



Product Brief

MCCI Catena 1850

Flexible Development Platform

The MCCI Catena® 1850 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 1850 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 five different cable adapters:

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

Code developed with the MCCI USB DataPump can readily use the ISP1761 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 1850 is packaged in a PCMCIA 34mm ExpressCard form factor.

ST-Ericsson ISP1761

The Catena 1850 gives HS USB On-The-Go (OTG) firmware developers everything needed to prototype OTG firmware in Microsoft Visual C, while working on a Windows XP, Vista, or Windows 7 system.

The Catena 1850 combines a 32-bit ExpressCard interface with an ST-Ericsson ISP1761 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 1850 allows developers to write register-level code that accesses the ISP1761 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 Development and Prototyping

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TABLE 1. Specifications	
USB Silicon	ST-Ericsson ISP1761 Hi-Speed USB On-The-Go controller
PCIx Bridge Silicon	PLX PEX8311 PCI Express-to-Generic Local Bus Bridge
Device Endpoints	Seven IN endpoints, seven OUT endpoints and one fixed control IN and OUT endpoint
Interrupts	All interrupts multiplexed onto a single IRQ. All interrupt handling is performed by the Windows 32 application, with minimal kernel overhead
Register-Alignment	ISP1761 registers are aligned on 2-byte boundaries in Memory space
Operating Modes	OTG Dual Role; USB Device; Dual USB host; USB host + OTG dual role; USB host + USB device
Operating Mode Configuration	Automatic, based on the cable adapter plugged in
Miscellaneous	Each Catena 1850 is assigned four Ethernet MAC addresses, using MCCI's OUI. Addresses are accessed by reading the PCMCIA Card Information Structure (CIS)

TABLE 2. Kit Contents	
MCCI Catena 1850	See Table 1, above
USB cables	Mini A/B; Mini B; OTG Mini A/B plus standard USB A; Mini B plus standard USB A; Dual A
Windows Drivers	Low-level I/O port and interrupt access drivers, allowing byte, word or dword access to registers of the Catena 1850
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 1850: <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 Studio.NET, Visual Studio 2005, Visual Studio 2005 Express, Visual Studio 2008, and Visual Studio 2008 Express

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