



PropTroniX

Thermal Detonator V2.1

Build Instructions

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1. About the Thermal Detonator

Thermal Detonators were palm-sized, spherical devices that were used as extremely deadly explosive weapons. In addition to being surprisingly powerful for their size, they could only be deactivated by whomever turned them on. They would only explode when they were activated, and therefore a secure and stable weapon to carry. They could also be programmed to explode after a set amount of time.

Their usage was heavily regulated, and owning one illegally could earn its owner the capital punishment in many star systems.

Most Thermal Detonators contained Baradium, a highly unstable chemical compound that could blow a two-meter-deep hole in pure Permacite.

The chemical compound was so unstable that, in certain situations, some Detonators have exploded after being accidentally dropped to the ground.

This, was due to them having been exposed to too much heat or manipulated harshly.

The power of the Thermal Detonator made it highly sought-after in the criminal underground, which made its price climb to 2,000 credits on the black market.

The Duros bounty hunter Cad Bane carried Thermal Detonators, and often used them during assignments. Princess Leia Organa, disguised as the bounty hunter Boushh, threatened the crime lord Jabba the Hutt with a Class-A Thermal Detonator in order to negotiate a deal. ([Fandom](#))

Bounty Hunter Boushh: (*in Ubese*) I want fifty thousand. No less.

C3P0: Uh, The mighty Jabba asks why he must pay fifty thousand?

C3P0: Because he's holding a Thermal Detonator.

Jabba: (*in Huttese*) This bounty hunter is my kind of scum. Fearless and inventive.

My version of the Class-A Thermal Detonator has been designed to add Electronics for Light and Sound.

It has also been designed so it's relatively easy to print and paint.

All the images used in these Build Instructions are images from my design done in Fusion360. I do not consider it to be 100% screen accurate but it's pretty close.

STAR WARS EPISODE IV A NEW HOPE



2. Tools List

The following tools are what I recommended to use to build your Class-A Thermal Detonator.

2.1. 3D Model

- Eye Protection - Goggles to protect your eye's from the dust particles
- Dust Mask - For protection from breathing in the dust particles
- Sandpaper - Various grades 80 Grit, 180 Grit and Wet & Dry 600 Grit (A few sheets of each)
- Small Metal Files - Various widths and shapes
- Super Glue
- 2 Part Epoxy Glue
- Small Pair of Side Cutters
- Needle Nose Pliers
- Exacto Knife
- Filler - Bondo, wood filler, fine car filler or any other type of filler that is easy to sand can be used.
- Paint - Filler Primer, Colours of your choice

2.2. Electronics

- Multi-Meter - For testing circuits and connections (**VERY IMPORTANT**)
- Soldering Iron or Soldering Station
- Solder
- Solder Wick
- Wire - 28AWG or 30AWG Silicon wire recommended
- Wire Stripper
- Heat Shrink Tubing - Various Sizes
- Hot Air Gun, Lighter or Solder Station - For shrinking heat shrink tubing
- Small Pair of Side Cutters
- Needle Nose Pliers
- Solder Helper - Optional

3. Sanding and Filling

Sanding all the parts is a necessary process and the more time you take on this process the better the finish of your Thermal Detonator will be. Start with the 80 grit sandpaper and reduce the grit until a nice smooth finish is achieved.

PLEASE WEAR A DUST MASK & GOGGLES WHEN SANDING

DO NOT USE POWER TOOLS for sanding, these create heat very quickly and will soften the plastic and potentially ruin the part. Hand sanding is a much slower process but with patience and time you will achieve a really good finish ready for assembling and painting.

- Rounded Parts - Roll sandpaper around the part to sand, both inside and outside of barrels can be sanded this way.
- Flat Surfaces - Use a sheet of sandpaper on a flat surface to sand these parts.
- Awkward Shapes and Small Details - Use small metal files with shaped sides and sanding sticks to sand these parts, being careful not to sand away the details too much.

Check all parts for voids and gaps and fill with filler, once dry and hardened sand these parts again. Only move on to assembling the Thermal Detonator once you are really happy with the sanded finish of all the parts.

4. Priming and Painting

The main colours used for painting the Thermal Detonator are Silver/Chrome and Black, but you can paint it in whatever colours you choose. I recommend using cans of acrylic spray paints, but you can also use an airbrush.

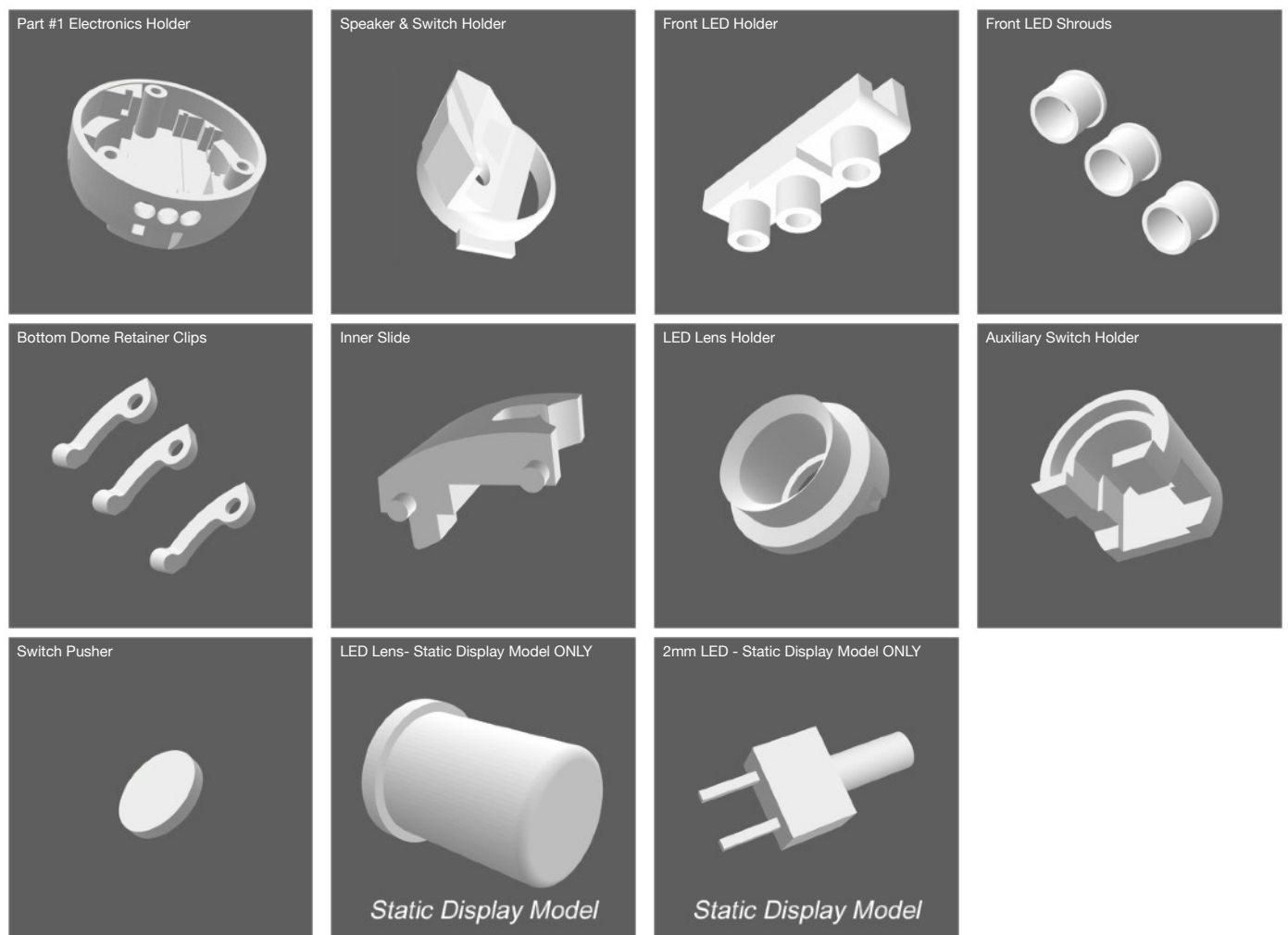
PLEASE WEAR A MASK WHEN PAINTING

- Always paint in a well ventilated area, preferably outside.
 - Wear PPE (Personal Protective Equipment) when painting.
 - Hang parts for printing where possible - This gives a better angle for painting and also for drying the parts.
 - Apply several light coats of paint rather than one which coats and try to avoid drips and runs.
1. Filler Primer - Spray Paint all parts with Filler Primer - This will fill any very small voids or gaps. If there are still some voids and gaps fill these with filler and sand all the parts with very fine grit wet and dry sandpaper to achieve a real good smooth finish ready for the final colour.
 2. Main Colour - Use several light coats of paint allowing each to dry for the recommended time before applying the next coat. Don't rush and try to paint thick coats of paint, you will possibly lose some of the finer details on the parts, and possibly have to start the sanding process again.
 3. Allow the paint to fully dry before attempting to assemble the Thermal Detonator. I recommend at least 24 hours.
 4. Remember any parts that are required to be glued together will need to have the paint sanded first. Gluing Painted parts together is NOT recommended.
 5. Weathering - This is a personal choice. If you want to give your Thermal Detonator the weathered look check out the many videos on YouTube showing how to achieve that weather look.

5. List of Parts

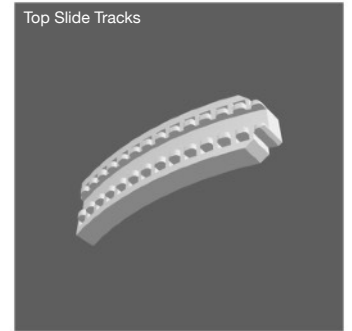
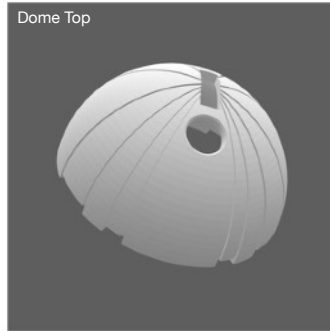
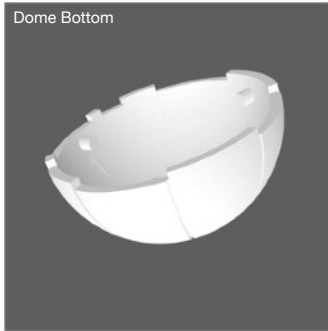
5.1. Internal Parts

Name	Paint Colour	Supports Yes/No
Middle Ring - Electronics Holder	Black	YES
Speaker & Switch Holder	Any	YES
Front LED Holder	Any	YES
Front LED Shrouds	White or Silver	NO
Bottom Dome Retainer Clips	Any	NO
Inner Slide	Any	YES
LED Lens Holder	Black or Silver	YES
Auxiliary Switch Holder	Any	NO
Switch Pusher	Not Painted	NO
LED Lens (Static Display Model ONLY)	Red	YES
2mm LED (Static Display Model ONLY)	Yellow	NO



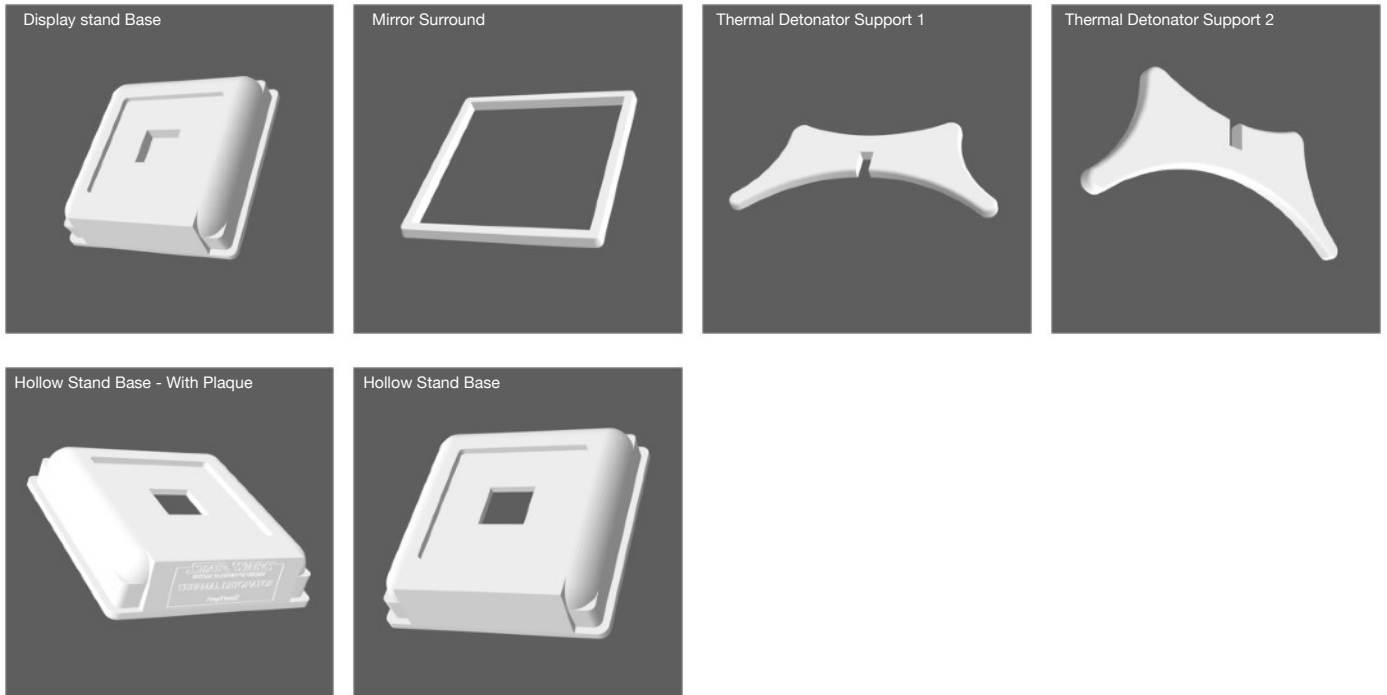
5.2. External Parts

Name	Paint Colour	Supports Yes/No
Dome (BOTTOM)	Silver or Chrome	YES
Dome (TOP)	Silver or Chrome	YES
Top Slide	Grey	YES
Top Slide Tracks	Black	YES



5.3. Display Stand

Name	Paint Colour	Supports Yes/No
Display Stand Base (Solid)	Black	NO
Mirror Surround	Black	NO
Thermal Detonator Support 1	Printed Clear	NO
Thermal Detonator Support 2	Printed Clear	NO
Stand Base (Hollow with Plaque)	Black	YES
Stand Base (Hollow)	Black	YES



Notes

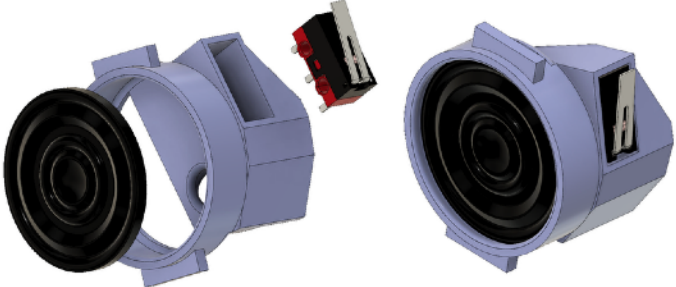
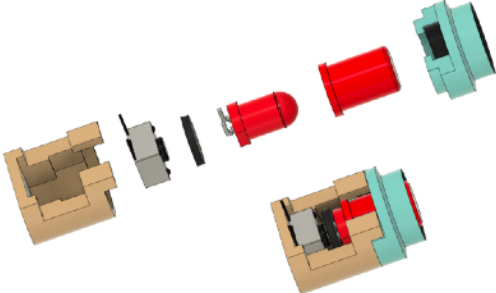
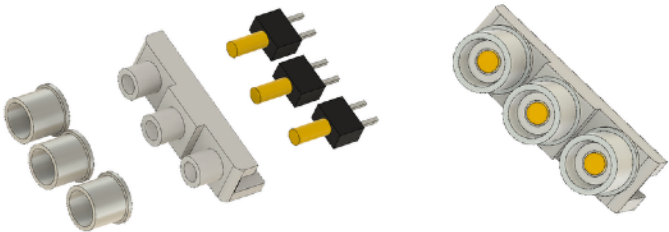

The "Display Stand Base" can be printed Solid or Hollow. If you have a Resin Printer you can print the "Hollow Stand Base - With Plaque" This does not print well on a FDM Printer.

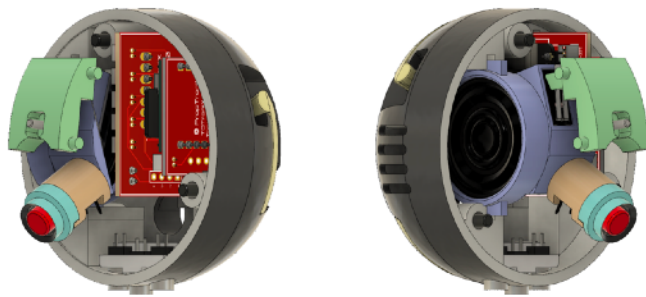
6. Hardware Components

Name & Type	Length	Quantity	Location
M2 Button Head	8mm	1	Inner Slide to Top Slide
M3 Flat Head	25mm	3	Bottom Dome Retainer Clips

7. Assembly Guide

7.1. Internal Parts

	<p>Insert the Speaker and Lever Switch into the "Speaker & Switch Holder". No need to glue they should push-fit. Set aside for later</p> <p>Electronics: 28mm Flat Speaker Mini Lever Switch</p>
	<p>Put the 6mm Tactile Switch into the "Auxiliary Switch Holder" then glue the "Switch Pusher" onto the button of the switch. Place the Red LED Lens inside "LED Lens Holder" and push in the 5mm Red LED. Snap-fit the two part together. Set aside for later</p> <p>Electronics: 6mm Tactile Switch 5mm Red LED 5mm Red Flat Top LED Lens</p>
	<p>Push the three 2mm Tower LED's into the "Front LED Holder" then push-fit the "Front LED Shrouds" onto the front of the "Front LED Holder". Set aside for later</p> <p>Electronics: 3 x 2mm Yellow Tower LED's</p>
	<p>Place a 2mm x 8mm Screw into the hole in the "Inner Slide". Set aside for later</p> <p>Hardware: 1 x M2 x 8mm Screw</p>
	<p>Position the three "Bottom Dome Retainer Clips" into the recesses of the "Middle Ring - Electronics Holder" and slide in a M3 x 25mm Flat Head Screw through the holes in both parts</p> <p>Hardware: 3 x M3 x 25mm Flat Head Screws</p>
	<p>Place the "Seeeduino and DFPlayer PCB's" into position as shown in the "Middle Ring - Electronics Holder"</p>

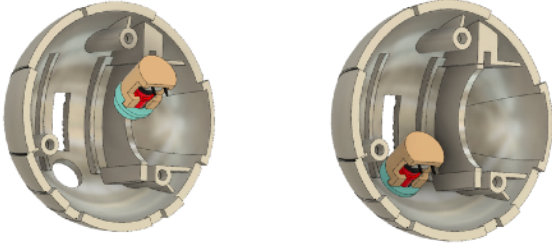



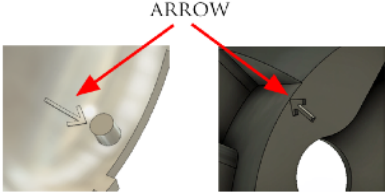
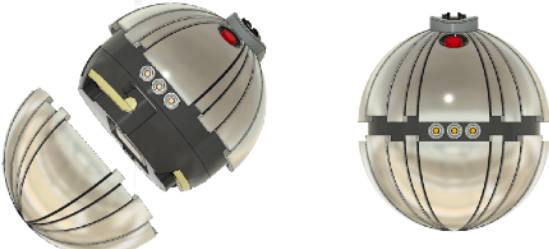


You can slide in the “Speaker & Switch Holder” into the “Middle Ring - Electronics Holder” The other two completed parts “Inner Slide” and “Auxiliary Switch” will be fitted into the “Dome Top” Inner parts completed

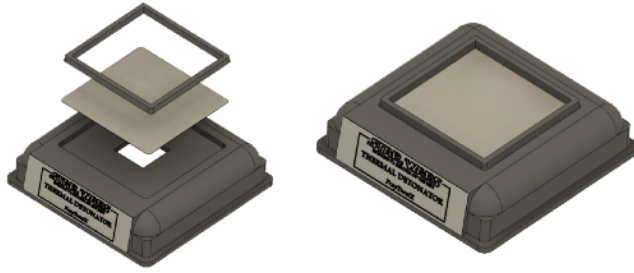
Electronics:

1 x 1S 3.7V 220mAh LiPo Battery 35C (Fits in the bottom of the “Middle Ring - Electronics Holder”

7.2. External Parts

	<p>Push the completed "Auxiliary Switch Assembly" into the hole in the "Dome Top" from the inside</p>
	<p>Push or glue the "Top Slide Tracks" into the "Top Slide"</p>
	<p>Position the "Top Slide" on the outside of the "Dome Top" with the rounded part facing towards the hole. then place the "Inner Slide" onto the "Top Slide" from inside and secure with the M2 x 8mm Screw (Not to tight)</p>
	<p>Align the "Dome Top" on to the "Middle Ring - Electronics Holder" making sure the holes are aligned then secure the two parts together with the three M3 x 25mm Flat Screws</p>
 <p>DOME BOTTOM ELECTRONICS HOLDER</p>	<p>Now take the "Dome Bottom" and align the arrow with the Arrow on "Middle Ring - Electronics Holder"</p>
	<p>Push the "Dome Bottom" up as far as it will go and twist to secure in place</p> <p>Class-A Thermal Detonator Complete</p>

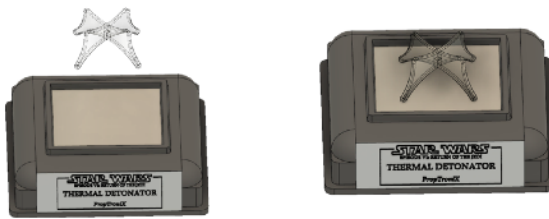
7.3. Display Stand



Place a piece of mirrored card (cut to size) in the middle of the "Display Stand Base" and secure in place with the "Mirror Surround"



Print the two "Thermal Detonator Supports" in clear and slide them together


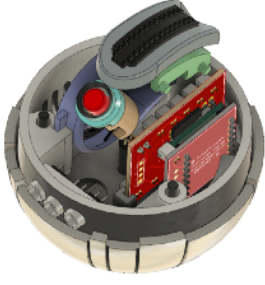
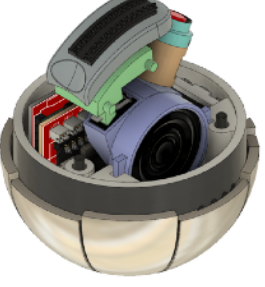



Place the completed "Thermal Detonator Support" in the middle of the "Display Stand Base"



Finally place your completed "Class-A Thermal Detonator" on the the "Display Stand:"

8. Completed Images

 <p>View Larger Image</p>	Class-A Thermal Detonator Complete
 <p>View Larger Image</p>	Inside View Left
 <p>View Larger Image</p>	Inside View Right
 <p>View Larger Image</p>	Dome Bottom Removed

9. Purchase the Electronics Kit

The Electronics Kit for the Class-A Thermal Detonator is available at PropTroniX.co.uk

Other Electronics Kits are available along with 3D STL Models and Electronics Components for your Prop Builds.