GILDERFLUKE & COMPANY · 820 THOMPSON AVENUE, SUITE 35 · GLENDALE, CALIFORNIA 91201 · FAX 818/546-1619 · 818/546-1618

"Always do right. This will gratify some people and astonish the rest" - Mark Twain

Gilderfluke & Co. ROBOTICS & SOUND SYSTEMS

All the News that we could jam into a little under 4 pages

Views and News from the world of Gilderfluke & Co.

November 1994 Volume 1 Number 4

NEW TOGGLODYTE DEBUTS

Togglodyte is the name we gave to the hand held test tool used by field service personnel to manipulate and adjust animated figures after a show has been installed. The name comes from the many toggle switches which bristled from the original Togglodyte.

The original Togglodyte was one of the very first pieces of equipment we designed and built. It was used in the early '80s to develop our original Micro MACs 'Bricks' and other Animation Control Systems. Prior to the release of our first Micro Consoles, it was the only programming console available for the Bricks, unless you wanted to build one yourself. One client still actually uses their Togglodyte in this way. Through the years, the Togglodyte has retained such useful features as support for our original eight bit full-sized Animation Control Systems.

After so many years of yeoman service, we have retired the design of the original Togglodyte and replaced it with a new model TOG-02. A completely redesigned unit, it has more in common with a PC·MACs programming console than it does with the original Togglodyte.

The Togglodyte Animation Test Tool features include:

- It works with all PC·MACs, MICRO MACs and Smart Brick Animation Control Systems from Gilderfluke & Company. It will even work with any DMX-512 control signals coming from a lighting board or other piece of equipment!
- Can be used with one channel (eight digital bits) of digital data, or one analog channel at a time. Analog channels' resolutions to thirty-two bits are supported (PC·MACs and DMX-512 modes only).
- Two line by sixteen character wide LCD display. Displays values, settings, and even the names of the movements when operating in PC·MACs mode.

~ continued on page 2 ~

NEW MID-SIZED ANIMATION SYSTEMS

The Gilderfluke and Company Remote Terminal Unit (RTU)/Frequency Shift Keyed (FSK) Unit is an Animation System with 128 digital outputs and (optionally) sixteen 0-10 VDC analog outputs.

The Remote Terminal Unit/Frequency Shift Keyed Unit can be used in one of the following three modes:

1) Frequency Shift Keyed (FSK) Data Playback: To play animated shows which have been recorded on any standard audio tape, Compact Disc, LaserDisk, or other source of audio data. Sixteen or thirty-two 8 bit channels of data can be played back using this unit. FSK data is normally generated using a PC·MACs Animation Control System. When operating in this mode, three relay outputs and/or the serial port can be used to start, stop and rewind a tape deck, LaserDisk or Compact Disc player. Sixteen different

~ continued on page 4 ~

ANALOG OUTPUT SMART BRICKS

Another new product we will be previewing at the 1994 IAAPA convention in Miami, Florida is an Analog Output Smart Brick Card. This is the first of a radically new family of Smart Bricks that will be supplementing our existing Smart Brick line.

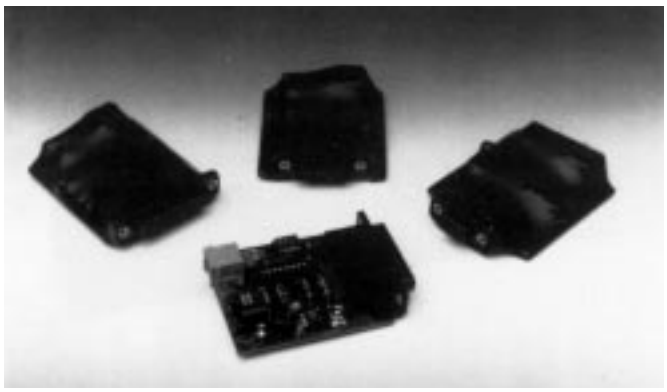
The Analog Smart Brick features sixteen 0 to 10 volt outputs. When plugged into any of our Brick card cages, the backplane connection is a standard J6/A output cable pinout. The outputs can be individually controlled through a DMX-512 input from a PC·MACs Animation Control System. Once programmed, an on-board EPROM can be used to permanently store the final animation sequence. The Smart Analog Card is synchronized with the

~ continued on page 4 ~

RS-422 CONVERTERS

The serial ports found on most computers come with one of two common communication standards. All of the Audio and Animation Control Systems from Gilderfluke & Company use the standard known as RS-422. This standard allows communication lines to be run as far as a mile or more, and more than one piece of equipment to be attached to the same line.

Some computers, like all Apple Macintoshes, come with RS-422 serial ports. Older computer designs, like all PCs and compatibles, come with RS-232 serial ports. These are limited to just a few feet of line length and a single piece of equipment on each serial line. For short distances, a RS-232 port can be used directly with a RS-422 port without any problem.



The Gilderfluke and Company RS-232 to RS-422 Converters are used to convert RS-232 ports for use with the RS-422 standard. This allows a PC or compatible to communicate with many pieces of equipment simultaneously, and/or from a distance of up to a mile. These adapters can also be used with LaserDisk players from Sony or Pioneer.

Features of the RS-232 to RS-422 Converter include:

- Converts the RS-232 ports found on many computers to use the RS-422 signal standards.
- RJ-11 connector output for direct connection to all Gilderfluke & Company RS-422 serial ports.
- Available with one of three different types of RS-232 'D' connectors:

a) Male 25 Position RS-232 connector for use with PCs and compatibles or Sony LaserDisk players.

b) Female fifteen position RS-232 connector for use with Pioneer LaserDisk players.

c) Male nine position RS-232 connector for use with PCs and compatibles.

- Green LED shows data transmitted by PC.
- Red LED shows data received by PC.
- Comes complete with small wall-mounted power supply.

A simple cable (MAC-CABL) is available for Macintosh users to connect the eight pin mini DIN connector on their computers to the RJ-11 connectors used on all our equipment.

SOFTWARE UPDATES...

Such is the nature of software.....it is never done. If you need to get an update of any Gilderfluke & Company software product, please contact us. Except for ROM updates, most software updates are free.

We will be adding an on-line Bulletin Board System (BBS) here at Gilderfluke & Co. sometime in the next few months. This will allow you to call up twenty-four hours a day and download updated software and firmware, application notes, and even the latest revisions of our operating manuals (not that anyone ever reads these). The firmware updates will need to be burnt into your own EPROMs after they are downloaded.

New Togglodyte... continued from page 1

- Attaches to PC·MACs as a single channel programming console. All of the regular features of the PC·MACs Programming Console are available. It can even be used to program a show one channel at a time! Many of the first units are already being used by our clients for making field changes to shows as they are installed.
- Attaches to any standard 1/4 J6 digital output cable from any Gilderfluke & Company Animation Control System. Data can be passed through and monitored or modified as needed. It can be used as a single channel Micro Console for Standard or Smart Record/Playback Bricks.
- Can intercept and retransmit any 256 channel stream of DMX-512 data. Any selected channel can be modified to manipulate whatever is being controlled by the DMX-512 signal. In this mode it can be used with lighting controllers and dimmer packs from other manufacturers.
- Can automatically cycle digital functions in a variety of patterns. Timers allow you to document the speed of digital movements. Field service personnel can then adjust the movements back to their original factory specifications.
- A built in sequencer allows you to record an analog or digital movement, then have the Togglodyte repeat it while you work on the figure. Capacity of sequencer (@ 30 FPS) is over two minutes. It can hold any one eight bit channel, which can be a single eight bit analog or eight individual digitals. The first fifteen seconds of the test sequence can be saved to nonvolatile memory if you need to use it regularly.
- Runs from an internal nine volt battery, external battery pack or other source of power, or draws its power from the system under test (when using the 1/4 J-6 inputs). When operating from a battery, the Togglodyte can automatically shut itself off when it hasn't been used for a while.
- LCD display backlighting allows use in dark corners. When operating from battery, backlighting can automatically turn off after use to extend battery life.
- Retains configuration settings in nonvolatile EEPROM memory when not in use.

HIGH RESOLUTION SERVO AND STEPPER MOTOR CONTROLS

PC·MACs Animation Control Systems support analog resolutions of up to thirty-two bits. This gives a maximum number of steps between the two extremes of an analog movement of 4,294,967,296 steps. Of course, not too many applications need this sort of positional accuracy. Those that do are generally used for positioning cameras, where every little joggle can show up as a big jump on the screen. To give you an idea of what this kind of resolution means, if you were to make a camera track 100 miles long, PC·MACs would be able to position the camera within .001 of an inch!

Rather than build high resolution servo and stepper motor controls ourselves, we are currently developing simple interfaces between PC·MACs and other manufacturer's motor controllers. The first of these is from Continuum Engineering. This is a self-contained micro stepping motor controller. Each unit can control up to three axis of motion, with up to 50,000 steps per revolution (based on a 1.8°, 200 step motor).

FOUR LEVELS FOR THE PRICE OF TWO

Along with the Original Togglodyte, another long-time product which has been updated is the Gilderfluke Bi-Level Dimmer/Flicker Controller. This is a complete redesign of the original product. The biggest improvement has been the addition of two more level settings on each output without increasing the price of the unit.

The Gilderfluke and Company Quad-Level Dimmer and Flicker Controller can be used in a number of lighting applications with or without an Animation Control System. It controls up to eight lighting circuits simultaneously.

As a Quad-Level Dimmer Controller, it can ramp a lighting circuit between four preset levels. The speed of the ramps up and down are individually preset.

As a flicker controller, it can make a lighting circuit 'flicker' to simulate a candle, lantern, or similar light source. Bi-Level lighting control is also available on channels which are being used for flicker circuits. One digital output from the Animation Control System (or a switch) is required for two level control (with or without a flicker effect). Two outputs are needed for four level lighting control.

The Quad-Level Dimmer and Flicker Control Unit features include:

- Eight quad-level and/or flicker control channels. Each is individually selectable for either use.
- Four individual controls per channel are used to set the four possible lighting levels. LEDs next to each control (32 total LEDs) make it easy to see the current level being used by each channel.
- Ramp rates up and down are individually adjustable. Longer times available on special orders.
- Connects to one 1/4 J-6 cable when used in Bi-Level mode. Two 1/4 J-6 cables are needed when used in four level mode. Accepts open collector switch to ground or switch closures on its inputs.
- 0-10 volt outputs connect to almost any lamp dimmer driver pack.
- Pulse proportional output for direct connection to Light Lab LCE-802 dimmer driver packs. These are low-cost driver packs with eight 1800 watt (15 amp) channels. They are UL listed.
- Powered by small wall mount transformer or LCE-802 driver pack. Transformer included if needed.
- Can be used in stand-alone architectural applications without a animation system.
- Optionally, any channel can also be slaved to an external 0-10 volt signal or the output of one of the other channels.
- Flicker speed is adjustable. The flicker patterns are stored in EPROM and can be programmed so flickers are coordinated to simulate breezes blowing past a chandelier and similar effects.

This controller requires a dimmer pack on its output to control heavy loads. Any dimmer pack that can accept a 0 to 10 volt signal can be used. We offer the Light Lab LCE-802 under our part number LG-8000.

GILDERFLUKE SHOW PLANS

We are scheduled to exhibit at the following trade shows and conventions in 1994 and 1995. Most of the equipment described in this newsletter will be on display at these shows:

- Nov. 2-5: IAAPA (International Association of Amusement Parks and Attractions) at the Miami, Florida Convention Center
- June 10-12: Show Biz Expo at the Los Angeles, California Convention Center

New FSK/RTU... continued from page 1

delays between shows can be set for up to 9,999 seconds each.

2) **Remote Terminal Unit (RTU):** The FSK/RTU can receive DMX-512 data transmitted by a PC·MACs Animation Control System, or any other source of DMX-512 data, and convert it to individual digital outputs and (optionally) sixteen 0-10 volt analog outputs. Up to sixteen FSK/RTUs can be used to temporarily take the place of Brick Animation Control Systems when programming a show from a PC·MACs Animation Control System. We are recommending the FSK/RTU for use as the best way of getting data out of a PC·MACs Animation Control System, especially in temporary installations. After all, a single DMX-512 twisted pair is far more convenient to handle than a multitude of temporary J6 output cables.

3) **Stand-Alone Animation Playback:** A sequencer feature allows the RTU/FSK to play a show from an onboard EPROM memory. This data can be set to play whenever either the FSK or DMX data source stops. This allows an animated show to continue running in an 'attract' or 'keep alive' mode when it isn't playing any of the regular shows. This mode of operation can also be used if you just need to run a single show continuously. The sequencer EPROM is programmed using a PC·MACs Animation Control System.

The Remote Terminal Unit/Frequency Shift Keyed Unit features include:

- 128 medium current (150 ma.) outputs on each unit. Sixteen optional 0-10 VDC analog outputs.
- Optional LED indicators available for all analog and digital outputs.
- RS-422 serial port for use in configuration and for sending serial commands to other devices.
- Runs from any DC power supply from 12 to 24 volts (17 to 24 volts if the analog option is used).
- The analog endpoints can be adjusted to anywhere between 0 and 10 volts via the serial port.
- Retains configuration settings in nonvolatile EEPROM memory when not in use.
- All outputs can be disabled or forced to a preset level via the serial port.

BECAUSE EVERYBODY STILL ASKS...

In the dozen or so years we have been in business, only two people thus far have had even the slightest notion of the origin of our company's name.

Eli Gilderfluke was a cartoon character who appeared in railroading trade magazines in the middle of the 19th century. More or less a precursor of Rube Goldberg, 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.

How was that for an obscure reference?

APPLICATION NOTES

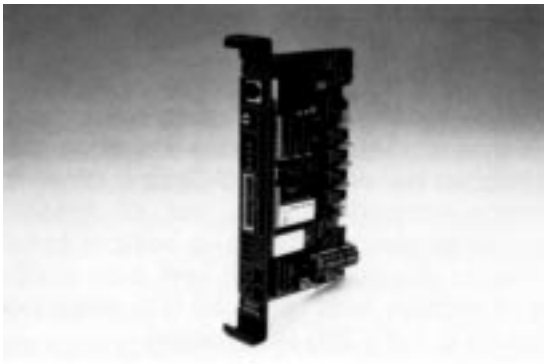
We are often asked to help our clients with specific projects and questions. If we get asked for the same question more than a few times, our 'stock response' will usually evolve into an 'application note'. The subject of these range from "How to hook up pneumatic cylinders" to "How to build a simple programming console" to "How to attach an animation system to a remote control".

Who knows, even if your application seems pretty bizarre, we may well have the answer in one of our application notes. Just give us a call to find out.

Analog Output Smart Brick... continued from page 1

Smart Brick Brain and other Smart Bricks in the system via a Smart Brick Network.

The sixteen analog outputs can be adjusted via a standard RS-422 serial port to set the two endpoints anywhere between 0 and 10 volts. As with all Gilderfluke & Co. Animation Control Systems, adjusting one endpoint does not affect the other endpoint. All four 1/4 J6/A outputs are protected by PTC circuit breakers.



For expansion each Smart Analog Card features a connection for controlling Z-Bricks. These each feature thirty-two medium current outputs, and can be used just like a normal Smart Brick. The advantage Z-Bricks have is that, during programming, they can get their data from the DMX-512 input via the Smart Analog Card. Normal Smart Bricks require a temporary RTU/FSK unit or cables from the Digital Output Card in the PC·MACs system for programming.

VITAL STATISTICS

This important news has just been made public by Magnavox/Phillips:

Fifteen percent of all Americans spend an average of ten minutes each day searching for their television remote controls. Fifty-five percent of these people lose the remote only once per week, while eleven percent report losing it six to ten times each week. Thirty-eight percent report finding it in or under furniture. Twenty percent find it in the kitchen or bathroom. Six percent have left it in the refrigerator.

In total, Americans spend six million man-hours each year searching for our television remote controls.