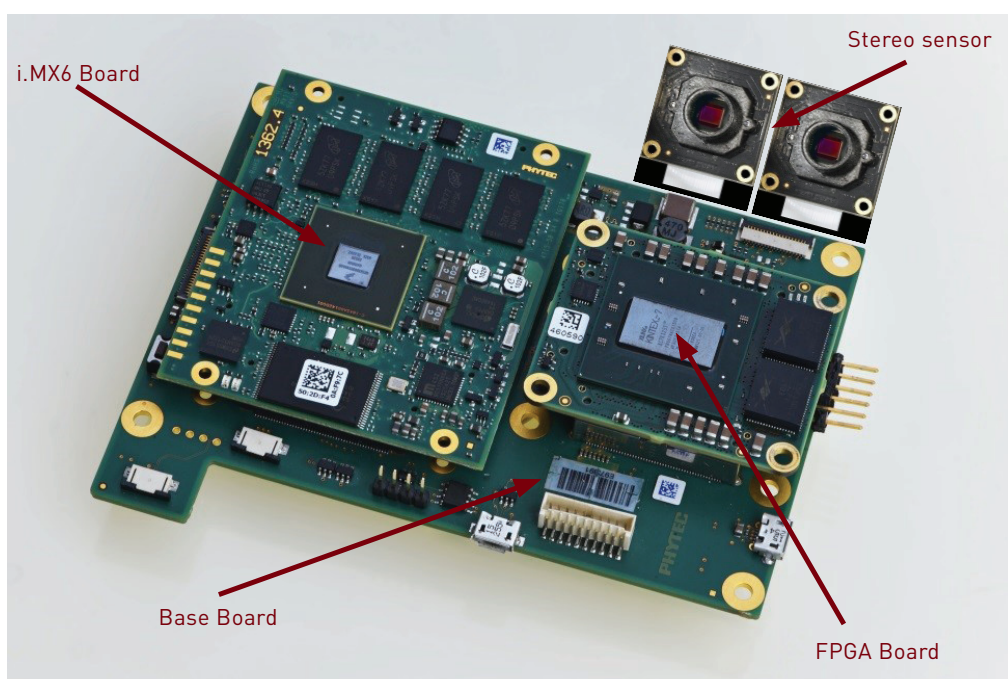# Heterogeneous Demo Platform

TECHNOLOGY

This demo platform enables solutions in the embedded domain. The design goal was to have a versatile, high performance adaptable platform for image processing which also can be used in a mobile way. The hardware is a trusted platform enabling high secure applications like biometric scanning and verification for border control purposes. Embedded hardware was designed with respect to typical industrial requierements such as components with long availability, scalability in terms of processing power, secure boot capabilities and extended temperature range. A plugin FPGA Module enables high-performance computing for complex real-time applications.

EMBEDDED SOLUTION

▶ Highly integrated and small form factor for embedded vision processing platforms and smart cameras
▶ Reference implementations for Zynq FPGAs

APPLICATIONS

Mobile devices e.g. handheld device for mobile boarder control (MobilePass), stereo vision sensors and other embedded vision devices.
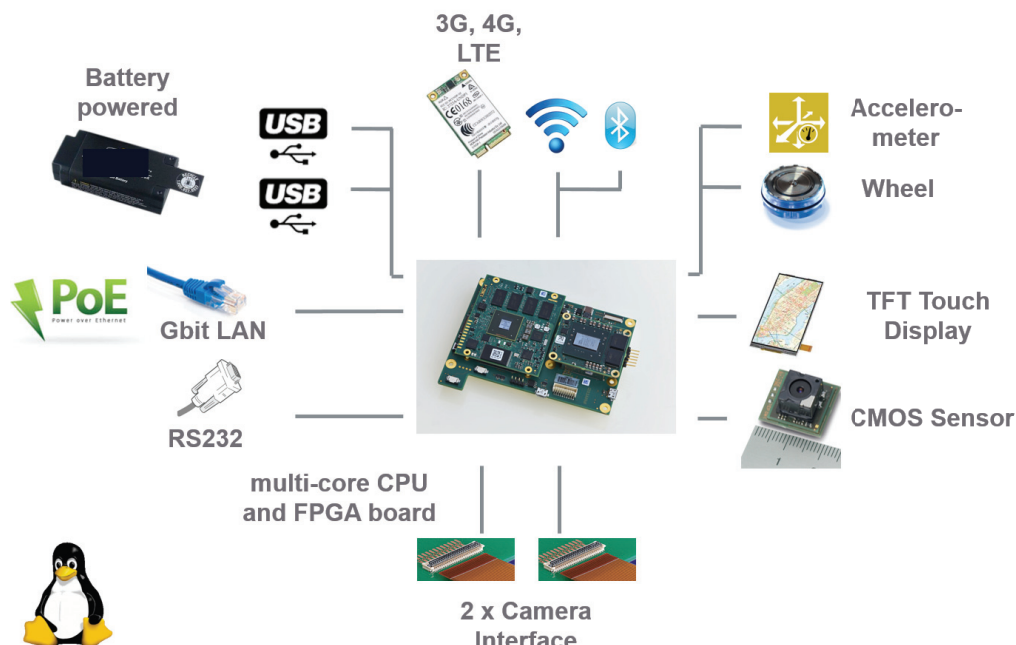

Stereo sensor

i.MX6 Board

Base Board

FPGA Board

Heterogeneous Demo Platform

TECHNICAL SPECIFICATION

CPU	Freescale i.MX6 Quad Core Module, 4x1.2 Ghz, 1GByte RAM, Flash
Accelerator	Xilinx FPGA Modules such as Artix or Kintex7
Cameras	Sony MA130, 30fps HD, max: 12MP 2x PhyCamP Interface (e.g. 5MP Aptina MT9P031)
Interfaces	Gbit-Ethernet, 3x USB 2.0, 2x RS232, WiFi IEEE 802.11 b,g,n, BT4.0 BLE and ANT, BT 2.1+EDR Power Class 1.5, 2/3/4G LTE Modem
LCD Display	Sunlight readable, 480*800, Touchscreen
Additional AddOns	Accelerometer, Multiwheel, Trusted Platform Module, Battery Power Supply
Board Support Package	Yocto Project builds a complete root file system. Customized Linux kernel image with all device drivers.
Libraries	Qt, OpenCV, Phyton, Tesseract
USP	Source available, industrial components with long availability, high scalability, extended temperature range, stereo camera interface, several power supply options - power plug, PoE or battery operation
Power consumption	less than 10 W (all components active)

BLOCKDIAGRAM

Battery powered

3G, 4G, LTE

USB

USB

Accelero-meter

Wheel

PoE Power over Ethernet

Gbit LAN

TFT Touch Display

RS232

CMOS Sensor

multi-core CPU and FPGA board

2 x Camera Interface

CONTACT

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