

Prevent RASND from floating
 away from GND

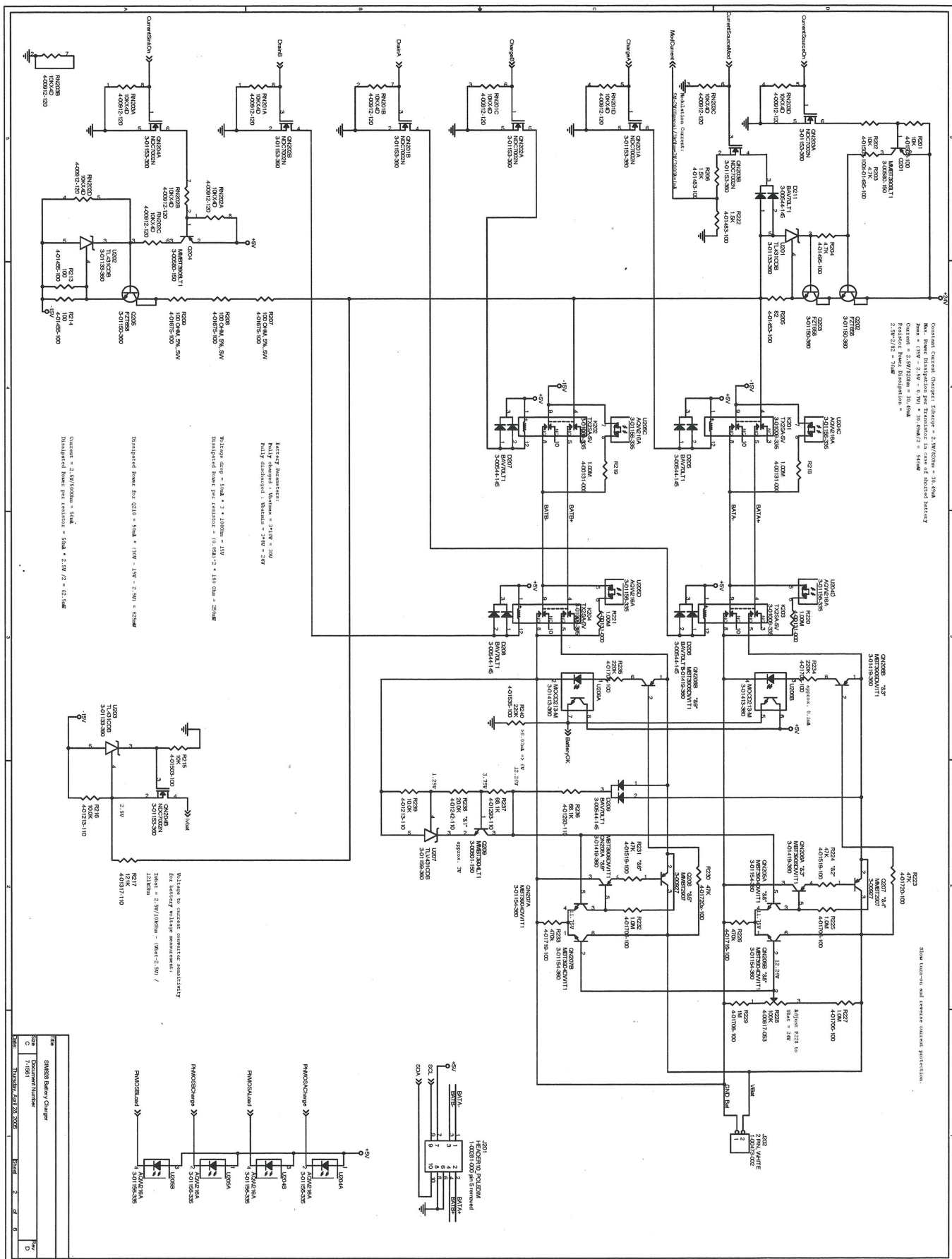
IEMI update every 10ms.
 default filter bandwidth is 3 kHz.
 measurement error from approx. state noise
 results in at best approx. 34.5 times
 increased resolution

Expected DC current approx. 100mA

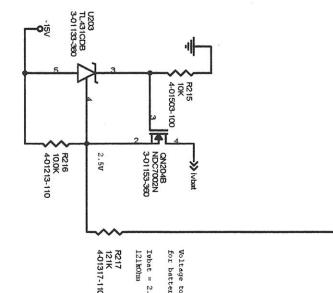
Labels forward voltage of LED should
 be specified. LED voltage with 100mA
 (CAL)

| Part | Quantity | Notes |
|-----------|----------|-----------------|
| U100 | 1 | Microcontroller |
| U101 | 1 | SRAM |
| U102 | 1 | Flash Memory |
| U103 | 1 | Logic |
| U104 | 1 | Logic |
| U105 | 1 | Logic |
| U106 | 1 | Logic |
| U107 | 1 | Logic |
| U108 | 1 | Logic |
| R100-R109 | Various | Resistors |
| C100-C119 | Various | Capacitors |
| L100-L104 | Various | Inductors |

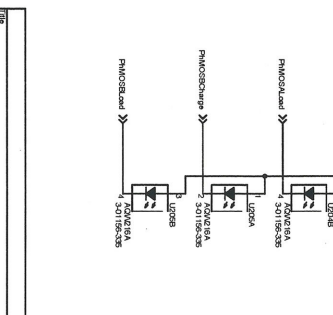
CURRENTS: CHARGE CURRENT = 2.0V/20Ω = 100 mA
 DISCHARGE CURRENT = 2.0V/20Ω = 100 mA
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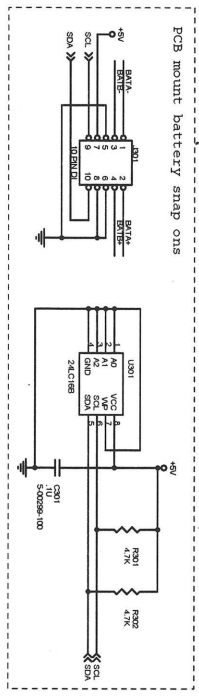
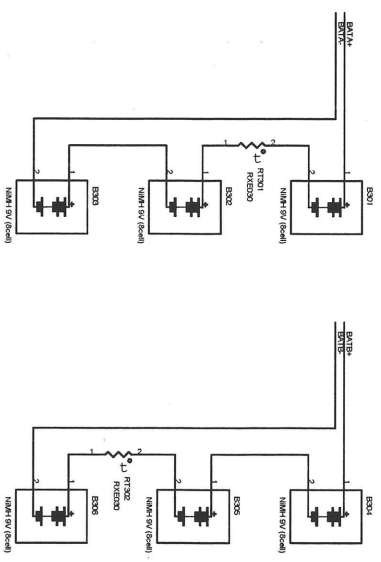
Battery Parameters:
 Fully charged: Voltage = 2.10V = 2.1V
 Fully discharged: Voltage = 1.75V = 1.75V
 Voltage drop = 1.50V = 1.5V
 Discharge current = 1.0A = 1.0A
 Discharge time = 10.0h = 10.0h
 Discharge power = 1.0W = 1.0W



Wattage to current converter:
 Wattage = 2.0V/20Ω = 100 mA
 Current = 2.0V/20Ω = 100 mA
 Discharge power = 1.0W = 1.0W

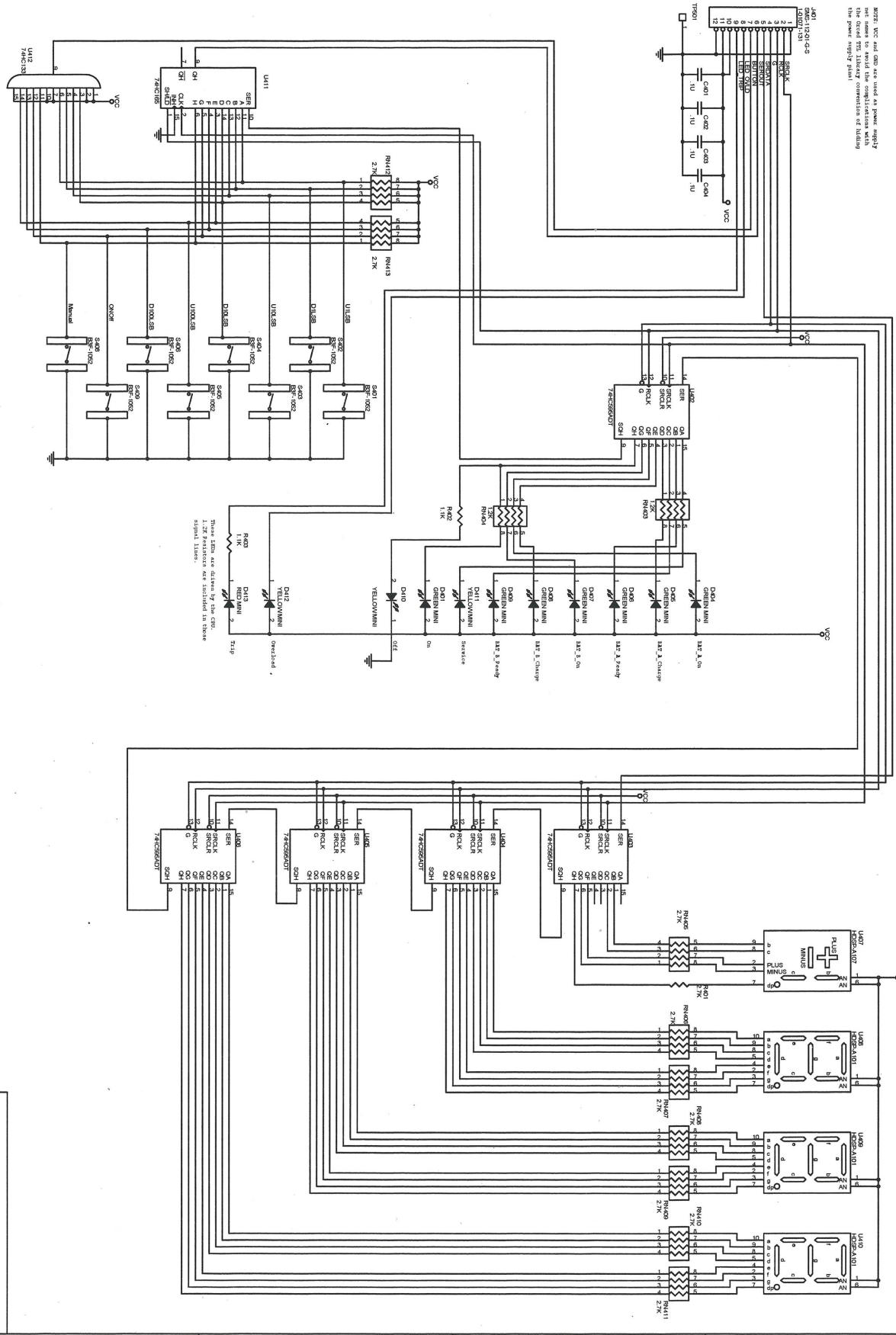


| Rev | Description | Date |
|-----|-------------|--------|
| 1 | Initial | 1/1/81 |
| 2 | Revised | 1/1/81 |
| 3 | Revised | 1/1/81 |
| 4 | Revised | 1/1/81 |
| 5 | Revised | 1/1/81 |
| 6 | Revised | 1/1/81 |
| 7 | Revised | 1/1/81 |
| 8 | Revised | 1/1/81 |



| | |
|-------------|---------------------|
| FIG. NO. | 518003 Battery Pack |
| DESCRIPTION | Battery Pack |
| REV. | 1 (1961) |
| DATE | APR 28 1961 |
| BY | 3 |
| CHECKED | 3 |
| APPROVED | 3 |
| TESTED | 3 |

NOTE: VCC and GND are used as power supply
 and should be avoided in the connections with
 the board. For correct connection of the board,
 the power supply is shown.



These items are driven by the CPU.
 1.2K resistors are included in these
 signal lines.



Temperature for input voltage protection (100 mA)
and current limit (100 mA):

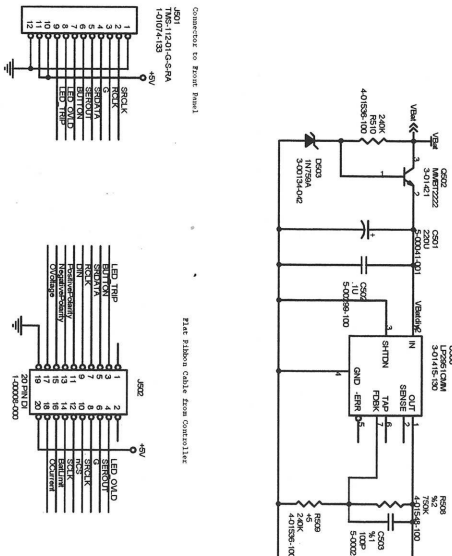
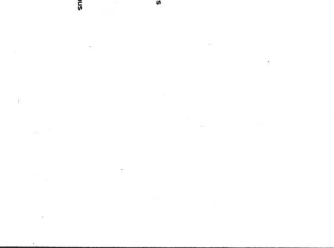
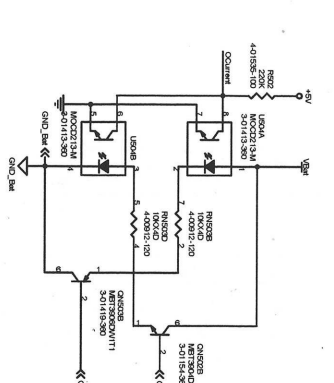
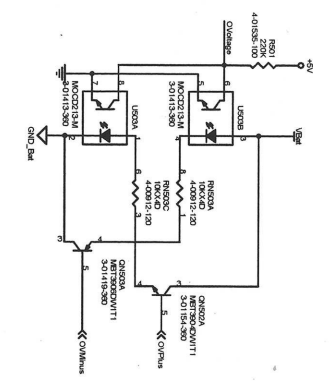
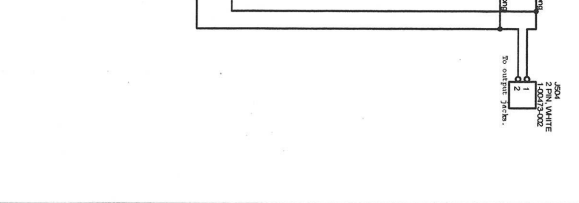
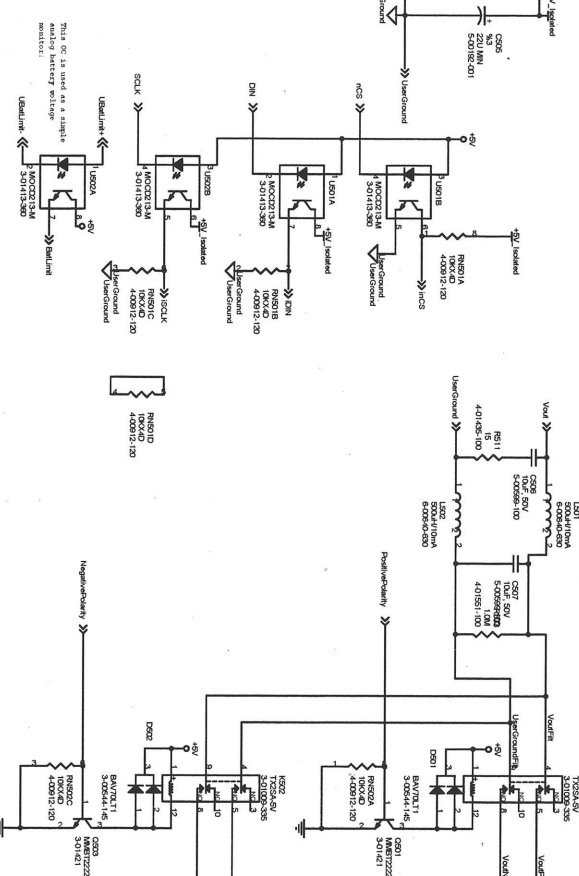
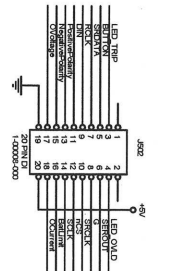
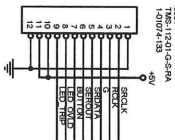
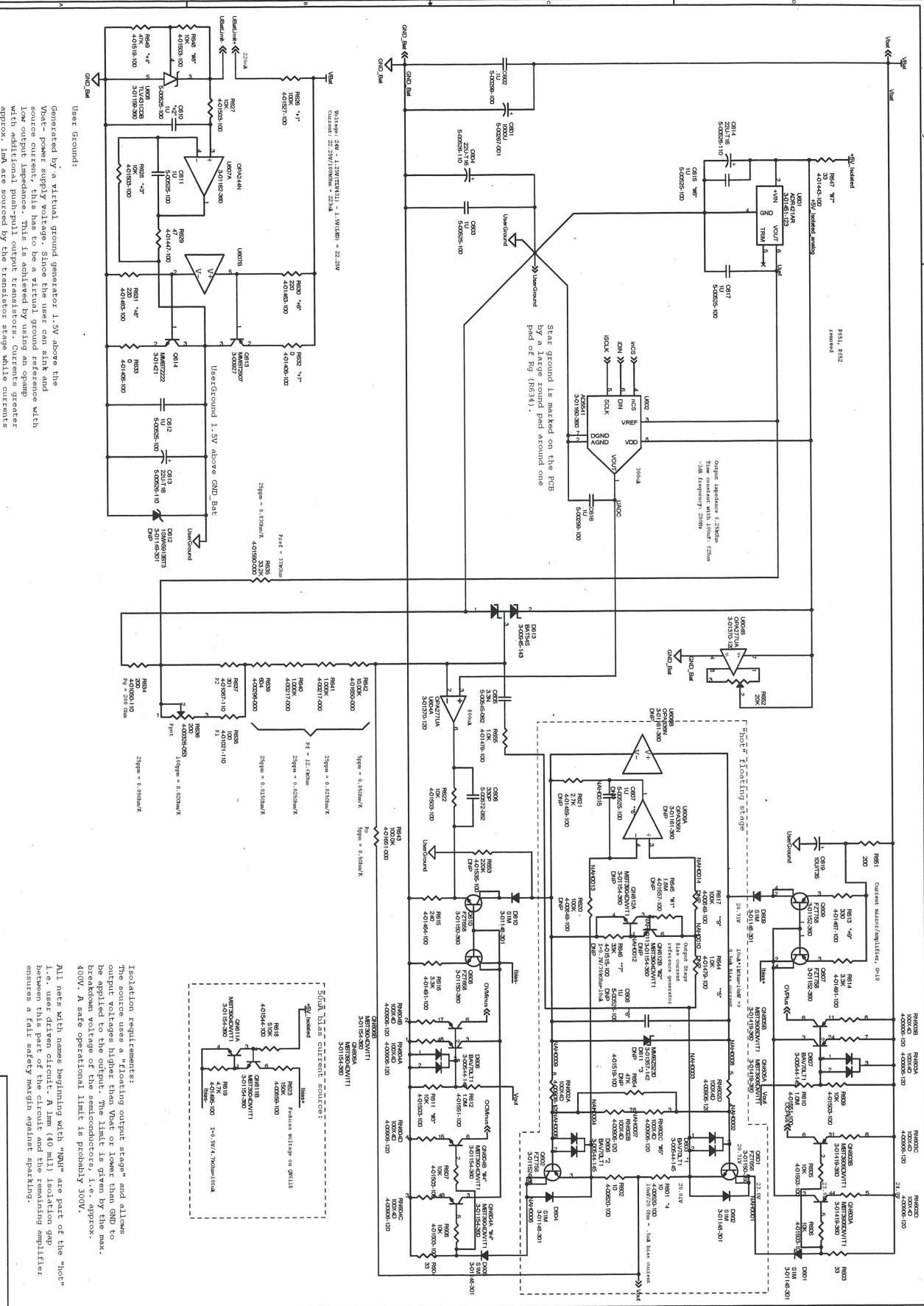


Plate Fiber Optic from Controller



Isolation requirements:
 1. Isolation distance: 2.5mm
 2. SIM mainframe slide: +5V, GND
 3. User slide: VBAT, GND, USERGND
 Isolation Distance: min. 2mm (80 mil)

| REV | DESCRIPTION | DATE | BY | CHKD |
|-----|-----------------------|--------|----|------|
| 1 | Initial Release | 7/1/01 | | |
| 2 | Hardware Add: 2K, 30K | 2/2002 | | |
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| 10 | | | | |



Generated by a virtual ground generator 1.5V above the Vbat- power supply voltage. Since the user can sink and source current, this has to be a virtual ground reference with 10M output impedance. The output impedance of the virtual ground is approx. 1mA are sourced by the transistor stage while currents below this limit are sourced by the opamp. The dynamic output impedance of this configuration is not as low as that of the emitter follower stage but this is less important since it is buffered by the capacitor.

User Ground: 1.5V above GND plane

Star ground is marked on the PCB by a large round pad around one

Output stage: Output filter/amplifier: C001
 1000µF 25V electrolytic capacitor
 Output Stage: MOSFET driver/amplifier: U004
 78K5A MOSFET
 Gate Resistor: R001
 100k
 Gate Capacitor: C002
 10nF
 Input Stage: Transformer: T001
 230VAC 0-0-230V

Isolation requirements:
 The source uses a "floating output stage" and allows output voltages higher than Vbat or lower than GND to be applied to the output. The limit is given by the max. breakdown voltage of the semiconductor, i.e. approx. 400V. A safe operational limit is probably 300V.
 All nets with names beginning with "NBG" are part of the "hot" 1.5V user driven circuit. A 1mm (40 mil) isolation gap between this part of the circuit and the remaining amplifier ensures a safe safety margin against sparking.

| REV | DATE | DESCRIPTION |
|-----|--------|----------------|
| 1 | 7/19/1 | Initial Design |
| 2 | 7/19/1 | Final Design |