![DAVe Embedded Systems logo]

AXEL LITE

FREESCALE i.MX6 S/D/Q
CPU MODULE

- Unmatched performances thanks to S/D/Q ARM Cortex A9 MPCore @ up to 1.2 GHz
- All memories you need on-board
- Boot from NOR for safe applications
- Enabling massive computing applications thanks to wide range DDR3 RAM memory up to 2GB (4GB OPT)
- Single 3V3 Power Supply
- Reduced carrier complexity: SDIO, dual CAN, USB, Ethernet 10/100 Mbps (Gb ETH OPT), GPIOs
- Multiple video outputs available
- H264 Video encoding and decoding
- Multiple video inputs available

freescale semiconductor

AXEL LITE is the new top-class Single - Dual - Quad Core ARM Cortex-A9 CPU module by DAVE Embedded Systems, based on the recent Freescale i.MX6 application processor. Thanks to AXEL LITE, 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.

The use of this processor enables extensive system-level differentiation of new applications in many industry fields, where high-performance and extremely compact form factor (67,5 mm x 43 mm) are key factors. Smarter system designs are made possible, following the trends in functionalities and interfaces of the new, state-of-the-art embedded products.
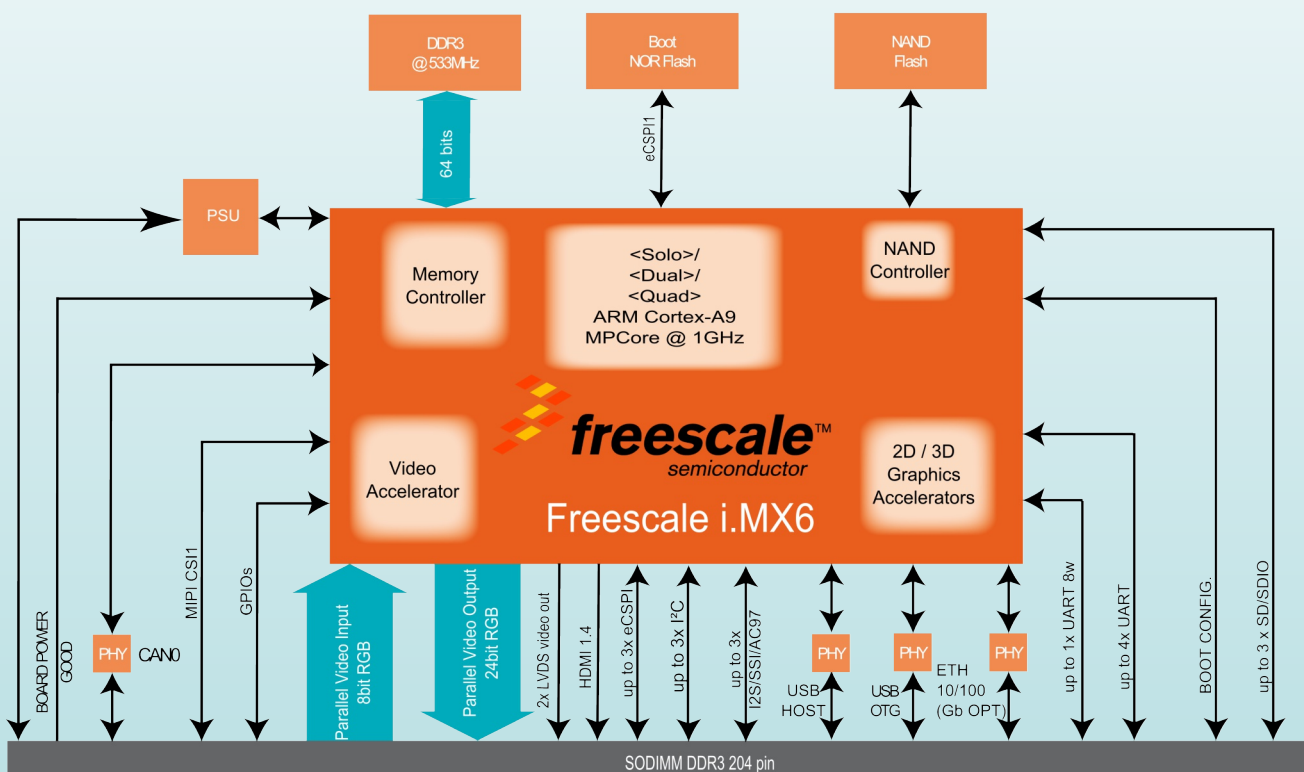
AXEL LITE offers great computational power, thanks to the rich set of peripherals, the Scalable ARM Cortex-A9 together with a large set of high-speed I/Os.

AXEL LITE 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 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).

AXEL LITE is designed in order to keep full compatibility with the LITE Line CPU modules, for designs where quality and reliability are important factors.

AXEL LITE is suitable for high volume applications where the price/quality ratio is important such as Home Automation, portable solutions, Human Machine Interfaces and Industrial Automation.
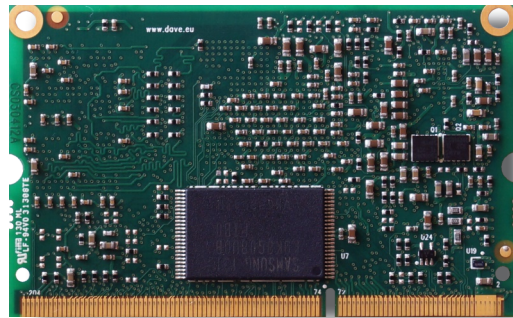
CPU	Freescale i.MX6 S/D/Q ARM Cortex A9 MPCore @ up to 1.2 GHz
Supervisor	On-board power supply supervision and power sequencer Watchdog and RTC

Memory

Cache	L1: 32Kbyte instruction, 32Kbyte data L2: Unified data/instruction, 1 MByte
SDRAM	Up to 2GB DDR3, x64 data bus width @ 533 MHz **
NOR	Bootable SPI NOR 16, 32, 64 MB
NAND	All sizes, on request

Interfaces (full-spec models) *

LAN	Ethernet 10/100 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) 1x 2.0 Host port (PHY on board)
CAN	2x CAN (1x PHY on board)
SDIO	up to 3x SDIO/MMC
Expansion Bus	PCIe 2.0, 5 Gbps
Audio	up to 3x I²S / SSI / AC97
Video Output	1x RGB Parallel port 16/24 bit 1x LVDS outputs 1x HDMI H264 decoder engine up to 1080p60
Video Input	1x RGB Parallel port 8 bit 1x MIPI CSI port H264 encoder engine up to 1080p30
Debug	JTAG IEEE 1149.1 Test Access Port
Other	up to 3x I2C channels up to 3x SPI channels GPIOs with interrupt capabilities 8x8 keypad

Mechanical

Connectors	SODIMM 204 pin
Size	67.5mm x 43mm
Temperature	Commercial (0°C / +70°C) temperature range Industrial (-40°C / +85°C) temperature range

PSU

Input	Single 3.3V, on-board voltage regulation

Software

Bootloader	U-Boot
Multitasking	Linux 3.x.x

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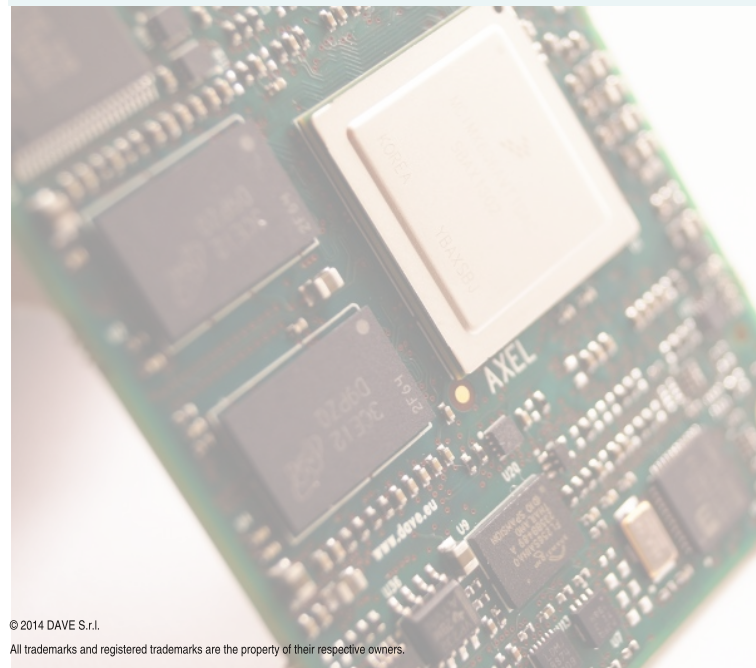
*: interface availability depends on pin multiplexing.
Please contact your local FAE.

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

Product code configurator *

Family	Processor	NOR flash	DDR3 RAM	NAND flash	Temp. range
DXL	A: i.MX6 Solo - 800M	0: No NOR	4: 4GB	0: No NAND	I: -40 / +85°C
	B: i.MX6 Solo - 1GHz	4: 16MB	2: 2GB	7: 128MB	Industrial temp.
	D: i.MX6 Dual - 800M	5: 32MB	1: 1GB	8: 256MB	C: 0 / 70°C
	E: i.MX6 Dual - 1GHz	6: 64MB	9: 512MB	9: 512MB	Commercial temp.
	G: i.MX6 Quad - 800M			1: 1GB	
	H: i.MX6 Quad - 1GHz			2: 2GB	
	I: i.MX6 Quad - 1.2GHz			4: 4GB	

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