

Usb Design By Example A Practical Guide To Building I O

USB

Developer's Guide (5th ed.). Lakeview Research. ISBN 978-1-931448-28-4. Hyde, John (February 2001). USB Design by Example: A Practical Guide to Building I/O Devices

Universal Serial Bus (USB) is an industry standard, developed by USB Implementers Forum (USB-IF), for digital data transmission and power delivery between many types of electronics. It specifies the architecture, in particular the physical interfaces, and communication protocols to and from hosts, such as personal computers, to and from peripheral devices, e.g. displays, keyboards, and mass storage devices, and to and from intermediate hubs, which multiply the number of a host's ports.

Introduced in 1996, USB was originally designed to standardize the connection of peripherals to computers, replacing various interfaces such as serial ports, parallel ports, game ports, and Apple Desktop Bus (ADB) ports. Early versions of USB became commonplace on a wide range of devices, such as keyboards, mice...

Laptop

a number of typical laptop I/O ports, such as USB 3 and Mini DisplayPort. 2-in-1s are designed to be used not only as a media consumption device but also

A laptop computer or notebook computer, also known as a laptop or notebook, is a small, portable personal computer (PC). Laptops typically have a clamshell form factor with a flat-panel screen on the inside of the upper lid and an alphanumeric keyboard and pointing device on the inside of the lower lid. Most of the computer's internal hardware is in the lower part, under the keyboard, although many modern laptops have a built-in webcam at the top of the screen, and some even feature a touchscreen display. In most cases, unlike tablet computers which run on mobile operating systems, laptops tend to run on desktop operating systems, which were originally developed for desktop computers.

Laptops are used in a variety of settings, such as at work (especially on business trips), in education, for...

I²C

a given I2C bus is limited by the address space and also by the total bus capacitance of

400 pF, which restricts practical communication distances to

I2C (Inter-Integrated Circuit; pronounced as "eye-squared-see" or "eye-two-see"), alternatively known as I2C and IIC, is a synchronous, multi-master/multi-slave, single-ended, serial communication bus invented in 1980 by Philips Semiconductors (now NXP Semiconductors). It is widely used for attaching lower-speed peripheral integrated circuits (ICs) to processors and microcontrollers in short-distance, intra-board communication.

In the European Patent EP0051332B1 Ad P.M.M. Moelands and Herman Schutte are named as inventors of the I2C bus. Both were working in 1980 as development engineers in the central application laboratory CAB of Philips in Eindhoven where the I2C bus was developed as "Two-wire bus-system comprising a clock wire and a data wire for interconnecting a number of stations". The...

Computer mouse

while others use a receiver that plugs into the computer, for example through a USB port. Many mice that use a USB receiver have a storage compartment

A computer mouse (plural mice; also mouses) is a hand-held pointing device that detects two-dimensional motion relative to a surface. This motion is typically translated into the motion of the pointer (called a cursor) on a display, which allows a smooth control of the graphical user interface of a computer.

The first public demonstration of a mouse controlling a computer system was done by Doug Engelbart in 1968 as part of the Mother of All Demos. Mice originally used two separate wheels to directly track movement across a surface: one in the x-dimension and one in the Y. Later, the standard design shifted to use a ball rolling on a surface to detect motion, in turn connected to internal rollers. Most modern mice use optical movement detection with no moving parts. Though originally all mice...

Linux kernel

by device drivers: SCSI Interfaces and libATA - respectively, a peer-to-peer packet based communication protocol for storage devices attached to USB,

The Linux kernel is a free and open-source Unix-like kernel that is used in many computer systems worldwide. The kernel was created by Linus Torvalds in 1991 and was soon adopted as the kernel for the GNU operating system (OS) which was created to be a free replacement for Unix. Since the late 1990s, it has been included in many operating system distributions, many of which are called Linux. One such Linux kernel operating system is Android which is used in many mobile and embedded devices.

Most of the kernel code is written in C as supported by the GNU Compiler Collection

(GCC) which has extensions beyond standard C. The code also contains assembly code for architecture-specific logic such as optimizing memory use and task execution. The kernel has a modular design such that modules can be...

Chorded keyboard

turned into a chorded keyboard. This design philosophy was decided on to lower the cost of building devices, and in turn lower the entry barrier to becoming

A keyset or chorded keyboard (also called a chorded keyset, chord keyboard or chording keyboard) is a computer input device that allows the user to enter characters or commands formed by pressing several keys together, like playing a "chord" on a piano. The large number of combinations available from a small number of keys allows text or commands to be entered with one hand, leaving the other hand free. A secondary advantage is that it can be built into a device (such as a pocket-sized computer or a bicycle handlebar) that is too small to contain a normal-sized keyboard.

A chorded keyboard minus the board, typically designed to be used while held in the hand, is called a keyer. Douglas Engelbart introduced the chorded keyset as a computer interface in 1968 at what is often called "The Mother...

List of Arduino boards and compatible systems

choices made by Arduino-compatible board designers is whether or not to include USB circuitry in the board. For many Arduino tasks, the USB circuitry is

This is a non-exhaustive list of Arduino boards and compatible systems. It lists boards in these categories:

Released under the official Arduino name

Arduino "shield" compatible

Development-environment compatible

Based on non-Atmel processors

Where different from the Arduino base feature set, compatibility, features, and licensing details are included.

NetBSD

(WAN, DMZ), 4x GE L2 switch ports, 2x USB 2.0 ports, and reaches a throughput of 2Gbps, and VPN rate of up to 2 Gbit/s. Moritz Systems, an EU-based IT

NetBSD is a free and open-source Unix-like operating system based on the Berkeley

Software Distribution (BSD). It was the first open-source BSD descendant officially released after 386BSD was forked. It continues to be actively developed and is available for many platforms, including servers, desktops, handheld devices, and embedded systems.

The NetBSD project focuses on code clarity, careful design, and portability across many computer architectures. Its source code is publicly available and permissively licensed.

Chromecast

powered by connecting the device to an external power adapter or USB port using a USB cable. Video-capable Chromecasts plug into the HDMI port of a high-definition

Chromecast is a discontinued line of digital media players developed by Google. The devices, designed as small dongles, can play Internet-streamed audio-visual content on a high-definition television or home audio system. The user can control playback with a mobile device or personal computer through mobile and web apps that can use the Google Cast protocol, or by issuing commands via Google Assistant; later models introduced an interactive user interface and remote control. Content can be mirrored to video models from the Google Chrome web browser on a personal computer or from the screen of some Android devices.

The first-generation Chromecast, a video streaming device, was announced on July 24, 2013, and made available for purchase on the same day in the United States for US\$35 (equivalent...

Computer

are designed to move frequently needed data into the cache automatically, often without the need for any intervention on the programmer's part. I/O is

A computer is a machine that can be programmed to automatically carry out sequences of arithmetic or logical operations (computation). Modern digital electronic computers can perform generic sets of operations known as programs, which enable computers to perform a wide range of tasks. The term computer system may refer to a nominally complete computer that includes the hardware, operating system, software, and peripheral equipment needed and used for full operation; or to a group of computers that are linked and function together, such as a computer network or computer cluster.

A broad range of industrial and consumer products use computers as control systems, including simple special-purpose devices like microwave ovens and remote controls, and factory devices like industrial robots. Computers...

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