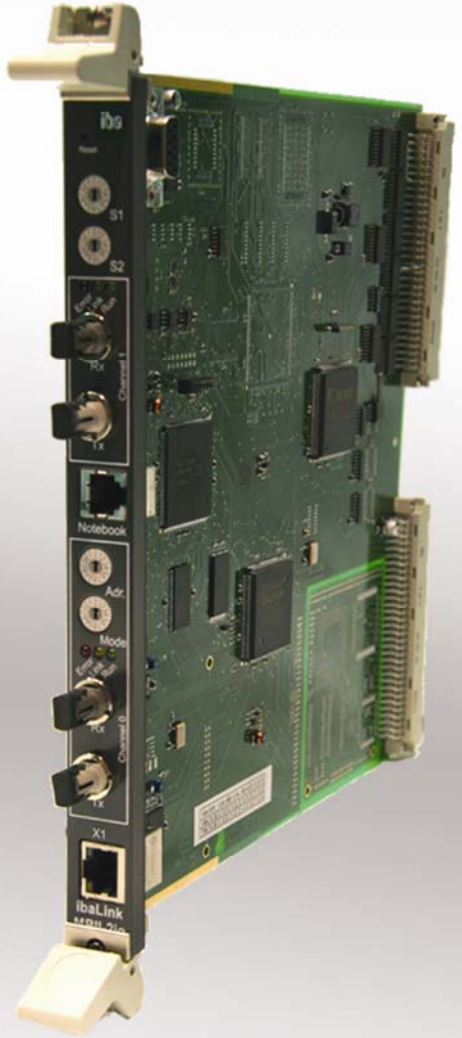
ibaLink-MBII-io

Multibus II Interface Board



Manual

Version 1.2 en

Measurement and Automation Systems

ibaLink-MBII-io -Manual

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ibaLink-MBII-io - Manual V 1.2 en A4

We have checked that the contents of this manual match the hardware and software described here. However, deviations cannot be fully ruled out, so that we cannot assume any warranty should any deviations actually exist. This manual is regularly updated. Necessary revisions are included in future editions, or can be downloaded from the Internet.

The latest version is always available for downloading at:

http://www.iba-ag.com.

We would welcome any suggestions for improvements which you may have.

Version / Rev.	Datum	Revision	Chapter / Page	Author	Version HW/FW
V 1.2 en	05/11/2009	Cover, Contacts, Layout	all	ma / if	

Table of Contents

This manual

This compact manual provides the information for installation and handling of the Multibus II interface board ibaLink-MBII-io.

For further information concerning the system integration and software configuration please refer to the corresponding engineering manuals and / or software documentation of our software products used in conjunction with this device.

You can find the latest issue of this manual always on our website

http://www.iba-ag.com in the download area.

This manual uses several symbols which essentially have the following meanings:

Important hint or warning in order to avoid hazard against material or life.

A useful tip or clue to make your work easier.

This draws your attention to special features, such as exceptions to rules, etc.

A reference to additional documentation or more in-depth literature.

Software reference

Here you find references to software samples or related software which is available on CD-ROM, on our web site or other sources.

1 Introduction

1.1 Where to Use This Board

The board ibaLink-MBII-io is an interface board in Eurocard size (double) for Multibus II systems.

The board is to be used for data transmission from a Multibus II system to an ibaPDA or ibaLogic system or for realization of a so called frame-to-frame connection.

The board provides two pairs of fiber optical senders/receivers on the front panel.

Each sender/receiver pair can transmit up to 64 analog and 64 digital signals in each direction.

The ibaLink-MBII-io board uses an assigned memory range in the backplane memory of the Multibus II system. The data to be measured should be written into this memory range by the supporting system, then converted by the board and transmitted to an iba system via the standard fiber optical interface with 3.3 Mbit/s.

The fiber optical receiver is used for data sent by an ibaLogic system to the Multibus II system or for receiving data coming from other iba devices and systems (ibaPADU, ibaLink-SM-64 / -128 etc.

A cross-over point-to-point connection between an ibaLink-MBII-io card and other iba components with fiber optical sender/receiver may be sufficient to exchange data without any software application from iba.

1.2 Multibus II

1.2.1. From Idea to Standard

In the early 1980s some manufacturers build a consortium together with Intel in order to improve and standardize a bus architecture "Multibus II" which is based on Multibus I.

The new system should offer the following key features:

- ❑ Eurocard board sizes and DIN-connectors
- ❑ self-test capability
- ❑ software jumpers for configuration
- ❑ fast 32-bit bus
- ❑ functional partitioning (using LAN concepts)
- ❑ reliability
- ❑ inter-operability

These properties were defined 1987 in the standard IEEE 1296 as Multibus II-standard.

1.2.2. Definition

The standard IEEE 1296 describes the function of Multibus II as follows (abstract):

MULTIBUS II is parallel system bus (PSB). It provides a high-performance backplane bus intended for use in multiple processor systems, with synchronous, 32-bit multiplexed address/data, with error detection, using a 10 MHz bus clock. The bus performance is approx. 32 to 40 MByte/s. Current systems offer up to 80 MByte/s.

1.2.3. Mechanical Arrangement and Board Sizes

Multibus II boards are available in two Eurocard board sizes:

- ❑ Single: height 3 U[1)] (5.25 " or 133.35 mm), depth 8.66 " or 220 mm
- ❑ Double: height 6 U (10.5 " or 266.70 mm), depth 8.66 " or 220 mm

The double size is most spread. The ibaLink-MBII-io has the double size too.

The backplane connectors are designed in compliance with DIN 41612.

[1)] "U" equals 1.75 inches

2 Scope of Delivery

The following items are part of the delivery:

- ibaLink-MBII-io board
- ibaLink-MBII-io manual

3 System Requirements

3.1 Hardware

- ***Control system***
  - Multibus II-rack (height 6U) with at least one empty slot (4 TE)
- ***Accessories***

For measurement or analysis of the received data beside the board:

- IBM-compatible PC with one of the following fiber optical interface boards:
- ibaFOB-io-S resp.
- ibaFOB-4i-S + ibaFOB-4o or
- ibaFOB-4i-X + ibaFOB-4o-X

In order to realize a frame-to-frame connection a second ibaLink-MBII-io card or another iba component such as ibaLink-SM-64 (MMC frames) or ibaLink-SM-128 (VMEbus) is required.

3.2 Software

- ***Accessories***

For further data processing on a connected PC, the following components are required:

- Operating system Windows NT 4.0 (SP 5 or higher), 2000, 2003 Server or XP
- Online software
  - ibaPDA, V5.xx , V6
  - ibaQDR ,
  - Signal manager (Soft-PLC) ibaLogic, V3.60 or higher
  - ibaScope, version 3.0.01 or higher
- Analysis software
  - ibaAnalyzer (V2.50 or higher)

4 Installation / Deinstallation

Each ibaLink-MBII-io board occupies a single slot in the Multibus II rack.

The EGB standards for handling electrostatic sensitive devices must be followed.

Use a ground line or discharge any electrostatic charge from yourself before touching the card.

Avoid direct contact with the connectors.

4.1 Installing the Card

Before installation / deinstallation of the card switch off the power supply of the Multibus II rack.

Don't plug in or pull out the card under power.

1. Unpack the card carefully. Use a ground line or discharge any electrostatic charge from yourself before touching the card.
2. Put the card with the welded side down on an even, clean and dry surface and make the required settings of the DIL switches.
3. Switch off the MB II rack.
4. Take hold of the card by the two grips between thumb and index finger each.
5. Slide the card into the appropriate slot of the MB II system carefully.
6. Before sliding in the card to the end make sure that the two screws on the rear side of the front panel can slide into the dedicated holes in the rack.
7. Unless already done, raise the lower, respectively lower the upper grip.
8. Push the card firmly until the end by pressing your thumbs on the front panel.
9. Fix the card to the rack with the two screws on the upper and lower end of the front panel.

4.2 Removing the Card

In order to remove the card from the MB II rack please follow these steps:

1. Switch off the power supply of the MB II rack.
2. Release the screws in the front panel.
3. Press the two grips apart from each other. This will release the card from the backplane connectors.
4. Pull the card out of the slot.

5 Product Characteristics

5.1 Connectors and Operational Elements on Front Panel

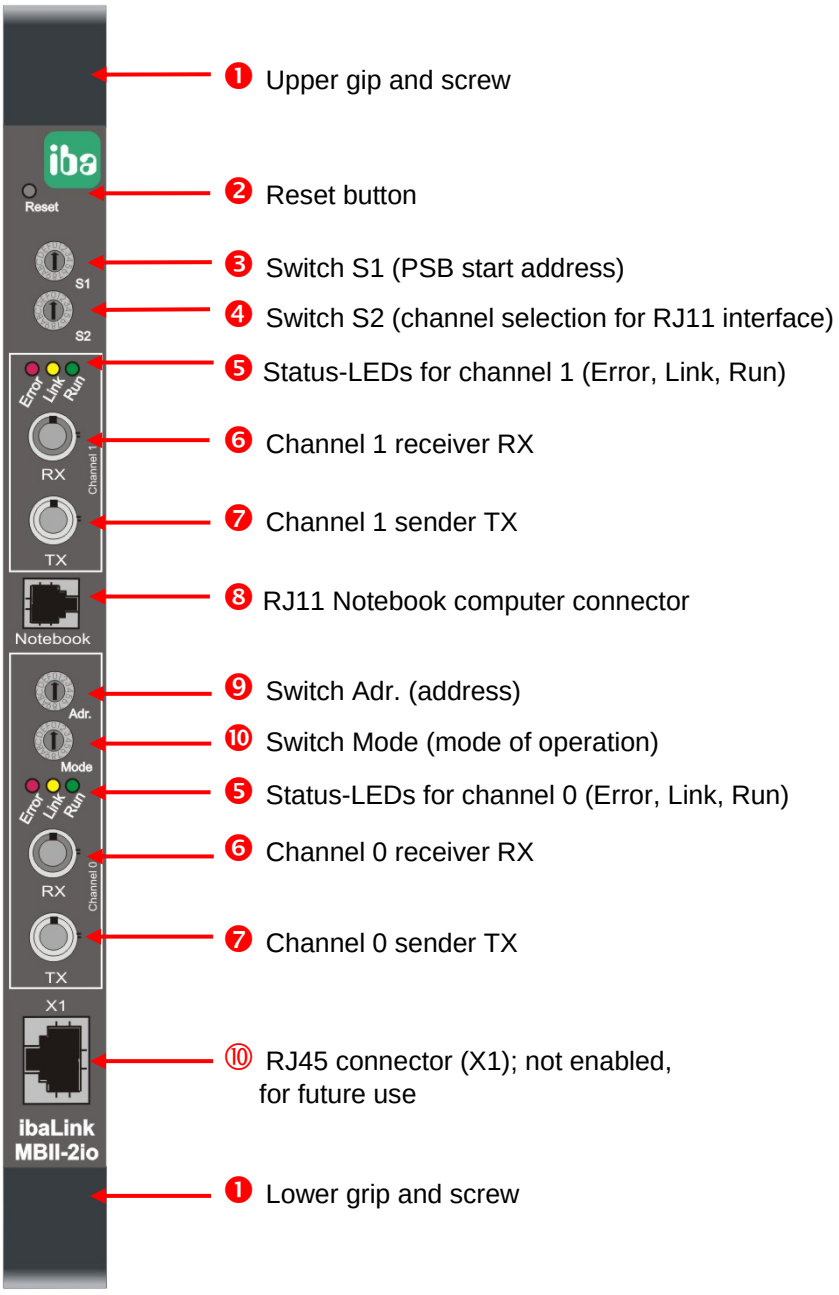


Figure 1 View on front panel of ibaLink-MBII-io

5.1.1. Reset Button ❷

Depressing this momentary switch resets the board. When the button is depressed the board can not be accessed by the system. Please note, that in certain instances, this may cause disturbances within a host system, when the ibaLink-MBII-io card refuses bus access requests during reset.

5.1.2. Dial Switch S1 ❸

The switch S1 is used for setting the PSB start address regarding the data to be transmitted. If the Interconnect Space of the MB II system is not used, you may set the PSB start address manually in steps of 64 KB. If the Interconnect Space is used actively the setting of the switch will be overwritten.

A changing of the switch setting will be applied with the next restart or reset of the system.

S1 position	PSB start address
0	Standard setting [1)]
1	6001 0000 H
2	6002 0000 H
3	6003 0000 H
4	7000 0000 H
5	7001 0000 H
6	7002 0000 H
7	7003 0000 H
8	D000 0000 H
9	D001 0000 H
A	D002 0000 H
B	D003 0000 H
C	E000 0000 H
D	E001 0000 H
E	E002 0000 H
F	E003 0000 H

Table 1 Switch positions S1

[1)] Standard operation and use of MB II boards, i. e. the activation is done by the Interconnect Space master. The memory space of the board is blocked for bus access until the start address has been mapped by the Interconnect Space master.

5.1.3. Dial Switch S2 ❹

The dial switch S2 is used for selection of the transmitter- / receiver channel which is to be measured at the RJ11 jack.

S2	Measuring parallel to FO-port...
0	Sender (TX), channel 0
1	Receiver (RX), channel 0
2	Sender (TX), channel 1
3	Receiver (RX), channel 1

Table 2 Switch position S2

5.1.4. Fiber-Optic Connectors TX and RX for Channel 0 and 1 ❻ ❼

Channels 0 and 1 communicate bi-directionally with compatible devices over the TX and RX interface ports (FO-ports) at a transmission rate of 3.3 Mbit/s. Both ports use standard ST type connectors for fiber optical cables. TX realizes the fiber optic transmitter while RX realizes the fiber optic receiver.

5.1.5. RJ11 Socket ❽

Over this socket one of the transmitting or receiving channels (0, 1) may be measured in parallel to the FO-ports. A notebook computer with an iba PCMCIA-F device and the corresponding spiral cable is required. The channel selection is done with dial switch S2.

5.1.6. Dial Switch “Adr.“ ❾

This switch sets the address where the board puts its data inside the ibaNet message (FO interface).

The switch only refers to channel 0!

Switch Adr.	Address	Remark
0		Full telegram length (all 64 values)
1...8	1...8	not supported

Note:

Set the Adr switch to 0. Then, always the entire telegram with 8 x 8 = 64 analog signals (plus 64 digital signals) will be transmitted. Other switch settings are currently not supported.

5.1.7. Dial Switch “Mode“ ❿

This switch sets the mode of operation of the board regarding the FO interface.

Note:

Only position 7 is supported!

5.1.8. RJ45 Socket X1 ⓾

Disabled. This interface is prepared for future use.

5.1.9. Status LEDs ❺

The status LEDs (Error, Link and Run) indicate for each fiber optic channel (channel 0 and channel 1) the operational conditions. The following table describes the meaning of the LEDs.

LED	Status	Description
Error (red)	on	No operation possible for channel 0 or channel 1 respectively. Wrong switch setting (DIL-switch)
	off	Normal operation, no error; after resolution of error, LED automatically resets.
Link (yellow)		Operation indicator for receiver
	slow blinking	No reception
	fast blinking	Device receives data in wrong data format (integer / real)
	on	Reception ok
Run (green)	blinking	Device is running (Life counter, 800 ms half period)
	off	No power supply or defect

Table 3 Status LEDs

5.2 Connectors and Switches on Board

5.2.1. DIL Switches

On the assembly side of the board there are four DIL-switches which are used to set the format of the data to be transmitted and received on the fiber optical channels.

Position of the elements

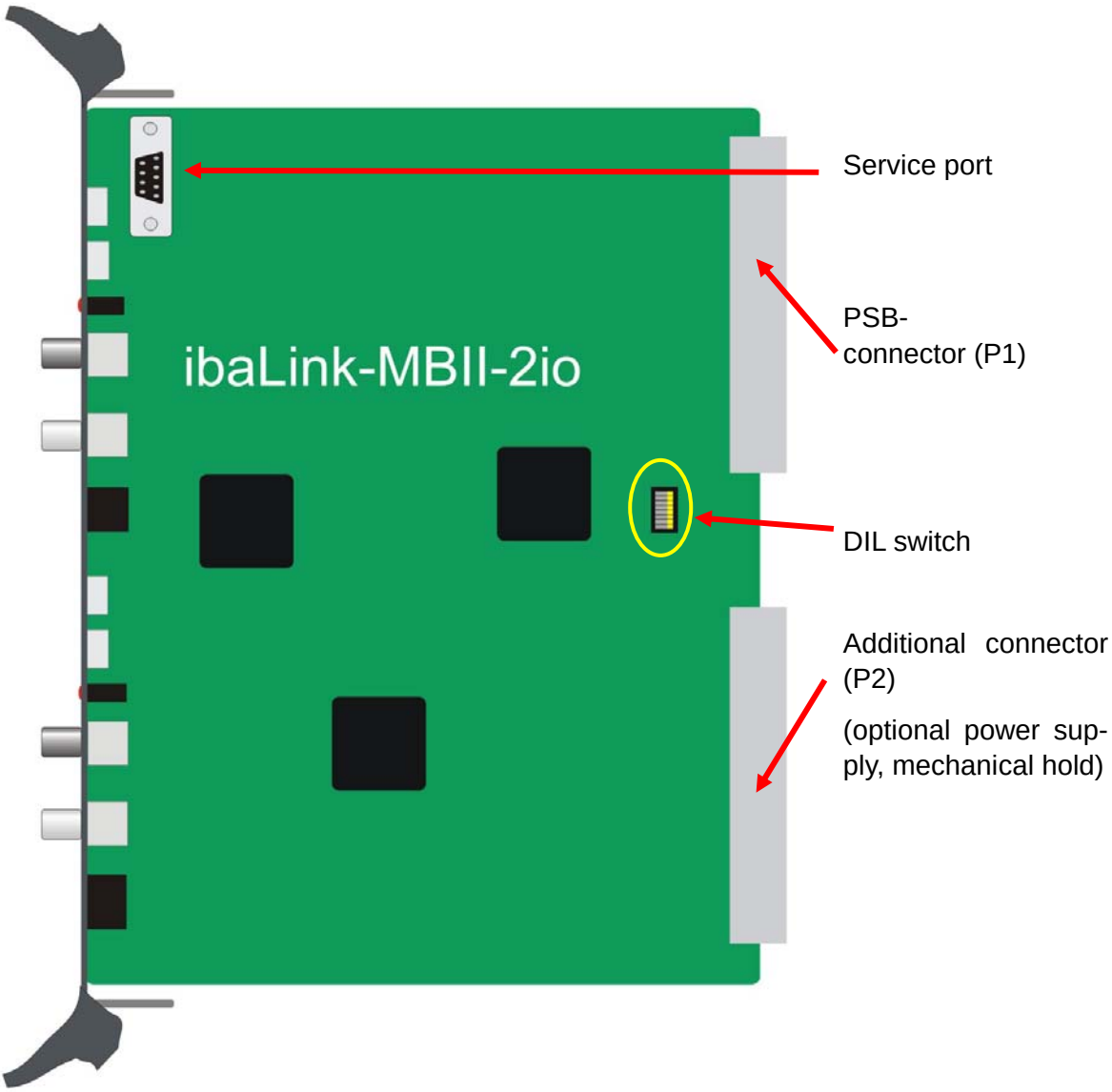
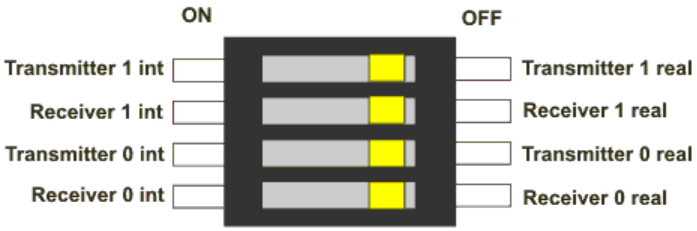


Figure 2 View on assembly side

Factory setting of the DIL switches: OFF (= Real format)

5.2.1.1. Function of the DIL Switches



Factory settings are marked yellow.

ON		OFF
Integer	**Mode3 Transmitter 1**	Real
Integer	**Mode2 Receiver 1**	Real
Integer	**Mode1 Transmitter 0**	Real
Integer	**Mode0 Receiver 0**	Real

Table 4 Function of the DIL switches

Integer = 2 Bytes, Real = 4 Bytes (32 Bit floating point value)

5.2.2. Service Port

The service port (9 pin D-sub) may be used for downloading the firmware.

Pin Assignment	
Pin	**Function**
1	-
2	TxD
3	RxD
4	-
5	GND
6	-
7	Force boot
8	-
9	-

Table 5 Service port pin assignment

6 The Multibus II Interface (PSB)

The ibaLink-MBII-io card is designed for processing up to 128 receiving channels and 128 transmitting channels. Only 8 Kbyte of the available 64 Kbyte in the PSB memory are required by the card. The start address of the card can be set by the interconnect space function or by switch S1.

The byte ordering for data processing is Little Endian, also known as Intel format.

The data from the MBII area are transferred asynchronously into the transmission buffer of the FOB transmitter in a 1 ms-cycle of the FOB interface. Hence, the transfer time of data from the MB II area is between 0 and 1 ms.

The card is ready for operation right after switching on. An initialization is not required. For use of the Interconnect Space a master is required in the system in order to perform the card initialization and the address assignment.

6.1 Address Assignment (Overview):

The card uses 8 kByte in the MB II address space, beginning at the PSB start address.

The basic structure of the DPRAM (PSB view) is as follows:

Address range	Channel	Data type	Usage
0000H - 00FFH	0	Transmission data	Analog data 0-63 (integer or real block bound)
0100H – 03FFH			Reserve
0400H - 04FFH	1	Transmission data	Analog data 0-63 (integer or real block bound)
0500H – 07FFH			Reserve
0800H - 08FFH	0	Received data	Analog data 0-63 (integer or real block bound)
0900H – 0BFFH			Reserve
0C00H – 0CFFH	1	Received data	Analog data 0-63 (integer or real block bound)
0D00H – 0FFFH			Reserve
1000H - 1007H	0	Transmission data	Digital data 0-63
1008H – 10FFH			Reserve
1100H – 1107H	1	Transmission data	Digital data 0-63
1108H – 11FFH			Reserve
1200H – 1207H	0	Received data	Digital data 0-63
1208H – 12FFH			Reserve
1300H – 1307H	1	Received data	Digital data 0-63
1308H – 13FFH			Reserve
1400H – 17FFH			Reserve
1800H – 19FFH	0		Diagnosis Channel 0
1A00H – 1BFFH	1		Diagnosis Channel 1
1C00H – 1FFFH	General.		Diagnosis global

Table 6 Assigment of PSB addresses

6.2 Address Assignment for Diagnostic Data

In the following you'll find a detailed listing of the address ranges for diagnosis Channel 0, Channel 1 and global.

The addresses are given with reference to the start address of the block.

Addresses which are important for the user are printed in bold. Other addresses for service purposes only.

Diagnosis Channel 0 (1800H – 19FFH) and Channel 1 (1A00H – 1BFFH)

Address (Offset)	Direction	Type	Usage
+ 20H	Sending	Byte	Transmitter status 08H - 3.3 Mbit/s transmitting
			.....
+ 24H	**Sending**	**Long**	**Transmit.counter (incrementing by each sequence sent)**
			.....
+ 40H	**Received**	**Byte**	**Status:** **00H - integer reception ok** **01H - real reception** **F0H - integer reception not ok** **F1H - real reception not ok.** **F3H - reception ok, wrong data type (int/real)**
+ 41H			Reserve
+ 42H	Received	Byte	Error code for communication error
+ 43H	Received	Byte	Head marker with recent error
+ 44H	**Received**	**Long**	**Receiver.counter** **(incrementing by each correctly received sequence)**
+ 48H	**Received**	**Long**	**Break counter**
			.....
+ 50H	Received	Long	Receiver EE-ok.counter
+ 54H	Received	Long	Receiver EB-ok.counter
+ 58H	Received	Long	Receiver E8-ok.counter
+ 5CH	Received	Long	Receiver E5-ok.counter
+ 60H	Received	Long	Receiver telegram EE-not ok.
+ 64H	Received	Long	Receiver telegram EB-not ok.
+ 68H	Received	Long	Receiver telegram E8-not ok.
+ 6CH	Received	Long	Receiver telegram E5-not ok.

Table 7 Address assignment for diagnostic data Channel 0 and Channel 1

Diagnosis Global (1C00H – 1FFFH)

Address (Offset)	Size / Type	Usage	
+000H – 100H	256 bytes	PROMI-INFO bootstrap loader	
+100H – 1FFH	256 bytes	PROMI-INFO application program	
		.....	
+20CH	**Long**	**Life counter , increment every 100 ms**	
+210H	**Byte**	**Lower dial switch group** **(currently forced to 70H)**	**High nibble – down** **low nibble - up**
+211H	Byte	Upper dial switch group	high nibble – down low nibble - up
+212H	**Byte**	**DIL switch settings** **Bit.7 – Mode.3 -Transm.Link.1** **Bit.6 – Mode.2 -Rec.Link.1** **Bit.5 – Mode.1 -Transm.Link.0** **Bit.4 – Mode.0 –Rec.Link.0**	 **„1“-real** **“0“-integer**
		.....	

Table 8 Address assignment for diagnostic data global

6.3 Interconnect Space

The Interconnect Space is a special memory space, dedicated to system configuration management, e. g. address assignments. By means of the Interconnect Space function a PSB start address can be assigned to the ibaLink-MBII-io card. Then, a manual address setting is not required.

The figure on the next page shows an overview of the division of the Interconnect Space

There are different sections:

- Header Record
  with information for logon and identification of the board
- PSB Memory Record
  with assignment of PSB start and end address for the memory space. Addresses will be written to this section by the master.
- Memory Space Record
  with information about size of data memory space for the ibaLink-MBII-io-card

6.3.1. Overview Interconnect Space

Header Record

44 Byte / 32 Byte	0	**Vendor ID**	00H		
			00H		
	2	**Board ID**	69H	= i	**ibaLNK/MB2**
			62H	= b	
			61H	= a	
			4CH	= L	
			4EH	= N	
			4BH	= K	
			2FH	= /	
			4DH	= M	
			42H	= B	
			32H	= 2	
	12	**RESERVED (0H)**			
	16	**HW Test Revision No.**	A0H		
	17	**Class ID**	42H		Bit details see 6.3.2 a)
	18	**Interc. Template Flag**	00H		Bit details see 6.3.2 b)
	19	**RESERVED (0H)**			
	21	**Reset Status**	00H		Bit details see 6.3.2 c)
	22	**Program Table Index**	00H		Bit details see 6.3.2 d)
	23	**NMI Enable**	00H		Bit details see 6.3.2 e)
	24	**General Status**	00H		
	25	**General Control**	00H		Bit details see 6.3.2 f)
	26	**BIST support Level**	00H		
	27	**BIST Data In**	00H		
	28	**BIST Data Out**	00H		
	29	**BIST Slave Status**	00H		
	30	**BIST Master Status**	00H		
	31	**BIST Test ID**	00H		

PSB Memory Record

7 Byte	32	**Type**	02H		
	33	**Length**	05H		
	34	**PSB Start Address**	00H		PSB start address (A[23...16])
			00H		PSB start address (A[31...24])
	36	**PSB End Address**	00H		PSB end address is start address + 64 KB. Required memory size = 8 KB
			00H		
	38	**PSB Memory Control**	00H		Bit details see 6.3.2 g)

Memory Space Record

4 Byte	39	**Type**	80H		
	40	**Length**	02H		
	41	**Memory Size**	08H		Memory Size
			00H		**Figures given in kByte!**

EOT Record

	43	**EOT Record**	FFH		

6.3.2. Bit Details in Interconnect Space

a) Class ID

Class No.	Subclass No.
4_H	2_H

4_H ≙ Communication Board (Class Nr.)
2_H ≙ synchronous (Subclass Nr.)

b) Interc. Template Flag

RESERVED (0_H)	0_H

0_H ≙ H/W extension not present or not supported

c) Reset Status

RES. (0_H)	Reset Type: 0_H

0_H ≙ register not supported

d) Program Table Index

MIF	OIF	Override Idx	Sequence Idx
0_H	0_H	0_H	0_H

0_H ≙ Monitor Index Flag (MIF): normal operation
0_H ≙ Override Index Flag (OIF): normal operation
0_H ≙ Override Index: not used
0_H ≙ Sequence Index: no offset in program table

e) NMI Enable

OBEE	PFE	RESERVED	SSE	DEE	DRE
0_H	0_H	RES. (0_H)	0_H	0_H	0_H

0_H ≙ On-Board Error Enable (OBEE): disable general NMI source
0_H ≙ Power Fail Enable (PFE): disable power fail NMI source
0_H ≙ Software NMI Source Enable (SSE): disable software NMI source
0_H ≙ Debugger Entry Enable (DEE): disable debugger NMI source
0_H ≙ Diagnostic Request Enable (DRE): disable diagnostic NMI source

f) General Control

LR		SS	DE	DR
0_H	RESERVED (0_H)	0_H	0_H	0_H

0_H ≙ Local Reset (LR): not active
0_H ≙ Software NMI Source (SS): no software interrupt pending
0_H ≙ Debugger Entry (DE): no debugger interrupt pending
0_H ≙ Diagnostic Request (DR): no diagnostic request pending

g) PSB Memory Control

	MWD	MD
RESERVED (0_H)	0_H	0_H

0_H ≙ Memory Write Disable (MWD): write operation permitted
0_H ≙ Memory Disable (MD): Memory enabled

0_H ≙ *1 Bit*

6.4 Pin Assignment of PSB Connector

P1 (upper connector)				P2 (lower connector)			
Pin no.	**Row A**	**Row B**	**Row C**	**Pin no.**	**Row A**	**Row B**	**Row C**
1	GND	PROT	GND	1	GND		GND
2	+5 V (VCC)	DCLOW	+5 V (VCC)	2	+5 V (VCC)		+5 V (VCC)
3	+12 V [1)]	+5 Battery [1)]	+12 V [1)]	3			
4	GND	SDA [1)]	BCLK	4			
5	TIMOUT	SDB [1)]	GND	5			
6	LACHn	GND	CCLK	6			
7	D0	AD1	GND	7			
8	D2	GND	AD3	8			
9	D4	AD5	AD6	9			
10	D7	+5 V (VCC)	PAR0	10			
11	D8	AD9	AD10	11			
12	D11	+5 V (VCC)	AD12	12			
13	D13	AD14	AD15	13			
14	PAR1	GND	AD16	14			
15	D17	AD18	AD19	15			
16	D20	GND	AD21	16			
17	D22	AD23	PAR2	17			
18	D24	GND	AD26	18			
19	D26	AD27	AD28	19			
20	D29	GND	AD30	20			
21	D31	Reserved [1)]	PAR3	21			
22	+5 V (VCC)	+5 V (VCC)	Reserved [1)]	22			
23	BREQ	RST	BUSERR	23			
24	ARB5	+5 V (VCC)	ARB4	24			
25	ARB3	RSTNC [1)]	ARB2	25			
26	ARB1	GND	ARB0	26			
27	SC9	SC8	SC7	27			
28	SC6	GND	SC5	28			
29	SC4	SC3	SC2	29			
30	-12 V [1)]	+5 Battery [1)]	-12 V [1)]	30			
31	+5 V (VCC)	SC1	+5 V (VCC)	31	+5 V (VCC)		+5 V (VCC)
32	GND	SC0	GND	32	GND		GND

[1)] not used

7 System Topologies and Application

Multiple system topologies are possible with the ibaLink-MBII-io without the request for special settings. The operating mode of the ibaLink-MBII-io is a consequence of the desired topology.

7.1 Peer-to-Peer Operation

If the device shall run in loopback mode (output coupled to own input) or two ibaLink-MBII-io cards shall run directly coupled the mode switch of both cards must be set to Mode = 7 and the address switch to Adr. = 0. In this setting cascading of multiple devices is NOT supported.

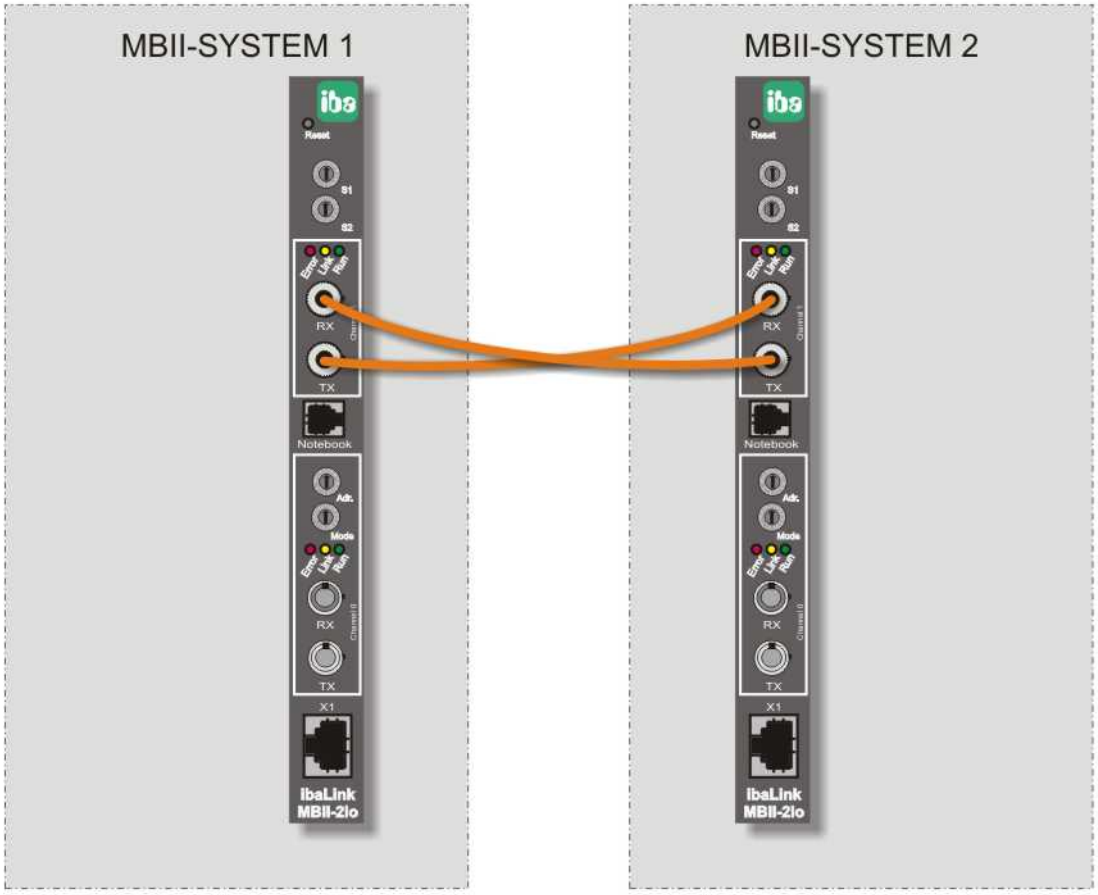


Figure 3 Peer-to-Peer operation (frame-to-frame connection)

This operation mode is used to connect two MBII-systems in order to exchange data (2 * 64 analog and 2 * 64 digital signals) periodically in 1 ms.

No further accessories, such as additional power supply or software, are needed. In this mode of operation the two MBII memory ranges are transmitted from one card to the other. The outputs of one card are the inputs for the other card and vice versa.

7.2 ibaPDA Application

In classic combination of ibaLink-MBII-io and ibaPDA the two fiber optic output links are connected to input links on ibaFOB-io or ibaFOB-4i (-S) cards. Each link transmits 64 analog and 64 digital signals, i.e. a total of 128 signals.

Only the outputs (TX) of the ibaLink-MBII-io card can be used.

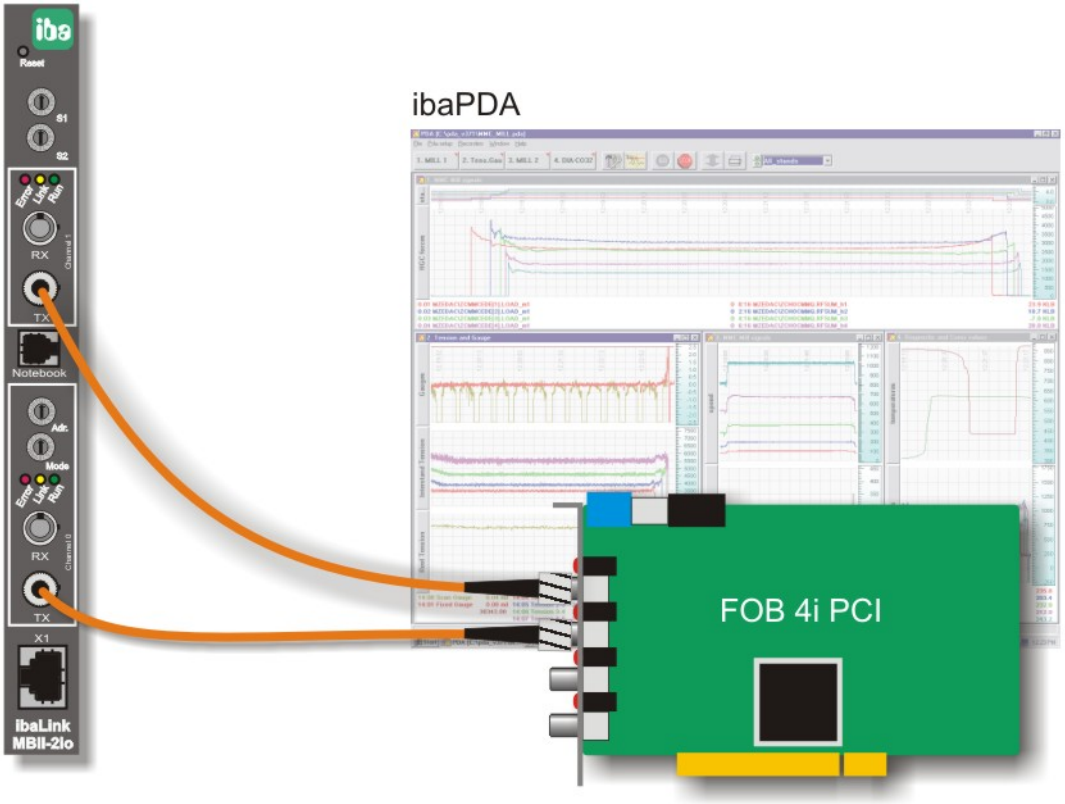


Figure 4 ibaLink-MBII-io with ibaPDA

Engineering Notice

If ibaPDA version is 5.20 or higher each connected fiber optic link must be assigned to two modules of module type “SM128”. This module type offers the possibility to scale the incoming signals with gain and offset even in real format. This allows the processing of standardized values (-1.0 …0 .. 1.0) coming from the MBII control system.

When working with older versions of ibaPDA assign the module type “SM64” to the appropriate modules. Scaling of the signals is not possible. The values are expected by ibaPDA in physical units.

Notice

The new ibaPDA-V6 will provide a special module type "Multibus II". As long as this type is not available please use the module type SM128.

7.3 ibaLogic Application

A typical combination of ibaLink-MBII-io and ibaLogic requires connections of the fiber optic output links to ibaFOB-io- or ibaFOB-4i (-S) input links. Each link transmits 64 analog and 64 digital signals, i.e. a total of 128 signals.

In order to use the outputs of the ibaLogic application the fiber optic input links at channel 0 and/or 1 of the ibaLink-MBII-io card must be connected to the output link of an ibaFOB-io- or ibaFOB-4o card in the ibaLogic-PC. Each of these links receives 64 analog and 64 digital signals.

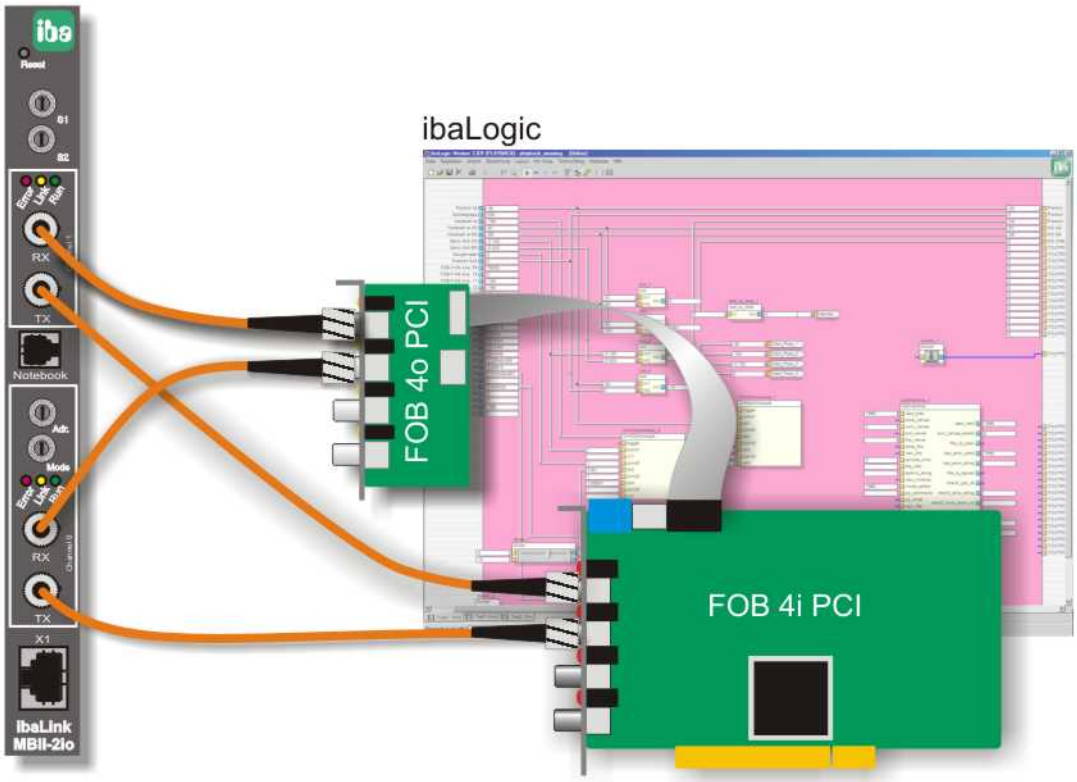


Figure 5 ibaLink-MBII with ibaLogic

Engineering Notice

In ibaLogic use the input resources FOB-F/FOB-IO for data coming from an ibaLink-MBII-io card.

The ibaLogic output resources FOB-F OUT / FOB-IO OUT should be used for outputs from ibaLogic to the ibaLink-MBII-io card.

7.4 I/O Mode of Operation

The ibaLink-MBII-io can serve as a process i/o bus extender for PLC systems.

In order to transmit output data from the MBII system via the ibaLink-MBII-io card the ibaPADU-8-O device can be used. For inputs of the MBII system the ibaPADU-8 devices may be used. Up to 8 ibaPADU-8 devices can be connected to each fiber optic output or input respectively of Channel 0 and 1 for a total of 16 x 8 analog (+/-10 V or +/-20 mA, or other) and 16 x 8 binary signals.

The devices of the ibaNet-750 family may be used as well for in and outputs.

Of course, ibaPDA or ibaLogic systems can be connected too.

Only daisy-chain structures are supported.

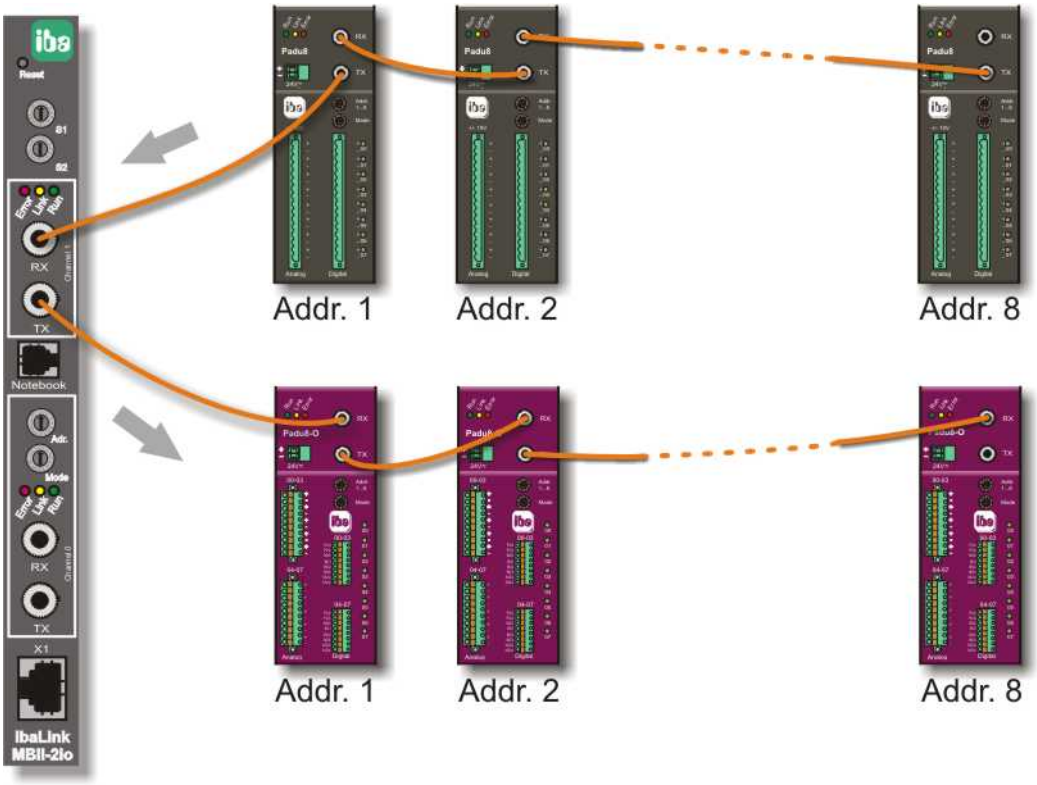


Figure 6 ibaLink-MBII in I/O mode operation with ibaPADU-8 and ibaPADU-8-O

Notice

For the first version of the ibaLink-MBII-io card the daisy-chain mode is not supported, i. e. the card can not be part of such a chain.

In the figure above, the daisy chain is realized outside of the card with the result, that the ibaLink-MBII-io card can send and receive complete telegrams on the fiber optic links. The card is working in pure I/O mode.

8 Technical Data and Environmental Conditions

iba order no.:	14.135000 (Name: ibaLink-MBII-io)
Operating temperature:	0 °C to 50 °C (32 °F…122 °F)
Storage temperature:	-25 °C to 70 °C (-13 °F…158 °F)
Transport temperature:	-25 °C to 70 °C (-13 °F…158 °F)
Cooling:	Natural convection
Installation:	1 slot in standard MBII chassis
Humidity:	Class F no submersion allowed
Protection class:	None
Power supply:	5 V from MBII backplane
Current consumption:	Max: 5 V / 1.5A
Watchdog:	n.a.
FO-cable Coupling	62,5/125 µm ST Lean
Max. distance of fiber optical cable (without repeater)	2000 m (6560 ft) with appropriate cable
Communication channels Galvanic isolation	Channel 0: FO in-/output 3.3 Mbit / s Channel 1: FO in-/output 3.3 MBit / s by fiber optic
Dimensions in mm (WxHxD) in inches Front panel	1 MBII slot x 233.6 mm x 220 mm (Double Eurocard) 1 MBII slot x 9.2 " x 8.6 " 6 U / 4 HP
Weight (incl. package/documents)	ca. 1 kg

Table 9 Technical data

9 Accessories and Related Products

Product	Order no.	Comment
ibaFOB-4i-S	11.115200	4 fiber-optic input ports
ibaFOB-io-S	11.115300	Fiber-optic input/output interface to PC
ibaFOB-OF-Link	11.113100	iba fiber-optic bus extender from PC
ibaBM-FOX-i-3o	13.113500	iba fiber-optic bus splitter/repeater
ibaPADU-8	10.120000	Input device 8 analog+8binary; 14 Bit; +/-10V
iba FO/p1-5	50.101050	ST-ST multimode, fiber-optic patch cable 1m…5m
ibaCom-PCMCIA-F	12.102000	Process interface for notebook computers, incl. spiral cabel with RJ11-jack
ibaLogic SoftPLC, signal manager	32.200001	SoftPLC based on Windows NT 4.0, 2000, XP
ibaPDA-V6 1024 Data Acquisition ibaPDA-V6 2048 Data Acquisition	30.610240 30.620480	for 1024 signals (analog and/or digital) for 2048 signals (analog and/or digital)
ibaPDA-V6 256 Data Acquisition	30.602560	for 256 signals (analog and/or digital)

10 Support and Contact

For technical support or sales information, please contact your local iba representative or call the following numbers:

Telephone: +49 911 97282-14

Fax: +49 911 97282-33

Email: support@iba-ag.com

For downloads of the latest software versions as well as hardware and software manuals please use our web-site at: http://www.iba-ag.com/

Any feedback, comments or tips on errata in this documentation or suggestions for improvement will be appreciated. Simply send an e-mail or fax to us, thank you for your support.

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