



September 22, 2005

PCN Number: 0512

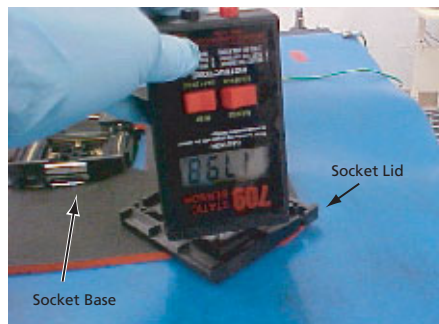
**Subject: ESD-Friendly Lid Replacement for CQFP Programming Modules**

As part of ongoing efforts to improve the ESD-protected environment, Actel found that the removable lids of the two-piece programming adapters, used for some Ceramic Quad Flat Pack (CQFP) packages (including CQ208, CQ256, and CQ352 packages), could accumulate ESD charges of over 2,000 V.

Below is a list of Actel FPGA and programming adapter combinations that are covered by the mandatory ESD-Friendly Lid exchange program:

- Axcelerator<sup>®</sup> and RTAX-S users of CQ208 and CQ352 devices with SMAX-208CQ-ACTEL and SMAX-352CQ-ACTEL programming adapters
- ProASIC<sup>PLUS</sup><sup>®</sup> users of CQ208 and CQ352 devices with SMPA-352CQ-ACTEL and SMPA-208CQ-ACTEL programming adapters
- SX, RTSX, SX-A, RTSX-S, and RTSX-SU users of CQ208 and CQ256 devices with SM208CQSX-ACTEL programming adapters
- RT14100A, A14100A, A42MX36, and A32200DX users of CQ208 and CQ256 devices with SM208CQ-ACTEL-2 programming adapters

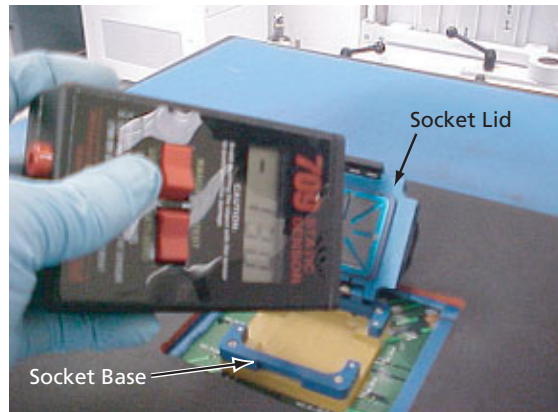
Actel suspects that ESD charge may build up on the lid surface of the programming adapter during the frequent loading and unloading sequences involved in device programming. Due to the highly resistive material used in the manufacturing of these lids, ionizers are only effective for the surface facing the Ionizer. Figure 1 shows the ESD measurement on the top of the socket lid, which has significant charge build-up when not in direct contact with ionized air flow.



**Figure 1 • Two-Piece CQFP Socket ESD Measurement**



Unlike the two-piece CQFP test socket discussed above, programming modules with single piece test sockets do not exhibit this build-up, as shown on Figure 2, since the hinge between the lid and the socket base serves as a discharge path.



**Figure 2 • One-Piece Socket ESD Measurement**

To improve the ESD environment during the testing and programming flow, the Actel CQFP test socket vendor has manufactured socket lids with an ESD-friendly, polymer material that reduces the ESD charge to about 15 V. Actel has replaced all CQFP socket lids in the test and programming facility with these "ESD-friendly" lids. Figure 3 and Figure 4 (zoom-in pictures) show the lid that was formerly used to test and program the FPGA. Figure 5 and Figure 6 (zoom-in pictures) show the ESD-friendly lid, which is identified with a white color dot next to the lid part number.



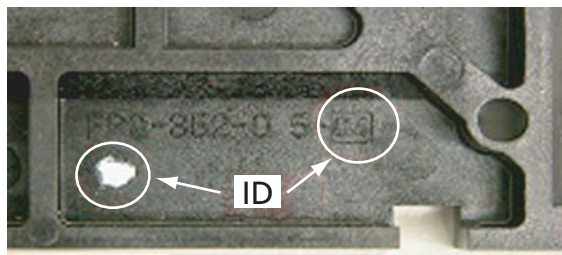
**Figure 3 • CQ208/256/352 Socket Old Lid Overall Picture**



**Figure 4 • CQ208/256/352 Socket Old Lid Zoom-In Picture (the last two digits of the part number are 01)**



**Figure 5 • CQ208/256/352 Socket ESD-Friendly Lid Overall Picture**



**Figure 6 • CQ208/256/352 Socket ESD-Friendly Lid Zoom-In Picture (the last two digits of the part number are 04)**



For customers programming their CQ208, CQ256, and CQ352 devices with the Silicon Sculptor I/II device programmers, the CQFP programming adapter modules use the same CQFP socket. For better ESD protection, Actel is mandating customers must replace the lids on the programming adapter modules with new ESD-friendly lids.

Customers who have Actel FPGAs/adapter module combinations covered by the exchange program will automatically receive the replacement lid no later than October 14, 2005. If you have not received the ESD-friendly lid by this date, please contact your local Actel sales representative as soon as possible. Your Actel sales representative will provide instructions on how to return the old lids.

**Failure to replace old lids and return them to Actel may void the warranty for the Actel FPGAs covered by the exchange program.**

If you have additional questions, please contact your local Actel sales representative or your regional FAE for assistance.

Regards,

Actel