mail

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832 Email & Skype: info@chipsmall.com Web: www.chipsmall.com Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





8-bit Microcontrollers

USBSPYDER08 Small, Simple, Flexible

Target Applications

- AC line voltage monitoring
- Battery chargers
- Computers
- DC cooling fan
- Fan control
- High-brightness light-emitting diodes
- Industrial compressors
- Industrial control
- Lighting system controls
- Low-end microwaves
- Low-power supplies
- Secure boot coprocessors
- Security systems
- Small handheld devices
- Small and large appliances
- Toasters
- Toys
- Vacuum cleaners
- Watchdog coprocessors
- Walkie-talkies

Overview

The USBSPYDER08 enables fast and easy development for embedded designers working on Freescale's low-end microcontrollers. This cost-effective, high-performance USB debug tool can:

- Spy the performance of your application in the early development stages
- Support Freescale's 8-pin (R)S08 families
- Catch bugs in your application so they can be fixed fast

To ensure speedy development, the USBSPYDER08 Discovery Kit has been manufactured to work with our Fast Track CodeWarrior[™] development tools, delivering a cost-effective, yet powerful way to design your products and speed time to market.

Hardware Interface Specifications

- Built-in USB to background debug module (BDM) circuitry based on Freescale's MC68HC908JB16 microcontroller allows the host PC to communicate with the target microcontroller through a standard USB interface
- **Programmed 8-pin PDIP** socket populated with an MC9S08QG8 (8-pin PDIP package), with a demo application. The MC9S08QG8 can be swapped out for other target microcontrollers including the MC9S08QD4 or MC9RS08KA2.
- Provision header connector with all of the microcontroller signals
- Flexible BDM connector for debugging external devices. USBSPYDER08 uses a variation of the standard, 6-pin BDM connector defined by Freescale to program and debug external MC9RS08KA, MC9S08QD and MC9S08QG devices in any package.





8-bit Microcontroller Seletor Guide

Part Number	Temp. Ranges	Features	Package	Speed
MC9RS08KA1	0 to +70°C	Entry-Level RS08 Core, 1K Flash/63B RAM, Analog Comparator (ACMP), Internal Clock Source, 1.8V to 5V Tolerant, Tiny Footprint, Small Form Factor	6-pin DFN (3mm2), 8-pin PDIP, 8-pin SOIC-NB	10 MHz Bus Speed
MC9RS08KA2	0 to +70°C	Entry-Level RS08 Core, 2K Flash/63B RAM, Analog Comparator (ACMP), Internal Clock Source, 1.8V to 5V Tolerant, Tiny Footprint, Small Form Factor	6-pin DFN (3mm2), 8-pin PDIP, 8-pin SOIC-NB	10 MHz Bus Speed
MC9S08QD2	-40°C to +85°C	High-Performance S08 Core, Low Power Consumption, 2K Flash/256B RAM, 4-ch., 10- bit A/D Converter and Analog Comparator (AMCP), Multiple Timer Options, Internal Clock Source, Small Footprint (8-pin packages, 1.8V to 5V Tolerant	8-pin PDIP, 8-pin SOIC-NB	10 MHz Bus Speed
MC9S08QD4	-40°C to +85°C	High-Performance S08 Core, Low Power Consumption, 4K Flash/256B RAM, 4-ch., 10-bit A/D Converter and Analog Comparator (AMCP), Multiple Timer Options, Internal Clock Source, Small Footprint (8-pin Packages, 1.8V to 5V Tolerant	8-pin PDIP, 8-pin SOIC-NB	8 MHz Bus Speed
MC9S08QG4	-40°C to +85°C	High-Performance S08 Core, Low Power Consumption, 4K Flash/256B RAM, 8-ch., 10-bit A/D Converter and Analog Comparator (ACMP), Multiple Serial Comms, Multiple Timers Option, Internal Clock Source, Small Footprint, 1.8V to 3.3V Tolerant	8-pin PDIP, 8-pin SOIC-NB, 8-pin DFN, 16-pin TSSOP, 16-pin QFN	10 MHz Bus Speed
MC9S08QG8	-40 to +85°C	High-Performance S08 Core, Low Power Consumption, 8K Flash/256B RAM, 8-ch., 10- bit A/D Converter and Analog Comparator (ACMP), Multiple Serial Comms, Multiple Timers Option, Internal Clock Source, Small Footprint, 1.8V to 3.3V Tolerant	16-pin PDIP, 16-pin TSSOP, 16-pin QFN, 8-pin DFN, 8-pin SOIC-NB	10 MHz Bus Speed

Debugging Key Features

- Real-time code execution and in-circuit debugging
- Working frequency up to 10 MHz
- Socketed target microcontroller
- BDM connector for external debugging
- Support for both 3.3V and 5V devices
- Jumperless hardware mode setting
- CodeWarrior IDE (the same user interface of all Freescale tools), with editor, assembler, C compiler and debugger

Design Challenges

The USBSPYDER08 Discovery Kit is a USB-based in-circuit debugger designed specifically for Freescale's low-end 8-bit MC9RS08KA, MC9S08QD and MC9S08QG families of microcontrollers.

By combining the hardware interfaces, Freescale offers a simple hardware solution capable of meeting key requirements in a small low-cost form factor.

By pairing the complete hardware solution with the Fast Track CodeWarrior IDE and supporting documentation on a complimentary CD, the USBSPYDER Discovery Kit gives the designer a complete, flexible debug environment.

The USBSPYDER08 Discovery Kit provides everything you need to write, compile, download, in-circuit emulate and debug user code. Full-speed program execution allows you to perform hardware and software testing in real time. With the introduction of the USBSPYDER08 tool, Freescale brings a new level of ease of development and a cost-effective debugging to 8-bit designers.

Learn More:

For current information about Freescale products and documentation, please visit **www.freescale.com**.

Freescale[™] and the Freescale logo are trademarks of Freescale Semiconductor, Inc. All other product or service names are the property of their respective owners. © Freescale Semiconductor, Inc. 2007 Document Number: USBSPYDER08FS REV 0

