Technical Support
TECHNICAL NOTE

TECHNICAL NOTE TN-1024

TB8100 PMU Reset Modification

27 May 2005

Applicability

All PMU's with a DC converter. This included DC only and AC/DC PMU's. AC only PMU's are not affected.

1. Introduction

An issue with the TB8100 PMU has been found where the PMU is providing high current from the 28V supply and is supplied by a DC source. This is a particular problem on 12V DC PMU's supplying a 100-watt or dual 50-watt base stations though all DC PMU's may be susceptible.
Noise from the DC-DC converter is affecting the temperature sensor input to the micro. This causes the software to use all memory space and eventually reset.
The modification documented here provides filtering on the temperature sensor input of the micro and is effective at eliminating the problem. Changes in the PMU software will be made to resolve the memory space problem in the micro and will be released at a later date.

2. Modification

Identifying the Boards that need modification.

The 2 boards in the PMU that need modification are the DC converter board.
12V IPN 220-02012-06
24V IPN 220-02041-02
48V IPN 220-02050-02

The High Voltage DC Control Card (HVDC) , IPN 220-02018-14.
The locations of these boards in the PMU can be found in the TB8100 Service Manual (MB8100-00-00-812) section 7, figure 7.1.
This is available from http://support.taitworld.com in the Fixed Equipment - TB8000 > Service Manuals and Revision Packages section.
Ensure you have read section 7.2 "Disassembly and Reassembly". Always observe electrostatic precautions when working on the PMU.

Parts Required.

The parts required per PMU are:
1 only IPN 30-52470-20 Res Flm 4x1.6 47e 5% 0.4w
1 only IPN 22-54220-10 Cap Mylar AI 2n2 5% 63v Potted
1 only IPN 015-24220-08 Cap Cer 0805 2n2 10% X7r 50v
1 only IPN 38-14220-00 Res 0603 2k2 1/10w 5%

NOTE: Having spare temperature sensors is recommended in case a lead is damaged carrying the modification. The IPN of the DS1822 IC used in IC1 is 002-00018-22.

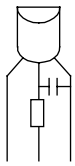
You will also need the PMU card removal tool IPN 220-02034-01 to remove the HVDC control card. Using a screwdriver is not recommended as it can damage components on the card.

Modifying the DC Converter Board.

See the attached PCB layout for the DC converter board. In all cases, IC1,

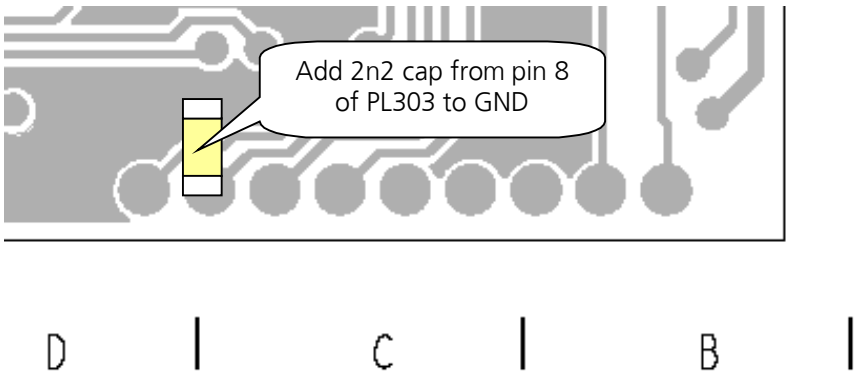
the temperature sensor is located in grid A2 and is a leaded TO-92 device.

Either remove IC1 or lift the centre lead. Fit the 47E resistor (IPN 030-52470-20) in series with the centre lead as shown on the right. The 2n2 potted mylar cap (IPN 022-54220-10) is connected to either outside lead as they are both connected to ground.



Modifying the HVDC Controller Board.

See the attached PCB layout for the HVDC Control Card. Remove the HVDC Control Card with the PCB removal tool. Locate R335 in grid B2. Replace the 4K7 resistor with a 2K2 resistor (IPN 038-14220-00).
Add the 2n2 0805 capacitor (IPN 015-24220-08) from pin 8 of PL303 to the PCB ground plane as shown below.



Refit the HVDC control board and re-assemble the PMU.

Compliance Issues

None

CSO Instruction

PMU's fitted with 12V DC converters need to be modified, especially if they are supplying a 100W or dual 50W base station. This includes AC/DC PMU's. 24V and 48V DC converters produce less noise but should be modified as a precaution.
CSO's will be supplied a quantity of DS1822 IC's (IC1 in the DC converter) as replacements for any that are damaged performing this modification.

3. Issuing Authority

Name and Position of Issuing Officer

Jeff Northcott
Senior Technical Support Engineer

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Document History

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