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FIELD SERVICE BULLETIN

FSB Number: LVCCFSB2004-7
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Date: February 1st, 2004
Total No. of Pages: 3
Subject: **GSM Triplets - SEC TMR Display Module**
Model Affected: V303, V400, V500, V525
Level of Repair: 3

Problem

Service is aware of an issue identified during the 1st 200 NPI Analysis on V400 and V500/525. Some units, returned with a customer complaint of “Corrupt Main Display”, were found to power up with a lower portion of the main display corrupt and the upper portion of the main display functional. Analysis revealed “Gate-Block” failure, a short between the ITO Layer and Data Metal Layer of the display glass, to be the cause. The short can occur as a result of a foreign material, corrosion, or ESD Burn internal to the display glass occurring at the display manufacture. Figure 1.0 below shows examples of displays with the “Gate-Block” failure.



Figure 1.0 – SEC TMR Display with Gate-Block Failure

Solution

The original design of the Samsung TMR Display Module (7289238N02) had a high susceptibility to Gate Block failure due the overlapping of the ITO and Data Metal layers. Samsung Changed the design of the TMR Display module, as of November 1st, 2003, to a new mask to separate the ITO and Data Metal layers of the display and strengthen the over-all tolerance against “Gate Block” failure. Samsung TMR Display Modules (7289238N02), built on Line 1 prior to November 1st, 2003, are highly susceptible to this defect. See Figure 2.0 below.

Samsung has managed 2 FAB lines and 2 types of 1.88 inch product have been manufactured. In order to identify the FAB code of each product, you have to inspect the red square below picture shown with a micro-scope after detaching the black tape on the driver IC.

❖ Sample picture of panel.

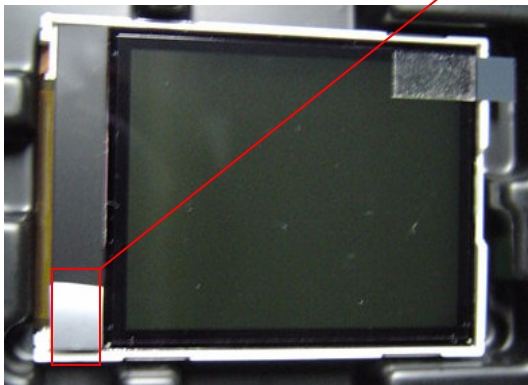


Figure 2.0 – Date/Lot Code Identification

C	M	I	1	2	3	1	2	1	2
①	②	③	④			⑤		⑥	

① FAB Code

Line #1	TF	A
	TMR	C
Line #2	TMR	B

- ② Model Code ('M' means 1.88 inch product)
- ③ Manufacturing month (A, B, C, D.....)
- ④ Mother glass lot No
- ⑤ Glass own No
- ⑥ Each panel No

***Affected Date Code Range: CMH thru CMJ**

Approximate Exposure:

1.13 million Samsung TMR Display Modules (7289238N02) are affected
Maximum Field Failure Rate of 4800 PPM (5.4K Units)
Predicted Field Failure Rate of 1500 PPM (1.7K Units)

Field Service Action

Customer Returns:

When servicing affected GSM Triplets customer returns with a customer complaint of “Corrupt Main Display”, then:

1. Power up the phone and verify the following symptoms: Unit Powers up with a lower portion of the main display corrupt and the upper portion of the main display functional.
 - 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:

All affected date codes of the 7289238N02 Samsung TMR Display Modules should be removed from inventory and quarantined. See Figure 2.0 above for Date Code Identification. There is a possible opportunity to return affected material to the supplier for cost recovery. An updated version of this FSB will be released once the process for the disposition of this material has been identified.

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: DIM03 (Display Main- Corrupt / error display)

Problem Found Code: DIM03 (Display Main- Corrupt)

REF Designator Code: A (Display)

Repair Code: RPT01 (Replace Part-Defective)

Asia Codes:

Fault Code: 06 (No Display)

Repair Code: 04 (Part Replaced)

PRC Codes:

Fault Code: 06 (No Display)

Reason Code: 403 (Part Replaced-Defective)