

# MIC-336

## 3U CompactPCI® Serial Intel® Atom Processor Blade



### Features

- Intel® Atom X7433RE/ X7835RE platform
- Max 16GB DDR5 4800 MT/s, with ECC
- 1 x DP, 2 x USB3.2, 2 x 2.5GbE RJ45/M12 LAN ports on front 4HP panel, 2 x COM, 1 x Line out on front 8HP panel
- 1 x On board SATA 3.0/PCIe 2.0 M.2 storage connector on XTM board, Compatible with 2280/2242 size
- Reserved 1 x 64G eMMC 5.1 storage , 1 x TPM2.0, 1 x wafer for USB 2.0 function
- Supports fanless application with optimized heatsink design
- Designed to meet EN50121-4 and EN50155
- PICMG CompactPCI Serial(CPCI-S.0 R2.0) compliant

### Introduction

Advantech MIC-336 series is a low power CompactPCI Serial CPU board, based on an Intel® Atom 4 cores or 8 cores processor, It provides up to 16GB DDR5-4800MHz soldered RAM. The MIC-336 provides with 1 x DP, 2 x USB 3.2, and 2 x 2.5GbE RJ45/M12 Ethernet ports with TSN/TCC on front 4HP panel, Also extra 2 x COM ports, 1 x Line out on front 8HP panel. The MIC-336 accommodates 1 x 2280/2242 size M.2 socket at high speed SATA 3.0/PCIe 2.0, reserved on board 1 x 64G eMMC 5.1 storage, 1 x TPM2.0, 1 x wafer for USB2.0 function per user request.

The MIC-336 series also provides extensible I/O resources: 4 x PCIe x1, 1 x USB3.2, 4 x USB2.0, 1 x SATA 3.0, 1 x 2.5 GbE to the CompactPCI® Serial backplane for peripheral I/O expansion like storage, Ethernet, Wifi etc.. The MIC-336 with excellent thermal and EMC design makes it suitable for harsh environments and provides an ideal solution for railway rolling stock and high-performance computing applications.

### Specifications

|                                       |                  |                                                                                                                                                                                                                                           |
|---------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor System                      | CPU              | Intel Atom® X7433RE, 4C/9W, Max Turbo Frequency: 3.4GHz, ECC<br>Intel Atom® X7835RE, 8C/12W, Max Turbo Frequency: 3.6GHz, ECC                                                                                                             |
|                                       | BIOS             | AMI 256Mb SPI flash                                                                                                                                                                                                                       |
| Memory                                | Technology       | DDR5 4800 MT/s, ECC                                                                                                                                                                                                                       |
|                                       | Max. Capacity    | Up to 16GB on board                                                                                                                                                                                                                       |
| Graphics                              | Controller       | Intel® UHD Graphics                                                                                                                                                                                                                       |
|                                       | I/O connector    | 1 x DisplayPort                                                                                                                                                                                                                           |
|                                       | Resolution       | 4096 x 2160@60Hz                                                                                                                                                                                                                          |
| Ethernet                              | Interface        | Up to three Ethernet in total<br>2 x 2.5GBASE-T RJ45/M12 on front panel<br>1 x 2.5GBASE-T to backplane via P6                                                                                                                             |
|                                       | Controller       | Intel i226IT 2.5Gbps Ethernet Controller                                                                                                                                                                                                  |
|                                       | I/O Connector    | 2 x RJ45/M12 to front 4HP W/ 2.5Gbps speed                                                                                                                                                                                                |
| Storage                               | Mode             | SATA 3.0                                                                                                                                                                                                                                  |
|                                       | Channels         | 1 x onboard 2280/2242 M.2 type module( (M-key socket)<br>1 x channel to CPCI-S backplane                                                                                                                                                  |
| Front I/O                             | USB              | 2x USB3.2 with gen1 speed                                                                                                                                                                                                                 |
|                                       | LAN              | 2 x 2.5GBASE-T RJ45/M12 on 4HP, With TSN/TCC function                                                                                                                                                                                     |
|                                       | Front Panel LEDs | 1 x blue LED for hot swap<br>1 x green LED for PWR<br>1 x green LED for master/drone<br>1 x yellow LED for HDD<br>2 x green/orange LEDs for LAN speed(green indicates 2.5Gbps; orange indicates 1Gbps)<br>3 x green LEDs for LAN activity |
|                                       |                  |                                                                                                                                                                                                                                           |
|                                       |                  |                                                                                                                                                                                                                                           |
|                                       | Buttons          | System reset button                                                                                                                                                                                                                       |
| CompactPCI Serial Backplane Resources | PCIe             | 4 x PCIe x1                                                                                                                                                                                                                               |
|                                       | SATA             | 1 x SATA 3.0                                                                                                                                                                                                                              |
|                                       | USB              | 1 x USB3.2 @ 5Gbps speed<br>4 x USB2.0 @ 480MHz speed                                                                                                                                                                                     |
|                                       | GbE              | 1 x 2.5 GbE to backplane via P6                                                                                                                                                                                                           |

## Specifications (Cont.)

|                   |                         |                                                                                                                                                                                                                                                         |
|-------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To P1-P6 Signal   | P1                      | 1 x PCIe3.0 x 1, 1 x SATA 3.0, 1 x USB3.2 gen1, 1 x USB2.0, reserve 1 x I2C, SMBUS                                                                                                                                                                      |
|                   | P2                      | 1 x PCIe3.0 x 1, 3 x USB2.0, 1 x UART, reserve 5 x GPIO                                                                                                                                                                                                 |
|                   | P3                      | n.a                                                                                                                                                                                                                                                     |
|                   | P4                      | 2 x PCIe2.0 x 1                                                                                                                                                                                                                                         |
|                   | P5                      | 4 x PCIe clock REQ                                                                                                                                                                                                                                      |
|                   | P6                      | 1 x 2.5GbE                                                                                                                                                                                                                                              |
| BIOS              | Boot Options            | SATA, USB, network (PXE)<br>eMMC (by option BOM)                                                                                                                                                                                                        |
| Watchdog Timer    | Output                  | Local reset                                                                                                                                                                                                                                             |
|                   | Interval                | Programmable 1s~255s                                                                                                                                                                                                                                    |
| Security          | Trusted Platform Module | Reserved TPM 2.0 function                                                                                                                                                                                                                               |
| Power Requirement | Configuration           | CPU TDP 9W/12W                                                                                                                                                                                                                                          |
|                   | Consumption             | 22W/25W                                                                                                                                                                                                                                                 |
| Operating System  | Compatibility           | Windows 11, Windows 10, Ubuntu 22.04, Vxworks                                                                                                                                                                                                           |
| Physical          | Dimension & Weight      | 8HP, 160.00 x 100.00 mm<br>700g                                                                                                                                                                                                                         |
|                   | Environment             | Operating Non-operating<br>Temperature -40 ~ 70 °C (-40 ~ 158 °F), fanless -40 ~ 85 °C (-40 ~ 185 °F)<br>Humidity 95% @40 °C, non-condensing 95 % @ 60 °C, non-condensing<br>Vibration 2Grms<br>Shock 10 G, 11ms, each axis three times, operation mode |
| Regulatory        | Conformance             | FCC Class A, CE, RoHS                                                                                                                                                                                                                                   |
| Compliance        | Standards               | PICMG® CompactPCI® Serial                                                                                                                                                                                                                               |

## Supported CPU Configurations

| Intel® CPU Model Number | # Cores | Max Turbo Frequency | Cache | Memory Types | ECC Support | TDP |
|-------------------------|---------|---------------------|-------|--------------|-------------|-----|
| Intel Atom® X7433RE     | 4       | 3.4GHz              | 6MB   | DDR5-4800    | Yes         | 9W  |
| Intel Atom® X7835RE     | 8       | 3.6GHz              | 6MB   | DDR5-4800    | Yes         | 12W |

## Ordering Information

| System board | Front Panel |                 |            |           |     |          | Onboard Features |                   |            | Others<br>To P6 Conn.<br>GbE Signal |
|--------------|-------------|-----------------|------------|-----------|-----|----------|------------------|-------------------|------------|-------------------------------------|
|              | DP          | USB<br>(Type-A) | LAN (RJ45) | LAN (M12) | COM | Line out | CPU              | Memory<br>Onboard | SATA (M.2) |                                     |
| MIC-336-A1D1 | 1           | 2               | 2          | -         | 2   | 1        | Atom® X7433RE    | 16GB, ECC         | 1          | 1                                   |
| MIC-336-B1D1 | 1           | 2               | -          | 2         | 2   | 1        | Atom® X7835RE    | 16GB, ECC         | 1          | 1                                   |

## Related Products

| Peripheral board | Description                                                           |
|------------------|-----------------------------------------------------------------------|
| MIC-3954D        | 3U CPCI-Serial quad M.2 carrier board                                 |
| MIC-3954E        | 3U CPCI-Serial quad Mini-PCIe carrier board for Wi-Fi/LTE/ GPS module |
| MIC-3954F        | 3U CPCI-S 4 x USB typeA, 1 x M.2 E key carrier board                  |
| MIC-3820         | 3U CPCI-Serial 2.5" SSD carrier board                                 |
| MIC-3811         | 3U CPCI-Serial dual mini PCIe carrier for wifi/BT/i-door module       |
| MIC-3860         | 3U CPCI-Serial 4 x RJ45/4 x M12 2.5 Gbps LAN board                    |
| MIC-3840         | 3U CPCI-Serial 8-port Serial Communication Board                      |
| MIC-300B         | 3U CPCI-Serial fanless chassis                                        |
| MIC-3890DC       | 3U CPCI-Serial DC-DC power module, 110V in / 12V out, 300W            |
| MIC-3890AC       | 3U CPCI-Serial AC-DC power module, 12 V & 5 V output, 300 W           |

## Product Picture

MIC-336-A1D1



MIC-336-B1D1

