

# Maxtek Leverages Synopsys' Services and ASIC Prototyping Solution to Develop 12.5 GS/s Digital Receiver



*Using Synopsys Professional Services was the best choice for achieving our project's high-performance objectives. Their FPGA design experience and prototyping expertise were key factors in our decision, and more importantly, in achieving our aggressive project objectives."*

**maxtek**
**Gary Goncher**

System Architect, Data Converters, Maxtek Components Corporation

Maxtek offers market-leading high-speed data converters for real-time embedded systems. To validate the data integrity coming from a new custom-digital receiver design, Maxtek needed to provide a hardware prototype capable of processing data at a rate of 200 Gbps. The requirements for the system included:

- ▶ High-speed DDR bit capture with bit-alignment and bitslip
- ▶ Four channels digitizing continuously at 6.25 GS/s
- ▶ Two 128-bit DDR interfaces at 781 Mbps per line
- ▶ A USB control interface and support for 100 Gbps transfer rates

Synopsys consultants worked with Maxtek's engineers to define and implement Maxtek's custom interface to Synopsys' High-performance ASIC Prototyping System (HAPS) boards. The team collaborated on the development of the specification and RTL code, the verification of the interface and hardware prototype, and the synthesis and mapping of the design into FPGAs.


**Maxtek's 12.5 GS/s ADC Module**

## Synopsys Solution includes:

- ▶ HAPS™ ASIC Prototyping Platform
- ▶ VCS® Functional Verification Solution
- ▶ Synopsys Professional Services

## Benefits of Cooperation

The resulting design achieved the targeted real-time data transfer rates between Maxtek's latest digitizer board and the FPGA-based HAPS system. For Maxtek's digital receiver project, the HAPS platform's performance and flexibility, combined with the quality of Synopsys' engineering expertise, were invaluable.