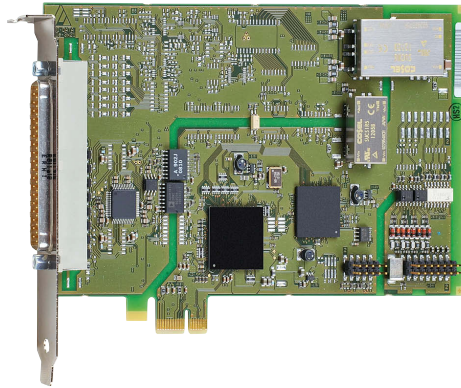


Analog output board, optically isolated, 8/4 analog outputs, 16-bit



Also for **PCI**
and APCI-3501, page 204



Windows
64/32-bit drivers



on request



LabVIEW™



LabWindows/CVI™

Features

Analog outputs

- 8 or 4 analog outputs, optically isolated 500 V
- Voltage or current outputs
- 16-bit resolution (15-bit for 0-10 V)
- Output ranges: ± 10 V, 0-10 V (through software)
- Output voltage after reset: 0 V
- Each output has its own ground line (without optical isolation)
- Output current ± 5 mA max. for voltage outputs
- Current outputs: 0-20 mA, min. load 10 Ω , max. load 560 Ω , at 20 mA
- EMI filters

Digital

- 4 dig. inputs including 1 interruptible input
- 4 dig. outputs, 24 V, optically isolated

Timer / Watchdog

- 2 timers, incl. 1 which can be used as a watchdog

APCIe-3521

PCI Express interface

8/4 analog outputs, 16-bit

Optical isolation 500 V

8 digital I/O, 24 V, optically isolated, timer,
watchdog

Safety features

- Optical isolation 500 V min.
- Creeping distance IEC 61010-1
- Protection against high-frequency EMI
- Noise neutralisation of the PC supply

Applications

- Industrial process control
- Industrial measurement and monitoring
- Control of chemical processes
- Factory automation
- Laboratory equipment, instrumentation

Software drivers

A CD-ROM with the following software and programming samples is supplied with the board.

Standard drivers for:

- Linux
- 32-bit drivers for Windows 8 / 7 / Vista / XP / 2000
- Signed 64-bit drivers for Windows 8 / 7 / XP
- Real-time use with Linux and Windows on request

Drivers and samples for the following compilers and software packages:

- .NET
- Microsoft VC++ • Borland C++
- Visual Basic • Delphi
- LabVIEW • LabWindows/CVI

ADDIPACK functions

- Analog input • Analog output • Digital input
- Digital output • Watchdog • Timer

On request:

Further operating systems, compilers and samples.

Driver download: www.addi-data.com/downloads

Specifications

Analog outputs

Number of outputs:	8 or 4
Resolution:	16-bit resolution
Optical isolation:	500 V through opto-couplers
Output range:	0-10 V, ±10 V switchable through software (0-20 mA optional)
Overvoltage protection:	±15 V
Max. output current / load:	±5 mA, 2 kΩ
Short-circuit current:	±35 mA (short time)
Output voltage after reset:	0 V
Current outputs	
Resolution:	15-bit
Output range:	0-20 mA
LSB:	610.35 nA
Load (at 20 mA):	10 Ω min., 560 Ω max.
Output current after reset:	0 mA

Digital I/O

Number of I/O channels:	4 dig. inputs, 4 dig. high-side outputs, 24 V
Optical isolation:	1000 V through opto-couplers
Input current at 24 V:	10 mA typ.
Input range:	0-30 V
Supply voltage:	8-32 V
Max. switching current:	65 mA typ.

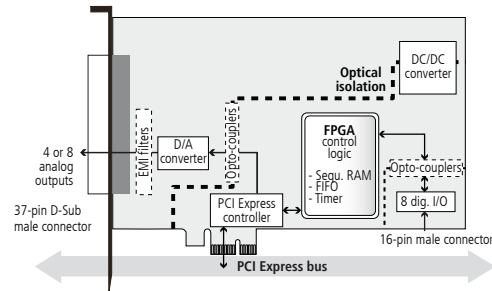
EMC – Electromagnetic compatibility

The product complies with the European EMC directive. The tests were carried out by a certified EMC laboratory in accordance with the norm from the EN 61326 series (IEC 61326). The limit values as set out by the European EMC directive for an industrial environment are complied with. The respective EMC test report is available on request.

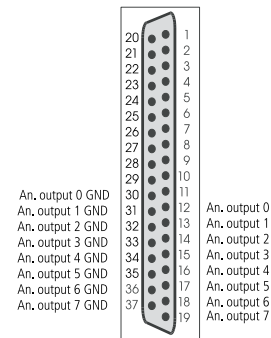
Physical and environmental conditions

Dimensions:	168 x 99 mm
System bus:	Acc. to PCI Express base specification, Revision 1.0a (PCI Express 1.0a)
Space required:	1-/4-/8-/16-lane PCI Express slot
Operating voltage:	+ 3.3 V, + 12 V from PC
Front connector:	37-pin D-Sub male connector
Temperature range:	0 to 60 °C (with forced cooling)

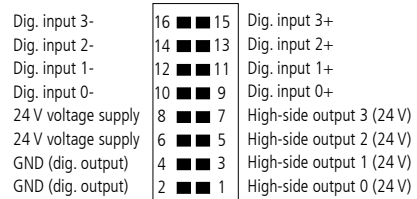
Simplified block diagram



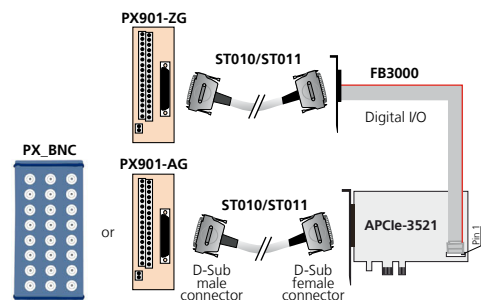
Pin assignment – 37-pin D-Sub male connector



Pin assignment – 16-pin male connector



ADDI-DATA connection



Ordering information

APCLe-3521

Analog output board, optically isolated, 8/4 analog outputs, 16-bit, for PCI Express. Incl. technical description and software drivers.

Versions

Voltage

APCLe-3521-8	Version with 8 analog voltage outputs
APCLe-3521-4	Version with 4 analog voltage outputs

Current

APCLe-3521-8C	Version with 8 analog current outputs
APCLe-3521-4C	Version with 4 analog current outputs

Accessories

PX901-A:	Screw terminal panel for connecting the analog I/O
PX901-AG:	Same as PX901-A with housing for DIN rail
PX_BNC:	BNC connection box for connecting the analog I/O
PX901-ZG:	Screw terminal panel for connecting the dig. I/O
ST010:	Standard round cable, shielded, twisted pairs, 2 m
ST011:	Standard round cable, shielded, twisted pairs, 5 m
FB3000:	Ribbon cable for digital I/O