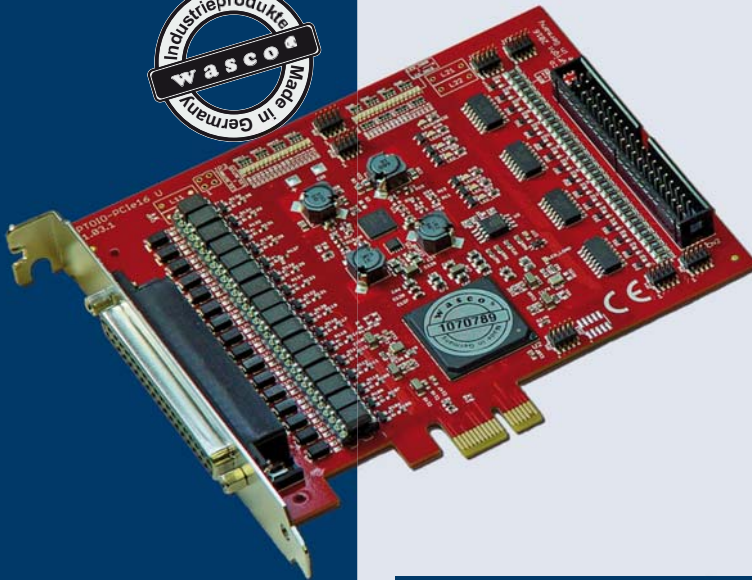


OPTOIO-PCIe16ULTRA

Digital PCIe I/O Interface Card with 16 Optocoupler Inputs, 16 Optocoupler Outputs, Timer, OC/IC Units and Board Identification



16 optocoupler inputs (configurable digital filters)

16 optocoupler outputs

6* 32-bit counter

2* timer

2* OC units (PWM)

2* IC units (time period and pulse measurements)

quartz crystal controlled

interrupt capable

board identification

SPECIFICATIONS

Optocoupler Inputs

Optocouplers
16 channels, usable as edge triggered interrupt inputs, optically isolated
Galvanic isolation also between every single channel with each two separate connections for each of the channels
Overvoltage protection by protection diodes
Two different jumper selectable input voltage ranges

Range 1 high = 14..30 Volt
low = 0..2 Volt
Range 2: high = 5..15 Volt
low = 0..1 Volt

Input frequency: max. 10 kHz

Optocoupler Outputs

Optocoupler
16 channels, optically isolated, socketed
PWM and pulse measurement possible at all channels
Galvanic isolation also between every single channel with each two separate connections for each of the channels
Overvoltage protection by protection diodes
Output current max. 150mA
Output frequency ca 1 KHz
Voltage collector-emitter: max. 50V
Voltage emitter-collector: max. 0,1V

Timer

2*32-bit increment counters
Counting frequency 1 MHz
Time dependent interrupt triggering
Clocking by quartz crystal oscillator

Counter

16*32-bit increment counters with overflow bit
Interrupt capable at overflow

Output Compare Unit

2*32-bit OC units
Resolution 1µs
Generation of PWM
Generation of discrete pulses

Input Capture Unit

2*32-bit IC units
Resolution 1µs
Measurement of period and impulse duration

Quartz crystal oscillator

4 MHz

Board Identification

Jumper block with five pairs of contact pins

Connection plug

1 * 37-pin Sub-D jack
1 * 40-pin box header

Bus system

32-bit PCIe Bus (32 bit data access)

Dimensions of the Board

129 mm x 111 mm (l x b)
standard height, half length card
multilayer PCB

Other

Control LEDs indicating power supply and inputs and outputs

APPLICATIONS

On/off events
Identification of contact states
Binary data acquisition
Process control
Data acquisition of BCD coded instruments
Control of external power relays

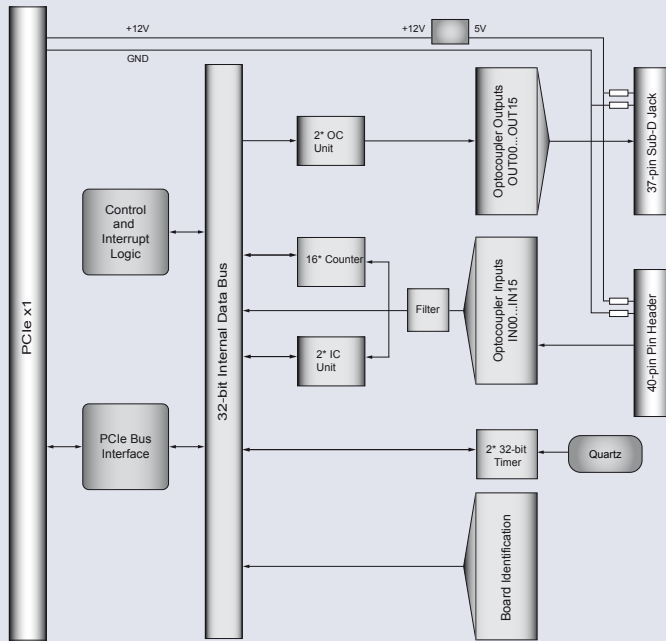
OPTOIO-PCIe16ULTRA (board name: WASCO-PCIe8117) provides 16 digital inputs and 16 digital outputs, every single channel is galvanically isolated by optocouplers of high quality. Special high-power output optocouplers manage a switching current of up to 150 mA. Each input or output is protected from harmful voltage peaks by additional protection diodes. You easily can adjust two different input voltage ranges by setting jumpers. A programmable filter can be assigned to each input channel to hide input impulses below an adjustable impulse duration.

In addition to the galvanically isolated inputs and outputs several counters are available as well as Output Compare Units (e.g. PWM) and Input Capture Units (e.g. for period measurement). Interrupt triggers are possible via all optocoupler inputs, counters, IC units and time-dependent by two 32-bit timers. Output optocouplers are connected to a 37-pin Sub-D jack on a board mounted slot bracket. Optocoupler inputs are connected to a 40-pin onboard box header. As an option a special plug-in cable set (female connector, flat ribbon cable and 37-pin female connector with bracket) is available, to relocate the connection to a slot of your PC case.

The pin assignment is identical to ISA bus card OPTOIO-16, PCI bus card OPTOIO-PCI16 and PCIe bus card OPTOIO-PCIe16. Therefore a changeover to PCIe16ULTRA is easy to realize.

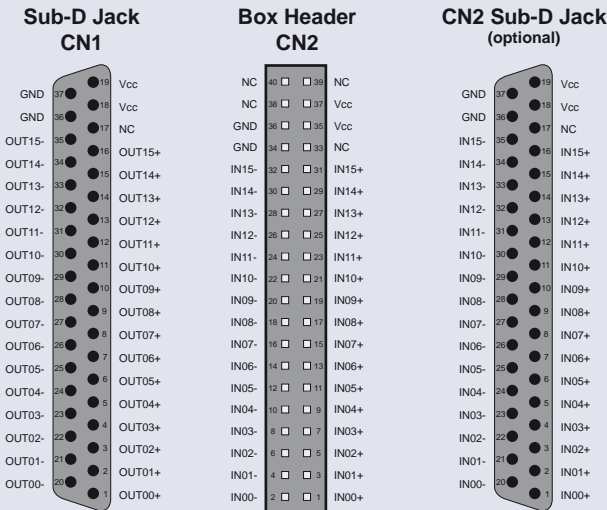
Furthermore, the card provides a jumper block for card identification in order to distinguish several identical cards in your system.

BLOCK DIAGRAM

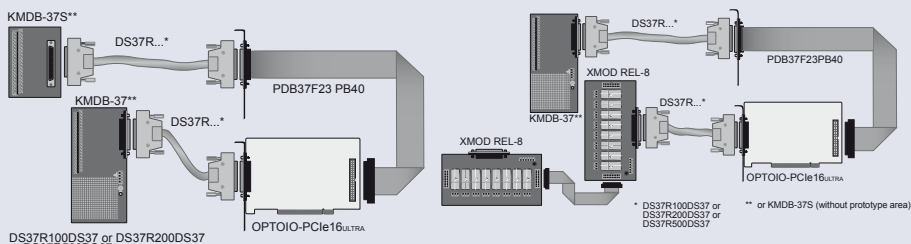


PIN ASSIGNMENT

Anode and cathode of each input optocoupler is connected to a 37-pin Sub-D jack CN1 for every channel individually. Collector and emitter are fed to a 40-pin box header CN2 for every output channel individually. CN1 is mounted to the board's edge bracket, CN2 is accessible inside the computer only. To obtain optimal connections to periphery with strain relief optionally a flat ribbon cable is available (see „Suitable Accessories“).



CONNECTION TECHNIQUE (APPLICATION EXAMPLES)



DS37R100DS37 or DS37R200DS37 or DS37R500DS37

* Alternatives: KMDB-37 with or without prototype area

** or KMDB-37S (without prototype area)

PROGRAMMING

The accompanying CD provides drivers for Windows (please visit www.wasco.de to check available s/w versions) and sample programs for Delphi, VB.NET, C++ and C#.NET

SCOPE OF DELIVERY

Interface Card OPTOIO-PCle32ULTRA
German Manual (English on request)
Drivers and program examples

ORDER INFORMATION

OPTOIO-PCle32ULTRA
EDP No A-829410
I/O Card

SUITABLE ACCESSORIES

PDB37F23PB40 EDP No A-497500

Flat ribbon cable (approx. 23 cm) to relocate signals from CN2 (40-pin box header) to a 37-pin Sub-D jack with slot bracket (please order 1 pc per plug)



DS37R500DS37 EDP No A-202800

Special twisted and shielded connection cable (approx. 5 m) to connect KMDB-37 to a 37-pin Sub-D jack



DS37R200DS37 EDP No A-202400

Special twisted and shielded connection cable (approx. 2 m) to connect KMDB-37 to a 37-pin Sub-D jack



DS37R100DS37 EDP No A-202200

Special twisted and shielded connection cable (approx. 1 m) to connect KMDB-37 to a 37-pin Sub-D jack



KMDB-37S EDP No A-204910

Terminal module with a 37-pin screw terminal block to connect to a 37-pin Sub-D jack



XMOD REL-8 EDP No A-3268

Relay module with eight isolated outputs for switching currents up to 5 A (Connection to the optocoupler outputs, cascading of the modules is possible)



XMOD REL-4 EDP No A-3264

Relay module with four isolated outputs for switching currents up to 5 A (Connection to the optocoupler outputs, cascading of the modules is possible)



For more detailed information about the here listed and other accessories we refer to the corresponding data sheets