Notes:

- PA0 also implements power off detection.
- PA3 & PA4 also implement #2 RS232 port.
- PE6 also reads the charge state.
- PE7 also reads the battery voltage.
Serial2 can be used as RTS/CTS handshake for Serial1 port: connect TxD2 to RTS1, connect RxD2 to CTS1.

RS485 Bias Termination Options:
1. Typical configuration has no RS485 Termination Jumpers installed (no RS485 Termination; this board is not at one of end of an RS485 system).
2. Install the Resistive RS485 Termination Jumpers for standard termination (assumes that the other end is terminated with the same resistance).
3. Install the RC RS485 Termination Jumper for low power applications.
4. Install the Bias Termination Resistors to assure valid idle level (enhances noise immunity when the transceiver is not active). Typically used with resistive termination.
Real-Time Clock

RTC is required for battery-backed RAM systems. Clock drift is approximately 3 seconds per day.

Lithium battery is charged only when Handheld is on.

Panasonic VL1220-1xx
Rohm 705D
<1uA leakage
Note:
These resistors are only installed for a system without a Personality Board. With these resistors installed, Port A, Port E, Serial 1, Serial 2, and the SPI are mapped to pins of the DB25 connector.
The Wildcard Field Headers, Probe Headers, and Module Bus 0 has 2 footprint: one for the actual header and the other representing a lead pattern that can be used to determine the connections to the module. This allows the developer to communicate and test the handheld without opening the enclosure.

Note: Module Address 0 is used for the KeypadDisplay Interface.
A series protection circuit can be installed in any non-power signal path between a node on the Field/TVS Header and the DB25/TVS Header. This schematic shows protection circuits configured for input signals. For outputs from the Handheld, reverse the 0 ohm and 100 ohm resistors for maximum protection.

Part Number: MMBZ9V1AL
Title: LCD Bias Supply

Project: Handheld Power Board

Size: A

Designer: Michael Dorman

Rev: 4

File: LCD Bias.Sch

Sheet 1 of 5 Date: 13-Jun-2005 12:55:49
Backlight Supply

- **VIN_BL_SW**: 4.2V typical, 5.05 to 5.46 without LEDs
- **BL+**: 0.254V or 0.142V
- **BL-**: 4.2V typical with LEDs

Components:
- Capacitors: C1-C17, C19-C25
- Resistors: R1-R39
- Diodes: D1-D7
- Transistors: SK14, U2
- Other: Backlight Supply

Note: Software controlled Bright_Backlight sets current within each range.
Fast Charging: 0.8 V

OUT

DANGER: DO NOT APPLY EXTERNAL POWER IF NON-NiMH BATTERIES ARE INSTALLED.

9. Do not leave charging for more than 12 hours.

8. Vlimit is 1.84V per cell (11.00V total).

7. Batteries won’t Fast Charge if their temperature is less than 1 degree C or more than 53 degrees C.

6. Batteries won’t Fast Charge until they reach 1.05V per cell or 6.3V total.

5. Fast charge BATT- voltage is 2V/7 not 2V/8 [2V/63 not 2V/64] as indicated by the data sheet.

4. Terminates fast charge at dV/dt = -7.5mV in 84 seconds, TEMP>THI, 132 minutes max, when their temperature is greater than 53 degrees C, or dT/dt > 1 degrees C per minute.

3. Fast charges at 1.3A or C/1.54; Trickle charges at 72 mA (C/28).

2. Install 6 size AA NiMH Batteries, 2000mAH.

1. See manual for instructions on operation without batteries.

Notes:

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7. Batteries won’t Fast Charge if their temperature is less than 1 degree C or more than 53 degrees C.

8. Vlimit is 1.84V per cell (11.00V total).

9. Do not leave charging for more than 12 hours.

10. USE ONLY NiMH (Nickel-Metal Hydride) RECHARGEABLE BATTERIES.

11. DANGER: DO NOT APPLY EXTERNAL POWER IF NON-NiMH BATTERIES ARE INSTALLED.

Battery Charger

Paul Clifford

Project Handheld Power Board

Sheet of 1

File: Battery Charger.sch

Size: Designer

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Title: Battery Charger

File: Battery Charger.sch

Size: Designer

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Print: Battery Charger

Rev: A

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Name: A