

**Features****● PCI Express**

- Single-lane (X1) PCI Express End-point Controller with integrated PHY
- Compliant with PCI Express Base Specification, Revision 1.1
- Compliant with PCI Express card specifications
- Supports four PCI Express functions
- Supports auto completion of configuration requests
- Supports built in flow control
- Supports Message TLP (Error) generation
- Supports integrated time out handling of Non-posted request
- Supports both legacy and MSI Interrupt
- Supports PCIe Power Management

**● Serial Port**

- Four 16C450 / 550 / Extended 550 / 650 / Enhanced Mode compatible UARTs
- Supports RS232, RS422 & RS485 modes
- Bi-directional speeds from 50 bps to 16 Mbps per port
- Full Serial Modem Control
- Supports Hardware, Software Flow Control
- Supports 5, 6, 7, 8 bit Serial format
- Supports Even, Odd, None, Space and Mark parity
- Supports Custom baud rate by programming internal PLL or external clock
- Supports On Chip 256 Byte depth FIFOs in Transmit, Receive path of each Serial Port

**Product Brief**

- Supports remote wakeup and power management features
- Serial Port transceiver shutdown support
- Supports Slow IrDA mode (up to 115200bps) on all Serial Ports

**● Parallel Port**

- Compatible with IEEE 1284
- Nibble Mode
- Byte Mode
- Enhanced Parallel Port (EPP 1.9)
- Extended Capability Port (ECP)
- FIFO mode (Buffered SPP mode)

**● Cascade:** MCS9900 supports a 13-Pin proprietary interface to connect to other cascade supported ASIX devices for IO expansion. For example, MCS9900 can interface with another MCS9900 to derive following product configurations.

- PCIe to 8 Serial Ports
- PCIe to 6 Serial Ports and 1 Parallel Port
- PCIe to 4 Serial Ports and 2 Parallel Ports

**● General Device Features**

- I<sup>2</sup>C interface for EEPROM
- EEPROM read / write through PCIe Interface
- Up to 8 bi-directional multi-function GPIO lines
- On chip oscillator
- Power supply : 1.2V, 3.3V
- Package : 128-Pin LQFP, RoHS
- Operating Temperature : 0 to +70°C

**Product Description**

MCS9900 is a single lane multifunction PCI express to I/O controller. It supports two modes of operations which are selectable through device mode select pins. Mode1 supports four serial ports and GPIO, Mode2 supports two serial ports, one parallel port and GPIO. MCS9900 also provides an option for peripheral expansion through proprietary Cascade interface. The generic cascade interface allows interconnection with similar chips like MCS9900, MCS9904, MCS9901CV-CC & MCS9922 for port expansion. The serial ports are compatible with RS232, RS422 & RS485 standards and supports throughput from 50bps to 16Mbps. Parallel Port is compatible with IEEE 1284 and supports Nibble, Byte, SPP, ECP, and EPP modes. All the GPIO pins are programmable and can be used as Input or Output. An I<sup>2</sup>C interface is provided to configure MCS9900 device options through an external EEPROM.

## Target Applications

- Serial Attached Devices
- Serial Networking / Monitoring Equipment
- Data Acquisition System
- POS Terminal & Industrial PC
- Parallel / Printer Port based applications
- Add-On I/O Cards – Serial / Parallel
- Embedded systems – For I/O expansion

## Block Diagram

