WOZ 2.0 Lighting Upgrade Kit

Installation Instructions (Rev. April 2019)

Tools needed: ¼" and 11/32" nutdrivers (magnetic, if possible), Phillips #1 and #2 screwdrivers (magnetic tip is best), flush-cut wire cutters, cordless drill & #52 (or 1/16") drill bit, Sharpie pen (or a label-making machine), masking tape.

1) **PREPARATIONS:**

IMPORTANT: Pre-read each numbered instruction step *FULLY* before beginning the tasks outlined in that step! Sometimes there are tips and clarifications in the 2nd, 3rd and/or 4th paragraphs under each step number.

Ensure that you are running the latest version of the WOZ game software (version 6.61). Download the appropriate ISO and/or update files from the Support page of the JJP website and install them to provide WOZ 2.0 lighting support in your game software. Software update instructions can also be found on the website.

Power down the game. Remove the playfield glass and carefully set it aside, in a safe place. Take special care to protect its edges and corners, as these are the weakest, most vulnerable areas of a sheet of tempered glass. Rest the playfield glass on a cushioned surface (carpet, cardboard, etc.); avoid hard surfaces like concrete, hardwood and ceramic tile.

Remove the two sheet metal screws holding the State Fair Balloon mounting bracket, in the lower left corner of playfield. Set the State Fair Balloon sculpture aside; this will prevent it from being damaged during the lighting upgrade process.

Place a folded towel or some other form of cushion across the front edge of the backbox top. This cushion will protect your backbox and your game's bottom arch while you work on the playfield underside. Raise the playfield up, out of the cabinet, stand it up and lean it against the padding/backbox.

Ensure that the lid is on the metal PCB Chassis, in the bottom of the cabinet, before beginning! It's a good time-saving, anti-frustration idea to spread a white sheet across the bottom of the cabinet to catch any small parts that are dropped during the lighting update task.

NOTE: You will need to purchase two M4 x 5mm metric machine screws and two simple L brackets to mount your power supply in the back/bottom of your WOZ cabinet. These are **not** included in the kit.

Prepare the cordless drill and bit for predrilling **shallow** pilot holes in the underside of the playfield. Chuck the #52 bit into the cordless drill. Wrap a short piece of masking tape around the shaft of the #52 (or 1/16") drill bit, leaving 5/16" of the "drill" end of the bit exposed (as shown in figure below). When drilling a pilot hole, only allow the drill bit to penetrate the playfield wood until the front edge of the masking tape contacts the playfield surface. Drill pilot holes with the drill held as perpendicular to the playfield as possible; this will help ensure that your screws go straight into the wood (and that your bds mount properly).

Check your **WOZ 2.0 Lighting Upgrade Kit Packing List PDF** to ensure that all parts arrived safely - and in the proper amount. You may want to print out the packing list, as it includes pictures and part number references (③) that are used in the instructions that follow.

Unpacking Information:

The following printed circuit bds (PCBs) should come with short nylon spacers attached to the PCB mounting holes:

WOZ 5V, TLED, FTYBR RGB LED Bd, W1 ③	*6 spacers*
WOZ 5V, TLED, Tin Man RGB LED Bd, W2 ④	*5 spacers*
WOZ 5V, TLED, Lion RGB LED Bd, W3 ⑤	*5 spacers*
WOZ 5V, TLED, Throne Room RGB LED Bd, W4 ⑥	*5 spacers*
WOZ 5V, TLED, Haunted Forest RGB LED Bd, W5 ⑦	*4 spacers*
WOZ 5V, TLED, Scarecrow RGB LED Bd, W6 ⑧	*4 spacers*
WOZ 5V, TLED, Winged Monkey RGB LED Bd, W7 ⑨	*3 spacers*
WOZ 5V, TLED, Witch Castle RGB LED Bd, W8 ⑩	*4 spacers*
WOZ 5V, TLED, TNPLH RGB LED Bd, W9 ⑪	*4 spacers*
BAG Controller PCB Assy, 2.5mm, No Connectors ⑬	*4 spacers*

NOTE: *the 15-000066-10, WOZ 5V, TLED, Rainbow RGB LED Bd, W10* ⑫ *, does* **NOT** *come with spacers – this bd will be attached to the RAINBOW plastic on the Munchkinland playfield –not screwed into playfield wood - so it does not require spacers.*

Single RGB LED [14] *and RGB GI* [15] *bds will need to be separated before use. Locate the perforated line separating adjacent PCBs (highlighted in red below). Using two hands, one on either side of the perforation, carefully bend the bds up and down until they snap apart.*
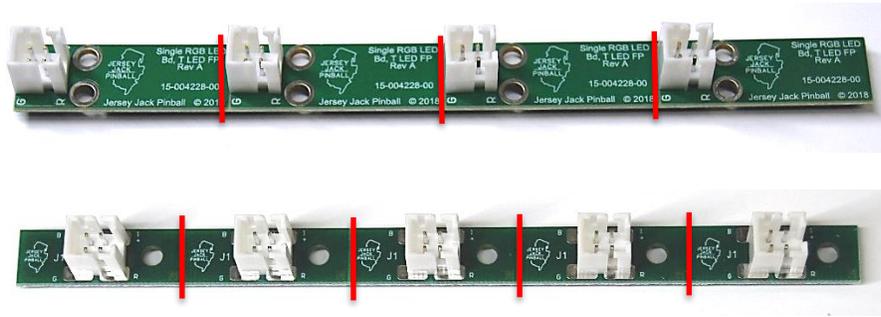
Each of the new, multi-colored-wire RGB cables ([20] *through* [28] *) has a label attached, typically near its largest connector, with the cable's part number printed on it.*

2) Under your WOZ playfield, remove all of the data cables (black, insulated, with red and green markings on the tiny end connectors, shown in the photo below) running between the existing Single GI and large RGB LED bds. These data cables vary in length. **Depress the locking tab** and pull each end straight out. If the connector will not come out easily, try releasing the locking tab and pushing the connector back down against the bd; then depress the locking tab and pull again.

It's best to avoid cutting any of the cable ties that hold the old cables to the game's main harness. Instead, cut the connectors off of the cables and pull them back through the existing cable ties to remove them. You **will not** need these cables for the new lighting system.

The longest of these data cables runs all the way from the I/O bd (inside the PCB Chassis box, in the bottom of the cabinet) up to the large WOZLED6 bd (under the Scarecrow inserts). Remove this cable from the main wiring harness/bundle all the way back to where it exits the back of the PCB chassis box. We will unplug it from the I/O bd and remove it from the game later on. For now, just leave the loose end laying in the bottom of the cabinet.

3) Remove all of the satellite RGB LED data/power cables (black, insulated). Leave the ends attached to the undersides of the mini playfields for later. As in the previous step, cut one (or both) of the connectors off the cables and pull them back through any existing cable ties to remove. Satellite bds are numbered in three digits: numbers 155, 159, 160, 176, 178, 179 & 192.
NOTE: The opposite ends of two of these (#160 & #192) are under the mini playfields and will have to wait until we remove the playfields later on.

4) Disconnect (**but DO NOT remove or cut**) the Haunted Forest/OZ Lanes signs cable that is connected to WOZLED6 bd (4 pins, RED, BLU/WHT, GRN/WHT, YEL colored wires). **This cable WILL be used with the new lighting system** (it will connect to the new WOZLED7 bd [9] later on).

5) Cut the ends off of the existing BLK and VIO-BLK RGB LED power harness and pull the loose ends through cable ties along the main wiring harness (cut as few wire ties as possible in the process). This harness runs to every RGB LED bd under the playfields (except satellite bds), and terminates in a larger, 2-pin, white connector at each bd. Cut all of the wire ties that are on the BLK & VIO-BLK power harness alone, to facilitate removal (pulling the BLK & VIO-BLK wires back through main harness wire ties, as you go).

Continue removing the BLK & VIO-BLK power harness wires all the way back to the source: either a modular, switching power supply, in the back of the cabinet (early WOZ games) or the back of the metal PCB chassis box, in the bottom of the cabinet (later WOZ games).

If your BLK & VIO-BLK wires lead to a modular, switching power supply (looks similar to the new one (16)), unplug the AC wires (BLK, WHT & GRN) running to the power supply (a 3-pin Molex plug) and completely remove the power supply from the cabinet; it will not be used with the new lighting system.

If your BLK & VIO-BLK wires lead to a large plug in the back of the metal PCB chassis box, pull the plug out of the PCB chassis back wall and discard the entire harness; it will not be used with the new lighting system.
NOTE: There is no need to remove any of the existing BLK & VIO-BLK wiring running inside the PCB chassis.

6) Using a #1 Phillips screwdriver, remove the large RGB LED bds, one at a time (**and NOT all at the same time!**), from the underside of the main playfield. As you remove the existing bds, set them **AND THEIR LONG SCREWS** somewhere *away* from the game. These original, 7/8" long, #4 SMSs (shown in the photo below) **MUST NOT** be used with the new bds – **THEY WILL GO ALL THE WAY THROUGH THE PLAYFIELD!!!**

**IMPORTANT:** **DO NOT REUSE THESE SCREWS!!!**

Again, DO NOT remove all of the large bds at once - if you do, it will be very difficult to determine which large replacement bd goes where (and in what orientation). As soon as you remove an existing large bd, install the replacement WOZ 2.0 bd ((3) through (9) , and (11)) in its place. ***Use the new #4 x ½" SMSs*** (41) to hold the PCBs to the playfield. Line up the PCB mounting holes with the existing holes in the playfield; these holes will be reused when mounting the new bds.   No predrilling is required for these large bds. Tighten screws down far enough to slightly compress the tops of the nylon spacers. You should NOT be able to wiggle the bd when they're properly tightened.

NOTE: When a new large bd is properly installed under the playfield, the silkscreened labels on the bd will be upright and readable, with the playfield in the raised position, leaning against the backbox.

7) Using a ¼" magnetic nutdriver, remove the existing Single GI RGB LED bds from under the main playfield, one at a time (**and NOT all at the same time!**). The old bds are attached to a metal bracket that is screwed to the playfield surface. It's a good idea to remove them in numerical order, to ensure you get them all: **1-10, 12-21 and 26**.

Note: Bd 11 (behind the back panel) will be removed and replaced in a later step.

As you remove an existing Single GI RGB LED bd, replace it with a new RGB GI bd (15). Use one 3/8" nylon spacer (43) and one #4 x ¾" Phillips SMS (42) to secure each bd to the playfield (mark and predrill a pilot hole). Refer to the provided **WOZ 2_0 Lighting Upgrade Kit RGB LED Wiring Diagram PDF** for the correct bd orientation on the playfield underside. Position each bd at approximately the same angle around the perimeter of the protruding GI light rod as the corresponding bd in the playfield illustration, ensuring that the RGB LED is centered in the middle of the light rod end (see photos below). When oriented correctly, the mounting hole will roughly point in the direction of the large RGB LED bd that the smaller RGB GI bd will connect to. The proper orientation will be important when we connect wiring cables later on; **some of the cables do not have much slack in them**. Tighten screws down far enough to securely hold the bd in place. You should NOT be able to wiggle the bd - or the light rod - when the screw is properly tightened.
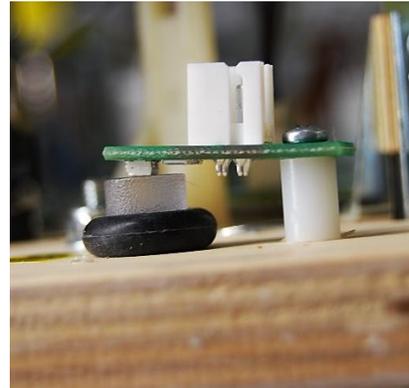

Save the #8 x ½" SMSs (shown in the photo below; we'll refer to these screws as (44) from now on) used to fasten the old brackets to the playfield; we will reuse them later. Your brackets may have a washer under them; the washers were used as a bracket spacer on very early WOZ builds. There is no need to keep the washers; they will **NOT** be used in the new bd installation process.

(44)   82-002008-08
       #8 x 1/2" HWH Phillips SMS
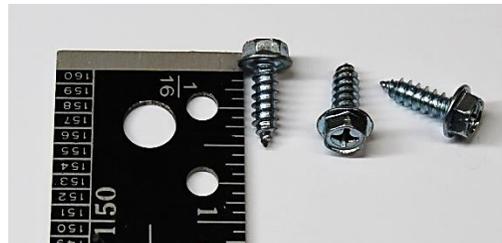
Using a Sharpie pen, write the number of the bd next to it on the underside of the playfield. Alternatively, you can print numbered, adhesive labels and stick them to the playfield underside next to each Single GI RGB LED location. These numbers will be used as reference to help attach cables later in the installation process.

8) Using a #1 Phillips screwdriver, remove existing satellite RGB LED bd 179 (in front of the Wicked Witch). Set the satellite bd **AND ITS LONG SCREWS** aside. **DO NOT REUSE THESE SCREWS!** Mount an RGB GI bd 15 off to the side of the insert, through an unused witch bracket mounting hole (circled in red below). Center the RGB LED in the insert hole and attach the bd to the playfield, over the bracket, with one 3/8" nylon spacer 43 and one #4 x ¾" Phillips SMS 42 (predrill a pilot hole if no spotting hole exists in your playfield). **Be careful not to pinch any of the GRN or WHT microswitch wires as you tighten your screw and attach the bd**. See the photos below.
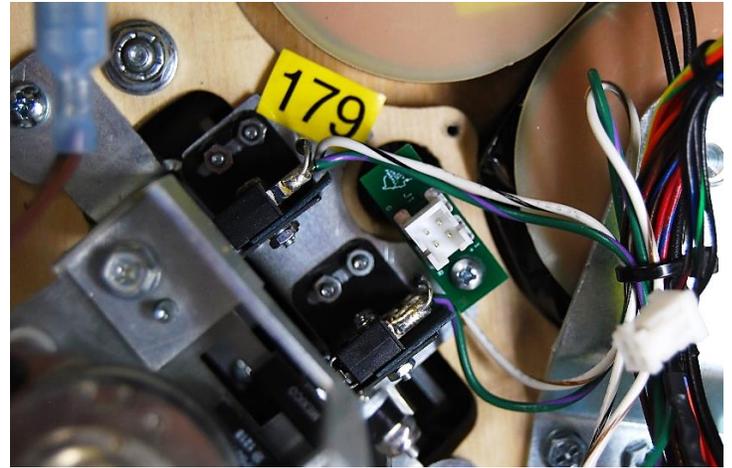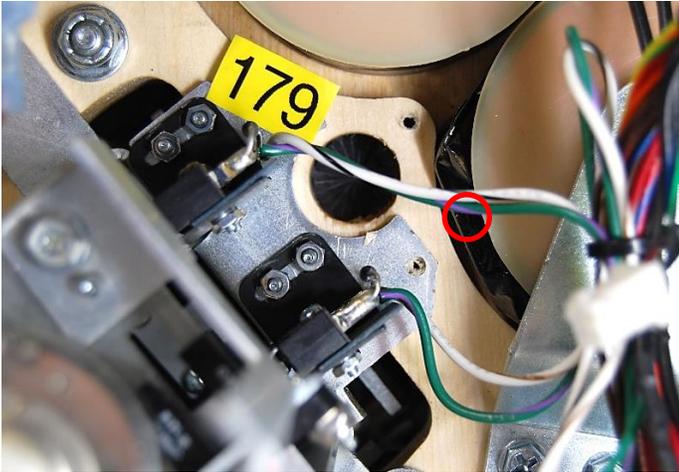
9) Locate the eight RGB LED Single rollover brackets 1 , eight RGB LED Insulators (fish paper) 37 and 8 of the 14 Single RGB LED bds 14 . Using a #1 Phillips screwdriver and two black, 4-40 x ¼" machine screws 38 , attach a Single RGB LED bd to one of the mounting brackets, with an insulator in-between the PCB and the bracket (as shown in the photos below). Keep the PCB, insulator and bracket aligned as you tighten the screws down (as shown in the photo on the right). Repeat this procedure for the other seven mounting brackets.
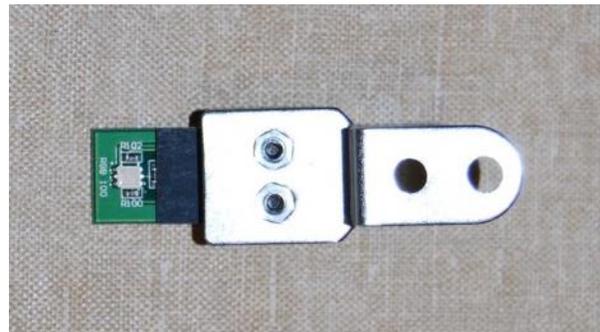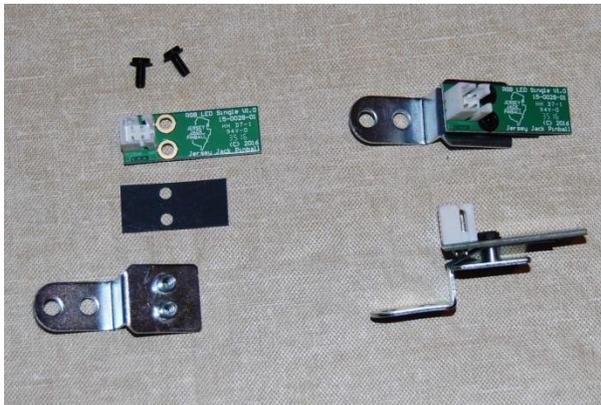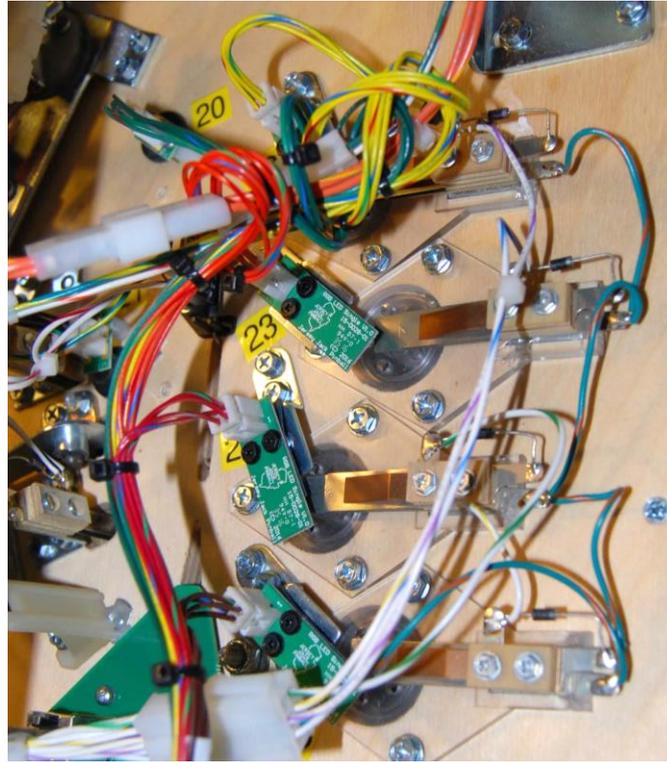
10) Using a #1 Phillips screwdriver, remove existing satellite RGB LED bds 155 (HOADC Collect, under the shooter lane) & 159 (Haunted Forest Collect, below the pop bumpers). Set the satellite bds **AND THEIR LONG SCREWS** aside. **DO NOT REUSE THESE SCREWS!** Install a Single RGB LED bd (14) next to each insert, directly to the playfield underside. Center each RGB LED in the insert hole and attach each bd to the playfield with two #4 x3/8" Phillips SMSs (40) (mark and predrill pilot holes). Refer to the provided **WOZ 2_0 Lighting Upgrade Kit RGB LED Wiring Diagram PDF** for proper bd orientation on the playfield underside. See the photo below.


11) Using a #1 Phillips screwdriver, remove existing satellite RGB LED bd 176 (It's A Twister!, under the ramp). Set the satellite bd **AND ITS LONG SCREWS** aside. **DO NOT REUSE THESE SCREWS!** Mount a Single RGB LED bd (14) next to the insert, directly to the playfield underside. As in step 10) above, center the RGB LED in the insert hole and attach the bd to the playfield with two #4 x3/8" Phillips SMSs (40) (mark and predrill pilot holes). Refer to the provided **WOZ 2_0 Lighting Upgrade Kit RGB LED Wiring Diagram PDF** for proper bd orientation on the playfield underside.

12) Using a ¼" magnetic nutdriver, remove existing Single GI RGB LED bds 22-25 ((TOTO rollovers in the right outlane) & 27-29 (Scarecrow/Tin Man/Lion rollovers in the playfield center). Mount a Single RGB LED bd [14]/insulator [37]/rollover bracket [1] assembly next to each rollover button/switch. Position the rollover bracket so that the RGB LED is under the rollover button (where it will not be obscured by the metal switch blades) and attach the bracket to the playfield underside (mark and predrill pilot holes). Use two of the #8 x ½" HWH Phillips SMSs [44] that were used to hold the old Single GI RGB LED bd brackets in place. Refer to the provided **WOZ 2_0 Lighting Upgrade Kit RGB LED Wiring Diagram PDF** for proper bd orientation on the playfield underside. See the photo below.

13) Using a #1 Phillips screwdriver, remove existing satellite RGB LED bd 178 (Winkie Guard, in front of the drop target). Set the satellite bd **AND ITS LONG SCREWS** aside. **DO NOT REUSE THESE SCREWS**! Mount a Single RGB LED bd [14] /insulator [37] /rollover bracket [1] assembly to the side of the Winkie Guard drop target assembly. the rollover bracket so that the RGB LED is under the Winkie Guard insert (over the "window" in the drop target bracket) and attach the bracket to the playfield underside (mark and predrill pilot holes). Use two of the #8 x ½" HWH Phillips SMSs [44] that were used to hold the old Single GI RGB LED bd brackets in place. See the photo below.
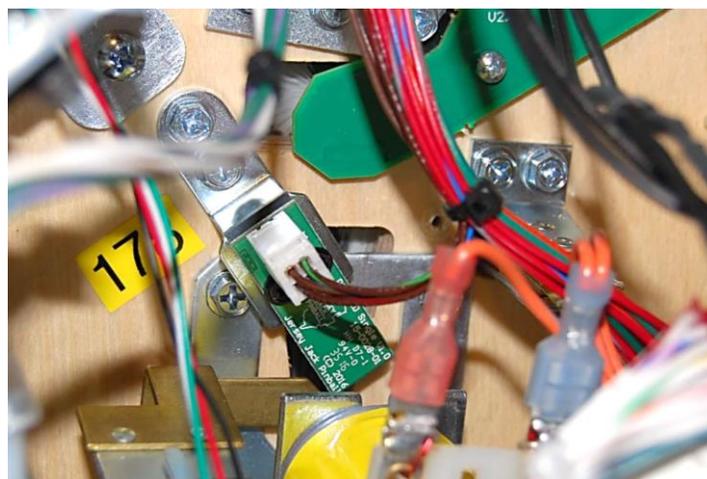
14) Lower the playfield and rest it on the support rails, with the second set of rubber feet centered in the lockdown bar receiver channel, at the front of the cabinet. Using a ¼" magnetic nutdriver, remove existing Single GI RGB LED bd 11 (Capture Dorothy, behind the back panel). Mount a Single RGB LED bd [14] next to the insert, directly to the back panel backside. Center the RGB LED in the insert hole and attach the bd to the back panel with two #4 x 3/8" Phillips SMSs [40] (mark and predrill pilot holes). Have an assistant press down on the apron and counterbalance the playfield across the lockdown bar receiver channel while you perform this task. When finished, lean the playfield up against the backbox again.

15) Using a #1 Phillips screwdriver and four black 4-40 x 3/8" machine screws [39] for each assembly, attach the PCB mounting bracket [2] to the BAG Controller PCB [13] (as shown in the photos below). Firmly tighten all four screws.

16) Using a ¼" nutdriver and two #8 x ½" SMSs ^{44}, attach the BAG bd ^{13}/mounting bracket ^{2} assembly to the underside, center of the playfield. Orient the bd and bracket as shown in the photos below (mark and predrill pilot holes).
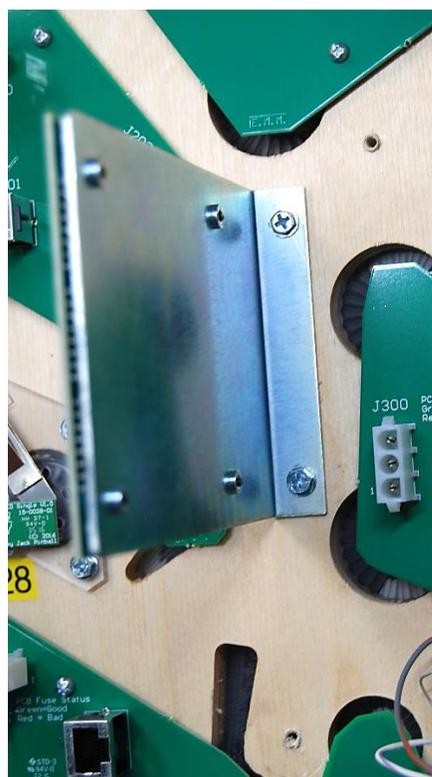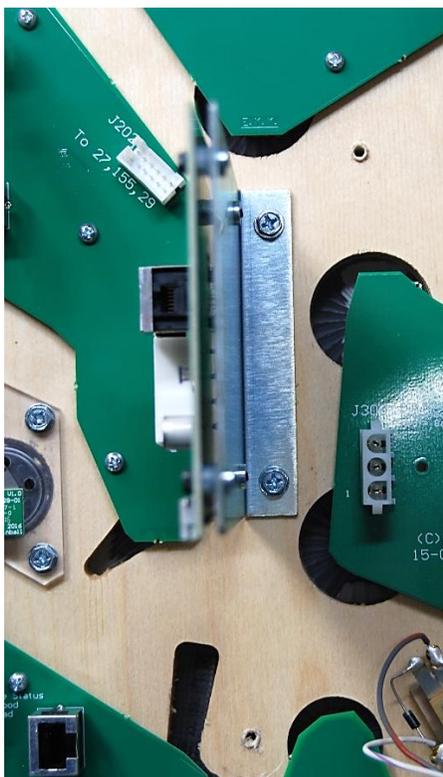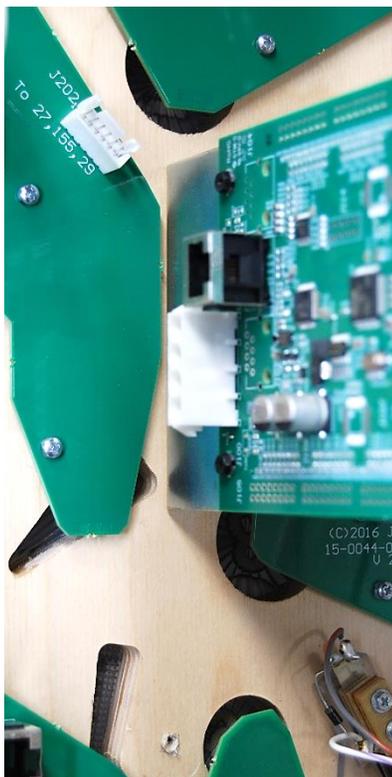
17) Using a #2 Phillips screwdriver, attach the two adapter cables (BLK, WHT & GRN wires [31] and BLK & WHT wires [32])
to the new modular, switching power supply [16] as shown in the two photos below. Ensure that the –V output DC
voltage reference is bonded (connected) to the AC GND terminal, as shown. If it is not, add a short, 18 AWG wire
between the leftmost –V terminal and the GND terminal (see below).
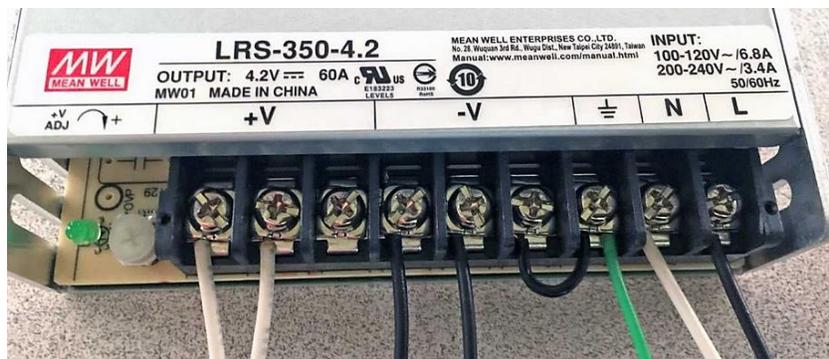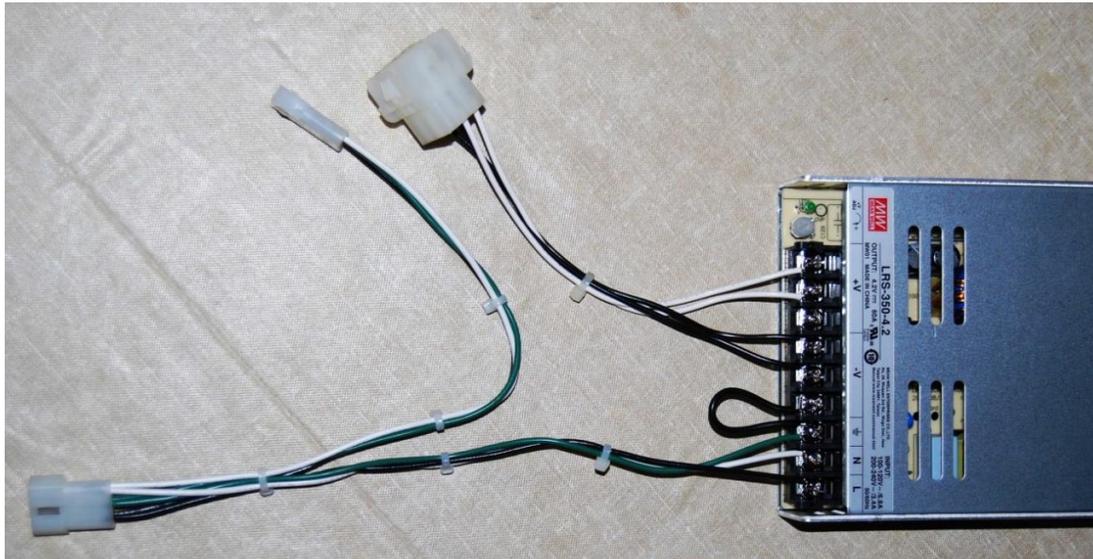

IMPORTANT: Check the red voltage select switch on the side of the power supply. Ensure that it is in the correct
position for your location: 115V for the USA and Canada; 230V for Europe, Australia, etc (see below). If your voltage is
not shown in the power supply voltage select window, use a key or a slot screwdriver to slide the switch to the correct
setting. Ensure that the switch fully clicks into position.

Using two M4 x 5mm machine screws, attach mounting brackets (simple L brackets will suffice) to the side(s) of the new
modular power supply, through two of its four threaded mounting holes. You will be attaching the power supply to the
back wall of the lower cabinet, sitting on the cabinet floor.

18) Loosen the two thumbscrews and remove the lid of the PCB Chassis box (slide the lid slightly to the right, then lift it up and off of the box). Locate the data cable that connects to J802 on the I/O bd (you disconnected this cable from one of the old large RGB PCBs earlier). Disconnect this cable from J802 (see the green arrow in the illustration below). Lower the playfield, placing the second set of rubber feet inside the lockdown bar receiver channel. This playfield position will give you the best access to work in the back portion of the PCB Chassis. Remove the cable you just disconnected from J802 from the PCB chassis, pull it through the hole in the back of the PCB chassis and discard it. Carefully cut cable ties, as necessary, to free the cable from the PCB chassis wiring bundle(s).
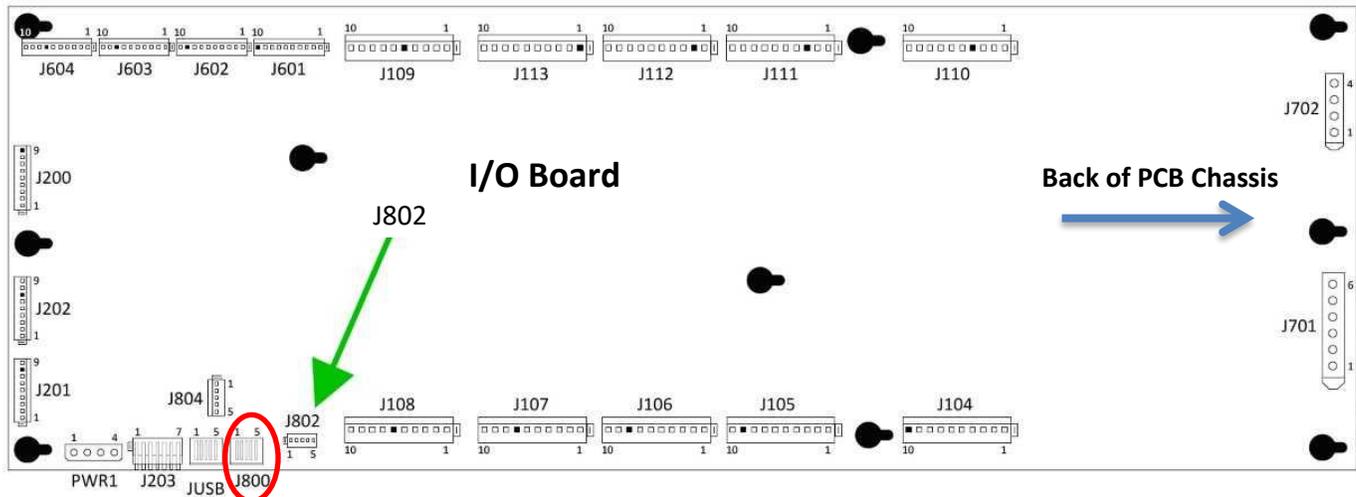
Locate the USB cable connected to J800 (circled in red above) on the I/O bd. Follow one of the two steps below:

a) If the USB cable running to J800 goes out the back of the PCB Chassis and plugs into one of the rectangular USB ports on the back of the CPU bd, pull both ends of the cable loose (at the CPU bd and the I/O bd), remove the cable from the PCB chassis harness and discard it. Carefully cut cable ties, as necessary, to free the cable from the PCB chassis wiring bundle.

b) If the USB cable running to J800 is a "Y" cable, that also connects to JUSB (the other end of this Y cable connects to a connector on one edge of the CPU bd, *INSIDE* the PCB Chassis), Simply disconnect the portion of the cable that connects to J800 – **LEAVE *BOTH* THE JUSB CONNECTOR AND THE CONNECTOR AT THE CPU BD PLUGGED IN** – and tuck and/or tie the loose connector back, out of the way. It will **NOT** be used in the new lighting system (**but it MUST be unplugged**).

Replace any cable ties (36) that were cut inside the PCB chassis and carefully trim the loose ends.

19) Connect the shielded, 6 ft USB 2.0A to Mini-B cable (29) to an open USB port on the back of the CPU bd. Run the Mini-B end of the cable through a hole in the back of the PCB chassis box (if necessary; the CPU bd in later WOZ games is mounted up against the back wall of the PCB chassis, with its USB ports accessible from the outside of the box). The Mini-B end of this cable will be connected to one of the PCBs mounted under the playfield later on.

Raise the playfield again and lean it against the front of the backbox. Replace the lid on the PCB chassis and tighten the two thumbscrews.

20) Disconnect an existing 3-pin (BLK, WHT & GRN), Molex AC power connection in the back of the lower cabinet (see photos below). Plug the two AC connectors attached to the new, modular, switching power supply [16] in between the two existing power connectors you just separated. If you removed an old power supply with your old RGB power harness (the BLK & VIO-BLK wires) earlier, you can simply plug the new power supply into the same power connector the old supply used.
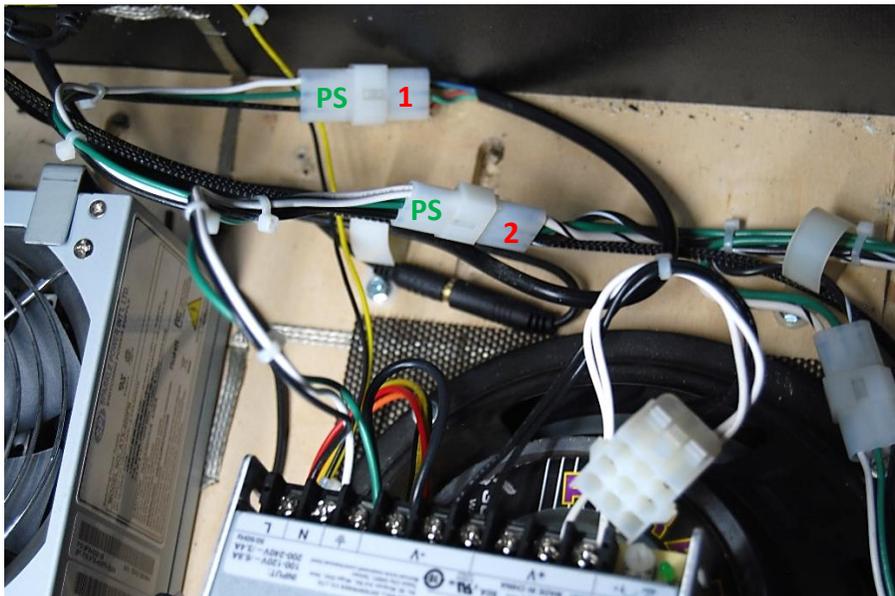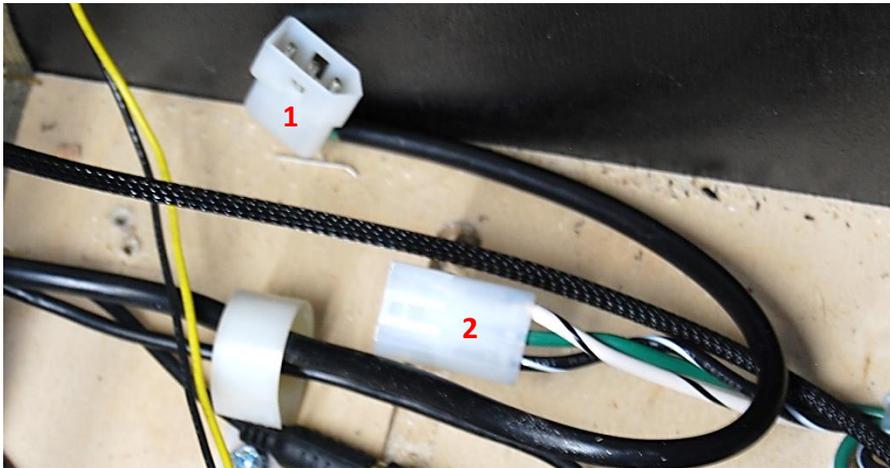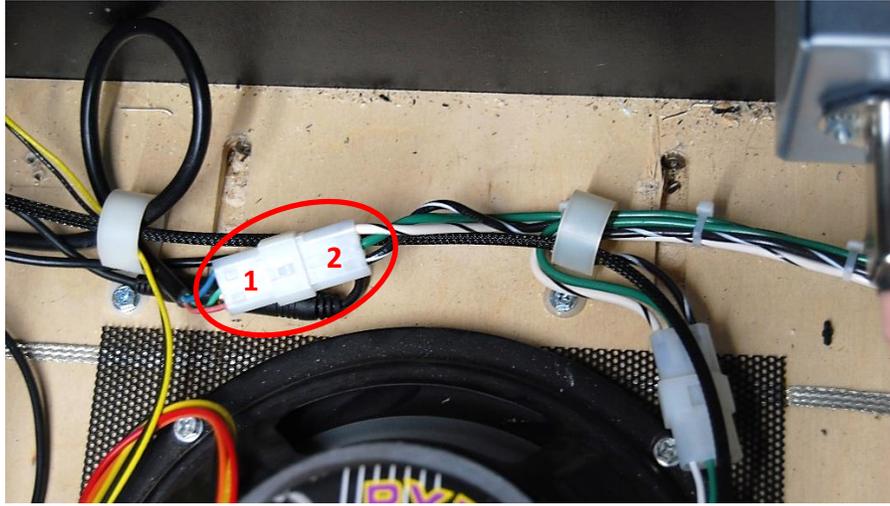
Using a ¼" magnetic nutdriver and two #8 x ½" SMSs [44], attach the new power supply (by way of the two L brackets you installed earlier) to the bottom and back wall (or just the back wall) of the lower cabinet (mark and predrill pilot holes).

21) Locate the three-wire (BLK, WHT & RED), multi-connector, RGB power harness [30] for the new lighting system. Locate **and disconnect** the two power harness extensions (shown in the photo below). These harness extensions will be attached to a couple of the connectors on the RGB power harness (don't worry about which connector they were attached to; it is not important). Set these extensions aside, they will be used for the mini playfields later on. Plug the nine-pin Molex connector (BLK & WHT wires) at one end of the harness into the mating connector that's already attached to the switching power supply [16].

Disconnect an existing 4-pin (BLK & RED wires), Molex 5VDC power connection in the back of the lower cabinet (near the ATX power supply on older WOZ games; near the back panel of the PCB chassis on newer games). Locate the short, three-connector (4 pins each), 5V Y adapter cable (BLK & RED wires) [33] and plug the two connectors with both BLK & RED wires running to them into the two existing DC power connectors you just separated. Plug the end of the cable that has a single RED wire running to it into the 4-pin connector at the end of new RGB power harness [30], as shown below.
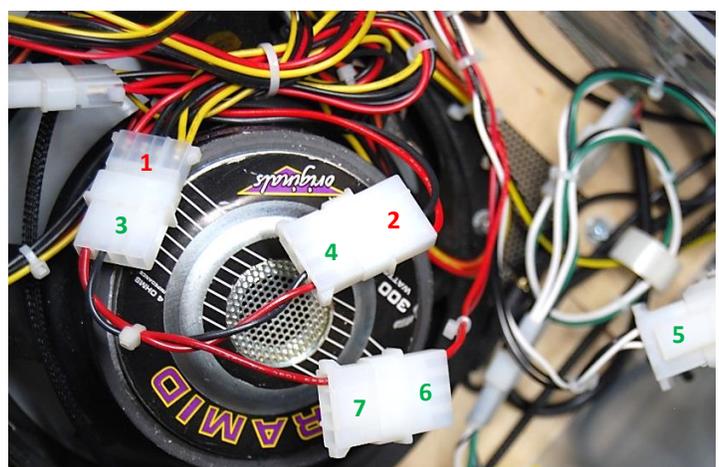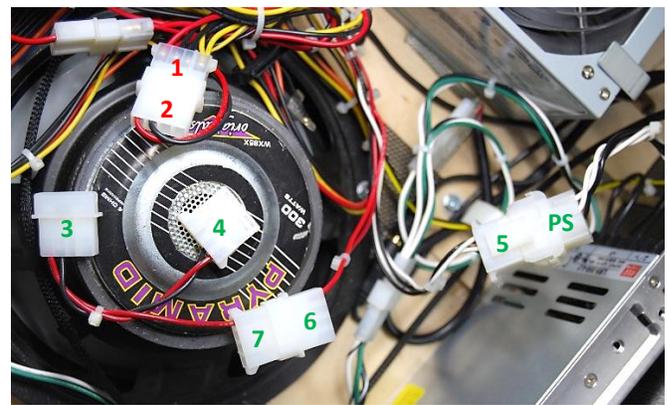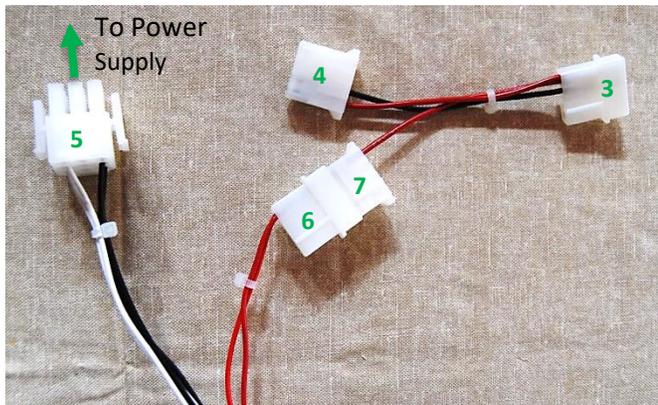
22) Cable tie (36) the new RGB power harness (30) and the shielded, 6-ft USB 2.0A to Mini-B cable (29) that you connected to the back of the CPU bd into the bundle running up to the playfield and fold them inside the black, corrugated, split tubing that protects the bundle.

23) Note that the RGB power harness splits as it starts up the underside of the playfield: the leg with 6 connectors will run up the left side of the playfield; the leg with 5 connectors will run up the right side of the playfield. The first connector on each leg is for the mini playfields: the first left side connector is for the castle mini playfield; the first right side connector is for the Munchkinland mini playfield.

Run the left side of the power harness up toward the hole under the castle mini playfield. Leave the fist connector loose near that hole. Plug the second connector into J100 of the WOZLED7 large bd (9). Plug the third connector into J100 of the WOZLED5 large bd (7). Plug the fourth connector (this is the only connector with 4 pins) into J100 of the BAG bd (13). Plug the fifth connector into J100 of the WOZLED2 large bd (4). Lastly, plug the sixth connector into J100 of the WOZLED9 large bd (11). Ensure that all of the connectors snap (and lock) firmly into the bd connector headers and no pins were pushed out of the backs of the connectors.

Run the right side of the power harness and the USB cable (29) from the CPU up toward the hole under the Munchkinland mini playfield. Leave the fist connector of the harness loose near that hole. Plug the second connector into J100 of the WOZLED6 large bd (8); run the USB cable (29) in this same direction, then plug its Mini-B end into J101 of the BAG bd (13). Plug the third right leg connector of the power harness into J100 of the WOZLED3 large bd (5). Plug the fourth connector into J100 of the WOZLED4 large bd (6). Lastly, plug the fifth connector into J100 of the WOZLED1 large bd (3). Again, ensure that all of the connectors snap (and lock) firmly into the bd connector headers and no pins were pushed out of the backs of the connectors.

24) Follow the steps in the provided **WOZ Castle PF Removal PDF** to remove the castle mini playfield. Remove the existing large and single bds, along with their data & power cables; carefully cut cable ties, as necessary. Remember: **DO NOT REUSE ANY OF THE LONG SCREWS** that were used to hold the old bds in; **THEY WILL GO ALL THE WAY THROUGH YOUR MINI PLAYFIELD!!!** Use the new #4 x ½" SMSs (41) to hold the WOZLED8 large PCB (10) to the castle mini playfield; use the new #4 x 3/8" SMSs (40) to attach an RGB LED Single bd (14) (#192). Use 3/8" nylon spacers (43) and #4 x ¾" Phillips SMSs (42) to attach the two RGB GI bds (15) (#30 & #31) to the castle mini playfield (mark and predrill pilot holes for all three of the small bds). Refer to the provided **WOZ 2_0 Lighting Upgrade Kit RGB LED Wiring Diagram PDF** for proper bd orientation on the castle mini playfield underside. Write the bd numbers for the single bds (#s 30, 31 & 192) under the mini playfield, for reference.

Use the WOZ Upper Playfield RGB Cable (23) and one WOZ Single 7" RGB Cable (28) to connect the four bds under the castle mini playfield, as shown in the **WOZ 2_0 Lighting Upgrade Kit RGB LED Wiring Diagram PDF**. Locate one of the power harness extensions you disconnected from the main RGB power harness earlier. Connect the smaller end of the extension to J100 of the WOZLED8 large bd (10). Connect a 1-ft Ethernet cable (17) to J101 on the WOZLED8 large bd (10). Tie all of the new cables into the castle playfield harness and replace any cable ties (36) you cut to remove the old cables. Tie the power harness extension and the Ethernet cable to the smaller PNK and BLK cable bundle, running off the flipper side of the mini playfield. Tie the data/power cable (with the inline connector) to the thicker (primarily BLU wired) bundle running off the back of the mini playfield. These cables will connect to the main playfield when the mini playfield is re-installed.

Reverse the order of the steps in the **WOZ Castle PF Removal PDF** and re-install the castle mini playfield.

25) Follow the steps in the provided **WOZ Munchkinland PF Removal PDF** to remove the Munchkinland mini playfield. Remove the existing RAINBOW plastic/PCB assembly. Remove the existing WOZLED10 bd and its associated data & power cables, cutting cable ties, as necessary. Replace it with the new WOZLED10 bd [12], using the same rubber spacers and push-lock rivets to hold the bd, light mask, plastic & mounting brackets together. Four additional push-lock, black, plastic rivets [35] are included in the kit, in case any were lost or broken during the WOZLED10 bd upgrade process.

Locate the remaining power harness extension that you disconnected from the main RGB power harness earlier. Connect the smaller end of the extension to J100 of the WOZLED10 large bd [12] (under the RAINBOW plastic). Connect a 1-ft Ethernet cable [17] to J101 on the WOZLED10 large bd [12] (again, under the RAINBOW plastic).

Remove the old single RGB LED bd from underneath the Munchkinland playfield. Use two new #4 x 3/8" SMSs [40] to attach a new RGB LED Single bd [14] (#160). Refer to the provided **WOZ 2_0 Lighting Upgrade Kit RGB LED Wiring Diagram PDF** for proper bd orientation on the Munchkinland mini playfield underside. Label the #160 bd location, under the mini playfield. One WOZ Single 7" RGB Cable [28] will be used to connect the WOZLED10 bd [12] and the #160 bd, fed through a hole in the Munchkinland playfield, as shown in the **WOZ 2_0 Lighting Upgrade Kit RGB LED Wiring Diagram PDF**. Run the loose ends of both the Ethernet cable and the power harness extension through this same hole in the mini playfield. These cables will connect to the main playfield when the mini playfield is re-installed.

Reverse the order of the steps in the **WOZ Munchkinland PF Removal PDF** and re-install the Munchkinland mini playfield.

26) Use the **WOZ 2_0 Lighting Upgrade Kit RGB LED Wiring Diagram PDF** to guide you in installing the data/power cables that run between the new large RGB bds and the Single RGB LED bds and RGB GI bds. There are 9 cables to be attached under the main playfield: [21], [22], and [24] through [28].

Connect the 8-pin end of the data/power cable [23] from the castle mini playfield to the mating 8-pin end of the data/power cable [22] originating from the WOZLED7 bd [9]. Connect the existing control cable for the Haunted Forest and OZ Lanes sign LEDs to J103 on the WOZLED7 bd [9]; you disconnected this cable from an old RGB PCB earlier.

*Note: The WOZLED7 bd [9] has several spare connectors that will **NOT** be used in this lighting upgrade process; connectors J104, J105, J106 & J107 are all spares. As such, **no data/power cables will attach to these connectors**.*

27) Use the **WOZ 2_0 Lighting Upgrade Kit Cat5 Wiring Diagram PDF** to guide you in installing the Cat5e (Ethernet) cables that run between the BAG bd [13], and the large RGB LED bds [3] through [12] . There are 10 cables to be attached under the main playfield: [17], [18] and [19] .

Using one of the two provided inline Ethernet couplers [34], attach the 3-ft Ethernet cable coming from the WOZLED1 bd [3] to the 1-ft Ethernet cable running up to the castle mini playfield. Using the other inline Ethernet coupler [34], attach one of the 2-ft Ethernet cables coming from the WOZLED1 bd [3] to the 1-ft Ethernet cable running up to the Munchkinland mini playfield. Both of these coupler connections are illustrated in the **WOZ 2_0 Lighting Upgrade Kit Cat5 Wiring Diagram PDF**.

28) Use cable ties [36] to tie up any of the cabling/wiring that runs ***anywhere near*** moving mechanisms (flippers, slingshots, drop targets, VUKs, etc). Lower the playfield back into the cabinet and re-install the State Fair Balloon sculpture in the lower left corner of playfield. Reinstall the playfield glass and power up the game to test the new lighting system.