

Product Change Notification (PCN): 0037 Apalis iMX8QM 4GB WB V1.0B to 0037 Apalis iMX8QM 4GB WB IT V1.1B

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1. Affected Product Numbers

End of Life Product		Replacement Product	
Part Number	Product Name	Part Number	Product Name
00371001	Apalis iMX8QM 4GB WB V1.0B	00371101	Apalis iMX8QM 4GB WB IT V1.1B

2. Product Phase in / Phase-out Schedule

End of Life Product		Replacement Product	
Part Number	Estimated Schedule	Part Number	Estimated Schedule
00371001	Early Access product	00371101	Sample available in late Q3, 2020

Customers are strongly encouraged to convert their designs to the replacement parts listed above. Toradex also advises customers to carefully validate the new product version before their production release, since the product is still in “Sample” product phase.

3. Description of Changes

Change #1: Key material changes

- eMMC: Replaced H26M52208FPRI with MTFC16GAPALBH-IT
- RAM: Replaced K4F6E304HB-MGCJ with MT53D512M32D2DS-046 IT:D
- PMIC: Replaced MC33PF8100A0ES with MC34PF8100A0EP
- SoC: Replaced PIMX8QM6AVUFFAB with MIMX8QM6AVUFFAB

Change #2: I/O rail switch for external RGMII

- The I/O voltage rail of the external RGMII interface signals changed from fixed 3.3V to the LDO1OUT of the secondary PMIC. This allows changing the I/O voltage level from 1.8V to 2.5V and 3.3V. During power-up, the rail is turned on and set to 3.3V. The operating system can modify the LDO voltage. Care needs to be taken when using lower voltages as the GPIO bank connected to this supply includes Apalis standard 3.3V pins (only recommended on custom boards).

Change #3: Change I2C2 pins to HDMI_TX0_DDC

- The I2C2 pins (MXM 207 and 205) are changed from the HDMI_TX0_TS interface of the SoC to the HDMI_TX0_DDC interface. The HDMI requires this dedicated interface for the DDC, not the generic I2C port. Unfortunately, the HDMI_TX0_DDC interface cannot be used as a generic I2C port, and the pins do not have GPIO capabilities.

Change #4: Change of GPIO for enabling PCIe clock

- The PCIe_CTRL0_CLKREQ_B of the SoC was used for enabling the PCIe reference clock. It has been changed to USDHC2_WP for the general PCIe reference clock and the ESAI1_TX3_RX2 for the Wi-Fi PCIe reference clock.

Change #5: LDO1OUT not used by Wi-Fi rail anymore

- Instead of using the LDO1OUT of the secondary PMIC, the Wi-Fi module is now permanently powered. Use the power down input of the Wi-Fi module (provided by SoC ball MIPI_CSI0_GPIO0_01) for shutting down the Wi-Fi module. This power-down feature was already available on V1.0B.

Change #6: Start-up after SW shutdown on RTC battery issue fixed

- On V1.0x when the 3V RTC battery was connected to the module, the module would not power-on again after software power-off (even after power cycle), which has been fixed in V1.1B.

Change #7: Gigabit Ethernet PHY changed

- Gigabit Ethernet PHY has been changed from KSZ9031RNXIC to KSZ9131RNXI for compliance with IEEE 1000Base-T.

4. Customer Impact

Hardware

- Product operating temperature range has been changed to IT
- Fixed issue "module not powering on after shutdown with RTC battery connected" described in the Errata/Known Issues section <https://developer.toradex.com/products/apalis-som-family/modules/apalis-imx8?view=all&key=HAR-4106#errataknown-issues>
- No generic I2C and GPIO functions are available any more on the I2C2 module connector pins. Use other pins for these purposes. The I2C2 interface can only be used as HDMI DDC
- The state of RGMII I/O pins are by default 3.3V but can be configured by SCU/u-boot/kernel with different voltages.
- No HiFi 4 DSP feature

Software

- The I/O voltage rail of the external RGMII interface signals is configured to 3.3V by default. This voltage could be changed to 1.8V by changing the output voltage of LDO1OUT of the secondary PMIC
- We have a new device tree called `fsl-imx8qm-apalis-v1.1.dtsi`. Customers used to use `fsl-imx8qm-apalis.dtsi` should upgrade
- 0037 Apalis iMX8QM 4GB WB V1.0B was an Early Access product that may have limited support in the future
- 0037 Apalis iMX8QM 4GB WB IT V1.1B is a Sample product for which Toradex will provide limited support in the future
- For the latest Linux BSP information, please refer to:
<https://developer.toradex.com/software/linux/linux-software/release-details>
- For the latest Toradex Easy Installer information, please refer to:
<https://developer.toradex.com/software/toradex-easy-installer/release-details>
- For the latest TorizonCore information, please refer to:
<https://developer.toradex.com/software/torizon/release-details>
- For more general Software information, please refer to:
<https://developer.toradex.com/software>

5. Contact

- Please contact Toradex if you have any questions.
- For commercial and sales questions, please contact shop@toradex.com
- For technical questions, please contact support@toradex.com