

3-Volt Compatible I²C Communications Adapter for



ICA93LV/C

The ICA93LV is able to work with I²C-Bus systems running on supplies between 2V and 6V so is ideally suited for use in low-power 3V applications. The ICA93LV is based upon Calibre's well-proven ICA90 I²C-Bus Communications Adapter which is now widely regarded as the industry standard tool and is currently in use by hundreds of companies large and small.

The package supplied includes the half-length IBM PC compatible card, a comprehensive user manual, sample software routines and source code functions in C and TurboBASIC for all I²C-Bus operations as well as set-up and status checking routines. A real-time bus monitor/data logging program is also supplied. 16-bit Windows DLLs are provided for users wishing to write software in either Microsoft C++ or Visual Basic.

Features

- 100% I²C Compatibility**
- I²C-Bus voltage between 2V and 6V (user alterable)**
- True 30/70% logic thresholds track with supply voltage**
- Operates as Master, Slave or Real-Time Monitor**
- Fits any PC, AT or ISA/EISA bus computer**
- Software Function Libraries & User Manual included**
- I²C Configuration through software**
- Link selection of I/O Addresses**
- I²C Connection via 9 way D socket**
- +2V to 6V power available on I²C connector**

This half-length card supports the full I²C communications protocol and plugs into any available I/O slot in your PC. Based around the Philips PCF 8584 I²C-Bus Controller it will work with any IBM compatible ISA/EISA bus computer. PC I/O base address is selectable in the range 310 to 31E (hexadecimal). The adapter occupies this base address and the next address up. Bus termination, protection and hardware interrupt line (usage is optional) are all link selectable while I²C configuration and all other protocol functions are software controllable. The I²C-Bus voltage is selectable by a trim-pot accessible through the card mounting bracket.

All I²C features are available under software control including data transmission mode (master/slave, transmitter/receiver), own slave address and SCL clock speed when operating as a master (1.5/11/45/90kHz). Both polled and interrupt driven modes can be supported, making programming in popular languages easy. A "transparent" real-time bus monitor program is also provided. The ICA93LV fully supports multi-master operation and associated bus arbitration.

Make Your PC I²C Compatible

The adapter adds inexpensive PC computing power to any I²C system and presents an attractive alternative option to the use of a microprocessor or microcontroller. Current applications include development systems, production line test and set-up of I²C based equipment, control of systems and specialised data links between equipment.

A comprehensive package is supplied including simple software routines in C and TurboBASIC for DOS programmers and as 16-bit DLLs for Microsoft C++ and Visual Basic for Windows programmers, a full user manual for the ICA93LV and the ICA93LV hardware itself. The user manual gives comprehensive software information but does assume that the user is already familiar with the protocol of the I²C bus and programming and on PCs.

32-bit DLLs are available as optional extras, as is Wini2c, a ready to run I²C-Bus comms package.

Standard software is in the form of function libraries for use in users' own application software.

The principle of the software is to provide all the I²C functions - I²C adapter set-up (including card's own I²C slave address and SCL clock speed), Start & slave address transmission, byte transmission, byte reception, Stop transmission and of course access to status information. The user then builds these high-level functions into the necessary program for driving their particular I²C devices (s). This option was chosen as opposed to providing drivers for specific I²C devices since

there are so many different types and sources available it would be impossible to provide specific code to suit all applications. The software routines provided allow any I²C device, current or future, to be communicated with. It should be noted that all I²C-Bus operations are on a byte-wise basis. Using the adapters as a Slave transmitter is quite specialised and requires a few extra lines of code under DOS. The Windows 16-bit DLLs are recommended if Slave mode is to be implemented. Calibre technical staff will be pleased to help if you wish to undertake such a use.

On the disc provided with the ICA93LV there are sample programs giving examples of how to use the library functions. Also included with the internal card versions is a ready to run real-time bus monitor program (for DOS only) which traces all transmissions on an externally mastered I²C bus and records them in an ASCII file on disc. The monitor traces in real-time without affecting the I²C system it is monitoring - to do so the card must be used in a PC booted in DOS mode rather than a DOS window, otherwise data may be missed. The monitor does not provide a real-time display to the screen, all data is stored on disc. It does carefully post-process the data recorded into easily understood information.

Calibre UK Ltd undertakes I²C-Bus software development and support contracts to customers' own requirements. Calibre also offers a large range of LCD displays and interfaces, colour monitors, computer video distribution amplifiers, scan converters and other display related products. Please call for further information.

Specification	<p>Half length IBM PC compatible card (fits any slot)</p> <p>Full I²C Compatibility I²C-Bus voltage adjustable between 2V and 6Volts Factory pre-set 3.3V for use with low-voltage devices I²C configuration through software Can be Master/Slave, Transmitter/Receiver, Real-Time Monitor</p> <p>Software library functions for DOS and Windows 3.1x Ready to run Real-Time Monitor is included Includes comprehensive User Manual</p> <p>I²C connections via 9-way D socket I²C-Bus voltage output to power external circuits via 9-way D 8 link selectable I/O base addresses (0x310 to 0x31E) 4 link selectable hardware interrupt lines (usage optional)</p>
Options	<p>32-bit Windows DLLs, 95 & NT versions available WINI2C ready to run application software, 95/98 & NT versions available</p>

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