



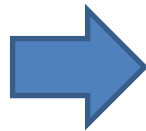
# Multitronix Pyro Board Upgrade Instructions



FRONT

BACK

Kate 2.0 Transmitter  
Starting Configuration



FRONT

BACK

Kate 2.0 Transmitter + Pyro Board  
Ending Configuration

## Pyro Board Upgrade Instructions

This document outlines the procedure that should be followed in order to upgrade a Kate 2.0 transmitter by adding an optional Pyro board. The Pyro board is used for firing pyrotechnic charges for staging and deployment events. The starting point is an Mx150 Option-10 Kate 2.0 Transmitter that is configured as a tracker only. An Mx152 Option-20 Conversion Kit includes a Pyro board and all the extra hardware needed to perform the upgrade.

The user must supply a battery to power the Pyro board. The battery can be a 9V alkaline or a 2S LiPo battery. Do NOT use a 1S or a 3S LiPo for the Pyro board battery! Contact Multitronix if you have any questions about the battery requirements. Email: [info@multitronix.com](mailto:info@multitronix.com) for more information.

## Revision History

Rev	Date	Description
1.0	Dec. 15, 2019	Initial Release

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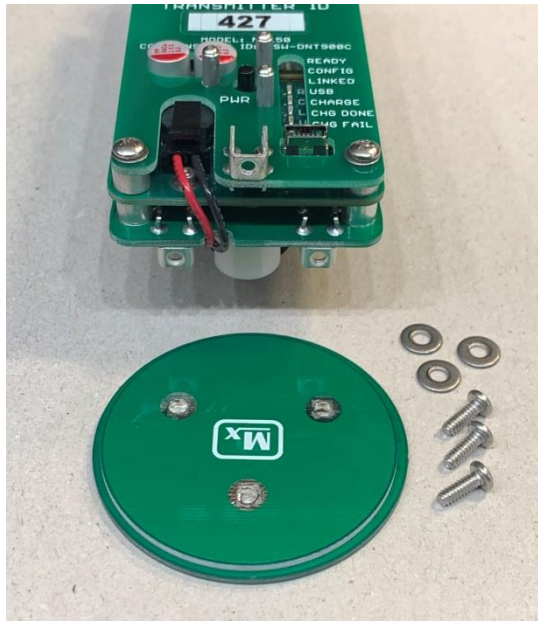
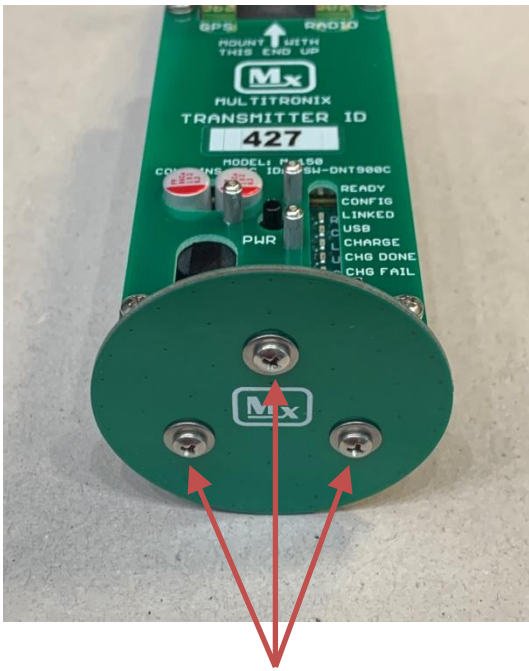
## WARNING

When a Kate 2.0 transmitter is dismantled there are a lot more electronic components exposed to the user than when it is full assembled. These components are very sensitive and are susceptible to damage by static electricity. This includes static discharges that are low enough in voltage that a human will not even feel anything when it happens!

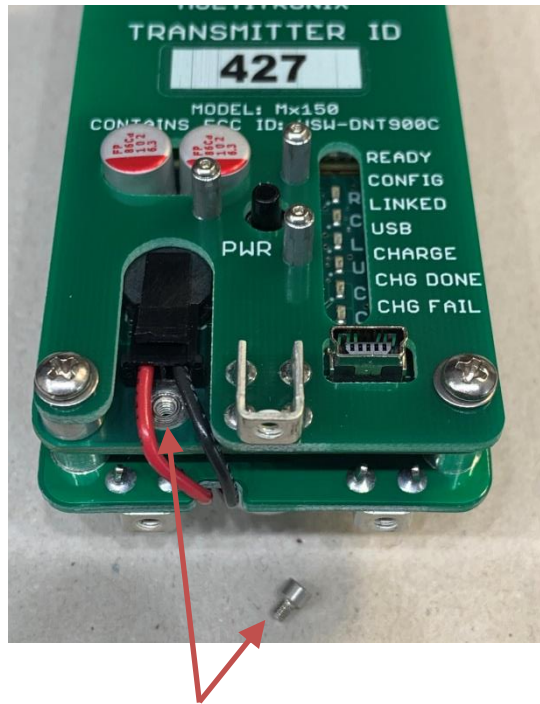
**Be careful handling the transmitter and the Pyro board! Only handle them by the edges. Avoid touching the electronic components on the circuit boards.**

Do not use a plastic table top as a work surface for performing the upgrade procedure outlined in this document. Almost all plastics generate and retain electrostatic charges. Especially, in low humidity environments. A wood table top is a better alternative.

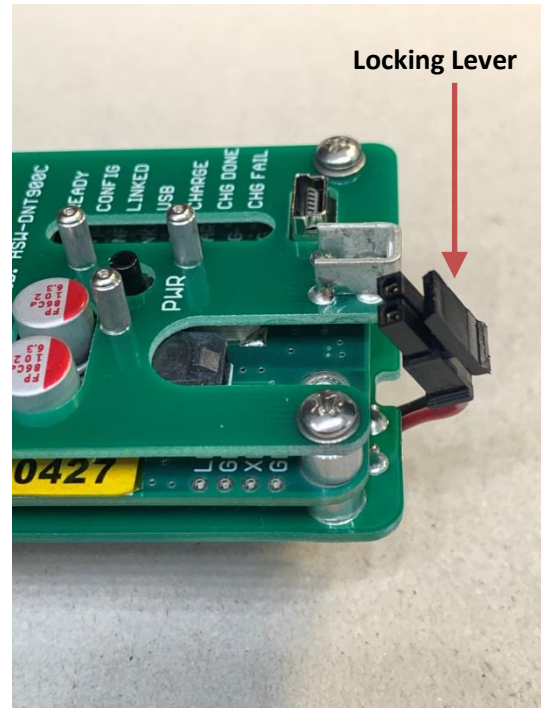
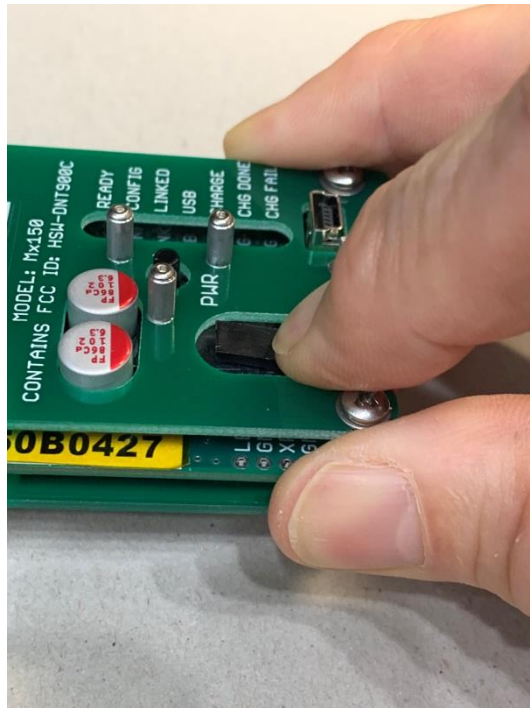
Also avoid working in an area with carpet. Carpets are notorious as generators of static electricity!



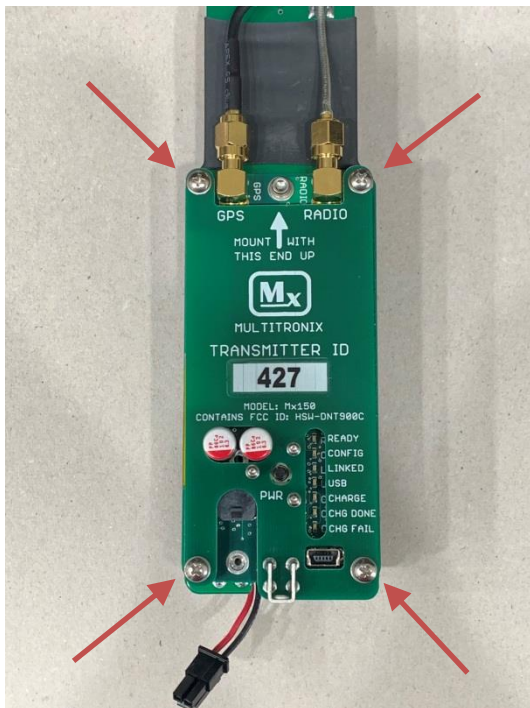
**Step 1:** Remove aft thrust plate by removing three screws. Set aside the thrust plate and screws. They are not needed for the pyro board outrigger configuration.



**Step 2:** Remove the small screw that prevents the battery connector from backing out. Use 5/64" Allen wrench. Save the small screw. It will be needed later.

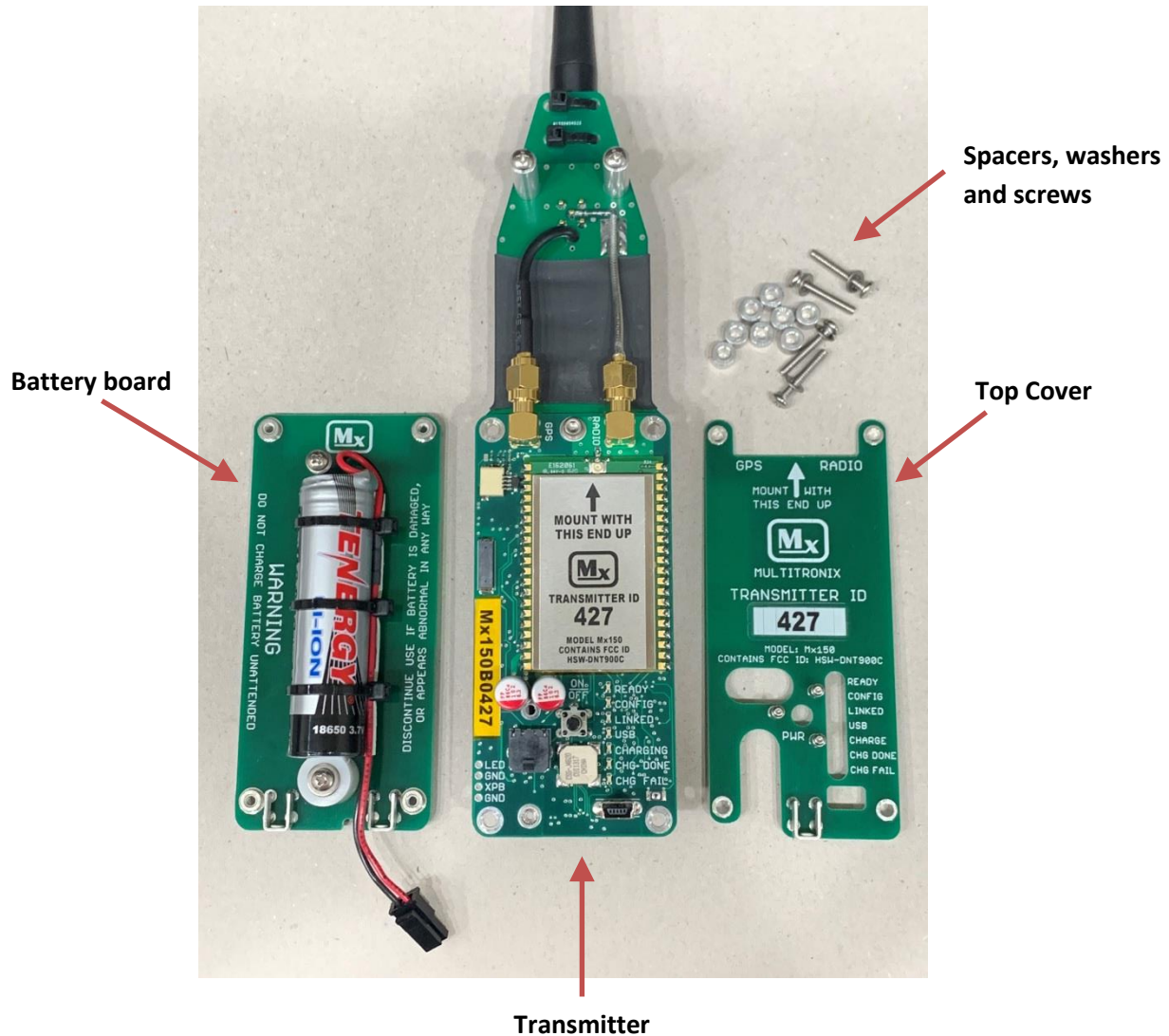


**Step 3:** Depress locking lever on battery connector and disconnect it.



**Step 4:** Use Phillips head screw driver to remove four screws that hold the stack together.

**Step 5:** Unstack all the circuit boards. Collect together all 8 spacers, 4 washers and 4 mounting screws. Save them along with the top cover and battery board in case you ever want to re-assemble the transmitter as just a tracker without a pyro board attached.

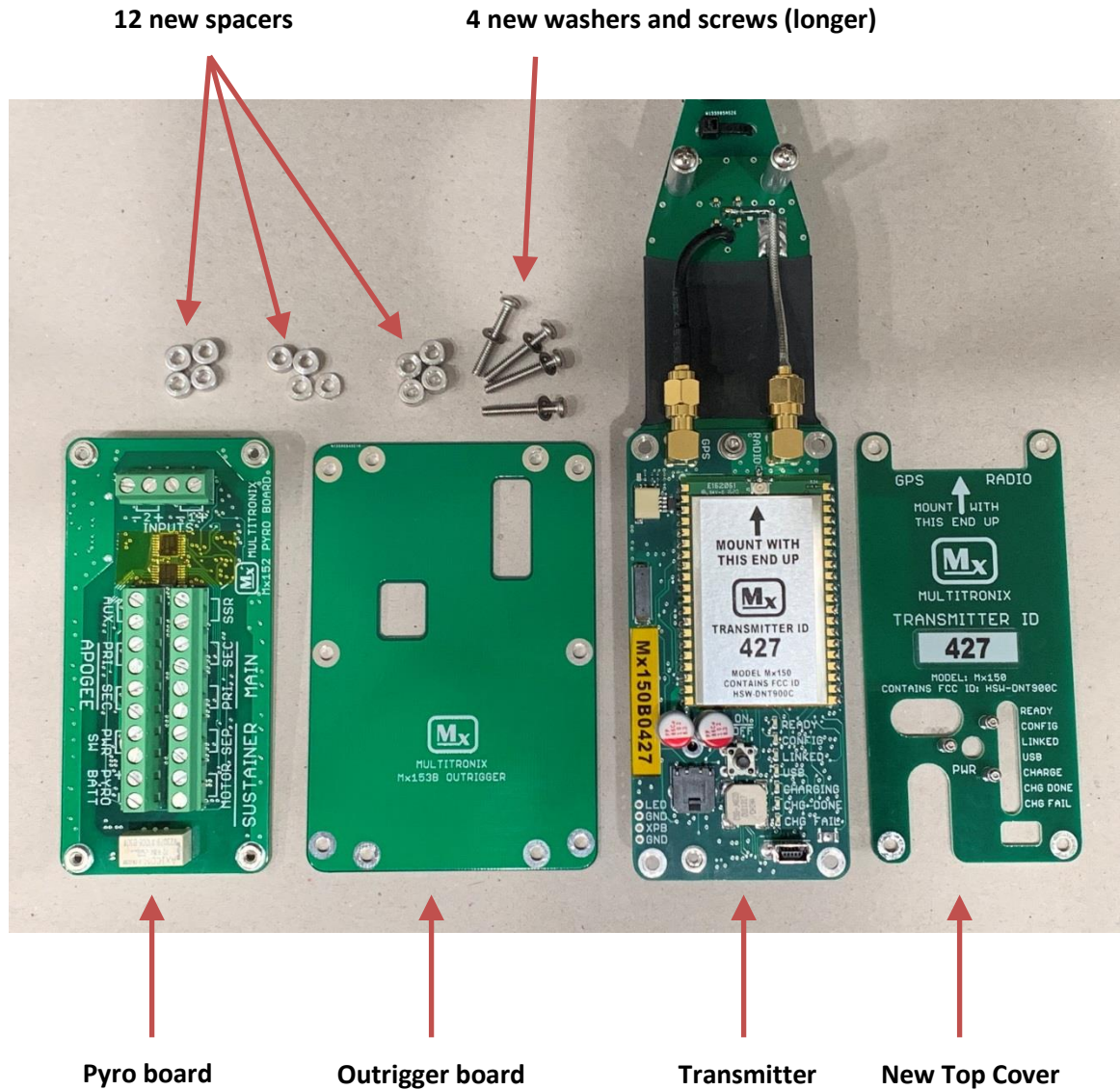


## WARNING

Be careful handling the transmitter! It can be damaged by static electricity. Only handle it by the edges. Avoid touching the electronic components on the circuit board.

**Step 6:** Carefully remove the Pyro Board from its antistatic bag. Be careful handling it. It can be damaged by static electricity. Only handle it by the edges. Avoid touching the electronic components.

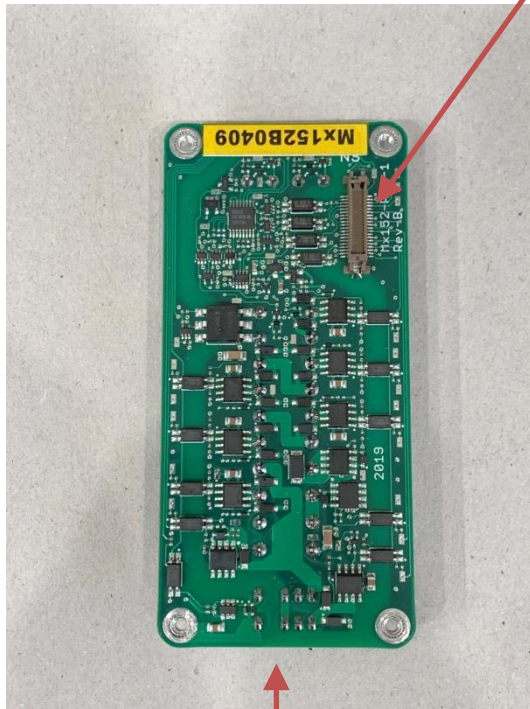
**Step 7:** Layout all the new parts needed for the pyro board configuration.



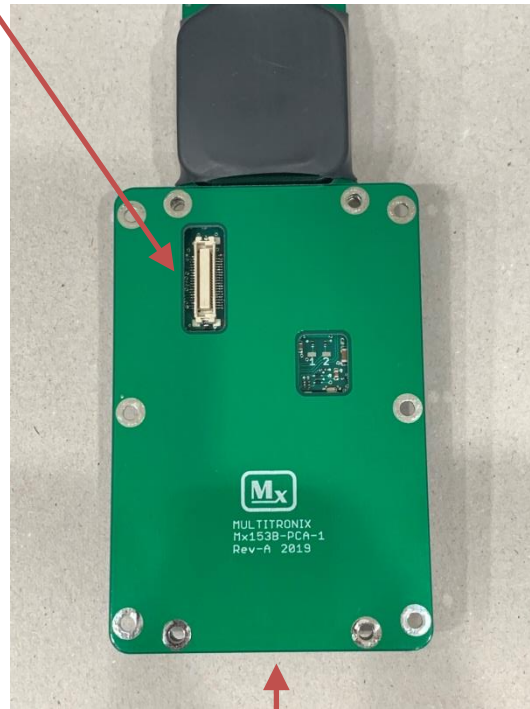
## WARNING

Be careful handling the transmitter and pyro board! They can be damaged by static electricity. Only handle them by their edges. Avoid touching the electronic components.

**These two connectors must be mated together when the boards are stacked.**



**Back side of Pyro Board**



**Outrigger placed over back side of Transmitter**

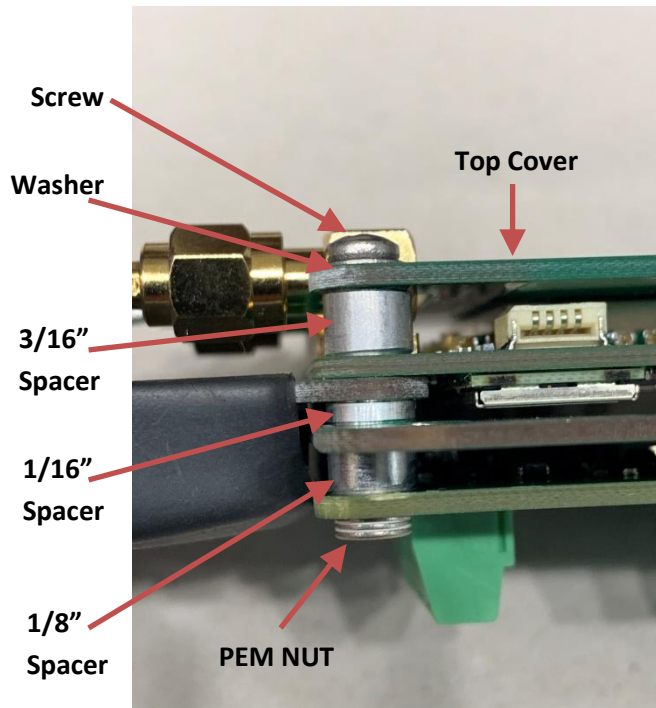
**Step 8:** Place the outrigger board over the back side of the transmitter such that the white connector on the transmitter is positioned into the rectangular opening on the outrigger board. See right hand image above.

**Step 9:** Mate the brown connector on the back side of the pyro board with the white connector on the transmitter board. The outrigger board will be sandwiched between them. Gently push the boards together to mate the two connectors. Handle the assembly with extra care until all the mounting screws are installed.

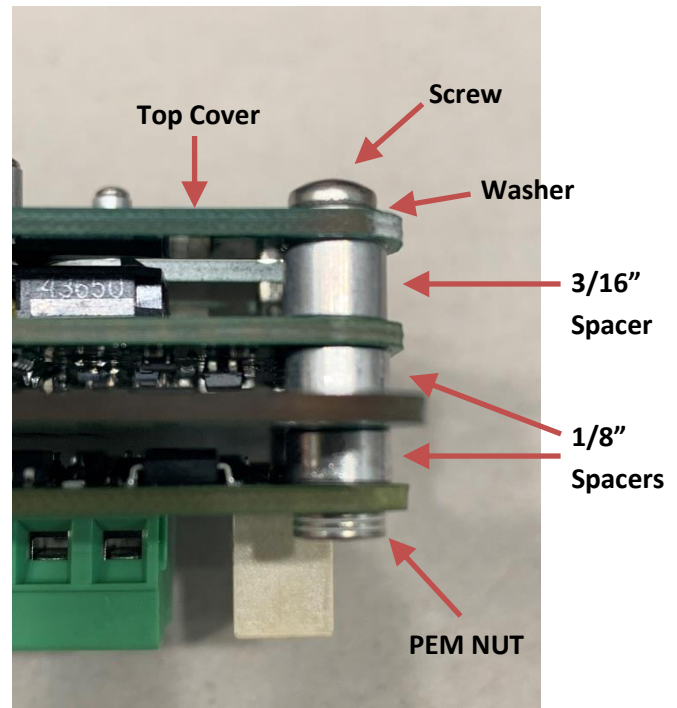
**Step 10:** Set the assembly down on your work surface with the pyro board on the bottom and the transmitter on the top. Place the new top cover in the correct orientation on top of the transmitter.



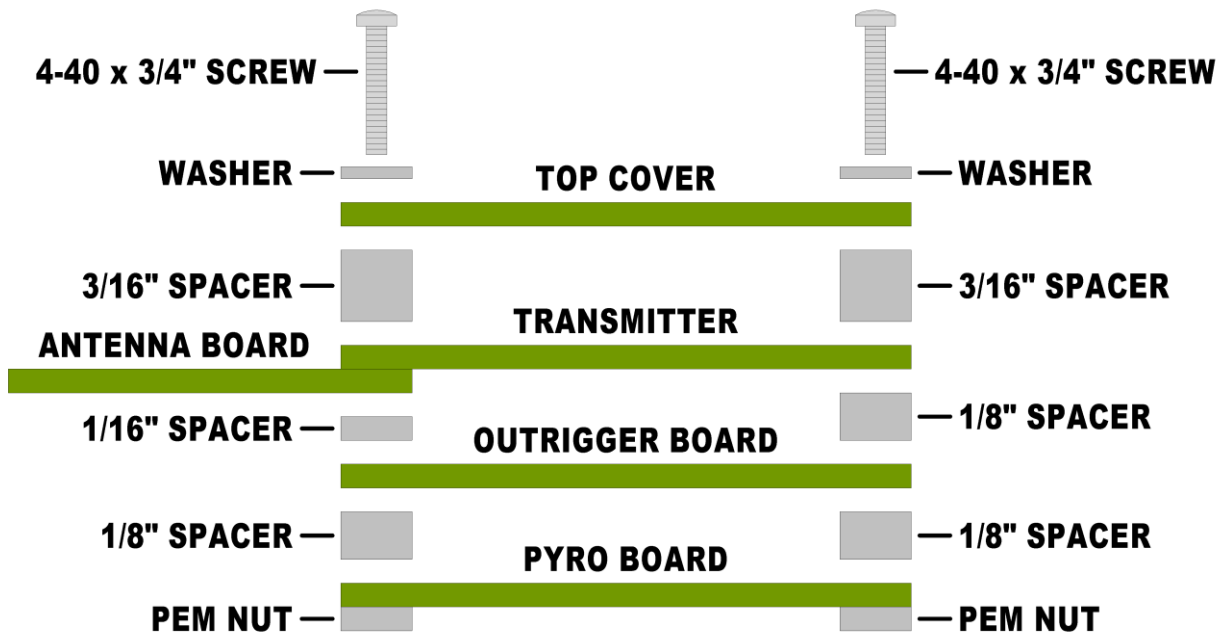
**Step 11:** Install the spacers, washers and mounting screws as per the photos and diagram below. Do one corner at a time paying special attention to get the correct size spacer in the correct location. Do not fully tighten the screws until all four are installed.



**Forward End**



**Aft End**

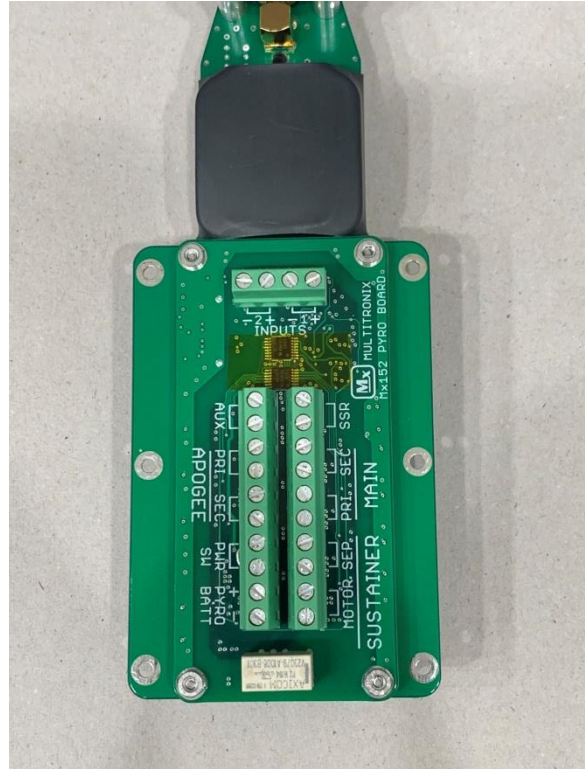


**SPACER STACKING ORDER**

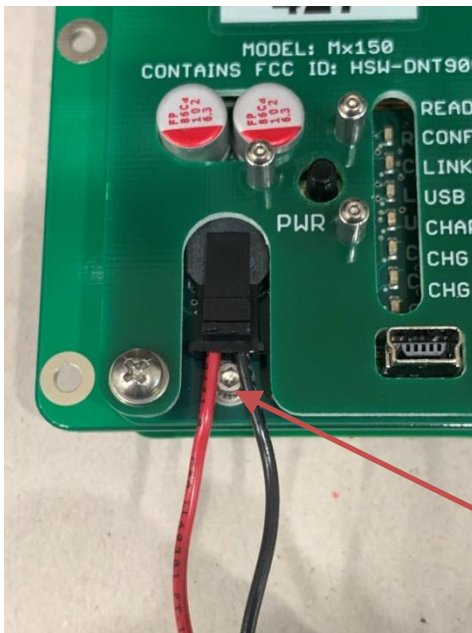
## Pyro Board assembly is now complete!



**Top Side**



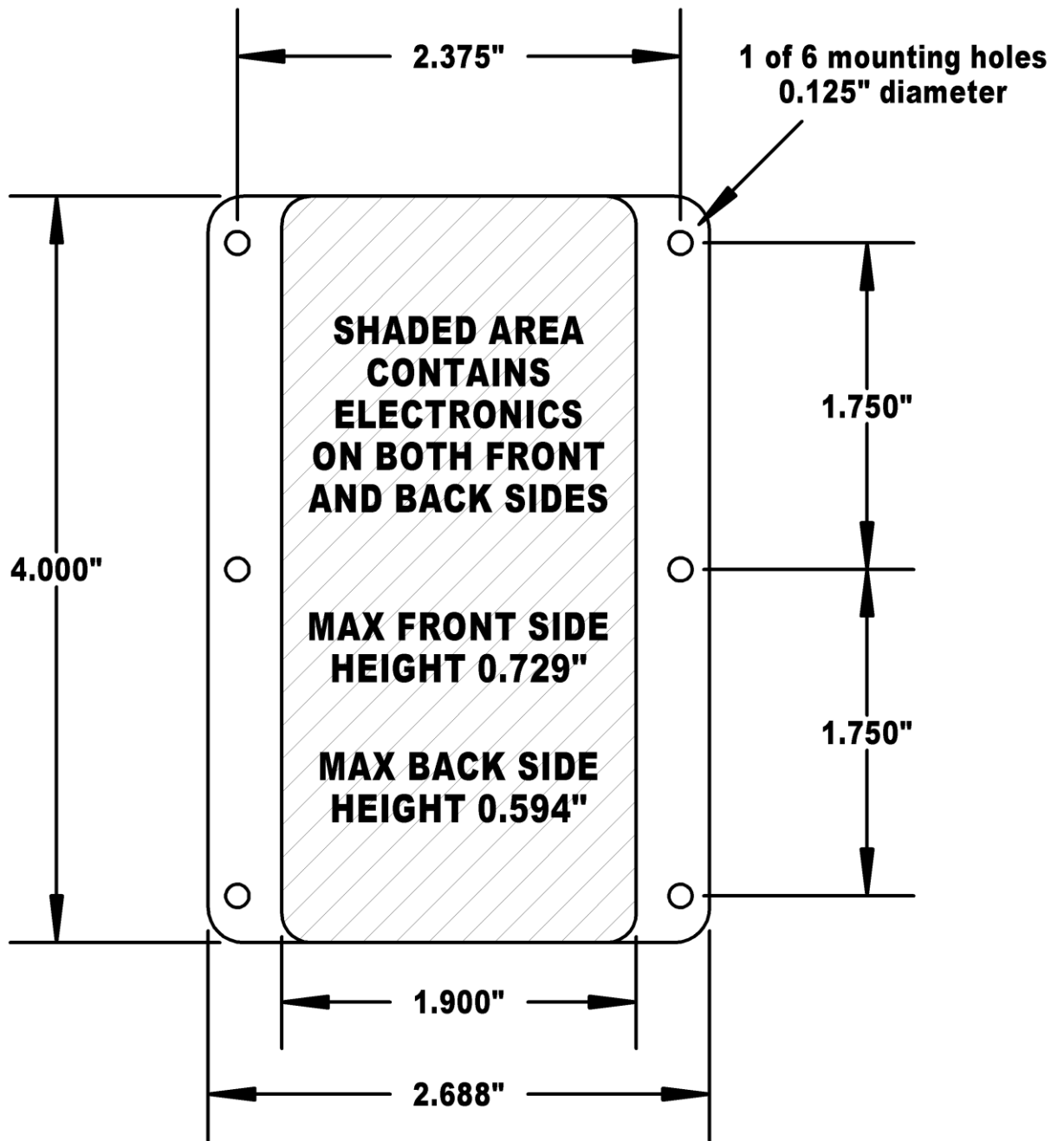
**Bottom Side**



The transmitter and pyro board assembly is now ready to be mounted in your rocket. Use the six mounting holes on the outrigger board.

You will also need to mount the system battery and connect it to the transmitter board. When you connect it, be sure to install the small retaining screw. The screw will prevent the connector from disconnecting due to a high G acceleration.

**Battery connector retaining screw**



## Mounting Hole Locations