

ARM module comparison table

	DIDO	BORA	AXEL ULTRA	BORA Xpress	NAON	AXEL ESATTA	MAYA	DIVA	AXEL LITE
Year (Longevity)	2013 (2025)	2013 (2025)	2013 (2025)	2014 (2026)	2011 (2023)	2013 (2025)	2012 (2024)	2013 (2025)	2014 (2026)
CPU	Texas Instruments Cortex-A8 DM8148	Xilinx Zynq Cortex-A9 XC7Z0x	Freescale Cortex-A9 i.MX6	Xilinx Zynq Cortex-A9 XC7Z0x	Texas Instruments Cortex-A8 DM8148	Freescale Cortex-A9 i.MX6	Texas Instruments Cortex-A8 AM387x	Texas Instruments Cortex-A8 AM335x	Freescale Cortex-A9 i.MX6
Core / Speed	Single up to 1GHz	Dual up to 800Mhz	Single/Dual/Quad up to 1GHz	Dual up to 1GHz	Single up to 1GHz	Single/Dual/Quad up to 1GHz	Single up to 600MHz	Single up to 1GHz	Single/Dual/Quad up to 1GHz
Cache memory	32KB instructions 32KB data 512KB Level 2	32KB instructions 32KB data 512KB L2 for core	32KB instructions 32KB data per core 1MB Level 2	32KB instructions 32KB data 512KB Level 2	32KB instructions 32KB data 512KB Level 2	32KB instructions 32KB data 1MB Level 2	32KB instructions 32KB data 512KB Level 2	32KB instructions 32KB data 512KB Level 2	32KB instructions 32KB data per core 1MB Level 2
SRAM	128 Kbyte	256 Kbyte	128 Kbyte	256 Kbyte	128 Kbyte	128 Kbyte	128 Kbyte	64 Kbyte	128 Kbyte
DSP	YES up to 750MHz C674x	NO	NO	NO	YES up to 750MHz C674x	NO	NO	NO	NO
FPGA	NO	YES Xilinx Artix-7	NO	YES Xilinx Artix-7, Kintex-7	NO	NO	NO	NO	NO
HW acceleration	NEON - SIMD PowerVR SGX530 HDVICP, HDVPSS OpenGL - OpenVG	NEON-SIMD	TBD	NEON-SIMD	NEON - SIMD PowerVR SGX530 HDVICP, HDVPSS OpenGL - OpenVG	TBD	NEON - SIMD PowerVR SGX530 HDVPSS OpenGL - OpenVG	NEON - SIMD PowerVR SGX530 OpenGL - OpenVG Crypto engine	TBD
PRU Programmable Real Time Unit	NO	NO	NO	NO	NO	NO	NO	YES 2xPRU-ICSS	NO
SDRAM	DDR3 up to 2GB	DDR3 up to 1GB	up to 4GB DDR3	DDR3 up to 1GB	DDR2 up to 512MB	DDR3 up to 4GB	DDR2 up to 512MB	DDR3 up to 512MB	DDR3 up to 2GB (4GB optional)
Flash NOR	NOR SPI up to 32MB	NOR SPI up to 16MB	NOR SPI up to 64MB	NOR SPI up to 16MB	NOR SPI up to 128MB	NOR SPI up to 64MB	NO	NOR SPI up to 64MB	NOR SPI up to 64MB
Flash NAND	All sizes	All sizes	All sizes	All sizes	All sizes	All sizes	All sizes	All sizes	All sizes
EEPROM	YES	YES	YES	YES	YES	YES	NO	YES	YES
LAN	1x10/100Mbps 1xRMII Interface	1x10/100/1000Mbps GMII/MII Interface	10/100/1000Mbps	1x10/100/1000Mbps 1xRMII Interface	1x10/100Mbps 1xRMII Interface	10/100/1000 Mbps	1x10/100Mbps 1xRMII Interface	1x10/100Mbps 1xMII/RMII/RGMII	1x10/100Mbps
UART	3xUART ports (1 x full, 2 x 4-wires)	up to 2xUART ports	4xUART ports 4-wires 1xUART ports 8-wires	up to 2xUART ports	3xUART ports (1 x full, 2 x 4 wires)	4xUART ports 4-wires 1xUART ports 8-wires	3xUART ports (1 x full, 2 x 4 wires)	up to 6xUART ports	up to 4xUART ports 4-w., 1xUART ports 8-w.
USB	2x2.0 OTG ports with PHY	up to 2 x 2.0 OTG ports	1x2.0 OTG port 1x2.0 Host port	up to 2 x 2.0 OTG ports	2x2.0 Host ports 1xOTG port	1x2.0 OTG port 1x2.0 Host port	2x2.0 OTG ports with PHY	up to 2 x 2.0 OTG ports	1x2.0 OTG port 1x2.0 Host port
CAN	2xCAN2.0 A/B protocol	up to 2xCAN	2xCAN2.0 version 2 part B	up to 2xCAN	2xCAN2.0 A/B protocol	2xCAN2.0 A/B protocol	2xCAN2.0 A/B protocol	2xCAN2.0 A/B protocol	CAN controller (version 2 part B)
SPI	3 channels	2 channels	5 channels	2 channels	3 channels	5 channels	2 channels	2 channels	2 channels
I2C	2 channels	2 channels	3 channels	2 channels	2 channels	3 channels	2 channels	3 channels	1 channels
PCIe	YES	NO	YES	up to 4 gen2	NO	YES	NO	NO	YES (optional)
ATA/SATA	YES 1xSATA 3.0Gbps	NO	YES	NO	YES 1xSATA 3.0Gbps	NO	NO	NO	NO
SD/MMC	2xSD/MMC	up to 2xSD/MMC	4xSD/MMC	up to 2xSD/MMC	2xSD/MMC	3xSD/MMC	2xSD/MMC	up to 3xSD/MMC	2xSD/MMC
GPIOs	YES, 3V3	YES EXT. Voltage	YES EXT. Voltage	YES EXT. Voltage	YES, 3V3	YES EXT. Voltage	YES, 3V3	YES, 3V3	YES EXT. Voltage
Product Line	ULTRA				ESATTA		LITE		

DMD0513R5

CPU

Memories

Interfaces

ARM module comparison table

	DIDO	BORA	AXEL ULTRA	BORA Xpress	NAON	AXEL ESATTA	MAYA	DIVA	AXEL LITE	
Interfaces	RTC	YES	YES 5ppm	YES 5ppm	YES 5ppm	YES 5ppm	YES	YES	YES 5ppm	
	BUS	GMPC 16bit BUS	GMPC 16bit BUS	GMPC 16bit BUS	GMPC 16bit BUS	GMPC 16bit BUS	8bit data 4bit address	GMPC 16bit BUS	GMPC 16bit BUS	
	Debug port	JTAG IEEE EMU port	JTAG IEEE	JTAG IEEE EMT port	JTAG IEEE	JTAG IEEE EMU port	JTAG IEEE ETM port	JTAG IEEE EMU port	JTAG IEEE EMU/ETB port	
	Video Resolution	16/24/30bit HD display	NO	16/24bit HD display	NO	16/24/30bit HD display	16/24bit HD display	16/24bit HD display	1x up to 2048x2048@24bit	16/24 bit HD display
	Type	HDMI 1.3,TFT/RGB	NO	1xHDMI 1xTFT/RGB 2xLVDS 1xMIPI DSI	NO	HDMI 1.3,TFT/RGB	1xTFT/RGB 1xLVDS	HDMI 1.3,TFT/RGB	TFT/RGB	1xHDMI 1xTFT/RGB 2xLVDS output port
	Touch Screen	YES resistive 4wires	NO	YES resistive 4wires	NO	YES resistive 4wires	YES resistive 4wires	YES resistive 4wires	YES resistive 4wires	NO
	TV out	YES	NO	NO	NO	YES	NO	YES	NO	NO
	Video input	24-bit video in port 16-bit camera interface	NO	1x20bit video input 1x MIPI CSI port	NO	up to 2x24bit	1x20bit	1x16bit	NO	8bit video input 1xMIPI CSI port
	Audio Interface	1 x McASP	N.A.	3xI2S/SSI/AC97	N.A.	1x McASP	3xI2S/SSI/AC97	1x McASP	up to 2x McASP	2 x I2S
	Other	YES Keypad	N.A.	N.A.	N.A.	YES Keypad	N.A.	YES Keypad	YES up to 8x12bit ADC	N.A.
Supervisor	YES 1V2, 2V5, ..	YES 1V2, 2V5, ..	YES 1V2, 2V5, ..	YES 1V2, 2V5, ..	YES 1V2, 2V5, ..	YES 1V2, 2V5, ..	YES 3V3	YES 3V3	YES 1V2, 2V5, ..	
PSU	3V3 <7W@100%	3V3 <7W@100%	3.1-4.5V, voltage regulation on board	3V3, voltage regulation on board	3V3 <5W@100%	3.1-4.5V, voltage regulation on board	3V3 <3W@100%	3.6-5.5V,voltage regulation on board	3V3 <7W@100%	
Mech	Connectors	2xHRS 140pin	3xHRS 140pin	3xHRS 140pin	3xHRS 140pin	2xHRS 140pin	2xHRS 140pin	SODIMM 204pin	SODIMM 204pin	SODIMM 204pin
	Size	70x65mm	70x50mm	85x50mm	85x50mm	70x50mm	85x50mm	67.5x40mm	67.5x38.3mm	67.5x45mm
	Temperature	Commercial (0/70) Industrial (-40/85)	Commercial (0/70) Industrial (-40/85)	Commercial (0/70) Industrial (-40/85)	Commercial (0/70) Industrial (-40/85)	Commercial (0/70) Industrial (-40/85)	Commercial (0/70) Industrial (-40/85)	Commercial (0/70) Industrial (-40/85)	Commercial (0/70) Industrial (-40/85)	Commercial (0/70) Industrial (-40/85)
Software	Bootloader	U-Boot	U-Boot	U-Boot	U-Boot	U-Boot	U-Boot	U-Boot	U-Boot	
	RTOS	VxWorks on demand	VxWorks on demand	XENOMAI, VxWorks on demand	VxWorks on demand	VxWorks on demand	XENOMAI, VxWorks on demand	VxWorks on demand	XENOMAI, VxWorks on demand	XENOMAI, VxWorks on demand
	O.S.	Linux 2.6.x WC7 on demand	Linux 3.x.x SOFT PLC WC7 on demand	Linux 3.x.x SOFT PLC ANDROID WC7 on demand	Linux 3.x.x WC7 on demand	Linux 2.6.x WC7 on demand	Linux 3.x.x SOFT PLC ANDROID WC7 on demand	Linux 2.6.x WC7 on demand	Linux 3.x.x SOFT PLC ANDROID WC7 on demand	Linux 3.x.x SOFT PLC ANDROID WC7 on demand
Product Line	ULTRA				ESATTA		LITE			