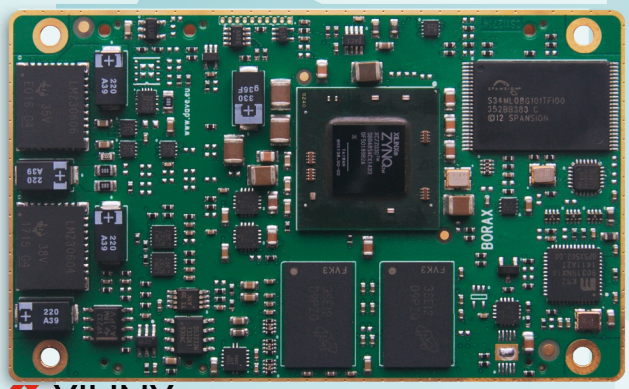
ULTRA LINE

BORA Xpress

XILINX ZYNQ XC7Z015/XC7Z030 CPU MODULE

- Unmatched performance thanks to dual ARM Cortex-A9 @ up to 1GHz
- SERDES: Xpress lanes up to 6.25 Gbps
- All memories you need: on-board NOR and NAND Flash
- Enabling smarter system thanks to Artix-7 or Kintex-7 FPGA integrated on chip
- FPGA banks wide range PSU input from 1.2V to 3.3V
- Highest security and reliability: internal voltage monitoring and power good enable
- Reduced carrier complexity: dual CAN, USB, Ethernet GB and native 3.3V I/O
- Easy to fit thanks to its small form factor
- Accurate timing application thanks to on-board 5ppm RTC
- Pin2Pin Compatibility with BORA SOM based on Zynq XC7Z010/XC7Z020



BORA Xpress is the new top-class Dual Cortex-A9 + FPGA CPU module by DAVE Embedded Systems, based on the recent Xilinx Zynq XC7Z015/XC7Z030 application processor.

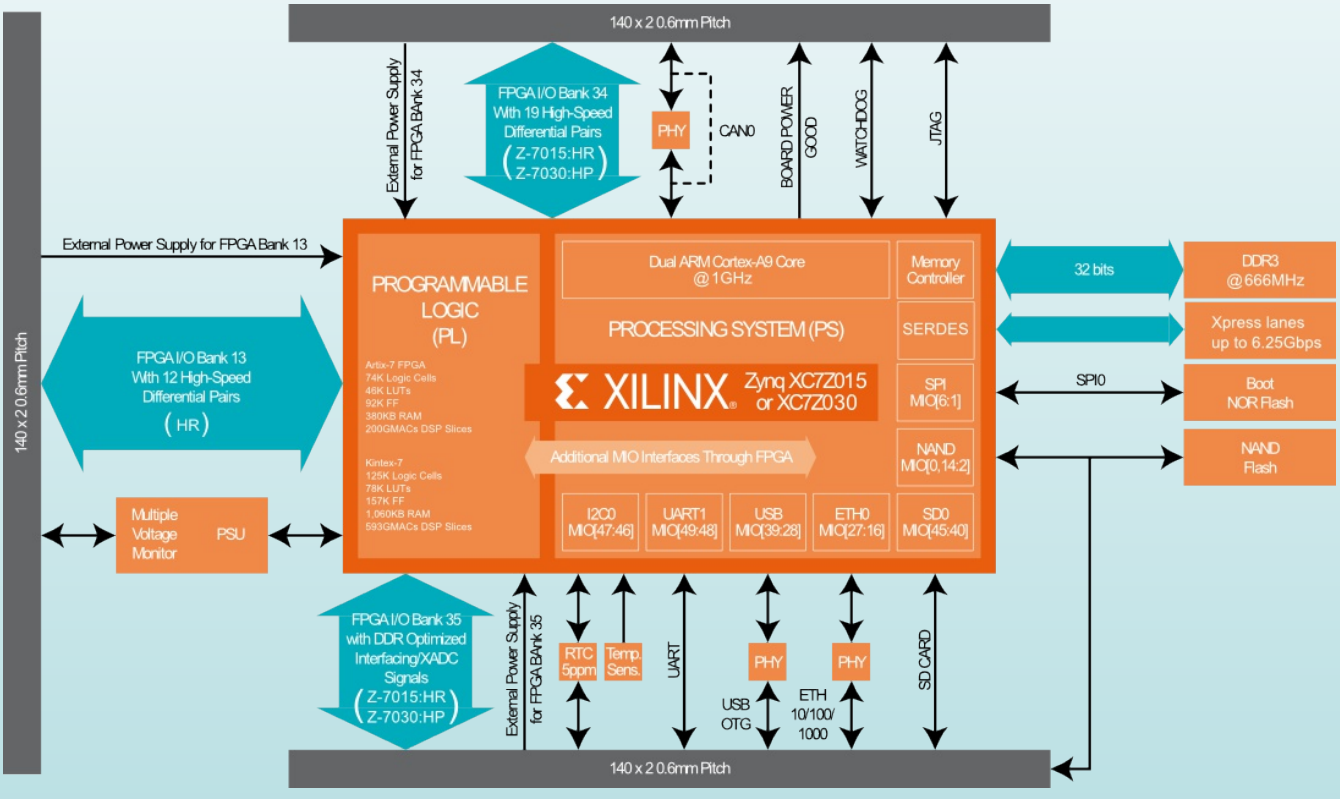
Thanks to BORA Xpress, customers are going to save time and resources by using a compact solution that includes both a CPU and an FPGA, avoiding complexities on the carrier PCB.
The use of this processor enables extensive system-level differentiation of new applications in many industry fields, where high-perfomance and extremely compact form factor (85mm x 50mm) 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.

BORA Xpress offers great computational power, thanks to the rich set of peripherals, the Dual Cortex-A9 and the Artix-7 or Kintex-7 FPGA together with a large set of high-speed I/Os (up to 6.25 Gbps).

BORA Xpress enables designers to create rugged products suitable for harsh mechanical and thermal environments, allowing for the development of the most advanced and robust products.
Thanks to the tight integration between the ARM-based processing system and the on-chip programmable logic, designers are free to add virtually any peripheral or create custom accelerators that extend system performance and better match specific application requirements.

BORA Xpress is designed and manufactured according to DAVE Embedded Systems' ULTRA Line specifications, in order to guarantee premium quality and technical value for customers who require top performances and flexibility.

BORA Xpress is suitable for high-end applications such as medical instrumentation, advanced communication systems, critical real-time operations and safety applications.



CPU

Xilinx Dual ARM Cortex-A9 ZYNQ XC7Z015/XC7Z030 @ up to 1GHz

Supervisor

On-board power supply supervision and power sequencer
Watchdog and RTC

Memory

Cache	32Kbyte instruction, 32Kbyte data, 512Kbyte L2 for each core
SDRAM	Up to 1GB DDR3 @533MHz
NOR	Bootable SPI NOR 8, 16 MB
NAND	All sizes, on request

Interfaces (full-spec models) *

LAN	Fast Ethernet 10/100/1000 Mbps Additional RMII interface
UART	up to 2x UART ports
USB	up to 2 x 2.0 OTG ports
CAN	up to 2 x CAN
Debug	JTAG IEEE 1149.1 Test Access Port CoreSight™ and Program Trace Macrocell (PTM)
Other	PC Card: 2 x SD/SDIO 2.0/MMC 3.31 compliant controllers up to 2 x I2C channels up to 2 x SPI channels GPIO available

FPGA

Model	Artix-7 (Z-7015)	Kintex-7 (Z-7030)
Logic Cells	74K	125K
LUTs	46K	78K
Flip Flops	92K	157K
RAM	380KB	1,060KB
DSP Slices	160	400
Differential Pairs	Up to 4 PCI Express gen2	

Mechanical

Connectors	3 x 140 pin 0.6mm pitch
Size	85mm x 50mm
Temperature	Commercial (0°C / +70°C) Industrial (-40°C / +85°C)

PSU

Input	3.3V, on-board voltage regulation
FPGA banks	PSU can be provided externally

Software

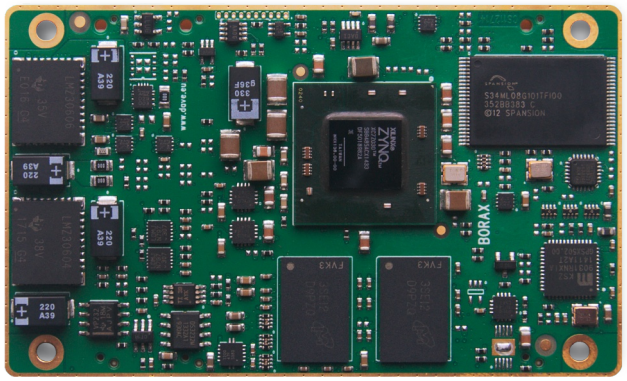
Bootloader	U-Boot
Multitasking	Linux 3.x.x

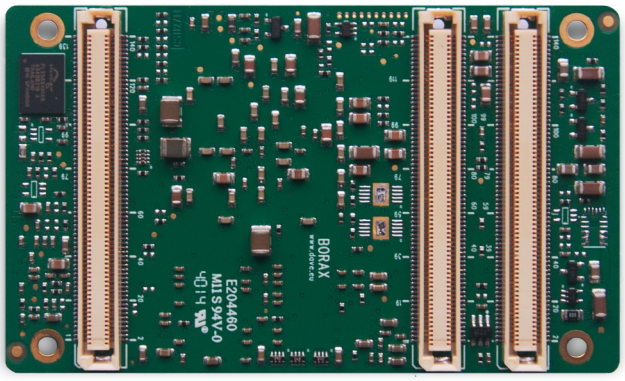
Evaluation Kit

The BORA Xpress 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.

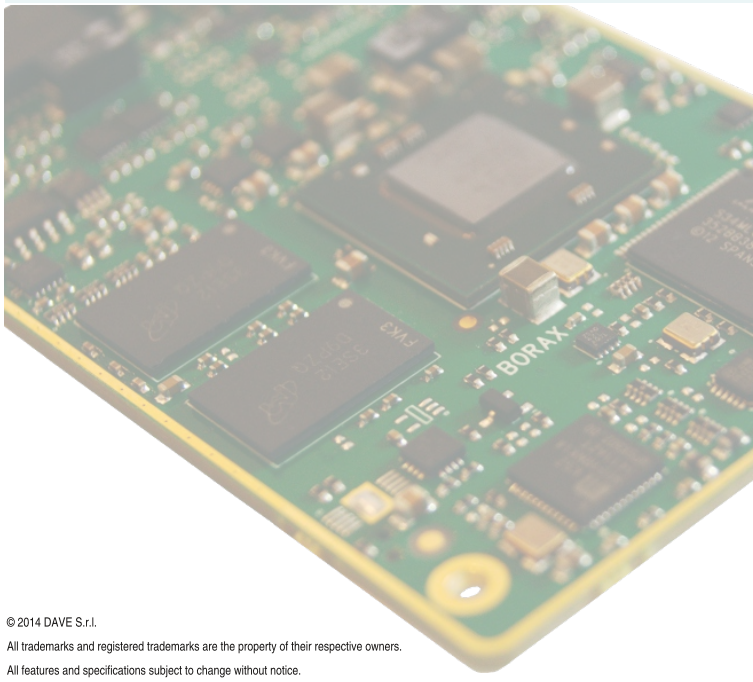
**: referred to chip junction temperature. The range depends on real case conditions. Please contact your local FAE.





Product code configurator *

Family	*Processor - Speed grade*	*NOR flash*	*DDR3 RAM*	*NAND flash*	*BOOT*	*Temp. range* **
DBX	A = XC7Z015-1 B = XC7Z015-2 C = XC7Z015-3 D = XC7Z030-1 E = XC7Z030-2 F = XC7Z030-3	0: 0MB 4: 16MB	1= 1GB 9= 512MB	0 = 0MB 1 = 1024MB 7 = 128MB 8 = 256MB 9 = 512MB	0=Nor Boot (SPI) 1=SD/NAN D Boot	C: Commercial temp. 0 / +70°C I: Industrial temp. -40 / +85°C



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