AVR Lightscreen

Instruction Manual

Features of the unit

DMX connectors (pins 2/3 signal, pin 1 grounded). Other DMX devices can be linked in to the system through these connectors. The unit will auto-sense the polarity of the DMX signal, either pin 2 hot or pin 3 hot. (You can manually override the auto sensing using the DP option). The DMX connectors are located next to the hanging bracket.

Power light (red). This light should be on whenever the unit is powered up. If it doesn't come on there is either no power to the unit, or some internal problem with the unit.

DMX present light (orange). This light is on constantly when DMX is being received.

Master light (green). This is lit when the unit is Master in stand alone mode. The light will blink off in time to the music.

Slave light (yellow). This light is on when the unit is Slave in stand alone mode.

Digital display. The display shows the DMX channel of the unit, or if in light show mode, the Light Show Group of the unit. The display is also used for setting options.

Enter button (end button underneath LEDs). Hold down the Enter button to get into the option menu. If the display shows "LOC" then the control panel has been locked to prevent tampering. See page 15 for lock/unlock instructions.

Option buttons (below display). The three buttons below the display are used to set the DMX channel and other options on the unit.

Mains power (not shown in picture). Power is supplied to the unit through an IEC connector on the back face of the unit. There is a power supply fuse built into this connector. If this fuse fails the unit requires service.

Lamp alignment (not shown in picture). On the rear of the case there are 3 screws which allow you to adjust the position of the lamp within the reflector to optimise the evenness of the light beam. The alignment is set at the factory and you should not need to change it until you renew the lamp.

Setup for Stand Alone mode

If you don't connect a controller, the unit will automatically switch to stand alone mode and listen to the music to produce an impressive light show (if the LSE option is set to ON). This mode is good when you want a quick and dramatic show, or if you don't have time to program or operate the light show. If you want to control the unit yourself, see page 9.

If you have more than one AVR Lightscreen unit, link the units together using 3-pin DMX cables. Connect the DMX out (the socket) on the first unit to the DMX in (plug) on the second unit. Then continue linking as many other units as you want. One unit will automatically take control and become the Master unit (green light on), the other units will become Slave units (yellow light on) to give a synchronised light show.

Note: If you connect other manufacturers' products to the DMX line while using stand alone mode, they will probably not respond.

Light show variations

The AVR Lightscreen units produce an impressive 4-head lightshow which includes chasing and colour sequencing. You can select which heads work together by setting the "Light Show Group" (LSG) option to 1, 2, 3 or 4. All heads set to "1" will copy each other, likewise for the other 3 groups. For extra fun you can use the pan and tilt invert options to invert mirror movements for some units.

Special options in stand alone mode

Choosing which unit is Master: Normally the units decide between themselves which one is going to be the Master. If you want a particular unit to become master (for example, the one next to the loudspeakers), ensure Light Show Enable (LSE) is OFF on all other units.

Disabling Light Show mode: If LSE is OFF on all units, the units will freeze in the last received DMX position and will not do light show.

Disabling Strobing: Set the STR option to OFF.

Forcing slow movement and colour fading: Set the SLO option to ON.

Setting continuous movement: Set the Sound (SOU) option to OFF.

Inverting the mirror movement: Set Invert Pan (I-P), Invert Tilt (I-T) or Pan-Tilt swap (P-T) options to ON.

If you have less than four units: ensure that the "Enhanced Light Show" (ELS) option is turned off. This option allows shutter chases along all four groups. With less than four units this can mean all lights are in blackout at the same time.

Auto DMX polarity: The DP (DMX polarity) option should be set to AUT or P2 when using light show mode.

Setup for DMX controlled mode

DMX controlled mode gives you full control over every function of the unit. Using a suitable DMX controller you can program a light show just the way you want it. However, it does take a bit more setting up, and a lot more programming time, than the stand alone lightshow.

Connect your controller to the "DMX in" socket on the first unit, using a 3-pin XLR cable. If you are using a controller with a 5-pin DMX output, you will need to use a 5 to 3 pin adaptor. The AVR Lightscreen will normally sense the polarity of the DMX (pin 2 or pin 3 hot); you can also set the polarity manually using the "DP" option.

Connect the next unit, if you have one, to the DMX output plug.

Setting the addresses on the units

Your DMX controller sends out commands for all the units it is controlling down one cable. You need to tell each unit which commands to respond to by setting the DMX address using the digital display.

Hold down the Enter button until the display shows CHA. Then use the left hand button to set the 100's, the middle button to set the 10's and the right hand button to set the 1's. When the display shows the channel you want, press Enter. The display will show SET. Until you press Enter, the channel setting will not be used or remembered.

The correct settings depend on what controller you are using, and how it is set up, but usually the first unit is set to "001", the second to "003", the third to "005" and so on - keep adding 2 to the address. The highest channel is 509.

Note: if you want two units to behave exactly the same, you can set the DMX address for both units to the same channel.

Operation in DMX controlled mode

Colour

The colour function is proportional; this allows you to perform smooth crossfades between colours. You can make the unit "snap" to full colours by setting the Colour Snap (CSN) option to "ON"

Shutter

The units have a separate shutter which provides fade out and strobing functions. Between 0 and 50% you will get varying levels of intensity. If you move the control to the top end of its range (about 80%) you will enter the 'strobe zone'. The unit will strobe slowly (about one flash per second) at 80%, up to full speed strobe (about 8 flashes per second) at 100%.

DMX values

Colour

DMX	Colour
0	White
26	Red
43	Blue
59	Green
75	Yellow
91	Cyan
108	Orange
124	Pink
140	Magenta
156	UV blue
208	Slowest colour scroll
|	| (variable speed scroll)
254	Fastest colour scroll

Intermediate values will give mixed colours if CSN option is OFF.

Shutter

DMX	Result
0	Blackout
|	| (variable brightness)
128	Full brightness
226	Slowest strobe effect
|	| (variable speed strobe)
255	Fastest strobe effect

Option list

These are the options on the AVR Lightscreen, in order of appearance. The default setting (how the unit is set when new, or after OPC) is shown.

display	default	option name/function
CHA	001	Set DMX channel
I-P	OFF	Invert Pan movement
I-T	OFF	Invert Tilt movement
P-T	OFF	Pan-tilt swap
CSN	OFF	Colour snap to half positions
GSN	ON	Gobo snap to full positions
CE	OFF	Abstract CE compatibility mode
DBL	OFF	Display blanking mode (turn off after 20 sec)
LSG	1	Light show group number
LSE	ON	Light show enable
SLO	OFF	Light show slow mode
STR	ON	Light show strobe enable
SOU	ON	Light show sound enable
ELS	OFF	Enhanced light show
DP	AUT	DMX input polarity, Auto, pin2 hot or pin3 hot
PC	_	Start PC link mode
RST	_	Soft-reset (reinitialise motors)
OPC	_	Option Clear (reset options to defaults)
TST	_	Self test mode
S-N		Displays unit serial number (00-00-00-00)
LT		Displays lamp timer (hours)
UT		Displays unit on timer (hours)
UC		Displays unit operation counter
TRI	_	Starts motor trim mode
RUN		Run mode options

Setting AVR Lightscreen options from the panel

Hold the "Enter" button for 3 seconds to enter the option menu. Press Enter briefly to step through the options. Use the 3 arrow buttons to change an option. Hold down the Enter button to go back to normal.

All options can also be set from a PC when the unit is linked up in PC mode using the optional programming interface.

Locking the keypad

If the AVR Lightscreen unit is located in a position where people could tamper with the settings, you can lock the keypad. Hold down the Enter button while turning the power on. The display will show LOC. If you press any of the buttons the display will show LOC and the button will not have any effect.

The keypad will remain locked until you unlock it by holding down the Enter button while turning the power on. The display will then show UNL (unlock).

Control options

CHA - set DMX address: See page 9 for details

I-P & **I-T** - invert pan or tilt: inverts the left-right or up-down movement of the mirror. Can be useful in light show mode to vary the show.

P-T - pan-tilt swap: makes the pan channel control the tilt movement and the tilt channel control the pan movement. Useful if a unit is mounted on its side.

CSN & **GSN** - colour or gobo snap: makes the colour or gobo wheel "snap" to full positions.

CE - Abstract CE compatibility mode: puts the unit into a 4-channel mode which is compatible with Abstract CE products and controllers.

DBL - display blanking: turns off the digital display after 20 seconds of inactivity. Any keypress turns the display back on.

LSG, **LSE**, **SLO**, **STR**, **SOU**, **ELS** - light show master options: see page 8 for details.

DP - DMX input polarity: The unit can accept DMX wired with either pin 2 hot or pin 3 hot (AUT=auto detect mode). Sometimes the unit can't tell which way the DMX is wired, in this case you can set the DMX polarity manually, either P2=pin 2 hot or P3=pin 3 hot. The DP option does not affect the DMX loop-through.

Functions

PC - set PC link mode: Allows you to set up the unit from a PC (used with optional programming interface). Press any button to exit PC mode, or feed DMX to the unit.

RST - soft reset: Reinitialises the motor positions. Hold down the middle button to activate the reset. Useful if a motor is knocked out of position.

OPC - option clear: Sets all control options back to factory settings (see page 14). Hold down the middle button to activate the clear.

TST - self test: Runs a test routine so you can observe that all functions are operating correctly. The unit does not check for problems itself.

Information

S-N - serial number: Displays the unique serial number held inside the unit. Shown as 4 groups of numbers, so S-N 00 08 11 A1 is unit number 00-08-11-A1.

LT - Lamp timer: Shows how many hours the lamp has been running for (since timer last reset). The time is shown as 2 groups of numbers, so 001 20L is 00120 Lamp hours. To reset the timer, hold down one of the arrow buttons while turning on the unit - the display should show RST.

UT - Unit timer: Shows how many hours the unit has been running for since manufacture. The time is shown as 2 groups of numbers as for the Lamp timer. The unit timer cannot be reset.

UC - Unit Counter: Shows how many times the unit has been turned on since manufacture. The count is shown as 2 groups of numbers as for the lamp timer.

Using Run mode

The AVR Lightscreen can be programmed internally with an 16 position sequence which can then be run without the need for a controller. This can be useful for demonstration or display applications.

It is recommended to program the sequence from a PC using the optional PC interface. However you can also program it from the unit's control panel.

Run mode menu

Press the middle arrow button when the RUN option is displayed to enter Run mode.

The following sub-menu is then available. Press the Enter button to scroll through the options, press any other button to select the option.

Playback mode (PLA)

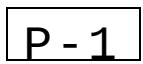
Press the middle button to start playback mode. The AVR Lightscreen will play back the programmed positions at the speed you have set. If no positions have been set the AVR Lightscreen will ignore the command.

While the AVR Lightscreen is in playback mode the display will show "RUN". If the unit is turned off, it will come back on in Run mode the next time it is turned on. Press any key to end the playback.

Options on the AVR Lightscreen (invert, snap, CE mode) will affect the playback positions, so you should make sure the options are set the same as they were set when you saved the positions.

Record mode (REC)

Press the middle button to enter record mode. You can then program the 16 positions:



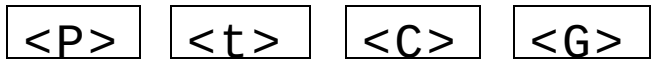
The AVR Lightscreen is ready for position 1. (Positions above 9 are shown as A B C D E F)

To program the position for a step, you can either set a position by DMX, or set the position using the buttons.

To grab the current DMX position, hold down the middle button. The AVR Lightscreen will move to the current DMX position and display SET.

You can now use a DMX controller to set the positions. Press any button to save the position.

To set the position using the buttons, press the middle button briefly to select Colour or Shutter.



Press or hold down the left or right button to set the pan, tilt, colour and gobo. Run mode operates in "CE compatible" mode, so the shutter and gobo rotation (if fitted) is controlled by the gobo channel.

If you have Gobo Snap or Colour Snap turned on, the gobo and colour will snap as you pass through the values, otherwise they will scroll slowly. Press Enter to go back when all positions are set.

You can amend steps you have already programmed using this method.

To move on to the next step, press Enter briefly.

If you don't want to use all 16 steps, leave the other steps unprogrammed by pressing Enter briefly for each step until you get back to the menu, or holding down Enter. If the steps are already programmed, you have to use the CLR option to erase all the steps, then just program the ones you want.

Speed (SPD)

Use the right hand arrow button to set the step time in seconds that each program step will be shown for. Times range from 1 second to 180 seconds.

Fade mode (FAD)

Allows you to set "fade" mode where the AVR Lightscreen moves more slowly between steps. The option swaps between On and Off when you press any of the buttons.

Program clear (CLR)

Press the middle button to clear all programmed positions.

If you have problems

Most problems are usually related to difficulties with the power supply, or confusion with the DMX control signal.

No light from the unit

Check the Power LED is lit and the fan is running. If not, there is no mains supply. Check your mains wiring and the fuse in the back panel. The lamp is powered directly from the mains input, so should come on if the power is OK.

Check if the lamp is alight. You should be able to see some light escaping through the fan. If power is present but the lamp is not alight it may need replacing. The lamp may take 1-2 minutes to come on and reach full brightness.

If the lamp is alight, check that the unit is not in "blackout". If you are using a controller, change the setting. If in stand alone mode, tap the case.

Unit turns itself off after working for a while

AVR Lightscreen units are fitted with a thermal trip which may operate if the fan vents are blocked or excessively dirty, or if the fan fails. The trip will automatically reset when the unit cools down. Ensure all vents are clean and have free airflow. If the fan does not run when the unit starts up, take the unit to an Abstract dealer for repair.

Unit not responding to DMX

Check if the DMX LED is lit. If not, check that your DMX cables are connected properly and are working. If the LED is lit, check the "DP" option in case the DMX polarity is incorrect. Try all settings of the DP option (AUT, P2 or P3).

Try using a different DMX source (controller or another scan) to check if that is the problem.

If you've tried all these and the DMX still doesn't work, it's possible that the DMX protection circuit is detecting a dangerous level of interference on the DMX line and is disconnecting the unit to protect it. Try running DMX cabling by a different route, avoiding high voltage cables, power lines, or neon.

Unit does not respond to sound

Check that the unit is not receiving DMX (the DMX LED should be off). Check that the LSE (Light Show Enable) option is ON. If the unit is in Master mode, tapping the case should cause the green LED to flash. Quiet or high pitched sounds will not activate the unit.

If still you cannot resolve the problem, it may be that the unit has a fault. You should contact your AVR dealer for assistance.

Trim mode

The TRI option allows you to finely adjust the trimming of all functions in the AVR Lightscreen. You can select C (colour), S (shutter).

Note: The trim values are set at the factory for best effect. You should not need to change the trim values unless the unit has been dismantled. Incorrect trim values can cause the unit to malfunction.

Lamp replacement

The lamp has a rated life of 6000 hours. When the lamp nears its rated life, it may take a long time to come on, not come on at all, or go off during operation.

To replace the lamp, first turn off the unit, remove the power, and if the unit has been operating, wait 15 minutes for it to cool down.

Remove the top casing of the unit by removing the 4 screws. Remove the back panel of the unit (where the display is) by removing the 4 screws.

Remove the old lamp by taking out the thumbscrews in the end plate and withdrawing the lampholder through the rear end of the case. Remove the old lamp from the lampholder and fit the new lamp.

> ***You must not touch the quartz glass of the lamp! Handle by the ceramic base only.***

Replace the lamp into the unit and refit the thumbscrews. Refit the back panel ensuring you do not trap any wires. Replace the top casing of the unit. Power up the unit and set to open white. Adjust the lamp for best brightness and evenness of light using the 3 screws accessed through the holes in the back panel.

Specifications

Colours:	White + 7 dichroic
Lamp:	150W Arcstream 4000K
DMX:	Receive on 1-506
	Transmit on 1-16 (stand alone mode - non-standard DMX)
Audio:	Internal Electret mic with AGC

Power consumption: 300W approx. Internal fuse: T3.15A

 Tel: +44 (0)116 278 8078
http://www.abstractavr.com