PXES-2301

6-slot PXI Express Chassis

User's Manual



Manual Rev.:	1.2
Revision Date:	September 24, 2020
Part No:	50-17053-1010

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Revision History

Revision	Release Date	Description of Change(s)
1.0	2017-08-24	Initial Release
1.1	2020-06-17	Update specifications; add TUV safety content
1.2	2020-09-24	Removed section 2.4.2

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Preface

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Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.



NOTE: Additional information, aids, and tips that help users perform tasks.



CAUTION: Information to prevent ***minor*** physical injury, component damage, data loss, and/or program corruption when trying to complete a task.



WARNING: Information to prevent ***serious*** physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

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1 Introduction

The ADLINK PXES-2301 compact 6-slot PXI Express chassis, compliant with PXI Express and cPCI Express specifications, provides one system slot with three expansion slots and five hybrid peripheral slots, supporting a wide variety of enhanced-bandwidth testing and measurement applications. The hybrid-slot design accepts installation of Compact PCI, hybrid slot-compatible PXI-1 peripheral module, Compact PCI Express, and PXI Express modules in any peripheral slot for maximum flexibility. Built on a four-link PXI Express chassis with 8GB/s system bandwidth, the PXES-2301's peripheral slots are all connected with PCIe x4 Gen2, with slot bandwidth up to 2GB/s.

The PXES-2301 implements ADLINK's ChassisWatch™ smart system monitoring control utility, reporting full chassis status including fan speed, system voltages, and internal temperature. Compact, rugged, half-rack size with efficient construction uniquely suits the PXES- 2301 for portable use with minimized space requirements. An industrial grade AC power supply delivers 320W performance under 50°C, with superior cooling capability. All in all, the PXES-2301 is an ideal PXI Express platform choice for practically any testing and measurement operation.

1.1 Features

- Compact construction with side carrying handle for portable application in a wide variety of testing environments
- Replaceable modular cooling fan reduces maintenance requirements
- High per-slot cooling capacity up to 38W
- ADLINK's ChassisWatch™ intelligent chassis management utility with automatic fan speed control and temperature/ power status monitoring
- System bandwidth up to 8GB/s (4 links, PCIe x4 Gen2) & peripheral bandwidth up to 2GB/s (PCIe x4 Gen2) for all slots
- Net weight (without accessories): 5.85 kg (13.1 lb)
- Fan noise 35.3dBA at ambient 25°C (w/ no peripheral slot occupied)

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1.2 Specifications

The PXES-2301 complies with the PXI-5 Specification Rev.1.0 and accepts all modules compliant with the PXI-5, CompactPCI, and PICMG 2.0 specifications.

Power Supply

AC Input	
Rated Input	100-240 VAC, 50-60Hz, 320W max.

Entrée d'alimentation CA	
Entrée nominale	*100-240 VAC, 50-60Hz, 320W max.*

Power Requirements

The PXI Systems Alliance provides normal power and low power chassis classifications, with the PXES-2301 power supply meeting the low power standard and providing interoperability between modules and chassis. Power rail specifications follow and are further detailed in the PXI-5 PXI Express Hardware Specification, Section 4-11.

VDC	Load Regulation	Maximum Current	Maximum Ripple Noise
12V	±5%	30A	120mV
5V		20A	50mV
5VAUX		3.5A	
3.3V		20A	
-12V		0.8A	120mV

Table 1-1: Power Requirements

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10 MHz System Instrument Clock (PXI_CLK10)

Maximum slot-to-slot skew	1 ns
Built-in 10 MHz clock Accuracy	±25 ppm

100 MHz System Instrument Clock: PXI_CLK100

Maximum slot-to-slot skew	100 ps
Accuracy	±25 ppm

Cooling

Fans	2 sets of 100.2CFM fans
Per-slot cooling capacity	38.2 W (verified by 50°C chamber test)

Physical

Slots	6 total, as follows: ▶ 1x PXI Express system slot (4 links, PCIe x4 Gen2) ▶ 5x PXI Express Hybrid peripheral slots (PCIe x4 Gen2)
Dimensions	220.8mm (W) x 319.6mm (D), 177.8mm (H) (8.7 x 12.58 x 7 in.)
Weight	5.85 kg (13.1 lb), net weight without accessories

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Environmental

Storage	Ambient temperature: -20 to 70°C Relative humidity: 10 to 90%, non-condensing
Operating	Ambient temperature: 0 to 50°C Relative humidity 10 to 80%, non-condensing
Functional shock	30 G, half-sine, 11 ms pulse duration
Random Vibration	Operating: 5 to 500 Hz, 0.21 Grms, 3 axes Nonoperating: 5 to 500 Hz, 2.46 Grms, 3 axes
Sound Pressure Level (at operator position) Tested in accordance with ISO 7779	Auto fan (up to 25 °C ambient w/ no peripheral slot occupied) 35.3dBA High fan 60.8dBA
Sound Power	Auto fan (up to 25 °C ambient w/ no peripheral slot occupied) 50.0 dBA High fan 71.5 dBA

Certification

Emissions Compliance	FCC/ICES-003 (USA/Canada): Class A - EN 61326-1 CE (Europe): Class A - EN 61326-1
Safety	CE/LVD (Europe, mandatory for devices with supply voltage exceeding 50VAC/75VDC): EN 61010-1

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1.3 Schematics

NOTE:

All dimensions are shown in mm (millimeters)

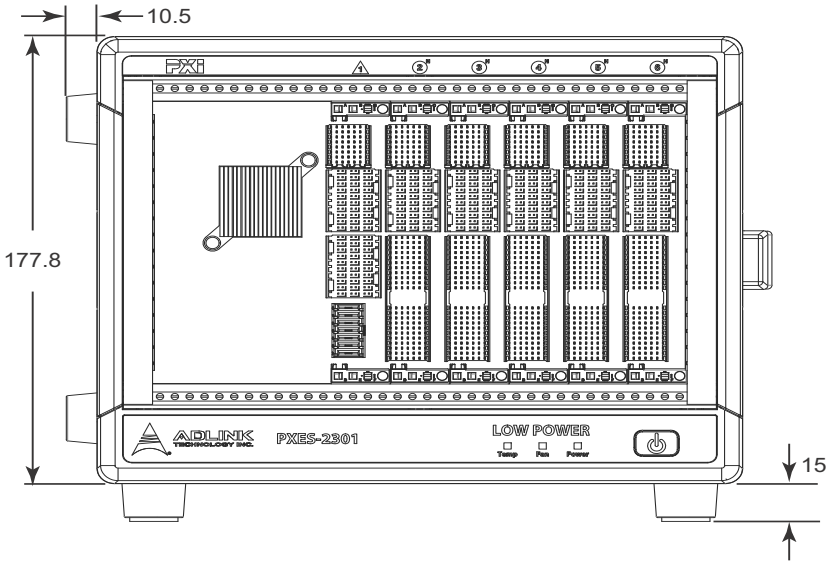


Figure 1-1: Front View

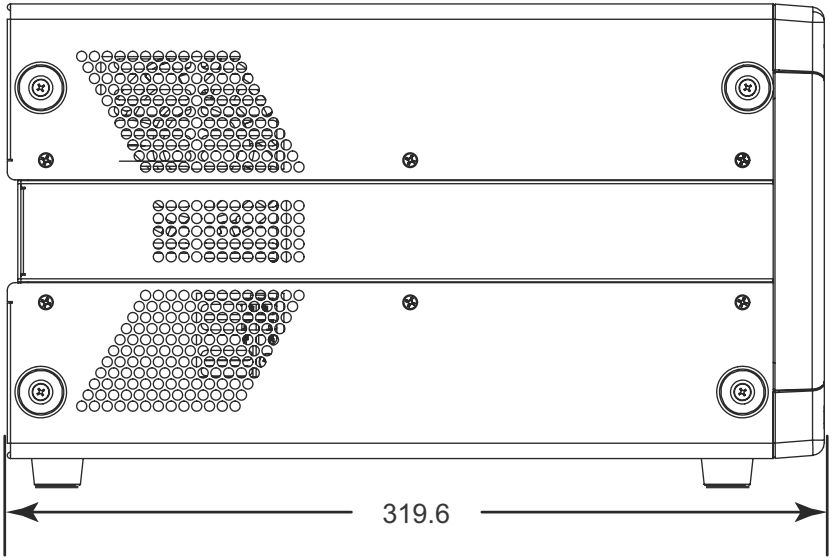


Figure 1-2: Left Side View

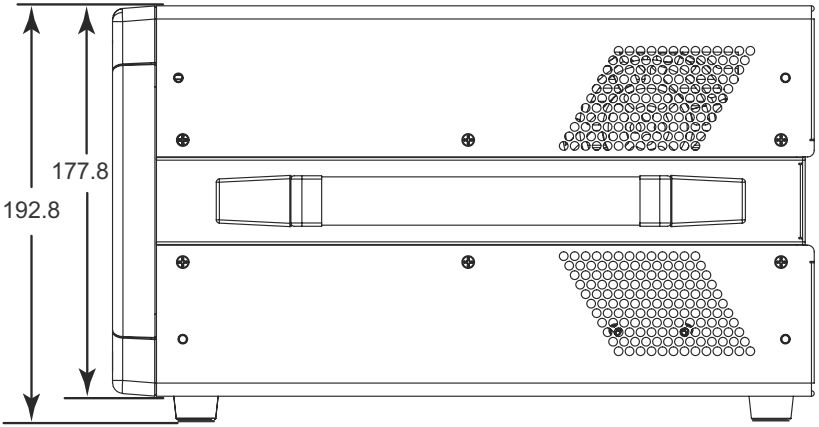


Figure 1-3: Right Side View

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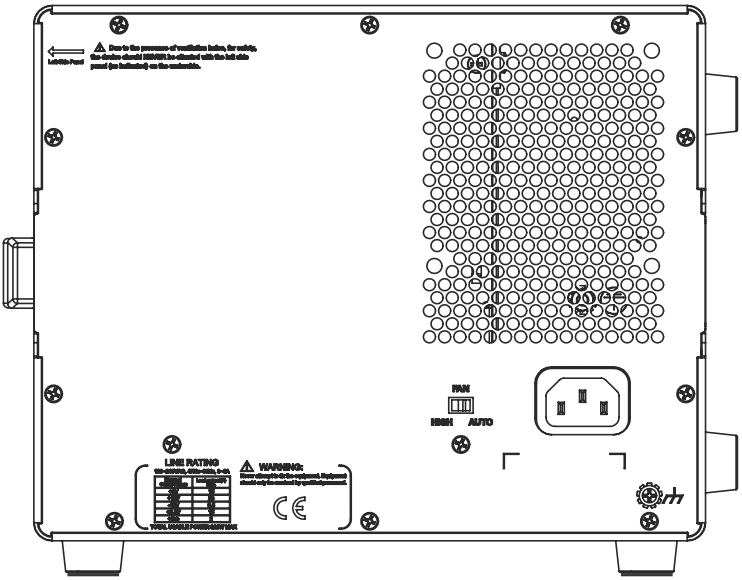


Figure 1-4: Rear View

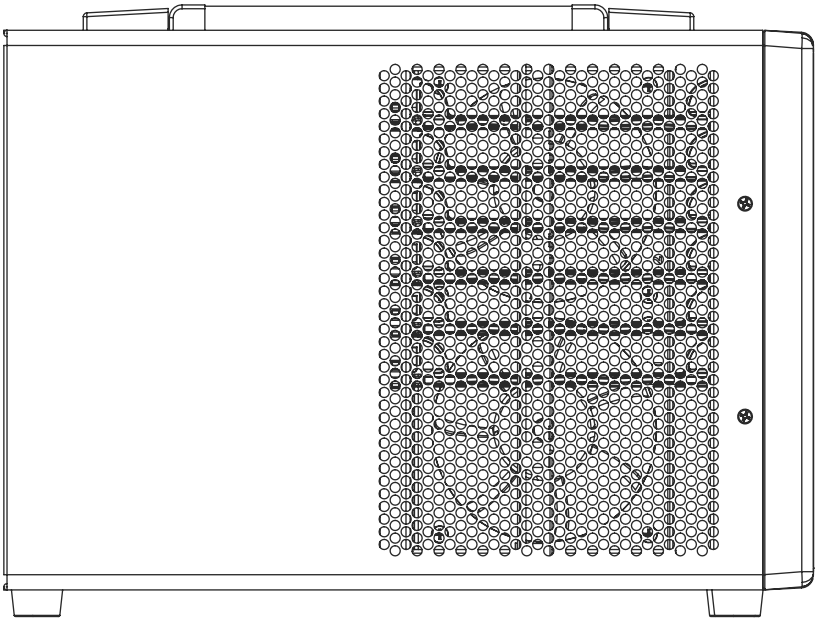


Figure 1-5: Top View

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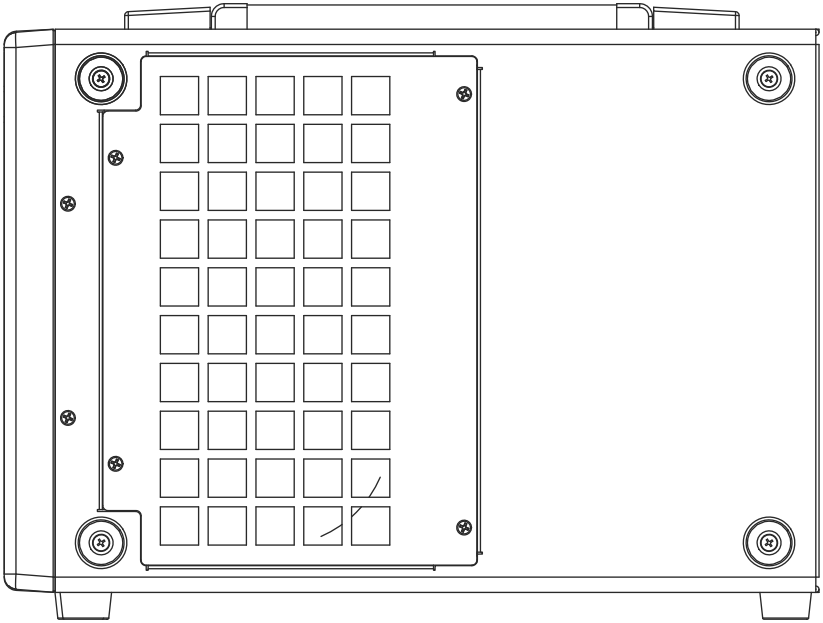


Figure 1-6: Underside View

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1.4 Connectors, I/O, and Controls

1.4.1 Front & Rear Panels



Figure 1-7: PXES-2301 Front Panel



Figure 1-8: PXES-2301 Rear Panel

	Feature	Details
A	Power	Powers the chassis on and off
B	Chassis Status LED	Temperature, Fan, and Power (L to R), functions (See “Front Panel LED Indicators” on page 12)
C	Fan Switch	In HIGH position, fans operate at maximum speed, in AUTO, fans run based on monitored chassis temperature
D	Universal Power	Accepts C13 power outlet-equipped connection
E	Chassis Ground Lug	For attachment to ground via ground lead

Table 1-2: Front & Rear Panel Legend

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Status	Temperature (Amber)	Fan (Green)	Power (Blue)
On (Lit)	N/A	Fans operating normally	DC voltage supply is normal
Off	Temperature is normal	Chassis is powered down	Chassis is powered down
Blinking	One or more temperature sensors exceeds threshold temperature (default 70°C)	One or more fans falls below threshold speed (default is 800RPM)	One or more power rails exceeds threshold settings (defaults are ±5% for 5V, 3.3V, +12V, and -12V)

Table 1-3: Front Panel LED Indicators

1.4.2 Backplane

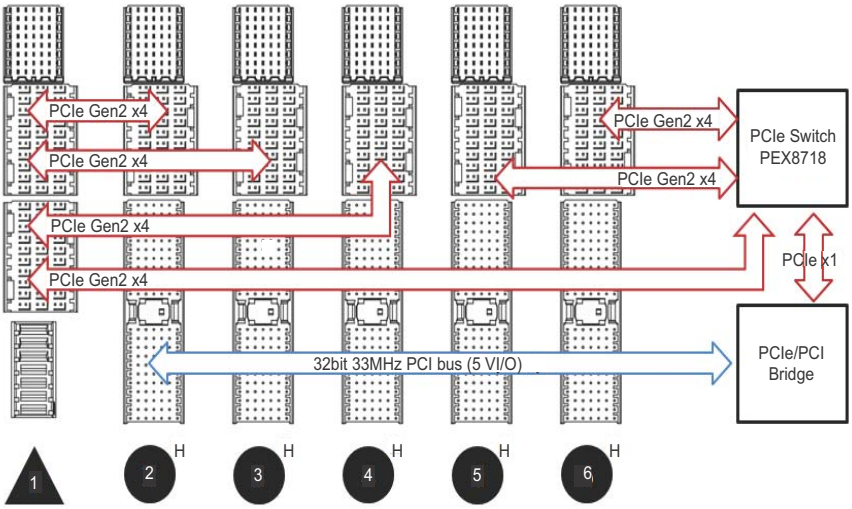


Figure 1-9: PXES-2301 PCIE Topology

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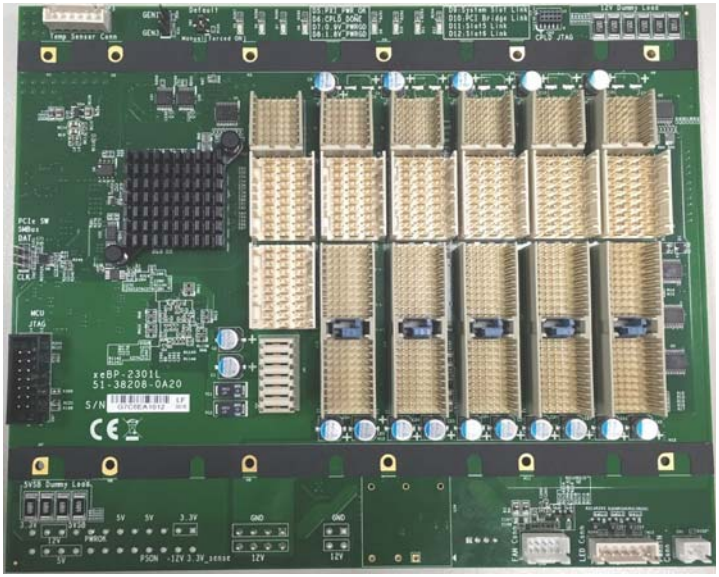


Figure 1-10: PXES-2301 Backplane

NOTE:

For details of chassis temperature detection, please see “Chassis Temperature” on page 38

PCI Express Link Capability

The PXES-2301 backplane follows a 4 link x 4 lane PCIe switch fabric configuration, as defined by Compact PCI Express and PXI Express specifications. The backplane routes three system slot x4 PCI Express links to 2nd to 4th peripheral slots directly. The fourth link is routed to a PCI Express switch, divided to x4 PCI Express links to 5th and 6th peripheral and x1 lane to PCIe/PCI switch for 32bit 33MHz PCI bus (5V I/O) to all hybrid slots.

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NOTE:

Connector pin assignments of the PXI Express System Controller Slot, PXI Express Hybrid Peripheral Slots, and PXI Express Peripheral Slots comply with the default pin assignments as defined in PXI-5 PXI Express hardware specification Rev.1.0.

PXI Express System Controller Slot

The System Controller slot is Slot 1 of the chassis as defined by the PXI specification. The PXES-2301 chassis can accommodate a PXI Express system controller that occupies width up to 4 slots. As defined in the PXI-5 specification, three controller expansion slots allow the controller to expand to the left to prevent the controller from using up peripheral slots.

PCI Express Hybrid Peripheral Slots

5 PXI Express hybrid peripheral slots are all connected with PCIe x4 lanes. Each can accommodate a 3U PXI Express/ Compact PCI Express/hybrid slot compatible with PXI-1/Compact PCI peripheral modules. The hybrid peripheral slots provide PXI Express functionality (excluding DSTAR and PXI Star) and 32-bit PXI functionality.

Local Bus

The local bus on a PXI backplane is a daisy-chained bus that connects each peripheral slot with adjacent peripheral slots to the left and right. Local bus lines are decreased from 13 to one (PXI_LBL6 and PXI_LBR6) on a PXI Express backplane. The remaining local bus line can transmit analog or digital signals between modules.

Trigger Bus

All six PXES-2301 slots share eight trigger lines, through which PXI and PXI Express modules can exchange trigger or clock signals via the trigger bus, allowing precisely timed response to asynchronous external events the system is monitoring or controlling.

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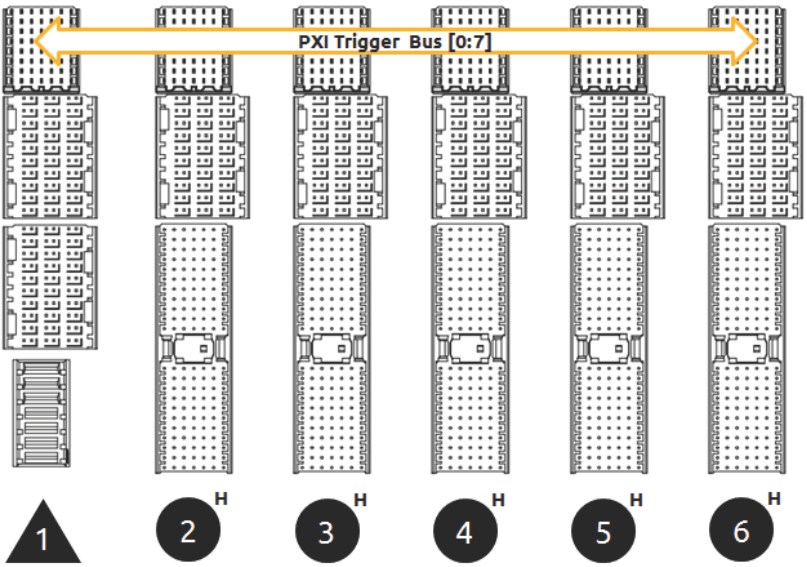


Figure 1-11: Trigger Bus Bridge Capability

Reference Clock

The PXES-2301 backplane supplies a single-ended 10MHz reference clock (PXI_CLK10) and differential 100MHz clock (PXIe_CLK100) to each peripheral slot for inter-module synchronization. The independent buffers drive the clock signal to each peripheral slot.

These common reference clock signals can synchronize multiple modules in a PXI Express chassis. PXI modules with phase-lock loop circuits can lock reference clocks to generate an in-phase timebase.

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2 Getting Started

This chapter describes procedures for installing the PXES-2301 and making preparations for its operation. Please contact ADLINK or authorized dealer if there are any problems during the installation.



Diagrams and illustrated equipment are for reference only. Actual system configuration and specifications may vary.

2.1 Package Contents

Before unpacking, check the shipping carton for any damage. If the shipping carton and/or contents are damaged, inform your dealer immediately. Retain the shipping carton and packing materials for inspection. Obtain authorization from your dealer before returning any product to ADLINK.

Please ensure that the following items are included in the package.

- PXES-2301 Chassis
- Power cords
- Filler panel kit for unused/reserved slots including five 1-slot panels
- Quick Start Guide

If any of these items are missing or damaged, contact the dealer from whom you purchased the product. Save the shipping materials and carton in case you want to ship or store the product in the future.

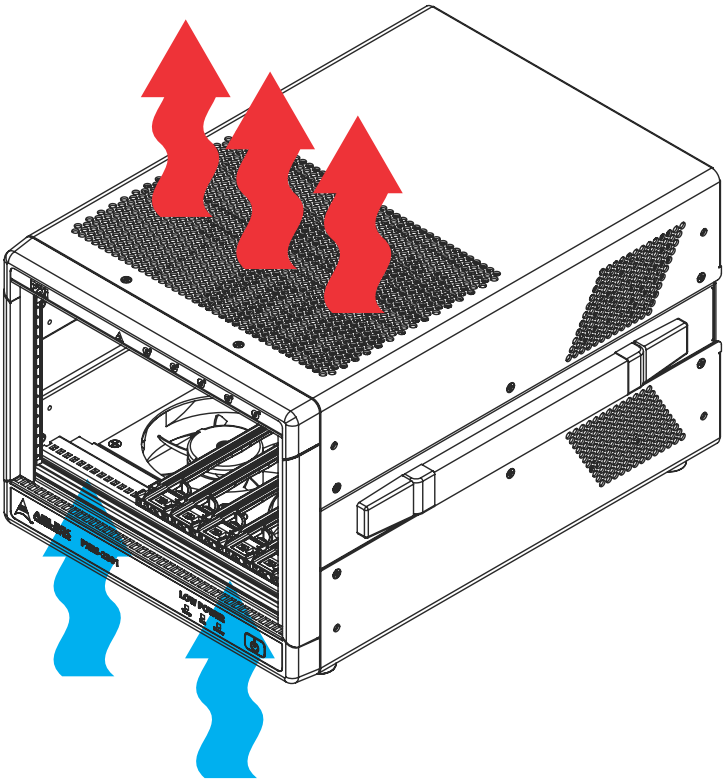


Do not install or apply power to equipment that is damaged or missing components. Retain the shipping carton and packing materials for inspection. Please contact your ADLINK dealer/ vendor immediately for assistance and obtain authorization before returning any product.

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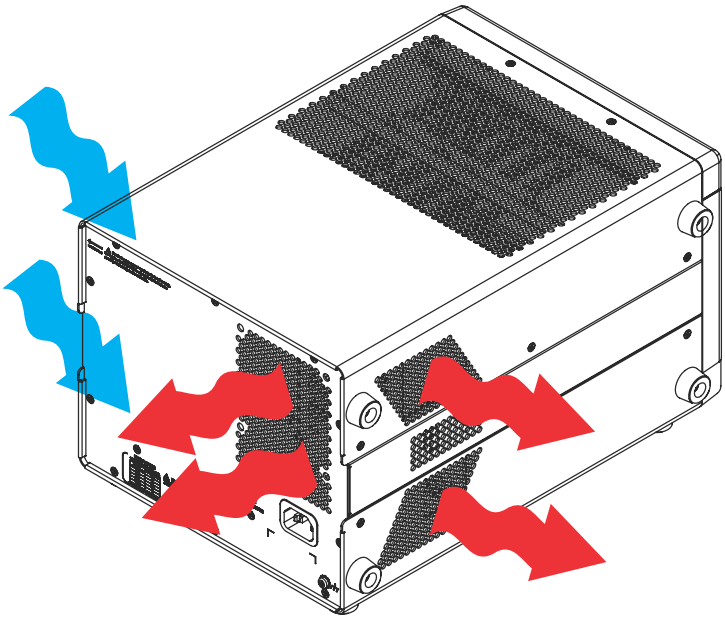
2.2 Cooling Considerations

Two 100.2CFM fans on the underside of the PXES-2301 draw cool air through apertures on the bottom and over the PXI/PXIe modules, to be exhausted through the top of the chassis.



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For power supply cooling, PSU fans draw cool air from the right side of chassis to be exhausted to the rear and left sides of the chassis



The PXES-2301 should be situated on a bench top or in an instrument rack, maintaining at least 1U (44.5 mm/1.75 in.) clearance from all ventilation apertures. Further, the 12.7mm/0.5 in. height of the rubber feet on the underside must be maintained to allow air intake.

The PXES-2301 smart fan control system detects the inner chassis temperature related to intake air temperature as the basis for fan speed control when in Auto Fan Speed. The user should be aware that the temperature in proximity to the chassis may exceed the ambient room temperature due to the presence of surrounding equipment and/or blockages, and may reach the upper operating temperature limit of 50°C when the environmental temperature may still be lower.

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While the PXES-2301 supports bidirectional setup, chassis direction cannot be configured with the right side carrying handle on the bottom, which can impede cooling functions.



NOTE:

To sustain required air flow, always install provided filler panels in unused slots.



NOTE:

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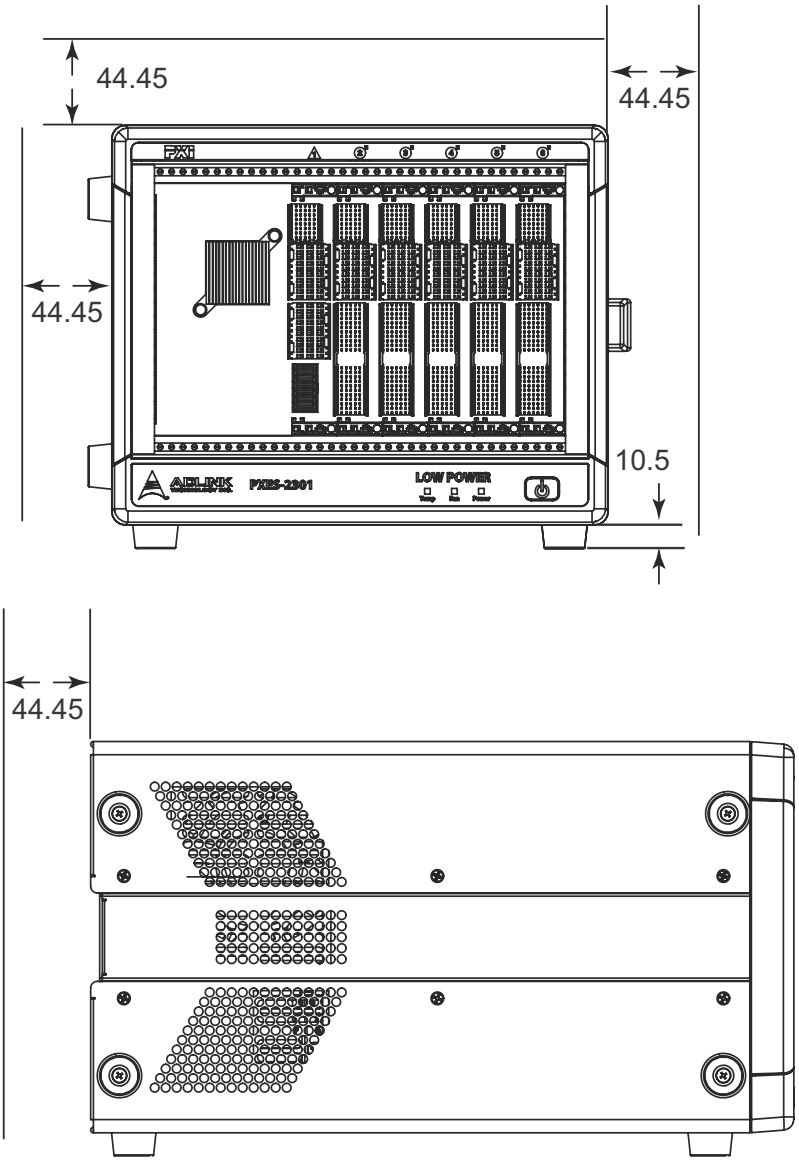


Figure 2-1: Cooling Clearances

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2.3 Hardware Installation

2.3.1 Installing the System Controller

The PXES-2301 incorporates a system controller slot supporting a PXI Express system controller of up to 4 slot width.

1. Ensure the CPU, memory module(s), and storage device(s) are properly installed on the system controller
2. Locate the system controller slot (Slot 1).



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3. Depress the system controller module's latch to release.



4. Align the module's top and bottom edges with the card guides, and carefully slide the module into the chassis.



5. Lift the latch until the module is securely seated in the chassis backplane

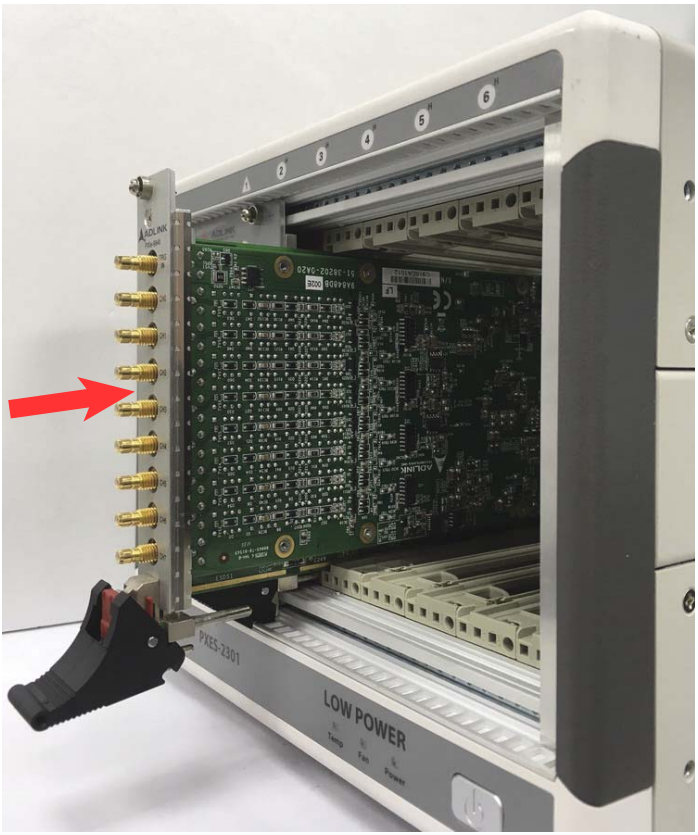
6. Fasten the screws on the module front panel, and connect all devices to the system controller.



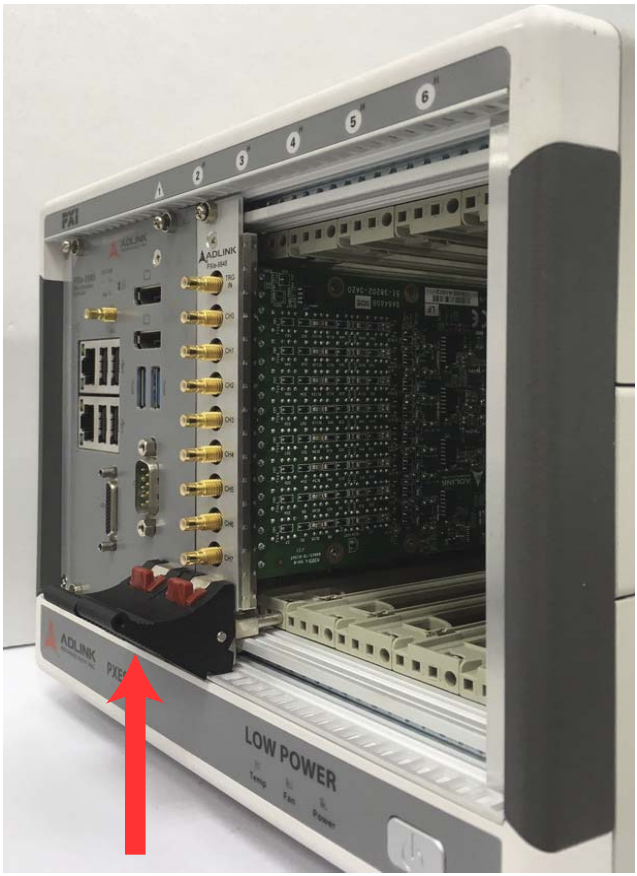
2.3.2 Installing Peripheral Modules

The PXE-2301 supports up to five peripheral modules, including a system timing module.

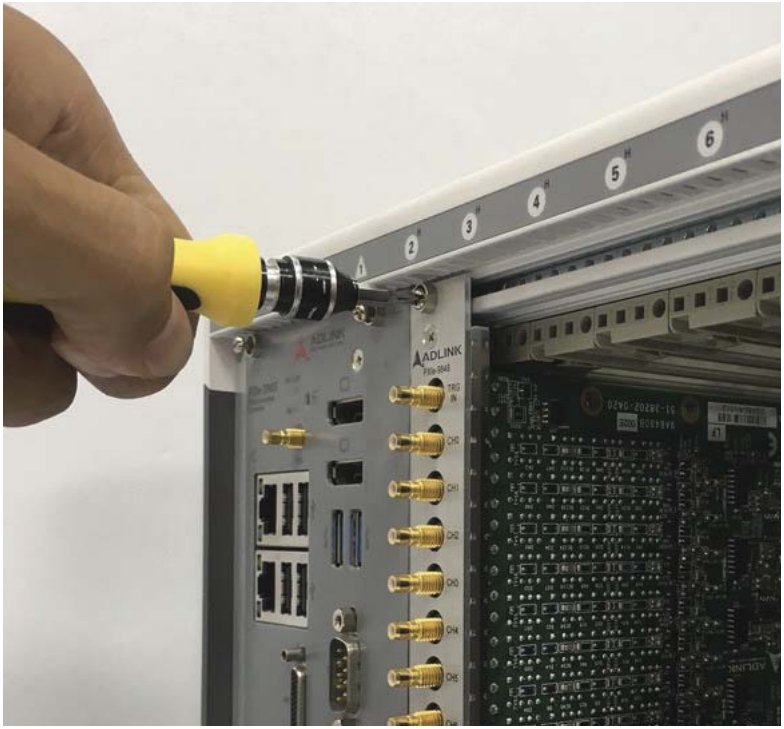
1. Select an available peripheral slot (2 to 6)
2. Depress the peripheral module's latch and align the module's top and bottom edges with the card guides.
3. Carefully slide the module into the chassis.



4. Lift the latch until the module is securely seated in the chassis backplane.



5. Fasten the screws on the module's front panel.



6. Repeat steps 1 to 5 to install additional PXI or PXES peripheral modules.

.

NOTE: To improve efficiency of heat dissipation, after installing desired peripheral modules, please install filler plates for any unused slots.

2.4 Rack Mounting

ADLINK provides hardware for optional installation of the PXES-2301 to a rack. The kit (order name PXES-2301 Rack Mount Kit)

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flexibly recesses the PXES-2301 in the rack, accommodating external mechanical parts on the front side, such as cables and mass interconnect modules.

2.4.1 Single Rack Mount

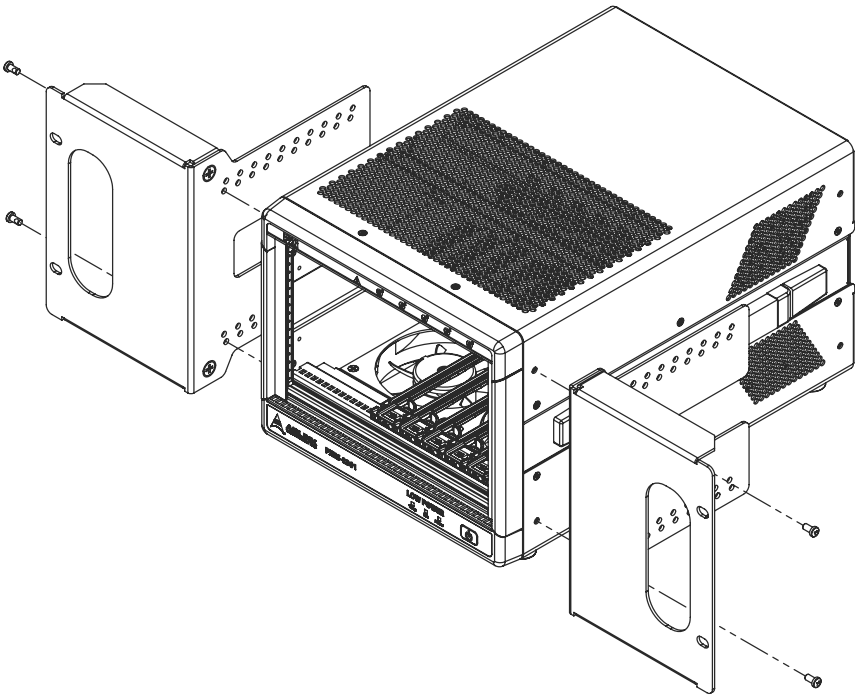


Figure 2-2: Single Rack Mount Assembly

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For the right side bracket, place screws in the holes marked R.

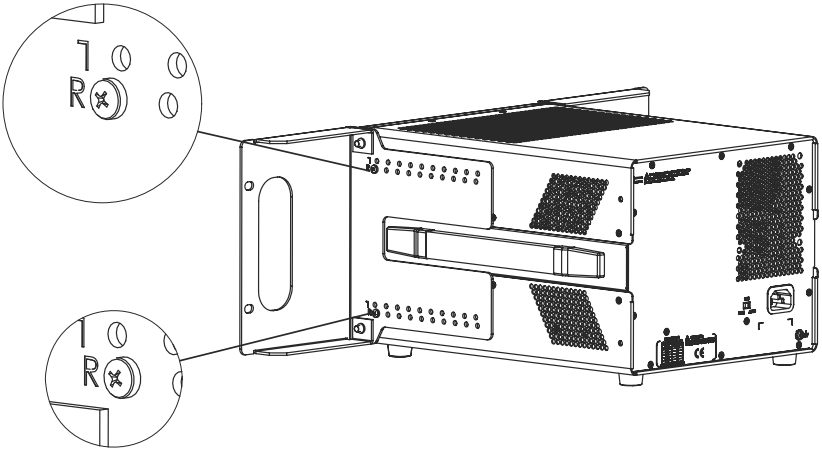


Figure 2-3: Right Side Bracket Mounting Holes

And for the left side bracket, use the holes marked L.

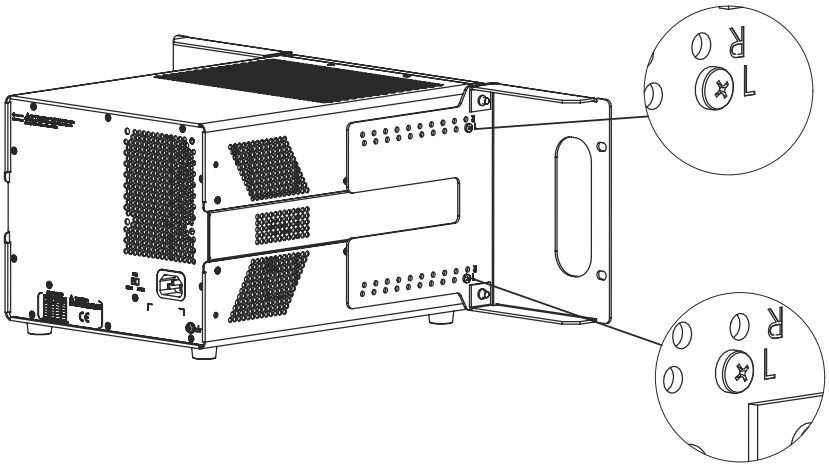


Figure 2-4: Left Side Bracket Mounting Holes

1.Remove carrying handle from the right side

2.Remove the four rubber feet from the left side

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3. Install the mounting brackets on both sides of the chassis using the provided M4 screws. Position of the mounting brackets can be adjusted via a range of screw holes to recess the chassis in the rack by any distance
4. Install the chassis in the rack using four screws (not included).

2.4.2 Powering On the System

The PXES-2301 is equipped with a 100 VAC to 240 VAC universal power supply unit requiring no input voltage selection.

1. Connect one end of the supplied power cord to the power inlet located at the rear side of the chassis.
2. Plug the other end of the AC power cord to a properly grounded wall socket or power strip.
3. Press the power button. The Power LED (blue) lights up immediately
4. To power off the chassis, press the power button.

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3 Chassis Monitoring

The PXES-2301 chassis provides advanced system monitoring and control. Chassis conditions, including internal temperature, fan speed, and DC voltage can all be monitored on the system controller.

Communication with the chassis monitoring control unit is available using an embedded controller, such as ADLINK PXIe-3985/3975/3935, to access the SMBus located on the system slot (1st slot).

3.1 Installing the Monitor Utility

Download the ADLINK PXI platform service package including system monitoring utility from: http://www.adlinktech.com.

Double-click Setup.exe to install and enable the PXI resource manager to generate PXI system description files. For more information, please refer to the ADLINK PXI Platform Services User's Manual.



The Active PXI resource manager is mandatory for normal Monitor Utility operations. Please use the preferred utility to set up the PXI resource manager as active. (Ex: ADLINK PXI Platform Service Utility as located at Start>ADLINK>PXI Platform Service).

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3.2 Monitoring the PXES-2301

As shown, the ADLINK ChassisWatch for PXES-2301 remote monitoring utility is divided into Connect Control, Remote Status & Control, and Chassis Status categories.

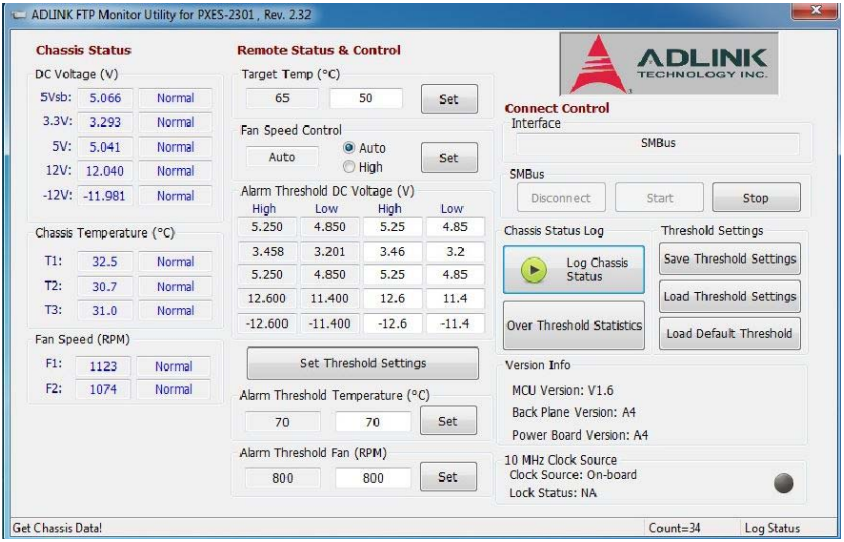


Figure 3-1: ADLINK ChassisWatch for PXES-2301

3.2.1 Connect Control

Selecting Connect reserves system SMBus.

Selecting Start initializes SMBus communication.

Selecting Stop ends communication.

Selecting Disconnect releases system SMBus.

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Chassis Status Log

With the Chassis Status Log function, monitored data can be recorded. Selecting Log Chassis Status opens the Log Options dialog, as shown.

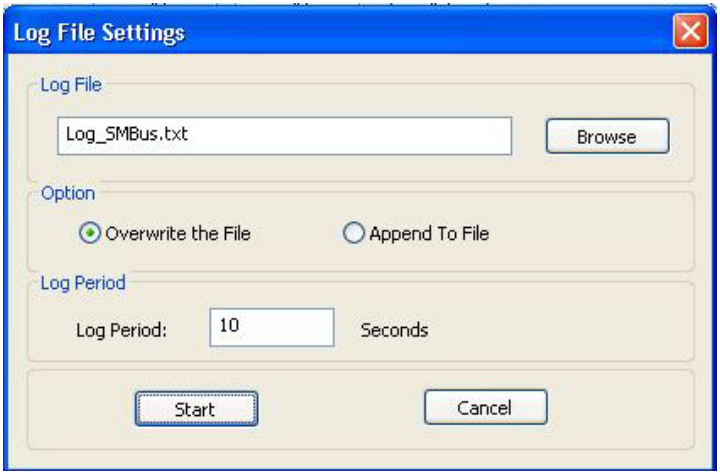


Figure 3-2: Log Options Dialog

The name of the log file can be entered, overwritten, or appended to selected operations. The log period can further be entered, in seconds. Selecting Start begins the log.

Over Threshold Statistics, when selected, displays statistics exceeding the threshold.

Save/Load Threshold

All Threshold & Control settings can be saved or loaded here.

Selecting Save Threshold Settings saves all current settings.

Selecting Load Threshold Settings loads all settings from the saved file.

Selecting Load Default Threshold resets all threshold settings to the default values. For details, please see “ADLINK ChassisWatch for PXES-2301” on page 34

Version Info

Displays the current firmware and board versions.

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3.2.2 Chassis Control and Alarm Threshold Setting

Provides operational and threshold settings for the PXES-2301, including trigger bus, PXIe link, target temperature, and fan mode, and threshold settings for DC voltage, temperature, and cooling fan speed.

Target Temperature

When the Fan switch on the rear panel is set to AUTO, fans run at different speeds based on the measured temperature.

Target Temp indicates the temperature at which fans run at 100%. Using the default fan curve as an example, fans run at 30% when all temperature readings are less than 25°C, and begin rampup when any reading exceeds 25°C.

Fans reach 100% speed if any temperature reading exceeds 65°C (i.e. Target Temperature).

Setting parameters are as shown.

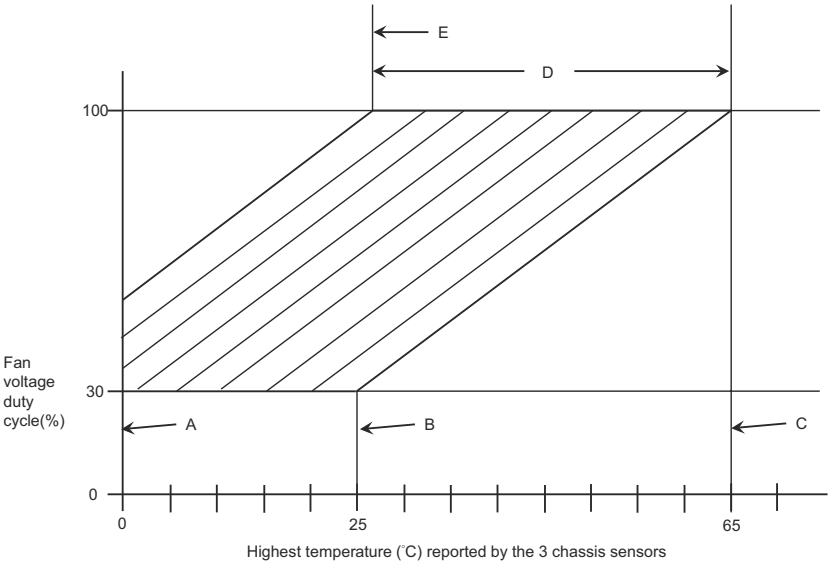


Figure 3-3: Target Temperature Parameters

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Mark	Temperature	Event
A	0°C	Lowest chassis temperature at which fan speeds commence ramping up for final 25° temperature mark (see E)
B	25°C	Highest chassis temperature at which fan speeds commence ramping up for final 65° temperature mark (see C)
C	65°C	Highest chassis temperature at which fan speeds reach maximum speed
D	25°C to 65°C (40° range)	Range over which maximum chassis temperature (at which fan speeds reach maximum speed) can be set
E	25°C	Lowest chassis temperature at which fan speeds reach maximum speed

Table 3-1: Target Temperature Parameters Legend

Target Temp can be set by entering the desired target temperature value in the field and selecting Set.

Fan Speed

Displays Auto/Full fan speed setting status of the PXES-2301. Auto is displayed when fans are set to auto mode and Full when the fans are set to run at full speed.

Selection of Auto or Full values and selecting Set directly changes cooling fan mode.

Alarm Threshold

Displays Active alarm threshold settings, including DC voltage, temperature, and fan speeds. The updated threshold setting can also be set here, by entering the desired value and selecting Set Threshold Settings.

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3.2.3 Chassis Status

DC Voltage

Displays monitored 5V Standby, 3.3V, 5V, 12V, and -12V power rail readings. The status displays as normal when the readings are within the threshold range, and abnormal when the threshold range is exceeded.

Chassis Temperature

Temperature sensors T1 to T3, located inside the chassis as shown, provide status, display as normal when under the threshold value (70°C in the Figure), and abnormal when the threshold value is exceeded.

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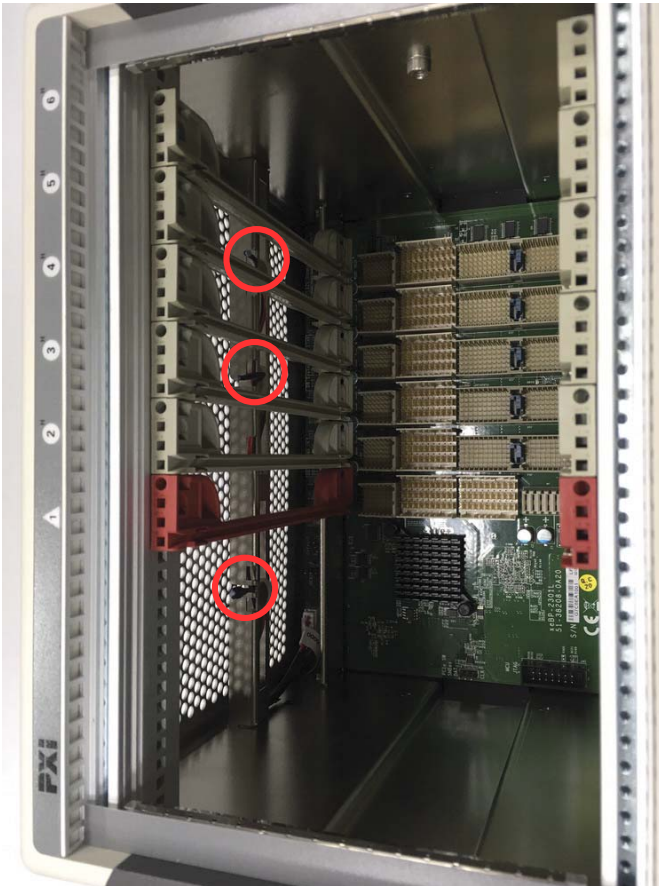


Figure 3-4: Chassis Temperature Sensors

Fan Speed

Displays monitored readings of the two cooling fans. Status displays as normal when readings exceed threshold value, and abnormal when the readings fall below the threshold value.

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Appendix A - Troubleshooting and Maintenance

This Appendix describes basic troubleshooting techniques, as well as instructions for the maintenance of the PXES-2301 chassis.

A.1 Installation Problems

Inability to start the system frequently results from incorrect installation of the system controller, peripheral modules, and other components. Before starting the system, please ensure that:

- The system controller is properly installed and secured
- All peripheral modules are properly seated on the slots
- All cables are properly connected to the system controller and peripheral modules
- All installed peripheral modules are compatible for use in the chassis
- The power cord is securely plugged into the chassis power connector and power outlet/wall socket/power strip

If the system fails to start when all installation conditions are met, remove all installed peripheral modules and try again. If the system starts normally, install one peripheral module at a time followed by powering up. You may also try installing the modules into different slots until the desired result is obtained.

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A.2 Basic Troubleshooting

Problem	Ensure that:
System fails to power up	▶ The power cord is securely plugged into the chassis power connector and wall socket/power strip ▶ The wall socket/power strip is live
No video output in the external display	▶ The external display is functioning properly ▶ Display settings support external video.
Power LED (blue) is blinking	If the signal persists, contact your dealer for further assistance
Fan LED (green) is blinking	▶ The fan is unobstructed If the signal persists, contact your dealer for further assistance.
Temperature LED (amber) is blinking	▶ Airflow from the outlet apertures is unobstructed and steady; if not, ensure that adequate clearance for the intake apertures is provided If the temperature of exhausted air is normal (70°C in Default setting) but the temperature LED is still blinking, contact your dealer for further assistance.

A.3 Maintenance

A.3.1 Handling the Chassis

The PXES-2301 is designed for both rack-mount and benchtop use. When transporting or carrying the chassis, it is recommended that the handle be used, being designed to support the weight of the chassis for superior portability and balance.

The PXES-2301 weights 5.85 kg (12.9 lb). Caution should be exercised when moving the chassis to avoid any possible injury.

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A.3.2 Cleaning the Exterior

Make sure that the system is turned off before cleaning the chassis exterior. Wipe the exterior with a clean cloth starting from areas that easily accumulate dust or dirt such as the area in and around the chassis and power supply air intake apertures.

A.3.3 Power Requirements

Make sure that the power cord is in good condition before plugging it into the system. It is important to check the reliability of the power source. The PXES-2301 power supply is capable of handling 100 to 240 V AC within the 50 Hz to 60 Hz range. Do not connect the PXES-2301 to an already overloaded circuit.

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Important Safety Instructions

For user safety, please read and follow all instructions, Warnings, Cautions, and Notes marked in this manual and on the associated device before handling/operating the device, to avoid injury or damage.

- Read these safety instructions carefully.
- Keep the User's Manual for future reference.
- Read the Specifications section of this manual for detailed information on the recommended operating environment.
- The device can be operated at an ambient temperature of 55ºC.
- For indoor use only.
- Altitude during operation: up to 2000m.
- Pollution degree: PD2.
- Equipment maintenance and service:
  - Maintenance and inspection can only be performed by qualified and authorized technicians or personnel.
  - Before performing maintenance tasks, it is imperative to turn off the power switch and remove the power cord from the unit to prevent possible electric shock leading to injury or death.
- When installing/mounting or uninstalling/removing device, or when removal of a chassis cover is required for user servicing (See "Getting Started" on page 17.):
  - Turn off power and unplug any power cords/cables.
  - Reinstall all chassis covers before restoring power.
- To avoid electrical shock and/or damage to device:
  - Keep device away from water or liquid sources.
  - Keep device away from high heat or humidity.
  - Keep device properly ventilated (do not block or cover ventilation openings).
  - Always use recommended voltage and power source settings.
  - Always install and operate device near an easily accessible electrical outlet.

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- ▷ Secure the power cord (do not place any object on/over the power cord).
- ▷ Only install/attach and operate device on stable surfaces and/or recommended mountings.

- ▶ If the device will not be used for long periods of time, turn off and unplug it from its power source
- ▶ Never attempt to repair the device, which should only be serviced by qualified technical personnel using suitable tools
- ▶ A Lithium-type battery may be provided for uninterrupted backup or emergency power.



Risk of explosion if battery is replaced with one of an incorrect type; please dispose of used batteries appropriately.
Risque d'explosion si la pile est remplacée par une autre de type incorrect. Veuillez jeter les piles usagées de façon appropriée.

- ▶ The device must be serviced by authorized technicians when:
  - ▷ The power cord or plug is damaged.
  - ▷ Liquid has entered the device interior.
  - ▷ The device has been exposed to high humidity and/or moisture.
  - ▷ The device is not functioning or does not function according to the User's Manual.
  - ▷ The device has been dropped and/or damaged and/or shows obvious signs of breakage.
- ▶ Disconnect the power supply cord before loosening the thumbscrews and always fasten the thumbscrews with a screwdriver before starting the system up.
- ▶ It is recommended that the device be installed only in a server room or computer room where access is:
  - ▷ Restricted to qualified service personnel or users familiar with restrictions applied to the location, reasons therefor, and any precautions required.
  - ▷ Only afforded by the use of a tool or lock and key, or other means of security, and controlled by the authority responsible for the location.

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	**BURN HAZARD** Touching this surface could result in bodily injury. To reduce risk, allow the surface to cool before touching.

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Consignes de Sécurité Importante

S'il vous plaît prêter attention stricte à tous les avertissements et mises en garde figurant sur l'appareil , pour éviter des blessures ou des dommages.

- *Lisez attentivement ces consignes de sécurité.*
- *Conservez le manuel de l'utilisateur pour référence future.*
- *Lisez la section Spécifications de ce manuel pour des informations détaillées sur l'environnement d'exploitation recommandé.*
- *L'appareil peut être utilisé à une température ambiante de 50° C.*
- *Pour une utilisation en intérieur uniquement.*
- *Altitude en fonctionnement: jusqu'à 2000m.*
- *Degré de pollution: PD2.*
- *Maintenance et entretien des équipements:*
  - *L'entretien et l'inspection ne peuvent être effectués que par des techniciens ou du personnel qualifiés et autorisés.*
  - *Avant d'effectuer des tâches de maintenance, il est impératif de couper l'interrupteur d'alimentation et de retirer le cordon d'alimentation de l'appareil pour éviter tout choc électrique pouvant entraîner des blessures ou la mort.*
- *Lors de l'installation / du montage ou de la désinstallation / retrait du périphérique, ou lorsque le retrait d'un capot du châssis est requis pour la maintenance par l'utilisateur (See “Getting Started” on page 17.):*
  - *Coupez l'alimentation et débranchez tous les cordons / câbles d'alimentation.*
  - *Réinstallez tous les couvercles de châssis avant de rétablir l'alimentation.*
- Pour éviter les chocs électriques et / ou les dommages à l'appareil:
  - *Gardez l'appareil éloigné de l'eau ou des sources de liquide.*

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- ▷ *Gardez l'appareil éloigné de la chaleur ou de l'humidité élevée.*
- ▷ *Gardez l'appareil correctement ventilé (ne bloquez pas et ne couvrez pas les ouvertures de ventilation).*
- ▷ *Utilisez toujours les paramètres de tension et de source d'alimentation recommandés.*
- ▷ *Installez et utilisez toujours l'appareil à proximité d'une prise électrique facilement accessible.*
- ▷ *Fixez le cordon d'alimentation (ne placez aucun objet sur / sur le cordon d'alimentation).*
- ▷ *Installez / fixez et utilisez l'appareil uniquement sur des surfaces stables et / ou des supports recommandés.*

- ▶ *Si l'appareil n'est pas utilisé pendant de longues périodes, éteignez-le et débranchez-le de sa source d'alimentation*
- ▶ *N'essayez jamais de réparer l'appareil, qui ne doit être entretenu que par du personnel technique qualifié à l'aide d'outils appropriés.*
- ▶ *Une batterie de type lithium peut être fournie pour une alimentation de secours ou une alimentation de secours ininterrompue.*



Risque d'explosion si la pile est remplacée par une autre de type incorrect. Veuillez jeter les piles usagées de façon appropriée.

- ▶ *L'appareil doit être réparé par des techniciens autorisés lorsque:*
  - ▷ *Le cordon d'alimentation ou la fiche est endommagé.*
  - ▷ *Du liquide a pénétré à l'intérieur de l'appareil.*
  - ▷ *L'appareil a été exposé à une humidité et / ou une humidité élevées.*
  - ▷ *L'appareil ne fonctionne pas ou ne fonctionne pas selon le manuel de l'utilisateur.*
  - ▷ *L'appareil est tombé et / ou endommagé et / ou montre des signes évidents de casse.*
- ▶ *Débranchez le cordon d'alimentation avant de desserrer les vis moletées et serrez toujours les vis moletées avec un tournevis avant de démarrer le système.*

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- *Il est recommandé d'installer l'appareil uniquement dans une salle de serveurs ou une salle informatique où l'accès est:*
  - ▷ *Réservé au personnel de maintenance qualifié ou aux utilisateurs familiers avec les restrictions appliquées à l'emplacement, les raisons de celles-ci et les précautions nécessaires.*
  - ▷ *Seulement permis par l'utilisation d'un outil ou d'une serrure et d'une clé, ou d'autres moyens de sécurité, et contrôlé par l'autorité responsable de l'emplacement.*

	***RISQUE DE BRÛLURES*** *Ne touchez pas cette surface, cela pourrait entraîner des blessures.* *Pour éviter tout danger, laissez la surface refroidir avant de la toucher.*

Getting Service

Ask an Expert: http://askanexpert.adlinktech.com

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