

PCES-8581-4S/4L/I3S, ECS-8582-4S

PCIe/EC-to-PCI Expansion Systems



Introduction

Harnessing the bandwidth potential of the PCI Express, these latest smart expansion systems enable computers 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-I3S) 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 PCIExpress® 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-I3S 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-I3S 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

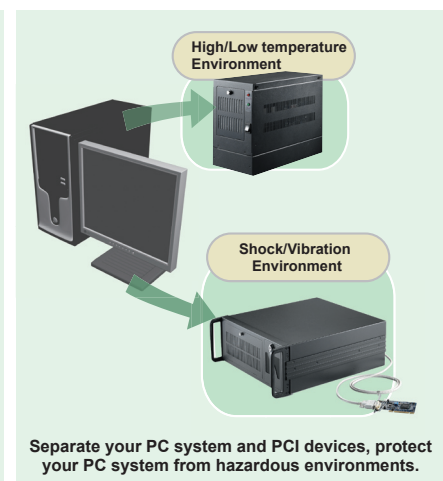
The ECS-8582-4S expansion system consists of an EC-8560 installed in the laptop computer, a RK-8005 expansion chassis with pre-installed backplane and PCI-8565 expansion card to accommodate PCI™ cards, and a cable to connect them. The EC-8560 is an ExpressCard/34 module that re-drives the PCI Express® 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.

Features

- PCI Express-based control of PCI - PCES-8581-4S/I3S
- 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-I3S expands 13 full-size PCI slots in a 19" rack-mount chassis with built-in 400 W power supply
- PCES-8581-I3S-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



1	Software & Utilities
2	DAQ
3	PXI
4	Modular Instruments
5	GPIB & Bus Expansion
6	PAC
7	Motion
8	Real-time Distributed I/O
9	Remote I/O
10	Communications
11	Vision
12	Fanless I/O Platforms
13	cPCI & Industrial Computers
14	Accessories



EC-8560



RK-8005



PCIe-8560



RK-8014

Specifications

■ EC-8560	<ul style="list-style-type: none"> 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: <table border="1"> <tr><th>Device</th><th>+3.3 V</th></tr> <tr><td>EC-8560</td><td>210 mA</td></tr> </table> 	Device	+3.3 V	EC-8560	210 mA
Device	+3.3 V				
EC-8560	210 mA				
■ PCIe-8560	<ul style="list-style-type: none"> 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: <table border="1"> <tr><th>Device</th><th>+3.3 V</th></tr> <tr><td>PCIe-8560</td><td>210 mA</td></tr> </table> 	Device	+3.3 V	PCIe-8560	210 mA
Device	+3.3 V				
PCIe-8560	210 mA				
■ PCI-8565	<ul style="list-style-type: none"> 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: <table border="1"> <tr><th>Device</th><th>+3.3 V</th></tr> <tr><td>PCI-8565</td><td>720 mA</td></tr> </table> 	Device	+3.3 V	PCI-8565	720 mA
Device	+3.3 V				
PCI-8565	720 mA				
■ RK-8005/8005L	<ul style="list-style-type: none"> Dimensions: <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 1 slot for expansion card 4 slots available for PCI™ cards Power supply: <ul style="list-style-type: none"> Input voltage: 85 VAC to 265 VAC Output: 200 W Cooling: One 37.5 CFM ball bearing fan (80 mm) 				
■ RK-8014	<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 1 slot for expansion card 13 slots available for PCI cards Power supply: <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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