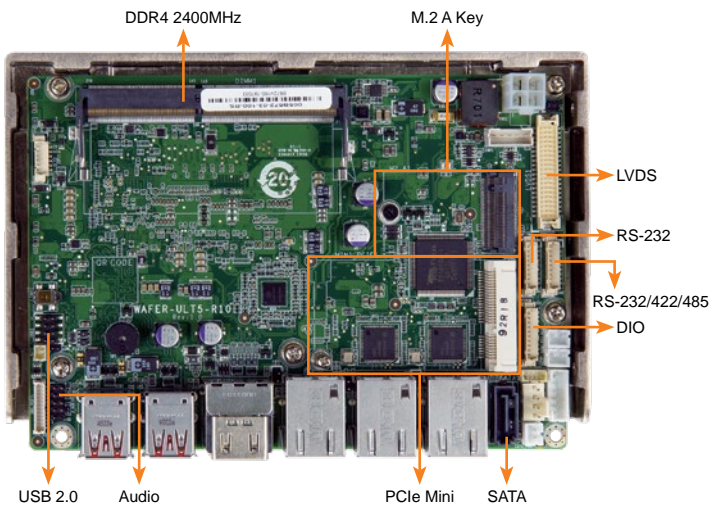


# WAFER-ULT5

3.5" SBC supports Intel® 8th Generation Whiskey Lake processor with DDR4 SO-DIMM, Triple display with dual HDMI 1.4, LVDS, Triple GbE, M.2 A Key, USB 3.2 Gen 2 x1, mPCIe with mSATA support, SATA 6Gb/s, COM and RoHS



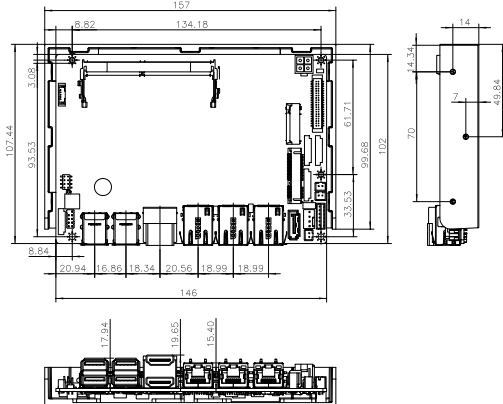
## Specifications

- ◆ SoC
  - 8th generation Intel® mobile ULT Processor
  - Intel® Core™ i7-8665UE 1.7 GHz (up to 4.4GHz, Quad-core, 8MB cache, TDP=15W)
  - Intel® Core™ i5-8365UE 1.6 GHz (up to 4.1GHz, Quad-core, 6MB cache, TDP=15W)
  - Intel® Core™ i3-8145UE 2.2 GHz (up to 3.9GHz, Dual-core, 4MB cache, TDP=15W)
  - Intel® Celeron® processor 4305UE (up to 2.0GHz, Dual-core, 2MB cache, TDP=15W)
  - Intel® Celeron® processor 4205U (up to 1.8GHz, Dual-core, 2MB cache, TDP=15W)
- ◆ BIOS
  - AMI UEFI BIOS
- ◆ Memory
  - 1 x DDR4 2400MHz SO-DIMM support up to 32GB
- ◆ Graphics Engine
  - Intel® UHD Graphics 620
- ◆ Display Output
  - Triple Independent Displays
  - 2 x HDMI 1.4 (up to 4096x2160@30Hz)
  - 1 x LVDS: 18/24-bit dual-channel LVDS by CH7511B DP to LVDS converter (up to 1920x1200@60Hz)
- ◆ Ethernet
  - 2 x Intel® I211AT (colay with I210)
  - 1 x PCIe GbE LAN Intel i219 Controller
- ◆ Embedded Controller
  - ITE IT8587VG-FX
- ◆ External I/O Interface
  - 4 x USB 3.2 Gen 2 x1
- ◆ Internal I/O Interface
  - 1 x RS-232 (1x9 pin, P=1.25)
  - 1 x RS-232/422/485 (1x9 pin, P=1.25) (Support Auto Flow Control over RS-485)
  - 1 x SATA 6G/s with 5V SATA power connector
  - 2 x USB 2.0 (2x4 pin, P=2.0)
- ◆ I²C
  - 1 x I²C (1x4 pin)
- ◆ Audio
  - 1 x HD audio (2x5 pin, support 7.1 channel HD audio by IEI AC-KIT-888S-R10 kit)
- ◆ Front Panel
  - 1 x Power LED & HDD LED (1x6 pin)
  - 1 x Power button (1x2 pin)
  - 1 x Reset button (1x2 pin)
- ◆ LAN LED
  - 3 x LAN LED (1x2 pin)
- ◆ Expansion
  - 1 x Full-size PCIe Mini slot (w/ SATA signal, support mSATA)
  - 1 x M.2 slot with A Key 2230
- ◆ Digital I/O
  - 1 x 8-bit digital I/O (1x10 pin)
- ◆ Fan Connector
  - 1 x Smart fan connector (1x4 pin)
- ◆ Power Supply
  - 12V DC input
  - 1 x Internal power connector (2x2 pin)
  - Support AT/ATX mode
- ◆ Watchdog Timer
  - Software programmable support 1~255 sec. system reset
- ◆ Power Consumption
  - 12V@3.38A (Intel® Core™ i7-8665UE up to 1.7GHz CPU with 16GB 2666MHz DDR4 memory)
- ◆ Operating Temperature
  - 20°C ~ 60°C
- ◆ Storage Temperature
  - 30°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146mm x 102mm
- ◆ Weight: GW: 700g / NW: 350g

## Features

- 3.5" SBC supports Intel® 8th generation Whiskey Lake processor with DDR4 SO-DIMMs
- Triple display with dual HDMI, LVDS selection
- M.2 A Key, PCIe Mini slot with mSATA support
- COM, USB 3.2 Gen 2 x1, SATA 6Gb/s support
- Support temperature operation: -20°C ~ 60°C
- Support Auto Flow Control over RS-485

## Dimensions (Unit: mm)



## Packing List

1 x WAFER-ULT5 single board computer with Heatspreader	
1 x Power cable	1 x SATA with power cable kit
2 x RS-232/422/485 cable	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
WAFER-ULT5-i7-R10	3.5" SBC supports Intel® 8th Generation Core™ i7-8665UE with DDR4 SO-DIMM, triple display with dual HDMI 1.4, LVDS, Triple GbE, USB 3.2 Gen 2 x1, M.2 A key, mPCIe with mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT5-i5-R10	3.5" SBC supports Intel® 8th Generation Core™ i5-8365UE with DDR4 SO-DIMM, triple display with dual HDMI 1.4, LVDS, Triple GbE, USB 3.2 Gen 2 x1, M.2 A key, mPCIe with mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT5-i3-R10	3.5" SBC supports Intel® 8th Generation Core™ i3-8145UE with DDR4 SO-DIMM, triple display with dual HDMI 1.4, LVDS, Triple GbE, USB 3.2 Gen 2 x1, M.2 A key, mPCIe with mSATA support, SATA 6Gb/s, COM and RoHS
WAFER-ULT5-C-R10**	3.5" SBC supports Intel® 8th Generation Celeron® 4305UE with DDR4 SO-DIMM, triple display with dual HDMI 1.4, LVDS, Triple GbE, USB 3.2 Gen 2 x1, M.2 A key, mPCIe support, SATA 6Gb/s, COM and RoHS
WAFER-ULT5-CE-R10	3.5" SBC supports Intel® 8th Generation Celeron® 4205U with DDR4 SO-DIMM, triple display with dual HDMI 1.4, LVDS, Triple GbE, USB 3.2 Gen 2 x1, M.2 A key, mPCIe support, SATA 6Gb/s, COM and RoHS
32005-003500-200-RS	Round cable, RS-232/422/485, RS-232 cable, 2, 250mm, 26AWG, (A) D-SUB 9P MALE+HEXAGONAL screw, (B) MOLEX 51021-0900 P=1.25, Wins Precision, RoHS
32801-000201-300-RS	SATA cable, 3, 150mm, 26AWG, SATA 7+15P female 180°, SATA 7P female 180°+LOCK, JST PHR-2 P=2.0, one pcs PKG w/ label, Wins Precision, RoHS

\*\*By order production, MOQ: 100