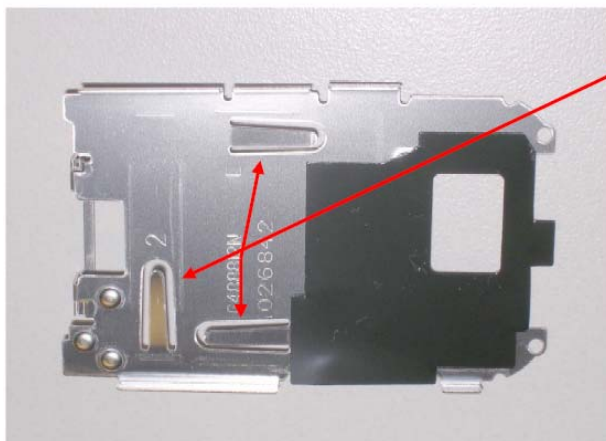


**Author:** Henrik Sondell, Technical Support  
**Date:** 2004-03-09  
**Subject:** GSM Triplets Rev. A PCB - ESD Improvement  
**Rating:** Level 1&2 Authorized

**Products:** V300 (SUGxxxxAA)  
V500, V525, (SUGxxxxAA or SUGxxxxBA)

**Problem:** Service is aware of a field issue, identified during the 1st 200 NPI Analysis on the affected models listed above. Some units, returned with a customer complaint of "Invalid Battery", were found to exhibit a lower than normal resistance on the OWB Line to the Neptune IC. Analysis revealed the root cause of this failure to be damage to the Neptune IC induced by ESD. Product Development identified, prior to launch, that all Triplets Rev. A PCB's had a high susceptibility ESD related failure due to insufficient grounding of the SIM Chassis. A short-term corrective action was implemented, on all shipping product, adding a conductive 1.5mm pad to the back of the SIM Chassis to effectively ground the chassis. Unfortunately, after time in the field, the conductive pad can compress to the point where it no longer makes contact with the PCB Shielding thus leaving the phone susceptible to ESD related failure.

**Solution:** A re-design of the metal SIM Chassis (0188940N01) has been implemented in production as of 1/26/2004. The new (0188940N02) Rev. E design includes three metal fingers that extend into the housing and make contact with the PCB Shielding adequately grounding the SIM Chassis. For additional ESD Protection, a diode was added to the Rev. D PCB release.  
**Note: Also contained in the new Rev. E design is an improvement for connectivity of the Flip Assembly to PCB connector. See Service Bulletin NB\_SB006.**  
Diagram 1.0 below shows a sample of the (0188940N02) Rev. E SIM Chassis with the improved design.



**Special Note:**  
New Design with Three Metal Fingers to GND Chassis

Diagram 1.0 New (0188940N02) Rev. E SIM Chassis Design

**Diagram 1.0**

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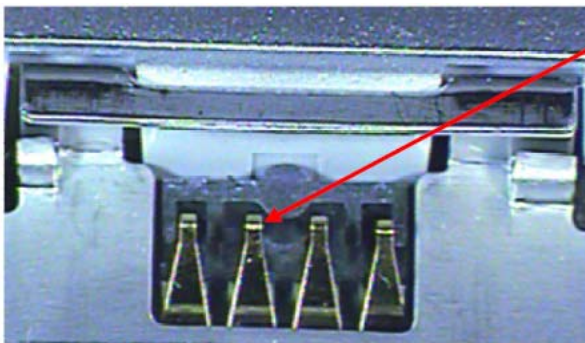
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**Action:**

**Customer Returns:**

When servicing affected models of Triplets customer returns, regardless of customer complaint, then:

1. Disassemble the unit
2. Remove the existing Poron Pad from the Flip Assembly Connector  
See *NB\_SB006*.
3. Replace the existing metal SIM Chassis with the improved Rev. E Design
4. Reassemble and Relabel unit
5. Perform all necessary testing to ensure proper assembly when servicing affected models of Triplets customer returns, with a customer complaint of "Invalid Battery", then:
  1. Power up the unit through the CE Connector with the battery removed
  2. Probe the voltage on the OWB Line at M1700 (pin 3). The Voltage should be 2.7 VDC and will measure significantly less (approx 0.7 VDC) on failures with a damaged Neptune IC. See Diagram 2.0 below.
    - a. If the voltage on the OWB line is correct, then the fault is not related to this issue and normal troubleshooting techniques should be applied to the battery and the unit to determine the failed part.
  3. Once a damaged Neptune IC has been confirmed the failed board should be swapped.



**OWB Line:**  
M1700 Pin 3 = 2.7VDC

**Diagram 2.0**

**Classification:** Standard Warranty Repair. Use following M-claims codes:

Problem Found Code: **BAT04** (Invalid Battery)  
Repair Code: **RPC11** (Replace PCB – CSB/FSB)  
REF Designator Code: **U** (Integrated Circuit/Module)

**Original FB No:** LVCCFSB2004-22