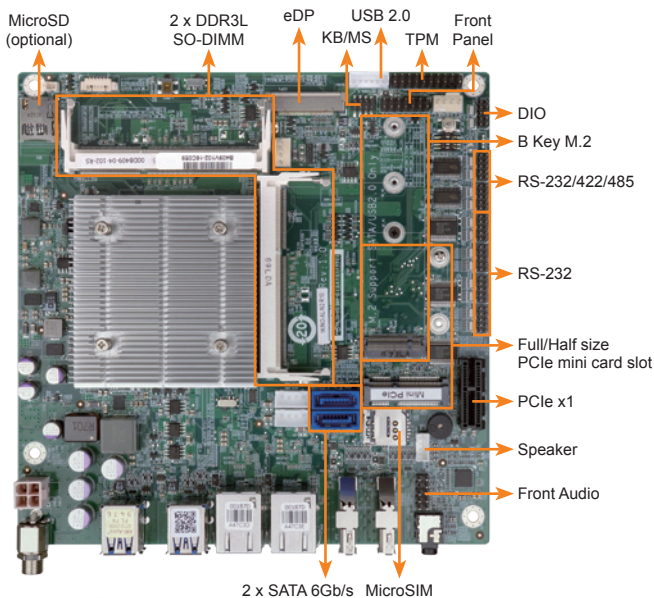


tKINO-AL

Thin Mini-ITX SBC supports Intel® 14nm Atom™, Pentium® or Celeron® on-board SoC with DP++, Dual PCIe GbE, USB 3.0, PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS



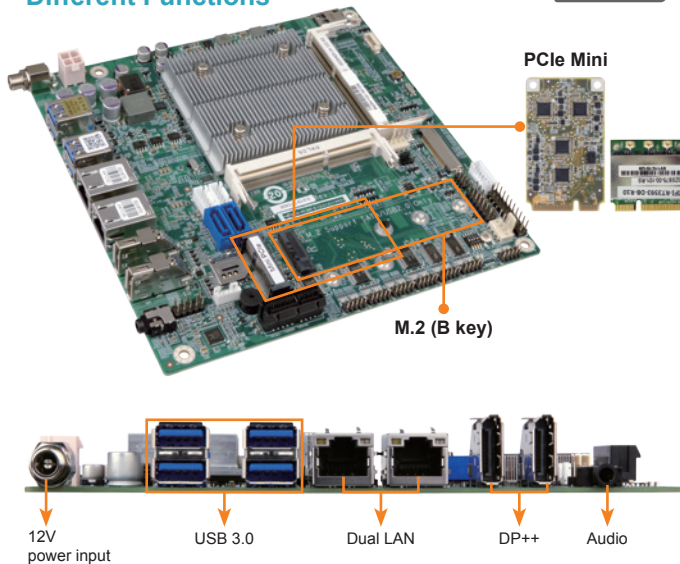
Specifications

- ◆ SoC
 - Intel® Atom™ E3950 on-board SoC (up to 2.0GHz, quad-core, 2M Cache, TDP=12W)
 - Intel® Atom™ E3940 on-board SoC (up to 1.8GHz, quad-core, 2M Cache, TDP=9W)
 - Intel® Atom™ E3930 on-board SoC (up to 1.8GHz, dual-core, 2M Cache, TDP=6W)
 - Intel® Pentium® N4200 on-board SoC (up to 2.5GHz, quad-core, 2M Cache, TDP=6W)
 - Intel® Celeron® N3350 on-board SoC (up to 2.4GHz, dual-core, 2M Cache, TDP=6W)
- ◆ BIOS
 - AMI UEFI BIOS
- ◆ Memory
 - Two 204-pin 1867/1600MHz Dual-channel DDR3L DIMMs support up to 8GB
- ◆ Graphics Engine
 - Intel® HD Graphics Gen9 Low Power; 18 Execution Units
 - 4K Codec Decode & Encode for HEVC , H.264, VP8, SVC, MVC
- ◆ Display Output
 - Triple Independent Display
 - 1 x eDP (up to 3840x2160@60Hz)
 - 2 x DP++ (up to 4096x2160@60Hz)
- ◆ Ethernet
 - 2 x PCIe GbE LAN Realtek RTL8111
- ◆ External I/O Interface
 - 4 x USB 3.0
- ◆ Internal I/O Interface

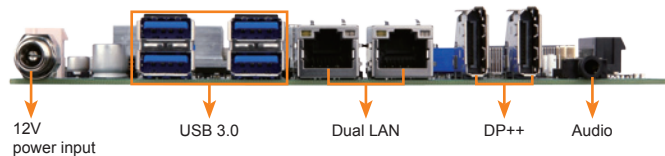
1 x KB/MS (1x6 pin)	1 x M.2 (B key) (2242, colay SATA1, with USB signal)
1 x MicroSD card slot (optional)	2 x RS-232/422/485 (2x5 pin, P=2.0)
2 x USB 2.0 (2x4 pin, P=2.0)	4 x RS-232 (2x5 pin, P=2.0)
2 x SATA 6G/s with 12/5V SATA power connector (No RAID)	
- ◆ SMBus
 - 1 x SMBus (1x4 pin)
- ◆ TPM
 - 1 x TPM (2x10 pin)
- ◆ Audio
 - Realtek ALC269 HD codec
 - 1 x Audio jacks (line-out, mic-in) on rear IO
 - 1 x Front audio (2x5 pin)
 - 1 x Speaker (1x4 pin)
- ◆ Front Panel
 - 1 x Front panel (2x7 pin, power LED, HDD LED, speaker, power button, reset button)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Expansion
 - 1 x PCIe x1 slot
 - 1 x Full/Half-size PCIe Mini card slot (w/ SIM holder)
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ FAN Connector
 - 1 x CPU smart fan (1x4 pin)
 - 1 x System smart fan (1x4 pin)
- ◆ Power supply
 - 12V only DC input as Default
 - 1 x Internal power connector (2x2 pin)
 - 1 x External DC power Jackc (Ø5.5mm)
 - Support AT/ATX mode
- ◆ Watchdog Timer: Software programmable support 1~255 sec. system reset
- ◆ Power Consumption
 - 12V@2.58A (Intel® Pentium® N4200 CPU with two 8GB 1600MHz DDR3L memory)
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -40°C ~ 85°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 1100g / NW: 700g

Flexible Selection of Modules with Different Functions

Preliminary



M.2 (B key)



Features

- Thin Mini-ITX SBC supports Intel® 14nm Atom™, Pentium® or Celeron® on-board SoC supports dual-channel DDR3L SO-DIMMs
- Triple independent display support
- Full size PCIe Mini slot with SIM sockets for WWAN expansion
- COM, USB 3.0, SATA 6Gb/s and audio support
- IEI one key recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x tKINO-AL single board computer with heatsink	1 x One key recovery CD
1 x SATA with power cable kit	1 x QIG
1 x I/O Shielding	1 x Utility CD

Ordering Information

Part No.	Description
tKINO-AL-N2-R10	Thin Mini-ITX SBC supports Intel® 14nm quad-core Pentium® N4200 2.5GHz on-board SoC with DP++, Dual PCIe GbE, M.2, USB 3.0, PCIe Mini, SATA 6Gb/s, COM, Audio and RoHS
tKINO-AL-N1-R10	Thin Mini-ITX SBC supports Intel® 14nm dual-core Celeron® N3350 2.4GHz on-board SoC with DP++, Dual PCIe GbE, M.2, USB 3.0, PCIe Mini, SATA 6Gb/s, COM, Audio and RoHS
tKINO-AL-E3-R10**	Thin Mini-ITX SBC supports Intel® 14nm quad-core Atom™ E3950 2.0GHz on-board SoC with DP++, Dual PCIe GbE, M.2, USB 3.0, PCIe Mini, SATA 6Gb/s, COM, Audio and RoHS
tKINO-AL-E2-R10**	Thin Mini-ITX SBC supports Intel® 14nm quad-core Atom™ E3940 1.8GHz on-board SoC with DP++, Dual PCIe GbE, M.2, USB 3.0, PCIe Mini, SATA 6Gb/s, COM, Audio and RoHS
tKINO-AL-E1-R10**	Thin Mini-ITX SBC supports Intel® 14nm dual-core Atom™ E3930 1.8GHz on-board SoC with DP++, Dual PCIe GbE, M.2, USB 3.0, PCIe Mini, SATA 6Gb/s, COM, Audio and RoHS
32000-070301-RS	Dual-port USB cable, 210mm, P=2.0
32000-023800-RS	PS/2 KB/MS cable, 135mm, P=2.0
32205-002700-100-RS	RS-232 cable, 200mm, P=2.0
TPM-IN02-R20	20-pin Infineon TPM 2.0 module, software management tool, firmware v5.5

**By order production, MOQ: 100