

Care and feeding of your Techknowman backlight kit.

WARRANTY INFO

Customers in the United States.

The complete kit and shipping is covered by a 30-day warranty. The 30 days starts from the time the shipment is received by the customer. 37 days will be given from the ship time for packages that are shipped in a way that is not track able.

Techknowman will repair or replace defective component and pay replacement-shipping cost to the customer. Shipping to Techknowman is the customer's responsibility, however costs or reimbursements to the customer will happen if after the device has been received and is tested faulty by reasons not contained in the warranty-voiding list below and the shipment method is pre-arranged. Techknowman will not pay for next day, second day or similar shipping methods. The customer must insure the package to cover 100% replacement cost. Techknowman will not be responsible for lost shipments.

International customers (outside the US)

The complete kit is covered by a 30-day warranty. The 30 days starts from the time the shipment is received. 37 days will be given from the ship time for packages that are shipped in a way that is not track able.

Techknowman will repair or replace defective component(s). Shipping to Techknowman is the customer's responsibility. The customer must insure the package to cover 100% replacement cost. Techknowman will not be responsible for lost shipments. Depending on the customer's location Techknowman **may** reimburse or credit the customers shipping costs. This is hard to guarantee due to the fact that shipping costs can exceed the value of the part or entire kit. Techknowman will work with the customer to help with any problems.

The warranty on any part of this kit is void if any of the following applies.

Removing the lamination sheet.

Trimming and or damage to the lamination sheet.

Trying to or removing the cable or damage to the hot seal protecting the cable to EL sheet connection

Cutting the EL connection cable shorter than 2 inches.

Bending the EL sheet causing a crease. Or tighter than a 4" (100 mm) radius.

Running the Inverter at any voltage above the stated maximum listed in this document.

Using a unregulated wall adapter (Wall wart) See "Using a wall adapter"

Excess exposure to moisture. Getting wet.

Backlight EL Sheet Information

The Version 2 kit comes with a hot laminated sheet covering on the EL backlight sheet.

This lamination seals out air and moisture and electrically isolates the high voltage on the EL sheet from the player.

Bending the EL sheet to a point of causing a crease will damage the sheet and void warranty.

Do not remove the lamination sheet. Trimming and or damage to the lamination sheet voids the warranty.

The backlight kit comes with a flexible cable that is permanently attached to the EL sheet via 2 thin copper bus bars. It is critical that the cable EL sheet connection remain undisturbed. **Trying to remove the cable or damage to the hot seal protecting the cable to EL sheet connection will void any warranty.**

The EL connection cable can be cut to any length to a minimum of 2 inches (50mm). A length shorter than 2 inches (50mm) can put a flexing strain on the cable to EL sheet connection. **Cutting the EL connection cable shorter than 2 inches will void the warranty.**

The Version 2 kit also comes with a 2 prong male and female connector to connect the Backlight to the Inverter. You may freely use these connectors as you want. They come pre-soldered and heatshrink to the backlight kit and inverter.

The wiring on the Inverter is sent factory length. You may trim to any length providing there is a minimum of ¼ inch (6.35mm) length of wire on the inverters.

Inverters.

The inverters come from the factory with 4 leads, 2 on each side.

The power (DC input) is always the leads on one side that are colored red and black.

The High voltage (AC output) is always the 2 leads on the other side of the DC input. At times they are either both white or both black.

Inverter power requirements.

The Inverters come in three DC voltage input ranges.

5 Volt, 9 Volt and 12 Volt.

The 5 Volt units can run at a minimum of 3Volts DC (at reduced brightness) and a Maximum of **5.5Volts** DC.

The 9 Volt units can run at a minimum of 5Volts DC (at reduced brightness) and a Maximum of **9.5Volts** DC.

The 12 Volt units can run at a minimum of 5Volts DC (at reduced brightness) and a Maximum of **13.5Volts** DC. The 12-volt unit is designed to give a little more flexibility for input voltages due their use in autos.

Using a wall adapter. (VERY IMPORTANT!!!)

Most devices that can use a wall adapter contain a built in voltage regulator or voltage limiter in them. The inverter included in these kits has no such regulator.

Hooking one up to a wall adapter may cause damage. Most wall adapters (wall warts) do not have any built-in voltage regulation and may deliver voltages as high as 18 Volts or more from a 12 Volt adaptor. With a light or no load condition these voltages could be higher. **These potentially higher voltages WILL permanently damage the inverters.** If you have a Volt ohm meter, verify that the voltage is within the inverters voltage range. If this is a problem Techknowman can send you a simple voltage regulator / limiter or tell you how to correct it yourself.

If you should damage your inverter by over voltage you can purchase a replacement from Techknowman or you can get it directly from www.coolight.com for \$6.00 to \$12.00 depending on voltage. The inverters part # is listed on the inverter.

Techknowman recommendations

The inverter can cause electrical interference. The inverter puts out around 100 Volts AC at 2Khz. This 2Khz can be heard in the audio output of electrical devices if the inverter or the EL sheet is located close to any audio amplification devices like those found in the PJRC player. Proper grounding and shielding and locating are the only way to prevent this.

The inverter can also create electrical noise in the supply voltage lines. Using a choke and capacitor circuit that can be home made using easily available parts can filter it. Check the Techknowman web site for information. If need be a 100VAC 400hz Inverter could be substituted.

Put a desiccant pouch in your kit. You can find these little pouches in all kinds of things. They are shipped inside clothing and shoes to reduce moisture, which is why I recommend using one in your electronics, especially for electronics that will be in a vehicle or portable application. It helps keep moisture and dampness down on your electronics and is especially helpful on the EL sheet.

Life Expectancy of the EL Sheet.

There is much debate over life expectancy of the EL sheet.

A 3000 hour half life is the generally agreed expectation. The half life means that after about 3000 hours the brightness will decrease to half. 6000 hours after that another half and so on.

There are many factors that control the life expectancy of the EL sheet.

The number 1 factor is moisture. Moisture that gets into the sheet can break down the phosphorescent crystals dramatically reducing life if not shorting out the sheet completely.

Because moisture is so invasive and destructive to the EL sheet, It is hot laminated and electrical connections sealed to prevent damage.

The #2 and #3 factors are Voltage and Frequency. Some say that a voltage of 100VAC at a frequency of 2Khz gives optimum life and brightness. Others say 200VAC or lower at 400hz gives optimum life and brightness. The bottom line is the brighter its driven, whether it be higher voltages or higher frequencies, the shorter the life. My testing pushed me to use the 100VAC 2khz type.

Installation Instructions

The most current installation instructions can be found at

<http://www.techknowman.com/Kits/LCD/Install/LCD%20INSTALL.html>

There are step-by-step instructions including pictures. You can also download the instruction sheet on the same page.

Notes about the kit and Techknowman.

Great care is taken to keep the EL sheet with lamination and the polarizing film from being scratched. But handling fitting and testing of the kits leads to some scratching of the plastics. Techknowman hand makes each kit and test fits each kit in a LCD unit to assure proper operation.

Techknowman does not have a “clean room environment” to work in so all the above is inevitable.

Techknowman (Len Averyt) started making the kits when he found that the only other source was in England. He started looking at getting the materials to make a backlight for his PJRC mp3 kit that he had bought. He found that he would have to buy a large quantity of the EL sheet material so it became logical to make others to offset the cost of his. He created and developed other things that can be used with the PJRC mp3 kit. Techknowman wants his customers to know / understand that he does not make any large quantity of money for these kits and in fact if you were to base the cost on time spent building the kits compared to what he does for a living he would be giving away a lot of labor cost. He believes in the PJRC mp3 project and this is a way for him to contribute to it and to help those that just want to enjoy having the PJRC player and kit as much as he does.

Thanks for buying a Techknowman backlight kit.

Check out <http://www.techknowman.com/Kits/Kits.htm> for a complete list of Techknowman products.