

*Contest*<sup>®</sup>  
architecture



SMART**PIXEL**

*By* *Contest*<sup>®</sup>  
architecture

# Safety instructions

## Important safety information



This device has been designed to operate in a warm environment, away from moisture or water splashes. Use in a humid, non protected environment, or one subject to significant variations in temperature may pose a risk for both the device and people nearby.



Only competent technical services authorised by CONTEST may carry out maintenance on this device. Routine maintenance procedures must follow the precautions stated in this manual.



This device houses uninsulated parts at a high enough voltage to pose a risk of electric shock. Under no circumstances should you perform maintenance on this unit when it is operating.

## Instructions and guidelines

### 1- Read the instructions:

It is recommended to carefully read all the instructions for use and operation prior to using the device.

### 2- Keep the instructions:

It is recommended to store the instructions for use and operation for future reference.

### 3- Take the instructions into consideration:

It is recommended to take all the warnings and instructions for operation into consideration.

### 4- Follow the instructions:

It is recommended to follow the instructions for operation and use.

### 6- Installation:

Do not place this device on a movable piece of furniture, a tripod, a stand or an unstable table. The device may fall and sustain damage or seriously injure a child or adult. Only use movable furniture, shelves, stands, tripods or tables recommended by the manufacturer or sold with the device. In all cases, it is recommended to follow the manufacturer's instructions and to use tools recommended by the manufacturer when installing the device. It is strongly advised to move furniture with care when the device is on top. Sudden stops, a strong push or a rough surface may cause the entire set to flip.

### 7- Mounting on ceiling or wall:

It is recommended to contact your authorised reseller before mounting.

### 8- Ventilation:

Slots and openings have been placed on the housing for ventilation, to ensure safe and reliable use and to prevent overheating. These openings must never be obstructed or covered. Special care must be taken to never obstruct these openings, for instance by placing the device on a bed, a sofa, a blanket, or any other similar soft surface. This device must not be placed within a closed space, such as a case or rack, unless ventilation has been provided or the manufacturer's instructions have been followed.

### 9- Heat:

It is recommended that you keep the device away from any sources of heat such as heaters, stoves, heat reflectors, or other appliances (including amplifiers) that produce heat.



## CAUTION

**RISK OF ELECTRIC SHOCK  
DO NOT OPEN**



**CAUTION:** To reduce the risk of electric shock, never remove the covers. No inner parts may be serviced by the user. Contact a qualified technical service for the maintenance of this device.

To prevent electric shocks, do not use extension leads, power strips, or any other connection system before ensuring that all metal parts in contact are out of reach.



## Environmental protection:

- HITMUSIC is committed to protecting the environment. We only market products that are clean and comply with RoHS regulations.
- Your product is composed of materials that must be recycled; do not dispose of it as general waste. Bring your product to a collection centre near you. Authorised service centres will take on your device at the end of its life cycle and proceed to dispose of it in accordance with environmental regulations.

### 10- Power supply:

This product will only operate at the voltage indicated on a label on the back of the device. If you are not certain of the voltage of your electrical set up, consult your dealer or electricity company.

### 11- Electrical cable protection:

Please ensure that power cables are not trampled on or pinched by objects placed on or against them, by paying particular attention to the cables at the outlet and their point of entry into the device.

### 12- Cleaning:

Disconnect the device before cleaning. Do not use accessories that have not been recommended by the manufacturer. Use a damp cloth to wipe the surface of the device. Do not immerse the device in water.

### 13- Period of non-use:

Disconnect the power cable if you will not use the device for a long period of time.

### 14- Ingress of objects or liquids:

Never allow objects of any kind to enter the openings of this device as they may cause fire or electric shock.

Never spill liquids of any kind on this product.

### 15- Damage requiring maintenance:

Please refer to qualified personnel in the following cases: If the power cord or plug has been damaged.

If any liquid has been spilled or objects have fallen into the device.

If the product has been in contact with rain or water.

If the product does not operate normally by following the instructions.

If the product has sustained an impact.

### 16- Maintenance/service:

Do not attempt to service this product yourself. This may expose you to dangerous voltage. Please refer servicing to qualified personnel.

### 17- Operating environment:

Operating environment temperature: 5 to 35°C.

Do not install the device in a poorly ventilated area or in direct sunlight (or under a strong artificial light).

## EFFECTS GENERATOR

Revised 25/09/19

### ***YOU CAN CONTROL 128 DMX UNIVERSES OR 102,400 RGB LEDs WITH 16 DMX CHANNELS!***

This is a unique way to manage thousands of light dots with extraordinary animations. Create an infinite number of animations with just a few DMX channels, and with configurations beyond the capabilities of ordinary controllers.

The complete set is divided into two levels:

**SMART-CTL800** LED control module in WS2812 format. Comprises 8 channels using 8 DMX channels. Each row is a light show in its own right.

**SMART-DMX** is a similar module, but includes 2 DMX universes. This module can control 8 rows of RGB or RGBW dots in DMX format.

It can be used as “Master”, thereby controlling up to 128 DMX universes or 128 Smart rows. In this case, only 16 channels will be used: 8 channels for choosing the animation common to all rows, and 8 to control the offsetting.

# DOCUMENT PLAN

*This is a dynamic document: in PDF format, click on the links to go to the desired section*

▶ The SMART LINE .....	5
▶ FAMILIES OF EFFECTS .....	11
▶ SETTING UP FUNCTIONS .....	12
▶ SPECIAL FUNCTIONS .....	13
▶ MASTER EFFECT .....	35
▶ STANDALONE .....	45
▶ TERMINOLOGY USED .....	46



## The **SMART LINE**

**SMART-CTL800**: 8 outputs in WS2812 formats (up to 800 RGB dots)

**SMART-DMX**: 2 DMX universes in slave mode (physically identical to SMART-CTL800)

Generally, an output corresponds to a row of RGB LEDs.

The basic box has 8 outputs totalling up to 800 RGB dots. These 800 dots can be divided on the 8 outputs and distributed according to the user's wishes. We recommend to always have an equal number of dots per row, e.g.: 1 row of 800 dots, 2 rows of 400, 3 rows of 250, 4 rows of 200... 8 rows of 100. These are maximum values, you can just as well have 8 rows of 50 dots.

These values are to be programmed using the simulation software with the **SMART-USB** cord (optional) and the RDM dongle.

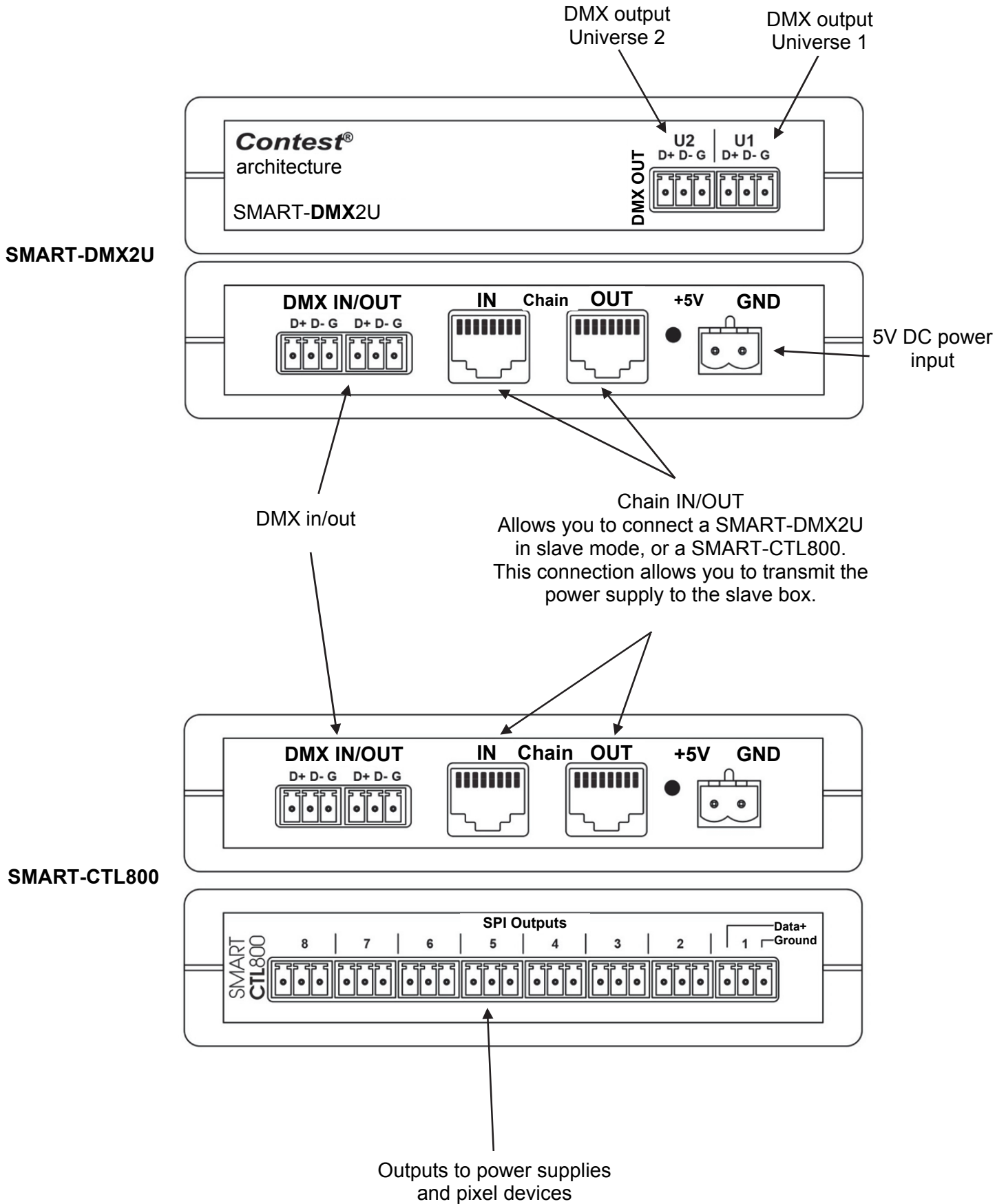
This dongle allows you to configure the card in every way possible and program the addresses.

**SMART-CTL800** cards: each output uses 8 DMX channels. A complete card (8 outputs) uses 64 addresses (8x8). These cards can be controlled directly using any software or console

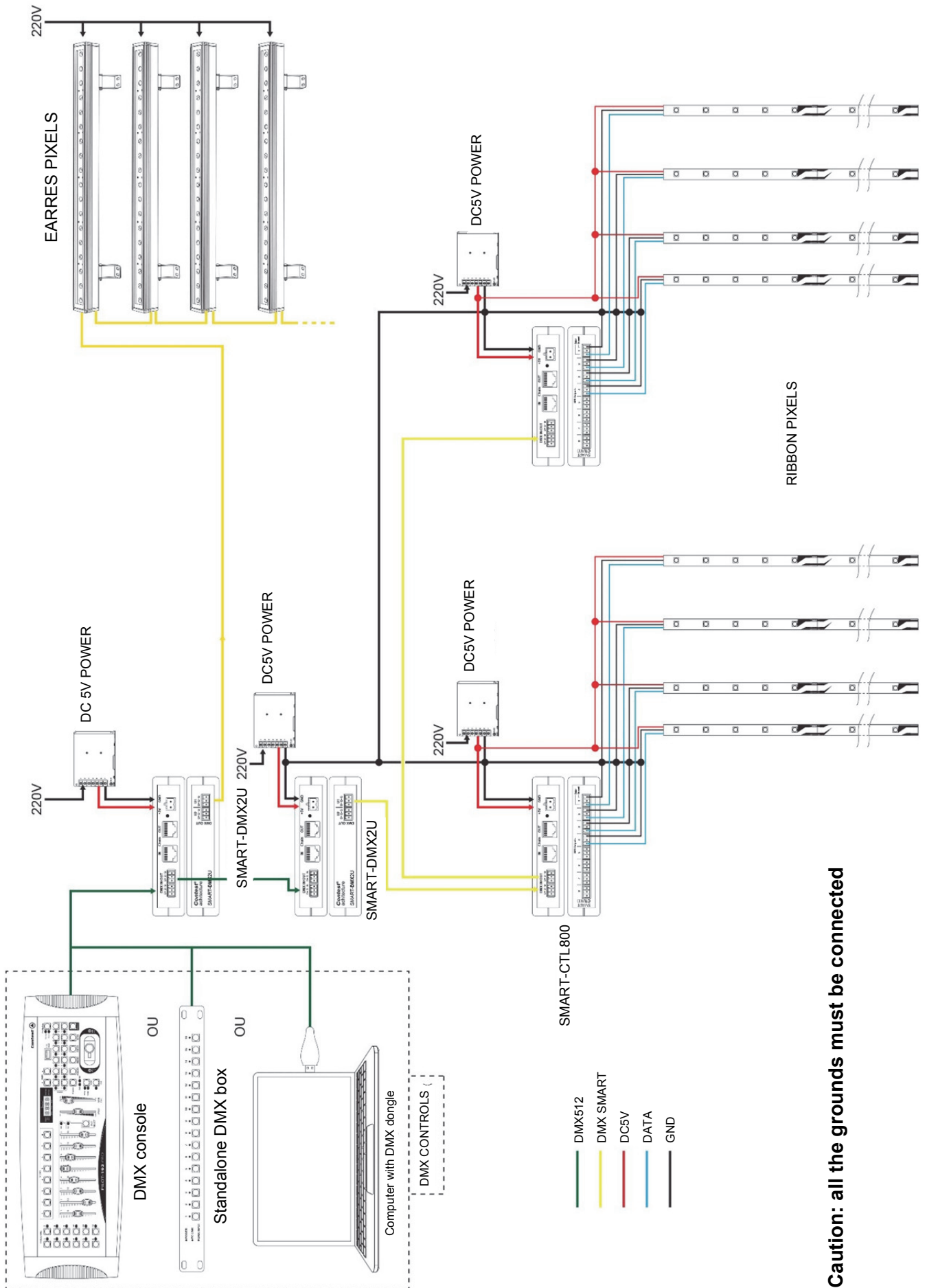
What **SMARTPIXEL** is best used for: you use several rows and therefore many DMX channels. The **SMART-DMX** card (**MASTER mode**) makes management easier. For a set of rows, 8 channels of identical effects are automatically allocated to each **SMART-CTL800** and 8 additional channels for special effects. This way, you will only use 16 channels for a complete installation.

If you use 8 rows, you can use a box in "ECO" mode, which will integrate a **MASTER** function internally.

Note that the management mode can be switched to "PRO" mode where you control RGB 1 and 2 colours conventionally, but with more channels (16 instead of 8 per row).



# CABLES




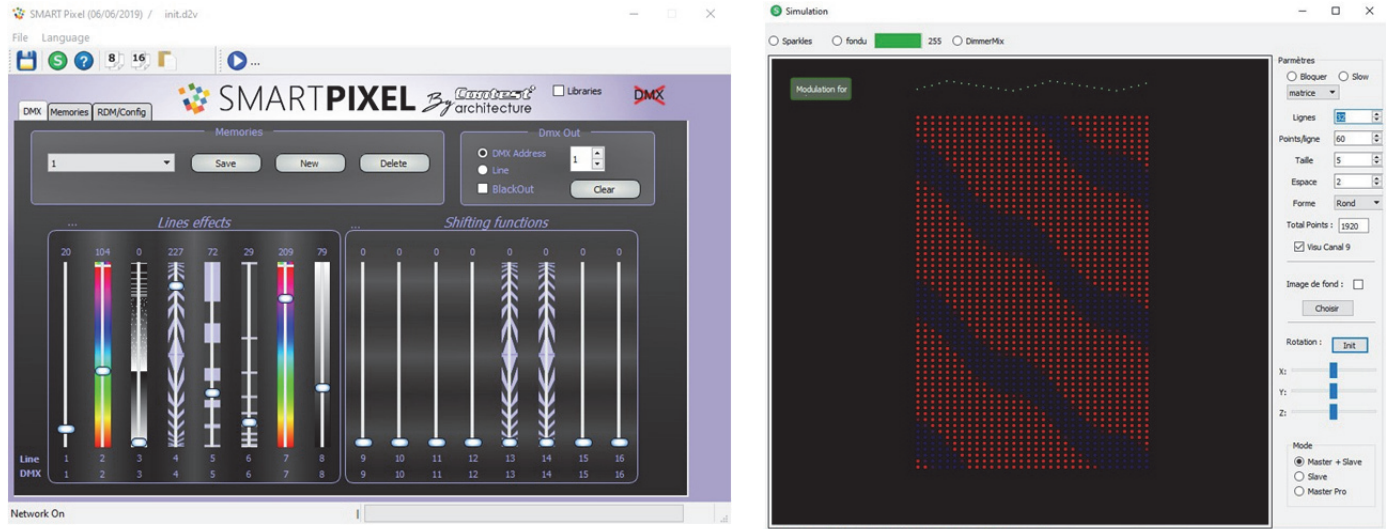
## SIMULATOR

*For the RDM/CONFIGURATION part, refer to the end of the instructions for use*

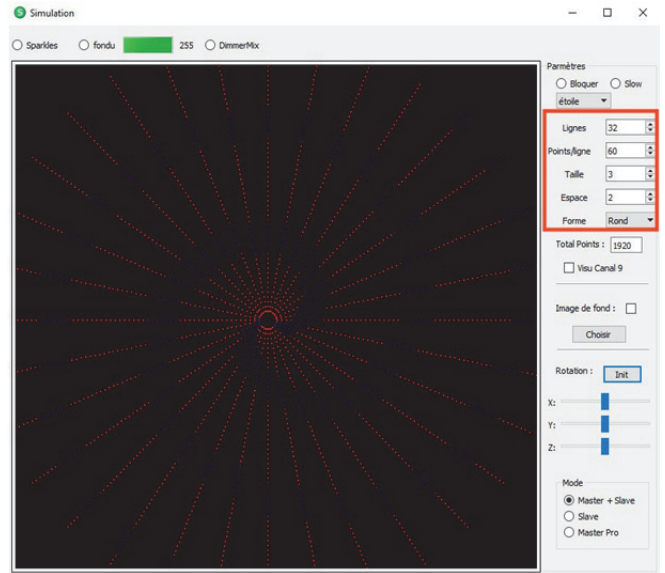
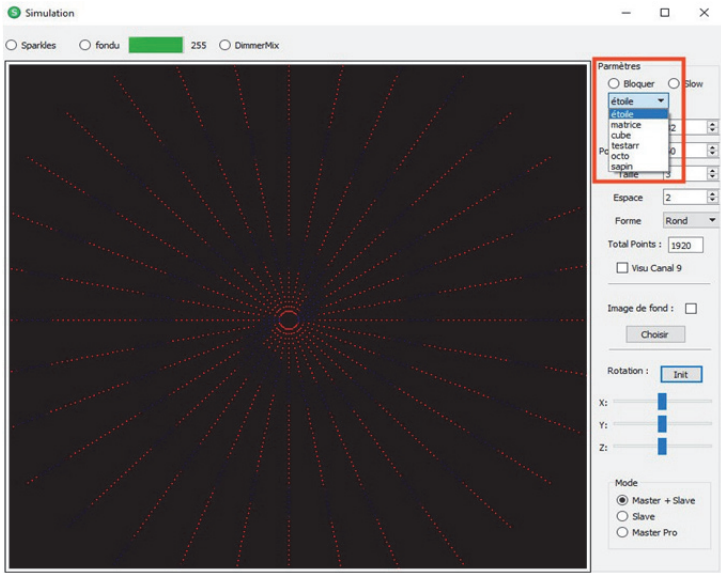
The simulator allows you to discover the SMARTPIXEL directly from a computer, create effects and save them.

Select your language (French/English) in the "LANGUAGE" menu.

The simulator consists of a control module reproducing 16 DMX channels and an output screen displaying the effects. This window is activated using the  key in the top left.



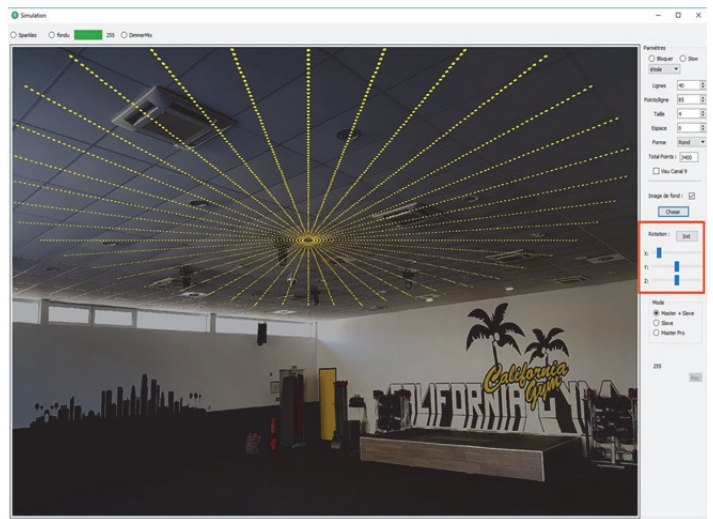
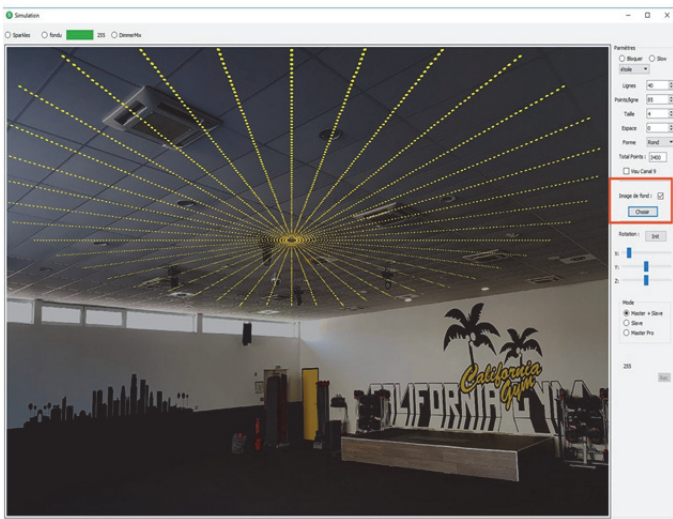




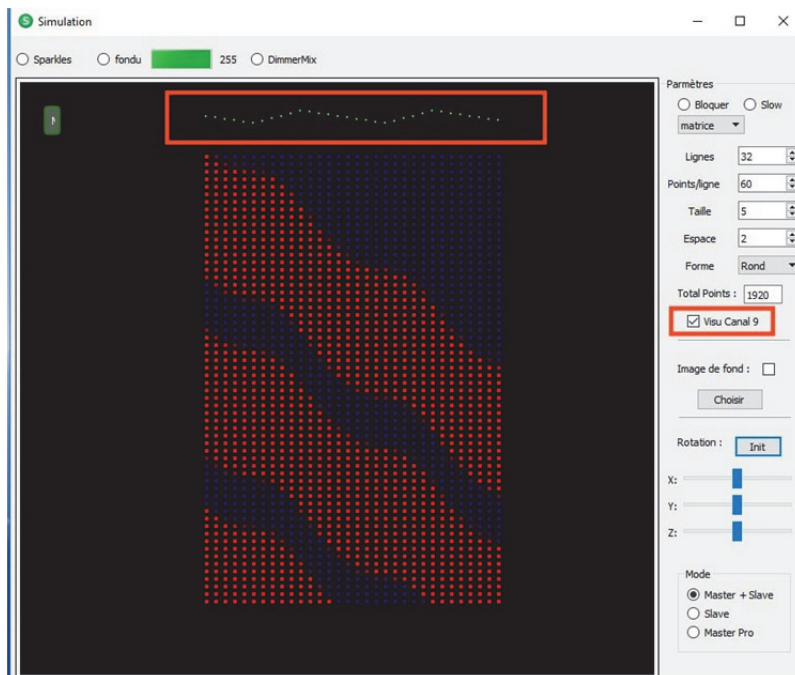
On the simulator, you can select the type of configuration (matrix or star), the number of rows and the number of dots (up to 60x300). Be aware that rendering is variable depending on the capabilities of your computer and will not necessarily be identical to the actual output.

## INSERTING AN IMAGE

To create projects, take a picture of the project space and insert the picture in the SMARTPIXEL folder. Load the picture by opening **"Background picture"**, then find the right perspective using the angle sliders. The live effects will then be available.



You can view the action of channels 9 to 16 by clicking on **View Channel 9**. Green dots will indicate the actions applied to offsets.



## FAMILIES OF EFFECTS

Effects are grouped by families for ease of use.

Effects are distributed by families of 10, and are thus considered to be groups. These can be customised (see page **12** "Setting up functions").

- GROUP 0: Fixed effects
- GROUP 1: Chasers
- GROUP 2: Stackings
- GROUP 3: Sparkles
- GROUP 4: Crossovers
- GROUP 5: Bubbles and Storm
- GROUP 6: Static effects - Flag
- GROUP 7: Static effects - Curtain
- GROUP 8: Niagara (waterfall)
- GROUP 9: Highway
- GROUP 10: VU metre
- GROUP 11: Magic
- GROUP 12: Magic - Static
- GROUP 13: Stop and Go
- GROUP 14: Stop and Reverse
- GROUP 15: Back and forth + Sinus
- GROUP 16: Unused
- GROUP 17: Flames
- GROUP 25: SPECIAL FUNCTIONS

## SETTING UP FUNCTIONS

Each effect can vary thanks to the associated functions (colour, speed, size, etc.)

In the document, DMX addresses are symbolised as follows: 0-1-2...

One can then play with the channels

Channel 1 : Effect (see effects section)

Channel 2 : Colour 1 1>252 Red to Red (all colours) 253-254 Custom 1 and 2  
255 Rainbow

Channel 3 : Dimmer - Transparency 1>100 100% > 0% - 101>200 Transparency 0% > 100%  
201>255 Strobe Fast > Slow 255: RESET

Channel 4 : Speed 1>127 Direction 1 128>255 Reverse (or special functions)

Channel 5 : Effect size 1>255 1 Pixel > Segment length

Channel 6 : Spaces 1>255 1 Pixel > Segment length (5 pixels offset minimum)

Channel 7 : Colour 2 (background) 1>252 Red to Red (all colours)  
253-254 Custom 1 and 2 255 Rainbow

Channel 8 : Dimmer colour 2 1>255 0% > 100 %

### ● Channel 1: EFFECTS

0: OFF – Effects 1 to 240

241 to 255: Special functions. These functions are used to configure certain effects such as transitions or the architect mode.

### ● Channel 2: EFFECTS COLOUR dimmable

0-254: Colour - 253: Custom 1 - 254: Custom 2 - 255: RAINBOW

### ● Channel 3: DIMMER/DIMMER + SPARKLES/STROBE

0>100 DIMMER (0 Maximum dimmer – 100 Dimmer to 0)

101 >200: DIMMER + SPARKLES (101 Maximum dimmer – 200 Dimmer to 0)

201>255: STROBE speed

### ● Channel 4: EFFECTS SPEED

0 fixed (stop)

1>127: increasing scrolling speed

128>255: reverse - decreasing scrolling speed

### ● Channel 5: EFFECTS SIZE

(in % of the LED strip length)

### ● Channel 6: Effect size or Start address

(in % of the LED strip length)

### ● Channel 7: BACKGROUND COLOUR dimmable

0-254: Colour - 253: Custom 1 - 254: Custom 2 - 255: RAINBOW

### ● Channel 8: Background colour DIMMER

0>255 DIMMER (0 Dimmer to 0 – 127 Maximum Dimmer)

## SPECIAL FUNCTIONS

Special functions allow for permanent modifications in order to work with presets. They are intended to be called using special buttons and remain in RAM (as long as the module is powered on) or FLASH memory (permanently, even when the module is turned off). In the simulator, some of these functions are called by activating “Libraries”.

**CAUTION: FLASH memory has a limited number of uses  
Only use the flash feature for “standalone” operation.  
For this reason, FLASH validations are only done for certain functions  
while keeping channel 8 on value 127 for at least 3 seconds.**

For use with a console or software, create a button with a duration of 1 second to activate each function, and possibly one for removing the function: for instance, for supplementary sparkles, create a “SPARKLES ON” button with values 248 - 255 - 0 - 0 - 0 - 0 - 0 - 255, then create a “SPARKLES OFF” button with values 248 - 0 - 0 - 0 - 0 - 0 - 0 - 255.

Activating these functions will not remove the current effect, but will add the function.

### CHANNEL 1

255 **DMX THRU** (input DMX controls are copied to output)  
254  
253  
252  
251

### 250 FADE EFFECT

Channel 1 to 250  
Channel 2 for transition speed (in 10ths of seconds)  
Channel 8 to 255 validates action in RAM  
Channel 8 to 127 validates action in FLASH After 3 seconds (flashing)

You can follow the fade duration using the green gauge at the top of the simulation screen.

### 249

### 248 SUPPLEMENTARY SPARKLES EFFECT in RAM

Channel 1 to 248  
Channel 2 to 255 activates sparkles – 0 deactivates them  
Channel 8 to 255 validates the action

On the simulation screen, a check box shows that the function has been activated.

## 247 CUSTOMISABLE COLOUR

Channels 2-3-4 RVB

Validated by channels 8 to 127 in FLASH after 2 seconds- channel 8 to 255 in RAM

It is possible to create two custom colours: 253 and 254  
These colours are defined in RGB and reusable as Colour 1 and 2.  
Gradients also use these colours.

Channel 1: 247 CUSTOM COLOUR

Channel 2: 253 or 254

Channel 3:

Channel 4: RED

Channel 5: GREEN

Channel 6: BLUE

Channel 7: WHITE for RGBW mode

Channel 8: 255 validates action in RAM - 127 validates action in FLASH After 3 seconds (flashing)



Use:

Channel 1: 8

Channel 2: choice of colour of customise

Adjust RGB with channels 4-5-6 (7 for white).

Validate the colour using channel 8 by moving the slider up to 255.

## 246 DIMMER MIXER

Allows you to use the Colour 1 Dimmer channel simultaneously with the background dimmer (Colour 2), very useful feature for small controllers using only one dimming channel.

Channel 1 to 246: Dimmer Mixer

Channel 2: 0 to 127: OFF

Channel 2: 128 to 255: ON

Channel 8 to 255 validates the action

## 245 GROUPING CONFIGURING SEGMENTS

Allows the use of rows segmented into triangles (3), squares (4), etc. up to 8

The row is then treated as a single row or as independent segments

This use is only possible on channel 1 with exclusive use of outputs 2 to 8

Channel 2 groups together 0 or 1 complete configuration, 2 groups of 2, 3 by 3... 8 -> segments validated by channel 8 to 255

Use:

Channel 1: 245

Channel 2: choosing grouping 1 to 8

Validate the function with channel 8 by moving the slider up to 255

Channel 1: 245 GROUPING

Channel 2: 1 to 8 grouping rows by 1-2-3-4-5-6-7-8

Channel 3:

Channel 4:

Channel 5:

Channel 6:

Channel 7:

Channel 8: 255 validates the action

Grouping example

Examples (select values, copy (Ctrl+C), position the mouse on the simulator and paste (Ctrl+V))

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Grouping by 8	245	8	0	0	0	0	0	255	0	0	0	0	0	0	0	0
Grouping 4	245	4	0	0	0	0	0	255	0	0	0	0	0	0	0	0
Grouping by 1	245	1	0	0	0	0	0	255	0	0	0	0	0	0	0	0

**ROW TEST FUNCTION:** Turns LED 1 on (flashing) as well as the last  
Channel 2 sets the colour, channels 3-4-5 set the pixel value  $752 = \text{channel 3 to 7} - 4 \text{ to } 5 - 5 \text{ to } 2$

## EFFECTS (CHANNEL 1)

On the selected channel, the given number is level 0 to 255

0: OFF

### Group 0: FIXED

#### 0-A 1 FIXED COLOURS

Channel 2: Colour 1 (Effect) 1 Red to Red (all colours) 253-254 Custom 255 Rainbow  
Channel 3: Dimmer – Transparency

For Rainbow

Channel 4: Speed 1>127 Direction 1 128>255 Reverse  
Channel 5: Effect size 1>255 1 Pixel > Segment length

#### 0-B 2 GRADIENT 1

Background colour 2 to foreground colour 1

The transition is adjustable

Channel 1: Effect  
Channel 2: Colour 1 Effect  
Channel 3: Dimmer – Transparency  
Channel 4: Speed Reversal  
Channel 5: Effect size - NO -  
Channel 6: Spaces - NO -  
Channel 7: Colour- 2  
Channel 8: Dimmer colour 2

#### 0-C 3 GRADIENT 2

Background colour to foreground to background

The frequency is adjustable as well as the position > moving wave

Channel 1: Effect  
Channel 2: Colour 1 Effect  
Channel 3: Dimmer – Strobe  
Channel 4: Speed Colour 1 starting position  
Channel 5: Effect size Transition position  
Channel 6: Spaces Number of transitions  
Channel 7: Colour- 2  
Channel 8: Dimmer colour 2

#### 0-D 4 FADE COLOUR 1<>2

Transition from one colour to another

Adjustable speed

#### 0-E 5 RAINBOW 1 colour scrolling with mix

red – green – blue > colours intersect with a threshold for each saturation (255)

#### 0-F 6 RAINBOW 2 colour scrolling with black

Red - yellow - green - cyan - blue - magenta with fade to black between each colour

#### 0-A 7 ADDING COLOURS

Colour 1 is fixed, colour 2 oscillating in addition

#### 0-A 8 FIXED COLOURS

Colour 2 only



Colour set as RGB

Channel 1:	FIXED	CUSTOM
	COLOUR	
Channel 2:		
Channel 3:		
Channel 4:	RED	
Channel 5:	GREEN	
Channel 6:	BLUE	
Channel 7:		
Channel 8:		

Adjust RGB with channels 4-5-6

### COLOUR PALETTE

COLOUR	DMX		
RED	1		
GREEN	84		
BLUE	168		
VIOLET	210		
YELLOW	42		
CYAN	126		
ORANGE	10		
CUSTOM 253	253	(WARM WHITE	255-146-46)
CUSTOM 254	254	(COLD WHITE	255-255-255)
RAINBOW	255		

**Group 1: CHASER**  
Regular succession of pixels

**1-A 10 SOLID CHASER Square**

Channel 2: Colour 1 (Effect) Active  
 Channel 3: Dimmer – Transparency Active  
 Channel 4: Speed 0-127: Increasing speed– 128-255: Reverse decreasing speed  
 Channel 5: Effect size Active  
 Channel 6: Spaces Active  
 Channel 7: Colour 2 (background) Active  
 Channel 8: Dimmer colour 2 Active



**1-B 11 CHASER Decreasing Snake**

Classic chaser with snake decreasing in intensity on the whole length



**1-C 12 CHASER Increasing Snake**

Classic chaser with snake increasing in intensity on the whole length



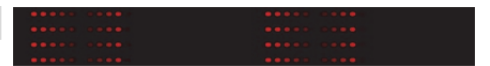
**1-D 13 CHASER Increasing-Decreasing Snake**

Classic chaser with snake increasing and decreasing in intensity on the whole length



**1-E 14 CHASER Decreasing-Increasing Snake**

Classic chaser with snake decreasing and increasing in intensity on the whole length



**1-F 15 CHASER White-Colour Snake**

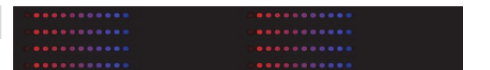
Chaser starting with white then gradient to colour 1



**1-G 16 CHASER Colour 1-Colour 2 Snake**

Chaser starting with foreground colour then gradient to background colour  
(No coloured background)

Channel 1: Effect  
 Channel 2: Colour 1 Effect  
 Channel 3: Dimmer - Transparency  
 Channel 4: Speed  
 Channel 5: Effect size  
 Channel 6: Spaces  
 Channel 7: Colour- 2  
 Channel 8: Dimmer colour 2



Snake starting colour

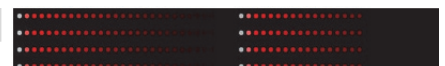
Snake ending colour

**1-H 17 SHOOTING STAR**

White dot followed by decreasing trail

Effect of a white pixel followed by a decreasing colour (see if random possibility in both directions)

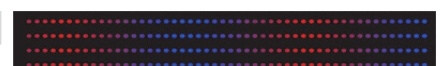
Channel 2: Colour 1 (Effect) Active  
 Channel 3: Dimmer - Transparency Active  
 Channel 4: Speed Active  
 Channel 5: Effect size Active  
 Channel 6: Spaces Active  
 Channel 7: Colour 2 (background) Active  
 Channel 8: Dimmer colour 2 Active



Trail size

**1-I 18 WAVE**

Similar to effect 13, decrease is on colour 2 (not black)



## Group 2: STACKINGS

### 2-A 20 STACKING 1 Stack then Reset

Channel 2:	Colour 1 (Effect)	Active
Channel 3:	Dimmer - Transparency	Active
Channel 4:	Speed	Active
Channel 5:	Effect size	Active
Channel 6:	Type of effect	Active
<b>Difference from other effects: the pattern is controlled here</b>		
Channel 7:	Colour 2 (background)	Active
Channel 8:	Dimmer colour 2	Active

### 2-A 20 STACKING 1 Stack then Reset

### 2-B 21 STACKING 2 Stacking then unstacking in the same direction

### 2-C 22 STACKING 3 Stacking then unstacking in the opposite direction

### 2-D 23 CONSTRUCTION 1 Stacking pixel by pixel (or group)

A pixel chases and stacks towards to end, then the pixels go back through the top (from where they came)

### 2-E 24 CONSTRUCTION 2 Stacking pixel by pixel (or group)

A pixel chases and stacks towards to end, then the pixels go back through the bottom (in the direction of stacking)

### 2-F 25 CONSTRUCTION 3 Stacking pixel by pixel (or group)

A pixel chases and stacks towards the end, then the whole row is flushed

### 2-G 26 xxx xxx

### 2-H 27 xxx xxx

### 2-I 28 xxx xxx

### 2-J 29 xxx xxx

### Group 3: SPARKLES

#### **3-A 30 SPARKLES** Random LED illumination effect

Channel 1: Effect  
Channel 2: Colour 1 Effect  
Channel 3: Dimmer – Transparency  
Channel 4: Speed  
Channel 5: Effect size  
Channel 6: Spaces  
Channel 7: Colour- 2  
Channel 8: Dimmer colour 2

**9**  
Flash duration (0 minimum)  
Density  
- NO -

#### **3-B 31 FALL DOWN** (Sparkles with decreasing effect)

Random LED illumination effect with decreasing intensity

Channel 4: Flash duration (0 minimum)

Channel 5: density

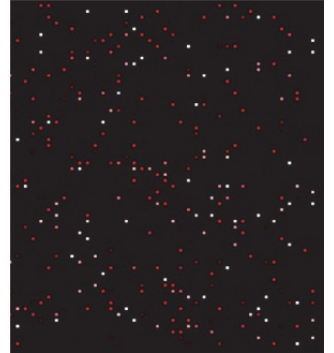
#### **3-C 32 FLASH FALL DOWN** (White sparkles then decreasing colour effect)

Random LED illumination effect, but each illuminated dot stays until everything is full, then reverse effect where the dots go out

It is important to have a white flash on illumination and extinction to “mark” the dot

Channel 4: Flash duration (0 minimum)

Channel 5: density



#### **3-D 33 FLASH FALL DOWN (Sparkles)**

#### **3-E 34 FLASH FALL DOWN (Sparkles)**

#### **3-F 35 FLASH FALL DOWN (Sparkles)**

#### **3-G 36 FLASH FALL DOWN (Sparkles)**

#### **3-H 37 FLASH FALL DOWN (Sparkles)**

#### **3-I 38 FLASH FALL DOWN (Sparkles)**

#### **3-J 39 FLASH FALL DOWN (Sparkles)**

## GROUP 4: CROSSOVERS

Regular succession of pixels from the ends and crossing each other

### 4-A 40 SOLID CROSSOVERS Square

All undescribed effects are by default identical to those of the chaser



### 4-B 41 CROSSOVERS Decreasing Snake

Classic chaser with snake decreasing in intensity on the whole length



### 4-C 42 CROSSOVERS Increasing Snake

Classic chaser with snake increasing in intensity on the whole length



### 4-D 43 CROSSOVERS Increasing-Decreasing (Javelin)

Classic chaser with snake increasing and decreasing in intensity on the whole length



### 4-E 44 CROSSOVERS Decreasing-Increasing

Classic chaser with snake decreasing and increasing in intensity on the whole length



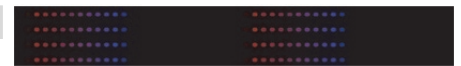
### 4-F 45 CROSSOVERS White-Colour Snake

Chaser starting with white then gradient to colour 1



### 4-G 46 CROSSOVERS Colour 1-Colour 2 Snake

Chaser starting with foreground colour then gradient to background colour (no coloured background)



### 4-H 47 CROSSOVERS SHOOTING STAR

Effect of a white pixel followed by a decreasing colour (see if random possibility in both directions)



### 4-I 48 CROSSOVERS WAVE

Similar to effect 43, decrease is on colour 2 (not black)



### 4-J 49 CROSSOVERS

## Group 5: BUBBLES and STORM EFFECT

### 5-A 50 BUBBLE 1

Randomly appearing and disappearing stain

Channel 1: Effect 50

Channel 2: Colour 1 Effect

Channel 3: Dimmer – Transparency

Channel 4: Speed

Channel 5: Effect size

Channel 6: Spaces

Channel 7: Colour- 2

Channel 8: Dimmer colour 2



### 5-B 51 BUBBLE 2

Effect identical to bubble 1, but the stain is not pierced in the centre and disappears globally

### 5-C 52 STORM 1

Random lightning effects with movement

Channel 1: Effect 52

Channel 2: Colour 1

Channel 3: Dimmer – Transparency

Channel 4: Travel speed

Channel 5: Lightning bolt size

Channel 6: Density (frequency)

Channel 7: Colour- 2

Channel 8: Dimmer colour 2

### 5-D 53 STORM 2

Random lightning effect with bursts of 3

Channel 1: Effect 52

Channel 2: Colour 1

Channel 3: Dimmer – Transparency

Channel 4: Flashing speed

Channel 5: Lightning bolt size

Channel 6: Density (frequency)

Channel 7: Colour- 2

Channel 8: Dimmer colour 2

5-E 54 xx

5-F 55 xx

5-G 56 xx

5-H 57 xx

5-I 58 xx

5-J 59 xx

## Group 6: STATIC EFFECTS

### 6-A 60 STATIC EFFECT 1 Square

Group of pixels to adjust. No programmed movement, the movement is done through the speed channel. This allows to insert fixed figures, or to introduce a sound effect on channels 5-6 or 7 which allows live changes to sizes and positions

- Channel 1: Effect
- Channel 2: Colour 1 Effect
- Channel 3: Dimmer – Strobe
- Channel 4: Speed
- Channel 5: Effect size
- Channel 6: Spaces
- Channel 7: Colour- 2
- Channel 8: Dimmer colour 2

Starting position (%)  
Size (%)  
Spaces (%)



### 6-B 61 STATIC 1 Decreasing Snake

Static 1 with snake decreasing in intensity on the whole length



### 6-C 62 STATIC 1 Increasing Snake

Static 1 with snake increasing in intensity on the whole length



### 6-D 63 STATIC 1 Increasing-Decreasing (Javelin)

Static 1 with snake increasing and decreasing in intensity on the whole length



### 6-E 64 STATIC 1 Decreasing-Increasing

Static 1 with snake decreasing and increasing in intensity on the whole length



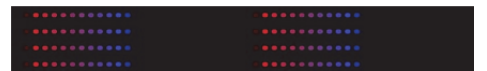
### 6-F 65 STATIC 1 White-Colour Snake

Static 1 starting with white then gradient to colour 1



### 6-G 66 STATIC 1 Colour 1-Colour 2 Snake

Static 1 starting with foreground colour then gradient to background colour (no coloured background)



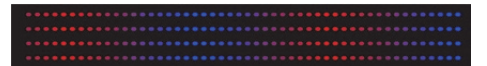
### 6-H 67 STATIC 1 Shooting Star

Static 1 Effect of a white pixel followed by a decreasing colour (see if random possibility in both directions)



### 6-I 68 STATIC 1 WAVE

Similar to effect 63, decrease is on colour 2 (not black)



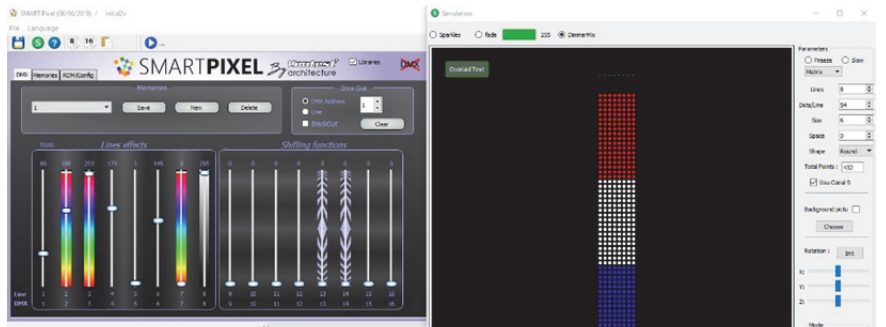
### 6-J 69 FLAG

Allows to create a flag with 3 colours

- Channel 1: Effect 69
- Channel 2: Colour 1
- Channel 3: Colour- 2
- Channel 4: N/A
- Channel 5: N/A
- Channel 6: N/A
- Channel 7: Colour 3
- Channel 8: Dimmer

colour 255 is black  
colour 255 is black

colour 255 is black



## Group 7: STATIC CURTAIN OPENING

### 7-A 70 STATIC EFFECT 2 Square

Group of pixels to adjust. Effect substantially similar to Static 1, but opening from the centre

Channel 4: - Channel 5:

Channel 1: Effect

Channel 2: Colour 1 Effect

Channel 3: Dimmer – Strobe

Channel 4: Speed

Channel 5: Effect size

Channel 6: Spaces

Channel 7: Colour- 2

Channel 8: Dimmer colour 2

Starting position (%)

Size (%)

Spaces (%)



### 7-B 71 STATIC 2 Decreasing Snake

Static 1 with snake decreasing in intensity on the whole length



### 7-C 72 STATIC 2 Increasing Snake

Static 1 with snake increasing in intensity on the whole length



### 7-D 73 STATIC 2 Increasing-Decreasing (Javelin)

Static 1 with snake increasing and decreasing in intensity on the whole length



### 7-E 74 STATIC 2 Decreasing-Increasing

Static 1 with snake decreasing and increasing in intensity on the whole length



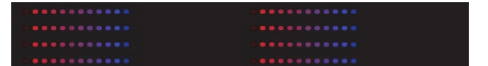
### 7-F 75 STATIC 2 White-Colour Snake

Static 1 starting with white then gradient to colour 1



### 7-G 76 STATIC 2 Colour 1-Colour 2 Snake

Static 1 starting with foreground colour then gradient to background colour (no coloured background)



### 7-H 77 STATIC 2 Shooting Star

Static 1 Effect of a white pixel followed by a decreasing colour (see if random possibility in both directions)



### 7-I 78 STATIC 2 WAVE

Similar to effect 73, decrease is on colour 2 (not black)





## Group 8: NIAGARA

### WATERFALL EFFECT

Segments randomly break off from one end, then accelerate while becoming longer.

Depending on the direction, this is a spectacular effect to simulate a waterfall, water flowing or (going up) champagne bubbles.

Segments are independent of each other. One can also create an interesting crossover effect by periodically reversing the speed (every second, for example).

#### 8-A 80 NIAGARA Square

Group of pixels to adjust. Effect substantially similar to Static 1, but opening from the centre

Channel 4: - Channel 5:

Channel 1: Effect

Channel 2: Colour 1 Effect

Channel 3: Dimmer – Strobe

Channel 4: Speed

Channel 5: Effect size

Channel 6: Spaces

Channel 7: Colour- 2

Channel 8: Dimmer colour 2

Starting position (%)

Size (%)

Spaces (%)

#### 8-B 81 NIAGARA Decreasing

Static 1 with snake decreasing in intensity on the whole length



#### 8-C 82 NIAGARA Increasing

Static 1 with snake increasing in intensity on the whole length



#### 8-D 83 NIAGARA Increasing-Decreasing (Javelin)

Static 1 with snake increasing and decreasing in intensity on the whole length



#### 8-E 84 NIAGARA Decreasing-Increasing

Static 1 with snake decreasing and increasing in intensity on the whole length



#### 8-F 85 NIAGARA White-Colour Snake

Static 1 starting with white then gradient to colour 1



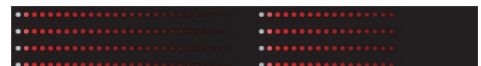
#### 8-G 86 NIAGARA Colour 1-Colour 2 Snake

Static 1 starting with foreground colour then gradient to background colour (no coloured background)



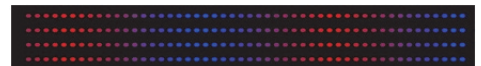
#### 8-H 87 NIAGARA Shooting star

Static 1 Effect of a white pixel followed by a decreasing colour (see if random possibility in both directions)



#### 8-I 88 NIAGARA Wave

Similar to effect 83, decrease is on colour 2 (not black)



Examples (select values, copy (Ctrl+C), position the mouse on the simulator and paste (Ctrl+V))

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Waterfall:	81	253	155	178	7	2	143	204	0	0	0	0	0	0	0	0
Champagne:	85	137	137	185	4	24	143	204	0	0	0	0	0	0	0	0
	81	253	0	57	1	83	32	105	0	0	0	0	0	0	0	0

## Group 9: HIGHWAY

The HIGHWAY effect is similar to a chaser, but with a random start. When it is used, it fills the rows at random. A snake starts and keeps going using its size, speed and colour settings until the end of its path, independently of the others.

This effect, used with variations of external parameters, is recommended to create bubble effects with variable size and speed to produce champagne or aquarium effects.

On ceiling effects, the speed can be reversed by various means to create stunning effects.

### 9-A 090 SOLID HIGHWAY Square

All undescribed effects are by default identical to those of the chaser



### 9-B 091 HIGHWAY Decreasing Snake

Classic chaser with snake decreasing in intensity on the whole length



### 9-C 092 HIGHWAY Increasing Snake

Classic chaser with snake increasing in intensity on the whole length



### 9-D 093 HIGHWAY Increasing-Decreasing (Javelin)

Classic chaser with snake increasing and decreasing in intensity on the whole length



### 9-E 094 HIGHWAY Decreasing-Increasing

Classic chaser with snake decreasing and increasing in intensity on the whole length



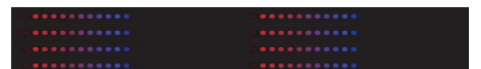
### 9-F 095 HIGHWAY White-Colour Snake

Chaser starting with white then gradient to colour 1



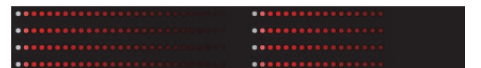
### 9-G 096 HIGHWAY Colour 1-Colour 2 Snake

Chaser starting with foreground colour then gradient to background colour (no coloured background)



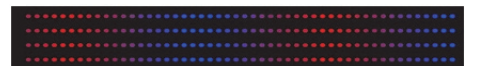
### 9-H 097 HIGHWAY Shooting star

Effect of a white pixel followed by a decreasing colour (see if random possibility in both directions)



### 9-I 098 HIGHWAY Wave

Similar to effect 93, decrease is on colour 2 (not black)



### 9-J 099 HIGHWAY

Example:

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Star:	97	0	0	16	88	255	0	0	20	110	17	126	0	0	0	0

## Group 10: VU METRES

<b>10-A</b>	<b>100</b>	<b>RANDOM LED VU METRE</b>	$\frac{1}{2}$ Green + $\frac{1}{4}$ Yellow + $\frac{1}{4}$ Red
Random green-to-red effect divided into segments (green + yellow + red) + black, parameters for minimum and maximum size, segments, speed and random speed			
Channel 1: Effect		<b>100</b>	
Channel 2: Colour 1 Effect		1-63 Green-Yellow-Red / 64-127 Blue-Cyan-Red / 128-191 Orange-Yellow-Red/ 192-255 Purple-Blue-Red	
Channel 3: Dimmer – Strobe			
Channel 4: Speed		Reversal	
Channel 5: Effect size		xx	
Channel 6: Spaces		xx	
Channel 7: Colour- 2			
Channel 8: Dimmer			

<b>10-B</b>	<b>101</b>	<b>VU METRE</b>	
Audio vu metre effect with configurable series of colours			
Position and actual audio amplitude configurable on channel 6			
Channel 1: Effect			
Channel 2: Colour 1 Effect			
Channel 3: Dimmer – Strobe			
Channel 4: Speed		Reversal	
Channel 5: Effect size		Starting position	
Channel 6: Spaces		Amplitude (sound level)	
Channel 7: Colour- 2			
Channel 8: Dimmer colour 2			

<b>10-C</b>	<b>102</b>	<b>XX</b>	
<b>Effect</b>			
Channel 1: Effect		102	
Channel 2: Colour 1 Effect			
Channel 3: Dimmer – Strobe			
Channel 4: Speed		Reversal	
Channel 5: Effect size			
Channel 6: Spaces			
Channel 7: Colour- 2			
Channel 8: Dimmer colour 2			

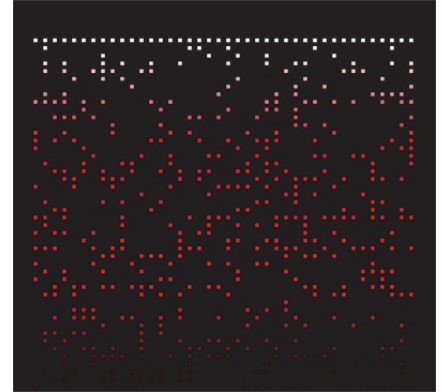
<b>10-D</b>	<b>103</b>	<b>XX</b>	
Waiting			

<b>10-E</b>	<b>104</b>	<b>XX</b>	
Waiting			

## Group 11: MAGIC

Channel 1: Effect **110**  
Channel 2: Colour 1 Effect  
Channel 3: Dimmer – Strobe  
Channel 4: Speed  
Channel 5: Effect size  
Channel 6: Spaces  
Channel 7: Colour- 2  
Channel 8: Dimmer

Reversal  
**xx**  
Star density



### **11-A** **110** **MAGIC 1**

A group moves and illuminates pixels at random, after which they fade smoothly

### **11-B** **111** **MAGIC 2**

Identical to Magic, but with a white pixel first that also appears randomly. Channel 5 > persistence

### **11-C** **112** **MAGIC 3**

A pixel moves like a chaser and projects pixels in front of it with variable speed and lifetime Channel 5 > persistence

## Group 12: MAGIC STATIC

A pixel moves while generating other pixels that slowly disappear

Channel 5 is the position channel  
Its movement generates effects

### 12-A 120 Magic static 1

A pixel moves while generating other pixels that slowly disappear

### 12-B 121 Magic static 2

Identical to Magic, but with a white pixel first that also appears randomly. Channel 5 > persistence

### 12-C 122 Magic static 3

A pixel moves like a chaser and projects pixels in front of it with variable speed and lifetime Channel 5 > persistence

### 12-D 123 xx

Waiting

### 12-E 124 xx

Waiting

### 12-F 125 xx

Waiting

### 12-G 126 xx

Waiting

### 12-H 127 xx

Waiting


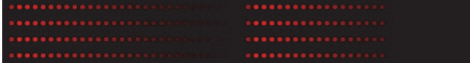







### 12-I 128 xx

Waiting

### 12-J 129 xx

Waiting

**Group 13: STOP AND GO**  
Chaser accelerates, slows down, stops and starts again

<b>13-A</b>	<b>130</b>	<b>STOP AND GO Square</b>	
Channel 2: Colour 1 (Effect)	Active		
Channel 3: Dimmer – Strobe	Active		
Channel 4: Speed	Active		
Channel 5: Effect size	Active		
Channel 6: Spaces	Active		
Channel 7: Colour 2 (background)	Active		
Channel 8: Dimmer colour 2	Active		
<b>13-B</b>	<b>131</b>	<b>STOP AND GO Decreasing</b>	
Stop and Go with decreasing snake			
<b>13-C</b>	<b>132</b>	<b>STOP AND GO Increasing</b>	
Stop and Go with increasing snake			
<b>13-D</b>	<b>133</b>	<b>STOP AND GO Increasing-Decreasing</b>	
Stop and Go with increasing and decreasing snake			
<b>13-E</b>	<b>134</b>	<b>STOP AND GO Decreasing-Increasing</b>	
Stop and Go with decreasing and increasing snake			
<b>13-F</b>	<b>135</b>	<b>STOP AND GO White-Colour</b>	
Stop and Go starting from white then gradient to colour 1			
<b>13-G</b>	<b>136</b>	<b>STOP AND GO Colour 1-Colour 2</b>	
Stop and Go starting from foreground colour then gradient to background colour (no coloured background)			
<b>13-H</b>	<b>137</b>	<b>STOP AND GO Shooting Star</b>	
Effect of a white pixel followed by a decreasing colour (see if random possibility in both directions)			
<b>13-I</b>	<b>138</b>	<b>STOP AND GO Wave</b>	
Similar to effect 133, decrease is on colour 2 (not black)			
<b>13-J</b>	<b>139</b>	<b>STOP AND GO</b>	

## Group 14: STOP AND REVERSE

Chaser accelerates, slows down, stops and starts again

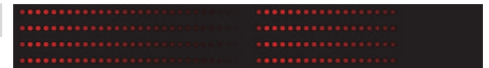
### 14-A 140 STOP AND REVERSE Square



Channel 2: Colour 1 (Effect) Active  
 Channel 3: Dimmer – Strobe Active  
 Channel 4: Speed **Active**  
 Channel 5: Effect size Active  
 Channel 6: Spaces Active  
 Channel 7: Colour 2 Active  
 (background)  
 Channel 8: Dimmer colour 2 Active

### 14-B 141 STOP AND REVERSE Decreasing

Stop and Reverse with decreasing snake



### 14-C 142 STOP AND REVERSE Increasing

Stop and Reverse with decreasing snake



### 14-D 143 STOP AND REVERSE Increasing-Decreasing (Javelin)

Stop and Reverse with increasing and decreasing snake



### 14-E 144 STOP AND REVERSE Decreasing-Increasing

Stop and Reverse with decreasing and increasing snake



### 14-F 145 STOP AND REVERSE White-Colour

Stop and Reverse starting from white then gradient to colour 1



### 14-G 146 STOP AND REVERSE Colour 1-Colour 2

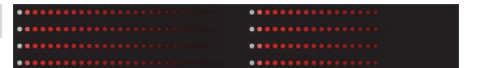
Stop and Reverse starting from foreground colour then gradient to background colour (no coloured background)

Channel 1: Effect  
 Channel 2: Colour 1 Effect Snake starting colour  
 Channel 3: Dimmer – Strobe  
 Channel 4: Speed  
 Channel 5: Effect size  
 Channel 6: Spaces  
 Channel 7: Colour- 2 Snake ending colour  
 Channel 8: Dimmer colour 2



### 14-H 147 STOP AND REVERSE Shooting Star

Effect of a white pixel followed by a decreasing colour (see if random possibility in both directions)



### 14-I 148 STOP AND REVERSE Wave

Similar to effect 143, decrease is on colour 2 (not black)





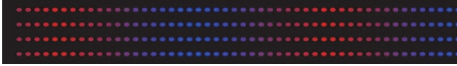



### 14-J 149 STOP AND REVERSE Chaser accelerates, slows down, stops and starts again



## Group 15: BACK AND FORTH & SINUS

Regular succession of pixels going from one edge to the other  
 Functions are differentiated using speed 0-127/128-255)

<b>15-A</b>	<b>150</b>	SOLID CHASER Square	
Channel 2: Colour 1 (Effect)	Active		
Channel 3: Dimmer – Strobe	Active		
Channel 4: Speed	0-127 linear speed – 128-255: Sinusoidal speed		
Channel 5: Effect size	Active		
Channel 6: Spaces	Active		
Channel 7: Colour 2 (background)	Active		
Channel 8: Dimmer colour 2	Active		
<b>15-B</b>	<b>151</b>	BACK AND FORTH Decreasing Snake Classic chaser with snake decreasing in intensity on the whole length	
<b>15-C</b>	<b>152</b>	BACK AND FORTH Increasing Snake Classic chaser with snake increasing in intensity on the whole length	
<b>15-D</b>	<b>153</b>	BACK AND FORTH Increasing-Decreasing Snake Classic chaser with snake increasing and decreasing in intensity on the whole length	
<b>15-E</b>	<b>154</b>	BACK AND FORTH Decreasing-Increasing Snake Classic chaser with snake decreasing and increasing in intensity on the whole length	
<b>15-F</b>	<b>155</b>	BACK AND FORTH White-Colour Snake Chaser starting with white then gradient to colour 1	
<b>15-G</b>	<b>156</b>	BACK AND FORTH Colour 1-Colour 2 Snake Chaser starting with foreground colour then gradient to background colour (no coloured background)	
<b>15-H</b>	<b>157</b>	BACK AND FORTH Shooting Star Effect of a white pixel followed by a decreasing colour (see if random possibility in both directions)	
<b>15-A</b>	<b>158</b>	BACK AND FORTH Wave Similar to effect 83, decrease is on colour 2 (not black)	
<b>15-A</b>	<b>159</b>	BACK AND FORTH	



Group 16:

**15-A** 150

Channel 2: Colour 1 (Effect)  
Channel 3: Dimmer – Strobe  
Channel 4: Speed  
Channel 5: Effect size  
Channel 6: Spaces  
Channel 7: Colour 2 (background)  
Channel 8: Dimmer colour 2

**15-B** 151

**15-C** 152

**15-D** 153

**15-E** 154

**15-F** 155

**15-G** 156

**15-H** 157

**15-A** 158

**15-A** 159

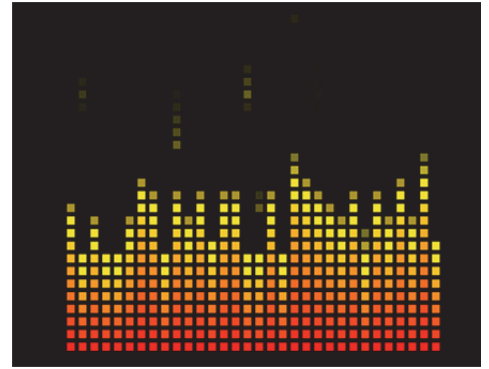
## GROUP 17: FIRE EFFECTS

### 17-A 170 FLAME 1

#### Fire effect with colours

Channel 1: Effect  
Channel 2: Colour 1 Effect  
Channel 3: Dimmer – Strobe  
Channel 4: Speed  
Channel 5: Effect size  
Channel 6: Spaces  
Channel 7: Colour- 2  
Channel 8: Dimmer colour 2

Reversal  
Flame amplitude  
Fire size



Example:

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Fire:	170	33	0	48	255	32	0	255	0	0	0	0	0	0	0	0

Caution: this effect works well in a matrix or a single row and on relatively short rows, parameters 4 and 5 must be adjusted accordingly.

### 17-B 171 FLAME 2

Variant of FLAME 1 → Flame vibrating to amplify the realistic effect

### 17-C 172 FLAME 3

Variant of FLAME 1 → Permanent light background. The high and low colours are defined in a colour range (channel 2), the background colour is defined by 7 and 8.

## MASTER EFFECT

### 1-8 MASTER CHANNELS

#### 001 MASTER Channel 1: EFFECTS

0: off - 1 to 255 effects

#### 002 MASTER Channel 2: EFFECTS COLOUR

0: RAINBOW - 1-254: Colour - 255: WHITE

#### 003 MASTER Channel 3: EFFECTS DIMMER/STROBE/SPARKLES

0>127 DIMMER (0 Maximum dimmer – 127 Dimmer to 0)

128>200: STROBE speed

201>226: Sparkles 1

227>254: Sparkles 2

255: RESET

#### 004 MASTER Channel 4: EFFECTS SPEED

0 Fixed (stop)

1>126: Decreasing scrolling speed - Speed

127 Fixed (stop)

128>254: Increasing inverted colours scrolling speed

255: DMX THRU

#### 005 MASTER Channel 5: EFFECTS SIZE

(in % of the LED strip length)

#### 006 MASTER Channel 6: Starting address

(in % of the LED strip length)

#### 007 MASTER Channel 7: BACKGROUND COLOUR dimmable

0: RAINBOW - 1-254: Colour - 255: WHITE

#### 008 MASTER Channel 8: Background colour DIMMER

0>127 DIMMER (0 Dimmer to 0 – 127 Maximum Dimmer)

128>200: STROBE speed

201>226: Sparkles 1

227>254: Sparkles 2

255:

The Master Command controls rows relative to each other.

For example, if a chaser order is given, the MC will control the offset between all rows. A chaser will start from row 1, then the same chaser will start from row 2 with a slight offset, then row 3, etc. A figure will thus be created that will change depending on the offset applied.

Channel 9 controls the offset type.

As with Channel 1, effects are grouped by families of 10.

From 1 to 80, groups are the functions of sliders 1 to 8

Sliders from 10 to 14 then change functions according to the groups (especially slider 10)

In the following examples, we will set the simulator to 8 rows of 50 dots.

To understand the effects of different offsets, we recommend starting with the “STATIC” effect: channel 1 in 60

Let's set the values of channels 1 to 8

60 0 0 72 38 59 253 62

(You can copy and paste these values)

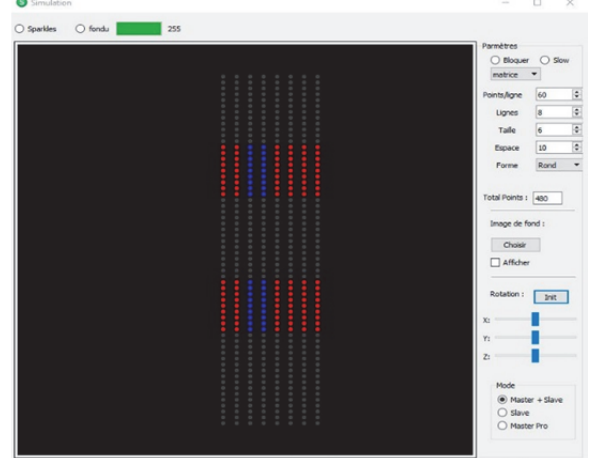
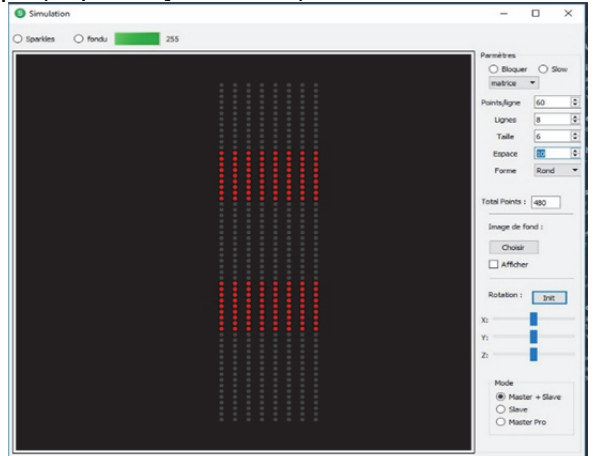
Then, set channel 9 to 10, and channels 11 and 12 to 40 and 40: You will notice that one row out of 2 disappears.

Set channel 12 to 255, only one row is left: this is the maximum offset between rows (like channel 6 of the chaser). Then, set channel 11 to 255: this is the number of grouped rows (like channel 5 of the chaser).

Apply values 80 and 255 to channels 11 and 12, then move channel 13 (speed).

The rows will then move as a horizontal chaser. Let's move on to colour: Set channel 9 to 20, slider 10 becomes the colour palette.

Set a blue colour and you will then see the blue move.



Set channel to 30, and slider 10 will become the dimmer. You can then set the intensity. Same functions as the dimmer with intensity, transparency and strobe.

Try values 40, 50, 60, 70 and 80.

There is one small exception with value 40, which is of particular interest with the chaser functions.

Set the values 10 0 0 72 38 59 253 62 40 166 39 41 0 0 0 0

You will get a chaser with every other row inverted. You can change the speed of channels 4 and 10 to see the influence of speed.

Then, change channels 11, 12 and 13 to create moving figures.

On the same basis, using the random generations of channels 1 to 90, try

97 0 0 72 124 59 253 0 40 29 124 120 104 0 0 0  
160 0 0 7 15 92 253 0 40 13 124 121 117 0 0 0

Here is a series of basic parameters for testing:

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Chaser:	10	160	0	24	24	51	41	221	4	111	176	177	110	126	0	0

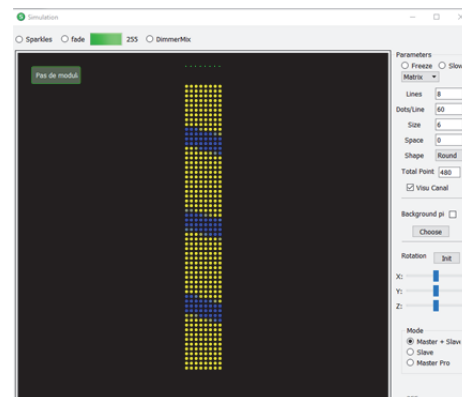
### CHANNEL 9

Generally, odd-numbered effects (1, 3, 5, 7...) open as a curtain from the central branches towards the outside (for 20 branches, the effect starts at 10-11, then 9-12, 8-13, etc.

Even-numbered effects (2, 4, 6...), open from left to right, or from right to left.

Channel 14 sets the direction and speed.

(Opposite: "curtain" opening)



For each effect 9, the parameters of the following channels modify the offset sequence. For better understanding, use the examples provided in the simulator.

In the example above, channel 14 allows to define the opening direction: change value 126 to 128, restart the effect and compare.

## CHANNEL 9

### Group 10

To test group 10, use the following parameters

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	10	160	0	120	82	209	41	221	10	62	54	37	129	116	0	0

Use channels 11 and 12 to spread the strips, and channel 13 to modify the scrolling speed

### Group 20 COLOURS

To test group 20, use the following parameters

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	10	160	0	120	82	209	253	221	20	5	48	40	33	118	0	0

Channel 10 sets the rotating colour (in this case, red)

Use channels 11 and 12 to offset the colours of the strips, and channel 13 to modify the scrolling speed

Channel 14 allows you to modify the start: Even values start the effect progressively, while odd values fill the effect in one go.

### Group 30 DIMMER

To test group 30, use the following parameters

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	10	160	0	120	82	209	253	221	30	85	196	166	124	102	0	0

Channel 10 sets the rotating dimmer

Use channels 11 and 12 to offset the intensities, and channel 13 to modify the scrolling speed

### Group 40 SPEED

To test group 40, use the following parameters

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	10	160	0	120	82	209	253	221	40	228	6	7	0	0	0	0

Channel 10 sets the speed of a second group. In this example, we will reverse the speed to see the direct effect and not create an offset (13 and 14 set to 0).

Use channels 11 and 12 to create groups, for example with 18-18, you will get 2 rows in one direction and 2 in the other.

Try it in a matrix.

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	10	160	0	17	20	23	253	221	40	182	18	18	49	0	0	0

Then, set value 9 to 45

10	160	0	32	24	23	253	221	45	71	18	18	51	0	0	0
10	160	0	196	24	23	253	221	45	201	51	18	42	0	0	0

### Group 50 SIZE

To test group 50, use the following parameters

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	10	160	0	120	82	209	253	221	53	26	40	43	120	99	0	0

Channel 10 creates different sizes

Use channels 11 and 12 to control the attack and closing speeds so as to generate moving points effects.

## Group 60 SPACE

To test group 60, use the following parameters

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	10	160	0	17	20	23	253	221	60	11	9	107	16	17	0	0

Channel 10 creates spaces

Use channels 11 and 12 to control the attack and closing speeds so as to generate moving points effects (oscillations)

Note that channel 14 has an odd value that creates a row from the start. Set an even value to see the effect disappear gradually.

## Group 70 COLOUR 2 (background)

To test group 70, use the following parameters

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	10	160	0	17	20	23	253	221	70	65	116	116	123	142	0	0

Channel 10 creates the background colour (in this case, green)

Use channels 11 and 12 to control the spaces

Channel 14 controls the strip offset speed, channel 15 that of the effect.

## Group 80 DIMMER 2 (background)

To test group 80, use the following parameters

CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	10	160	0	17	20	23	253	221	82	102	116	145	142	136	0	0

Channel 10 controls the background luminance (in this case, white, colour of channel 7). Use channels 11 and 12 to control the spaces

Channel 14 controls the strip offset speed, channel 15 that of the effect.

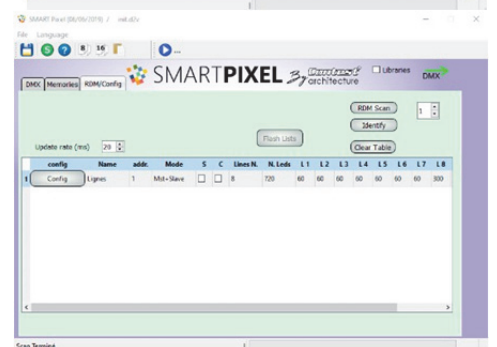
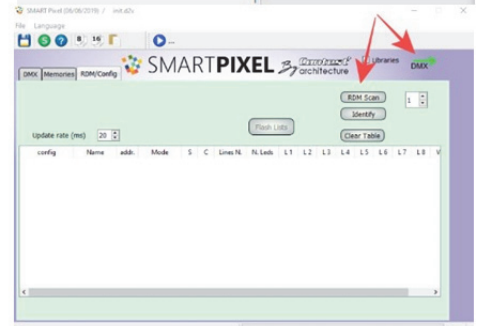
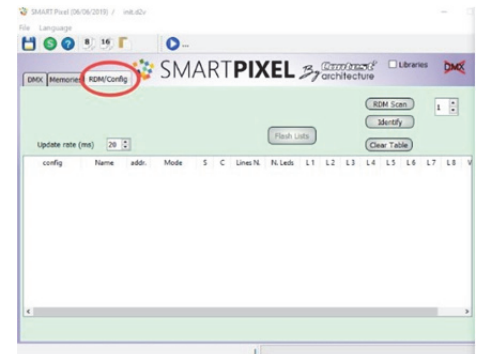
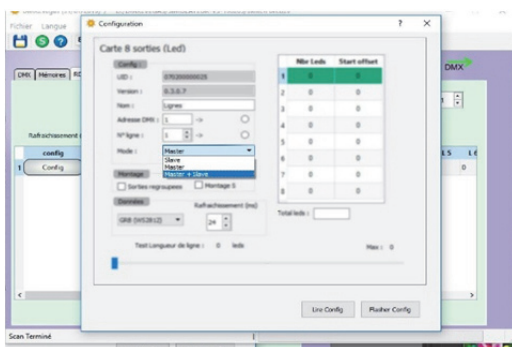
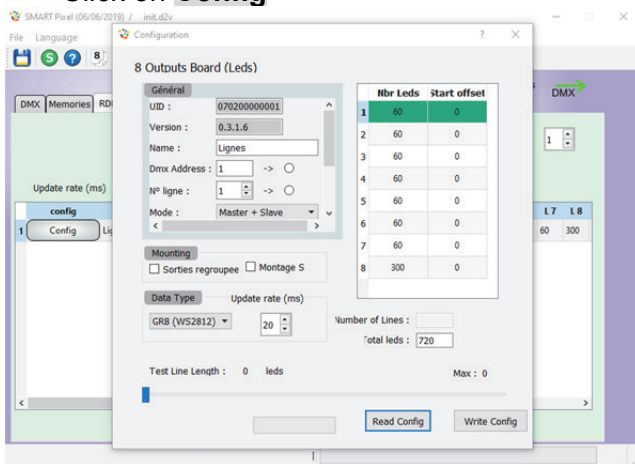
## PROGRAMMING THE MODULE CONFIGURATION

This section deals with how to configure boards by giving information about their function and configuration (number of LED rows, types of LEDs, etc.)

The **RDM/Config** tab is accessible in the simulator.

To communicate with the boards, use the SMART-USB cord. You can use multiple boards simultaneously, but we recommend that you program them one by one.

- Connect the USB cord to the computer and start the program.
- Open the “**RDM/Config**” tab
- Connect the DMX output (orange) to the module’s DMX input
- Connect the module to a 5V power supply
- Run the simulator.
- → In the top right, **DMX** must be displayed with a green arrow (otherwise, restart the simulator).
- The configuration line will then be displayed
- Select the module line by clicking on it
- Click on **Config**

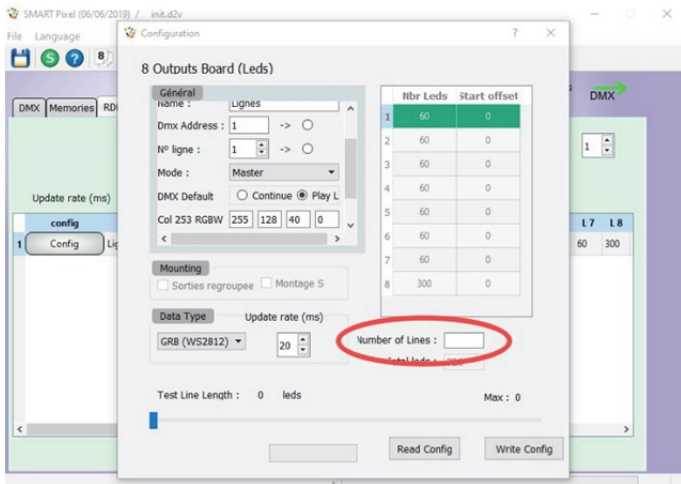


Configure the type of application:

- **Master** if the module is used to control slaves (SMART- DMX only)
- **Slave** if the module is used as a slave
- **Master + Slave** is the module is used in mixed mode



## MASTER CONFIGURATION



The MASTER configuration is used to control slave modules.

Its base address can be set from 1 to 498 on the standard network.

The number of rows corresponds to the slave configuration (caution, this is not the number of modules).

These rows can be StripLED rows or DMX rows

The maximum is 128

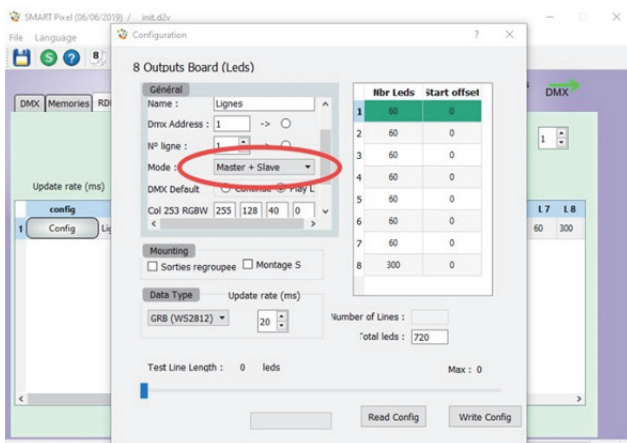
1-64 rows: Universe 1 output

65-128: Universe 2 output

## DMX OR STRIPLED (STRL) SLAVE CONFIGURATION

These two modes are similar in terms of global characteristics (number of rows, customisable colours, etc.)

### COMMON FUNCTIONS

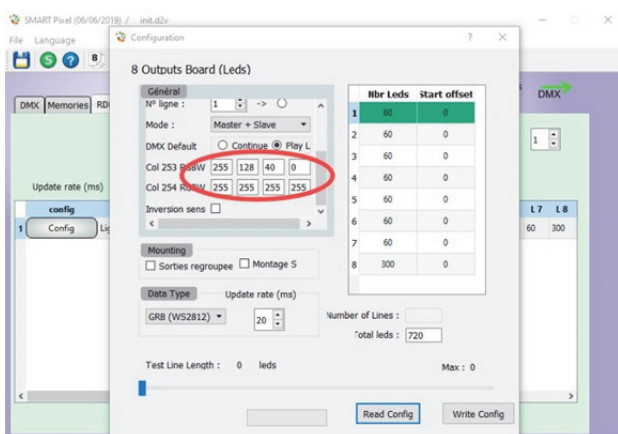


#### DMX Default

This is the action in the absence of DMX.

Check **CONTINUE** to continue the last instruction received.

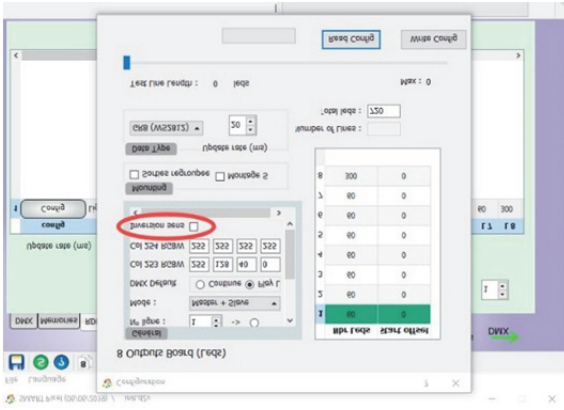
Check **PLAY LIST** to trigger playback of the list (if saved). This choice is mandatory when the **STANDALONE** mode is used



#### CUSTOMISABLE COLOURS

Customisable colours are set here by default.

By default, colours 253 & 254 are warm white and cold white, but you can set them to your liking.

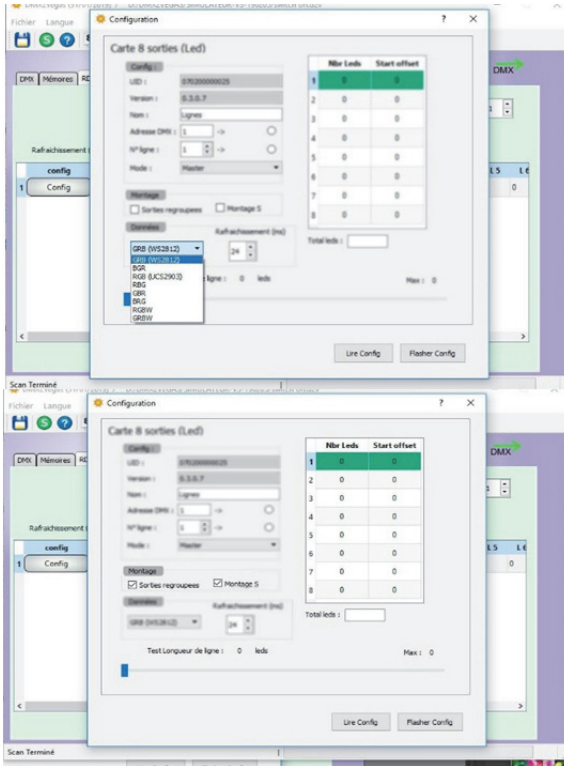


### DIRECTION REVERSAL

You can set the default operating direction of the module.

This function is useful in applications where modules work in different directions, or when control modules are physically placed in opposite locations

Example: in the case of ceiling or surface-mounted lights (driver at the top or at the bottom)

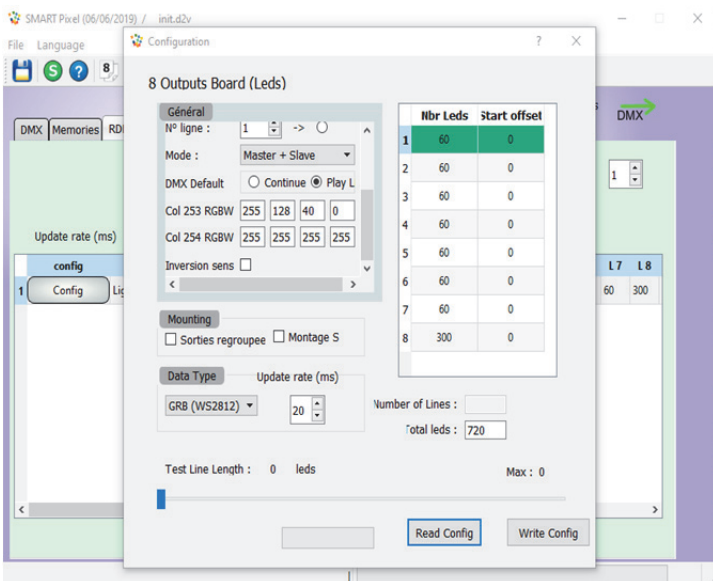


### Configuring the type of LED or strip used.

– This configuration can be tested several times to find the right configuration: it is then necessary to flash the configuration, quit and test with the colour palette to find the right configuration. One configuration per module, but module combinations can use different configurations.

### Configuring the mounting type:

- If the **Grouped outputs** box is checked, used outputs will be on physical output 1. This mounting type is used if you use separate rows that follow one another. For example, an installation around the room or in rectangle.
- If the **S-shaped mounting** box is checked, used outputs will be on physical output 1, but one row out of 2 will be inverted. This function is used in a matrix where the rows go back and forth.



### LED output configurator.

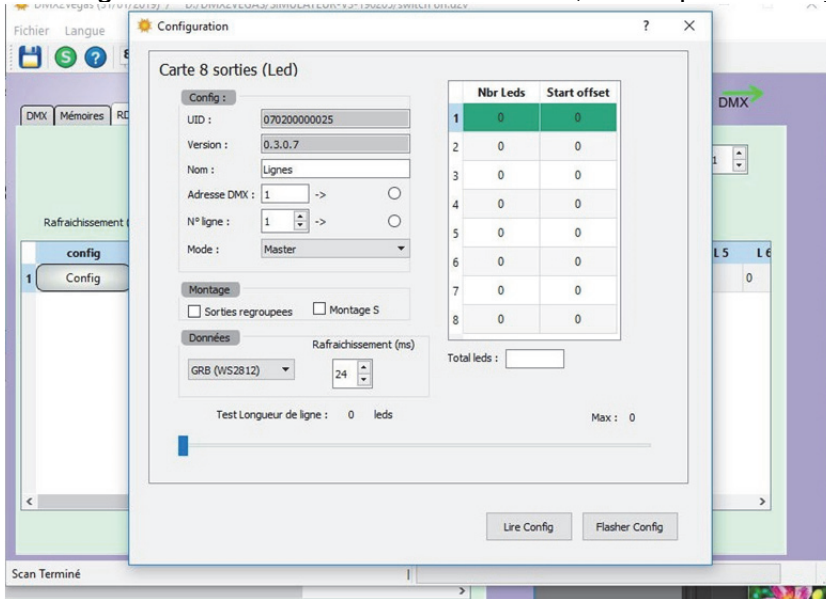
This utility is used to count the LEDs for each row, define the offsets, and program the configuration.

- Click on the row and manually enter the number of pixels or use the slider.
- Using the slider: move the slider using the mouse or the wheel. On the strip, a white pixel will appear, followed by a red fill.
- Bring the white pixel to the last pixel of the strip: the value shown will be used for future animations. Click on the following row to confirm the choice
- Repeat the operation for each row if necessary.

## OFFSETS

Offsets are ghost values. They are used for installations where the strips are physically offset.

Example: you have two parallel rows that must display identical effects, but there is an obstacle at the start of the second row. The first row is composed of 100 dots and the second one, of the same length, starts 30 cm further because of a misplaced technical hatch. Essentially, there are 10 dots that can be not installed. Either you wrap those 10 dots behind the hatch (to avoid an animation mismatch), or you state in the offset that there are 10 ghost dots. When the animation runs, the strips will be synchronised.



**Caution:** since the calculations are proportional to the number of dots, if you apply value 100 to the first row and 90 to the second one, you will have mismatched animations.

**Note:** if, conversely, the hatch is located at the end of the row, you will have to apply value 100 to both rows, since the shortened 90 strip will remain equal in terms of animation.

UID: Module serial number

Version: Internal software version Name: Customisable module name DMX Address: editable address

Row no.: Used for single row uses

The SMART-DMX board configured as Master can take any value (1 to 496) in the main DMX universe. Once addressed, it must be told how many rows are used (1 to 128)

Depending on how many rows are used, each box must have its own address. Just register the address of the box's first row.

In the following tables, numbering examples are given for 8-row and 4-row boxes. The DMX address of each box is written in **bold**.

See the "Calculation" cell for full details: Correspondence of all module configurations and DMX uses (single RGB and RGBW projectors and projector bars)

### **NOTE FOR DMX APPLICATIONS**

If pixel bars are used, make sure that the last bar does not overlap 2 universes. Use the calculation cell to obtain the addresses of the bars and find the last one.

### **REFRESHING**

The default refresh rate is 24 (ms). For uses greater than 700 pixels on one row, this rate must be adjusted. If this rate is too low, information may be lost. The rate must be optimally adjusted, otherwise the strip may flicker slightly.

## STANDALONE

The **Standalone** mode defines non-DMX operation.

The "LIST" function takes over all created scenes. It is possible to modify the order (using the arrows) and the duration of each scene.

Several lists can be created and named.

Once one of the lists has been created, go to the RDM tab, scan the network, choose the module and send the list (FLASH LIST).

By default, if no DMX signal is detected, the module plays list no. 1 (make sure to remove the INIT scene that would otherwise be played and cause a "black-out")

### INPUT PORTS

**Caution:** *These ports should be used with caution, as they are unprotected and electric shocks can damage the module. Use the internal connections (to be soldered) with short shielded wires.*

Using common to ports:

Port 8 increments the list (push-button is used to change lists)

Ports 1 to 7 play lists 1 to 7 in "Toggle" or "Flash" mode.

**"Toggle" mode:** if no port is activated, list 1 is played; if port 2 is activated, list 2 is played, once port 2 is released, list 1 takes over.

**"Flash" mode:** By default, list 1 is played. Pressing port 2 (push-button) activates list 2 and stays on it.

## TERMINOLOGY USED

**SEGMENT:** This is a set of dots following each other (1 to 800). All the effects of channels 1 to 8 are defined in a segment.

**SNAKE:** This is a block of moving dots. A snake can have a size of 1 dot, up to the length of a segment.

**COLOUR 1:** By default, this is the colour of a snake (foreground colour)

**COLOUR 2:** By default, this is the background colour, but in some effects, it is the second colour used.

**EFFECT:** This is a visual function assigned to a segment. It uses snakes defined by number, speed, colour and space.

**BACKGROUND COLOUR (Colour 2):** This is the colour appearing behind a snake along the whole length. Only its colour and intensity can be controlled.