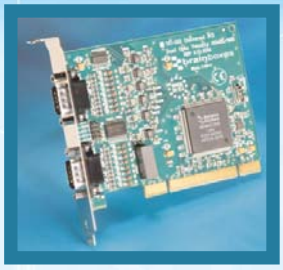
brainboxes
www.brainboxes.com

EST 1984

ISO9001 UKAS

Elektra O5 European Electronics Industry Awards WINNER Manufacturer of the Year

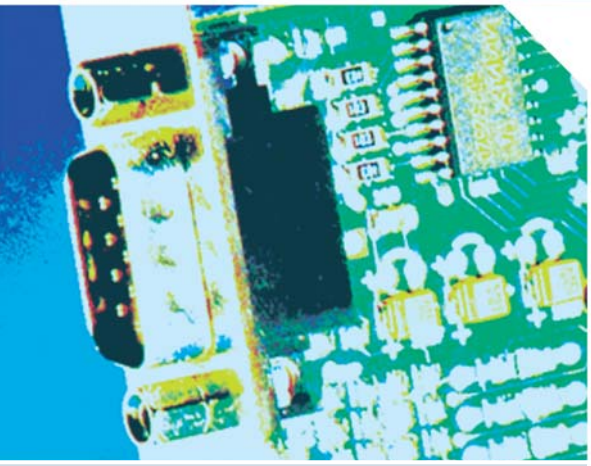
Microsoft CERTIFIED Partner



UC-310

UNIVERSAL DUAL OPTO VELOCITY RS422/485

SERIAL CARDS ENGINEERED TO EXCEED EXPECTATIONS



Features

- 2 Port RS422/485
- Universal PCI
- 128 Byte FIFO with user definable trigger level
- Up to 921,600 baud
- Standard Profile
- Full Duplex and Half Duplex Autogating
- Optical Isolation:
  ±1500 Volt DC, 1000 Volt AC
- Transient Spike Protection
- Drivers for all popular operating systems
- Sample Programs, Test & Terminal software - all with source code
- Lifetime Support and Lifetime Warranty

Click on each feature to find similar products

Applications

- Cash Deposit Machine
- Long Distance Communication
- Industrial Sector
- Banking & Financial Sector

Description

Universal PCI card providing 2 industry standard 9 pin RS422/485 serial COM ports in a single PCI slot. Velocity megabaud data transfer rates and 128 byte deep FIFO guarantees uncompromising performance and fault-free use.

Optical isolation provides greater protection from electrical current surges to both the card itself and the PC.

Universal PCI is fully compatible with both 3.3Volt and 5Volt PCI slots; protecting your investment into the future.

Now with Brainboxes Lifetime Warranty and Lifetime Support!

Software

Microsoft signed drivers (easy installation & robust operation) for:

- Windows Server 2003 x32 bit & x64 bit Editions
- Windows XP x32 bit & x64 bit Editions
- Windows 2000.

64 Bit Drivers

Fully tested drivers also included for:

- Windows Me, Windows 98 & 95, Windows NT.

As well as: full product documentation, a thorough troubleshooting guide and terminal software. Detailed sample source code for all popular programming languages.

Need support for other operating systems? Please telephone or email. Find out about Brainboxes excellent driver configurability: Click Here



Lifetime Warranty · Lifetime Support · Opto Isolation

CE · FC · UL

ORDER

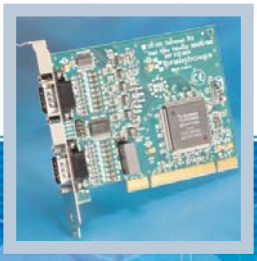
Description	Code
UNIVERSAL DUAL OPTO VELOCITY RS422/485	UC-310

brainboxes
www.brainboxes.com

EST 1984

Elektra 05 European Electronics Industry Awards WINNER Manufacturer of the Year

UC-310



UNIVERSAL DUAL OPTO VELOCITY RS422/485

Product Code	UC-310	
Serial Port		
RS422/485 Pinout (9 pin Male)	Ports	2 Port RS422/485
	Connector	DB9 (9 Pin Male)
	UART type	16950 UART inside Brainboxes LYNX BB16PCI958
	FIFO size	128 Byte with user definable trigger level
	Transmitted Signal Strength	+/- 5 Volts open circuit RS422/485 Standard
	Operating Distance	4000 ft (1200 metres) RS422/485 Standard
	Electrical Protection*	Opto-Isolation: +/- 1500 Volt DC / 1000 Volt AC +ve transient spikes > 12V, -ve transient spikes >6.8V
Serial Port Settings		
	Baud Rate (bits per second)	up to 921,600
	Data Bits	5,6,7 or 8
	Parity	Odd, Even, None, Mark or Space
	Stop Bits	1, 1.5 or 2
	Flow Control	CTS/RTS
	IRQs	Plug and Play - Shared interrupts for all ports
	Tx/Rx Modes	Full Duplex, Half Duplex Autogating
	Connection Schemes	Point to Point, One talker; many listeners, (32 Max) Many talkers / listeners Half Duplex (32 Max)
	RS485 Gating	Hardware Autogating, TxD always / RTS true enabled, RxD always enabled, RxD RTS true disabled, CTS forced true
General		
	Bracket Profile	Standard
	PCB Layers	4
	Power	550mA @ 5V
	Weight	0.097Kg
	Size	93 x 122 mm
Interface		
	BUS Compatibility	32/64 bit Universal (3.3V or 5V) PCI or PCI-X
	OS Compatibility	Windows 98/ NT4/ 2000/ XP/ Server 2003 Windows XP x64 bit Edition / Windows Server 2003 x64 bit Linux
	PCI Compliance	Version 3.0
Approvals & Accreditations	CE FC UL	UL, EMC: CE, FCC, PCI Power Management 1.1 Compliant, PCI 3.0 Compliant
Box Contents		Installation CD including manual, Microsoft signed drivers, utilities and sample programs with source code UNIVERSAL DUAL OPTO VELOCITY RS422/485 Installation Guide
OEM option		Available for bulk buy OEM
Product Support		Lifetime Email and Phone Support from Fully qualified, friendly staff 40 hours a week
Warranty		Lifetime
Made In	MADE IN EU Elektra 05 WINNER Manufacturer of the Year	Manufactured in the UK by Brainboxes Winner 2005 European Electronics Industry Awards "Manufacturer of the Year"
Customisable		Brainboxes operate a "Perfect Fit Custom Design" policy for volume users More Info: CLICK HERE

Pin	
Pin 1	TXD-
Pin 2	TXD+
Pin 3	RTS-
Pin 4	RTS+
Pin 5	GND
Pin 6	RXD-
Pin 7	RXD+
Pin 8	CTS-
Pin 9	CTS+

1 2 3 4 5
6 7 8 9

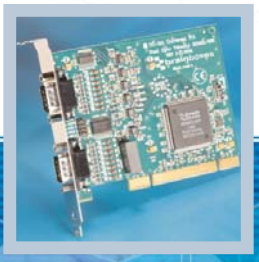
*Standard electrical protection see UC-313

brainboxes
www.brainboxes.com

EST 1984

Elektra 05 European Electronics Industry Awards WINNER Manufacturer of the Year

UC-310



UNIVERSAL DUAL OPTO VELOCITY RS422/485

Glossary: Product Features Explained

Universal PCI

Universal products allow compatibility with both 3.3 Volt and 5 Volt PCI systems. This ensures that Brainboxes universal card range is backward compatible with older systems and works with all new PCI systems.
More info on 'Universal' products: Click Here

Autogating

When the device is set to half duplex mode, transmitted and received data is sent across the same signal lines. Autogating means the Brainboxes card knows when to 'listen' for data and when to transmit data, with a quick and automatic hardware switch between the 2 modes. This is much faster than software switching and ensures no data loss due to turnaround delay.
More Info: Click Here

Opto Isolation

Optical isolation provides greater protection from electrical current surges to both the card itself and the PC. It improves noise immunity by isolating the PC from the card's transmit ground.
Opto-Isolation: ±1500Volt DC/ 1000Volts AC

PCI Compliant

All Brainboxes Universal PCI cards are fully PCI version 3.0 compliant, in accordance with the PCI-Special Interest Group (PCI-SIG).

Large FIFO

FIFO means First In First Out, a FIFO is memory space on the Brainboxes card. A larger FIFO allows more memory space for buffering data, so calls to the computer processor are less frequent. This significantly increases data throughput and improves CPU availability for other applications.
More info: Click Here

4 Layer PCB

Printed Circuit Board with 4 layers of circuitry complies with the PCI SIG best practice guideline and ensures a more reliable card. 1 layer is for power and 1 for ground which leads to greater EMC shielding for the signals. This ultimately gives greater signal integrity for sensitive timing applications.

Surface Mount Components

Most components on a Brainboxes card are placed by a surface mount machine. The surface mount machine allows for highly accurate and fast production of Brainboxes cards. Orders can be met quickly, reliably and with outstanding quality.

Capacitors

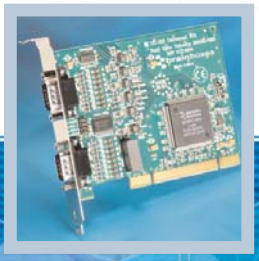
As required by the PCI-SIG all Brainboxes cards have capacitors connected to all the power pins on the PCI connector, near to the connector. This ensures that the electrical power rails on the Brainboxes card stay at the right voltage, regardless of the power demands placed on them. Data signals keep their integrity.

brainboxes
www.brainboxes.com

EST 1984

Elektra 05 European Electronics Industry Awards WINNER Manufacturer of the Year

UC-310



UNIVERSAL DUAL OPTO VELOCITY RS422/485

Brainboxes' Service

"Brainboxes offers free lifetime support for ALL customers."

We aim to provide industry leading support for our customers. Our highly trained and helpful support engineers sit and work closely with the product designers, developers, and testers to ensure an in-depth knowledge of the products. Support can be found by emailing support@brainboxes.com or calling: +44 (0)151 220 2500 during UK office hours.
Support website: www.brainboxes.com/support/index.asp

"Brainboxes' passionately believes in the quality of its manufacturing process and will reflect this by offering a Lifetime Warranty on ALL of its universal serial card range."

Brainboxes is pleased to be able to extend a new Lifetime Warranty for all universal serial cards products.
We have introduced this based on our exceptional manufacturing and design quality and the company ethos of kaizen.

Brainboxes' Kaizen

"Brainboxes constantly strives to achieve higher standards for the benefit of customers."

'Kaizen' is a Japanese term meaning 'continuous improvement'. Kaizen has been implemented throughout Brainboxes, resulting in significant improvements to our products and our customer service, as illustrated by the development of our own custom ASIC "LYNX" and our new lifetime warranty. As part of this ongoing process, in 2004 we embarked on 'Lean' and '6 Sigma' programs which are successfully increasing productivity and efficiency in all areas of the company. **More Info:** Click Here

Brainboxes' LYNX

We developed the Brainboxes LYNX (BB16PCI958) to enable us to drive product performance, and supply customer needs for Universal PCI products (3.3v and 5v compatible). By reducing the part count and incorporating several components into one chip (FIFO, UARTs, PCI interface), we have also increased board reliability. The LYNX also features thorough backwards compatibility with legacy systems, tested beyond the databook for compatibility with standard TL16C550, 750 UARTs. The chip is designed so that Brainboxes products will work with all applications designed for TI UARTs. **More Info:** Click Here

RS422/485 Standards

RS422 allows one transmitter and up to 10 receivers with data transmission rates up to 10 Megabits per second, for distances up to 40 feet and up to 100 Kilobits per second, for distances up to 4000 feet (1219 metres).

RS485, based on the RS422 standard, allows up to 32 driver/receivers pairs on a party line data bus. This can be configured into half duplex and full duplex mode. Whilst only one of these should be transmitting data at any time, the rest can all simultaneously listen to the data. **More Info:** Click Here

TXD-	Pin 1
TXD+	Pin 2
RTS-	Pin 3
RTS+	Pin 4
GND	Pin 5
RXD-	Pin 6
RXD+	Pin 7
CTS-	Pin 8
CTS+	Pin 9

RS422/485 Pinout

