

B2B® SMT Connectors Help Imaging Equipment Manufacturer Improve Reliability and Meet RoHS Requirements

THE CHALLENGE

A major electronics imaging equipment manufacturer was ready to begin production of a next generation airborne digital sensor used to capture data from high altitude to create detailed, image-based maps. Board-to-board connectors in the sensor provide the critical interface between the electronics package and the optics package in the system.

To meet sales commitments, the manufacturer requested its supplier provide a lead-free version of the connectors for customers who required RoHS compliant components. The original supplier did not offer a lead-free version of the connectors.

THE ADVANCED® SOLUTION

Advanced Interconnections supplied two lead-free, 1.27mm pitch B2B® SMT Connectors — a 19.05mm 500-position and a 7.0mm 200-position board-to-board connector. The existing board-to-board connectors had a smaller footprint than standard B2B SMT Connectors. However, Advanced was able to modify a standard connector to fit the smaller footprint on the PC boards so that the manufacturer did not have to reconfigure the board layout.

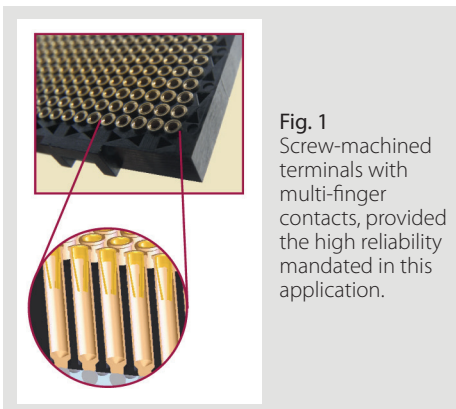
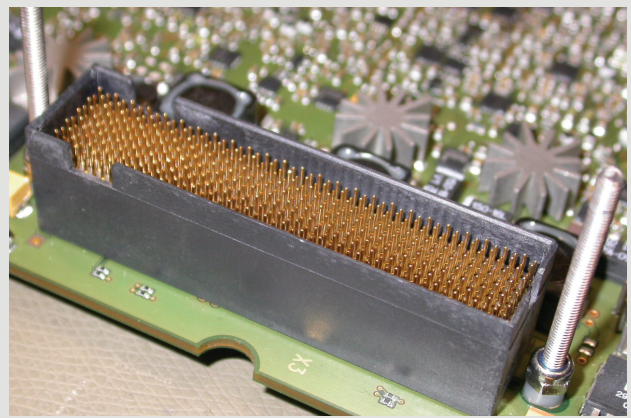


Fig. 1
Screw-machined terminals with multi-finger contacts, provided the high reliability mandated in this application.



Male (header) B2B® SMT Connector provides 19.05mm board spacing when mated. Both male and female connectors feature the industry's most durable screw-machined terminals and lead-free solder balls for RoHS Compliant SMT processing.

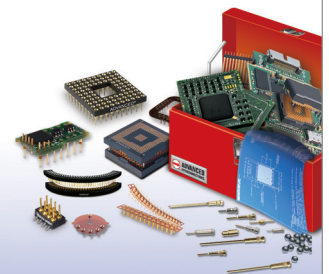
At the manufacturer's request, Advanced plated the contacts with 30 micro inches of gold, an additional 20 micro inches over the 10 micro inches of the competitive design. The Advanced design features screw-machined terminals with multi-finger contacts for added robustness in blind mating and repeated mating and unmating cycles. (see figure 1) The terminals of the competitive design were stamped and formed.

The shrouded, guide box design of B2B SMT connectors facilitated the alignment of male and female connector components while protecting the pins from damage during board mating (see figure 2).

Continued on reverse side.



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The Advanced B2B Connectors for this application were produced with a coplanarity of .006" overall compared with .008" coplanarity of the competitor's design. The improved flatness of the connectors significantly aided the manufacturer in attaching them to the board. In tests conducted by the manufacturer, flatness after a seven-hour cycle at 150°C showed only a minor change in connector height, well within the manufacturer's specifications.

Through its customization and standard product modification services, Advanced Interconnections was able to provide this manufacturer with board-to-board connectors that met, and in some cases exceeded, original design specifications. Quick turnaround by Advanced Interconnections allowed the manufacturer to meet sales contractual obligations with dependable lead-free connectors that perform reliably in image mapping applications.

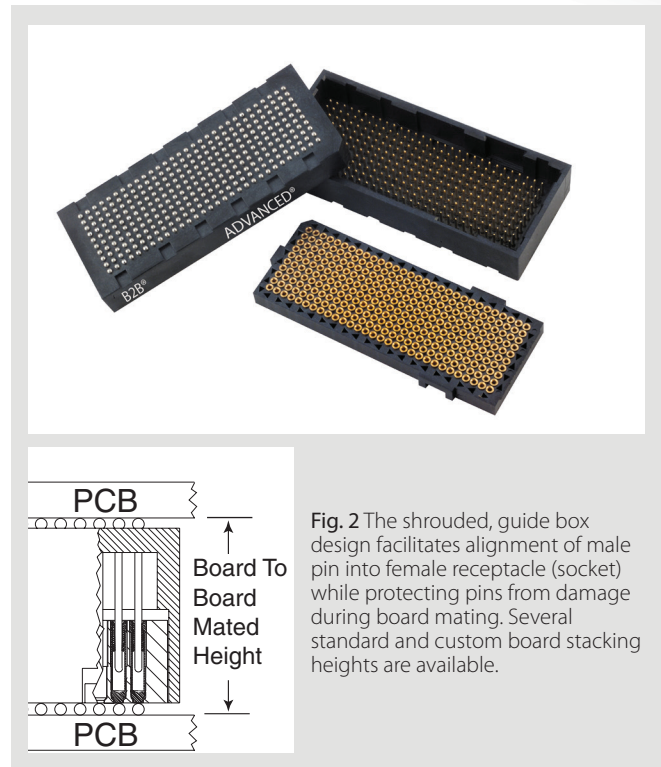


Fig. 2 The shrouded, guide box design facilitates alignment of male pin into female receptacle (socket) while protecting pins from damage during board mating. Several standard and custom board stacking heights are available.



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