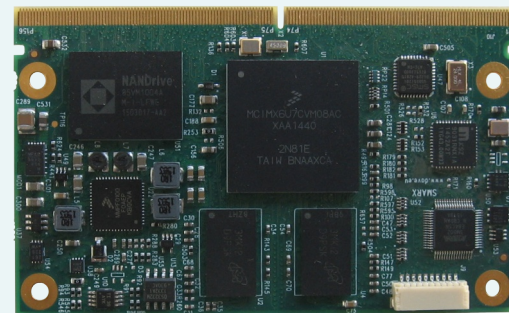# SMARX

NXP i.MX6 S/DL/D/Q//DP/QP
CPU MODULE

- Unmatched performances thanks to S/DL/D/Q//DP/QP ARM Cortex A9 MPCore @ up to 1.2 GHz
- eMMC primary storage on board
- EEPROM safe and reliable storage
- Enabling massive computing applications thanks to wide range DDR3 RAM memory up to 2GB (4GB OPT)
- Single 5.0V Power Supply 3.3 V I/O
- Compliance with standard SMARC v1.0
- Full support and maintenance over uboot and Linux release
- Full support and maintenance over Yocto RFS
- Embedded Android support on request

SMARX is DAVE Embedded Systems' answer to the de-facto standards available now in the market. SMARX is a System On Module based on NXP i.MX6 application processor fully compliant with the Standard SMARC v1.0. Thanks to SMARX, customers have the chance to save time and resources by using a compact solution that permits to reach scalable performances that perfectly fits the application requirements avoiding complexities on the carrier board.

Smarter system designs are made possible, following the trends in functionalities and interfaces of the new, state-of-the-art embedded products. SMARX offers great computational power, thanks to the rich set of peripherals, the Scalable ARM Cortex-A9 together with a large set of high-speed I/Os.
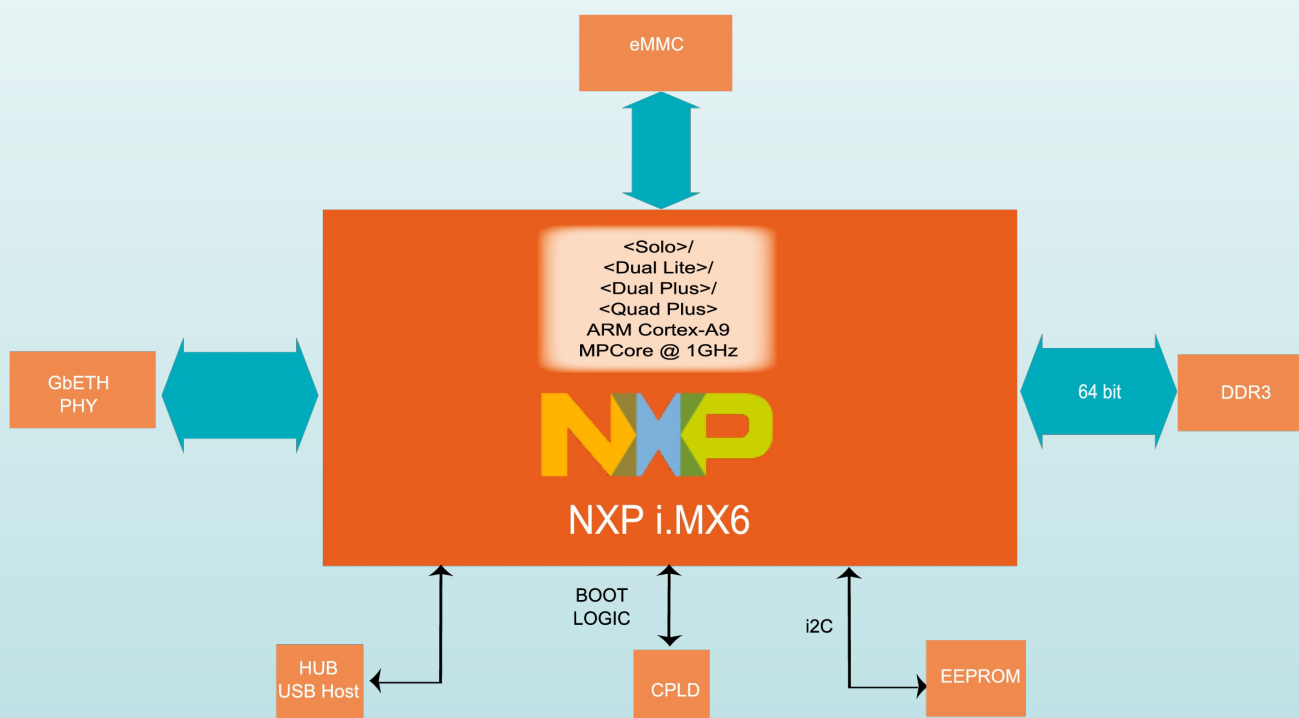
SMARX enables designers to create smart products suitable for harsh mechanical and thermal environments, allowing for the development of high computing and reliable solutions.

Thanks to compliance with standard SMARC and the SW flexibility provided by DAVE Embedded Systems' the SMARX SoM is the perfect solution that permits to plug and play onto existing applications.

DAVE Embedded Systems has a deep knowledge on SW legacy porting and on new technologies like Yocto Root File Systems, Android O.S., QT graphic libraries, IEC-61131 language, etc enabling customer in a real great experience on moving from old platform into this new generation solutions.

Thanks to the tight integration between the ARM Core-based processing system, designers are able to share the applications through the multicore platform and/or to divide the task on different cores in order to match with specific application requirements (thanks to AMP it is possible to create applications where RTOS and Linux work together on different cores).

SMARX is suitable for high volume applications where the price/quality ratio is important such as Medical Automation, portable solutions, Human Machine Interfaces and Industrial Automation.

CPU	NXP i.MX6 S/DL/D/Q//DP/QP ARM Cortex A9 MPCore @ up to 1.2 GHz
Supervisor	On-board power supply supervision and power sequencer Watchdog and RTC

Memory

Cache	L1: 32Kbyte instruction, 32Kbyte data L2: Unified data/instruction, 1 MByte
SDRAM	Up to 2GB DDR3, x64 data bus width @ 533 MHz **
EEPRON	32 Kbit I2C
NAND	All sizes, on request

Interfaces (full-spec models) *

LAN	Ethernet 10/100/1000 Mbps (PHY on board)**
UART	up to 4x UART ports 4 wires up to 1x UART ports 8 wires
USB	1x 2.0 OTG port (PHY on board) 2x 2.0 Host port (PHY on board)
CAN	2x CAN
SDIO	1x SDIO/MMC 4bit 2x eMMC 8bit
Expansion Bus	1x PCIe 2.0, 5 Gbps
SATA	1x SATA interface
Audio	up to 3x I²S / SSI / AC97
Video Output	1x RGB Parallel port 24 bit 1x LVDS outputs 1x HDMI H264 decoder engine up to 1080p60
Video Input	1x MIPI CSI port H264 encoder engine up to 1080p30
Debug	JTAG IEEE 1149.1 Test Access Port
Other	up to 4x I2C channels up to 2x SPI channels GPIOs with interrupt capabilities

Mechanical

Connectors	MxM 314 pin
Size	82mm x 50mm
Temperature	Commercial (0°C / +70°C) temperature range Industrial (-40°C / +85°C) temperature range

PSU

Input	5.0 V +/- 5%, on-board voltage regulation

Software

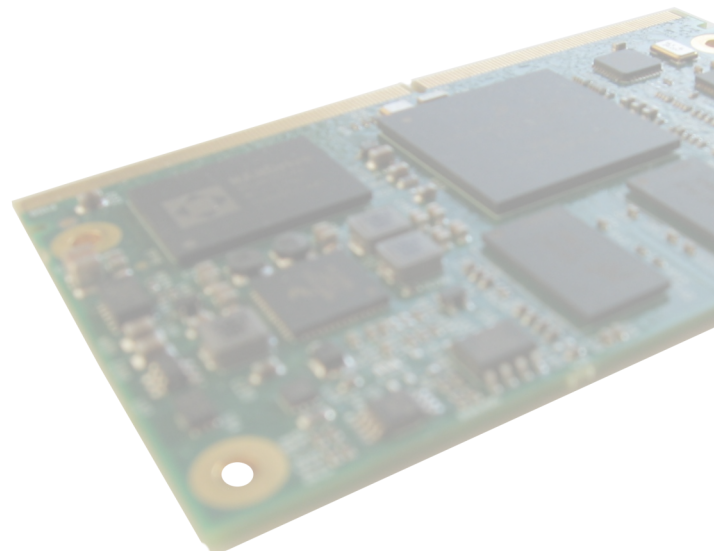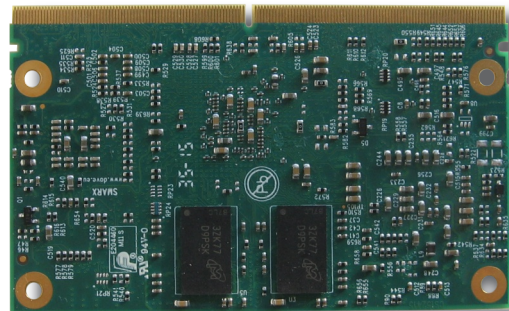|	
Bootloader	U-Boot
Multitasking	Linux 3.x.x with Yocto BSP

Evaluation Kit

The AXEL LITE evaluation kit is available in a developement kit that includes a SOM, a carrier board and all accessories required for immediate start-up.

*: interface availability depends on pin multiplexing.
Please contact your local FAE.

**: Gb ETH and 4GB DDR3 available on request

DAVe
Embedded Systems

DBR1604R2