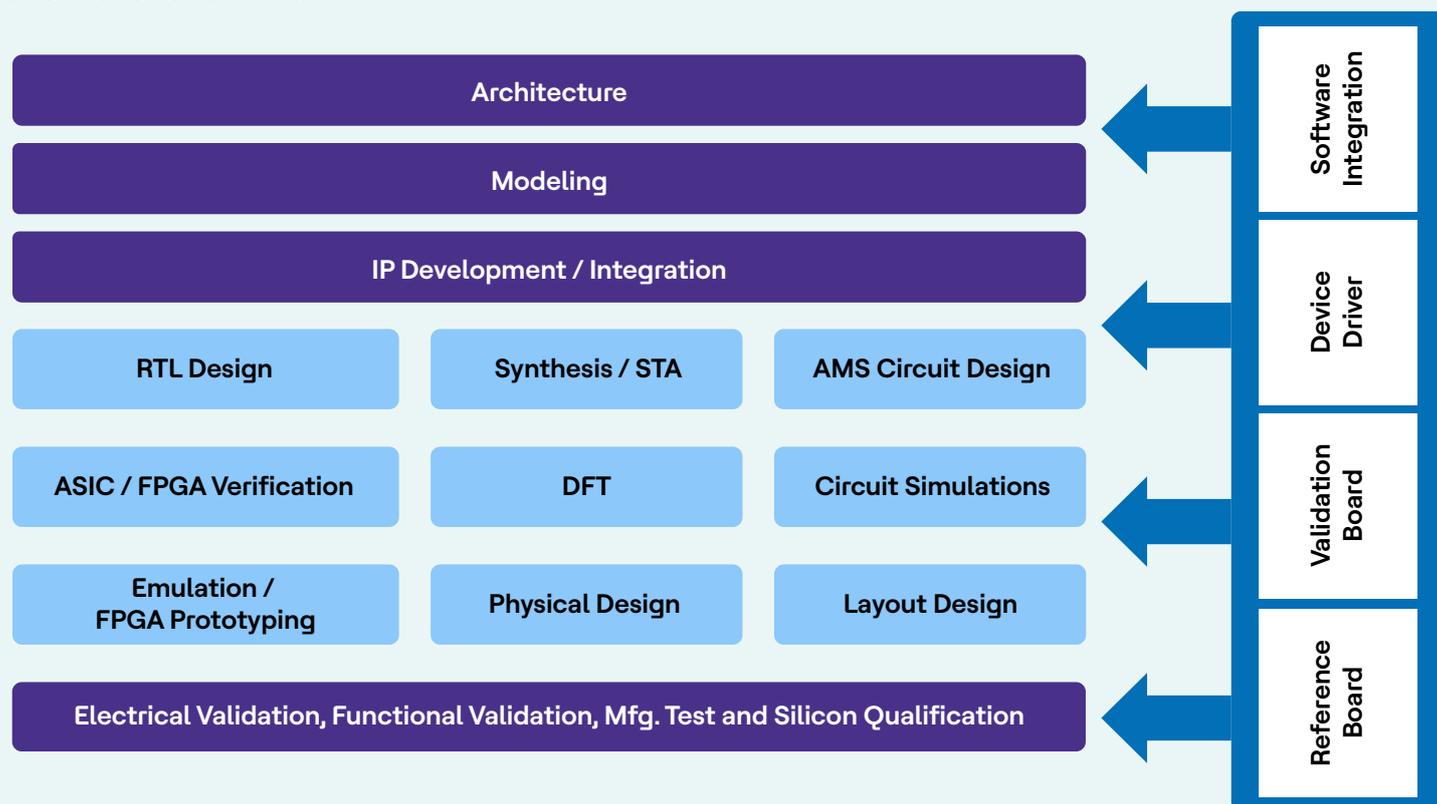**HCLTech** | Supercharging Progress™
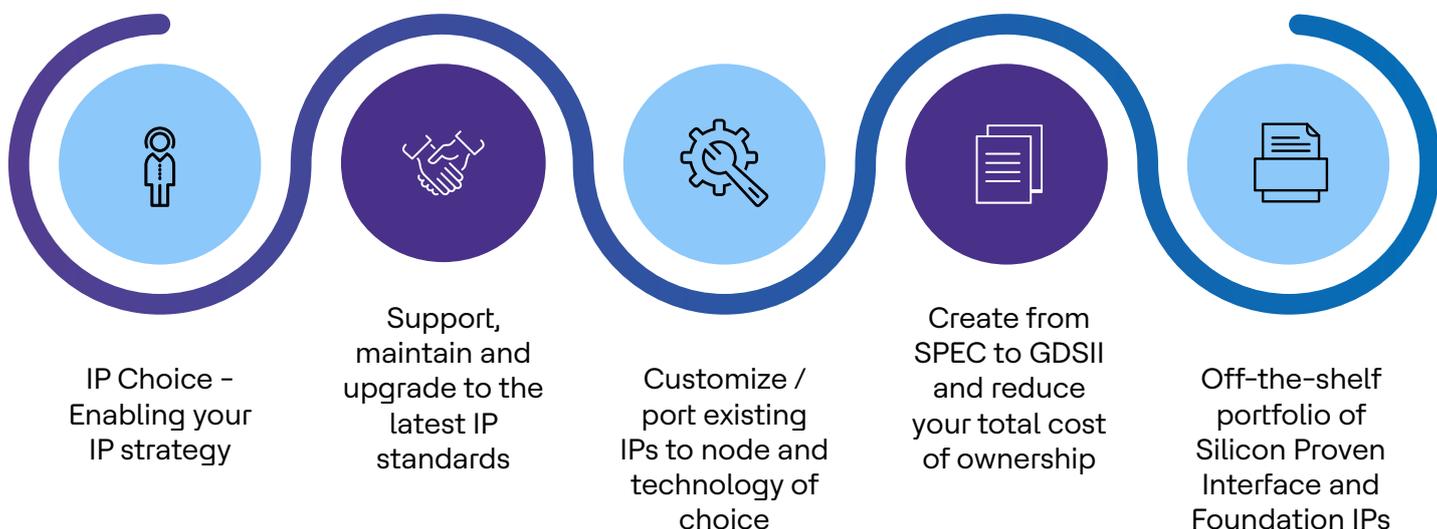
Silicon
Design Services

Semiconductors have increasingly become an important part of the world economy due to evolving technology trends across the globe. Semiconductor industry itself is undergoing a paradigm shift — increasing silicon complexity, shrinking process nodes, first time right silicon with quality and demand for shift left. With a strong legacy of more than 25 years in the VLSI (Very-large-scale integration) industry along with a rich experience of having worked with top chip manufacturers and design foundries across the globe, we are poised to adapt to the rapidly evolving demands to develop high-end complex chip designs from concept to production-ready wafer/chip.

ASIC Services

Architecture
Modeling
IP Development / Integration

RTL Design	Synthesis / STA	AMS Circuit Design
ASIC / FPGA Verification	DFT	Circuit Simulations
Emulation / FPGA Prototyping	Physical Design	Layout Design

Electrical Validation, Functional Validation, Mfg. Test and Silicon Qualification

- Software Integration
- Device Driver
- Validation Board
- Reference Board

IP as a Service (IPaaS)

IP Choice - Enabling your IP strategy

Support, maintain and upgrade to the latest IP standards

Customize / port existing IPs to node and technology of choice

Create from SPEC to GDSII and reduce your total cost of ownership

Off-the-shelf portfolio of Silicon Proven Interface and Foundation IPs

IP Choice ™

IP as a Service

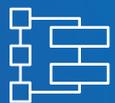**IP porting and integration**

Create, customize, license and support

IP maintenance

Flexi model – Black box and White box

IP Portfolio Management for customers – High speed SerDes, Memory (DDR/HBM), RF, Power management, IO, Clocking, Data convertors and custom IPs

Lab as a Service

Major challenges faced by customers include reduced development cycle, increased complexity of the product and evolving of new standards/technology every year. Our one-stop-shop testing and lab services provide solutions that help customers launch products faster with reduced cost.

Our one-stop-shop testing solution

Design analysis

SI model simulation, Power integrity analysis, Loop stability, Thermal simulation

Test content development

Functional test cases, Interoperability test cases, Custom test methodologies

Testing services

Electrical Compliance Circuit, Marginality Electrical Characterization, Protocol stress testing, SerDes tuning, Platform validation, Debug support, Antenna characterization, RF/Microwave measurement, Receiver jitter, Tolerance returns loss/Insertion loss

Product certification /testing

FCC, CE, MIL certification Benchmarking safety, High speed measurement equipment for PCIe-Gen 5, DDR-5, USB 4.0. SAS-3, SATA Gen 6, 25G/100G Ethernet

Flexible business model

Extended lab of customer, Turnkey service of standard electrical compliance, Pre-compliance testing with debug support, 24x7 operation support

Consultancy

Deep technical strength from 35+ years of silicon and system design and testing experience Consulting and training, Develop custom test methodologies, Debug support during development, Lab testing, Field testing

Highlights

25+
years of Silicon Design Services

2600+
Employees across Analog and Mixed signal, Digital design skills

1000+
Successful projects in Digital, IOs, AMS design and layout across multiple foundries/ nodes

Domain and customer specific processes

Global VLSI delivery centers across cities in India and other countries

Member of TSMC DCA and strong partnership with other major foundries, ARM approved Design Center

Case studies

End to end development of eFPGA based AI accelerator

End to end development of Image co-processor SoC for mobile

Power management ASICs for automotive and home lighting applications

Radar based ADAS SoC system

Multiple generations of chipsets for satellite phone and set top box

Analog mixed signal ASIC for sensor application

Automotive chip for ADAS application

Analog front end for biomedical application

Custom AMS IP developments - IOs, High speed SerDes, Data convertors, Power management and Clocking for consumer, mobile and automotive applications

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HCLTech is a global technology company, home to 225,900+ people across 60 countries, delivering industry-leading capabilities centered around digital, engineering and cloud, powered by a broad portfolio of technology services and products. We work with clients across all major verticals, providing industry solutions for Financial Services, Manufacturing, Life Sciences and Healthcare, Technology and Services, Telecom and Media, Retail and CPG, and Public Services. Consolidated revenues as of 12 months ending March 2023 totaled $12.6 billion. To learn how we can supercharge progress for you, visit hcltech.com