MCCI

Product Brief

MCCI USB DataPump® — Device Firmware Stack

The USB Interconnect

Since its release, USB has established itself as the clear local connectivity leader with over 2 billion devices shipped. USB's large installed base is a compelling argument for building USB support into new products.

Users enjoy the convenience of Plug-and-Play, multiple functions, and high data rates. USB 2.0 allows speeds of up to 480 Mb/s, a forty-fold increase over the 1.1 (1996) standard. SuperSpeed USB from the USB Implementers Forum, also called USB 3.0, promises data rates up to ten times faster than USB 2.0 rates.

USB is also an essential element of the development and production process, allowing developers to perform debug tracing and to download software into flash.

Designed for Developers and End-Users

From the outset, the MCCI USB DataPump was designed to address the issues faced by developers of complex embedded products:

- Because it is hardware independent, device developers can migrate their software investment across platforms as needed to react to supplier changes or evolving requirements.
- Device manufacturers may have parallel development activities that use different OSes and tools. Because it is independent of any operating system or tool chain, the MCCI USB DataPump can leverage the knowledge gained on one platform for use on another.

Its flexible architecture allows integration of new device classes to support new product requirements.

MCCI USB DataPump

The MCCI USB DataPump is a complete, portable embedded software package that provides a total solution for engineers designing high-performance, multi-function USB peripheral devices. It has been ported to numerous CPUs and operating systems. Contact sales@mcci.com for a complete list.

Embedded systems place many demands on software performance. Developers and integrators are under pressure to create an end product that has very strict cost and performance requirements. For example, the product's memory footprint must be kept to a minimum to achieve Bill of Materials targets; system throughput must be high enough to suit the application; the product needs to support the most desirable end-user features.

These aspects are just some of the basic criteria MCCI® takes into account during product design and development.

Lowest Risk

The MCCI USB DataPump has been deployed in hundreds of millions of cell phones and other devices – proof of the quality that has been designed into the product. Not only has it been ported to numerous CPUs and integrated into many general and real-time operating systems, it can even be used on devices with no operating system. In addition, more than a dozen USB silicon chips are presently supported and support for the "next" chips is always being developed.

Since MCCI is also a certified USB-IF test house, fundamental knowledge of USB at product core is guaranteed. But USB knowledge alone doesn't suffice. MCCI's experts understand how to integrate the MCCI USB DataPump into the customer's architecture to achieve optimal results.

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Superior embedded software for USB devices

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Development and Test Tools

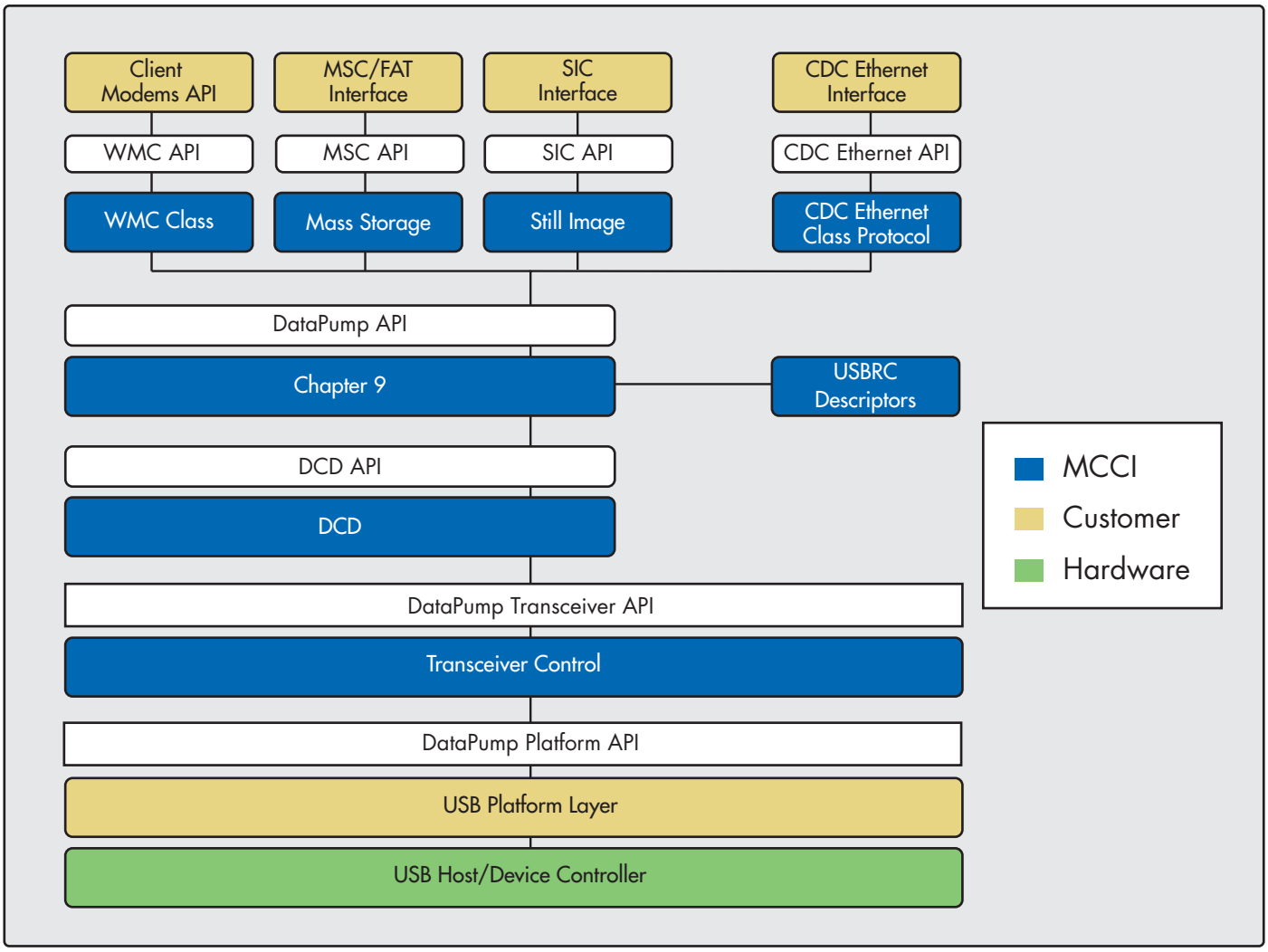
Complementing the MCCI USB DataPump embedded code is a set of software and hardware tools that support product development and customer platform integration.

The MCCI Catena® cards are PC cards with USB controllers on them. Under Microsoft Windows, developers can use the portable MCCI USB DataPump with the MCCI Catena, porting the USB stack to the USB controller so as to develop applications. As part of the MCCI Catena package, MCCI provides the MCCI Loopback protocol demo, the WMC ACM (Wireless Mobile Communication Abstract Control Model) demo, and the MCCI VSP (Virtual Serial Port) demo.

Device Protocols Supported

- Audio Class 1.0
- Video Class 1.1
- Audio / Video
- Mass Storage Class BOT and UAS
- DFU (Device Firmware Update) 1.1
- HID (Human Interface Device) 1.1
- CDC (Communications Device Class) 1.1 WMC (Wireless Mobile Communication)
- CDC 1.1 WMC NCM (Networking Control Model) 1.0
- CDC 1.1 WMC ACM (Abstract Control Model)
- CDC 1.1 WMC Device Management
- CDC 1.1 WMC OBEX (Object Exchange)
- CDC 1.1 ECM (Ethernet Control Model)
- RNDIS (Remote Network Driver Interface Specification)
- Mobile Computing Promotion Consortium GL-004/005
- SIC (Still Image Class)
- MCCI VSP
- MCCI Loopback

MCCI USB DataPump Architecture Diagram



NOTE: For Host side support, see the MCCI OTG and Embedded Host software products. Matching class drivers also available.