Applications

The AF-EV850-TFT reference design targets a wide range of embedded applications that require a GUI, network connectivity and system performance:

- Building and home automation equipment
- Home appliances
- Medical devices
- Industrial controls
- Embedded global positioning systems
- Electronic point-of-sale systems

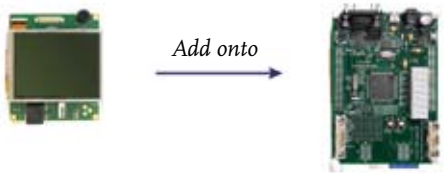
AF-EV850-TFT Reference Design with V850ES™ Microcontroller and Touch-Screen QVGA TFT-LCD

Designed to simplify the development of high-resolution graphics and touch interface applications, the AF-EV850-TFT reference design provides a single-source, cost-effective solution to customers with combined NEC semiconductor and LCD panel product portfolios. In addition, products and support from leading third-party vendors with graphics software and hardware expertise makes the solution easy to implement.

Key Features

- AF-EV850-TFT board
  - One-stop source for NEC components
    - NEC Electronics all flash V850ES™ microcontroller
    - NEC LCD Technologies 3.5" touch-screen thin-film transistor (TFT) panel with quarter video graphics array (QVGA) resolution
    - NEC Electronics µPA679TB MOSFET that serves as a resistive touch-screen interface
    - NEC Electronics 512 KB µPD444016L SRAM
  - Complete touch-screen graphical user interface (GUI) solution
    - Segger emWin graphics software
    - Optional embOS real-time operating system and emFile embedded file system
- AF-EV850 baseboard
  - Supports V850ES all flash microcontrollers
    - V850ES/HJ3™
    - V850ES/JJ3™
    - V850ES/HJ2™
    - V850ES/JJ2™
    - V850ES/KJ2™
    - V850ES/FJ3™ (with CAN functionality)
    - V850ES/SJ3™ (with CAN functionality)
  - Serial interfaces
    - UART
    - USB
    - CAN (optional)
  - SDIO memory card support
  - Networking ready
    - ZigBee® interface for wireless control
    - Ethernet interface (optional)

AF-EV850-TFT board *AF-EV850 baseboard*



System Benefits

- Total reference design solution with easy-to-use graphics library for touch-screen graphics applications
- Dedicated graphics controller that offloads the microcontroller and realizes high system performance
- Low system cost due to small memory footprint in Segger emWin graphics stack; fits in single-chip MCU
- Low-cost development tools
- Real-time control performance

NEC ELECTRONICS AMERICA

AF-EV850-TFT Reference Design
With V850ES Microcontroller and Touch-screen QVGA TFT-LCD

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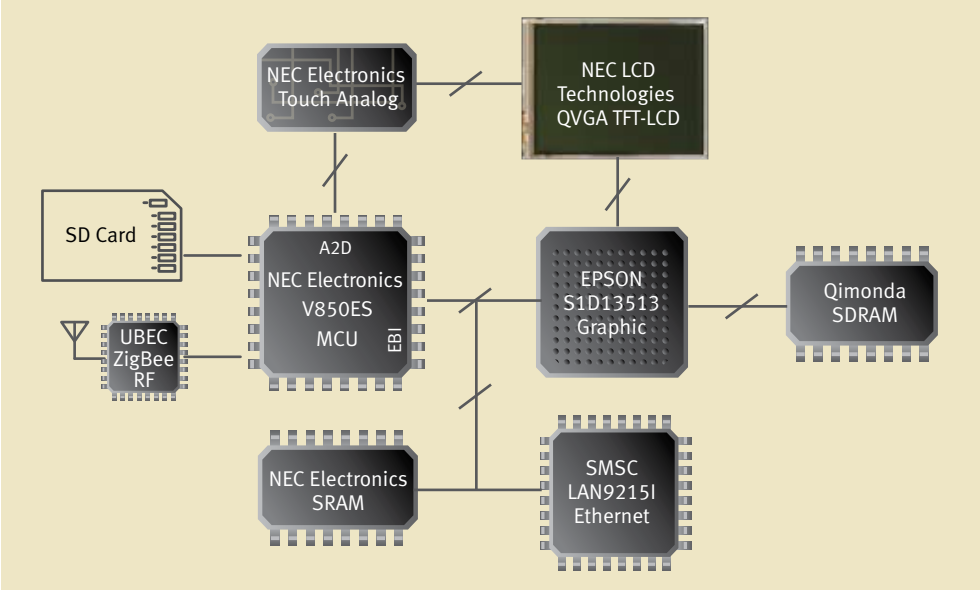
System Block Diagram



Partnerships

- Segger software stack
  - emWin graphics stack that can run with or without a real-time operating system
  - embOS real-time operating system with small kernel
  - emFile flash memory file system that supports an SDIO memory card
  - One-time license fee for unlimited projects and products without royalty
  - Free trial versions
  - Support: info@segger-us.com (U.S. sales +1 978 874 0299)
- Epson S1D13513 LCD graphics controller (http://vdc.epson.com/)
- SMSC LAN9215I Ethernet MAC and PHY (http://www.smsc.com/main/catalog/ethernet.html)
- Qimonda HYB39SC128 synchronous DRAM (http://qimonda.com/consumer-dram/index.html)

Development Tools

- Bundled evaluation version of CA850 compiler and assembler (128 KB code size limitation)
- V850™ MINICUBE™ JTAG-type debugger (sold separately)

Ordering Information

Part number: AF-EV850-TFT-JJ3 (with 32 MHz V850ES/JJ3™ microcontroller)

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