



## IPC-M2202S

Industrial 2 ports RS-422/485  
M.2 (2280 Type, Key B+M)  
with Surge PCI-Express Serial Card



### Introduction

SUNIX IPC-M2202S, 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-M2202S 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 (16C950 UART Compatible)	<b>Stop bit</b>	1, 1.5, 2
<b>BUS</b>	PCI Express 2.0 x 1(single lan) M.2 2280 Type, 59-pin 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 4-wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2-wire RS-485: Data+, Data-, GND		
<b>Protection</b>	±15KV ESD IEC6000-4-2 Air Discharge ±8KV ESD IEC61000-4-2 Contact Discharge ±4KV ESD IEC61000-4-2 Level 2 Line-to-Line 2KV Surge IEC61000-4-5 Level 3 Surge Immunity Test		
<b>PCB Connector</b>	2 pcs x WAFER 2x5P pitch 1.0mm (180°)		
<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

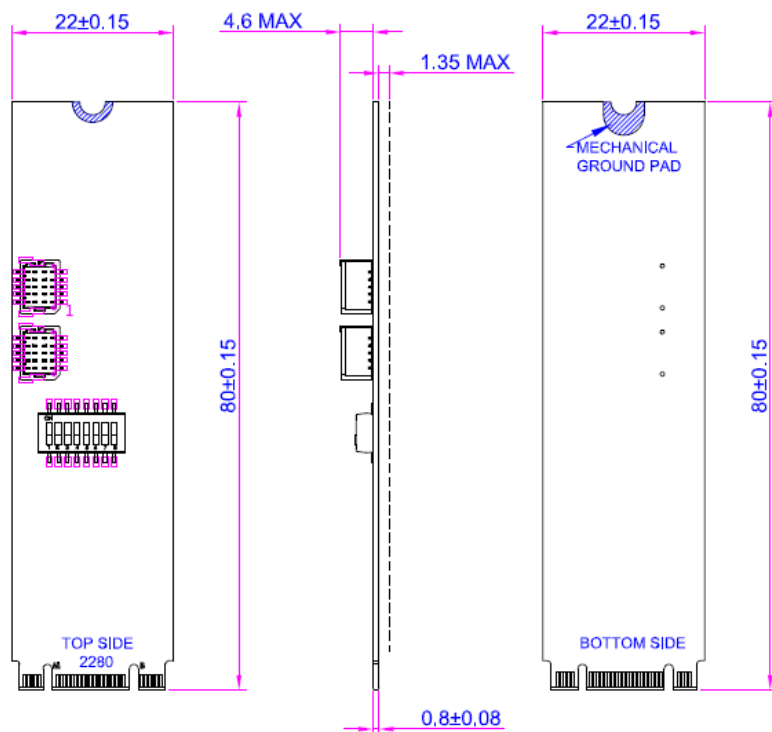
<b>Hardware</b>	EN55032 Class B, EN55035, EN61000-3-2, EN61000-3-3, FCC Part 15 Class B, BSMI: CNS13438, C-Tick: CISPR22 AS/NZS, RoHS
<b>Software</b>	Microsoft WHQL Windows <ul style="list-style-type: none"> <li>■ Microsoft Client: XP/Vista/7/8.x/10 (X86/X64)</li> <li>■ Microsoft Server: 2003/2008/2012/2016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

### Environment

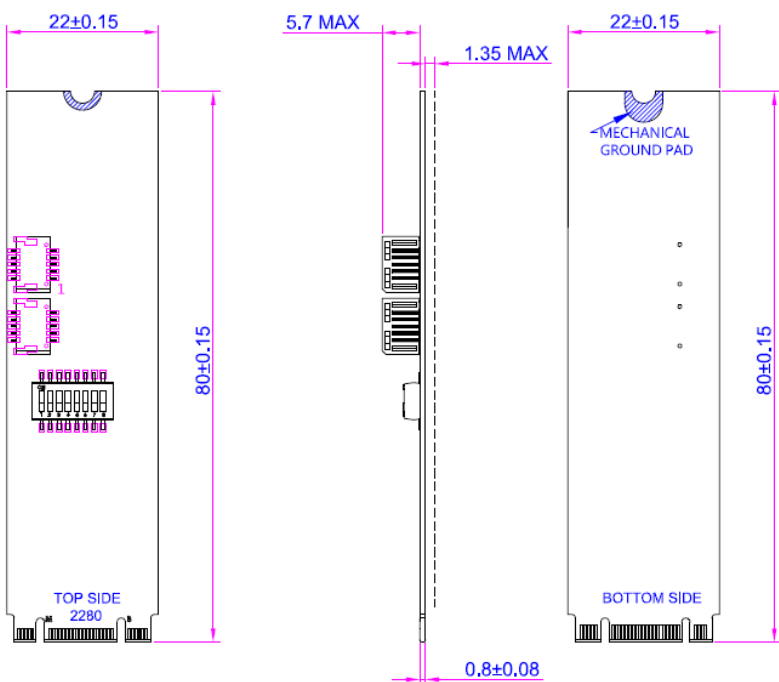
<b>Operation Temperature</b>	0 to 70°C (32 to 158°F)
<b>Operation Humidity</b>	5 to 95% RH
<b>Storage Temperature</b>	-20 to 85°C (-4 to 185°F)

## Mechanical Drawings (Unit = mm)

### ■ IPC-M2204S (Standard):

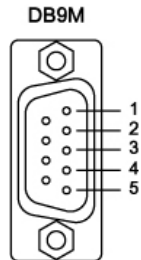


### ■ IPC-M2204SR (Right Angle Type 10-pin wafer) :



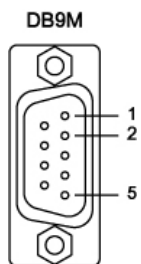
## Pin Assignment

### ■ 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-M2202S - 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 2pcs



## 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
							-	IPC-E2204S
	4	DB44 Female					1.5KV	IPC-E2204SI
							-	IPC-E2204SL
							1.5KV	IPC-E2204LI
							-	IPC-E2202S
							1.5KV	IPC-E2202SI
							-	IPC-E2202SL
2	DB9 Male	-	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](http://www.sunix.com)  
E-mail : [info@sunix.com](mailto:info@sunix.com)

#### America

SUNIX USA, INC.

Tel : +1 (626) 765-4031  
Fax : +1 (909) 594-8906

Website : [www.sunix.com](http://www.sunix.com)  
E-mail : [sales.sunixusa@sunix.com](mailto:sales.sunixusa@sunix.com)

#### Germany

Sunix Vertriebs Gmbh

Tel : +49(0)6995-20 9506  
Fax : +49(0)6995-20 8267

Website : [www.sunix.com](http://www.sunix.com)  
E-mail : [info@sunix-euro.de](mailto:info@sunix-euro.de)

#### China

Shanghai Office

Tel : +86-21-6469-1670  
Fax : +86-21-6468-8346

Website : [www.sunix.com.cn](http://www.sunix.com.cn)  
E-mail : [info@sunix.com.cn](mailto:info@sunix.com.cn)

Beijing Office

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

Shenzhen Office  
Tel : +86-07-5533500418