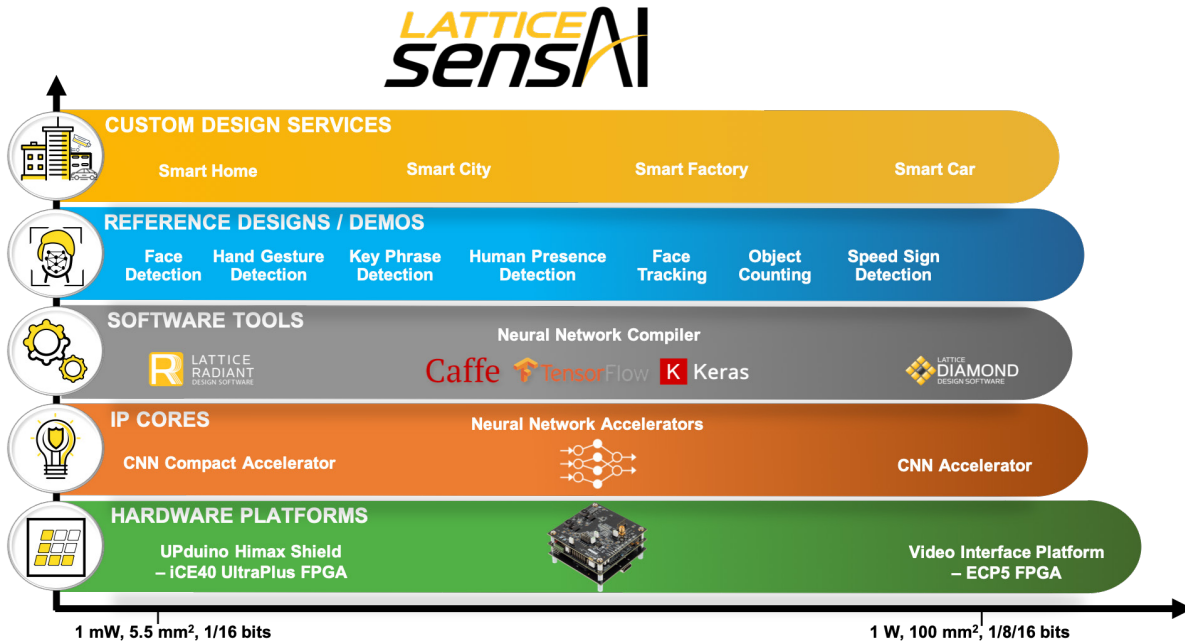


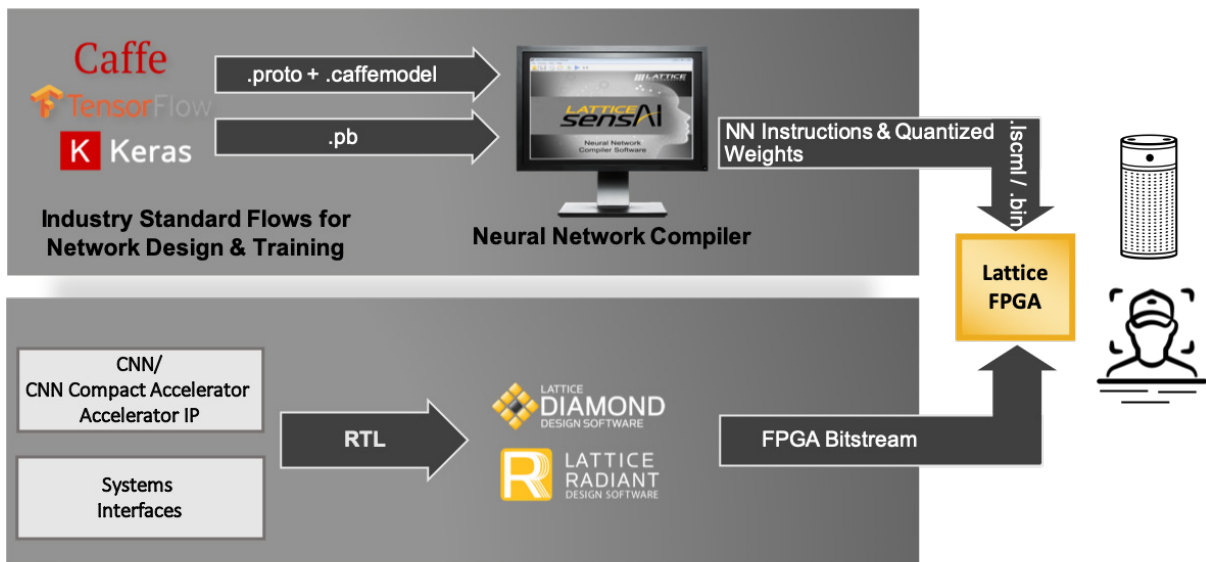
Ultra-Low Power Lattice sensAI™ Stack

Accelerate Integration of Flexible Inferencing at the Edge

With solutions optimized for ultra-low power consumption (under 1 mW – 1 W), small package size (5.5 mm² – 100 mm²), interface flexibility (MIPI CSI-2, LVDS, GigE, etc.), and high-volume pricing, the Lattice sensAI stack accelerates integration of scalable, always-on, on-device AI.



Complete technology stack for ultra low power flexible inferencing



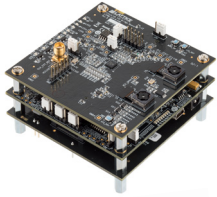
Rapid design space exploration – Performance vs Power vs Accuracy tradeoffs

Lattice sensAI Hardware Platforms



■ Mobile Development Platform (MDP)

- Key Features:
 - iCE40 UltraPlus™ FPGA consuming few mWs of power consumption
 - Includes image sensor, microphones, compass/pressure/gyro sensors, etc.



■ Embedded Vision Development Kit

- Key Features:
 - ECP5™ FPGA consuming under 1 W of power consumption
 - Supports MIPI CSI-2, eDP, HDMI®, GigE Vision, USB 3, etc.



■ HiMax HM01B0 UPduino Shield

- Key Features:
 - A complete development kit for implementing Artificial Intelligence (AI) using vision and sound as sensory inputs
 - iCE40 UltraPlus FPGA based Upduino 2.0 board and HiMax image sensor module

Lattice sensAI IP Cores

IP Core	OPN	Key Features
Compact CNN Accelerator	CNN-CPACCEL-UP-U	Optimized for iCE40 UltraPlus FPGA
CNN Accelerator	CNN-ACCEL-E5-U	Optimized for ECP5 FPGA, supports variable quantization

Lattice sensAI Software Tools

Software Tool	Key Features
Neural Network Compiler	Supports Caffe and TensorFlow. No prior RTL experience required

Lattice sensAI Reference Designs and Demos

Reference Design/Demo	Supported FPGA, HW Platform	Power Consumption
Face Detection	iCE40 UltraPlus, iCE40 UltraPlus Mobile Development Platform	< 1 mW
Key Phrase Detection	iCE40 UltraPlus, iCE40 UltraPlus Mobile Development Platform	< 8 mW
Face Tracking	ECP5, Video Interface Platform	< 1 W
Object Counting	ECP5, Video Interface Platform	< 1 W
Speed Sign Detection	ECP5, Video Interface Platform	< 1 W
Human Presence Detection	iCE40 UltraPlus/HiMax HM01B0 UPduino Shield	< 8 mW
Human Presence Detection	ECP5, Video Interface Platform	< 1 W
Hand Gesture Detection	iCE40 UltraPlus/HiMax HM01B0 UPduino Shield	< 8 mW

Lattice sensAI Stack Custom Design Services

Have custom AI solution needs? The senseAI stack includes an ecosystem of select, global design service partners that can deliver custom solutions for a range of end-applications, including smart home, smart city, smart factory, and smart cars. Please contact your local sales representative to request more information.

