Show Designer 2

Software Revision 1.06

OVERVIEW

The Show Designer 2 is a lighting controller based on the successful and simple to use Show Designer 1. The Show Designer 2 expands on the existing features and adds several others. The approach of this controller is to try to simplify the programming process as much as possible while still offering a high level of control at a low cost.

48 lighting fixtures of up to 32 channels each can be controlled using 2 DMX 512 outputs. Control of up to 1024 DMX channels is possible. A selection of the most popular lighting fixtures is included in the setup menu.

Programming is quick and simple. Fixture selection, channel changes, Presets and Chases are used to achieve a look on stage. This can then be saved as a Scene. A Scene is defined as the entire state of the stage including channel levels, any number of presets as well as up to 8 chases running simultaneously. Saving the scene is as simple as pressing the Record switch and then selecting a page number and a scene number. Up to 4752 scenes can be saved this way. Editing scenes is also simple. Call the scene, make any changes then resave it.

The operating system uses flash memory so that the system software can be updated using any PC. Software updates will be made available on the American DJ web site at www.americandj.com.

REAR PANEL CONNECTIONS

- **Power input** for an external 9V power supply. This requires a transformer with a 9VDC output at 500ma. The plug polarity is + center with an inside diameter of 2.1 mm.

- **2 DMX 512 outputs** with both a 3 pin and a 5 pin XLR connector. There is a polarity switch for the 3 pin XLR which swaps pins 2 and 3. Some lighting fixtures send data minus on pin 2 and some on pin 3. The more commonly used polarity is data minus on pin 2 (switch is to the right as you're looking at the back of the unit).

- **MIDI in and out**. MIDI can be used for calling scenes in an automated installation.

- **9 pin RS232 connector**. This is used for connection to a PC to update the software or backup the memory.

- **Audio input**. This is used for syncing chases to an external audio source. This is a line level input for connection to the line output of a mixing console. Do not connect speaker level signals to this.

FRONT PANEL

Front panel features include assorted switches for programming, eight 60mm faders for direct control of lighting fixture channels as well as for scene masters, 4 wheels for channel control and data entry, a joystick for pan and tilt control and a backlit display for programming. There is also a 3 pin XLR connector for a gooseneck style work light.

MENU

System configuration is accomplished using the menu switch, the menu control switches and the LCD. Pressing “menu” brings up the message “Select a menu item then press enter” followed by a choice of menu items. You can cycle through the menu choices using the + and - switches or the #1 data wheel. Pressing “enter” when the desired menu item is selected brings that function up on the display. Once a menu item is selected, in general the cursor switches allow you to select a value on the display to edit and the + and - switches allow you to edit the value. You can also use one of the data wheels under the text that you are editing. “enter” must always be pressed following any data entry to record the change. This will allow you to cycle through all of the possible choices before changing anything.

Several of the menu items are hidden to prevent unauthorized or accidental changes to the memory. The “memory lock/unlock” function is hidden as well as the “erase all memory” function. These choices can only be selected by pressing and holding down the “add” switch while selecting these last items from the menu list. This is a safety feature for the benefit of installers who wish to protect the memory from unauthorized tampering.

The various menu items are explained in the following paragraphs.

CHOOSE FIXTURES

This allows you to select from a list of lighting fixtures in the fixture library. Use the + or - switch or the #1 data wheel to select a fixture number from 1 to 48. Select the type of fixture with the #2 data wheel. You must press “enter” to record the choice. You can press “erase” to select “No Fixture” which is also one of the fixture choices. If auto patch is enabled, a warning will appear telling you that some DMX start addresses may be changed. Press “yes” to confirm or “no” to exit. After pressing “yes” the message “DONE” will appear for 1 second. If auto patch is enabled, the start addresses of all higher numbered fixtures will be adjusted to accommodate the new fixture.

PATCH FIXTURES

This menu item allows you to turn auto patch on and off, and also to view or change the output port or the start addresses for each fixture. Auto patch must be turned off to be able to change the start addresses or port of any fixture. To turn auto patch on or off, place the cursor under the words “ON” or “OFF” below “AUTO PATCH”, then use the + or - switch to select on or off or use data wheel #4. You must press “enter” for the change to take effect. If you are turning auto patch on, a warning will appear telling you that some DMX start addresses may change. Press “yes” to proceed or “no” to exit. Auto patch will assign start addresses to each fixture number in ascending order with each DMX start address immediately following the last channel of the previous fixture. After 512 channels have been used, DMX output port 2 will be used for any remaining fixtures.

With data wheel #1 you can cycle through fixtures 1-48 and see the starting address and port for each fixture. You can move the cursor under any of the three digits of the channel number or use data wheel #3 to select a new starting address. If auto patch is on you will not be able to change the value of the start address. You must press “enter” following any edit to record the change. The message “DONE” will appear for 1 second after pressing “enter”.

MULTI FIXTURE

Show Designer 2 supports intelligent lighting fixtures that use up to 32 channels. Since most fixtures use far less than 32 channels, Show Designer 2 will allow you to control groups of smaller fixtures that are of the same type, under a single fixture number. For example if you have selected a 4 channel intelligent light for fixture number 1, you can set multi to 8. When fixture 1 is selected you can use all 32 channels available to fixture 1 to control these 8 fixtures.

NOTE: This feature is for controlling large numbers of small fixtures that use only a few channels each. This allows more room for larger fixtures by not using up the 48 available fixture numbers.

You can control the individual channels of each multi fixture using the 4 banks of 8 faders. When using the joystick, all of the multi fixtures within that fixture number will respond if they have a pan and tilt feature. To control individual pan and tilt levels use the faders.

To select multi fixtures, move the cursor to the fixture number and use the + and - switches or data wheel #1 to select a fixture. Move the cursor to the multi number or use data wheel #2 to increment or decrement this value. You can only choose numbers between 1 and the maximum number of fixtures that will fit within 32 channels. If there is no fixture assigned to this fixture number the multi value will be 0 and cannot be changed. You must press “enter” to record the change. If auto patch is enabled you will be given the warning that some addresses may change. Press “yes” to continue or “no” to exit.

MODIFY FIXTURE

This feature allows you modify the attributes of a lighting fixture after you install it from the fixture library. You can also use this to create a new fixture that isn’t in the library. To do this you must first select a fixture as described above in the “Choose Fixture” section. Choose something that is similar to the one you are trying to create or start with the “Generic Dimmer” which is the first choice from the list. You can later use the “Copy Fixture” feature as described in the next section to duplicate your new fixture.

Once installed, there are nine fixture attributes that Show Designer uses to define a lighting fixture that can be modified. The attributes in order are: fixture name, number of channels, black channel, black value, pan channel, pan fine channel, tilt channel, tilt fine channel and crossfade mode. After you have entered the “Modify Fixture” menu, use the cursor switches to move the underline cursor to the fixture number or use data wheel #1 to select which fixture you want to modify. Next move the cursor to the “attribute” which is displayed immediately to the right or use data wheel #2 to select from the nine fixture attributes which are described in the following paragraphs. Next move the cursor to the “value” line of the display or use data wheel #3 to select the value for the attribute you are changing. Finally you must always press “enter” to record any changes you make to any attribute. The message “DONE” will appear in the display when the change has been recorded.

NAME is the fixture name that appears whenever you select or deselect a fixture. You may want to modify this attribute on all of your fixtures to show fixture purpose or location. You must place the underline cursor on the character you want to edit.

CHANNELS is the total number of channels for the fixture. This can be any number from 1 to 32. When you change the number of channels be aware that other things such as fixture addresses and number of multi fixtures can be automatically changed if you drastically change the number of channels

for a fixture that has already been set up and is in use. Fixture attributes such as black channel, pan or tilt will also be automatically disabled if you select a number that is smaller than the channels that are already assigned to those attributes. For example if you already assigned pan to channel 8 and you reduce the total number of channels for the fixture to 4, pan will automatically be set to “none”. Likewise if you increase the number of channels from 8 to 9 and you had previously set up 4 multi fixtures using all 32 channels, the multi fixture setting will be reset back to 1.

BLACK CHANNEL is the channel that will be affected when the “black” switch is pressed. You can choose any available fixture channel as well as “ALL” which will force all channels to the selected black value.

BLACK VALUE is the DMX value that will be sent to the selected black channel(s). This will accommodate fixtures that use the gobo wheel for blackout and that use a value other than 0 to set the gobo wheel to black. You may also want to blackout all channels to a value other than 0 since this is used as a reset by some fixtures.

PAN CHANNEL is the channel used by the fixture for pan. This can also be set to “none” if the fixture does not have a pan feature. This is also the pan coarse channel or pan high byte channel for those fixtures that use two channels to control pan.

PAN FINE is for fixtures that use two channels to control pan. This is also referred to sometimes as the pan “low byte” channel. Set this to “none” if the fixture uses only one channel for pan. This channel will be controlled by the joystick with “fine” on.

TILT CHANNEL is the same as described above for pan channel except that it controls tilt.

TILT FINE is the same as described above for pan fine except that it controls tilt.

FADE MODE is used to set the crossfade method for each of the fixture’s channels. Use the + and - switches or data wheel #2 to select the channel desired. Once the channel is selected move the cursor to the value or use data wheel #3 to select the crossfade mode. The choices are “crossfade”, “snap before fade” and “snap after fade”. You must press “enter” after each channel has been programmed.

“Crossfade” will cause the channel to smoothly fade between levels when changing scenes. The crossfade time will vary from scene to scene depending on how that scene was programmed. Use this setting for channels that control functions like pan and tilt or dimming to achieve a smooth transition from scene to scene. If you use this setting for gobo or color wheel channels, this will cause the wheels to step through all positions between the start and end positions of a long fade. This is usually the default setting for pan, tilt and dimmer channels.

“Snap before fade” will cause the channel to jump immediately to the next scene level as soon as the new scene is called. Use this setting for channels that control motor speed so that pan and tilt will move at the correct speed during the fade. You can also use this setting for wheel channels that you want to change at the start of long crossfades. This is usually the default setting for speed and mode channels.

“Snap after fade” will cause the channel to jump immediately to the next scene level at the end of a crossfade. Use this setting for wheels and effects that you want to take effect after a long crossfade is complete. This is usually the default setting for color and effects wheels.

COPY FIXTURE

This is used to copy the fixture attributes from one fixture number to another. When setting up a group of fixtures that are all the same type, this feature saves time by letting you copy the fixture choice rather than searching through the list for each fixture. Use the + and - switches or data wheels #1 and #2 to select a fixture number to copy from and to copy to. You must press "enter" to copy. If auto patch is enabled you will be given the warning that some addresses may change. Press "yes" to continue or "no" to exit. If a fixture is already set up at the "copy to" location, you will be asked if you want to copy over the existing fixture. Press "yes" to copy over it or "no" to exit.

PAN AND TILT INVERT

The joystick can be used to control pan and tilt if a fixture has this feature. Sometimes a fixture is oriented in a way so that its pan or tilt movement is opposite that of the joystick movement. You can use this to invert the direction of the pan or tilt as controlled by the joystick for each fixture. This will not affect the faders or the wheels when used to control pan or tilt. With this menu displayed, use the + and - switches or data wheel #1 to select the fixture then use data wheels #2 or #3 to set the invert states for pan or for tilt. You must then press "enter" to save the selection.

SET MIDI CHANNEL

This allows you to select the MIDI channel that Show Designer 2 will send and receive on. Select from 1-16 using the + or – switches or use data wheel #1 then press, "enter". Read the section on MIDI for more info.

VIEW MEMORY SIZE

This allows you to see how much memory is left for scenes and shows. It is displayed in kilobytes remaining. Memory usage varies depending on the size and complexity of the scenes.

SEND MEMORY FILE

This allows you to back up the memory to a PC using the RS232 port. Pressing "enter" starts the data transmission. The contents of the memory are encoded in text format and can be recorded running Hyper Terminal from Windows on a PC attached to the RS232 port. Read the section at the end of this manual on how to back up the memory.

LOAD MEMORY FILE

This allows you to update the memory from a backup that was made using the RS232 port and a PC. Pressing "enter" configures the RS232 port for memory read and waits for the file to be sent from the Hyper Terminal program. Read the section at the end of this manual on how to back up and restore the memory. The only way to exit this menu is to turn the power off.

UPDATE SOFTWARE

This allows you to update the software inside Show Designer 2 from a computer connected to the RS232 port. The message "DOWNLOAD NEW PROGRAM" will appear when you press "enter". Show Designer 2 will wait for the computer to send the proper file. The message "RECEIVING NEW PROGRAM" will appear as the computer sends the new software file. Upon completion, the system will reboot. The only way to exit this menu is to turn the power off. You can also call this menu during power up by pressing and holding "menu" and "erase" together while turning on the power.

To update the software you must use a PC running Windows and a serial lap link cable. Read the section at the end of this manual for more details.

LOCK/UNLOCK MEMORY

This is one of the hidden menu items that can only be found by holding the "add" switch while cycling through the menu selections.

This allows you to lock the memory to prevent someone from changing or erasing anything that has been recorded. The message "MEMORY LOCKED, CAN'T RECORD" will appear if the memory is locked and anyone presses the record switch. All other menu items that are not hidden will also be locked out in order to protect the memory.

To lock or unlock the memory, use the + and - switches or data wheel #1 to select the desired state, then press "enter".

ERASE ALL MEMORY

This is another one of the hidden menu items that can only be found by holding the "add" switch while cycling through the menu selections.

This menu item allows you to clear the entire memory of Show Designer 2. This does not erase the software that runs the system but erases all of the scene, preset, chase and show data as well as the system parameters such as fixture assignments. The message "ARE YOU SURE? HOLD "YES" 5 SEC" will appear. Press and hold "yes" until the system reboots or press "no" to exit.

SWITCH AND CONTROL DESCRIPTIONS

The following paragraphs outline the various switches and controls with their functions.

NUMBER SWITCHES

There are 48 number switches that are multi-purpose. Their function depends on the state of 6 of the function switches that are just above the number switches. Only one function is selected at a time and the LED for the particular function will be lit when selected. The following is a description of each function.

FIXTURE

This switch allows you to select fixtures for programming. With the "fixture" switch led lit, the number switches 1-48 are used to select an active fixture. When a fixture is selected it can be directly controlled using the faders, the wheels or the joystick. A selected fixture can also be controlled using a preset. A fixture does not have to be selected to be controlled by scenes or shows. If a fixture is not selected it will only be disconnected from the manual controls, it is not turned off.

Fixtures are selected one at a time unless the "add" switch is held while selecting. If no fixture type has been assigned to a fixture number, it cannot be selected.

When a fixture is selected its name will appear in the LCD followed by the first 4 channels of the fixture and the current values of those channels. The four data wheels can then be used to set the levels for each channel. Press the "fixture" switch at any time to turn on the channel wheel display and the channel wheels.

FIXTURE GROUP

The fixture group feature allows you to define and select combinations of fixtures. To create a fixture group press "record" then "fixture group", both LEDs will flash. Next press "fixture" to select which fixtures will be included in the group. Use the number switches to turn the desired fixture LEDs on or off. Next press the "fixture" switch again to turn off its LED. If you want to name the group, use the cursor switches to place the underline cursor under the character of the name and use the data wheel to select characters. Finally select the group number by pressing one of the number switches from 1-48. If a switch LED is already lit it means that a group is already recorded there. After you are finished recording, press "record" to exit.

Fixture groups are selected by pressing "fixture group" then selecting the desired group from 1-48. If you want to turn on more than one group you must hold down the "add" switch while selecting.

To edit a fixture group, first select the group then go to "record fixture group" as described in the preceding paragraphs. Make any changes in the group then resave it.

DATA WHEELS

The data wheels are used to increment or decrement the values in the display directly above each wheel. They are used for channel control of the lighting fixtures as well as for general-purpose programming. Pressing "fixture" will bring up the channel control display if there are any fixtures currently selected. From the channel control display you can access all of the channels of the selected fixture using the left and right arrow switches above the display. Pressing the left switch past the lowest channel number, displays the selected fixture number and its name. With more than one fixture selected, the last selected fixture is usually the one displayed since there can only be one fixture displayed at a time. If a "fixture group" is selected, the lowest number fixture is the one that is displayed. **NOTE:** When more that one fixture is selected, all fixtures **of the same type** that are selected will be set to the level on the display whenever a wheel is moved.

Show Designer 2 will display the channel functions for some types of fixtures. Not all types of fixtures are supported by this feature and these fixtures will only display the channel numbers when selected.

CHANNEL FADERS

Just below the number switches are 8 faders that can be used to control the individual channels within each fixture. You can address up to 32 channels per fixture by using 4 banks of 8 faders. The bank switch to the left of the faders is used to select which bank of 8 channels is currently active. The LED to the left of the faders shows the current bank. The channel numbers for the faders are printed to the left of each fader. For example the first fader can control channels 1, 9, 17 or 25 depending on which bank is selected. If a fixture has less than 32 channels then some banks and some faders will not be used. Before the channel faders can control a fixture, that fixture must be selected. Any number of fixtures can be controlled at once. If for example all fixtures are enabled, moving fader 1 with bank 1 selected will change channel 1 on every fixture.

If you are using the “multi” fixture feature of Show Designer 2 then the channel faders are used to control each of the individual fixtures within the group. If for example you have defined 8 fixtures of 4 channels each, channel faders 1-4 will control the first fixture of the group, faders 5-8 the second and so on.

BANK SWITCH

The bank switch selects the current bank of 8 faders. This allows you to control up to 32 channels per fixture (or 32 scenes when in scene master mode) using only 8 faders. The bank LED next to the faders will show the currently selected bank and the numbers printed next to each fader show the channel number or scene number of the fader for the selected bank. As a convenience the bank select will only go as high as needed for the size of the currently selected fixtures when using the faders to control channel levels.

JOYSTICK

The joystick controls pan and tilt on all selected fixtures that have a pan or tilt feature. The joystick is the “return to center” type so it operates by moving it in the desired direction. The farther the movement the faster the pan or tilt movement will be. The state of the “fine” switch also determines the speed of the movement. If a fixture has 2 channels of pan or tilt (16 bit), the joystick will affect the fine channel with “fine” on. If the fixture only uses 1 channel for pan or tilt, the movement will be slower with “fine” on.

FINE SWITCH

The “fine” switch affects the way the joystick and the data wheels operate. With “fine” on, they will increment or decrement by the smallest possible amount. With “fine” off, they will increment or decrement by larger amounts.

BLACK SWITCH

Pressing the “black” switch will stop all activity and call a blackout on all fixtures. Depending on the type of fixture and its capabilities, black will only turn off the channel that controls the output of the lamp but for some types of fixtures will turn off all channels. The LED will remain on to indicate that a blackout was called. Pressing the switch a second time will turn the LED off and restore the blacked out channels to previous settings.

Pressing and holding black for 2 seconds will force all DMX channels to 0 and clear the current scene for a clean start when programming a new scene.

SCENES

RECORDING SCENES

A scene is a recording of the state of the entire stage. Individual channel levels as well as presets and chases can make up a scene. Show Designer keeps track of all the actions you perform to make the stage appear as it does. For example, if you change channel levels using the faders or the joystick, then call a chase, then call a preset, these events which affect the look of the stage are saved in temporary memory so that you can record them as a scene. This also means that you can call a recorded scene, modify it and then save it as a new scene or save it to the same location for quick edits.

Once you have a look on stage that you want to save as a scene, press “record”, its LED will flash. Next press “scene”, its LED will also flash. The page display will light and any number locations that already contain scenes will also light. You can at this time enter a name for the scene as well as a crossfade time. Use the cursor switches to move the cursor under each character of the name, then use the + or - switch or data wheel #1 or #2 to modify the character. Move the cursor under the fade time or use data wheel #3 to change the crossfade time for this scene.

To record the scene, select the page and scene number. You can use the page switches to select from pages 1 to 99 and the number switches from 1 to 48 allowing you to store up to 4752 scenes. If you select a scene number that is already lit, a message will appear asking if you want to write over the existing scene. Press “yes” or “no”.

Note: It can take up to 30 seconds to overwrite or erase a scene depending on how much of the memory is currently filled.

If at any time you wish to exit record mode without saving anything, press “record” again and you will exit record mode.

RECALLING SCENES

Once a scene is recorded it can be played back by turning on the “scene” LED and then selecting the desired page and scene number. Only one scene can be selected at a time using the number switches. Pressing the scene number that is currently lit will turn that scene off by calling a blackout.

ERASE SCENE

To erase a scene from the memory, press “record” then “scene” then “erase”. As when recording a scene, all number LEDs that contain a scene will light. Next select the scene number to erase. That scene name will appear in the LCD along with the message “Erase this scene?”. Press “yes” or “no”. If you press “yes” the scene will be erased. You can then select additional scenes to be erased or you can press “record” to exit record mode.

Note: It can take up to 30 seconds to overwrite or erase a scene depending on how much of the memory is currently filled.

PRESETS

A preset is made from select channel levels of select fixtures. Presets allow for fast and easy programming of scenes by giving you instant access to colors and beam settings without having to search through channel levels with the faders or data wheels. Presets also save memory because many scenes can reference the same preset. For example, if a preset defines a pan and tilt location for several scenes, only the preset needs to be edited in order to modify the pan and tilt for all of those scenes.

Show Designer 2 allows you to record up to 24 pages of 48 presets for a total of 1152 presets. For your convenience the words “color”, “gobo”, “focus” and “effect” are printed next to the 4 rows of number switches. These types of presets can then be recorded on the corresponding rows if desired. Unlike scenes, presets do not record the entire stage, they only record the channels that you select while in

preset record mode. This allows you to record things such as color or gobo or beam position only, once recorded they can be recalled and layered to make a scene.

RECORDING PRESETS

Before recording a preset you must first do some preparation. In order to be able to view fixture settings like color or gobo you will need to first set some channel levels in order to see the color or gobo. Do this by selecting the fixture or fixtures to be used in the preset and then position the beams and turn up the dimmer levels. These things will not be recorded into the preset if they are done before pressing "record".

To start recording a preset press "record", its LED will flash. Next press "preset", this LED will also flash. The page display will show the current page and any number locations that already contain presets will be lit. Adjust the channel or channels that you want to include in the preset. These adjustments will be recorded into the preset so take care not to move any channels that you don't want included.

Note: If when recalling a preset, some channels are changed that weren't intended as part of the preset, chances are that a fader or the joystick was bumped and those channels were accidentally added when the preset was being recorded. If this happens, go back and rerecord the preset.

If you need to turn different fixtures on or off or would like to see the channel levels while recording the preset, you can press "fixture". You can use the number switches to toggle any fixtures on or off. Pressing "fixture" again will turn off the fixture LED allowing you to finish saving the preset.

At any time while recording the preset you can enter a name. Use the cursor switches to move the cursor on the LCD under each character then use the + or - switch or the data wheel to modify the characters of the name.

To save the preset, select the page and number where you want to store it. If you select a number that is already lit, a message will appear asking if you want to write over the existing preset. Press "yes" or "no". You can use the page switches to select from pages 1 to 24 which will allow you to store up to 1152 presets.

Note: It can take up to 30 seconds to overwrite or erase a preset depending on how much of the memory is currently filled.

After you have saved the preset, record mode stays on allowing you to continue to record more presets. Any channel changes that were made since starting "record preset" will be included. To start a new preset from scratch, toggle the "preset" LED off and then back on with the "record" LED still flashing.

To exit record mode, press "record", all LEDs will stop flashing.

RECALLING PRESETS

To select a preset for display, first select the fixtures that you want to control with the preset. Next, press the "preset" switch, select the page of the desired preset then use the number switches to select from the presets on that page. Unlike scenes, you can have as many presets turned on as you want as long as the presets are controlling different channels. If two presets control the same channels, the last preset that was turned on will have control. If a preset has been completely canceled by another, it will be automatically switched off.

A fixture must be enabled to be part of the selected preset even if it the fixture was included in the preset when you recorded it. This allows you to put all fixtures into a preset but only use selected ones as needed. For example you could create a preset called “Red” that sets all color channels of every fixture to the color red. Then you can select the fixtures you want to be red then call the “Red” preset changing only those fixtures.

ERASE PRESET

To erase an existing preset, press “record” then “preset” then “erase”. As when recording a preset, all LEDs that contain a preset will light. Next select the preset to erase. That preset name will appear in the display. The message “Erase this Preset?” will also appear along with the preset name. Press “yes” or “no”. If you press “yes” the preset will be erased. You can then select additional presets to be erased or you can press “record” again to exit record mode.

Note: It can take up to 30 seconds to overwrite or erase a preset depending on how much of the memory is currently filled.

EDITING PRESETS

To edit a preset that has already been recorded, press “record” followed by “preset”. Before making any channel changes, press the preset number of the one you want to edit. The message “Edit this existing Preset?” will appear in the display. Press “yes” and the preset will be called up and you can add to it or modify it by changing any channel levels. After making changes you can store it at the same or at a new location by pressing any preset number. You can also use this method to copy a preset to another location by saving it without making any changes.

COMBINING PRESETS

You can add existing presets to any preset you are currently working on. While in preset record mode press the “add” switch followed by any preset number that has something recorded on it. The channel settings will be added to the preset you are currently recording. You can add as many presets as you wish. You can use this to mix several smaller presets into a single larger one. If two presets control the same channels, the channel levels from the last one added will have precedence.

CHASES

Show Designer 2 allows you to record up to 1152 chases and also provides 48 pre-recorded chases referred to as “factory chases”. A chase is a sequence of steps, creating motion or quick repetitive changes on stage. Each chase step is a recording of selected channel levels and or presets. The steps are then played back in a continuous loop at a programmed chase speed.

Unlike scenes, chases do not affect the entire stage but only the channels that you select. This allows you to chase things such as colors, gobos or beam positions. You can run as many as 8 chases at the same time allowing you to combine them into one scene.

RECORDING CHASES

Before recording a chase you must first do some preparation. In order to be able to view features such as colors or gobos or to be able to see beam positions for moving lights, you will first need to set some channel levels. Do this by selecting the fixture or fixtures to be used and then turn up the dimmer levels or open the apertures as needed. These things will not be part of the chase if they are done before recording.

To start recording a chase press “record”, its LED will flash. Next press “chase”, the chase LED will also flash. The page display will show the current chase page and any number LEDs that already contain chases will be lit. There are 24 pages of memory locations available. Page “FC” is reserved for factory chases and can’t be recorded on. The display will show the current chase step, speed, fade and speed lock status. To start recording the first chase step, move the channel or channels to the positions that you want by either adjusting the faders or by using the joystick. If you want to use the data wheels to adjust the channel levels, press “fixture”. These adjustments will be recorded into the step so take care not to move any channels that you don’t want included. You can at any time press the fixture switch and turn fixtures on or off while recording the step. You can also press the preset switch allowing you to include presets in the chase step. When using presets, only the fixtures that are currently selected will be included.

After you have finished adding channels or presets to the step, press “enter”. The “fixture” LED must be off to enter the step. The step indicator on the display will automatically increment to the next step. Repeat the previous actions to record up to 256 steps. You can enter empty steps as well by pressing “enter” before changing any channels. On playback these empty steps will not playback anything but can be used to lengthen the time between steps. You can record something into these empty steps later if desired.

As you are recording steps you can at any time move from step to step by putting the display cursor under the step number and use the + or - switches or use data wheel #1 to select a new step. You can change or add more channels to each recorded step this way.

Pressing “enter” when at the last recorded step of the chase will always add an additional step to the end. If you press “enter” while the step number is at a lower step you will advance to the next step number, the same as when you increment data wheel #1.

If you make a mistake while recording a chase step, press “erase” and you will be prompted whether or not to erase the contents of the chase step. Press “yes” to clear the step of all channel and preset data. If you press “erase” a second time, you will be prompted whether or not to remove the empty step from the chase. This will shorten the chase by one step.

At any time while recording the chase you can enter a speed value, a fade value and a name for the chase. Use the cursor switches to move the cursor on the display under the item to be changed then use the + or - switch or a data wheel to modify it. To get to the name, continue to move the cursor to the right, past the speed lock setting and the screen will change to show the name. To edit the name, move the cursor under each character then use the + and - switches or the data wheel to modify the letters.

The chase speed will be the default speed for the entire chase. This means that when you first call the chase this is the speed that it will run at. You can change the speed while it is running and the new speed

can be recorded with a scene. This allows you to use the same chase in many scenes but at different speeds for each of the scenes.

The fade value is displayed as a percentage and is the same for every step in the chase. You cannot set a separate fade time for each step. This will be the amount of fade time between steps. If set it to 100% the crossfade time will be equal to the time between steps giving a smooth continuous motion between steps. If set to 0% the steps will move with no fade in between. Any settings between 0 and 100 will give varying amounts of fade time depending on the speed of the chase. As with speed, this is only the default value. It can be changed before recording a scene.

The speed lock and unlock feature allows you to tell the chase whether or not to ignore the audio or beat switches when the chase is running. When set to "No Beat" the chase will only run at the programmed speed and will not be affected by the beat or audio switches. This is useful when you have a chase that must always run at a high speed to create a certain effect.

After you have finished recording all of the steps for the chase, set the speed, fade and lock status, save it by selecting a page and number. The "fixture" and "preset" LEDs must be off. If you select a chase number that is already lit, a message will appear asking if you want to write over the existing chase. Press "yes" or "no". You can use the page switches to select from pages 1 to 24 which will allow you to store up to 1152 chases. Page "FC" is reserved for factory chases.

Note: It can take up to 30 seconds to overwrite or erase a chase depending on how much of the memory is currently filled.

After you have saved the chase, the "record" and "chase" LEDs will continue to flash, allowing you to continue to add to or edit the chase. To exit record mode, press "record" and the LEDs will stop flashing.

RECALLING CHASES

To run a chase, press the "chase" switch, then press the desired page and number switch. The chase will begin to run at the speed set when it was recorded. Pressing the same switch again will turn it off. You can run more than one chase (up to 8) as long as they are chasing different channels.

You can use data wheel #3 to adjust the speed and data wheel #4 to adjust the fade rate of any running chase that is displayed. Use data wheel #1 to select between chases if more than one chase is running. Any speed changes that are made will be saved if you record the current scene. This allows you to reuse the same chase in different scenes at different speeds. If at any time you need to recall the running chase display, press the "chase" switch.

You can run up to 8 chases simultaneously. If a new chase is selected that completely overrides one that is running, the overridden chase will be automatically turned off. A chase is canceled when another one is called that controls all of the same channels. A chase will not be canceled if only some of its channels are overridden. The channels that are still available will continue to chase.

ERASE CHASE

To erase an existing chase from the memory, press "record" then "chase" then "erase". As when recording a chase, all LEDs that contain a chase will be lit. Next select the chase to erase. The message "Erase this Chase?" along with the chase name will appear in the LCD. Press "yes" or "no". If you press

"yes" the chase will be erased. This only works when there is no chase being edited or recorded. While editing a chase, "erase" is used to erase the chase steps. You can abort chase erase at any time by either pressing "no" or exiting record mode by pressing the "record" switch.

Note: It can take up to 30 seconds to overwrite or erase a chase depending on how much of the memory is currently filled.

EDITING CHASES

To edit a chase that has already been recorded, press "record" followed by "chase". Before making any channel changes, press the number of the one you want to edit. The message "Edit this existing Chase?" will appear in the display. Press "yes" and the chase will be called up and you can add to it or modify it by selecting steps and changing any channel levels. You can also use the "erase" switch to remove the contents of the current step or if the step is empty, remove the step entirely. You can also insert additional empty steps at the current step by pressing "add". You will be prompted whether or not to add an empty chase step here. Press "yes" to insert a step at the current step number. All following chase steps will be moved up one number. Once the new step is added you can record channel levels or presets there.

After you have finished editing the chase you can store it at the same memory location or at a new location by selecting the page and by pressing a number switch. You can also use this method to copy a chase to another location by saving it without making any changes.

FACTORY CHASES

When you select chase memory page "FC" (factory chase) you can call from the list of 48 preprogrammed pan and tilt chases. Some hard to program movements such as circles and figure eights can be found here. Unlike chases that you program yourself, you must first select the fixtures you want to include before you turn on the chase.

AUDIO SWITCH

The audio switch enables the audio input as a trigger for chase steps. Pressing the "audio" switch turns on the LED. It will flash off briefly whenever an audio beat is detected at the audio input. Any chases that are running will sync to this beat unless the speed has been locked for that chase. Read the previous section on recording chases regarding how to lock the chase speed. Turning on "audio" automatically turns off "beat". The audio switch state is not stored with a scene.

BEAT SWITCH

The beat switch allows you to override the tempo or beat of a chase by tapping on the switch in time to any music that is playing. The LED will flash in time to the beat that is tapped in. Any chases that are running will sync to this beat unless the speed has been locked for that chase. Read the previous section on recording chases regarding how to lock the chase speed. Pressing the "beat" switch will automatically turn off "audio". To turn off the beat, press and hold the "beat" switch for one second. The "beat" switch state and beat tempo are not stored when recording a scene.

SHOWS

A show is a sequence of scenes that are recorded and played back in order at preprogrammed times. Show Designer 2 lets you record up to 24 pages of 48 shows for a total of 1152 shows.

RECORDING SHOWS

Before recording a Show you must first record the scenes that will be included in the show. Consult the previous sections on how to do this.

To start recording a show press “record”, the “record” LED will flash. Next press “show”, the “show” LED will also flash. The page number will display the current Show page and any locations that already contain Shows will be lit.

The display will show the current step that is ready to be recorded along with the scene page and scene number in that step. The word “Empty” will appear in place of the scene page and number if there is nothing recorded at this step. The hold time for the step is displayed in minutes and seconds. The minutes and seconds are separated by colons “:” with seconds having a decimal point allowing tenths of a second resolution.

When you first start the record process, step 000, scene “Start” will be displayed. Step 0 is used to add a delay to the start of the show before the first scene is called. No scene can be recorded at step 0. If you don’t want a delay time at the start of the show, leave the hold time as 00:00.0 and move on to step 1 by pressing the “+” switch, the “enter” switch or by incrementing data wheel #1.

To record a show step, press the “scene” switch. With the “scene” LED lit, choose a scene for this step by selecting the page and pressing the desired scene number. Next select the hold time for this step. The time that you select is the time that this scene will be held until the next step is called. You can select a new time by moving the cursor to the hour, minute or second number then press the + or - switch or use data wheel #3 to change the time.

Once a scene has been selected and the hold time set, press “enter”. The step number will automatically advance to the next step. You can enter up to 255 steps in the show. If you press “enter” without selecting a scene, the step number will advance leaving the step empty.

As you are recording a show you can select any step by moving the cursor under the step number and using the + or - switch or data wheel #1 to select a new step. You can edit the scene number or hold time for any recorded step this way. Pressing “enter” when on the last recorded step will add an additional step to the end of the show. If you press “enter” while the step number is not at the end you will advance to the next step number the same as if you incremented the step number using the data wheel.

At any time while recording the show you can enter a name. Use the right cursor switch to move the cursor on the display to the right, continuing past the “loop” status. The screen will change showing the name. Edit the name by putting the cursor under each character then use the + or - switch or the data wheel to change the character.

The loop status lets you to program the show to loop continuously or play once through and stop.

After you have finished recording, save the show by selecting a page and number where you want to store it. Make sure that the "scene" LED is off. If you select a show number that is already lit, a message will appear asking if you want to write over the existing show. Press "yes" or "no".

Note: It can take up to 30 seconds to overwrite or erase a show depending on how much of the memory is currently filled.

After you have saved the show, Show Designer 2 remains in record mode allowing you to continue to edit the show. To exit record mode, press "record", the LEDs will stop flashing.

RECALLING SHOWS

To run a show, press the "show" switch, and then select the desired page and number switch. You can only run one show at a time and shows can only call one scene at a time. The page, show number and name of the show will be displayed along with the current step, the current scene and hold time. If the show is set to loop, it will restart after the last step's hold time has counted down. If loop is set to "off", the show will end after the last scene has been called.

Pressing the "black" switch will pause a show as well as blacking out the fixtures. Pressing "black" again will resume the show and turn the fixtures back on. If you press black and hold it for 1 second the show will be turned off. If you press the number switch of the show that is currently running the show will be turned off. If you select a new show while one is running it will replace the current show. If you select a scene while a show is running it will also turn off the show. If you turn the show display off you can restore it by pressing the "show" switch.

ERASE SHOW

To erase an existing show, press "record" then "show" then "erase". As when recording a show, all LEDs that contain a show will be lit. Next select the show to erase. That show name will appear in the LCD. The message "Erase this Show?" will also appear. Press "yes" or "no". If you press "yes" the show will be erased. Erase show only works when there is no show currently being edited. While editing a show, "erase" is used to erase show steps. You can abort show erase at any time by either pressing "no" or by exiting record mode by pressing the "record" switch.

Note: It can take up to 30 seconds to overwrite or erase a show depending on how much of the memory is currently filled.

EDITING SHOWS

To edit a show that has already been recorded, press "record" followed by "show". Instead of entering steps for a new show, press the show number of the one you want to edit. The message "Edit this existing Show?" will appear in the display. Press "yes" and the show will be called up and you can add to it or modify it by selecting steps and changing any value. You can use the erase switch to remove the current step. You can also insert additional steps at the current step number by pressing "add". You will be prompted whether or not to add an empty show step here. Press "yes" to insert an empty show step at the current step number. All following show steps will be moved up one number. After the empty step is added you can record a scene or time value there.

After editing, a show can be saved at the same or at a new location by pressing any number switch. The scene LED must be turned off. You can use this method to copy a show to another memory location by calling it for edit and then saving it without making any changes.

PREVIEW

Preview mode allows you to first see the name of a scene, preset, chase or show before being called. With the "preview" LED lit, the display will show the page and number as well as the name of the item that is selected. The "go" switch is then used to call the item. For example, when calling a scene, press "scene" then select a scene number. The page, number and name will be displayed along with the message "Press go to call this scene". The "go" switch LED will be lit. The scene will not be called until you press the "go" switch. If you press a "scene" LED that is already lit, the scene will turn off as in normal operation.

SCENE MASTERS

The faders can also be used to call scenes. In this mode the faders allow manual control of the crossfading. To use the faders this way, the "masters" LED must be lit as well and the "scene" LED. Scenes 1 through 32 of the currently selected scene page can then be called using 4 banks of 8 faders.

To start a scene, first move the fader all the way to the bottom to reset it. The corresponding scene will be assigned to the fader after it is moved upwards. Any chases that are part of the scene will start at this time. Channels that are set to snap at the start of a fade will also move to the scene levels right away. Channels that are set to snap at the end of a fade will move to their scene levels when the fader reaches the top. All channels set to crossfade will follow the movement of the fader. This allows 8 scenes to be running at the same time provided they are controlling different channels. Starting a new scene that uses some of the same channels as a scene that is already active will steal those channels for the new scene.

NOTE: To start a master, the "masters" LED must be lit and the "scene" LED must be lit. The scene will be called from the current scene page that is shown in the page display. That scene will stay attached to that fader until that fader is reset (moving it to the bottom position). The scene will stay with the fader even if you change pages.

MIDI

Show Designer 2 allows you to use MIDI to call scenes using a MIDI sequencer so that you can synchronize lighting to a MIDI performance. The scene page and number is encoded in a MIDI message that is sent when the scene is selected. The "black" switch also sends a MIDI message allowing you to record a blackout or blackout off. The MIDI channel can be set from the "menu".

USING THE COMPUTER PORT

The RS232 port can be used to connect to a personal computer. You will need a serial lap link cable available at any computer store. A lap link cable is normally used to connect a laptop computer to a desktop computer or to connect 2 computers together. A standard RS232 cable will not work.. Connect the RS232 port on Show Designer 2 to one of the serial "COM" ports on your PC. Some COM ports use a 25 pin connector and some use a 9 pin. Most lap link cables come with both types of connectors.

Once connected, you can use a PC running Windows to backup or restore the memory and also to update the software. This allows you to update your controller with the latest features by downloading new Show Designer 2 software from American DJ's web site.

CONFIGURING WINDOWS

Elation now offers a program that can be downloaded from the web site at www.elationlighting.com called "SD Backup" that is designed to handle communication between a PC and the Show Designer lighting controllers. Before this program was available you had to use the Windows accessory "Hyper Terminal" for all communication with your PC but with "SD Backup" the process has been simplified. "SD Backup" will also allow you to download a fixture profile, which wasn't possible using Hyper Terminal. Instructions for using Hyper Terminal are still included here but we recommend that you use the SD Backup program instead.

Determine which of your COM ports is available on your PC and connect it to the RS-232 port on the Show Designer 2 as described in the previous section. COM 1 is sometimes used for the mouse on your PC so you will probably be using COM 2 to connect to the Show Designer 2.

If you have installed the SD Backup program, follow the directions on the help file included with the program. If you want to use Hyper Terminal you must first configure it to work with the Show Designer 2. Run Hyper Terminal by clicking on "Start" in Windows then "Programs" then "Accessories" then "Hyper Terminal". If for some reason Hyper Terminal is not installed on your version of Windows, install it from your Windows CD. Go to the control panel, select Add/Remove Programs, select Windows Setup, and then select communications. Follow the instructions.

Once the Hyper Terminal folder is open, double click on "Hypertrm.exe" or "Hypertrm" which will start the Hyper Terminal program. You will be asked to choose a name and an icon. Name it Show Designer then pick any icon then click on OK. Go to the bottom of the next dialog box and choose "connect to" "Direct to COM 2". Ignore the telephone number and other settings in this box then click OK. In the next dialog box, set bits per second to 19200, data bits to 8, parity to none, stop bits to 1, flow control to none, then click OK. You will now be running Hyper Terminal. One last item needs to be set by clicking on "File" in the upper left corner of the window, then "Properties", then select the "settings" tab. From the settings tab click on the box that says "ASCII Setup". From that dialog box make sure the box labeled "send line ends with line feeds" is checked, you can also leave the box labeled "wrap lines" checked but leave all of the other boxes unchecked. Click OK and you are done with setup. Close Hyper Terminal and you will be prompted to save this Hyper Terminal setup. Click yes to save it and you will return to the Hyper Terminal folder. There should now be a program in the folder labeled "Show Designer.ht" or "Show Designer". You may want to make a shortcut on your desktop if you plan to use your PC with

Show Designer 2 often. From this point on, whenever you communicate with Show Designer 2 using your PC, call this Show Designer Hyper Terminal configuration.

MEMORY BACKUP USING THE COMPUTER PORT

Once configured, you can use SD Backup or Hyper Terminal to back up the Show Designer 2 memory and save it on your hard disk. Connect the Show Designer 2 to your PC as described in the previous paragraphs.

If you are using the SD Backup program, follow the instructions for "Receive File". To use Hyper Terminal, call the version of Hyper Terminal that you created for Show Designer 2. Click on "Transfer" on the top menu bar and select "Capture Text". A dialog box will appear allowing you to select a folder and name for the backup file. Use a name like "SD2 backup1.txt". Click "Start" and Hyper Terminal is now ready to receive the file from Show Designer 2.

Next, go to the menu selection on the Show Designer 2 labeled "save memory file" and press the "enter" switch. The display will read, "Press enter to send memory file". Press "enter" to start the transmission from Show Designer 2. An encoded copy of the entire memory will be transmitted to your PC. A series of numbers will be displayed in the Hyper Terminal window as the file is being copied to your disk drive. The time needed to send the memory file will vary depending on the amount of memory currently in use. When the file is finished being sent, Show Designer 2 will return to its startup display and the numbers will stop scrolling in the Hyper Terminal window. You can either close Hyper Terminal or return to the "capture text" pull down menu and select "stop", the file will automatically be saved.

Note: When creating additional memory backup files, always start with a new text file. Hyper Terminal will not write over an old file that has data in it but will add the new data to the file giving you multiple memory dumps in one file.

MEMORY RESTORE USING THE COMPUTER PORT

To copy a memory file from your PC back to Show Designer 2, first go to the menu selection in Show Designer 2 labeled "load memory file". Press "enter" and the display will read, "Waiting for file from COM port". Show Designer 2 is now ready to receive the file from your PC.

If you are using SD Backup, follow the instructions for "Send File". If using Hyper Terminal, call the version of Hyper Terminal that you created for Show Designer 2. Click on "Transfer" on the top menu bar and select "Send Text File". A dialog box will appear allowing you to select the Show Designer text file that you made when you backed up. Find the drive and folder where you created the file if it is not in the current window, select the file and click on "Open". Hyper Terminal will begin to transmit the file. The Show Designer 2 display will read "receiving file". After the file has been sent, Show Designer 2 will restart and show its startup display. If any errors have been detected, Show Designer 2 will prompt you to retry. Check your connections and try again. The length of time it takes to update the memory will vary depending on the amount of memory in use at the time it was recorded.

UPDATING THE SOFTWARE

The software that runs Show Designer 2 can be updated with new versions available from the Elation Lighting web site at www.elationlighting.com . New software updates will include things such as new features. You can also download updated versions of this manual that will describe any new features.

To copy the new software file from your PC to Show Designer 2, go to the Show Designer 2 menu selection labeled “update software”. Press “enter” and the display will read, “download new program”. Show Designer 2 is now ready to receive the file from your PC. As an alternative you can access this menu by holding down the “menu” and “erase” switch while powering up Show Designer 2.

If you are using SD Backup, follow the instructions for “Send File”. If you are using Hyper Terminal, call the version of Hyper Terminal that you created for Show Designer 2. Click on “Transfer” on the top menu bar and select “Send Text File”. A dialog box will appear allowing you to select the text file that you downloaded from the web site. Make sure that the file has been unzipped before trying to use it (the file will end with .txt not .zip). Find the drive and folder where the file is located, select the file and click on “Open”. Hyper Terminal will begin to transmit the file. The Show Designer 2 display will read, “receiving new program”. After the file has been sent, Show Designer 2 will restart and show its startup display. If any errors have been detected, Show Designer 2 will prompt you to retry. Check your connections and try again. It will take several minutes to transfer the file.

LOAD FIXTURE PROFILE

You must use the SD Backup program to send a fixture profile to the Show Designer 2, Hyper Terminal will not work for this. When you enter the menu on Show Designer 2 for “Load fixture profile” the message “Ready to receive fixture profile, press enter to cancel” will appear on the display. Use the “Send File” function on the SD Backup program to send a fixture profile to the Show Designer 2. The Show Designer 2 will wait indefinitely until you send the file or until you press the “enter” switch to cancel.

The following is the list of “built in” lighting fixtures in the Show Designer 2 fixture library. Fixture profiles are available from elationlighting.com and offer more detailed fixture information than those in this list.

Generic Dimmer (1 Channel)
32 DMX Channels

Elation Active Scan/Wave
Elation Barrel-Tech
Elation Color Spot 150s (mode 2)
Elation Color Spot 150r (mode 2)
Elation Color Spot 250 mode 1
Elation Color Spot 250 mode 2
Elation Color Spot 575 mode 1
Elation Color Spot 575 mode 2
Elation Color Wash 250 mode 1
Elation Color Wash 250 mode 2
Elation Color Wash 575 mode 1
Elation Color Wash 575 mode 2
Elation DP-619
Elation FS-150SCI
Elation Joy-150
Elation Joy 300
Elation MB-1500
Elation MDP-1219
Elation Mini Patend 150
Elation Power Spot 250
Elation Stage Color
Elation Vision 575 mode 1
Elation Vision 575 mode 2
Elation Waterfall
Elation X-Calibur/SC

Robe Color Mix-150 Wash
Robe Color Mix-150 Profile
Robe Color Mix 250
Robe Color Spot 170
Robe Color Zoom 250
Robe Ecolor-250 XT

American DJ Auto Spot 150
American DJ Color-150/DMX
American DJ Concept 1 and 2
American DJ DP-DMX20 Dimmer Pack
American DJ PP-DMX20 Switch Pack
American DJ Marvel

American DJ Matrix Spot
American DJ Max
American DJ Mega-Strobe/DMX
American DJ Midi-Pak
American DJ Mighty Scan
American DJ Onyx II
American DJ Patend-1200
American DJ Pocket Scan
American DJ Radd
American DJ Rainbow-250
American DJ Rampage
American DJ Rollertron and Scantron
American DJ S-1500/DMX
American DJ S-150/DMX
American DJ Snap Shot DMX
American DJ Sonic Beam
American DJ Spin-Out
American DJ Spiral Scan
American DJ Swivel Beam
American DJ Tempest II
American DJ Ultra Scan 250
American DJ Virtual Beam VR8
American DJ XP-3

High End Color Pro
High End Cyberlight 20 Channel
High End Intellabeam 13 Channel
High End Studio Beam
High End Studio Color 250
High End Studio Color 575
High End Studio Spot 250
High End Studio Spot 575
High End Studio Spot CMY
High End Technobeam 18 Channel Mode
High End Technoray 14 Channel Mode
High End Technopro 12 Channel Mode
High End Trackspot

Martin Acrobat
Martin Imagescan Mode 2
Martin Mac 250 Mode 4
Martin Mac 300 Mode 4
Martin Mac 500 Mode 4
Martin Mac 600 Mode 4
Martin Mac 600 NT Mode 4
Martin Mac 1200 Mode 4