

Non-telecom AdvancedTCA applications

By *Justin Moll*



AdvancedTCA is gaining popularity in systems outside of the telecom Central Office (CO). Several potential customers in enterprise, scientific, and high-performance computing applications have shown a great deal of interest in AdvancedTCA. Even military communications systems vendors have shown interest. Although AdvancedTCA is geared for the CO, customers in these other market segments love the bandwidth, open standard format, form factor, reliability, and proven interoperability of the specification.

Non-telecom customers often have slightly different needs than conventional AdvancedTCA customers. For one, shelf management can be overkill for their application. The redundant nature and inherent reliability of AdvancedTCA is often ample for their less demanding needs. Some are willing to sacrifice the extra reliability and serviceability of shelf management to save the costs (and perhaps save more shelf space). Many in the non-telecom arena also do not need the full redundancy of AdvancedTCA. A modular and flexible design allows ver-

sions to be with or without key elements, providing customers with more choices based on their needs.


The incorporation of A/C power is another requirement of many in the non-telecom community. Although the PICMG 3.0 specification utilizes 48 VDC for power, some vendors have incorporated AC power supply options in their 2U, 3U, and 5U AdvancedTCA chassis. As these units can be plugged into conventional wall outlets, they suit tasks such as prototyping or tradeshow demos. An A/C power sup-

	Application	Challenge/Needs	Solution
Enterprise (2U)	This non-telecom user needed to use a smaller stackable chassis for scalability. The chassis had to be able to plug into A/C outlets.	<ul style="list-style-type: none"> • As small a form factor as possible • A/C power 	A 2U A/C AdvancedTCA chassis met the need for a small form factor, with its room above the card cage for ultra-thin power supplies. (See Figure 1.)
Enterprise (13U)	This application needed a high end computing solution with full redundancy and maximum performance.	<ul style="list-style-type: none"> • Load sharing or N+1 redundant power • Minimize customization and NRE charges to standard 13U design 	The user chose a 13U AdvancedTCA chassis with three power supplies. Elma Electronic performed thermal simulation to confirm that cooling was more than adequate. (See Figure 2.)
High-performance computing	This application required high-performance computing for general applications in a small portable size.	<ul style="list-style-type: none"> • Two front boards • Two RTMs • Redundant and pluggable fan trays and filters • 250 W power supply • PEM • Shelf manager 	By choosing a 2U A/C chassis, with a design that allows space for both the power supply and shelf manager above the card cage, the user met the portability demands of this application. The chassis' removable fan tray and filter with side-to-side airflow enable increased serviceability.
Communications	In this case the customer needed a chassis that could address various communication applications and have full redundancy.	<ul style="list-style-type: none"> • Four slots • Shelf manager (included on the customer's fabric card) 	The customer chose a 3U A/C chassis to accommodate the need for four slots. Elma Electronic increased the depth of the chassis below the RTM to make room for the dual power supplies and PEMs.
Storage	This application needed high processing power, A/C pluggability, and very high reliability.	<ul style="list-style-type: none"> • Dual shelf managers • A/C power 	A 5U A/C chassis that included a shelf manager met this user's needs. Elma Bustronic's backplane characterization studies confirmed excellent performance at 3.125 and 6.250 Gbps data rates.

Table 1

NON-TELECOM APPLICATIONS: ADVANCEDTCA

ply option also lends flexibility to non-telecom AdvancedTCA users. Many of the non-telecom applications use widely available AC power. Table 1 shows some of the specific applications we've seen for non-telecom AdvancedTCA designs.

The non-telecom AdvancedTCA applications are becoming more common and interesting everyday. With a modular design platform and creative engineering, AdvancedTCA vendors will be able to provide solutions to meet the new challenges. 

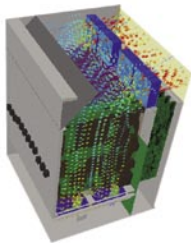


Figure 2



Figure 1

Justin Moll has more than 10 years of high-tech marketing and sales experience and has been with Elma Bustronic and Elma Electronic Inc. since 2000. As the Director of Marketing for Elma Bustronic and Manager of PR for Elma Electronic, he has been a key figure in the strategic marketing for both companies. Justin is active in VITA and PICMG and has been the VP of Marketing for the StarFabric Trade Association since 2003. His previous positions include Marketing Services Manager for E21 Corporation and Account Manager for Elcon

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