

Description

The CP2200/1 is a single-chip Ethernet controller containing an integrated IEEE 802.3 Ethernet Media Access Controller (MAC), a 10 BASE-T Physical Layer (PHY), and 8 kB of Non-Volatile Flash Memory available in a 28-pin QFN (5x5 mm) or 48-pin TQFP package.

The CP2200/1 can add Ethernet connectivity to any micro-controller or host processor with 11 or more Port I/O pins. The 8-bit parallel interface bus supports both Intel and Motorola bus formats in multiplexed and non-multiplexed mode. The 28-pin QFN device supports multiplexed addressing only. Mode select pins are used to configure the bus interface mode.

The on-chip Flash memory may be used to store user constants, web server content, or can be used as general purpose non-volatile memory. The Flash is factory pre-programmed with a unique 48-bit MAC address stored in the last six memory locations. Having a unique MAC address stored in the CP2200/1 often removes the necessary serialization step from the product manufacturing process of most embedded systems.

Firmware Features

Software Support

- Royalty-free TCP/IP stack with device drivers
- TCP/IP Configuration Wizard
- Hardware diagnostic software and example code

Example Applications

- Remote sensing and monitoring
- Inventory management
- VoIP phone adapters
- Point-of-sale devices
- Network clocks
- Embedded web server
- Remote Ethernet-to-UART bridge

Hardware Features

Ethernet Controller

- Integrated IEEE 802.3 MAC and 10 BASE-T PHY
- Fully compatible with 100/1000 BASE-T networks
- Full/Half duplex with auto-negotiation
- Automatic polarity detection and correction
- Automatic retransmission on collision
- Automatic padding and CRC generation
- Supports broadcast and multi-cast MAC addressing

Parallel Host Interface (30 Mbps Transfer Rate)

- 8-bit multiplexed or non-multiplexed mode
- Only 11 I/O pins required in multiplexed mode
- Intel or Motorola Bus Format
- Interrupt on received packets and Wake-on-LAN

8 kB Flash Memory

- 8192 bytes of non-volatile user data storage
- Factory pre-programmed unique 48-bit MAC address
- No external EEPROM required

Other Features

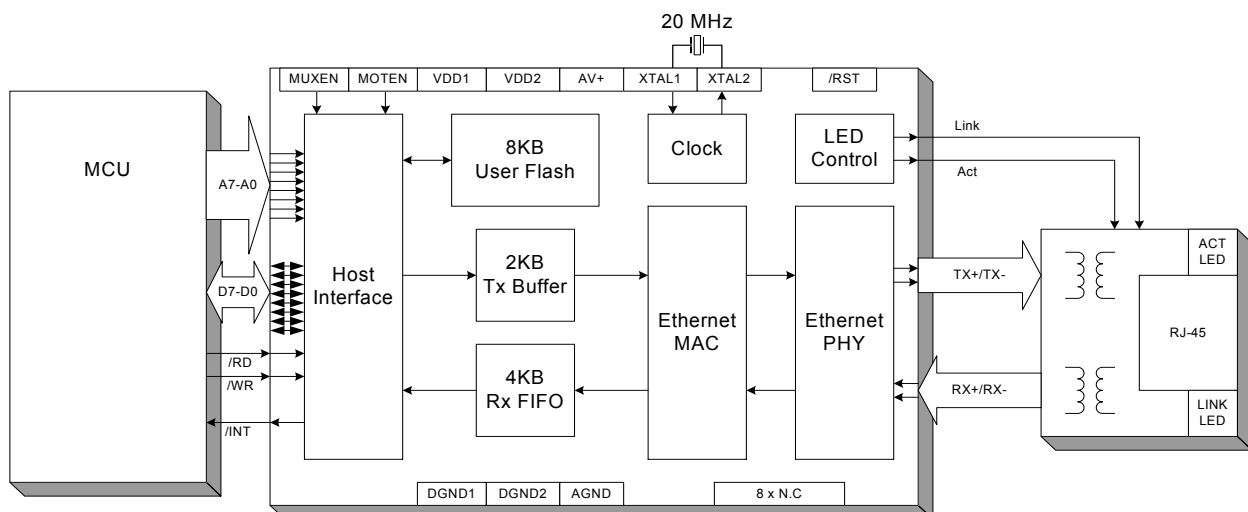
- LED output drivers (Link/Activity)
- Dedicated 2 kB RAM transmit buffer and 4 kB RAM receive FIFO buffer
- Power-on Reset
- 5 V tolerant I/O

Supply Voltage: 3.1 to 3.6 V

Package Options

- Lead free 48-pin TQFP (9 x 9 mm footprint)
- Lead free 28-pin QFN (5 x 5 mm footprint)

Temperature Range: -40 to +85 °C



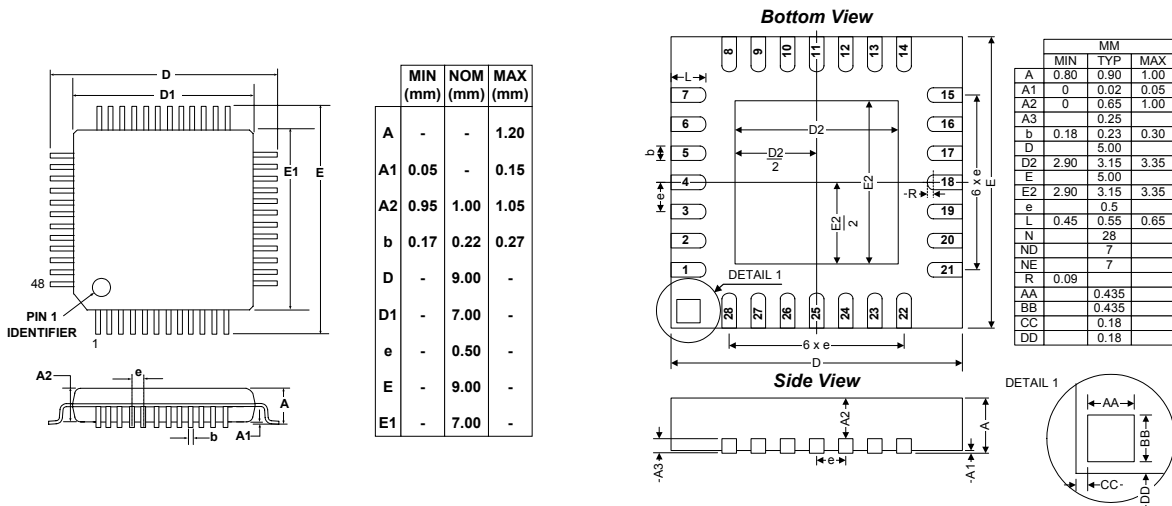
Selected Electrical Specifications

($T_A = -40$ to $+85$ °C, $V_{DD} = 3.1$ V unless otherwise specified.)

Parameter	Conditions	Min	Typ	Max	Units
Voltage (V_{DD})		3.1	3.3	3.6	V
Current—Operating (I_{DD})		—	70	—	mA
Supply Current—Shutdown		—	TBD	—	mA
Flash		—	8192	—	bytes
VIH		2	—	—	V
External Oscillator	50 ppm	—	20	—	MHz

External Magnetics Requirements: RX Turns Ratio—1:1 and TX Turns Ratio—1:2.5

Package Information



Ethernet Development Kit

The Ethernet Development Kit (ETHERNETDK) provides all of the hardware and software necessary to develop real-world embedded systems using the industry-proven CMX Micronet™ protocol stack, the CP2200, and Silicon Laboratories' high-performance microcontrollers.

Included in the kit is a 100 MHz C8051F120 MCU Target Board, a CP2200 Ethernet Development Board (AB4), the Silicon Laboratories IDE, a TCP/IP Configuration Wizard that generates TCP/IP Libraries, a USB debug adapter, and all necessary cables to debug the MCU and connect it to an Ethernet network.

The CP2200 Ethernet Development Board is also compatible with the C8051F020TB and the C8051F340TB. Additional information is available at www.silabs.com/ethernet.

