Display ARM-based, HMI, Qt / Android
per applicazioni industriali

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crit
SCOUTING
YOUR NEXT
TECHNOLOGY

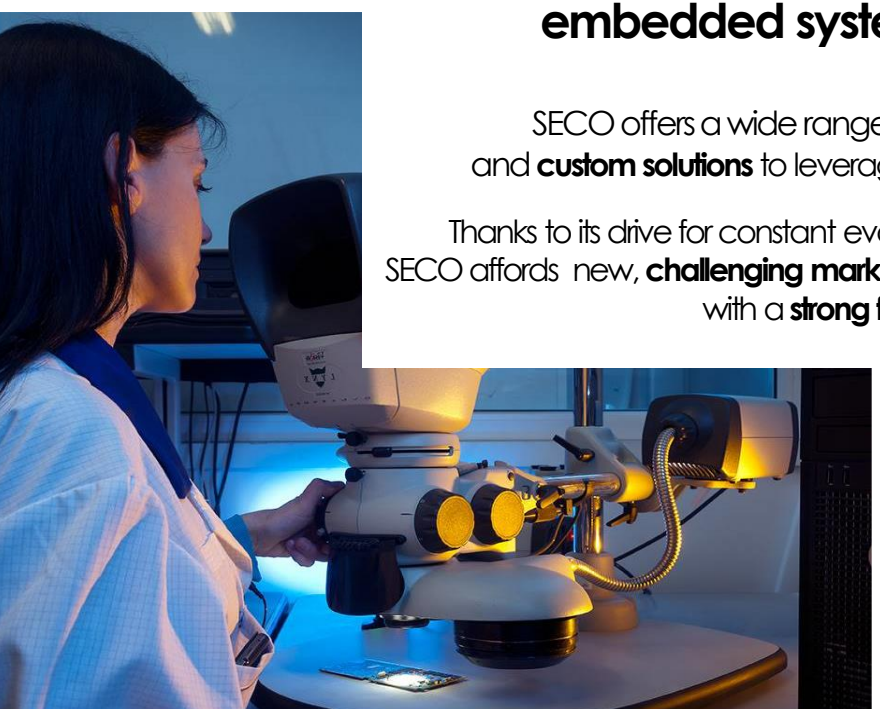
SECO

About SECO

SECO **designs** and **manufactures embedded systems all-in-house**, in **Italy**.

SECO offers a wide range of **standard modules**, **SBCs**, **systems** and **custom solutions** to leverage **innovative**, state-of-the-art **technologies**.

Thanks to its drive for constant evolvement and relying on its **strong know-how**, SECO affords new, **challenging market demand** with innovative **cutting edge solutions**, with a **strong focus on Internet of Things**.



HIGHLIGHTS

Experience

Since **1979**

HR

206 people

(31.12.2016) (SECO srl, PSM srl)

Turnover

€ 47+ mil.

in 2016 (SECO srl)

WW presence

BRANCH OFFICES

HQ: Arezzo Milan (Italy)

Frankfurt (Germany)

Boston (USA)

Bangalore (India)

Taipei (Taiwan)

GLOBAL DISTRIBUTION

Milestones

Introduction of **SECO's first PC** onto the Italian market: SECO SYSTEM 210

SECO Elettronica Snc **is established**

Foundation of PSM (Professional Surface Mounting): **SECO's production unit**

Launch of the **all-in-one touch PC Ellipse:** selected for the **SMAU Industrial Design Award**

The new **Qseven** embedded **standard** and the **Qseven Consortium** are **founded by SECO**, Congatec and MSC

Celebration of **SECO's 30° anniversary**; **new company logo** created

SECO is one of the **founding members** of **SGeT**

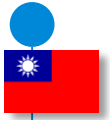
SECO USA Inc. in **Boston** (**USA**) is established

Launch of **UDOO** on **Kickstarter**: more than **4000 backers** reached

SECO's **branch office** in **India** is established

Launch of **UDOO NEO** on **Kickstarter**: funded in just **80 minutes**

SECO's **branch office** in **Taipei**, **Taiwan** is established



Launch of **UDOO X86**: funding goal of **$100K in just 7 hours**

SECO Deutschland GmbH in **Frankfurt**, **Germany** is established

New headquarters building

1979 1989 1995 1999 2008 2009 2012 2012 2013 2014 2015 2016 2016 2017 2017

SECO: a Technological Reference Partner

KNOW-HOW

DESIGN

Long experience
in **x86** & **ARM**
both **HW** & **SW** design

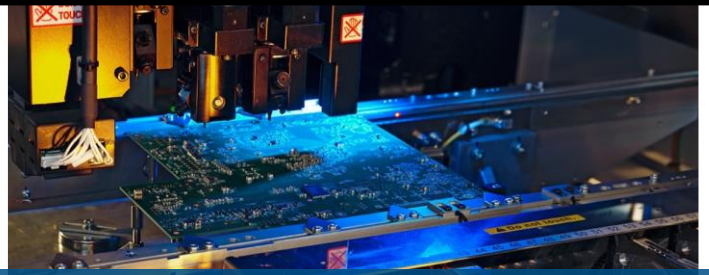
MANUFACTURING

Design
and **production**
in **Italy**

SYSTEM INTEGRATION

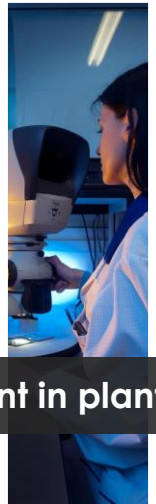
Design & **Assembly**
of **mechanical parts**
and **touch display** solutions

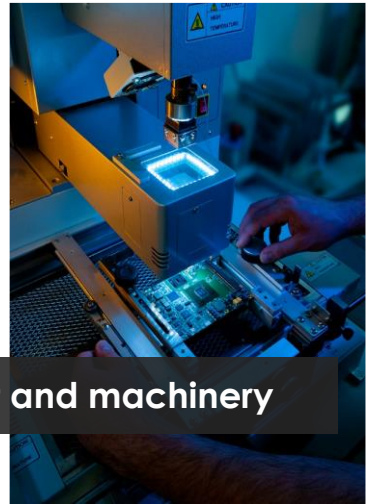
Manufacturing



All In-house PROCESS

PROCUREMENT | INCOMING | KITTING | PCBA MANUFACTURING & SYSTEMS ASSEMBLING | TESTING | SHIPPING





Continued **investment in plant and machinery**

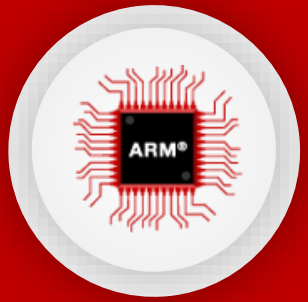
Total output capacity:
~ 200.000 comps/h

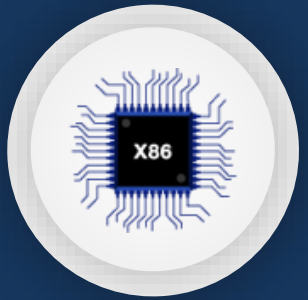
The speed of the lines is the actual value measured and not estimated from datasheets of P & P

SMT Line 1 & 2 : mass production line
SMT Line 3: mass production line/fast setup change

Last update: June 2017

Design





FPGA design

BIOS Engineering & Development

Software development

Mechanical Engineering & Development

Signal Integrity

Analysis & Design

Drivers Engineering & Development

BSP

Hardware Engineering & Development

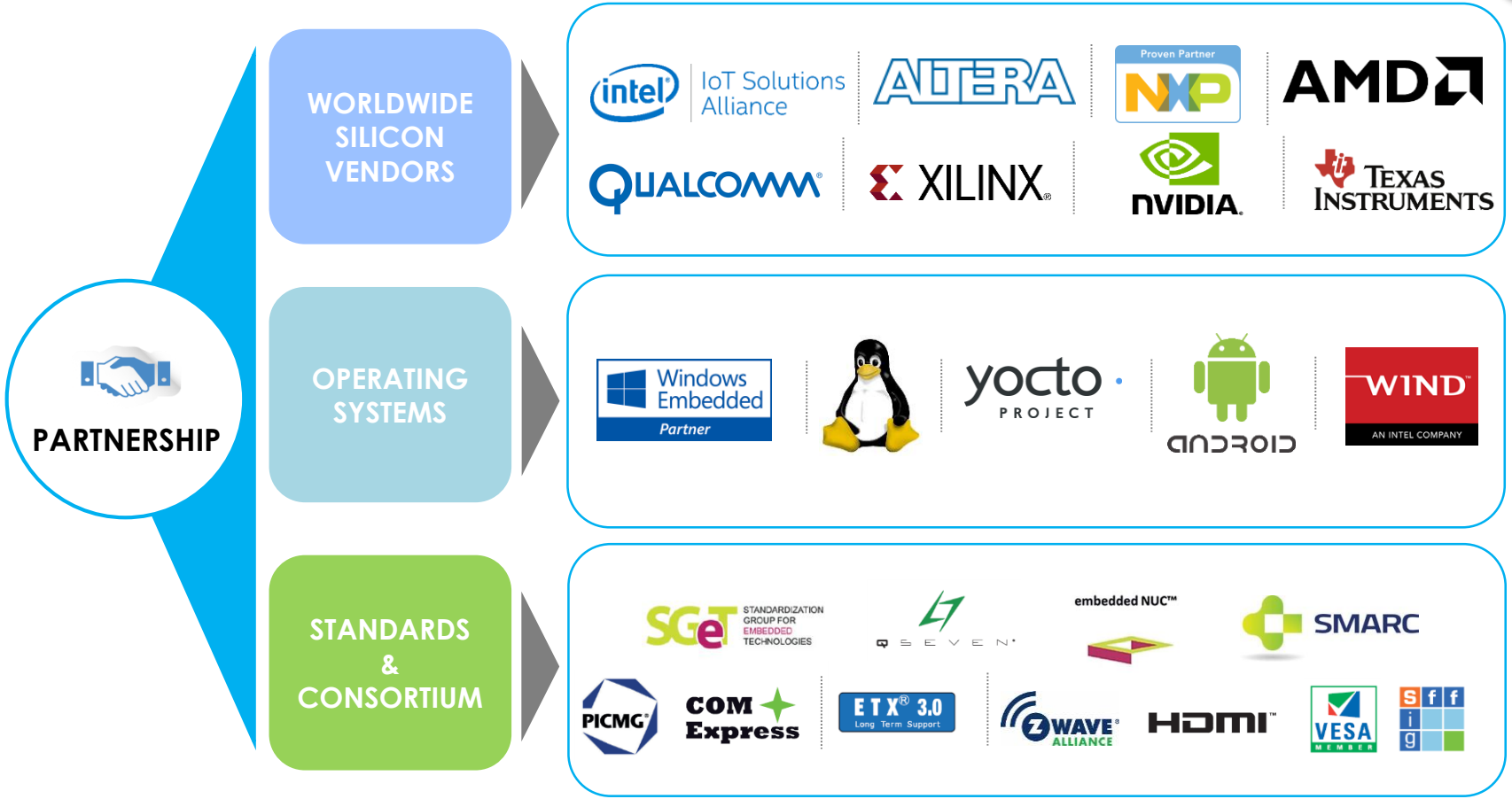
Firmware Development

Validation & Verification

Thermal Analysis

Keysight CERTIFIED EXPERT EDA SOFTWARE

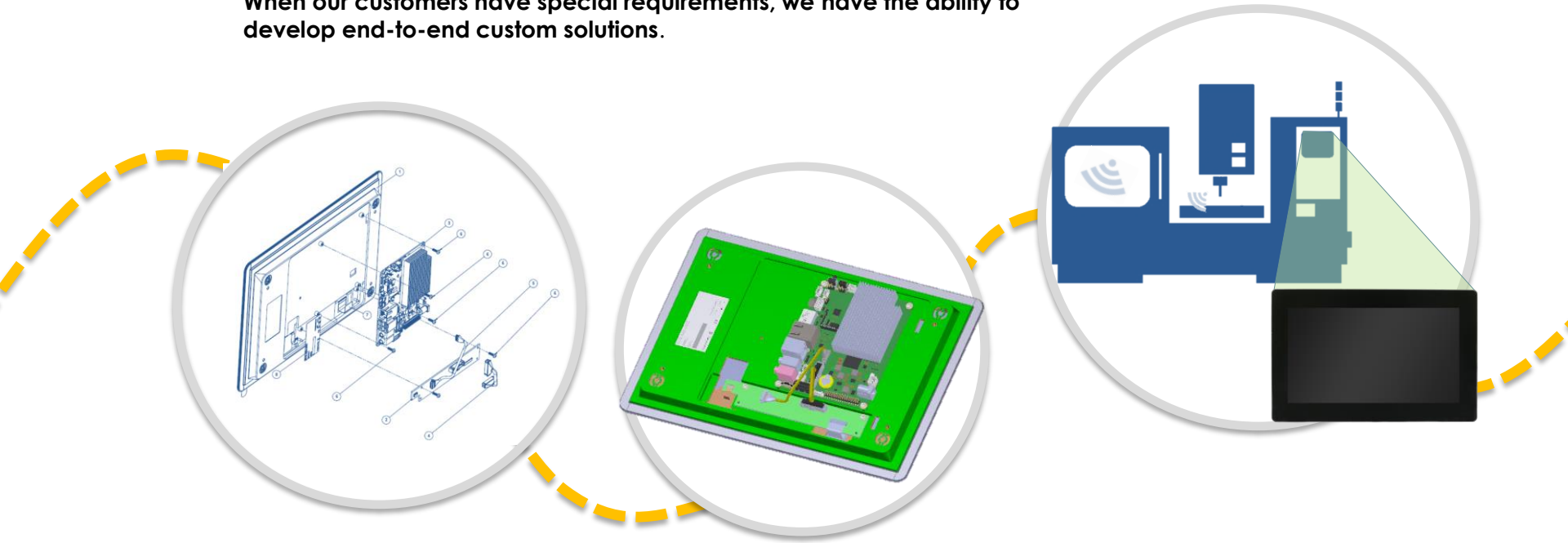
Technological Ecosystem



System integration service for the development of advanced HMI solutions

At SECO we understand that a project is more than just an embedded board, it includes screens, peripherals, enclosure and more.

When our customers have special requirements, we have the ability to develop end-to-end custom solutions.



EMBEDDED SOLUTIONS

Standard Products

Modular Solutions

- Qseven
- COM Express
- SMARC
- ETX/XTX

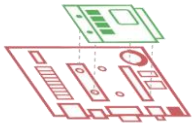
SBC

- Embedded NUC
- Pico-ITX

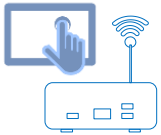
- Off-the-shelf solutions
- Ready-to-use
- High configurability

Semi-custom solutions

Custom carrier board + Modular solution



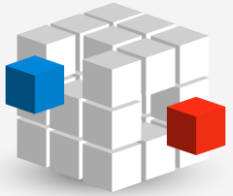
Modular HMI & Boxed Solutions



- Slight customization of standard products (MOQs)
- Loading of custom FW/SW/OS
- Mechanical parts assembly

Full-custom solutions

End-to-end "tailored" solutions:
Full support from the concept development to the complete System solution



- Optimization/costs constraints
- High-volume
- No re-design constraints
- No TTM constraints

Vertical Markets

AUTOMATION

VENDING

AVIONICS

BIOMEDICAL/ MEDICAL DEVICES

DIGITAL SIGNAGE - INFOTAINMENT

E-HEALTH TELECARE

ENERGY

FITNESS EQUIPMENT

GAMING

HMI

HOME AUTOMATION

HOME ENTERTAINMENT

INDUSTRIAL AUTOMATION AND CONTROL

INFO KIOSKS

INTERNET OF THINGS

IN-VEHICLE INFOTAINMENT SYSTEMS

MEASURING INSTRUMENTS

MOBILE DEVICES

MULTIMEDIA DEVICES

PDA ELECTRONICS

POINT OF SALES

PORTABLE DEVICES

ROBOTICS

SURVEILLANCE

TELCO

THIN CLIENTS

RAILWAY

WIRELESS TECHNOLOGY

VISUAL COMPUTING

Why choosing Android?

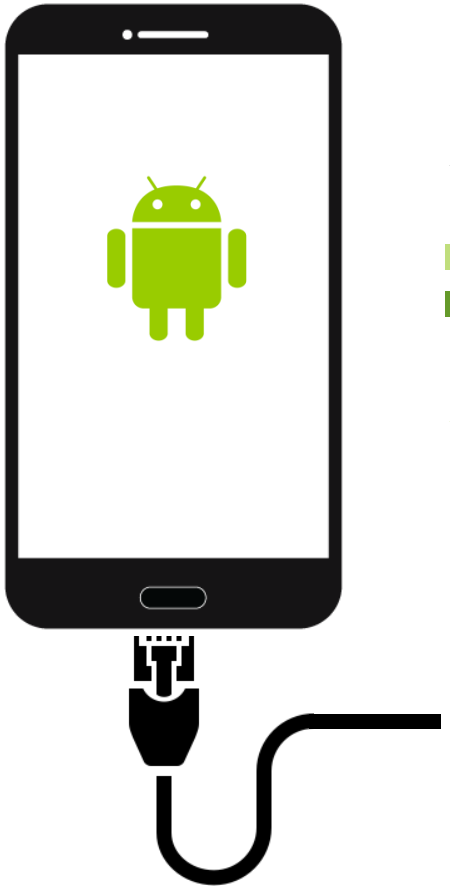
Open source

Use of existing APPs

Easy application development

Convergence with the mobile world

SECO Expertise on Android



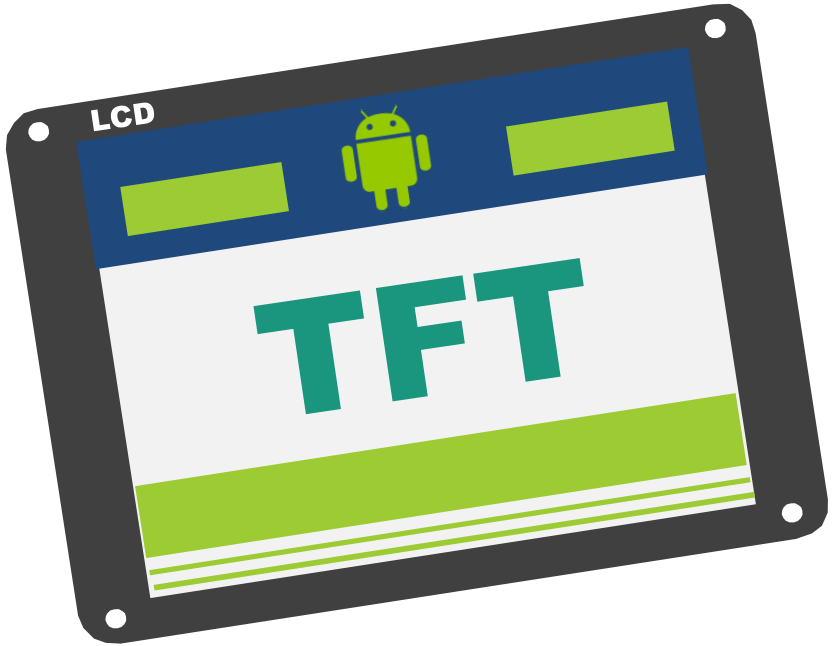
Smartphone-like user experience over embedded electronics:

- Industrial temperature grade BOM
- Guaranteed lifetime

SECO adapts **Android,** which was born for mobile applications, to **industrial solutions**, taking care about the implementation, verification and certification processes

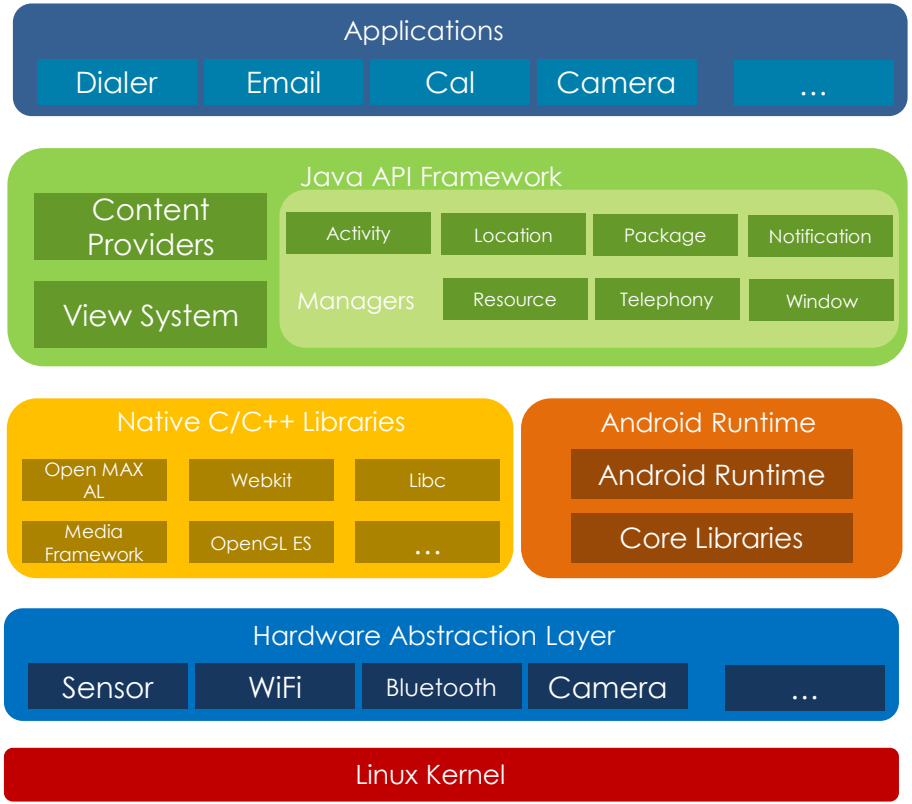
ETH, HDMI, WiFI/Bluetooth modules in extended temperature range

Custom Solutions



- Full custom TFT
- Touch panel, adopting different technologies and interfaces
- Integration of custom peripherals in the SW stack, eg:
  - CVBS signal capture
  - multiple audio streams management

Android SW stack



- Integration of Linux kernel drivers
- HAL level development to manage specific hardware
- Touch panel with various technologies and interfaces
- Libraries development for direct access to specific devices via JNI
- Customization of the Android framework for a tailored user experience

Off the shelf solutions: SYS-A62-J

Embedded Panel with 10.1” LCD display based on the Multicore NXP i.MX6 SoC family

- Dedicated expansion port providing 28 configurable pins
- Wide capability to interfaces system-level electronics: RS232/485, CAN, SPI, SDIO, I2C, ecc.
- Connectivity: Gbe, WiFi
- Ready for mechanical integration In custom systems

Thank You

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