

Introduction

REPLAY is a four output SD-Card Pixel Player, which is capable of converting various file-types and outputting pixel data to four JST outputs which can be connected to WS2812 (or compatible) Pixel-LEDs. The file-types supported are Jinx '.OUT' and Xlights/Falcon '.FSEQ'. REPLAY is able to play up to four different files (of one type) and output them separately to its corresponding outputs 1-4, thus allowing you to drive four different pixel matrices or displays from the one REPLAY device. The form-factor of the REPLAY is very small, allowing it easily to be hidden within signage, theatre props, clothing, hats etc.

Specifications

Power Input : **5-24V** external power applied across PWR & GND connections of the rear connector

Parts Supplied

REPLAY Pixel Driver 7-way plug-in connector

Pixel LED Connection

Connect one (or several) strips of compatible Pixel-LEDs to the pixel outputs, ensuring that you use a common ground for the strips, connected to the GND connection supplied, this must also be connected to the PSU ground, although the power supply to the pixels should go directly to the pixels, and NOT via the REPLAY unit. Use an appropriate power supply capable of powering your Pixel-LEDs. To calculate the power supply required, multiply the number of Pixel-LEDs by 0.25 (each WS2812 Pixel-LED draws a maximum of 0.25W/0.06A). For example 300 WS2812s will require $300 \times 0.25W = 75W$, therefore a 100W/20A/5V power supply should be perfectly adequate.

Powering Options

REPLAY should ideally be powered directly from the 5-24V power available at the Pixel Strip. **Applying more than 24V to the product in this way may cause damage internally.**

Status LED : Modes of operation

The Red/Blue Status LED will give you continuous information of the operational mode of the device :

NO CARD INSERTED	Fast unbroken sequence of RED,BLUE,RED,BLUE...
PLAYING JINX SPLIT FILE	Short single BLUE flash every half a second
PLAYING JINX ANIMATION FILE(S)	Short single RED flash every half a second
PLAYING FSEQ SPLIT FILE	Short DOUBLE BLUE flash every half a second
PLAYING FSEQ ANIMATION FILE(S)	Short DOUBLE RED flash every half a second
TAMPER WARNING	Very fast continual Blue-off-Red-off sequence

FileTypes and Extensions

REPLAY can only read filenames in the 8:3 format (also known as 'Short Filename'), in other words the name part should be no more than 8 characters and the extension be no more than 3, therefore we have prefixed filenames and extensions that can be used

When you create an 'output file' from within the Jinx interface (see 'Lets Animate' below), you should name it **[filename].OUT**, the filename should only be one listed in the 'Allowable FileNames' section (below). If possible you should ensure the file extension is named correctly at this point as some operating systems make it a little hard to change an extension once it is embedded.

When you create an FSEQ (or PSEQ) output file from Xlights (or similar lighting package), you must rename the extension to **[filename].FSQ** before putting the SD-Card into the REPLAY device. REPLAY will not play the file if the extension is '.FSEQ'. FSEQ V1.1 is supported only, please check with your Xlights version.

Allowable FileNames

The SD-Card that is placed into the SD-Card slot should only contain certain filetypes and filenames, the following list are allowed with a description of what they do (just add .FSQ or .OUT as detailed above) :

- NOSPLIT.** File frames will be sent to Output 1
 - SPLIT2.** File frames will be split equally into TWO equal parts, routed to Output 1 & 2 respectively.
 - SPLIT3.** File frames will be split into 3 equal parts, routed to Outputs 1,2 & 3 respectively.
 - SPLIT4.** File frames will be split into 4 equal parts, routed to Outputs 1,2,3 & 4 respectively.
 - ANIM1.** File frames will be sent to Output 1
 - ANIM2.** File frames will be sent to Output 2
 - ANIM3.** File frames will be sent to Output 3
 - ANIM4.** File frames will be sent to Output 4
- (Note : You may have any combination of ANIMx files, for instance you can miss out ones if you so wish)

Example 1 : **SPLIT4.OUT** is a file created in Jinx that will be split into 4, each part sent to its corresponding output

Example 2 : **NOSPLIT.FSQ** is a file created in XLights that will not be split, but each frame sent just to Output 1

Example 3 : **ANIM1.OUT & ANIM3.OUT** two separate Jinx files, ANIM1 sent to Output 1, ANIM3 sent to Output 3

- Once the file(s) has finished running, it will restart again from the beginning immediately, allowing seamless looping.
- **ANIMx** files can be of different lengths and they will restart and run independent of other files also running
- The SD-Card should contain **NOSPLIT**, or **SPLITx** or any combination of **ANIMx** files.
- If you have a mix of **SPLITx** and **ANIMx** files present REPLAY may not be able to load and play them all

Lets Animate !

Open your LED animation application, we suggest 'Jinx' as a good starting point, this can be downloaded free of charge from <http://www.live-leds.de/>

1. Start by creating your desired Matrix size in 'Setup>Matrix Options'
2. In 'Setup>OutputDevices' and selecting 'Add', then from the options available, select 'tpm2' for device type
3. In 'Channels' box, enter the total number of channels that correspond to the matrix you have set.
*Example: A 20 pixel * 20 Pixel matrix would have 400 elements, which is 1200 channels (400*3 for RGB)*
4. Select the tickbox for 'Output Redirection' to redirect output to a file, and pressing 'select' will allow you to name the file. NOTE : Ensure you leave the file extension as .OUT
5. Press OK from within the OutputDevices box to save your choices
6. Patch your matrix to the device from within 'Setup>OutputPatch'. Ensure that you clear any previous patch by pressing 'Clear Patch' first. You can patch your matrix by pressing 'Fast Patch', then select the same number of X & Y pixels that match your matrix.
7. Select the 'Patch Mode' that matches how you have wired your pixels on the target hardware
8. Carefully select the correct colour order for your Pixels, WS2812 are GRB, NOT RGB, starting at channel 0.
9. Finally select your TPM2 device as the 'Patch Device' and press OK
10. 'Setup>StartOutput' to start the show, and select the effects you want to see from the Channel Effects and have fun. NOTE : What appears in the central window is what is recorded to the file.
11. All animations and changes (including brightness etc) are recorded directly to the file, until such times as you deselect 'Setup>StartOutput'. NOTE : Restarting the output again will overwrite the file unless you change the filename for it.
12. Transfer the file to an SD-Card ensuring that you call it one of the allowed filename (above)
13. Insert the SD-Card into REPLAY and the animation should start straight away

Hot-Swapping of SD-Cards

SD-Cards can be hot swapped at any time. Once an SD-Card is removed, any residual pixel display will be cleared down. Once a new SD-Card is inserted the show will usually start within a second or two.

SD-Card Types & Formatting

Almost any sized Micro SD-Card can be used. It is recommended that FAT32 formatting is used, and if you will be hot-swapping of cards then all SD-Cards MUST be formatted with the same type (i.e. FAT32)

Pixel-LEDs that can be driven from REPLAY

WS2811, WS2812(b), WS2813, WS2815, WS2818, SK6812

Plus many more of similar timing format like UCS1903, UCS1909, USB1912, UCS2903, TM1804 and TM1809

Dimensions

Length : 100mm (including connector) – Width 50mm – Height 20mm

Software Compatibility

REPLAY works with filetypes that can be created in Jinx and Xlights. Both of these applications are available as free downloads : Jinx : <http://www.live-leds.de/> Xlights : <https://xlights.org/>

Firmware Upgrades

From time to time we may issue revised firmware for our products. The latest firmware can be uploaded to the REPLAY by placing the REPLAYFW.BIN file onto the SD-Card. Once powered the device will read the firmware file, program it (showing continuous blue LED) and show a confirmation (Solid RED LED) at the end, after which the device will reboot running the newly install firmware. Please ensure that the firmware file matches the product you are installing to.

Technical Support

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