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FIELD SERVICE BULLETIN

FSB Number: LVCCFSB2004-5
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Date: January 9th, 2004
Total No. of Pages: 3
Subject: **GSM Triplets - SEC Display Module**
Model Affected: V300, V400, V500, V525, V600
Level of Repair: 3

Problem

Service is aware of an issue identified during the 1st 200 NPI Analysis on V300 and V500/525. Some units, returned with a customer complaint of "No Main Display", were found to have a blank/white Main Display and no CLI Display upon power up. Analysis revealed an open solder joint on the ATI Chip (U3000), internal to the Display Module, on the ATI_CLK Line to be the cause. The open occurs as a result of a cold solder connection on the BGA traced back to solder mask process control issue at IDS, one of Samsung's Display PCB suppliers. See Figure 1.0 below.
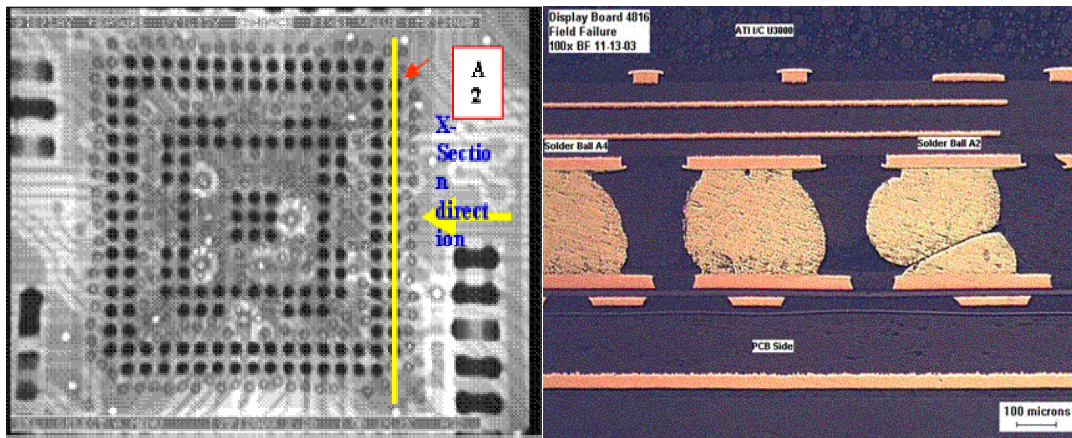

Figure 1.0 - U3000 (ATI) – Open Solder Connection at Pin A2

All Samsung Display Modules, built with IDS Display PCB's with date codes in the first three weeks in September, are affected by this issue. See Figure 2.0 below.

Approximate Exposure:
Field Exposure of 600 Units shipped with affected Display Modules.

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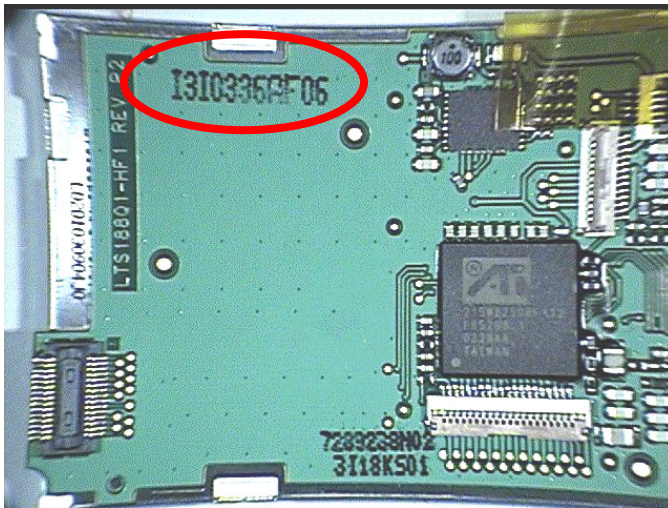
Figure 2.0 – Vendor/Date Code Markings

Individual Part Markings: All parts shall be marked on the back/flex side of the display assembly module as picture shown.
Example:
      I3I0336AF06
Where:
      I   **denotes the PCB Supplier**
                      I (IDS), Y (Sanyan)
      3   **denotes the last digit of the year module assembled**
      I   **denotes the month of production**
                      A (Jan.), B (Feb.), C (Mar.), D (Apr.),,,,,,, I (Sep.)
      03   **denotes the date of production**
      36   denotes the line/shift of production
      AF06   denotes Internal Factory Tracking

*Affected Date Code Range: I3I01 thru I3I19

Solution

Root Cause: Display PCB - Open connection U3000 at A2 - Cold Solder - Paste solder did not metallurgically bond with bump solder. The cause of solder failures were due to a clogged SMT mask hole which has to be cleaned by cleaning-paper after every spreading process of solder paste. The cleaning paper did not roll up at that time because the sensor was tilted in the wrong position.
The following corrective actions have been implemented by Samsung at IDS to eliminate this defect. Repair of the sensor position on Solder Screen machine and improvement of the Solder Stencil Cleaning Process to eliminate the possibility of a reoccurrence of this defect. IDS will perform a minimum cross-section analysis of 5 completed Display PCB panels a day (1 per line) as a preemptive screen for possible solder defects. IDS will closely monitor internal process reports for any increase in solder related defects.

Field Service Action

Customer Returns:

When servicing affected GSM Triplets customer returns with a customer complaint of ""No Main Display", then:

1. Power up the phone and verify the following symptoms: Unit Powers up and you hear wake-up tones but the Main Display is either blank or white and there is no CLI Display.
   a. If the unit does not display these symptoms, then proceed with normal troubleshooting techniques as per the customer complaint.
2. Disassemble the unit and verify that the display flex connector from the flip assembly is properly seated onto the PCB board connector J1300.
   a. If the display flex connector is found to have a problem then perform the necessary steps to repair the unit. Reference released FSB LVCCFSB2003-99 for information of this failure mode.
3. Disassemble the Flip Assembly and verify that the failure is caused by the display module itself by replacing the suspect module with a known good module.
   a. If the unit displays the original failure symptoms with the known good display module, then troubleshoot the display flex assembly (0188928N01) for defects.
4. Finally, replace the defective display module, reassemble the unit, and retest to confirm the repair.

Service Inventory:

Service Entry Codes

Please ensure that repairs of this type are logged on the Service database as follows:

Global M-Claims Codes:
Customer Complaint Codes: DIM01 (Display Main-No Display)
Problem Found Code: DIM01 (Display Main-Blank)
REF Designator Code: A (Display)
Repair Code: RPT01 (Replace Part-Defective)

EPPRS Codes:
Customer Fault Code: 41 (Faulty Display-Intermittent Electrical)
Repair Code: 22 (Display Itself Faulty)

Asia Codes:
Fault Code: 06 (No Display)
Repair Code: 04 (Part Replaced)