**Part 1 Questions**

**1.a) What is the audio device?**

Realtek ALC888.

**1.b) What device is the GPIO connected to?**

The 8-bit GPIO is connected to the Super IO Winbond W83627DHG.

**1.c) How many network (LAN) devices are on the motherboard and what are they?**

There are two (2) LAN devices on the motherboard.

They are the Intel 82567V on “LCI & GLCI” and the Intel 82583V on PCIe.

**1.d) How many total serial ports does the box support, inside and out?**

One RS-232/422/485 serial port, five RS-232 serial ports, and two Serial ATA ports for a total of eight.

**2.a) What pins control the LEDs?**

Pin 30 controls LED1 and Pin 31 controls LED0.

**2.b) What address offset is the Device Control Register?**

The Device Control Register is at Memory Offset 0x00000 or 0x00004.

**2.c) What bit in the Device Control Register will force a reset of the network chip?**

Bit 10, named PHY Reset Asserted. This bit has an initial value of 1b.

**3.a) What register (name and address) controls the LEDs?**

The LED Control Register is named LEDCTL and it is located at address 0x00E00.

**3.b) What bit pattern should you use to turn off LED1?**

The LED1\_MODE bits are 11:8 and the pattern for LED\_OFF is 1111.

All registers on this device are 32-bits.

Thus, the pattern to turn off LED1 is either 0b00000000000000000000111100000000 or 0x00000F00.

**3.c) What bit pattern should you use to make LED2 blink?**

The LED2\_BLINK\_MODE bit is 21.

Writing a 0b to this bit will set the blink speed of the LED to 200 ms on and 200 ms off. Writing a 1b to this bit will set the blink speed of the LED to 83 ms on and 83 ms off. The same value must also written to GLOBAL\_BLINK\_MODE.

Once a speed is selected, a 1b must be written to LED2\_BLINK at bit 23.

**4.a) What company makes the Super I/O chip in this box?**

Winbond.

**4.b) Can you find the datasheet on the web?**

Yes, at this URL:

http://www.alldatasheet.com/datasheet-pdf/pdf/206193/WINBOND/W83627DHG.html

**4.c) Where/how can you find this chip's datasheet if you aren't able to find it with a standard web search?**

Email or call Winbond.