IMX-1 Mixer

Status LED

RC Inputs

The IMX-1 mixer allows single-stick driving for tank drive style robots. One unique feature is the third input channel which is used to select **inverted driving**. The IMX-1 acts as a **failsafe**. It will shut off all outputs whenever no signal or an invalid RC signal is detected. Operation will resume immediately when a valid signal is re-detected. The IMX-1 also acts as a **signal booster**; you can connect up to 2 Victor 833 speed controllers to each output.
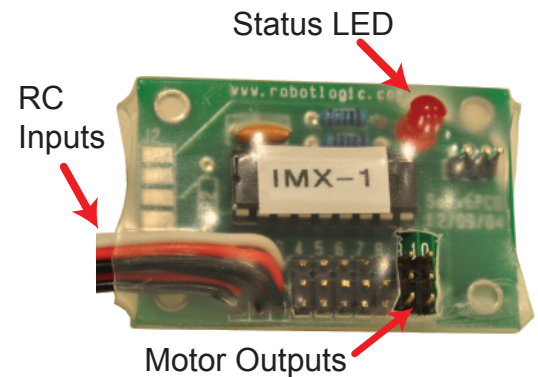
Motor Outputs

Improved Mixing

Our mixing algorithm was specifically designed for combat robots. Unlike our mixer, some RC transmitters and mixers use a simple "add and clamp" algorithm. Their "simple" algorithm causes your motor outputs to clamp to their maximum everywhere outside an inscribed diamond in your joystick's range of motion. Our algorithm gives you smooth proportional control all the way to the corners of your stick's travel.

Connections

Connect the servo cables to your RC reciever. The first input is the one closest to the left side of the mixer.

Input 1	Strafe (Left Right translation)
Input 2	Drive (Fwd-Reverse translation)
Input 3	Invert
Output 9	Left Motors
Output 10	Right Motors

RC Reciever → IMX-1 9 10 → Left ESCs → Right ESCs
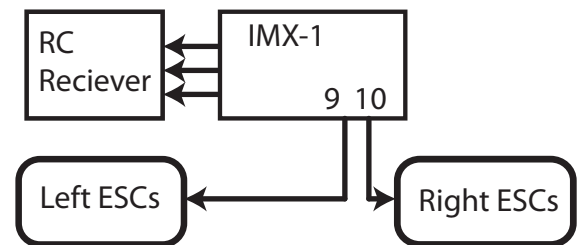
(Optional) Transmitter Trim Calibration

If your transmitter is not trimmed properly, your robot may drift when the invert feature is used.   If the IMX-1 detects a signal only on Input 1, it goes into "trim calibration" mode. In this mode, the LED will light up when your transmitter is sending a perfect center pulse. So, one at a time, plug the IMX-1's Input 1 into your RC channels for driving and turning and trim them until the LED lights up.

Testing

Once you have connected everything, put your robot on blocks so that its wheels do not touch the ground to do your initial drive testing. Start with a forward command, if any of your wheels are rotating in the wrong direction, you may need to flip the polarity of those motors. Next test turning left and right. Once these functions are working you can test the invert feature. When the invert channel is at one extreme, the mixer will behave normally. When it is at the opposite extreme, the forward-back control will be inverted. Note that invert can be used to drive a robot in reverse or to drive it when it has been flipped upside down!

LED Status

Off	No Power
On Solid	Valid Signal
Fast Blink	Valid Signal - Invert
Slow Blink	Invalid Signal

LEGAL DISCLAIMER: