

**Features****● USB 2.0 MTT Hub**

- Fully compliant with Universal Serial Bus Specification Revision 2.0
- Supports USB HS (480Mbps), FS(12Mbps) and LS (1.5Mbps) modes
- Three downstream ports and one upstream port with integrated USB 2.0 transceivers
- Multiple Transaction Translator (MTT) provides respective TT control logics for each downstream port
- Supports one suspend LED indicator and three downstream port status LED indicator
- On-chip 8-bit micro-processor (6 MIPS @12MHz) with 64-byte RAM and 2K internal ROM
- Built-in upstream port 1.5K $\Omega$  pull-up and downstream port 15K $\Omega$  pull-down resistors
- Supports both individual and gang modes of power management and over-current detection for downstream ports
- Supports compound-device (non-removable in downstream ports) by I/O pin configuration
- Improves output drivers with slew-rate control for EMI reduction
- Internal power-fail detection for ESD recovery

**● 10/100M Fast Ethernet Controller**

- Integrates 10/100Mbps Fast Ethernet MAC/PHY
- IEEE 802.3 10Base-T/100Base-TX compatible
- Supports twisted pair crossover detection and auto-correction (HP Auto-MDIX)
- Embedded 16KB SRAM for RX packet buffering and 8KB SRAM for TX packet buffering
- Supports both Full-duplex with flow control and Half-duplex with backpressure operation

**Product Brief**

- Supports 2 VLAN ID filtering, received VLAN Tag (4 bytes) can be stripped off or preserved
- MAC/PHY loop-back diagnostic capability
- Support Wake-on-LAN Function
  - ◆ Supports Suspend mode and Remote Wakeup via Link-up, Magic packet, MS wakeup frame and external pin
  - ◆ Optional PHY power down during Suspend mode
- High performance packet transfer rate over USB bus using proprietary burst transfer mechanism (US Patent Approval)
- Supports USB to Ethernet bridging or vice versa in hardware
- Supports 256/512 bytes (93c56/93c66) of serial EEPROM (for storing USB Descriptors for USB to LAN function)
- Supports automatic loading of Ethernet ID, USB Descriptors and Adapter Configuration from EEPROM after power-on initialization
- Integrates on-chip voltage regulator and only requires a single 3.3V power supply
- 12MHz and 25Mhz clock input from either crystal or oscillator source
- Integrates on-chip power-on reset circuit
- Package type with 100-pin LQFP RoHS compliant package
- Operating temperature range: 0°C to 70°C

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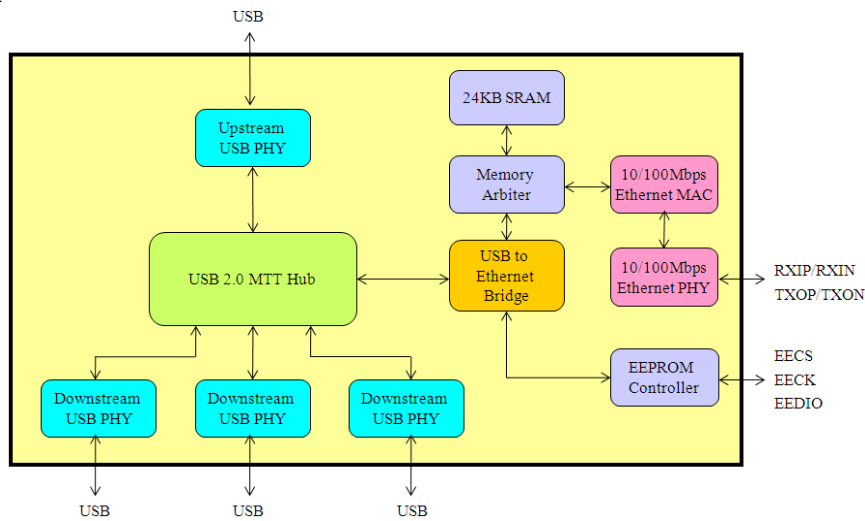
**Product Description**

The AX88760 is a high performance and highly integrated USB/Ethernet and USB/USB connectivity solution which contains an USB 2.0 hub, three downstream USB 2.0 transceivers, an upstream USB 2.0 transceiver, a 10/100M Ethernet PHY, a 10/100M Ethernet MAC, a EEPROM controller, and a 24KB SRAM. The AX88760 is targeted for many applications such as desktops, notebook PCs, Ultra-Mobile PCs, docking stations, game consoles, multifunction printers, digital-home appliances, and any embedded systems using a standard USB port.

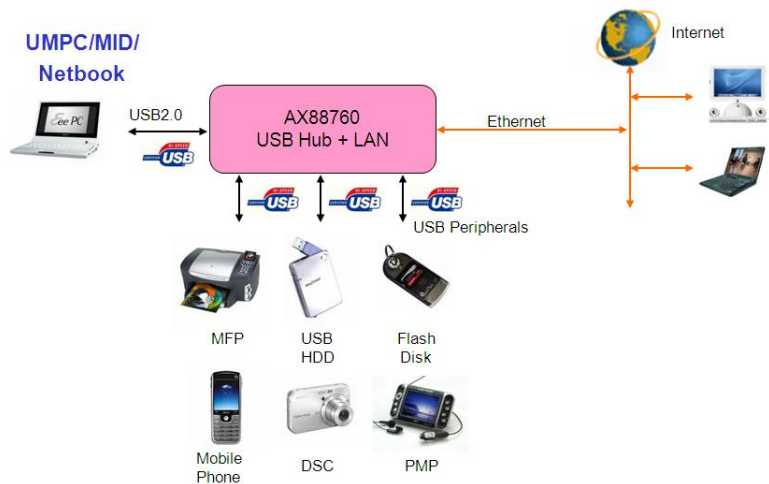
The AX88760's integrated USB hub is fully compliant with USB 2.0 Specification and supports Low-Speed, Full-Speed, and High-Speed downstream devices on all of the enabled downstream ports. The AX88760 implements multiple TT architecture that provides dedicated TT to each downstream (DS) ports, which guarantee Full-Speed (FS) data passing bandwidth when multiple FS device perform heavy loading operations. The AX88760 provides full hub features such as (1) One suspend LED indicator and three downstream port status LED indicators, (2) Individual/Gang mode power management scheme and over-current detection for downstream ports, and (3) Non-removable declaration configured by I/O pin during power-on reset...etc

The AX88760 integrates on-chip Fast Ethernet MAC and PHY, which is IEEE802.3 10Base-T and IEEE802.3u 100Base-TX compatible, and 24KB embedded SRAM for packet buffering to accommodate high bandwidth applications. The AX88760 has a wide array of features including support for HP Auto-MDIX, Wake-on-LAN power management, and IEEE 802.3x and backpressure flow control.

**Block Diagram**



**Application Diagram**



**Target Applications**

