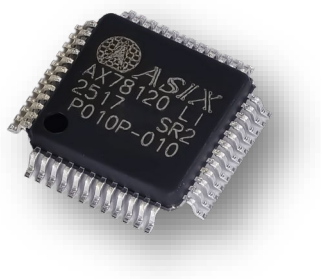
# AX78120
# Product Brief

Release Date: 03/10/2026

# USB 2.0 to Multi I/O (1S, 2S) Controller



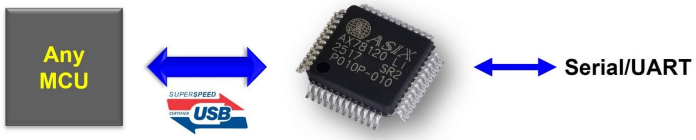

The AX78120 is a USB 2.0 Single/Dual UART Serial Bridge Controller integrating a USB 2.0 controller and PHY with two high-speed serial ports. It supports two modes: 1S (USB to Single UART/Serial) and 2S (USB to Dual UART/Serial). The AX78120 is ideal for USB 2.0 I/O bridge applications including USB to UART/RS-232/RS-422/RS-485 serial converters, USB Data Acquisition (DAQ) modules, industrial computers, automation systems, measurement instruments, medical devices, and POS terminals. Fully pin-to-pin and driver compatible with MCS7810 and MCS7820.

## Key Features

- **Single chip USB 2.0 to Multi I/O (1S, 2S) controller**
- **USB Device Controller**
  - Integrates on-chip USB 2.0 PHY and controller compliant to USB Spec 2.0 and 1.1
  - Supports all USB 2.0 power saving modes (L1, L2)
  - Supports USB High/Full Speed modes with Bus-power or Self-power device auto-detect capability
  - Supports USB LPM (Link Power Management)
- **Dual Serial Port Interface**
  - Supports two 16c450/16c550 compatible UARTs
  - Supports SIR IrDA mode on any/all ports
  - Supports RS-232, RS-422 and RS-485 serial ports
  - Supports multi-protocol serial transceivers
  - Supports 5, 6, 7 & 8 bit serial data
  - Supports automatic data direction control
  - Supports multi-drop mode with auto address detection
  - Supports hardware and software flow control
  - Supports baud rates from 50bps to 6Mbps
  - Supports custom baud rates from external clock
  - On-Chip 1024-Byte FIFO for upstream and 512-Byte for downstream data transfer for each Serial Port
  - I2C interface for EEPROM
  - Supports read/write EEPROM through USB interface
  - On-Chip buffers for serial port signals to operate without external transceivers over short cable
  - Pin-to-Pin compatible with MCS7810/MCS7820
  - Driver backward compatible with MCS7810/ MCS7820
- **Support Remote Wake Up Function**
  - Supports Suspend Mode and Remote Wakeup via RXD, RI, DSR, DCD and CTS pin
- **Advanced Power Management Features**
  - Supports USB LPM (Link Power Management)
  - Supports remote wake up re-trigger
- **Supports 1 GPIO pin**
- **Integrates on-chip 1.8V and 3.3V voltage regulator and only requires a single 5V power supply**
- **Single 12MHz clock input from either crystal or oscillator source**
- **Integrates on-chip Power-On Reset (POR) circuit**
- **Small form factor with 48-pin LQFP RoHS compliant package**
- **Operating over -40˚C to +85˚C temperature range**

## Target Applications

- USB to UART/RS-232/RS-422/RS-485 Serial Converters
- USB Data Acquisition (DAQ) Modules
- Point-of-Sale (POS) Terminals
- Industrial Computers and Automation Systems
- Measurement and Instrumentation Systems
- Medical Devices and Equipment




**ASIX Electronics Corporation**
4F, No. 8, Hsin Ann Road, Hsinchu Science Park, Hsinchu, 30078, Taiwan
TEL: +886-3-5799500 FAX: +886-3-5799558
Email: sales@asix.com.tw
https://www.asix.com.tw/

Website WeChat LINE