# Product Change Notification (PCN): 0058 Verdin iMX8M Plus Quad 4GB WB IT V1.0C, 0058 Verdin iMX8M Plus Quad 4GB WB IT V1.0D, and 0058 Verdin iMX8M Plus Quad 4GB WB IT V1.0E to 0058 Verdin iMX8M Plus Quad 4GB WB IT V1.1A

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## 1. Affected Product Numbers

| End of Life Product | | Replacement Product | |
|---|---|---|---|
| Part Number | Product Name | Part Number | Product Name |
| 00581002 | 0058 Verdin iMX8M Plus Quad 4GB WB IT V1.0C | 00581100 | 0058 Verdin iMX8M Plus Quad 4GB WB IT V1.1A |
| 00581003 | 0058 Verdin iMX8M Plus Quad 4GB WB IT V1.0D | | |
| 00581004 | 0058 Verdin iMX8M Plus Quad 4GB WB IT V1.0E | | |

## 2. Product Phase-in / Phase-out Schedule

| End of Life Product | | Replacement Product | |
|---|---|---|---|
| **Part Number** | **Estimated Schedule** | **Part Number** | **Estimated Schedule** |
| 00581002 | Q2 2022 | 00581100 | Q2 2022 |
| 00581003 | Q2 2022 | | |
| 00581004 | Q2 2022 | | |

Customers are strongly encouraged to convert their designs to the replacement parts listed above. Compatibility of the end of life parts with future software releases is not guaranteed. Toradex also advises customers to carefully validate the new product version before their production release, since the product is still in the "Sample" product phase.

## 3. Change Details

### Change #1: PCB

The PCB design has been updated.

### Change #2: eMMC

The eMMC part Micron MTFC16GAPALBH-IT/MTFC16GAPALBH-AAT has been replaced with the Kingston EMMC32G-IX29-8AC01.

### Change #3: Bluetooth module host controller interface

The host controller interface of the Bluetooth module has been changed from SDIO to a full-featured UART interface (including flow control signals, served by the UART4 SoC interface).

### Change #4: USB_1_ID pin

The SoC pin serving the ID pin of the USB_1 (OTG) Verdin interface (USB_1_ID, pin 161 of the edge connector) has been changed.

### Change #5: Module-specific pins

The ECSPI2 SoC pins (previously available on the Module-specific pins MSP_13, MSP_18, MSP_28, and MSP_33) are not anymore available on the edge connector.

### Change #6: Optional MIPI CSI-2 master clock output

The SoC pin serving the optional MIPI CSI-2 master clock output Verdin pin (CSI_1_MCLK, pin 91 of the edge connector) has been changed.

### Change #7: Bluetooth audio I2S interface signals

The RX and TX signals of the I2S interface connected to the Bluetooth solution have been swapped on the SoC side.

### Change #8: PCB temperature sensor assembly option

An assembly option for a PCB temperature sensor has been added (not assembled).

### Change #9: TPM assembly option

An assembly option for the ST ST33GTPMII2C TPM has been added (not assembled). The assembly option for the Microchip ATTPM20 TPM has been eliminated.

## 4. Customer Impact

### Hardware

- The eMMC capacity has increased from 16GB to 32GB.
- The NAND cell type and arrangement implemented by the eMMC have changed from 2D MLC to 3D TLC. Depending on the use case, this may have an impact on the behavior, the performance and the lifetime of the eMMC. For more information, please refer to the related article on our Developer Website.
- Automatic role switching is functional for the USB_1 (OTG) Verdin interface (via the USB1_ID pin).
- The primary and alternative functions of the ECSPI2 SoC pins cannot be used anymore as the pins are not available on the edge connector.
- The MIPI CSI-2 master clock output Verdin pin is served by a general-purpose clock pin of the SoC and thus could be used for outputting a clock signal.
- The hardware bug preventing the Bluetooth audio interface from being used has been eliminated.

## Software

- eMMC changes usually do not affect customer software, however, please validate your use case. The Kingston eMMC features a different hardware area boot partition size compared to the Micron part. Toradex uses the last block of the primary hardware area boot partition to store important information such as the module's serial number in the so-called Config Block. Due to the different hardware area boot partition size the absolute location of this Config Block changed. All Toradex provided software calculates the Config Block address relative to the end of the hardware area boot partition, hence there is no software impact for standard software. Customers who explicitly write the Config Block to a fixed eMMC block number need to update the block number. It is recommended to review and test your software, especially if you have customized Toradex-provided software or used your own software to take advantage of eMMC-specific features. A common process to find such customizations is in the customer's factory programming process.
- A full-featured UART interface (including flow control pins) has been provided for serving the host controller interface of the Bluetooth module. The UART4 instance of the SoC has been used for this purpose. As a consequence, the UART_4 Verdin interface instance (served by the same SoC UART instance, reserved for the console output of the M7 core) is not usable by default. In case the Bluetooth module is not used, the functionality of the UART_4 Verdin interface can be restored via a Device Tree change.
- Automatic role switching for the USB_1 (OTG) Verdin interface has not been functional with previous hardware versions. The feature is supported and functional when this hardware version is used in combination with the 5.6.0 Embedded Linux BSP Quarterly Release (or newer).
- For providing the CSI_1_MCLK clock, the general-purpose clock output of the SoC (CCM_CLKO2) could be used.
- For serving the Verdin USB_2_OC# pin, the GPIO alternate function of the connected SoC pin (SAI3_MCLK) could be used.
- The Replacement Products are supported in the Toradex Embedded Linux BSP from the 5.6.0 Quarterly Release onwards. Starting from this release, the End of Life products are not supported. In case of using the End of Life products in combination with the aforementioned (or a newer) software release, the Bluetooth feature and the automatic role switching feature of the USB_1 (OTG) Verdin interface may not be functional. It is possible to restore the functionality of these features via Device Tree changes.

## 5. Contact

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