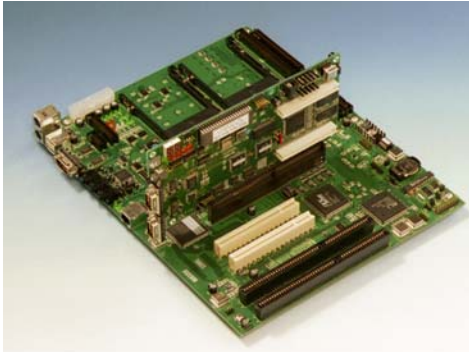


# ***SolutionGear™*** (RISC Microcontroller Reference Platform)

Strongly supporting short development TAT through software turnkey system and user board

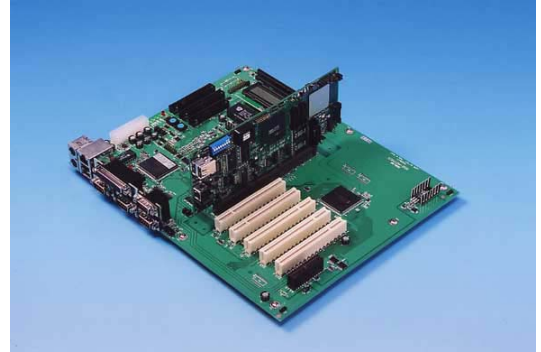
## ***SolutionGear I***

General-purpose platform for V850 Series



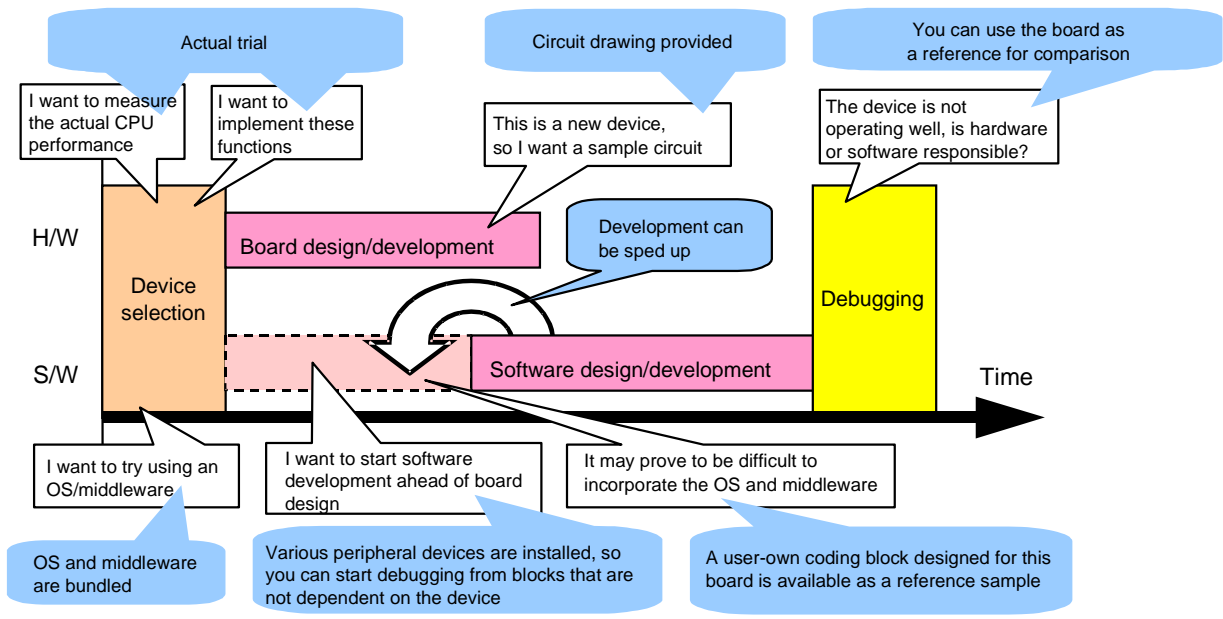
## ***SolutionGear II***

Platform focused on performance for V<sub>R</sub>™ Series



### FEATURES

- ◆ **Ideal:**  
For evaluation of CPU/OS/middleware when selecting device  
When developing software ahead of board under development  
As a reference for board development  
For benchmark measurement using actual CPU
- ◆ **CPU board provided for each device**
- ◆ **Motherboard not dependent on CPU**
- ◆ **Industry-standard and PC-compatible interfaces installed**
- ◆ **Reference design information supplied**
- ◆ **PC frame, power supply, and peripheral devices can be used**



The information in this document is subject to change without notice. Before using this document, please confirm that this is the latest version.  
Not all products and/or types are available in every country. Please check with an NEC Electronics sales representative for availability and additional information.

# V850 Series

32-bit RISC Microcontrollers

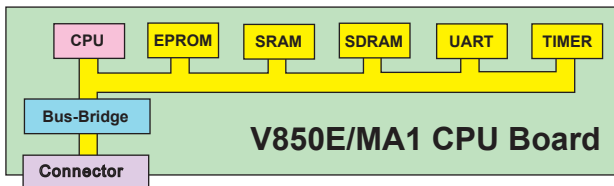


## CPU BOARD

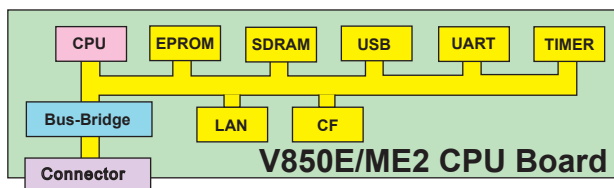
- ◇ CPU, ROM, SDRAM, and SRAM mounted
- ◇ LAN, USB, and CF interface installed (V850E/ME2)
- ◇ Supports Multi or PARTNER remote monitor
- ◇ Supports ID850MON remote monitor (V850E/ME2)
- ◇ N-Wire interface installed (V850E/ME2)
- ◇ Supported CPU
  - V850E/MA1 [Max.: 50 MHz] (Part No.: SG-703107-1)
  - V850E/ME2 [Max.: 150 MHz] (Part No.: SG-703111-1)



V850E/MA1 CPU Board (110 mm × 200 mm)

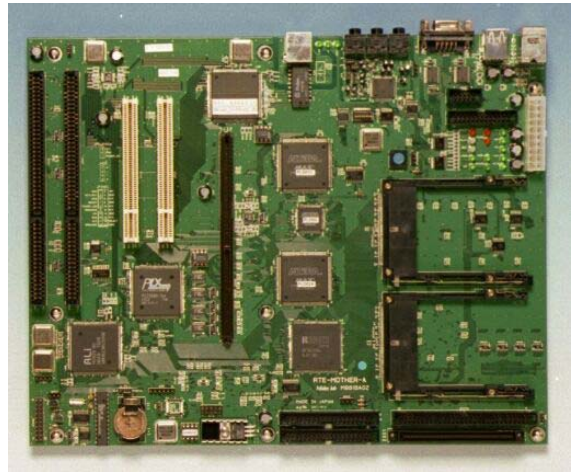


V850E/ME2 CPU Board (107 mm × 237 mm)

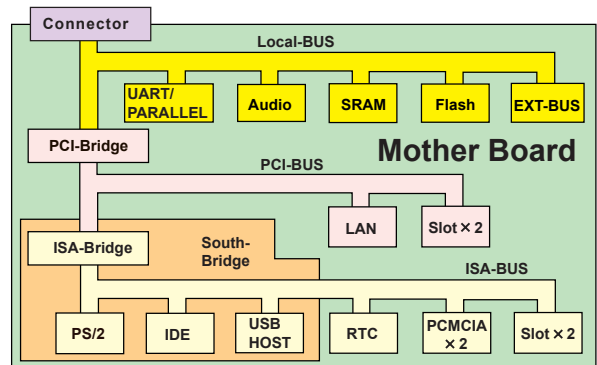


## MOTHERBOARD

- ◇ Hardware supporting middleware such as speech I/O mounted on the board
- ◇ PCI, ISA, PCMCIA, E-IDE, LAN, SIO, PIO, USB, keyboard, mouse, and other PC-compatible interfaces installed
- ◇ PC frame, power supply, and peripheral devices can be used (ATX standard)
- ◇ Supports various V850 Series CPUs
- ◇ Part No.: SG-MOTHER-1



Motherboard (244 mm × 305 mm)



## INCLUDED SOFTWARE

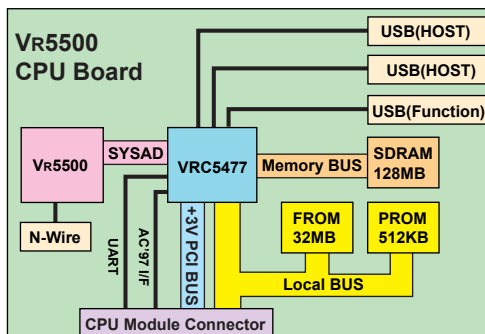
- ◇  $\mu$ TRON-compliant real-time OS RX Series (RX850 Pro)
- ◇ TCP/IP software library (RX-NET)
- ◇ Speech recognition middleware
- ◇ Text-to-speech middleware
- ◇ JPEG middleware
- ◇ Various device drivers (sample)

## CPU BOARD

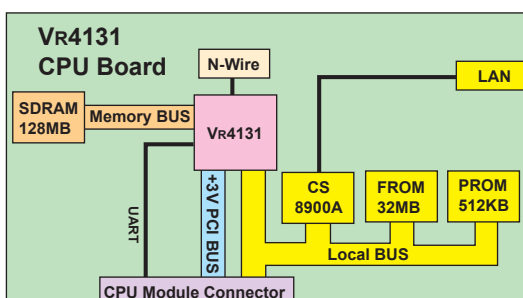
- ◇ CPU, PCI bridge (excluding VR4131), Flash memory, PROM, and SDRAM mounted
  - ◇ PMON monitor installed
  - ◇ N-Wire interface installed
  - ◇ Connected to motherboard with PCI bus and local bus
  - ◇ Supported CPU
    - VR5500 [Max.: 400 MHz] (Part No.: SG-30550-2)
    - VR4131 [Max.: 200 MHz] (Part No.: SG-30131-2)
    - VR4133 [Max.: 266 MHz]\* (Part No.: SG-30133-2)
- \* Under development



VR5500 CPU Board (84 mm × 184 mm)

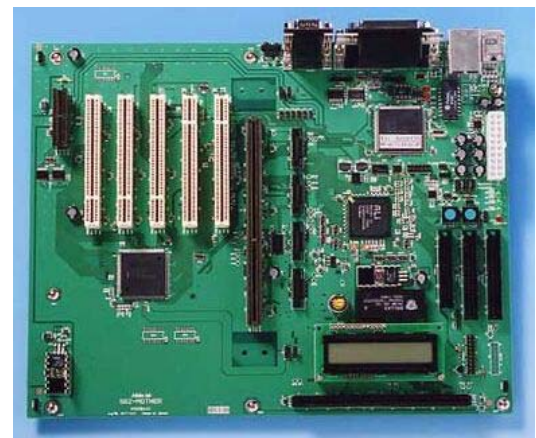


VR4131 CPU Board (75 mm × 180 mm)

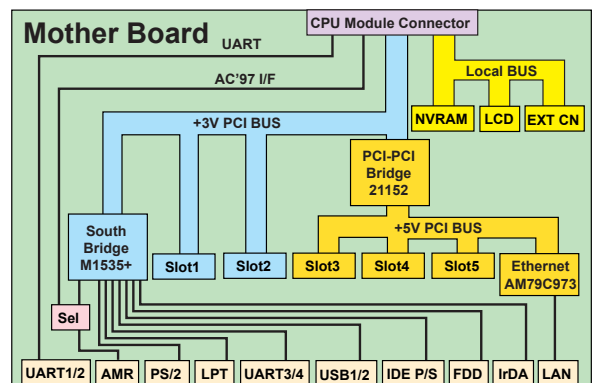


## MOTHERBOARD

- ◇ Two +3 V PCI slots and three +5 V PCI slots provided
- ◇ PCI, E-IDE, LAN, SIO, PIO, USB, keyboard, mouse, and other PC-compatible interfaces installed
- ◇ PC frame, power supply, and peripheral devices can be used (ATX standard)
- ◇ AC'97 interface of AMR connector provided
- ◇ NVRAM (clock unit embedded) installed
- ◇ LCD console (16 columns × 1 row) installed
- ◇ Part No.: SG-MOTHER-2



Motherboard (244 mm × 305 mm)



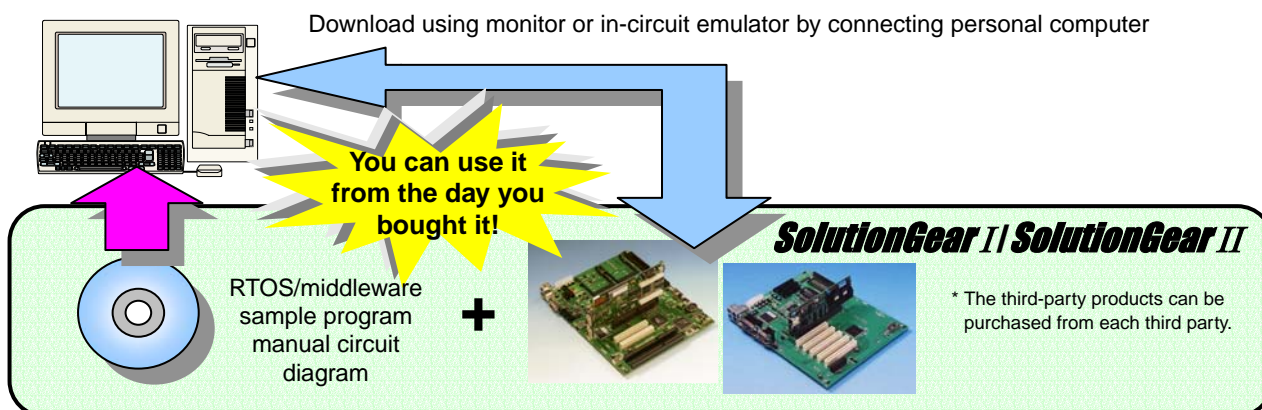
## THIRD-PARTY SOFTWARE

- ◇ Tornado2™/VxWorks™ (Wind River Systems)
- ◇ Windows™ CE (Microsoft)
- ◇ MontaVista™ Linux™ (MontaVista Software)

## THIRD-PARTY HARDWARE

- ◇ Graphics board: MQ200 made by MediaQ
- ◇ Graphics board: CyberPro5050 made by Tvia
- ◇ CardBus/PCMCIA board:
  - R5C485/R5C486 made by Ricoh
- ◇ Board supporting CardBus/PCMCIA & Flash Card:
  - R5C811/R5C812 made by Ricoh

## **SolutionGear I / SolutionGear II CONFIGURATION (can be used from day of purchase)**



SolutionGear and V<sub>R</sub> are trademarks of NEC Electronics Corporation.

Company names and product names indicated in this pamphlet are either registered trademarks or trademarks of each company.

- The information in this document is current as of October, 2003. The information is subject to change without notice. For actual design-in, refer to the latest publications of NEC Electronics data sheets or data books, etc., for the most up-to-date specifications of NEC Electronics products. Not all products and/or types are available in every country. Please check with an NEC Electronics sales representative for availability and additional information.

- No part of this document may be copied or reproduced in any form or by any means without the prior written consent of NEC Electronics. NEC Electronics assumes no responsibility for any errors that may appear in this document.

- NEC Electronics does not assume any liability for infringement of patents, copyrights or other intellectual property rights of third parties by or arising from the use of NEC Electronics products listed in this document or any other liability arising from the use of such products. No license, express, implied or otherwise, is granted under any patents, copyrights or other intellectual property rights of NEC Electronics or others.

- Descriptions of circuits, software and other related information in this document are provided for illustrative purposes in semiconductor product operation and application examples. The incorporation of these circuits, software and information in the design of a customer's equipment shall be done under the full responsibility of the customer. NEC Electronics assumes no responsibility for any losses incurred by customers or third parties arising from the use of these circuits, software and information.

- While NEC Electronics endeavors to enhance the quality, reliability and safety of NEC Electronics products, customers agree and acknowledge that the possibility of defects thereof cannot be eliminated entirely. To minimize risks of damage to property or injury (including death) to persons arising from defects in NEC Electronics products, customers must incorporate sufficient safety measures in their design, such as redundancy, fire-containment and anti-failure features.

- NEC Electronics products are classified into the following three quality grades: "Standard", "Special" and "Specific".

The "Specific" quality grade applies only to NEC Electronics products developed based on a customer-designated "quality assurance program" for a specific application. The recommended applications of an NEC Electronics product depend on its quality grade, as indicated below. Customers must check the quality grade of each NEC Electronics product before using it in a particular application.

"Standard": Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots.

"Special": Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support).

"Specific": Aircraft, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems and medical equipment for life support, etc.

The quality grade of NEC Electronics products is "Standard" unless otherwise expressly specified in NEC Electronics data sheets or data books, etc. If customers wish to use NEC Electronics products in applications not intended by NEC Electronics, they must contact an NEC Electronics sales representative in advance to determine NEC Electronics' willingness to support a given application.

(Note)

(1) "NEC Electronics" as used in this statement means NEC Electronics Corporation and also includes its majority-owned subsidiaries.

(2) "NEC Electronics products" means any product developed or manufactured by or for NEC Electronics (as defined above).

M8E 02.11-1