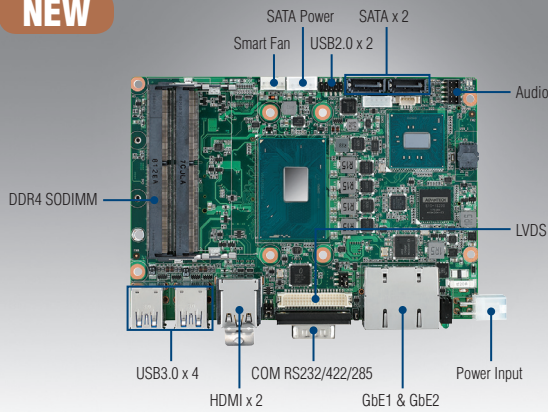


# MIO-5391

## 7th Gen Intel Core Mobile Processors, 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
- Dual channel DDR4 2400, Max 32GB (ECC optional)
- 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:



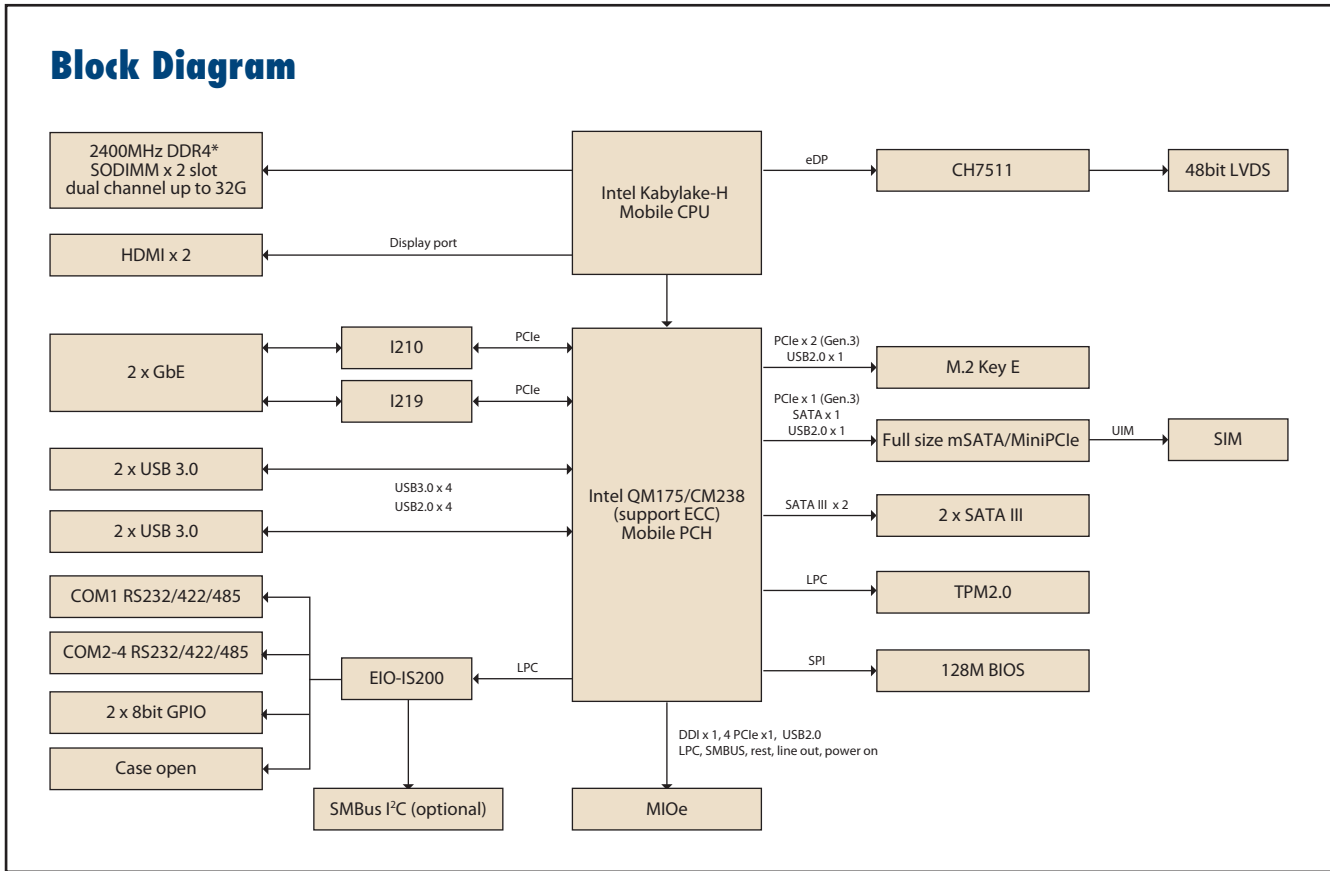
#### Utilities:



### Specifications

|               |                          |   |           |          |
|---------------|--------------------------|---|-----------|----------|
| Platform      | Processor                | i7-7820EQ   | i5-7442EQ | i3-7102E |
|               | Max. Frequency           | 3.7 GHz   | 2.9 GHz   | -        |
|               | Base Frequency           | 3.0 GHz   | 2.1 GHz   | 2.1 GHz  |
|               | Core/Tread               | 4   | 4         | 2        |
|               | LLC                      | 8MB   | 6MB       | 3MB      |
|               | CPU TDP                  | 45W   | 25W       | 25W      |
|               | Chipset                  | PCH QM175/CM238 (optional)  |           |          |
| Memory        | BIOS                     | AMI UEFI 128Mbit  |           |          |
|               | Technology               | DDR4 up to 2400MHz  |           |          |
|               | Max. Capacity            | Up to 32GB  |           |          |
| Graphics      | Channel/Socket           | Dual Channel 260P SO-DIMM (1 DIMM per Channel)  |           |          |
|               | ECC Support              | ECC is supported with specific SKU  |           |          |
|               | Controller               | Intel Gen 9 low power graphics  |           |          |
| Display I/F   | Max. Frequency           | 1GHz  |           |          |
|               | Base Frequency           | 350MHz/   |           |          |
|               | Graphics Memory          | Intel DMVTS.0, share memory up to 1024MB  |           |          |
|               | 3D/HW Acceleration       | HW Codec: H.265/HEVC 8bit/10bit encode/decode; VP8 8bit encode/decode; VP9 10bit decode; MPEG2; JPEG; VC1/MMV9. 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   |           |          |
| Ethernet      | HDMI                     | Supports 2 ports HDMI 1.4 for HD Video playback<br>Max resolution up to 4096 x 2304 @ 60Hz  |           |          |
|               | Multit-Display           | HDMI + LVDS, Dual HDMI + LVDS with each display combinations  |           |          |
| External I/O  | Controller               | LAN1: Intel 219LM, LAN2: Intel 210IT  |           |          |
|               | Speed                    | 10/100/1000 Mbps  |           |          |
|               | Ethernet                 | 2 x RJ-45   |           |          |
|               | VGA/HDMI/DP              | -/2/-   |           |          |
|               | USB3.0/USB2.0            | 4/-   |           |          |
| Internal I/O  | COM Port                 | 1 x RS-232/422/485  |           |          |
|               | LED                      | Power status, HDD R/W   |           |          |
|               | Power DC-Jack            | Optional  |           |          |
|               | SATA                     | 2 x SATA GenIII 6.0Gbps   |           |          |
|               | USB2.0                   | 2   |           |          |
|               | Serial Bus               | SMBus default, I2C optional   |           |          |
|               | COM Port                 | 3 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   |           |          |
| Board Feature | LPC/SPI Bus              |   |           |          |
|               | CAN Bus                  | -   |           |          |
|               | Fan                      | 1 x Smart Fan   |           |          |
|               | Front Panel Control      | Power-on, Reset, Buzzer, ...  |           |          |
|               | Watchdog Timer           | 65536 level, 0-65535 sec  |           |          |
| Storage       | TPM                      | Optional TPM2.0 (Infineon SLB9665)  |           |          |
|               | iManager 3.0             | yes   |           |          |
|               | SATA                     | 2, up to 6Gb/s (600 MB/s)   |           |          |
| Expansion     | mSATA                    | 1 x Full-size   |           |          |
|               | NVME*                    | 1, dimension: 2230, PCIe*2  |           |          |
|               | M.2                      | E-Key (PCIe x1, USB2.0)   |           |          |
| Power         | mPCIe/mSATA              | 1 x full size mSATA with Sim holder   |           |          |
|               | MIO Extension            | DDI x1, 4 PCIe*1, USB2.0, LPC, SMBUS, rest, Line out, Power on  |           |          |
|               | Supply Voltage           | Vin: DC 12V +/- 10%; RTC Battery: Lithium 3V/210mAh   |           |          |
|               | Connector                | ATX 2x2 pin 90D, optional DC-Jack or ATX 2x2 pin 180D   |           |          |
| Environment   | Power Management         | AT, ATX   |           |          |
|               | Max. Consumption         | TBD   | TBD       | TBD      |
|               | Idle Consumption         | TBD   | TBD       | TBD      |
| Certification | 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  |           |          |
|               | Vibration Resistance     | 3.5 Grms  |           |          |
| Mechanical    | EMC                      | CE, FCC   |           |          |
|               | 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 |
|----------------|-----------|----------------|------|-------------|------------------|-----------------------|
| MIO5391-C7H0A1 | i7-7820EQ | 3.7GHz         | 4    | non-ECC     | Active           | 0 ~ 60 °C             |
| MIO5391-C5U1A1 | i5-7442EQ | 2.9GHz         | 4    | non-ECC     | Passive          | 0 ~ 60 °C             |
| MIO5391-C3U1A1 | i3-7102E  | 2.1GHz         | 2    | non-ECC     | Passive          | 0 ~ 60 °C             |

## Packing List

| Part No.   | Description                                    | Quantity |
|------------|--|----------|
|            | MIO-5391 SBC                                   | 1        |
| 2006525100 | Startup Manual                                 | 1        |
| 1700006291 | M Cable SATA 7P/SATA 7P 30cm C=R 180/90        | 1        |
| 1700018785 | SATA 35cm power cable                          | 1        |
| 1701200220 | COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM | 2        |
| 1700019584 | Audio Cable 2*5P-2.0/JACK*3 20cm               | 1        |
| 9689000002 | mini Jumper pack                               | 1        |
| TBD        | Heatsink                                       | 1        |
| TBD        | Wide temp. heatsink                            | 1        |

## Optional Accessories

| Part No.   | Description                         |
|------------|-------------------------------------|
| TBD        | Heat spreader (16.7mm height)       |
| 1757003934 | Adapter 100-240V 60W 12V 5A W/O PFC |
| 1703100264 | Internal 1 port USB cable 22.5cm    |

## Embedded OS/API

| Embedded OS/API | Part No. | Description  |
|-----------------|----------|--------------|
| WIN10           | TBD      |              |
| Linux           |          |              |
| VxWorks         |          |              |
| Software API    |          | iManager 3.0 |

## Rear I/O View

