

OPTOIO-PCIe32^{ULTRA}

Digital interrupt capable PCIe I/O Interface Card with 32 Optocoupler Inputs, 32 Optocoupler Outputs, Timer, OC and IC Units and Board Identification

32 optocoupler inputs (configurable digital filters)

32 optocoupler outputs

32* 32-bit counters

2* timers

2* OC units (PWM function)

2* IC units (time period and pulse measurements)

quartz crystal controlled

interrupt capable

board identification

SPECIFICATIONS

Optocoupler Inputs

Optocouplers LTV-244 or compatibles
32 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

32 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

Timers

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

Counters

32*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 pulse duration

Quartz crystal oscillator

4 MHz

Board Identification

Jumper block with five pairs of contact pins

Connection plugs

2 * 68-pin SCSI sockets

Bus system

32-bit PCIe Bus (32 bit data access)

Dimensions of the Board

208 mm x 111 mm (l x b)
standard height, full length card
multilayer PCB

Other

Control LEDs indicating power supply and inputs and outputs

The OPTOIO-PCIe32^{ULTRA} (board name: WASCO-PCIe8132) features 32 digital inputs and 32 digital outputs, every single channel is galvanically isolated by high-quality optocouplers. 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 suppress input pulses below an adjustable pulse duration.

In addition to the galvanically isolated inputs and outputs, two counters, Output Compare Units (e.g. PWM) and Input Capture Units (e.g. for period measurement) are available. Interrupt triggers are possible via all optocoupler inputs, counters, IC units and time-dependent by two 32-bit timers. The output optocouplers are connected to a 68-pin SCSI socket mounted on the board's slot bracket. The optocoupler inputs are connected to a 68-pin onboard SCSI socket. As an option a special plug-in cable set (female connector, flat ribbon cable and 68-pin female connector with bracket) is available, to relocate the connection to a 68-pin Sub-D socket.

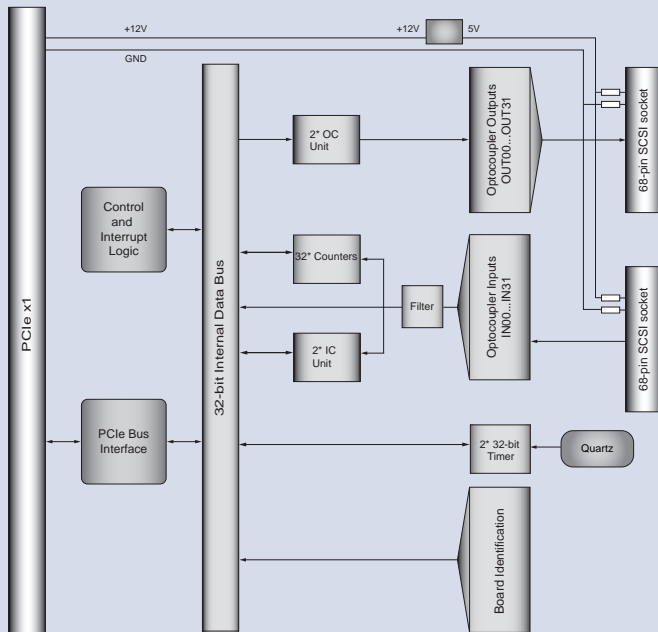
The pin assignment is identical to the PCI bus card OPTOIO-PCI32. Therefore a changeover to PCIe32^{ULTRA} is easy to realize.

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

APPLICATIONS

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

BLOCK DIAGRAM



PIN ASSIGNMENT

Anode and cathode of each input optocoupler is connected to a 68-pin SCSI socket CN1 for every channel individually. Collector and emitter are fed to a 68-pin SCSI socket 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“).

SCSI-II socket
CN1

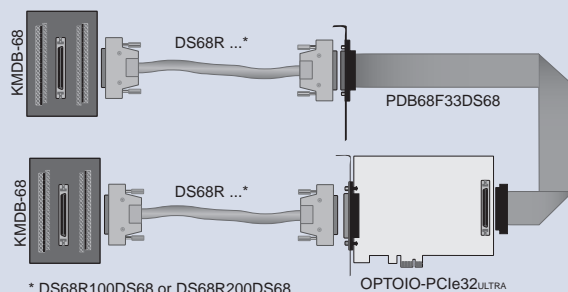
GND	68	34	Vcc
GND	67	33	Vcc
OUT31-	66	32	OUT31+
OUT30-	65	31	OUT30+
OUT29-	64	30	OUT29+
OUT28-	63	29	OUT28+
OUT27-	62	28	OUT27+
OUT26-	61	27	OUT26+
OUT25-	60	26	OUT25+
OUT24-	59	25	OUT24+
OUT23-	58	24	OUT23+
OUT22-	57	23	OUT22+
OUT21-	56	22	OUT21+
OUT20-	55	21	OUT20+
OUT19-	54	20	OUT19+
OUT18-	53	19	OUT18+
OUT17-	52	18	OUT17+
OUT16-	51	17	OUT16+
OUT15-	50	16	OUT15+
OUT14-	49	15	OUT14+
OUT13-	48	14	OUT13+
OUT12-	47	13	OUT12+
OUT11-	46	12	OUT11+
OUT10-	45	11	OUT10+
OUT09-	44	10	OUT09+
OUT08-	43	9	OUT08+
OUT07-	42	8	OUT07+
OUT06-	41	7	OUT06+
OUT05-	40	6	OUT05+
OUT04-	39	5	OUT04+
OUT03-	38	4	OUT03+
OUT02-	37	3	OUT02+
OUT01-	36	2	OUT01+
OUT00-	35	1	OUT00+

SCSI-II socket
CN2

GND	68	34	Vcc
GND	67	33	Vcc
IN31-	66	32	IN31+
IN30-	65	31	IN30+
IN29-	64	30	IN29+
IN28-	63	29	IN28+
IN27-	62	28	IN27+
IN26-	61	27	IN26+
IN25-	60	26	IN25+
IN24-	59	25	IN24+
IN23-	58	24	IN23+
IN22-	57	23	IN22+
IN21-	56	22	IN21+
IN20-	55	21	IN20+
IN19-	54	20	IN19+
IN18-	53	19	IN18+
IN17-	52	18	IN17+
IN16-	51	17	IN16+
IN15-	50	16	IN15+
IN14-	49	15	IN14+
IN13-	48	14	IN13+
IN12-	47	13	IN12+
IN11-	46	12	IN11+
IN10-	45	11	IN10+
IN09-	44	10	IN09+
IN08-	43	9	IN08+
IN07-	42	8	IN07+
IN06-	41	7	IN06+
IN05-	40	6	IN05+
IN04-	39	5	IN04+
IN03-	38	4	IN03+
IN02-	37	3	IN02+
IN01-	36	2	IN01+
IN00-	35	1	IN00+

PDB37F23PB40

CONNECTION TECHNIQUE (APPLICATION EXAMPLES)



* DS68R100DS68 or DS68R200DS68 or DS68R500DS68

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-840810
I/O Card

SUITABLE ACCESSORIES

PDB68F33DS68 EDP No A-498600
Flat ribbon cable (approx. 33 cm) to relocate signals from CN2 to a 68-pin SCSI-II socket with slot bracket



DS68R500DS68 EDP No A-492800
Special twisted and shielded connection cable (approx. 5 m) to connect KMDB-68 or any other KM modules to a 68-pin SCSI-II socket



DS68R200DS68 EDP No A-492400
Special twisted and shielded connection cable (approx. 2 m) to connect KMDB-68 or any other KM modules to a 68-pin SCSI-II socket



DS68R100DS68 EDP No A-492200
Special twisted and shielded connection cable (approx. 1 m) to connect KMDB-68 or any other KM modules to a 68-pin SCSI-II socket



KMDB-68 EDP No A-494800
Terminal module with a 68-pin screw terminal block to connect to a 68-pin SCSI-II socket



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