

# SERIOUS™ 4.3" WQVGA Touch/Graphic Module

## Featuring the Renesas RX621 MCU with LCD Direct Drive



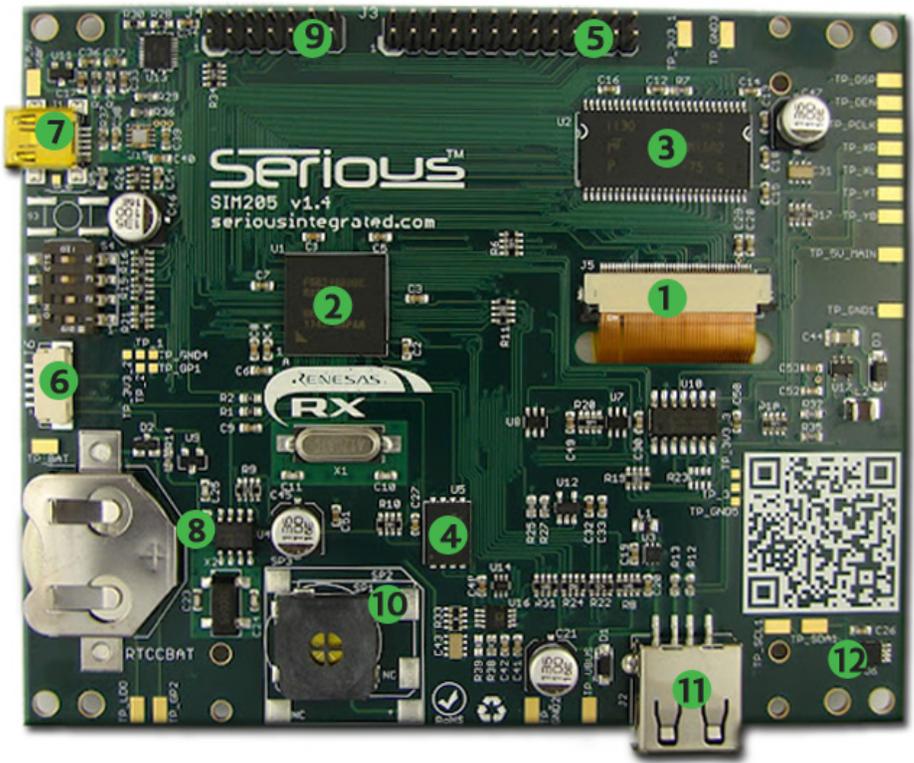
SERIOUS™



Adding a graphic/touch interface to your product has never been faster than with Serious Integrated Modules. Simply connect power and a communications port from your existing system to the SIM205 and your hardware design is complete.

The SIM205 is an off-the-shelf, production-worthy and prototype-friendly 4.3" WQVGA TFT graphic/touch module powered by the Renesas RX600 MCU and supported by extensive out-of-the-box software.

### SIM205 Hardware Features



1. 4.3" Wide QVGA 16-bit color 480x272 TFT Touch Display with 4-wire Resistive Touch
2. 100MHz 32-bit Renesas RX621 with 512KB Flash, 96KB RAM and FPU
3. 8MB SDRAM wired for Direct Drive of LCD panel
4. 8MB (64Mbit) Serial FLASH for program, image, and data storage
5. Baseboard connector: SPI, I2C, CAN, USB, UART, ADC, & GPIO
6. Advanced Dual Supply Dynamic Power Path Management with charger for (optional) Lithium Ion Polymer battery
7. USB device port (can power whole module!)
8. Battery Backed Real Time Clock/Calendar with 1Kbit EEPROM and 64 bytes parameter SRAM
9. Standard 14-pin debug port for Renesas E1 and compatible debuggers
10. D-to-A driven 750mW Class D Audio Amplifier with speaker
11. USB Embedded Host Port Up to 150mA supply
12. System Temperature Sensor

SIM205 Product Brief  
March 2012 v1.9

# SIM205 Software and Support

**Writing a full GUI application can be a daunting task. Even before you write that first line of GUI code you can waste months porting an OS and developing the board support package, basic support utilities, and graphics libraries. Serious delivers out-of-the-box pre-ported software that gets you past these initial barriers in minutes, not months – all with no-cost licenses!**

## No-Cost Development Tools

Software provided with the SIM205 is targeted for the free [Renesas High Performance Embedded Workbench \(HEW\)](#) along with the free [KPIT GNU](#) toolsuite. Develop complete applications on SIM205 with no software development tool costs! For more information on the Renesas RX621 MCU and tools, visit [www.rxmcmu.com](http://www.rxmcmu.com). *Serious* is committed to supporting the new Eclipse-based Renesas e2 Studio as it evolves through the beta development phase in 2012.

## Out-of-the-Box RTOSs & BSP

### Pre-ported Pre-Licensed RTOSs

Pick the right RTOS for the job: SIM205 comes with pre-ported single commercial full-production licenses of both the [Micrium µC/OS-III](#) and [Segger embOS](#) professional-grade kernels as well as the standard open-source [FreeRTOS](#) kernel.

### Out of the Box Drivers

The SIM205's no-cost software includes many pre-ported cross-OS drivers including SPI, I2C, UART, RTCC, CAN, Graphics, Touch, and Timer drivers with full source code.

### Direct Drive Support

*Serious'* Direct Drive subsystem goes beyond the Renesas driver, adding on-the-fly portrait and landscape mode selection, dynamic frame rate management, and an enhanced direct drive "monitor" task. *Serious*

makes Direct Drive nearly transparent to the application, allowing you to write a GUI application that can more easily port to other SIMs without Direct Drive.

### Renesas Graphics API (GAPI)

The Renesas Graphics API, in source code with documentation, is part of the demo application.

### The *Serious* Human Interface Platform™ (SHIP)

Looking for a comprehensive WYSIWYG rapid-GUI development environment? A demo of the soon-to-be-released *Serious* Human Interface Platform™ (SHIP) comes preloaded on the SIM205. Contact *Serious* for more information on SHIP and how GUIs can be developed in *hours*.

### SHIP Core Elements

Source-code for core elements from SHIP ("SHIP Core") are included with the SIM205, including malloc/free replacements that allow multiple heaps and easier debugging, a buffer allocation system (typically for communications ISRs and messages), as well as an OS Abstraction layer that allows projects to be written identically for all supported RTOSs without #ifdefs! Beyond these basic utilities, SHIP Core also includes basic CAN, SPI, I2C, and UART driver frameworks that you can build upon for your applications' specific needs.

## Serious Support and Services

*Serious* offers comprehensive software, hardware and GUI customization and development services. [Contact Serious](#) for information. The [mySerious.com](http://mySerious.com) site offers community and *Serious* applications support for registered users of the SIM205.

## SIM205 Accessories

### SBX200 Prototyping Enclosure

Need a prototyping box? Something to keep it safe while your marketing team is handling it? The [SBX200](#)



is a prototypers enclosure designed for the SIM205, and includes a USB-rechargeable Lithium Ion battery.

### Segger JLink Lite RX

New to the RX600

family? Purchase the SIM205 bundled with the cost effective Segger JLink Lite RX JTAG Debugger/Programmer. Use the JLink Lite RX for the programming and debugging programs on the SIM205 as well as any future RX600-based project.

## Buying SIM205

**SERIOUS™**



SIM205 is available [direct from Serious](#) in the US, and worldwide from [Digi-Key](#).

## SIM205 Partners



**Micrium**



**SERIOUS™**

[seriousintegrated.com/sim205](http://seriousintegrated.com/sim205)

