DN6000k10/DN6000k10PCI Errata

Symptom:
DN6000k10(PCI) does not appear to be responding to USB, does not configure the FPGAs, and/or does not print anything out on the MCU RS232 port. The problem seems to go away after cycling power to the board.

Problem:
The Cypress FX2 MCU requires a clock during reset. On the current DN6000k10(PCI) the MCU clock is being driven by the Xilinx Spartan II FPGA. The Spartan takes ~270ms from power on before it starts driving the MCU clock. The MCU reset transitions from active to inactive in ~20ms from power on. This means that the MCU is coming out of reset without a clock and this causes the MCU to behave nondeterministicly.

Solution:
There is an RC circuit responsible for the timing of the reset signal. By changing the value of the capacitor in the RC circuit from 2.7nF to 0.1uF the reset signal will stay active for ~480ms after power on thereby ensuring the MCU has a clock when it comes out of reset.

The USB spec requires all USB devices to enumerate no later than 100ms after the USB cable has been plugged in. By holding reset active longer, the DN6000k10(PCI) board will no longer meet this requirement when the board is powered on with the USB cable plugged in. Windows XP will record the DN6000k10(PCI) as an unknown device until the MCU has come out of reset at which time Windows will record the device correctly. If the USB cable is plugged in after the DN6000k10(PCI) has been powered up then the USB spec will be met.

Action:
If you believe you are seeing the problem described above please call The Dini Group at (858)454-3419 or email support@dinigroup.com