



FIELD SERVICE BULLETIN

FSB Number: LVCCFSB2006-83
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Date: March 10, 2006
Total No. of Pages: 9
Subject: GSM RAZR V3 & RAZR 05 – Toko Hall-Effect Switch
Phone Models: GSM RAZR V3, RAZR 05
Level of Repair: 2

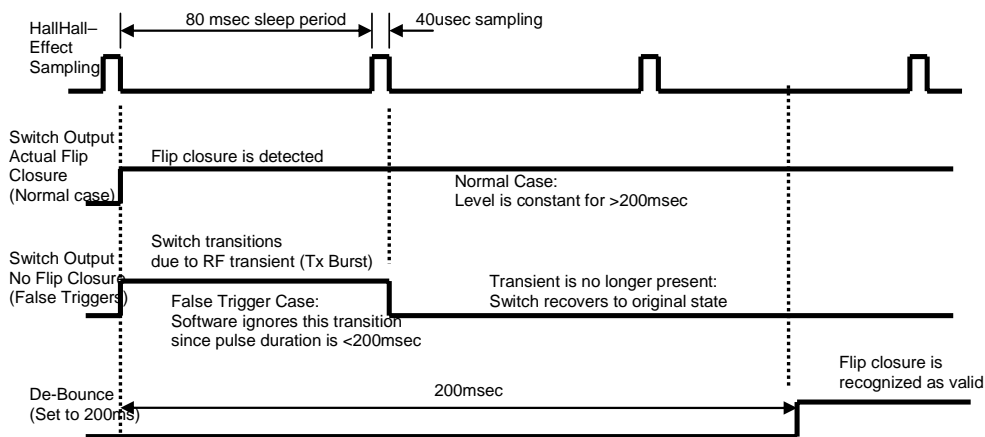
Problem

Service has been made aware of an issue on GSM RAZR and RAZR-05, in where the end-user could experience call dropped followed by a white/blank main display that will lasts for a short period, after which the unit transitions back to the home screen.

Engineering analysis identified the root cause to be RF susceptibility of the Hall-effect switch causing the phone to register a flip closure in error. Further analysis indicated that the RF susceptibility was limited to the Hall-effect switch provided by second source supplier of the switch Toko. The supplies from Toko were introduced into the 2006 production. The Hall-effect switches provided by first source supplier Allegro are not affected.

Software Solution

The Hall-effect switch samples the presence of the magnet approximately every 80 milliseconds with duration of 40 microseconds, the solution is to “de-bounce” the switch for 200msec to allow its output to stabilized and indicate a valid flip transition to the phone control processor.





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SW with the Fixed:

Phone	SW version	Region
V3	R374_G_0E 42 09R_A	North America (T-Mobile)
V3	R374_G_0E 41 C3R_C	North America (Cingular)
V3	R374_G_0E 42 10R_A	HGM
V3	R374_G_0E 42 10R_A	North Asia (PRC, HK, TWN)
V3	R374_G_0E 42 0ER_A	EMEA
V3	R374_G_0E 42 08R_B	EMEA
V3'05	R4515_G_08.BD.2A_2	North Asia

Hardware Solution

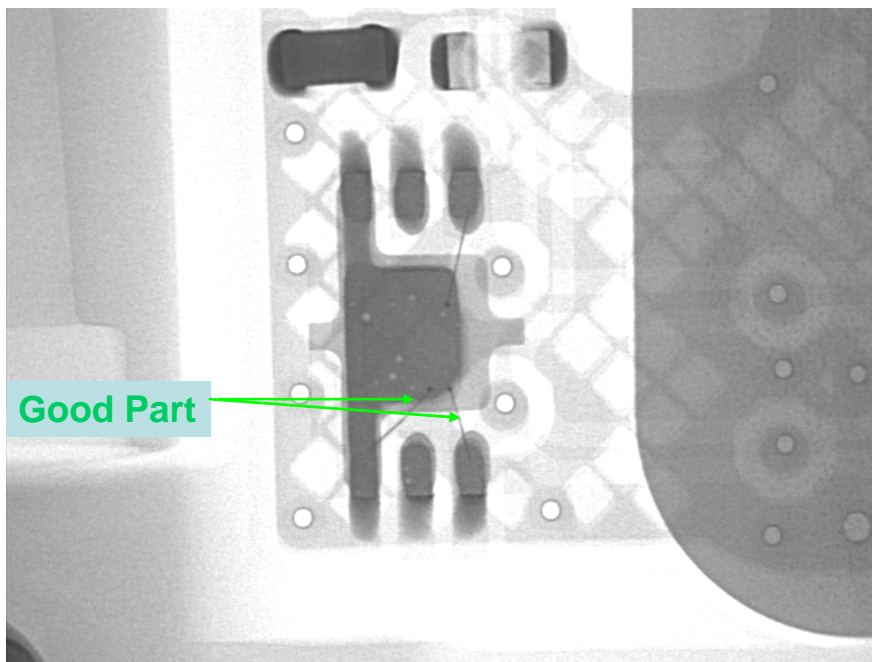
Factory and DC Inventories have been 100% screened for units built with the Toko Hall-effect switch. Screening was done using the two methods detailed below and was completed **March 03, 2006**. Current shipping product is only built with Allegro parts.

Screening Methods

1. **Completed XCVR Level:**

Phones are checked using an X-Ray equipment. Although at this level there are no visible differences between a XCVR with Toko or Allegro parts, there are differences in wire bonding. These can be seen via x-ray as detailed in the images below.

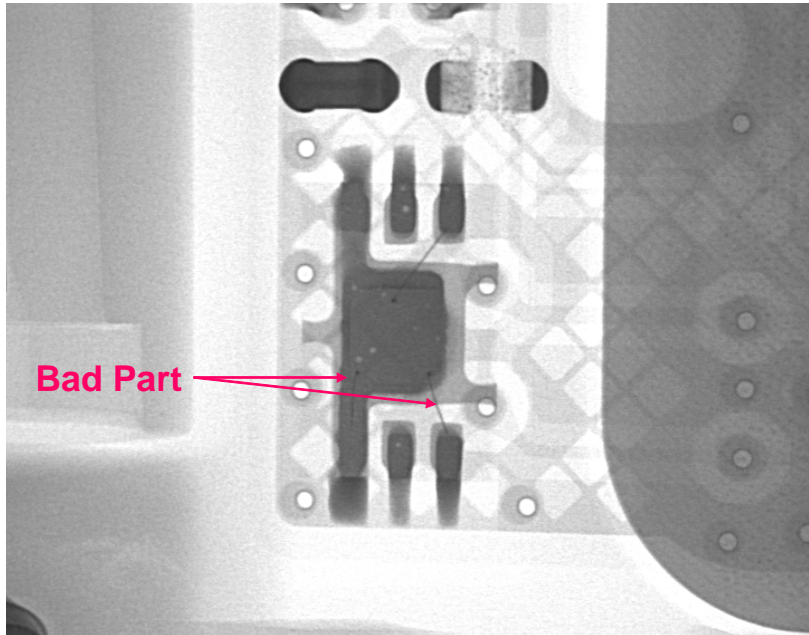
Hall Diode : "Allegro" Part



The distance of two wires is shorter.



Hall Diode : "TOKO" Part



The distance of two wires is bigger.

2. Flip Assembly Level:

Flips can be sorted by measuring switch resistance. Measure the Hall-Effect switch resistance to separate the Allegro part from TOKO parts, different supplier part has different resistance.

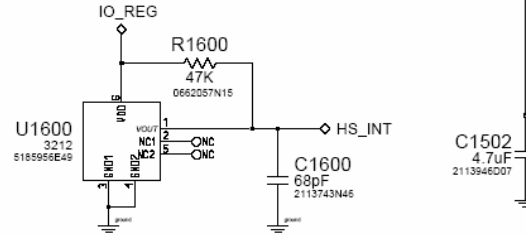
Method: Using the Multi meter measure the Hall-Effect switch resistance through HS_INT pin and Ground pin in the flip 50pin connector. See Image Below.

Allegro Part - Resistance Measurement less than or equal to 43.5 kOhm (Allegro Nominal Value = 39.8 kOhm)

Toko Part – Resistance Measure greater than or equal to 44 kOhm (Toko Nominal Value = 51.4 kOhm)

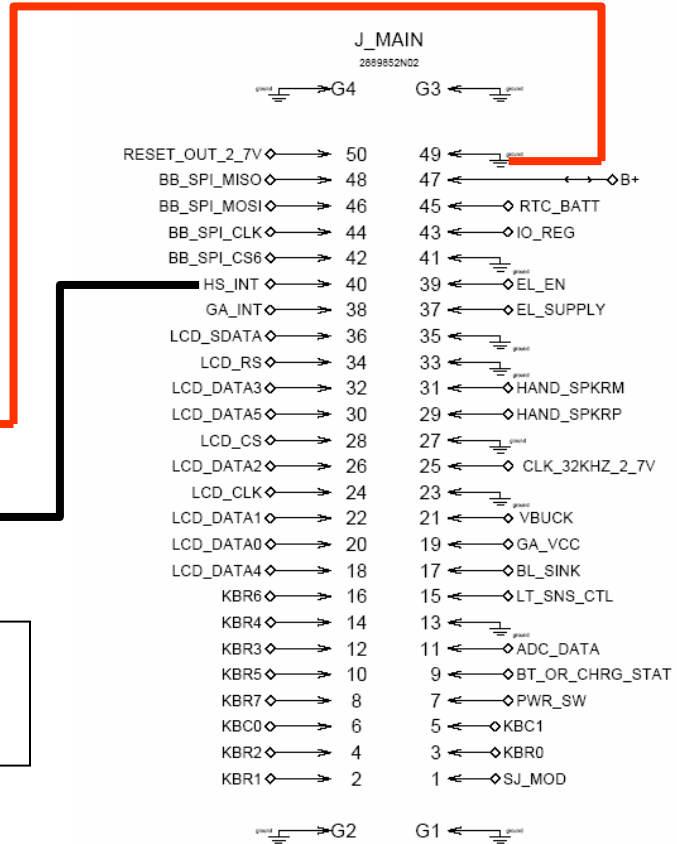


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High Quality
 Multi-Meter
 (Example: HP34401A)

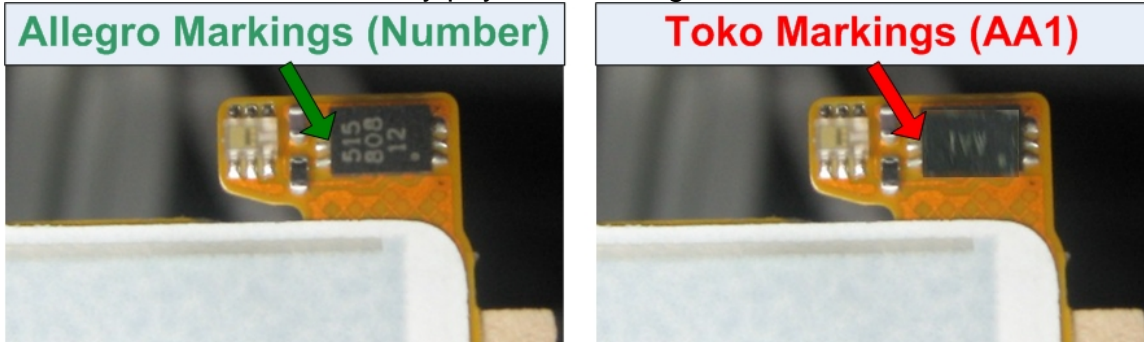
The positive probe connect Ground pin and
 the negative probe connect Hs-INT pin.
 The resistance measurement range to set to
 AUTO.



PINS ARRANGED AS GEOMETRY WAS BUILT
 REARRANGE NUMBERING AS NEEDED WHEN REPLACING

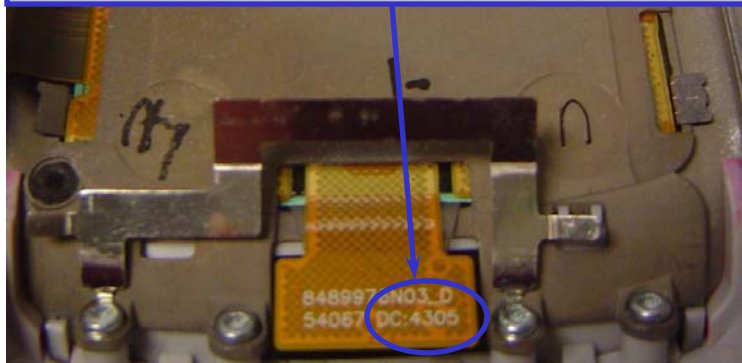
3. K-Flex Assembly Level:

K-Flex can be sorted by physical marking on the hall-effect switch.



K-Flex built with both vendors range of date codes.

Date Code Ranges: 5105 to 0806
 K-Flex Supplier ID: Nwing = 091329 & MFlex = 54067



Marking Instructions

1. Completed XCVR Level:

Allegro XCVR

For transceivers screened with x-ray, add a **GREEN** dot to the right side wall of the front housing to signify that was identified as built with an Allegro hall effect switch.

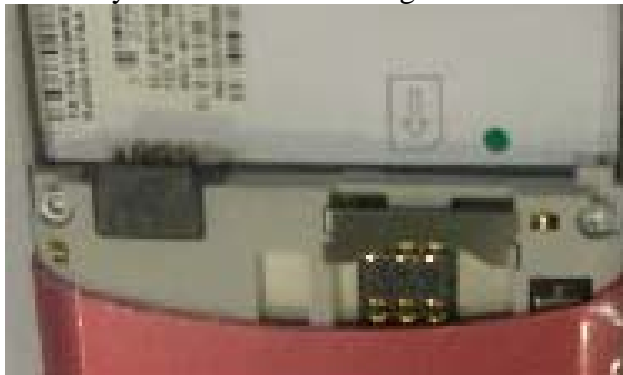




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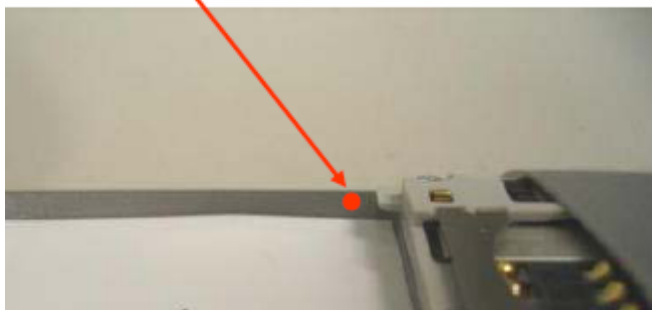
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Or the **GREEN** dot could be at the bottom/right corner by the SIM card drawing on the label.



Toko XCVR

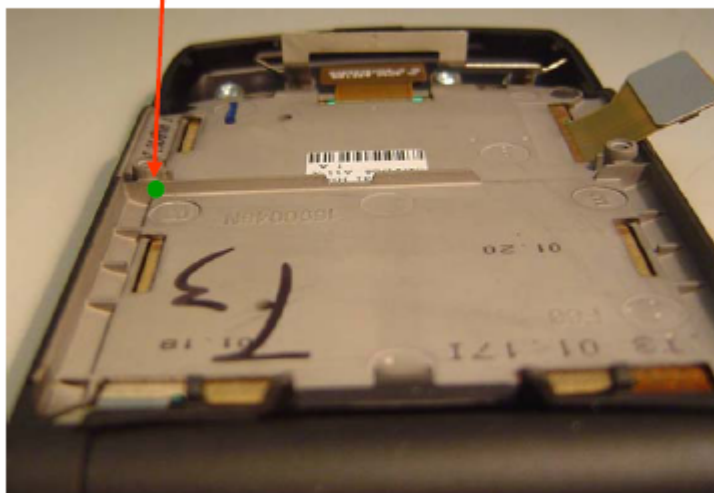
For transceivers screened with x-ray, add a **RED** dot to the right side wall of the front housing to signify that was identified as built with a TOKO hall effect switch.



2. Flip Assembly Level:

Allegro Fresh Flip

For fresh built flips, add a **GREEN** dot to the lower side wall of the front housing to signify that it was built with an Allegro hall effect switch.



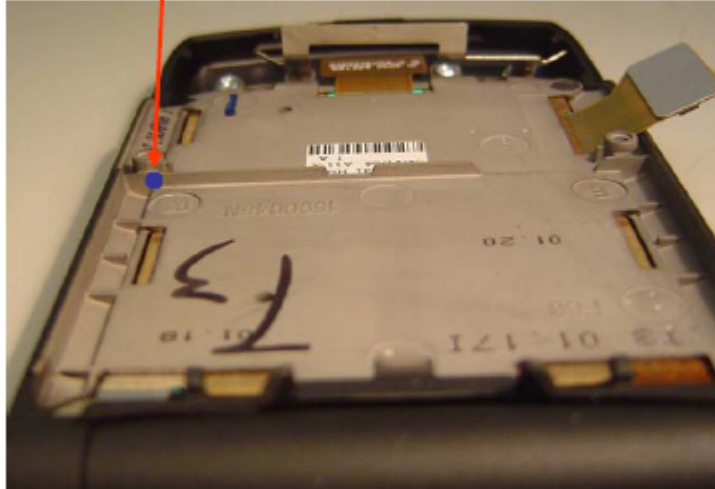


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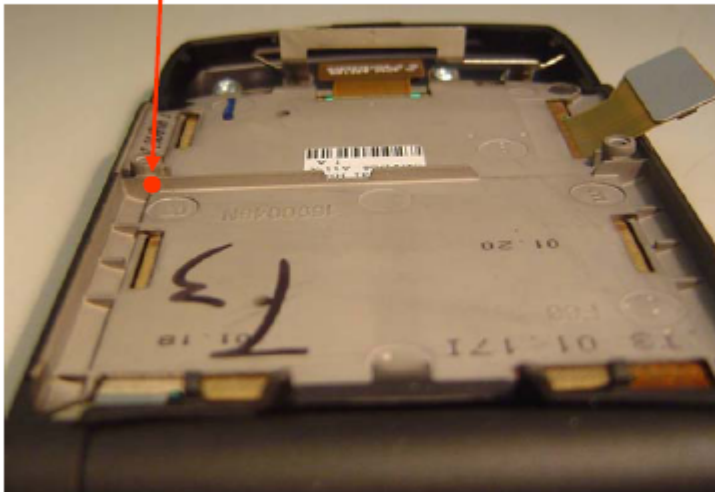
Allegro Screened Flip

For flips screened with the resistance measurement technique, add a **BLUE** dot to the lower side wall of the front housing to signify that it was identified as built with an Allegro hall effect switch.



Toko Screened Flip

For flips screened with the resistance measurement technique, add a **RED** dot to the lower side wall of the front housing to signify that it was identified as built with a TOKO hall effect switch.



Note: Use a permanent marker, do not use paint pen.

Field Service Action

Customer Returns:

When servicing any GSM RAZR V3 and RAZR 05 customer returns, with a Month of Manufacture (MOM) of January and February of 2006, regardless of customer complaint, then:

1. Identify if it is V3 or RAZR 05. (See FSB LVCCFSB2006-71)
2. Identify if it is January, February MOM by MSN.



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MSN: Mechanical Serial Number

Example of MSN: **D54 G G N 0000**

Length-10 digits

D54	G	F	N	0000
APC Code	Plant Code	Year Code	Month Code	Sequential number

➤ **APC: Accounting Product Code**

D54 = V3 Razor			
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➤ **Plant Code:**

Asia Plant =G			
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➤ **Year Code:**

A~Z starting 2000, excluding “I” and “O”

A = 2000	B = 2001	C = 2002	D = 2003
E = 2004	F = 2005	G = 2006	

➤ **Month Code:**

As follows (there is a choice of 2 digits for each month due to volume of product shipped)

MONTH	PRIMARY	SECONDARY	MONTH	PRIMARY	SECONDARY
JAN	A	B	FEB	C	D
MAR	E	F	APR	G	H
MAY	J	K	JUNE	L	M
JULY	N	P	AUG	Q	R
SEPT	S	T	OCT	U	V
NOV	W	X	DEC	Y	Z

3. Proceed with normal testing and troubleshooting as per customer complaint.
 - a. If the unit is identified as physical/liquid damage, do not proceed.
 - b. If the unit requires disassembly or replacement of K-Flex go to step 4.
 - c. Complete repair as per normal process.
4. If the software with the fixed is approved reflash and complete repair, if not go to step 5.
5. Determine if unit is built with Toko or Allegro Hall Effect Switch using one the above screen methods.
 - a. If the unit is built with Allegro Hall Effect Switch complete repair as per normal process
 - b. If the unit is built with Toko Hall Effect Switch, replace the K-Flex (see FSB LVCCFSB2005-93) using one with an Allegro Hall Effect Switch and complete repair as per normal process.
6. Mark the phone as per XCVR markings instructions.
7. Scrap the removed K-Flex.



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Service Inventory:

Please purge all existing service inventory of RAZR V3 and RAZR 05 Flip/K-flex Assemblies built using the Toko Hall-Effect switch.
Reference the Screen methods and affected K-Flex date code.

8489976N05 RAZR 05 – Keyboard Flex Assembly
8489976N03 RAZR V3 – Keyboard Flex Assembly

Separate Toko and Allegro K-Flexes and ensure it is supply as per SW approved.

If Toko K-Flexes can not be use, return via normal channels.

Call Center Action

When responding to customer inquiries on GSM RAZR V3 or RAZR 05 with complaints related to “Dropped Calls” and/or “White Main Display”, please inform the customer to return the unit to an authorized service center for repair.

Service Entry Code

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

Global M-Claims Codes:

Customer Complaint Code:

CPR06 (Voice Call – Drop Call, Poor Reception)

DIM03 (Display Main – Corrupt / Error Display)

Problem Found Code: CPR06 (Voice Call – Drop Call, Poor Reception)

Reference Designator Code:

Repair Code: RTW02 (Replace Level 2 part - CSB/FSB)