The Ribbon Wizard is a Unique Device used to Control Strings and Arrays of ws2812 LED Pixels Using DMX-512 or Just Use The Push Buttons

Each ws2812 LED Pixel uses 24-Bit RGB to illuminate almost any color.
Strips & Many Other Shapes using the ws2812 LED are widely available.
Ws2812 LEDs are also available in Standard T1 3/4 and 10mm Packages.
Ribbon Wizard can be used with any of these ws2812 Based Displays.
The Ribbon Wizard can Directly Control 480 individual LED Pixels.
'MultiDot' and 'Repeat' Variables allow Many Multiples of 480 Pixels.
Additionally, several strings of LEDs may be connected in Parallel.
Ribbon Wizard gets power from the LED array being driven.

Use the Ribbon Wizard's Push Buttons select, change and save actions.
The Buttons give you effective control of the Ribbon Wizard and LED Array.
Great for Store Window Displays, Cars, Trucks, Boats…

DMX CONTROLLED:

One or Many Ribbon Wizards can be connected to a DMX-512 Controller.
You will have control over your entire synchronized, Multi-Display system.
100 Display Styles that use only a Single DMX Channel.
100 Display Styles that use 6 DMX Channels.
Several Styles that use up to 12 DMX Channels.
Just the thing for Stage Lighting, Bars, Discos and Many Larger Display Systems.

STAND ALONE OPERATION, using the Push Buttons.

O 1st Button Next (closest to the 3-Pin LED Connector)
O 2nd Button Previous (center)
O 3rd Button Select 1 of 6 Variables to change. (closest to DMX Connector)
Saves All Variable settings if Held Until LEDs Flash, about 3 seconds.

When the 3rd Button is Pressed and Released,
A few LEDs, 1 to 6, at the end closest to the Ribbon Wizard will light up.
The number of LEDs Lit indicates one of the Six Variable to be changed.

The 6 Variables control the operation of the Ribbon Wizard, they are explained below.
Here we are just using the 3rd Button to select the Variable we want to change.

If you press and release the 3rd Button Again, another LED will Lite.
Or a Single LED will Lite if there were 6 LEDs Lit before the 3rd Button was pressed.

Continue pressing and releasing the 3rd Button.
Notice that the number of LEDs increases with each press.

When 6 LEDs are Lit, the Next press of the 3rd Button will roll-over back to 1 LED Lit.
This will continue until one of the Other Buttons is pressed.

The Five Variables that are used to control the Ribbon Wizard

O	**Style**	**When 1 LED is Lit the Style Variable is Selected.**
OO	**Brightness**	**When 2 LEDs are Lit the Bright Variable is Selected.**
OOO	**Speed**	**When 3 LEDs are Lit the Speed Variable is Selected.**
OOOO	**NumDots**	**When 4 LEDs are Lit the NumDots Variable is Selected.**
OOOOO	**MultiDot**	**When 5 LEDs are Lit the MultiDot Variable is Selected.**
OOOOOO	**Repeats**	**When 6 LEDs are Lit the Repeats Variable is Selected.**

Blue circles represent Lit LEDs at the Beginning of the Strip.

Once you have selected a Variable,
i.e. The number of LEDs lit equals the Variable you want to change,

Use the 2nd Button to Decrease the Value in that Variable.
Use the 1st Button to Increase the Value in the Variable.

For Example,
Press and Release the 3rd Button, repeatedly, until a Single LED is Lit.
This selects the Style Variable. The type of movement shown on the display.

Now press and release the 1st Button. Notice that the display has changed to the next Style.

Again press & release the 1st Button. Notice that the display has changed to the next Style.
The 1st Button Advances to Next Style.

Press and release the 2nd Button. Notice that the display has returned to the previous Style.
The 2nd Button goes back to the Previous Style.

You can press and release either of these buttons as many times as desired.
You can also Press and Hold the buttons to rapidly move through the Styles.

Once you have chosen a Style that you like, let's change the Brightness of the display.
Press and Release the Black Button 1 time.
There should be Two LEDs Lit. This means that the Brightness Variable is Selected.

If you accidentally press the 3rd Button more than once and there are Not 2 LEDs Lit,
Just press and release the 3rd Button until there are 2 LEDs Lit.

Now press and release the 1st Buttons.
Notice that the display become Brighter, unless already at Maximum.

Press and Release the 2nd Button.
Notice that the display become More Dim, unless already at Minimum.
There are 5 different Brightness values.

Once you have chosen a Style and Brightness you want, let's change the Speed of the display.
Press and Release the 3rd Button 1 time.

There should be Three LEDs Lit. This means that the Speed Variable is Selected.
If there are Not 3 LEDs Lit, press and release the 3rd Button until 3 LEDs are Lit.

Now press and release the 2nd Button. Notice the Speed has Increased.
Press and release the 1st Button and movement on the display Slows Down.

There are 255 different Speed values.

So now we should have the Style, Brightness and Speed we want, Let's Save it.
Press and Hold the 3rd Button until ALL LEDs FLASH RED 3-TIMES.

The next time the system is Powered Up, the Values you chose will continue.

The 6 Variables that are used to control the Ribbon Wizard

O	Style	When 1 LED is Lit the Style Variable is Selected.
OO	Brightness	When 2 LEDs are Lit the Bright Variable is Selected.
OOO	Speed	When 3 LEDs are Lit the Speed Variable is Selected.
OOOO	NumDots	When 4 LEDs are Lit the NumDots Variable is Selected.
OOOOO	MultiDot	When 5 LEDs are Lit the MultiDot Variable is Selected.
OOOOOO	Repeats	When 6 LEDs are Lit the Repeats Variable is Selected.

Blue circles represent Lit LEDs at the Beginning of the Strip.

The STYLE Variable is probably the most important Variable, it sets the type of movement on the display. There are 100 different STYLES, see listing below.

The Bright Variable is pretty Straight Forward, there are 5 different LED Brightness values.

The SPEED Variable is how the Movement happens, there are 255 different Speed values.

The NumDots Variable is usually set to the Number of Pixels in the Array or Strip. This Changes by 2.

The MultiDot Variable is the Number of Pixels to Set for each Pixel in the NumDot Variable.

The Repeats Variable is the Number of Times the Entire Pack is Repeated, for very-long led strips.

Summary,
Use the Black Button to select the Variable you want to change.

Use the White and the Red Buttons Increment or Decrement the Value in the Variable.

Use Black Button again to choose another Variable to change, use White and Red Buttons to change it.

Repeat this process until you get the look that you want, Style, Brightness, Speed, etc.

Then Press & Hold the 3rd Button until LEDs Blink to Save Everything, Ready for the next power up!

Stationary Solids, Styles 00-15

000 Fill Black

001 Fill Red

002 Fill Green

003 Fill Blue

004 Fill Yellow

005 Fill Magenta

006 Fill Turquoise

007 Fill White

008 Full Red + 1/2 Green

009 1/2 Red + Full Green

010 Full Red + 1/2 Blue

011 1/2 Red + Full Blue

012 Full Green + 1/2 Blue

013 1/2 Green + Full Blue

014 1/2 Red + 1/2 Green + Full Blue

015 Full Red + Full Green + 1/2 Blue

Moving. Even numbered Styles move Right, Odd Styles move Left, Styles 16-47

016 Red Dot then 3 Black Dots Moving Right

017 Same Pattern but Moving Left

018 Green Dot then 3 Black Dots Moving Right

019 Same Pattern but Moving Left

020 Blue Dot then 3 Black Dots Moving Right

021 Same Pattern but Moving Left

022 Yellow Dot then 3 Black Dots Moving Right

023 Same Pattern but Moving Left

024 Magenta Dot then 3 Black Dots Moving Right

025 Same Pattern but Moving Left

026 Turquoise Dot then 3 Black Dots Moving Right

027 Same Pattern but Moving Left

028 White Dot then 3 Black Dots Moving Right

029 Same Pattern but Moving Left

030 Red, White, Blue, Black Dots Moving Right

031 Same Pattern but Moving Left

032 Red, Green, Blue, Black Dots Moving Right

033 Same Pattern but Moving Left

034 White, Red, Red, Black Dots Moving Right

035 Same Pattern but Moving Left

036 White, Green, Green, Black Dots Moving Right

037 Same Pattern but Moving Left

038 White, Green, Green, Black Dots Moving Right

039 Same Pattern but Moving Left

040 Red, Red, Green, Black Dots Moving Right

041 Same Pattern but Moving Left

042 Green, Green, Red, Black Dots Moving Right

043 Same Pattern but Moving Left

044 Yellow, Green, Green, Black Dots Moving Right

045 Same Pattern but Moving Left

046 Red, Yellow, White, Black Dots Moving Right

047 Same Pattern but Moving Left

Shoots, use Speed to select Center Dot Color, Styles 48-63

048 Right Shoot Green Red

049 Left Shoot Green Red

050 Right Shoot Red Blue

051 Left Shoot Red Blue

052 Right Shoot Magenta Turquoise

053 Left Shoot Magenta Turquoise

054 Right Shoot Black White

055 Left Shoot Black White

056 Right Shoot Black Red

057 Left Shoot Black Red

058 Right Shoot Black Green

059 Left Shoot Black Green

060 Right Shoot Black Blue

061 Left Shoot Black Blue

062 Right Shoot White Red

063 Left Shoot White Red

Right Synced Rainbows, Styles 64-70

064 Right synced rainbow Red

065 Right synced rainbow Green

066 Right synced rainbow Blue

067 Right synced rainbow Red Green

068 Right synced rainbow Red Blue

069 Right synced rainbow Green Blue

070 Right synced rainbow Red Green Blue

Left Synced rainbows, Styles 71-77

071 Left synced rainbow Red

072 Left synced rainbow Green

073 Left synced rainbow Blue

074 Left synced rainbow Red Green

075 Left synced rainbow Red Blue

076 Left synced rainbow Green Blue

077 Left synced rainbow Red Green Blue

Un-Synced Rainbows, Styles 78-84

078 Right un-synced rainbow Red

079 Right un-synced rainbow Green

080 Right un-synced rainbow Blue

081 rainbow Red Green

082 Right un-synced rainbow Red Blue

083 Right un-synced rainbow Green Blue

084 **Right un-synced rainbow Red Green Blue**

Left Un-Synced Rainbows, 85-91

085 Right un-synced rainbow Red

086 Right un-synced rainbow Green

087 Right un-synced rainbow Blue

088 rainbow Red Green

089 Right un-synced rainbow Red Blue

090 Right un-synced rainbow Green Blue

091 Right un-synced rainbow Red Green Blue

Other Styles, 92-99

092 whole strip rainbow

093 whole strip rainbow

094 Right random colors pm values

095 Left random colors pm values

096 Dual random colors pm values

097 Right random colors time

098 LEFT random colors Time

099 Dual random colors time

DMX CONTROLLED: Connected to a DMX-512 Controller.

Single Channel Styles.

Styles 0 - 99 are the same as Styles obtained using the Push Buttons.

Channel 1 Selects the Style from 0 to 99.

All Other Channels have No Effect on the Ribbon Wizard.

Brightness, Speed, NumDots, MultiDot and Repeat Variables must be set using the Push Buttons,

While the Ribbon Wizard is NOT Connected to the DMX Controller.

The Single DMX Channel Only Controls the Style, the type of movement.

6 Channel Styles.

Styles 100 - 199 are the same as Styles 0 through 99 Except that Channels 2, 3, 4, 5 and 6 control the Variables.

Channel 1 = 100 to 199 Style Selection

Channel 2 = Brightness

Channel 3 = Speed

Channel 4 = NumDots - The NumDots Variable is usually set to the Number of Pixels in the Array or Strip. This Value Changes by 2.

Channel 5 = MultiDot - The MultiDot Variable is the Number of Pixels to Set for each Pixel.

Channel 6 = Repeats - The Repeat Variable is the Number of times to show the entire screen. NumDots x MultiDot is shown Repeats number of times. This is used with very long Strips.

DMX BASE ADDRESS:

The Base address of the Ribbon is when the STLYE is Set Using the Push Buttons.

The DMX Base Address = Style Number times 2 plus 1.

Example:

Style0 is All Leds OFF. 0 x 2 = 0 + 1 = Base Address 1

Style1 is All Leds Red. 1 x 2 = 2 + 1 = Base Address 3.

Style2 is All Leds Green. 2 x 2 =4 + 1 = Base Address 5.

Each Ribbon Wizard Uses either 1 or 6 or 12 channels depending on Styles Used.

Multi-Channel Styles.

Channel 1 = 200 Rainbow

Channel 2 = Maximum Red Value
Channel 3 = Speed
Channel 4 = NumDots
Channel 5 = MultiDot
Channel 6 = Repeats
Channel 7 = Maximum Green Value
Channel 8 = Maximum Blue Value
Channel 9 = Red Increment Value
Channel 10 = Green Increment Value
Channel 11 = Blue Increment Value
Channel 12 = DMX Plus Style Channel.

Channel 1 = 201 Whole Strip Rainbow three

Channel 2 = Brightness.
Channel 3 = Speed
Channel 4 = NumDots
Channel 5 = MultiDot
Channel 6 = Repeats
Channel 7 = Low Address
Channel 8 =High Address
Channel 9 = not used
Channel 10 = not used
Channel 11 = not used
Channel 12 = DMX Plus Style Channel

Channel 1= 202 Right Push, P random

Channel 2 = Brightness.
Channel 3 = Speed
Channel 4 = NumDots
Channel 5 = MultiDot
Channel 6 = Repeats
Channel 7 = Source
Channel 8 =not used.
Channel 9 = Red Value
Channel 10 = Green Value
Channel 11 = Blue Value
Channel 12 = DMX Plus Style Channel

Channel 1= 203 Left Push, P random

Channel 2 = Brightness
Channel 3 = Speed
Channel 4 = NumDots
Channel 5 = MultiDot
Channel 6 = Repeats
Channel 7 = Source
Channel 8 =not used
Channel 9 = Red Value
Channel 10 = Green Value
Channel 11 = Blue Value
Channel 12 = DMX Plus Style Channel

Channel 1 = 204 Draw Solid Color Line

Channel 2 = Brightness.
Channel 3 = Speed
Channel 4 = NumDots
Channel 5 = MultiDot
Channel 6 = Repeats
Channel 7 =Start if NumDot>255 x 2
Channel 8 =End if NumDot>255 x 2
Channel 9 = Red Value
Channel 10 = Green Value
Channel 11 = Blue Value
Channel 12 = DMX Plus Style Channel

Channel 1 = 205 Draw Dotted Color Line

Channel 2 = Brightness.
Channel 3 = Speed
Channel 4 = NumDots
Channel 5 = MultiDot
Channel 6 = Repeats
Channel 7 =Start if NumDot>255 x 2
Channel 8 =End if NumDot>255 x 2
Channel 9 = Red Value
Channel 10 = Green Value
Channel 11 = Blue Value
Channel 12 = DMX Plus Style Channel

This Style Draws a Color Line from Start to End.
If Start<End then Line moves to the Right. If Start>End then Line moves to the Left.

Channel 1 = 206 Show Frame Loaded from PC or Laptop..

Channel 2 = Brightness.
Channel 3 = Speed
Channel 4 = NumDots
Channel 5 = MultiDot
Channel 6 = Repeats
Channel 7 = Low Address
Channel 8 =High Address
Channel 9 = not used
Channel 10 = not used
Channel 11 = not used
Channel 12 = DMX Plus Style Channel.

Channel 1 = 207 Solid Stationary

Channel 2 = Maximum Red Value
Channel 3 = Speed
Channel 4 = NumDots
Channel 5 = MultiDot
Channel 6 = Repeats
Channel 7 = not used
Channel 8 =not used
Channel 9 = Red Value
Channel 10 = Green Value
Channel 11 = Blue Value
Channel 12 = DMX Plus Style Channel

CHANNELS 208-255 RESERVED FOR FUTURE EXPANSION AND UPDATES.

OPERATION USING A TTL SERIAL PORT.

The Serial Line is 0 to 5 Volt TTL. Normally +5 and Goes Low with Start-Bit.

The Data Format is 9,600 Baud 8-Data Bits, 1-StopBit, No Parity, LSB First.

Data must be received in Packets of 7 Bytes.
1st Byte is Attention Byte, Normally 255.
2nd Byte is Serial ID Byte. 255=Wild-Card, All Ribbon Wizards Match.
3rd Byte is Style Byte.
4th Byte is Brightness 0=Dim 4=Brite.
5th Byte is Speed 0=Fast 255=Slow.
6th Byte is Number of Dots x 4.
7th Byte is Multi-Dot Value 1 to 15.
8th Byte is Number of Screen Repeats 1 to 7.

Some Styles, those above 199, require other than these 7 Bytes.
See Style Number for Details.

The Module ID Byte Should Be Different for Each Ribbon Wizard Used in the System.

Up To 254 Different Ribbon Wizards can be used in a System.

The Module ID Byte is Set Using the Push Buttons on the Ribbon Wizard.

Press and Release the Red Button Until a Single Blue LED Lights up. This Selects The Style Variable.

Now Press and Hold the Black Button Until All LEDs Are Off. This is Style Zero.

Now Press and Release the White Button, Counting Up as you Press & Release.

The LEDs will change as you count… 1=Red 2=Green 3-Blue and so on.

When you have reach the count that you want to use as the Module ID Number, Press & Hold the White Again until the LEDs Quickly Flash.

Then use the White and Black to select the Power-Up Style you want.

Finally, Press and Hold the Red Button until the LEDs Flash. You Are Done!

DMXPLUS OPERATION

When Physical DMX Channel 1 = 254 dmxplus operation is in effect, if dmxplus has been enabled.

All Ribbon Wizards use Physical DMX Base Address of 000.
Physical DMX Channel 12 becomes the Style Select Channel for all Ribbon Wizards.
Physical DMX Channels 2 thru 11 operate All Ribbon Wizards, Synced in Parallel.

Dmxplus operation is used for effects in stage lighting and graphics on large displays.

Setting the DMX Base Address of the Ribbon Wizard Using A DMX Controller:

The Ribbon Wizard is shipped from our factory with the DMX Base Address set to 001.
To change this, follow the steps below:

1. Connect the DMX Controller the Ribbon Wizard that is to be set with a New Base Address.
2. Turn ON the DMX Controller.
3. Set DMX Controller so the Value Contained in Channel One Equals the Value of the New Base Address.
   This Value Must Be 1 to 255.
   For Base Address >255, Set the Value of Channel Two to 1. This will add 255 to the Value in Channel One.
   If the Ribbon Wizard will be used in a DMXPLUS System, Set Channel Three to a value of 1.
4. Set All Other DMX Channels To a Value of 000.
5. Turn OFF Power To the Ribbon Wizard. Leave DMX Controller Power On.
6. Press and Hold The Black Button on The Ribbon Wizard.
7. Turn ON Power To the Ribbon Wizard.
8. Wait 2 Seconds then Release the Button.

That's It! The Base Address has been Set.

If the Ribbon Wizard is connected to a LED Strip while the Base Address is being set:

Pressing the Set-Button anytime the Ribbon Wizard is connected to a DMX Controller,
Will cause the Ribbon Wizard show the values contained in Channel One and Channel Two.
These are used as the Base Address Low and the Base Address High.

Use this to confirm the values being outputted by the DMX Controller Before the Base Address is Set.

Some DMX Controllers have only Slide-Pots to Control the Values in Each DMX Channel.
This can sometimes make it difficult to know exactly what the value is in a particular Channel.
The Ribbon Wizard and the LED Strip can be used to set precisely, the values in Channel One and Two.

Connect The DMX Controller to The Ribbon Wizard with The LED Strip and apply Power to All.
Set the DMX Controller to output 0 for all Channels.

Now Press and Hold the Set-Button on the Ribbon Wizard, You should see the First 60-Dots are Lit.
10-Red 10-Green, 10-Blue, 10-Red, 10-Green, 10-Blue
This indicates that the values in Cannels One and Two are both 0.

Now, While Holding the Set-Button, Slowly increase the value in Channel One on the DMX Controller.
Every 2-Seconds the Ribbon Wizard will Up-Date the Strip to Show the New Values in Channels One and Two.
Notice the Number of Blue Dots will change as the value in Channel One changes for 0 to 9.
Changing the value in Channel Two will change the 2nd group of 30-Dots for the Base Address High, if needed.
There is more info about how to interrupt these values in the section below.

Pressing the Set-Button with the Power Applied, Does Not SET the Base Address in the Ribbon Wizard.
Once you get the Values wanted for Base Address Low in Channel One and Base Address High in Channel Two,
Remove Power from Only The Ribbon Wizard, Maintain Power to the DMX Controller.
Then, While Holding the Set-Button, Re-Apply Power to the Ribbon Wizard.
Wait 2-Seconds and release the Set-Button. This SETS the Base Address Values.

The 1st Two Values being *Outputted* from the DMX Controller are displayed using a 60-Dot area of the LED Strip.

The 60-Dots represent Two, 3-Digit Values.
The 30-Dots Closest to the Input End of the LED Strip Show the value in Channel One, used as the Base Address Low.
The Next 30-Dots Show the value in Channel Two, used as the Base Address High.

The Two, 3-Digit Values are Shown using 10-Dots for each Digit. Red=100s, Green=10s, Blue=1s.
If the Digit Value is 0 then 10-Dots are On.
If the Digit Value is 1 then 1 Dot is On.
If the Digit Value is 2 then 2 Dots are On.
If the Digit Value is 3 then 3 Dots are On.
If the Digit Value is 4 then 4 Dots are On.
If the Digit Value is 5 then 5 Dots are On.
If the Digit Value is 6 then 6 Dots are On.
If the Digit Value is 7 then 7 Dots are On.
If the Digit Value is 8 then 8 Dots are On.
If the Digit Value is 9 then 9 Dots are On.

Some Examples: Color O's mean the Dot Is ON. Black O's mean the Dot is OFF.

>INPUT END OF ws2812 LED STRIP OUTPUT END OF ws2812 LED STRIP>

|----------Base Address Low----------|----------Base Address High----------|

100s 10s 1s 100s 10s 1s

OOOOOOOOOO OOOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 001
OOOOOOOOOO OOOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 002
OOOOOOOOOO OOOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 003

OOOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 010
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 011
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 012

OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 033
OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 100

|-------This Value is Base Address Low 0 to 255-----|-----This is always 000 for Base Address 0 to 255----|

A Few More Examples: Color O's Dot Is ON. Black O's Dot is OFF

>INPUT END OF ws2812 LED STRIP OUTPUT END OF ws2812 LED STRIP>

|----------Base Address Low----------|----------Base Address High----------|

100s 10s 1s 100s 10s 1s

OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 123
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 124
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 125
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOOO = 255

|-------This Value is Base Address Low 0 to 255-----|-----This is always 000 for Base Address 0 to 255----|

OOOOOOOOOO OOOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 256
OOOOOOOOOO OOOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 257

|----------Restarts From 0 at 256----------|----This is always 001 for Base Address 256 to 511--|

OOOOOOOOOO OOOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 509
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 510
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 511

|----------Restarts From 0 at 256----------|----This is always 001 for Base Address 256 to 511--|

DMXPLUS STYLE FRAME PLAYER ADDRESSES:

>INPUT END OF ws2812 LED STRIP OUTPUT END OF ws2812 LED STRIP>

|----------Base Address Low----------|----------Base Address High----------|

100s 10s 1s 100s 10s 1s

OOOOOOOOOO OOOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 512
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 513
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 514

OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 515
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 516
OOOOOOOOOO OOOOOOOOO OOOOOOOOO OOOOOOOOOO OOOOOOOOOO OOOOOOOOO = 517

|----------This Value Must Be 0 to 255----------|----------The Number of 256's to be Added----------|

And starts over from 0 every 256 **This Allows up to 65,525 Ribbon Wizards.**