RoweBots

Software Data Sheet

Unison version 5

Ultra tiny embedded Linux™ or POSIX™ compatible RTOS

for

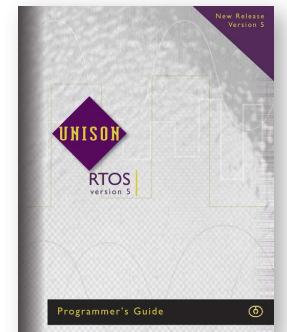## Renesas

SH2A Microcontroller

Family

- Open Standards
- Open Source
- Renesas SH2A Microcontroller Family
- Complete integrated development using:
  - HEW
  - Kpit Eclipse
- Seamless integration of target components
- POSIX Nano Kernel
  - Fast
  - Tiny
  - Compliance tested
- Total Integrated POSIX I/O
  - Web server
  - Networking options
  - Serial I/O
  - File Systems
  - Bus Support
  - Touch Screen and Graphics
  - Wireless Options
  - Motor Control
  - Power Supply and LED Control
- Tiny footprint software components
- Off the shelf evaluation board support
- Single click install
- Complete documentation including:
  - Index and Release Notes
  - Tutorial Guide for Unison 5
  - Programmer's Guide for Unison 5
  - Reference Guide for Unison 5
  - Quickstart Guide featuring 50+ demos to get you up and running in 10 minutes
- Optional source code
- Royalty FREE
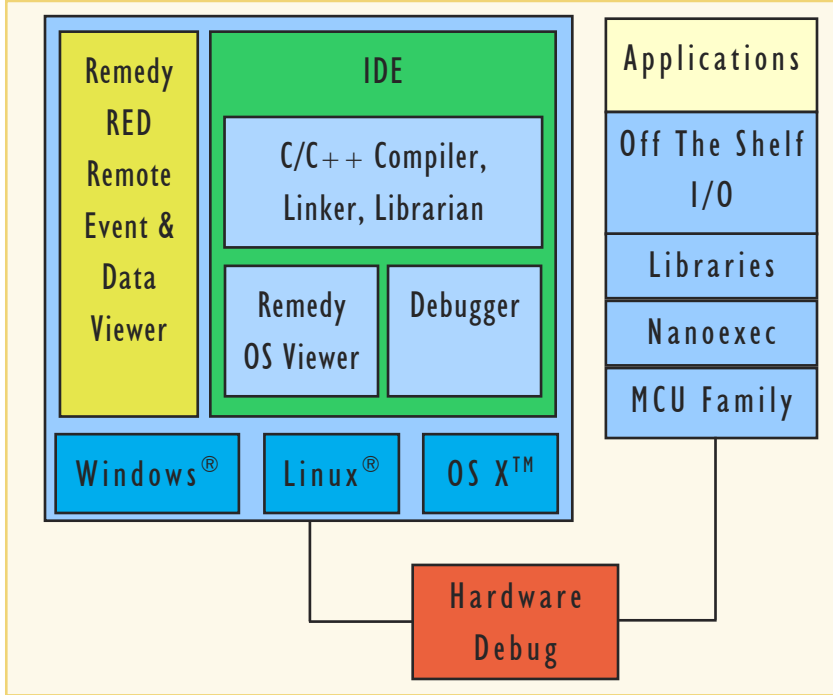- Interface compatible with other DSPnano and Unison versons

Benefits

The key benefits from this approach are significant for developers.

1. Unison is an ultra tiny Linux or POSIX compatible RTOS with complete System on Chip (SoC) support for 32 bit processors. It eliminates training and supports standards based development on tiny processors where other Linux variants or larger RTOS solutions don't run.

2. Unison 5 is extremely easy to configure and use compared to Linux or any other RTOS. Six simple primitives, a nano-kernel architecture and intuitive device driver structures make optimized driver development simple and fast.

3. Unison provides integrated support for evaluation modules, and a range of IDEs. Users can create and execute a new project in minutes without errors or configuration issues. It is fast and easy both to learn and to use!

4. Integrated software components with complete I/O can save significant time in OEM application development. Today, all systems are connected and the integration of Unison along with networking support, serial support and various out-of-the-box applications will allow you to build whatever you need quickly.

5. A single click install on Windows® makes Unison simple to deploy. Our no-nonsense **Quickstart Guides** – a comprehensive (yet surprisingly concise) collection of some 50 step-by-step demos – will have you up and running with a solution in sight in no time. Get your project team started without the usual barrage of questions and early difficulties.

6. With extensive documentation, the Rowebots approach walks the user through the system with minimum distraction or delay. From a conceptual understanding of it through to actual hands on operation on standard hardware, users come up to speed quickly and develop confidence with the system before encountering more challenging problems.

7. Interface compatibility with other Linux, embedded Linux, POSIX compatible RTOS, Unison and DSPnano versions provide seamless upgrade and downgrade paths to more or less powerful processors with minimal source code changes.

Feature Mapping

Hardware Feature	Software Support	High Level Software Support
Timer	OS timers, real-time clock	
Serial Ports	tty_server, busywait I/O	ppp (asynch & HDLC) with NAT, iolib, stdio
Ethernet MAC/PHY	udp only, tcp/udp/ip, IPv4/V6	tftpd, telentd, dhcpd, thttpd, iolib, snmp, smtp, dns, ftp
SD & SPI Interface	fsys file system, fat file system, NAND/NOR flash file system	SQLite*
Bus Support	driver support, CAN, wireless	tcp multiple networks, Ipv6/6loWPAN, UDPSimpliciTI, Bluetooth, 802.15.4, WiFi
USB	USB embedded host, device & OTG*	MCS, Serial, HID*, Kybd*, WiFi, Bluetooth
Color Touch Panel	vendor graphics library	GraphXGen
PWM, ADC, QEI	motor control, power control, vendor drivers	
NOR Flash	Bootloader, Diagnostics	Downloader
Reset	Power On Self Test (POST)	
Security	IPsec*, SSL/TLS*, AES*	
Unmapped	power management	neural networks
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Unison Operating System Architecture

Remedy RED Remote Event & Data Viewer

IDE

C/C++ Compiler, Linker, Librarian

Remedy OS Viewer

Debugger

Windows®

Linux®

OS X™

Applications

Off The Shelf I/O

Libraries

Nanoexec

MCU Family

Hardware Debug

Additional Information

Other seperately available RoweBots files:

- Internet Protocols
- File Systems
- System Security
- USB
- Remedytools
- Wireless

Supported Hosts

- Windows XP™
- Windows Vista™
- Windows System 7™
- Linux*
- OS X*

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Supported Processors

- SH2A Family

Integrated Development Environments

- HEW
- Kpit Eclipse

Software Version

- Unison 5

Availability

- Q1, 2012

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RoweBots