STICK-DE3

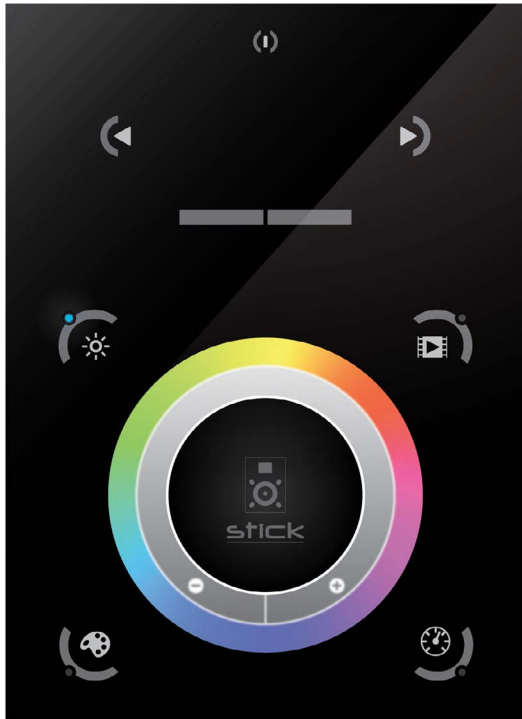**THE SMART LIGHTING COMPANY**

NICOLAUDIE ARCHITECTURAL

Sunlite Touch Sensitive Intelligent Control Keypad

Overview

The feature rich lighting controller has been designed to provide a control solution for the most demanding of projects, whilst maintaining an easy to use panel of touch sensitive buttons. The controller integrates a graphical color screen allowing scene photos to be displayed. Easily view the selected zone, scene name and design without the need to navigate through complex menus. Change the speed, color and dimmer using the circular palette.

The lighting levels, color and effects can be programmed from a PC, Mac, Android, iPad or iPhone using the included software.

www.nicolaudie.com/stick-de3.htm

Key Features

- Sleek glass design which sits 11mm from the wall
- Graphical color display to show selected environment
- Color/dimmer/speed palette
- Color temperature mixing
- Touch sensitive buttons. No mechanical parts
- Touch sensitive wheel allows for accurate color selection
- Multi-zone microSD memory
- Multi-room control with 500 scenes, 10 zones
- 1024 DMX channels. Control 340 RGB fixtures
- USB & Ethernet connectivity for programming and control
- RS232, Dry Contact Ports and an Infra Red input port
- Clock and calendar with Sunrise/Sunset triggering
- Network communication. Control lighting remotely
- Catalog of designs including black and white glass
- OEM customization of the color palette and logo
- Windows/Mac software to set dynamic colors/effects
- iPhone/iPad/Android remote and programming apps

Technical Data

Input Power	6-7V DC 0.6A
Output Protocol	DMX512 (x2)
Programmability	PC, Mac, Tablet, Smartphone
Available Colors	Black / White
Connections	USB, Ethernet, RS232, Clock, 8 dry contact ports, open drain ouput (for relay)
Memory	microSD (32Gb Max)
Temperature	-10 °C to 45 °C
Battery	LIR2032
Mounting	Single or double gang wall socket
Dimentions	146x106x11mm
Weight	247g
Standards	EC, EMC, ROHS, ETL

Optional Accessories

RJ2BLOCK	RJ45 to connector block converter for power+DMX
POWER4M	6-7v ACDC power supply

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EASY INSTALLATION

## 1. Mount an electrical box inside the wall

The controller can be installed in any standard electrical backbox. If you use a double size box, you can insert the power supply inside. Note: We recommend against installing against a metal wall or surface as this can cause issues with the touch buttons.
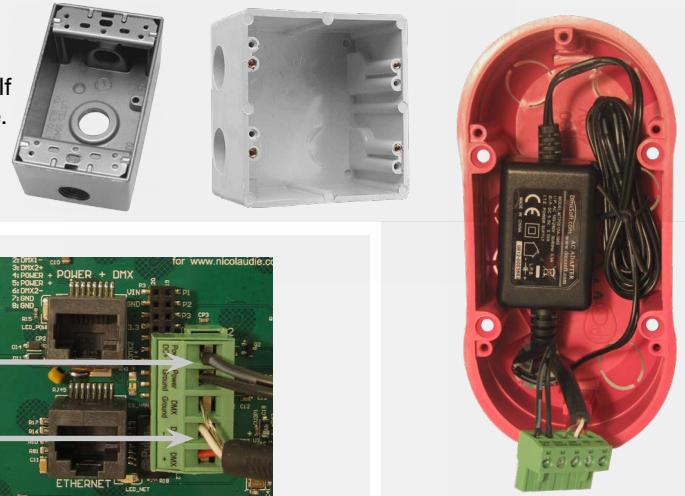
2. Connect the wires

POWER: Connect a 6V to 7V DC 0.6A ACDC supply. Be sure to not invert the + and the ground.

DMX: Connect the DMX cable to the lighting receivers (Leds, Dimmers, Fixtures..) (for XLR: 1=ground 2=dmx- 3=dmx+)
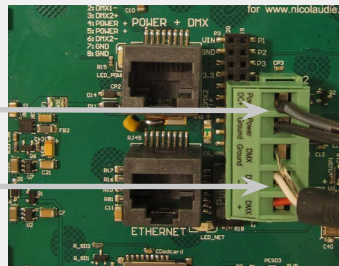
3. Mount the interface on the wall

First, mount the back side of the interface on the wall with 2 or more screws
Secondly, plug the connectors :
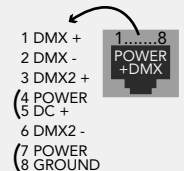- DMX and power (connector block or RJ45)
- Ethernet cable
The front panel is mounted by pressing it against the back plate and then sliding down. 2 screws should then be attached underneith to hold the controller in place.

POWER+DMX
WITH THE CONNECTOR BLOCK

POWER DC +
POWER Ground
DMX Ground
DMX -
DMX +

POWER+DMX
WITH THE RJ45 CABLE

1 DMX +
2 DMX -
3 DMX2 +
4 POWER DC +
5 DC +
6 DMX2 -
7 POWER
8 GROUND

1......8
POWER +DMX

CHECK PIN CONFIGURATIONS. APPLYING POWER TO THE DMX INPUT WILL DAMAGE THE CONTROLLER
MAKE SURE THE CONTROLLER IS MOUNTED WITHOUT TOO MUCH FORCE BEHIND AS THIS CAN PUSH APART THE GLASS
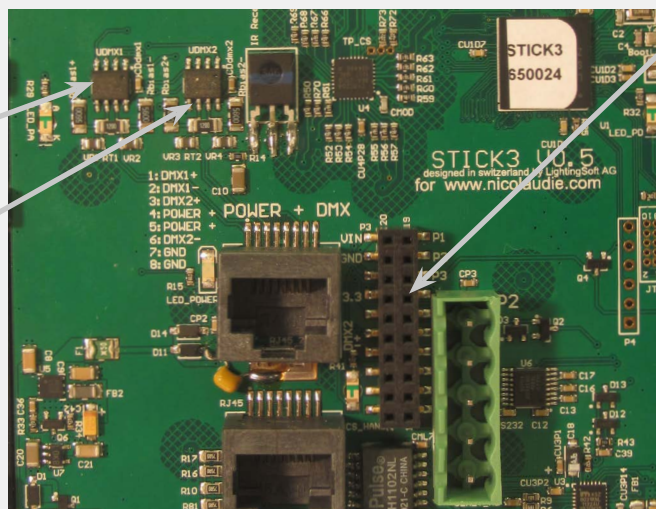
2x10 pins EXTENSION socket

DMX CHIP replacement

DMX universe #1

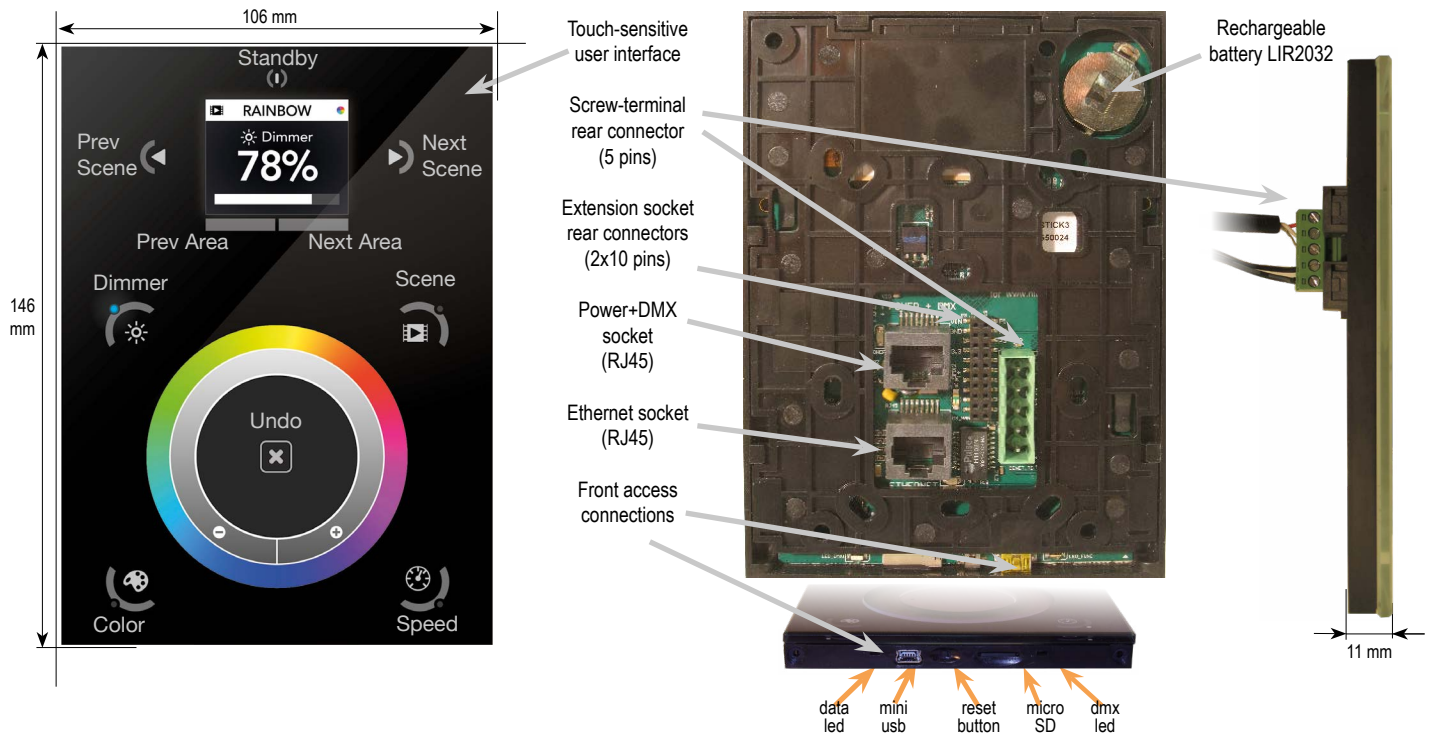DMX universe #2

Ref: SP485ECN-L
         MAX485 CSA

EXTENSION socket

VIN *	20	19	PORT1
GND	18	17	PORT2
IR_RX	16	15	PORT3
3.3V	14	13	PORT4
Relay	12	11	PORT5
DMX2+	10	9	PORT6
DMX2-	8	7	PORT7
DMX1+	6	5	PORT8
DMX1-	4	3	RS232 RX
GND_DMX	2	1	RS232 TX

* VIN pin 20 is not protected and should not be used

Compatible header connectors:
WURTH ELEKTRONIK ref: 61301021121
MOLEX ref: 10-89-7202
TE Connectivity ref: 1-87227-0
FCI ref: 77313-101-20LF
HARWIN ref: M20-9981046
SAMTEC ref: TSW-110-xx-T-D
FARNELL ref: 1841232
RS ref: 763-6754 673-7534 251-8165
MOUSER ref: 538-10-89-7202
DIGIKEY ref: WM26820-ND

Connections & Triggering

Touch-sensitive user interface

Screw-terminal rear connector (5 pins)

Extension socket rear connectors (2x10 pins)

Power+DMX socket (RJ45)

Ethernet socket (RJ45)

Front access connections

Rechargeable battery LIR2032

data led   mini usb   reset button   micro SD   dmx led

Dry Contact Port Triggering

It is possible to start scenes using the input ports (contact closure). To activate a port, a brief contact of atleast 1/25 second must be established between the ports (1...8) and the ground (GND). Note: the scene will not be switched off when the switch is released.

P1   P2   P3   P4 ...   GND
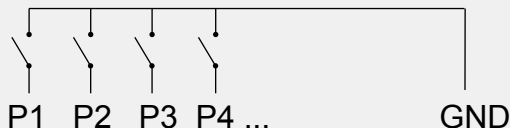
RS232 Triggering

Make a cable using the 3 pins : TX, RX and G (GND)
Set the RS232 parameters to : 9600bds 8 bits, no Parity, 2 Stop bits
Messages should be hexidecimal not decimal (ie. 1 = 01, 255 = ff etc.)
- To play a scene, send 4 bytes :   **1   x   y   255**
- To stop a scene, send 4 bytes :   **2   x   y   255**
- To pause a scene, send 4 bytes :   **3   x   y   255**
- To release a pause, send 4 bytes :   **4   x   y   255**
- To reset a scene, send 4 bytes :   **5   x   y   255**
When (y)=0, (x) can be set between 0 and 255
-to stop scene 145, send the command: 2 145 0 255
When (y)=1, (x) can be set between 0 and 243 to trigger scenes 256-499
-to play scene 300, send the command: 1 44 1 255

BLACKOUT Relay (energy saving)

A relay can be connected between the RELAY and GND sockets of the 20 pin extension socket. This is an open drain ouput that allows current to flow only when the controller is on. It can be used to turn off other equipment such as lighting drivers.

Example Relay :
FINDER Ref.
22.23.9.012.4000

STICK
12V
GND
GND
RELAY
DRL
Imax< 150mA
Relay
2
1
3
4
5
Coil Resistance > 100 Ohms for 12V
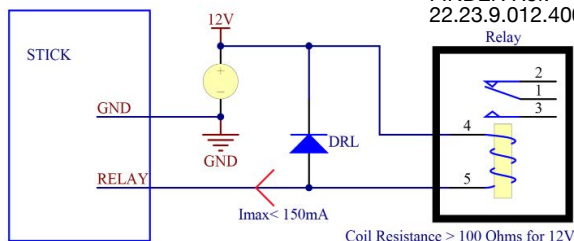
Infra Red

The controller works with the official IR remote control, however there is no receiver. A 36khz infra red receiver can be connected, such as the TSOP34836 by Vishay Semiconductors. Farnell ref: 4913127. This can be attached to the 20 pin connector. It's a good idea to add a resistor and capacitor to surpress power supply disturbance.

+3.3V
IR_RX
GND
100Ω resistor
4.7 µF capacitor
1
2
3
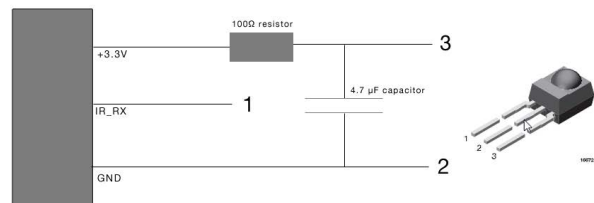
Network Control

The controller can be connected to a local network, allowing it to be controlled from a smartphone or tablet over WiFi.
• Connect the controller to a router or switch with an RJ45 cable
• The controller is set by default to get an IP address from the router via DHCP. If the network is not working with DHCP, a manual IP address and subnet mask can be set using the Hardware Manager
• If the network has a firewall enabled, allow ports 2430 and 2431

TCP Triggering

The controller can be connected to an existing automation system over a network and triggered via TCP packets on port 2431 or UDP packets on 2430. Refer to the remote protocol document for more information.

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Setting up the Controller

iPhone/iPad/Android Control

The controller can be used with one of 3 different apps. Each available at Google Play and the App store.

Lightpad
Designed to work seamlessly with the controller, DMX Lightpad 3 provides an easy way to control your lights over a local WiFi network. Use the wheel to change the dimmer, color or speed, and the arrows to select scenes and effects just like the wall panel. Swipe down to reveal quick access scene selection buttons.

Easy Remote
Create an entirely customized remote controller for your tablet or smartphone. Easy Remote is a powerful and intuitive app allowing you to easily add buttons, faders, color wheels and more. Connect to a WiFi network and the app will find all compatible devices.

Arcolis
The Arcolis application is a comprehensive tool allowing you to directly control and re-program the controller from your smartphone or tablet. This is a simple application which can be used by just about everyone in any situation. Mobile, easy to use and powerful, Arcolis is the ideal controller for dimming or switching traditional, LED and RGB color mixing DMX lighting fixtures. Program static and dynamic lighting scenes and effects. Arcolis is compatible with Android devices only.

http://www.nicolaudie.com/smartphone-tablet-apps.htm

Programming the Controller

The controller be programmed from a PC, Mac, Tablet or Smartphone using the software available on our website. Refer to the corresponding software manual for more information. The firmware can be updated using the Hardware Manager which is included with the programming software.

ESA Pro Software (Windows) - Timeline + Multi-Zone
http://www.nicolaudie.com/en/esapro.htm
ESA2 Software (Windows/Mac) - Single Zone
http://www.nicolaudie.com/esa2.htm

Hardware Manager (Windows/Mac) - Firmware, clock..
http://www.dmxsoft.com/global/ftp/hardwaremanager.zip
http://www.dmxsoft.com/global/ftp/HardwareManager.dmg

Color Temperature Mixing

In addition to mixing RGB using the color pallet, it's also possible to mix up to 3 custom colors. This is useful for mixing color temperature. To set this up, choose the correct profile for your lighting fixture when programming the controller. Profiles for common channel configurations can be found in the 'Generic' folder:
RGBW for Red, Green, Blue, White
RGBA for Red, Green, Blue, Amber
RGBY for Red, Green, Blue, Yellow
WWCW for Warm White, Cold White

Once your show has been written to the controller, tap the color mode button and use the circular palette to change the color. If your lighting fixture has more than 3 color channels, tap the color mode button a second time to mix the additional colors.

Settings Menu

To access the settings menu, hold the standby button for 3 seconds.
- Use the arrow buttons or palette to scrol through the menus
- Use the area buttons to navigate forwards and backwards
- The 'undo' button can also be used to navigate forwards

Mode (M): Manages the on/off button and the 4 modes (dimmer, speed, color, scene)
Arrows (A): Allows you to adjust which modes can be controlled by the arrows
Pallet (P): Allows you to adjust which modes can be controlled by the palette wheel
Scene (S): Scene management
First Start (F): Default settings when the unit is first powered up
Trigger (T): Manages the controllers external triggering properties
Ethernet (E): Enables the Ethernet socket on the controller
Date/Time (D): Manages the date and time stored inside the controller
Graphics (G): Screen management
DMX Output (X): Manage the timings of the DMX output messages and the page priorities (advanced function!)
Sensitive (S): Manage the touch sensitivity settings
Language (L): change the language of the text which appears on the screen
About: check the firmware release date and version number and assign a name for the controller

Service

Servicable parts include:
- Memory card - used to store the scenes
- Battery - used to store the clock/calendar
- DMX Chips - used to drive the DMX (see p2.)

*To replace the Li-Ion rechargeable battery on the DE3 :
1. You need a rechargeable 3.6v LIR 2032 replacement battery
2. Remove the back panel by pulling down and sliding it out.
3. Using a paper clip push the battery from the bottom so it slides out of its cage.
4. Slide the replacement battery in from the top, making sure the positive side is facing up.
5. Replace the back panel by pushing it up into place.

Internal Menu

MODE (M) : Manages the on/off button and the 4 modes (dimmer, speed, color, scene)
  M OFF enable : enables/disables the use of the on/off button so that the controller is permanently on
  M Dimm. enable : when enabled, scenes can be made brighter or darker
  M Color. enable : when enabled, the color of a scene can be changed
  M Speed. enable : when enabled, dynamic scenes can be made faster and slower
  M Scene. enable : when enabled, the scene can be changed
  M Auto mode : when enabled, the controller will revert to the default mode after it has been left for a specified period of time
  M Auto time : the amount of time the controller will wait before reverting to the default mode
  M Default : the default mode which the controller will revert to after a certain amount of time
  M Dimmer 100% : when enabled, the dimmer mode will adjust between 0% and 100% without saturating to white between 100% and 200%
  M Lock Control : Once this is enabled, you can hold the dimmer button for 5 seconds to enable/disable lock mode. It's automatically activated after 120 seconds. When lock is activated, you'll see a red border around the screen

Arrows (A) : Allows you to adjust which modes can be controlled by the arrows
  A Dimmer enable : allows for the Dimmer mode to be controlled by the arrows
  A Color enable : allows for the Color mode to be controlled by the arrows
  A Speed enable : allows for the Speed mode to be controlled by the arrows
  A Scene enable : allows for the Scene mode to be controlled by the arrows
  A Default : the mode to jump to when the arrows are pressed, if the arrows are not enabled on the selected mode

Pallet (P) : Allows you to adjust which modes can be controlled by the palette wheel
  P Dimmer enable : allows for the Dimmer mode to be controlled by the palette wheel
  P Color enable : allows for the Color mode to be controlled by the palette wheel
  P Speed enable : allows for the Speed mode to be controlled by the palette wheel
  P Scene enable : allows for the Scene mode to be controlled by the palette wheel
  P Default : the mode to jump to when the palette is pressed, if the palette is not enabled on the selected mode

Scene (S) : Scene management
  S 0(off) enable : displays an empty off scene before scene 0 in each area
  S Pause enable : allows a scene to be paused if the scene mode button is held for 1 second
  S Stop enable : allows a scene to be stopped if the scene mode button is held for 4 seconds
  S Fade config : manages fading between scenes
      From Show : the fade time set inside the show file will be used
      Force : the automatic fade time set in the menu will override all fadetimes in the show file
      Force Max : the controller will look at the show file fade time and the menu fade time and use the greatest
      Force Min : the controller will look at the show file fade time and the menu fade time and use the smallest
      Never : the controller will never fade between scenes
  S Fade time : the time of the automatic fade between scenes
  S Setting management : determines how dimmer/speed/color overrides are saved
      SaveAlways : the dimmer/speed/color overrides all scenes until the reset button has been pressed
      NeverSave : the dimmer/speed/color is never saved
      AutoReset : the dimmer/speed/color is saved on the current scene
  S Trigger : sets the scene triggering mode. Time Delay and Scene Butt allow for scenes to be scrolled through without playing
      Auto : the scene will be triggered as soon as it's selected
      Time Delay : a short delay is added before a scene is triggered
      Scene Butt. : the selected scene will not play until the scene button is pressed

First Start (F) : Default settings when the unit is first started
  F Scene Nr. : specify a default startup scene. 'Scene Star' mode must be enabled in the Scene Mode options (below)
  F Start Scene Mode : manages the startup mode for scene selection
      Scene Star : activates a specific scene at startup. The scene number is set in the F Scene Nr. option (above)
      Recovery : activates the previous calendar/time triggered scene. Useful for recovering from power interuptions
      Off: activates the off scene
  F Display Time : when enabled, the time will be displayed on the screen at startup
  F Display Firm : when enabled, the firmware version will be displayed on the screen at startup
  F Start Trigger : when enabled, in combination with Recovery mode, a calendar triggered scene will start from where it was last playing, after a power interuption. When disabled, a scene will start at the beginning.

Trigger (T) : Manages the controllers external triggering properties
  T Time enable : enables the clock triggering
  T Ports enable : enables the 8 dry contact ports
  Binary Mode : enables ability to trigger 256 scenes using binary combinations of contact ports
  Port Replay : when enabled, retriggering the same port will restart the same scene at the beginning
  T RS232 enable : enables scene triggering by RS232
  T IR enable : enables the infra red port (disabled by default to prevent interference)
  T UDP enable : allows the controller to send and receive UDP messages required for network control
  T Blackout port : enables the blackout relay output which is triggered when the stanby putton is touched

Ethernet (E) : Manages the controller's network settings
> **Ethernet :** enables the ethernet socket on the controller
> **LAN :** enables network disovery
> **WAN & Remote :** enables direct IP connections from WAN and remote locations (i.e. the internet)
> **Wan Port :** define port to connect to controller (default is 2431)
> **Software Pwd :** define password to connect programming and configuration software
> **Remote Pwd :** define password to connect remote control apps (e.g. EasyRemote and Lightpad)
> **Dynamic IP Addr :** enables dynamic IP addressing (DHCP) which allows the controller to obtain an IP address from a router
> **Sync Blackout:** when this open is enabled, all other controllers on the network will go into standby when the standby button is pressed
> **Enable NTP :** enables Network Time Protocol. The controller will synchornise the clock with the internet if a connection is available
> **Dynamic IP Add :** If enable, the controller will look for a DHCP server to receive network settings
> **Sync Blackout :** sychronises blackout mode across all controllers on a network
> **Enable NTP :** enables time sychronisation over the internet
> **NTP Server :** the IP address of the server to synchronize the clock. The default is 005.135.141.108
> **DHCP Status:** shows whether DHCP has assigned a valid IP address. DHCP success or fail displayed
> **Device's IP Add :** the controller's static IP address that it will use if it does not receive an IP address via DHCP
> **Lease :** the lease time for a IP address given by DHCP
> **Mask:** the subnet mask of the controller if not set to DHCP. Generally this is 255.255.255.0
> **Default Gateway :** the IP address of the router if not set to DHCP
> **MAC Address :** a unique ID used to identify the controller on the network

Date/Time (D) : Manages the date and time stored inside the controller
> **Date :** the controllers date
> **Time :** the controllers clock time
> **G Bright normal :** the % brightness when the controller is not sleeping G Bright sleep: the % brightness when the controller is sleeping
> **G Bright LED :** the % brightness of the mode and reset LEDs

Graphics (G) : Screen management
> **G Image enable :** allows for images to be shown for each scene if they have been assigned in the programming software
> **G Image full :** when enabled, the image will be displayed in full screen and the scene and area will not be visible
> **G Image time :** the time it takes before the image is displayed in full screen
> **G Sleep enable :** when enabled, the screen brightness will dim after a certain amount of time
> **G Sleep time :** the amount of time to wait before sleeping
> **G Bright normal :** the brightness of the screen's backlight
> **G Bright sleep :** the brightness of the screen's backlight whilst the controller is sleeping
> **G Bright LED :** the brightness of the scene, undo and standby LED's

DMX Output (X) : Manage the timings of the DMX output messages and the page priorities (advanced function!)
> **X MBB :** Mark Before Break- the time to wait between sending each 512 channel DMX message (or 'packet')
> **X Break :** Break- the time to wait just before sending a new packet, resetting the DMX line
> **X MAB :** Mark After Break- the message which tells your receiver to begin reading data
> **X MBS :** Mark Between Slots- the delay time between sending each DMX channels data within the DMX packet
> **Univ-1/Univ-2 :** each timing can be set differently depending on the universe number
> **X Alphab Mode :** if the same scene is triggered in the global area and a second area, the area with the highest letter will take priority
> **X LTP Mode :** If the same scene is triggered in the global area and a second area, the latest scene triggered takes priority

Sensitive (S) : Manage the touch sensitivity settings
> **S USB Init :** reset the touch sensitivity when the USB is connected and disconnected
> **S Auto Time :** the time to wait before automatically resetting the touch sensitivity
> **S High Sense :** when enabled, the sensitivity will be increased
> **S See Values :** see each touch sensitive button number and palette value

Language (L) : change the language of the text which appears on the screen

About : check the firmware release date and version number and assign a name for the controller

Reset : Reset all settings to the factory default

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Troubleshooting

Touch buttons not responding

If the STICK is not responding to touch input, this could be because the touch sensitive buttons have recalibrated incorrectly. In this state it is common for the display to be stuck on RGB values. This is not a hardware fault and can be resolved.

The back of the Stick-DE3 is not electrically shielded because it is designed to be mounted against a wall. If electronic interference happens through movement, touching of your hands and/or cables at the back, this can cause the symptoms described above.

To avoid this problem:
· Only power the Stick-DE3 on once it is securely mounted and is not able to move. Ensure the cables are also not able to move.
· We do not recommend mounting on a metal surface as this is known to cause interference with the touch buttons. In some cases, connecting earth to the metal surface and to the Stick-DE3 GND can solve this. In many cases, the Stick-DE3 will need to be mounted against a non-metallic surface.
· Mount using a deep back box with enough space for the cables. Try to avoid the cables touching the back of the PCB.
· Mount on a completely flat surface. This will prevent bending.

All LEDs on the controller are flickering

There has been no showfile detected on the SD memory card.
· Try formatting the SD card in the computer
· Try re-writing the show file
· Try replacing the SD memory card

The lights are not responding

· Check the DMX +, - and GND are connected correctly
· Check that the driver or lighting fixture is in DMX mode
· Be sure that the DMX address has been set correctly
· Check there are no more than 32 devices in the chain
· Check that the DMX LED is flickering to the right of the SD card
· Connect with the computer and open Hardware Manager (found in the software directory). Open the DMX Input/Output tab and move the faders. If your fixtures respond here, it is possibly a problem with the show file

All LEDs on the controller are flickering except the standby LED

There is no SD card detected.
· Check the SD card is properly connected
· Check the SD card is 32Gb or less in size
· Try formatting the SD card to FAT16 or FAT32 in the computer
· Try re-writing the show file
· Try replacing the SD memory card

4 Mode LEDs on the controller are flickering

The controller is in bootloader mode. This is a special 'startup mode' which is run before the main firmware loads.
· Check that there is nothing metallic touching the back of the controller
· Try re-writing the firmware with the latest hardware manager
· Try formatting or replacing the SD card

Displayed error messages

You may see one of the following messages on the LCD display

INIT SD	If this message is frozen, it means the controller is having a problem initialising the SD card
NO SD CARD	No SD card detected
DATA ERROR	The controller can read the SD card, however, it can't understand the data on it
EMPTY SD	The SD card is empty
CAPSENS	Problem with the touch sensitivity chip detected. · Remove USB cable from controller · Update firmware to 1.09 or later · If above does not solve it, contact support
ERROR xx	· Try rewriting your show · Contact support with error number
RTC QUARTZ	Contact support

The controller is not detected by the computer

· Be sure that the latest software version is installed
· Connect by USB and open the Hardware Manager (found in the software directory). If it's detected here, try to update the firmware

Cannot write show

· Use HardwareManager to write an Empty Show
· Format your SD card to FAT format without Quick option