



K-12 EDU CONTROLLER DEVELOPMENT

THE CLIENT

The client is a leading US University.

BUSINESS NEED

The client envisaged to develop a K-12 EDU controller intended for use in classrooms. It allows teachers and students to control multiple audio and visual devices such as projectors, DVD players and audio amplifiers easily using the keypad on the controller.

In the development of the K-12 EDU hardware, firmware & configuration software, following challenges were faced:

- ⦿ Supporting multiple operation modes like serial, IR, etc.
- ⦿ Support for adding new IR devices without any hardware change
- ⦿ Provide support for as many as 120-130 types of devices from various makes across the US market
- ⦿ Support for 9 pre-programmed scenarios with specific devices
- ⦿ On filed and web based firmware upgrade

TECHNOLOGY USED

- ⦿ **Hardware:** 16 bit micro-controller, USB, Rs232, IR and IR learning, RTC, Silicone keypad interface
- ⦿ **Software:** Controller firmware, GUI on Windows XP and Vista, IR learning, USB Device control, RS232 protocol, RTC

BUSINESS BENEFITS

- ⦿ Multi-operation modes
- ⦿ High flexibility

SOLUTION DELIVERED

The K-12 EDU controller is designed around Renesas H8 Series 16 bit micro-controller HD64F2211UNP with features such as:

- ⦿ HD64F2211UNP running at 24 MHZ
- ⦿ 64K E(2) PROM for storing configuration data
- ⦿ USB Device interface
- ⦿ Serial interface
- ⦿ RTC with day light saving
- ⦿ Dual IR interface for connecting IR devices
- ⦿ IR learning interface
- ⦿ 8 button silicone key interface
- ⦿ RJ45 interface for connecting power & interface signals to a Custom adapter
- ⦿ Web-based GUI for configuring the K-12 EDU Controller
- ⦿ Web download of Firmware



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www.altencalsoftlabs.com

business@altencalsoftlabs.com