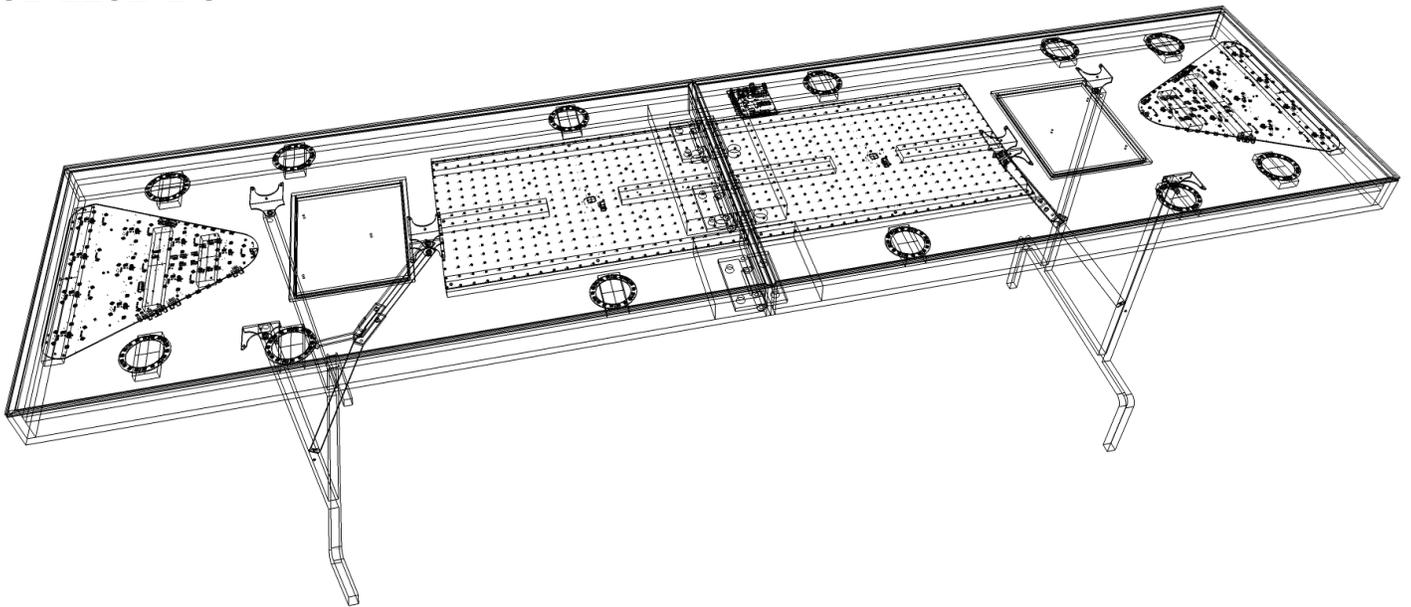




# Electronic Installation Guide

## RaveTable Interactive Beer Pong Table

002-1202-1.0



### **IMPORTANT:**

Read through this construction guide carefully before building this product. Pay close attention to the complete table layout.

Ensure that you follow all proper safety instructions that adhere to the power tools that you will be using to construct this table.

Failure to obey any safety warnings of the tools that you are using to construct this table may result in serious injury.

# Introduction

This instruction manual will guide you through the steps of installing a RaveTable Interactive LED Beer Pong Table Kit in a table built from our "Table Construction Guide" manual.

The following knowledge and skills will help aid you through this project:

- Knowing how to use basic hand tools (screwdrivers, staplers, etc.)
- Knowing how to follow assembly/installation instructions
- Knowing how to use a router (optional in *Step #7*)

The following tools are required for this installation guide:

- Robertson Screwdriver (#1 and #2 bit)
- Cable Stapler (optional; Tape can be used instead)
- Electric Router w/ Flush Trim Bit (optional; Used to make acrylic sheet flush to table edge)

The measurements in this guide are metric, however, you can easily convert the metric units to imperial units with the conversion table below. You may notice that some of the hardware is listed in its imperial form and that is due to this table being designed in Canada, where much of our hardware (such as screws) are still labeled in Imperial units.

**Do not complete any of the assembly steps with powered electronics. Until you are ready to test the table, keep the power supply unplugged.**

**Do not do this installation in a space where there is carpet since static electricity can damage electronic components. Laminate, concrete or hardwood floor are all fine. Only handle the PCBs on the outer edges of each board to mitigate this risk.**

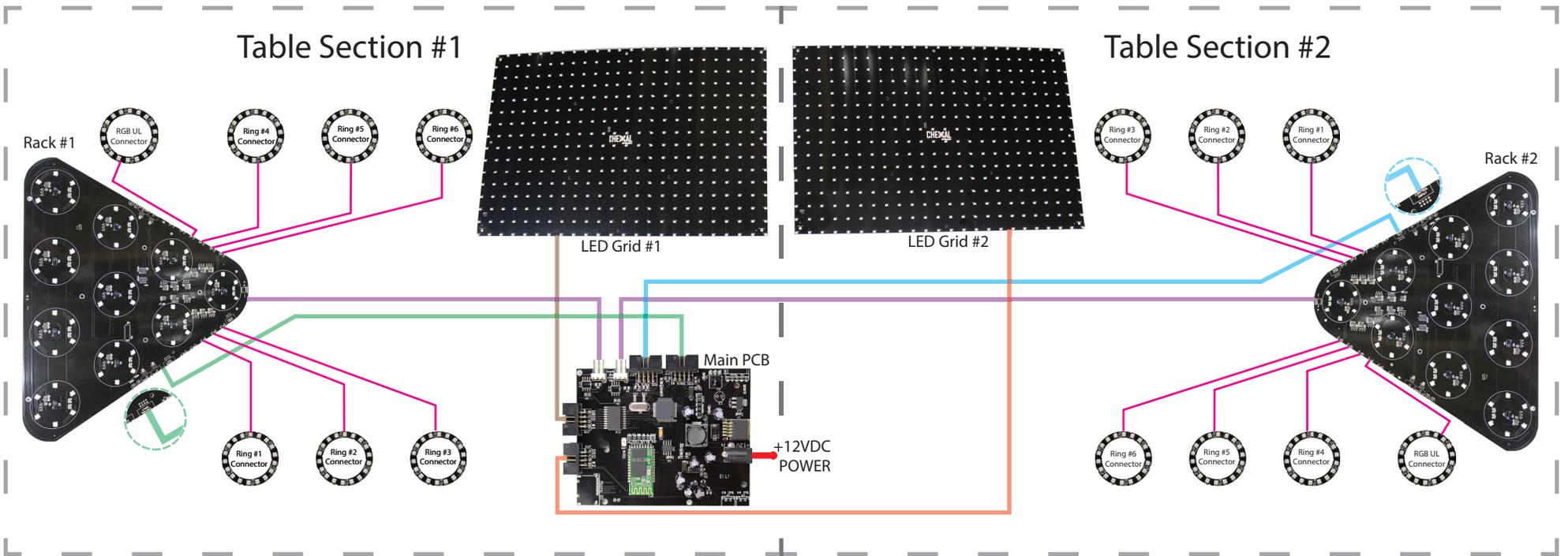
**Do not touch any of the components on the PCB as there is a risk of damaging that component with any static buildup.**

Unit	Converted Value
1 Inch	25.4mm
1mm	0.03937 Inches

## Electronic Assembly Bill of Materials

Part (Hardware)	Vendor	Qty per Table
RaveTable PCB Set	Chexal Technologies	1
Screws - #5 - 5/8"	Home Depot	48
Screws - #8 - 1/2"	Home Depot	9
3/4" Steel Strapping	Home Depot	1
7" Black Zip-Ties	Home Depot	5
Wide Duct Tape (Black)	Home Depot	1
Plastic Nylon Wire Clip (6mm or 1/4")	Amazon	3
10mm Wide/1mm Thick Double Sided Silicone Tape (Can be thicker than 1mm if needed; Foam tape will also work but it is harder to remove if you need to service under the acrylic)	AliExpress	1

The acrylic is listed in the Bill of Materials (BOM) in the "Table Construction Guide" but it will be installed in this guide after we have set up all of the electronics.



Connecting From	Connector Name On PCB	Cable Used	Connecting To	Connector Name On PCB
Main PCB	POD RACK #1 (JP7)	8-Pin 2x4 Cable (170cm)	Rack #1 PCB	Control Input (JP14)
Main PCB	POD RACK #2 (JP4)	8-Pin 2x4 Cable (170cm)	Rack #2 PCB	Control Input (JP14)
Main PCB	GRID #1 (JP8)	8-Pin 2x4 Cable (85cm)	LED Grid #1 PCB	*Only connector on PCB* (JP1)
Main PCB	GRID #2 (JP9)	8-Pin 2x4 Cable (85cm)	LED Grid #2 PCB	*Only connector on PCB* (JP1)
Main PCB	POD POWER RACK (JP2)	3-Pin Power Cable (120cm)	Rack #1 PCB	POWER INPUT (JP1)
Main PCB	POD POWER RACK (JP1)	3-Pin Power Cable (120cm)	Rack #2 PCB	POWER INPUT (JP1)
Rack PCBs	RING #1 (JP2)	Micro-USB Male (75cm)	RGB Ring PCB	*Micro-USB on PCB* (J1)
Rack PCBs	RING #2 (JP3)	Micro-USB Male (75cm)	RGB Ring PCB	*Micro-USB on PCB* (J1)
Rack PCBs	RING #3 (JP4)	Micro-USB Male (75cm)	RGB Ring PCB	*Micro-USB on PCB* (J1)
Rack PCBs	RING #4 (JP5)	Micro-USB Male (75cm)	RGB Ring PCB	*Micro-USB on PCB* (J1)
Rack PCBs	RING #5 (JP6)	Micro-USB Male (75cm)	RGB Ring PCB	*Micro-USB on PCB* (J1)
Rack PCBs	RING #6 (JP7)	Micro-USB Male (75cm)	RGB Ring PCB	*Micro-USB on PCB* (J1)
Rack PCBs	RGB UL (JP7)	Micro-USB Male (75cm)	RGB Ring PCB	*Micro-USB on PCB* (J1)

# Electronic Installation Guide

Now that you have completed the “*Table Construction Guide*” and have a fully built table, you are finally ready to install the RaveTable Interactive LED Beer Pong Tavble Kit into it and make it come alive! It doesn’t take very long to get everything installed and up and running, so it should be much quicker than the table build was.

When it comes time to run the cables between the PCBs, if you are unclear about some of the connections, use the diagram on *page 2* as a reference. Almost all of the instructions use CAD renderings of the RaveTable. The PCBs are colored red in the renderings for clarity, but in real life they are solid black.

Ensure that you have the required hardware (listed on *page 1*) and tools on hand and then proceed through the following steps.

# 1

First, we will install the power supply unit (PSU) in the table before installing the PCBs. You will need the following hardware to install the PSU:

Hardware	Qty
12V Power Supply Unit	1
Screws - #8 - 1/2"	3
3/4" Steel Strapping (150mm section)	1
7" Black Zip-Ties	5
Plastic Nylon Wire Clip (6mm or 1/4")	1

Flip the table over so that it matches the orientation of *Figure 1.4*. Take two #8 - 1/2" screws, the steel strapping and the power supply and secure it just ahead of the table-leg joint (*Figure 1.1*). Do **NOT** do any of these steps with the PSU plugged into mains power. Keep it unplugged until the end of this guide.

Plug the AC cable into the power supply and make sure that it is firmly seated. Put a nylon clip around the AC cable and secure it tight to the table (*Figure 1.1*).

Take the AC cable and run it down the table leg. Fasten five zip-ties around the cable and the leg and secure them tight to one another (*Figure 1.2*). Ensure that the table-leg can still fold without any issues.

Finally, run the DC cable from the PSU up and through its hole, into the top portion of the table. You can secure this line with more nylon clips, tape or a cable stapler if needed (*Figure 1.3*).

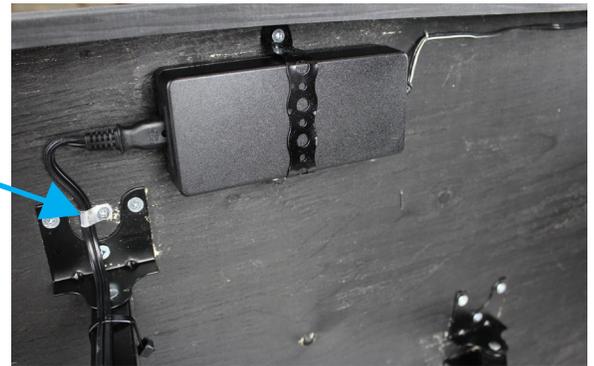


Figure 1.1



Figure 1.2



Figure 1.3

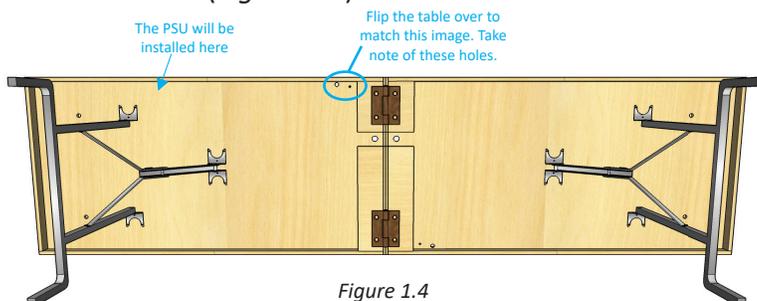


Figure 1.4

2

With the table now standing back upright, install the *Main PCB* near the fold of the table. The PCB has a small part that sticks out from underneath it. This will fill right into the small hole next to where we ran the DC cable into the table. Orient the PCB the same way that it is oriented in *Figure 2.1*.

With the PCB in place, **gently** secure it with two #5 - 5/8" screws until it is held firm against the table.

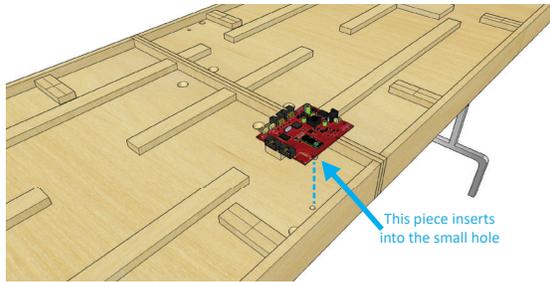


Figure 2.1

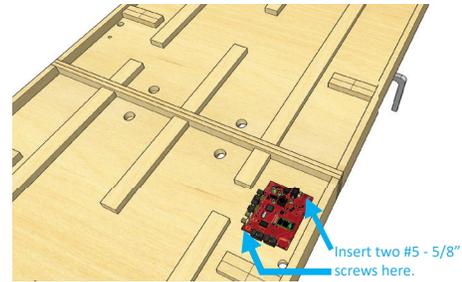


Figure 2.2

3

Gather the Rack PCBs and place one at each end of the table. Center each PCB across the width of the table (should be about 112mm on each side), make sure that the back of the PCB is flush with the furthest back wooden support (*P8*) and then secure the PCB to the table with five #5 - 5/8" screws.

The screw hole locations are demonstrated in *Figure 3.2*.

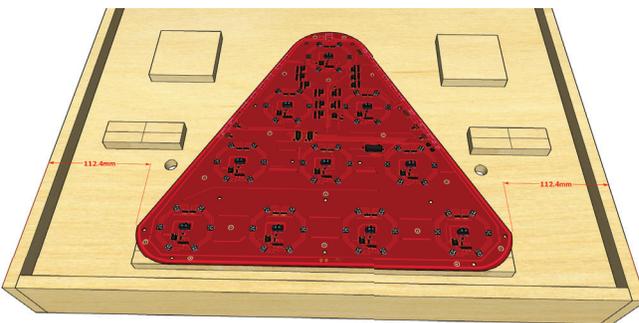


Figure 3.1

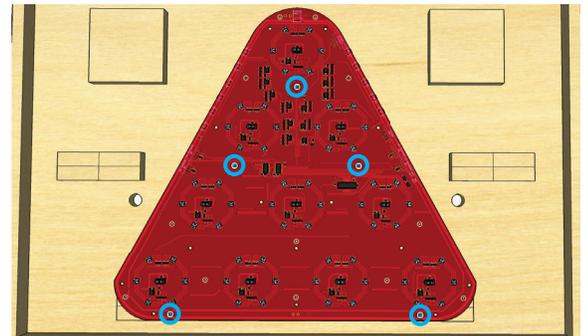


Figure 3.2

4

Refer to *page 2* for the connection diagram and gather the three cables that are needed for the second half of the table. They are as follows:

- 8-Pin 2x4 Cable (85cm) for the LED Grid #2 PCB
- 8-Pin 2x4 Cable (170cm) for the Rack #2 PCB
- 3-Pin Power Cable for the Rack #2 PCB

Route these three cables from *Table Section #1* near the Main PCB underneath the table and then up into *Table Section #2*. The cables will follow through the notched *P4* parts at the fold of the table.

Refer to *Figure 4.2* and *Figure 4.3* on the next page for clarity.



Figure 4.1

*Continued on the next page*

## 4

When you have the cables routed across the table, connect the cable connectors on the *Table Section #1* side to the Main PCB and pull most of the slack through to *Table Section #2*.

Leave a small loop of cable underneath the table (*Figure 4.3*) and ensure that the table will be able to fold freely with the amount of slack that you have left.

Place a nylon clip on either side of the entry and exit holes for the table sections (*Figure 4.2*) and secure the cables to the table with #8 - 1/2" screws.

Connect up the two Rack #2 PCB cables and then repeat this section for the other side of the table (although you don't have to worry about routing across the fold for *Table Section #1*). Be sure to connect the DC power plug into the main PCB as well (can be seen in *Figure 4.2*).

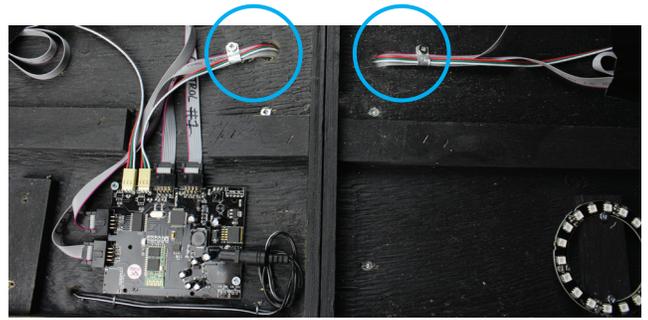


Figure 4.2

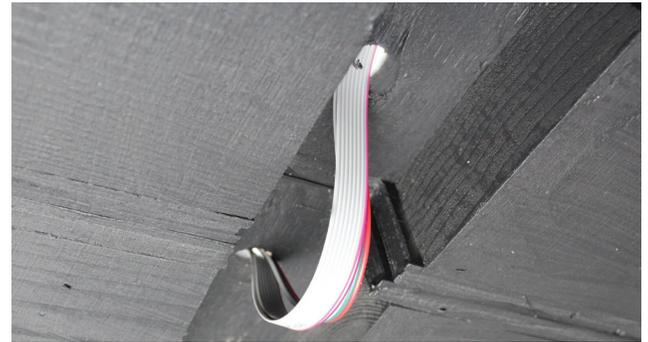


Figure 4.3

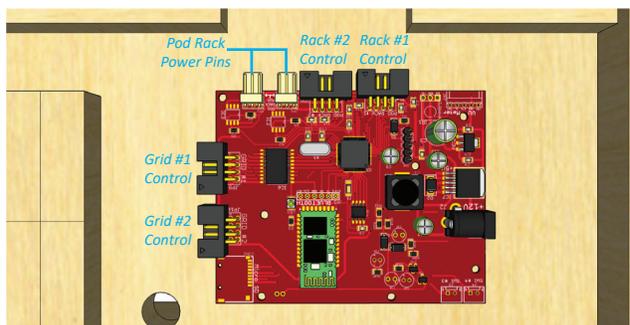


Figure 4.5

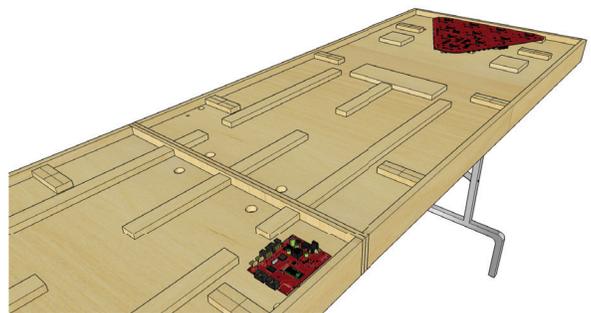


Figure 4.4

## 5

Before installing the LED Grid PCBs, take some black duct tape and press the Pod Rack cables flat to the surface of the table and secure them there with the duct tape. With all of the Pod Rack cables out of your way, connect up the *Grid #1* and *Grid #2* cables. You will then need to set the LED Grid PCBs in place, centering them across the width of the table (about 130mm in from each edge).

Ensure that no cables are in the way of lying the PCBs flat or are in the path of a screw hole. Then secure each PCB to the table with four #5 - 5/8" screws. The screw hole locations are shown in *Figure 5.3*.

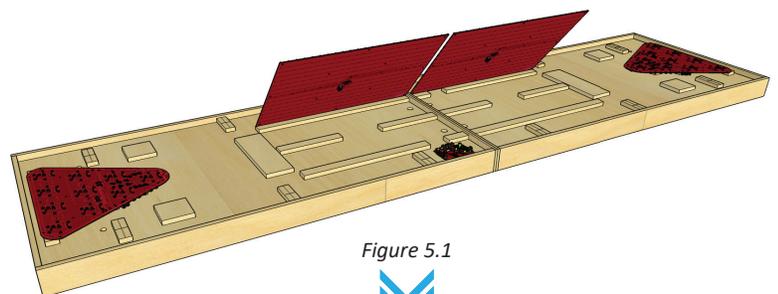


Figure 5.1

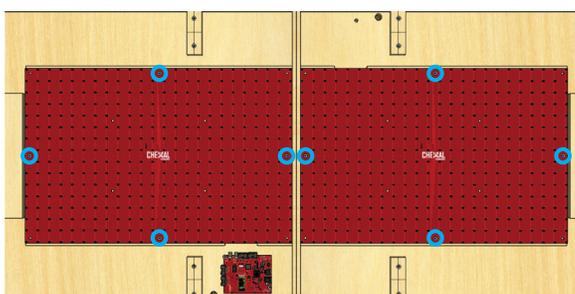


Figure 5.3

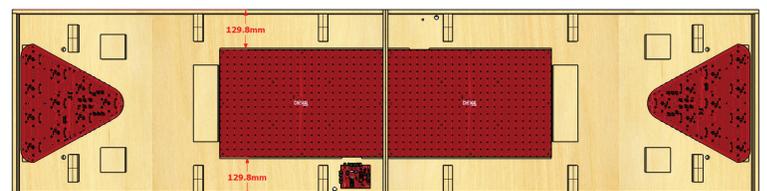


Figure 5.2

6



**The micro-USB connectors on the PCBs are extremely delicate. While attaching the cable, any excess up/down force can break it off of the PCB, rendering it useless. Make sure to seat the cable firmly into the connector and then make sure that you do not accidentally press down on the connector/cable, set a tool on it, etc. All PCBs are tested before being shipped out, thus we do not warranty broken connectors/PCBs.**

To install the RGB Ring PCBs, we will need to use two #5 - 5/8" screws per RGB Ring. The four rings that are closest to the Pod Rack PCBs will be installed in the same orientation as Figure 6.3. The other eight rings will be installed the same way, only they will deviate  $\pm 90^\circ$  (depending which side of the table that they are on) so that the micro-USB connector always faces its respective Pod Rack PCB.

When installing an RGB Ring, center the PCB across the support, as depicted in Figure 6.1. Place one of the screws into the rings notch and screw it down (screw it in by hand only) so that the top of the screw is roughly flush with the LEDs (white squares) on the PCB.

Take the other screw and set it in the notch that is across from the screw that you just put in. Gently screw it in while periodically checking if the ring can still move or not. You don't want to go too tight or else you will stress the PCB as the screw tightens down on it. You want to get it just perfect so that the PCB doesn't move but it isn't stressed either. It's quite simple to do but take your time when you are installing these.

After you have finished installing all of the RGB Rings on the top of the table, you will need to install one ring underneath each table section. This is for the RGB underlighting feature and it is the same PCB and cable that is used for the top rings. Plug the cable into the "RGB UL" connector on the respective Pod Rack, route it through the closest hole to the underside of the table and secure the cable and the PCB to the bottom of the table.

#### Tip:

If you want to be extra safe, you can install a small piece of wood underneath each micro-USB connector to ensure that it can't move and break off of the PCB. It isn't absolutely necessary, but we do it with our tables just as a precaution. We find that a narrow strip of 9.5mm (3/8") thick plywood works well. Just be sure that the piece of wood does not stick out in front of the connector, otherwise you won't be able to plug the cable into the connector.

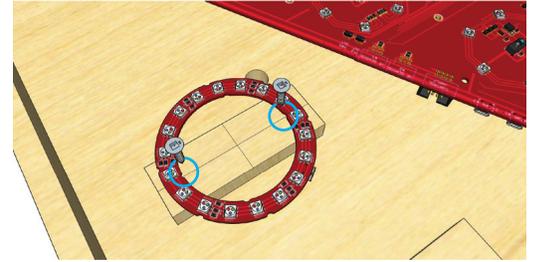


Figure 6.1

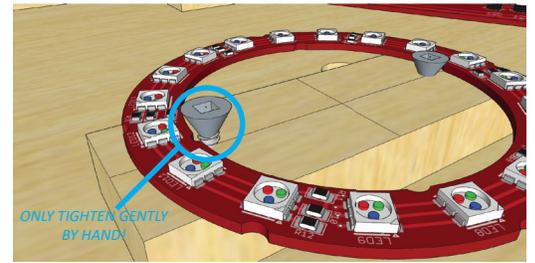


Figure 6.2

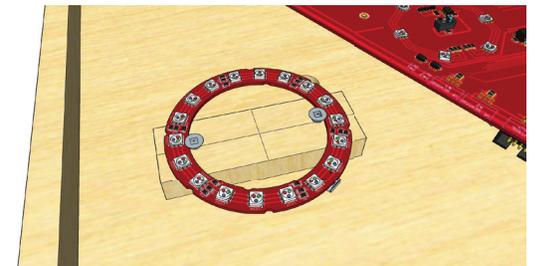


Figure 6.3

You can route the cable through either hole

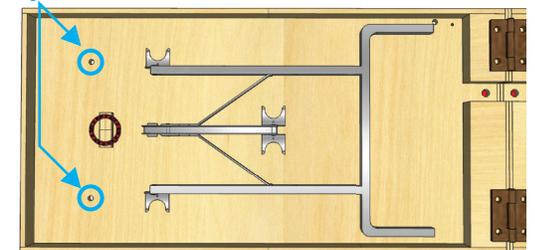


Figure 6.4

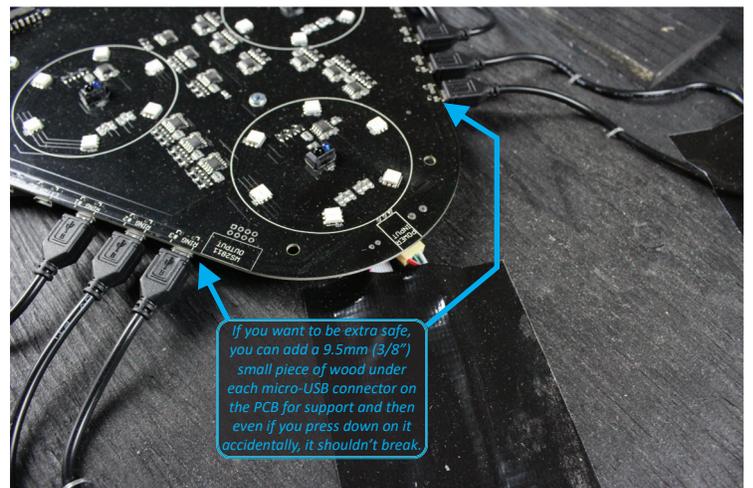


Figure 6.5

**7** You have now finished connecting up all of the electronics for the RaveTable. Congratulations! In this step, we are going to fit the acrylic sheets onto the table, but first you should plug the table in and test it out. Once you plug it in, it should take about 3 seconds to start up. Please refer to the “*RaveTable User Manual*” to operate the table and test it out.

Once you are completely sure that everything is working as it needs to be, **unplug** the table and apply one section of double-sided tape to each table half (*Figure 7.1*). Do **not** peel off the backing for the top part off the tape yet. The tape can be foam tape or silicone tape with a thickness of 1 - 2mm.

Continue applying tape to each edge of the table. Once you have finished with the tape, set an acrylic sheet on top of one of the table sections. Line it up and make sure that it is flush with **P4** at the table fold. It is OK if there is some overhang on the other edges for now, but the center needs to be flush or it will bind with the other sheet when unfolded.

When you have it lined up properly, go to one corner of the table and start to peel off the backing on the double-sided tape. Make sure that the acrylic doesn't shift. Once you get the corner started, you can begin peeling the backing off and apply slight pressure to the acrylic to make sure that the tape adheres to it. If the backing starts to bind, simply flex the acrylic sheet upwards slightly and that should allow you to keep pulling off the backing while you are sticking the acrylic to the tape.

Do that for each section of the table and once it's all done, go back around the perimeter and press on the edges with your hand to ensure that there is solid contact between the wooden edge, the tape and the acrylic sheet.

If the acrylic sheets aren't cut to size and there is a bit of overhang, you can use a router with a 'flush trim bit' and go along the edges of the table sections, thus cutting away the overhang and making everything nice and flat along the sides of the table.

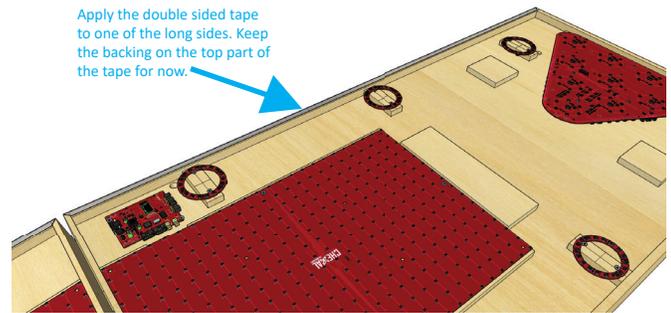


Figure 7.1

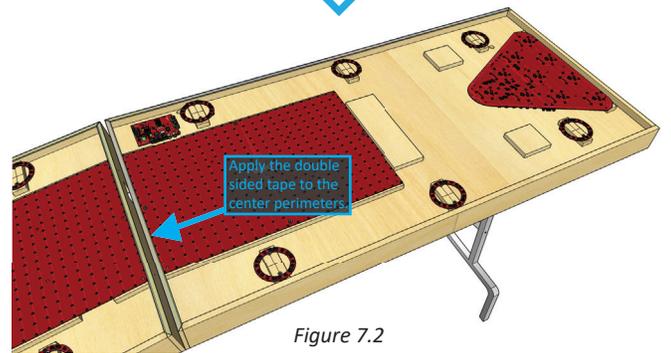


Figure 7.2

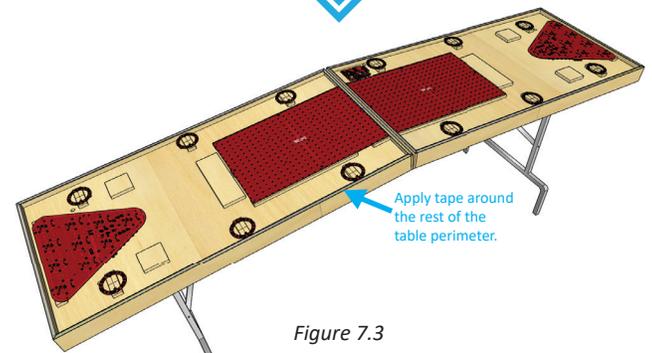


Figure 7.3

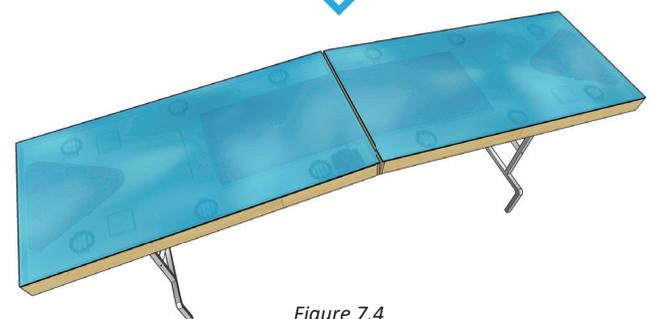


Figure 7.4

You have now finished building your very own RaveTable. Good job! Check out the “*RaveTable User Manual*” for operating instructions and helpful hints.

If you have any questions or concerns, feel free to contact us directly at [support@chexal.com](mailto:support@chexal.com). Thank you for your interest in our products!