

Product Change Notification PCN.2012.07.12.1

Transition from
Robin Z510S V1.0k to Robin Z530S V2.2a

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1. Toradex Product Numbers Affected

Production Module EOL		Replacement	
Part Number	Product Name	Part Number	Product Name
01261009	Robin Z510S V1.0k	01262200	Robin Z510S V2.2a

2. Product Phase in / Phase out Schedule

Production Module EOL		Replacement	
Part Number	Estimated Schedule	Part Number	Estimated Schedule
01261009	LTB (Last Time Buy): LTS (Last Time Ship): Toradex will continue to sell existing inventory until the stock is depleted.	01262200	Volume Production: Q4/2012

Customers are strongly encouraged to convert their designs to the replacement parts listed above. Toradex also advises customers to carefully validate the new module before their production release.

3. Description of Changes

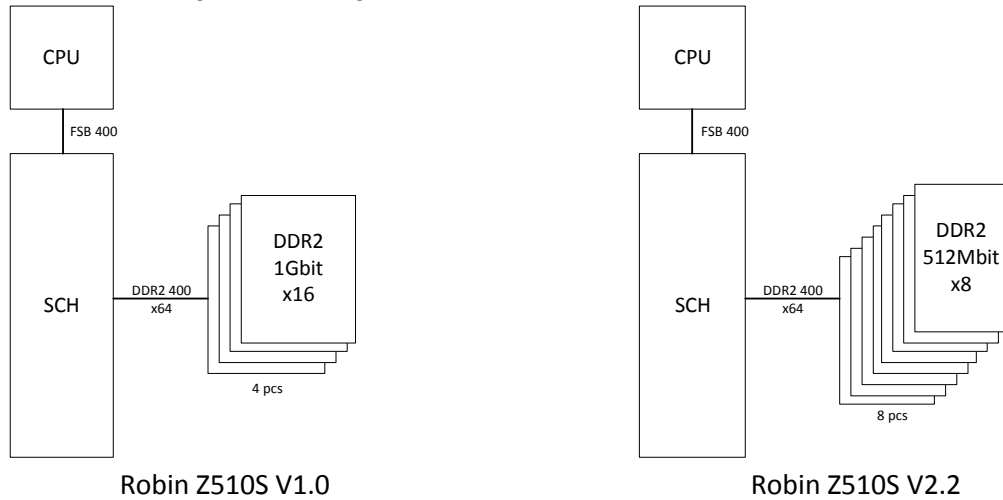
From 01261009 to 01262200 (version 1.0k to 2.2a)

- PCB thickness increased from 1.6mm to 2.0mm
 - o Increased PCB rigidity
 - o Position of CPU, SCH, MicroSD Card Holder and FFC are not changed



- Position and height from PCB surface of high components are not changed

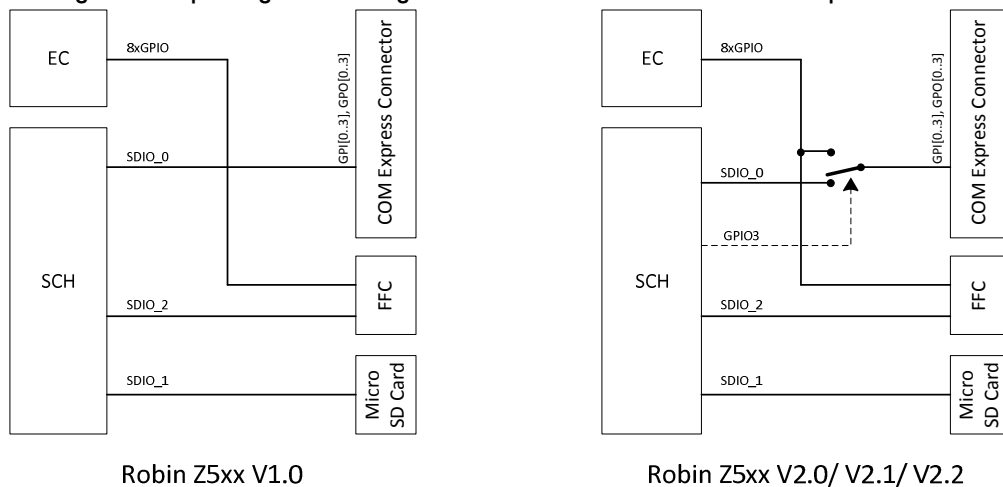
- DDR2 RAM configuration changed



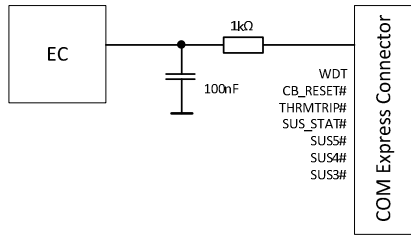
- Old configuration: 4 pcs 1Gbit DDR2 x16 = 512MByte total memory
- New configuration: 8 pcs 512Mbit DDR2 x8 = 512MByte total memory
- Total size of RAM and access speed are not changed

- Removed isolation circuit for external SMB

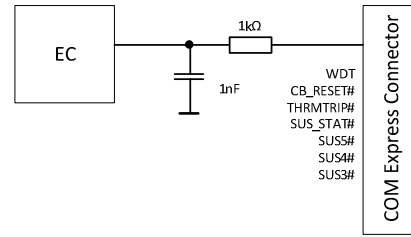
- Add signal multiplexing of SDIO signals that are located on the COM Express connector



- Micro SD socket JAE ST2S008V1A (EOL) replaced by Amphenol 101-00581-59
- EMC Filter capacitor values on Embedded Controller outputs decreased from 100nF to 1nF. This affects the following COM Express signals: WDT, CB_RESET#, THRMTRIP#, SUS_STAT#, SUS5#, SUS4#, SUS3#. Input signals are not affected.



Robin Z5xx V1.0/ V2.0



Robin Z5xx V2.1/ V2.2

- Minor schematic and layout changes, optimizations for manufacturing

4. Customer Impact

4.1. Hardware Design

- Due to the removed SMB isolation circuit, there should be no problems anymore with the low level output voltage. On the Robin Z5xx V1.0, the low output voltage level could exceed the maximum of 0.4V due to the bus isolator. There should not be any drawbacks due to the removing of the bus isolator.
- Due to the additional multiplexer of the SDIO signals, the GPIO signals that are provided by the embedded controller can now also be accessed over COM Express connector pins. The multiplexer is controlled by an SCH GPIO which can be set by the BIOS setup menu. Customers that were using the SDIO0 on the COM Express connector will not face any impact since the default setting of the multiplexer is SDIO.
- The lower EMC Filter capacitor values lead to slightly increased rise times of the following signals:
 - o WDT
 - o CB_RESET#
 - o THRMTRIP#
 - o SUS_STAT#
 - o SUS5#
 - o SUS4#
 - o SUS3#

4.2. Software

- The RAM configuration settings are stored in a special block of the BIOS image. Since Robin Z5xx V2.2 features a different RAM configuration than the Robin Z5xx V1.0, not the same BIOS image can be used for both versions. If a customer is programming cloned BIOS images to the devices during production, a new clone image need to be created that is based on an image for the Robin Z510S V2.2. The module might not boot if a BIOS image with wrong RAM configurations is used.

BIOS Image	Suitable Modules	RAM Configuration	Remarks
R0Pxxxxx.bin	Robin Z510S V1.0 Robin Z530M V1.0	4 pcs 1Gbit DDR2 x16 = 512MByte total memory	Toradex will keep maintaining this Image
R2Pxxxxx.bin	Robin Z530L V2.0 Robin Z530L V2.1 Robin Z530L V2.2	8 pcs 1Gbit DDR2 x8 = 1GByte total memory	
R3Pxxxxx.bin	Robin Z510S V2.2 Robin Z530M V2.2	8 pcs 512Mbit DDR2 x8 = 512MByte total memory	



- No software impacts known on the OS level. The different RAM configuration should not impact the OS or applications. The size and speed of the RAM is equal.

4.3. Mechanical

- The PCB is 0.4mm thicker. That makes the PCB more rigid. The advantage is that the PCB will be less bended when mounted with pressure to heat sink with a thermal interface material (TIM). The position of the CPU and SCH and its height from the PCB surface are not changed. Also other high components did not change. Therefore, the Toradex Heatspreader and Heatsink solutions are still fitting. But the overall height will be increased by the 0.4mm.
- Even though the Micro SD card socket is replaced by a different type, the card is still located at the same place. There should be no mechanical impact.

5. Definitions

LTB: Last Time Buy

LTS: Last Time Ship

EOL: End Of Life