

2/9/2007

## CP2200/1 Rev. C Errata

1. **Extra Bit Observation**—On packets where the most significant bit of the last byte (typically the last byte of the FCS) is a logic 1, an extra transition was observed on TX±. This transition is considered a dribble bit and should be truncated by the receiver per Section 4.2.4.2.1 of IEEE 802.3-2002. There are no system level implications to the transmission and truncation of a dribble bit.

**Definition of Jam Sequence**—If the MAC is operating in half-duplex mode and a collision is detected, it is required to transmit a random 32-bit sequence called jam (see 4.1.2.2 of IEEE 802.3-2002). The jam sequence is a random number which is inserted on the network during a collision to guarantee that a maximally remote link partner (i.e., 100 meters away) will see the collision and begin a back off procedure.

**Effect of Extra Bit on Jam Sequence**—Since the jam sequence is a random number, it was occasionally observed to have an extra transition, resulting in a 33-bit jam sequence. Although this extra bit in the jam sequence violates specification, it does not impact proper operation of the network. The extra bit increases the time to recover from a collision by 100 ns (i.e., 1 bit time), which is inconsequential in a 10 Base-T Half-Duplex Collision Domain.

The extra transition observed on TX± will be removed in a future silicon revision.

2. **MAC Address Filtering**—For unicast packets received over the Ethernet wire, the receive filter only validates the first 5 bytes of the 6-byte Ethernet MAC Address. Any packet addressed to a device whose MAC address only differs in the 6th byte will be allowed to pass through the receive filter.

**Workaround**—The Ethernet driver on the host controller should verify that the 6th byte of each packet (i.e., the final byte of the MAC address) matches its assigned MAC address. If it detects a mismatch, the packet should be discarded by writing '1' to the RXSKIP bit.

**Implications on Throughput**—This behavior does not slow down the rate which the embedded system can send or receive packets, since the CP220x must receive and filter all packets on the network. However, it can interrupt the host controller for received packets addressed to another device with a similar MAC address (where the only difference is in the 6th byte) on the same subnet. On a managed switch network, present on most corporate LANs, the effect of this behavior is minimal due to the fact that the managed switch filters out unicast packets not addressed to the receiving Ethernet device.

3. **Ability to capture all packets**—The CP220x does not have a mode in which all packets on the Ethernet wire can be captured and buffered. This feature was incorrectly mentioned in data sheet revisions 0.41 and prior.

All future datasheet revisions will be corrected to exclude this feature.