To our customers,

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

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Microcontroller

Tool Letter

V850 All Flash

Demonstration Kit – EB-V850ES/HG2-EE

Description

EB-V850ES\HG2-EE is a demonstration kit for NEC Electronics' V850 All Flash 32-bit microcontroller family. It supports on-board debugging, Flash programming and real time execution of application programs, making it ideal for the development of simple applications as well as demonstration of the V850's capabilities. The board is also ready-prepared to be connected to user hardware for evaluation of digital I/O's, analog signals, etc and comes complete with an appetizer version of the IAR Systems Embedded Workbench.

Devices

The kit includes a V850ES/HG2 microcontroller, part of NEC Electronics' V850 All Flash 32-bit line-up.
V850 All Flash combines the rich functionality of a high performance MCU with the flexibility of Flash memory. V850 All Flash offers 29 MIPS performance combined with up to 640K of embedded Flash, up to 48K of RAM and an abundance of general purpose peripherals. The range includes a 5V family with up to 24 A/D channels, a high performance low voltage line-up and dedicated motor control devices.

Minimum system requirements

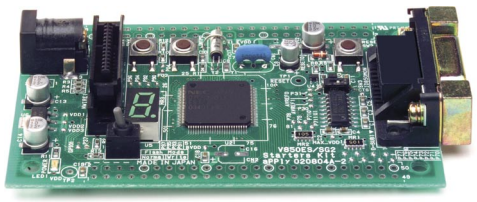
Host PC

A PC supporting Windows 98SE, Windows ME, Windows 2000 or Windows XP is required for the IAR Systems Embedded Workbench appetizer version and the FPL Flash programming software. Pentium 166MHz (minimum), 128MB of RAM, 256-colour display (1024 x 768), mouse, CD drive and 200Mbytes of free hard disk space are required to install the tool packages.

Host interface

USB interface that enables communication based on USB (version 1.1 or later).

Demonstration Kit



V850 All Flash

Demonstration Kit – EB-V850ES/HG2-EE

Main Features

- Easy to use device demonstration capabilities to easily demonstrate I/O functions such as push buttons, 7-segment LED output, A/D reference voltage, I/O lines, serial interface, etc.
- Simple USB connection via supplied cable
  - No external power supply required
- On-board debug function using IAR C-SPY debugger allowing Flash programming and simple standard debug features without connecting to additional hardware
  - Supports standard debug functions (code execution, single stepping, software breakpoints, memory manipulation, etc.)
- N-Wire debugging via KEL adapter to connect to the QB-V850MINI-EE or IE-V850E1-CD-NW on-chip debug emulator to use the on-chip debug function of the device (Please note that QB-V850MINI-EE and IE-V850E1-CD-NW are sold separately)
- Analog to digital conversion supported
- Various input / output signals available such as
  - All I/O ports prepared for connection to user hardware
  - Timer input / output signals
  - Two or three wire serial I/O
  - UART interface via USB UART chip FT232
  - 16 analog input lines
  - 7-Segment LED
  - 2 push buttons prepared for external interrupt generation
- Supplied with the IAR Embedded Workbench for V850 and the IAR C-SPY debugger / simulator (limited to 16Kbytes of program code)
- FPL Flash programming software included to enable downloading of application programs to the board
- Full documentation included for the V850ES/HG2 microcontroller, the IAR Systems Embedded Workbench, IAR Systems C-SPY debugger / simulator and the NEC Electronics FPL Flash programming software

Ordering Information

Article code EB-V850ES/HG2-EE

For further information visit our European website at **www.eu.necel.com/v850allflash**

Contact

European Headquarters:
NEC Electronics (Europe) GmbH
Arcadiastr. 10, 40472 Düsseldorf, Germany
Tel. +49 211 65030
Fax +49 211 6503-1327
www.eu.necel.com

Offices in Europe:
www.eu.necel.com/europe

Distributors in Europe:
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