fidus
innovate•design•deliver

A Robust Prototyping Solution for Synopsys®

Mantyss-32G™: a daughter card for HAPS®

MULTIPLE CARDS

Synopsys® wanted to prove their newly created PCIe Gen4 IP using the Synopsys HAPS® Prototyping System. They also wanted to provide their ASIC customers with a straightforward prototyping solution. However, at these rates, the HAPS system didn't have a convenient way of prototyping these real-world I/O speeds. They were faced with using multiple cards and cables which proved to be time-consuming, messy, and unreliable. If it was going to be hard for them, it was going to be even harder for their customers. Synopsys recognized that a Zynq® UltraScale+™ daughterboard was the right solution and they decided that Fidus, a Xilinx® Premier Design Services Member, would be the experts to get them a robust solution, quickly.

> **"Fidus' ability to develop solutions quickly, at a fair cost, and with minimal oversight made them an easy choice for us,"**
>
> ***- Sunil Ashtaputre, R&D Group Director, at Synopsys***

We understood Synopsys' challenge and their goal. We worked as an independent extension of their team, a close partner defining requirements, optimizing architecture, and planning how to seamlessly integrate the solution with HAPS.

AN INTEGRATED SOLUTION

We understood our customer's challenge. As bandwidth demands increase, the requirement for underlying high-end processor chips and high-speed transceivers is growing. Modern SoCs also integrate multiple Arm cores that require native prototyping. As the newest ASICs come to market with these capabilities embedded, design engineers need to be able to prototype for the latest protocols like PCIe Gen 4/ 5 and 100/400 Gig Ethernet.

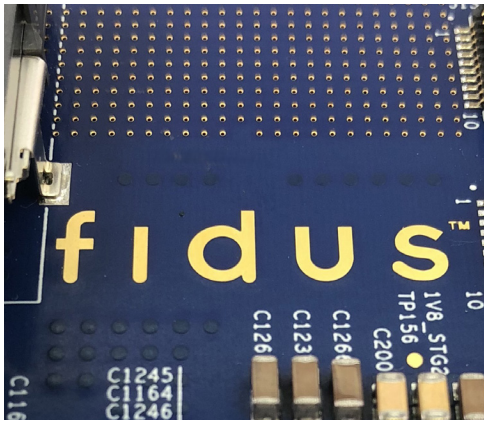
To address our customer's need, Fidus developed a daughter board that integrates a Xilinx® Zynq® UltraScale+™ with multiple Arm® processors, 32Gbps transceivers, and a collection of other real-world I/O peripherals onto a single card designed specifically for the Synopsys HAPS prototyping solution.

> **We were very impressed with Fidus' knowledge, technology, and how they execute with customers. Fidus delivered a daughter card that integrates easily and introduces new capabilities needed by us and our customers. We closely partnered throughout the development and were very pleased when we received our first card."**

DAUGHTERBOARD, IF YOU WANT TO CALL IT THAT

When we set out, our goal was to create a daughterboard for the HAPS system. But actually, calling it a daughterboard does it a disservice. Yes, it seamlessly integrates into HAPS. Yes, it extends the capability of HAPS into the next generation, but independently it is a 48-layer, 5.5mm thick, high-power processing and high-speed I/O complete system. We like to joke that the HAPS system becomes the daughterboard when Mantyss-32G is plugged in. Regardless, two things are for sure: HAPS with Mantyss-32G solved Synopsys' need and it solves their future customer's needs.

THE BENEFITS



- Integrated: interoperability verified by Synopsys
- Powerful: enough horsepower to prototype your high-end ASIC
- Flexible: over 300 connections to HAPS, support of common interfaces and debugging ports
- Reliable: direct connection, no dangling cables, less components to connect
- Convenient & compact: everything on one card
- Efficient: speeds up setup & implementation

INNOVATE

Accelerate your time-to-market and demonstrate product capability as a leader in your sector.

DESIGN

Engage with our World-Class team of tenured Engineers and experience quality turnkey project management.

DELIVER

Capitalize on our ecosystem of partners.

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