

DE25-Nano

Development and Education Board

Inherit the DE10-Nano, the new DE25-Nano FPGA board is a robust hardware platform built around the Altera® Agilex™ 5 E-series SoC FPGA. It is ideal for a wide range of applications, from educational use to embedded systems for gaming and edge AI devices.



* FPGA Board Comparison Table

Board Model (release date)	DE25-Nano (T.B.D)	DE25-Standard (2025/9)	DE23-Lite (2025/8)	Atum A3 Nano (2025/8)
FPGA Device	Agilex™ 5 E-series B SoC	Agilex™ 5 E-series D SoC	Agilex™ 3 C-series Z	Agilex™ 3 C-series Z
FPGA Part Number	A5EB013BB23BE4SR1	A5ED013BB32AE4SR1	A3CZ135BB18AE7S	A3CZ135BB18AE7S
Number of LEs	138,060	138,060	135,110	135,110
Internal RAM	8.43Mbit	8.43Mbit	6.89Mb(M20K)	6.89Mb(M20K)
Internal Flash(UFM)	—	—	—	—
MLAB	1.43Mbit	1.43Mbit	1.4Mb	1.4Mb
Multipliers 18x19	376	376	368	368
or FP32	188	188	184	184
or INT8(AI Tensor)	188x20	188x20	184x20	184x20
HPS processor ARM®	2x A55 + 2x A76	2x A55 + 2x A76	—	—
Transceiver	—	10G 4ch (HSMC)	—	—
External DRAM (FPGA)	128MB SDRAM(16bit)	64MB SDRAM(32bit)	64MB SDRAM(32bit)	64MB SDRAM(32bit)
External DRAM (FPGA)	1GB LPDDR4(32bit)	—	—	—
External DRAM (shared)	1GB LPDDR4(32bit)	1GB LPDDR4(32bit)	—	—
SD card slot	MicroSD (HPS)	MicroSD (HPS)	—	MicroSD
Configuration Flash	128Mb QSPI	128Mb QSPI	128Mb QSPI	128Mb QSPI
LCD	—	128x64	—	—
MIPI 2.5 D-PHY (22pin)	CSI/DSI 2lanes	CSI/DSI 2lanes	—	—
Video input	—	CVBS (ADV7180) RCA	—	HDMI (TFP410)
Video Output	HDMI (ADV7513)	HDMI (ADV7513)	HDMI (ADV7513)	—
Audio Digital Output	HDMI (ADV7513)	HDMI (ADV7513)	HDMI (ADV7513)	—
Audio Analog I/O	—	24bit codec (Mic,Line-I/O)	—	USB-UART
UART	USB-UART(HPS,FPGA)	USB-UART(HPS) CP2105	USB-UART	10/100/1G (DP83867CR)
Ethernet (RJ45)	10/100/1G (HPS)	10/100/1G (HPS)	—	—
IR port	—	Tx / Rx (HPS)	—	—
USB port	HS OTG-PHY Type-C	USB Host(HPS) Type-A x 2	—	—
HSMC expansion Bus	—	79single I/O + 4ch XCVR	—	36 I/O(3.3V)
2x20 GPIO	2 x 36 I/O (3.3V)	36 I/O (3.3V)	36 I/O(3.3V)	—
1x6 3.3V GPIO	—	2GPIO,I2C,3.3V	—	8 I/O(3.3V) x 2
2x6 TMD GPIO (PMOD)	—	—	—	—
A/D port	12bit 8ch (2x5 header)	12bit 8ch (2x5 header)	12bit 8ch (2x5 header)	—
Sensor	G (HPS)	G (HPS)	—	—
User LED	1(HPS) + 8(FPGA)	1(HPS) + 10(FPGA)	10	4
7-Seg LED	—	6 (FPGA)	6	—
Push SW	1(HPS) + 2(FPGA)	1(HPS) + 4(FPGA)	4	2
Slide SW	4 (FPGA)	10 (FPGA)	10	2
USB Blaster	USB Blaster III	USB Blaster III	USB Blaster III	USB Blaster III
Cooling	Active Fan control	Active Fan control	heat sink	heat sink
Power (5V)	5V DC-in	12V DC-in	5V DC-in or Type-C	5V DC-in
Board Size	107 x 69mm	166 x 133mm	98 x 75mm	85 x 70mm

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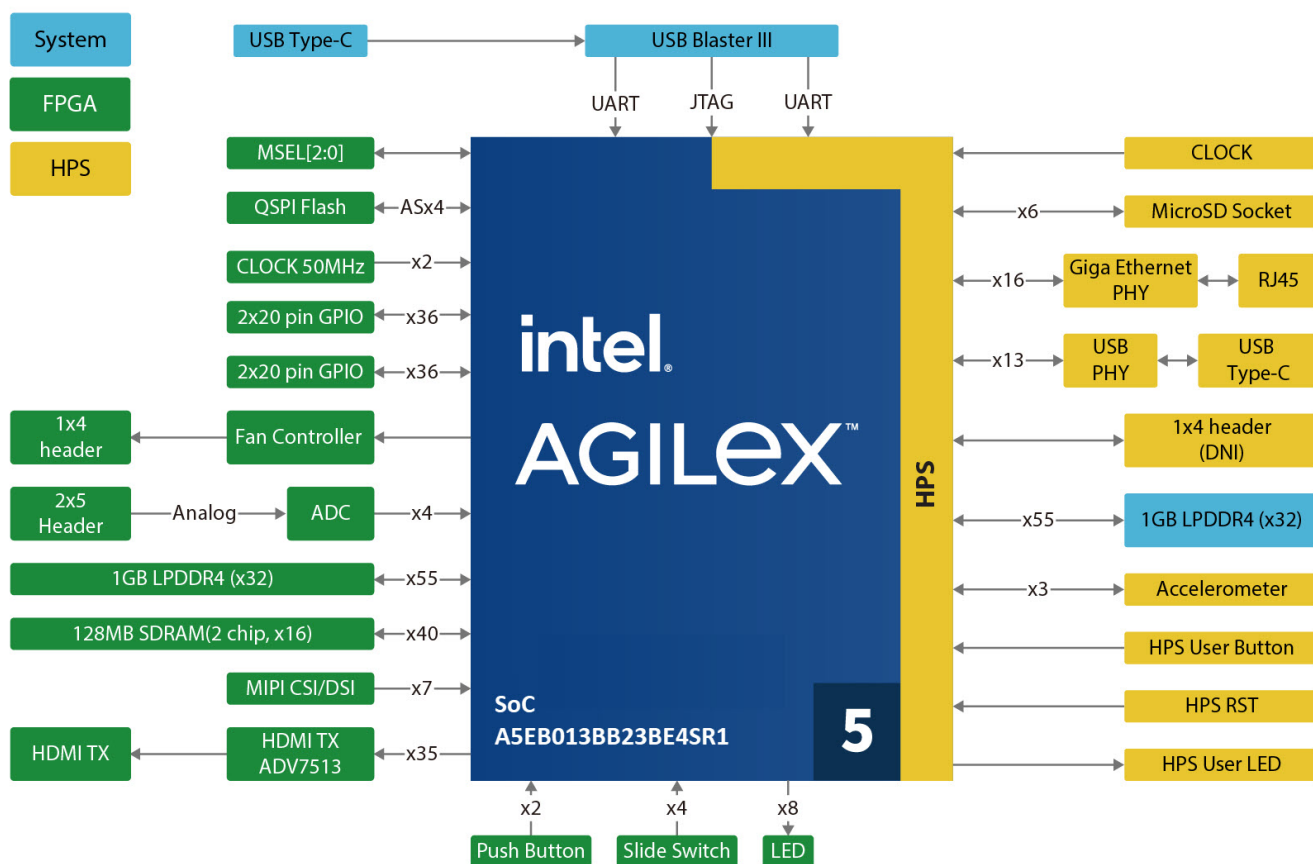
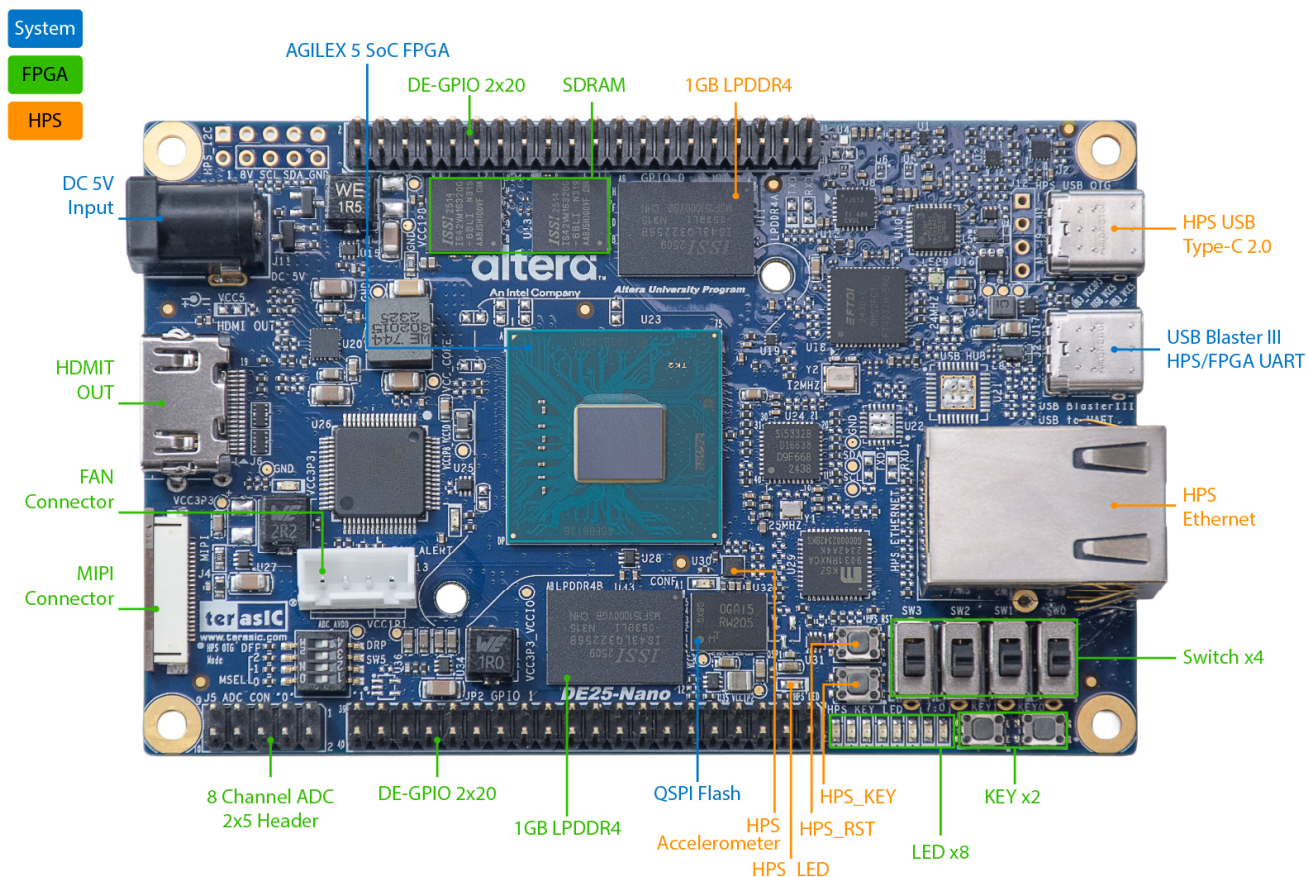
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