IPC-E2204SI

**Industrial 4-port RS-422/485
with Surge & Isolation PCI-Express
Serial Card**

Introduction

SUNIX IPC-E2204SI, Industrial 4-port RS-422/485 with Surge & Isolation PCI-Express Serial Card, allows users to expand four RS-422/485 ports on PC-based system. 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-E2204SI board is provided with 2KV IEC6100-4-5 Level 3 Surge Suppressor, 15KV IEC61000-4-2 ESD Discharge Transceiver, and 1.5KV IEC-60747-5-5 standard optical isolators which achieve on power and serial signal lines to protect your PC and equipment against damages from ground loops, increasing system reliability in harsh environments. 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

- Expands 4 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 – jumper and software free.
- 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.
- 1.5KV isolated protection for all signal and power meets IEC-60747-5-5 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.
- Support Microsoft Windows, Linux, and DOS OS.

Specifications

Serial Communication

Interface	RS-422/485	Baud rate	50bps ~921.6Kbps
Controller	SUNIX SUN2410 (16C950 UART Compatible)	Stop bit	1, 1.5, 2
BUS	PCI Express 2.0 x 1 (single lan)	Parity	even, odd, none, mark, space
No. of Port	4-port	Flow Control	Xon/Xoff (software)
IRQ & IO	Assigned by System	FIFO	128byte Hardware
Signal	RS-422: TxD+, TxD-, RxD+, RxD-, GND 4-wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2-wire RS-485: Data+, Data-, GND		
Protection	±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 1.5 KV Isolation IEC60747-5-5 Hi-Pot		
PCB Connector	DB44 Female		

Driver Support

Windows Client	Windows XP/Vista/7/8/8.1 (X86/X64)
Windows Server	Windows 2000 / 2003 / 2008 / 2008 R2 / 2012 / 2012 R2 (X86/X64)
Windows Embedded	Windows CE 4.2/5.0/6.0/XP Embedded/POSReady 2009/POSReady 7/ Embedded System 2009/Embedded Standard 7
Linux	Linux 2.4.x/2.6.x/3.x
DOS	DOS

Regulatory Approvals

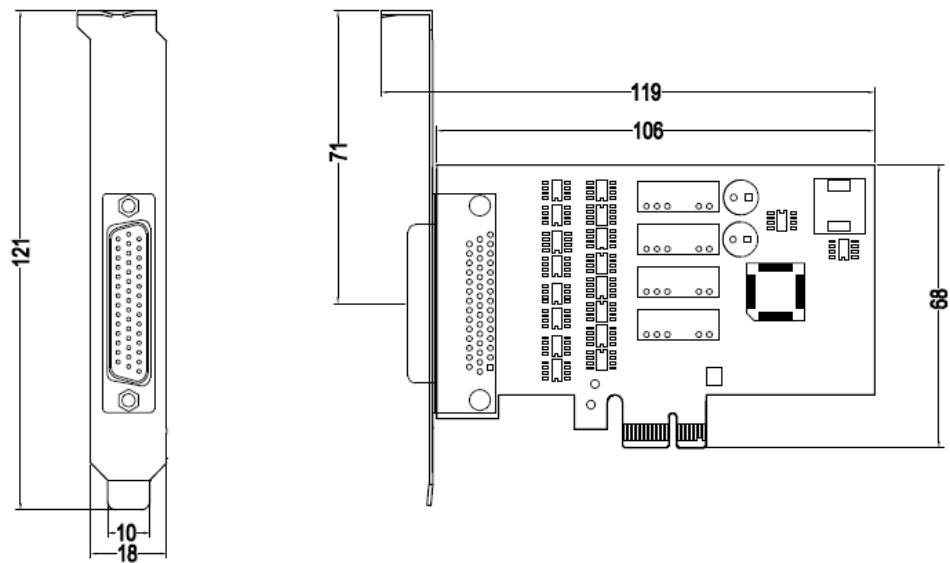| Hardware	EN55022 Class B, EN55024, EN61000-3-2, EN61000-3-3, FCC Part 15 Class B, BSMI: CNS13438, C-Tick: CISPR22 AS/NZS, RoHS
Software	Microsoft WHQL Windows ● **Microsoft Client:** XP/Vista/7/8/8.1 (X86/X64) ● **Microsoft Server:** 2000 / 2003 / 2008 / 2008 R2 / 2012 / 2012 R2 (X86/X64)

Environment

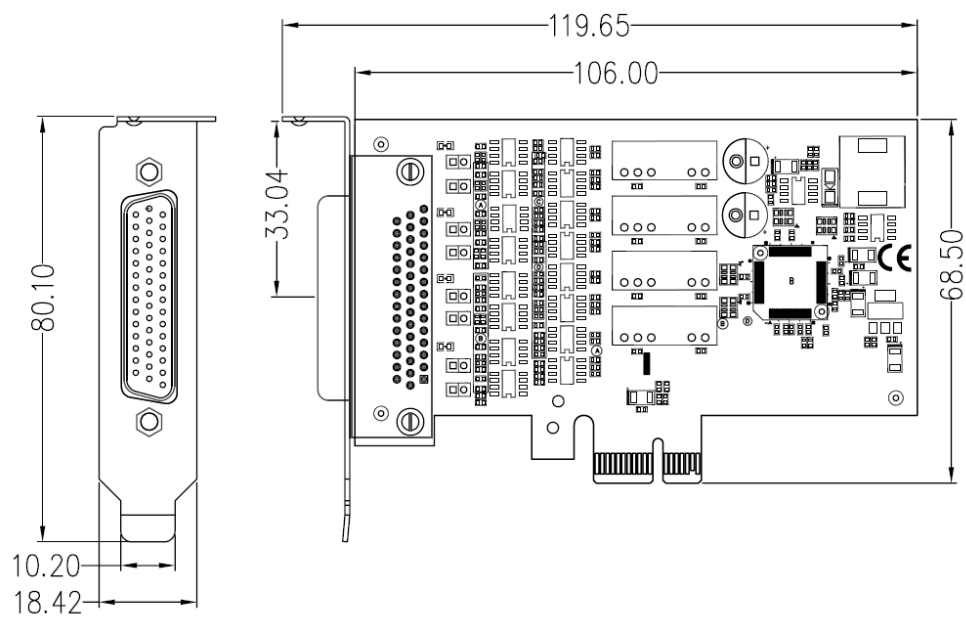| Operation Temperature	0 to 70°C (32 to 158°F)
Operation Humidity	5 to 95% RH
Storage Temperature	-20 to 85°C (-4 to 185°F)

Dimension

PCB Dimension	106 x 68 mm
Bracket	Standard 121mm / Low Profile 80mm
Bracket Space	1

Mechanical Drawings (Unit = mm)
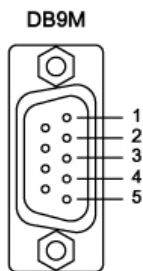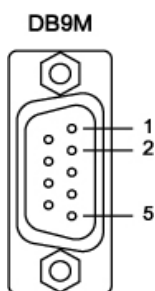
■ Standard Bracket

■ Low Profile

Pin Assignment

■ RS-422

DB9M

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

■ RS-485

DB9M

PIN	DB9M
1	Data-
2	Data+
5	GND

Package

- IPC-E2204SI - Industrial 4-port RS-422/485 with Surge & Isolation PCI-Express Serial Card
- Quick Installation Guide
- Software CD Driver
- DB44 to 4-port DB9 Male Connection Cable, 40 cm
- Low Profile Bracket 80mm

Optional Accessories

- DB44 to 4-port DB9 Male Connection Cable, 40cm
  Part No.: 1WDB-44M04009D4001
- DB44 to 4-port DB25 Male Connection Cable, 40cm
  Part No.: 1WDB-44M04025D4000
- DB44 to 4-port DB9 Male Connection Cable, 100cm
  Part No.: 1WDB-44M10009C4000
- DB44 to 4-port DB25 Male Connection Cable, 100cm
- PCIe Add-on Card Holder
  Part No.: 13BF-PCIEFIX010000

Ordering Information

Bus	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