

AXIe : AdvancedTCA[®] Extensions for Instrumentation and Test

Overview



Agilent Technologies



Giga-tronics



ADLINK
TECHNOLOGY INC.



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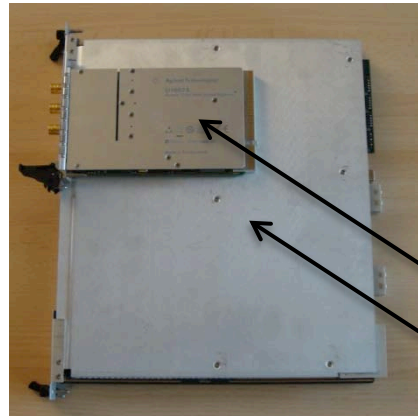
AXIe: What and Why

- **What is it?**
 - An open system modular instrumentation standard based on AdvancedTCA[®], that delivers high performance instrumentation for aerospace defense, high energy physics, semiconductor test and other industries.
- **What advantages does it bring?**
 - “Big brother to PXI.” Same PCIe fabric and programming, but with:
 - Horizontal configurations for minimal rack space, vertical for large systems
 - Larger boards for highest rack and power densities per rack inch
 - High speed trigger, timing, and local bus
 - Semiconductor test extensions
 - ATCA compatibility
 - Optional LAN fabric
 - Integrates easily with PXI, LXI and IVI

AXIe compatibility and scalability



LXI, PXI, and AXIe Rack and Stack System



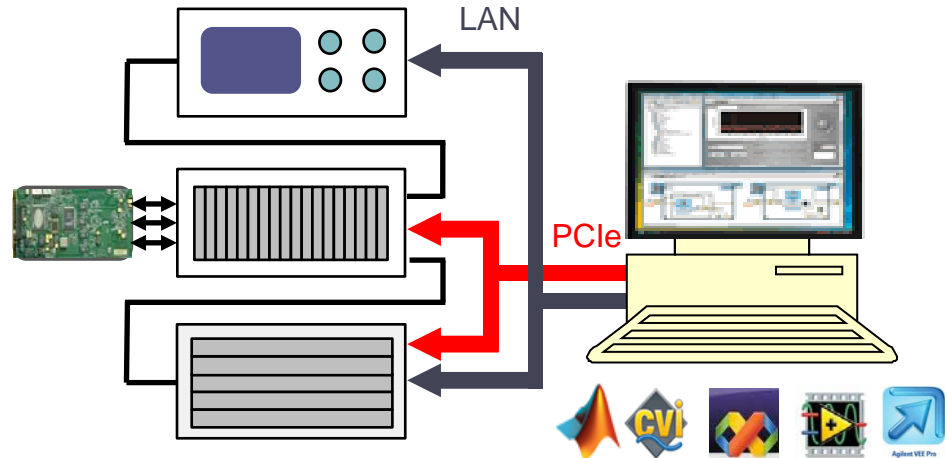
PXI (30 Watts)
AXIe (200 Watts)



AXIe + PXI Semiconductor Test System



Open system formats



Instruments & Switching

- Bench and Modular Formats

Software

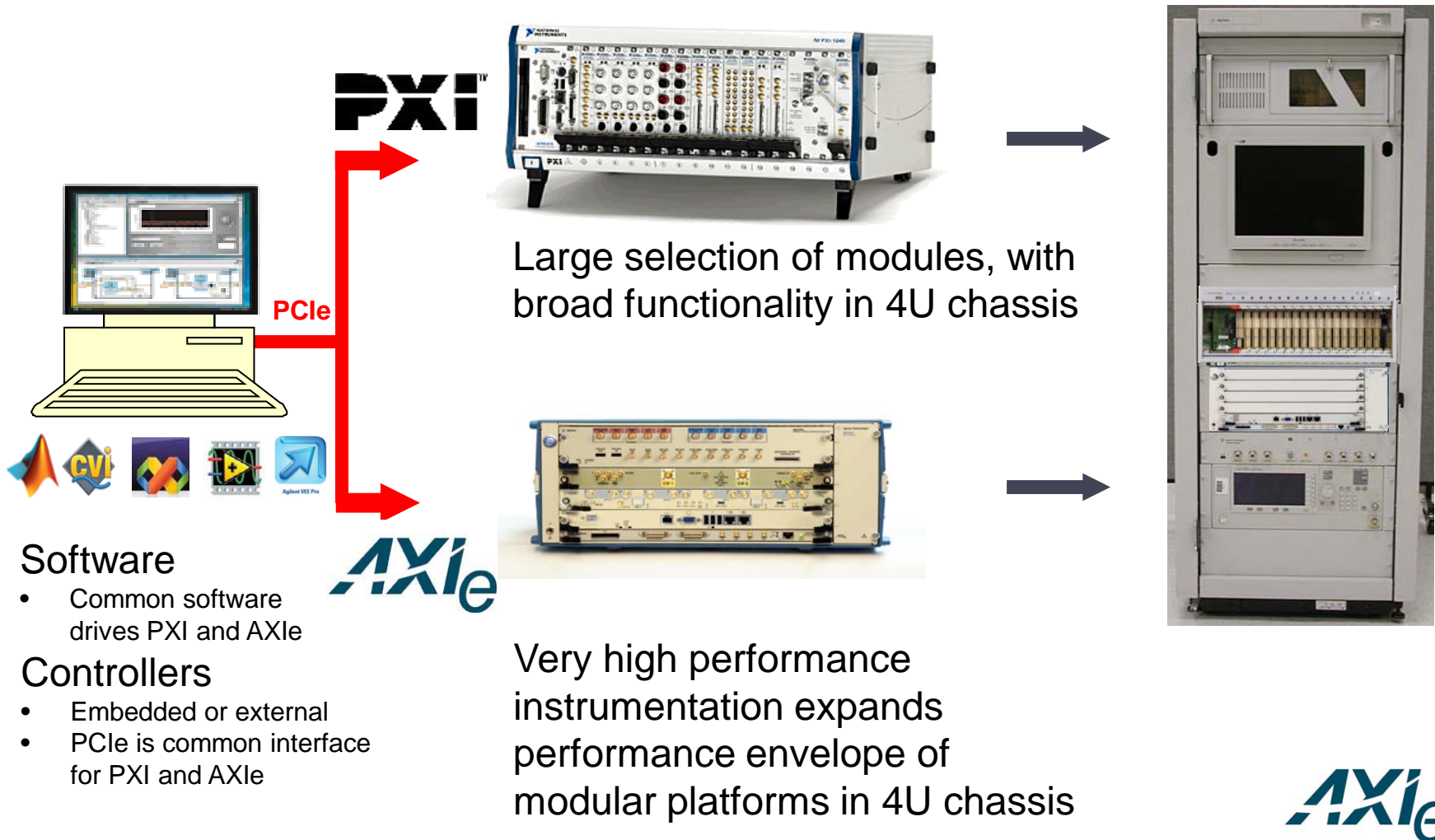
- All common apps and languages

Controllers

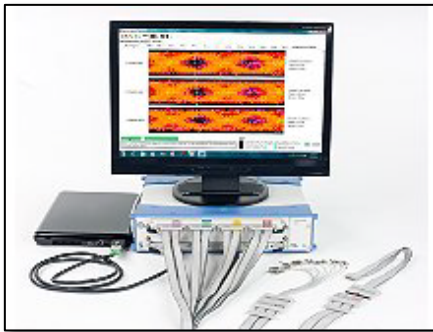
- Embedded or external
- Standard I/O



AXIe brings critical functionality to Mil/Aero systems in a dense and powerful form factor

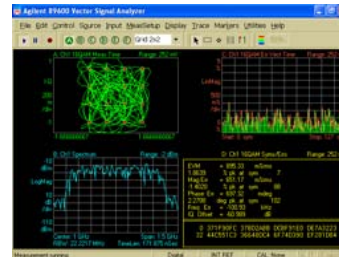


AXIe brings powerful and cost effective new technology to digital verification and test



AXIe delivers leading edge verification tools including:

- PCIe Gen 1,2,3 exerciser and analyzer
- HDMI 1.4 analyzer
- Industry's fastest logic analyzer
- DDR3 analysis



AXIe digitizers and AWGs deliver industry leading performance for mixed-signal test:

- Digitizers range from 1.6Gs/s @ 12 bits to 40Gs/s @ 8 bits
- AWGs deliver 8Gs/s @ 14 bits to 12Gs/s @ 12 bits
- Powerful and complex waveform creation and analysis

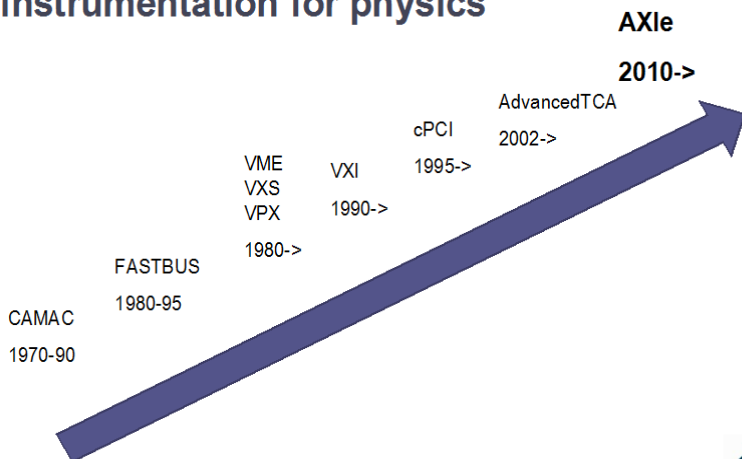


AXIe + PXI Semiconductor Test System offers cost effective alternative to “big iron” testers for small scale manufacturing and design verification

AXIe brings world-class measurements and density to Big Physics



AXIe is the next logical step in modular instrumentation for physics



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- AWGs deliver 8Gs/s @ 14 bits to 12Gs/s @ 12 bits
- Powerful and complex waveform creation and analysis

AXIe brings unprecedented rack density to high speed digitizers

AXIe is built upon the ATCA standard, enabling a platform for end user customization.

4U Rack Height:



40 channels of 1.6Gs/s



20 channels of 10Gs/s

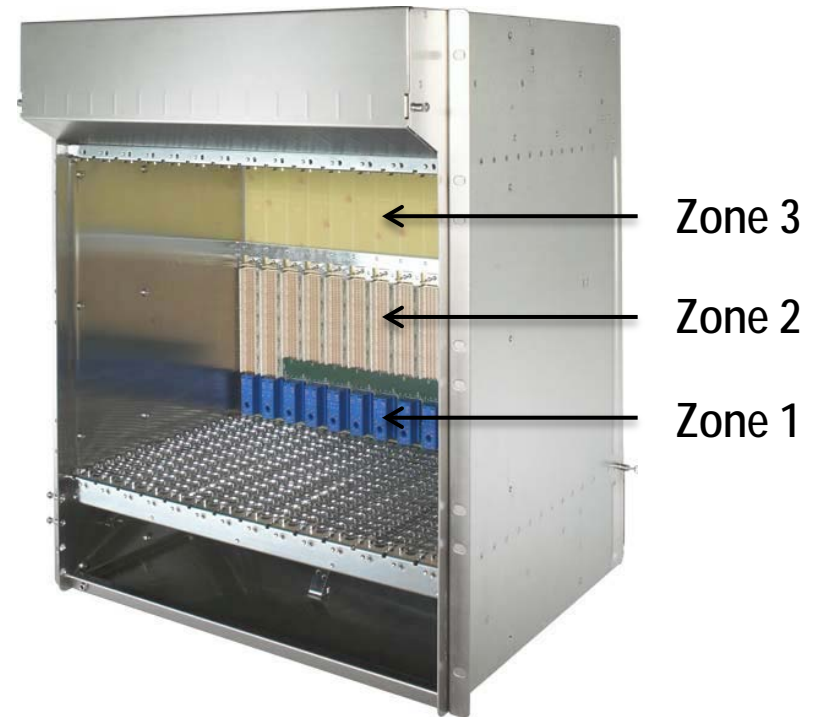
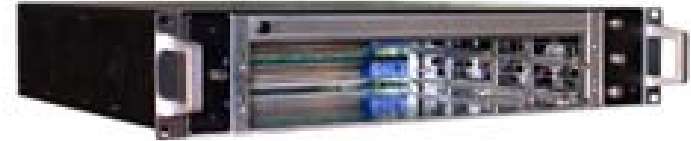


Waveform Capture and Generation



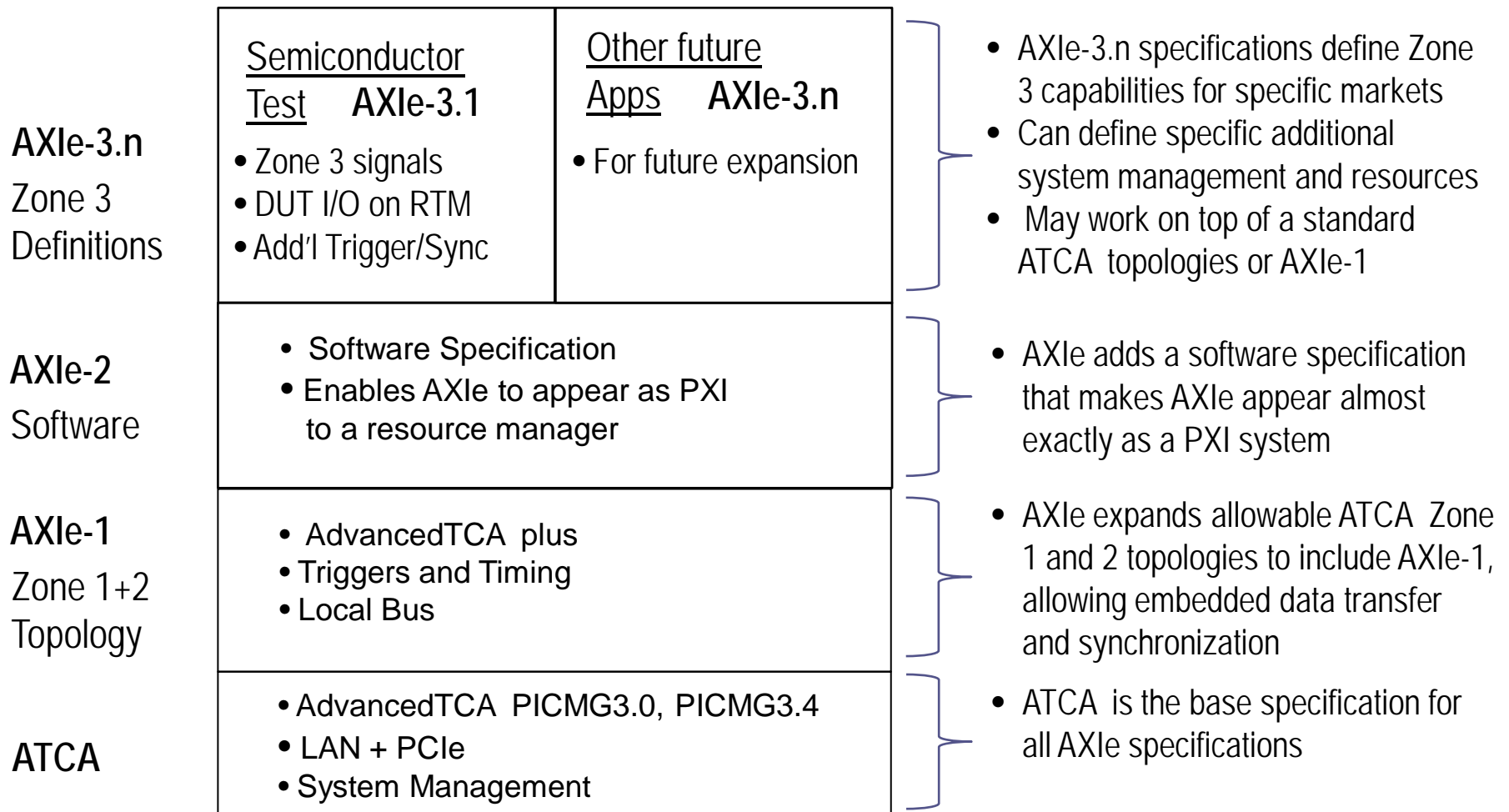
AdvancedTCA Shelf (Chassis)

- 2-16 Slot Shelf
 - 2-14 Slots in 19" Rack
- 2 Hub Slots
- 14 Node Slots
- User Zone 3 Backplane
- LAN routed to every slot
- PICMG 3.4: PCIe to every slot
- Large form factor cards
- Flexible power (48V) and air cooled design



AXIe Specification Structure

AXIe is a scalable family of specifications allowing a portfolio of applications.



High scalability of AXIe

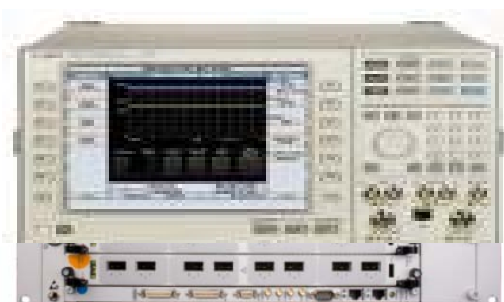
14 slot Vertical



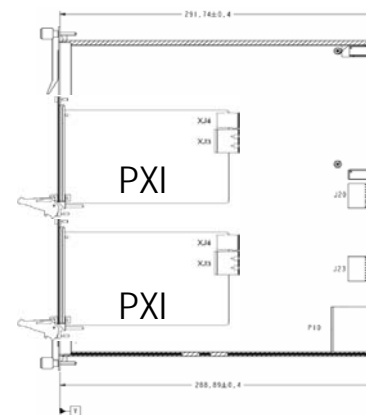
n U Horizontal



1U

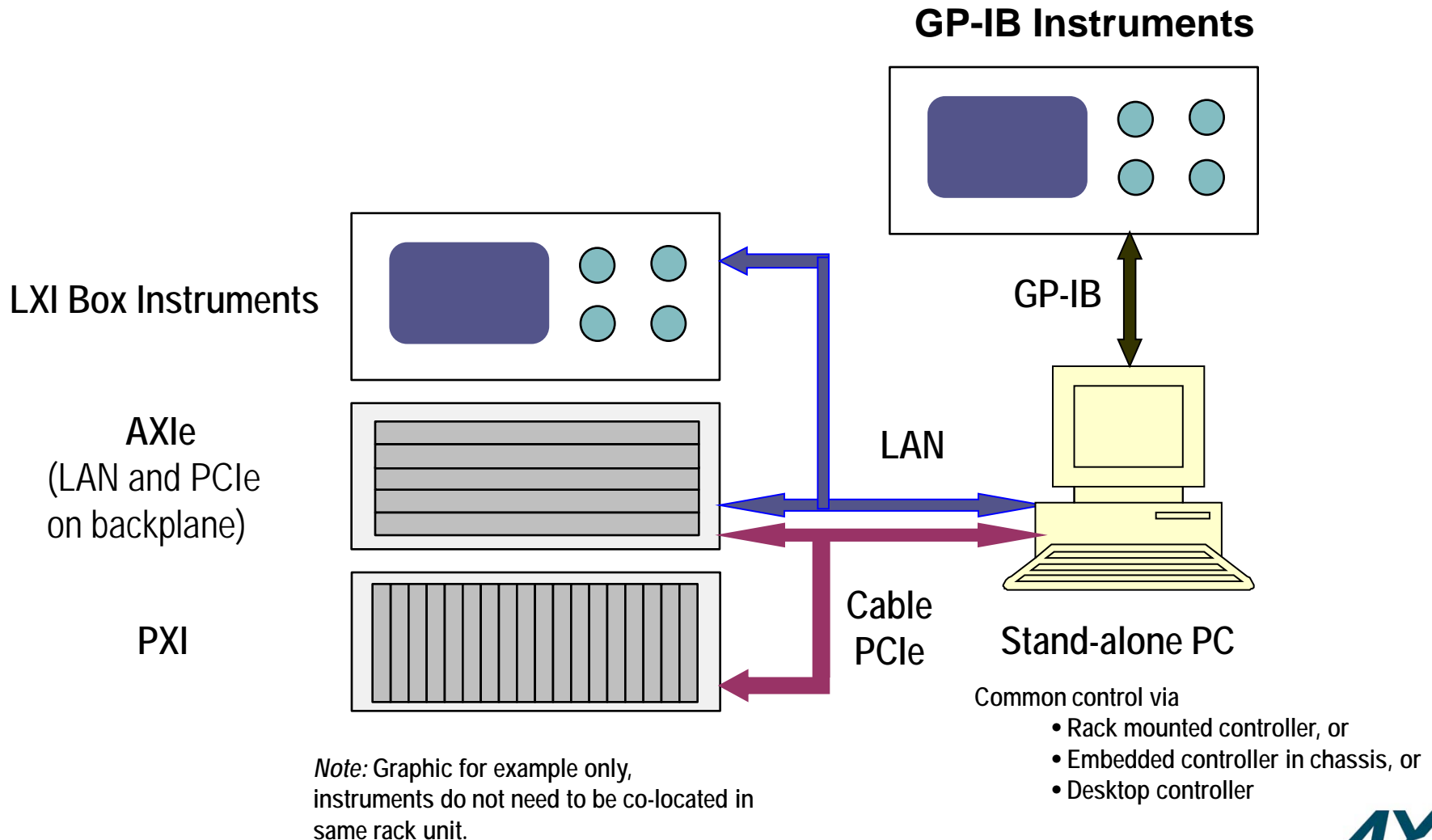


Specialty instrument with AXIe module



PXI carrier module

AXIe integration with Rack and Stack



Summary

- **Extending AdvancedTCA**
 - AXIe is based on AdvancedTCA with extensions for instrumentation and test.
- **General Purpose (AXIe-1) , Base Software Specification (AXIe-2), & Semiconductor Test (AXIe-3.1)**
 - Family of standards
- **More Performance, Scalability, Flexibility**
 - AXIe delivers higher performance in a flexible, scalable platform.
- **PXI, LXI, IVI**
 - AXIe works well with other standards, such as PXI, LXI and IVI.
 - "Big Brother of PXI"
- Specifications may be downloaded from the AXIe Consortium website at www.axiestandard.org