

## Declaration of HW change on peiker module series V1140

### HW Change 01/2014: Change of LPDDR SDRAM memory

The Mobile LPDDR SDRAM memory used in the V1140 module series becomes end of life. Therefore, peiker will replace the memory without any layout or software change by a memory type distributed by the same vendor. In detail peiker will change part from "Micron MT46H64M32LFCM-5 IT:A" to "Micron MT46H64M32LFBQ-48 IT:C".

The new memory device is fully function and pin compatible and uses the same bus timing and memory organization. The vendor's change is just a die shrink. The old memory was produced in 50nm technology and the new part is produced in 30nm technology. The technology of silicon die packaging is unchanged, but decreased in y-size. Electrical and timing parameters in both datasheets are identical. The documents with characterization data delivered by manufacturer are attached.

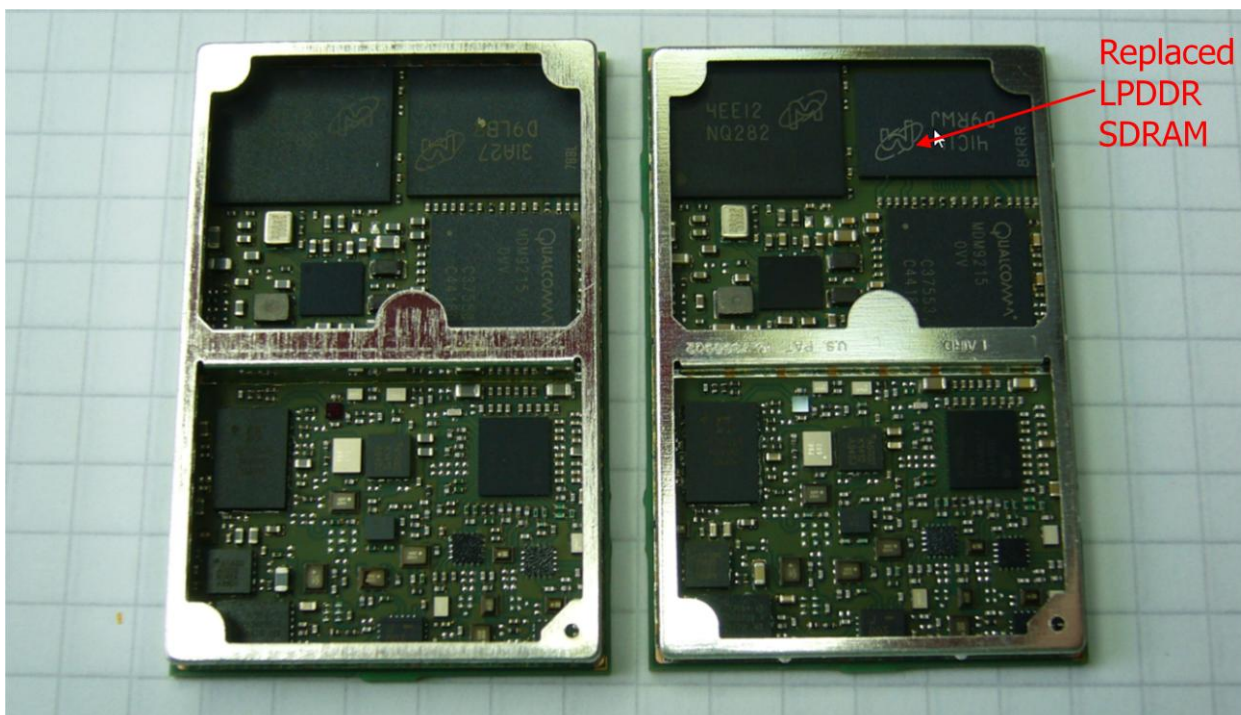


Fig. 1: Left side module uses Micron MT46H64M32LFCM-5 IT:A. Right side module with Micron MT46H64M32LFBQ-48 IT:C is decreased in y-size of the package because of smaller silicon die inside, compared to left module with old memory

### Affected Modules:

V1140-100, V1140-101

Note: The change will be made only in those modules produced after the change is authorized.

### PCB:

PCB Layout is not changed.

**Memory bus width:**

The memory bus width is not changed.

**Memory frequency:**

The memory frequencies and timings are given by the software and not by the memory. Since driver or application software is not changed at all, the memory frequencies and timings will not change when the new memory is used.

**Memory size:**

The memory size of the SDRAM didn't change, it is still 2Gigabit.

**Expected performance impact:**

Peiker has validated the memory function over temperature (-40°C ... +90°C), a malfunction has not been observed during the tests.

The memory is located in the baseband shield compartment. This compartment is separated by a shield wall to the RF shield compartment.

When using Micron MT46H64M32LFBQ-48 IT:C memory, peiker does not expect any degradation<sup>1</sup> in EMC or RF or CPU characteristics as reported to and accepted by the Commission.

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<sup>1</sup> Degradation for EMC parameters as defined by FCC in "178919 D01 Permissive Change Policy v05r04", May 2014, Page 1