PCES-8581-4S/4L/13S, ECS-8582-4S

PCIe/EC-to-PCI Expansion Systems

ECS-8582-4S

PCES-8581-4S

PCES-8581-4L

PCES-8581-13S

Introduction

Harnessing the bandwidth potential of the PCI Express, these latest smart expansion systems enable compuers with a PCI Express slot to remotely manage and control up to 13 PCI devices seven meters away, using the high-speed PCI Express interface. Offering up to 13 (PCES-8581-13S) or four PCI slots (PCES-8581-4S/4L, ECS-8582-4S), these expansion systems operate in 32-bit/33 MHz configuration and come with complete end-to-end hardware and software transparency for the host system. Hardware devices installed in the expansion system behave and work as if these are directly installed into the host system, requiring no additional drivers or software installation. The host system may be separated from the expansion system at up to seven meters using high-quality shielded twisted copper cables. The robust and reliable PCI expansion-to-PCI expansion systems are suited for portable test and measurement applications with high-density I/O requirement and in hazardous industrial control and automation environments.

Controlling PCI™ Remotely via the PCI Express® Interface

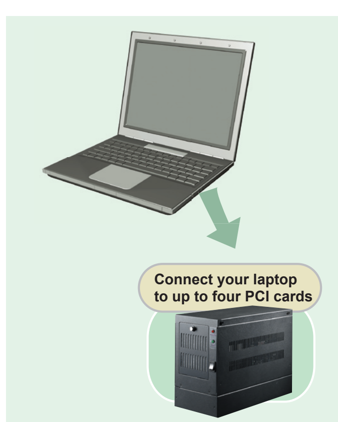
Most commercial desktop PCs of today are equipped with only one or two PCI slots. For users and applications requiring control of multiple PCI devices from one PC system, this limitation causes great difficulty when searching for and deciding on a suitable computer system. With the ADLINK PCES-8581-13S expansion system, users can easily expand their system and conveniently accommodate 13 PCI devices or more.

For rugged applications where the PC system is subjected to a hazardous environment, valuable components such as the CPU and hard disk drive are easily damaged. To protect these valuable IT investments, the PCES-8581-13S and the PCES-8581-4S/4L PCI Express-to-PCI expansion system can be controlled remotely at up to 7 meters from the host PC using a high-speed and well-shielded cable. While the host PC system is installed at a safe distance from the rugged environment, the remote expansion system is designed to withstand extreme temperatures or high vibration. On the other hand, if your PCI devices require less electromagnetic interference, you may also use the PCI Express-to-PCI expansion system to isolate high frequency interferences from the CPU, memory, or North/Southbridge chips. These expansion systems also allow close installation of your DAQ and/or control cards with the DUT (Device Under Test) for a more compact and space-saving test and measurement environment.

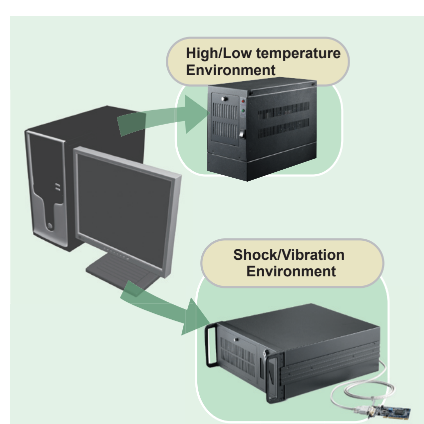
The ExpressCard-to-PCI expansion technology

The ECS-8582-4S expansion system consists of an EC-8560 installed in the laptop computer, a RK-8005 expansion chassis with pre-installed backplane and PCI-8565 expansion card to accommodate PCI™ cards, and a cable to connect them. The EC-8560 is an ExpressCard/34 module that re-drives the PCI Express® signal and transmits it through the cable. On the other side, the PCI-8565 installed in the expansion chassis equalizes the signal and works as a PCI Express-to-PCI bridge to accommodate four 32-bit/33 MHz PCI™ slots. Operating with full 132 MB/s PCI™ bandwidth, the ECS-8582-4S delivers an easy solution for bus expansion without any sacrifice of performance.

Note:
Due to the BIOS design, some laptop computers may be limited by system resource allocation for external PCI™ devices. ADLINK tests various laptop computers for compatibility with the ECS-8582-4S. Please visit the ADLINK website or contact us for compatibility information.



Expand PCI connectivity from a laptop computer



Separate your PC system and PCI devices, protect your PC system from hazardous environments.

Features

- **PCI Express-based control of PCI - PCES-8581-4S/13S**
- **ExpressCard-based control of PCI - ECS-8582-4S**
- **High-speed PCI Express x1 interface**
- **Compatible with 5 V and 3.3 V PCI signaling**
- **32-bit/33 MHz PCI interface support**
- **PCES-8581-4S/ECS-8582-4S expand four half-size PCI slots in a shoebox size wallmount chassis with built-in 200 W power supply**
- **PCES-8581-4L expands four full-size PCI slots in a wall-mount chassis with built-in 200W power supply**
- **PCES-8581-13S expands 13 full-size PCI slots in a 19" rack-mount chassis with built-in 400 W power supply**
- **PCES-8581-13S-RED expands 13 full-length PCI slots in a 19" rack-mount chassis with built-in 400W redundant power supply**
- **Extension distance of up to 7 meters (extension cables at 1 M, 3 M, and 7 M)**
- **Comprehensive hardware and software transparency**
- **Compliant with**
  - ExpressCard™ Standard Release 1.2
  - PCI Express® Base Specification Rev. 1.0a
  - PCI-to-PCI Bridge Architecture Specification, Revision 1.2
  - PCI Local Bus Specification, Revision 3.0


EC-8560


RK-8005


PCIe-8560


RK-8014

Specifications

EC-8560
- ExpressCard™ Standard Release 1.2 compliant
- PCI Express® Base Specification Rev. 1.0a compliant
- PCI Express® x1 link with 250 MB/s data throughput
- Dimension: ExpressCard/34 (108 mm (W) x 34 mm (H))
- Power requirements:

Device	+3.3 V
EC-8560	210 mA

PCIe-8560
- PCI Express Base Specifications Rev. 1.0a compliant
- PCI Express x1 link with 250 MB/s data throughput
- Dimension: Low-profile PCI Express card (69 mm (H) x 87 mm(W))
- Power requirements:

Device	+3.3 V
PCIe-8560	210 mA

PCI-8565
- PCI-to-PCI Bridge Architecture Specifications Rev. 1.2 compliant
- PCI™ Local Bus Specifications Rev. 3.0 compliant
- Supports 5 V and 3.3 V PCI™ bus
- Dimensions: Low-profile PCI™ add-on card (64 mm (H) x 120 mm (W))
- Power requirements:

Device	+3.3 V
PCI-8565	720 mA

RK-8005/8005L
- Dimensions:
  - RK-8005: 122 mm (W) x 195 mm (H) x 259 mm (D), for half-sized PCI cards
  - RK-8005L: 122 mm (W) x 195 mm (H) x 420 mm (D), for full-sized PCI cards
- Weight: 3.2Kg (7.04 lb) for RK-8005, 4.5Kg (9.9 lb) for RK-8005L
- Backplane: Five 32-bit/33 MHz half-sized PCI™ slots
  - 1 slot for expansion card
  - 4 slots available for PCI™ cards
- Power supply:
  - Input voltage: 85 VAC to 265 VAC
  - Output: 200 W
- Cooling: One 37.5 CFM ball bearing fan (80 mm)

RK-8014
- Dimensions: 483.5 mm (W) x 177 mm (H) x 448.5 mm (D)
- Weight: 12 Kg (26.4 lb)
- Backplane: 14 x 32-bit/33 MHz full-sized PCI slots
  - 1 slot for expansion card
  - 13 slots available for PCI cards
- Power supply:
  - Input voltage: 85 VAC to 265 VAC with auto-switching
  - Output: 400 W
- Cooling: Two 88 CFM ball bearing fan (120 mm)

ACL-EXPRESS-1/-3/-7
- Length: 1 M, 3 M, 7 M

General Specifications

- Operating temperature: 0°C to 50°C
- Storage temperature: -20°C to 80°C
- Relative humidity: 10% to 90%, non-condensing

Ordering Information

ECS-8582-4S
Includes One EC-8560, One RK-8005, and One ACL-EXPRESS-3 Cable

PCES-8581-4L
4-Slot PCIe-to-PCI Expansion System for Full-Size PCI Cards. Includes One PCIe-8560, One RK-8005L (full-length PCI slot) and One ACL-EXPRESS-3 Cable

PCES-8581-4S
Includes One PCIe-8560, One RK-8005, and One ACL-EXPRESS-3 Cable

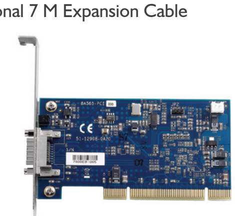
PCES-8581-13S-RED
13-Slot PCIe-to-PCI Expansion System with 400W Redundant Power Supply. Includes One PCIe-8560, One RK-8014 with 400W Redundant Power Supply, and One ACL-EXPRESS-3 Cable

PCES-8581-13S
Includes One PCIe-8560, One RK-8014, and One ACL-EXPRESS-3 Cable

ACL-EXPRESS-1
Optional 1 M Expansion Cable

ACL-EXPRESS-3
Optional 3 M Expansion Cable

ACL-EXPRESS-7
Optional 7 M Expansion Cable


PCI-8565


ACL-EXPRESS-1/-3/-7

PCIe/EC-to-PCI Expansion Systems

System Model	Host Bus Type	Expansion Bus Type	Slots No.	Expansion System Includes				Cable Option
				Card (Host)	Card (Remote)	Expansion Chassis	Accessory	
ECS-8582-4S	ExpressCard	PCI	4	EC-8560	PCI-8565	RK-8005	ACL-EXPRESS-3	ACL-EXPRESS-1/-7
PCES-8581-4S	PCI Express	PCI	4	PCIe-8560	PCI-8565	RK-8005	ACL-EXPRESS-3	ACL-EXPRESS-1/-7
PCES-8581-4L	PCI Express	PCI	4	PCIe-8560	PCI-8565	RK-8005L	ACL-EXPRESS-3	ACL-EXPRESS-1/-7
PCES-8581-13S/-13S-RED	PCI Express	PCI	13	PCIe-8560	PCI-8565	RK-8014	ACL-EXPRESS-3	ACL-EXPRESS-1/-7

Mouser Electronics

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ADLINK Technology:

ECS-8582-4S