Work Completed

I gave a call to Frank DeGiso, a regional sales representative for New England, for Vicor Power corporation about the BatMod recharging circuit. After describing our senior design project, he suggested a FlatPAC and BatMod module (see Fig. 1). This device would convert the AC from a standard US outlet to a DC current.

Frank’s associate gave the part number to being VI-LU1-CU-BM. “VI-LU” for 50-200W total power with 1 converter. “1” stands for 12V output voltage. “C” for 0˚C - 85˚C case product grade. “U” for 200W output power and...
40A output current, for $V_{out} > 5V$ and $V_{out} < 5V$, respectively. Finally, “BM” for the BatMod option.

However, the only problem situated with this was that if this product was ordered, the estimated delivery time would be 6 weeks, which is too long for us to complete this project in time. Thus the next back up product if Vicor cannot ship less than 4 weeks, was an Automatic 12V battery charger (see Fig. 2) found on www.batterystuff.com.

![Automatic 12V Battery Charger](image)

Figure 2: Automatic 12v Battery Charger

An email back from technical support suggested this battery will work well with our infusion pump rechargeable battery. Hopefully, if Vicor cannot mail their module within a 4 weeks time, then we will might as well go with this product for our recharging circuit.

Future Work

Main work needs to done in displaying the front panel of our LabVIEW program onto the LCD screen with a yellow video composite input. This feature is not supported by the EZ KIT LITE module we have in our design lab. A new module will need to be found and used. One that showed great appeal was the ADSP-BF561 EZ-KIT LITE module (see Fig. 3-next page) which also includes a Blackfin microprocessor.
Integrating external inputs (i.e. joystick, buttons) also needs to be explored for operating purposes for the program. In addition, the mechanism of working the infusion pump stepper motor needs to be greatly worked on in order to signal the motor correctly.

**Project Review**

Numerous problems were found upon analyzing our current progress with our project. The Blackfin EZ-KIT LITE module in our design labs does not feature a video output to an LCD display through a composite input. In addition, finalizing the recharging circuit had to be done and instead of designing one by ourselves, we are going towards the more conventional way of ordering a company product shown above. Fortunately, the LabVIEW program is still under near completion, but burning the program to a blackfin chip and making it work needs to be researched.

**Hours Worked**

11 hours