Synopsys and Leadcore

Leadcore Achieves First-Pass Silicon Success on Smartphone Application Processor with DesignWare MIPI IP

With the tight time-to-market windows in the mobile market, we needed an IP supplier that would provide high-quality and reliable solutions. Synopsys DesignWare IP exceeded our expectations and helped us get to market four months sooner than originally planned.”

Dijun Liu
Vice President, Leadcore Technology Co., Ltd

Business
Leadcore Technology Co., Ltd (Leadcore), based in Shanghai, China, is one of the core members of Datang Telecom Technology and Industry Group. As a technology provider for the TD-SCDMA standard and an active participant in TD-LTE technology development, Leadcore is dedicated to providing terminal manufacturers and design houses with advanced mobile communications chipsets. Leadcore has over 1,000 employees worldwide who work to develop its TD-SCDMA/TD-LTE baseband chip and leading-edge applications processor. Leadcore prides itself in providing a comprehensive portfolio of mature and stable products to more than 40 manufacturers worldwide.

Challenges
- Meet aggressive time-to-market window for multiple smartphone application processor system-on-chip (SoC) designs
- Reduce integration risk with proven and reliable IP
- Reduce total system cost

Synopsys Solution
- DesignWare® MIPI® IP, including:
  - D-PHY
  - DSI Host Controller

Benefits
- Achieved first-pass silicon success and accelerated time to market by an estimated 4 months
- Reduced integration effort with silicon-proven MIPI IP
- Received excellent technical support from an experienced support team that helped accelerate and ease the integration process

Overview
Leadcore has a deep understanding of the Chinese mobile TD-SCDMA/TD-LTE standard, but was challenged in speeding their dual-core Cortex™-A9-based INNOPOWER® LC1810 applications processor SoC to market. To accelerate their development schedule, Leadcore needed a reliable IP solution that would minimize time and integration effort while helping them to reduce their total system cost with area and power optimized IP.
Synopsys' silicon-proven DesignWare MIPI D-PHY and DSI Host Controller IP provided the reliable solution that Leadcore required.

High-Quality DesignWare IP

Leadcore knew that meeting the needs of the smartphone market would require them to focus their engineering effort on their unique core technologies and strengths. Instead of developing the MIPI IP for the LC1810 in-house, Leadcore selected Synopsys DesignWare MIPI D-PHY and DSI Host Controller IP. Leadcore chose Synopsys' MIPI IP because it offered a complete solution, including controllers and PHYs, and it was silicon-proven in their required process technology.

Selecting DesignWare MIPI D-PHY and DSI Host Controller IP helped Leadcore reduce their total system costs. The IP is architected to minimize area and power use, which reduces silicon costs. In addition, integrated testability features enable efficient production IC tests, reducing the costs associated with system and board manufacturing tests.

“Synopsys DesignWare IP gave us a time-to-market advantage that was vital to getting our ICs to market quickly,” said Dijun Liu, vice president of Leadcore Technology Co., Ltd. “The availability of a complete portfolio of high-quality MIPI IP in the process node we required made the integration process as seamless as possible.”

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Expert and Responsive Support

Synopsys' technical documentation helped Leadcore efficiently integrate the DesignWare IP into their SoC designs, and Leadcore integrated the DesignWare IP into their design within two weeks with no major issues, accelerating their time to market by an estimated 4 months. When further assistance was needed, Synopsys' responsive technical support was ready to provide timely and knowledgeable help, further easing the integration process.

“The quality of the DesignWare IP exceeded our expectations, and we were pleased with the responsiveness and expertise of Synopsys’ technical team,” said Dijun Liu. “We will consider DesignWare IP for future projects with every confidence Synopsys will continue to meet our design and support requirements.”

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The DesignWare D-PHY and DSI Host Controller were easy to use, and we were impressed by the complete MIPI IP solution that Synopsys offers.”

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