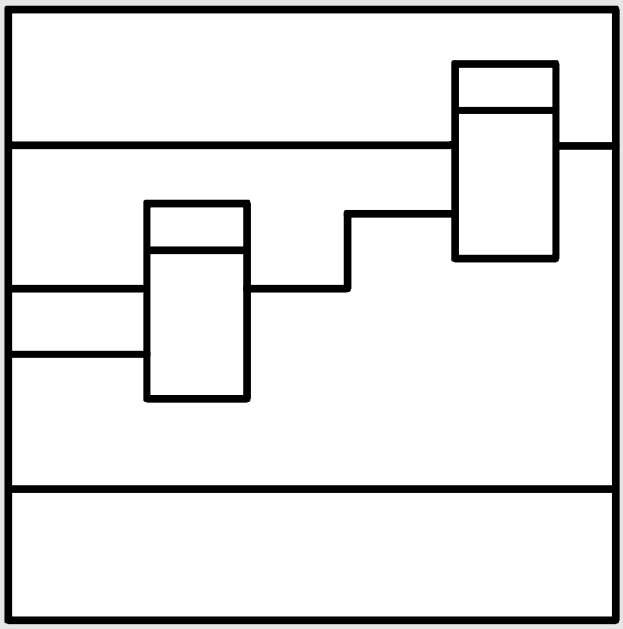
SIMADYN D
Digital Control System

User Manual

Communication board CSH11



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User Manual, Communication board CSH11

Edition		Edition status
1	Communication board CSH11	08.94
2	Communication board CSH11	05.95

We have checked the contents of this Manual to ensure that they coincide with the described hardware and software. However, deviations cannot be completely ruled-out, so we cannot guarantee complete conformance. However, the information in this document is regularly checked and the necessary corrections included in subsequent editions. We are thankful for any recommendations or suggestions.

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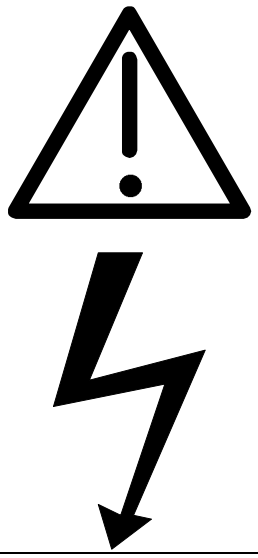
N O T E !

The information in this Manual does not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with installation, operation or maintenance.

Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, please contact your local Siemens office.

Further, the contents of this Manual shall not become a part of or modify any prior or existing agreement, committment or relationship. The sales contract contains the entire obligation of Siemens. The warranty contained in the contract between the parties is the sole warranty of Siemens. Any statements contained herein do not create new warranties nor modify the existing warranty.

Warning information



W A R N I N G !

Electrical equipment has components which are at dangerous voltage levels.

If these instructions are not strictly adhered to, severe bodily injury and material damage can result.

Only appropriately qualified personnel may work on this equipment or in its vicinity.

This personnel must be completely knowledgeable about all the warnings and service measures according to this User Manual.

The successful and safe operation of this equipment is dependent on proper handling, installation, operation and maintenance.

Definitions

* **QUALIFIED PERSONNEL**

For the purpose of this User Manual and product labels, a „Qualified person“ is someone who is familiar with the installation, mounting, start-up and operation of the equipment and the hazards involved. He or she must have the following qualifications:

1. Trained and authorized to energize, de-energize, clear, ground and tag circuits and equipment in accordance with established safety procedures.
2. Trained in the proper care and use of protective equipment in accordance with established safety procedures.
3. Trained in rendering first aid.

* **DANGER**

For the purpose of this User Manual and product labels, „Danger“ indicates death, severe personal injury and/or substantial property damage will result if proper precautions are not taken.

* **WARNING**

For the purpose of this User Manual and product labels, „Warning“ indicates death, severe personal injury or property damage can result if proper precautions are not taken.

* **CAUTION**

For the purpose of this User Manual and product labels, „Caution“ indicates that minor personal injury or material damage can result if proper precautions are not taken.

* **NOTE**

For the purpose of this User Manual, „Note“ indicates information about the product or the respective part of the User Manual which is essential to highlight.

C A U T I O N !

This board contains components which can be destroyed by electrostatic discharge. Prior to touching any electronics board, your body must be electrically discharged. This can be simply done by touching a conductive, grounded object immediately beforehand (e.g. bare metal cabinet components, socket protective conductor contact).

W A R N I N G !

Hazardous voltages are present in this electrical equipment during operation.

Non-observance of the safety instructions can result in severe personal injury or property damage.

It is especially important that the warning information in all of the relevant Operating Instructions are strictly observed.

1. Ordering information

CSH11: 6DD1661-0AB1	Support board CSH11

2. Description

SIMADYN D can be connected to the industrial SINEC H1/H1FO industrial communications network using the CSH11 board. The CP1470 board is used as interface and is mounted on the carrier module for adapting to SIMADYN D.
The SIMADYN D-bus interface and the interface to the CP1470 are located on the carrier module.

Data transfer between SIMADYN D processor boards and CP1470 is realized via a dual port RAM on CP1470.

In addition to two sub-D socket connectors, a switch, a pushbutton and two LEDs are located on the front panel.

The switch and pushbutton have the following functions:

Switch ADM/RUN/STP:

Setting ADM	Resetting CP1470 via the RESET button
RUN -> STOP depressed	Communications interrupted
STOP -> RUN depressed	Communications established

The LEDs have the following functions:

LED RED (STP)	LED GREEN (RUN)	CP status
dark	lit	Run with data basis
dark	flashing	Run without data basis, with NSAP address
lit	dark	Stop
lit	flashing	Interrupt
lit	lit	Wait for synchronization with the monitor process in the host
dark	dark	Internal intermediate status of the CP
flashing	dark	Fatal CP error

3. Board design

The board provides the following hardware components.

- Local bus connection (L bus)
- Communications bus connection (C bus)
- Dual port RAM on the CP1470
- Serial interface for parameterizing CP1470
- Serial interface for connecting to the SINEC H1 bus
- Monitoring LED for the operating display
- Function selection switch and reset button
- Transferring the clock interrupt from CP1470 to the communications bus

4. Interfaces

4.1. SIMADYN D bus connection

The connection to the subrack backplane bus is realized via the 96-pin plug connector at slots X1 and X2. Data transfer between the processors and the CP 1470 dual port RAM is realized via the C bus. Further, the +5V power supply is also realized via this connector. The +5V, +15V and -15V power supplies as well as the connection to the power supply control signals are realized via the L bus.

4.2. SINEC H1 bus

The connecting cable (drop cable) is connected to the SINEC H1 tranceiver at the 15-pin sub D socket connector X6. The cable must be retained with an locking mechanism.

The cable consists of 4 twisted and screened cable pairs with an additional overall screen. The maximum transceiver cable length must not exceed 50 m.

The receiver cable can be purchased in pre-assembled cable lengths. The same is true for the other bus components.

4.3. Monitor interface

An asynchronous serial interface for local parameterization and administration is provided at the 25-pin sub D socket connector. The PG750/770 programming units as well as other AT-compatible DOS PCs can be connected. The baud rate is 9600 baud. The interface is used by the SINEC NLM configuring software for CP 1470.

The interface can either be operated in the RS232 or TTY modes. The TTY interface is passive.

The board is parameterized via this interface (setting the Ethernet address, defining the communications connections etc.).

5. Application information

The communications board has an L- and C-bus connection, and can only be inserted in large subracks. It occupies 1 slot.

The board must be tightly screwed into the subrack to ensure perfect operation, even during start-up.

The serial connecting cable must be retained using the cable clamping device.

If the board is inserted in an adapter, the front panel must be connected with the frame housing through a short cable.

It is not permissible that the board is inserted or withdrawn under voltage.

6. Additional components

Plug-in cable 727-1 (drop cable)	MLFB
3,2 m	6ES5727-1BD20
10 m	6ES5727-1CB00
15 m	6ES5727-1CB50
20 m	6ES5727-1CC00
32 m	6ES5727-1CD20
50 m	6ES5727-1CF00

7. Technical data

INSULATION GROUP	A acc. to VDE 0110 Para. 13, Group 2 at 24 V DC, 15 V DC, 5 V DC		
AMBIENT TEMPERATURE	0 to +55 degrees C with natural air cooling		
STORAGE TEMPERATURE	-40 to + 70 degrees C		
HUMIDITY RATING	F acc. to DIN 40040		
ALTITUDE RATING	S acc. to DIN 40040		
MECHANICAL STRESSING	Installation is stationary equipment which is not necessarily vibration-free		
PACKAGING SYSTEM	ES 902 C		
DIMENSIONS	220 * 233.4 mm		
BOARD WIDTH	1 slot in the subrack		
WEIGHT	0.5 kg		
CURRENT DRAIN	P5	2.5 A	
	P15	max. 100 mA	(without the SINEC H1 bus coupler connected)
	P15	max. 600 mA	(with the SINEC H1 bus coupler connected)
	N15	max 100 mA	

8. Connector assignment of the interfaces

8.1. Monitor interface

X5 (25-pin sub D socket connector)

	RS232	TTY
1	Screen	----
2	TxD	----
3	RxD	----
7	GND	----
9	----	+RxD
10	----	-RxD
18	----	+TxD
21	----	-TxD

8.2. SINEC H1 interface

X6 (15-pin sub D socket connector)

	Signal name	Code
1	Collision (screen)	CI-S
2	Collision (+)	CI-A
3	Transmit data (+)	DO-A
4	Receive data (screen)	DI-S
5	Receive data (+)	DI-A
6	Power supply (-)	VC
7	Control signal (+)	CO-A
8	Control signal (screen)	CO-S
9	Collision (-)	CI-B
10	Transmit data (-)	DO-B
11	Transmit data (screen)	DO-S
12	Receive data (-)	DI-B
13	Power supply (+)	VP
14	Power supply (screen)	VS
15	Control signal (-)	CO-B
Housing	Complete screen	PG

8.3. Assignment of the SIMADYN D backplane bus connection, X1 and X2

X1, X2 (96-pin plug connector to the backplane bus)

Pin	A	B	C
1	P5 **	P5 **	P5 **
2	----	AB20	AB22
3	----	AB21	AB23
4	+15V	+15V *	+15V *
5	----	-15V *	-15V *
6	L_LOCK	----	L_CSINI
7	----	----	----
8	----	AB12	AB0
9	----	0V **	AB1
10	L_DSAD *	AB13	AB2
11	----	PLC0	AB3
12	AB19	AB14	AB4
13	----	PLC1	AB5
14	L_RESET *	AB15	AB6
15	L_BHE	PLC2	AB7
16	----	AB16	AB8
17	L_BGIN **	PLC3	AB9
18	L_BGOUT **	AB17	AB10
19	----	PLC4	AB11
20	----	AB18	DB0
21	----	0V **	DB1
22	L_LIR2	DB11	DB2
23	----	0V **	DB3
24	L_RDYIN *	DB12	DB4
25	L_RDY	----	DB5
26	----	DB13	DB6
27	----	0V **	DB7
28	----	DB14	DB8
29	CLK8M *	0V **	DB9
30	L_DEN	DB15	DB10
31	L_HWEN	----	----
32	DT_L_R	0V **	----

Signals, designated with " * " are only connected to connector X2, and signals, designated with " ** ", to connectors X1 and X2. All other signals are only connected to connector X1.

9. STRUC L mask of the CSH11 board in the master program

STRUC L mask

```
100         :CSH11                  "CSH11 board for SINEC H1"
101   ************************************************************************
```

10. Others

10.1. Attachments

10.1.1. Block diagram

Block diagram	Fig. 1

10.1.2. Layout diagram

Layout diagram	3SE.465 661.9001.10 AO

10.1.3. Dimension drawing

Dimension drawing	2SE.465 661.9001.10 MB

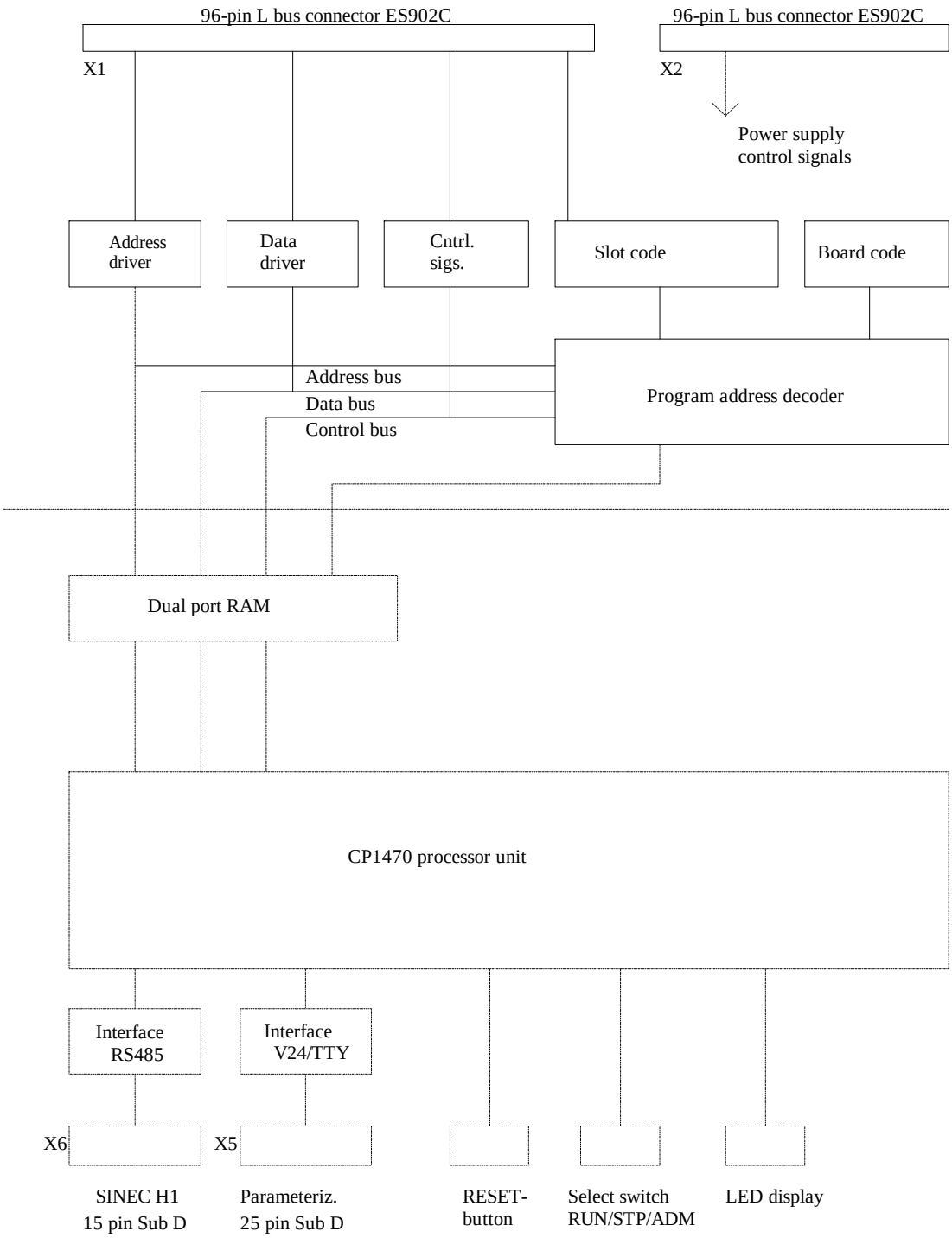


Fig. 1: Block diagram of the CSH11 board

11. ECB instructions

Components which can be destroyed by electrostatic discharge (ECB)

Generally, electronic boards should only be touched when absolutely necessary.

The human body must be electrically discharged before touching an electronic board. This can be simply done by touching a conductive, grounded object directly beforehand (e.g. bare metal cubicle components, socket outlet protective conductor contact.

Boards must not come into contact with highly-insulating materials - e.g. plastic foils, insulated desktops, articles of clothing manufactured from man-made fibers.

Boards must only be placed on conductive surfaces.

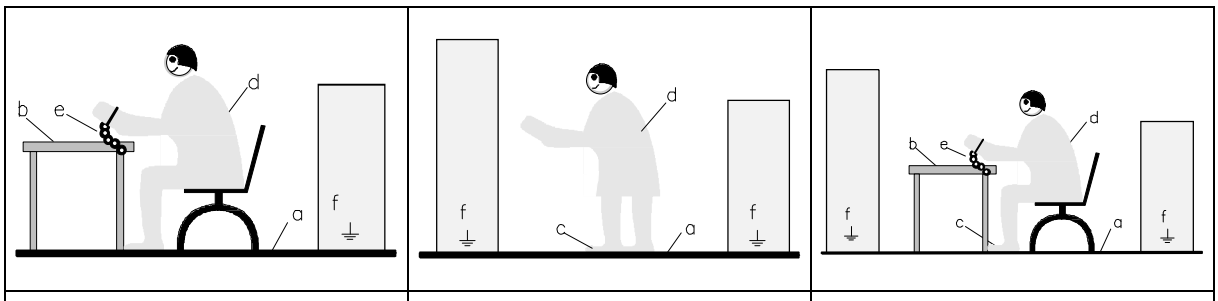
When soldering, the soldering iron tip must be grounded.

Boards and components should only be stored and transported in conductive packaging (e.g. metalized plastic boxes, metal containers).

If the packing material is not conductive, the boards must be wrapped with a conductive packing material, e.g. conductive foam rubber or household aluminum foil.

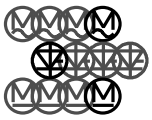
The necessary ECB protective measures are clearly shown in the following diagram.

a = Conductive floor surface
b = ECB table
c = ECB shoes
d = ECB overall
e = ECB chain
f = Cubicle ground connection



Seated	Standing	Standing/sitting

Drives and Standard Products
Motors and Drives Systems Group
Postfach 3269, D-91050 Erlangen



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