

The TekPatrol™ system by TEKVOX is a unique device management system used to monitor video projectors, LCD displays, control systems and many other devices. TekPatrol includes both hardware and software to manage and monitor a device. A small min-controller called TekMonitor is placed at each monitored device and includes a serial port, relays and logic inputs and outputs. At the heart of TekPatrol is a software application called TekManager, this software application gathers information from the TekMonitors and displays the information on a view all screen including a project tree, icon based grid view and properties area. From TekManager a user is able to configure a TekMonitor, view the status of a device, control a device and maintain a usage database of the device.

All current software applications are PC based and there are no Web pages associated within a TekMonitor. This adds more security to TekPatrol by eliminating a porthole for some hacker to cause havoc. Placing a Web server device on a network without changing its security password is asking for trouble.

What Makes TekPatrol Unique



Auto-Discovery

Unlike other systems that typically require a static IP address, a TekMonitor can be installed set DHCP. This is achieved by an Auto-Discovery method within the TekManager software that can automatically locate and relocate TekMonitors by their Serial number and pass code. TekManager does not use the MAC or ARP to locate TekMonitors, so it will not be blocked across routers or flood your network with lots of ARP broadcast. This is very cool to watch take place when an old project is opened and TekMonitors have different IP addresses from what's in the project.

Each TekMonitor has a configurable security pass code to allow different groups to operate their own TekPatrol system. A campus audiovisual group could have their TekPatrol system configured with a pass code of 1234, while a digital signage group has their TekPatrol system configured with a pass code of 2222. Neither group would be able to view the others equipment. But it is possible for an administrator to view both groups on one TekManager program.



Theft Deterrent and Detection

TekSecurity is a low cost addition to a TekMonitor and includes a theft deterrent device that lets a would be thief know that the display is under security. If the device is disconnected from a TekMonitor, an Email is sent immediately to security. This theft detection method works just like a typical alarm system, break a connection loop and set an alarm. Computers and desktop displays can also be monitored. *Extron and Crestron both use a polling method to determine theft. Polling is not reliable and can cause false Emails or long delay times before sending an Email.*



Energy Management

TekMonitors are sold with an optional occupancy sensor and lighting power pack to reduce energy costs and to extend the life of monitored equipment. Projector lamps, LCD's and Plasma displays consume between 250 and 800 watts of power. Classroom lights can also consume about 800 watts. By adding an occupancy sensor to a TekMonitor, the time that a display or lighting remains on can be reduced, saving energy and extending the life of the equipment. This is made possible by the occupancy sensor detecting small amounts of movement in the room and signaling the TekMonitor when people are present.

Not all occupancy sensors are alike and some may create more problems than they solve. In addition, if the type and placement of the occupancy sensor is not correct, you may find your system shutting down prematurely or not shutting off at all. To address these problems; TEKVOX uses a dual technology occupancy sensor, eliminating the problem of movement detected through glass and improving sensitivity directly under the sensor. That combined with proper placement of the sensors allows for an error free environment. A programmable timer is also present to add some logic and extra time before shutting down the display.

Using the TekManager reporting software, an administrator can monitor room usage and determine if there are problems with an occupancy sensor. The occupancy sensor can also be used during crisis management, allowing an administrator the ability to virtually "see" rooms that are occupied by means of the TekManager software.



TekTranslator

Like a Rosetta Stone a TekMonitor has the ability to communicate with AMX Aaccess/Netlinx, Crestron and Extron systems. We call this TekTranslator. This method allows new and older control systems to easily be monitored along with projectors. When using IP based AMX or Crestron control system, a TekMonitor can be placed at a projector or LCD monitor eliminating the need to use up valuable serial ports. This method allows for easy projector control and even allows for projectors to be replaced without having to modify the control software.

Configurable Grid Display

TekManager has a configurable grid display that allows easy mapping of driver information. This allows for any selected driver item to be displayed on a grid. Multiple grid displays can be stored and recalled at any time.

TekMonitor View - UTSA Dual Proj															
Room Name	On Line	Dev. Connect	Dev. Thelt	Sec. Enabled	Locked	Lamp Hrs	Maint. Hrs	System Pwr	L. Proj Pwr	R. Proj Pwr	L. Source	R. Source	Left Lamp	Right Lamp	
BB 2.01.02											PC	PC	8	242	
BB 2.01.06											PC	Doc Camera	462	463	
Frio St. 1.406											None	None	141	203	
Frio St. 1.512											None	None	169	227	



Timers

A TekMonitor maintains its own lamp, maintenance (filter) timers, monthly usage and total usage. Some projectors may not report their timers, so a TekMonitor makes up the difference. Projectors that do report their timers are also reported by a TekMonitor. At the end of the month, a TekMonitor can be configured to send a usage report with all timer information.



Schedules

Four programmable schedules reside on a TekMonitor. A battery backed-up clock is synchronized with the TekManager program. These schedules can be used to turn on and off devices. Since these schedules reside on the TekMonitor, the TekManager program does not need to be running for the schedule to execute. Schedules can be changed at anytime using TekManager.

Select Schedule: Schedule 1: System Off Rename

Enable Schedule

Macro Name: (Select Macro To Run)

Interval: Run Once Run Daily

(hh:mm:ss AM/PM)

<input type="checkbox"/> Sunday Enabled	Run Time: 12:00:00 AM
<input checked="" type="checkbox"/> Monday Enabled	Run Time: 05:00:00 PM
<input checked="" type="checkbox"/> Tuesday Enabled	Run Time: 05:00:00 PM
<input checked="" type="checkbox"/> Wednesday Enabled	Run Time: 05:00:00 PM
<input checked="" type="checkbox"/> Thursday Enabled	Run Time: 05:00:00 PM
<input checked="" type="checkbox"/> Friday Enabled	Run Time: 05:00:00 PM
<input type="checkbox"/> Saturday Enabled	Run Time: 12:00:00 AM



Macros

Macros are like building blocks allowing for simple drag-and-drop programming to create command groups.

A TekMonitor driver program is designed to maintain communication with a device via the serial port. The driver operates using a command queue system that waits for proper responses from the device before sending the next command. During the warm-up or cool-down period of a projector and even LCD displays, no commands can be sent to the device. To solve this problem the TekMonitor places each command in a queue. This queuing method allows for easy macro construction. For example; to turn on a projector you may want it to be set to VGA 1 after it powers on. This is accomplished by dragging a power on command followed by a source VGA 1 command into a macro. When you run the macro, the projector will power on and once it has warmed up, the TekMonitor will send the VGA 1 command.



Data Logging

TekManager Pro has the ability to log changes in selected events to a SQL database. The selected data can be viewed by a date range for either the time-stamped event history or the event summary. The event history is a helpful tool to diagnose problems while the event summary shows the usage of equipment.



Product Comparison

Crestron

Crestron is designed for more complex applications than a typical classroom needs.

- Requires programming – Can be expensive and not all programmers are the same.
- Requires Static IP addressing unless a DNS server is used.
- Scheduling is performed using the Crestron RoomView program. If the computer or network goes down, scheduling is not working.
- RoomView can be expensive and costly to setup. RoomView is free for up to 25 systems. An Enterprise version RoomView is available for a site license fee.

Calypso

Calypso has a controller with two serial ports, 2 relays and some IO. They also have an 8 button keypad, audio amplifier and other room devices. They claim no software skills are required by using a script language. .

- Web-based interface
- Requires Script writing for projector control – This would not be all that easy for someone to take the time and create a script program.
- Requires Static IP addressing unless a DNS server is used.
- Has an IR learner and can send IR data.
- Keypad seems difficult to setup and save a configuration file.

```
Relay CLOSE - #GPOxx["CLOSE"];
(Select an entry)
Input Status - #GPIxx[];
Relay Status - #GPOxx[];
Relay OPEN - #GPOxx["OPEN"];
Relay CLOSE - #GPOxx["CLOSE"];
Event Command - #EVTxx[];
Serial Transmit - #COMxx[""];
Serial Receive - #COMxx[];
IR-Out CIRT Command - #XROxx[F1];
IR-Out Universal Command - #XROxx[F2];
NET Command - #NETxx[];
Learn CIRT codes - #XRI1[F1];
Learn Universal codes - #XRI1[F2];
Learn Universal codes w/1 skip - #XRI1[F6];
Learn Universal codes w/2 skips - #XRI1[F7];
IR Noise level - #XRI1[F4];
Value Command - #VALxx[];
```

Script File

Extron

The Extron IP Link is a mini-controller with driver selection like the TekMonitor. The PoleVault systems have keypads, VGA and Video wall plates. and audio supporting systems.

- Web-based interface
- Requires Static IP addressing. Any changes to the IP address of the IP Link device after configuration will require a recompile of the GlobalConfigurator project file.
- Large library of drivers
- No Logic inputs, outputs or relays on their smaller IP Link systems. No occupancy sensor connection with these units.
- Theft is detected by polling the monitored device. This cause delays with theft detection and may cause invalid E-mails to be sent.
- No preconfigured templates or wizard to create complex systems. Connecting to an occupancy sensor may cause unintended problems.
- Their keypads like the MLC 104 have simple source selection, volume control and logic IO. These keypads are easy to setup and assign commands to buttons.
- There are several programs required when setting up and monitoring an Extron system. GlobalConfigurator, GlobalViewer, Data Logger and a few others. They now have a GlobalViewer Enterprise version, but it is expensive to implement. There is no one program that does it all.