embin

INDUSTRIAL INTERFACES · USA

Graphical Menu Interface for Embedded Displays

Embedded Firmware | Display Driver Development | User Interface Design

CLIENT

A US-based company.

THE PROBLEM

The client's product had a monochrome graphical display but nothing built to actually drive it — no drivers, no interface, nothing. They wanted users to navigate the product's settings the way they'd navigate a familiar desktop menu — nested menus, drop-downs — but using a small set of physical buttons rather than a mouse, on a screen with none of the high-level graphics support a desktop takes for granted.

WHAT WE BUILT

We started at the bottom and built up. The first layer was low-level display drivers capable of drawing to any specific position on the screen — the absolute foundation everything else depends on. On top of that, we added a graphics library that handled higher-level rendering: text and images, rather than individual pixels. With that foundation in place, we built the actual menu system — nested and drop-down menus modelled on the kind of desktop interface users would already find familiar — and wired it up to the product's physical buttons, including a smooth scrolling effect so navigating through a long menu felt natural rather than jumpy.

WHAT IT DOES

- ✓ Custom low-level display drivers capable of precise drawing to any position on the monochrome screen
- ✓ Higher-level graphics library built on top of the drivers for rendering text and images
- ✓ Nested, drop-down menu system modelled on familiar desktop-style navigation
- ✓ Smooth scrolling effect when navigating menus using the product's physical buttons
- ✓ Built the entire interface stack from raw display drivers up to finished menu navigation

OUTCOME

The client's product gained a navigation experience that felt familiar to users from desktop software, running entirely on a simple monochrome display with physical-button input — built from the ground up since nothing existed beforehand to build on.

Embin Technologies Pvt. Ltd.

Unit 507, Sarita B, Prabhat Industrial Complex,
W.E. Highway, Dahisar (E), Mumbai – 400 068, India

www.embin.com
contact@embin.com