Subaru new generation EyeSight powered by Xilinx

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The Xilinx Automotive Grade (XA) Zynq® UltraScale+™ multi-processor system-on-chip (MPSoC) is powering Subaru’s new stereo vision-based advanced driver-assistance system (ADAS), EyeSight.

Xilinx 16 nanometer technology provides the power to process stereo images into 3D point clouds with the ultra-low latency and functional safety that is required to ensure Eyesight can accurately understand and react to dynamic driving scenarios.

Subaru’s new generation EyeSight system offers features such as:
- adaptive cruise control (ACC)
- lane keeping assist (LKA)
- pre-collision braking
Evolution of Accident Prevention Features of New Gen. EyeSight

First Half of 2020s

- Enhance capacity to avoid intersection/urban area accidents
  - Hitting pedestrian while turning
  - Right-turn collision
  - Head-on crash
  - Avoidance by steering

- Enhance capacity to monitor driver status and respond to driver’s errors
  - Driver distraction
  - Loss of consciousness
  - Unintentional acceleration & runaway

A number of features to avoid severe accidents and risks to be developed
Evolution of Driver Assist Technologies

First Half of 2020s

Active lane change assist, auto deceleration based on curve prediction, and hands-off driving in congested traffic

State-of-the-art features for comfortable and safe travels on highways
Subaru Levorg is available for pre-orders in Japan starting on August 20\textsuperscript{th}
Comprehensive Portfolio

Distributed Sensors
- Camera Sensors
- Radar Sensors
- LiDAR Sensors

AI Edge or Domain Processing Module(s)

Vehicle Control & Status
- HMI

Vehicle Control & Status
- Camera
- Sensors
- Radar
- Sensors
- LiDAR
- Sensors

ZU2
ZU3
ZU4
ZU5
ZU7
ZU11

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Zynq UltraScale+ MPSoC
Heterogeneous Multi-Processing at the Heart of the System
Xilinx Steady Growth in Automotive

Unit Shipments

- 6.6M avg (FY2006-FY2007)
- 12.1M avg (FY2008-FY2011)
- 19.3M avg (FY2012-FY2020)

Consistent growth

- Double digit unit shipment growth over 15 years
- More than 190M devices shipped
- More than 75M devices shipped into ADAS

Production deployments with our 28nm and 16nm families to fuel continued growth

Tier-1s
- Continental
- MAGNA
- Veoneer
- ZF
- HITACHI
- REACH

OEMs
- BYD
- SUBARU
- DAIMLER
- WELTMARKER

Startups
- Baidu
- apollo
- pony
- OUSTER
- MINIEYE

Note: Only showing publicly-announced customer collaborations
Xilinx Automotive ADAS & AD Focus Areas

- Full Display Mirror
- LiDAR
- Surround View Camera
  - Rear
  - Side
  - Front
- Forward Camera
- In-Cabin Monitoring Camera
- Domain Controller
  - Gateway
  - Compute Acceleration
  - Data Aggregation, Pre-processing, and Distribution (DAPD)
- RADAR

Note: Not representing actual vehicle architecture; Sensors are for illustrative purposes