

Synopsys, GUC and Light

GUC Achieves Silicon Success with DesignWare MIPI & DDR IP, Enables Light to Accelerate Time-to-Market for Groundbreaking Computational Imaging Camera

“As a leading custom ASIC design company, GUC enables customers like Light to quickly deliver innovative products with unique functionality. By using Synopsys’ DesignWare MIPI and DDR IP, we met Light’s aggressive power and performance requirements, while achieving silicon success weeks ahead of schedule.”

~Ken Chen, President, Global Unichip Corporation



Business

Global Unichip Corporation (GUC) provides a comprehensive suite of ASIC design services, from specification to silicon, to meet the unique business and technology requirements of customers like Light. Light makes creative photography more accessible than ever before with their recently announced Light L16 camera.

Challenges

- Meet aggressive design schedule for ultra-high-definition camera SoC
- Overcome stringent power, performance and area requirements for battery-operated camera with advanced imaging engine

DesignWare IP Solution

- MIPI CSI-2 Host and Device Controllers
- MIPI D-PHY
- DDR multiPHY
- uMCTL2 Controller

Benefits

- Achieved silicon success and accelerated design schedule by weeks
- Met power, performance and area requirements with an aggressive time-to-market schedule for Light’s first product, the L16 camera
- Reduced integration risk with silicon-proven DesignWare IP

Overview

GUC, a leading custom ASIC company, provides a combination of advanced technology, low-power and embedded SoC design and production services. In collaboration with third-party partners, GUC delivers a full spectrum of engineering services that cover product, test, package and reliability engineering. GUC's flexible ASIC design services provides on-time delivery and a variety of production services, including probed wafers, packaged parts and tested packaged devices.

Recently, Light, a team of creative technologists on a mission to re-invent the art and science of imaging, called upon GUC to design a custom ASIC, first for use in Light's new L16 camera and soon in licensees' products. "Our new Light L16 camera, a high-end yet pocketable device, delivers over 5x optical zoom with more than 52 megapixels, delivering on the promise of uncompromised quality in an incomparable form-factor by using computational imaging and a systems-level approach. By collaborating with GUC's first-class design services that leveraged Synopsys' industry-leading DesignWare MIPI and DDR IP, we met our project goals and capitalized on our time-to-market advantage, which was extremely important in this competitive environment," said Prashant Velagaleti, SVP Engineering at Light.

High-Quality DesignWare IP

To meet Light's aggressive time-to-market goals and design requirements, GUC turned to its IP provider of choice, Synopsys. "Synopsys has been our IP provider of choice for many years, and has enabled us to successfully deliver dozens customer designs for a wide range of applications," said Chen at GUC.

Leveraging Synopsys' DesignWare MIPI and DDR IP, GUC accelerated their design schedule by weeks and met Light's stringent power, performance and area requirements. GUC's success with DesignWare IP enabled Light to maximize its time-to-market window for Light's innovative L16 camera.

The fully configurable DesignWare MIPI CSI-2 Host and Device Controllers along with DesignWare MIPI D-PHY provided GUC a low-power interface between the processor and multiple camera sensors. In addition, the proven DesignWare Controller and PHY IP for LPDDR3 provided a complete high-speed interface for LPDDR3 SDRAM memories operating at up to 1066 megabits per second.

Expert and Responsive Technical Support

To ease IP integration and keep the project on schedule, GUC used Synopsys' responsive expert technical support team. "In-addition to using DesignWare IP, we collaborated with Synopsys' local technical support team from the very beginning, which was integral to meeting design requirements," said Chen at GUC.

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~Prashant Velagaleti, SVP Engineering, Light