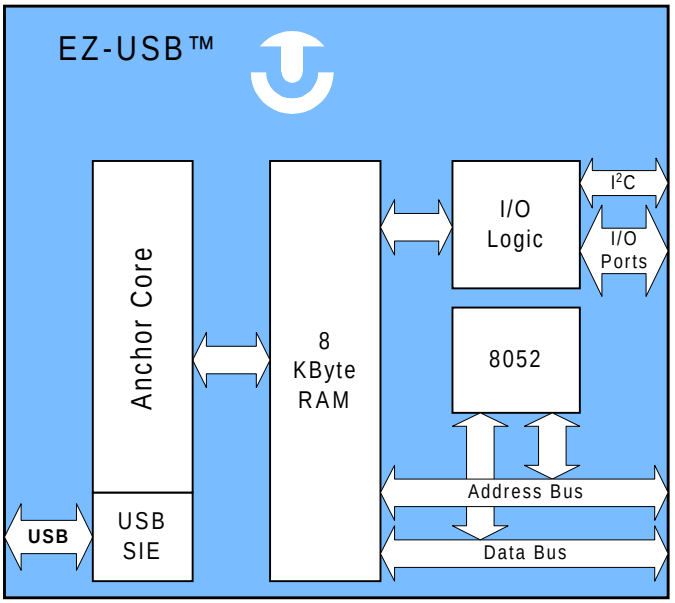
EZ-USB™ Integrated Circuit

AN2131Q



Product Description

The Anchor Chips EZ-USB™ integrated circuit provides the foundation for a USB (Universal Serial Bus) peripheral. In addition to the SIE (Serial Interface Engine) required by any USB peripheral, the EZ-USB chip contains all of the components needed to design a USB peripheral. This includes RAM, endpoint buffers, FIFOs, control logic, and input-output pins.

Features

Compliance
- Compliant with USB Spec. (Ver 1.0)
- "Compatibility-workshop" proven

Choice of CPU
- Internal 8052 for single-chip operation
- Address/data bus for external CPU
- 8 Kbytes of on-chip RAM
- Memory-mapped I/O lines

I²C bus
- Available to USB host or CPU

"Soft" operation
- No mask tooling charges
- No E-PROMS to burn
- Store device intelligence in the PC
- Change configurations on the fly
- Control I/O from PC host
- Field updates are a breeze
- Debug capabilities are built-in

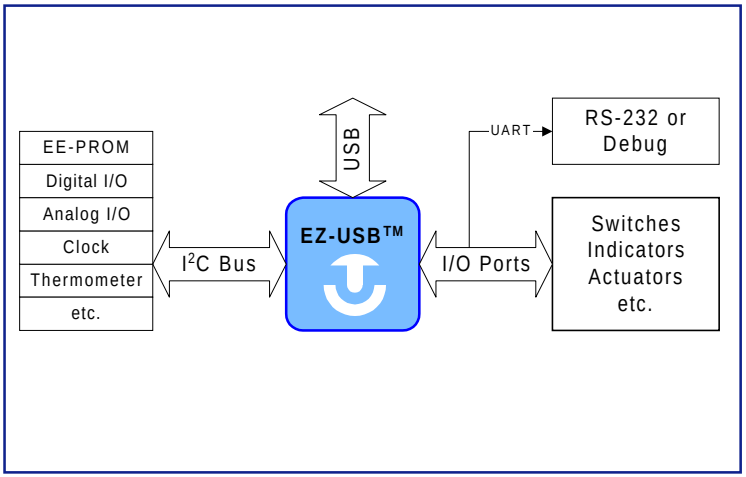
Full endpoint support
- Maximum number of endpoints (31)
- Sixteen isochronous endpoints
- Fifteen bulk-control-interrupt endpoints
- Data is available in natural format
  - FIFOs for isochronous data
  - RAM for structured data
- Large endpoint buffers

Ideal for bus-powered devices

Developer kit available

Applications

Single Chip



The EZ-USB chip contains an internal 8052 microprocessor, making it an ideal low-cost USB solution. This diagram illustrates a typical system that uses the internal 8052. The 8 Kbyte RAM is downloaded with 8052 program code, as well as USB configuration information. This RAM replaces E-PROM, OTP E-PROM or Masked ROM that is conventionally used. I/O ports are available for connection to buttons, lights, actuators, or any other devices in the system that require digital control. The I^2C bus can be connected to dozens of low-cost, standard peripheral devices such as EE-PROMS, digital I/O expanders, analog acquisition chips, LCD displays, clock-calendars, and thermometers/thermostats. The 8052 serial port is also available for RS-232 applications.

The 8052 code is easy to write because the Anchor USB Core does most of the work. For example, during device enumeration, the host requests various "descriptors," which are tables of device characteristics. The three-phase SETUP transactions (Setup, Data, Acknowledge) are handled by the core which also supplies the required table data. The 8052 merely checks a "USB ready" bit to indicate that enumeration is complete.

Other USB device applications include:

High-end audio	Scanners	Personal Information Managers
Data collection systems	Wireless services	Teleconferencing cameras
Instrumentation	Security systems	Biomedical instruments
ISDN modems	Printers	Migration of ISA bus functions
GPS systems	Zip drives	Industrial controls

www.anchorchips.com

Anchor Chips Incorporated
12396 World Trade Drive, Suite 212
San Diego, CA 92128

Voice (619) 676-6815
Fax (619) 676-6896

ANCHORCHIPS