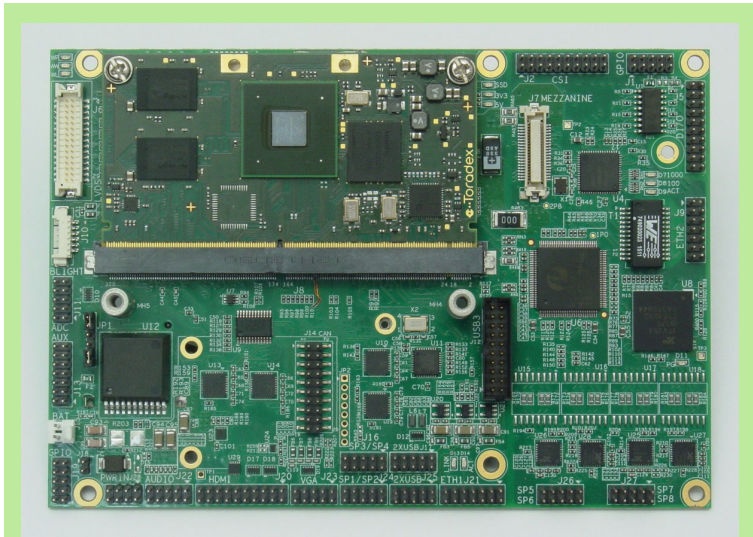# EAGLE ARM SBC Family

3.5 Inch Form Factor SBC with Toradex Apalis ARM Computer-on-Modules

◆ Choice of Toradex ARM Computer-on-modules:
  – NVIDIA Tegra T3 1.4GHz quad core Cortex A9
  – i.MX6 NXP/Freescale 1.0GHz quad core Cortex A9

◆ Standard baseboard I/O features:
  – 4 USB 2.0 ports
  – 8 RS-232/422/485 serial ports
  – 2 Gigabit Ethernet ports
  – VGA, HDMI and dual channel LVDS display options
  – HD audio interface with MIC in and Line out
  – 4 12-bit A/D; 4 PWM; I2C; SPI; 16 GPIO lines
  – 4 opto-isolated digital inputs; 4 opto-isolated digital outputs
  – Camera serial interface (CSI)
  – PCIe MiniCard and mSATA sockets
  – "Type specific" I/O connector for mounting custom daughterboard

◆ Wide input 9VDC to 36VDC power supply

◆ 3.5 inch form factor: 4.0" x 5.75" (102mm x 146mm)

◆ -40°C to +85°C (-40°F to +185°F) operating temperature

Off the Shelf ARM Computing Solution

Eagle provides a rugged, compact, ready-to-run, complete embedded computing solution based on the Toradex Apalis family of ARM modules. Eagle is a 2-board "COM-based SBC" consisting of a baseboard plus installed CPU module. The baseboard provides a socket to mount the ARM module and then provides all the power and I/O circuitry necessary to turn it into a complete SBC. The use of a socketed CPU module provides easy field upgradability and ensures the longest possible product lifetime.

Select from 3 different processor families according to the performance you need. Select models are available as standard off the shelf configurations; others are available as special order.

Eagle offers wide temperature operation over the full industrial range of -40 to +85°C. Actual temperature range will be determined by the installed ARM module.

Accessories

A panel I/O board is available with industry-standard I/O connectors to simplify system assembly. The board plugs onto the front edge of the Eaglet SBC and provides access to 2 USB ports, 1 Ethernet port, 2 serial ports, VGA, HDMI, 8 GPIO lines, audio, and power input. Remaining I/O features may be accessed with cables.

An optional daughterboard provides dual opto-isolated CAN ports with jumper-selected split bias termination.

Cable kits are also available, providing access to all I/O features on the board, including the I/O accessed with the panel I/O board.
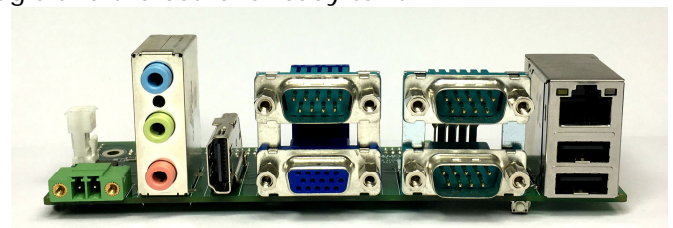
Selection of Toradex ARM COMs

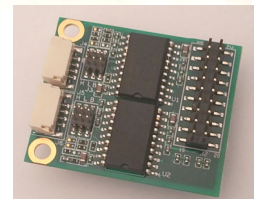| Apalis iMX6	Apalis T30	Apalis TK1 (coming soon!)
Freescale i.MX6	NVIDIA Tegra 3	NVIDIA Tegra K1
ARM Cortex A9	ARM Cortex A9	ARM Cortex A15
Quad core Dual core	Quad Core	Quad core
1GHz / 800MHz	1.4GHz	Up to 2.2GHz
512MB to 2GB DDR3 RAM	1GB or 2GB DDR3 RAM	2GB DDR3 RAM
4GB eMMC flash	4GB/8GB eMMC flash	16GB eMMC flash
End of life 2028	End of life 2025	End of life 2025

See www.toradex.com for more information.

Linux Board Support Package

The Eagle Linux BSP is based on the Open Embedded Build Framework. The BSP is delivered on a 32GB micro-SD module and contains all drivers necessary for controlling all peripherals on Eagle. Just plug the SD into Eagle and the board is ready to run.

Eagle panel I/O board

CAN daughterboard

EAGLE: ARM SBC using Toradex Apalis ARM COMs

Specifications

Supported COMs	Apalis iMX6 800MHz or 1GHz ARM Cortex A9 Apalis T30 1.4GHz ARM Cortex A9
Networking	2 Gigabit Ethernet ports
Serial ports	8 RS-232/422/485 ports with software configuration
USB ports	4 USB 2.0 ports
Video output	**i.MX6** **T30** VGA 1280x1024 1920x1200 LVDS 1920x1200 dual ch 2048x1536 dual ch HDMI HDMI1.4a up to 1080p/60Hz
Mass storage	1 micro SD & 1 mSATA socket
Camera input	MIPI CMOS sensor interface
Audio	HD audio line in, line out
Data acquisition and control	4 12-bit A/D, 4 PWM 16 GPIO, 3.3V logic levels 4 opto-isolated in / 4 opto out, 3-28VDC
Connectivity	1 I2C, 1 SPI, 2 CANbus 2.0 on pin headers
I/O expansion	PCIe MiniCard socket (with SIM socket) Type specific connector for custom I/O
Input power	9VDC to 36VDC
Power consumption	12V in: 1.8W 28V in: 2.8W
Operating temp	-40°C to +85°C for both i.MX6 and T3 CPUs
Shock & Vibration	MIL-STD-202G compatible
Dimensions	4.0" x 5.75" (102mm x 146mm)
RoHS	Compliant

Ordering Information

EGL-MX6-Q2G-XT	Eagle SBC, i.MX6 quad core 1GHz CPU, 2GB memory, wide temp
EGL-T3-Q1G-XT	Eagle SBC, T3 quad core 1GHz CPU, 1GB memory, wide temp
DK-EGL-MX6Q2G-LNX	Eagle Development Kit with T3 SBC, Linux OS on micro SD, and cable kit
DK-EGL-T3Q1G-LNX	Eagle Development Kit with T3 SBC, Linux OS on Micro-SD, and cable kit
SDK-EGL-MX6-LNX	Linux BSP for Eagle / MX6 on Micro-SD
SDK-EGL-T3-LNX	Linux BSP for Eagle / T3 on Micro-SD
PNL-EGL-01	Eagle/Eaglet Panel I/O Board
CK-EGL-01	Eagle Cable Kit, no HDMI cable
CK-EGL-01	Eagle Cable Kit, with HDMI cable

Industrial ARM Computers

Eagle is available as a complete packaged system with integrated Linux OS. The enclosure supports table top, bulkhead, and DIN rail mounting options. Dimensions: 183W x 165D x 81H mm (7.2W x 6.5 x 3.1 in).

Eagle / Eaglet Block Diagram

V1.4