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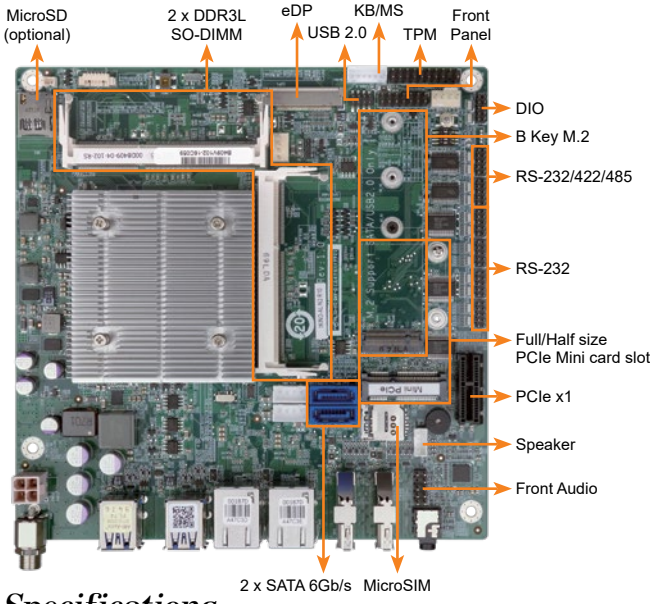
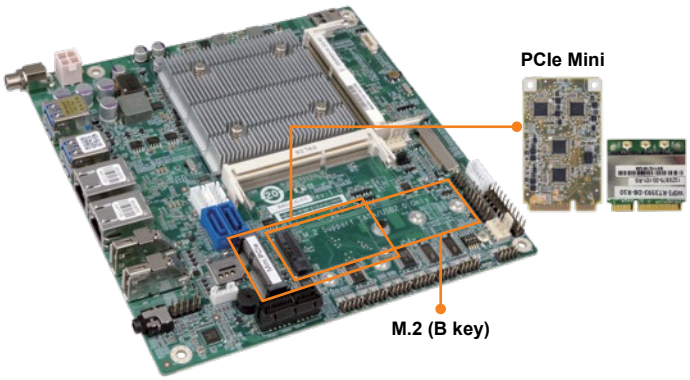
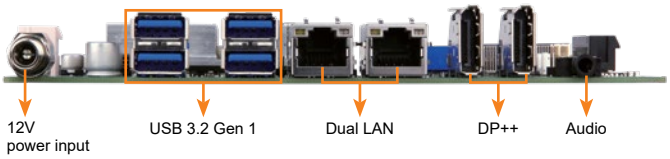
tKINO-AL

Thin Mini-ITX SBC supports Intel® 14nm Atom™, Pentium® or Celeron® on-board SoC with DP++, Dual PCIe GbE, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS



Flexible Selection of Modules with Different Functions





Specifications

- SoC
  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
  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 (4 lane 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 3.2 Gen 1 (5Gb/s)
- Internal I/O Interface
  1 x KB/MS (1x6 pin)
  1 x MicroSD card slot (optional)
  2 x USB 2.0 (2x4 pin, P=2.0)
  2 x SATA 6Gb/s with 12/5V SATA power connector (No RAID)
  2 x RS-232/422/485 (2x5 pin, P=2.0)
  4 x RS-232 (2x5 pin, P=2.0)
- SMBus
  1 x SMBus (1x4 pin)
- TPM
  1 x TPM (2x10 pin)
- Audio
  Realtek ALC269 HD Audio 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)
  1 x M.2 B key (2242/2260/2280, USB 2.0 & colay SATA2)
- 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, supports 1~255 sec. system reset
- Power Consumption
  12V@2.58A (Intel® Pentium® N4200 CPU with two 8GB 1600MHz DDR3L memory)
- Operating Temperature: -20°C ~ 70°C
- Storage Temperature: -40°C ~ 85°C
- Operating Humidity: 5% ~ 95%, non-condensing
- Dimensions: 170mm x 170mm
- Weight: GW: 1100g / NW: 700g
- CE/FCC compliant

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 3.2 Gen 1 (5Gb/s), SATA 6Gb/s and audio support

Packing List

1 x tKINO-AL single board computer with heatsink
1 x SATA with power cable kit
1 x I/O Shielding
1 x QIG

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 3.2 Gen 1 (5Gb/s), 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 3.2 Gen 1 (5Gb/s), PCIe Mini, SATA 6Gb/s, COM, Audio and RoHS
32000-070301-RS	Dual-port USB cable, 210mm, P=2.0
32006-001100-201-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