

# PARTS IS PARTS: FingerTech Robotics tinyMixer

Product  
Review

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**F**ingerTech Robotics has recently developed and produced a new channel mixer for use on robots in all weight classes. The tinyMixer weighs in at only 2 g and the main body has a footprint of 8.9 mm x 6.3 mm x 22 mm. It retails for \$19.05CAD.

In the **photo**, the tinyMixer is shown with a tinyESC and a quarter. A mixer is a small device that can be placed inside your robot to allow you to combine two channels on a pistol grip or airplane style transmitter to alter how the controller interacts with your speed controllers.

In the case of a pistol grip style controller, this would allow you to use the throttle for the forward-reverse function on a tank/differential style drive robot and use the steering wheel for turning. Without a mixer, you would have the throttle control one side of the drive system and the wheel control the other side.

For an airplane style transmitter, you would use this to allow one stick to control both sides of the drive with up/down on the stick corresponding to forward/reverse, and left/right turning the robot to the left or right. Some airplane style transmitters can do the mixing on board, which is typically referred to as elevon or V-tail mixing.

Depending on the specific model of transmitter, the mix setting could result in not getting the full throttle travel or the need for several additional layers of settings to get full speed performance. An in-bot mixer provides a simple lightweight way of avoiding those issues.

In addition to the standard mixing functionality, the tinyMixer also has an invert switch which can be plugged into your transmitter to allow you to quickly and easily switch between



normal and inverted driving. For invertible robots, this will make it much easier to drive your robot should it be flipped, as you won't have to deal with remembering that forward and reverse are swapped on an inverted robot.

The tinyMixer also has the option of disabling the mixing while maintaining the invert switch functionality, and autocalibrates its output to maximum transmitter input travel.

The market for mixers is fairly shallow right now with the primary competitors being the IMX1 from Robot Logic, the Digimix 3, and something in the range of half a dozen variants on the same basic cheaper imported mixer.

The IMX1 provides mixing, an invert switch, and the option to bypass the mixing feature, while retaining invert functionality. The IMX1 is priced at \$39.99US and uses a much larger board. So, while it has many of the same capabilities, those features come at a higher price with a larger footprint.

The Digimix 3 replaces the

Digimix 2 which was similar in size to the tinyMixer but lacked the invert switch. The Digimix 3 is a new version of the mixer that adds an invert switch. Weighing 25 g and costing \$49.99US, the Digimix 3 is the most expensive option without gaining any real functionality. While smaller than the IMX1, the Digimix 3 takes up about three times as much space as the tinyMixer.

The cheaper imported mixers are all fairly similar and typically only offer mixing functionality. These low cost mixers also frequently have issues with failsafe behavior in robotic applications without an obvious way to determine if it will or won't have the issue. They're small, cheap, and generally will work, but most combat events will require some failsafe functionality which will mean they aren't appropriate for a fighting robot.

The tinyMixer is a great option if you're in a situation where you either want or need to use an in-robot mixing device. The low cost, light weight, and small size mean it will be an easy option for an extremely wide range of designs. **SV**