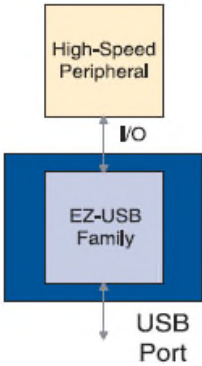


## Claim Chart for U.S. Patent No. 6,493,770

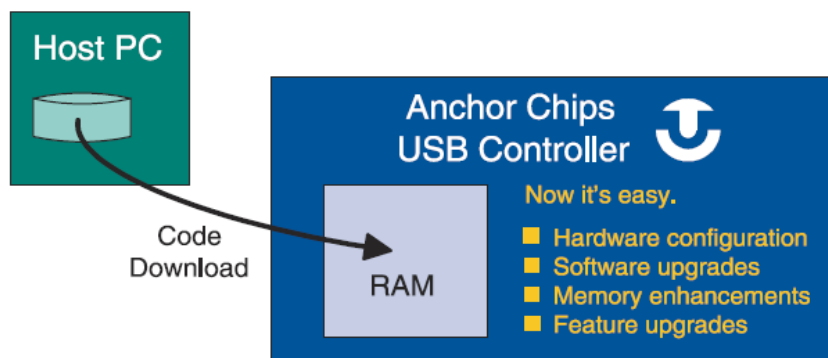
This claim chart maps some of the claims of U.S. Patent No. 6,493,770 ('770 patent) to **Anchor Chips' EZ-USB** product (e.g., part no. AN2131xx) and to **Cypress' EZ-USB FX** product (e.g., part no. CY7C646xx).

<b>CLAIM 1</b>	
1. A system for reconfiguring a peripheral device having a first configuration connected by a computer bus to a host computer, the system comprising:	<p><b>Anchor Chips' EZ-USB:</b> The EZ-USB Integrated Circuit (IC) is a solution for high-speed USB peripheral devices (i.e., USB peripherals) that are attached to a host PC through a USB port.</p> <p style="text-align: center;"><b>Anchor USB Solution</b></p>  <p style="text-align: center;">Ex. 2025, pp. 2.</p>

**EXHIBIT 2024**

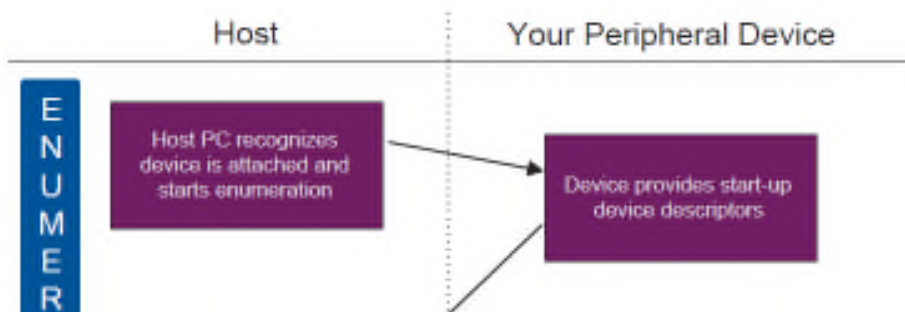
LG Elecs. v. Cypress Semiconductor  
IPR2014-01405, U.S. Pat. 6,493,770

## Soft Configuration



Ex. 2025, pp. 4.

The USB peripheral with the EZ-USB IC has an initial configuration upon start-up.



Ex. 2025, p. 5.

**Cypress' EZ-USB FX:** The EZ-USB FX chip is a compact IC that provides a highly integrated solution for a USB peripheral device.

The Cypress Semiconductor EZ-USB FX is a compact, integrated circuit that provides a highly integrated solution for a USB peripheral device. Three key EZ-USB FX features are:

Ex. 2032, pp. 29 (document page 1-1).

A USB peripheral device can attach to a host computer through a USB bus and connector (e.g., having pins D+ and D-).

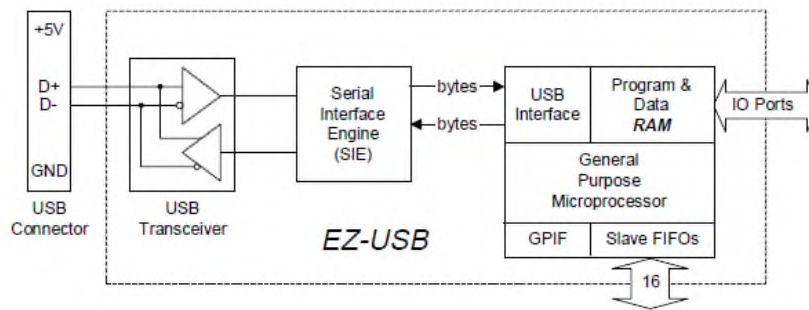


Figure 1-1. CY7C646x3-80NC (80 pin) Simplified Block Diagram

The Cypress Semiconductor EZ-USB FX chip packs the intelligence required by a USB peripheral interface into a compact, integrated circuit. As *Figure 1-1* illustrates, an integrated USB transceiver connects to the USB bus pins D+ and D-. A Serial Interface Engine (SIE) decodes and encodes the serial data and performs error correction, bit stuffing, and other signaling-level details required by USB. Ultimately, the SIE transfers data bytes to and from the USB interface.

Ex. 2032, pp. 30 (document page 1-2).

### 1.5 Host is Master

This is a fundamental USB concept. There is exactly one master in a USB system: the host computer. **USB devices respond to host requests.** USB devices cannot send information between themselves, as they could if USB were a peer-to-peer topology.

Ex. 2032, pp. 33 (document page 1-5).

The USB peripheral device with the EZ-USB FX IC has an initial configuration (e.g., upon power-on).

To support the soft feature, the EZ-USB FX chip enumerates automatically as a USB device *without firmware*, so the USB interface itself can download 8051 code and descriptor tables. The USB core performs this initial (power-on) enumeration and code download while the 8051 is held in RESET. This initial USB device, which supports code download, is called the "Default USB Device."

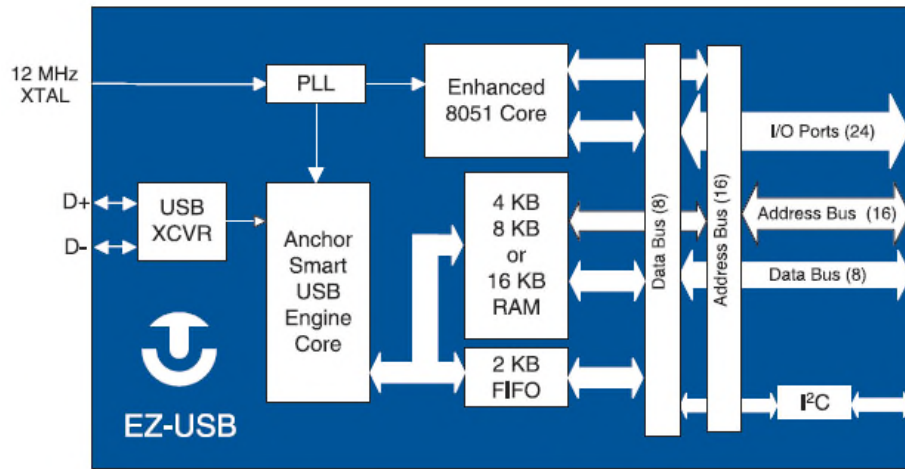
Ex. 2032, pp. 85 (document page 5-1).

a first circuit configured to download information for a second configuration from the host computer into the peripheral

**Anchor Chips' EZ-USB:** The EZ-USB IC includes one or more circuits to download information for a second configuration from the host PC into the USB peripheral over the USB bus. For example, in the figure below, the Anchor Smart USB Engine Core is coupled to the USB bus (which includes the D+ and D- lines) and includes one or more circuits configured to download information from the host PC.

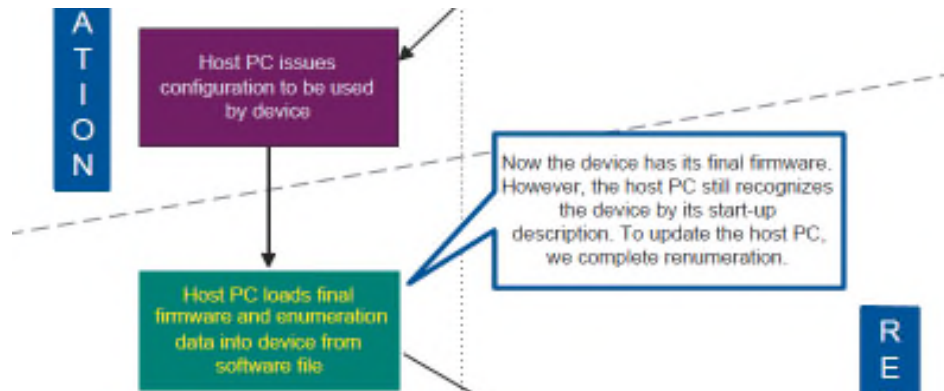
device over the computer bus; and

## EZ-USB Family



Ex. 2025, pp. 1.

The circuits connected to the USB bus are configured to download second configuration information from the host PC to the USB peripheral over the USB bus.



Ex. 2025, pp. 5.

**Cypress' EZ-USB FX:** The EZ-USB FX IC includes one or more circuits to download information for a second configuration from the host computer into the USB peripheral over the USB bus. For example, in the figure below, the Serial Interface Engine (SIE) is coupled to the USB bus over

a USB connector and includes one or more circuits configured to download information from the host computer.

## 1.2 EZ-USB FX Block Diagrams

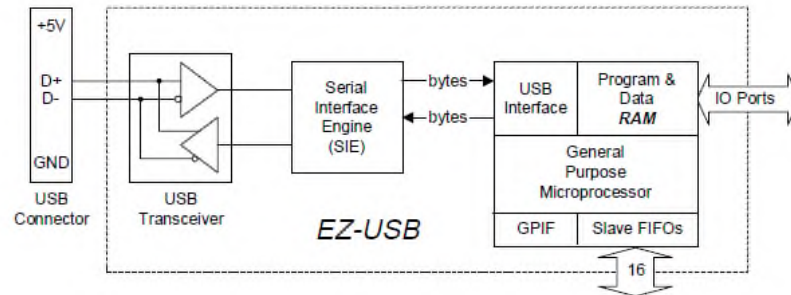


Figure 1-1. CY7C646x3-80NC (80 pin) Simplified Block Diagram

The Cypress Semiconductor EZ-USB FX chip packs the intelligence required by a USB peripheral interface into a compact, integrated circuit. As *Figure 1-1* illustrates, an integrated USB transceiver connects to the USB bus pins D+ and D-. A Serial Interface Engine (SIE) decodes and encodes the serial data and performs error correction, bit stuffing, and other signaling-level details required by USB. Ultimately, the SIE transfers data bytes to and from the USB interface.

The internal microprocessor is an enhanced 8051 with fast execution time and added features. It uses internal RAM for program and data storage, making the EZ-USB FX family a *soft* solution. The USB host downloads 8051 program code and device personality into RAM over the USB bus, and then EZ-USB FX re-connects as the custom device, as defined by the loaded code.

Ex. 2032, pp. 30 (document page 1-2).

a second circuit configured to electronically simulate a physical disconnection and reconnection of the peripheral device to reconfigure the peripheral device to said second configuration

**Anchor Chips' EZ-USB:** The EZ-USB IC includes one or more circuits to electronically simulate a physical disconnection and reconnection of the peripheral device over the USB bus. For example, in the figure below, the Anchor Smart USB Engine Core includes one or more circuits configured to simulate a physical disconnection and reconnection after the second configuration is downloaded in RAM.

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