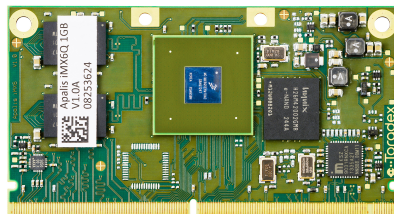




Apalis iMX6



Apalis iMX6Q

(Double-Click to Zoom)

The **Apalis iMX6** is a Toradex System on Module based on the NXP i.MX 6 SoC, and a member of the **Apalis Family**.

This page provides hardware design resources, documentation, revision history, erratas, compatibility details, and getting started guides for developers working with the Apalis iMX6 module.

Getting Started

Recommendation for the First-Time Order

Toradex recommends ordering the following additional products for your first-time order:

- **Apalis Evaluation Board**

All products are available for online purchase through the [Toradex Webshop](#).

Quickstart Guide

Check out our guide for detailed instructions on how to get your board up and running with [Torizon](#):

- [Quickstart Guide](#)

Having trouble?

Please contact our technical support. Various options of technical support are mentioned below:

- [Technical Support Channels](#)

Product Features

Hardware Features

- [Apalis iMX6 Product Page](#)

Compatible Products

- [Apalis Carrier Boards](#)
- [Accessories & Add-ons](#)

Block Diagram

Apalis iMX6

- [Apalis iMX6 Block Diagram](#)

Pinout Evaluation & Planning

- [Toradex Pinout Designer](#)

Power Consumption

- [Power Consumption Testing Results](#)

Software Adjustments

Software modifications needed in order to silence the (non-fatal) errors that appear on these modules.

- [Software Adjustments for Colibri/Apalis iMX6 V1.1Z Modules](#)

Product Documents

Datasheets

Apalis iMX6 V1.1

- [Apalis iMX6 V1.1 Datasheet](#)

Design Resources

Toradex provides two different 3D models for Apalis Systems on Module:

- **Generic 3D Mechanical Models:** This model has the maximum component height for testing the mechanical fit. This ensures the mechanical design fits all current Apalis modules as well as future releases.
- **Specific 3D Mechanical Models:** These models are simplified models of the respective Apalis module. They contain only the PCB and the CPU and are intended to be used for heat spreader or heat sink designs. The CPU height is a typical value. Due to production tolerances, the actual height of the assembled component can be different.

Generic 3D Mechanical Models

The generic Apalis 3D model contains the PCB and the maximum component height on top and bottom of modules from the **Apalis Module Family**. This model should be used to test the mechanical fit, ensuring that the mechanical design fits all current Apalis modules as well as future releases.

- **SolidWorks CAD model 3D EASM model**
 - You can download the free eDrawings model viewer from SolidWorks [here](#)
- **3D STEP model** that can be opened and modified in any 3D CAD
- **3D PDF model** that can be opened in Adobe Reader

Specific 3D Mechanical Models

The Apalis iMX6 3D model is simplified and contains only the PCB and the CPU. It is intended to be used for heat spreader or heat sink designs. The CPU height is a typical value. Due to production tolerances, the actual height of the assembled component can be

different. Please use the [Generic 3D Mechanical Models](#) with the maximum component height for testing the mechanical fit. This ensures the mechanical design fits all current Apalis modules as well as future releases.

- [SolidWorks CAD model 3D EASM model](#)
 - You can download the free eDrawings model viewer from SolidWorks [here](#)
- [3D STEP model](#) that can be opened and modified in any 3D CAD
- [3D PDF model](#) that can be opened in Adobe Reader

Design and Layout Guide

- [Apalis Carrier Board Design Guide](#)
- [Layout Design Guide](#)
- [Apalis Module Specification](#)

Hardware Ecosystem

Carrier Boards

Off-the-shelf Carrier Boards

- [Apalis Carrier Boards](#)

Learn more on the [Apalis Product Family Specification](#).

Custom Carrier Board Design

Find free reference designs, schematics, 3D designs, and tools to build your carrier board easily in the link below:

- [Carrier Board Design Section](#)

- [Carrier Board Design Guide](#)

Accessories & Add-ons

- [EDT Display](#)
- [Capacitive Touch Display 7" Parallel](#)
- [Resistive Touch Display 7" Parallel](#)
- [Capacitive Touch Display 10.1" LVDS](#)
- [Carrier Board Accessory Kit](#)
- [Apalis Heatsink Type 1 & 3](#)
- [LM816 USB WiFi](#)
- [Analogue Camera Adapter](#)
- [Apalis iMX6 Mezzanine](#)

Check other options and compatibility information on the [add-ons product pages](#).

Software Ecosystem

Toradex-Supported Linux Platforms

The following Linux-based offerings are in-house supported - pre-built images available for quick evaluation:

- [Torizon OS](#) - open source, easy to use industrial Linux operating system
 - [OS Customization Overview](#)
 - [Application Development Overview](#)

- [Yocto Project Reference Images](#) - reference images for Yocto Project, a great starting point for customized Linux images
 - [OS Customization Overview](#)
 - [Application Development Overview](#)

Industry and Partner Software Ecosystem

For detailed instructions about software development, including other operating systems for Toradex Computer on Modules - **QNX**, **Android and more** - check out our software ecosystem page:

- [Software Ecosystem Page](#)

Toradex-Supported Windows Embedded Compact (EOL)

- [Windows Embedded Compact](#)

INFO

Torizon OS with containers has limited performance on the Apalis iMX6. Toradex recommends using the [Torizon OS Yocto Reference Minimal Image](#) for such scenarios.

Windows CE is EOL. Refer to [WinEC Affected Modules EOL - Migration Guide](#) for more information.

Development Resources

Installing the Operating System

Toradex products come with [Toradex Easy Installer](#) pre-installed. Once you power-on the board, it will display a list of available images to be installed. Check out how to get started with the Toradex Easy Installer:

- [Toradex Easy Installer - Getting Started](#)

You might need to enter recovery mode:

- [Recovery Mode Instructions](#)

You can also install the compatible pre-built images available for download:

- [Download Links](#)

Connecting to the Board

During development, you will need to communicate the board with your host machine:

- [Connect using SSH - network](#)
- [Connect using serial](#)

Revision History

▶ [Click to See the Product Numbering Scheme](#)

A specific product revision has a lifecycle defined by the product state. Learn more about it on the [Product Change Notifications](#).

0028 Apalis iMX6Q 2GB IT (WinEC)

Product #	Product Description	Changes from Previous Version	Release Date
00281000	Apalis iMX6Q 1GB IT V1.0A	Initial Release	2014-04-30
00281100	Apalis iMX6Q 2GB IT V1.1A	• Changed 1GB RAM to 2GB RAM • Switched UART 1-4 RX and TX signals (to be Apalis family compliant in DTE mode) • Switched UART 3 and 4 (UART 3 now from pins KEY_ROW0/KEY_COLO, UART 4 now from pins KEY_ROW1/KEY_COL1) • RESET_MOCI# can be controlled as a GPIO • PWM4 can now be used on BLK1_PWM as mentioned in the datasheet	2014-12-31
00281101	Apalis iMX6Q 2GB IT V1.1B	• Changed from 8GB eMMC to 4GB eMMC	2015-12-25

00281102	Apalis iMX6Q 2GB IT V1.1C	- Replaced eMMC Toshiba THGBMAG5A1JBAWR (EOL) with Micron MTFC4GACAJCN-4M- IT - i.MX 6 SoC and eMMC are irrevocably configured (fused) for "fast boot mode" - The pre-installed software changes from "embedded Linux" to "Toradex Easy Installer"	2017- 05-30
00281103	Apalis iMX6Q 2GB IT V1.1D	- Replaced eMMC: Micron MTFC4GACAJCN-4M IT with Macronix MX52LM04A11XUI - Replaced Gigabit Ethernet Transceiver: KSZ9031RNXIC with KSZ9131RNXI	Q4, 2021
00281125	Apalis iMX6Q 2GB IT V1.1Z	- Additional version with limited features, sold on request only - Removed STMPE811QTR touch/ADC controller and related	Q2, 2020

		components due to temporary component shortage	
00281124	Apalis iMX6Q 2GB IT V1.1Y	• Additional version with limited features, replacing V1.1Z • Removed STMPE811QTR touch/ADC controller and related components due to temporary component shortage • Replaced eMMC: Micron MTFC4GACAJCN-4M IT with Macronix MX52LM04A11XUI • Replaced Gigabit Ethernet Transceiver: KSZ9031RNXIC with KSZ9131RNXI	Q4, 2021

0027 Apalis iMX6Q 1GB (WinEC)

Product #	Product Description	Changes from Previous Version	Release Date
00271000	Apalis iMX6Q 1GB V1.0A	Initial Release	2014- 04-30
00271001	Apalis iMX6Q 1GB V1.0B	Removed internal strapping resistors. Module is fused for eMMC boot anyway.	2014- 06-18
00271100	Apalis iMX6Q 1GB V1.1A	- Switched UART 1-4 RX and TX signals (to be Apalis family compliant in DTE mode) - Switched UART 3 and 4 (UART 3 now from pins KEY_ROW0/KEY_COL0, UART 4 now from pins KEY_ROW1/KEY_COL1) - RESET_MOCI# can be controlled as a GPIO PWM4 can now be used on BLK1_PWM as mentioned in the datasheet - Switched from MCIMX6Q5EYM10AC to MCIMX6Q5EYM10AD	2014- 12-31

00271101	Apalis iMX6Q 1GB V1.1B	- Replaced eMMC 4GB Toshiba THGBMBG5D1KBAIT (EOL) with 4GB Micron MTFC4GACAJCN-1M-WT - i.MX 6 SoC and eMMC are irrevocably configured (fused) for "fast boot mode" in the new version - The pre-installed software changes from "embedded Linux" to "Toradex Easy Installer"	2017-05-30
00271102	Apalis iMX6Q 1GB V1.1C	- Intermediate version - Replaced eMMC Micron 4GB MTFC4GACAJCN-1M WT with 4GB SkyHigh S40FC004C1B1C00	Q4, 2021
00271103	Apalis iMX6Q 1GB V1.1D	- Replaced Gigabit Ethernet Transceiver: KSZ9031RNXIC with KSZ9131RNXI - Replaced eMMC Micron 4GB MTFC4GACAJCN-1M WT with 4GB SkyHigh S40FC004C1B1C00	Q1, 2022

		(this change was already implemented in the intermediate version V1.1C)	
00271125	Apalis iMX6Q 1GB V1.1Z	• Additional version with limited features, sold on request only • Removed STMPE811QTR touch/ADC controller and related components due to temporary component shortage	Q2, 2020
00271124	Apalis iMX6Q 1GB V1.1Y	• Additional version with limited features, replacing V1.1Z • Removed STMPE811QTR touch/ADC controller and related components due to temporary component shortage	Q1, 2022

		- Replaced eMMC Micron 4GB MTFC4GACAJCN-1M WT with 4GB SkyHigh S40FC004C1B1C00 - Replaced Gigabit Ethernet Transceiver: KSZ9031RNXIC with KSZ9131RNXI	
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0035 Apalis iMX6D 1GB IT (WinEC)

Product #	Product Description	Changes from Previous Version	Release Date	
00351100	Apalis iMX6D 1GB IT V1.1A	Initial Release	2016- 07-20	

00351101	Apalis iMX6D 1GB IT V1.1B	- Replaced eMMC Toshiba THGBMAG5A1JBAWR (EOL) with Micron MTFC4GACAJCN- 4M-IT - The pre-installed software changes from "embedded Linux" to "Toradex Easy Installer"	2017- 06-28
00351102	Apalis iMX6D 1GB IT V1.1C	- Replaced eMMC: Micron MTFC4GACAJCN- 4M IT with Macronix MX52LM04A11XUI - Replaced Gigabit Ethernet Transceiver: KSZ9031RNXIC with KSZ9131RNXI	Q4, 2021
00351124	Apalis iMX6D 1GB IT V1.1Y	- Additional version with limited features, sold on request only - Replaced eMMC: Micron MTFC4GACAJCN- 4M IT with Macronix MX52LM04A11XUI - Replaced Gigabit Ethernet Transceiver:	Q1, 2022

		KSZ9031RNXIC with KSZ9131RNXI Removed STMPE811QTR touch/ADC controller and related components due to temporary component shortage	
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0029 Apalis iMX6D 512MB (WinEC)

Product #	Product Description	Changes from Previous Version	Release Date
00291000	Apalis iMX6D 512MB V1.0A	Initial Release	2014- 04-30
00291100	Apalis iMX6D 512MB V1.1A	- Switched UART 1-4 RX and TX signals (to be Apalis family compliant in DTE mode) - Switched UART 3 and 4 (UART 3 now from pins KEY_ROW0/KEY_COLO, UART 4 now from pins KEY_ROW1/KEY_COL1)	2014- 12-31

		• RESET_MOCI# can be controlled as a GPIO - PWM4 can now be used on BLK1_PWM as mentioned in the datasheet	
00291101	Apalis iMX6D 512MB V1.1B	• Replaced eMMC Toshiba THGBMBG5D1KBAIT (EOL) with Micron MTFC4GACAJCN-1M-WT • i.MX 6 SoC and eMMC are irrevocably configured (fused) for "fast boot mode" • The pre-installed software changes from "embedded Linux" to "Toradex Easy Installer"	2017-06-30
00291102	Apalis iMX6D 512MB V1.1C	• Replaced eMMC Micron 4GB MTFC4GACAJCN-1M WT with 4GB SkyHigh S40FC004C1B1C00	Q1 2022

0082 Apalis iMX6D 512MB

Product #	Product Description	Changes from Previous Version	Release Date	Pre-Installed Software
00821100	Apalis iMX6D 512MB V1.1A	Initial Version Module based on 00291102 without WinEC License	2024-04-01	ToradexEasyInstall

0083 Apalis iMX6Q 1GB

Product #	Product Description	Changes from Previous Version	Release Date	Pre-Installed Software
00831100	Apalis iMX6Q 1GB V1.1A	Initial Version Module based on 00271103 without WinEC License	2024-04-01	ToradexEasyInstall

0084 Apalis iMX6D 1GB IT

Product #	Product Description	Changes from Previous Version	Release Date	Pre-Installed Software
00841100	Apalis iMX6D 1GB IT V1.1A	Initial Version Module based on 00351102 without WinEC License	2024-04-01	ToradexEasyInstall

0085 Apalis iMX6Q 2GB IT

Product #	Product Description	Changes from Previous Version	Release Date	Pre-Installed Software
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00851100	Apalis iMX6Q 2GB IT V1.1A	Initial Version Module based on 00281103 without WinEC License	2024- 04-01	ToradexEasyInst
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Errata/Known Issues

SoC Errata Document

- Filter by [Errata](#) on the: [i.MX 6Dual/6Quad Documentation on the NXP website](#).

SoM Errata Document



- [Apalis iMX6 Errata Document](#)
- [KSZ9031RNX Silicon Errata](#)

Hardware Issue Tracker

- [Hardware Issue Tracker Page](#)

Software Issue Tracker

- [Torizon OS](#)
- [Linux BSP](#)
- [WinCE](#)

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