



Product Brief

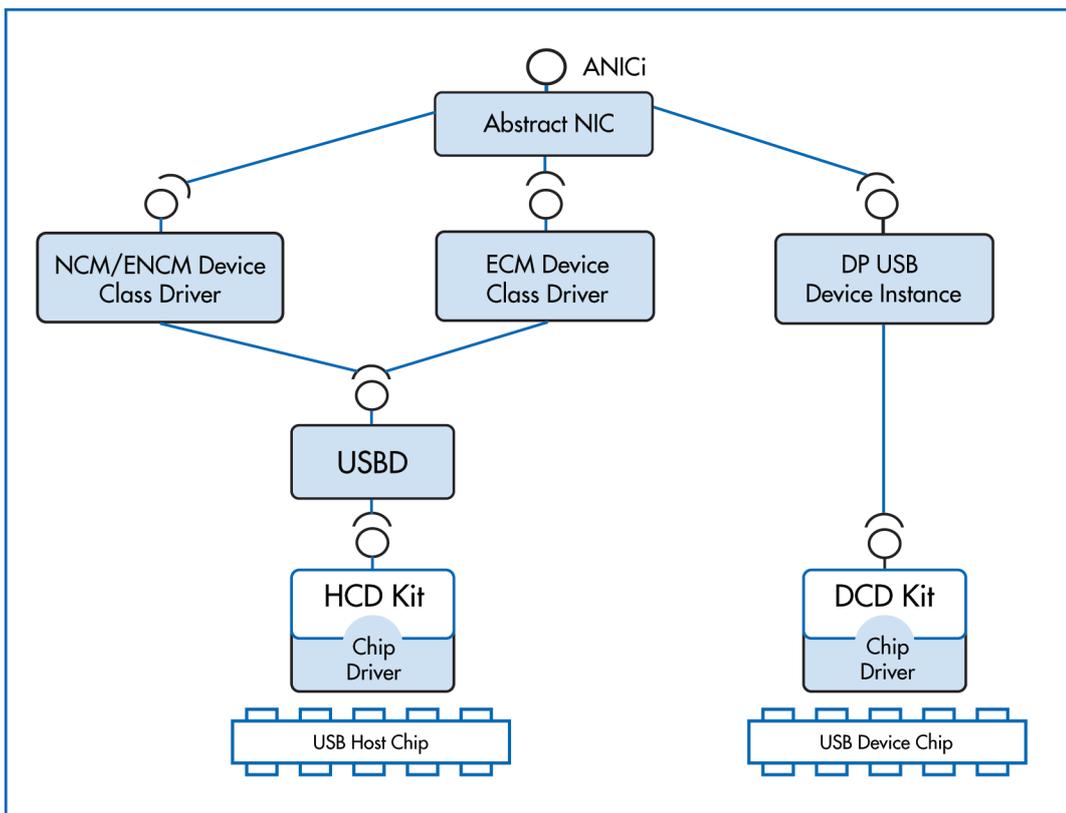
MCCI[®] Network Control Model Solution

Next Generation Networks

As network operators prepare to roll out LTE and WiMax communications networks, handset designers are turning to networked communications models to outperform yesterday's modem-based data communications. Although there are configurations in which a full-speed Windows device may need little more than MCCI's CDC Ethernet host-side drivers, tomorrow's radios will deliver content at a rate of 75-100 Mbps.

Once the switch from a modem architecture to a network architecture is made, the problem of frequent interrupts must be addressed because CDC Ethernet Control Model (ECM) — also called CDC Ethernet — transfers only a single frame per USB transfer. Every time a USB transfer finishes, the processor must stop what it is doing and service the interrupt. This is very costly in terms of performance and battery life.

NCM Firmware Architecture Model



MCCI's NCM Solution

With Network Control Model (NCM), a single USB transfer includes multiple Ethernet frames, thus reducing interrupt overhead. MCCI is a primary contributor to the NCM specification, which was approved by the USB Implementers Forum in August 2009.

MCCI's embedded NCM USB stack combines with MCCI's matching NCM host-side drivers for the best design support. NCM is based on MCPC Mobile Direct Line Model (MDLM). It uses the semantics of CDC ECM.

MCCI Quality and Reliability

MCCI technology has been delivered in over 600 million consumer products to date. Our customers place their USB needs for their high volume products confidently in the hands of MCCI. We have the world's largest USB software team, with a world-wide support presence that allows us to address customer support needs around the clock.

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High Throughput Network Functionality

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NCM Product Features

Further improvements brought by NCM:

- * A standard way of imposing structure on the raw USB pipe data stream has been defined, so that Ethernet frames don't have to begin or end on packet boundaries.
- * Highly efficient DMA (Direct Memory Access) is used to move data directly from the USB transfer buffers into the final application buffer, web browser, etc.
- * Cache handling and interrupt loading are optimized across all standards for mobile platforms and communications. This makes NCM a good remedy in situations where excessive control plane activity results in unstable connections.

When a high-speed USB peripheral must appear to a computer as a networked object, the technology optimized for speed and throughput is MCCI's NCM drivers.

NCM Host PC Driver Architecture Model

