

IBS PC ISA SC/I-T

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PC controller board in ISA format, with electrical isolation

Commercial data

GTIN (EAN)	 4 017918 120146
Note	Made-to-order
sales group	K020
Pack	1 pcs.
Customs tariff	84733020
Catalog page information	Page 123 (AX-2009)

Product notes

WEEE/RoHS-compliant since:
06/03/2008



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Product description

INTERBUS Generation 4 controller boards for PCs

The intelligent controller boards, IBS PC ISA SC/I-T and IBS PC 104 SC-T provide PCs with two INTERBUS interface connections with Generation 4 functionality that can be programmed with high-level languages.

The IBS PC 104 SC-T is a software-compatible variant in the internationally standardized PC/104 format.

For the operating system, Windows NT, Windows 95 and DOS, there are drivers that permit access to the controller board via a simple interface.

The new intelligent IBS PC SC HLI application interface allows you to create powerful INTERBUS applications using C, C++, Delphi or Visual Basic quickly and easily. The IBS CMD SWT G4 software can be used to parameterize the INTERBUS system by integrating an export filter for IBS PC SC HLI.

The system packages offer includes an economy version consisting of the controller board, the manuals, all the drivers, and CMD.

Technical data

Control system

Control system	IBM-compatible PCs with ISA slot
Diagnostics tool	DIAG+ from version 1.0x
Configuration tool	CMD from Version 4.0x

Software interfaces

Software driver	Windows NT
	Windows 2000
	Windows 95/98
	DOS
	Further types on request
Application interface	OPC
	DDI

Software requirements

Configuration tool	CMD from Version 4.0x
Diagnostics tool	DIAG+ from version 1.0x

Power supply

Power supply connection	Via ISA bus
Typical current consumption	0.5 A
Supply voltage	5 V DC
Supply voltage range	± 5 % (including ripple)

General data

Weight	140 g
Format	Short plug-in card, 1-slot
Height	107 mm
Depth	135 mm
Degree of protection	IP00
Ambient temperature (operation)	-25 °C ... 75 °C (in acc. with EN 60204-1)

Ambient temperature (storage/transport)	0 °C ... 75 °C (in acc. with EN 60204-1)
Permissible humidity (operation)	75 % (on average, 85% infrequently, no condensation)
Air pressure (operation)	860 hPa ... 1080 hPa (up to 2000 m above mean sea level)
Air pressure (storage/transport)	660 hPa ... 1080 hPa (up to 3000 m above sea level)

Data interfaces

Interface	INTERBUS remote bus
Type of connection	9-pos. D-SUB female connector, with electrical isolation
Interface	Parameterization/operation/diagnostics
Type of connection	RS-232-C, D-SUB 9-pos. male connector
Interface	Host system
Type of connection	ISA bus
Interrupts	Selectable between IRQ 3, 5, 7, 9, 10, 11, 12, 15

INTERBUS data

Type	INTERBUS master
Number of devices with parameter channel (PCP)	max. 126 (512 words)
Number of PCP data	max. 126
Number of supported devices	max. 512 (of which 254 are remote bus devices/bus segments)
Number of I/O nodes	max. 8192

Certificates / Approvals



Certification CUL, GOST, UL

Accessories

Item	Designation	Description
Cable/conductor		
2806862	IBS PRG CAB	Connection cable, to connect the controller boards to the PC (RS-232-C), length 3 m
General		
2985589	CD PC DRIVER	Driver software and documentation on CD-ROM (German and English)

Software

2730307	DIAG+	Diag+, diagnostics software, for INTERBUS networks, area of application: Startup, maintenance and, for example, for integration in control desk software, can be integrated in 32 bit applications (ActiveX-capable)
2721439	IBS CMD SWT G4	Network configuration software for INTERBUS Generation 4
2721442	IBS CMD SWT G4 E	Network configuration software for INTERBUS Generation 4
2729127	IBS OPC SERVER	INTERBUS OPC server, communication interface between distributed INTERBUS and Ethernet networks and visualizations.

FAQs

- **Call parameter of the DOS driver Version 1.05**

When starting up, the driver for DOS (IBSISA.EXE), Version 1.05 is to be called with an extra call parameter, "CM", to avoid error messages from existing applications created with older driver versions: IBSISA.EXE IO= CM This parameter is not to be used in the case of a new translation of the application with files from V1.05 of the driver.

- **Driver development with the aid of the Device Driver Development Kit for operating systems not supported**

A Device Driver Development Kit (DDK) can be ordered for IBS PC ISA SC/I-T and IBS PC 104 SC /I-T PC controller boards: IBS PC DEV KIT G4 , Order No. 28 36 17 5. This kit describes the Multi Port Memory (MPM) and the Device Driver Interface (DDI). Together with module-specific information and the commented source code for the DOS driver (ANSI C), the DDK can be used as the basis (e.g., by directly porting the sources) for the development of a driver for operating systems not supported.

- **How do I change the settings for the software driver (device driver)?**

1. Under MS-DOS The settings are transmitted as parameters when the IBSISA.EXE driver is called. 2. Under Windows 3.1 / Windows 95 for 16-bit applications The settings are managed in the IBDDIWIN.INI file in the Windows directory. For board no. X (1...8) the settings can be changed in the [IBSISASC_BOARDX] section. 3. Under Windows 95 for 32-bit applications The settings are managed in the Windows registry. For board no. X (1...8) the settings can be changed in HKEY_LOCAL_MACHINE \ SYSTEM \ CurrentControlSet \ Services \ VxD \ IBSISASC \ Parameters \ X using REGEDIT.EXE. 4. Under Windows NT for 32-bit applications The settings are managed in the Windows registry. For board no. X (1...8) the settings can be changed in HKEY_LOCAL_MACHINE \ SYSTEM \ CurrentControlSet \ Services \ IBSISASC \ Parameters \ X using REGEDT32.EXE (Administrator rights are needed).

- **IBS PC SC HLI: Error code 0201hex with Microsoft Visual C++ applications under Windows NT 4.0**

Symptom(s): In Windows NT 4.0 applications created using Microsoft Visual C++ 5.0 / 6.0 and using IBS PC SC HLI user interfaces, the IBS_HLI_Init..() initialization functions return the error code 0201hex. This is only the case, if the application was created as a release version and the Microsoft Foundation Class (MFC) is used as shared DLL. Cause: Unknown. Solution / Remedy: Updating Windows NT 4.0 with service pack 6 will solve this problem.

- **IBS PC SC HLI: Function IBS_HLI_AlarmStop() not declared for Visual Basic**

(Relates to Version 1.03 or older) In the IBSG4HLI.BAS interface module, the definition of the IBS_HLI_AlarmStop() function in the corresponding public section is missing. To remove the error the IBSG4HLI.BAS file can be extended as follows: 1. In the "HLI Functions" interface part, "Windows 16-Bit Version" area, "INTERBUS Services" section, add the line "Public Declare Function IBS_HLI_AlarmStop Lib "G4HLIW16.DLL" (ByVal CID As Integer) As Integer" 2. In the "HLI Functions" interface part, "Windows 32-Bit Version" area, "INTERBUS Services" section, add the line "Public Declare Function IBS_HLI_AlarmStop Lib "G4HLIW32.DLL" (ByVal CID As Integer) As Integer"

- **IBS PC SC HLI: Visual Basic applications terminate at update of process data input objects**

(Relates to Version 1.03 or older) The process data registration functions IBS_HLI_RegisterPDO...() expect a reference to a changed state variable as the last parameter. If no changed state variable is used, a ZERO pointer must be transmitted to the HLI function. The transmission of the Visual Basic object "Zero" or "Empty" for the changed state variable reference can lead to problems because Visual Basic does not transmit a true ZERO pointer, but instead transmits a pointer to an object in the current application stack which contains empty information. One possible result is an application error when calling one of the PD In update functions of the HLI. Remedy: Declare an additional global integer variable (e.g., Dim ibsNull As Integer), and transmit this as the last parameter when calling the registration functions, instead of "Zero" or "Empty". This also applies to modules which have been generated using the CMD export filter. These modules should be modified accordingly!

- **Incorrect revision number of Windows NT driver**

The current revision of the windows NT driver for the IBS ISA SC/I-T and IBS PC 104 SC-T controller boards is 1.12. Unfortunately, there is a wrong revision indicated on the installation disk. It shows revision 1.11. However, after driver software installation, you will see that revision 1.12 has been installed.

- **Is it possible to implement a bus parameterization with isolated disconnection if an incorrect bus is connected?**

Yes, it is possible. Before a bus start it however is necessary to activate the configuration frame. Activate configuration frame: Code: 0711 Parameter_Count: 0001 Frame_Reference: 0001 Start bus: Code: 0701

- **Missing files after installation of driver software under Windows 95**

Symptom(s): Operating system messages "The file IBDDIW95.DLL could not be loaded" and "Unable to initialize VIBSSCD.CXD" when starting applications for PC controller boards under Windows 95. Cause: The setup program fails to copy files IBDDIW95.DLL and VIBSSCD.VXD to \WINDOWS\SYSTEM, leaving them instead in \<Drive-installations-directory>\LIB. Windows cannot find the driver data, as there is no reference to this directory. Solution / Remedy: Manually copy both files - IBDDIW95.DLL and VIBSSCD.VXD - to \WINDOWS\SYSTEM

- **Return code 89hex of software driver functions (device driver interface)**

If calling a driver function returns code 89hex, there is a problem accessing the MPM (multiported memory) of the board. Check the setting for the base address of the MPM. From this address, a minimum unused area of 4KB (!) must be available in the computer! Hardware conflicts are the cause of the error in the following cases:
* Overlapping with the ROM of the graphics board if the MPM address is between C800h and D000h. Remedy: select another base address. Remedy: Select another base address.
* Overlapping with the ROM of the computer BIOS if the MPM address is >= E000h. Remedy: Select another base address.
* Components such as network or communication boards with the same memory address. Remedy: Select another base address.
* Use of the expanded memory manager (EMM386) without exclude instruction for the MPM area. Remedy: Add the instruction X=D000-D0FF in the call line of the EMM386 (CONFIG.SYS) (represents base address D000h, otherwise add correspondingly).
* For some PCI computers a setting is required in the BIOS setup so that the MPM of the board is visible in the address area of the CPU. Please refer to the BIOS description for your computer, keyword ISA boards with memory. See also: "How do I change the settings for the software driver (device driver)?"

- **Windows NT: Software driver function return code 01 (Device Driver Interface)**

Symptom: A Device Driver Interface function returns the error code 01hex Possible causes: 1. Version inconsistency between Device Driver Interface DLL (IBDDIWNT.DLL) and the Device Driver (IBSISASC.SYS). Check whether the Device Driver Interface DLL (IBDDIWNT.DLL) is available in several different paths and delete if necessary. Then reinstall the driver software (or IBS CMD / PCWORX). 2. Resource conflicts - IRQ and MPM addresses. Check the controller board settings, and compare them with the available IRQ and memory resources (see Administration - >Windows NT Diagnostics -> Resources). Check the settings in the PC BIOS.

- **Windows NT: Software driver function return code 02 (Device Driver Interface)**

The software driver has not started. (see System Control -> Devices -> IBS ISA SC Driver). Reasons for this are conflicts in the resource settings. Check the settings for the board and compare them with the free IRQ and memory resources (see Management -> Windows NT Diagnostics -> Resources).

- **Windows NT: Windows NT: Service confirmations not received**

There is a problem with the IRQ specified. Although this is available in the system, the interrupt signal from the board is not passed on to the CPU. This is the case in some PCI computers. An ISA board which occupies an IRQ must be explicitly declared in the BIOS setup. Please refer to the BIOS description for your computer, keyword PCI / Plug and Play -> IRQ.

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