

ATCA boards compared with older CompactPCI technology

ATCA boards are considerably larger than CompactPCI boards, have a much larger power budget, and can operate much faster.

CHARACTERISTICS OF ATCA BOARDS

Attribute	PICMG2 / CPCI	PICMG2.16 / CPSB	PICMG3 / ATCA
Board Size	6U x 160mm x .8" 57 sq in + 2 Mez	6U x 160mm x .8" 57 sq in + 2 Mez	8U* x 280mm x 1.2" 140 sq in +4 Mez
Board Power	35-50W	35-50W	150-200W
Backplane Bandwidth	~4Gb/s	~38Gb/s	~2.4Tb/s
# Active Boards	21	19	16
Power System	Centralized Converter 5, 12, 3.3V Backplane	Centralized Converter 5, 12, 3.3V Backplane	Distributed Converters Dual 48V Backplane
Management	OK	OK	Advanced
I/O	Limited	OK	Extensive
Clock, update, test bus	No	No	Yes
Multi-vendor support	Extensive	Building	Since end 2003
Base cost of shelf	Low	Low - Moderate	Moderate-High
Regulatory conformance	Vendor specific	Vendor specific	In standard
Functional density of shelf	Low	Moderate	High
Lifecycle cost per function	High	Moderate	Low
Standard GA Schedule	1995	2001	2H2003

Note that 1U (height of a module) is 1.75 in or 4.445 cm.

The key points here are that AdvancedTCA boards offer a large area (140 square inches including room for 4 mezzanine cards) as compared to CompactPCI (57 square inches and 2 mezzanine cards). AdvancedTCA also has a power budget of 200 W as compared to CompactPCI at 50 W, and a backplane bandwidth of 2.4 Tb/s, as compared to 4 Gb/s with CompactPCI.