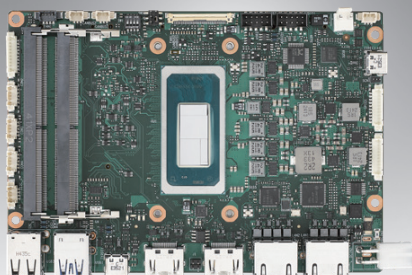


# MIO-5379

## Intel Core Ultra Processors (Code Name: Arrow Lake H / Meteor Lake U)

### Preliminary



### Features

- Intel® Core™ Ultra 7/5 Processors, up to 14 Cores, TDP 28W/15W
- Dual Channel DDR5-6400 up to 96GB, with IBEC support
- Optional MIOe-TCPD module supports USB-C PD 100W
- 4 simultaneous displays: eDP + 2x HDMI + USB-C with DP Alt.
- 2x LAN, 8x USB (incl. 1x USB4), 4x UART, 2x CAN-FD, 8bit GPIO, I2C(\*SMBus)
- 4x M.2 Expansions: E-Key 2230, B-Key 3052, 2x M-Key 2280
- Support EdgeBMC for OOB (Out-of-Band) remote control

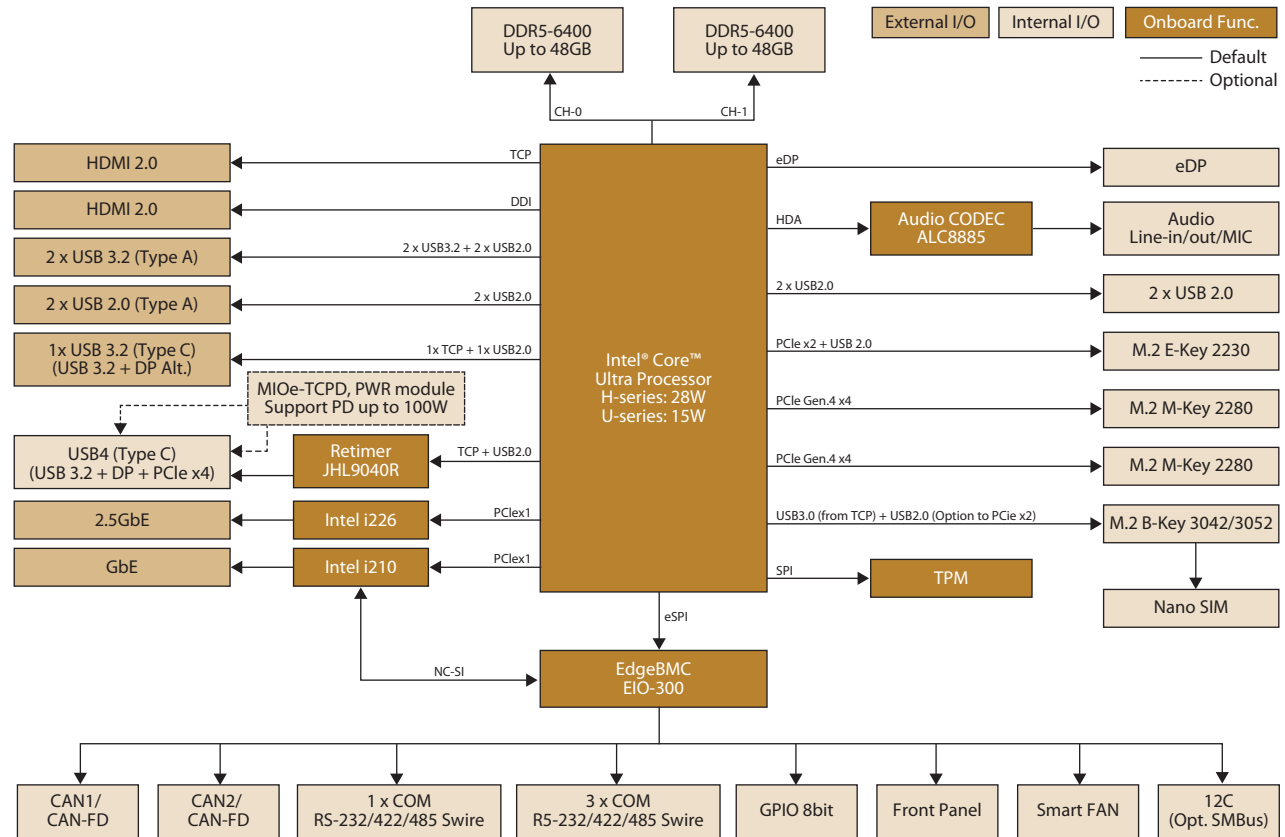
Ubuntu Windows 11 DeviceOn EdgeBMC CE FCC

### Specifications

|               |                                |                                                                                                                   |                         |                    |                    |
|---------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------|--------------------|
| Platform      | Processor                      | Core Ultra 7, 255H                                                                                                | Core Ultra 5, 225H      | Core Ultra 7, 155U | Core Ultra 5, 125U |
|               | Max. Frequency (P-Core/E-Core) | 5.1/4.4                                                                                                           | 4.9/4.3                 | 4.8GHz             | 4.3GHz             |
|               | Base Frequency (P-Core/E-Core) | 1.2/0.9                                                                                                           | 1.2/0.9                 | 1.7GHz             | 1.3GHz             |
|               | Core/Tread                     | 16C/6P+8E                                                                                                         | 14C/4P+8E               | 12C/2P+8E          | 12C/2P+8E          |
|               | LLC                            | L3                                                                                                                | L3                      | 12MB               | 12MB               |
|               | CPU TDP                        | 28W                                                                                                               | 28W                     | 15W                | 15W                |
|               | Chipset                        | Intel® Chipset (SoC Integrated)                                                                                   |                         |                    |                    |
|               | BIOS                           | AMI UEFI 256Mbit                                                                                                  |                         |                    |                    |
| Memory        | Technology                     | DDR5 6400                                                                                                         | DDR5 6400               | DDR5 5600          | DDR5 5600          |
|               | Max. Capacity                  | Up to 96GB                                                                                                        |                         |                    |                    |
|               | Channel/Socket                 | Dual Channels / 2 Sockets                                                                                         |                         |                    |                    |
| Graphics      | Controller                     | Intel® Xe LPG+ graphics                                                                                           | Intel® Xe LPG+ graphics | Intel® Graphics    | Intel® Graphics    |
|               | Max. Frequency                 | 2.25                                                                                                              | 2.2                     | 1.95               | 1.85               |
|               | 3D/HW Acceleration             | Ray Tracing (Full-rate) / Execute Indirect                                                                        |                         |                    |                    |
|               | AI Features                    | Intel® XMX Matrix Engines (4-deep systolic)                                                                       |                         |                    |                    |
| Display I/F   | eDP                            | 1 x eDP 1.4                                                                                                       |                         |                    |                    |
|               | HDMI                           | 2 x HDMI 2.1                                                                                                      |                         |                    |                    |
|               | USB                            | 1 x USB 4                                                                                                         |                         |                    |                    |
|               | Multiple Display               | 4 simultaneous displays: eDP/HDMI/USB                                                                             |                         |                    |                    |
| Ethernet      | Controller                     | LAN1: Intel i210; LAN2: Intel i226 Support TSN                                                                    |                         |                    |                    |
|               | Speed                          | LAN1: 1Gbps; LAN2: 2.5Gbps                                                                                        |                         |                    |                    |
| External I/O  | Ethernet                       | 2 x RJ-45                                                                                                         |                         |                    |                    |
|               | HDMI/USB-C                     | 2/1                                                                                                               |                         |                    |                    |
|               | USB3.2/2.0                     | 2/2                                                                                                               |                         |                    |                    |
|               | Power DC-Jack                  | 4-pin 90D ATX connector                                                                                           |                         |                    |                    |
| Internal I/O  | USB                            | 2 x USB-A 2.0, 1 x USB-C 4.0                                                                                      |                         |                    |                    |
|               | Serial Bus                     | 1 x I2C/SMBus                                                                                                     |                         |                    |                    |
|               | COM Port                       | 1 x RS-232/422/485(8-wire) , 3 x RS-232/422/485 (4-wire)                                                          |                         |                    |                    |
|               | GPIO                           | 8-bit general purpose input output I/O                                                                            |                         |                    |                    |
|               | Audio                          | Realtek ALC888S, Line-in/Line-out/MIC                                                                             |                         |                    |                    |
|               | Inverter                       | 12V/5V                                                                                                            |                         |                    |                    |
|               | CAN Bus                        | 2 x CAN-FD                                                                                                        |                         |                    |                    |
|               | Fan                            | 4-wire smart fan                                                                                                  |                         |                    |                    |
|               | Front Panel Control            | Power-on, Reset, Buzzer, CaseOpen                                                                                 |                         |                    |                    |
|               | USB-C PD                       | USB Type-C PD (Power Delivery) 100w*(optional MIOe-TCPD module)                                                   |                         |                    |                    |
| Board Feature | EdgeBMC OOB                    | LAN1: Support EdgeBMC Out-of-Band (OOB) remote control                                                            |                         |                    |                    |
|               | Watchdog Timer                 | 65536 level, 0-65535 sec                                                                                          |                         |                    |                    |
|               | TPM                            | TPM2.0                                                                                                            |                         |                    |                    |
| Expansion     | M.2 E-Key                      | 1 x E-Key 2230 (PCIe x2, USB2.0)                                                                                  |                         |                    |                    |
|               | M.2 B-Key                      | 1 x B-Key 3042/ 3052 (USB2.0 / Opt. PCIe x2) w/ Nano-SIM                                                          |                         |                    |                    |
|               | M.2 M-Key                      | 2 x M-Key 2280 (PCIex4 Gen.4 NVMe)                                                                                |                         |                    |                    |
| Power         | Supply Voltage                 | Vin: DC 12-24V +/- 10%; RTC Battery: Lithium 3V/210mAH                                                            |                         |                    |                    |
|               | Connector                      | ATX 2x2 pin 90D, optional DC-Jack or ATX 2x2 pin 180D*                                                            |                         |                    |                    |
|               | Power Management               | AT, ATX                                                                                                           |                         |                    |                    |
| Environment   | Temperature                    | 0 ~ 60 °C (32 ~ 140 °F)                                                                                           |                         |                    |                    |
|               | Humidity                       | Operating: 40° C @ 95% relative humidity, non-condensing<br>Storage: 60° C @ 95%relative humidity, non-condensing |                         |                    |                    |
|               | Vibration Resistance           | 3.5 Grms                                                                                                          |                         |                    |                    |
| Certification | EMC                            | CE, FCC Class B                                                                                                   |                         |                    |                    |
| Mechanical    | Dimensions                     | 146 x 102 mm (5.7" x 4")                                                                                          |                         |                    |                    |

\*Note: Optional function support by request

## Block Diagram



## Ordering Information

| Part No.         | CPU                | Core      | TDP | Thermal Solution | Operating Temperature |
|------------------|--------------------|-----------|-----|------------------|-----------------------|
| MIO-5379C7P-R1A1 | Core Ultra 7, 255H | 16C/6P+8E | 28W | Active Cooler    | 0~60° C               |
| MIO-5379C5P-Q9A1 | Core Ultra 5, 225H | 14C/4P+8E | 28W | Active Cooler    | 0~60° C               |
| MIO-5379C7-R2A1  | Core Ultra 7, 155U | 12C/2P+8E | 15W | Passive Heatsink | 0~60° C               |
| MIO-5379C5-Q8A1  | Core Ultra 5, 125U | 12C/2P+8E | 15W | Passive Heatsink | 0~60° C               |

## Packing List

| Part No.       | Description                                       | Quantity |
|----------------|---------------------------------------------------|----------|
| MIO-5379 SBC   |                                                   |          |
| 1700030406-01  | USB 2.0 Cable 20cm                                | 1        |
| 1700031582-01  | COM2~4, COM RS-232 4-Wire Cable, D-SUB 9P(M) 20cm | 3        |
| 1700030404-01  | COM1 RS-232/422/485 Cable 20cm                    | 1        |
| 1970005512T001 | Active cooler for TDP 28W CPU                     | 1        |
| 1970005973T001 | Passive heatsink for TDP 15W CPU                  | 1        |

## Optional Accessories

| Part No.       | Description                     |
|----------------|---------------------------------|
| TBD            | Heat spreader                   |
| MIOE-TCPD-P1A1 | MIOE-TCPD Module                |
| 1700035016-01  | 4 wires COM RS-422/485 cables   |
| 1960103315N020 | M.2 3042/3052 Extension Bracket |

## Embedded OS/API

| OS           | Part No.            | Description              |
|--------------|---------------------|--------------------------|
| WIN11        | TBD                 | 64-bit (UEFI mode only)  |
| Ubuntu       | TBD                 | Ubuntu Desktop 22.04 LTS |
| Software API | Download by website | SUSI v4.0                |

## Rear I/O View



# Compatible Expansion Boards

## MIOe-TCPD



### Specifications

|               |                             |                                                                                                                   |
|---------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------|
| Power         | Output Power Voltage        | 20V 5A                                                                                                            |
|               | USB Power Delivery Standard | PD 2.0                                                                                                            |
|               | Max. Power                  | 100watt                                                                                                           |
|               | Input DC Voltage            | 12-24V                                                                                                            |
| Environment   | Temperature                 | Operating: -40 ~ 85° C (-40 ~ 185° F)<br>Storage: -40 ~ 85° C (-40 ~ 185° F)                                      |
|               | Humidity                    | Operating: 40° C @ 95% relative humidity, non-condensing<br>Storage: 60° C @ 95%relative humidity, non-condensing |
|               | Vibration Resistance        | 3.5 Grms                                                                                                          |
| Certification | EMC                         | CE, FCC Class B                                                                                                   |
| Compatibility | Compatible SBC              | MIO-5379 series                                                                                                   |
| Mechanical    | Dimensions                  | 70 x 40 x 1.6 mm                                                                                                  |

### Ordering Information

| Part No.       | Description              |
|----------------|--------------------------|
| MIOE-TCPD-P1A1 | MIOe-TCPD 100W PD module |