Designed for durability.

Based on an interview between Sustainable Engineering's Max Barrett and Review Display Systems' marketing manager, Daniel Burke, this article explores how the RTC-1010 industrial tablet's durable design contributes to sustainability in various industrial settings.

At first glance, the RTC-1010 appears to be a standard industrial tablet. However, its design tells a deeper story about resilience and innovation. With its IP65-certified enclosure, the RTC-1010 is dust-tight and water-resistant, capable of withstanding harsh conditions. It adheres to MIL-STD-810G standards for vibration resistance and drop protection, allowing it to survive falls from up to 122 cm. Likewise, its operating temperature range of -20 to 50°C adds to its capabilities in extreme environments, from factory floor to military manoeuvres.

Review Display Systems' marketing manager, Daniel Burke, explained: "Sustainability in industrial technology isn't just about using fewer resources. It's about creating products that last, are modular and contribute to a circular economy. The RTC-1010 is a great example of that ethos.

"Durability is key. By designing a tablet that lasts significantly longer, we help reduce the need for frequent replacements. That's less waste in landfills and fewer resources consumed in manufacturing. It's about creating tools that outlive trends and handle abuse in tough environments."

Longevity is critical in addressing one of the greatest challenges in modern technology: electronic waste. With rapid turnover of electronic devices, many products end up in landfills far too soon. The RTC-1010

combats this trend with its rugged construction and robust engineering, ensuring it can be relied on for many years.

Modularity for longevity

A standout feature of the RTC-1010 is its hot-swappable battery system. Unlike devices that are rendered useless when the battery fails, the RTC-1010 lets users replace batteries without powering down the device. This system includes a primary 32.7 W battery and an internal 11.3W backup battery, ensuring uninterrupted operation even during replacements.

Burke highlighted how this modularity supports sustainability: “Modular designs are critical. They allow components to be replaced, repaired or upgraded, extending the product’s life and minimising electronic waste. This is especially important in industrial settings where downtime is costly.”

Modularity extends beyond the battery. With customisable options for storage, connectivity, and functionality, the RTC-1010 is designed to adapt to changing needs. Engineers can upgrade storage with up to 512GB via mSATA or add features like barcode scanners, smart card readers or NFC modules, tailoring the tablet to specific applications. This adaptability not only maximises the device’s value but also reduces the likelihood of obsolescence.

Energy efficiency

In industrial settings, energy efficiency is paramount—not just for cost savings but also for reducing environmental impact. The RTC-1010 is powered by Intel Celeron N3350 or **Pentium N4200 processors**, which are designed to balance performance with power consumption.

Another sustainability attribute of the RTC-1010 is its ability to integrate multiple functions into a single device. It combines tools such as NFC and smart card readers, barcode scanners and advanced connectivity options. This integration eliminates the need for additional equipment, reducing material use and streamlining workflows.

Burke said: “By reducing the number of devices required, we’re not only saving resources but also simplifying operations for our users. It’s a win-win for sustainability and productivity.”

Customisation for diverse applications

The versatility of the device means it can be configured to meet the needs of industries from logistics to factory automation. Engineers can program the tablet’s customisable buttons to perform specific functions, making it an ideal tool for mobile human-machine interface (HMI) applications. One notable feature is the optional ultra-bright screen, capable of reaching up to 1,000 nits. This ensures visibility in outdoor environments, making the unit suitable for industries like agriculture, construction and utilities.

Burke continued: “The ability to customise the tablet for different environments and applications is one of its biggest strengths. It’s not a one-size-fits-all solution. Engineers can tailor it to their workflow, which enhances both its value and sustainability.”

Practical applications

The RTC-1010’s combination of ruggedness, efficiency and customisability makes it a valuable tool in industries seeking to reduce their environmental impact:

Factory automation: The tablet’s durability and programmable functions make it a reliable mobile HMI, supporting efficient manufacturing processes.

Logistics and warehousing: Rugged build and lightweight design simplify inventory management while reducing downtime and the need for additional equipment.

Field operations: For professionals working in remote or challenging environments, the RTC-1010 offers portability, weather resistance and energy efficiency.

Engineering for a better future

By prioritizing durability, repairability, energy efficiency and recyclability, this product helps engineers meet their environmental responsibilities without compromising performance.

Burke concluded: “It’s not enough to design for function. We have to design for impact—on the environment, on workflows and on the industries that depend on these tools.”

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The original article can be found here: https://sustainable.engineering/Magazine/sustainable-engineering/january-2025

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