

## **CX6900** **0.13 $\mu\text{m}$ Standard Cell ASIC/SoC**

### Overview

The CX6900 ASIC and System on Chip (SoC) offering from ChipX combines the well-proven UMC standard six- or eight-metal 0.13- $\mu\text{m}$  deep submicron process technology with a rich portfolio of silicon-proven processors, memory structures, mixed-signal PHYs, analog, I/O and digital IP, and advanced packaging technology, to provide industry-leading performance.

All layers are available for customization, resulting in optimal performance and die size. Prototypes can be manufactured, assembled, tested, and shipped in as few as 10 weeks, with production parts in as few as 14 weeks.

ChipX can offer built-in, silicon-proven PHYs such as USB 2.0 OTG or PCI Express as well as data converters, all in combination with ChipX synthesizable processors and

controllers, to form a complete subsystem capable of achieving compliance with the relevant standards body, such as USB-IF or PCI-SIG.

The CX6900 builds on three generations of ChipX Standard Cell experience. The core technology combines our accumulated design expertise with a focus on consumer, military/aerospace and industrial needs. The CX6900 Standard Cell ASIC/SoC offering delivers an ideal solution that is high performance, low power, and appropriate for high volume production.

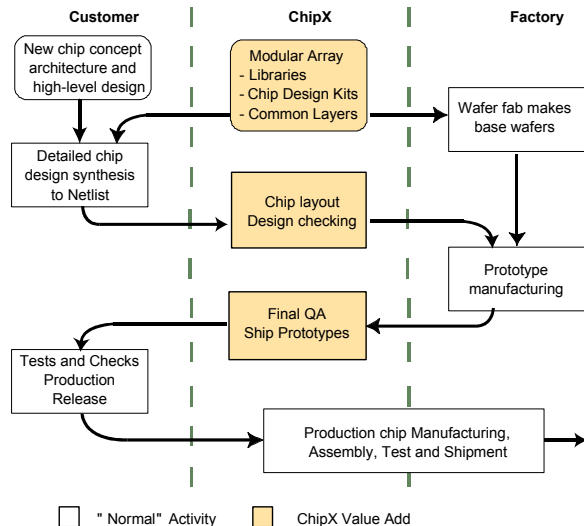


### XPath

#### ***Proven Conversion from Structured ASIC to Standard Cell***

Easily and seamlessly convert from Structured ASIC to Standard Cell when volumes increase. The ChipX XPath methodology allows you to have the best of both worlds—start in a Structured ASIC (SA) and benefit from fast time to market and easy, low cost silicon changes—then convert to Standard Cell for optimal economy, and get credit for most of the SA NRE. XPath offers continuity in production, full reuse of previous design efforts, and significant simplification of design flow. Only one signoff is required from the customer.

## Design Flow



ChipX spends considerable development effort to ensure that taping out a design to a CX6900 Standard Cell ASIC is simple, painless, and low risk. ChipX provides downloadable libraries online, for Magma, Synopsys, and Synplify, and uses industry standard development tools to ensure first time working silicon on schedule.

## Experience

Standard Cell solutions require the best engineering talent to ensure success every time. All engineering disciplines need to be strongly represented, so all aspects of a specific design can be taken into consideration, be it efficient digital or analog design, solid modeling and verification, or optimal package design. The ChipX customer support team has taped out more than 1500 Structured ASICs, and more than 400 Standard Cell products, including designs up to 10M gates and clock frequencies up to 550 MHz. Millions of ChipX Standard Cell products have shipped over the past decade. As an ISO 9001 certified company, ChipX adheres to strict quality control standards.

The ChipX team will get to know you and your application, and will be able to work with you throughout the project. Regular meetings and design reviews keep all teams aligned, and if desired, the customer remains in full control at all times.

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To date, we can proudly claim over 98% first time right, and 100% working silicon within one spin.

## Intellectual Property (IP)

Standard Cell developments can be large and complex; ChipX makes it easy with an extensive library of in-house and pre-approved synthesizable and analog IP. Silicon-proven, fully verified and well documented, the IP used by ChipX dramatically lowers the effort required to select and integrate. Where required, ChipX can also offer full integration and even software services through its extensive partner network, offering local support to customers worldwide.

IP includes 32 bit processors including ARM926EJ and Beyond Semi BA12, 8 bit processors, USB 2.0<sup>1</sup>, PCI Express 1.1<sup>1</sup>, PCI, 10/100 Ethernet and 1GE MAC, Processor peripherals, ADC, DAC, PLL, DDR<sup>1</sup>, DDR2<sup>1</sup>, encryption/decryption, MPEG 4, H.264, Powerline communications, HDMI/DVI, MIL-STD-1553, and more. For a complete list of available IP, please visit [www.ChipX.com](http://www.ChipX.com).

<sup>1</sup> = Controller and PHY

## Key Features and Benefits

- Up to 8 layers available for routing
- 350 MHz maximum global operating frequency, over 1 GHz local
- Gate count of more than 12M gates
- High speed embedded SRAM up to 10Mb
- Supports over 400 I/O types, including LVTTTL, LVCMOS, HSTL, SSTL (18/2/3), LVDS (up to 840 Mbps), RSDS, PCI, PCIX, and XOSC
- Core operating voltage of 1.2 V
- I/O voltages of 1.5 V, 1.8 V, 2.5 V and 3.3 V; output drive strengths up to 16 mA
- PLLs with Spread Spectrum tracking, output range of 10 MHz to 1 GHz
- Commercial and industrial grade temperature libraries
- UMC 0.13  $\mu$ m HS and Fusion process libraries available
- Packages from 56 QFN to 676 PBGA
- Fast shuttle prototyping available for certain programs.
- XPath methodology available to prototype in CX6000 Structured ASIC and convert to CX6900 Standard Cell

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