

Product Brief

MCCI Catena 1820

Flexible Development Platform

The MCCI Catena® 1820 is ideal for use in early prototyping and proof of concept, development of device class drivers for an embedded host stack, and for evaluating OTG system architectural concepts before product hardware is available.

Software can be developed in a number of “operating system” environments:

- MCCI USB DataPump® portable firmware environment and “os/w32” — this binding simulates an embedded system in the Windows environment. Developed code can be recompiled and directly ported to development platforms.
- MCCI USB DataPump environment combined with an OSE Windows-based simulator. Code developed in this environment can directly port to OSE-based targets.
- Custom environments — readily supported through an abstraction layer.

Code developed with the MCCI Catena runs as a Windows application and is debugged using standard debugging tools, including the Visual Studio environment.



MCCI Development Platform

In addition to supporting OTG development, the Catena 1820 can be used for developing embedded USB device firmware, embedded USB host stacks, or a combination (USB embedded host for embedded peripherals, plus OTG functionality for system expansion). MCCI® supplies three different cable adapters:

- * OTG mini A/B (for OTG dual role device emulation)
- * Mini B (for OTG or standard USB device emulation)
- * Dual A receptacle (emulates dual USB host)

Code developed with the MCCI USB DataPump can readily use the R8A66597 to simulate silicon that is under development or not yet available. The silicon independent DataPump architecture allows the underlying silicon to be replaced with no effect on the higher level firmware developed earlier in a project.

The Catena 1820 is packaged in a 34mm ExpressCard form factor.

Renesas R8A66597

The MCCI Catena® 1820 gives HS USB On-The-Go (OTG) and Host firmware developers everything needed to prototype OTG firmware in Microsoft Visual C, while working on a Windows 2000, XP, Vista, or Windows 7 system.

The Catena 1820 combines an ExpressCard interface with a Renesas R8A66597 Hi-Speed USB Host Controller and Peripheral Controller chip and a low-level driver for Windows XP, Vista, or Windows 7. This controller is memory mapped through the Windows ExpressCard Root Port. The Catena 1820 allows developers to write register-level code that accesses the R8A66597 just as it would in a target system. Code can then be recompiled and used unchanged on a target embedded system.

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USB
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TABLE 1. Specifications	
USB Silicon	Renesas R8A66597
PCIx Bridge Silicon	PLX PEX8311 PCI Express-to-Generic Local Bus Bridge
Device Endpoints	Ten endpoints
Interrupts	All interrupts multiplexed onto a single IRQ. All interrupt handling is performed by the Windows 32 application, with minimal kernel overhead
Register-Alignment	R8A66597 registers are aligned with a 200h offset between each consecutive physical address
Operating Modes	OTG Dual Role; USB Device; Dual USB host
Operating Mode Configuration	OTG Dual Role; USB Device; Dual USB host
Miscellaneous	Each Catena 1820 is assigned four Ethernet MAC addresses

TABLE 2. Kit Contents	
MCCI Catena 1820	See Table 1, above
USB cables	2 meter OTG cable (Mini-A/ Mini-B)
Windows Drivers	Low-level I/O port and interrupt access drivers, allowing byte, word or dword access to registers of the Catena 1820
Additional Software	The basic kit includes an evaluation version of the MCCI USB DataPump, with a precompiled MCCI VSP application
Supported USB Host Operating Systems	Windows XP through Windows 7, WinCE, MacOS 9; Mac OS X 10.1.3 and later
MCCI Class Drivers for USB Host System	Evaluation copies of the following MCCI Class Drivers are shipped with the MCCI Catena 1820: <ul style="list-style-type: none"> • MCCI Generic Class Driver for Windows • MCCI VSP (virtual serial port) Class Driver for Windows
Warranty	90 days



TABLE 3. System Requirements	
Development System OS	Windows XP, Vista, or Windows 7
CPU speed (minimum)	300 MHz recommended
Memory (minimum)	64 MB
Externally Accessible Requirement	34mm ExpressCard slot
C Compiler	Visual C++ 6.0, .NET, Visual Studio 2005, Visual Studio 2005 Express, Visual Studio 2008, and Visual Studio 2008 Express are supported by MCCI

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