nVent SCHROFF
PXIe Embedded Controller

User Manual

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1 Safety

	**Read manual** The nVent SCHROFF PXIe embedded controller intended to be installed and maintained by qualified and trained personnel in compliance with local and national electrical codes and safety regulations.

	Before using the devices, check connectors and electrical cables. All connectors and cables must be designed and rated in accordance with the technical data.

1.1 Intended Use

The nVent SCHROFF PXI Express embedded controller is a compact high-performance PXI Express compatible system controller. The 3 U / 4 HP embedded controller is intended to be installed into a PXI Express-compatible chassis.

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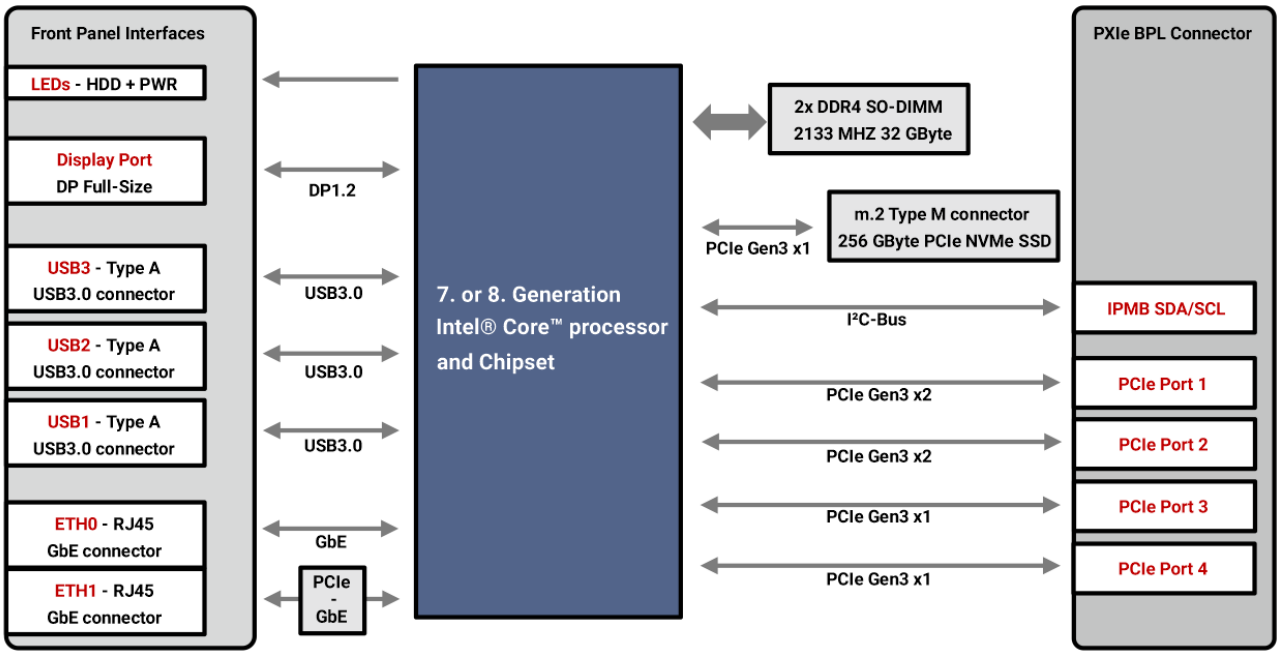
Features:

- Most compact PXIe Embedded Controller on the market
- PXI™-5 PXI Express hardware spec. Rev.2.0 compliant
- Maximum System Throughput 6 GB/s in Four-Link mode PCIe Gen 3 x2 - x2 - x1 - x1
- 7th Intel® Core™ Generation with Hyper-Threading
- Intel ® Gen9 HD Graphics 620
- 16 GB 2133 MHz DDR4 memory (2x16 GB optional)
- 250 GB Integrated m.2 NVMe SSD
- 2 GBE ports at the front panel
- 3x USB3.0 Type A
- DisplayPort 1.2
- Customizable BIOS

2 Functional description

The embedded controller's computing core is based on a congatec COM Express™ Compact Module. The COM (Computer On Module) integrates all the core components.
At the date of publishing this manual the following modules are used:
Congatec TC175
Congatec TC370
For module documentation and driver visit congatec.com
Note: For some information and drivers you need access to the restricted area of the congatec website, which is free after a registration.



The nVent SCHROFF PXI Express embedded controller provides the following interfaces and connectors at the front panel:

- 3x USB Type-A connectors
- 1x DisplayPort connector
- 2x Gb Ethernet interface (RJ45)
- LED HDD
- LED Power

3 Installing and configuring

	The embedded controller is intended to be installed into a SCHROFF PXIe - compatible chassis. The controller comes without an operating system or a specific instrument and measurement management software. The BIOS settings are already preconfigured for use in the PXIe environment. A customer specific BIOS or custom boot logo is also possible, please contact your local SCHROFF dealer for specific information. The instrument and measurement management software typically run on a Windows-based operating system. Windows 10 usually comes with all necessary drivers or downloads them automatically if the controller is connected to the Internet. To make the embedded controller recognize the PXIe system, the chassis INI file must be stored in the path specified by the software and the registry entry must be updated.

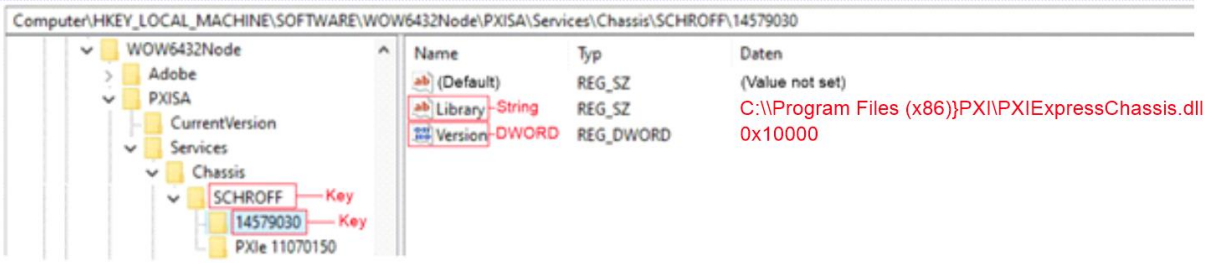
3.1 Configuring the SCHROFF embedded Controller

- Insert the embedded controller into the system slot of the PXIe system.
- Connect keyboard, mouse and monitor
- Connect a bootable device to one of the USB ports
- Power-up the system
  Note: To access and navigate the BIOS setup menu, press the <DEL> or <F2> key while booting.
- Install the OS.
  Note: To load any drivers that may be required automatically, connect the embedded controller to a network with Internet access before installing the operating system. (To make a wired connection insert a network cable with RJ45 connector into one of the socket labelled "ETH0" or “ETH1” at the front panel)
- Install your instrument and measurement management software on the embedded controller.
- Save the chassis INI file which comes with your system in a system directory specified by your instrument and measurement management software
  Note: default path is (C:) > ProgramData > PXISA > Descriptions > Chassis (The folder is not visible by default. You need to change the folder visibility first.)
- Place PXIExpressChassis.dll and PXIExpressSystemModule.dll in a folder you have crated in C:\\Program Files (x86)
- Run regedit.exe (press Windows + r and type in regedit) and search for the path/keys your instrument and measurement management software has created.

3.1.1 Example installing the chassis dll

Path:
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\PXISA\Services\Chassis

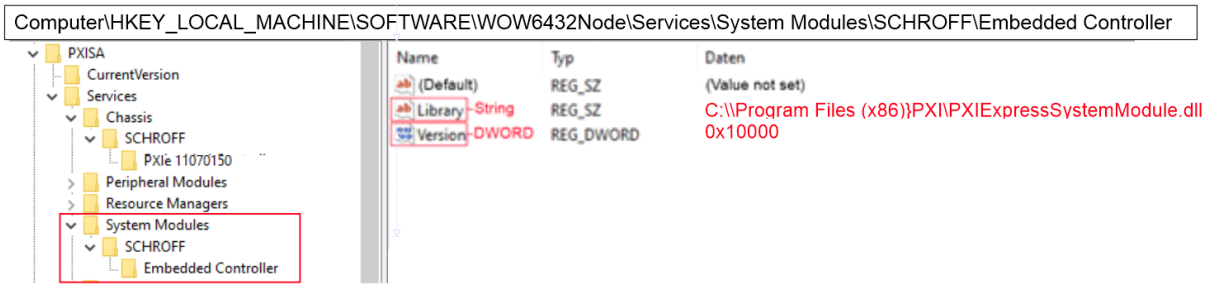
- Create a key “SCHROFF” and a key with the chassis name, for example “14579030”
- Create a new string with the name “Library”, and enter the path of your chassis dll (PXIExpressChassis.dll) as a value
- Create a new DWORD with the name “Version” and 0x10000 as a value



3.1.2 Example installing the controller dll

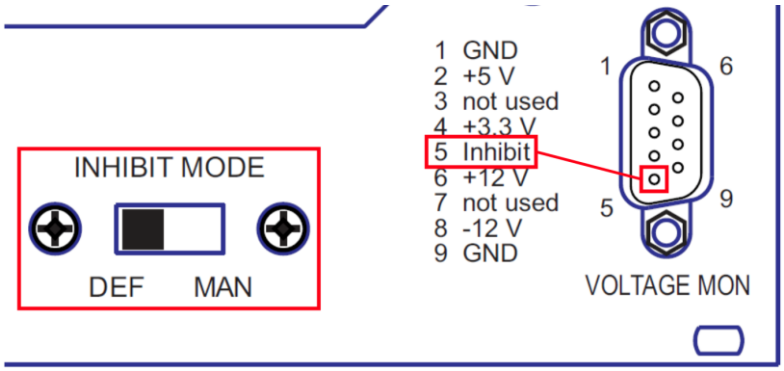
Path:
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\PXISA\Services\ System Modules\SCHROFF\Embedded Controller

- Create a key “SCHROFF” and a key “Embedded Controller”
- Create a new string with the name “Library”, and enter the path of your controller.dll (PXIExpressSystemModule.dll) as a value
- Create a new DWORD with the name “Version” and 0x10000 as a value

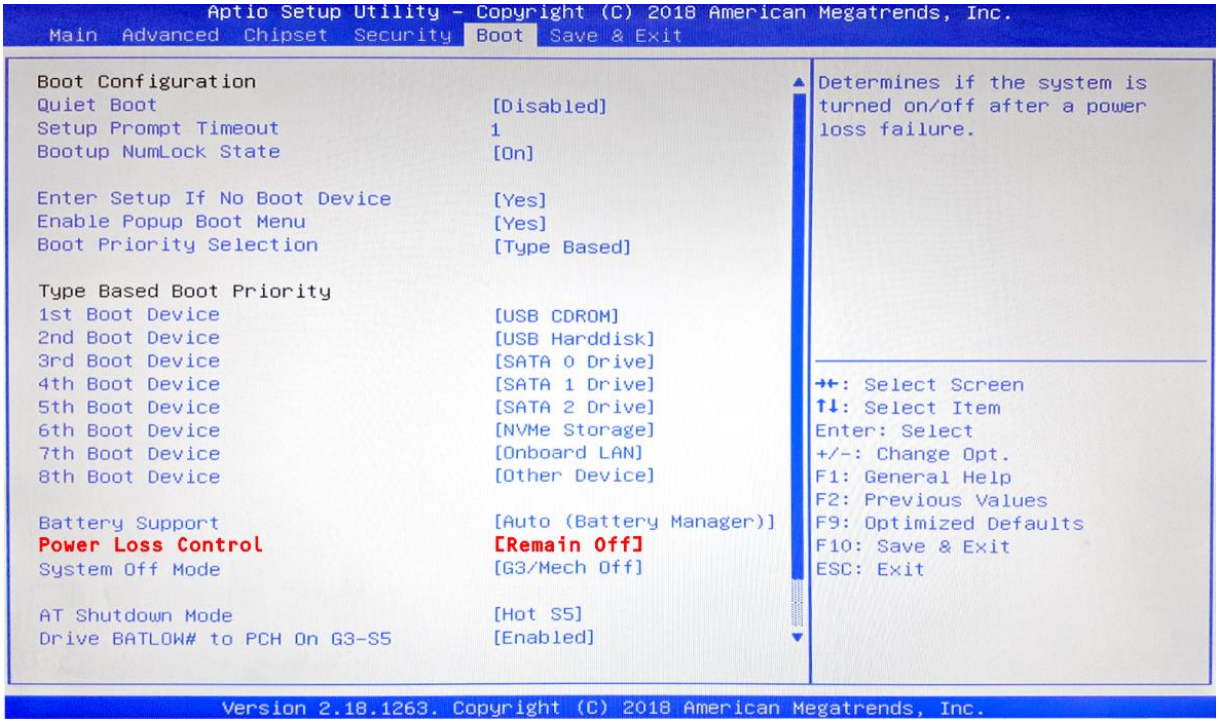


3.2 Chassis power-on behavior

When the chassis inhibit mode switch is set to "**DEF**", the CMM controls the power supply inhibit, that means, the chassis can be powered by pushing the power button at the left front side.
When the inhibit mode switch is set to '**MAN**', the chassis boots when AC-power is applied, as long as Pin 5 at the DSUB connector is not connected to GND.



	Please note the following: In order to ensure a proper function of the DEF and MAN settings, the embedded controller's BIOS settings must be altered. **DEF Mode:** - Set BIOS Power Loss Control to "**Remain Off**". **MAN Mode:** - Set BIOS Power Loss Control to "**Turn On**".



4 Schroff PXIe System Manager

With the Schroff embedded controller, the settings and readings of a Schroff PXIe system can be displayed and managed by a dedicated tool called Schroff PXIe System Manager.

The Schroff PXIe System Manager is available on request and can be downloaded at the Schroff website.