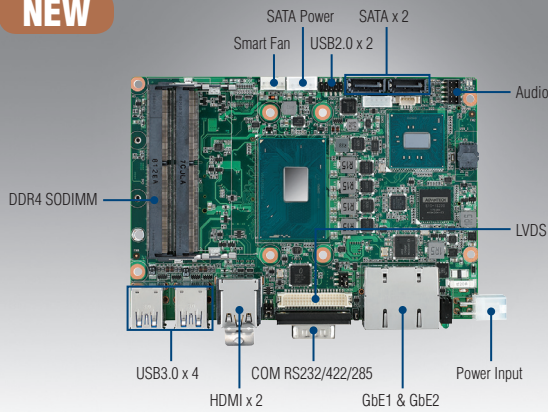


# MIO-5391

## 7th Gen Intel Core Mobile Processors, Xeon, i7, i5, i3 3.5" SBC w/ MIOe

**NEW**



**WISE-PaaS/RMM iManager** CE FCC

### Features

- 7th Gen Intel Core i7/i5/i3 + PCH QM175 & Xeon + PCH CM238
- Dual channel DDR4 2400, Max 32GB
- 1 Intel i210 GbE & 1 Intel i219 GbE support iAMT, rich I/O: 2COM, SATA, USB3.0, SMBus/I2C, 16 bit GPIO full-size Mini PCIe or mSATA /M.2 E Key support NVME, 12V Power input
- Full-size Mini PCIe or mSATA /M.2 E Key
- Support NVME (optional)
- Supports iManager, WISE-PaaS/RMM, emb. SW API

#### Software APIs:



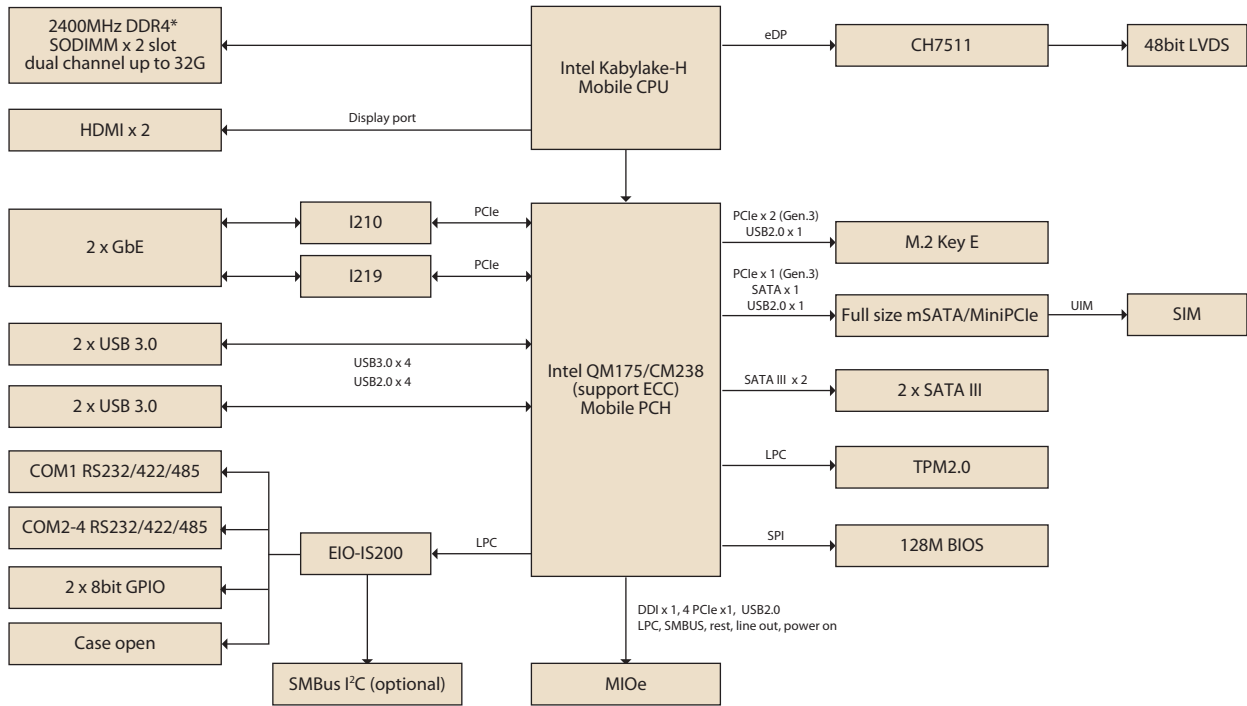
#### Utilities:



### Specifications

|               | Processor            | i7-7820EQ   | i5-7442EQ                | i3-7102E | E3-1505MV6 |
|---------------|----------------------|---|--------------------------|----------|------------|
| Platform      | Max. Frequency       | 3.7 GHz   | 2.9 GHz                  | -        | 4.0 GHz    |
|               | Base Frequency       | 3.0 GHz   | 2.1 GHz                  | 2.1 GHz  | 3.0 GHz    |
|               | Core/Tread           | 4   | 4                        | 2        | 4          |
|               | LLC                  | 8MB   | 6MB                      | 3MB      | 8MB        |
|               | CPU TDP              | 45W   | 25W                      | 25W      | 45W        |
|               | Chipset              | PCH QM175   |                          |          |            |
|               | BIOS                 | AMI UEFI 128Mbit  |                          |          |            |
| Memory        | Technology           | DDR4 up to 2400MHz  |                          |          |            |
|               | Max. Capacity        | Up to 32GB  |                          |          |            |
|               | Channel/Socket       | Dual Channel 260P SO-DIMM (1 DIMM per Channel)  |                          |          |            |
|               | ECC Support          | ECC is supported with Xeon SKU  |                          |          |            |
| Graphics      | Controller           | Intel Gen 9 low power graphics  |                          |          |            |
|               | Max. Frequency       | 1GHz  |                          |          |            |
|               | Base Frequency       | 350MHz/   |                          |          |            |
|               | Graphics Memory      | Intel DMVTS.0, share memory up to 1024MB  |                          |          |            |
| Display I/F   | 3D/HW Acceleration   | HW Codec: H.265/HEVC 8bit/10bit encode/decode; VP8 8bit encode/decode; VP9 10bit decode; MPEG2; JPEG; VC1/WMV9. Direct3D 2015/11.2/11.1/10/9; OpenGL5.0; OpenCL 2.0/1.2/1.0 |                          |          |            |
|               | LVDS                 | 48-bit LVDS up to WUXGA 1920 x 1200 at 60Hz<br>Supports 3.3/5/12V for VDD power, 5/12V for inverter   |                          |          |            |
|               | HDMI                 | Supports 2 ports HDMI 1.4 for HD Video playback<br>Max resolution up to 4096 x 2304 @ 30Hz  |                          |          |            |
| Ethernet      | Controller           | LAN1: Intel 219LM, LAN2: Intel 210IT  |                          |          |            |
|               | Speed                | 10/100/1000 Mbps  |                          |          |            |
| External I/O  | Ethernet             | 2 x RJ-45   |                          |          |            |
|               | VGA/HDMI/DP          | -/2/-   |                          |          |            |
|               | USB3.0/USB2.0        | 4/-   |                          |          |            |
|               | COM Port             | 1 x RS-232/422/485  |                          |          |            |
|               | LED                  | Power status, HDD R/W   |                          |          |            |
| Internal I/O  | Power DC-Jack        | Optional  |                          |          |            |
|               | SATA                 | 2 x SATA GenIII 6.0Gbps   |                          |          |            |
|               | USB2.0               | 2   |                          |          |            |
|               | Serial Bus           | SMBus default, I2C optional   |                          |          |            |
|               | COM Port             | 2 x RS-232/422/485  |                          |          |            |
|               | GPIO                 | 16-bit general purpose input output I/O   |                          |          |            |
|               | Audio                | Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in  |                          |          |            |
|               | Inverter             | 3.3/5/12V for VDD power, 5/12V for inverter   |                          |          |            |
|               | LPC/SPI Bus          |   |                          |          |            |
|               | CAN Bus              | -   |                          |          |            |
|               | Fan                  | 1 x Smart Fan   |                          |          |            |
|               | Front Panel Control  | Power-on, Reset, Buzzer, ...  |                          |          |            |
|               | Board Feature        | Watchdog Timer  | 65536 level, 0-65535 sec |          |            |
| TPM           |                      | TPM2.0 (Infineon SLB9665)   |                          |          |            |
| iManager 3.0  |                      | yes   |                          |          |            |
| Storage       | SATA                 | 2, up to 6Gb/s (600 MB/s)   |                          |          |            |
|               | mSATA                | 1 x Full-size   |                          |          |            |
|               | NVME*                | 1, dimension: 2230, PCIe*2  |                          |          |            |
| Expansion     | M.2                  | E-Key (PCIe x1, USB2.0)   |                          |          |            |
|               | mPCIe/mSATA          | 1 x full size mSATA with Sim holder   |                          |          |            |
|               | MIO Extension        | DDI x 1, 4 PCIe*1, USB2.0, LPC, SMBUS, rest, Line out, Power on   |                          |          |            |
| Power         | Supply Voltage       | Vin: DC 12V +/- 10%; RTC Battery: Lithium 3V/210mAh   |                          |          |            |
|               | Connector            | ATX 2x2 pin 90D, optional DC-Jack or ATX 2x2 pin 180D   |                          |          |            |
|               | Power Management     | AT, ATX   |                          |          |            |
|               | Max. Consumption     | TBD   | TBD                      | TBD      | TBD        |
| Environment   | Idle Consumption     | TBD   | TBD                      | TBD      | TBD        |
|               | Temperature          | Operating: Standard: 0 - 60° C (32 - 140° F), Extend: -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  |                          |          |            |
| Certification | Vibration Resistance | 3.5 Grms  |                          |          |            |
|               | EMC                  | CE, FCC   |                          |          |            |
| Mechanical    | Safety               | -   |                          |          |            |
|               | Dimensions           | 146 x 102 mm (5.7" x 4")  |                          |          |            |

## Block Diagram



## Ordering Information

| Part No.         | CPU        | Max. Frequency | Core | DDR4 Memory | Thermal Solution | Operating Temperature |
|------------------|------------|----------------|------|-------------|------------------|-----------------------|
| MIO-5391E4M-H0A1 | E3-1505MV6 | 4.0GHz         | 4    | ECC support | Active           | 0 – 60 °C             |
| MIO-5391C7-H0A1  | i7-7820EQ  | 3.7GHz         | 4    | non-ECC     | Active           | 0 – 60 °C             |
| MIO-5391C5-U1A1  | i5-7442EQ  | 2.9GHz         | 4    | non-ECC     | Passive          | 0 – 60 °C             |
| MIO-5391C3-U1A1  | i3-7102E   | 2.1GHz         | 2    | non-ECC     | Passive          | 0 – 60 °C             |

## Packing List

| Part No.       | Description                                    | Quantity |
|----------------|--|----------|
|                | MIO-5391 SBC                                   | 1        |
| 2006539100     | Startup Manual                                 | 1        |
| 1700006291     | M Cable SATA 7P/SATA 7P 30cm C=R 180/90        | 1        |
| 1700018785     | SATA 35cm power cable                          | 1        |
| 1700019414     | A Cable D-SUB 9P(M)/2*5P-2.0 30cm for FWA-5442 | 2        |
| 1700019584     | Audio Cable 2*5P-2.0/JACK*3 20cm               | 1        |
| 9689000002     | mini Jumper pack                               | 1        |
| 1960089060T001 | Cooler   | 1        |
| 1960089142T001 | Heatsink                                       | 1        |

## Optional Accessories

| Part No.         | Description                                     |
|------------------|---|
| 1960090936N001   | Heat spreader (16.7mm height)                   |
| 96PSA-A60W12R1-1 | ADP A/D 100-240V 60W 12V WO/PFC C14 DC PLUG 90° |
| 1703100264       | Internal 1 port USB cable 22.5cm                |

## Embedded OS/API

| Embedded OS/API          | Part No.       | Description                        |
|--------------------------|----------------|------------------------------------|
| WIN10 for I7 & Xeon SKUs | 20706WX9HS0003 | img W10 19HL MIO-5391 64b 1809 ENU |
| WIN10 for I5 & I3 SKUs   | 20706WX9VS0003 | img W10 19VL MIO-5391 64b 1809 ENU |
| Software API             |                | iManager 3.0                       |

## Rear I/O View

