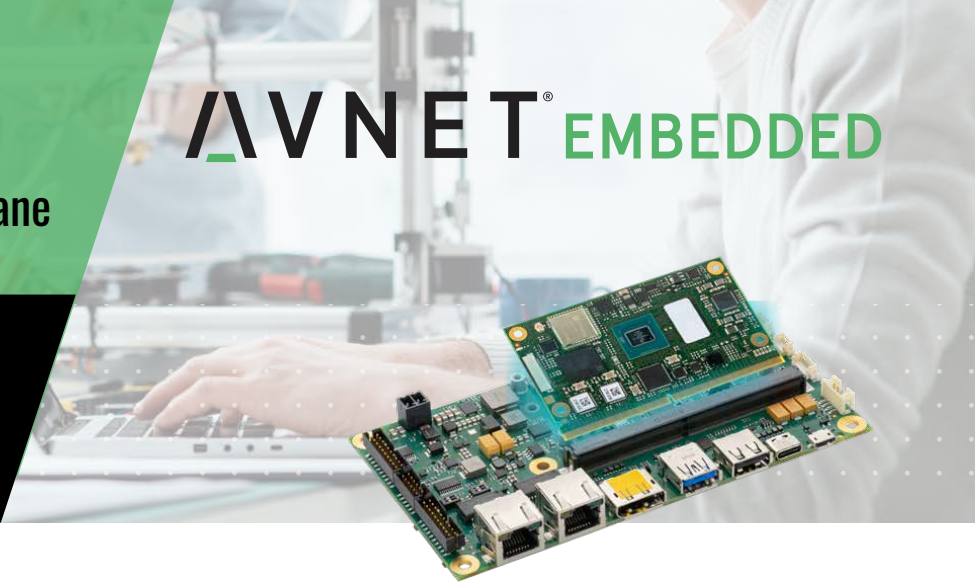


# Software Technology Lab Technology Demo – Smart Crane

# AVNET<sup>®</sup> EMBEDDED

## SMARC 2.1.1™ MSC SM2S-IMX8PLUS

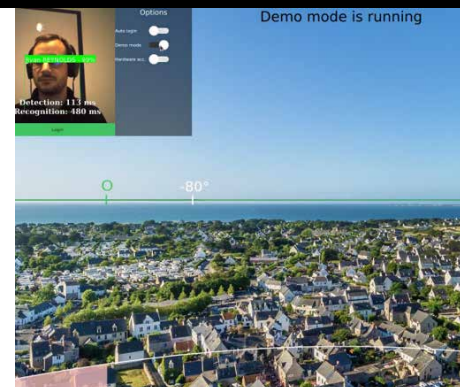


### EMBEDDED COMPUTER VISION



**Realization of Computer Vision at the edge, run locally and offline.**

Integrating face recognition and user identification in an embedded device using AI hardware acceleration (NXP NPU with low power consumption 2.5W).

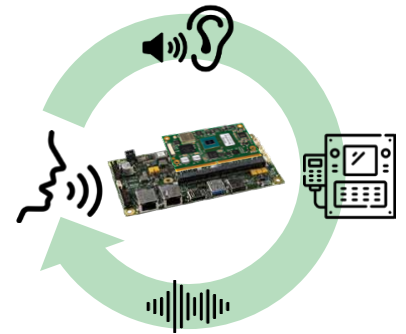


### NATURAL LANGUAGE PROCESSING



**Natural Language capabilities at the edge without any network or cloud connectivity.**

Realizing natural language understanding and processing, as well as innovative text-to-speech for intuitive user feedback.

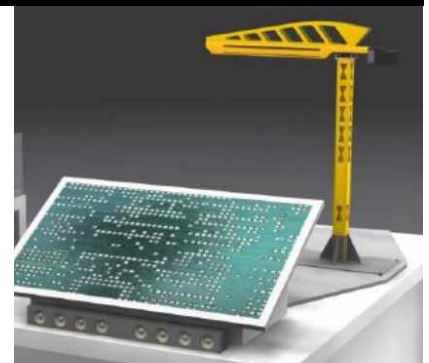


### INDUSTRIAL USE CASE



**Show the advantages of technological innovation by bringing it to life in an embedded demo use case.**

Design an innovative and use case specific UI application providing the best possible user experience.





## MSC SM2S-MB-EP5 Embedded Platform SMARC<sup>®</sup> 2.X

### APPLICATION-READY EMBEDDED PLATFORM

SimpleFlex is the intelligent combination of a standard Computer-On-Module with a standard carrier board. It combines the advantages of Standard SBC and Custom SBC by choosing the COM from a huge portfolio of CPU and memory configuration.

## /SIMPLEFLEX

146 x 80

Arm

x86



- Low-cost, flexible Platform for medium to high volume
- Up to 2x Gigabit Ethernet
- Mini PCI Express, M.2 key B, Micro-SD
- 2x USB 3.0, 3x USB 2.0, 1x USB 2.0 MicroAB Host/Client
- RS-232/RS-485/CAN (opt. galv. Isolated)
- DisplayPort, LVDS, MIPI-DSI, eDP, µHDMI
- USB Type-C™ (with DisplayPort)
- Audio, opt. with 2x 2.5W Stereo Amplifier
- MIPI-CSI, 12 GPIO, SPI, I<sup>2</sup>C
- WLAN / Bluetooth NFC with antenna (option)
- Input voltage 10VDC to 36VDC



## MSC SM2S-IMX8M NXP<sup>®</sup> i.MX 8M Arm<sup>®</sup> Cortex<sup>®</sup>-A53 SMARC<sup>®</sup> 2.0/2.1

The new MSC SM2S-IMX8M module features NXP's i.MX 8M processors offering dual- and quad-core Arm Cortex-A53 compute performance at very low power consumption and excellent graphics performance combined with a high degree of functional integration. MSC SM2S-IMX8M offers dual-core or quad-core Arm Cortex-A53 processors in combination with Arm Cortex-M4 real time processor and Vivante GC7000Lite 3D Graphics GPU. It provides fast LPDDR4 memory, up to 64GB eMMC Flash memory, Gigabit Ethernet, PCI Express, USB 3.0, an on-board Wireless Module as well as an extensive set of interfaces for embedded applications.

82 x 50  
4 / 6 W  
-40... +85 °C

### Highlights

- Dual or Quad core NXP i.MX8M Arm Cortex-A53 Applications Processor up to 1.5GHz
- Arm Cortex-M4 Real Time Processor at 266MHz
- GC7000lite 2D/3D Graphics Processor
- 4Kp60 HEVC/H.265, H.264 and VP9 Video Codec (not supported by QuadLite)
- Up to 4GB LPDDR4 SDRAM
- Up to 64GB eMMC Flash
- Dual-channel LVDS or MIPI-DSI
- HDMI 2.0 or DisplayPort interface
- Dual Independent Display support
- Dual MIPI CSI-2 Camera Interface
- 2x PCI Express x1 Gen. 2
- 2x USB 3.0 Host interface
- 2x USB 2.0 Host interface
- 1x USB 2.0 Host/Device interface
- Gigabit Ethernet
- Wireless Module (optional)
- MMC/SD/SDIO interface
- 2x CAN interface (optional)
- I2S, UART, SPI, I2C

