"I am proud of the fact that I never invented weapons to kill"
- Thomas Edison

All the GilderNews we could jam into a little under 8 pages
- Eli the Mule, CEM

GilderNewsletter

Views and News from the World of Gilderfluke & Co.

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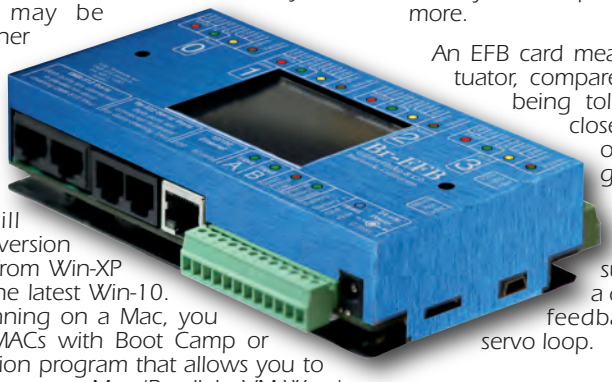
Serving the Entertainment Industry for 33+ Years!

Pc▪MACs Developments

We have been adding new features to Pc▪MACs for 30 years, and are nearing completion of one of the largest rewrites ever. If you can think of any features that we don't already have in Pc▪MACs, let us know! If your suggestions may be useful to other users, we'll consider rolling them in too.



The free-Beta of Pc▪MACs will run on any version of Windows from Win-XP up through the latest Win-10. If you are running on a Mac, you can use Pc▪MACs with Boot Camp or any virtualization program that allows you to run Windows on your Mac (Parallels, VM Ware).

We are still adding new features to make Pc▪MACs even better. If you have been following Pc▪MACs developments with your own Pc▪MACs projects, you will have seen that we have averaged a new build of Pc▪MACs about once a month through 2015.

If you haven't seen these updates on your PC, you'll want to enable the 'Auto Updater' features of Pc▪MACs (at the bottom of the 'Preferences' menu). If you are trying Pc▪MACs for the first time, or have an older build of the Alpha Pc▪MACs from 2014 or before, you'll want a new download of the entire installer from the Gilderfluke & Co. software /firmware downloads web page.

Add the Beta of Pc▪MACs to your cart, and then 'checkout' (this button is hidden in the lower margin of the webpage). This will look like you are making a purchase, but if you select 'download' as your method of shipping, your

Continued on p.2: New Pc▪MACs

New Br-EFB/Quad

The Br-EFB is used when you need to close an analog servo loop used to control pneumatic and hydraulic cylinders or DC motors. These are used in animated shows, motion bases, industrial systems, special effects, fountains, and more.

An EFB card measures the position of an actuator, compares this with the position it is being told to be at, and opens or closes the valve (or turns on or off the motor) as needed to get the actuator to where it should be. The Br-EFB does this thousands of time each second. The Br-EFB also supports 'Compliance', which adds force feedback to the servo loop.

Features of the Br-EFB include:

- Up to four independent axis of PID (Position, Integral and Differential) Electronic Feedback.
- Supports data with resolutions of eight thru thirty-two bits. The Servo loop it closed at sixteen bits of resolution.
- Twelve bit resolution +/- 10 vdc outputs can run most servo valves, VFDs and motor drivers.
- Highly oversampled PID loop for outputs smooth enough to run even the largest motion bases.
- Self-adjusting initial setup, and automatic tuning while running. You can also set up the PID loop manually, if you prefer.
- Actuator endpoints can be limited any-

Continued on p.4: Br-EFB/Quad

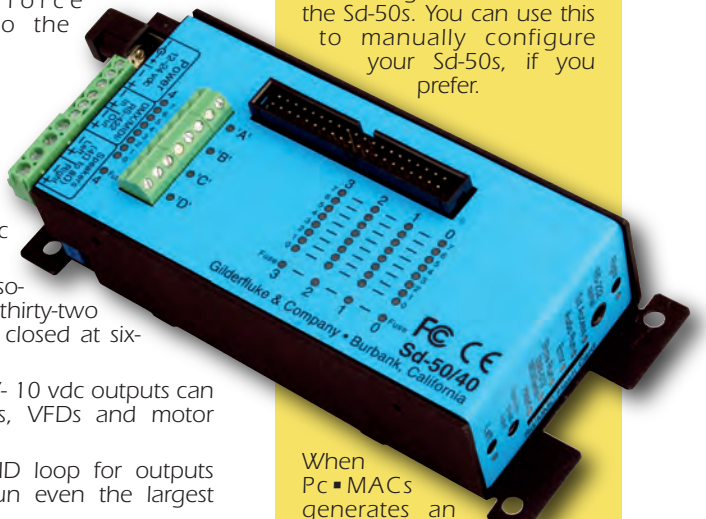
Updated

Sd-50 Firmware

Our All-in-One, does everything players have had the firmware that runs our Sd-50s has been rewritten from the ground up. This brings it into line with our other products.

This includes the ability to use SdHc cards and the standard Sd flash cards they have always supported.

We have also rewritten the configuration tool for the Sd-50s. You can use this to manually configure your Sd-50s, if you prefer.

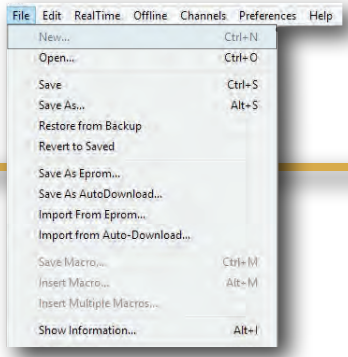


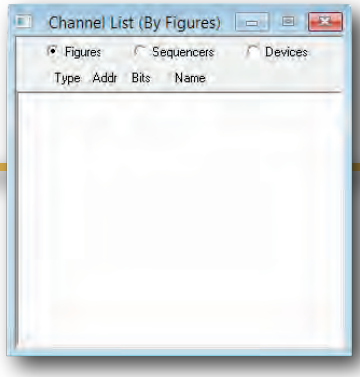
When Pc▪MACs generates an AutoDownload for your shows, it will gather all the sounds and files that are needed for your shows into an 'Auto-Download' folder, 'draw' in the triggers, and configure the Sd-50 for you. All you need to do is drag-n-drop the contents of this folder onto the Sd card you put into your Sd-50. ~G

v-4K Video Players Named 'Product of the Year'

Before an audience of almost 1000 people, the BrightSign v-4K solid state digital video players were presented with the Digital Signage Product of the Year award at the prestigious AV Awards.

These 4K players still lead the industry with features, performance, reliability and value a full year after we started shipping them. They have earned multiple industry awards since shipping late 2014, including the NSCA's Excellence in Product Innovation Awards in the "Most New Revenue Potential" category, and Hardware Innovation of the Year at the International Digital Signage Awards. BrightSign itself was named Manufacturer of the Year at the same awards. ~G





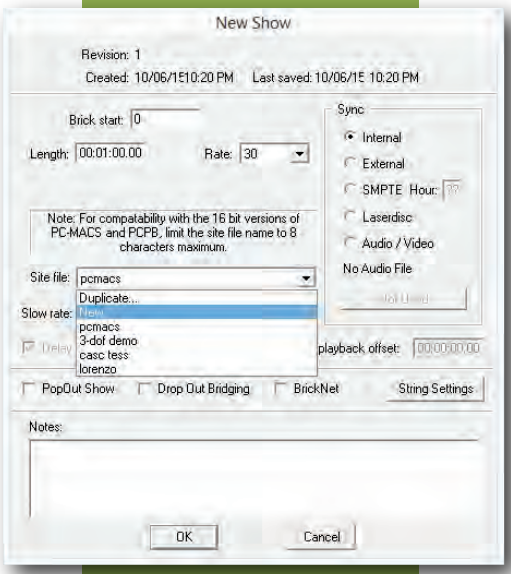
How To...

Old Shows with New Pc▪MACs

Using the new version of Pc▪MACs, you can open any show that was created in any older version of Pc▪MACs.

Upon opening an older show for the first time, Pc▪MACs will tell you (twice) that it needs to add your channels to a sequencer. Let it do this.

If you aren't going to be converting your audio and video triggers to the new Drag-n-Drop triggers, that's all you have to do to your shows.



You can also update your shows to use Pc▪MACs' new drag-n-drop Audio/Video triggers. These support Sd-25s w/ DMX, Sd-50/xx or BrightSign video players triggered thru GPIO and running the GilderScript.

You just need to tell Pc▪MACs which channels are used for the Audio or

Continued on next page

New Pc▪MACs: Continued from p.1

web browser will download Pc▪MACs for free.

Once the Pc▪MACs setup is downloaded, just double click on it to start the installation. Answer 'yes' a bunch of times (we haven't paid Microsoft to certify Pc▪MACs), and before you can quickly say 'toy boat' one hundred forty-three and a half times, it will be installed and ready to run.

If you allowed Pc▪MACs to start itself at the end of the installation, you are all set. If you didn't, just double click on the shortcut the installer left on your desktop, or in your 'programs' folder, and Windows will launch Pc▪MACs.

Making a New Show

Select 'new' from under Pc▪MACs' 'File' menu. This will open the 'New Show' dialog. There aren't too many things that need to be set here, and anything you do set can be changed later by accessing the 'Show Information' dialog from under the 'File' menu. Except for its name, it is identical to the 'New Show' dialog.

The site file is where Pc▪MACs stores information about everything Pc▪MACs is controlling at a specific 'site'. This includes types of inputs and outputs, the names you have given them, the console and other presets, what shows were included in any AutoDownloads and much more.

Depending on the type of shows you do, a 'site' could be an attraction at a theme park, a display in a museum, a fountain, or a stand-alone 'prop' built by the hundreds for the haunt market. No matter what type of shows you are building, each 'site' should have its own unique site file.

All the shows that run at a 'site' should use the same site file. This saves you from reentering the same stuff each time you start a new show. If you modify or add a preset, change the name of an output or anything else, it will instantly and automatically be applied to all other shows using that site file.

To select an existing site file, there is a drop-down that lists every site file name that you have ever used, or if you scroll to the top of the list, you can enter a 'New' site file name or 'Duplicate' the current site file (shown at left).

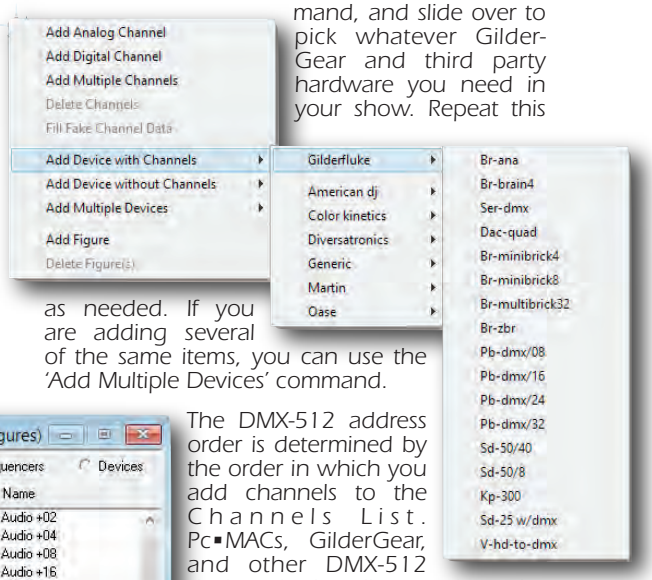
You can guess about the length of your show and enter it, but if you will be adding audio or video files to the show, Pc▪MACs can do this for you a bit later. You can change the frame rate, length, time code or anything else by just accessing the 'Show Information' dialog.

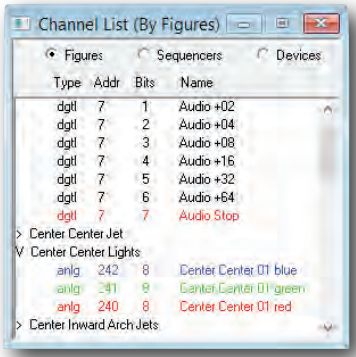
Unless your final show is going to be running on a Br-Brain4 and using Smpte or DVD time code, just leave the 'sync' radio buttons set for 'internal'. Although this is where we used to select the audio or video file to use, it is now easier to do on the OffLine Editing Window,

If you are using a new site file for this show, when you close the 'New Show' dialog, the Channels List will automatically open. It will be very empty (see above). Next step is to fill it in…

In all the following 'Channels List' commands, you can use the command from the 'Channels' menu, or just right+click in the Channels List and pick the command from the contextual menu that will magically appear.

Select the 'Add Device with channels' command, and slide over to pick whatever GilderGear and third party hardware you need in your show. Repeat this as needed. If you are adding several of the same items, you can use the 'Add Multiple Devices' command.



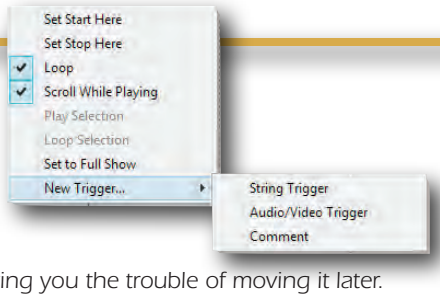


The DMX-512 address order is determined by the order in which you add channels to the Channels List. Pc▪MACs, GilderGear, and other DMX-512 devices don't really care about the order in which you add them. Always set the DMX-512 address of any GilderGear or third party gear to match the DMX-512 address shown in the 'addr' column on the Channels List.

When you are setting the DMX-512 addresses of any lighting gear, you will want to set the DMX-512 addressing to 'one-based' (1 to 512) under the 'Preferences' menu.

To help you keep your Channels List orderly, you can use the 'Add Figure' command to create folders, and drag and drop individual outputs or entire figures into it. Folders can now be nested several layers deep in your Channels List.

Hint: If you create a figure and highlight it, anything you add will go right into that folder,



saving you the trouble of moving it later.

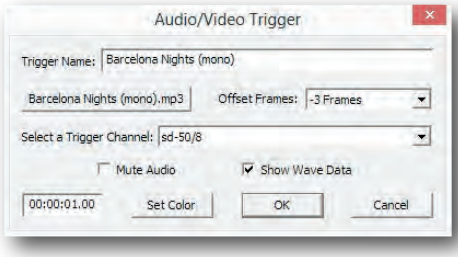
Triggering A/V Files

The biggest single change in Pc▪MACs this year is that it will do virtually all the work for you when triggering Audio and Video files.

To add an Audio/Video file to a show, just open the OffLine Editing Window. Right+Click anywhere on the main window, except on a channel. A contextual menu will appear...

Select 'New Trigger'. This will give you the option of adding:

- String: Text to be sent out through the Br-Brain4's secondary COM port.
- Comment: Allows you to make notes to yourself that appear as part of the timeline.
- Audio/Video: Here's where you now add Audio/Video playback to a show. Just pick the player from the pulldown (Sd-25s w/ DMX, Sd-50s or BrightSign video players), and choose your Audio/Video file. That's really all you need to do!



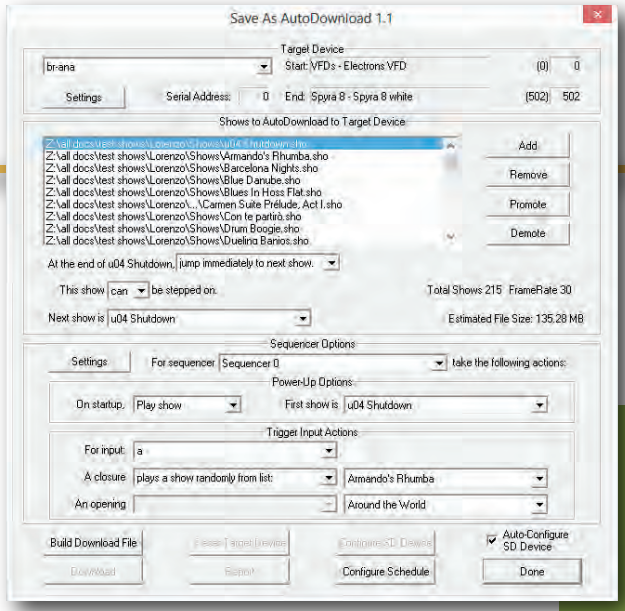
You can have multiple Audio/Video triggers in each show, and Pc▪MACs will keep track of them for you, only downloading the files you have used. Pc▪MACs will automatically add an offset to compensate for any triggering delays when it 'draws' in the A/V triggers during the AutoDownload process. While you are working in Pc▪MACs, you can also choose whether you want to mute audio output from your computer, and if the waveform is displayed on the OffLine Window.

If you want your Audio/Video files to play back from your A/V devices, just do a quick AutoDownload, and drag the resulting folders to the players. Once the files are on the players, Pc▪MACs will be able to trigger them too.

AutoDownloading Shows

The final step in programming most shows is to generate an AutoDownload file to run the permanent Show Control System. Pc▪MACs automates most of this process for you.

The 'Save to AutoDownload' dialog is found under the 'File' menu. The AutoDownload dialog has four sections. You start at the top of the dialog, and work your way to its bottom to complete your AutoDownload:



- 'Target Device:' Pc▪MACs picks the most likely target for your AutoDownload. If you want to build for another device in your Channels List, just pick it from the drop-down. Unless you tell it otherwise, Pc▪MACs will download all the channels in your Channels List, or at least as many as the target Device can hold.
- 'Shows to AutoDownload to Target Device:' Use this section to choose which shows will go into the AutoDownload file. You can pick one or more show files at a time to set what happens at the end of the show, and whether it can be stepped upon (or not) by another show request coming in.
- 'Sequencer Options:' Most shows use only a single sequencer. Use this section to set which show gets loaded and what happens on startup. It can play the show or just wait for the first trigger input to arrive.
- 'Trigger Input Actions:' Each Target Device has different numbers of trigger inputs, and different things it can do with them. You can pick one input at a time, and set what will happen on both the opening and closing edges of the input you have chosen.

Once you have completed all the settings, you can use the 'Build AutoDownload' to simply build the AutoDownload file, or the 'Download' button to build the file and then send it to the target device through the COM port.

If you have used the drag-n-drop Audio/Video triggers in your shows, and have the 'Auto Configure SD Device' checked (it's 'on' by default), Pc▪MACs will gather up all the audio and video files used by your shows, put them in the proper order for the player(s), configure the player(s) for you, and 'draw' in all the Audio/Video triggers in the shows to start them playing.

If you are AutoDownloading to an Sd-50/xx, the only question Pc▪MACs will ask you is if you want to use the built-in amplifier or not.

For Sd-25s w/DMX, Pc▪MACs creates a text file for each Sd-25 in your installation, telling you what the proper settings for the dipswitches are.

At the end of the AutoDownload process, Pc▪MACs will have made a folder for each Target Device and Audio/Video device that your installation uses. Just drag-n-drop the content of each of these folders onto flash cards, and insert them into your players. ~ G

Reusing Old Shows:

Video triggers so it can set them for you.

Open the Channels List and use the radio buttons at the top of the dialog to select to view by 'devices'.

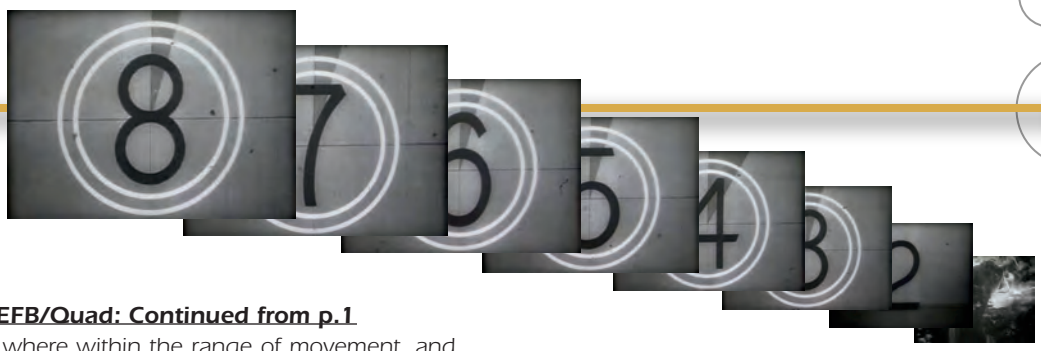
Use the 'add devices without channels' command from the 'Channels' menu or (Right+Click) contextual menu to add your Audio/Video devices (Sd-25s w/DMX, Sd-50/xx, v-Hd-to-DMX or v-Hd-to ¼J6). If they are already listed in the Channels List, you can skip this step.

If your old show was already able to trigger Audio/Video files, then there should be some Audio/Video trigger channels already in your Channels List. Drag all these into the appropriate Audio/Video devices.

Open each of the Audio/Video devices' folders and double click on any one of the trigger channels. In the lower left corner of the dialog, there is a new drop-down. These are probably set to 'normal digital'. You need to pop it open and switch it to a 'MCU' for the appropriate Audio/Video device. Doing this to just one bit will switch all eight bits in the MCU channel.

Now open a different show that uses the same site file (or close and re-open the same show). Pc▪MACs will see your old audio triggers, and ask if you would like them updated for this one show, or in all the shows in the folder.

Your old triggers from the 'Show Information' dialog will have changed into the new Drag-n-drop triggers on the OffLine Editing Window. ~ G



Tip

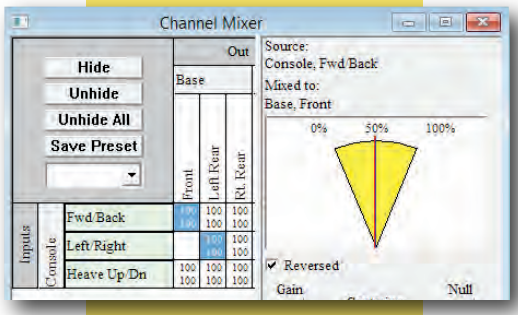
Motion Base Helicopters

The most natural way to program any motion base is using a Waldo like our USB-MbJoystick. It can program both 3-DOF and 6-DOF motion bases.

A helicopter is flown using a two-axis joystick for pitch and roll and a 'cyclic' lever to control the lift.

Typical 3-DOF motion bases can roll (left/right), pitch (forward/back), and heave (up/down). (You can read our Motion Base App. Note for more info.)

A helicopter pilot may use a two-axis joystick and 'cyclic' lever to program 3-DOF motion bases. You will need to use Pc▪MACs' 'Channel Mixer' for this.



The Left/Right of the joystick feeds both the left and right actuators, with one side 'reversed'. When the joystick is moved left/right, one side goes up, and the other goes down.

Pushing the 'fwd/back' joystick forward lowers the front actuator as it raises both of the rears. The axis is mixed into all three actuators, with either the front or backs reversed.

The 'Cyclic' is also mixed into three actuators. Raising and lowering the 'cyclic' raises and lowers all three actuators at once. ~ G

Br-EFB/Quad: Continued from p.1

where within the range of movement, and even reversed.

- Each axis has a removable screw terminal block for connections to the actuator: Ground and 24 VDC for powering the valve and feedback sensors (PTC fused at 1.1 Amp), Position Feedback Input (0-5, +/-5, 0-10 or +/-10 dc), Compliance feedback input (0-5, +/-5, 0-10 or +/-10 dc), -10/+10 vdc reference for using potentiometers for position feedback, and positive and negative outputs for controlling the valve/motor.
- 'Enable' input disconnects the valve outputs from the Br-EFB and connects them to 'Battery' terminal. You can use this in place of an actual hardware 'blocking' Valve.
- Shows are stored on standard micro Sd/SdHC Flash cards for a virtually unlimited capacity (up to 32 GBytes). Like all GilderGear, up to two hundred fifty-five shows can be loaded onto a Br-EFB.
- Networkable! Transmits a full 512 channel DMX-512 universe to act as a network 'master', or receives a full 512 channel DMX-512 universe to use as a 'slave'. Uses USITT-standard pinout for DMX-512 through Rj-45 cables. DMX-512 input/output/thru to daisy-chain using standard CAT-5 or CAT-6 Ethernet patch cords.
- ▪Ethernet (10/100) for monitoring and communicating with the Br-EFB.
- ▪Triggerable! Two non-polarized optoisolated inputs or the networkable RS-422 COM port can be used to start, stop, pause, continue, or access shows. Rising or falling edges can trigger different actions, including random and sequential playlist commands. Rj-12 Rs-422 input/output/thru for easy daisy-chaining.
- ▪Optional One Quarter VGA color touchscreen. Can be used to adjust settings, or monitor each axis. It's just like having a little oscilloscope for tuning the servo loops on each controller.
- Sturdy aluminum enclosure. Mounts in Snap Track, DIN rail (optional), or just Velcro or screw it down. ~ G

Made in the USA

All equipment which is designed and built by Gilderfluke & Co. is manufactured in the United States of America. ~ G

Frame-By-Frame Video when Single-Stepping

Pc▪MACs lets you easily link videos to your shows, and automatically moves your videos and configures your BrightSign players for you.

If you are going to be using single-stepping on the OffLine Window, or your computer just doesn't have enough horsepower to display a high resolution video while also running your show, you may need to create a temporary 'scratch' video file to use while programming.

Your 'scratch' video file will be a duplicate of your 'real' video file, just at a lower resolution and/or using a different compression scheme. Since it will typically be seen only by you as you are programming, it doesn't matter that it isn't at the highest possible resolution.

Although most modern video compression schemes do a great job of compacting the video, they don't carry all the data to reproduce every single frame of your video. When you enter single-step mode in the OffLine Editing Window, you can use the forward and back arrow keys to step through your show one frame at a time, You may notice that unlike your show, your video may only step every few frames. This is because the video format you are using doesn't store every frame of video.

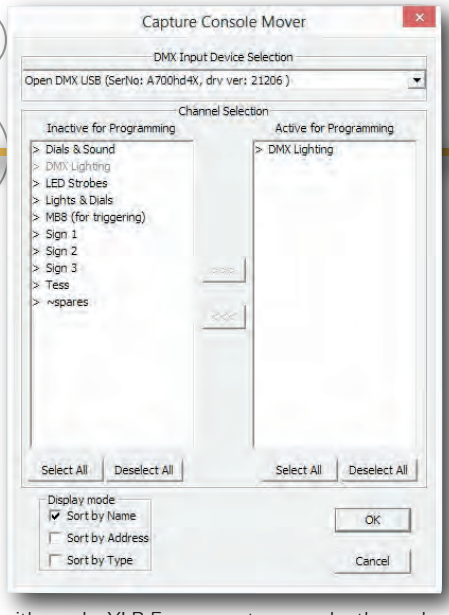
To get around this video stepping, try using an older format, like AVI for your 'scratch' video file. It doesn't compress nearly as well as newer video formats, so you'll want to kick your scratch video's resolution down to a smaller size. ~ G

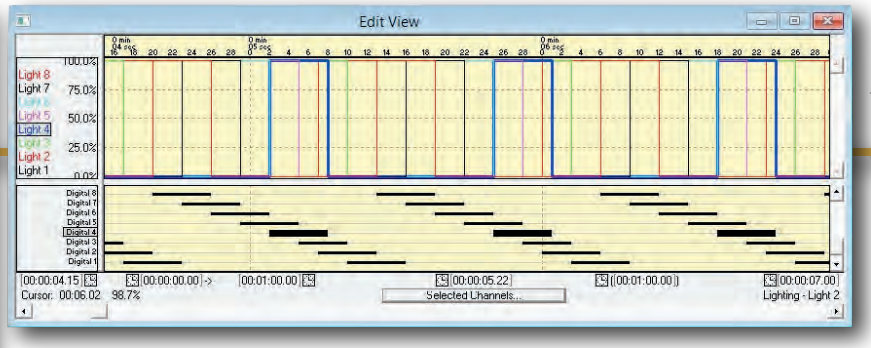
How to Capture DMX-512 into Pc•MACs

There are times when you need to import DMX-512 data from another source into Pc▪MACs. This could be when you are retrofitting an older system from another manufacturer, the lighting data has been programmed using a specialized tool for moving lights or a LED video wall, or the Lighting Designer has spent years learning to run his favorite lighting board, and declares that 'damned if I'm going to learn a different way of doing things!'

You can import up to a full universe of DMX-512 at one time. To import DMX-512 into Pc▪MACs, you will need an available USB-to-DMX adapter and a MACs-License. You can not use a single adapter for simultaneous input and output.

All that is needed is a short DMX-512 cable





with male XLR-5 connectors on both ends. Wire pin #1 to #1, pin #2 to #2, and pin #3 to #3.

From the 'Preferences' menu, select 'Consoles'. On the dialog that opens, select the 'Capture Console' from an available drop down. You do not need to deselect the Soft Console or any other console you are using, as more than one console can be used at the same time. Close the 'Consoles' dialog after selecting the console.

From the 'RealTime' menu, select 'Capture Console Channels'. This dialog is used to select the available DMX-512 input device from the drop down at the top of the window. It will list all the USB-to-DMX adapters Pc▪MACs can find that are not currently being used for DMX-512 output.

All the channels you have created for your show are shown in the left column. Move the channels to be imported to the right column. Any channels that remain in the left column will remain unchanged. If you have more than one universe worth of channels defined, the universe of the first channel moved to the right column determines which universe is being imported. Channels that are in any other universe will be unavailable to move into the right column.

To consummate the import, just start the source system 'playing', while starting Pc▪MACs 'recording'. If you have the OffLine Editing Window open or are sending the channels you are sampling through a second USB-to-DMX adapter, you will see the data displayed or sent out, just as if you were programming from any other Pc▪MACs console.

Once the DMX-512 is imported, you can display and edit it on the OffLine Editing Window, just as you can with anything in Pc▪MACs. We have been surprised to see how ugly some of the imported waveforms can get when the system they were recorded from got too busy. ~ G

Pasting Between Analogs and Digitals in Pc▪MACs

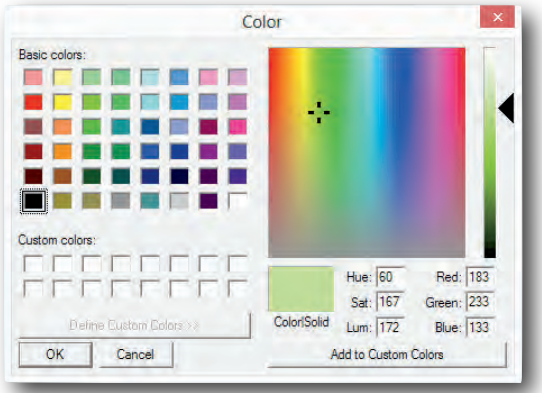
You can now freely copy and paste between channels of any resolution on Pc▪MACs. This includes pasting digitals into analogs, analogs into digitals, and among different resolutions of analogs. Pc▪MACs will warn when you are pasting between analogs and digitals, just to make sure that this is what you really want to do.

In the example above, an eight channel chase has been drawn in the digitals, and then copied and pasted into eight analog dimmer channels. 'Digital 4' and 'Light 4' have been highlighted.

An option to apply the 'cut/paste' options when pasting digitals into analogs allow you to add ramps on the rising and/or falling edges of the analogs as you paste the digitals in. ~ G

Fade to a Color

RGB (Red, Green and Blue) LED lighting has become ubiquitous in all types of shows. Using the new 'Edit' menu command, you can now 'Ramp Colors to a Value'. You choose your color and brightness from a standard color picker.



All RGB channels that are selected will be ramped to the appropriate levels. Hint: Make sure the 'brightness' slider at the right is set properly, unless you want all of your lighting to ramp to black. ~ G

Tip

LeapFrog Fountains

LeapFrog (AKA: JumpJet) fountains are usually designed so that as the jet from the previous nozzle arrives, the water from the next nozzle is fired. By doing this across several jets, it gives the fountain the signature 'LeapFrog' illusion that the same steam of water is bouncing from jet to jet.

If a LeapFrog jet is internally illuminated, once the valve closes they loose their illumination. Often the LeapFrog jets have a series of up-lights below the water's path that illuminate the water as it flies through the air. For best results, these lights must be sequenced so that they turn on just as the water is flying over each light.

In the photo below, a large splash pad at Point Ruston, Washington has approximately 25 LeapFrogs and arches. The LeapFrogs are both internally lit and lit from below.

LeapFrogs and their lights are easy to program in Pc▪MACs. Just program the LeapFrog jets using RealTime or by drawing them in on the OffLine Editing Window. Once you are satisfied with these, you can program the lights to match in a matter of seconds.

Divide the water 'fly' time by the number of

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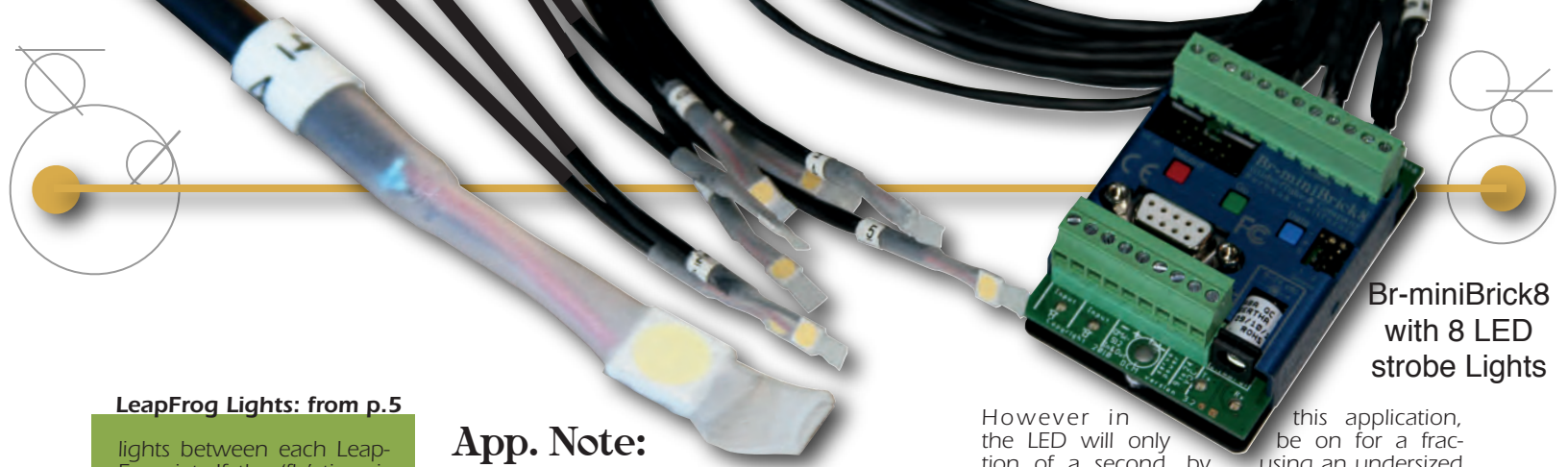


Br-miniBrick8 with 8 LED strobe Lights

LeapFrog Lights: from p.5

lights between each LeapFrog jet. If the 'fly' time is 36 frames and there are three lights, then the time each light is on will be 12 frames. You can program the lights for all the jets that have the same 'fly' time at the same time.

Select all the digital outputs that tell the LeapFrogs to squirt. 'Copy' them.

Without changing the amount of time selected, deselect the LeapFrog jets, and select one color from each of the up-lights closest to each LeapFrog nozzle. Hint: creating OffLine Presets in advance make this into a 'one-click' job.

Now 'paste'. Pc▪MACs will warn you that you are pasting digital data into analog channels. This will put a perfect copy of your digital LeapFrog Triggers into your first set of analog lights. If you opt to apply the 'Cut/Paste' options, then Pc▪MACs can add ramping to the rising or falling edges of your lighting commands. An immediate 'fade up' and a short 'fade out' are typically used.

Now move the start of the time selected forward by 12 frames (in this example), deselect the first lights, and select the next lights in the chase. When you 'paste', there will now be a duplicate of what is in the first light, but shifted later in time by 12 frames. Repeat these steps for each of the remaining lights.

The result is that as each LeapFrog jet squirts, it is followed by a perfect chase down the lights. These will illuminate the water as it is in flight on every squirt. ~G

App. Note: Build a Multi-LED Strobe

As part of a museum retrofit last year, we came across a display with nearly 100 xenon strobe lights. Of these, only a handful were still working. The manufacturer had disappeared so long ago that there wasn't even a trace of them on the internet.

We looked into what multi-headed strobe systems were readily available. The cost of these was several times the cost of the entire control and sound system we were retrofitting.

Most strobes now use LEDs instead of xenon bulbs. All that a LED needs to run is a resistor to limit the current through it and something to turn it on for an instant (like any Gilderfluke & Co. Show Control Systems). The LEDs used in many of the strobes we looked at were rated for five Watts. Our digital outputs are rated for 12 Watts peak. You can use our Br-miniBricks, Z-Bricks, Sd-50s to control any number of these strobe lights. All you need are some LEDs, wire and resistors.

Here's how to put it together:

The LEDs we chose are Osram part number GWP9LMS1.EM-NSPP-65S5, but any similar LED will work. Each of these LEDs are made of several LED chips in a single ¼" square package. The advantage of these LEDs is that they have a forward voltage of about 20 volts. With a supply voltage of 24 VDC running all the other GilderGear, it makes them easy to power. The current limiting resistor only needs to drop four volts to limit the LED's current to a peak of 400 milliamps. Their continuous output is rated at about 400 lumens (about the same as a 40 Watt incandescent light bulb). By using short pulses, we will be running brighter than this.

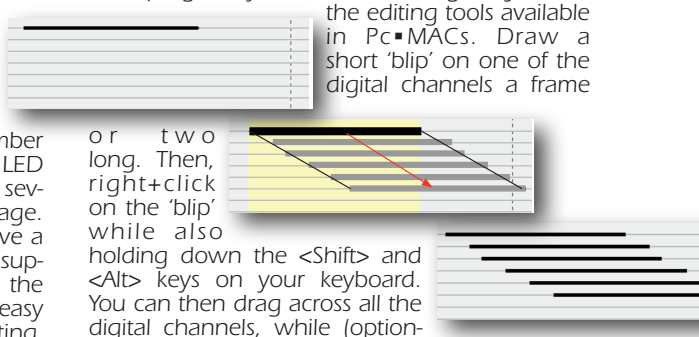
The LED has a tiny dot near one corner (at the left in the photo). This marks the cathode side of the LED. Solder the black wire that runs to the digital output of the control system (Br-miniBrick, Br-ZBR, Sd-50/, etc.). Solder the red wire that goes to the common positive to the other pad on the back of the LED.

A resistor must be wired in series with the LED to limit the current flow through it. This can be on either wire. With a 24 volt supply, the resistor will need to be about 10Ω to limit the current to a peak of 400ma. With 4 volts dropped across it, the resistor should be larger than 1.3 Watts. However in this application, the LED will only be on for a fraction of a second, by using an undersized ⅛ Watt resistor, it will double as a fuse if the LED is accidentally left on for too long.

In most applications, these LEDs are attached to a heatsink to draw away excess heat. Because this application is to be used as a strobe light, each LED will only be turned on for a fraction of a second at a time, and so it won't be on long enough to heat up enough to melt the solder on the back of the LED. If it is, the purposely undersized resistor should fuse before the LED is damaged. or the output from the show control system will self-protect and turn off the output to protect it from too much current being drawn.

Once you have tested your LEDs, you should protect them from the environment with a bit of clear shrink wrap, or by potting them in a clear container using clear epoxy.

To program your new strobe lights, just use the editing tools available in Pc▪MACs. Draw a short 'blip' on one of the digital channels a frame or two long. Then, right+click on the 'blip' while also holding down the <Shift> and <Alt> keys on your keyboard. You can then drag across all the digital channels, while (optionally) dragging the ending 'blip' either forward or backwards in time. The result is a perfect 'chase' across all of your new strobe lights. ~G



Machao Orphanage

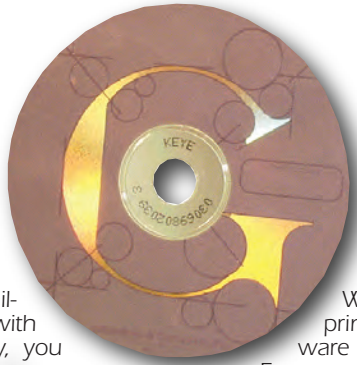
Along with her work with people with Sickle Cell Disease, Dr. Carolyn Rowley, our VP and CFO, has been the primary U.S. organizer and fundraiser for the Machao Orphanage in Makueni, Kenya.

This year's projects included beautification of the Orphanage and an improved irrigation system to help ensure a bountiful crop this year, and contribute to Machao's sustainable future.

If you would like to help support the facility, or any of the kids directly with school tuition or other aid, more information can be found at www.machaoorphanage.org ~G

Custom Product GilderGear Labeling

If you are using a larger quantity of GilderGear, you can order the equipment with your own custom labeling. In this way, you can 'brand' the GilderGear as your own. ~ G



Greatest Hits On CD

We distribute all our printed material and software on a single CD-ROM. Every manual, cut sheet, and piece of software we offer is all on one disk. These are included with most orders, or are available for a nominal charge. ~ G

GilderSwag Available for Ordering

As everyone knows, there is no human being more fashionable on this planet than your typical Gilderfluke & Co. Employee.

Now you too can dress just like one!

GilderShirts, GilderChocolates, GilderMousePads and other great GilderSwag are now available from our online web store. ~ G

Classes Anyone?

The spacious quarters at Gilderfluke Towers has a permanent display area where we offer classes in GilderGear. We know that our stuff is pretty easy to learn to operate, but if you would like formal classes, they can be scheduled.

If you are interested in training on GilderGear, please contact Carolyn Rowley (carolyn@gilderfluke.com) in our California GilderOffice. ~ G

Custom Design Work

As time allows, we do custom design work. Most jobs are for clients that need a product to do a specific job that none of our off-the-shelf boards will do. Usually, these have been incorporated into products produced by our clients.

If you are interested in custom-designed equipment, please contact Doug Mobley (doug@gilderfluke.com). ~ G

Field Installation & Service

Gilderfluke technicians are available for installations worldwide. You will need to pay all the usual transportation expenses (business class or better airfare, hotel, food, and per diem) in addition to the fee for the technician.

If you are interested in field support and installation of Gilderfluke & Co. equipment, contact Carolyn Rowley (carolyn@gilderfluke.com) in our California GilderOffice. ~ G

Gilderfluke Show Plans

We are scheduled to exhibit at the following trade shows in the upcoming year. Most of the equipment described in this newsletter will be on display at these shows. We have free passes for many of them, so contact us if you would like to attend.

November 18-21, 2015

Booth #1651

International Association of Amusement Parks & Attractions (IAAPA), Orange County Convention Center, Orlando, Florida

March 17-20, 2016

Booth #931

Transworld's Halloween & Attractions Show, America's Center, Saint Louis, Missouri

June 8-10, 2016

Booth #C9842

InfoComm International, Las Vegas Convention Center, Las Vegas, Nevada

November 15-18, 2016

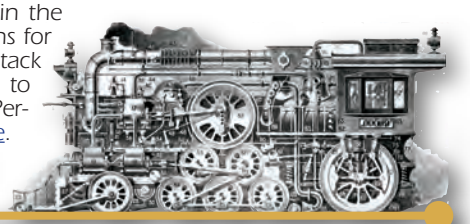
Booth #t.b.d.

International Association of Amusement Parks & Attractions (IAAPA), Orange County Convention Center, Orlando, Florida

Our Two Most Asked Questions

In the more than thirty-three years we have been in business, the second most commonly asked question is where our company's unusual name came from.

Eli Gilderfluke was an 'inventor' whose illustrations appeared in railroading trade magazines in the 19th Century. A precursor of Rube Goldberg in the 20th Century, he developed strange inventions for steam trains. These were things like a big scoop to catch the exhaust coming out of the smoke stack and feed it back into the engine's firebox. The verb "to Gilderfluke" something eventually came to mean improvised repairs (i.e.: "Jury-Rigging") on a piece of machinery. To the right is 'Gilderfluke's Perfected Locomotive' from the December 1897 issue of Railway and Locomotive Engineering Magazine.



The answer to the most commonly asked question is: 'No, we don't build animated figures'. ~ G

• You can follow us on:

Who Are We?

For over 30 years Gilderfluke & Company has been building Animation & Show Control Systems for theme parks, museums, and other entertainment venues. In 1988 we added Digital Audio Playback Systems to our product line, and became the first company to be able to provide the entire electronics package for your animated show or attraction.

We currently deliver an average of four or five systems a day. We are the only company that delivers complete, off-the-shelf Animation & Show Control Systems from stock. Most systems are bought by Animation Manufacturers for incorporation into their shows. They are simple enough to be installed by anyone.

Our **PC▪MACs** Animation & Show Programming Systems were the first to run under Microsoft's Windows. It is still the technological leader among Animation Programming Systems. Our 'Brick' Show Control Systems are the largest selling Animation & Show Control Systems in the world. These are modular systems which can be used to control any size show you can imagine.

Our Digital Audio Systems are led by our ***Sd-10***, ***Sd-25*** and ***Sd-50*** Industrial-Strength Mp3 players. These store audio on standard MMC/SD Flash cards for any installation where you need a sound to play reliably and with zero maintenance; forever. Our systems are modular. Systems with two to thousands of outputs are can be made with our repeaters.

Sd-50 players are also available with an option that adds eight or forty digital Show Control outputs, DMX-512, MIDI and COM ports to them. This turns them into a total Audio and Show Control playback solution. The GPS option allows shows and sounds to be scheduled, accurate to a thousandth of a second. -G

In this issue...

Gilderfluke & Co. Robotics & Sound Systems

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