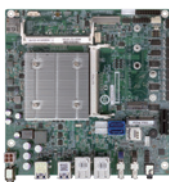
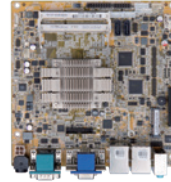


Mini-ITX Selection Guide

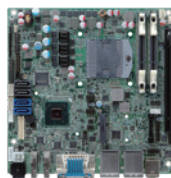
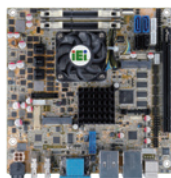
Model Name	KINO-DH310	tKINO-AL	gKINO-DMF	tKINO-ULT3	KINO-DCM236
CPU Socket	LGA1151	On Board	On Board	On Board	On Board
CPU Type	8th generation Intel® Core™ i7/ i5/i3 Pentium® and Celeron® processor	Intel® Atom™/Celeron®/ Pentium® on-board SoC	AMD G-series on board SoC Merlin Falcon	Intel® Core™ i7/i5/i3, Celeron® ULT processor	Intel® Xeon® E3, Core™ i3, Celeron® process
Chipset	Intel® H310	Intel® Atom™/Celeron®/ Pentium® on-board SoC	AMD G-series on board SoC Merlin Falcon	Intel® Core™ i7/i5/i3, Celeron® ULT processor	Intel® CM236
Memory	2 x 260-pin 2666/2400 MHz dual-channel DDR4 SDRAM SO-DIMMs (system Max. 64 GB)	2 x 204-pin 1866/1600 MHz single-channel DDR3L SO-DIMM (system max. 8 GB)	2 x SO-DIMM DDR4 2400MHz up to 64GB	2 x SO-DIMM DDR4 2133MHz, system maximum up to 32GB	2 x SO-DIMM DDR4 2133MHz up to 32GB with ECC support
Display Interface	Dual independent display 2 x HDMI 1 x iDP interface	Triple independent display 2 x DP++ 1 x eDP	Triple independent display 1 x HDMI 2.0 1 x HDMI 1.4 1 x DP++	Triple independent display 1 x HDMI/DP 1 x HDMI 1 x LVDS/eDP	Triple independent display 1 x HDMI 2.0 2 x HDMI 1.4 1 x LVDS
Ethernet	Dual LAN: RTL8111H	Dual LAN: RTL8111	Dual LAN: RTL8111GN	LAN1: Intel® I219LM LAN2: Intel® I211AT	LAN1: Intel® I219LM LAN2: Intel® I211
iRIS Remote Management Module	N/A				
I/O Interface	1 x KB/MS 1 x RS-422/485 3 x RS-232, 4 x USB 3.1 Gen 1 4 x USB 2.0	1 x PS/2 KB/MS 2 x RS-232/422/485 2 x USB 2.0 4 x RS-232 4 x USB 3.1 Gen 1	2 x RS-232/422/485 4 x RS-232 (2 support cctalk, TTL) 4 x USB 3.1 Gen 1 5 x USB 2.0	2 x RS-232/422/485 4 x RS-232 4 x USB 2.0 4 x USB 3.1 Gen 1	1 x KB/MS 2 x RS-232/422/485 4 x RS-232 4 x USB 2.0 4 x USB 3.1 Gen 1
Storage Interface	2 x SATA 6G/s	2 x SATA 6Gb/s with 12/5V SATA power connector 1 x M.2 (B Key) (2242)(SATA port1 + USB 2.0 signal) 1 x Micro SD slot (Optional)	2 x SATA 6Gb/s with 5V/12V SATA power connector 1 x MicroSD slot 1 x M.2 (B key) (SATA signal)	2 x SATA 6Gb/s with 5V SATA power connector 1 x eMMC5.0 (up to 32G, optional)	4 x SATA6Gb/s 1 x mSATA
Audio	Realtek ALC662 HD codec	Realtek ALC269 HD Audio codec	Realtek ALC662 HD Audio Codec		
Digital I/O	8-bit digital I/O	8-bit programmable digital I/O			
Power Consumption	12V@11.32A (Intel® Core™ i7-8700 up to 4.60 GHz CPU with two 8GB 2666MHz DDR4 memory)	12V@2.58A (Intel® Pentium® N4200 CPU with two 8GB 1600MHz DDR3L memory)	12V@5.54A (AMD RX-421BD 2.1GHz CPU with 2400 MHz 16GB DDR4 memory)	12V@4.68A (Intel® Core™ i7-6600U up to 3.4GHz CPU with 16GB (8GB x 2) DDR4-2133 memory running in 3.2GHz)	12V@6.93A (Intel Xeon E3-1505M V5 2.8GHz CPU with 32 GB (two 16 GB) 2133 MHz DDR4 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Environment	Temperature Range: -20°C ~ 70°C (-4°F ~ 158°F) Relative Humidity: 5% ~ 95% non-condensing		Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing		
Expansion Slot	1 x PCIe x16 1 x M.2 M key (2280, Gen2 PCIe x2 only) 1 x M.2 A Key (2230, PCIe x1 & USB 2.0)	1 x PCIe x1 slot 1 x Full/Half-size PCIe Mini card slot (w/ SIM holder)	1 x PCIe x8 slot 1 x Full-size PCIe Mini card slot 1 x MicroSD slot	1 x PCIe x4 slot 1 x Full-size PCIe Mini card slot (support mSATA, colay with SATA2) 1 x Full-size PCIe Mini card slot (with SIM card slot)	1 x PCIe x16 slot 1 x Full-size PCIe Mini card slot (support mSATA) 1 x Half-size PCIe Mini card slot 1 x M.2 2230 (A key)
CPU Cooler	CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	Heatsink	Cooler	Heatsink	Heatsink

Mini-ITX Selection Guide



Model Name	KINO-DQM170	KINO-AQ170	tKINO-BW	KINO-DBT	KINO-DH810
CPU Socket	On board	LGA1151	On board	On board	LGA1150
CPU Type	6th generation Intel® Core™ i7/ i5/i3 and Celeron® processor	6th/7th generation Intel® Core™ i7/i5/i3, Pentium® and Celeron® processor	Intel® Pentium®/Celeron® on board SoC	Intel® Atom™/Celeron® on board SoC	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® QM170	Intel® Q170	Intel® Pentium®/Celeron® on-board SoC	Intel® Atom™/Celeron® on-board SoC	Intel® H81
Memory	Two 260-pin 2133 MHz dual-channel DDR4 SDRAM SO-DIMMs (system Max. 64 GB)	Two 260-pin 2133 MHz dual-channel DDR4 SDRAM SO-DIMMs (system Max. 64 GB)	Two 204-pin 1600/1333 MHz dual-channel DDR3L SDRAM SO-DIMMs (support up to 8 GB)	Two 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM support up to 8 GB (J1900, N2930, E3845, E3827, E3826) One 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM supports up to 4 GB (N2807, E3825, E3815)	Two 204-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 16 GB)
Display Interface	Triple independent display supported 1 x HDMI 2.0 2 x HDMI 1.4 1 x LVDS	Triple independent display supported 1 x HDMI 2.0 1 x HDMI/DP 1 x VGA 1 x iDP interface	Triple independent display supported 1 x HDMI/DP 1 x VGA 1 x 18/24-bit dual-channel LVDS	Dual independent display supported 1 x VGA 1 x DVI-D	Dual display supported 1 x VGA 1 x DVI-D 1 x iDP interface
Ethernet	LAN1: Intel® I219-LM with Intel® AMT 11.0 support LAN2: Intel® I211 PCIe controller	LAN1: Intel® I211 PCIe controller LAN2: Intel® I219LM with intel AMT 11.0 support	Dual LAN: Realtek RTL8111G PCIe controller	Dual LAN: Realtek RTL8111G PCIe controller	Dual LAN: Intel® I211-AT PCIe controller
iRIS Remote Management Module	N/A				
I/O Interface	1 x KB/MS 2 x RS-232/422/485 4 x RS-232 4 x USB 2.0 4 x USB 3.1 Gen 1	1 x KB/MS 2 x RS-232/422/485 4 x RS-232 4 x USB 3.1 Gen 1 6 x USB 2.0	1 x KB/MS 2 x RS-232/422/485 2 x USB 3.1 Gen 1 4 x RS-232 4 x USB 2.0	1 x KB/MS 1 x RS-422/485 2 x USB 3.1 Gen 1 4 x USB 2.0 5 x RS-232	1 x PS/2 for KB/MS 1 x RS-422/485 2 x USB 3.1 Gen 1 5 x RS-232 6 x USB 2.0
Storage Interface	4 x SATA 6Gb/s (RAID 0/1/5/10 supported)	4 x SATA 6Gb/s (RAID 0/1/5/10 supported)	2 x SATA 6Gb/s 1 x mSATA 1 x Micro SD slot	2 x SATA 3Gb/s 1 x Micro SD slot (E38xx sku only)	2 x SATA 6Gb/s
Audio	Realtek ALC662 HD Audio codec				
Digital I/O	8-bit digital I/O				8-bit programmable digital I/O
Power Consumption	12V@5.08A (Intel® Core™ i7-6820EQ, 3.5GHz CPU with 16 GB (two 8 GB) 2133 MHz DDR4 memory)	3.3V@1.62A, 5V@3.54A, 12V@8.17A, 5VSB@3.6A (Intel® Core™ i7 6700K 4.0 GHz CPU with 16 GB (two 8 GB) 2133 MHz DDR4 memory)	12V@1.61A (Intel® Celeron® N3710 CPU with two 4 GB 1600 MHz DDR3L memory)	12V@1.64A (Intel® Celeron® J1900 CPU with 4 GB 1333 MHz DDR3L memory)	12V@6.03A (Intel® Core™ i7-4770K 3.90 GHz CPU with two 1333 MHz 4 GB DDR3 memory)
Watchdog Timer	Software programmable supports 1~255 sec. system reset				
Operation Environment	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing				
Expansion Slot	1 x PCIe x16 slot 1 x Full-size PCIe Mini card slot (support mSATA) 1 x Half-size PCIe Mini card slot 1 x M.2 2230 (A key)	1 x PCIe x8 slot 1 x Full-size PCIe Mini card Slot (support mSATA)	1 x PCIe x1 slot 1 x PCIe Mini card slot	1 x Full-size PCIe Mini card slot (support mSATA) 1 x PCIe x4 slot (with PCIe x1 signal)	1 x Full-size PCIe Mini card slot 1 x PCIe x1 slot
CPU Cooler	Heatsink	CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	Heatsink	Heatsink	CF-115XA-R10 CF-115XE-R10

Mini-ITX Selection Guide



Model Name	eKINO-BT	KINO-DQM871-1	KINO-QM770	KINO-DH610	KINO-AH612
CPU Socket	On board	On Board	Socket G2	Socket H2	Socket H2
CPU Type	Intel® Atom™/Celeron® on-board SoC	Intel® Core™ i7/i5/i3 Mobile processor	Intel® Mobile processor	Intel® Core™ i3, Pentium®, Celeron® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® Atom™/Celeron® on-board SoC	Intel® QM87	Intel® QM77	Intel® H61	Intel® H61
Memory	Two 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM support up to 8 GB (J1900, N2930, E3845, E3827, E3826) One 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM supports up to 4 GB (N2807, E3825, E3815)	2 x 204-pin, Max. 16 GB, 1333/1600 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max. 16 GB, 1066/1333/1600 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin 1066/1333 MHz dual-channel DDR3 SO-DIMMs (system max. 16 GB)	2 x 204-pin 1066/1333 MHz dual-channel DDR3 SO-DIMMs (system max. 16 GB)
Display Interface	Dual display supported 1 x VGA 2 x 18/24-bit dual-channel LVDS	Triple display supported 2 x HDMI 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x iDP interface	Triple display supported 2 x HDMI 1 x DVI-I 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 1 x VGA 1 x DVI-D
Ethernet	Dual LAN: Realtek RTL8111E PCIe controller	LAN1: Intel® I217LM with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller	LAN1: Intel® 82579 PHY with Intel® AMT 8.0 support LAN2: Intel® 82583V PCIe controller	LAN1: Realtek RTL8111E PCIe GbE controller with ASF 2.0 support LAN2: Realtek RTL8111E PCIe GbE controller	Dual LAN: Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
iRIS Remote Management Module	N/A	1 x iRIS-1010 slot	N/A		
I/O Interface	1 x PS/2 for KB/MS 1 x RS-422/485 2 x USB 3.1 Gen 1 4 x RS-232 4 x USB 2.0	1 x PS/2 for KB/MS 1 x RS-422/485 1 x SMBus 1 x TPM (2x10 pin) 4 x USB 3.1 Gen 1 5 x RS-232 10 x USB 2.0	1 x KB/MS 1 x RS-422/485 1 x SMBus 1 x TPM (2x10 pin) 2 x RS-232 4 x USB 2.0 4 x USB 3.1 Gen 1	1 x KB/MS 1 x RS-232 1 x RS-422/485 1 x TPM (2x10 pin) 10 x USB 2.0	1 x PS/2 for KB/MS 1 x RS-422/485 1 x TPM (2x10 pin) 5 x RS-232 8 x USB 2.0
Storage Interface	2 x SATA 3Gb/s	2 x SATA 6Gb/s 2 x SATA 3Gb/s 1 x mSATA	2 x SATA 6Gb/s 2 x SATA 3Gb/s	4 x SATA 3Gb/s	4 x SATA 3Gb/s
Audio	Realtek ALC662 HD Audio codec		Realtek ALC892 HD Audio codec	Realtek ALC662 HD Audio codec	
Digital I/O	8-bit programmable digital I/O				
Power Consumption	12V@1.55A (Intel® Celeron® J1900 CPU with two 8 GB 1333 MHz DDR3L memory)	12V@5.03A (2.0GHz Intel® Core™ i7 processor with two 1333 MHz 4 GB DDR3 memory)	12V@6.08A (2.3GHz Intel® Core™ i7-3610QE with two 1333 MHz 4 GB DDR3 memory running 3DMark06 burn in)	12V@5.07A (2.2GHz Intel® G620T with two 2GB DDR3 1066 MHz running 3DMark06 burn in) 12V@8.85A (2.8GHz Intel® Core™ i7-2600S with two 1066 MHz 2 GB DDR3 running 3DMark06 burn in)	5V@3.9A, 12V@0.36A, Vcore_12V@8.28A, 3.3V@1.24A, 5VSB@0.18A (3.4GHz Intel® Core™ i7-2600 with two 1333 MHz 2 GB DDR3)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Environment	Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing		Temperature Range: -10°C ~ 60°C (14°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing		
Expansion Slots	1 x Full-size PCIe Mini card slot 1 x PCIe x1 slot	1 x PCIe x16 slot 1 x Full-size PCIe Mini slot (support mSATA)	1 x PCIe x16 slot 1 x PCIe Mini card slot (support mSATA)	1 x PCI slot 1 x PCIe x1 slot	1 x PCIe x4 slot
CPU Cooler	Heatsink	XCF-479B-RS CF-989B-RS-R11	CF-989A-RS-R12	CF-115XA-R10 CF-1156C-R20 CF-1156D-R20 CF-115XE-R10	CF-115XA-R10 CF-1156C-R20 CF-1156D-R20 CF-115XE-R10