



# IPC-M2202SR

Industrial 2 ports RS-422/485

M.2 (2280 Type, Key B+M)

with Surge PCI-Express Serial Card



## Introduction

SUNIX IPC-M2202SR, Industrial 2 ports RS-422/485 with Surge PCI-Express Serial M.2 Card, allows users to expand two RS-422/485 ports on M.2 with Key-M or Key-B based PC-based system. The RS-422/485 COM ports can be attached to a housing or slot bracket. Each serial port achieves data rates up to 921.6 Kbps and utilizes 16C950 UART with an on-chip 128-bytes hardware FIFO buffer for reliable, high-speed serial I/O. With SUNIX patented Auto-Switching RS-422/485 and RS-485 AHDC™ technology, user can easily manage different serial interfaces selection and RS-485 signal direction control. SUNIX IPC-M2202SR board is provided with 2KV IEC6100-4-5 Level 3 Surge Suppressor and ±15KV IEC61000-4-2 ESD Discharge Transceiver. Besides, board supports a wide variety of operating systems, including Windows, Linux, DOS, and UNIX. It is the best serial communicating solution for industrial and harsh environment applications.

## Features

- Suitable for M.2 slot with Key-M or Key-B based on PCI Express communication.
- Expands 2 independent RS-422/485 serial ports with communication speeds up to 921.6Kbps.
- With high reliable SUNIX SUN2410 native PCI Express 16C950 UART controller.
- Designed to meet PCI Express Base Specification Revision 2.0.
- RS-422 and RS-485 auto detect and switching technology by software settings.
- Optional 120ohms termination resistor for each RS-485 COM port by jumper settings.
- AHDC/CS™ technology for collision free communication.
- On-chip hardware auto flow control to guarantee no data loss.
- Ultra low power consumption design for Green Environment.
- 15KV ESD protection for all serial signals meets IEC-61000-4-2 standard.
- 2KV surge protection for all serial signals meets IEC-61000-4-5 Level 3 standard.
- Plug-n-Play, I/O address and IRQ assigned by BIOS.
- Certified by CE, FCC, VCCI, C-Tick, BSMI, RoHS, and Microsoft WHQL approval.

## Specifications

### Serial Communication

|                      |  |                     |                              |
|----------------------|--|---------------------|------------------------------|
| <b>Interface</b>     | RS-422/485   | <b>Baud rate</b>    | 50bps ~921.6Kbps             |
| <b>Controller</b>    | SUNIX SUN2410<br>(16C950 UART Compatible)  | <b>Stop bit</b>     | 1, 1.5, 2                    |
| <b>BUS</b>           | PCI Express 2.0 x 1(single lan)<br>M.2 2280 Type, 59-pin<br>Key B+M Male   | <b>Parity</b>       | even, odd, none, mark, space |
| <b>No. of Port</b>   | 2-port   | <b>Flow Control</b> | Xon/Xoff (software)          |
| <b>IRQ &amp; IO</b>  | Assigned by System   | <b>FIFO</b>         | 128byte Hardware             |
| <b>Signal</b>        | RS-422: TxD+, TxD-, RxD+, RxD-, GND<br>4-wire RS-485: TxD+, TxD-, RxD+, RxD-, GND<br>2-wire RS-485: Data+, Data-, GND  |                     |                              |
| <b>Protection</b>    | ±15KV ESD IEC6000-4-2 Air Discharge<br>±8KV ESD IEC61000-4-2 Contact Discharge<br>±4KV ESD IEC61000-4-2 Level 2 Line-to-Line<br>2KV Surge IEC61000-4-5 Level 3 Surge Immunity Test |                     |                              |
| <b>PCB Connector</b> | 2 pcs x WAFER 2x5P pitch 1.0mm (90°)   |                     |                              |
| <b>Cable</b>         | 2 pcs x serial RS-422/485 D-Sub 9 pin male with nuts on cable  |                     |                              |

### Driver Support

|                           |   |
|---------------------------|---|
| <b>Microsoft Client</b>   | XP/Vista/7/8.x/10 (X86/X64)                             |
| <b>Microsoft Server</b>   | 2000/2003/2008/2012/2016 (X86/X64)                      |
| <b>Microsoft Embedded</b> | Windows CE5.0/6.0/XP Embedded/POS Ready/Embedded System |
| <b>Linux</b>              | Linux 2.x / 3.x / 4.x                                   |
| <b>DOS</b>                | DOS   |

### Regulatory Approvals

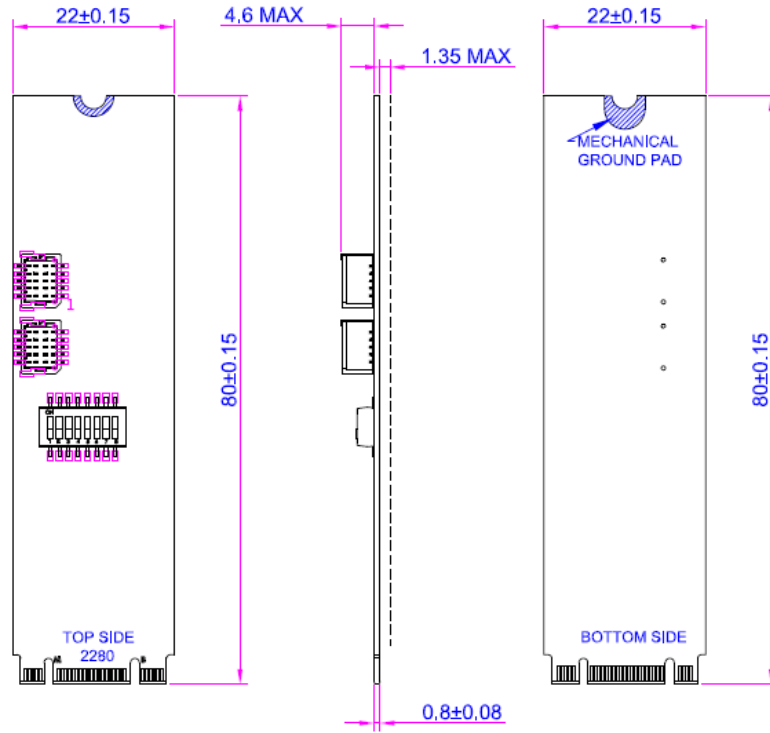
|                 |  |
|-----------------|--|
| <b>Hardware</b> | EN55032 Class B, EN55035, EN61000-3-2, EN61000-3-3,<br>FCC Part 15 Class B, BSMI: CNS13438, C-Tick: CISPR22 AS/NZS, RoHS   |
| <b>Software</b> | Microsoft WHQL Windows<br><ul style="list-style-type: none"> <li>■ Microsoft Client: XP/Vista/7/8.x/10 (X86/X64)</li> <li>■ Microsoft Server: 2003/2008/2012/2016 (X86/X64)</li> </ul> |

### Environment

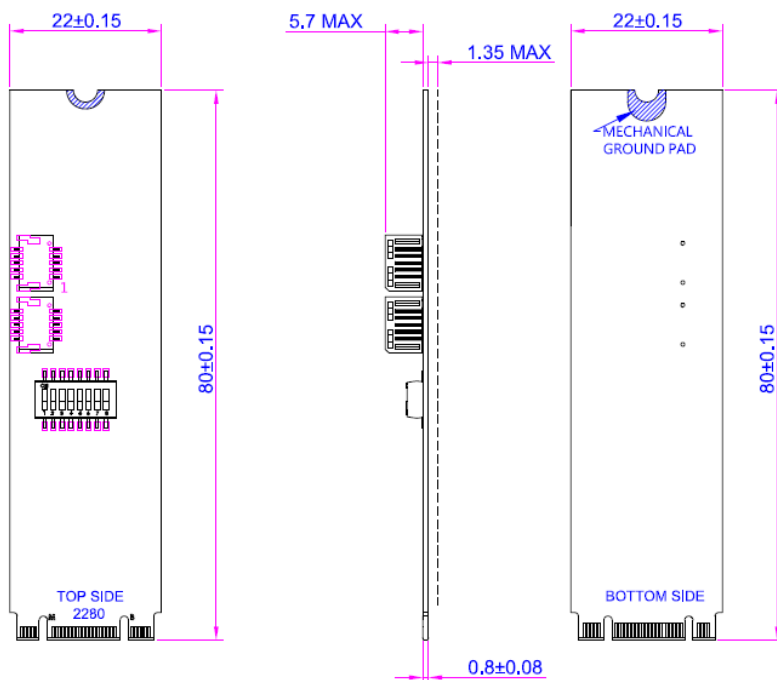
|                              |                           |
|------------------------------|---------------------------|
| <b>Operation Temperature</b> | 0 to 70°C (32 to 158°F)   |
| <b>Operation Humidity</b>    | 5 to 95% RH               |
| <b>Storage Temperature</b>   | -20 to 85°C (-4 to 185°F) |

## Mechanical Drawings (Unit = mm)

### ■ IPC-M2204S (Standard):

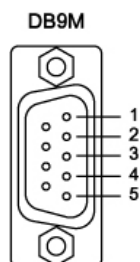


### ■ IPC-M2204SR (Right Angle Type 10-pin wafer) :



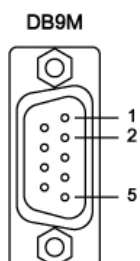
## Pin Assignment

### ■ RS-422



| PIN | DB9M |
|-----|------|
| 1   | TxD- |
| 2   | TxD+ |
| 3   | RxD+ |
| 4   | RxD- |
| 5   | GND  |

### ■ RS-485



| PIN | DB9M  |
|-----|-------|
| 1   | Data- |
| 2   | Data+ |
| 5   | GND   |

## Package

- IPC-M2202SR - Industrial 2 ports RS-422/485 M.2 with Surge PCI-Express Serial Card (Type2280)
- Quick Installation Guide
- Software CD Driver
- Serial RS-422/485 D-Sub 9-pin male with nuts on cable, 30 cm x 2 pcs



## Ordering Information

| Bus                      | RS-422/485 Port | Connector                   | ESD           |                   |                      | Surge                  | Isolation    | Model No.   |
|--------------------------|-----------------|-----------------------------|---------------|-------------------|----------------------|------------------------|--------------|-------------|
|                          |                 |                             | IEC-6100-4-2  |                   |                      | IEC-6100-4-5           | IEC60747-5-5 |             |
|                          |                 |                             | Air Discharge | Contact Discharge | Line-to-Line Level 2 | Surge Immunity Level 3 | Hi-Pot       |             |
| PCI Express              | 8               | DB44 Female                 | ±15KV         | ±8KV              | ±4KV                 | 2KV                    | -            | IPC-E2108   |
|                          |                 |                             |               |                   |                      |                        | 1.5KV        | IPC-E2108SI |
|                          | 4               | DB44 Female                 |               |                   |                      |                        | -            | IPC-E2204S  |
|                          |                 |                             |               |                   |                      |                        | 1.5KV        | IPC-E2204SI |
|                          |                 |                             |               |                   |                      |                        | -            | IPC-E2204SL |
|                          |                 |                             |               |                   |                      |                        | 1.5KV        | IPC-E2204LI |
|                          | 2               | DB9 Male                    |               |                   |                      |                        | -            | IPC-E2202S  |
|                          |                 |                             |               |                   |                      |                        | 1.5KV        | IPC-E2202SI |
|                          |                 | DB44 Female                 |               |                   |                      |                        | -            | IPC-E2202SL |
|                          |                 |                             |               |                   |                      |                        | 1.5KV        | IPC-E2202LI |
| PCI Express M.2 2280Type | 4               | WAFER 2x5P pitch 1.0mm Male | ±15KV         | ±8KV              | ±4KV                 | 2KV                    | N.A.         | IPC-M2204S  |
|                          |                 |                             |               |                   |                      |                        |              | IPC-M2204SR |
|                          | 2               |                             |               |                   |                      |                        |              | IPC-M2202S  |
|                          |                 |                             |               |                   |                      |                        |              | IPC-M2202SR |

### Headquarters

#### Taiwan

Sunix Co., Ltd.  
Tel : +886-2-8913-1987  
Fax : +886-2-8913-1986  
Website : www.sunix.com  
E-mail : info@sunix.com

#### America

SUNIX USA, INC.  
Tel : +1 (626) 765-4031  
Fax : +1 (909) 594-8906  
Website : www.sunix.com  
E-mail : sales.sunixusa@sunix.com

#### Germany

Sunix Vertriebs GmbH  
Tel : +49(0)6995-20 9506  
Fax : +49(0)6995-20 8267  
Website : www.sunix.com  
E-mail : info@sunix-euro.de

#### China

Shanghai Office  
Tel : +86-21-6469-1670  
Fax : +86-21-6468-8346  
Website : www.sunix.com.cn  
E-mail : info@sunix.com.cn

#### Beijing Office

Tel : +86-10-65308429  
Fax : +86-10-65308421

#### Shenzhen Office

Tel : +86-07-5533500418