# **FORT** Robotics

# Greenzie Puts Safety First in Autonomous Mower Application

FORT Remote Control Ensures Safer Mowing



Atlanta-based startup Greenzie is on a mission to free humans from repetitive outdoor labor with the power of autonomous mowers. Their software and retrofit kits transform existing zero-turn commercial mowers into self-driving machines. Not only do these mowers help alleviate the strain of the labor shortage in landscaping, they reduce cost, increase productivity, and automate tedious work.

#### THE CHALLENGE Remote Operation, Safe Enough for Dangerous Machines

In developing robotic software for mowers, the Greenzie team took a safety-focused approach. Several factors can make commercial mowers very dangerous: the heavy vehicles have sharp blades, are prone to rollovers, and can cause burns, eye injuries, and other accidents.

Greenzie knew from day one that to automate these machines, safety must be their top priority. In fact, "Safety first" is the company's first core value, and the guiding principle in their development. "There's no way the Greenzie team could build a solution for autonomous commercial mowers and not think about safety first," said Charles Quinn, Greenzie Co-Founder and CEO. Greenzie wanted to incorporate remote control into their mowers. In order to stay laser-focused on their autonomous software, they looked for a third party solution that would meet their needs. The right remote needed to be rugged for outdoor use, have a long range, a fast reaction time, and be easy for their customers to use and understand. Most importantly, however, it had to be safe.

The company developed a variety of safety and sensing measures in their AI software, but they needed an additional fail-safe solution that could be controlled by the user on site. They wanted to provide their customers with an extra layer of protection and peace of mind, knowing that they could always stop the machine from their remote control in the event of an emergency.



"FORT was the obvious choice when the Greenzie team was looking for safety controllers that exceed industry standards"

- Charles Quinn Greenzie Co-Founder & CEO



## THE SOLUTION A Remote Control that Puts Safety First

The search for a safety-critical remote control led Greenzie to FORT. The FORT remote control with integrated emergency stop is designed specifically for safety and control for dangerous machines.

The FORT solution solved for Greenzie's requirements by delivering:

- Maximum reliability with built-in redundancy and signal monitoring
- · Low latency to ensure instant emergency stopping
- Long-range wireless communications to accommodate large commercial fields
- A rugged controller with a user-friendly design for easy operation
- Built-in encryption for security
- Ease of integration with their software

### RESULTS More Mowing, More Peace of Mind

Greenzie now provides customers with a full kit that includes an outdoor robotic software stack and the hardware they need to create a safe autonomous mowing operation. FORT's remote control is an integral part of the system. It allows users to maneuver the mower to and from the jobsite, where they can set the autonomous mower to "cut the middle" of a lawn while they are edging, weeding, and trimming. Users gain peace of mind knowing that they can always stop the machine from the remote if needed. Most customers will never have to use the e-stop button, but with machines this powerful, it's important to have the ability to stay in control.

The productivity gains for Greenzie customers are huge. Autonomous mowing empowers them to:

- Overcome labor shortages
- Multiply output
- Grow market share
- Save money

The pairing of Greenzie's autonomous mowers and FORT's safety technology has proved to be a successful one, and demand for Greenzie's offerings continues to grow. The company recently raised \$1.5 million to build a fleet of 20, along with the software, hardware, and processes to ensure safe, beautiful lawn maintenance under robotic autonomous operation.



