steps". The [RECORD] (ADD STEP) and the [FUNCTION] keys flash.

### **Recording (Adding) Steps**

Each step of a Chase consists of a snapshot of the output which is taken when that step is "added". Hence the steps that you add may consist of single or multiple channels or scenes.

Create the first look on the output, then, to record it as the first step, press;

[RECORD], (ADD STEP)

Create the next look on the output.

To record this step, press;

[RECORD], (ADD STEP)

Continue to create and record steps as above. The display shows the latest step number.

If the look that you add is not correct, the last step may be deleted by pressing;

[RECORD], (DELETE STEP)

**HINT: If a step other than the last step is incorrect, complete the recording then Preview/Edit the chase. With Preview/Edit, any step may be deleted.**

### **Chase Rate**

Repeated presses of the [FUNCTION] key will toggle the display between the STEP number, the RATE setting in BPM (Beats Per Minute) and the IN & OUT fade percentage. When the RATE is displayed, the Edit wheel may be used to set the desired rate. The default setting is 230 BPM.

### **Bass Step**

Chase stepping may be synchronised to the bass beat of an audio input signal (Sound To Light).

Whilst setting the chase RATE (above), setting the rate below 0 BPM will change the chase stepping to

"BASS STEP". The Bass Step audio level may also be adjusted so that the chase steps on the correct beat.

See "CONTROLLING A CHASE", "BASS STEP" and "BASS LEVEL", later in this chapter for details.

### **Chase Fade**

Traditionally, chases will snap (instantly switch) from step to step but in the Atom you may also elect to record a FADE time for the chase so that the chase will crossfade from step to step.

The fade is recorded as a percentage of the chase rate.

Repeated presses of the [FUNCTION] key will toggle the display between the STEP number, the RATE setting in BPM (Beats Per Minute) and the IN & OUT fade percentage. When the IN & OUT indicators are lit, the Edit wheel may be used to set the percentage of the chase rate that is used for the crossfade. The default setting is 0%, ie. No fade.

See "CONTROLLING A CHASE", "FADE", later in this chapter for more details.

### **Completing The Chase**

When all steps have been recorded, complete the chase by pressing;

[RECORD], (END CHASE) The display briefly displays the recorded Page/Chase number.

The chase will be a conventional forward running chase. To select other chase modes, Preview/Edit the chase as described below.

## 9.3 Replaying Chases

Chases may be replayed on the Submasters (in Scene mode) or on the Grab master (in any mode).

### Scene Mode

When you select scene mode or change pages whilst in Scene mode, the chases or scenes in the selected page are assigned, in order, to their respective Submasters, 1 to 12 (24).

**Note; Mode/Page freeze rules apply. See the “MEMORY STRUCTURE” chapter for details.**

Any one of the 9 pages may be selected as the *current* page by using the PAGE key.

Press [PAGE] to increment to the next pages.

To switch *directly* to a page;

Press and hold [PAGE], Tap [S/A] (Page number).

To reveal a chase on the output, select the page that contains the chase, ensure that you are in Scene mode and that the RED Preset master is faded up then fade up the Submaster for that chase number.

### Grab Master As A Chase Master

A chase may be recorded on the Grab master or copied to the Grab master allowing it to act like a Submaster containing a chase. See the “GRABMASTER” chapter for details.

### Controlling A Chase Level

The OVERALL level of a chase is controlled by the Submaster or Grab master containing the chase. The chase can be faded in or out as required (its fade times are controlled manually) or the chase may be “Soloed” (flashed or bumped) via its S/A key.

### RATE, BASS STEP, FADE, MODE, DIRECTION And STATE.

When a chase is played, it will perform as it is recorded in memory. The Rate, Bass Step, Fade, Mode, Direction and State of a chase are *controlled* by PREVIEW/EDITING the chase.

To Preview/Edit a chase, press;

[PREVIEW/EDIT],

[S/A] (Chase number).

Make the required adjustments as described below, then press;

[PREVIEW/EDIT]

Any changes that you have made will automatically be saved in memory.

**Hint; If you want to experiment with some changes, make a copy of the chase and edit the copy. See “COPYING A CHASE” later in this chapter for details.**

### Rate

To change the Rate of a chase, Preview/Edit the chase (above) then rotate the Edit wheel. If the rate is set **higher** than the recorded level, the Edit indicator flashes **quickly**. If the rate is set **lower** than the recorded level, the Edit indicator flashes **slowly**. If the rate is restored to its original value, the edit indicator is steady.

### Bass Step

Chase stepping may be synchronised to the bass beat of an audio signal (also known as Sound To Light). Connect a suitable music source to the audio input (see the “REAR PANEL” chapter for details).

To select Bass Step, Preview/Edit the chase and adjust the RATE (described above). Setting the rate *below* 0 BPM will change the chase stepping to “BASS ON” and the RATE LED will flash. When bass stepping is on, you may still set a chase rate so that the chase will continue to step during pauses in the music. For best results, choose a rate that is slower than the bass beat of the music. When you have finished Preview/Editing (i.e. during normal operation), the STEP LED will flash every time that a music beat is detected (see BASS LEVEL below). To deselect Bass Step, raise the rate above 0 BPM then lower it below 0 BPM. Every time that the rate is adjusted below 0 BPM, the Bass Step will toggle between ON and OFF.

### Bass Level

The Bass Step audio level may be adjusted so that the chase steps on the correct beat of the music. It is adjusted in normal operating mode (not in Preview/Edit). Deselect [Preview Edit], then press and hold [FUNCTION], Tap; [S/A 12] (BASS LEVEL), release; [FUNCTION]. Rotate the Edit wheel to set the bass level so that the chase steps on the desired music beat. Every time that a beat is detected, the STEP LED will flash and the chase will step. When the chase is satisfactorily stepping to the beat, press; [YES] to save the setting or [NO] to retain the original setting. The BASS LEVEL adjustment is a global setting for all chases that have been set to “BASS ON”.

## Fade

Traditionally, chases will snap (instantly switch) from step to step but in the Atom you may also elect to record a FADE time for the chase so that the chase will crossfade from step to step.

The fade is recorded as a percentage of the chase rate.

For example, if the chase rate is set at 60 BPM (which is one step per second), then with fade set at 0% (that is, no fade), the chase will wait for one second, then snap to the next step. None (0%) of the available rate time will be used for crossfading.

If the Fade is set to 50%, then the chase will perform a 0.5 second crossfade to the next step, wait for 0.5 seconds and then perform the next crossfade. That is, 50% of the Rate time is used to perform a cross fade and 50% of the Rate time is spent waiting before starting the next crossfade.

If the Fade is set to 100%, then the Chase will use all of the Rate time performing a crossfade to the next step. When the crossfade is complete, the next crossfade will commence immediately, as 100% of the available rate time has been used by the crossfade.

To change the fade of a chase, Preview/Edit the chase (above) then repeated presses of the [FUNCTION] key will toggle the display between the STEP number, the RATE setting in BPM (Beats Per Minute) and the IN/OUT fade percentage. When the IN & OUT indicators are lit, the Edit wheel may be used to set the percentage of the chase rate that is used for the crossfade. If the fade is set higher than the recorded percentage, the Edit indicator flashes quickly. If the fade is set lower than the recorded percentage, the Edit indicator flashes slowly. If the fade is restored to its original value, the edit indicator remains steady.

**Hint: Fading chases are very useful for controlling moving fixtures.**

## Modes, Direction And State.

Some Mode changes require you to hold down one key whilst at the same time tapping another key and then releasing the first key.

For example, selecting Bounce Mode requires you to hold the ">" key down whilst tapping "Stop/Step" then releasing ">". This is described as; Hold [>], Tap [Stop/Step].

To change the mode, direction or state of a chase, Preview/Edit the chase (above) then use the following keystrokes for the desired result.

KEY/MODE	ACTION
[STOP/STEP]	STOPS a running chase. STEPS a <i>stopped</i> chase in the direction indicated by the currently lit direction key. This stepping will be the direction that the chase was running prior to being stopped.
[>] (Forward)	STARTS a stopped chase and runs it forward. Changes the DIRECTION of a reverse running chase (runs it forward). Changes a BOUNCE chase into a normal forward chase. SNAPS a forward running chase to the next step.
[<] (Reverse)	STARTS a stopped chase and runs it backwards. Changes the DIRECTION of a forward running chase (runs it backwards). Changes a BOUNCE chase into a normal reverse chase. SNAPS a backward running chase to the next step.
Hold [>], Tap [<]	Selects Bounce mode.
Hold [<], Tap [>]	Also selects Bounce mode.
[>]	Deselects Bounce mode (runs forward).
[<]	Deselects Bounce mode (runs reverse).
Hold [Stop/Step], Tap [>]	Selects single shot mode.
[>]	Runs a Single Shot in the forward direction.
[<]	Runs a Single Shot in the reverse direction.
[S/A] (Chase number)	Runs a Single Shot when <i>not</i> in Preview/Edit mode.
Hold [Stop/Step], Tap [<]	De-selects single shot mode.

- When finished controlling the Chase, press [PREVIEW/EDIT] to de-select it.

**The latest settings are automatically stored in memory.**

## Mode Descriptions

**NORMAL:** A conventional chase that steps from one step to the next and when it reaches the last step it loops around to the beginning and repeats the steps in the same order.

**BOUNCE:** The chase runs but automatically changes direction when it reaches the last or first step. In this manner, it continuously “bounces” from end to end. The indicators in the “>” (forward) key and the “<” (reverse) key indicate bounce mode as each only flashes (at the chase rate), when the chase runs in its indicated direction.

**SINGLE SHOT:** The chase is normally stopped. When it is started, it will run through its recorded steps **once** in the direction in which it is started. It will then stop and wait until it is manually started again in either direction.

**Hint:** *When recording a chase that is to be run as “Single Shot”, record the first and last steps with no channels on (a blackout). This allows the chase Submaster to be kept faded up with no output appearing from the chase. Pressing the chase’s Submaster S/A key will instantly run the Single shot.*

## 9.4 Previewing And/Or Editing A Chase

You may **Preview** a chase (on the S/A key LED indicators and on the optional VGA monitor) without revealing the chase on the output of the Atom. You may edit the channel levels in each step (including channels not already on in the step), and steps may be inserted or deleted.

The Preview/Edit function is also used to *control* the chase (see above).

- To preview a chase (in the current page), press;

[PREVIEW],

[S/A] (Chase number).

- To preview a chase (in the Grab master), press;

[PREVIEW],

[S/A] (Grab master).

- To Preview a chase in a different page, or to Preview a chase when NOT in scene mode, press;

[PREVIEW],

Press; [PAGE], (repeated presses until desired page is shown), or hold [PAGE] tap [S/A] (page number).

As each page is selected, all Submasters containing chases in that page will flash rapidly. (Submasters containing scenes will light and empty sub masters are not lit.)

To preview a chase in the selected page, press;

[S/A] (chase number).

When a chase is previewed, each step is visually displayed on the channel S/A key LEDs and it can be controlled (see above) or edited.

### Modifying A Step

The channel levels of any step may be modified.

To modify a step, first Preview/Edit the chase (above). Repeatedly press [STOP/STEP] to firstly **stop** the chase and then **step** the chase until the step to be modified is reached.

Press [FUNCTION] until the “CHANNEL” LED indicator lights.

To select a channel and read its level, press;

[S/A] (channel number).

The “CHASE”, “CHANNEL” and “LEVEL” LED indicators beside the display show that it indicates the LEVEL (%) of a CHANNEL in a CHASE. Whilst the channels S/A key is held down, the display shows the channel number. When the S/A key is released, the display shows the level of that channel in the step. The channel’s S/A indicator flashes to show which channel’s level is being displayed.

To edit the level of the selected channel, rotate the EDIT wheel.

If the level is varied from its recorded level, the Edit wheel indicator flashes. It flashes **quickly** when a parameter is varied **above** its recorded value and flashes **slowly** when a parameter is varied **below** its recorded value. If the level is restored to its original value, the edit indicator remains steady.

Press and release further channel S/A keys to read and/or edit their levels.

To modify other steps, press [STOP/STEP] to *step* the chase then again select any channels to be modified with their S/A keys.

When finished modifying, if necessary press [>] or [<] to start the chase again in the desired direction then press [PREVIEW/EDIT] to deselect it.

### **Inserting A Step**

To insert a step, first Preview/Edit the chase (above). Repeatedly press [STOP/STEP] to firstly *stop* the chase and then *step* the chase until the step **prior** to the point where the new step is to be inserted is reached. Press; [RECORD] (ADD STEP).

The channel S/A keys no longer preview the chase but revert to showing the output of the Atom to allow you to create the look for the new step.

When the look to be inserted is correct, press; [RECORD] (ADD STEP) to record it. All subsequent steps are automatically renumbered to allow for the inserted step.

If necessary press [>] or [<] to start the chase again in the desired direction then press [PREVIEW/EDIT] to end the editing function.

### **Deleting A Step**

To delete a step, first Preview/Edit the chase (above). Repeatedly press [STOP/STEP] to firstly *stop* the chase and then *step* the chase until the to the step that you wish to delete is displayed.

To delete the step, press; [RECORD] (DELETE STEP)

If necessary, press [>] or [<] to start the chase again in the desired direction then press [PREVIEW/EDIT] to end the editing function.

### **Ending Preview / Edit**

Preview / Edit may be deselected at any time by pressing; [PREVIEW/EDIT]

**Any changes that you have made will automatically be saved in memory.**

## **9.5 Copying A Chase**

Any chase may be copied to any other chase or page number.

To copy a chase press;

[RECORD], (COPY). The display reads "CPY"

Use the PAGE key and the red S/A keys to select the **source** page and chase number.

When the source chase number S/A key is pressed, the display will briefly display the following, "ChA", "x.yy" (page. chase number), "to"

Use the PAGE key and the red S/A keys to select the **destination** page and chase number.

Submasters containing Scenes are lit. Submasters containing Chases flash rapidly. Empty Submasters are not lit. This acts as a warning to you of existing scene and chase numbers in each page.

When the destination chase number (red) S/A key is pressed, the display will briefly confirm the page and chase number of the copy that has been made.

**Note: When you make a copy of a chase, any chase (or scene) that is currently recorded in the destination number will be overwritten by the copy.**

The copy process may be abandoned at any time prior to entering the destination chase number by pressing; [RECORD], (COPY).

That is, deselecting it.

**Hint: If you have recorded a chase and you want to experiment with some changes, make a copy of the chase and edit the copy. In the event that your changes are unsatisfactory, the original remains unaltered.**

## **9.6 Deleting A Chase**

To delete a chase;

Press and Hold; [RECORD] (CHASE).

If required, repeatedly press [PAGE] until the required page number is displayed, then;

Tap [S/A] (Chase number) of the chase to be deleted. Release [RECORD] (CHASE). The display asks you to confirm your action. Press [YES].

## 10.0 GRAB MASTER

### 10.1 Overview

The Grab master is a multi function master. It can be used as either;

- A Grab master.
- A Scene master.
- A Chase master.

You change its function by simply *recording* or *copying* either a Grab, a Scene or a Chase into it.

### 10.2 Grab Master As A Grab Master

The Grab master allows you to “GRAB” and maintain the current output of the Atom by taking a “snapshot” of the Atom's output and holding it the Grab master, thus freeing the rest of the Atom for other operations.

To “Grab” the output of the Atom, press;

[RECORD] (SCENE)

[S/A] (GRAB)

By default, the fade time for the Grab master is controlled by the Time Faders. The contents of the Grab master (including its fade times), may be previewed and edited in exactly the same manner as a scene. Refer to “PREVIEWING AND/OR EDITING A SCENE” in the “SCENES” chapter.

#### **Typical Grab Operations**

When you perform a “Grab” and then fade up the Grab master, it allows the Preset masters (and hence the channel faders and/or Submasters) currently producing the output to be faded down whilst the Grab master maintains the output. This allows the next look to be preset *blind* on either of the preset banks. This is most useful in Wide and Scene modes as the Grab master effectively provides a second (or “Phantom”) preset.

In a typical operation, the current look is created on any of the channel faders or Submasters. To enable the next look to be created, take a “Grab” of the output, fade up the Grab master to full and **then** fade down the Preset masters. The look is maintained by the Grab master.

Preset the next look using any of the channel faders or Submasters. To crossfade to the next look, simply fade up the Preset masters and fade down the Grab master.

In order to create the next look, “Grab” the current look in the Grab master, fade it up to full and **then** fade down the Preset masters. As before, create the next look “blind” on the channel faders or Submasters.

You may continue to “Preset” and “Grab” for every new look that you require.

### 10.3 Grab Master As A Scene Master

Any existing Scene from any Page may be copied to the Grab master. The Grab master then performs like any other Submaster containing a Scene. The fade times are determined by the time settings that were recorded into the Scene that has been copied.

To copy a scene from any page of memory, to the Grab master press;

[RECORD] (COPY)

[PAGE], (If the desired page is already indicated, omit this step. If not, repeatedly press [PAGE] until desired source page is shown, or hold [PAGE] tap [S/A] (Page number).

[S/A] (Scene number)

[S/A] (Grab master)

The Scene in the Grab master may be previewed and edited, exactly the same as a scene in a Submaster. Refer to “PREVIEWING AND/OR EDITING A SCENE” in the “SCENES” chapter.

**Hint; The Grabmaster may be used as a scene master in any mode of operation and so is especially useful when operating in “Preset mode” or “Wide mode” where Submasters are not available to replay scenes.**

## 10.4 Grab Master As A Chase Master

Any existing Chase from any Page may be copied to the Grab master, or a chase may be recorded directly into the Grab master. The Grab master then performs like any other Submaster containing a chase.

### **Copying A Chase To The Grab Master**

To copy a chase from any page of memory, to the Grab master, press;

[RECORD] (COPY)

[PAGE], (If the desired page is already indicated, omit this step. If not, repeatedly press [PAGE] until desired page is shown, or hold [PAGE] tap [S/A] (page number).

S/A (Chase number)

S/A (Grab master).

When making copies, as each page is selected, all Submasters in that page containing scenes will light, Submasters containing chases will flash rapidly and empty sub masters are not lit.

### **Recording A Chase On The Grab Master**

To record a Chase in the Grab master, press;

[RECORD], (CHASE)

[S/A] (Grab master).

Each step of a Chase consists of a snapshot of the output which is taken when that step is "added".

Create the first look on the output, then to record it as the first step, press;

[RECORD], (ADD STEP)

Create the next look on the output.

To record this step, press;

[RECORD], (ADD STEP)

Continue to create and record steps as above.

When all steps have been recorded, complete the chase by pressing;

[RECORD], (END CHASE).

**Note:** *This is the same procedure as recording a chase on a Submaster except that the Grab master is selected as the chase number. The Chase in the Grab master may be previewed, controlled and edited, exactly the same as a chase in a Submaster. Refer to the "CHASE" chapter for details.*

**Hint:** *The Grab master may be used as a Chase master in any mode of operation and so is especially useful when operating in "Preset mode" or "Wide mode" where Submasters are not available to replay chases.*

## 11.0 SOLO

### 11.1 Overview

The SOLO section of the Atom utilises the SOLO/ASSIGN keys in the fader bank section and the 3 Master's SOLO keys to provide extensive soloing control of channels or masters. "Soloing" is sometimes known as "flashing" or "bumping", but the term "Solo" is more correctly used when the channel or master whose SOLO key is pressed is turned ON whilst all other output is "killed". The Atom will perform this classic Solo (flash and kill) function but also adds other options as described below.

You may Solo any channel or multiple channels, any Submasters, any Preset master, the Grab master, or any multiple combination of the above at the one time. The only limit is your ability to hold down multiple keys. The Solo function is a momentary action. As soon as **all** Solo keys are released, normal output is restored. There are no times associated with the SOLO function. All actions are instantaneous.

### 11.2 Add/Kill Mode

You may select what effect the Solo keys have on the *output* of the Atom, by selecting either ADD mode or KILL mode. Pressing the ADD/KILL key will toggle from one mode to the other.

Kill mode is indicated when LED indicator in the ADD/KILL key flashes.

- In ADD mode, pressing any SOLO key will simply add the solo'ed channels to the output (at the SOLO fader level) without having any effect on the current output of the Atom.
- In KILL mode, pressing any SOLO key will add the solo'ed channels to the output (at the SOLO fader level) and at the same time it will KILL (black out) all other output of the Atom.

### 11.3 Solo Fader

The SOLO fader sets the *percentage level* at the output of the SOLO section for all channels when they are solo'ed.

For individual channels the Solo fader sets the level of any soloed channels.

For the contents of any Submaster it will be the *percentage* of the channel's recorded level.

For example, if the Solo fader is set to its mid (50%) position;

- Soloed **channels** will come on at a level of 50%.
- If a scene is Soloed and it contains a channel at a level of 80% then that channel will come on at 40% (50% of 80%).

If the SOLO fader is set to minimum, then no channels will come on when a SOLO key is pressed.

If the Atom is in ADD mode, and a channel is already ON when it is soloed, the solo level is acts with any existing level for that channel on a Highest Takes Precedence basis.

**Warning:** *Setting the SOLO LEVEL fader to minimum and the ADD/KILL mode to KILL will cause all of the SOLO keys to act as DBO (Dead Black Out) keys because pressing a SOLO key will cause its channel(s) to come on at 0% and all normal output to be killed.*

**Hint:** *To safeguard against inadvertently "flashing" any lights on stage or killing the output, you can set the SOLO LEVEL fader to minimum and the ADD/KILL mode to ADD. Pressing any SOLO key will now have no affect.*

**Hint:** *You can create some stunning visual effects with the ADD/KILL modes and the SOLO keys. For example, when lighting a musical item, if a particular Submaster only contains the lights for the drummer, and the rest of the stage lighting is coming from other Submasters or channels, then by setting the mode to KILL and the Solo level to full, pressing the SOLO key for the drummers Submaster at the appropriate time in the song will highlight the drummer and kill all the other stage lighting. This can be especially effective if you Solo a Chase.*

## 12.0 PATCH

### 12.1 Overview

The Atom provides a “1 to 1” patch and a user programmable “Softpatch”.

- The “1 to 1” patch is a fixed patch in which the dimmer outputs are permanently connected to their *matching* channel numbers (1 to 24(48)). This patch may not be edited.
- The “Softpatch” is an area within the Atom where you may patch (connect) dimmer outputs to channel numbers allowing the Atom to control up to 99 dimmer (DMX) outputs from any of its 24 (48) channels. The selection of the “Softpatch” may be inhibited by a rear panel switch which locks out all of the Softpatch operations described below leaving the fixed 1 to 1 patch selected. This is useful when the Softpatch will not be needed and inadvertently selecting it may confuse inexperienced operators.

### 12.2 Enabling Patch Selection

When you hold down the Function key, any Red Preset S/A keys that have secondary functions available will flash. To determine the current patch selection, press and hold [FUNCTION];

- If the SOFTPATCH S/A key flashes, the “1:1 Patch” is already selected and the “Softpatch” is *available*.
- If the 1:1 PATCH S/A key flashes, the “Softpatch” is already selected and the “1:1 patch” is *available*.
- If neither key flashes the 1:1 patch is selected and Softpatch selection is **inhibited by the rear switch**.

To allow selection between the 1:1 patch and the Softpatch, place mode switch 2 (at the rear of the Atom) in the UP position.

#### 1 To 1 Patch

To select a fixed “1 to 1” patch;

Press and hold [FUNCTION], Tap; [S/A] (1:1 PATCH)

Release; [FUNCTION].

The display asks “Select 1 to 1 Patch?”. Press [YES].

The display confirms your selection.

The “1 to 1” patch is automatically selected whenever you perform a TOTAL Reset or if mode switch 2 (at the rear of the Atom) is Down.

#### Softpatch

Patches are required when;

- A single desk channel is to control several different dimmer (DMX) numbers.
- There are more dimmers to be controlled than there are desk channels.
- A particular desk *channel number* is to control a different *dimmer (DMX) number*.

The Softpatch provides the following facilities;

- Any of the 99 dimmer outputs may be patched to any of the 24 (48) channels.
- A maximum of 99 dimmer outputs may be patched to any one channel.
- Each dimmer output may only be patched to any one channel at a time.

#### Selecting The Softpatch

Ensure that Mode switch 2 (at the rear of the Atom) is in the UP position.

To select the Soft patch;

Press and hold [FUNCTION], Tap; [S/A] (SOFTPATCH)

Release; [FUNCTION].

The display asks “Select Softpatch?”. Press [YES].

The display confirms your selection.

#### Clearing The Softpatch

If you wish to program an entirely new patch, then it is best to clear the patch so any previous patches will not give unexpected results.

**Note: If you have performed a TOTAL reset, then the Softpatch will have been automatically cleared.**

To clear the Softpatch;

Press and hold [FUNCTION], Tap; [S/A] (CLEAR S'PATCH)

Release; [FUNCTION]

The display asks you to confirm your selection. Press; [YES]

**Note: The Clear Softpatch function is only available when the Softpatch is selected.**

## 12.3 Patching Dimmers To Channels

**Hint: When patching dimmers to channels start with the fixture to be controlled, allocate the dimmer output (DMX) number that is to control it, and then patch that dimmer output to the desired desk channel. Keeping a written record of your patch will assist.**

To patch a dimmer to a channel select the Softpatch (described above) then press; [PREVIEW/EDIT].

The Softpatch resides in a special "PAGE" of memory known as page "P" (Patch).

To select page "P", press and hold [PAGE], tap [S/A] (Red 11).

**HINT: When Previewing, you may also select page P by repeated presses of the PAGE key which will step from page "1" through "9" then "C" (Channels), then "P" (Patch) and back to "1".**

When page P is selected, the display asks, "Edit Patch?". Press [YES].

To select the required dimmer number, press [<] or [>] or rotate the Edit wheel. If you hold down either [<] or [>], they will auto repeat. Dimmer numbers are shown on the display as you select them and are also highlighted in yellow on the optional VGA monitor.

To patch the selected dimmer to a channel press; [S/A] (Channel number).

The display shows the selected "d # (dimmer number) to c # (channel number)" patch and asks you to confirm it. Press [YES].

The channel S/A key then lights to show the existence of the patch to the displayed dimmer number and on the VGA monitor, the channel number appears in cyan below the dimmer number.

Select further dimmers and patch them to channels as required.

When scrolling through the dimmers, as each dimmer number is shown, if a channel is patched to it, that channel's S/A key will light. The VGA monitor shows all 99 dimmers with their patched channel (if any).

Each dimmer output may only be patched to any one channel. If a particular dimmer output is already patched to a channel and you attempt to patch that same dimmer output to a different channel (by pressing that channel's S/A key) then the display will ask "Unpatch d # to c #?" (the existing patch). If you press [NO], the patch remains. If you press [YES], the patch is deleted and the display will ask "Patch d # to c #?" (your new channel selection). If you press [YES], the new channel is patched to the dimmer. If you press [NO], the old patch is simply deleted. When finished patching, press [PREVIEW/EDIT].

### Deleting A Patch

To delete a patch, select the dimmer as described above. The channel S/A key to which the dimmer is patched will be lit. Press the lit [S/A] key and the display will ask "Unpatch d # to c #?". Press [YES].

### Previewing The Softpatch

#### Channel Patched To Dimmer

To determine which channel is controlling a dimmer you must preview the Patch page (page P).

Press; [PREVIEW/EDIT], press and hold [PAGE], tap [S/A] (Red 11). (Or use the hint above).

When page P is selected, the display asks, "Edit Patch?". Press [YES].

Press [<] or [>] or rotate the Edit wheel to select the dimmer number (indicated on the display).

The S/A key of the channel patched to that dimmer lights to show the existence of a patch.

The VGA monitor shows all 99 dimmers (grey) together with their patched channel (if any) (cyan).

When finished previewing, press [PREVIEW/EDIT].

#### Dimmers Patched To Channel

Each channel may be patched to more than one dimmer. To determine which dimmers are patched to a channel you must preview the Channel page (page C).

Press; [PREVIEW/EDIT], press and hold [PAGE], tap [S/A] (Red 10). (Or use the hint above).

Press [FUNCTION] and the "DIMMER" LED lights. Press [S/A] (Channel number).

If the channel is not patched to any dimmers, the display reads "---".

If the channel is patched, the display reads the lowest patched dimmer number and the > key flashes if patches to higher dimmer numbers exist. Press [>] or [<] to scroll through the dimmer numbers (indicated on the display) that are patched to the selected channel.

The VGA monitor shows the selected channel and all dimmers patched to that channel are in yellow.

To see the dimmers patched to other channels simply press the desired channel's S/A key and scroll through the dimmers patched to it as above. When finished previewing, press [PREVIEW/EDIT].

### Printing The Softpatch

The contents of the Softpatch may be printed or displayed on a computer screen. See "PRINT" in the "UTILITIES" chapter for details.

### Editing The Softpatch

Editing a patch is exactly the same procedure as patching and deleting above.

## 13.0 UTILITIES

### 13.1 Reset

The Atom provides two different types of reset function. SYSTEM reset and TOTAL reset.

#### **System Reset**

In the unlikely event that the Atom fails to respond to your keystrokes or fader movements, the operating system may be reset so that the software may initialise and recommence normal operation. Performing a system reset will **not** affect any of the recorded memory or settings, except that the Atom resumes operation in PRESET mode.

There are two way of performing a SYSTEM RESET;

1. Switch off the power to the Atom (on the rear panel) and wait for a few seconds. Press [FUNCTION] and whilst holding it down, switch the power back on, then release the key.
2. Press and hold [FUNCTION], tap S/A (RESET), release [FUNCTION].  
The display asks "System Reset?". Press [YES]. The Atom should now perform normally.

#### **Total Reset**

Total Reset will **ERASE** all the recorded memory from the Atom *and* reset the operating system. All Scenes, Chases and Patches are erased. Total reset also selects PRESET mode and the fixed "1 to 1 patch".

To perform a TOTAL reset, press and hold [FUNCTION], tap S/A (RESET), release [FUNCTION].

The display asks "System Reset?". Press [NO].

The display asks "Total Reset?". Press [YES].

The display asks "Do it?". Press [YES].

### 13.2 Invert Yellow Preset Master

The operation of the Yellow Preset master may be inverted so that its output is at maximum when the fader is at the bottom of its travel. This allows crossfades between the Red and Yellow preset masters (or Yellow preset master and Grab master) to be performed with the fader knobs side by side held with one hand.

To invert the operation of the Yellow Preset master, locate the DIP switch on the rear of the Atom. Switch 1 must be in the ON (up) position for inverted operation.

### 13.3 Print

The print function allows the memory contents of the Atom to be printed on a serial printer or displayed on a Personal Computer where they may also be saved in a file and printed.

You may choose to print the Scenes, the Chases, the Patch, or All memory (scenes, chases and patch).

#### **Connecting A Serial Printer**

Connect a serial printer to the Atom's RS232C Port with a standard RS232 cable (available from most computer stores).

Referring to the printers documentation, setup the serial printer to receive data with the following parameters;

**9600 Baud    8 bits    1 stop bit    No parity**

#### **Connecting A Computer**

Connect a computer's serial (COM) port to the Atom's RS232C Port with a standard RS232 cable (available from most computer stores).

You must run a communications program on the computer to receive the data from the Atom. Suitable communications programs include Microsoft Windows "Terminal" , or "Telix" , or you may use your favourite communications program.

Setup your communications program to receive data with the following parameters;

**9600 Baud    8 bits    1 stop bit    No parity**

For example, if you are using "Microsoft Windows, Terminal" .

From the "**Settings**" menu, choose "**Communications**". The Communications dialog box appears.

Select the options as;

**Connector**, Select the COM port to which the Atom is connected.

**Baud Rate**, 9600    **Data Bits**, 8    **Stop Bits**, 1    **Parity**, None    **Flow Control**, Hardware

#### **Printing**

Setup the printer or computer as described above, then;

### Printing To A Printer

To PRINT the memory contents, press and hold [FUNCTION], tap S/A (PRINT), release [FUNCTION].

The display asks "Scenes ?". Press [YES] or [NO].

If you select no, the display asks "Chases ?". Press [YES] or [NO].

If you select no, the display asks "Patch ?". Press [YES] or [NO].

If you select no, the display asks "All ?". Press [YES] or [NO].

If you select no, the print function is aborted.

If you select yes to any of the above, the selected data is sent to your printer.

### Printing To A Computer

If you are printing to a computer, use your communications program to "capture" or "receive" the data from the Atom and save it in a file.

For example, if you are using "Microsoft Windows, Terminal" .

From the "Transfers" menu, choose "Receive Text File". Name the file and select OK.

To send the data from the Atom to the computer, press and hold [FUNCTION], tap S/A (PRINT), release [FUNCTION].

The display asks "Scenes ?". Press [YES] or [NO].

If you select no, the display asks "Chases ?". Press [YES] or [NO].

If you select no, the display asks "Patch ?". Press [YES] or [NO].

If you select no, the display asks "All ?". Press [YES] or [NO].

If you select no the print function is aborted.

If you select yes to any of the above, the selected data is sent to your computer.

When all the data has been transferred, stop the capture or receive process.

For example, if you are using "Microsoft Windows, Terminal" , click on "STOP".

### Displaying Atom Data

L.S.C. recommends using a word processor to view and print the memory contents file. Word processors use various text formatting setups and fonts. You can **correctly** display the Atom print out by selecting COURIER size 10 as the display font. The example of Courier below shows that all the text is displayed with correctly aligned columns because all Courier characters have the same width.

```
Page 2 Scene 3
Time:  IN = 3.1s          OUT = FAD
Chan:  001 002 003 004 005 006 007 008 009 010 011 012
Levl:           FL              88  74          97  95

Chan:  013 014 015 016 017 018 019 020 021 022 023 024
Levl:           FL              75  83  29          92
```

Refer to your word processor manual for details on how to select Courier and how to print the files.

## 13.4 Video Output

The Atom provides several means of displaying information on a video screen. The display may be either a;  
                   VGA monitor (optional).                   Video terminal (TTY).                   Personal computer (PC).

The *optional* VGA output provides the easiest means of connecting a video display. However, if your Atom is not fitted with the VGA option, a Video Terminal (also known as a "Dumb Terminal" or "TTY") or a Personal Computer may be used. These require you to setup some communication parameters as described below.

When any video screen is used, it *automatically* displays the following information;

- The current OUTPUT of the Atom (the video terminal and PC require you to "double click" the [PREVIEW/EDIT] key to see a snapshot of the current output.
- A Scene when you RECORD or PREVIEW it.
- A step of a Chase that you RECORD or PREVIEW (Stop/Step to see the steps when previewing).
- A Grab when you RECORD it.
- The patch when you preview or edit it.

### Vga Monitor

If your Atom is fitted with the *optional* VGA output connector, simply plug a VGA monitor into the VIDEO connector and connect the monitor to mains power. The Atom provides all the necessary video and synchronisation signals for the VGA monitor. No setup is required. Using a VGA monitor also leaves the RS232C Port free for other uses.

The VGA monitor provides *dynamic* displays and "message" prompts of;

- OUTPUT.....shows current mode, page number, channel levels, submaster levels and contents, master levels, grab contents and level, fade times, add/kill status and level.
- RECORD.....shows the channels to be recorded and the step number, rate and fade if recording a chase.
- PREVIEW / EDIT.....shows the contents of sub masters/pages, grab master, softpatch (Page P for "channels patched to dimmers. Page C for "dimmers patched to channel")
- QUICK REFERENCE.....6 pages of help screens.  
To select the QUICK REFERENCE pages; hold [FUNCTION], tap [HELP (VIDEO)] (Red S/A 7). Press [>] or [<] to scroll through the pages. Press [STOP/STEP] when finished.

### Video Terminal (Tty)

You may connect a Video Terminal (also known as a TTY) or a personal computer running a terminal emulation program.

The Atom's RS232C Port should be connected to the communications input of the Video Terminal or to the serial port (COM port) of a computer with a standard RS232 cable (available from computer stores).

### Turning On Tty Preview

To use the TTY preview facility you must turn it ON. Hold [FUNCTION], tap S/A (PREFS).

The display asks "Set TTY Preview on ?". Press [YES]. The display confirms your selection.

Both the Atom and the video terminal (or computer) must be set for to the same terminal *type*. The Atom has a fixed data format so you must setup your Video Terminal or Computer communications program to match the Atom's data format.

### Setting The Atom

You must initially choose the type of TTY that is to be connected. Once set, the Atom will retain the selection. After turning on TTY preview (above), press and hold [FUNCTION], tap S/A (PREFS), release [FUNCTION]. The display asks "Set TTY Preview off?". Press [NO]. The display asks "Set TTY type ?". Press [YES]. The display shows the "current" type and the Edit wheel allows you to change the setting. Rotate the Edit wheel to choose from **TTY**, **VT 52** or **VT 100**. (VT 100 is recommended). When the setting is correct, press [YES]. If you select [NO], the function is aborted and the original setting is retained.

#### SETTING THE TERMINAL OR COMPUTER

- If you are using a Terminal, refer to the documentation that came with your terminal and choose the correct terminal *type* to match the Atom setting and set the terminal's data parameters to:  
**9600 Baud    8 bits    1 stop bit    No parity**
- If you are using a computer, you need to run a communications program to "emulate" a terminal. Suitable communications programs include "Microsoft Windows, Terminal" or "Telix" , or you may use your favourite communications program. Use the communications program to set the data parameters and to choose the correct terminal *type* to match the Atom setting;

For example, if you are using a "Microsoft Windows, Terminal" on a computer to emulate a terminal. From the Settings menu, choose Communications. The Communications dialog box appears. Select the options as;

**Connector**, Select the COM port to which the Atom is connected.

**Baud Rate**, 9600    **Data Bits**, 8    **Stop Bits**, 1    **Parity**, None    **Flow Control**, Hardware

Then from the Settings menu, choose Terminal Emulation. Select; **DEC VT 100 (ANSI)**.

**Hint: If you are not using a terminal, turn TTY OFF for maximum Atom operating speed.**

## 13.5 Disk

The Atom may be *optionally* fitted with a floppy disk drive (located on the right **side** of the Atom). The disk format is 3.5 inch double sided, high density, (1.44 MB), which is the same type of disk used with IBM compatible computers. Up to 9 complete shows may be saved to or loaded from a disk. A show is the entire contents of the Atom memory including all Scenes, Chases Grab master and Softpatch. Shows are interchangeable between both models of the Atom. A show recorded on an Atom 24/48, when loaded on an Atom 12/24, ignores all channel numbers above 24.

You may format a disk in the drive or they may also be *formatted* and *copied* on any IBM compatible computer with a 1.44 MB, 3.5 inch disk drive.

### Formatting A Disk

Before you can use a *new* disk, you need to format it. Formatting prepares the tracks on the disk onto which all the Atom data will be saved. A disk only needs to be formatted once.

**Formatting will erase all existing data on the disk.**

To format a disk, place the disk in the disk drive and press and hold [FUNCTION], tap S/A (DISK), release [FUNCTION].

The display asks "Save ?". Press [NO].

The display asks "Load ?". Press [NO].

The display asks "F Disc ?". Press [YES].

The display asks "Do it ?". Press [YES].

### **Save To Disk**

When you save a show to disk, you copy the entire contents of the Atoms memory to the disk. This includes all Scenes, Chases, Grab master contents and the Softpatch.

To save a show to disk place a formatted disk in the disk drive then press and hold [FUNCTION], tap S/A (DISK), release [FUNCTION].

The display asks "Save ?". Press [YES].

The display asks for a Show number from 1 to 9 "S- #". Rotate the Edit wheel to select a number.

To save the show, press [YES].

Saving a show to disk takes a few moments and a "S" (Save) and "percentage done" readout shows you the progress of the saving action. All files are automatically checked after being saved and a "C" (Check) and "percentage done" readout shows you the progress of the checking action.

At the completion of the saving process, the display reads "Done". Press "YES" to acknowledge.

### **Load From Disk**

When you load a show from disk, you replace the entire contents of the Atom's memory with the show data from the disk. This includes all Scenes, Chases, Grab master contents and the Softpatch.

**WARNING: Once a load from disk is initiated, the current contents of the Atom's memory will be erased and cannot be recovered.**

To load a show from disk place the disk in the disk drive then press and hold [FUNCTION], tap S/A (DISK), release [FUNCTION].

The display asks "Save ?". Press [NO].

The display asks "Load ?". Press [YES].

The display asks for a Show number from 1 to 9 "S- #". Rotate the Edit wheel to select the number.

To load the show, press [YES].

Loading a show from disk takes a few moments. All files are automatically checked before being loaded and a "C" (Check) and percentage done readout show you the progress of the checking action. Following a successful check, the show will be loaded and a "L" (Load) and percentage done readout shows you the progress of the loading action. At the completion of the loading process, the display reads "Done". Press "YES" to acknowledge the message.

**Note: Many of the LEDs on the Atom will flash when the disk is operating. This is normal.**

## **13.6 Diagnostics**

The Atom diagnostics allow you to test the operation of all keys, LEDs, faders and the Edit wheel.

### **Keys, LEDs and Wheel Test**

**To select** this test mode, press and hold [FUNCTION], tap [S/A] 1 (Yellow Preset), release [FUNCTION].

- To test a KEY, press it and its LED will light and its number or function will be shown on the display.
- To test ALL LEDs, press and hold [S/A] (Red Preset master), tap [S/A] (Yellow Preset master).

To cancel, press and hold [S/A] (Yellow Preset master), tap [S/A] (Red Preset master).

- To test the Edit wheel, rotate it and look for a smooth increment of numbers on the display.

**To cancel** test mode, press and hold [FUNCTION], tap [PREVIEW/EDIT], release [FUNCTION].

### **Fader Test**

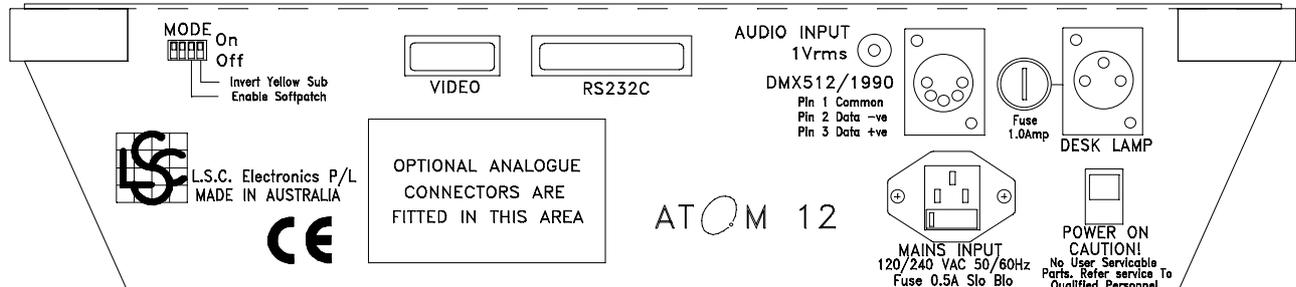
**To select** this test mode, press and hold [FUNCTION], tap [S/A] 2 (Yellow Preset), release [FUNCTION].

- To test a fader, press the key closest to it then move the fader. The display reads from 0 to 255 as the fader is moved through its range. Use the [<] key to select the IN fader and the [STOP/STEP] key to select the OUT fader.

**To cancel** test mode, press and hold [FUNCTION], tap [PREVIEW/EDIT], release [FUNCTION].

## 14.0 REAR PANEL

The DMX512/1990 connector and Mains input connector are described in the “CONNECTING AND TURNING ON” chapter. DMX512 pin connections are printed on the rear panel of the Atom (below). Typical dimmer connections are described in Appendix A.



Rear panel layout of an Atom 12/24. An Atom 24/48 has provision for a second analogue output module.

### 14.1 Mains Fuse

The mains fuse is located in a slide out tray in the base of the mains input socket. Should the fuse blow, remove the mains lead and slide out the fuse tray. Pop out the blown fuse and replace it with a 0.5 Amp slow blow fuse. A **spare fuse is provided** in the slide out fuse tray. Replace the fuse if you use it.

### 14.2 VGA Output (Optional)

The *optional* VIDEO output allows a standard VGA computer monitor to be directly connected to the Atom to provide visual displays of channel levels, fade times etc. For operational details, refer to the “VIDEO OUTPUT” section in the “UTILITIES” chapter.

### 14.3 Expansion Port RS 232c

The RS 232C connector is a serial port that may be used for the following functions;

- **VIDEO TERMINAL / COMPUTER.** A “video terminal” or “computer” may be connected to provide visual displays of channel levels etc. Refer to the “VIDEO OUTPUT” section in the “UTILITIES” chapter.
- **PRINTER.** A Serial Printer may be connected to provide hard copy print-outs of the Atom memory contents. Refer to the “PRINT” section in the “UTILITIES” chapter.

### 14.4 Desk Lamp Connector And Fuse

The optional halogen goose-neck desk lamp is connected to this socket. The socket provides both power and mounting for the lamp. If you have purchased the optional desk lamp, simply plug the goose-neck into the connector and adjust the position of the lamp to illuminate the front panel. The desk lamp is separately fused from the main Atom power supply. Should the desk lamp fuse blow, replace it with a 1 amp fuse.

### 14.5 Analogue Output Connectors (Optional)

The *optional* analogue outputs provide an analogue control voltage (0 to positive 10 volts or 0 to negative 10 volts) on a one-wire per channel basis to control older analogue dimmers. Several different types of connector are available. Wiring details of the analogue connectors are given in “APPENDIX B”.

### 14.6 Mode Switches

The DIP MODE switches on the rear panel provide the following functions;

- Switch 1 UP. The operation of the Yellow Submaster is inverted.
- Switch 1 Down. The operation of the Yellow Submaster is normal. See the “UTILITIES” chapter for details.
- Switch 2 UP. The selection of the Softpatch is allowed.
- Switch 2 DOWN. The selection of the Softpatch is NOT allowed. See the “PATCH” chapter for details.

### 14.7 Audio Input

The audio input connector accepts a line level audio signal up to 1 volt rms. An automatic gain control feature ensures reliable stepping with varying audio levels. The bass frequencies of the audio signal may be used to control the stepping of a chase and so synchronise the chase to the beat of music. See the “CHASES” chapter for details.

## 15.0 APPENDIX A: DMX 512

### 15.1 DMX512/1990

DMX512/1990 is the industry standard for the transmission of digital control signals between lighting equipment. It utilises just a single pair of wires on which is transmitted the level information for the control of up to 512 DMX channels. (The Atom transmits levels for 99 DMX channels). The information for each channel is sent sequentially. The level of channel 1 is transmitted, then the level of channel 2, then 3, etc. up to a maximum of 512 channels. This stream of data containing the levels for all 512 DMX channels is repeated a minimum (generally) of 44 times per second. This provides sufficient updates of channel information for smooth fade transitions.

When good quality data cables are used, DMX512 cable runs may be up to 1,000 metres in length. Most DMX receiving equipment (dimmers, scrollers, moving lights, etc) are provided with a DMX512 input and DMX512 output. This allows the DMX512 feed to be looped through various pieces of equipment. DMX512 splitters may also be employed to provide multiple DMX512 feeds. If a piece of DMX equipment *regenerates* the DMX signal, then the calculation of the 1,000 metre cable length limit begins again from the output of the regenerating device

As the DMX512 signal contains the level information for all channels, each piece of equipment needs to be able to read the level(s) of the channel(s) that apply only to that piece of equipment. To enable this, each piece of DMX512 receiving equipment is fitted with an address switch. This switch is set to the channel number to which the equipment is to respond. If the equipment is a rack of 12 dimmers, then the address switch is set to the channel number to which the first dimmer in the rack is to respond. The other 11 dimmers will follow on from the channel number on the address switch in numerical order.

#### **Advantages of DMX**

- Up to 512 channels of control on a single pair of wires.
- Up to 1,000 metres per cable run.
- Feeds are easily distributed via DMX512 splitters and/or DMX loop through.
- Multiple units may be set to the same address. For example,
  - By setting several dimmers to the same address, a number of dimmers in *different locations* may be controlled by a single desk channel, or,
  - By setting several colour scrollers to the same address they will all change colour in unison under the control of a single channel.
- Dimmers may be *distributed* in various locations around a venue, (usually adjacent to each group of fixtures to be controlled), and all that is required at each dimmer location is a feed of power and DMX512.
- Patching of desk channels to dimmers is easily achieved and **altered** and it also allows a small number of desk channels to control a large number of dimmers. The patching may be performed either in the lighting desk (if it has a softpatch facility as in the Atom) or in a DMX patching device such as the LSC "SOFTLINK".

### 15.2 Controlling Analogue Dimmers with the Atom

The Atom has DMX512 as its standard output. However, if you are using older analogue dimmers, there are two methods available to control them from the Atom.

#### **1. Optional Analogue Outputs**

The Atom may be fitted with *optional* analogue outputs which provide an analogue control voltage (0 to + or -10 volts) on a one wire per channel basis. Details of connector types and pin connections are given in Appendix B. The DMX output still operates when analogue outputs are fitted.

Using analogue outputs is most useful if either;

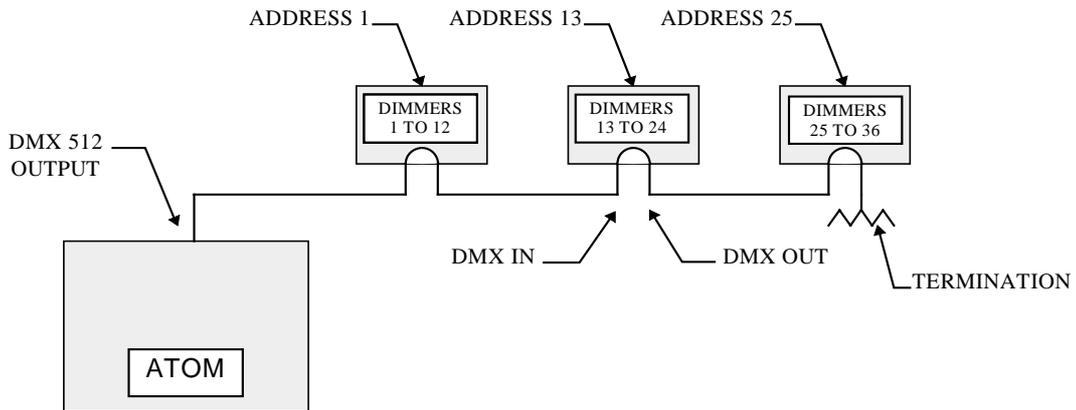
- The Atom is to be located close to the analogue dimmers (hence the multi core cable lengths are short).
- The Atom is to be located some distance from the analogue dimmers and multi-core cables **already exist** between the Atom and the dimmers.

#### **2. Demultiplexers (Demux)**

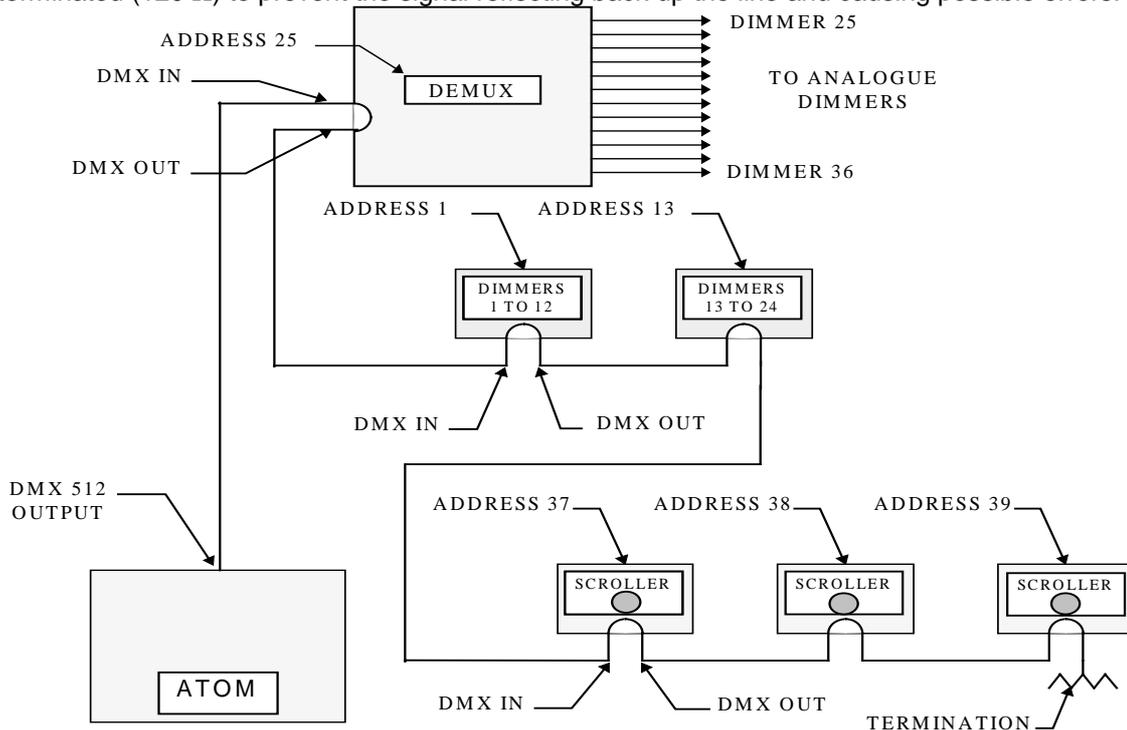
A demultiplexer is a device that accepts a DMX512 input and produces analogue outputs to drive analogue equipment (dimmers). By using a demultiplexer with each group of dimmers you can utilise the advantages of DMX512 (see above) and still maintain use of your analogue dimmers. DEMUX boxes are usually located adjacent to the analogue equipment and hence the lengths of multi core cable are kept to the minimum.

### 15.3 TDMX512 Applications

The following diagrams illustrate some typical setups utilising DMX512.



In this setup, the DMX output signal from the Atom is fed to the DMX input of the first dimmer rack. As the first dimmer in this rack is to be controlled by DMX channel 1, the address switch is set to channel 1. The DMX output connector of the first rack is connected to the DMX input of the second dimmer rack whose address switch is set to 13 because the first dimmer in this rack is to be controlled by channel 13. Further dimmer racks are connected in this daisy chain manner and their addresses set accordingly. Address switches can be set to any desired address. They do not have to follow in numerical order. If a dimmer further along the line is to be also controlled by say channel 13, then simply set its address switch to channel 13. The end of the DMX line is terminated (120 Ω) to prevent the signal reflecting back up the line and causing possible errors.



In this setup, the DMX loops through different types of equipment and each has its address set to read its own channel levels. The DMX cable first goes to a DEMUX box that converts the DMX signal into analogue signals to control analogue dimmers. As the DEMUX box is set to DMX address 25, the 12 analogue dimmers would be controlled by channels 25 through 36. The DMX output of the DEMUX then feeds 3 racks of digital (DMX) dimmers and finally loops through 3 colour scrollers. The end of the line must be terminated.

## 16.0 APPENDIX B: ANALOGUE OUTPUT CONNECTORS

The Atom's optional analogue outputs provide an analogue control voltage (0 to +10 or -10 volts) on a one wire per channel basis to control analogue dimmers.

Analogue outputs are provided in modules.

The maximum number of analogue modules that may be fitted depends upon the model of the Atom.

Model	Maximum number of modules
<i>Atom 12/24</i>	1
<i>Atom 24/48</i>	2

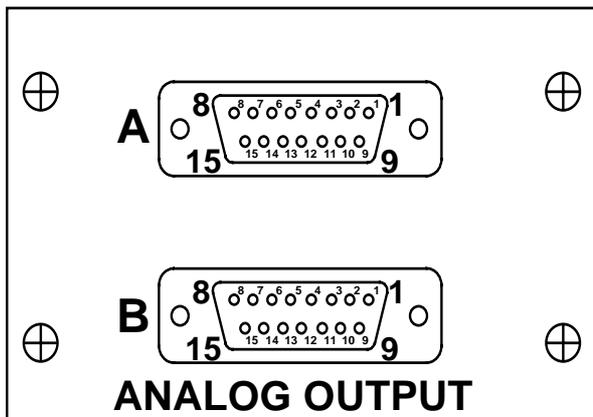
Three different types of connector are available. They are DB15, DB25 and DIN 8.

The number of channels that each module can provide depends upon the type of connectors that are fitted.

Connector type/No of pins.	Connectors per module.	Number of channels per module.
DB15	2	24
DB25	1	24
DIN 8	4	24

### DB 15 Pinouts

The following diagram shows one DB15 module with its two connectors as viewed from the rear of the Atom.

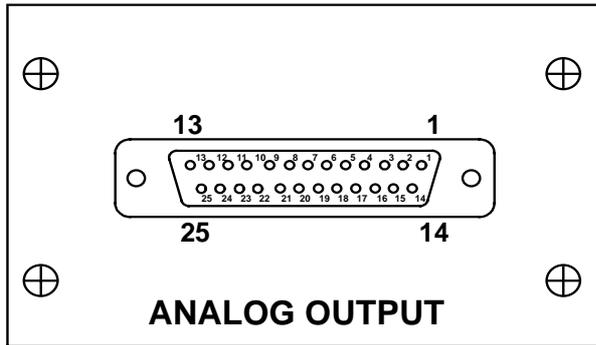


Connector A		Connector B	
Pin	Function	Pin	Function
1	Channel 1	1	Channel 13
2	Channel 2	2	Channel 14
3	Channel 3	3	Channel 15
4	Channel 4	4	Channel 16
5	Channel 5	5	Channel 17
6	Channel 6	6	Channel 18
7	Channel 7	7	Channel 19
8	Channel 8	8	Channel 20
9	Channel 9	9	Channel 21
10	Channel 10	10	Channel 22
11	Channel 11	11	Channel 23
12	Channel 12	12	Channel 24
13	Not Connected	13	Not Connected
14	Not Connected	14	Not Connected
15	Common 0V	15	Common 0V

If a second DB15 connector module is fitted (to the right of the first module when viewed from the rear) its two connectors provide outputs for channels 25 to 48. To obtain the pin connections, simply substitute channels 25 to 48 for channels 1 to 24 in the table.

**DB25 Pinouts**

The following diagram shows one DB25 module with its single connector as viewed from the rear of the Atom.



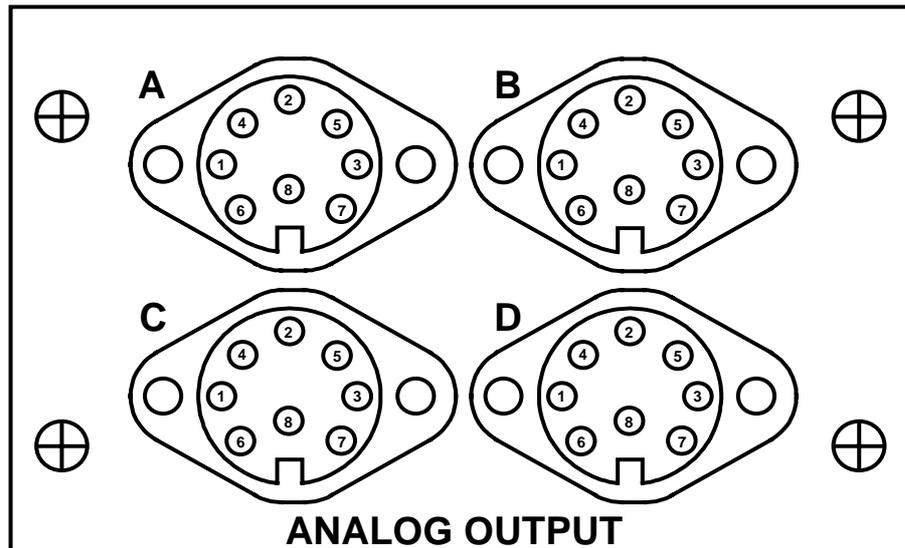
Pin	Function
1	Channel 1
2	Channel 2
3	Channel 3
4	Channel 4
5	Channel 5
6	Channel 6
7	Channel 7
8	Channel 8
9	Channel 9
10	Channel 10
11	Channel 11
12	Channel 12

Pin	Function
13	Channel 13
14	Channel 14
15	Channel 15
16	Channel 16
17	Channel 17
18	Channel 18
19	Channel 19
20	Channel 20
21	Channel 21
22	Channel 22
23	Channel 23
24	Channel 24
25	Common 0V

If a second DB25 connector module is fitted (to the right of the first module when viewed from the rear) it provides outputs for channels 25 to 48.

**DIN 8 Pin PINOUTS**

The following diagram shows one DIN 8 module with its four connectors as viewed from the rear of the Atom.



Connector A		Connector B		Connector C		Connector D	
Pin	Function	Pin	Function	Pin	Function	Pin	Function
1	Channel 1	1	Channel 7	1	Channel 13	1	Channel 19
2	Channel 2	2	Channel 8	2	Channel 14	2	Channel 20
3	Channel 3	3	Channel 9	3	Channel 15	3	Channel 21
4	Channel 4	4	Channel 10	4	Channel 16	4	Channel 22
5	Channel 5	5	Channel 11	5	Channel 17	5	Channel 23
6	Channel 6	6	Channel 12	6	Channel 18	6	Channel 24
7	Not Connected						
8	Common 0V						

If a second DIN connector module is fitted (to the right of the first module when viewed from the rear) it provides outputs for channels 25 to 48.

APPENDIX C "TERMINOLOGY"

## **Fixtures**

The output of the Atom is usually used to control dimmers and the “lights” that you connect to the dimmers are known as Fixtures. Fixtures are also known as “Lanterns”, “Luminaires”, “Instruments” or “lights”. Other devices that you can control with the DMX 512 output include “Colour Scrollers” and “Smoke Machines”.

## **Look**

A lighting “LOOK” is the collection of channels at their various levels (intensities) that are contributing to the output of the Atom at any one time. A “look” may be made up of a collection of channels or a single scene (see below) or a combination of several scenes. It may even be a single channel.

## **Channel**

A Channel is the basic element of a Lighting Control System. The number of dimmers and fixtures connected to this channel is variable depending on your installation and/or application. The most basic application will have just one dimmer and fixture (light) connected to a channel, so that as you vary the level of that channel, you vary the level of that fixture.

## **Preset**

When many channels are assembled in a group of adjacent faders they form a “Preset” and each channel in the preset has an individual fader to control its level. It is common to have two presets available to the operator. The first lighting “look” is created on one preset by fading up the required channels. The next lighting “look” is prepared (or “preset”) on the other preset without appearing on stage (as its preset master is kept faded down). At the appropriate time, the first preset is faded down whilst the second preset is faded up. The next lighting “look” is now prepared on the first preset. These alternate crossfades from preset to preset form the standard operation of a manual preset lighting board.

## **Preset Master**

A Preset master controls the overall level of all the channels in a preset (above). The Atom provides a Red and a Yellow Preset Master to control the overall level of the red and yellow presets respectively.

## **Grab Master**

A grab master is similar to a preset master in that it can control the level of a number of channels. It differs from a preset master in that it does not have dedicated channel faders under its control. It “grabs” or stores the channels that it controls from other areas of the Atom. Typically, it would be used to grab the current **output** of the Atom.

When a grab is performed, an exact copy of the channels that are on (including their levels) is loaded onto the grab master. This is often referred to as taking a “snapshot”.

## **Scene**

A Scene is a *recorded* group of channels (at their respective levels) plus “IN” and “OUT” fade times. Once you have recorded some scenes, you may of course fade up several scenes at once and record the combination as a new scene.

## **Chase**

A chase is a list of steps that are replayed in order, stepping continuously from one step to the next and automatically repeating the list when it has reached the end.

## **Submaster**

A Submaster provides a means of controlling the overall level of a scene or a chase.

## **Highest Takes Precedence**

If a level for a particular channel is emanating from several places at the same time, then the highest of all those levels will be the level at the output.

## **Dipless Crossfade**

When a crossfade is performed, the output level of any channel that is on in *both* the OUT fading master and the IN fading master will fade directly from its outgoing level to its incoming level and will **not dip** below a level equal to the current sum of the two masters.

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