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Claims/Repair HW-log LPA 108 338 - Rule for ERS BB units with ICM CCR PLL issue

# Abstract

This document shall be used to give inputs for decision forum regarding criteria file to Claims/Repair HW-log LPA 108 338.

# Basic information

## Responsible for this proposal

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## Revision information

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| --- | --- | --- |
| Rev | Date | Major changes |
| A | 20180914 | Approved in LAT meeting 2018-09-02 |
| B | 2019-05-17 | Changed applicable products - chap 2.1 Improved set of rules to identify faulty component – chap 2 and 3 Updated with SearchKeys Reviewed in LAT meeting 2019-05-08 |
| C | 2019-06-19 | - Added new applicable products - chap 2.1 - Added new criteria for Rule 1 (rule 1f to 1k), based on product number. See sub-sections of chap 2.4.3.1 - Following changes made in Rule 1 compared to Rev B: new code 0x11, and code 0x9 moved from rule 1c to rule 1b (see Table 1-A) |

## Why do we need this criteria?

The purpose of this LAT rule is to identify the units that have showed signs of the specific problem and recommend a correct repair action.

Around 300 BB units with PLL fault symptoms have been identified in PQAT.

Fault slip through has been observed in standard repair test.

## Need for RIR / RCO

* Buffer stock is impacted (to secure not run dry) **NO**
* Component shall be claimed against vendor **NO**
* Component changes need complex instructions **NO**
* Component changes where predicted impact   
  deviates much from predicted component MTBF **NO**
* Shall the revision of the unit be changed to   
  obtain traceability. **NO**

# Input values for the programming of the Claims/Repair HW-log LPA 108 338

## Product number

KDU137925/31 (BB5216)

KDU137925/41 (BB5212)

KDV127620/11 (BB6620)

KDV127621/11 (BB6630)

KDU137847/11 (BB6620)

KDU137848/11 (BB6630)

KDU1370053/31 (BB6318)

KDU137848/11 (BB6303)

KDU1370053/31 (BB6502)

## Serial number

N/A

## R-state

N/A

## Criteria Definition

First step for the LAT is to search for a number of entries in different logs.

Entries should be stored as the rules are defined based on a combination of the different entries.

### Step 1: Collect Trap info in logs

Criteria 1: Trace from HW Log (ee\_esi file)

Look for line in the log with (A6P) entry and read out the Value parameter on the same line (Trap info):

(A6P) ICM CCR PLL(s) LOSS-OF-LOCK event has occured. Value 0xffd/**0x2**

🡪 where the Trap info, **0x2** in the example above (located after the ‘/’ character), should be recorded.

Attached HW Log including the wanted trace:



Criteria 2: Trace from system log

Locate the syslog.txt file that is stored in the following folder:

...\Node0\LOG\_1\_XXX\_LogsAndDumps\esi.XXX.tar.gz\esi.XXX.tar\var\log\

Note: LAT tool team needs to check for possible other locations of this file.

(...\Node0\LOG\_1\_XXX\_LogsAndDumps\var\log etc.)

Look for line in the log with ‘ICM CCR PLL’ entry and read out the Value parameter on the same line (Trap info):

ICM CCR PLL(s) LOSS-OF-LOCK event has occured. Value 0xd19/**0xd19**

🡪 where the Trap info, **0xd19** in the example above (located after the ‘/’ character), should be recorded.

Extract from syslog with the wanted trace:

2019-01-16T15:34:39.504631+00:00 axm56xx rhsd[3647]: EXTIF: tdmp registered

2019-01-16T15:34:39.513374+00:00 axm56xx rhsd[3647]: HWLOG: <A6P><ICM CCR PLL(s) LOSS-OF-LOCK event has occured. Value 0x1fe/0x1 (0)>:0x0

2019-01-16T15:34:39.533232+00:00 axm56xx rhsd[3647]: EXTIF: eatcc registered

Criteria 3: Trace from uboot log

1. Locate the uboot.txt file that is stored in the following folder:

...\Node0\LOG\_1\_XXX\_LogsAndDumps\CMD\

Note: LAT tool team needs to check for possible other locations of this file (...\Node0\LOG\_1\_XXX\_LogsAndDumps\, ...\Node0\ etc.).

1. Look for the following info in the uboot log:

*CCR\_PLL\_LOCKED:0xf7b trap:****0x4***

where the trap info, **0x4** in the example above, should be recorded.

Attached uboot.txt file including the wanted trace:



### Step 2: Collect other PLL traces

Criteria 1: Trace from HW Log (ee\_esi file)

Record presence of the following entries in the HW Log, marked in red.

(A6M) SyntB PLL

(A6M) SyntB fPLL

(A6M) SyntC PLL

(A6M) SyntC fPLL

(A6M) Multiplier PLL

(A6N) Loss of toggle detection

Note the syntax with 2x ‘*blank*‘.

Attached a HW Log including most of the wanted trace:



Criteria 2: Trace from system log

Locate the syslog.txt file that is stored in the following folder:

...\Node0\LOG\_1\_XXX\_LogsAndDumps\esi.XXX.tar.gz\esi.XXX.tar\var\log\

Note: LAT tool team needs to check for possible other locations of this file.

(...\Node0\LOG\_1\_XXX\_LogsAndDumps\var\log etc.)

Record presence of the following entries in the Syslog Log, marked in red.

<A6M><SynthB PLL

<A6M><SynthB fPLL

<A6M><SynthC PLL

<A6M><SynthC fPLL

<A6M><Multiplier PLL

<A6N><Loss of toggle detection

Extract from syslog with some the wanted trace: (from complaintID EMEA:8008402399:2012519726:9)

2018-01-10T04:49:50.828616+00:00 axm56xx rhsd[3459]: HWDUMP: hwdump.2 generated (77430305)

2018-01-10T04:49:50.828685+00:00 axm56xx rhsd[3459]: HWLOG: <A6M><Multiplier PLL1 LOSS-OF-LOCK event has occurred (2)>:0x0

2018-01-10T04:49:50.829460+00:00 axm56xx rhsd[3459]: TUM ALARM SYNTA clock fault

2018-01-10T04:49:50.840063+00:00 axm56xx rhsd[3459]: HWLOG: <A6M><SynthC PLL LOSS-OF-LOCK event has occurred (3)>:0x0

2018-01-10T04:49:50.844902+00:00 axm56xx rhsd[3459]: TUM ALARM SYNTC MOD PLL clock fault

2018-01-10T04:49:50.845165+00:00 axm56xx rhsd[3459]: HWLOG: <A6M><SynthB PLL LOSS-OF-LOCK event has occurred (4)>:0x0

2018-01-10T04:49:50.849987+00:00 axm56xx rhsd[3459]: TUM ALARM SYNTB MOD PLL clock fault

2018-01-10T05:13:49.412885+00:00 du1 rhsd[2829]: HWLOG: <A6N><Loss of toggle detection of CLK\_REF\_ARBS. Value 0x3d5 (5)>:0x0

### Step 3: Logic for pointing out faulty component

#### Rule 1: Valid when ‘Trap info’ is available from Step 1

Suggested SearchKeys:

LAT 1/-68, Rule **1x**, PLL Trap issue, Rev B

Where **1x** is defined in the tables below, in column ‘Rule’.

**Table 1-A: rules 1a to 1e valid for:**

KDU137925/31, for rev R1,R2,R3,R4,R5. *Does not include R10*  
 KDU137925/41, for rev R1,R2,R3,R4,R5. *Does not include R10*

|  |  |  |
| --- | --- | --- |
| **Rule** | **Trap Info** | **POS** |
| 1a | 0x1, 0x200, 0x201 | A101A3 and A1001A3 |
| 1b | 0x8, 0x9, 0x10, 0x11, 0x100, 0x119, 0xd19, 0x400, 0x409, 0x800, 0x810 | A101A3 |
| 1c | 0x2, 0x26, 0x6, 0x66 | A100A3 and A1000A3 |
| 1d | 0x20, 0x24, 0x4, 0x60, 0x64, 0x80 | A100A3 |
| 1e | 0x122, 0x123, 0x3, 0xd3b, 0xd7f | D2000 |

Additional condition:

IF (Rule 1a OR Rule 1b) AND (Rule 1c OR Rule 1d) trigger at the same time, then the output should be **POS** = D2000

**Table 1-B: rules 1f to 1h valid for:**

KDU137925/31, for rev R10 and higher  
 KDU137925/41, for rev R10 and higher  
 KDV127620/11  
 KDV127621/11  
 KDU137847/11  
 KDU137848/11  
 KDU1370053/31

|  |  |  |
| --- | --- | --- |
| **Rule** | **Trap Info** | **POS** |
| 1f | 0x1, 0x8, 0x9, 0x10, 0x11, 0x100, 0x119 | A101A3 |
| 1g | 0x2, 0x20, 0x24, 0x26, 0x4, 0x6, 0x60, 0x64, 0x66, 0x80 | A100A3 |
| 1h | 0x122, 0x123, 0x3 | D2000 |

Additional condition:

IF (Rule 1f) AND (Rule 1g) trigger at the same time, then the output should be **POS** = D2000

**Table 1-C: rules 1i to 1k valid for:**

KDU137974/11  
 KDU137862/11

|  |  |  |
| --- | --- | --- |
| **Rule** | **Trap Info** | **POS** |
| 1i | 0x1, 0x10, 0x11 | A101A3 |
| 1j | 0x2, 0x20, 0x24, 0x26, 0x4, 0x6, 0x60, 0x64, 0x66, 0x80 | A100A3 |
| 1k | 0x3 | D2000 |

Additional condition:

IF (Rule 1i) AND (Rule 1j) trigger at the same time, then the output should be **POS** = D2000

#### Rule 2: Valid when no ‘Trap info’ available from Step 1

Apply following conditions based on combinations of entries.

Suggested SearchKeys:

LAT 1/-68, Rule **2x**, PLL issue, Rev B

Where **2x** is defined in the table below, in column ‘Rule’.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Rule** | SynthB  PLL | SynthB  fPLL | SynthC  PLL | SynthC  fPLL | Multiplier | Loss of toggle | **POS** |
| 2a | **Y** | N | N | N | N | N | A101A3 |
| 2b | any | **Y** | N | N | N | N | A101A3 and A1001A3 |
| 2c | N | N | **Y** | N | N | N | A100A3 |
| 2d | N | N | any | **Y** | N | N | A100A3 and A1000A3 |
| 2e | **Y** | any | **Y** | any | N | **Y** | G1A3 |
| 2f | **Y** | any | **Y** | any | **Y** | **Y** | G1A3 and D3A3 |

## Criteria Valid for

|  |  |  |
| --- | --- | --- |
| LOG test | Screening Test | Proactive Fault finding |
| Y | Y | N |

## SC/RC Location limitations for criteria

# Output from the Claims/Repair HW-log LPA 108 338

## Info text in PRTT/Screening center

“Send unit to Repair Center”

## Information text to repair center

Generic output:

“HW Fault indicated.  
Replace component at position **POS**  
Report as A105/59. Major Fault.”

*Where the position POS is specified by the rules in chapters 2.4.3.*

Note for implementation team:

In case several component positions POS are pointed out by the logic, the LAT output should be one line per action, like:

“HW Fault indicated   
Replace component at position **POS**  
Replace component at position **POS**  
Report as A105/59. Major Fault.”

## Information text to lead repair centre (extended information)

See previous chapter.