ICELED™

ELECTRO STYLING

ZEN

USER GUIDE
INSTALLATION GUIDE

WARNING

This product has been deliberately designed to create a highly noticeable lighting effect that will turn heads at car shows and exhibitions. Because of this it is EXTREMELY important that it is **NOT USED ON THE PUBLIC HIGHWAY** to prevent the distraction of other road users.

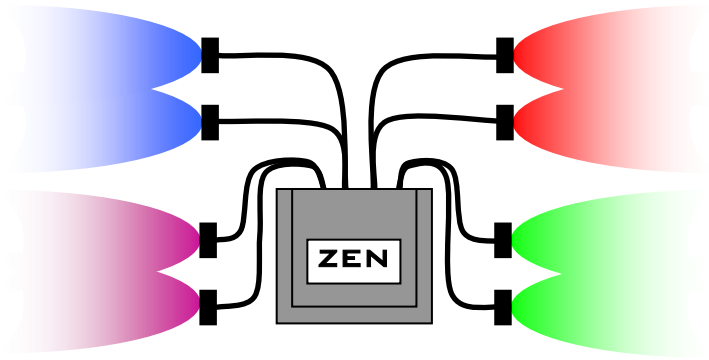
Having issued this warning ICELED Will not accept any responsibility for issues arising from any failure to comply with this clear instruction.

ICELED Will not accept responsibility for any other issues arising from improper use or fitting of this product as these matters are beyond our control.

This product is capable of producing stroboscopic lighting effects when connected to IceLed light sources.

Features

ICELED ZEN is a programmable lighting controller that can independently connect and command between one and four zones of interior or exterior ICELED light sources. ZEN allows each Zone to be lit with different colours and intensity levels according to one of 10 user-predefined Programs. Simply selecting the appropriate Program can quickly make dramatic changes to the entire lighting arrangement.



The four zones may correspond to separate areas - inside a car for example: floor; console; under-dash and roof lights.

Some zones may need to be dimmed-out for driving – in which case certain Programs can be edited to dim these zones and can be selected whenever required.

Not all zones have to be connected however. ZEN will be equally useful providing control over fewer than four zones. If more than four zones are required, additional ZEN controllers can also be linked together to bring even more zones under control.

Lighting effects

Each of the 10 Programs has access to a number of lighting effects that can be applied to individual zones. For example, a variable-speed 'sweep' effect cycles through a predetermined range of colours. Sound reactivity can also be applied to animate the colour or other qualities of the light produced in time with music. A further option allows zones to be synchronised to other ICELED controllers such as UFO when present. A separate 'lightning' Program causes all zones to strobe in random sequences. Steady light is, of course, also an option.

Automatic operation

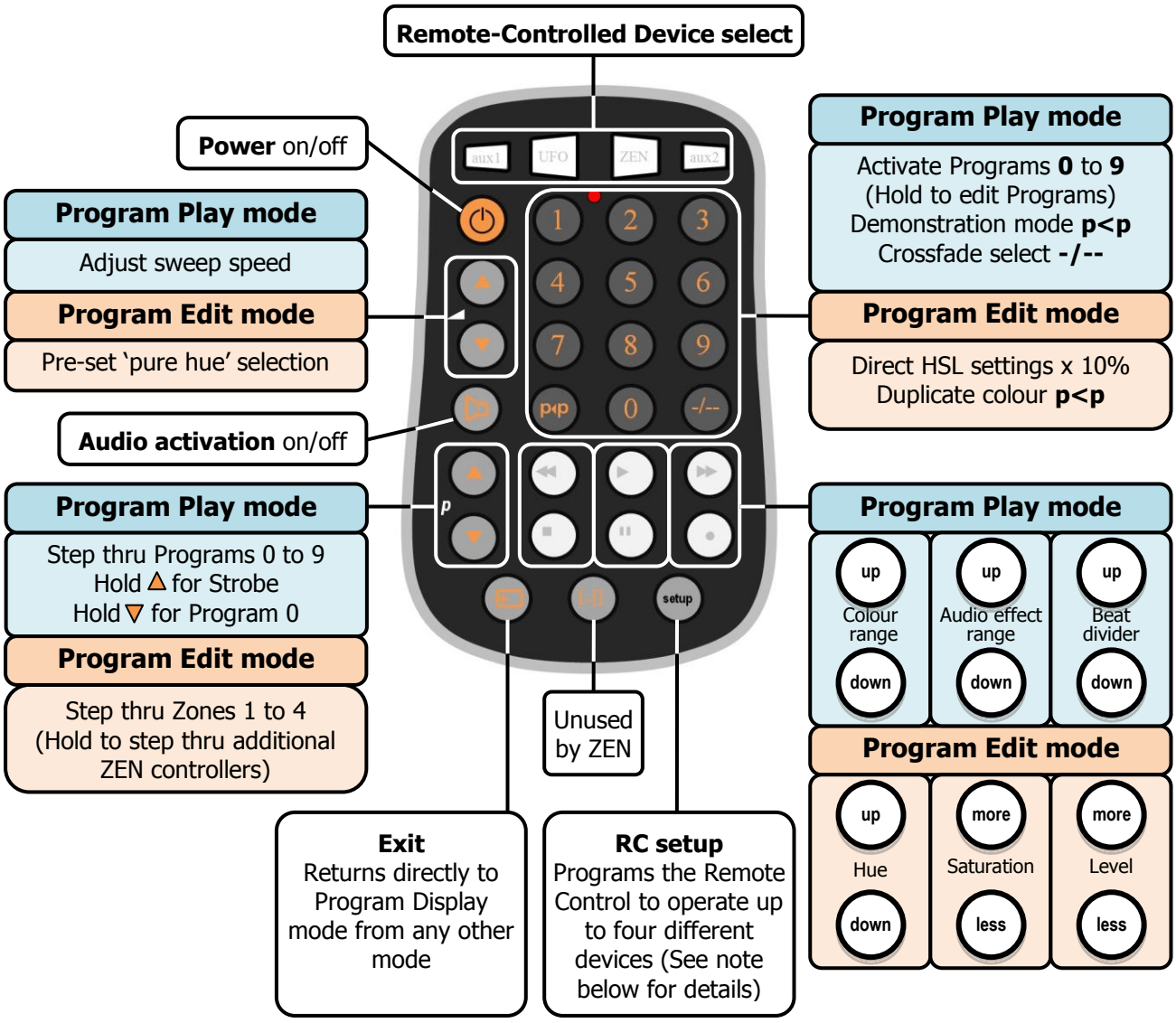
Each ZEN has an Enable input that can be connected to an external circuit (e.g. door switch or PIR sensor) allowing a pre-set lighting scheme to be switched-on automatically whenever the external circuit is active. The most obvious application is for switching-on interior lighting when doors are opened, however, ZEN may also be useful for the automated control of external lighting where the colour of each zone can be pre-set to conform to a particular lighting requirement e.g. white to the front, red to the rear on vehicles. At other times different Programs can be selected to override those colours if so desired.

Energy Saving and Domestic use

Equally at home in the house, car or boat, ZEN has a number of programmable functions to suit many different environments – including an energy-saving facility that automatically dims the lighting if left switched-on in unattended areas.

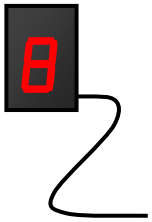
Remote Control quick-reference

For your convenience the remote control handset supplied with ZEN is a "universal" type that can be programmed to operate up to four different remote-controlled devices. In addition to being used to operate ICELED controllers it may therefore also be used to operate common Audio/Visual equipment. As supplied the handset is pre-programmed to operate ZEN on both of the rightmost device buttons. Be sure to press one or other of these device buttons before you attempt to operate ZEN.



*To assign a particular code to a **device button** first press the target device button then press and hold the setup button until the indicator lights. Finally enter the four-digit device code for your equipment. The indicator should go straight out. If it flashes twice then the code is not allowed.*

*The device code for ZEN V7 is **1703***



Remote Display

The signal from the Remote Control handset is received by the discrete remote display module plugged into the ZEN controller. When buttons are pressed on the handset, the indicator on the handset should light and the remote display module should also respond accordingly.

ZEN Terminology

ZEN makes extensive use of the **HSL Colour model** to provide easy access to a wide range of attractive colours and effects. This model specifies colour using three components familiar to artists: ***Hue***, ***Saturation*** and intensity ***Level***.

Whenever 'colour' is mentioned in this guide, it should always be thought of as being a particular combination of various values of *hue*, *saturation* and *level* resulting in one of the millions of colours that ICELED light sources can produce – including pastel shades, white and even black. The following diagrams should make the role of each colour component easy to recognise:

Hue: Adjusting the value of **Hue** shifts the colour along the visible spectrum e.g. from magenta to blue.

0%  100%

Saturation: For any given *Hue* (e.g. blue in the example below) increasing the value of **Saturation** produces a purer *Hue* – or a more vivid colour.

0%  100%

Level: For any given combination of *Hue* & *Saturation* (e.g. pale blue in the example below) increasing **Level** boosts the overall amount of light produced.

0%  100%

*Lower **Saturation** settings result in brighter, whiter, colours. However, some effects like the sweep function will be unable to influence colours with very low saturation.*

*To adjust the **Hue** of such colours, first increase the saturation so that the hue can*

***Levels** should normally be kept at their maximum except for when deliberately dimming-down certain zones or making them completely*

Home Colours

In order to establish a particular lighting theme for each Program, all zones may be assigned individual 'home' colours in the **HSL** format described above. Home colours provide a starting point for the various effects and are set up in **Program Edit** mode. Each ZEN controller holds a total of 44 home colours.

ZEN Operating Modes

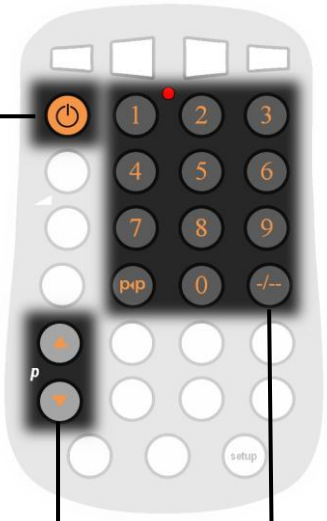
The four different modes that ZEN operates in are summarised in the table below. For context, during use, a letter indicating the current mode will briefly appear as a prefix on the remote display when certain operations are performed.

Mode	Activity	Prefix
Standby	Ready for switch-on with remote control	.
Program Play	Zones are lit according to the selected Program	P
Program Edit	Home colours and options are re-defined	E
Functional setup	ZEN functionality is customised to suit the installation	F

Basic operation – switching on

A small glowing dot in the corner of the remote display indicates that the ZEN controller is powered-on but waiting in **Standby** mode, ready to be switched-on fully by the remote control. In standby mode power is removed from all zones so that current consumption is reduced to the absolute minimum.

A single press of the power button turns all Zones on or off.
At switch-on the *most recently selected Program* will be recalled. Alternatively, pressing any numbered button selects the corresponding Program directly. In either case ZEN enters **Program Play** mode and each Zone lights-up showing its own programmed colours.



Remote display information

At switch-on or Program change, the remote display shows the current Program number prefixed by the letter **P** e.g. P 1 but the remote display may also provide other useful information depending on the operation being performed at the time.

Program selection

In addition to the number buttons **0-9** the ▲ and ▼ buttons labelled **P** can also be used to step sequentially through each of the 10 pre-set Programs plus the 'Lightning' strobe effect. Once the highest or lowest Program number has been reached, the buttons will cease to step any further in that direction.

A smooth transition will usually be generated between one Program and the next but **Crossfading** may be toggled on and off with alternate presses of the **-/--** button: This setting is remembered for each individual Program.

Demonstration feature

ZEN can be instructed to make a continuous sequence of random Program selections on its own. A random selection is initiated on each press of the **p<p** button and the sequence continues until cancelled. If an audio trigger is present each new random Program will be selected in time with the music. Any other button-press immediately cancels **Demonstration** mode and restores manual Program selection.

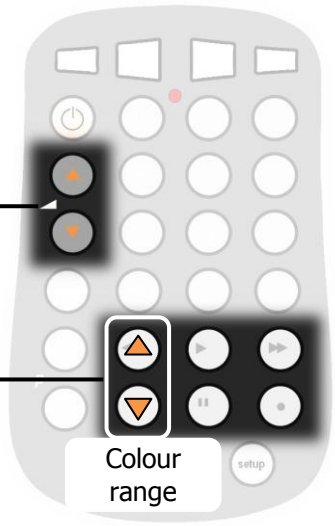
Program recall

Each Program recalls a number of settings that can be adjusted to generate a unique lighting arrangement. Settings that apply to all zones in a Program are adjusted 'live' in **Program Play** mode. Settings that apply to each individual Zone are adjusted in **Program Edit** mode. The following table summarises all the settings recalled whenever a new Program is selected:

Setting	Zone 1	Zone 2	Zone 3	Zone 4	*Adjusted*
Sweep speed	Min–max				*Live* in Program Play mode
Colour Range	Manual, 1–9, unlimited, random				
Audio effect	Level–hue–saturation				
Beat divider	Pattern a–d, 1:1 1:2 1:4				
Crossfade	On/off				
Home Colours	HSL	HSL	HSL	HSL	In Program Edit mode
Zone Options	Free UFO Mute Lock	Free UFO Mute Lock	Free UFO Mute Lock	Free UFO Mute Lock	

Program Play mode – Live adjustments

In **Program Play** mode the four vertically arranged pairs of buttons shown below can be used to make immediate changes to the recalled settings for the lighting Program on display.



Colour sweep-speed

The rate at which colours are swept around their home settings can be altered from slow to fast using the two 'ramp' buttons. At the lowest setting sweeping is temporarily halted at the colours on display.

All lit Zones will flash to warn whenever high or low adjustment limits have been reached.

Colour range

The colour sweep can be adjusted to include a wider or narrower range of colours using the leftmost pair of multi-function buttons. If the range is set to zero the 'ramp' buttons shown above will shift the colour manually instead of changing sweep speed.

Available colour ranges

The Colour range buttons step up and down through the ranges listed below. The selected range applies to all zones.

Remote display	Colour range	Example
C r	**Random** colours	
C U	**Unlimited** colours	
C 9	90% of spectrum	
C ▪	40 – 80%	----------
C 3	30%	
C 2	20%	
C 1	10%	
C 0	Manual colour selection	^Home colour

When selecting a colour range the remote display briefly shows C *followed by a letter or number from the table on the left.*

After a few seconds without any changes the display returns to showing the current Program number. Similar letter/digit sequences are used in many other operations.

Ranges 1 to 9 restrict the colour sweep to varying percentages of the colour spectrum starting from the home colour. The sweep repeatedly cycles away from, and returns to the hue of the home colour in 10% increments.

10	20	30	40	50	60	70	80	90	%
^Home colour									

Unlimited colours sweep through the entire spectrum while **random** colours are obtained from a 'random walk' around the spectrum.

All zones being swept will be *hue-shifted* relative to their *home colours* set in **Program Edit** mode. This means that if all zones were pre-set to the same *home colour* they would all continue to track together showing the same sweeping colour. If different *home colours* were pre-set in each zone then their relative offsets in *hue* will be maintained so that different colours would continue to be shown in each zone.

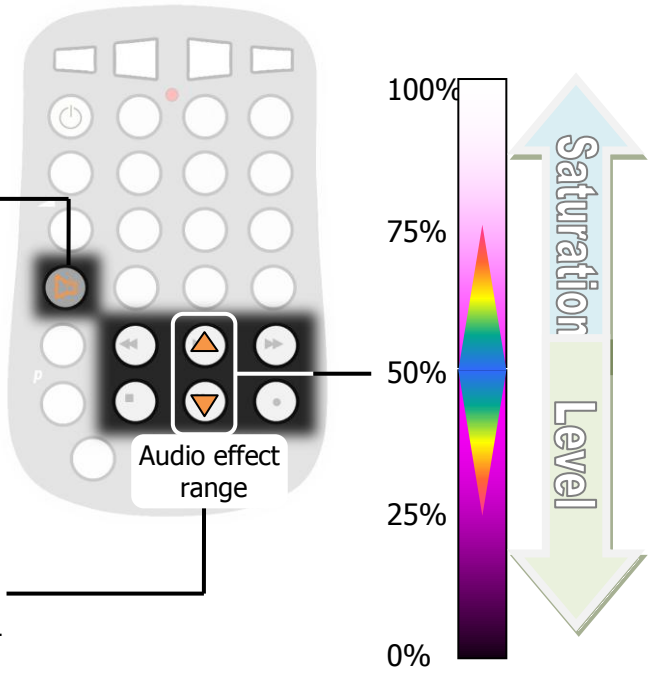
Audio activation

Audio activation is toggled on and off with each alternate press of the loudspeaker button.

The small dot on the remote display lights brightly when audio activation is enabled and blinks in time with the internal beat detector.

Adjusting the audio effect

If zones are free to respond to sound then the way they do so is determined by the setting of the Audio effect range which manipulates the HSL colour components in various ways.



In the top 50% of the range each audio beat reduces the *saturation* of the colour towards white. The saturation effect becomes more pronounced the further towards the maximum limit the setting is taken. At 100% each beat completely de-saturates the colour forcing it to white before settling back to the amount of saturation defined by the *home colour* after the beat. While in this upper control region the remote display shows the symbol on the right.

In addition to the saturation effect, around the centre of the range, every beat also steps the *Hue* of each zone by a variable amount. The size of this step varies symmetrically either side of the centre of the range with the 50% position providing the biggest step. This position also coincides with zero change in both *Level* and *Saturation* and is identified with **–** on the remote display. The step in *Hue* falls off to zero below the 25% and above the 75% points leaving only *Level* or *Saturation* affected by the audio beat.

In the lower 50% of the range the audio beat increases the *Level* of each zone pulsing it to the *home colour* setting before fading back into darkness until the next beat arrives. Increasing the setting gradually raises the minimum *Level* up to a point halfway through the control range at which point no dimming will occur at all. While in this lower control region the bottom three segments on the remote display illuminate as shown.

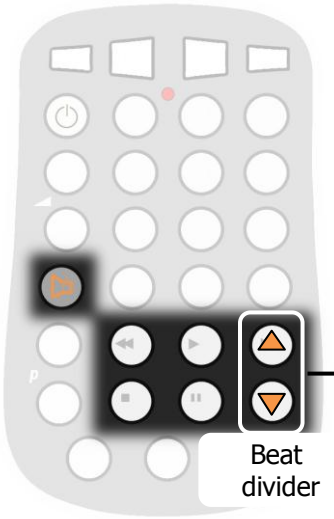
The audio effect can be disabled for individual Zones in **Program Edit** mode. This might be useful for setting up Programs having particular zones that are less distracting than others. Disabled zones may still respond to colour sweeping if desired using the options described on page 9.

For any given Program, the chosen Audio effect applies globally to all zones opted-in for sound activation.

Other Programs may be configured with different effects to create a variety of lighting schemes each with their own distinct appearance.

Audio beat divider

The triggering of audio effects can be modified by the beat divider setting. Four different trigger patterns can be selected (a b c d) and each pattern can be set to respond to every beat, every second beat or every fourth beat.



Remote Display	Trigger pattern
d 4 d 2 d 1	All zones respond simultaneously
c 4 c 2 c 1	Effects alternate between zones 1 & 3, 2 & 4
b 4 b 2 b 1	Effects alternate between zones 1 & 2, 3 & 4
A 4 A 2 A 1	Each zone responds sequentially

Program exceptions

Program 0 can also be activated automatically by an external circuit e.g. a switch operated by an opening car door. This is only effective when ZEN is in **Standby** mode so an opening door will not override a Program already in use. Switching off the unit with the remote control *when* Program 0 has been circuit activated temporarily disables this feature as it suggests that lights are not required to switch-on automatically. Automatic operation is restored the next time ZEN is switched on using the remote control.

In the case of being switched-on automatically by opening a car door, Program zero will remain on for a short period after the door is closed to provide an interior light delay facility.

By sensing the supply voltage, ZEN brings about an early termination of this period when the car engine is started or when leaving the car.

Leaving the vehicle

If a Program is actively providing interior lighting, selecting **Program 0** instead of switching-off before leaving the vehicle will continue to provide ambient illumination. Once selected, Program zero remains on until the enable input instructs it to switch off automatically. This will be the case once the door has been opened and closed.

Strobing

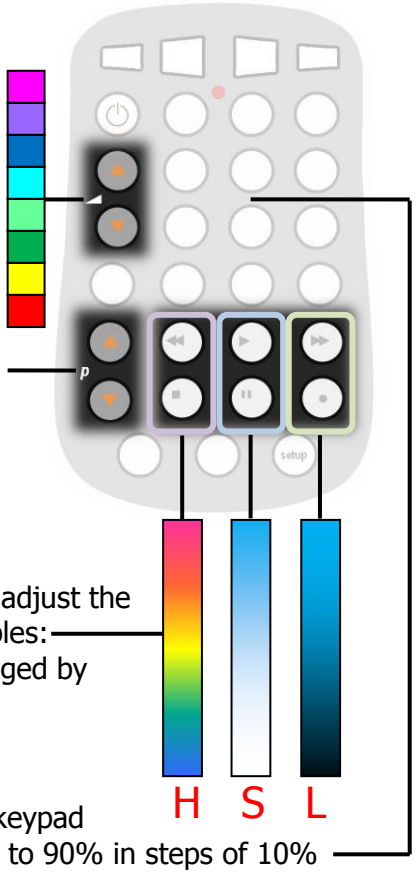
In order to prevent inadvertent operation, the 'Lightning' strobe effect can only be activated by holding down the **p** ▲ button for two seconds. The strobe responds to sound activation and to the speed control. When the strobe is engaged the remote display shows P L To enter **Program Edit** mode for the strobe hold down the **p** ▲ button, while the strobe Program is active, for a further two seconds.

In **Program Play** mode the audio effect buttons control the degree to which all zones strobe together. At the lowest setting zones flash independently in a random sequence. At higher settings zones tend towards flashing together.

Program Edit mode – Pre-set Adjustments

Every Program recalls its own set of *home colours* – one for each zone. To edit the home colours for a particular Program **press and hold down the corresponding Program number button until E 1 appears on the remote display**.

On entering ***Program Edit*** mode, zone 1 is selected by default and all zones are frozen on their *home colours*. All the buttons detailed below assume different functions to those assigned in Program Play mode.



Standard Hues

The two 'ramp' buttons quickly step through a pre-set selection of eight pure Hues (Saturation and Level both pre-set to maximum) providing a useful starting point for fine-tuning with the HSL button group below.

Zone Selection

The △ and ▽ button pair labelled **p** step up and down through each of the four zones to be edited. The remote display shows E 1 to E 4 to confirm which zone has been selected and all light sources connected to that zone briefly blink in white to identify themselves as ready for editing.

Hue - Saturation - Level

The next three pairs of multi-function buttons to the right adjust the individual colour components as illustrated in these examples: The remote display shows which component is being changed by temporarily flashing H S or L on the remote display.

Direct numeric entry of component values

In addition to adjusting HSL with the button pairs above, keypad buttons **0** to **9** can be used to enter values directly from 0 to 90% in steps of 10% The **-/--** button enters a value of 100%. Values entered with the numeric buttons update the most recent component adjusted by the HSL button group.

Zone options

In addition to a **HSL** colour definition, each zone has four options determining how the zone reacts to colour changing influences. To select one of the available options, press the audio button to cycle continuously through each of the four available options with each successive press.

A series of blinks from the zone being edited keeps track of the option selected for that particular zone. To select any of the four options shown in the table below, repeatedly press the audio button until the corresponding number of blinks is seen.

Blinks		
1	Free	Zone is free to colour sweep and react to sound
2	UFO	As above but will be overridden by UFO if present
3	Mute	Zone is colour swept only (doesn't react to sound)
4	Lock	Zone remains fixed on home colours

Duplicating a zone colour

The home colour of the currently selected zone may be duplicated into another zone at any time during Program editing. Zone duplication can also take place between different Programs.

A short press of the **p<p** button makes an internal 'copy' of the currently selected colour and a long press 'pastes' this copy into any other zone(s) selected thereafter. To draw attention to the impending duplication, the remote display starts to flash rapidly shortly before the selected zone is updated with the duplicate colour.

Exiting Program Edit mode

To leave **Program Edit** mode press the **Exit** button shown to the left. **Program Play** mode is resumed with the new home colours and options. As with all other ZEN settings, Program editing is saved in non-volatile memory which is retained indefinitely in the absence of a power supply.

Factory default settings

An arbitrary set of 'Factory defaults' are provided to allow the controller to be demonstrated immediately following installation. All Programs can be edited to suit individual requirements thereafter. The following table gives an overview of the default settings provided:

Program	Live Program adjustments				Home Colours & Options			
	Sweep speed	*Colour range*	*Audio effect*	*Beat divider*	Zone 1	Zone 2	Zone 3	Zone 4
PL	fast	Cr	n	d1	Free	Free	Free	Free
P9	fast	Cr	u	A4	UFO	UFO	UFO	UFO
P8	fast	Cr	-	A2	Free	UFO	UFO	UFO
P7	medium	CU	n	b2	Mute	Mute	UFO	UFO
P6	medium	C7	n	c2	Free	Free	Free	UFO
P5	medium	C5	u	d2	Mute	Mute	Free	Free
P4	slow	C3	n	A1	Free	Free	Free	Free
P3	slow	C2	n	b1	Free	Free	Free	Free
P2	slow	C1	u	c1	Free	Free	Free	Free
P1	manual	C0	u	d1	Free	Free	Free	Free
P0	manual	C0	-	d1	Lock	Lock	Lock	Lock

The full set of Factory Defaults shown above can be restored using the reset function described in the section that follows.

Custom Installation Functions

As ZEN may be used in a wide variety of different environments, a number of options are available to customise the controller for different types of installation.

In order to select one or more of the required functions listed in the table below, the controller must first be switched-on with a three-second long press of the power button on the remote control handset.

After the initial unit switch-on, the power button must be kept pressed **until** the remote display flashes **E F** indicating that the controller is ready for a function number to be entered on the numeric keypad. Once >**F**< is flashing on the display, the power button can be released and the controller waits for one of the following number button presses to select the desired function:

Option	Button	Function	Default	Typical application
Factory defaults	**0**	Restore (!)		Re-installation
ZEN state after Power-up	**1**	Standby mode	✓	Vehicle installation
	2	Last mode in use		Domestic installation
External Enable circuit **E**	**3**	Active low	✓	Switched to ground
	4	Active high		Switched to +12V
Automatic Power-saving	**5**	Disabled	✓	Vehicle installation
	6	Enabled		Domestic installation
Strobe Program in Demo mode	**7**	Exclude	✓	On-road use
	8	Include		Off-road use

On pressing any of the function buttons listed above, the controller briefly displays the function number entered e.g. **E 2** and then returns to the flashing >**F**< symbol in readiness for any further Functions to be entered.

To finally execute and store the selection(s) made from the table above, the power key must be pressed to confirm the operation. The controller will then return to the power-up state after a few seconds.

To abandon all selection(s) without making any changes at all, press the exit button. In this case the controller ignores the selection and restarts in exactly the same state as it was before.

(!) Restoring the **Factory Defaults** overwrites **all** Program colours and settings with the factory defaults shipped with the controller - so use with extreme caution.

Power-up refers to the connection of a nominal 12V supply to the controller. In a domestic installation, where the controller is powered from a 12VDC transformer, switched by a lighting circuit, it may be desirable to have the controller automatically resume the last Program selected rather than wait remote control.

Automatic Power-saving refers to a reduction in Intensity after an unbroken ten minute period of inactivity. Levels are slowly reduced to 25% of their programmed values to save electrical power when not needed, and returned to full when activity resumes. Activity is determined by any of three triggers: Ambient sound level; remote control usage; Enable circuit activation e.g. a PIR detector connected to the **E** input (the active level of the E input being determined by functions 3 & 4).

Mechanical and Electrical Installation

The complete kit consists of:

1 x ECU	1 x Fused supply wire
1 x Remote display	1 x Chassis return wire
1 x Remote control handset	3 x Self-tapping screws for mounting ECU
	1 x Self-tapping screw and washer for chassis return wire

Step 1: Install the ECU

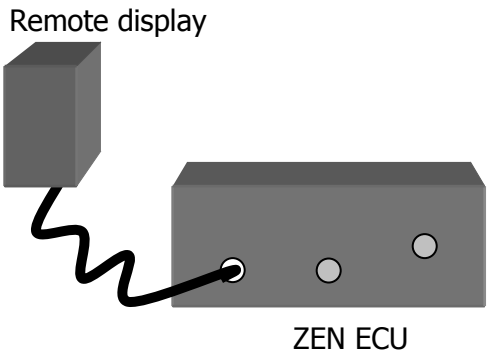
The ECU must not be exposed to moisture or excessive heat so should therefore be located inside a car or luggage bay – not outside or within an engine bay. An ideal location might be somewhere under the dashboard, with a short route to the car battery. The box should be secured to a flat surface using the three short self-tapping screws provided. Ensure that the drilling of these holes will not damage wiring or other equipment on the other side. Care should also be taken not to over-tighten these fixings.

Installation should be carried out in the following sequence after first reading through every step (this will assist in locating everything in the best position).

A fourth hole will be required nearby to attach the chassis return wire. It is not sufficient to use any of the case screws for this connection, as it needs to be fully tightened in order to make a good connection to the metalwork. **Do not connect either of the power wires yet**.

Step 2: Locate the remote display

The remote display unit plugs into a socket on the rear of the ECU.



The display should be positioned where the driver can see it and, as it also receives infrared commands from the remote handset, it should be located at window level to allow the handset to be operated from outside the vehicle.

An ideal place for the remote display might be in the corner of the dashboard where it meets the windscreen.

Step 4: Wiring the ECU

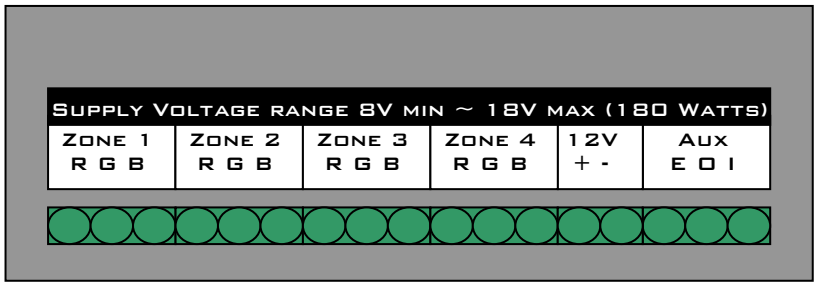
The 3-way connectors terminating the red green and blue wires from the light sources in each zone can be plugged into the appropriate zones. These plugs can be rearranged at any time to reassign the lights to different zones.

Connections to the 12V supply should be made with the fuse temporarily removed from its holder in the red lead. The red **+** wire should be run directly to the vehicle battery if possible, in order to maintain a permanent supply for standby mode. Other power 'pick-up' points may be suitable so long as they provide a constant supply. In either case the fuse holder must be located nearest the supply end so that the fuse can be effective in protecting the wire all the way back to the ECU. To maintain protection, if this wire is to be shortened at all, it must be cut off at the end furthest from the fuse.

The ring terminal on the end of the short black wire needs to be firmly attached to the vehicles metalwork using the self-tapping screw and serrated washer supplied. **A good contact is essential here**.

If an external enable is to be used it can be connected to the **E** terminal now. A switch connecting this input to chassis when one or more doors are open or a connection to the sidelight circuit are typical examples of external enables. Any small-gauge wire will be suitable for this connection which merely senses voltage.

The default is for ZEN to switch to Program 0 when the enable input is grounded. It is also possible to re-program the controller so that connecting 12Volts to the enable input turns ZEN on instead. This might be required if ZEN is to operate automatically from a sidelight circuit or electronically controlled interior light for example. Refer back to the **Custom Installation Functions** in the previous section for details on changing the switching polarity from active low to active high if necessary.



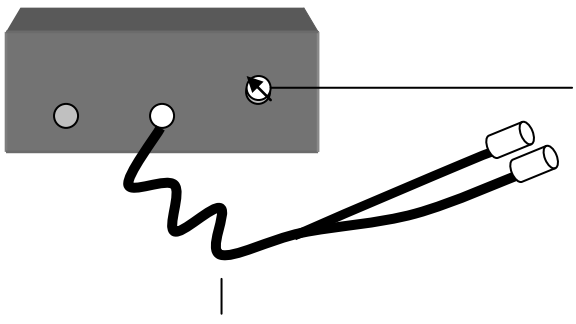
R	Red wire to light source(s)	**E**	External enable (Program 0 select)
G	Green wire to light source(s)	**O**	Serial output (Expansion output)
B	Blue wire to light source(s)	**I**	Serial input (UFO/Expansion input)
+	8-18VDC @ 15A max.	**-**	Chassis return

Step 5: Powering-up and testing

Once the fuse and 12V plug are inserted the remote display should light up showing a version number. e.g. U 7 After a few seconds the display should clear down to just a standby dot showing that the controller is ready. Press the power button on the remote handset to switch on the zones. If the external enable was active during power-up it will automatically switch to Program 0 instead of entering standby mode.

Adjusting the audio level

The ECU will automatically adapt to different sound levels over a wide range so no adjustment should be required. However a variable attenuator is provided at the rear of the unit if the sound levels are unusually high. This might be required if the patterns do not respond well to the music. The attenuator is adjusted with a small flat bladed screwdriver through a hole in the case. Turn the dial clockwise to reduce sensitivity.

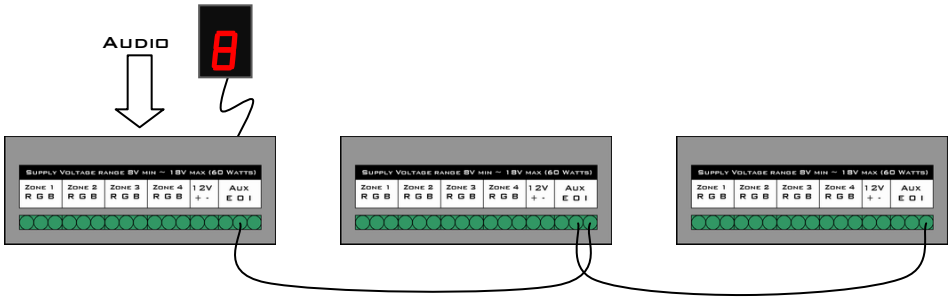


Optional Line-level connections to ICE

A direct line-level connection can be made to In-Car Entertainment systems using the optional link cable. This automatically disables the internal microphone so ensuring that music alone activates the light show – to the exclusion of all external sounds. The attenuator is still effective when a direct connection is used.

Expanding the number of zones

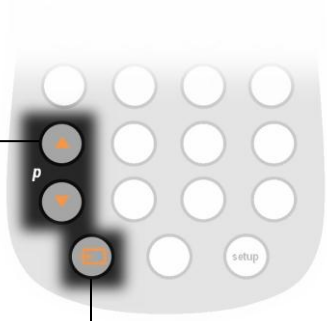
Multiple ZENs can be linked together to act like one single controller with extra zones. All that is required is to run a wire from the 'O' terminal of one ZEN to the 'I' terminal of the next. The first controller is the only one that should have a remote display plugged in. Additional controllers take their commands across the expansion link. This is also true of the line-in audio input (if used) – only the first device in the chain needs to be wired to an audio source.



Each additional controller requires its own connection to the 12VDC supply.

Editing expansion zones

In normal operating mode linked controllers all respond to the same Program and speed changes. However in order to edit the *home colours* and *options* in zones belonging to expansion controllers it is necessary to step from controller to controller while in **Program Editing** mode.

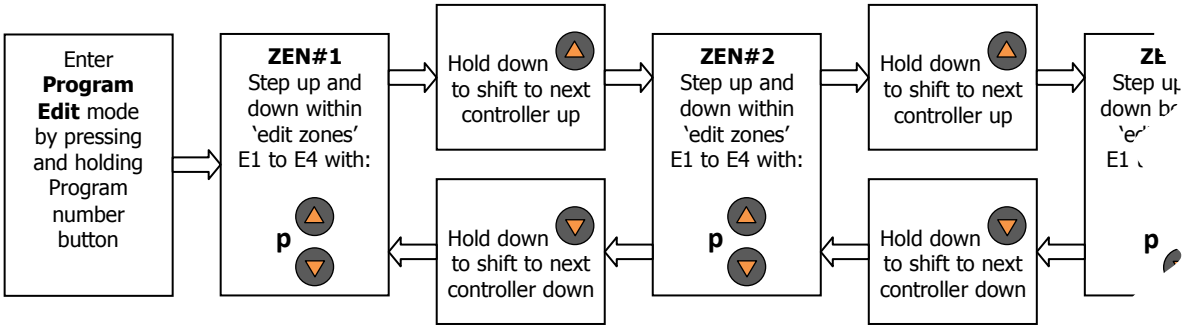


To step from the ZEN at the start of the chain to the next controller up press and hold the zone select up button

When the shift has been made, the first zone of the expansion controller selected will blink identifying the new range of zones that can be edited. At this point the button can be released. Likewise, shifting back down can be accomplished by keeping the down arrow button pressed instead.

Press the **Exit** button to leave Extended editing mode at any time.

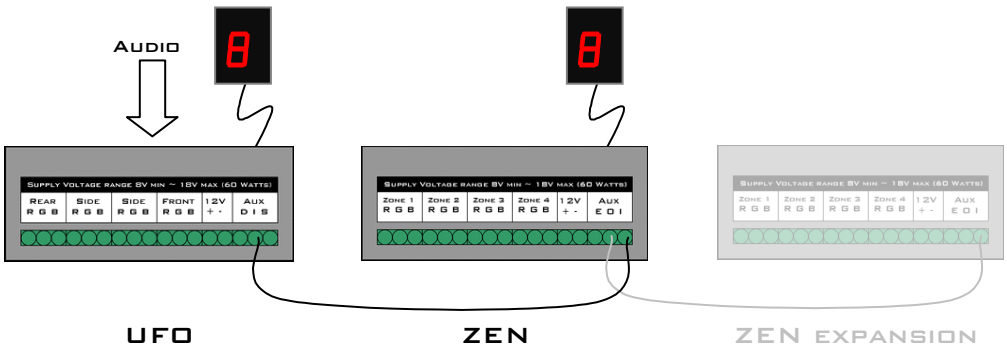
The following diagram illustrates how control is passed from controller to controller using the method described above:



Expansion zone enable
Each additional ZEN may have its own enable input (E) wired to a separate circuit to automatically switch to Program 0. In this case only the four zones associated with that particular controller will be activated. Groups of zones can be 'ganged together' simply by wiring the same enable signal to each controller.

Linking-up with UFO

ZEN's expansion input (I) can also be wired to the Interior data terminal (I) on UFO. Doing so allows zones to show the global ICELED colour generated from the under-body pattern. In this case any external audio input **need only** be connected to UFO. The signal is then passed from UFO to ZEN via the link. ZEN still requires its own remote display but may continue to be expanded as described above.



Temporarily syncing ZEN with UFO operations
When linked-up to UFO, ZEN can be set to obey Program changes, sound activation and on/off commands from the UFO remote control. To enable this facility first press the **Exit** button while ZEN is the selected device. Next, press the device button for UFO on the universal remote and both UFO and ZEN will respond to the same Program changes etc. together.

Re-select ZEN as the device on the universal remote and operate it normally to cancel synchronised operation.

Specifications

Nominal supply voltage:	12 Volts DC (1)
Standby current drain:	0.02 Amps
Maximum switched current:	15 Amps (2)
Audio sensitivity:	54dB to 102dB
Data input:	Any ICELED controller output

(1) Voltage range of between 8 and 18 Volts. Reverse polarity and over-voltage protection are built in.

(2) Maximum current in or out of any terminal.

Resources
To see the full ICELED product range visit http://www.iceled.co.uk the official ICELED website.

For more suggestions and advice visit http://iceled.co.uk/area51/ the official ICELED user forums.

ICELED ZEN Conforms to:
EMC Directive (2004/108/EEC)