JED T460R: T460 A/V controller with OLED display

The T460R is an update of the T460 A/V controller which has been in production for nearly 10 years. It updates the LCD display to now use a yellow OLED (Organic Light-Emitting Diode) panel.

The update also adds four N-FET "Relay" outputs to directly drive screens, "dippers" and dimmers, and an extra logic input for alarms or security.

Features of the T460R:

Text display: The T460R is unique among low-cost A/V controllers in that is has a 2-line by 12 character text display to provide range of useful feedback and data to operators.
(Most other low-end controllers have just LED indicators, such as JED's low-cost T430 and T440 family does.)

This shows:
• System status: Standby, Warm-up, Running, Cooling down;
• Lamp and Filter running hours used;
• Current channel, from eight, identified by exact name (customisable);
• Audio volume shown numerically, commanded, or read back from the display, (useful when display device does NOT display it);
• Communications status: "Projector not replying" or "Projector Coms OK" messages;
• Aspect ratio settings and messages by name: 16:9, 4:3 etc;
• Screen control settings and messages;
• Mute and Freeze setting control and status display;
• Provides 18 convenient interactive menus during setup,so field settings can be done without needing complicated laptop software. Users can enter custom values for warm-up and cooldown times, auto-close-down and relay times for screen dropping and raising;
• Alphanumeric display allows choosing display device by maker and exact model number, retrieving the appropriate command profile;
• Internal HEX editor on the screen allows custom loading of serial codes for ancillary devices (LCD screen, Kramer scaler-switcher), or various audio devices into non-volatile memory.

Simple keyboard: Four keys provide all functions, as the ON key doubles as the source-select key, rolling sources through the eight available. A "video/audio mute" is provided by pressing both volume keys together. Aspect ratio, screen control, and microphone level control are provided by dummy channels that can be selected momentarily in Run mode. (Other keyboards support Freeze/Mute and Mute On/Off options.)
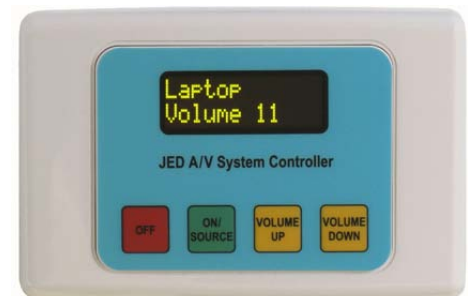
Dual RS232 serial ports, RS485 port: Serial port one drives the main display device, with Tx and Rx lines (and an optional CTS line). The Rx input receives and processes data from the display device, such as On/Off status, volume, lamp and filter hours, error states, alarms and internal temperatures (which can be reported via the networking option.)
Serial port two drives ancillary devices, such as the JED T461 four-channel switcher/mixer, and the JED T464 networking adapter. (The T461 changes audio channels in step with the video channels, and provides absolute volume control for four stereo pairs to a stereo line out.)

T40R with metallic keyboard.

T460R with Beige keyboard.

T460R-W-Volume keyboard.

T461 four-channel audio mixer/ attenuator with eight relays.

(The T464 is a network adaptor which connects a room controlled by a T460R into a software package running on a tech centre PC, monitoring the room.)

This second serial port can also be used to drive additional equipment such as other projectors, flat panels running in parallel with the main display device. (A good example of this is an installation in a church where a high-power projector provides the main congregational display, and an ancillary LCD panel is provided for a choir or overflow room. The T460R commands both devices with appropriate control commands on separate RS232 ports … no port sharing is necessary.)

Another application of the second RS232 serial port is to drive a Kramer (or similar) scaler/switcher. In this application with a single display device commanded from Serial Port One, the Kramer is commanded from Serial Port Two. All video scaling and switching occurs in the Kramer, and the display device has a constant channel selection to accept the output of the Kramer for all T460R channels. (A re-mapping menu provides this setup.) (The T460R serial ports are full +/- RS232 levels, not just 0-5 volts as some other controllers only provide.)
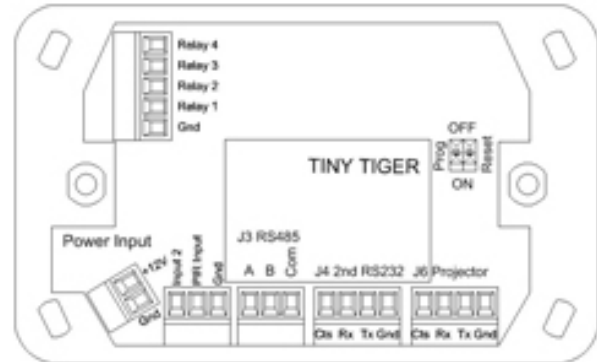
Serial Port 3 (RS485): This can drive RS485-specific devices (such as the IN400 audio processor), but its main function is to link two T460R units together in a "Master/Slave" configuration. (A hall or theatre can have a slave T460R by the stage and the master in the A/V control room.)

Relay Outputs: This addition (option "–R4") to the T460R allows the controller to control screen, dipper and room light dimming directly, without needing an external relay box (like the T461/2). The connections are to a new 5-pin Phoenix connector located vertically near the top edge of the back. Outputs are N-channel FETs with a 60–volt rating and built-in Zener clamping to catch inductive load spikes. The FETs use Ground as the common … this suits inputs of screen controllers from most makers (the N-FET looks like a relay contact or push-button to Ground).

Note: This is NOT suitable for the most recent Somfy screen controller (anemeo IB+ 1AC) as this uses a

common raised to plus 13.7 volts. The older CD4 controller from Somfy does use a ground-referenced common, and is fine with this N-FET drive. If using an "animeo" controller, the T462-R2 still provides an isolated mechanical relay interface.
A mixture of on-board N-FET outputs and serial-controlled ones in a T461/2 can be used … relays can also be used for external channel switching.

The T460R is 116 by 76mm, and uses Clipsal 2000 mountings.

PIR Input: This input adds a powerful feature to the T460R … it allows a Passive InfraRed detector to be connected to the unit. This senses the presence of students in a classroom, and this is used to control an internal timer. This timer starts when the display device is turned ON and if there is no user keyboard entry (eg to set a source or turn it OFF manually), will turn off the display after a programmable period of time, (eg one hour) … UNLESS the PIR detects people in the room (which restarts the counter via this PIR input.) Thus the display device will not be left ON overnight, over the weekend or over the holidays.

General Purpose Input: This new input on the T460R is used for connection to security or RFID readers, or keypads, external Timer inputs or Fire Alarm wiring, (which can force an audio mute on alarm.) Timer inputs are used in exhibitions, museums or galleries to turn displays on during 9/5.

Power supply: Power input is rated for 8 to 20 volts … we recommend a 12v regulated power pack. Current consumption is under 50mA at 12v. (A T461 audio mixer can also supply this power.)