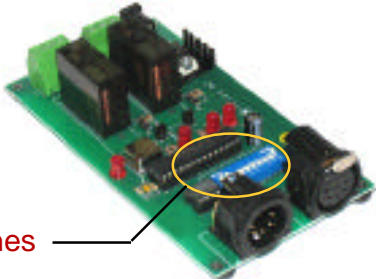


# DMX 2-Channel Relay Board

Version 3.2 -2018  
WD1564

### Overview

A two-channel DMX relay switch for switching loads up to 10A at 240V AC per channel.  
 The DMX switch operates on the standard DMX512 bus and requires 1-2 DMX channels for operation.  
 Relays can operate Independently or be set as Flip-Flop Relays  
 The DMX address can be set between 1 and 512.



Address / J1 Switches

### Setup

#### Connections

The DMX Switch (2-Ch Relay) board requires a 12V DC supply at 500 mAmps. (via 2.1mm socket, center pin positive or wire terminal block positive (+) and minus (-) connections.)  
 Connect the relay board to the DMX network using 5-pin XLR connectors. (Input and Feed through)  
 Connect the loads / devices to the relevant volt-free relay outputs 1-2 . ( See relay setup and application example pages for details). Each relay is rated at 10 Amps at 240V AC.

#### Settings - (See Pages on Control / Addressing)

Set the required base address using the DIP switches 1 through 9. Add-up the values where the switch is set to the ON positions. The base address is read continuously.

Set the base address of Relay No. 1 as follows: Determine the start address value to be used for the DMX 2 Ch Relay board. (See DMX Value table for values and switch ON setting) Switch ON the DIP switches for the address value selected to the **ON** position. Example: DIP switches 5 =(16) and 6=(32) set to **ON** position, the base address for the DMX 2 Ch Relay board is now 16 + 32 = 48, this setting is used to determine the starting address output of the first Relay. Address 48 is the base address for Relay No. 1. The address of Relay No. 2 is the base address of Relay 1 plus 1 for Relay 2. Example: Base = 49 (Relay No. 1) Relay No 2 is 49 ( 48 +1 =49)

#### Relay Control (JP1 switch setting (Byte)

The relays on-board can be set as two different modes, by setting J1 switch ON or in the OFF position.

#### 2-Individual Relay Control

J1 switch **OFF** = normally relay mode, operates from **2-DMX channels** with individual relay

Relay-1	DMX CH-1 Value
Status	224 - 255 = ON 223 - 0 = OFF

Relay-2	DMX CH-2 Value
Status	224 - 255 = ON 223 - 0 = OFF

#### 2-Relay Flip / Flop Relay Control

J1 switch **ON** = relays are interconnected and operate from **1-DMX channel**. (Relays Flip-Flop Mode)

DMX CH1 Value	Relay-1 Status	Relay-2 Status
Less than 80	ON	OFF
Between 80 and 160	OFF	OFF
Greater than 160	OFF	ON

DMX LED- **ON** when a suitable DMX signal is being received or a flashing LED when **NO** valid DMX signal stream is being received by the 2-Ch DMX relay board.

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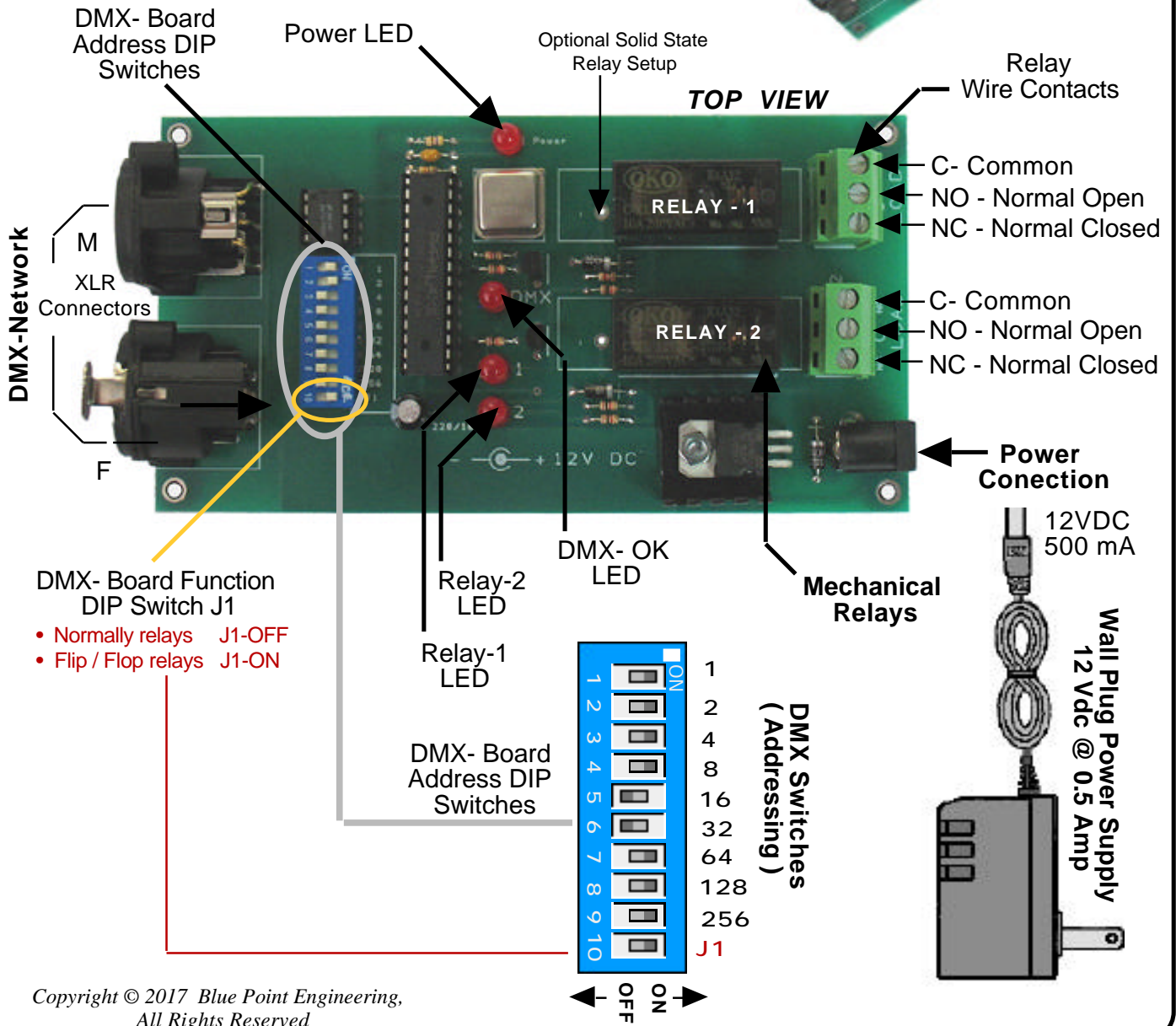
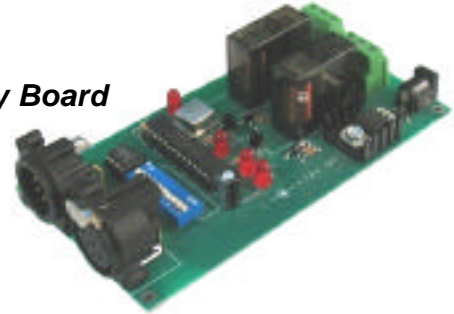
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# DMX 2-Channel Relay Board

## Hook-up

DMX 2-Ch Relay Board



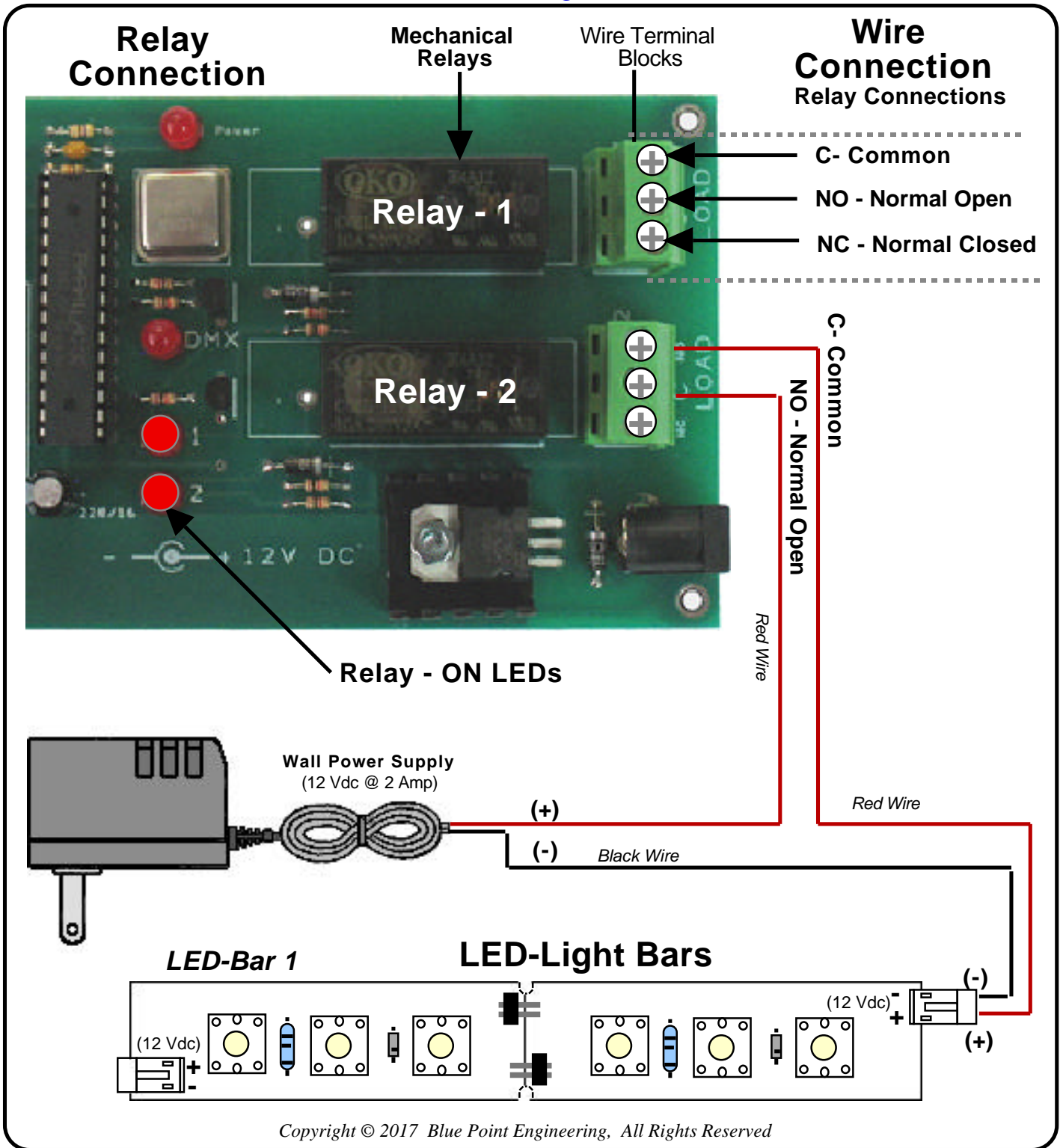
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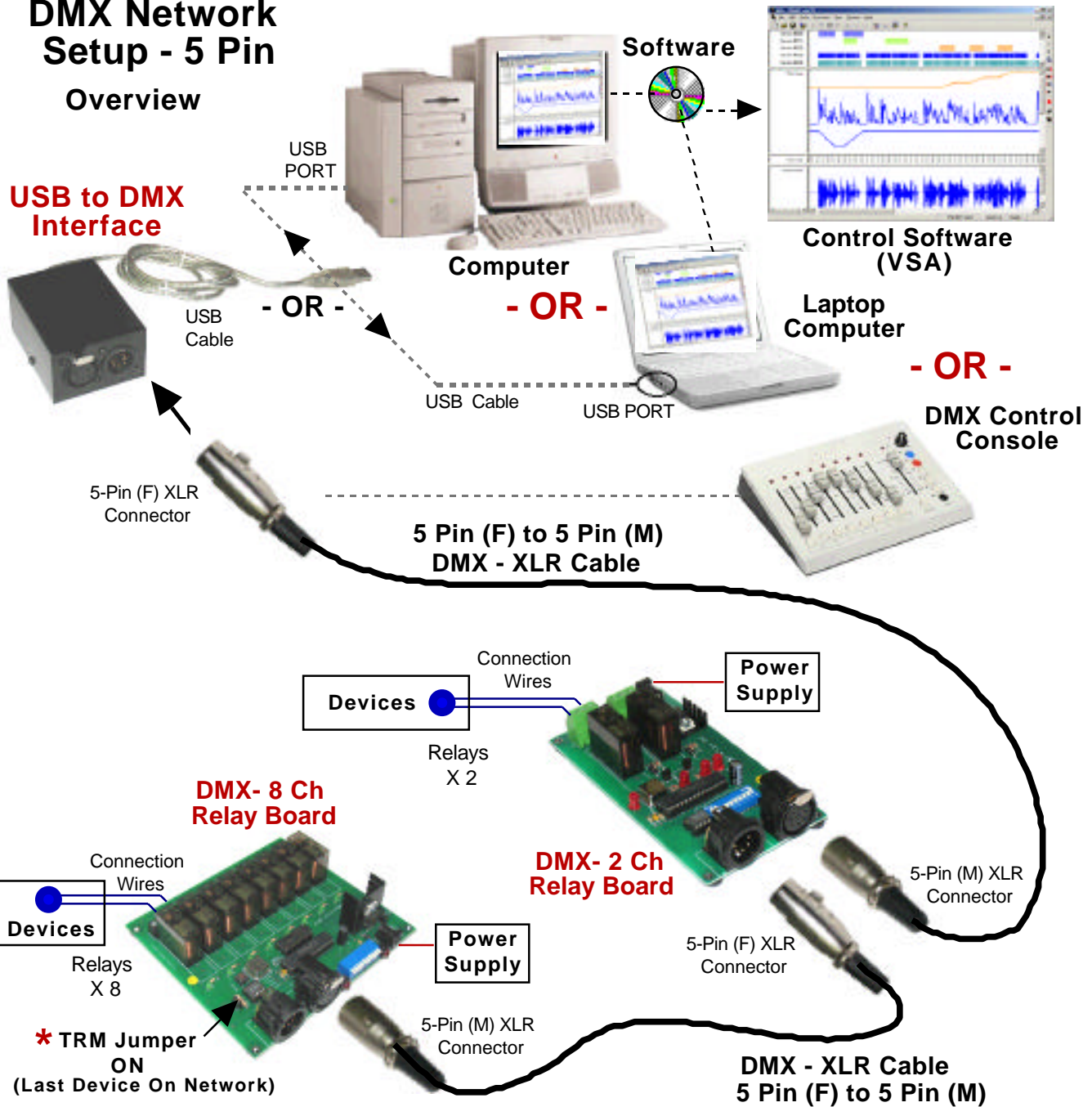
# DMX 2-Channel Relay Board



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# DMX 2-Channel Relay Board

## DMX Network Setup - 5 Pin Overview



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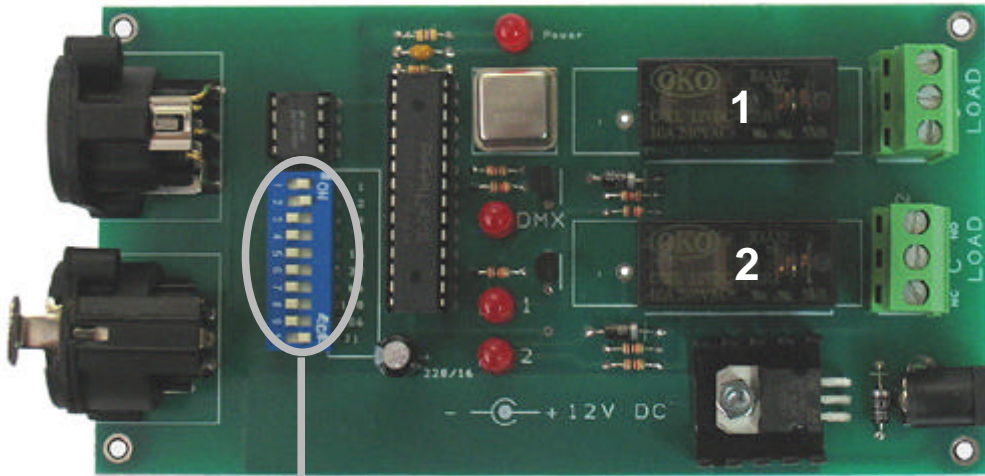
# DMX 2-Channel Relay Board

**Board Address  
DMX - Values**

## Duo DMX (2ch) Individual Relay Control

DIP Switch 10 (J1) = OFF  
Individual Relay Control

J1 = OFF

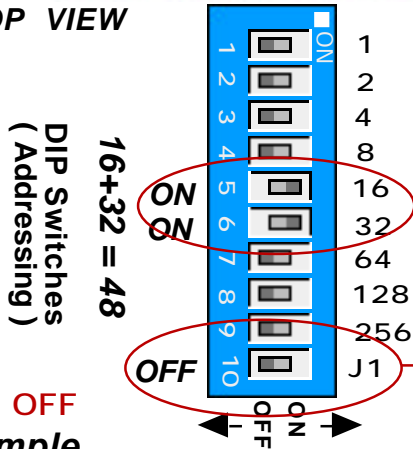


### Example

**Relay-1**  
(CH=48)  
(Value= 224-255)  
(Relay = ON)  
(Value= 223-0)  
(Relay = OFF)

**Relay-2**  
(CH=49)  
(Value= 224-255)  
(Relay = ON)  
(Value= 223-0)  
(Relay = OFF)

TOP VIEW



### Control Syntax - (See DMX512 Chart Chart for Values)

J1 = OFF (DIP Switch 10) set to OFF: ( Multiple DMX control channels )

The output on a particular channel will go high (ON) when the DMX transmitted value for that channel exceeds 224 and go low (OFF) when the DMX transmitted value for that channel is lower than 223.

( 223= OFF, 0% and 224= ON, 100% )

DMX Value 0-255 = 0-100%

J1 = OFF

### Example

**Setting the base address of Relay Outputs (Switch 10 (J1) set to OFF)**

Add the value of the address DIP switches set to the **ON** position to calculate the base address.

Example(CH): DIP switches 5=(16) and 6=(32) set to **ON** position, the base address is now 48, (16+32) this setting is used to determine the starting address output of Relay 1, the next relay would be address 49 for Relay 2.

Dip Switch 5 and 6 ON = **Base start Address 48 = Relay No.1**

**J1- Switch 10 = OFF**

Relay 1 **ON** at DMX value 224-255 **RELAY - 1**

Relay 1 **OFF** at DMX value 223-0

Dip Sw 5 ON- Value =16

DIP Sw 6 ON- Value =32

Value= (16+32= 48 )

48 = Start Address for Relay No.1

**Relay No2. = 49 ( Base address Relay No.1 = 48 + 1= 49, Relay No.2 = 49 )**

Relay 2 **ON** at DMX value 224-255 **RELAY - 2**

Relay 2 **OFF** at DMX value 223-0

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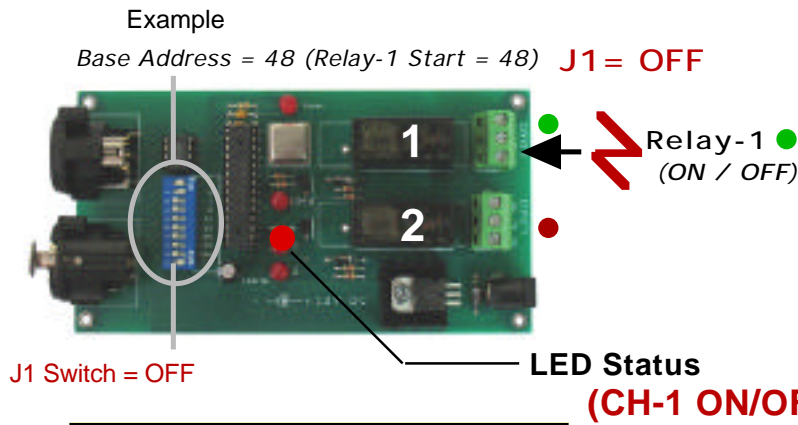
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# DMX 2-Channel Relay Board

**Board Address  
DMX - Values**

Duo DMX (2ch) Individual Relay Control  
DIP Switch 10 (J1) = OFF  
Individual Relay Control



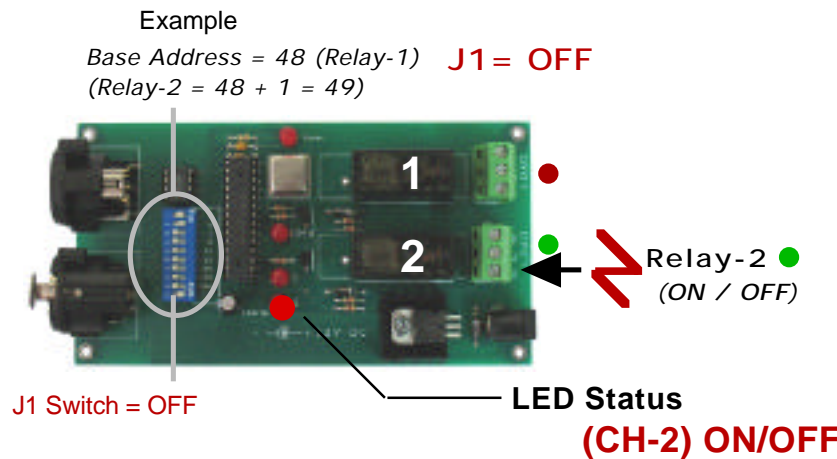
DMX Value-Channel -1  
0 = OFF ( 0 %)  
255 = ON ( 100 %)

**Example**

(DMX Board Base Address = 48)  
(Relay 1 = DMX Channel 48)  
(Relay 1 = ON Value = 224-255)  
(Relay 1 = OFF Value = 223-0)

Relay-1	DMX CH-1 Value
Status	224 - 255 = ON 223 - 0 = OFF

**Single Channel Relay Control**



DMX Value-Channel -2  
0 = OFF ( 0 %)  
255 = ON ( 100 %)

**Example**

(DMX Board Base Address = 48)  
(Relay 2 = DMX Channel 49)  
(Relay 2 = ON Value = 224-255)  
(Relay 2 = OFF Value = 223-0)

Relay-2	DMX CH-2 Value
Status	224 - 255 = ON 223 - 0 = OFF

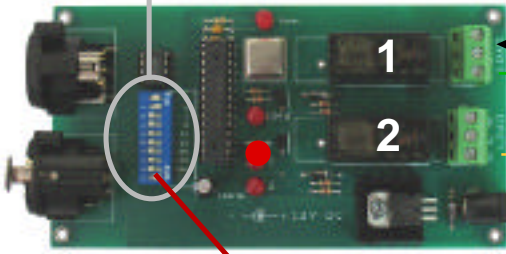
**Single Channel Relay Control**

# DMX 2-Channel Relay Board

## Board Address DMX - Values

DIP Switches  
(Addressing)

Example  
Address = 48



### Single DMX (1) Channel Control DIP Switch 10 (J1) = ON Flip-Flop Relay Control

J1 switch ON

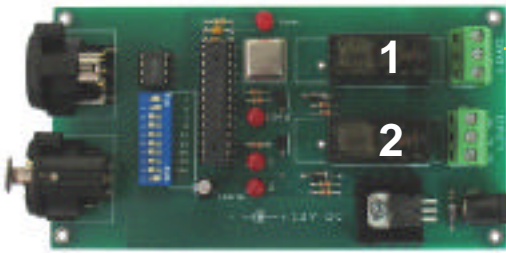
- Relay-1 ● (ON)
- Relay-2 ● (OFF)

#### Example

(DMX Board Address = 48)  
(Value = 80 - 0)  
(Relay 1 = ON)  
(Relay 2 = OFF)

Flip-Flop Function  
J1 Switch = ON

DMX CH1 Data Value Less than 80	Relay 1 Status ON	Relay 2 Status OFF
	Flip	Flop



- Relay-1 ● (OFF)
- Relay-2 ● (OFF)

#### Example

(DMX Board Address = 48)  
(Value = 80 - 160)  
(Relay 1 = OFF)  
(Relay 2 = OFF)

DMX CH1 Data Value Between 80 and 160	Relay 1 Status OFF	Relay 2 Status OFF
--	-----------------------	-----------------------



- Relay-1 ● (OFF)
- Relay-2 ● (ON)

#### Example

(DMX Board Address = 48)  
(Value = 160 - 255)  
(Relay 1 = OFF)  
(Relay 2 = ON)

DMX CH1 Data Value Greater than 160	Relay 1 Status OFF	Relay 2 Status ON
	Flop	Flip

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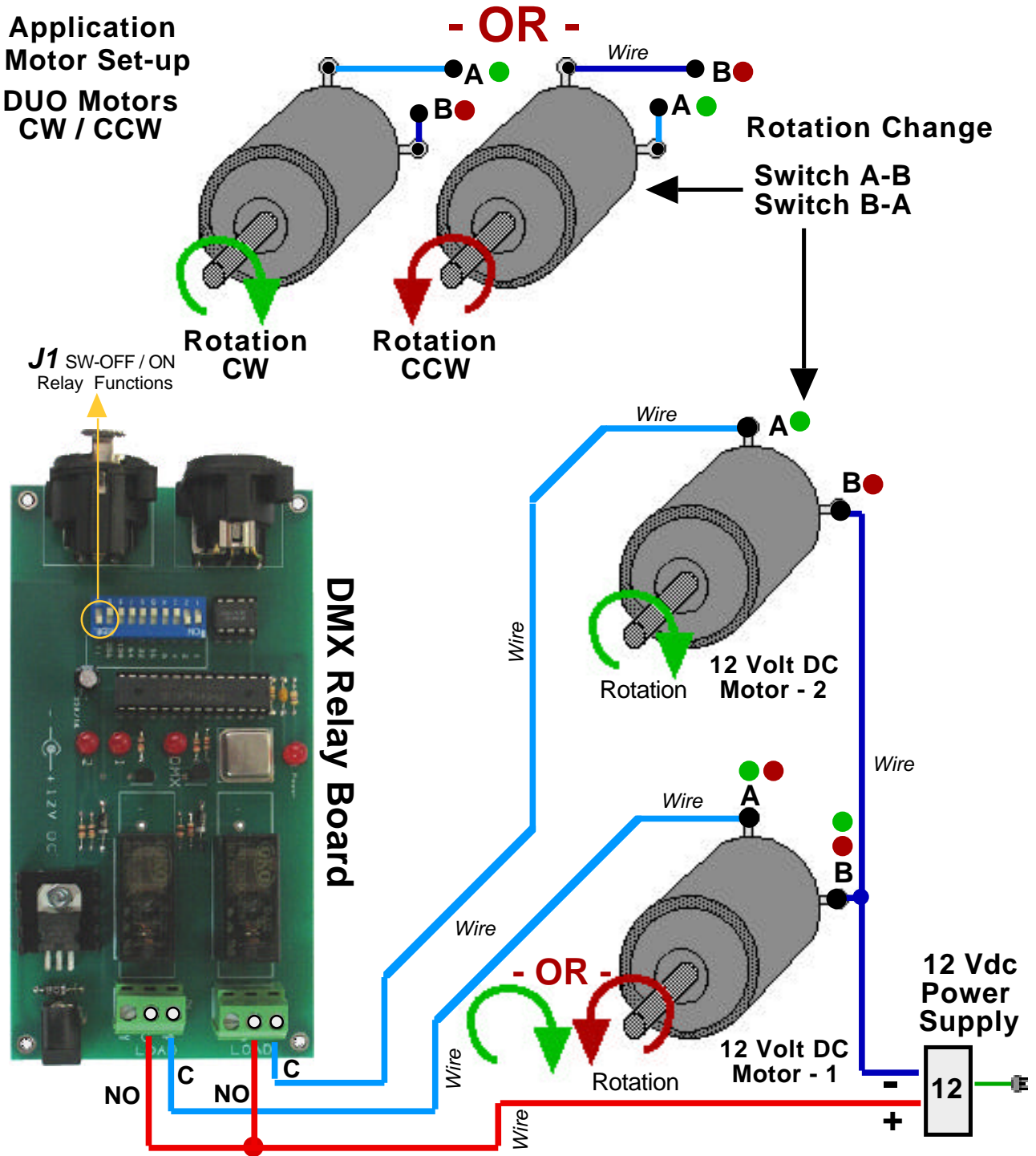
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# DMX 2-Channel Relay Board

**Application**  
**Motor Set-up**  
**DUO Motors**  
**CW / CCW**



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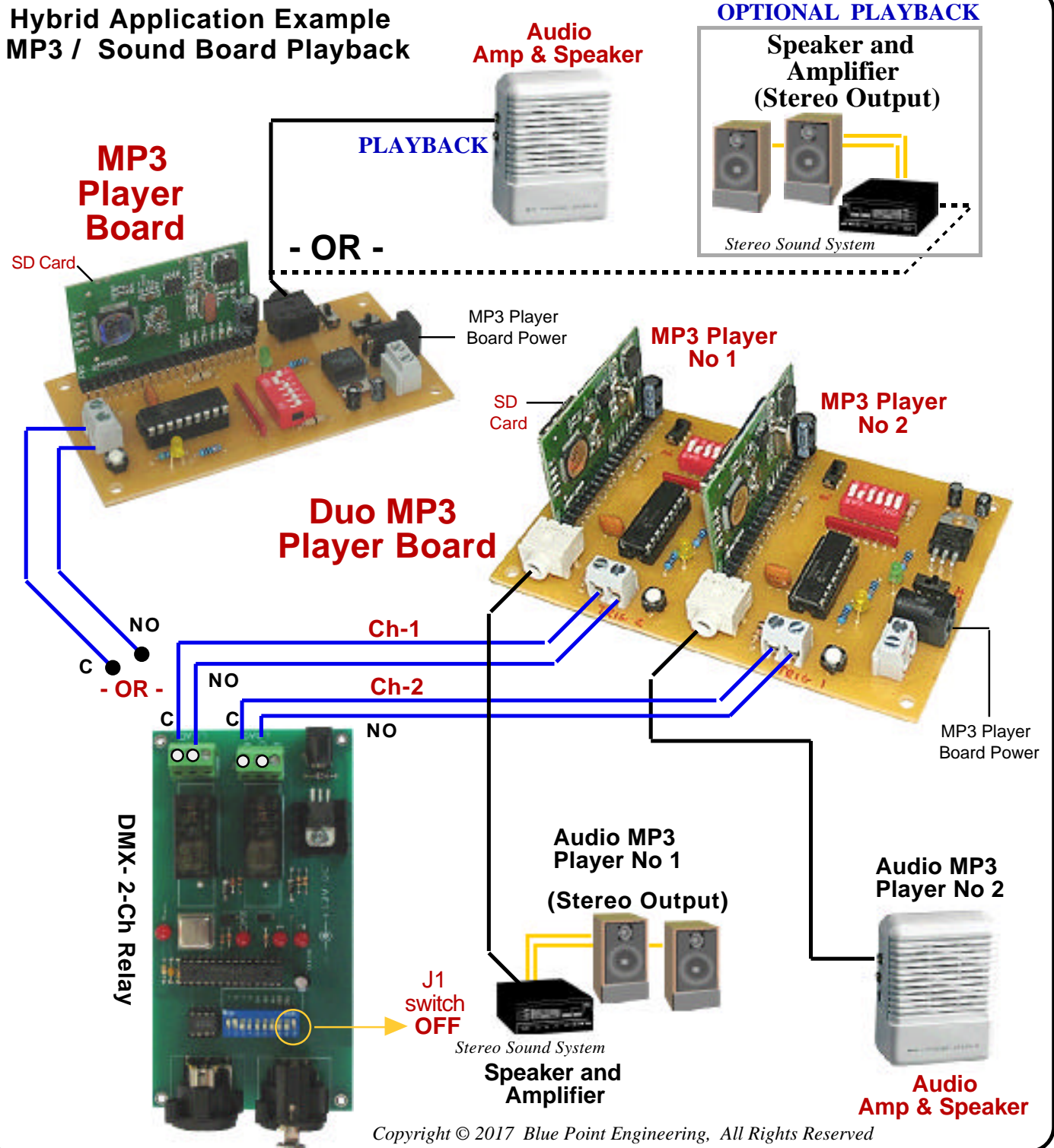
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# DMX 2-Channel Relay Board

Hybrid Application Example  
MP3 / Sound Board Playback



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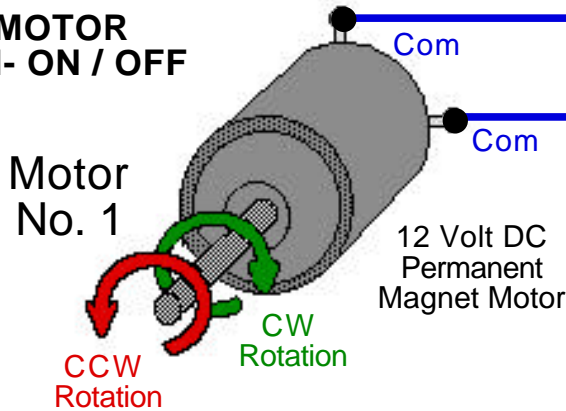
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# DMX 2-Channel Relay Board

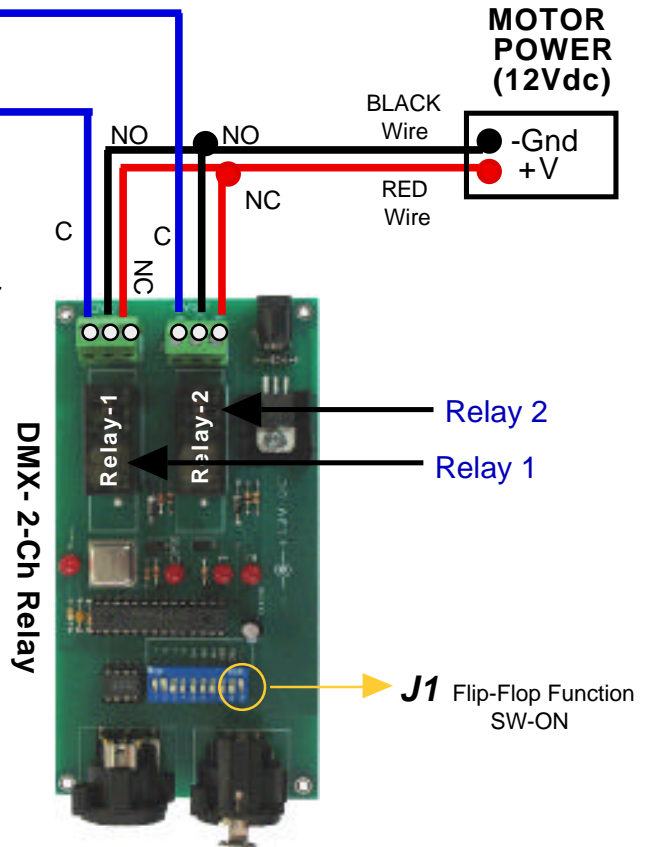
**DC MOTOR  
Control- ON / OFF**



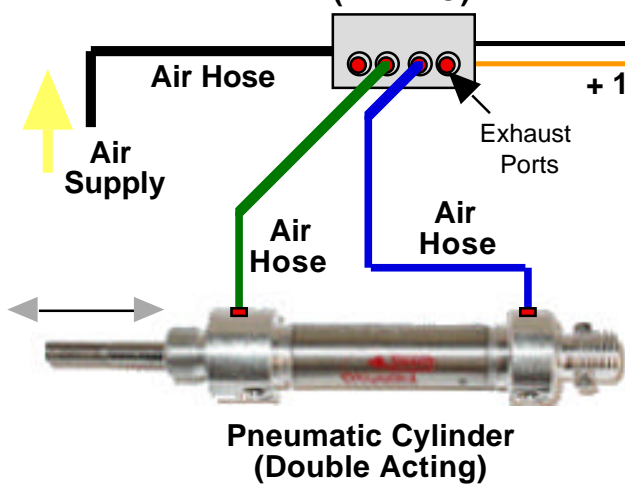
J1 switch ON

## Motor Logic

Relay 1 ON Relay 2 OFF	= Motor CW Rotation	●
Relay 1 OFF Relay 2 ON	= Motor CCW Rotation	●
Relay 1 and 2 ON Relay 1 and 2 OFF	= Motor All Stop	● ●

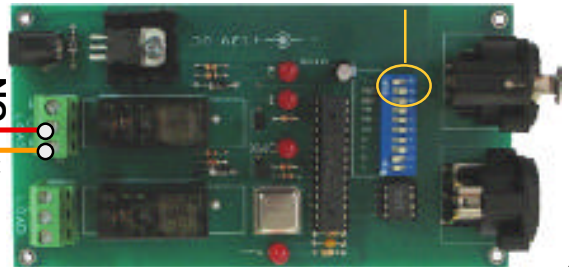


**5/2 Switching Solenoid Air Valve  
(12 VDC)**



**Applications  
Relay Connection  
Pneumatic Setup**

J1 switch OFF



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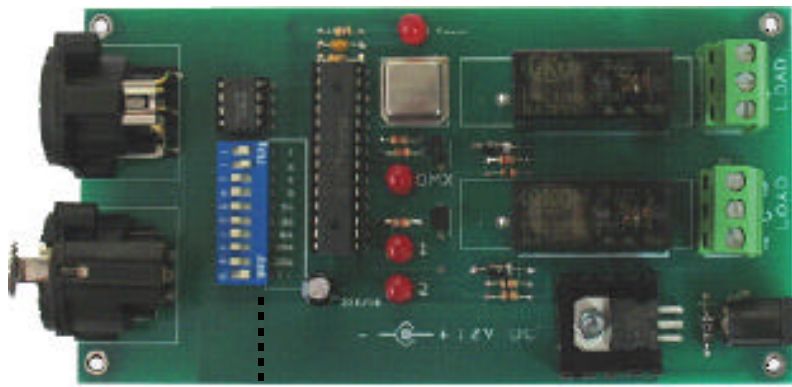
# DMX 2-Channel Relay Board

## Notes / Work Sheet:

DMX RELAY BOARD NO: \_\_\_\_\_

DMX RELAY BOARD Application: \_\_\_\_\_

\_\_\_\_\_



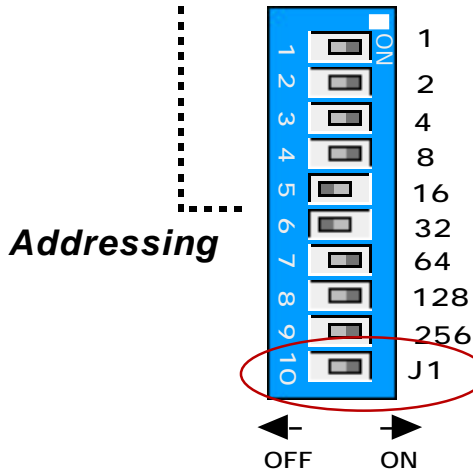
**Relay -1** **Output Application**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Relay -2**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**J1** \_\_\_\_\_  
Single or Flip-Flop Function



### Addressing

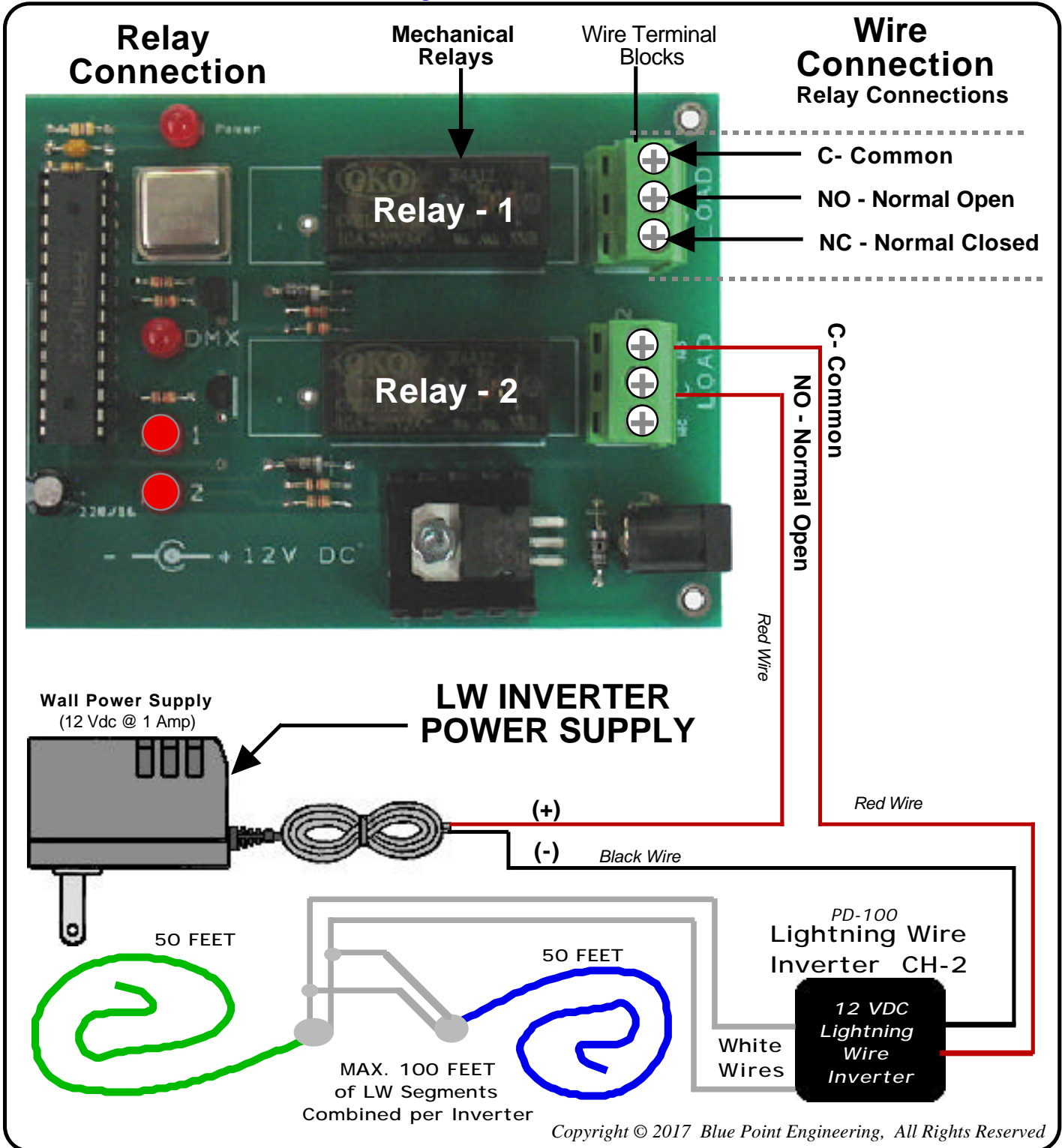
1 = Relay ON  
0 = Relay OFF

- SW-1 \_\_\_\_\_
- SW-2 \_\_\_\_\_
- SW-3 \_\_\_\_\_
- SW-4 \_\_\_\_\_
- SW-5 \_\_\_\_\_
- SW-6 \_\_\_\_\_
- SW-7 \_\_\_\_\_
- SW-8 \_\_\_\_\_
- SW-9 \_\_\_\_\_
- SW-10 \_\_\_\_\_
- J1 \_\_\_\_\_

### Addressing

**DMX Value**

# DMX 2-Ch Relay Board to LW Inverter



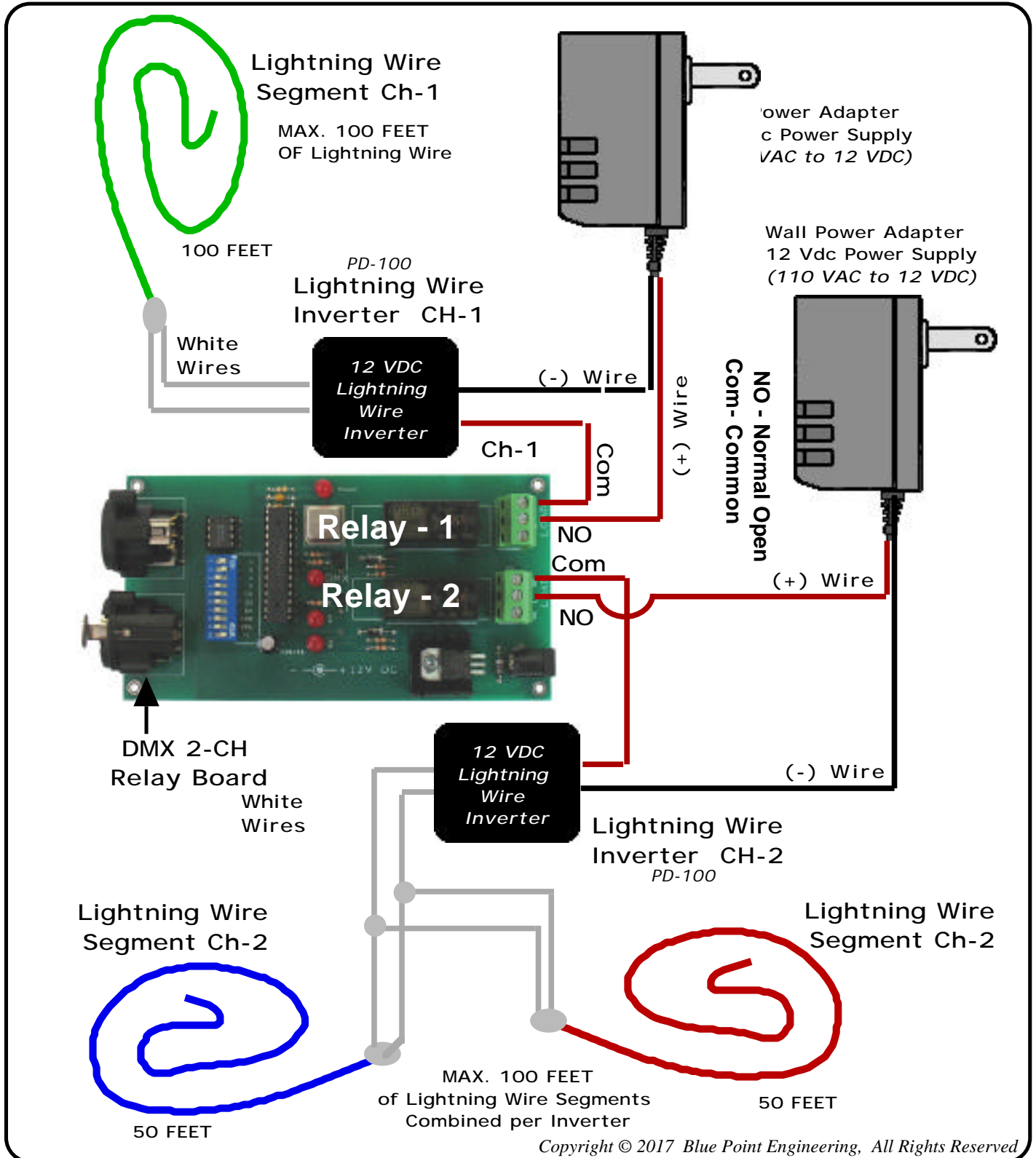
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**Lighting Wire Segment Connections**

Lighting Wire



# DMX 512 Address Chart

Chart A - US  
Standard DMX 512

Ch - Switches	Ch - Switches	Ch - Switches	Ch - Switches	Ch - Switches
1 = 1	53 = 1, 3, 5, 6	105 = 1, 4, 6, 7	157 = 1, 3, 4, 5, 8	209 = 1, 5, 7, 8
2 = 2	54 = 2, 3, 5, 6	106 = 2, 4, 6, 7	158 = 2, 3, 4, 5, 8	210 = 2, 5, 7, 8
3 = 1, 2	55 = 1, 2, 3, 5, 6	107 = 1, 2, 4, 6, 7	159 = 1, 2, 3, 4, 5, 8	211 = 1, 2, 5, 7, 8
4 = 3	56 = 4, 5, 6	108 = 3, 4, 6, 7	160 = 6, 8	212 = 3, 5, 7, 8
5 = 1, 3	57 = 1, 4, 5, 6	109 = 1, 3, 4, 6, 7	161 = 1, 6, 8	213 = 1, 3, 5, 7, 8
6 = 2, 3	58 = 2, 4, 5, 6	110 = 2, 3, 4, 6, 7	162 = 2, 6, 8	214 = 2, 3, 5, 7, 8
7 = 1, 2, 3	59 = 1, 2, 4, 5, 6	111 = 1, 2, 3, 4, 6, 7	163 = 1, 2, 6, 8	215 = 1, 2, 3, 5, 7, 8
8 = 4	60 = 3, 4, 5, 6	112 = 5, 6, 7	164 = 3, 6, 8	216 = 4, 5, 7, 8
9 = 1, 4	61 = 1, 3, 4, 5, 6	113 = 1, 5, 6, 7	165 = 1, 3, 6, 8	217 = 1, 4, 5, 7, 8
10 = 2, 4	62 = 2, 3, 4, 5, 6	114 = 2, 5, 6, 7	166 = 2, 3, 6, 8	218 = 2, 4, 5, 7, 8
11 = 1, 2, 4	63 = 1, 2, 3, 4, 5, 6	115 = 1, 2, 5, 6, 7	167 = 1, 2, 3, 6, 8	219 = 1, 2, 4, 5, 7, 8
12 = 3, 4	64 = 7	116 = 3, 5, 6, 7	168 = 4, 6, 8	220 = 3, 4, 5, 7, 8
13 = 1, 3, 4	65 = 1, 7	117 = 1, 3, 5, 6, 7	169 = 1, 4, 6, 8	221 = 1, 3, 4, 5, 7, 8
14 = 2, 3, 4	66 = 2, 7	118 = 2, 3, 5, 6, 7	170 = 2, 4, 6, 8	222 = 2, 3, 4, 5, 7, 8
15 = 1, 2, 3, 4	67 = 1, 2, 7	119 = 1, 2, 3, 5, 6, 7	171 = 1, 2, 4, 6, 8	223 = 1, 2, 3, 4, 5, 7, 8
16 = 5	68 = 3, 7	120 = 4, 5, 6, 7	172 = 3, 4, 6, 8	224 = 6, 7, 8
17 = 1, 5	69 = 1, 3, 7	121 = 1, 4, 5, 6, 7	173 = 1, 3, 4, 6, 8	225 = 1, 6, 7, 8
18 = 2, 5	70 = 2, 3, 7	122 = 2, 4, 5, 6, 7	174 = 2, 3, 4, 6, 8	226 = 2, 6, 7, 8
19 = 1, 2, 5	71 = 1, 2, 3, 7	123 = 1, 2, 4, 5, 6, 7	175 = 1, 2, 3, 4, 6, 8	227 = 1, 2, 6, 7, 8
20 = 3, 5	72 = 4, 7	124 = 3, 4, 5, 6, 7	176 = 5, 6, 8	228 = 3, 6, 7, 8
21 = 1, 3, 5	73 = 1, 4, 7	125 = 1, 3, 4, 5, 6, 7	177 = 1, 5, 6, 8	229 = 1, 3, 6, 7, 8
22 = 2, 3, 5	74 = 2, 4, 7	126 = 2, 3, 4, 5, 6, 7	178 = 2, 5, 6, 8	230 = 2, 3, 6, 7, 8
23 = 1, 2, 3, 5	75 = 1, 2, 4, 7	127 = 1, 2, 3, 4, 5, 6, 7	179 = 1, 2, 5, 6, 8	231 = 1, 2, 3, 6, 7, 8
24 = 4, 5	76 = 3, 4, 7	128 = 8	180 = 3, 5, 6, 8	232 = 4, 6, 7, 8
25 = 1, 4, 5	77 = 1, 3, 4, 7	129 = 1, 8	181 = 1, 3, 5, 6, 8	233 = 1, 4, 6, 7, 8
26 = 2, 4, 5	78 = 2, 3, 4, 7	130 = 2, 8	182 = 2, 3, 5, 6, 8	234 = 2, 4, 6, 7, 8
27 = 1, 2, 4, 5	79 = 1, 2, 3, 4, 7	131 = 1, 2, 8	183 = 1, 2, 3, 5, 6, 8	235 = 1, 2, 4, 6, 7, 8
28 = 3, 4, 5	80 = 5, 7	132 = 3, 8	184 = 4, 5, 6, 8	236 = 3, 4, 6, 7, 8
29 = 1, 3, 4, 5	81 = 1, 5, 7	133 = 1, 3, 8	185 = 1, 4, 5, 6, 8	237 = 1, 3, 4, 6, 7, 8
30 = 2, 3, 4, 5	82 = 2, 5, 7	134 = 2, 3, 8	186 = 2, 4, 5, 6, 8	238 = 2, 3, 4, 6, 7, 8
31 = 1, 2, 3, 4, 5	83 = 1, 2, 5, 7	135 = 1, 2, 3, 8	187 = 1, 2, 4, 5, 6, 8	239 = 1, 2, 3, 4, 6, 7, 8
32 = 6	84 = 3, 5, 7	136 = 4, 8	188 = 3, 4, 5, 6, 8	240 = 5, 6, 7, 8
33 = 1, 6	85 = 1, 3, 5, 7	137 = 1, 4, 8	189 = 1, 3, 4, 5, 6, 8	241 = 1, 5, 6, 7, 8
34 = 2, 6	86 = 2, 3, 5, 7	138 = 2, 4, 8	190 = 2, 3, 4, 5, 6, 8	242 = 2, 5, 6, 7, 8
35 = 1, 2, 6	87 = 1, 2, 3, 5, 7	139 = 1, 2, 4, 8	191 = 1, 2, 3, 4, 5, 6, 8	243 = 1, 2, 5, 6, 7, 8
36 = 3, 6	88 = 4, 5, 7	140 = 3, 4, 8	192 = 7, 8	244 = 3, 5, 6, 7, 8
37 = 1, 3, 6	89 = 1, 4, 5, 7	141 = 1, 3, 4, 8	193 = 1, 7, 8	245 = 1, 3, 5, 6, 7, 8
38 = 2, 3, 6	90 = 2, 4, 5, 7	142 = 2, 3, 4, 8	194 = 2, 7, 8	246 = 2, 3, 5, 6, 7, 8
39 = 1, 2, 3, 6	91 = 1, 2, 4, 5, 7	143 = 1, 2, 3, 4, 8	195 = 1, 2, 7, 8	247 = 1, 2, 3, 5, 6, 7, 8
40 = 4, 6	92 = 3, 4, 5, 7	144 = 5, 8	196 = 3, 7, 8	248 = 4, 5, 6, 7, 8
41 = 1, 4, 6	93 = 1, 3, 4, 5, 7	145 = 1, 5, 8	197 = 1, 3, 7, 8	249 = 1, 4, 5, 6, 7, 8
42 = 2, 4, 6	94 = 2, 3, 4, 5, 7	146 = 2, 5, 8	198 = 2, 3, 7, 8	250 = 2, 4, 5, 6, 7, 8
43 = 1, 2, 4, 6	95 = 1, 2, 3, 4, 5, 7	147 = 1, 2, 5, 8	199 = 1, 2, 3, 7, 8	251 = 1, 2, 4, 5, 6, 7, 8
44 = 3, 4, 6	96 = 6, 7	148 = 3, 5, 8	200 = 4, 7, 8	252 = 3, 4, 5, 6, 7, 8
45 = 1, 3, 4, 6	97 = 1, 6, 7	149 = 1, 3, 5, 8	201 = 1, 4, 7, 8	253 = 1, 3, 4, 5, 6, 7, 8
46 = 2, 3, 4, 6	98 = 2, 6, 7	150 = 2, 3, 5, 8	202 = 2, 4, 7, 8	254 = 2, 3, 4, 5, 6, 7, 8
47 = 1, 2, 3, 4, 6	99 = 1, 2, 6, 7	151 = 1, 2, 3, 5, 8	203 = 1, 2, 4, 7, 8	255 = 1, 2, 3, 4, 5, 6, 7, 8
48 = 5, 6	100 = 3, 6, 7	152 = 4, 5, 8	204 = 3, 4, 7, 8	256 = 9
49 = 1, 5, 6	101 = 1, 3, 6, 7	153 = 1, 4, 5, 8	205 = 1, 3, 4, 7, 8	257 = 1, 9
50 = 2, 5, 6	102 = 2, 3, 6, 7	154 = 2, 4, 5, 8	206 = 2, 3, 4, 7, 8	258 = 2, 9
51 = 1, 2, 5, 6	103 = 1, 2, 3, 6, 7	155 = 1, 2, 4, 5, 8	207 = 1, 2, 3, 4, 7, 8	259 = 1, 2, 9
52 = 3, 5, 6	104 = 4, 6, 7	156 = 3, 4, 5, 8	208 = 5, 7, 8	260 = 3, 9

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# DMX Address Chart Cont.

Ch - Switches	Ch - Switches	Ch - Switches	Ch - Switches	Ch - Switches
261 = 1, 3, 9	322 = 2, 7, 9	383 = 1, 2, 3, 4, 5, 6, 7, 9	444 = 3, 4, 5, 6, 8, 9	505 = 1, 4, 5, 6, 7, 8, 9
262 = 2, 3, 9	323 = 1, 2, 7, 9	384 = 8, 9	445 = 1, 3, 4, 5, 6, 8, 9	506 = 2, 4, 5, 6, 7, 8, 9
263 = 1, 2, 3, 9	324 = 3, 7, 9	385 = 1, 8, 9	446 = 2, 3, 4, 5, 6, 8, 9	507 = 1, 2, 4, 5, 6, 7, 8, 9
264 = 4, 9	325 = 1, 3, 7, 9	386 = 2, 8, 9	447 = 1, 2, 3, 4, 5, 6, 8, 9	508 = 3, 4, 5, 6, 7, 8, 9
265 = 1, 4, 9	326 = 2, 3, 7, 9	387 = 1, 2, 8, 9	448 = 7, 8, 9	509 = 1, 3, 4, 5, 6, 7, 8, 9
266 = 2, 4, 9	327 = 1, 2, 3, 7, 9	388 = 3, 8, 9	449 = 1, 7, 8, 9	510 = 2, 3, 4, 5, 6, 7, 8, 9
267 = 1, 2, 4, 9	328 = 4, 7, 9	389 = 1, 3, 8, 9	450 = 2, 7, 8, 9	511 = 1, 2, 3, 4, 5, 6, 7, 8, 9
268 = 3, 4, 9	329 = 1, 4, 7, 9	390 = 2, 3, 8, 9	451 = 1, 2, 7, 8, 9	512 = 0
269 = 1, 3, 4, 9	330 = 2, 4, 7, 9	391 = 1, 2, 3, 8, 9	452 = 3, 7, 8, 9	
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297 = 1, 4, 6, 9	358 = 2, 3, 6, 7, 9	419 = 1, 2, 6, 8, 9	480 = 6, 7, 8, 9	
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306 = 2, 5, 6, 9	367 = 1, 2, 3, 4, 6, 7, 9	428 = 3, 4, 6, 8, 9	489 = 1, 4, 6, 7, 8, 9	
307 = 1, 2, 5, 6, 9	368 = 5, 6, 7, 9	429 = 1, 3, 4, 6, 8, 9	490 = 2, 4, 6, 7, 8, 9	
308 = 3, 5, 6, 9	369 = 1, 5, 6, 7, 9	430 = 2, 3, 4, 6, 8, 9	491 = 1, 2, 4, 6, 7, 8, 9	
309 = 1, 3, 5, 6, 9	370 = 2, 5, 6, 7, 9	431 = 1, 2, 3, 4, 6, 8, 9	492 = 3, 4, 6, 7, 8, 9	
310 = 2, 3, 5, 6, 9	371 = 1, 2, 5, 6, 7, 9	432 = 5, 6, 8, 9	493 = 1, 3, 4, 6, 7, 8, 9	
311 = 1, 2, 3, 5, 6, 9	372 = 3, 5, 6, 7, 9	433 = 1, 5, 6, 8, 9	494 = 2, 3, 4, 6, 7, 8, 9	
312 = 4, 5, 6, 9	373 = 1, 3, 5, 6, 7, 9	434 = 2, 5, 6, 8, 9	495 = 1, 2, 3, 4, 6, 7, 8, 9	
313 = 1, 4, 5, 6, 9	374 = 2, 3, 5, 6, 7, 9	435 = 1, 2, 5, 6, 8, 9	496 = 5, 6, 7, 8, 9	
314 = 2, 4, 5, 6, 9	375 = 1, 2, 3, 5, 6, 7, 9	436 = 3, 5, 6, 8, 9	497 = 1, 5, 6, 7, 8, 9	
315 = 1, 2, 4, 5, 6, 9	376 = 4, 5, 6, 7, 9	437 = 1, 3, 5, 6, 8, 9	498 = 2, 5, 6, 7, 8, 9	
316 = 3, 4, 5, 6, 9	377 = 1, 4, 5, 6, 7, 9	438 = 2, 3, 5, 6, 8, 9	499 = 1, 2, 5, 6, 7, 8, 9	
317 = 1, 3, 4, 5, 6, 9	378 = 2, 4, 5, 6, 7, 9	439 = 1, 2, 3, 5, 6, 8, 9	500 = 3, 5, 6, 7, 8, 9	
318 = 2, 3, 4, 5, 6, 9	379 = 1, 2, 4, 5, 6, 7, 9	440 = 4, 5, 6, 8, 9	501 = 1, 3, 5, 6, 7, 8, 9	
329 = 1, 2, 3, 4, 5, 6, 9	380 = 3, 4, 5, 6, 7, 9	441 = 1, 4, 5, 6, 8, 9	502 = 2, 3, 5, 6, 7, 8, 9	
320 = 7, 9	381 = 1, 3, 4, 5, 6, 7, 9	442 = 2, 4, 5, 6, 8, 9	503 = 1, 2, 3, 5, 6, 7, 8, 9	
321 = 1, 7, 9	382 = 2, 3, 4, 5, 6, 7, 9	443 = 1, 2, 4, 5, 6, 8, 9	504 = 4, 5, 6, 7, 8, 9	

