



**Congratulations** on your purchase of the LED-WIZ™ with LumAura™ Technology, one of the most feature packed, USB-compatible, LED and output control interfaces available today...and the best value! **CAUTION:** This unit has been factory tested and is intended for professional installation. IDVT Inc. will not be responsible for any damages that occur, either directly or indirectly, as a result of using of this device for any purpose.

**Installation:**

Making sure the bottom of the PCB is not in contact with any conductive materials, plug the B side of the supplied USB cable into the port of the LED-WIZ™ and then plug the A side into the USB port on the PC. Due to the power requirements of the device, connection to a non-powered hub is not recommended unless the outputs are powered from the PC power supply. If this is the first time you have installed a USB HID Device, you may need the install disc for your OS. Follow the on-screen steps during the installation procedure provided by your OS. When completed, you may need to reboot. The LED-WIZ™ will be identified as an "HID Compliant Consumer Control Device" and should be listed in the "Human Interface Devices" list under your systems "Hardware Manager."

**Mounting:**

Mounting standoffs are **required** and included with your purchase. You **must** ensure that the bottom of the PCB is not in contact with any conductive materials and that the heads of your fasteners are small enough that they do not make contact with any components on the PCB.

**Screw Terminals**

The LED-WIZ™ provides for simple wire connection to the PCB through the use of "screw terminal blocks." With the device **disconnected from power**, simply strip approximately 3/16" of insulation from one end of your wire, insert the bare end into the terminal associated with the desired output for your device, and tighten the screw with a small screwdriver. Do not over tighten, but be sure that the wire cannot be pulled from the connector by giving it a firm tug after tightening. Also be sure that no strands of wire are outside of the terminal that might cause a short circuit to adjacent connections.

**Wiring Connections:**

Your LED-WIZ™ comes shipped with a jumper wire between the U5v and the X5v terminals (Figure 1.) It is pre-configured for USB supplied 5v DC power with a total current delivery of 500ma or less. Depending on the LEDs used, up to 32 LEDs, with their appropriate resistors, may be used with USB power alone. For larger 5v DC loads, like small incandescent lamps and relays, a connection to the PC Power supply (Figure 2) through a cable with an **in-line fuse** is **strongly** recommended! This type of cable is not included but can be purchased at your local electronics store. Be sure to select the proper fuse size for the load you have connected to the device! Too large a fuse and it won't protect anything, too small and they will keep blowing. Keep all of your wiring clean and tidy. The most important thing to keep in mind when wiring your project is **safety first** and a well thought out approach will help ensure this.

The latest support software is always available at <http://www.groovygamegear.com/ledwiz.zip>

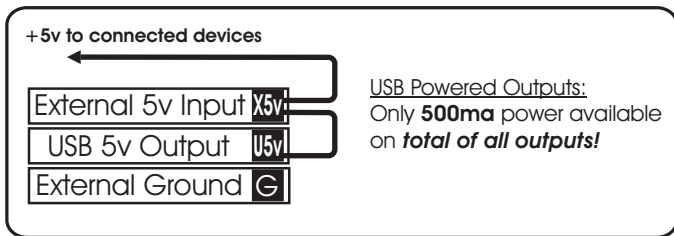


FIGURE 1. Power to external devices provided by USB Port.

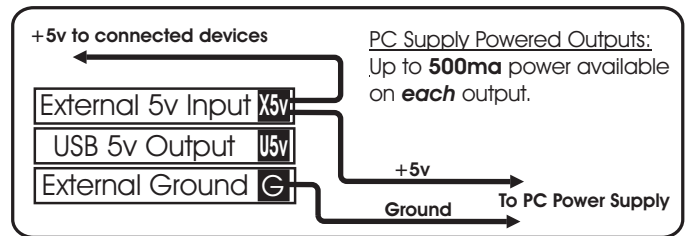


FIGURE 2. Power to external devices provided by PC Power Supply.

**LED Usage Considerations:**

LED's are like goldfish. They don't know when to stop consuming and will "pop" if you feed them too much. For this reason, you **must** install a resistor in series with the LED to limit the current to an amount that will make the LED bright and happy.

Resistor values for use with LEDs connected to the LED-WIZ can be found using the following formula:

$$\text{RESISTOR VALUE} = (5\text{v} - \text{LED VOLTAGE}) / \text{LED CURRENT}$$

So, the resistor value for an 3.2v LED with a 20ma current rating would be 100ohms and the formula would be:

$$R = (5 - 3.2) / .020 \text{ or } R = 1.8 / .020 \text{ or } R = 90\text{ohms.}$$

So where did the 100ohm resistor come from? Simple. Resistors are not commonly available in all values, so it may be necessary to use the next closest value. **Always use the next higher value, not the next lower one.** It is always acceptable to use a higher resistor value for a slightly dimmer LED, but lower than proper values will damage the LED, resulting in poor performance and a much shorter life span.

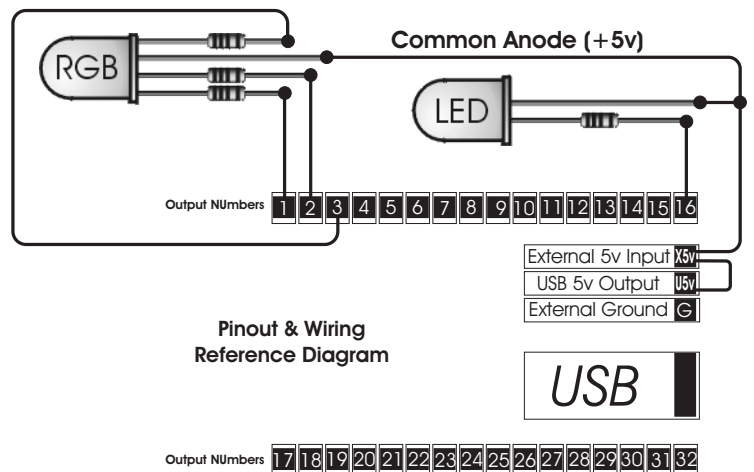


FIGURE 3. Example showing proper wiring of an RGB and Standard LED.