

# Zip™ DRIVE 1 Controller v5.5

## User Manual

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## Introduction

The Zip™ DRIVE is a small controller that can be used to control Zip Tubes and Zip Panels. It can be operated via the four buttons on the front panel or remotely via DMX. Over nine million different combinations of patterns, colors, speeds, and effects are possible.

## Quick Start

1. Connect the Zip Drive to the system and turn it on.
2. Press the **MODE** button until SYSTEM SETUP appears in the menu.
3. Press **SET UP** and set the number of tubes using the **UP** and **DOWN** buttons. Press Set Address = YES to send the addresses to the tubes.
4. If you want to use the DMX input, set the DMX Start channel to value greater than 0. Refer to the DMX section for DMX channel values.
5. For non DMX use, use the **MODE** button to cycle through the four playback modes. For each mode, press the **SET UP** button to modify a color or color sequence and a speed. Additional parameters for Direction, Pattern Mode, and Flash Frequency are available in some modes.

## Setup

1. Connect the supplied wall transformer to an AC power outlet and into the back of the controller.
2. Connect the data output cable from the back of the controller into the first Zip Tube or Zip Panel.
3. Turn on the controller and all tubes and/or panels.
4. When the controller first turns on the LCD display will show:

The image shows a rectangular LCD display with a black background and white text. The text is arranged in two lines. The first line reads "Element Labs" and the second line reads "ZIP DRIVE 1 v5.5". The text is in a simple, monospaced font.

# Operation

## Buttons

The Zip DRIVE uses a simple menu system and four navigation buttons to access all of the functions.

The buttons are:

**MODE:** This button cycles through all the available modes

**SET UP:** This button cycles through the various parameters within each mode

**UP and DOWN:** These buttons scroll up and down through the parameter values

## Modes

The Zip DRIVE has a set up mode and four program modes. Each mode has a number of parameters than can be modified. These modes and the available options are shown in table 1:

<b>MODE</b>	<b>SET UP Options</b>	<b>UP and DOWN Options</b>	<b>Function</b>
SYSTEM SETUP	Tube Amount	1 - 1000	Sets the number of tubes in the system
	DMX Start	0 - 507	Sets the DMX start address of the controller
	Set Address	YES / NO	Sends address information to the tubes or panels
SOLID COLOR	Color Sequence	1 - 64	Sets the color(s)
	Speed	0 - 100	Sets the pattern step time
	Flash Frequency	0 - 100	Sets the strobe frequency
COLOR FADE	Color Sequence	9 - 64	Sets the colors
	Speed	0 - 100	Sets the pattern step time
WIPE	Color Sequence	9 - 64	Sets the colors
	Speed	0 - 100	Sets the pattern step time
	Direction	Forward, Reverse, Bounce	Sets the pattern direction
	Pattern Mode	Pixel/Tube, Pixel/System, Tube/System	Sets the lengths of the pattern parts
	Flash Frequency	0 - 100	Sets the strobe frequency
PUSH	Color Sequence	9 - 64	Sets the colors
	Speed	0 - 100	Sets the pattern step time
	Direction	Forward, Reverse	Sets the pattern direction
	Pattern Mode	Pixel/Tube, Pixel/System, Tube/System	Sets the lengths of the pattern parts
	Flash Frequency	0 - 100	Sets the strobe frequency

Table 1: Modes

## Color Sequences

The "Solid Color" and "Color Fade" modes have 64 color different color sequences that may be selected. The "Wipe" and "Push" modes do not use the single color choices, so they have a total of 56 color combinations that may be chosen (9 through 64).

The list of combinations is shown in table 2:

Color Sequence	DMX Values			
1	0 - 3	K	(K = BLACK)	
2	4 - 7	R		
3	8 - 11	G		
4	12 - 15	B		
5	16 - 19	C		
6	20 - 23	M		
7	24 - 27	Y		
8	28 - 31	W		
9	32 - 35	K R		
10	36 - 39	K G		
11	40 - 43	K B		
12	44 - 47	K C		
13	48 - 51	K M		
14	52 - 55	K Y		
15	56 - 59	K W		
16	60 - 63	R G		
17	64 - 67	R B		
18	68 - 71	R C		
19	72 - 75	R M		
20	76 - 79	R Y		
21	80 - 83	R W		
22	84 - 87	G B		
23	88 - 91	G C		
24	92 - 95	G M		
25	96 - 99	G Y		
26	100 - 103	G W		
27	104 - 107	B C		
28	108 - 111	B M		
29	112 - 115	B Y		
30	116 - 119	B W		
31	120 - 123	C M		
32	124 - 127	C Y		
33	128 - 131	C W		
34	132 - 135	M Y		
35	136 - 139	M W		
36	140 - 143	R G B		
37	144 - 147	R G M		
38	148 - 151	R G Y		
39	152 - 155	R B M		
40	156 - 159	R B Y		

41	160 - 163	R M Y	
42	164 - 167	R Y K	
43	168 - 171	R W B	
44	172 - 175	G B M	
45	176 - 179	G B C	
46	180 - 183	G B W	
47	184 - 187	G M Y	
48	188 - 191	G M W	
49	192 - 195	B M C	
50	196 - 199	B M W	
51	200 - 203	B C W	
52	204 - 207	M Y W	
53	208 - 211	C M Y	
54	212 - 215	R K B K	
55	216 - 219	R K M K	
56	220 - 223	R K Y K	
57	224 - 227	R K W K	
58	228 - 231	G K M K	
59	232 - 235	G K B K	
60	236 - 239	B K W K	
61	240 - 243	R Y G C B M	
62	244 - 247	R C M B Y G	
63	248 - 251	R C M B Y G W	
64	252 - 255	K R C M B Y G W	

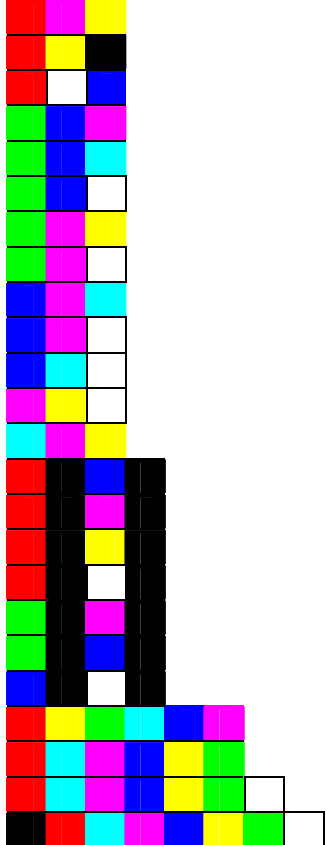


Table 2: Color Sequences

## Speed

The Speed function is available in all playback modes. There are 100 different speeds available. The value shown in the menu is the pattern's step time in seconds.

0	Stop (Paused)
0.01 – 0.09	in 0.01 increments
0.1 – 7.0	in 0.1 second increments
7 – 20	in 1 second increments
20 – 100	in ten second increments

## System Mode

Before using the controller, the system must be set up by defining the number of tubes and, optionally, the DMX start address.

1. Press the **MODE** button until `SYSTEM SETUP` is in the LCD window.
2. Press the **SET UP** button until `Tube Amount` is in the LCD window.
  - a. Use the **UP** and **DOWN** buttons to set the number of tubes in the system.
3. Press the **SET UP** button again and `DMX Start` will appear in the window.
  - a. If you are using the controller without DMX, set the value to "0"
  - b. If you wish to use DMX to trigger the controller, set the value to the start address (the first channel) that you require.

Note: If you set the DMX start address to any value other than "0" the controller will be in "DMX mode" and the other programming modes will not be available through the front panel of the controller.

4. Press the **SET UP** button again and `Set Address` will appear in the window.
  - a. Press `YES` (the **UP** button) to send the new address information to all of the tubes or panels.
  - b. If you do not want to send this new address information to the system, press `NO` (the **DOWN** button).

Once you send the addresses to the system, each tube will store its address in its own memory. This information is retained even when the tube is powered off.

If you make any changes to the system (more tubes, less tubes, or a different arrangement or order) then you will need to resend new address information to the system.

## Playback Modes

There are four different playback modes, each with a number of parameters, such as color, speed, etc.

All of the parameters for each mode are saved independently by the Zip DRIVE. So, as you cycle through the modes, each one will appear with the parameters that were last set in the mode.

### **Solid Color Mode**

The Solid Color mode creates a single color in the whole system simultaneously. If a single color is chosen (Color Sequence # 1 – 8) then the color will be static. If a Color Sequence is chosen that has more than one color, the system will alternate between (or loop through) those colors at a speed determined by the Speed parameter.

1. Press the **MODE** button until `SOLID COLOR` is in the LCD window.
2. Press the **SET UP** button until `Color Sequence` is in the LCD window.

Use the **UP** and **DOWN** buttons to choose the desired color or color sequence (see Table 2).

3. Press the **SET UP** button until `Speed#` appears in the LCD window.

Use the **UP** and **DOWN** buttons to set the desired speed.

The speed of the pattern's steps can be set from 0 to 100 seconds.

A speed of "0" will cause the pattern to pause.

If the Color Sequence is set to 1 through 8 (single colors) the speed parameter will have no apparent effect since there is nothing changing in the fixtures.

4. Press the **SET UP** button until `Flash Frequency#` appears in the LCD window.

The Flash Frequency sets a strobe effect that flashes the whole system on and off while the current pattern is running. Use the **UP** and **DOWN** buttons to set the desired rate.

"0" is no flashing (always on), "1" is the slowest, and "99" is the fastest.

## **Color Fade Mode**

The Color Fade mode creates a solid color in the whole system and then fades to one or more other colors.

1. Press the **MODE** button until `COLOR FADE` is in the LCD window.
2. Press the **SET UP** button until `Color Sequence#` is in the LCD window.

Use the **UP** and **DOWN** buttons to choose the desired color sequence (see Table 2).

Note: In the Color Fade mode, only Color Sequences #9 - #64 are available, since 2 or more different colors are required for the cross-fade.

3. Press the **SET UP** button until `Speed#` appears in the LCD window.

Use the **UP** and **DOWN** buttons to set the desired speed.

The speed of the pattern's steps can be set from 0 to 100 seconds.

A speed of "0" will cause the pattern to pause.

## **Wipe Mode**

The Wipe mode creates an effect where one solid color wipes over another color.

1. Press the **MODE** button until `WIPE` is in the LCD window.
2. Press the **SET UP** button until `Color Sequence#` is in the LCD window.

Use the **UP** and **DOWN** buttons to choose the desired color or color sequence (see Table 2).

Note: In the Color Fade mode, only Color Sequences #9 - #64 are available, since 2 or more different colors are required for the cross-fade.

3. Press the **SET UP** button until `Pattern Mode#` appears in the LCD window.

The Pattern Mode defines the size of each step in the wipe and the overall size of the wipe pattern. It can either be set to three different values:

- a. Pixel / Tube  
The individual steps are 1 pixel (1/8 meter) long.  
The pattern runs through a single tube before repeating.  
All tubes display the same pattern simultaneously.
- b. Pixel / System  
The individual steps are 1 pixel (1/8 meter) long.  
The pattern runs through the entire system before repeating.

c. Tube / System

The individual steps are 1 pixel (1/8 meter) long.  
The pattern runs through the entire system before repeating.

Use the **UP** and **DOWN** buttons to set the Pattern Mode.

4. Press the **SET UP** button until `Direction#` appears in the LCD window.

The Direction defines the direction of the wipe pattern. There are three options:

a. Forward

The pattern always moves away from the controller

b. Reverse

The pattern always moves towards the controller

c. Bounce

When the pattern reaches either end it reverses direction

5. Press the **SET UP** button until `Speed#` appears in the LCD window.

Use the **UP** and **DOWN** buttons to set the desired speed.

The speed of the pattern's steps can be set from 0 to 100 seconds.

A speed of "0" will cause the pattern to pause.

6. Press the **SET UP** button until `Flash Frequency#` appears in the LCD window.

The Flash Frequency sets a strobe effect that flashes the whole system on and off while the current pattern is running. Use the **UP** and **DOWN** buttons to set the desired rate.

"0" is no flashing (always on), "1" is the slowest, and "99" is the fastest.

## **Push Mode**

The Push mode creates an effect where bands of color push each other down the tube(s).

1. Press the **MODE** button until `Push#` is in the LCD window.

2. Press the **SET UP** button until `Color Sequence#` is in the LCD window.

Use the **UP** and **DOWN** buttons to choose the desired color or color sequence (see Table 2).

Note: In the Color Fade mode, only Color Sequences #9 - #64 are available, since 2 or more different colors are required for the cross-fade.

3. Press the **SET UP** button until `Pattern Mode#` appears in the LCD window.

The Pattern Mode defines the size of each step in the wipe and the overall size of the wipe pattern. It can either be set to three different values:

- a. Pixel / Tube  
The individual steps are 1 pixel (1/8 meter) long.  
The pattern runs through a single tube before repeating.  
All tubes display the same pattern simultaneously.
- b. Pixel / System  
The individual steps are 1 pixel (1/8 meter) long.  
The pattern runs through the entire system before repeating.
- a. Tube / System  
The individual steps are 1 pixel (1/8 meter) long.  
The pattern runs through the entire system before repeating.

Use the **UP** and **DOWN** buttons to set the length.

4. Press the **SET UP** button until `Direction#` appears in the LCD window.

The Direction defines the direction of the wipe pattern. There are two options:

- a. Forward: The pattern always moves away from the controller
- b. Reverse: The pattern always moves towards the controller

5. Press the **SET UP** button until `Speed#` appears in the LCD window.

Use the **UP** and **DOWN** buttons to set the desired speed.  
The speed of the pattern's steps can be set from 0 to 100 seconds.  
A speed of "0" will cause the pattern to pause.

6. Press the **SET UP** button until `Flash Frequency#` appears in the LCD window.

The Flash Frequency sets a strobe effect that flashes the whole system on and off while the current pattern is running. Use the **UP** and **DOWN** buttons to set the desired rate.

"0" is no flashing (always on), "1" is the slowest, and "99" is the fastest.

## DMX Operation

All of the Zip DRIVE's playback functions can be controlled directly via the DMX input. The SYSTEM SETUP mode can only be accessed through the front panel of the Zip DRIVE controller.

To turn the DMX input on or off:

1. Press the **MODE** button until `SYSTEM SETUP` is in the LCD window.
2. Press the **SET UP** button until `DMX Start` will appear in the window.
  - a. If you are using the controller without DMX, set the value to "0"
  - b. If you wish to use DMX to trigger the controller, set the value to the start address (the first channel) that you require.

Note: If you set the DMX start address to any value other than "0" the controller will be in "DMX mode" and the other programming modes will not be available through the front panel of the controller.
3. The Zip DRIVE will now respond to six DMX channels starting with the channel set in step 2b above. The channel values and parameters are shown in table 3 below.

When the Zip DRIVE is being controlled via DMX, the patterns are identical as those accessible through the front panel control buttons. The six DMX channels must contain all the possible parameters for each mode, so not all modes use all of the parameters and DMX channels. For example: The Solid Color mode does not use DMX channels 4 or 5, since that mode has no Direction or Pattern Speed parameters.

DMX Notes:

1. In Solid Color mode, the Speed channel must be set greater than 2 for the single colors (#1 - #8) to appear properly.
2. In Color Fade, Wipe, and Push modes, the Color Sequence channel (DMX channel 2) must be set to 32 (Color Sequence #9) or higher, since Color Sequences #1 - #8 are not used with these modes.
3. The Flash Frequency function (DMX channel 6) needs to be left at full for normal (non-flashing) operation.
4. The use of the DMX input does not affect the parameter values that are stored by the Zip DRIVE when it was last used without DMX. Those values will still be present if the DMX input is turned off.

<b>DMX Channel</b>	<b>Function</b>	<b>Values</b>	<b>Option</b>
1	Select Mode	0 - 63 64 - 127 128 - 191 192 - 255	Solid Color Color Fade Wipe Push
2	Color Sequence	0 - 4 5 - 9 10 - 14 ↓ 250 - 255	#1 - Black #2 - Red #3 - Green ↓ (as per Figure 2) # 64 - K, R, C, M, B, Y, G, W
3	Speed	0, 1 2 ↓ 255	Off (Pause) Fastest Speed (0.01 sec.) ↓ Slowest Speed (100 sec.)
4	Direction	0-85 86-171 172-255	Forward Reverse Bounce
5	Pattern Mode	0-85 86-171 172-255	Pixel / Tube Pixel / System Tube / System
6	Flash Frequency	0 ↓ 254 255	Slowest Flash Rate ↓ Fastest Flash Rate No Flash (always on)

Table 3: DMX Channels

## Known Issues

1. The list of times in the Speed menus is missing a value for 1.0 seconds. The current list of values skips from 0.9 seconds to 1.1 seconds
2. In PUSH mode, Color Sequences #36 - #53 and #61 - #63 have an additional color.

## Specifications

*Part Number* ZD-1

*Width* 8 ¼" (210mm)

*Height* 2 ¼" (57mm)

*Depth* 5" (126mm)

*Weight* 21 oz. (0.6 kg)

*Construction* Powder coated aluminum

*Mounting* Stand alone with plastic feet or mounted via four slots

*Environmental* IP30 (indoor use only)

*Cooling* Passive

*Storage Temperature* -40°C to 70°C

*Operating Temperature* 0°C to 50°C

*Operating Humidity* 95% max, non-condensing

*Front Panel* Power Switch  
LED Display with backlight  
4 control buttons

*Rear Panel* DC Power Input: 12VDC, 500mA minimum  
Data output for Zip fixtures  
DMX input (male XLR, 3-pin)  
DMX output (female XLR, 3-pin)

*Power Supply* Class 2 Wall Adapter  
Input: 120VAC 60Hz  
Output: 12VDC, 500mA (minimum)  
UL and cUL listed

*Included Accessories* Zip Tube / Panel power cord, 5' (1.5m) with male Edison (NEMA 5-15)

**WARNING** Severe risk of electric shock. No user-serviceable parts inside.

## **Contacting Element Labs**

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