FeaturePak™
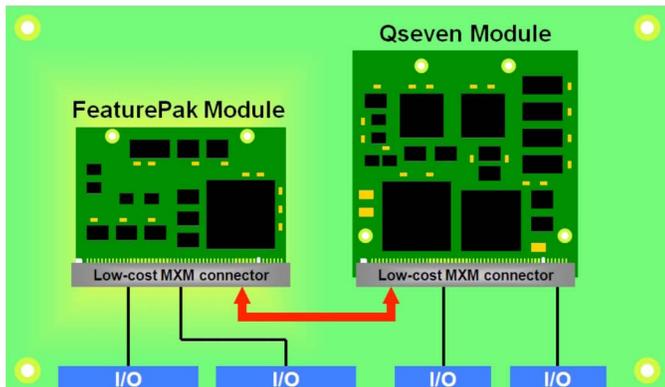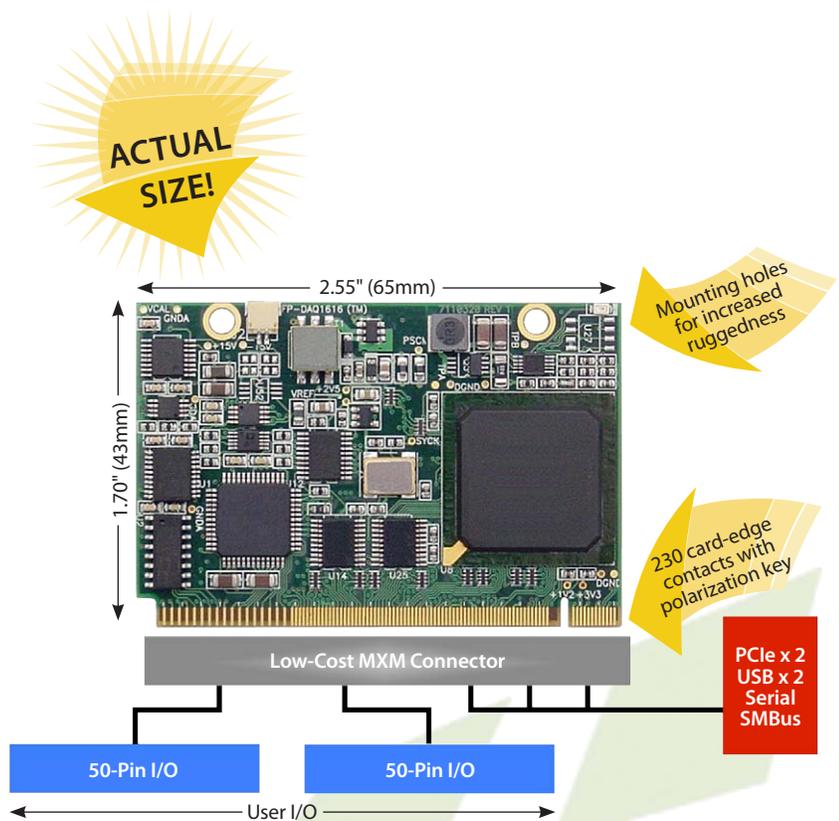
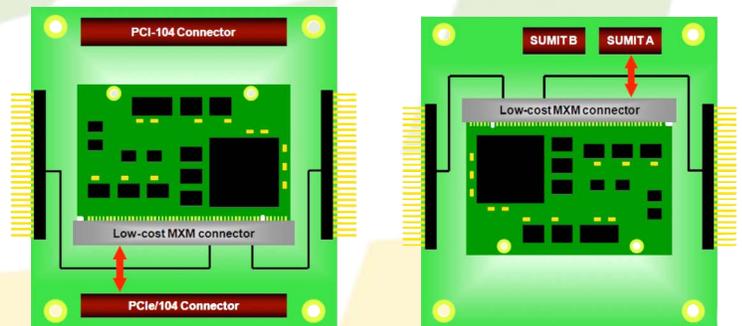# World's Smallest PCI Express Open Architecture Embedded I/O Standard

The FeaturePak specification defines a highly compact, low profile, and inexpensive way to add configurable I/O functions to embedded systems. The tiny modules—measuring just 1.70 x 2.55 inches—can implement snap-in options or upgrades for off-the-shelf single-board computers (SBCs) or computer-on-module (COM) baseboards, or can serve as building-blocks for simplifying the development of custom embedded electronics.

- Compact, low profile
- Simplifies system design
- Up to 100 I/O points per module
- PCI Express and USB 2.0 host interface
- Low-cost socket
- Rugged: tested to 6G vibration
- Enables easy options & upgrades
- Protects from component obsolescence
- Open industry standard

This exciting new mezzanine-style I/O expansion format is also highly synergistic with existing and emerging bus, I/O, chip, and board-level technologies. It leverages the latest high-speed serial expansion standards—including PCI Express and USB 2.0—and is compatible with both x86 and RISC CPU architectures. Additionally, FeaturePak modules offer "zero height expansion," in that they fit within the normal component envelope of an SBC or COM baseboard and add no height to PC/104-style I/O expansion stacks.

ACTUAL SIZE!

2.55" (65mm)

1.70" (43mm)

Mounting holes for increased ruggedness

230 card-edge contacts with polarization key

Low-Cost MXM Connector

PCIe x 2 USB x 2 Serial SMBus

50-Pin I/O   **50-Pin I/O**

User I/O

Qseven Module

FeaturePak Module

Low-cost MXM connector

Low-cost MXM connector

I/O   I/O   I/O   I/O

FEATUREPAK SOCKETS ARE IDEAL FOR LOW-PROFILE EXPANSION OF COMPUTER-ON-MODULE BASEBOARDS

PCI-104 Connector

Low-cost MXM connector

PCIe/104 Connector

SUMIT B   SUMIT A

Low-cost MXM connector

FEATUREPAK SOCKETS ARE SMALL ENOUGH TO FIT ON PCI/104-EXPRESS AND SUMIT-ISM MODULES

FeaturePak™

FeaturePak Features

- Compact, low profile form-factor—3/5 the size of a credit card and 1/3 the size of a PC/104 module
- Single low-cost connector integrates all host and external I/O interfaces
- Provides up to 100 I/O points per module
- Leverages industry-standard buses such as PCIe, USB, and I2C
- Host processor and form-factor agnostic
- Coexists with PC/104, SUMIT, Qseven, ETX, XTX, COM Express, etc.
- Multiple FeaturePak modules may be present within one system
- Zero height expansion module
- Open industry standard
- Rugged and reliable

FeaturePak Benefits

- Shortens time-to-market
- Reduces board-level development costs and risks
- Simplifies system design
- Eliminates cables, resulting in higher reliability, lower cost, and faster assembly
- Enables scalable and reconfigurable system design
- Enables easy product upgrades
- Protects from component obsolescence
- Encapsulates intellectual property
- Suitable for SBCs, baseboards, and proprietary all-in-one hardware designs
- Ideal for rapid-prototyping through high-volume applications
- Ideal format for silicon vendor reference designs
- Open standard increases market acceptance

FeaturePak expansion is suitable for use on…

- Single-board computer formats such as EBX, EPIC, 3.5-inch, ECX, Mini-ITX, Nano-ITX, etc.
- Application baseboards for COM Express, Qseven, Mobile-ITX, and other computer-on-module formats
- Stackable expansion modules such as PCI/104-Express and SUMIT-ISM
- Backplane expansion boards such as PCI Express slot boards
- Industrial backplane formats such as PICMG's CompactPCI Express
- Silicon vendor reference designs and evaluation boards
- Custom electronics for set-top boxes, intelligent transportation systems, medical devices, test equipment, etc.

Join the FeaturePak Trade Association

DIAMOND SYSTEMS CORPORATION — Connect Tech Inc. *Industrial Strength Communications* — COGENT — ARBOR *Embedded and Network Computing* — congatec *the rhythm of embedded computing* — DOUGLAS ELECTRONICS INC. — HECTRONIC — IXXAT — VIA *we connect* — msc

Ownership of the FeaturePak specification, trademark, and logo will soon be transferred by FeaturePak originator Diamond Systems Corp. to the FeaturePak Trade Association (FPTA), a California Mutual Benefit Corporation charted to maintain, extend, and promote the FeaturePak standard so that all companies in the embedded market can enjoy its benefits. Although anyone can build products based on the FeaturePak specification, FPTA members will gain the ability to:

- Directly influence the evolution of the FeaturePak specification
- Use the FeaturePak logo in association with FeaturePak-related products
- List FeaturePak-related products on FeaturePak.org
- Participate in FPTA marketing and promotional activities

Further Information

To learn more about the FeaturePak Specification and the FeaturePak Trade Association, or to obtain a copy of the FeaturePak Specification, visit: FeaturePak.org

FeaturePak is a trademark of the FeaturePak Trade Association.