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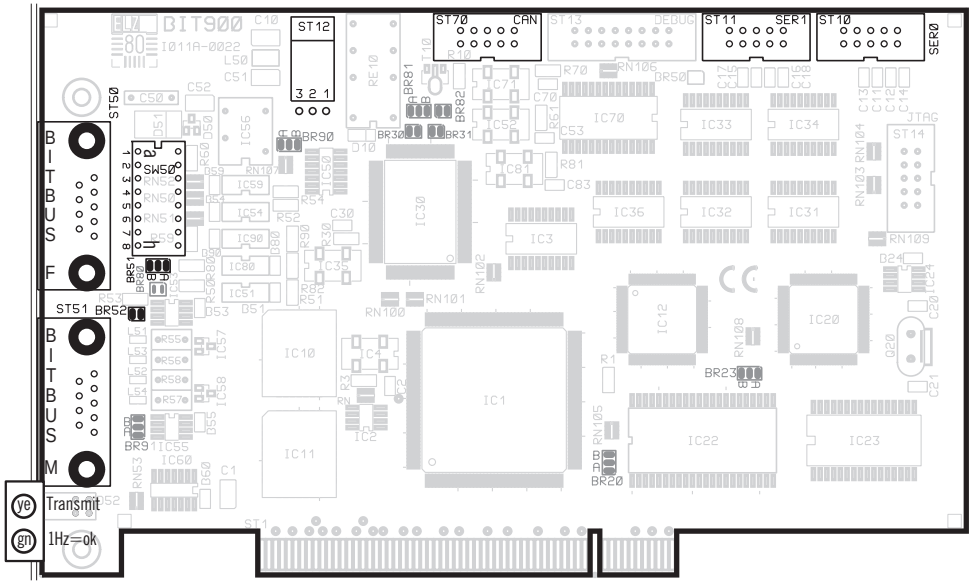
(Rev. 0236) Walter Giesler 2005-09-14

How to install the

IPC-BIT900<PCI

PCI BITBUS Master Board

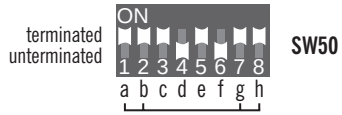


Board address and interrupts are set automatically by PCI-bus logic.

To set up the board as a standard BITBUS master, only the following settings have to be checked - everything else is default:

Switch SW50: RS485 line termination:

Switches 1, 2, 7, and 8 of SW50 (a,b,g,h) are used to add termination resistors at the extreme ends of a physical RS485 line. Only there termination is necessary, do not set these switches to on at other locations. All 4 switches have to be set alike. The other 4 switches (3-6/c-f) are used to switch the duplex operation, they must not be manipulated for standard BITBUS use.



Signal ground direct/via 100 Ohm:

Solder jumper BR52 (behind the BITBUS connnector, see sketch on next page) is used to select whether the ground line of the RS485 line gets connected directly to the isolated ground of the BIT900<PCI (jumper closed) or through a 100 Ohm resistor.

There are different feelings between experts as to what is most suitable for BITBUS - normal applications will note no difference.

Default: open

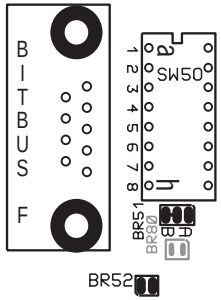
For non-standard applications only please consider the following settings

RTS-level H-active: Open BR51 (Default: track at B)

Full/half duplex mode

at SW50 c-f:

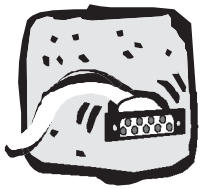
Half duplex signifies reception and transmission using the same wire pair, while the other wire pair can be used for RTS (active during transmit).



External amplifiers (repeaters) need RTS for direction control. In full duplex nets all slave receivers are connected to the master's transmitter line. For full duplex the switches at SW50 have to be inverted from the standard to read as follows:

c=OFF, d=ON, e=OFF, f=ON.

BITBUS uses half duplex operation.

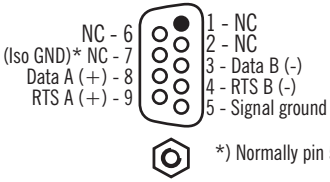


BITBUS

The BITBUS connection is realized through any or both of the interconnected sub-D-connectors at the front bezel; BEUG recommends using the socket for a master situated at a line end.

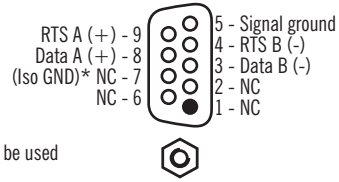
For full duplex "Data" is used for transmit and RTS for reception of data.

ST51 (Plug):



*) Normally pin 5 would be used

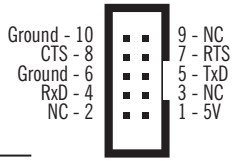
ST50 (Socket):



For non-standard extensions here the pinouts of the additional ports on BIT900PCI

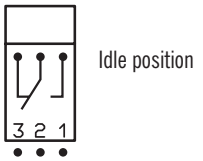
ST10: SER 0; ST11 SER1

Connect to the TLCS900-internal serial ports (SER0: mCAT programming port). TTL level. Mating level shifter modules are available for RS232/422/485 (PER-IF232,...).



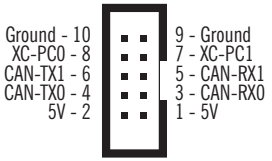
ST12: Relay

48V/1A SPDT relay that can be operated from PB3/TO5 by software to be used for emergency-chain etc. A low output switches the relay on. Will be reset on RESET.



ST70: CAN (option)

Optional CAN bus port. TTL level signals for external driver-/isolator board "ISOCAN". Requires a board with an optional CAN chip.



The board comes with the mCAT2 real time kernel (including the BITBUS driver) in Flash-EPROM. To be used as a BITBUS master or slave board, a native kernel mode driver is available for Windows NT and a WDM driver for Windows98 SE, Windows ME, 2000 and XP. Up to 6 boards can be operated in parallel. The base address and interrupt are set by the PCI mechanism.

After successful initialisation the green LED at the front bezel will flash at a 1Hz frequency. The yellow LED indicates transmission activity.

The board allows other real time tasks to be processed concurrently to the BITBUS master operation and independently from the PC, being BITBUS-related or for example using the serial ports to connect to other devices. The mCAT development package together with a C compiler are available at moderate cost. Large areas of the 1MByte Flash-EPROM and the RAM are available for user applications.