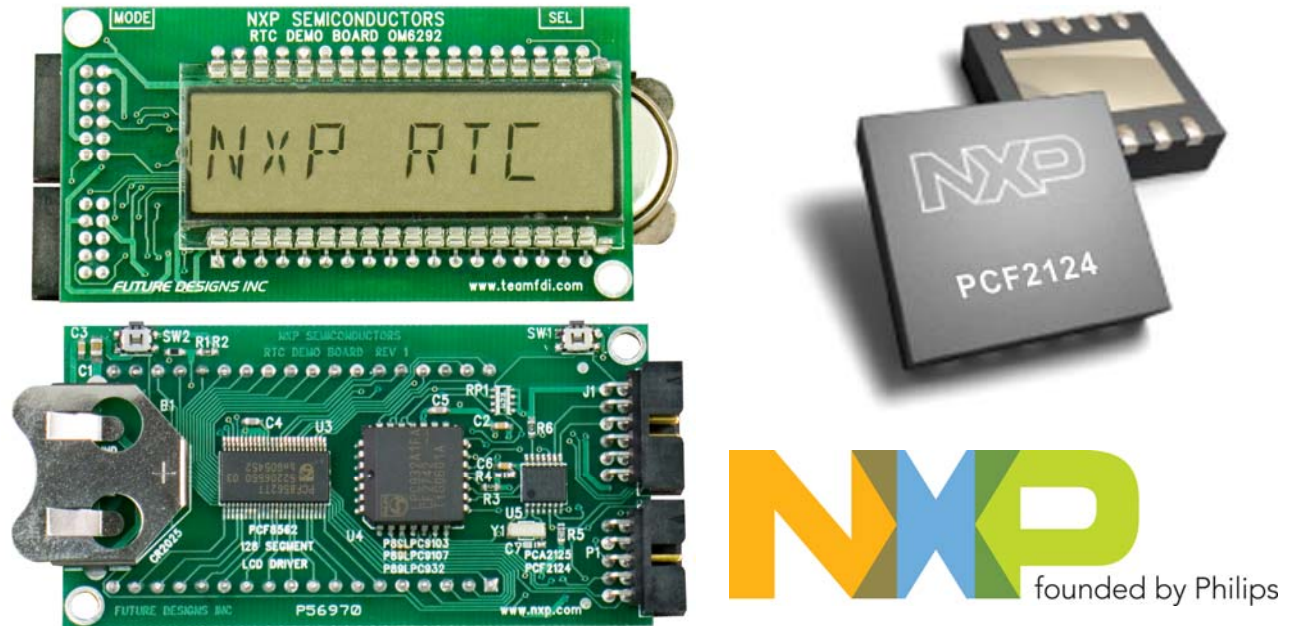


# RTC Demo



## Highlights

- Low power, SPI based Real Time Clock driven by a 32.768 KHz quartz crystal
- Flexible PCB layout supports two RTC package options
  - 14-pin TSSOP for PCF2125
  - 10-pin HVSON for PCA2124
- Powered by a single 3V coin cell battery
- 8-character alphanumeric LCD
- I2C based LCD driver with 128 segment support
- Two miniature push-buttons for user control; additional User Interface via header
- User reprogrammable via 10-pin ICP header

The NXP RTC Demo is a reference design for a low power Real Time Clock and LCD solution. The Demo Board is controlled by a simple two-button user interface (MODE and SELECT). Example code for several sample applications: a programmable time and date display, a programmable countdown timer, and a repeating pattern of text lines, can all be found on the website at [www.teamFDI.com/RTCDemo](http://www.teamFDI.com/RTCDemo). The user can edit this code and download to the reprogrammable Flash microcontroller via a 10-pin header included on the board using any external ICP style programmer.

A small USB based ICP programmer that allows ICP programming of the P89LPC932A1 and many other NXP microcontrollers from any PC is available from Future Designs, Inc. Details can be found at [www.teamfdi.com/USB-ICP](http://www.teamfdi.com/USB-ICP).

## Features

### PCA2125 / PCF2124 Low Power SPI based RTC

- Resolution - sec, minutes, hours, weekday, day, month, year
- Operating voltage 1.2 to 5.5V
- Low standby current for SuperCap
  - typ 0.25uA at 3.0V for PCF2124
  - typ 0.55uA at 3.0V for PCA2125
- Three-line SPI with separate data I/O
- Programmable timer / alarm functions with interrupt capability
- Internal power-on reset
- 32.768 KHz quartz crystal
- No other external components required
- Automotive temp range of -40 to +125 C for PCA2125

### P89LPC932A1 8-bit, 2-clock, 80C51 MCU

- 8 KB Flash, 256 bytes RAM
- 28-pin PLCC package with Internal RC Oscillator
- UART, ADC, DAC, two 16-bit timers & RTC, KBI
- WDT with on chip 400kHz oscillator

## Ordering Information

Part Number: RTC-DEMO-KIT

Suggested Resale Price: \$69.00 (USD)

Order Online Now at:

[www.digikey.com](http://www.digikey.com)

[www.mouser.com](http://www.mouser.com)

NXP SEMI: OM6292

Warranty: 30-day money back guarantee

Availability: Stock

(256) 883-1240 Phone

(256) 883-1241 FAX

E-mail: [sales@teamfdi.com](mailto:sales@teamfdi.com)

[www.teamfdi.com](http://www.teamfdi.com)

### Contents

RTC Demo Board:

- PCA2125 or PCF2124 RTC
- P89LPC932A1 8KB Flash microcontroller
- PCF8562TT 128-segment LCD Driver
- 8-character alphanumeric LCD
- 3V Coin Cell Battery

Visit [www.teamfdi.com/RTCDemo](http://www.teamfdi.com/RTCDemo) for:

- Demo application code
- Schematic
- In Circuit Programming (ICP) Documentation

All brand names and product names are trademarks or registered trademarks of their respective holders.

**FDI** *Future Designs, Inc.*  
Your Development Partner