

■ MCAN

CAN Interface Module for PCI-BASEII, PCIe-BASE

Assemble Measurement Card. Measure. Via CAN.

For optimum customization to a measurement application, the PCI/PCIe cards from BMC Messsysteme GmbH can be supplemented with various modules. Measurements via the CAN interface can be realized with the MCAN module.

Analog-CAN Combination. Synchronous.

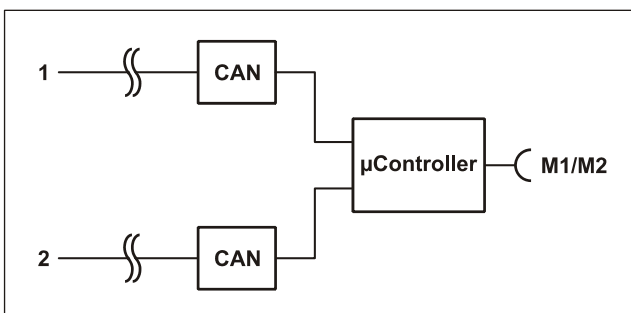
If using both a MADDA and an MCAN module together on the PCI-/PCIe card, analog and CAN data are sampled synchronously in time.

Those Who Can, CAN.

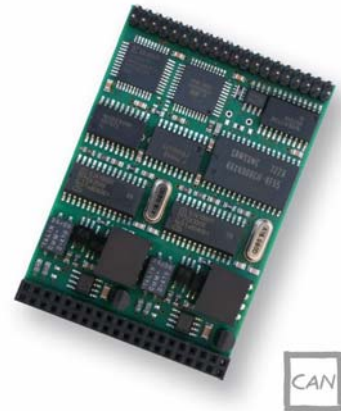
The CAN technology (Controller Area Network) features high interference resistance, low costs, and real time capability. CAN is preferred especially in industry and in the automotive sector.

2 Channels. 1 Mbit.

The MCAN module features two measuring channels CAN1 and CAN2. They are available at the 37-pin D-Sub female connector of the PCI/PCIe card. Transmission rates of up to 1 Mbit can be reached.



Functional diagram



Modularity. Individuality. Flexibility.

Besides the MCAN module, a great variety of analog input and output modules is available to equip the PCI/PCIe base board for a measurement application.

The combination of the modules in the two card slots creates individual solutions.

Windows®. That's it.

The MCAN can be used on Windows® XP/7/8. The driver to install the module is included.



NextView®4. Try for Free.

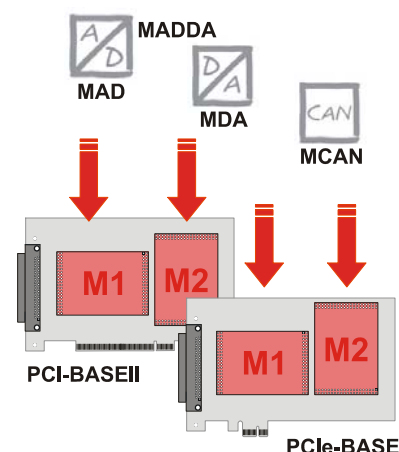
The CAN module is supported by NextView® 4, the software for data acquisition and analysis. A fully functional 30-day trial can be downloaded for free at www.bmcm.de/us to directly test the functionality of the MCAN.

1 Installation on the PCI-BASEII, PCIe-BASE

The MCAN module can be integrated on any slot of the *PCI-BASEII*, *PCIe-BASE* or older versions. Make sure the plugs and sockets fit together exactly.

The channels of the module on slot M2 can be accessed at the internal pin connectors K3, K4 of the DAQ card. They can be led out of the PC to a slot bracket with D-Sub 37 female using the optional ZUKA16 connection cable (connect channel 1 - colored line - of ZUKA16 with pin 1 of the pin connector K3 - square pad - and attach 2. connector in parallel).

Available as accessory is the connector cable ZUKA-CAN leading the two CAN channels from the 37-pin D-Sub female of the DAQ card or the ZUKA16 to two 9-pin D-Sub male connectors with standard CAN assignment.



- If the modules are not plugged correctly, the modules and/or the DAQ card may be damaged!
- The modules are electrostatic sensitive devices - please provide for a conductive pad connected to ground during installation.

2 Addressing the MCAN Module

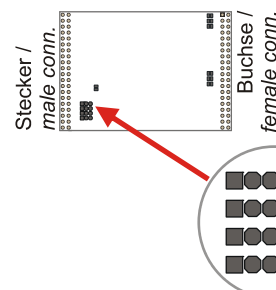
The address configuration is done via the 3-pin solder jumpers PL2-4 on the (component-free) bottom side of the module board.

The MCAN module is preset to address 3. The addresses 6 and 7 are reserved.

Address	0	1	2	3	4	5
PL2						
PL3						
PL4						

Address 3 is factory setting

Modulunterseite /
module bottom



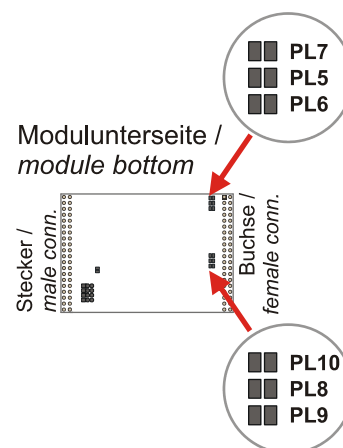
The address determines the assignment of the channels. For example, the MCAN module with the lower address is assigned to the channels 1-2, the other module to the following channels.



- Make sure to assign different addresses for modules (also of different type) used on one DAQ card!
- If using two MCAN modules, the channels of the module with the lower address are scanned with the preset sampling rate first, then the channels of the module with the higher address.

3 Termination

Closing solder jumpers PL7 for channel 1 and PL10 for channel 2 turns on the termination for the respective channel (make settings on the "component-free" side).



4 Pin Assignment of the MCAN Modules with the PCI/PCIe Card

The following table shows which pins are used for the connection of the CAN channels.

The channels of the module on the first slot are accessible at the 37-pin D-Sub female of the DAQ card. The connections of the module on slot 2 can be led through to an additional 37-pin D-Sub female by means of the add-on cable ZUKA16. If using the add-on ZUKA-CAN, the connections are available at two D-Sub 9 plugs with standard CAN assignment.

MODULE SLOT M1		CAN MODULE	MODULE SLOT M2		ZUKA-CAN
D-Sub37 PCI(e)-BASE	Plug/Pin PCI(e)-BASE	MCAN	D-Sub37 ZUKA16	Plug/Pin PCI(e)-BASE	2x D-Sub9/ Pin
1	K1/1	-	1	K3/1	1/1
2	K1/3	CAN1 L	2	K3/3	1/2
3	K1/5	CAN1 GND	3	K3/5	1/3
4	K1/7	-	4	K3/7	1/4
5	K1/9	-	5	K3/9	1/5
6	K1/11	-	6	K3/11	2/6
7	K1/13	CAN2 H	7	K3/13	2/7
8	K1/15	-	8	K3/15	2/8
9	K1/17	CAN2 5V	9	K3/17	2/9
10	K1/19	-	10	K3/19	n. c.
11, 12, .. , 19	K2/1, K2/3, .. , K2/17	-	11, 12, .. , 19	K4/1, K4/3, .. , K4/17	n. c.
20	K1/2	-	20	K3/2	1/6
21	K1/4	CAN1 H	21	K3/4	1/7
22	K1/6	-	22	K3/6	1/8
23	K1/8	CAN1 5V	23	K3/8	1/9
24	K1/10	-	24	K3/10	2/1
25	K1/12	CAN2 L	25	K3/12	2/2
26	K1/14	CAN2 GND	26	K3/14	2/3
27	K1/16	-	27	K3/16	2/4
28	K1/18	-	28	K3/18	2/5
29	K1/20	-	29	K3/20	n. c.
30, 31, .. , 37	K2/2, K2/4, .. , K2/16	-	30, 31, .. , 37	K4/2, K4/4, .. , K4/16	n. c.

5 Sampling Rate for Analog or CAN Measurements

Depending on the number of analog inputs sampled, between 20 and 60µsec are required to scan the CAN bus.

6 Important Notes for Using the MCAN

- The modules are only suitable for extra-low voltages - please observe the relevant regulations! The modules must only be used in closed PC housings (for reasons relating to EMC).
- All accessible pins are electrostatic sensitive devices. Provide for a grounded conductive work place.
- Only use non-solvent detergents for cleaning. The product is designed to be maintenance-free.
- The product must not be used for safety-relevant tasks. With the use of the product, the customer becomes manufacturer by law and is therefore fully responsible for the proper installation and use of the product. In the case of improper use and/or unauthorized interference, our warranty ceases and any warranty claim is excluded.
- Improper installation of the modules on the PCI/PCIe card may damage the modules and/or the DAQ card.
- To remove the module, first loosen it on one plugged side by levering the module with the utmost caution using a blunt object (e.g. plastic ballpoint pen). Then carefully lift up the other side with your hand moving it back and forth.
- Exposing the card to strong vibrations requires additional protection of the module.
- If connecting internal ribbon cables to the PCI/PCIe base board, please make sure the modules are well ventilated to prevent excess heating. Also observe the temperature ranges of the PC.



Do not dispose of the product in the domestic waste or at any waste collection places. It has to be either duly disposed according to the WEEE directive or can be returned to bmcm at your own expense.

7 Technical Data

(typical at 20°C, after 5min.)

• CAN Channels

Channels:	2 CAN interfaces, electrically isolated from each other and from the PC
Termination:	with 120Ω (to be set by solder jumper)
Max. transmission rate:	1Mbit
Frequency accuracy:	±50ppm
Frequency drift:	±50ppm/°C

• General Data

Power supply:	+4.5V..+5.5V from PCI-BASEII or PCIe-BASE, max. 300mA
CE standards:	EN61000-6-1, EN61000-6-3, EN61010-1; for decl. of conformity (PDF) visit www.bmcm.de
ElektroG // ear registration:	RoHS and WEEE compliant // WEEE Reg.-No. DE75472248
Max. perm. potentials:	60V DC acc. to VDE , max. 1kV ESD on open lines
Temperature ranges:	operating temp.: -25°C..+50°C, storage temp.: -25°C..+70°C
Relative humidity:	0-90% (not condensing)
Dimensions:	~ 74 x 52 x 13 mm ³
Delivery:	product, description
Available accessories:	connector cable ZUKA-CAN (D-Sub37 male to 2x D-Sub9 male)
Software support:	trial version of the DAQ software NextView®4 to test and operate the hardware under Windows® XP/7/8
NextView®4 (optional):	professional software (versions: Professional or Lite) for the acquisition and analysis of measurement data under Windows® XP/7/8
Warranty:	2 years from date of purchase at bmcm, claims for damages resulting from improper use excluded