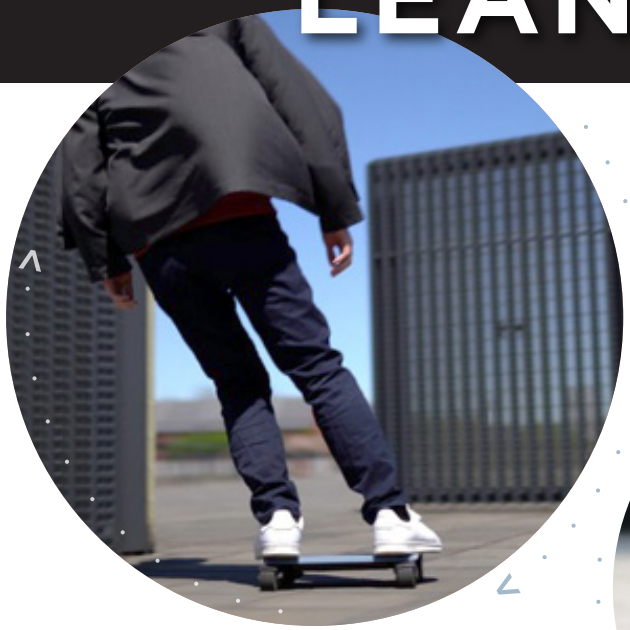
INTERLINK ELECTRONICS | ie SENSORS

CASE STUDY

Interlink Electronics & Personal Transportation

LEAN MACHINE



BACKGROUND

Cocoa Motors is a Japanese startup revolutionizing the personal transportation market with its compact, lightweight WALKCAR—a laptop-sized, battery-powered vehicle. The device is controlled by leaning, so Cocoa needed a pressure sensing solution to detect subtle shifts in the rider's posture.

CHALLENGES

Cocoa needed a pressure sensing solution sensitive enough to track minor shifts in its rider's weight distribution. However, the solution also had to be compact to fit within the slim form factor of the WALKCAR while standing up to harsh usage conditions.

EXECUTIVE SUMMARY

- Cocoa Motors needed a slimline sensing solution that could stand up to harsh environments.
- After exploring a strain gauge solution, the company turned to Interlink Electronics FSRs.
- Interlink's engineers worked directly with Cocoa to develop a custom solution and assist with design issues as they came up.
- The final solution uses four custom FSR 408 sensing strips and will be included in the WALKCAR production model.

PROCESS > SOLUTION > RESULTS

Cocoa Motors' WALKCAR is a novel personal transportation device that allows riders to freely and easily navigate urban environments on an electric vehicle the size of a laptop. When Cocoa was first searching for a force sensing solution, it tested a strain gauge sensor for the application, but it turned out to be bulky and couldn't stand up to the harsh environments in which the WALKCAR was intended to perform.

The company eventually turned to Force Sensing Resistor (FSR) technology, and built a prototype using multiple Interlink FSR 408 sensing strips. This implementation turned out to be sensitive enough to detect shifts in the rider's weight and thin enough to be integrated within the vehicle's slimline frame. The successful application initiated an early dialog between Cocoa Motors' development and the Interlink's engineers to create custom sensors that solved various integration problems. For instance, upon Interlink's advice, the final solution used a custom interconnect method that resulted in a higher-quality product.

The final application consists of four custom sensing strips paired with Cocoa's proprietary technology. Satisfying all of Cocoa's requirements, the solution will appear in the production version of the WALKCAR when it launches in summer of 2021.

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Interlink Electronics, Inc. United States Corporate Office: 1 Jenner, Suite 200 | Irvine, CA 92618, USA

Toll Free: +1.866.764.8965 | Phone: +1.805.484.8855 | Fax: +1.805.530.5598

Sales & Support: sales@iefsr.com | Visit us at InterlinkElectronics.com