

Connected Paint & Tint Dispensing Controller

Custom Hardware Design

Embedded Linux

Touchscreen GUI

Network Connectivity

Smart Card Integration

CLIENT

An India-based market leader in craftsmen products and industrial specialty chemicals.

THE PROBLEM

The client's paint and tint dispensing machines were mechanically capable but presented to customers through a dated, unfriendly interface — and that interface was the only way to use the machine. There was no option for a customer to place an order online and have it ready, no secure record of what had been dispensed for which customer, and no way for the client to see what was happening across their machines without being physically present.

WHAT WE BUILT

We rebuilt the front end of the machine around a large touchscreen running a full operating system, which gave us the freedom to build a genuinely friendly graphical interface for walk-in customers — selecting paint types, mixing custom colour shades, and confirming quantities, all visually. But the bigger shift was making the machine a connected device: the same touchscreen system runs a parallel web-based interface, so online customers can place the same kind of order remotely. Underneath both interfaces, the controller drives a large number of inputs and outputs across the actual dispensing mechanism — the touchscreen and web layers are how the order gets in, but the controller still has to make the machine physically do it. We added smart card integration so each transaction could be securely logged against a customer record, giving the client a verifiable trail of what was dispensed, when, and for whom.

WHAT IT DOES

- ✓ Provides a large touchscreen interface for walk-in customers to select paint types, mix custom colour shades, and confirm quantities
- ✓ Runs a parallel web-based interface so online customers can place equivalent orders remotely
- ✓ Drives the full dispensing mechanism — a large number of inputs and outputs — from whichever interface the order came through
- ✓ Connects to the internet, giving the client visibility into machine activity without needing to be on-site
- ✓ Uses smart card technology to securely log each transaction against a customer record

OUTCOME

The client's dispensing machines went from a single, dated on-machine interface to a connected system serving both walk-in and online customers through one underlying controller, with a secure transaction record the client didn't have before.