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[54] **BATTERY PACK HAVING A PROCESSOR CONTROLLED BATTERY OPERATING SYSTEM**

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[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,691,621.

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[51] Int. Cl.^{6} **H01M 10/44; H02J 7/04**
[52] U.S. Cl. **320/2**; 320/48
[58] Field of Search 320/5, 19, 20, 320/22, 30, 35, 48; 324/426; 365/96, 106

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[57] **ABSTRACT**

A battery pack and a method of operating a battery system. The battery pack includes a rechargeable battery and a processor for monitoring the battery during charging and discharging. The processor receives data values representing the battery voltage, temperature and current, and the processor performs a series of calculations using those data values. The processor is part of a hybrid integrated circuit, which also includes an analog-to-digital converter, a ROM and a RAM. Preferably, the integrated circuit comprises a multitude of layers, upper layers of the circuit form the ROM, and lower layers of the circuit form the RAM.
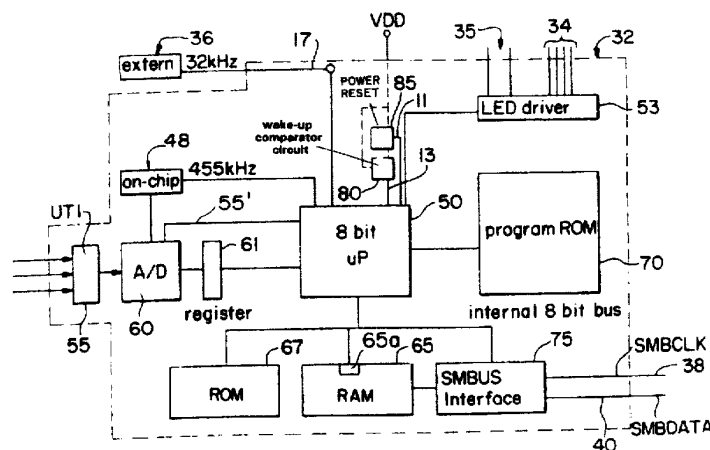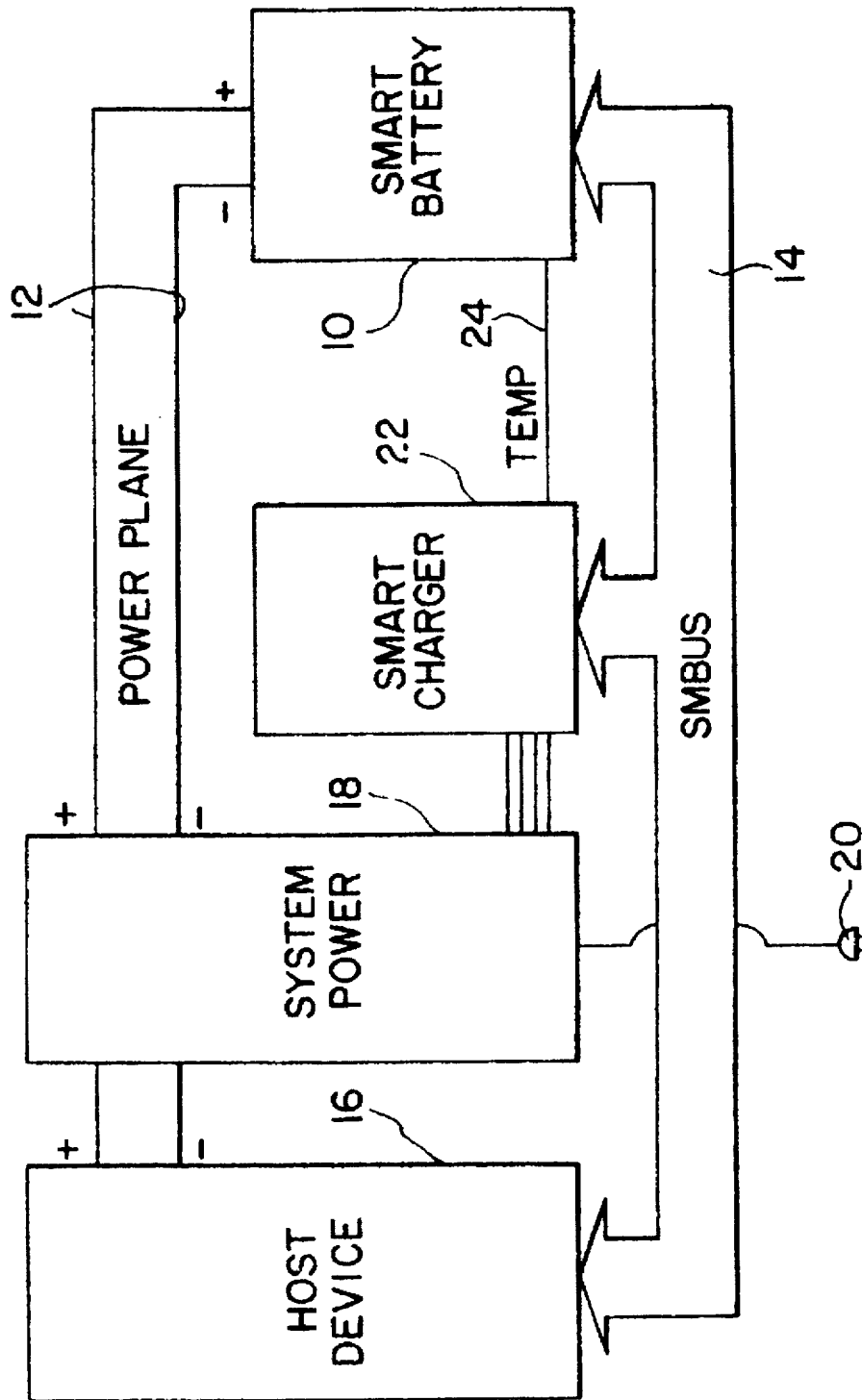
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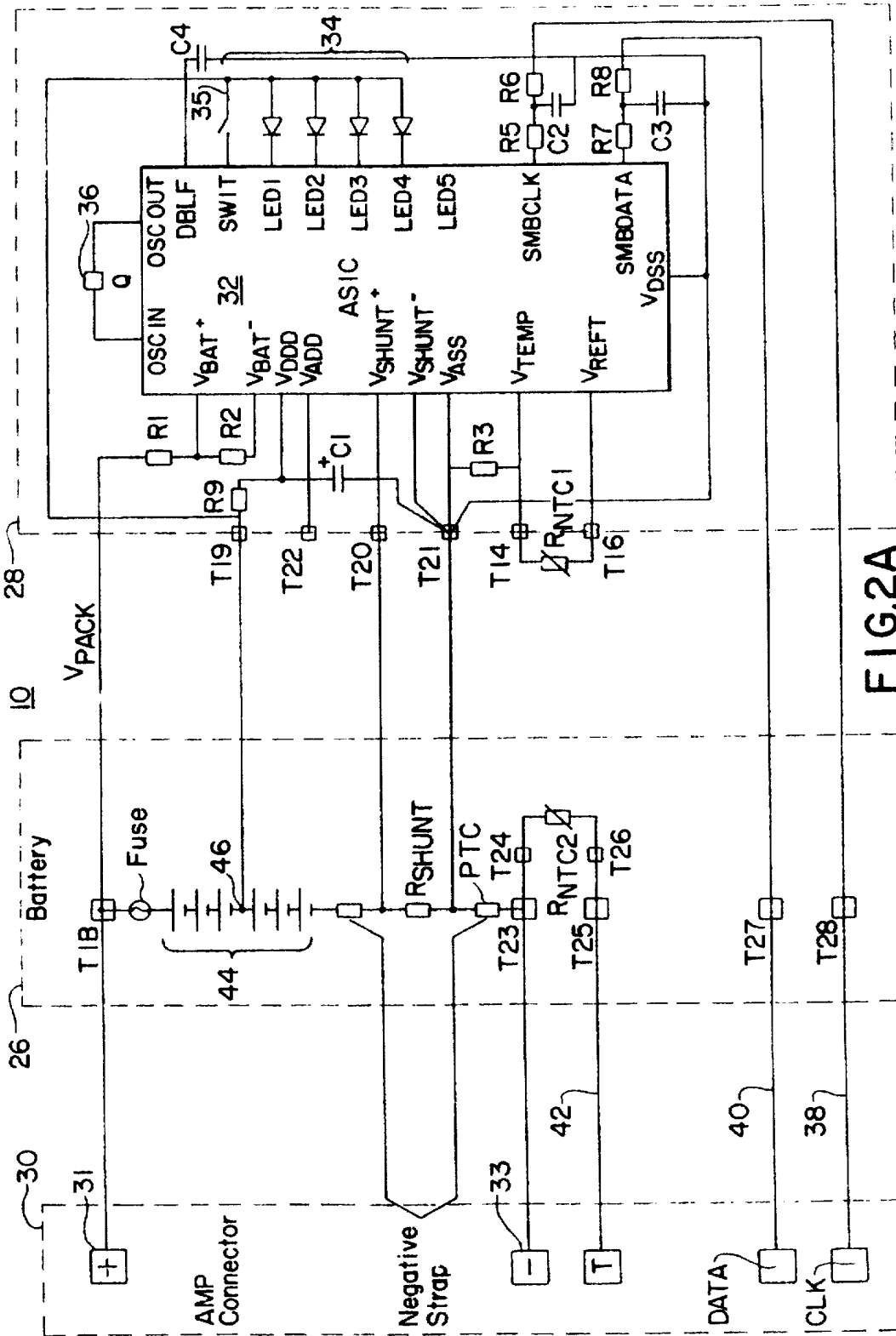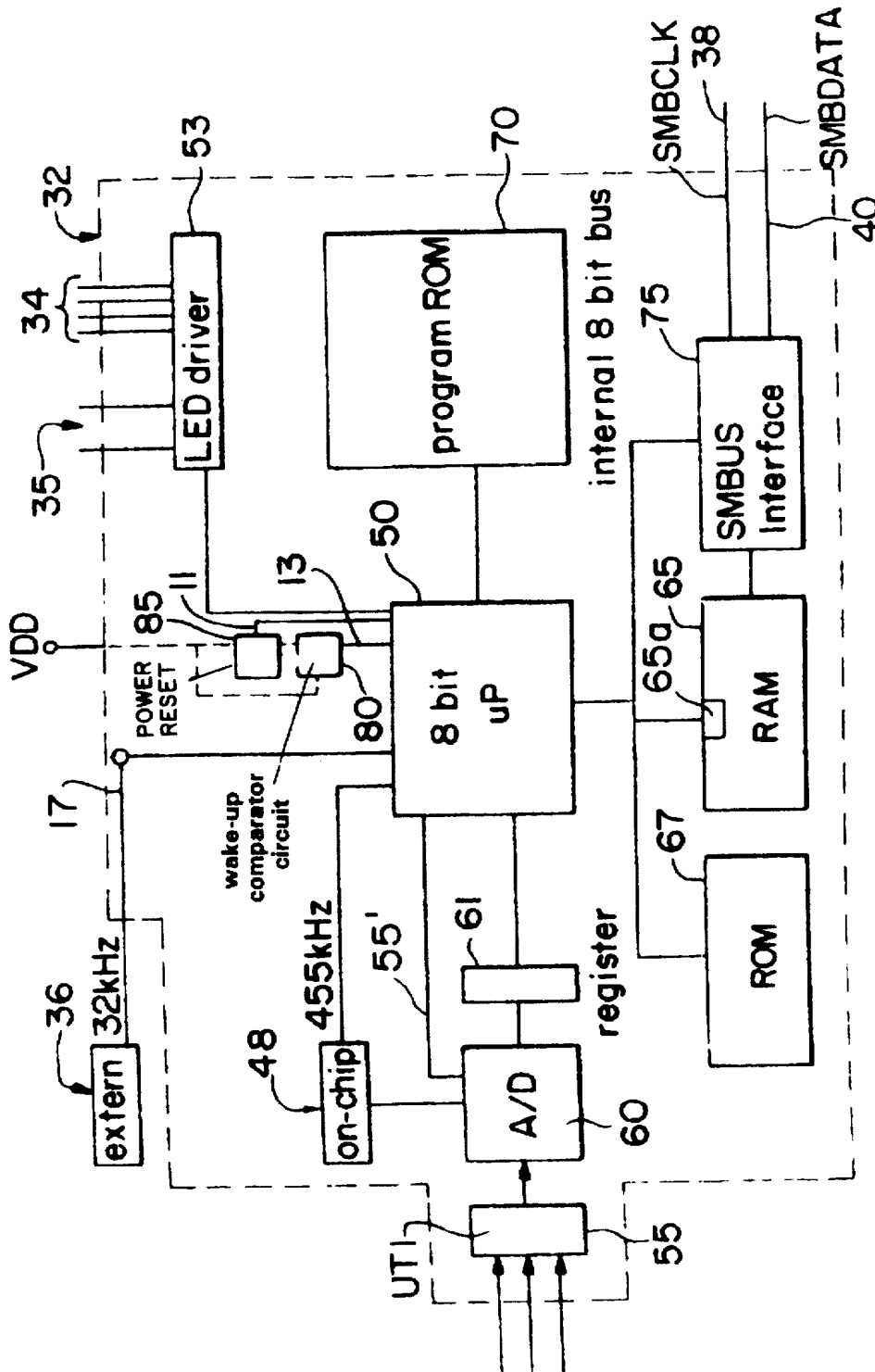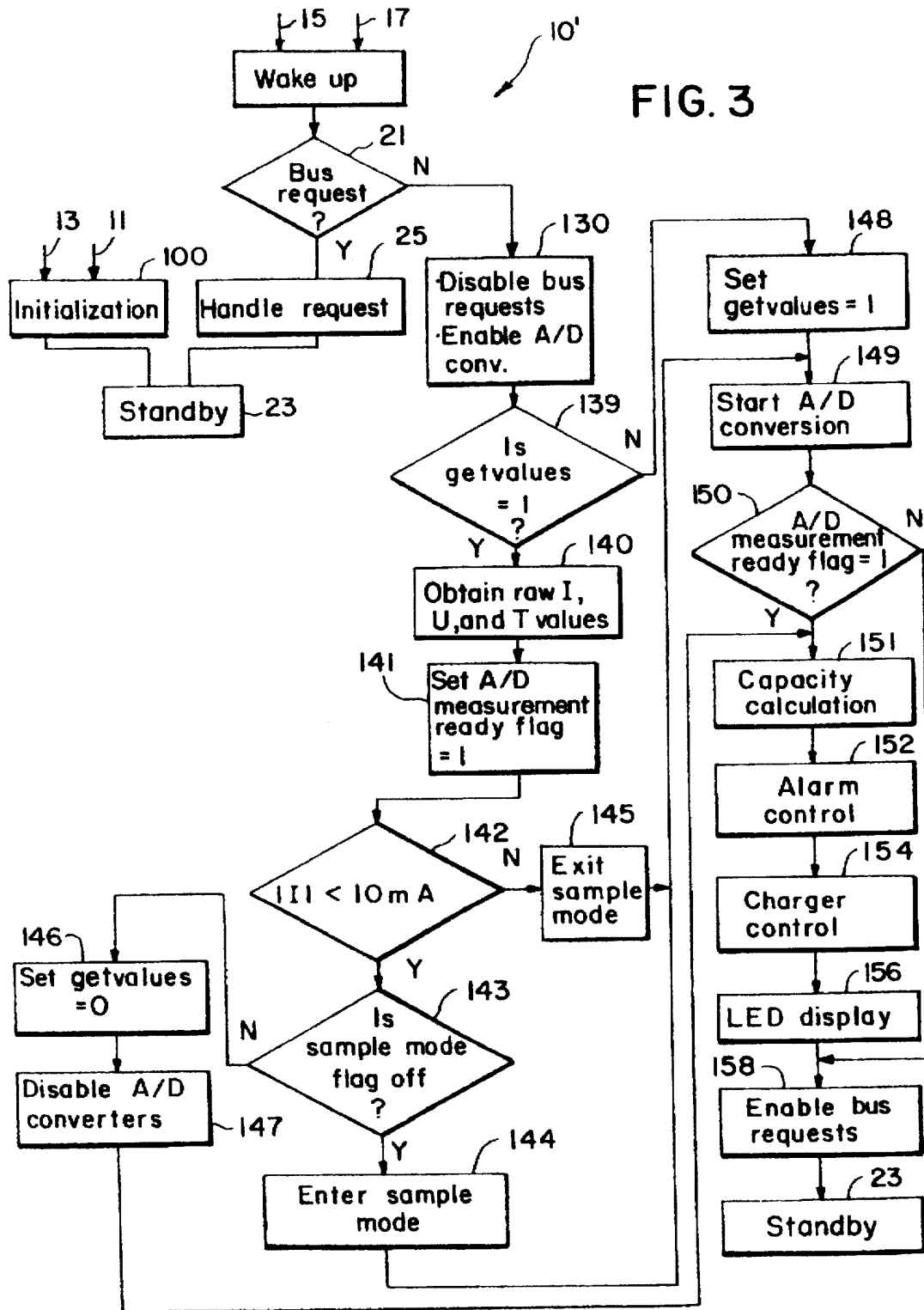
FIG.1

FIG.2A

FIG.2B

FIG. 3

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