

## Product Description

**Product Name**     **PCI488/AXP Version 1.9**  
                          PCI-IEEE-488-Interface for OpenVMS AXP/I64

### Description

The PCI488/AXP is a low-cost, high-performance PCI IEEE-488 converter for OpenVMS AXP and I64. The PCI488/AXP supports the Alpha workstations, Alpha servers and Integrity servers with PCI bus slots, represented, e.g. by the models of the AlphaStation, AlphaServer and Integrity families. The PCI488/AXP connects instruments and measuring devices, communicating via the IEEE-488 bus to the PCI bus.

The PCI488/AXP consists of the PCI-GPIB-Board and the corresponding device driver for OpenVMS AXP or OpenVMS I64. The PCI-GPIB is an PCI board which allows a standardized, bi-directional communication between the PCI bus interconnect and the widely used IEEE-488 bus, also known as the GPIB. The PCI488/AXP is fully compatible with the TC488/VMS, the TC488/AXP and the AT488/AXP from EQUIcon Software GmbH. Therefore, the PCI-GPIB is also compatible with the IEZ11, a SCSI-IEEE488 converter from Digital Equipment Corporation. The IEEE-488 circuit TNT4882C<sup>TM 1</sup>, which combines the NAT488 and the Turbo488 from National Instruments, is implemented on this board. It permits to realize all major IEEE-488 interface functions as described in the IEEE-488.1 and IEEE-488.2 standards, and provides enhanced transfer capabilities with data transfer rates of more than 1 Mbyte/second for both read and write operations. The board supports up to 14 IEEE-488 bus devices directly.

The loadable device drivers for OpenVMS AXP (at least version 7.0) allow use of all features of the board. This includes all interface functions of the IEEE-488 specification, in particular the full talker, listener, and controller capabilities. The driver provides a QIO interface which is compatible to the TC488/VMS, the TC488/AXP, the AT488/AXP, and the IEZ11. Thus, it is easily possible to port applications written for the TC488/VMS, the TC488/AXP, the AT488/AXP or the IEZ11 to the PCI488/AXP.

The drivers realize the following functions:

- read and write data access on the IEEE-488 bus, write command access on the IEEE-488 bus
- control and monitoring of other devices (system controller and Controller-In-Charge (CIC) function)
- peripheral device functions (talker and listener only)
- serial and parallel polling on the bus

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<sup>1</sup> TNT4882C is a registered trade mark of National Instruments

- configuration functions (detecting and recognizing connected devices on the IEEE-488 bus system)
- reaction to bus events (e.g. service request handling)
- service request function

Additionally, an IF4882 interface library for C programs is provided which contains NI488.2 compatible calls (the NI488.2 is the interface standard from National Instruments for GPIB cards). Using the library calls, UNIX based applications using the IET11 can be ported to the OpenVMS AXP platform with the PCI488/AXP. Additionally it is possible to program GPIB applications on the high level interface functions provided by the IF4882 interface library.

The test and maintenance program PCI488\$ITADS is also part of the PCI488/AXP. This program is a menu-driven utility that can be used to verify the PCI488 hardware and software installation. You can also use it to verify the operational state of the PCI488 at any time and as an aid for application development and debugging. With PCI488\$ITADS it is possible to execute all of the PCI488 QIO functions interactively.

An AlphaStation workstation or low-end Integrity server, equipped with the PCI488/AXP, is well suited for instrument control applications where low-cost and high-performance requirements are important selection criteria. These applications can be found in research and development laboratories, service laboratories, research institutes, education, and government. Applications include data acquisition systems, automated test equipment, and numerous graphic applications.

For the installation of the PCI488/AXP software the standard OpenVMS product installation procedure VMSINSTAL is used.

## Specification

### General:

System	-) AlphaStation, AlphaServer or Integrity server models with PCI bus slots for the PCI488/AXP. -) each PCI-GPIB board uses one PCI slot
Power Requirement	from PCI slot, + 5V DC, 600 mA maximal or from PCI slot, 3.3V DC, 600mA maximal
Dimensions	short standard PCI board (5.25 x 4.20 inches, which is equal to 13,34 x 10,6 cm), requires only one slot
Data Transfer Rate	maximal 1.5 Mbyte/s for both read and write operations (the actual speed may vary considerably from speed shown due to system and instrumentation capabilities)

**IEEE-488-Interface:**

Implementation	SH1, AH1, T5, TE5, L3, LE3, SR1, PP1, PP2, PP0, RL1, E1, E2, IEEE-488.1-1978, IEEE-488.2-1978
Controller Subsets	C1, C2, C3, C4, C5
Connector	IEEE-488 standard 24-pin
Mounting Requirements	Mounts inside the workstation or server using screws provided. No external power supply.

**Documentation**

The PCI488/AXP contains the "Installation Guide", the "User's Guide" and the "IF4882 User's Guide" in English. The documentation is provided in both printed and computer readable form (PostScript files).

**Requirements****Hardware:**

AlphaStation, AlphaServer or Integrity server models with AXP processor or Itanium processor which supports PCI bus slots and where OpenVMS AXP or OpenVMS I64 is supported.

**Software:**

OpenVMS AXP version 7.0 up to OpenVMS AXP version 8.2 or OpenVMS I64 version 8.2 up to OpenVMS I64 version 8.4-2L1. The used workstation or server model must be supported by the OpenVMS AXP or OpenVMS I64 version.

**Licences**

The PCI488/AXP contains the unlimited-period licence for using hardware and software on only one single machine under OpenVMS AXP at one time.

**Shipment**

The shipment contains the hardware (the PCI-GPIB board), the software, and the printed documentation. The software encloses the device driver, the test program, the language

header files, and all programs and procedures needed for installation. The software will be shipped on 4mm DAT (TLZ06) or CD (Files-11 format). It also contains the documentation as PostScript files. These files can be printed on PostScript capable printers.

On request the software can also be shipped on other media (e.g. TK50 tapes). Please note these requests on your order.

It is also possible to buy the following other bundles: *Software Only* (this is the PCI488 package without the hardware - the PCI-GPIB board) or *License Only* (this contains only the license and the registration card).

## Service and Support

The usual support is free for the first year.

The following additional services and support can be obtained:

- product installation
- teaching and education for the PCI488, the GPIB, and programming under OpenVMS
- user specific changes of the device driver interface and functions
- development of user specific device drivers and applications for the PCI488

## Contact

Please call us if you have more questions or you need more information. The contact address is

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