

EAGLE I/O-Rich SBCs and Carrier Boards Provide Off-the-Shelf Complete ARM Computing Solutions

Sunnyvale, California — October 26, 2016 — Today Diamond Systems, a global supplier of compact, rugged, I/O-rich embedded computing solutions for real-world applications in a broad range of markets, unveiled its **EAGLE** family of compact, rugged ARM single-board computers and carrier boards designed to work with the Toradex Apalis family of ARM computer-on-modules (COMs).

The product line is composed of two models, the full-size, full-featured **Eagle** and its smaller sized, low-cost **Eaglet**. For greatest convenience, customers may purchase a fully-configured off the shelf solution from Diamond, including a select ARM module and heat sink installed, or they may purchase the baseboard and ARM module separately for greater configuration flexibility and lower unit cost. Development Kits, including the fully configured SBC, pre-configured Linux OS on a microSD card, and a full cable kit, are available from Diamond Systems.

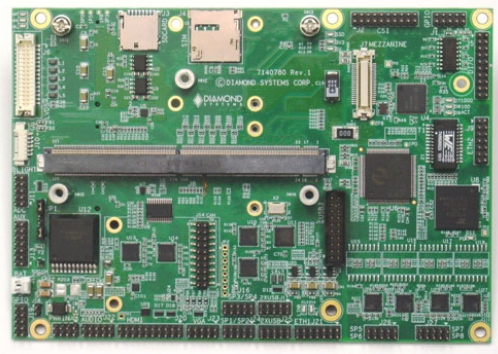
Key highlights of the Eagle/Eaglet family are long product lifetime, configuration flexibility, and a wide range of I/O.

One of the most difficult challenges in embedded systems is the frequent and often painful technology refreshes during the product's lifecycle, due to the relatively short life of the processor. The Eagle/Eaglet family with the Toradex Apalis family of ARM modules solves this problem, providing a long life, scalable platform for embedded computing applications with interchangeable processors similar to the well-known COM Express concept. All COMs in the Apalis Family are pin-compatible to ensure seamless platform upgrades. Eagle enables customers to extend their product's lifecycle by simply upgrading to a new Apalis module and installing new driver software. Currently available models offer product lifetimes extending through 2028.

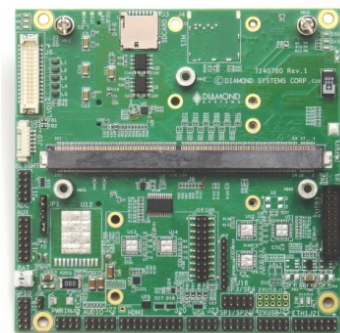
Eagle/Eaglet users have great flexibility in selecting not only the price/performance characteristics of the installed COM but multiple configurations, including the number of cores, memory and flash size, and operating temperature range. Both Eagle and Eagle baseboards support the following Toradex Apalis COM families:

Apalis i.MX6 COM	Apalis T30 COM	Apalis TK1 COM
NXP/Freescale i.MX6	NVIDIA Tegra 3	NVIDIA Tegra K1
ARM Cortex A9	ARM Cortex A9	ARM Cortex A15
Quad/ Dual core	Quad core	Quad core
800MHz / 1GHz	1.4GHz	Up to 2.2GHz
512MB to 2GB DDR3 RAM	1-2GB 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

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Eagle full sized ARM Baseboard
 (4.00\"/>



Eaglet compact ARM Baseboard
 (4.00\"/>



Sample Toradex Apalis
 ARM Computer-on-Module

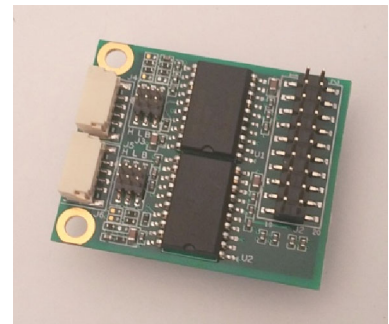
Eagle and Eaglet feature a variety of I/O functionality as described in the following table. Eaglet provides the core functionality of the installed Apalis COM. Eagle adds extra functionality including more Ethernet, serial, and GPIO ports, for applications requiring more I/O.

Feature	EAGLE	EAGLET
Supported COMs	Apalis iMX6, Apalis T30, Apalis TK1	*
Display	VGA, HDMI & dual channel LVDS	*
Ethernet	2 Gigabit Ethernet	1 Gigabit Ethernet
USB	5-6 2.0 ports	3-4 2.0 ports
Serial	8 RS-232/422/485 programmable	2 RS-232/422/485; 2 RS-232
Audio	HD audio	*
Analog I/O	4 12-bit A/D	*
PWM	4 channels	*
Digital I/O	16 lines with 3.3 logic levels; 4 opto in, 4 opto out, 3-28VDC	8 lines with 3.3V logic levels
CAN option	Dual isolated CAN via low-cost expansion socket	*
Camera	CSI camera serial interface	Not available
Mass storage	1 micro SD; 1 mSATA socket	*
Expansion buses	I2C, SPI, type specific I/O	*
Expansion sockets	PCIe MiniCard socket; Low cost expansion socket Apalis type specific interface	PCIe MiniCard socket; Low cost expansion socket
Input voltage	9-36VDC wide range	+5VDC
Dimensions	5.75"W x 4.0"H (146 x 102mm)	4.0" x 4.0" (102 x 102mm)
Operating temperature	-40°C to +85°C operation capable depending on installed COM	*

* same as Eagle

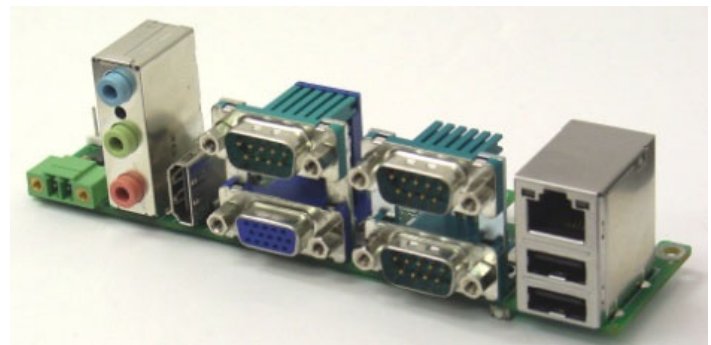
Low-Cost Expansion Socket

Eagle includes a novel low-cost I/O expansion socket. This can be used to attach low-cost compact I/O expansion modules such as analog and digital I/O. The first expansion module for Eagle/Eaglet is a dual CAN isolated transceiver module measuring 1.1" x 1.4" (29 x 35mm) that provides access to the 2 CAN ports native on each Apalis COM. Due to the simplicity of the I2C and SPI interfaces provided on the connector, even novice users can easily design their own custom I/O modules to use on Eagle/Eaglet.



Panel I/O Board

Most of Eagle's I/O connectors are located along the front edge of the board. A panel I/O board accessory (shown at right) is available to plug onto these connectors in place of cables. This provides a convenient solution for customers looking to achieve a compact, low-cost, rugged solution without cables. The remaining I/O features are still accessible with cables if needed.



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Pricing and Availability

The Eagle SBC with installed ARM module and heat sink starts at US\$650, and the Eaglet SBC in similar configuration starts at US\$420. Eagle baseboard single unit pricing is US\$450, and Eaglet baseboard single unit pricing is US\$220. Shipments are expected to begin in December 2016.

Media Resources

Eagle SBC web page (with links to datasheet and photo)	Eaglet SBC web page (with links to datasheet and photo)
Eagle Baseboard web page (with links to datasheet and photo)	Eaglet Baseboard web page (with links to datasheet and photo)
Toradex Apalis Modules web page	

About Diamond Systems

Founded in 1989 and based in Sunnyvale, California, Diamond Systems Corporation is an innovative provider of compact, rugged, board- and system-level real world embedded computing solutions to companies in a broad range of markets worldwide, including transportation, energy, aerospace, defense, manufacturing, medical equipment, industrial controls, and research. The company is recognized as an innovator of embedded I/O standards and technologies; it originated the FeaturePak I/O modules standard, was an early adopter of PC/104 module technology, and holds a patent for a unique analog I/O autocalibration technique.

Diamond's extensive product line includes compact, highly integrated single-board computers (SBCs); an extensive line of expansion modules for analog and digital I/O, wired and wireless communications, GPS, solid-state disk, and power supply functions; and complete system-level solutions. In support of performance-critical embedded application requirements, these products are engineered to operate reliably over wide operating temperature ranges, such as -40°C to $+85^{\circ}\text{C}$, and at high levels of shock and vibration. Additionally, the company offers a comprehensive hardware, software, and system integration and customization services.

For further information, please visit www.diamondsystems.com or call +1-800-367-2104 (USA).

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