Product Change Notification (PCN): 0048 Apalis iMX8QP 2GB WB V1.0B to 0048 Apalis iMX8QP 2GB WB V1.1B

Date of publication: 28 Jul 2020

Table of Contents

1. Affected Product Numbers

End of Life Product		Replacement Product	
Part Number	**Product Name**	**Part Number**	**Product Name**
00481001	Apalis iMX8QP 2GB WB V1.0B	00481101	Apalis iMX8QP 2GB WB V1.1B

2. Product Phase in / Phase-out Schedule

End of Life Product		Replacement Product	
Part Number	**Estimated Schedule**	**Part Number**	**Estimated Schedule**
00481001	Sample product	00481101	Sample in 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 THGBMHG7C1LBAIL with MTFC16GAPALBH-IT
- PMIC: Replaced MC33PF8100A0ES with MC34PF8100A0EP

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

- 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#erratakown-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.

Software

- The I/O voltage rail of the external RGMII interface signals is configured to 1.8V by default. This voltage could be changed to 2.5V or 3.3V 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
- 0048 Apalis iMX8QP 2GB WB V1.0B was an Early Access product that may have limited support in the future
- 0048 Apalis iMX8QP 2GB WB V1.1B is a Sample product that may have 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