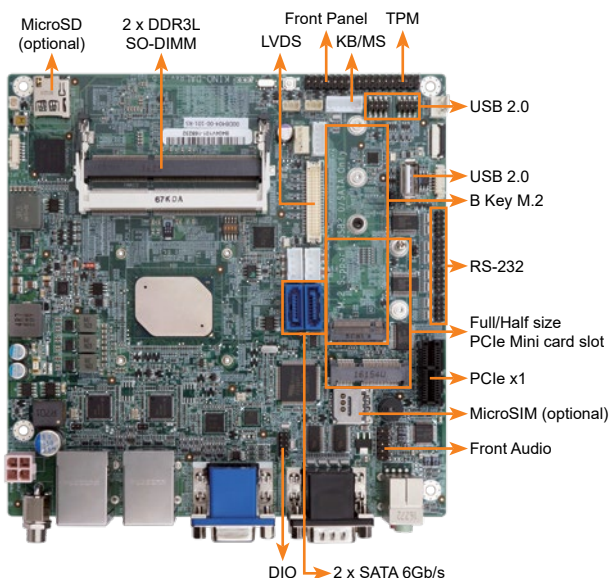
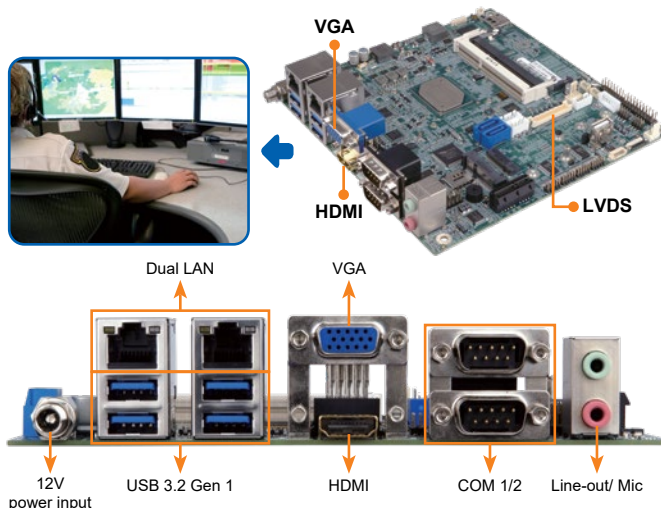


# KINO-DAL

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



## Triple Independent Displays



## Specifications

- SoC
  - Intel® Atom® x7-E3950 on-board SoC (up to 2.0GHz, quad-core, 2M Cache, TDP=12W)
  - Intel® Atom® x5-E3940 on-board SoC (up to 1.8GHz, quad-core, 2M Cache, TDP=9W)
  - Intel® Atom® x5-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
  - UEFI BIOS
- Memory
  - Two 204-pin 1866/1600MHz Dual-channel DDR3L SO-DIMMs support up to 8GB
- Graphics Engine
  - Intel® HD Graphics Gen9 Low Power; 18 Execution Units
  - 4K Codec Decode & Encode for HEVC 4, H.264, VP8, SVC, MVC
- Display Output
  - Triple independent display
  - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz)
  - 1 x VGA (up to 1920x1200@60Hz)
  - 1 x HDMI (up to 3840x2160@30Hz)
- Ethernet: 2 x PCIe GbE LAN Intel® i211 AT controller
- External I/O Interface
  - 4 x USB 3.2 Gen 1 (5Gb/s)
  - 2 x RS-232/422/485
- Internal I/O Interface
  - 1 x eMMC 5.0 (optional, up to 32G)
  - 1 x MicroSD card slot (optional)
  - 1 x USB 2.0 (180° Type-A)
  - 2 x SATA 6Gb/s with 12/5V SATA power connector
  - 1 x KB/MS (1x6 pin)
  - 4 x RS-232 (2x5 pin, P=2.0)
  - 4 x USB 2.0 (2x4 pin, P=2.0)
- SMBus: 1 x SMBus (1x4 pin)
- PC: 1 x PC (1x4 pin)
- TPM: 1 x TPM (2x10 pin)
- Audio
  - Realtek ALC888S HD Audio codec
  - 2 x Audio jacks (line-out, mic-in) on rear IO
  - 1 x Front audio (2x5 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 card slot
  - 1 x Full/Half-size PCIe Mini card slot
  - 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 (1x3 pin)
- Power Supply
  - 12V only DC input as Default/ 9V~30V DC input (optional)
  - 1 x Internal power connector (2x2 pin)
  - 1 x External DC power Jack (Ø5.5mm)
  - Support AT/ATX mode
- Watchdog Timer
  - Software programmable, supports 1~255 sec. system reset
- Power Consumption
  - 12V@3.64A (Intel® Pentium® N4200 CPU with two 8GB 1600MHz DDR3L memory)
- Operating Temperature: -20°C ~ 70°C / -40°C ~ 85°C (KINO-DAL-ExW2)
- 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

- Mini-ITX SBC supports Intel® 14nm Atom®, Pentium® or Celeron® on-board SoC supports dual-channel DDR3L SO-DIMMs
- Triple independent display support
- Optional wide range 9V~30V DC input design
- Full size PCIe Mini slot for 3G/LTE expansion
- COM, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, M.2, eMMC 5.0 and audio support

## Packing List

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

## Ordering Information

Part No.	Description
KINO-DAL-N2-R10**	Mini-ITX SBC supports Intel® 14nm quad-core Pentium® N4200 2.5GHz on-board SoC with HDMI/LVDS/VGA, Dual PCIe GbE, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS
KINO-DAL-N1-R10	Mini-ITX SBC supports Intel® 14nm dual-core Celeron® N3350 2.3GHz on-board SoC with HDMI/LVDS/VGA, Dual PCIe GbE, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS
KINO-DAL-J2-R10	Mini-ITX SBC supports Intel® 14nm quad-core Celeron® J3455 2.3GHz on-board SoC with HDMI/LVDS/VGA, Dual PCIe GbE, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS
KINO-DAL-E3W2-R10**	Mini-ITX SBC supports Intel® 14nm quad-core Atom® x7-E3950 2.0GHz on-board SoC with HDMI/LVDS/VGA, Dual PCIe GbE, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS, -40°C ~ 85°C
KINO-DAL-E2W2-R10**	Mini-ITX SBC supports Intel® 14nm quad-core Atom® x5-E3940 1.8GHz on-board SoC with HDMI/LVDS/VGA, Dual PCIe GbE, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS, -40°C ~ 85°C
KINO-DAL-E1W2-R10**	Mini-ITX SBC supports Intel® 14nm dual-core Atom® x5-E3930 1.8GHz on-board SoC with HDMI/LVDS/VGA, Dual PCIe GbE, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, M.2, SATA 6Gb/s, COM, Audio and RoHS, -40°C ~ 85°C
32000-070301-RS	Dual-port USB cable, 210mm, P=2.0
32006-001100-201-RS	PS/2 KB/MS cable, 135mm, P=2.0
32205-002700-200-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