

Ericsson Telecom

Using XC9500 CPLDs for High-Performance Telecommunications Equipment

Ericsson Telecom in Scandinavia has introduced a new line of data communication products used to improve the quality and bandwidth of satellite communication systems. The designers at Ericsson needed the benefits of in-system programmability (ISP) in order to fit the designs into the smallest possible space (they planned to use the latest surface mount packaging, and wanted to program the chips on the circuit board to minimize handling problems).

This design, which was for a custom, high-performance microprocessor interface, needed to be fast, dense, and extremely flexible. Ericsson chose the XC95108-7TQ100C because it met all of these stringent requirements. The flexibility of the XC9500 CPLDs enabled Ericsson to considerably shorten its logic design cycle, because the design was extremely complex in parts and required several iterations before it functioned correctly.

The Ericsson engineers also found they could fit large amounts of logic into the XC95108, and still make substantial logic changes without any significant changes in device performance or pinouts. Ericsson saved a substantial amount of time and money because the XC95108 maintained fixed pinouts after design changes; therefore, new PC boards were not required. Pin-locking is an especially critical feature in this application because Ericsson estimates there is a very high possibility that at least one field upgrade will have to be performed during each device's lifecycle.

One of the key features of the XC9500 family, which also contributed significantly to Ericsson's choice, was the fact that all XC9500 products can be programmed, debugged, and tested through an industry standard IEEE 1149.1 JTAG Boundary-Scan port. This enables design iterations to be completed very quickly, and greatly simplifies the volume production of the final product. ♦

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