EMIO-200SA-MP01E 2-Ch SATA III Module Datasheet

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Revision History

Rev.	Date	History
0.1	2014/8/11	1. 1st draft

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1. Overview

Advantech EMIO-200SA module is a family of PCIe to 2-Ch SATA port devices. This model, EMIO-200SA, provides a simple method of adapting two SATA III devices to a modern PCIe x 1 port. This is accomplished by incorporating the industry standard PCIe bridge chip.

The EMIO-200SA module is compatible with all types of Serial ATA devices, including hard drives (HDDs), Solid State Drives (SSD), and optical drives (CD/DVD/BD). A versatile solution for storage applications.

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2. Electrical Features

- PCI Express Base Specification Rev. 2.0
- PCI Express Card Electromechanical Rev. 2.0
- Serial ATA AHCI Spec. Rev.1.3
- Serial ATA Revision 3.0
- One lane PCI Express for 2.5 and 5GHz signaling
- SSC support
- ECRC and Advanced Error Reporting capability
- 2 ports Serial ATA PHY for 1.5, 3.0 and 6.0GHz signaling
- Support IDE/AHCI mode
- Support Native Command Queue (NCQ)
- Support Gen1m and Gen2m SATA PHY
- Support Port Mult

3. Environmental Features

■ **Temperature Ranges**
- Operating : 0℃ ~ 70℃
- Storage : -40℃ ~ 85℃

■ **Humidity**
- 25% ~ 95%, 40℃

■ **Random Vibration Test**
- 5 - 500Hz, PSD 0.028G²/Hz,3.5Grms
- 3 axes, 1 hr/per axis

■ **Acquired RoHS Certificate**

■ **Dimension：50.95 mm x 30 mm x 15 mm**

■ **Weight：30 g**

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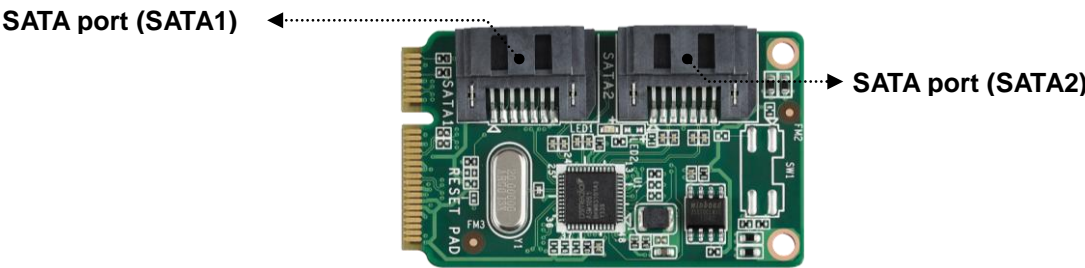
4. Block Diagram

Below Figure shows the operation of Advantech EMIO-200SA 2-Ch SATA III module from the system level, including the major hardware blocks.

```
        ┌─────────────────────┐
        │      MiniPCIe        │
        │   Golden Finger      │
        └─────────────────────┘
                  │
                  ▼
        ┌─────────────────────┐
        │  PCIe to 2-Ch SATA III │
        │    Controller IC     │
        └─────────────────────┘
           │              │
           ▼              ▼
    ┌──────────┐    ┌──────────┐
    │  SATA1   │    │  SATA2   │
    └──────────┘    └──────────┘
```

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5. Pin Assignment and Description

5.1 Connector Location

SATA port (SATA1) ◄·············

············► SATA port (SATA2)

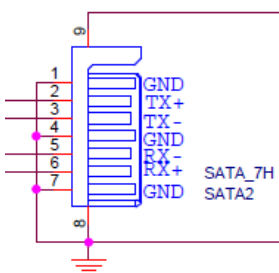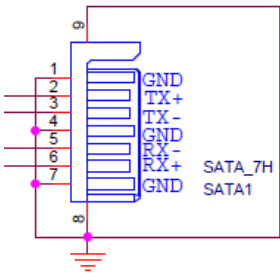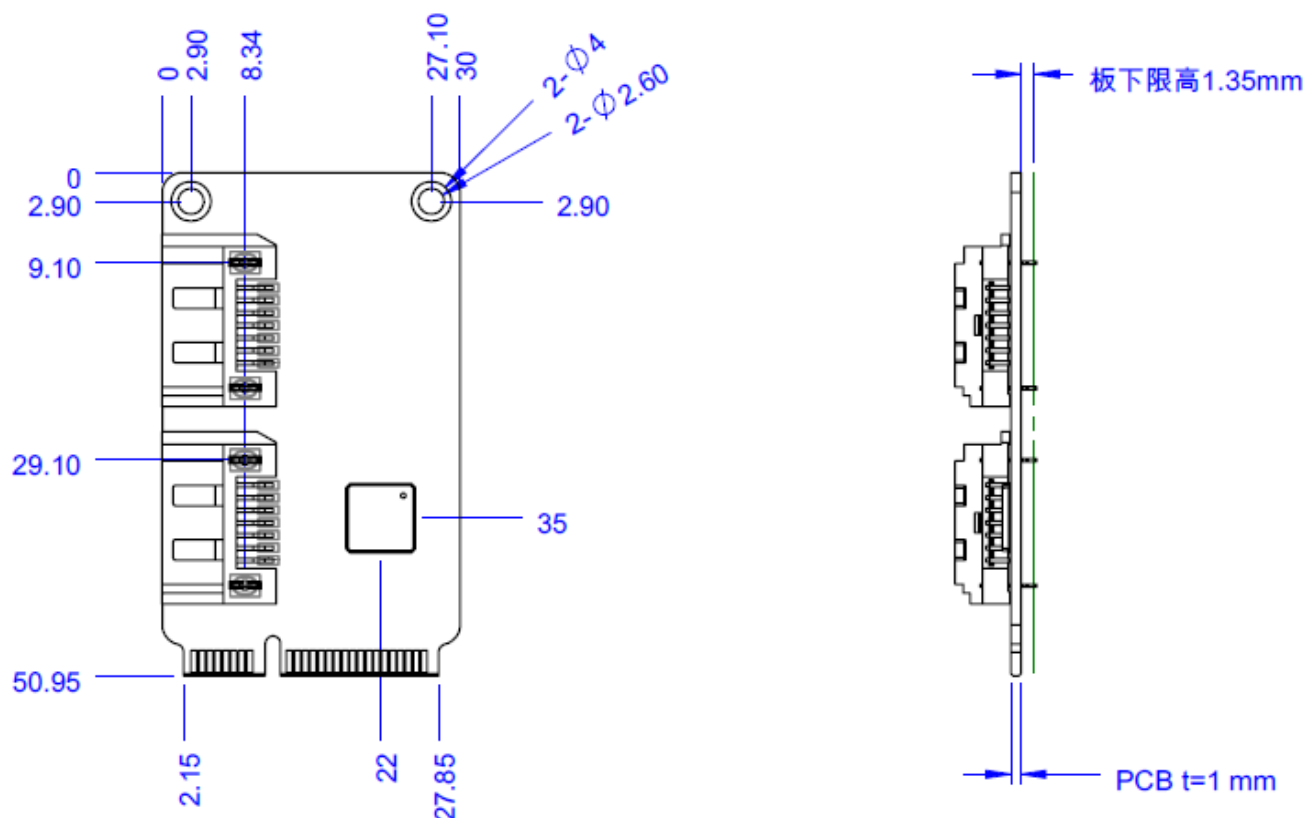### 5.2 SATA port, SATA1 and SATA2

The SATA port, SATA1 and SATA2, is a Wafer Box 7P 90D connector matching side connector for SATA signal output. The pins are numbered as shown in the table below.

SATA1 Pin #	Signal Name	SATA2 Pin #	Signal Name
1	GND	1	GND
2	SATA1 TX+	2	SATA2 TX+
3	SATA1 TX-	3	SATA2 TX-
4	GND	4	GND
5	SATA1 RX-	5	SATA2 RX-
6	SATA1 RX+	6	SATA2 RX+
7	GND	7	GND

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6. Physical Dimension

EMIO-200SA PCIe to 2-Ch SATA III module (Unit: mm)

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Appendix I: Part Number Table

Product Description	Advantech P/N
Advantech EMIO-200SA, PCIe to SATA III module, 2-Ch, (0~70°C)	EMIO-200SA-MP01E

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