

**BSC3189-1.0**

**Nokia BSC3i, Rel. S13, Site Documentation, v.1**

# **Jumper Settings of the Plug-in Units in BSC3i and in TCSM3i**

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## Summary of changes

Changes between document issues are cumulative. Therefore, the latest document issue contains all changes made to previous issues.

### Changes made between issues 5-4 and 6-0

Information on the ET16, SBMUX-A and SW256B has been updated to S13 level.

### Changes made between issues 5-3 and 5-4

Information on the ET2E-TCB has been updated.

### Changes made between issues 5-2 and 5-3

Information on the CP710-AC and CP816-AC has been added.

### Changes made between issues 5-1 and 5-2

Information on the ET16, SBMUX-A and SW256B has been updated.

### Changes made between issues 5-0 and 5-1

Information on the CP710-A has been updated.

### Changes made between issues 4-5 and 5-0

Information on the following plug-in units has been added: CP816-A, CP710-AB, CLAB-S, ET16, ETS2, SBMUX-A, TR3E and TR3A, and SW256B. Information on the PCU2-D has been updated.

## **Changes made between issues 4-4 and 4-5**

Structural changes.

## **Changes made between issues 4-3 and 4-4**

New ET2 variants added.

SERO-B added.

## **Changes made between issues 4-2 and 4-3**

Information for plug-in units PCU2-D and SW128B updated. Editorial changes made.

## **Changes made between issues 4-1 and 4-2**

Information for plug-in unit PCU2-D updated. Editorial changes made.

## **Changes made between issues 4-0 and 4-1**

Minor editorial changes made.

## **Changes made between issues 3-0 and 4-0**

ESB26, ET4E, ET4A, ET4E-C, PCU2-D, SW128B, and WDW73 added.

Minor editorial changes made.

# 1

## Overview of jumper settings for the plug-in units in BSC3i

*Jumper settings of plug-in units in BSC3i* provides the basic information needed for setting the various jumpers of the plug-in units in the BSC3i. The settings are referred to as standard when no changes are required, and alternative when the application delivered may need reconfiguration.

Before setting the various jumpers of the plug-in units in the BSC3i, the user is advised to read the information presented below.

### Presentation of the settings

The standard and alternative jumpers of the plug-in units are presented in tables except if the plug-in unit has factory settings. The standard settings are illustrated in the jumper group location maps. For the standard jumpers, the table indicates the jumper group number, the connection required and a note about the connection. For the alternative settings, the meaning of the connection (like the plug-in unit location), the required connection and a note about the connection are listed. Each alternative jumper group is preceded by a title describing it.

In the column *Connection*, a hyphen (-) is used between the pins of the jumper group that are to be connected on the plug-in unit. The pins are symbolized by consecutive numbers. If there is only a hyphen and no numbers in the column, no connection is made. The numbers of the jumper group(s) are also given for the alternative settings.

The column *Note* indicates the alternative selected with the jumper concerned. If the jumper group is relevant only in connection with plug-in unit testing, the column is blank. The alternatives are listed in the plug-in unit descriptions.

If the plug-in unit has a jumper group which is strapped for interchangeability, the setting alternatives are presented in a form that differs from the presentation of the other tables.

In the interchangeability table,

- X = the corresponding connection is made
- blank = the corresponding connection is not made.

### **Implementation of the jumper settings**

A hardware setting (strapping) is made by means of a jumper (marked by a rectangle).

The materials required: Jumper code 15291 00089

### **Selection of settings**

Settings are often called only jumper settings, or when they can clearly be defined they are divided into two groups:

- standard settings
- alternative settings

The standard settings do not depend on external factors, so they are always set in the same way regardless of the equipment position.

The alternative settings depend on external factors, such as the track position, the parameter to be selected, and the operating environment.

The plug-in units with both standard and alternative settings are a mixture of the cases in the two previous chapters.

### **Presentation of the read-only memory circuits**

The following information is given about the read-only memory circuits:

- location of read-only memory circuit(s) of the plug-in unit
- installation direction of read-only memory circuit(s) (direction of the notch of circuit(s))
- setting of read-only memory circuit(s) in the socket (sockets of circuit(s) are indicated with broken line)
- the following can be read inside the circuit(s) depending on the case:



- EPROM or PROM; either marking HIGH or LOW on 8-bit read-only memory circuits (not on 16-bit circuits)
- base addresses of circuits (for some plug-in units, only the beginning of the base address of the circuit, e.g. 60 = 60000H, A0 = A0000H, is presented) or the name of the program on the circuit + indexes of circuits.

The following plug-in units have settings that the user can set:

*AC25-A*

*AS7-C*

*AS7-B*

*CL3TG*

*CLAB-S*

*CP816-AC*

*CP816-A*

*CP710-AC*

*CP710-AB*

*CP710-A*

*ETS2*

*ET16*

*ET4E, ET4A*

*ET4E-C*

*ET2A*

*ET2A-T, ET2A-TB*

*ET2E-S*

*ET2E-SC*

*ET2E-TC, ET2E-TCB*

*ET2E-T, ET2E-TB*

*HWAT-A*

*MBIF-B*

*PCU2-D*

*PCU-B*

*SBMUX-A*

*SERO-B*

*SERO-A*

*SWCOP-A*

*SW256B*

*SW128B*

*SW64B*

*TR3E, TR3A*

*MO91*

*WDW73*

*WDW18-S/WDW36*

The following plug-in units have no jumper settings to be set by the user:

- DCAR1-A
- *ESB20, ESB20-A* and *ESB26*: The switch and the pin header on the board are only for testing purposes.
- PSC1-S
- PSC6-A and PSC6-B

## 2 AC25-A C08944

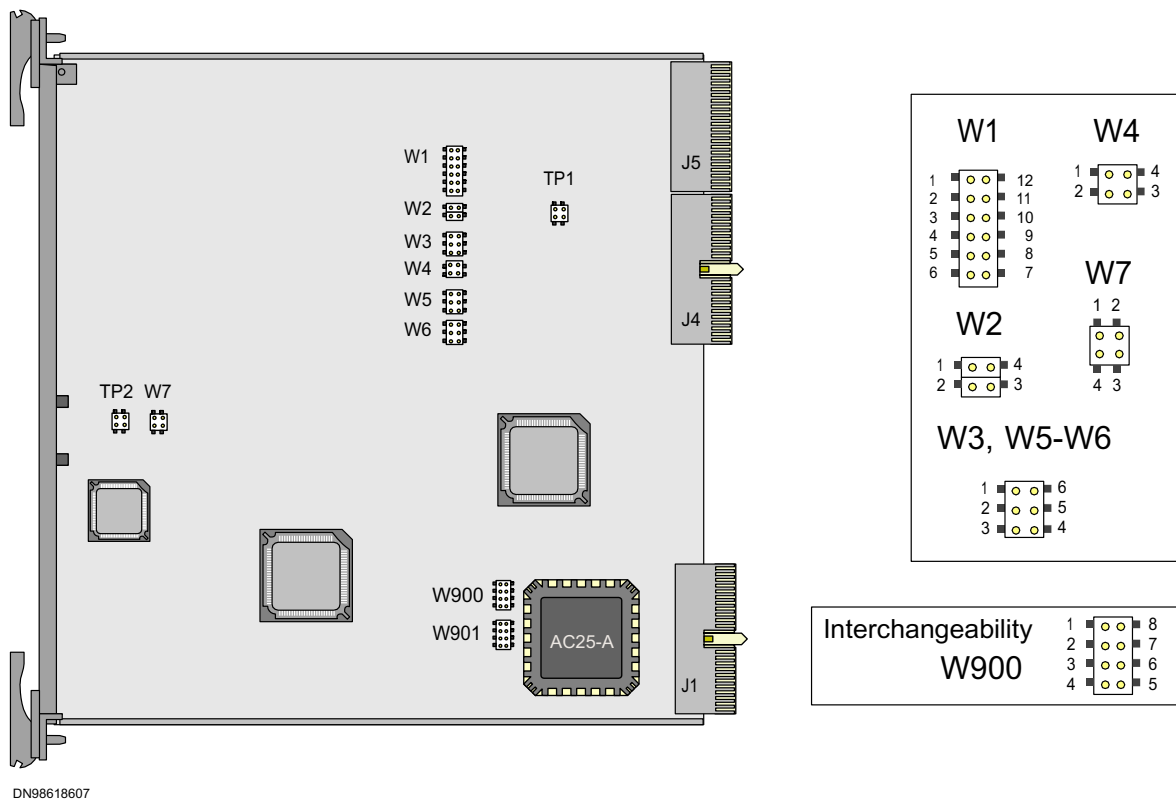


Figure 1. Jumpers and read-only memory circuits of the plug-in unit AC25-A.

Alternative settings on jumper groups W1 through W7 depend on the application as presented in the table below.

Jumper group W900 is used for setting the interchangeability code of the plug-in unit, when required, see the table below.

Jumper groups W901 and W7 are used for testing purposes. There are no jumpers to be set on these.

### Alternative settings

Table 1. Alternative settings of AC25-A.

Meaning	Jumper	Setting
<i>SELECTION OF EXTERNAL INTERFACE TYPE</i>		
<i>X.21 interface in use (Channel 2)</i>	W1;1 - 2	ON
	W1;3 - 4	ON
	W1;5 - 6	ON
	W1;7 - 8	OFF
	W1;9 - 10	OFF
	W1;11 - 12	OFF
	W3;1 - 2	ON
	W3; 5 - 6	ON
	W6;1 - 6	ON
Selection of bit timing:		
DCE (Bit timing of the output data from AC25-A)	W2;1 - 4	OFF
	W2;2 - 3	ON
	W4;1 - 4	ON
	W4;2 - 3	ON
DTE (Bit timing of the output data from serial interface)	W2;1 - 4	ON
	W2;2 - 3	OFF
	W4;1 - 4	OFF
	W4;2 - 3	OFF
<i>V.24 interface in use (Channel 1) (Default setting)</i>	W1;1 - 2	OFF
	W1;3 - 4	OFF
	W1;5 - 6	OFF
	W1;7 - 8	ON
	W1;9 - 10	ON
	W1;11 - 12	ON
	W3;1 - 2	ON
	W3;5 - 6	ON
	W6;1 - 6	ON
Selection of bit timing:		

Table 1. Alternative settings of AC25-A. (cont.)

Meaning	Jumper	Setting
DTE (Bit timing of the output data from serial interface) (Default setting)	W2;1 - 4 W2;2 - 3 W4;1 - 4 W4;2 - 3	ON OFF OFF OFF
DCE (Bit timing of the output data from AC25-A)	W2;1 - 4 W2;2 - 3 W4;1 - 4 W4;2 - 3	OFF ON ON ON
<i>Limited V.24 interface in use (Channel 2)</i>	W1;1 - 2 W1;3 - 4 W1;5 - 6 W1;7 - 8 W1;9 - 10 W1;11 - 12 W2;1 - 4 W4;ALL W6;1 - 6	ON ON ON OFF OFF OFF ON OFF ON
Selection of bit timing:		
DTE (Bit timing of the output data from the serial interface)	W3;1 - 2	ON
DCE (Bit timing of the output data from AC25-A)	W3;2 - 3	ON
DCD-circuit control:		
Serial interface control	W3;5 - 6	ON
Forced control into active state (ON state)	W3;4 - 5	OFF
<i>V.35 interface in use (Channel 1)</i>	W1;1 - 2 W1;3 - 4 W1;5 - 6 W1;7 - 8 W1;9 - 10 W1;11 - 12 W3;1 - 2 W3;5 - 6 W6;2 - 5	OFF OFF OFF ON ON ON ON ON ON

Table 1. Alternative settings of AC25-A. (cont.)

Meaning	Jumper	Setting
V.35 interface bit timing:		
DTE (Bit timing of the output data from serial interface)	W2;1 - 4 W2;2 - 3 W4;1 - 4 W4;2 - 3	ON OFF OFF OFF
DCE (Bit timing of the output data from AC25-A)	W2;1 - 4 W2;2 - 3 W4;1 - 4 W4;2 - 3	OFF ON ON ON
V.36 interface in use (Channel 1)	W1;1 - 2 W1;3 - 4 W1;5 - 6 W1;7 - 8 W1;9 - 10 W1;11 - 12 W3;1 - 2 W3;5 - 6 W6;3 - 4	OFF OFF OFF ON ON ON ON ON ON
V.36 interface bit timing:		
DTE (Bit timing of the output data from serial interface)	W2;1 - 4 W2;2 - 3 W4;1 - 4 W4;2 - 3	ON OFF OFF OFF
DCE (Bit timing of the output data from AC25-A)	W2;1 - 4 W2;2 - 3 W4;1 - 4 W4;2 - 3	OFF ON ON ON
UART INTERFACE CONTROL		
1) UART interface is not in use (Default setting)	W5;1 - 6	ON
2) UART interface is in use	W5;1 - 6	OFF
Bit timing of UART interface:		
Bit timing of output data from AC25-A	W5;2 - 5 W5;3 - 4	ON OFF

Table 1. Alternative settings of AC25-A. (cont.)

Meaning	Jumper	Setting
Bit timing of output data from serial interface	W5;2 - 5	OFF
	W5;3 - 4	ON

### Interchangeability code settings (W900)

Table 2. Interchangeability code settings of AC25-A (W900).

ICC code	W900 settings			
	1 - 8	2 - 7	3 - 6	4 - 5
A	ON	ON	ON	ON
B	OFF	ON	ON	ON
C	ON	OFF	ON	ON
D	OFF	OFF	ON	ON
E	ON	ON	OFF	ON
F	OFF	ON	OFF	ON
G	ON	OFF	OFF	ON
H	OFF	OFF	OFF	ON
J	ON	ON	ON	OFF
K	OFF	ON	ON	OFF
L	ON	OFF	ON	OFF
M	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF
P	OFF	ON	OFF	OFF
R	ON	OFF	OFF	OFF





# 3 AS7-C C105007

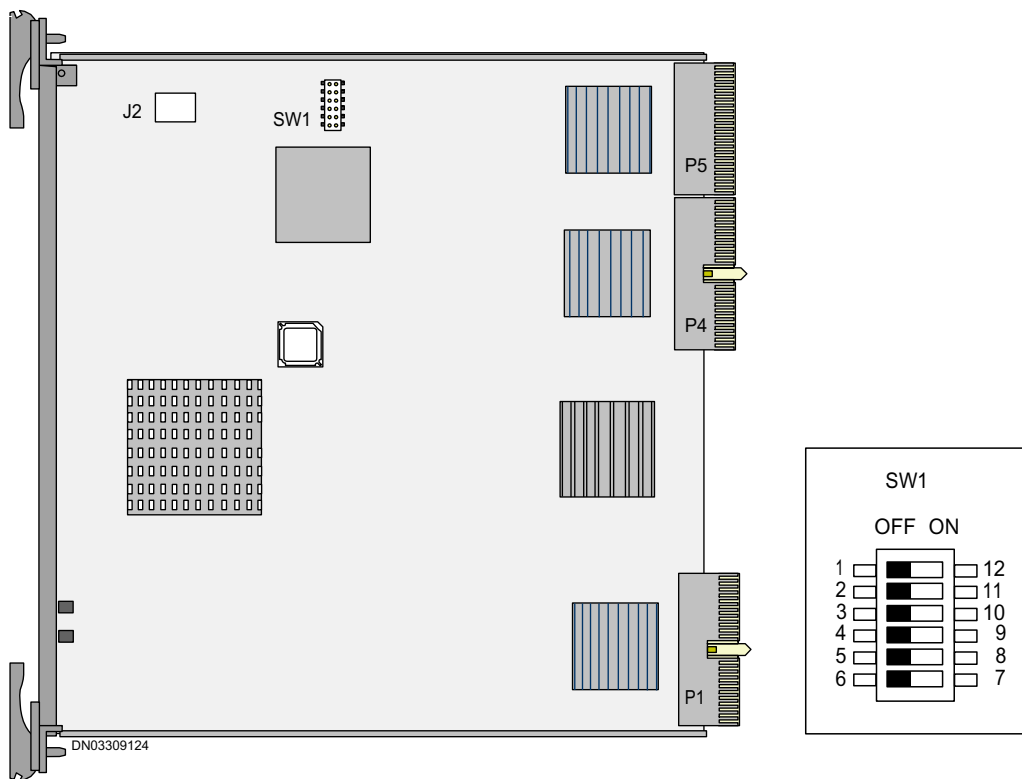


Figure 2. DIP switches of the plug-in unit AS7-C

## Altera Bit Blaster header J2

The J2 (Altera Bit Blaster) pin header is used for reprogramming the Altera CPLD. No jumpers are installed.

## Interchangeability code settings

The Interchangeability Switch Block consists of a 6-position DIP switch. This switch contains the four interchangeability code bits. The interchangeability lines drive to '0' when the switches are OFF.



### Note

'OFF' is GND, 'ON' is VCC.

Table 3. SW1 switch settings.

Switch 1	Setting	Meaning
1-12	OFF*)	Interchangeability code bit 3 (MSB)
2-11	OFF*)	Interchangeability code bit 2
3-10	OFF*)	Interchangeability code bit 1
4-9	OFF*)	Interchangeability code bit 0 (LSB)
5-8	OFF	Not in use
6-7	OFF	Not in use.

\*) The first interchangeability code A corresponds to all switches OFF, after which the settings start to roll for each interchangeability code change.

The table below presents the setting of the interchangeability code.

Table 4. Interchangeability code settings of AS7-C

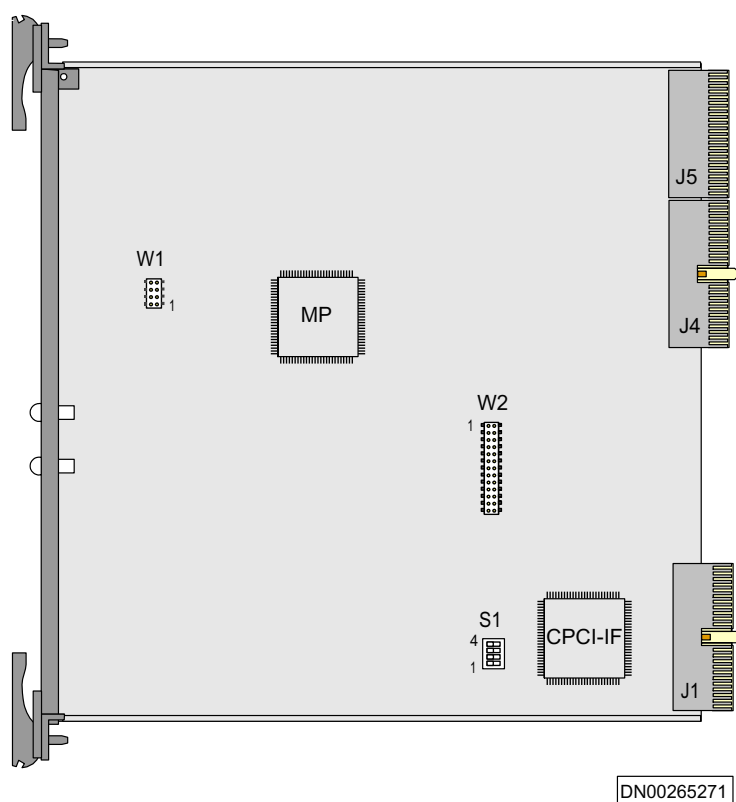
ICC code	Meaning			
	SW 1: 1-12 (MSB)	SW 1: 2-11	SW 1: 3-10	SW 1: 4-9 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON

Table 4. Interchangeability code settings of AS7-C (cont.)

ICC code	Meaning			
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF



# 4 AS7-B C81550



CPCI-IF = CPCI-interface

Figure 3. Jumpers and switch of the plug-in unit AS7-B

There are no standard or alternative jumpers to be set on the plug-in unit.

Jumper group W1 is a JTAG connector and jumper group W2 is a PRTA connector. There are no jumpers to be set on these.

Switch S1 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

### Interchangeability code settings (S1)



#### Note

Switch 1 = MSB and switch 4 = LSB.

ON = the switch is on the left; OFF = the switch is on the right.

Table 5. Setting the interchangeability code (S1)

ICC Code	Switch (S1) settings			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

# 5 CL3TG C08826

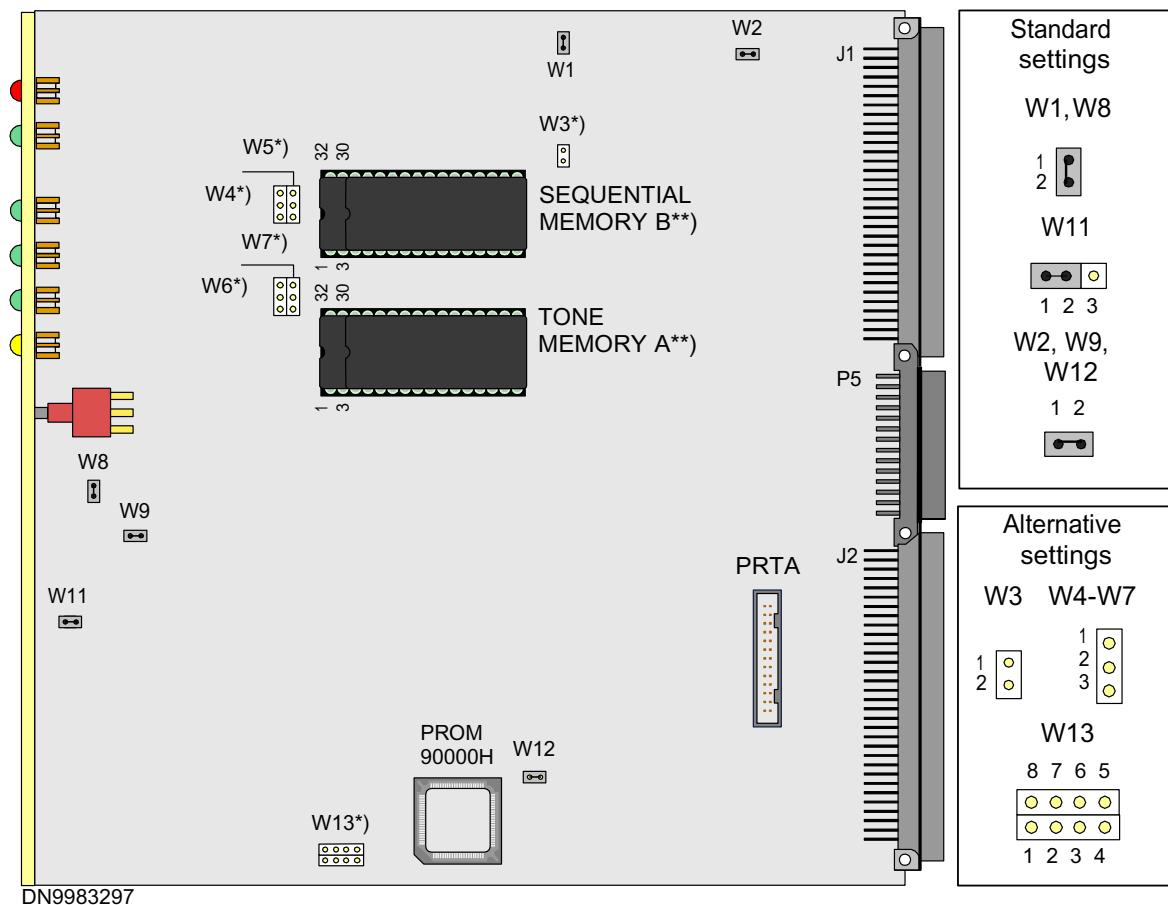


Figure 4. Jumpers and EPROM circuits of plug-in units CL3TG.

\*) Alternative settings are presented in the tables below.

\*\*) There are two different sizes of read-only memory circuits of the sequential and tone generator memories; 28-pin (256 kbit) or 32-pin (1 Mbit / 2 Mbit / 4 Mbit)

- The equipment instructions of the TON read memory circuits are presented separately in the definition dossier of the plug-in unit /2/.

### Standard settings

Table 6. Standard settings.

Jumper group	Jumper	Note
W1	1-2	
W2	1-2	
W8	1-2	
W9	1-2	
W10	-	Connector to test adapter of processor (PRTA)
W11	1-2	
W12	1-2	

### Number of time slots used by the tone generator (W3)

Table 7. Selection of the number of time slots used by the tone generator.

Selection criteria	Jumper	Note
28 time slots available	W3: -	TON-AEA icc A, TON-CNA icc up to B, TON-DEA icc up to B, TON-FIA icc A, TON-LKA icc A, TON-MYA icc A, TON-RUA icc A, TON-SEA icc up to B (icc = interchangeability code)
30 time slots available	W3: 1-2	Other interchangeability alternatives for TON products available, except those mentioned in Note column for '28 time slots' above



## Capacity of the sequential memory (W4, and W5)

Table 8. Selection of the capacity of the sequential memory.

Selection criteria	Jumper	Note
Sequential memory capacity 256 kbit	W4: 2-3, W5: 2-3	Sequential memory B = IC67; note that the number of the time slots used is selected with W3
Sequential memory capacity 1 Mbit	W4: 2-3, W5: 1-2	Sequential memory B = IC67; note that the number of the time slots used is selected with W3
Sequential memory capacity, 2 Mbit or 4 Mbit	W4: 1-2, W5: 1-2	Sequential memory B = IC67; note that the number of the time slots used is selected with W3

## Capacity of the tone memory (W6 and W7)

Table 9. Selection of the capacity of the tone memory.

Selection criteria	Jumper	Note
Tone memory capacity 256 kbit	W6: 1-2, W7: 1-2	Tone memory A = IC88
Tone memory capacity 1 Mbit	W6: 1-2, W7: 2-3	Tone memory A = IC88
Tone memory capacity 2 Mbit or 4 Mbit	W6: 2-3, W7: 2-3	Tone memory A = IC88

### Capacity of the sequential and tone memory (W4, W5, W6, W7)

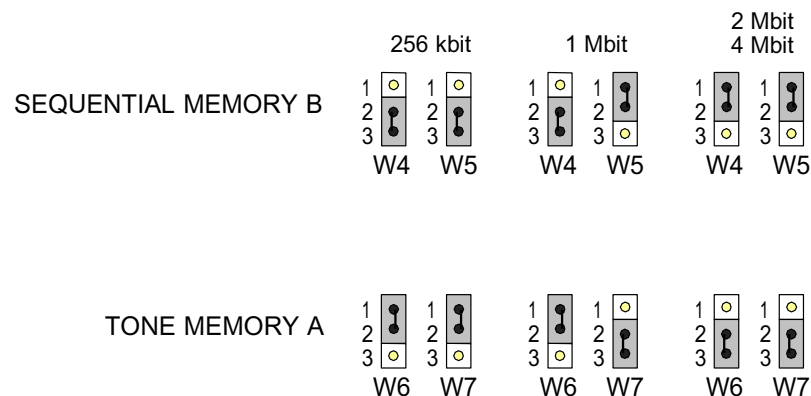


Figure 5. Setting the capacity of the sequential memory and tone memory.

### Interchangeability code (W13)

Table 10. Selection of the interchangeability code.

Jumper	Interchangeability code															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	
W13: 1-8	X	X	X	X	X		X		X		X		X		X	
2-7	X	X			X	X			X	X			X	X		
3-6	X	X	X	X					X	X	X	X				
4-5	X	X	X	X	X	X	X	X								

In the table, X = the corresponding connection is made, and blank = the corresponding connection is not made



#### Note

Letters I, O, and Q may not be used as interchangeability codes.

# 6 CLAB-S C08839

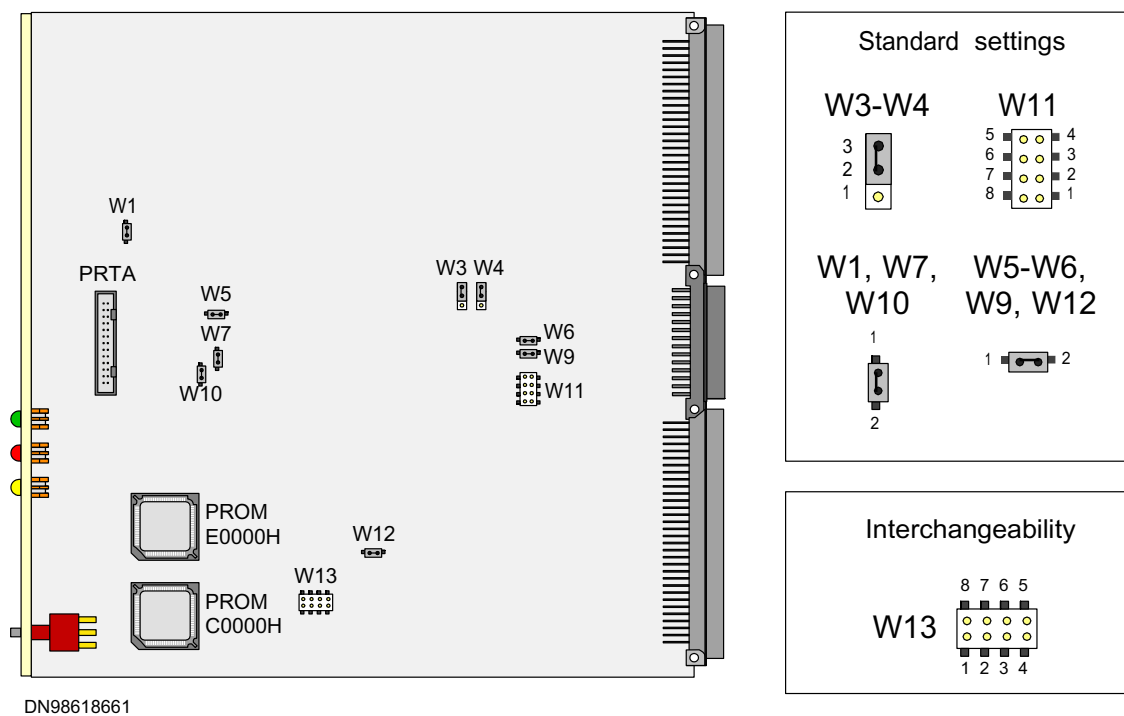


Figure 6. Jumpers and EPROM circuits of plug-in unit CLAB-S

The PRTA (Processor Test Adaptor) is a connector which can be used for testing and servicing.

Standard settings are presented in the table below, and the jumpers must be set as shown during normal operation.

There are no alternative settings available on the plug-in unit.

Jumper group W13 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

### Standard settings (W1, W3, W4, W5-7, W9, W11, W12)

Table 11. Standard settings of CLAB-S (W1, W3, W4, W5-7, W9, W11, W12)

Jumper	Setting	Meaning
W1;1 - 2	ON	32 MHz clock signal of the processor is not disconnected
W3;2 - 3	ON	Automatic phase advance enabled (used in i-series NEs)
W4;2 - 3	ON	
W12;1 - 2	ON	
W5;1 - 2	ON	Watchdog enabled
W6;1 - 2	ON	The 32 MHz output signal of the phase lock circuit is not disconnected
W7;1 - 2	ON	The reset signal of the plug-in unit is not disconnected
W9;1 - 2	ON	The 64 MHz output signal of the phase lock circuit is not disconnected
W10;1 - 2	ON	The reset signal of the processor is not disconnected
W11;ALL	OFF	Used for testing of the phase lock circuit

### Interchangeability code settings (W13)

Table 12. Interchangeability code settings of CLAB-S (W13)

ICC code	W13 settings			
	1 - 8	2 - 7	3 - 6	4 - 5
A	ON	ON	ON	ON
B	OFF	ON	ON	ON
C	ON	OFF	ON	ON
D	OFF	OFF	ON	ON
E	ON	ON	OFF	ON
F	OFF	ON	OFF	ON
G	ON	OFF	OFF	ON
H	OFF	OFF	OFF	ON
J	ON	ON	ON	OFF
K	OFF	ON	ON	OFF

Table 12. Interchangeability code settings of CLAB-S (W13) (cont.)

ICC code	W13 settings			
L	ON	OFF	ON	OFF
M	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF
P	OFF	ON	OFF	OFF
R	ON	OFF	OFF	OFF



# 7

## CP816-AC C111134

The CP816-AC has two vendors that differ in layout but are identical in function. They can be distinguished from each other by the following:

- slight differences in the front panel (cooling fins)
- differences on the PWB.

## 7.1 Advantech CP816-AC

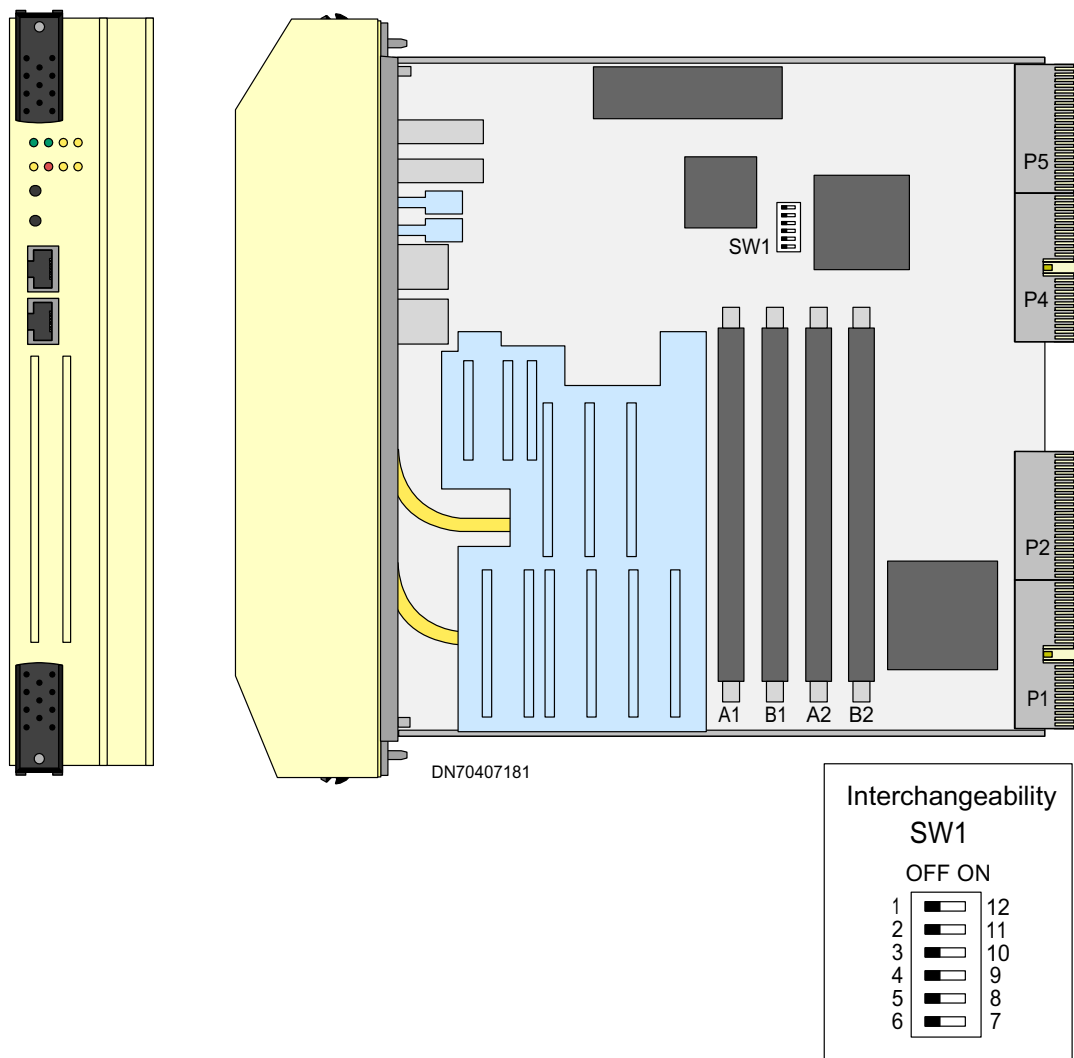


Figure 7. Connectors and switches of the CP816-AC

### 7.1.1 Equipping DIMM modules

#### Selecting Dual Channel Mode

When equipping DIMM modules for Dual Channel Mode, note that DIMM modules must be equipped in pairs. Therefore, fill first A2 and B2 and A1 and B1 second.





#### Note

When using Dual Channel Mode, speed, size and the organization of the DIMMs (one row / two row) must be identical for both pairs.

### Selecting Single Channel Mode

When equipping DIMM modules for Single Channel Mode, fill first A2 and A1 second.



#### Note

Dual Channel Mode is default. Single Channel Mode is used only if so specified in delivery specific documentation.

## 7.1.2 DIP-switch settings

The following settings are made with micro switch see the table below:

- Interchangeability code
- MBIF status (in use / not in use).

Table 13. SW1 switch settings.

Switch 1	Setting	Meaning
1-12	OFF*)	Interchangeability code bit 3
2-11	OFF*)	Interchangeability code bit 2
3-10	OFF*)	Interchangeability code bit 1
4-9	OFF*)	Interchangeability code bit 0
5-8	OFF	Not in use
6-7	OFF	Message Bus Interface (MBIF) status: OFF = MBIF in use (bit D3 in register 104h reads 0).  In NE installations, when EMB is used, this setting must be ON = MBIF not in use.

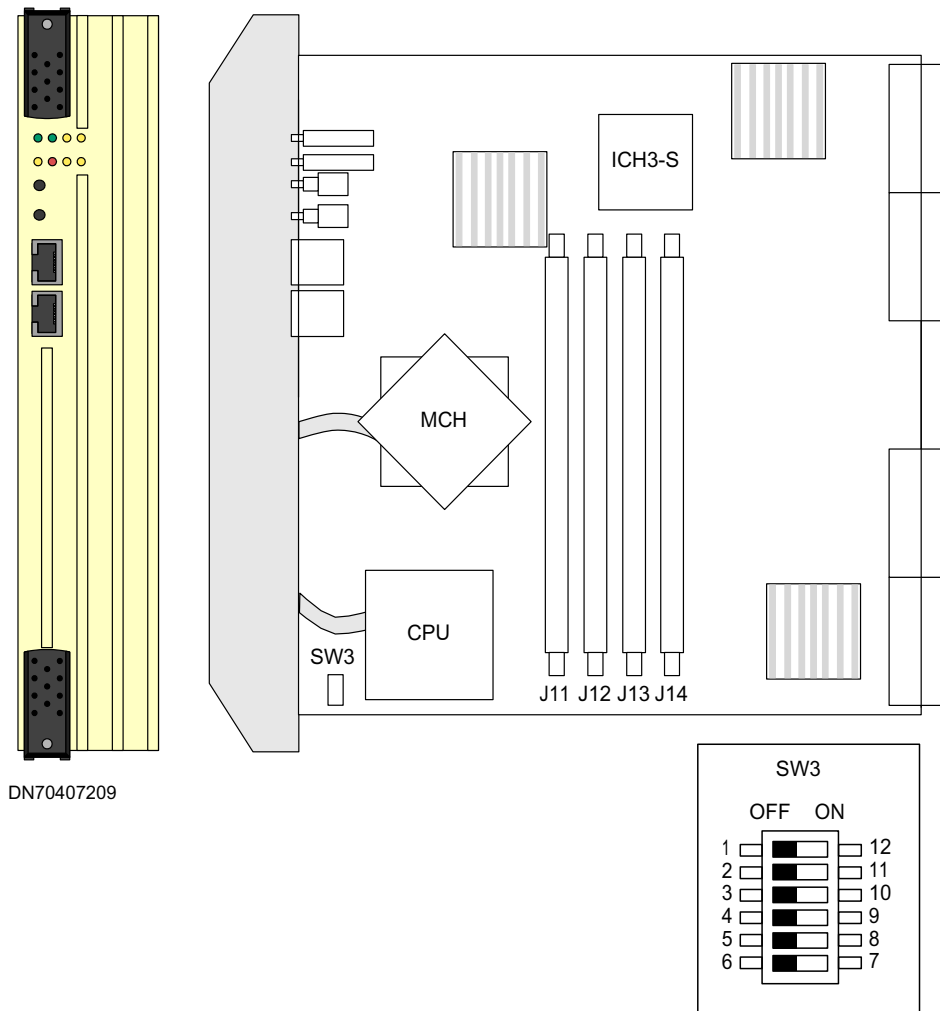
\*) The first interchangeability code A corresponds to all switches OFF, after which the settings start to roll for each interchangeability code change.

The table below presents the setting of the interchangeability code.

Table 14. Interchangeability code (ICC) settings (SW1).

ICC code	Switch setting			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

## 7.2 RadiSys CP816-AC



DN70407209

Figure 8. Connectors and switches of the CP816-AC

### 7.2.1 Equipping DIMM modules

#### Selecting Dual Channel Mode

When equipping DIMM modules for Dual Channel Mode, note that DIMM modules must be equipped in pairs. Therefore, fill first J14 and J13 and J12 and J11 second.



#### Note

When using Dual Channel Mode, speed, size and the organization of the DIMMs (one row / two row) must be identical for both pairs.

### Selecting Single Channel Mode

When equipping DIMM modules for Single Channel Mode, fill first J14 and J12 second.



#### Note

Dual Channel Mode is default. Single Channel Mode is used only if so specified in delivery specific documentation.

## 7.2.2 DIP-switch settings

The following settings are made with micro switch see the table below:

- Interchangeability code
- MBIF status (in use / not in use).

Table 15. SW3 switch settings.

Switch 1	Setting	Meaning
1-12	OFF*)	Interchangeability code bit 3
2-11	OFF*)	Interchangeability code bit 2
3-10	OFF*)	Interchangeability code bit 1
4-9	OFF*)	Interchangeability code bit 0
5-8	OFF	Not in use
6-7	OFF	Message Bus Interface (MBIF) status: OFF = MBIF in use (bit D3 in register 104h reads 0). In NE installations, when EMB is used, this setting must be ON = MBIF not in use.

\*) The first interchangeability code A corresponds to all switches OFF, after which the settings start to roll for each interchangeability code change.

The table below presents the setting of the interchangeability code.

Table 16. Interchangeability code (ICC) settings (SW3).

ICC code	Switch setting			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF



# 8

## CP816-A C108488

The CP816-A has three vendors that differ in layout but are identical in function. They can be distinguished from each other by the following:

- slight differences in the front panel (cooling fins)
- differences on the PWB.

## 8.1 Advantech CP816-A

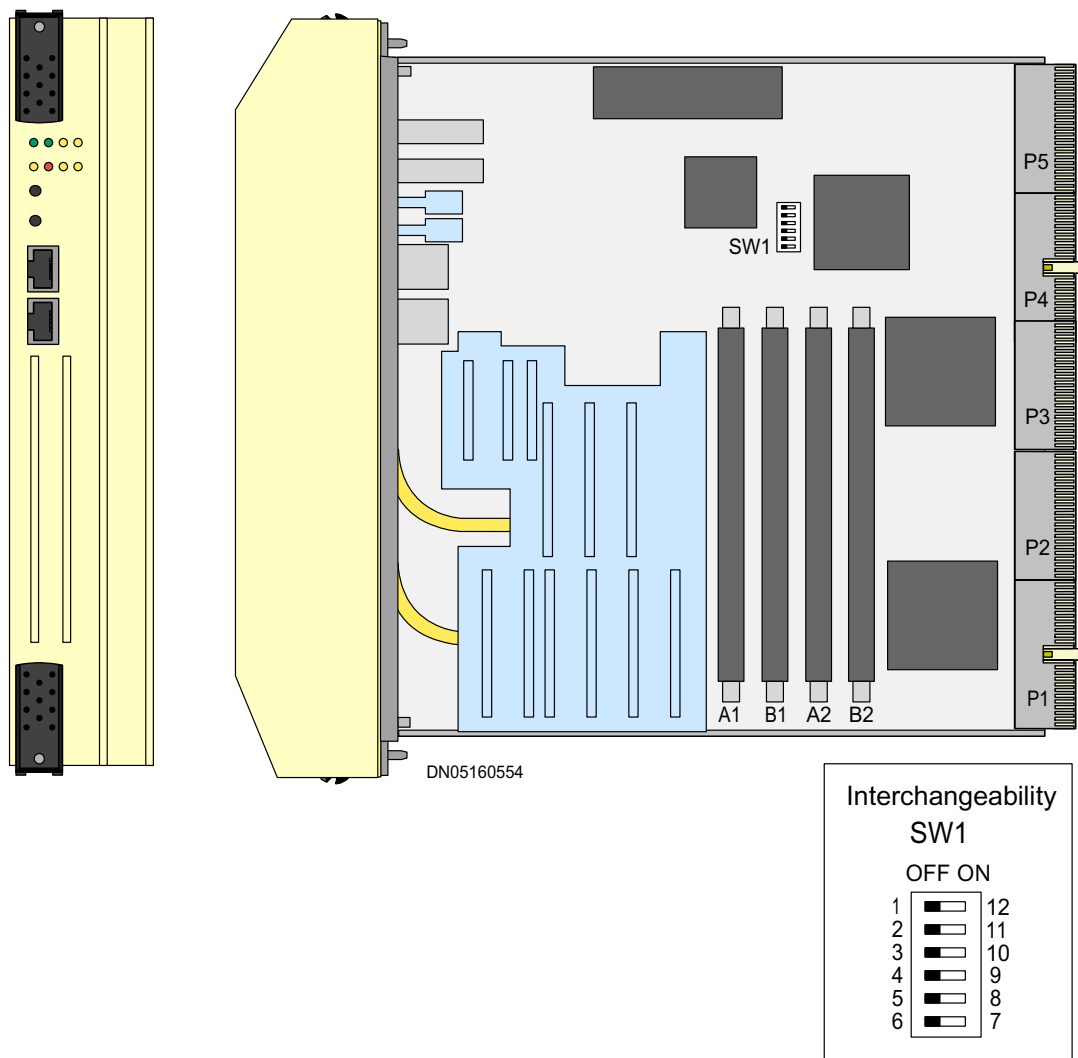


Figure 9. Connectors and switches of the CP816-A

### 8.1.1 Equipping DIMM modules

#### Selecting Dual Channel Mode

When equipping DIMM modules for Dual Channel Mode, note that DIMM modules must be equipped in pairs. Therefore, fill first A2 and B2 and A1 and B1 second.





#### Note

When using Dual Channel Mode, speed, size and the organization of the DIMMs (one row / two row) must be identical for both pairs.

### Selecting Single Channel Mode

When equipping DIMM modules for Single Channel Mode, fill first A2 and A1 second.



#### Note

Dual Channel Mode is default. Single Channel Mode is used only if so specified in delivery specific documentation.

## 8.1.2 DIP-switch settings

The following settings are made with micro switch see the table below:

- Interchangeability code
- MBIF status (in use / not in use).

Table 17. SW1 switch settings.

Switch 1	Setting	Meaning
1-12	OFF*)	Interchangeability code bit 3
2-11	OFF*)	Interchangeability code bit 2
3-10	OFF*)	Interchangeability code bit 1
4-9	OFF*)	Interchangeability code bit 0
5-8	OFF	Not in use
6-7	OFF	Message Bus Interface (MBIF) status: OFF = MBIF in use (bit D3 in register 104h reads 0).  In NE installations, when EMB is used, this setting must be ON = MBIF not in use.

\*) The first interchangeability code A corresponds to all switches OFF, after which the settings start to roll for each interchangeability code change.

The table below presents the setting of the interchangeability code.

Table 18. Interchangeability code (ICC) settings (SW1).

ICC code	Switch setting			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

## 8.2 Force CP816-A

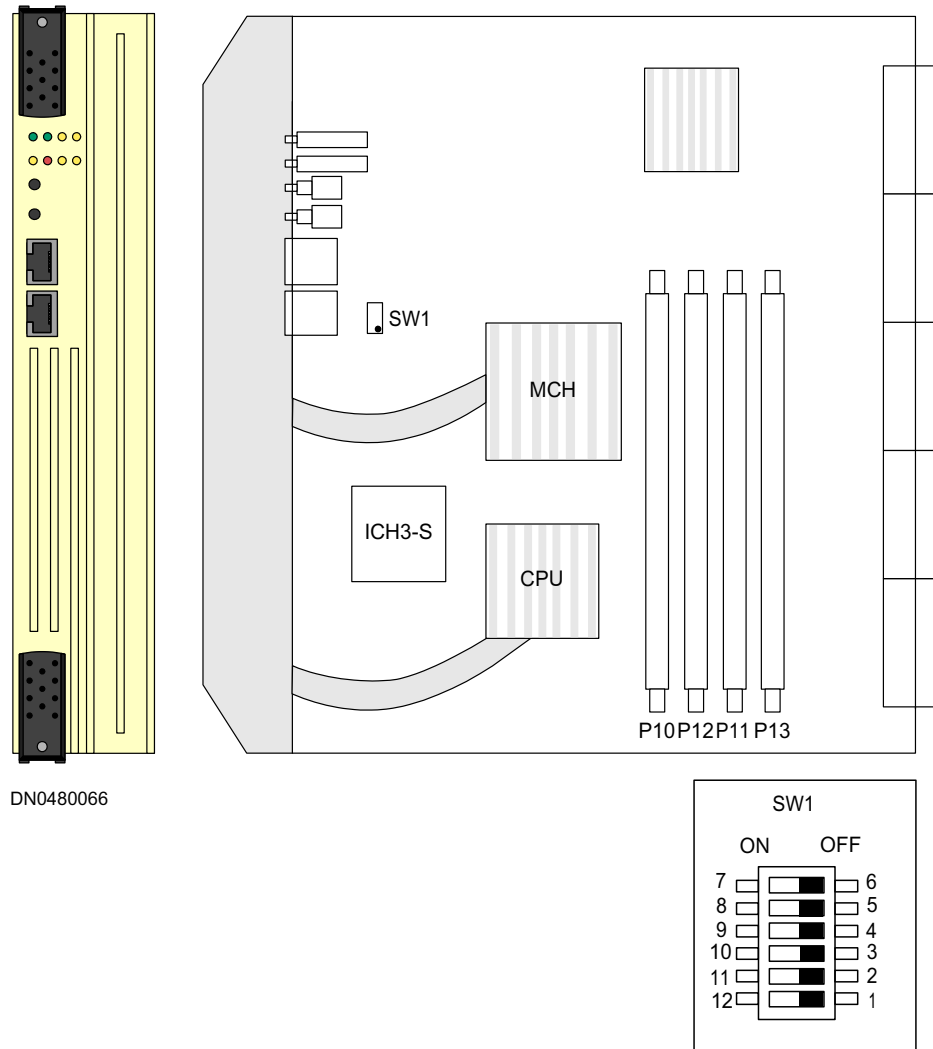


Figure 10. Connectors and switches of the CP816-A

### 8.2.1 Equipping DIMM modules

#### Selecting Dual Channel Mode

When equipping DIMM modules for Dual Channel Mode, note that DIMM modules must be equipped in pairs. Therefore, fill first P13 and P11 and P12 and P10 second.



### Note

When using Dual Channel Mode, speed, size and the organization of the DIMMs (one row / two row) must be identical for both pairs.

## Selecting Single Channel Mode

When equipping DIMM modules for Single Channel Mode, fill first P11 and P10 second



### Note

Dual Channel Mode is default. The Single Channel Mode is used only if so specified in delivery specific documentation.

## 8.2.2 DIP-switch settings

The following settings are made with micro switch see the table below:

- Interchangeability code
- MBIF status (in use / not in use).

Table 19. SW1 switch settings.

Switch 1	Setting	Meaning
1-12	OFF*)	Interchangeability code bit 3
2-11	OFF*)	Interchangeability code bit 2
3-10	OFF*)	Interchangeability code bit 1
4-9	OFF*)	Interchangeability code bit 0
5-8	OFF	Not in use
6-7	OFF	Message Bus Interface (MBIF) status: OFF = MBIF in use (bit D3 in register 104h reads 0). In NE installations, when EMB is used, this setting must be ON = MBIF not in use.

\*) The first interchangeability code A corresponds to all switches OFF, after which the settings start to roll for each interchangeability code change.

The table below presents the setting of the interchangeability code.

Table 20. Interchangeability code (ICC) settings (SW1).

ICC code	Switch setting			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

## 8.3 RadiSys CP816-A

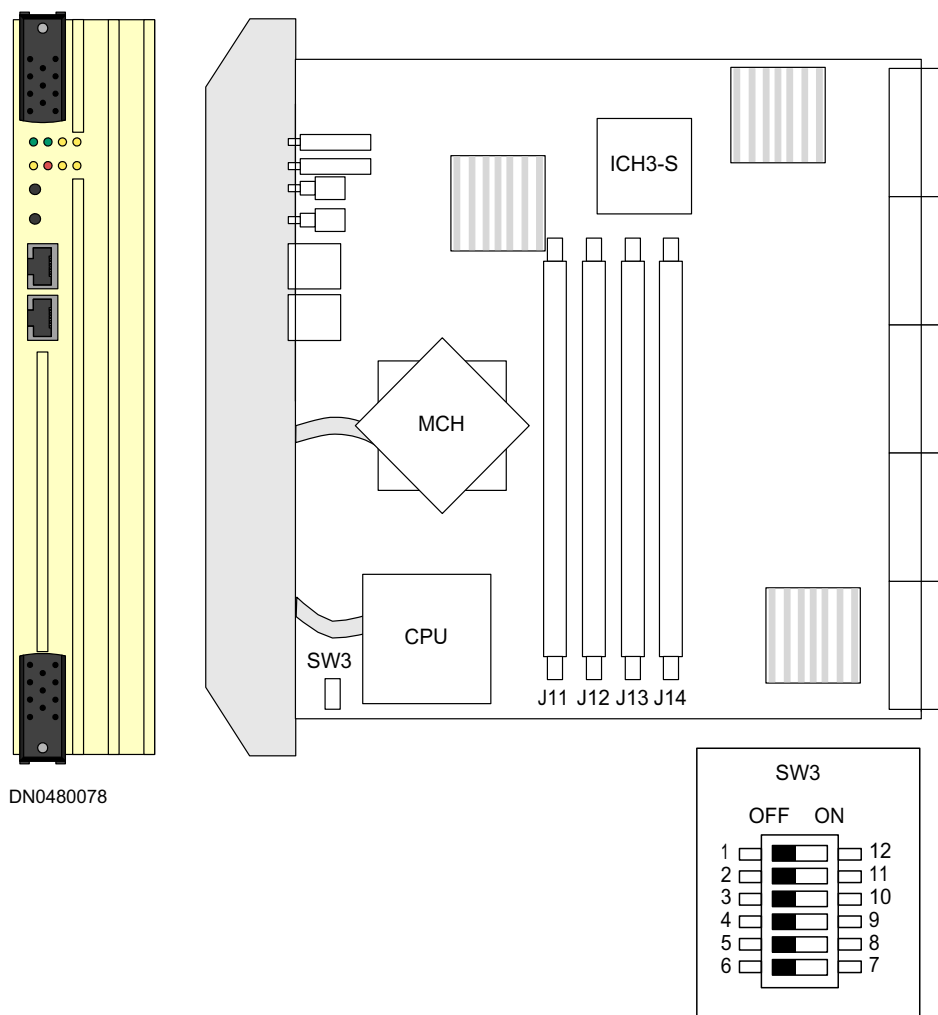


Figure 11. Connectors and switches of the CP816-A

### 8.3.1 Equipping DIMM modules

#### Selecting Dual Channel Mode

When equipping DIMM modules for Dual Channel Mode, note that DIMM modules must be equipped in pairs. Therefore, fill first J14 and J13 and J12 and J11 second.



#### Note

When using Dual Channel Mode, speed, size and the organization of the DIMMs (one row / two row) must be identical for both pairs.

### Selecting Single Channel Mode

When equipping DIMM modules for Single Channel Mode, fill first J14 and J12 second.



#### Note

Dual Channel Mode is default. Single Channel Mode is used only if so specified in delivery specific documentation.

## 8.3.2 DIP-switch settings

The following settings are made with micro switch see the table below:

- Interchangeability code
- MBIF status (in use / not in use).

Table 21. SW3 switch settings.

Switch 1	Setting	Meaning
1-12	OFF*)	Interchangeability code bit 3
2-11	OFF*)	Interchangeability code bit 2
3-10	OFF*)	Interchangeability code bit 1
4-9	OFF*)	Interchangeability code bit 0
5-8	OFF	Not in use
6-7	OFF	Message Bus Interface (MBIF) status: OFF = MBIF in use (bit D3 in register 104h reads 0).  In NE installations, when EMB is used, this setting must be ON = MBIF not in use.

\*) The first interchangeability code A corresponds to all switches OFF, after which the settings start to roll for each interchangeability code change.

The table below presents the setting of the interchangeability code.

Table 22. Interchangeability code (ICC) settings (SW3).

ICC code	Switch setting			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF



# 9

## CP710-AC C111133

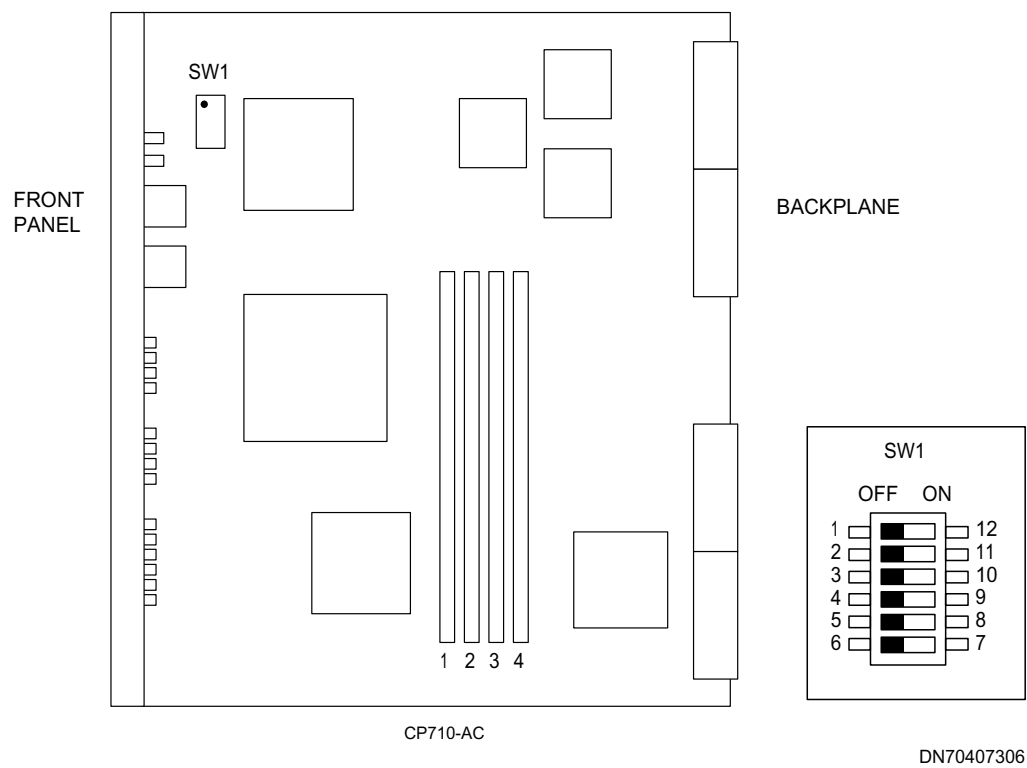


Figure 12. Jumpers of the central processor CP710-AC



## Note

If a total of 3.5 GB memory (3 x 1 GB + 512 MB DIMM) or 3.25 GB memory (3 x 1 GB + 256 MB DIMM) is used with CP710-AC, there is a memory equipment restriction. In this case the 512 MB or 256 MB memory module has to be assembled on the module socket 1 (the module socket closest to the front panel). It is not allowed to assemble it on any other module socket. Equipping order of the memory modules is 1- 2- 3- 4.

Alternative DIP-switch settings are presented in the tables below.

## Switch SW1 settings

Table 23. SW1 switch settings

Switch	Setting	Meaning
1-12	OFF	Interchangeability code bit 3, read by software. See ICC code settings below.
2-11	OFF	Interchangeability code bit 2, read by software. See ICC code settings below.
3-10	OFF	Interchangeability code bit 1, read by software. See ICC code settings below.
4-9	OFF	Interchangeability code bit 0, read by software. See ICC code settings below.
5-8	OFF	Processor speedstep mode OFF = High performance mode. Default.
6-7	OFF	Message Bus Interface (MBIF) usage OFF = MBIF in use. Default ON = MBIF not in use

## Interchangeability code settings (SW1)

Table 24. Interchangeability (ICC) code settings (SW1)

ICC code	Switch setting			
	Switch 1-12 (MSB)	Switch 2-11	Switch 3-10	Switch 4-9 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON

Table 24. Interchangeability (ICC) code settings (SW1) (cont.)

ICC code	Switch setting			
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF



# 10 CP710-AB C109767

The CP710-AB has two vendors that differ in layout but are identical in function. They can be distinguished from each other by the differences in PWB.

## 10.1 Force CP710-AB

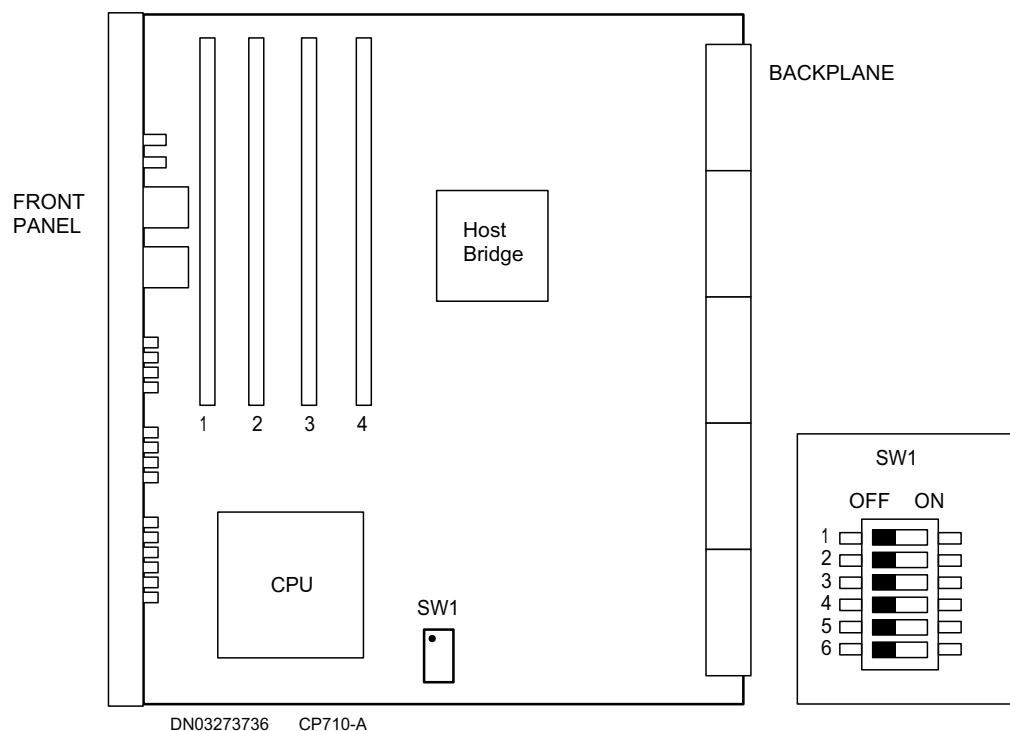


Figure 13. Jumpers of the central processor CP710-AB

## 10.2 RadiSys CP710-AB

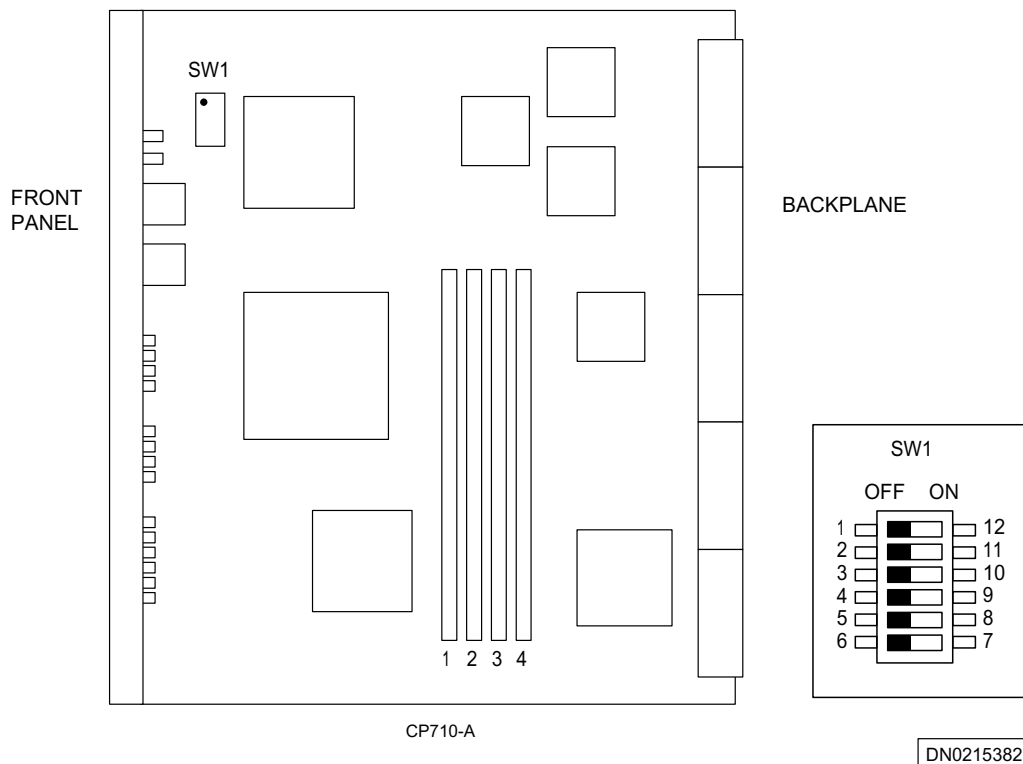


Figure 14. Jumpers of the central processor CP710-AB

## 10.3 DIP-switch settings

Alternative DIP-switch settings are presented in the tables below.

### Switch SW1 settings

Table 25. SW1 switch settings

Switch	Setting	Meaning
SW1-1	OFF	Interchangeability code bit 3, read by software. See the ICC code settings below.
SW1-2	OFF	Interchangeability code bit 2, read by software. See the ICC code settings below.

Table 25. SW1 switch settings (cont.)

Switch	Setting	Meaning
SW1-3	OFF	Interchangeability code bit 1, read by software. See the ICC code settings below.
SW1-4	OFF	Interchangeability code bit 0, read by software. See the ICC code settings below.
SW1-5	OFF	Not in use. Default.
SW1-6	OFF	Message Bus Interface (MBIF) usage OFF = MBIF in use. Default. ON = MBIF not in use

### Interchangeability code settings (SW1 )

Table 26. Interchangeability (ICC) code settings (SW1)

ICC code	Switch setting			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF



#### Note

If a total of 3.5 GB memory (3 x 1 GB + 512 MB DIMM) is used with CP710-AB, there is a memory equipment restriction. In that case the 512 MB memory module has to be assembled on the module socket 1 (module socket closest to the front panel). It is not allowed to assemble it on any other module socket. The equipping order is 1-2-3-4.

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# 11 CP710-A C101180

The CP710-A has two vendors that differ in layout. They can be distinguished from each other by the differences in PWB.

## 11.1 Force CP710-A

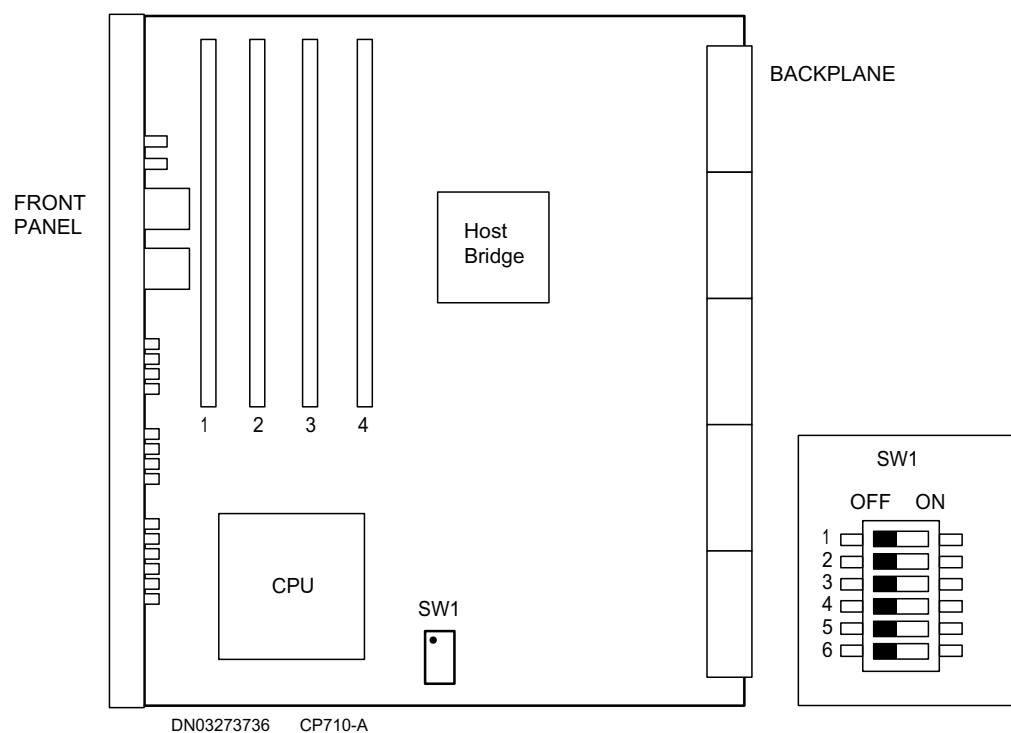


Figure 15. Jumpers of the central processor CP710-A

## 11.2 Radisys CP710-A

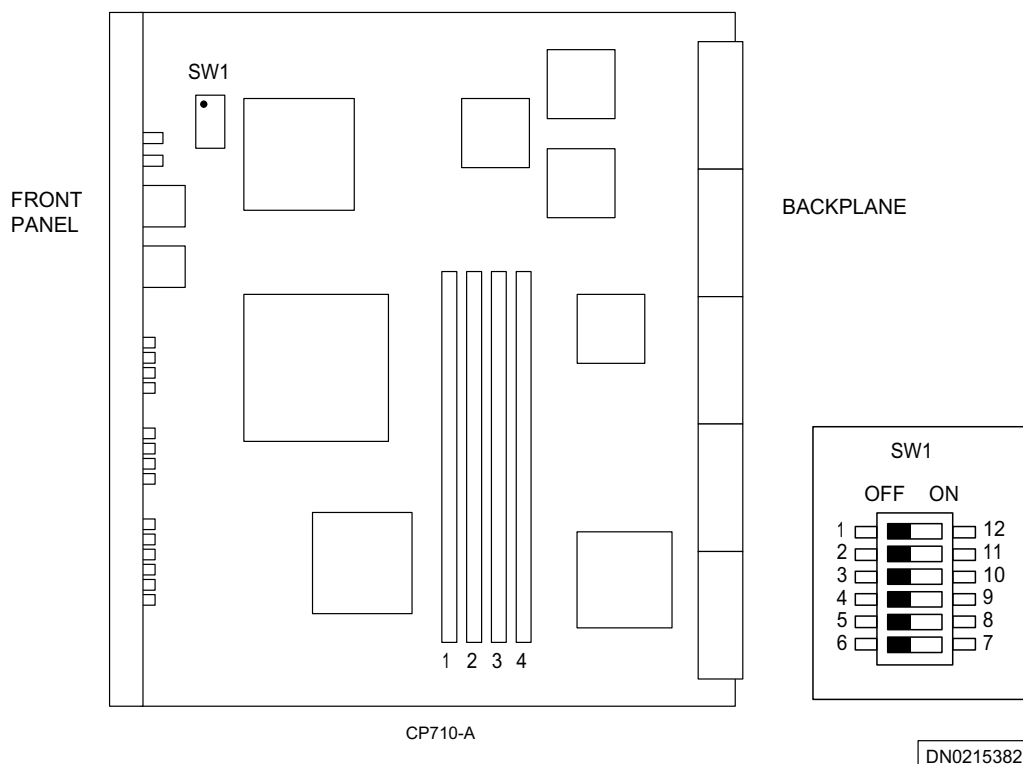


Figure 16. Jumpers of the central processor CP710-A

## 11.3 DIP switch settings

Alternative DIP-switch settings are presented in the tables below.

### Switch SW1 settings

Table 27. SW1 switch settings

Switch	Setting	Meaning
SW1-1	OFF	Interchangeability code bit 3, read by software. See the ICC code settings below.
SW1-2	OFF	Interchangeability code bit 2, read by software. See the ICC code settings below.

Table 27. SW1 switch settings (cont.)

Switch	Setting	Meaning
SW1-3	OFF	Interchangeability code bit 1, read by software. See the ICC code settings below.
SW1-4	OFF	Interchangeability code bit 0, read by software. See the ICC code settings below.
SW1-5	OFF	Not in use. Default.
SW1-6	OFF	Message Bus Interface (MBIF) usage OFF = MBIF in use. Default. ON = MBIF not in use

### Interchangeability code settings (SW1 )

Table 28. Interchangeability (ICC) code settings (SW1)

ICC code	Switch setting			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF



#### Note

If a total of 3.5 GB memory (3 x 1 GB + 512 MB DIMM) or 3.25 GB memory (3 x 1 GB + 256 MB DIMM) is used with CP710-A, there is a memory equipment restriction. In that case the 512 or 256 MB memory module has to be assembled on the module socket 1 (module socket closest to the front panel). It is not allowed to assemble it on any other module socket. Equipping order of the memory modules is 1 - 2 - 3 - 4.

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# 12 ESB26 C108885

There is one jumper group on the board for testing purposes. The jumper setting should not be set during normal operation.

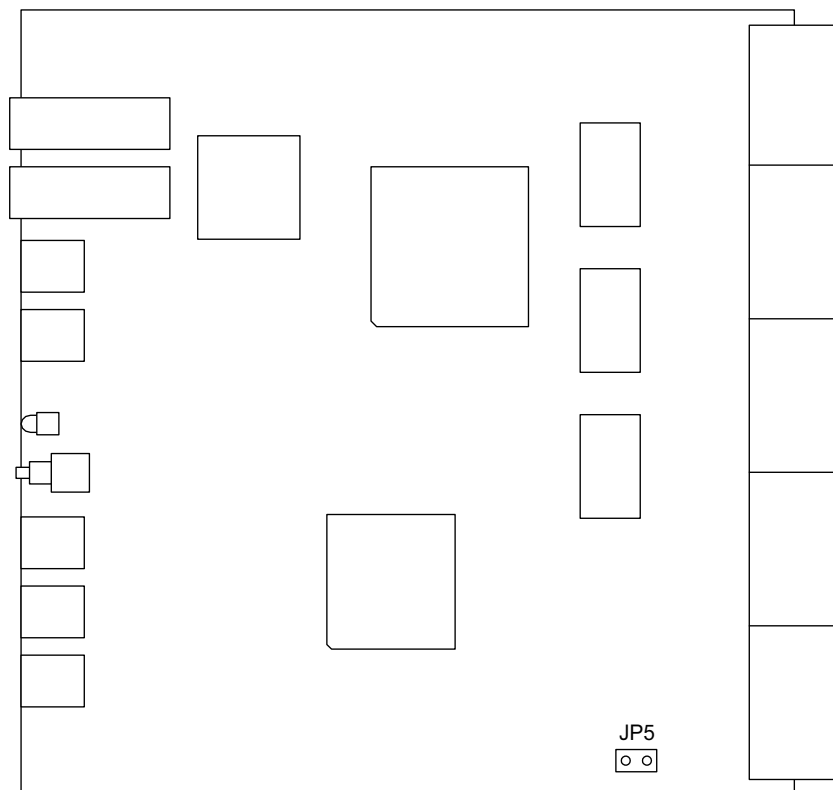


Figure 17. Jumper group of the plug-in unit ESB26

## Standard settings

Jumper group JP5 should not be set during normal operation as shown in the table below.

Table 29. Standard settings of the plug-in unit ESB26.

Group	Jumper	Setting	Meaning
JP5	1-2	OFF	Normal operation

# 13 ESB20-A C108000

There is only one jumper block on the board for testing purposes. No jumpers should be set during normal operation.

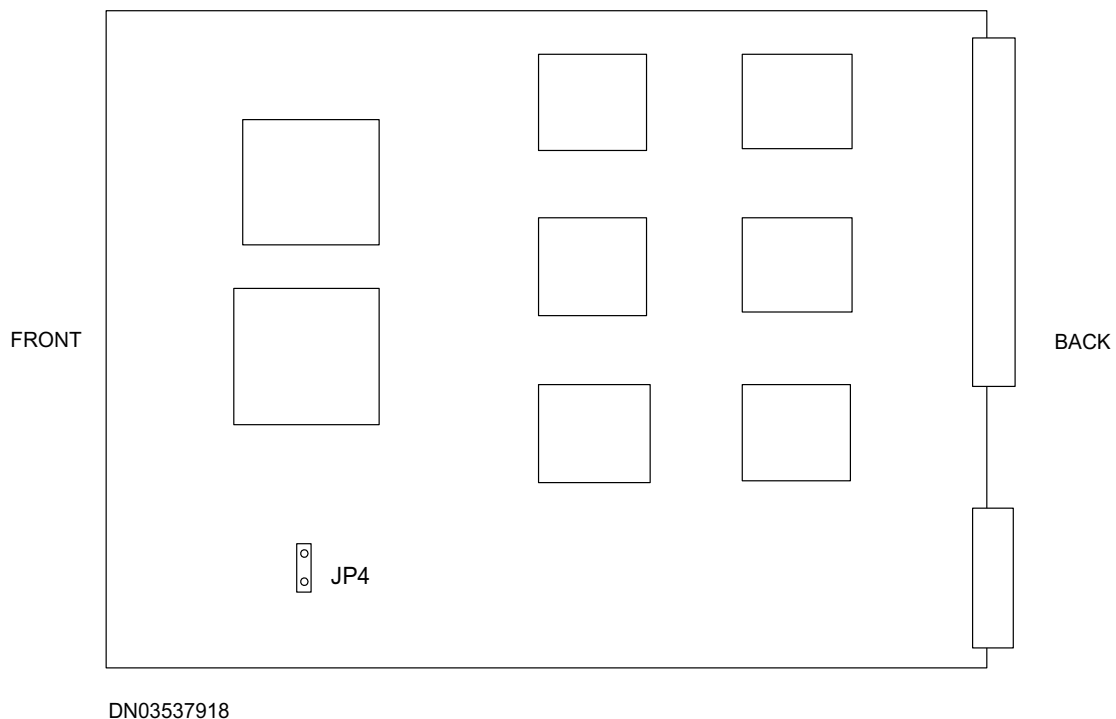


Figure 18. Jumpers of the plug-in unit ESB20-A

## Standard settings

No jumpers should be set in jumper group JP4 during normal operation as shown in the table below.

Table 30. Standard settings of the plug-in unit ESB20-A

Jumper	Setting	Meaning
JP4; 1-2	OFF	Normal operation



# 14 ESB20 C100400

There are no alternatives nor interchangeability settings to be set on the plug-in unit.

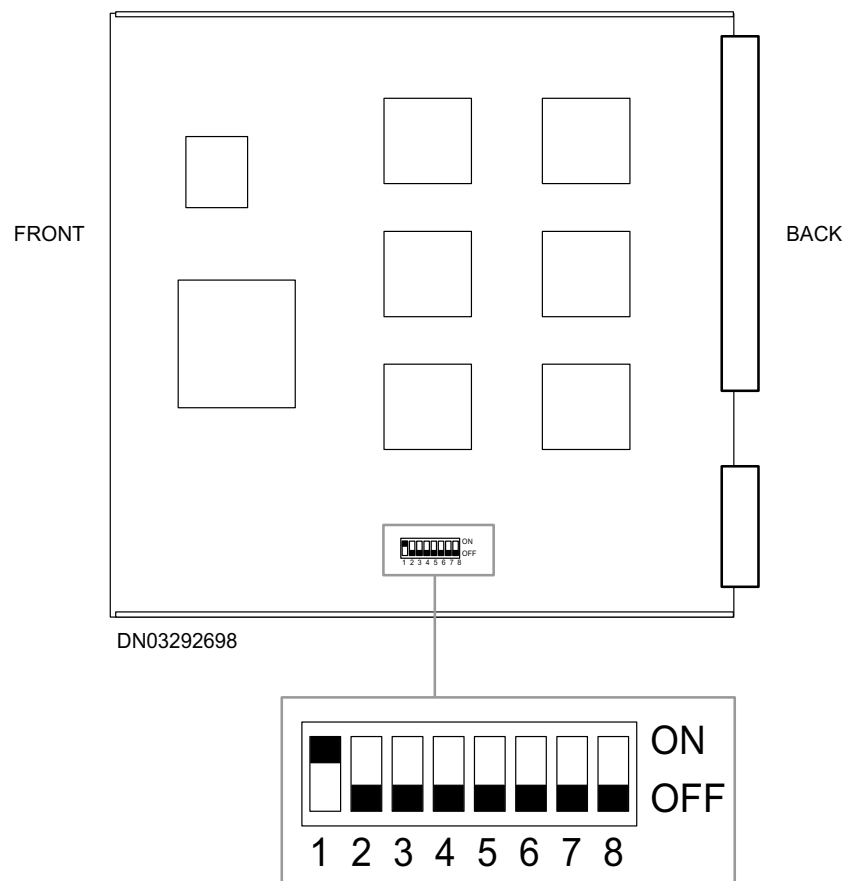


Figure 19. Jumpers of the plug-in unit ESB20

## Standard settings

The DIP-switch SW1 is used for setting the standard settings presented in the table below. The settings must be as listed during normal operation.

Table 31. Standard settings of the plug-in unit ESB20

Jumper	Setting	Meaning
SW1; 1	ON	Normal operation
SW1; 2-8	OFF	Normal operation

# 15 ETS2 C109474

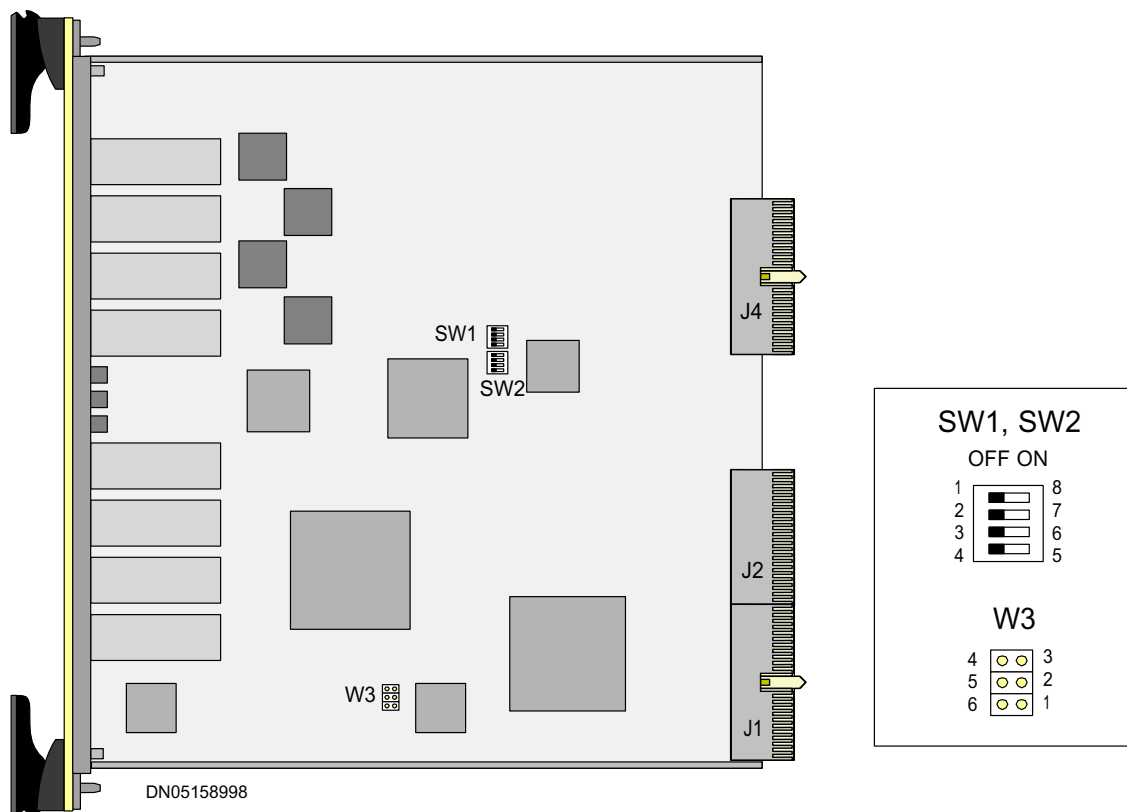


Figure 20. Jumpers and micro switches of the ETS2

## Jumper W3 settings

The setting of the Jumper W3 is presented in the table below (W3). This jumper is not set during normal operation.

Table 32. Jumper W3 settings.

Pins		When not connected/when connected
1	6	External watchdog enabled / External watchdog disabled
2	5	Back plane connector JTAG selected / Emulator connector W4 JTAG selected
3	4	RSTCONF signal pulled low / RSTCONF signal connected to Vcc

### Interchangeability settings SW1

The setting of the interchangeability code is presented in the table below (SW1).

Table 33. Interchangeability code (ICC) settings (SW1).

ICC code	Setting			
	4-5	3-6	2-7	1-8
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

### Unit configuration settings

The unit configuration settings are presented in the table below (SW2).

Table 34. Configuration settings (SW2).

Switch	Default setting	Function
1-8	OFF	Width of the HDLC link: OFF = 16x64 kbit/s, ON = 8x64 kbit/s
2-7	OFF	Reserved for future use
3-6	OFF	Reserved for future use
4-5	OFF	Reserved for future use



# 16 ET16 C109519

The ET16 has two vendors that differ in layout and function of the interface switch. They can be distinguished from each other by the differences in the PWB.

## 16.1 Emerson ET16

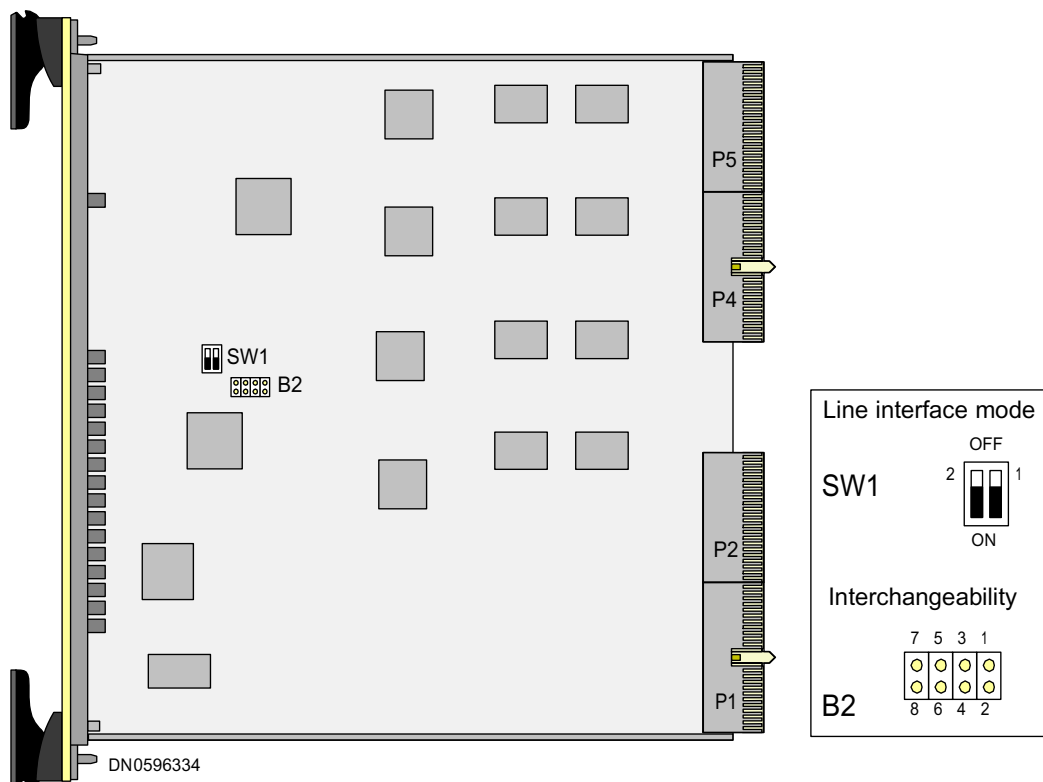


Figure 21. Jumpers and micro switches of the Emerson ET16

## Configuration settings

The line interface mode settings are presented in the table below (SW1).

Switch		Function
1	2	
OFF	OFF	E1 (default)
OFF	ON	T1



### Note

E1 setting applies to both symmetric (120Ω) and asymmetric (75Ω) interfaces. Conversion from symmetric to asymmetric is realized in connector panel CPETC. Connector panel CPETS is needed for symmetric E1 interface.

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## 16.2 Interphase ET16

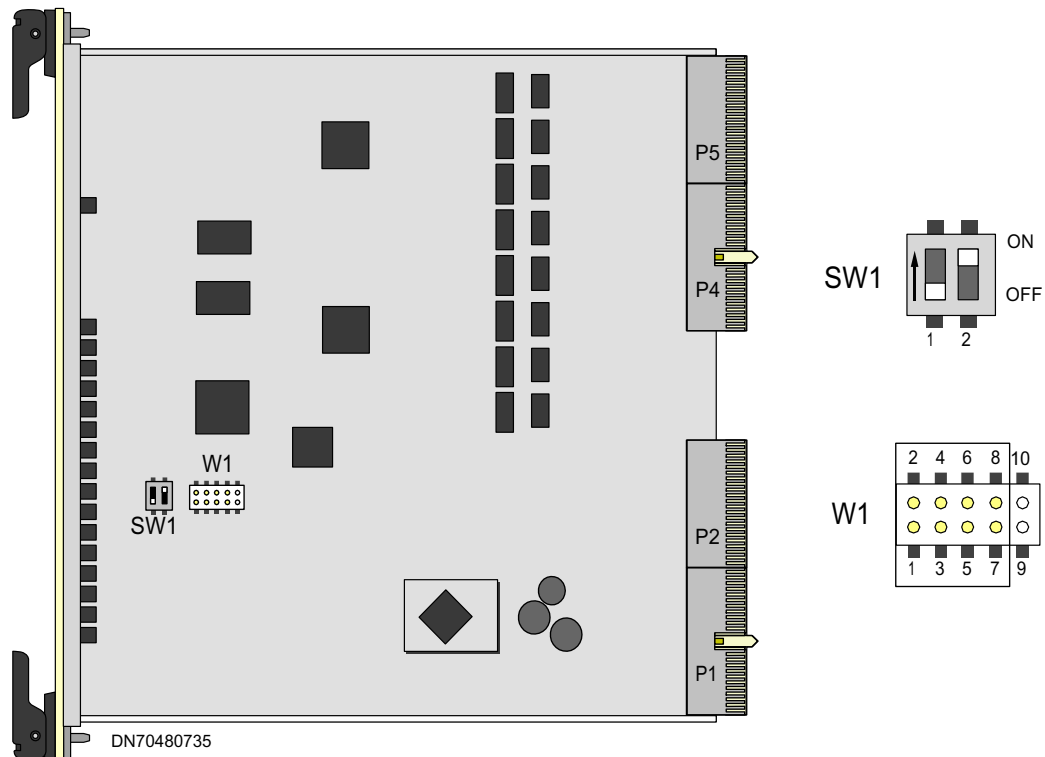


Figure 22. Jumpers and micro switches of the Interphase ET16

### Configuration settings

The line interface mode settings are presented in the table below (SW1).

Switch		Function
1	2	
OFF	OFF	JT1
OFF	ON	T1
ON	OFF	E1/75R
ON	ON	E1/120R

## 16.3 Interchangeability settings

The setting of the interchangeability code is presented in the table below (B2).

Table 35. Interchangeability code (ICC) settings (B2).

ICC code	Setting			
	7-8	5-6	3-4	1-2
A	ON	ON	ON	ON
B	ON	ON	ON	OFF
C	ON	ON	OFF	ON
D	ON	ON	OFF	OFF
E	ON	OFF	ON	ON
F	ON	OFF	ON	OFF
G	ON	OFF	OFF	ON
H	ON	OFF	OFF	OFF
J	OFF	ON	ON	ON
K	OFF	ON	ON	OFF
L	OFF	ON	OFF	ON
M	OFF	ON	OFF	OFF
N	OFF	OFF	ON	ON
P	OFF	OFF	ON	OFF
R	OFF	OFF	OFF	ON
S	OFF	OFF	OFF	OFF

# 17 ET4E C108784, ET4A C108786

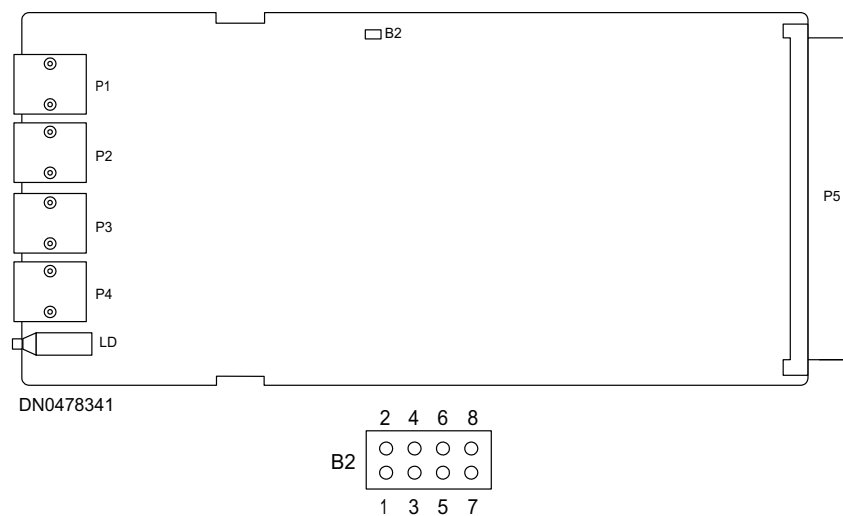


Figure 23. Connectors, LED indicator and jumper group B2

## Interchangeability code

The setting of the interchangeability code is presented in the table below (B2).

Table 36. Interchangeability code (ICC) settings (B2).

ICC code	Setting			
	7-8	5-6	3-4	1-2
A	ON	ON	ON	ON
B	ON	ON	ON	OFF
C	ON	ON	OFF	ON

Table 36. Interchangeability code (ICC) settings (B2). (cont.)

ICC code	Setting			
D	ON	ON	OFF	OFF
E	ON	OFF	ON	ON
F	ON	OFF	ON	OFF
G	ON	OFF	OFF	ON
H	ON	OFF	OFF	OFF
J	OFF	ON	ON	ON
K	OFF	ON	ON	OFF
L	OFF	ON	OFF	ON
M	OFF	ON	OFF	OFF
N	OFF	OFF	ON	ON
P	OFF	OFF	ON	OFF
R	OFF	OFF	OFF	ON
S	OFF	OFF	OFF	OFF

# 18 ET4E-C C108785

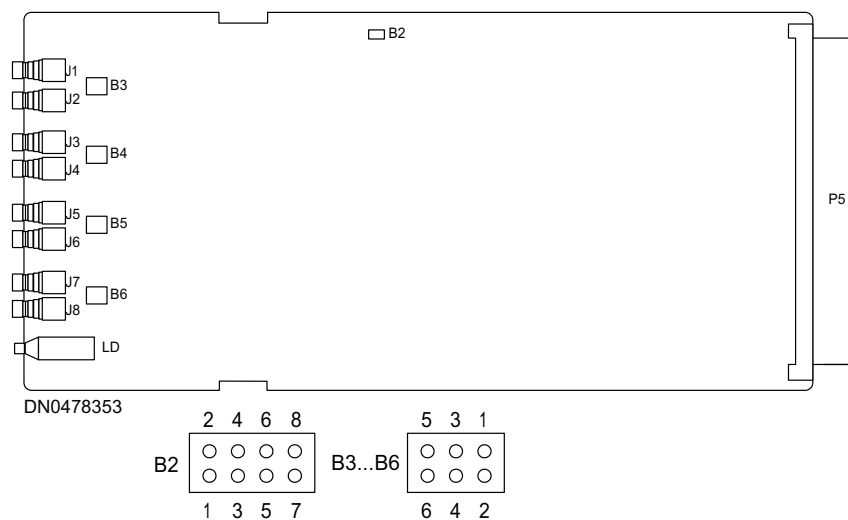


Figure 24. Connectors, LED indicator and jumper groups B2 and B3...B6

## Interchangeability code

The setting of the interchangeability code (ICC) with B2 is presented in the table below.

Table 37. Interchangeability code (ICC) settings (B2).

ICC code	Setting			
	7-8	5-6	3-4	1-2
A	ON	ON	ON	ON
B	ON	ON	ON	OFF
C	ON	ON	OFF	ON

Table 37. Interchangeability code (ICC) settings (B2). (cont.)

ICC code	Setting			
D	ON	ON	OFF	OFF
E	ON	OFF	ON	ON
F	ON	OFF	ON	OFF
G	ON	OFF	OFF	ON
H	ON	OFF	OFF	OFF
J	OFF	ON	ON	ON
K	OFF	ON	ON	OFF
L	OFF	ON	OFF	ON
M	OFF	ON	OFF	OFF
N	OFF	OFF	ON	ON
P	OFF	OFF	ON	OFF
R	OFF	OFF	OFF	ON
s	OFF	OFF	OFF	OFF

The selection of the cable sheath is presented in the table below (B3...B6).

Table 38. The selection of the cable sheath.

Selection criteria	Jumper	Note
Output direction cable sheath of circuit 0 not connected	B3: 4 - 6	Factory setting
Output direction cable sheath of circuit 0 galvanically connected to GND	B3: 2 - 4	
Input direction cable sheath of circuit 0 not connected	B3: 3 - 5	Factory setting
Input direction cable sheath of circuit 0 galvanically connected to GND	B3: 1 - 3	
Output direction cable sheath of circuit 1 not connected	B4: 4 - 6	Factory setting
Output direction cable sheath of circuit 1 galvanically connected to GND	B4: 2 - 4	
Input direction cable sheath of circuit 1 not connected	B4: 3 - 5	Factory setting

Table 38. The selection of the cable sheath. (cont.)

Selection criteria	Jumper	Note
Input direction cable sheath of circuit 1 galvanically connected to GND	B4: 1 - 3	
Output direction cable sheath of circuit 2 not connected	B5: 4 - 6	Factory setting
Output direction cable sheath of circuit 2 galvanically connected to GND	B5: 2 - 4	
Input direction cable sheath of circuit 2 not connected	B5: 3 - 5	Factory setting
Input direction cable sheath of circuit 2 galvanically connected to GND	B5: 1 - 3	
Output direction cable sheath of circuit 3 not connected	B6: 4 - 6	Factory setting
Output direction cable sheath of circuit 3 galvanically connected to GND	B6: 2 - 4	
Input direction cable sheath of circuit 3 not connected	B6: 3 - 5	Factory setting
Input direction cable sheath of circuit 3 galvanically connected to GND	B6: 1 - 3	





# 19 ET2A C08781

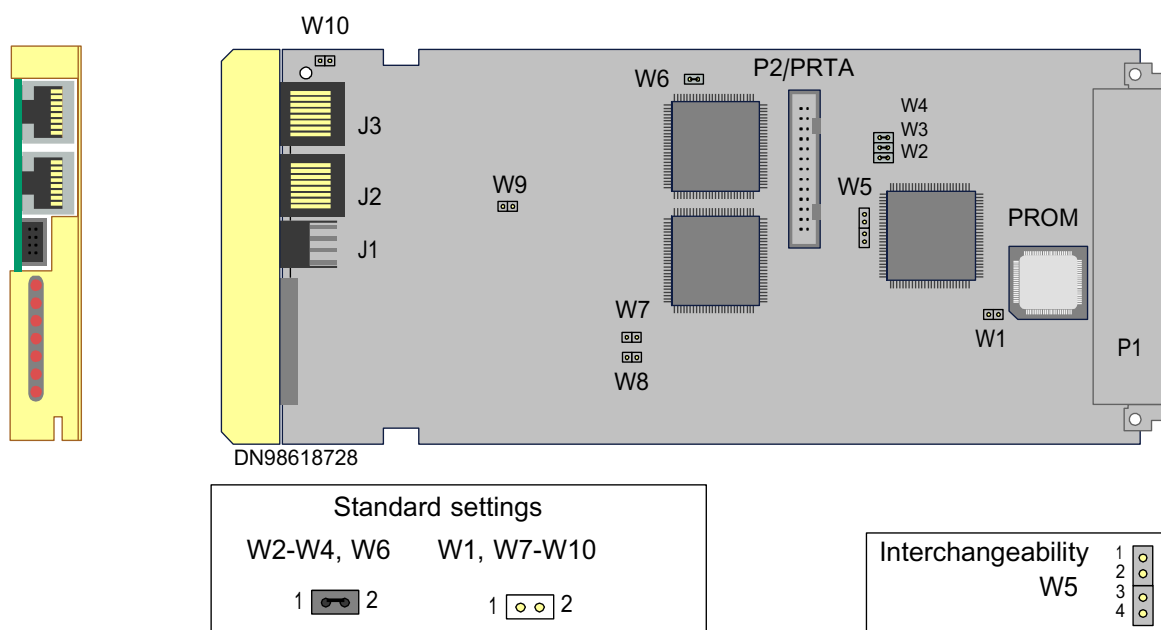


Figure 25. Jumper groups and EPROM circuits of plug-in unit ET2A

Standard settings are presented in the table below, and the jumpers W1 through W10 must be set as shown in normal operation.

There are no alternative settings available on the plug-in unit.

Jumper group W5 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

## Standard settings (W1-W4, W6-W10)

Table 39. Standard settings of ET2A (W1-W4, W6-W10)

Jumper	Setting	Meaning
W1;1 - 2	OFF	Clock oscillator of processor connected (for testing)
W2;1 - 2	ON	Jumper readable by program; not in use
W3;1 - 2	ON	Clock oscillator for processor connected (for testing)
W4;1 - 2	ON	Processor RESET signal connected (for testing)
W6;1 - 2	ON	6.176 MHz signal connected to interface circuit
W7;1 - 2	OFF	-5 V (pin 2) and ground (pin 1) for testing
W8;1 - 2	OFF	+5 V (pin 1) and ground (pin 2) for testing
W9;1 - 2	OFF	Ground potential for testing
W10;1 - 2	OFF	Overvoltage ground of T1 interface separated from digital ground

## Interchangeability code settings (W5)

The currently valid interchangeability code is set at the factory.

Table 40. Interchangeability code settings of ET2A (W5)

ICC code	W5 setting	
	1 - 2	3 - 4
A, E, J or N	ON	ON
B, F, K or P	OFF	ON
C, G, L or R	ON	OFF
D, H, M or S	OFF	OFF

# 20

## ET2A-T C105509, ECE2-A C105512, ET2A-TB C110380, ECE2-AB C110379

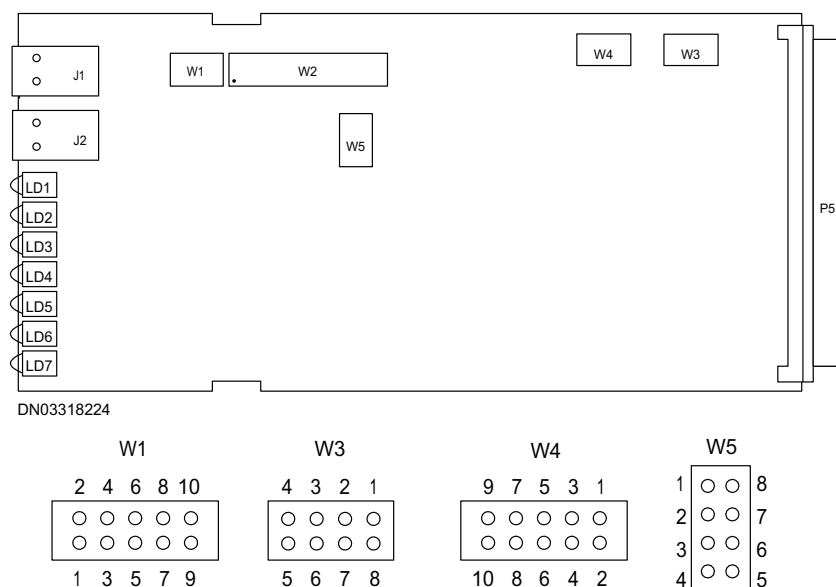


Figure 26. Jumpers of ET2A-T/-TB and ECE2-A/-AB



### Note

W2 is a PRTA connector.

### W4

The following tables present user changeable settings. By default, all the strappings are unset.



### Note

How setting W4: 9-10 functions, depends on the Interchangeability code (A or B) of the plug-in unit.

Table 41. Strappings of ET2A-T/-TB and ECE2-A/-AB (W4).

Connection	Setting	Meaning	Note
W4	1-2	Zero Suppression mode Set: Zero Suppression enabled Unset: Zero Suppression disabled	
	3-4	T1/JT1 mode Set: JT1 Unset: T1	
	5-6	Used only in E1 variants.	
	7-8	Echo cancellation mode Set: ISC Unset: MSC	
	9-10	Flash boot sector protection A: Set: Unprotected Unset: Protected B: Set: Protected Unset: Unprotected	A = Interchangeability code A B = Interchangeability code B

## W3, Interchangeability code settings

Table 42. Interchangeability (ICC) code settings (W3).

ICC code	Setting			
	W3: 4-5 (MSB)	W3: 3-6	W3: 2-7	W3: 1-8 (LSB)
A	OFF	OFF	OFF	OFF

Table 42. Interchangeability (ICC) code settings (W3). (cont.)

ICC code	Setting			
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

### W1, W2 and W5

The FPGA, FALC56 and daughter board include a JTAG interface (W1), which is connected to a 2x5-pin strip.

W2 is a PRTA interface (for test adapter).

W5 is used for watchdog settings, see the table below.

Table 43. Watchdog settings (W5).

Connection	Setting	Setting
W5	1-8	Spare
	2-7	Spare
	3-6	Spare
	4-5	Watchdog set: disabled Watchdog unset: enabled (default)

Spare strappings can be removed and used in other locations, if need be.

# 21 ET2E-S C08901

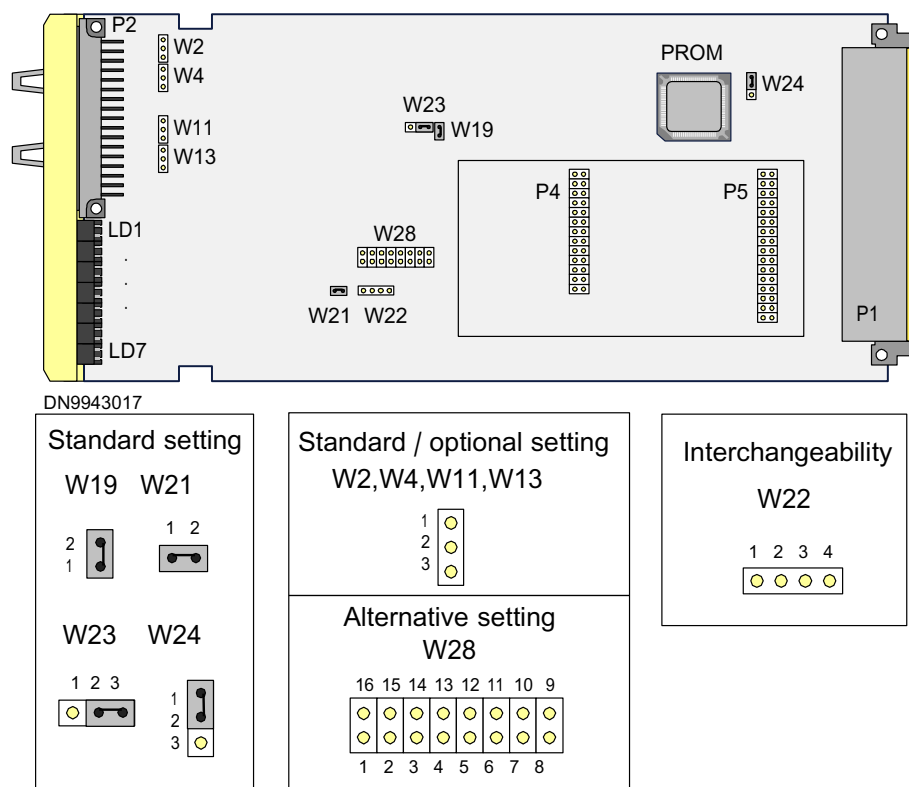


Figure 27. Jumpers and EPROM circuits of plug-in unit ET2E-S

Standard settings are presented in the table below, and the jumpers W2, W4, W11, W13, W19, W21, W23, and W24 must be set as shown during normal operation.

Optional settings for grounding the cable sheaths (W2, W4, W11, and W13) are available for some applications if required.

Alternative settings are presented in the table below, and the setting of jumpers on W28 depends on the application. All the setting alternatives are presented.

Jumper group W22 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

A daughter board ET2DV (C 23200), implementing the V.11 interface of the ET2E and the through-connection of Sa bits, can be equipped to connectors P4 and P5 located on the plug-in unit.

### Standard settings

The standard jumper settings for ET2E-S are described in the table below.

Table 44. Standard settings of ET2E-S

Jumper	Setting	Meaning
W2;1 - 2	OFF	The plug-in unit ground is not connected with ET interface cables in the incoming or the outgoing transmission direction.  These are default settings, but in some applications these can be changed if required; See <i>Optional grounding settings</i> below.
W2;2 - 3	OFF	
W4;1 - 2	OFF	
W4;2 - 3	OFF	
W11;1 - 2	OFF	
W11;2 - 3	OFF	
W13;1 - 2	OFF	
W13;2 - 3	OFF	
W19;1 - 2	ON	20 MHz clock connected to CPU
W21;1 - 2	ON	Watchdog reset enabled
W23;2 - 3	ON	256 kbyte of RAM memory selected for code area
W24;1 - 2	ON	Timer 0 / 1.25 MHz clock

### Alternative settings

Table 45. Alternative settings of ET2E-S

Meaning	Jumper	Setting
<i>Selection of line code</i>		
Double frame mode on circuit 0	W28;1 - 16	ON
CRC4 mode on circuit 0 (Default setting)	W28;1 - 16	OFF



Table 45. Alternative settings of ET2E-S (cont.)

Meaning	Jumper	Setting
Double frame mode on circuit 1	W28;2 - 15	ON
CRC4 mode on circuit 1(Default setting)	W28;2 - 15	OFF
<i>Selection of function mode (program can bypass the settings concerned)</i>		
ET2E in transparent mode	W28;4 - 13	OFF
	W28;5 - 12	OFF
ET2E in through-connection mode of Sa bits	W28;4 - 13	ON
	W28;5 - 12	OFF
ET2E in normal mose (Default setting)	W28;4 - 13	OFF
	W28;5 - 12	ON
ET2E in V.11 mode	W28;4 - 13	ON
	W28;5 - 12	ON
Bits 5 and 6 of the odd T0 in use (Default setting)	W28;3 - 14	ON
Bits 5, 6, 7 and 8 of the odd T0 in use	W28;3 - 14	OFF
<i>Supervision of the far-end error ratio (10e-6); T0/B4-bit</i>		
An alarm is sent to the far end	W28;7 - 10	ON
No alarm is sent to the far end (Default setting)	W28;7 - 10	OFF
<i>Transmission redundancy</i>		
Transmission redundancy in use	W28;8 - 9	ON
Transmission redundancy not in use (Default setting)	W28;8 - 9	OFF

### Optional grounding settings

Table 46. Optional settings for grounding the cable sheaths of ET2E-S (W2, W4, W11 and W13)

Jumper group	Setting	Selection criteria	Notes
W2;ALL	OFF	The cable sheath of the PCM trunk circuit 0 in the outgoing direction is separated from the plug-in unit ground.	Default 1)
W2;2 - 3	ON	The cable sheath of the PCM trunk circuit 0 in the outgoing direction is galvanically connected to the plug-in unit ground.	1)
W2;1 - 2	ON	The cable sheath of the PCM trunk circuit 0 in the outgoing direction is capacitively connected to the plug-in unit ground.	1)

Table 46. Optional settings for grounding the cable sheaths of ET2E-S (W2, W4, W11 and W13) (cont.)

Jumper group	Setting	Selection criteria	Notes
W4; ALL	OFF	The cable sheath of the PCM trunk circuit 0 in the incoming direction is separated from the plug-in unit ground.	Default 1)
W4;2 - 3	ON	The cable sheath of the PCM trunk circuit 0 in the incoming direction is galvanically connected to the plug-in unit ground.	1)
W4;1 - 2	ON	The cable sheath of the PCM trunk circuit 0 in the incoming direction is capacitively connected to the plug-in unit ground.	1)
W11;ALL	OFF	The cable sheath of the PCM trunk circuit 1 in the outgoing direction is separated from the plug-in unit ground.	Default 1)
W11;2 - 3	ON	The cable sheath of the PCM trunk circuit 1 in the outgoing direction is galvanically connected to the plug-in unit ground.	1)
W11;1 - 2	ON	The cable sheath of the PCM trunk circuit 1 in the outgoing direction is capacitively connected to the plug-in unit ground.	1)
W13;ALL	OFF	The cable sheath of the PCM trunk circuit 1 in the incoming direction is separated from the plug-in unit ground.	Default 1)
W13;2 - 3	ON	The cable sheath of the PCM trunk circuit 1 in the incoming direction is galvanically connected to the plug-in unit ground.	1)
W13;1 - 2	ON	The cable sheath of the PCM trunk circuit 1 in the incoming direction is capacitively connected to the plug-in unit ground.	1)

1) The default settings that are factory settings (no jumpers set) are normally applicable (M92 and M98 mechanics) as shown in *Standard settings* above. In the i-series network elements (M98) these settings have no meaning. In arrangements where PCM trunk cables are brought to the front panels of ET units (for example BSC, BSC2, BSC3i, and TCSM2 applications) these settings can be changed if required. More information on grounding alternatives is available in the document: *Grounding of External Interface Cables*.

## Interchangeability code settings

Table 47. Interchangeability code settings of ET2E-S (W22)

ICC code	W22 setting	
	1 - 2	3 - 4
A, E, J or N	ON	ON
B, F, K or P	OFF	ON
C, G, L or R	ON	OFF
D, H, M or S	OFF	OFF



# 22 ET2E-SC C08902

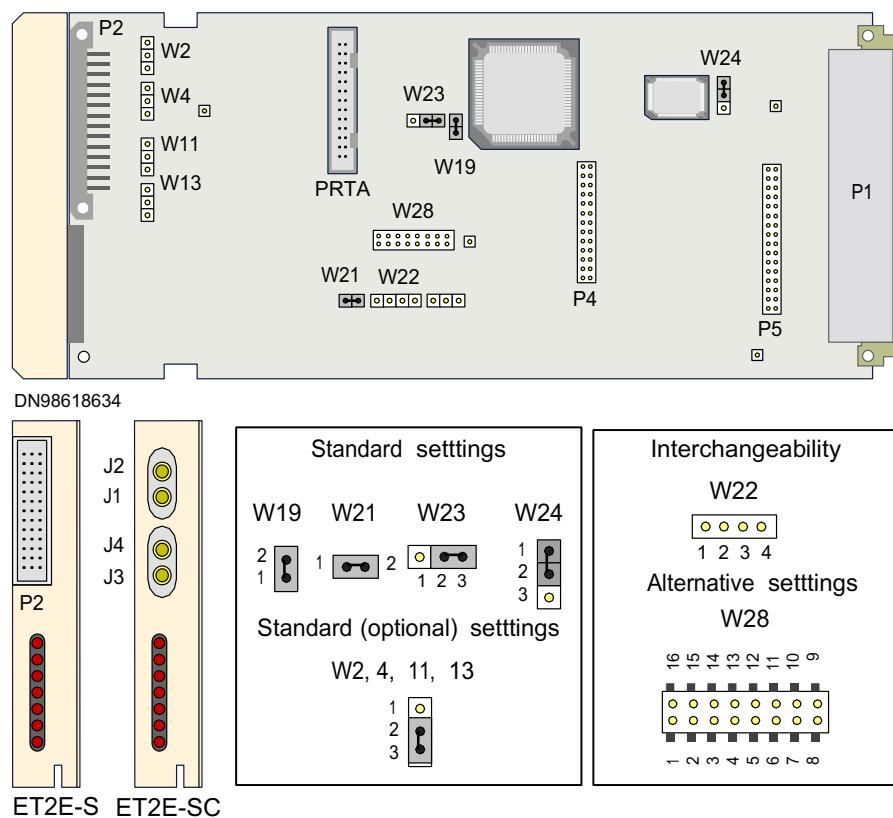


Figure 28. Jumpers and EPROM circuits of plug-in unit ET2E-SC

Standard settings are presented in the table below, and the jumpers W2, W4, W11, W13, W19, W21, W23, and W24 must be set as shown in normal operation.

Alternative settings are presented in the table below, and the setting of jumpers on W28 depends on the application. All the setting alternatives are presented.

Jumper group W22 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

A daughter board ET2DV (C 23200), implementing the V.11 interface of the ET2E and the through-connection of Sa bits, can be equipped to connectors P4 and P5 located on the plug-in unit.

### Standard settings (W2, W3, W11, W12, W19, W21, W23, W24)

Table 48. Standard settings of ET2E-SC (W2, W3, W11, W12, W19, W21, W23, W24)

Jumper	Setting	Meaning
W2;2 - 3	ON	The plug-in unit ground is connected galvanically to the cable sheath of the external interface cables in incoming and outgoing direction 1)
W4;2 - 3	ON	
W11;2 - 3	ON	
W13;2 - 3	ON	
W19;1 - 2	ON	20 MHz clock connected to CPU
W21;1 - 2	ON	Watchdog reset enabled
W23;2 - 3	ON	256 kbyte of RAM memory selected for code area
W24;1 - 2	ON	Timer 0 / 1.25 MHz clock

1) In the M92 and M98 network elements these are default settings, but in some applications they can be changed if required; see *Optional grounding settings* below.

### Alternative settings (W28)

Table 49. Alternative settings of ET2E-SC (W28)

Meaning	Jumper	Setting
<i>Selection of line code:</i>		
Double frame mode on circuit 0	W28;1 - 16	ON
CRC4 mode on circuit 0 (Default setting)	W28;1 - 16	OFF

Table 49. Alternative settings of ET2E-SC (W28) (cont.)

Meaning	Jumper	Setting
Double frame mode on circuit 1	W28;2 - 15	ON
CRC4 mode on circuit 1 (Default setting)	W28;2 - 15	OFF
<i>Selection of function mode (program can bypass the settings concerned):</i>		
ET2E in transparent mode	W28;4 - 13 W28;5 - 12	OFF OFF
ET2E in through-connection mode of Sa bits	W28;4 - 13 W28;5 - 12	ON OFF
ET2E in normal mode (Default setting)	W28;4 - 13 W28;5 - 12	OFF ON
ET2E in V.11 mode:	W28;4 - 13 W28;5 - 12	ON ON
1) Bits 5 and 6 of the odd T0 in use (Default setting)	W28;3 - 14	ON
2) Bits 5, 6, 7, and 8 of the odd T0 in use	W28;3 - 14	OFF
<i>Supervision of the far-end error ratio (10e-6); T0/B4-bit:</i>		
An alarm is sent to the far end	W28;7 - 10	ON
No alarm is sent to the far end (Default setting)	W28;7 - 10	OFF
<i>Transmission redundancy:</i>		
Transmission redundancy in use	W28;8 - 9	ON
Transmission redundancy not in use (Default setting)	W28;8 - 9	OFF

### Optional grounding settings (W2, W4, W11, W13)

Table 50. Optional settings for grounding the cable sheaths of ET2E-SC (W2, W4, W11, and W13)

Jumper group	Setting	Selection criteria	Notes
W2;ALL	OFF	The cable sheath of the PCM trunk circuit 0 in the outgoing direction is separated from the plug-in unit ground.	1)
W2;2 - 3	ON	The cable sheath of the PCM trunk circuit 0 in the outgoing direction is galvanically connected to the plug-in unit ground.	Default 1)
W2;1 - 2	ON	The cable sheath of the PCM trunk circuit 0 in the outgoing direction is capacitively connected to the plug-in unit ground.	1)

Table 50. Optional settings for grounding the cable sheaths of ET2E-SC (W2, W4, W11, and W13) (cont.)

Jumper group	Setting	Selection criteria	Notes
W4; ALL	OFF	The cable sheath of the PCM trunk circuit 0 in the incoming direction is separated from the plug-in unit ground.	1)
W4;2 - 3	ON	The cable sheath of the PCM trunk circuit 0 in the incoming direction is galvanically connected to the plug-in unit ground.	Default 1)
W4;1 - 2	ON	The cable sheath of the PCM trunk circuit 0 in the incoming direction is capacitively connected to the plug-in unit ground.	1)
W11;ALL	OFF	The cable sheath of the PCM trunk circuit 1 in the outgoing direction is separated from the plug-in unit ground.	1)
W11;2 - 3	ON	The cable sheath of the PCM trunk circuit 1 in the outgoing direction is galvanically connected to the plug-in unit ground.	Default 1)
W11;1 - 2	ON	The cable sheath of the PCM trunk circuit 1 in the outgoing direction is capacitively connected to the plug-in unit ground.	1)
W13;ALL	OFF	The cable sheath of the PCM trunk circuit 1 in the incoming direction is separated from the plug-in unit ground.	1)
W13;2 - 3	ON	The cable sheath of the PCM trunk circuit 1 in the incoming direction is galvanically connected to the plug-in unit ground.	Default 1)
W13;1 - 2	ON	The cable sheath of the PCM trunk circuit 1 in the incoming direction is capacitively connected to the plug-in unit ground.	1)

1) The default settings that are factory settings are normally applicable (M92 and M98 mechanics) as shown in *Standard settings* above. However, these settings can be changed as described in this table if required. More information on grounding alternatives is available in the document: *Grounding of External Interface Cables*.



## Interchangeability code settings (W22)

Table 51. Interchangeability code settings of ET2E-SC (W22)

ICC code	W22 setting	
	1 - 2	3 - 4
A, E, J or N	ON	ON
B, F, K or P	OFF	ON
C, G, L or R	ON	OFF
D, H, M or S	OFF	OFF



# 23

## ET2E-TC C105508, ECE2-C C105511, ET2E-TCB C110307, ECE2-CB C110352

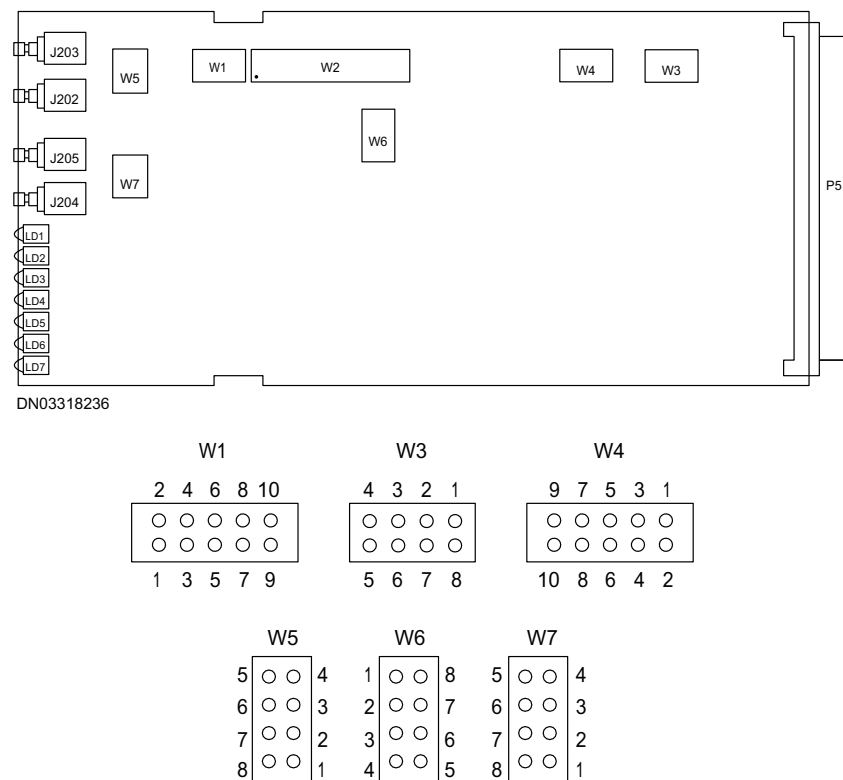


Figure 29. Jumpers of ET2E-TC/-TCB and ECE2-C/-CB



### Note

W2 is a PRTA connector.

## W4, W5 and W7

The following table presents user changeable settings. By default, all the strappings are unset.



### Note

How setting W4: 9-10 functions, depends on the Interchangeability code (A or B) of the plug-in unit.

Table 52. Strappings of ET2E-TC/-TCB and ECE2-C/-CB (W4, W5 and W7).

Connection	Setting	Meaning	Note
W4	1-2	Used only in T1/JT1 variants.	
	3-4	Used only in T1/JT1 variants.	
	5-6	B4/TS0 Set: Bit error rate alarm enabled. Unset: Normal operating mode.	
	7-8	Echo cancellation mode Set: ISC Unset: MSC	
	9-10	Flash boot sector protection A: Set: Unprotected Unset: Protected B: Set: Protected Unset: Unprotected	A = Interchangeability code A B = Interchangeability code B

Table 52. Strappings of ET2E-TC/-TCB and ECE2-C/-CB (W4, W5 and W7). (cont.)

Connection	Setting	Meaning	Note
W5	1-8	PCM0 cable sheath grounding, receive Set: Grounded Unset: Not grounded	
	2-7	Spare	
	3-6	PCM0 cable sheath grounding, transmit Set: Grounded Unset: Not grounded	
	4-5	Spare	
W7	1-8	PCM1 cable sheath grounding, receive Set: Grounded Unset: Not grounded	
	2-7	Spare	
	3-6	PCM1 cable sheath grounding, transmit Set: Grounded Unset: Not grounded	
	4-5	Spare	

### W3, Interchangeability code settings

Table 53. Interchangeability (ICC) code settings (W3).

ICC code	Setting			
	W3: 4-5 (MSB)	W3: 3-6	W3: 2-7	W3: 1-8 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON

Table 53. Interchangeability (ICC) code settings (W3). (cont.)

ICC code	Setting			
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

## W1, W2 and W6

The FPGA, FALC56 and daughter board include a JTAG interface (W1), which is connected to a 2x5 pin strip.

W2 is a PRTA interface (for test adapter).

W6 is used for watchdog settings, see the table below.

Table 54. Watchdog settings (W6).

Connection	Setting	Setting
W6	1-8	Spare
	2-7	Spare
	3-6	Spare
	4-5	Watchdog set: disabled Watchdog unset: enabled (default)

Spare strappings can be removed and used in other locations, if need be.

# 24 ET2E-T C105507, ECE2 C105510, ET2E-TB C110306, ECE2-B C110351

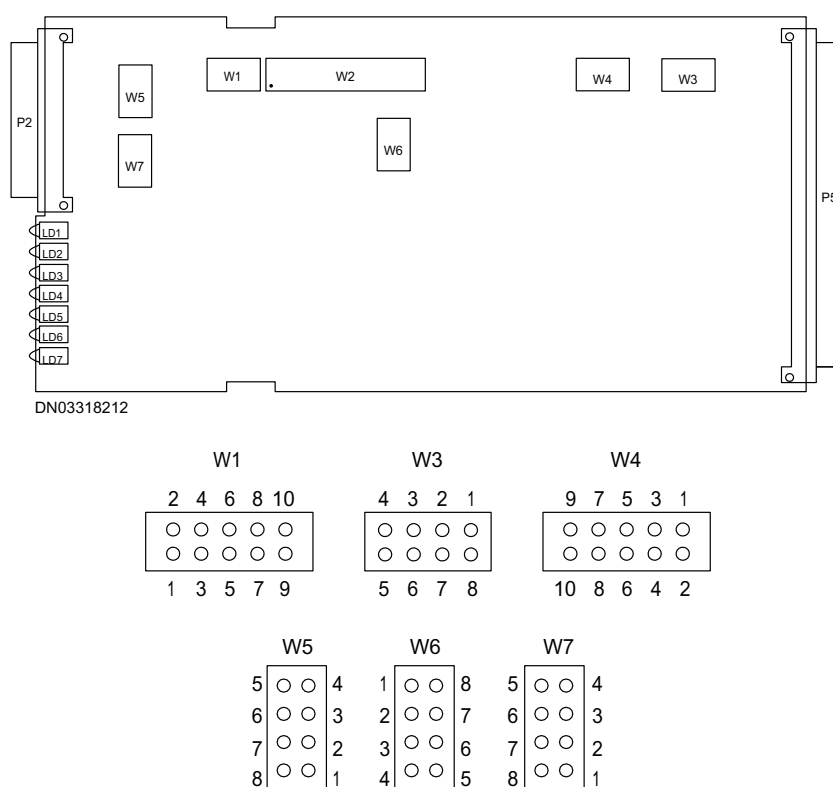


Figure 30. Jumpers of ET2E-T/-TB and ECE2/-B



## Note

W2 is a PRTA connector.

## W4, W5 and W7

The table below presents user changeable settings. By default, all the strappings are unset.



### Note

How setting W4: 9-10 functions, depends on the Interchangeability code (A or B) of the plug-in unit.

Table 55. Strappings of ET2E-T/-TB and ECE2/-B (W4, W5 and W7).

Connection	Setting	Meaning	Note
W4	1-2	Used only in T1/JT1 variants.	
	3-4	Used only in T1/JT1 variants.	
	5-6	B4/TS0 Set: Bit error rate alarm enabled. Unset: Normal operating mode.	
	7-8	Echo cancellation mode Set: ISC Unset: MSC	
	9-10	Flash boot sector protection A: Set: Unprotected Unset: Protected B: Set: Protected Unset: Unprotected	A = Interchangeability code A B = Interchangeability code B



Table 55. Strappings of ET2E-T/TB and ECE2/-B (W4, W5 and W7). (cont.)

Connection	Setting	Meaning	Note
W5	1-8	PCM0 cable sheath grounding, receive Set: Grounded Unset: Not grounded	
	3-6	PCM0 cable sheath grounding, transmit Set: Grounded Unset: Not grounded	
W7	1-8	PCM1 cable sheath grounding, receive Set: Grounded Unset: Not grounded	
	3-6	PCM1 cable sheath grounding, transmit Set: Grounded Unset: Not grounded	

### W3, Interchangeability code settings

Table 56. Interchangeability (ICC) code settings (W3).

ICC code	Setting			
	W3: 4-5 (MSB)	W3: 3-6	W3: 2-7	W3: 1-8 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF

Table 56. Interchangeability (ICC) code settings (W3). (cont.)

ICC code	Setting			
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

### W1, W2 and W6

The FPGA, FALC56 and daughter board include a JTAG interface (W1), which is connected to a 2x5 pin strip.

W2 is a PRTA interface (for test adapter).

W6 is used for watchdog settings, see the table below.

Table 57. Watchdog settings (W6).

Connection	Setting	Setting
W6	1-8	Spare
	2-7	Spare
	3-6	Spare
	4-5	Watchdog set: disabled Watchdog unset: enabled (default)

Spare strappings can be removed and used in other locations, if need be.

# 25 HWAT-A C08950

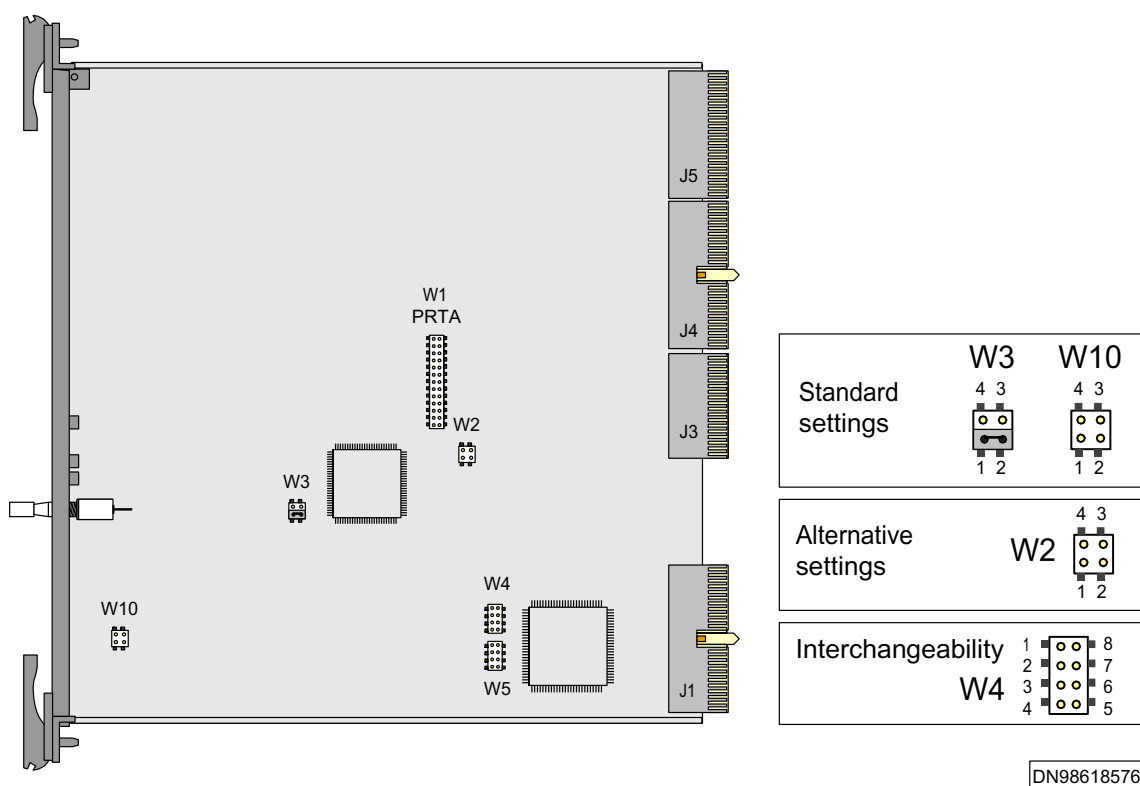


Figure 31. Jumpers of the plug-in unit HWAT-A

Standard settings are presented in the table below, and the jumpers W3 and W10 must be set as shown during normal operation.

Alternative settings on jumper groups W2 depend on the application as presented in the table below.

Jumper group W4 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

Connectors which do not require jumpers:

- W1 service and testing connector PRTA,
- and W5 test connector for PCI bridge circuits.

### Standard settings (W3, W10)

Table 58. Standard settings of HWAT-A (W3, W10)

Jumper	Setting	Meaning
W3;1 - 2	ON	Clock signal connected to CPU
W3;3 - 4	OFF	
W10;1 - 2	OFF	Oscillator for forced start-up counter, running
W10;3 - 4	OFF	

### Alternative settings (W2)

Table 59. Alternative settings of HWAT-A (W2)

Meaning	Jumper	Setting
<i>Branching of SBUS (Supervision Bus)</i>		
SBUS is not branched. Cabinets in one row; for example, HLRi, Compact MSCi, SGSN, SRRi, CPS, CDS, HSS, IPT Gateway, and BSC3i	W2;2 - 3 W2;1 - 4	ON OFF
SBUS branched. Cabinets in several rows; for example, MSCi, Transit MSCi Cabinets in one row; for example, MSS, GCS	W2;2 - 3 W2;1 - 4	OFF OFF

### Interchangeability code settings (W4)

Table 60. Interchangeability code settings of HWAT-A (W4)

ICC code	W4 settings			
	1 - 8	2 - 7	3 - 6	4 - 5
A	ON	ON	ON	ON
B	OFF	ON	ON	ON

Table 60. Interchangeability code settings of HWAT-A (W4) (cont.)

ICC code	W4 settings			
C	ON	OFF	ON	ON
D	OFF	OFF	ON	ON
E	ON	ON	OFF	ON
F	OFF	ON	OFF	ON
G	ON	OFF	OFF	ON
H	OFF	OFF	OFF	ON
J	ON	ON	ON	OFF
K	OFF	ON	ON	OFF
L	ON	OFF	ON	OFF
M	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF
P	OFF	ON	OFF	OFF
R	ON	OFF	OFF	OFF
S	OFF	OFF	OFF	OFF



# 26 MBIF-B C74920

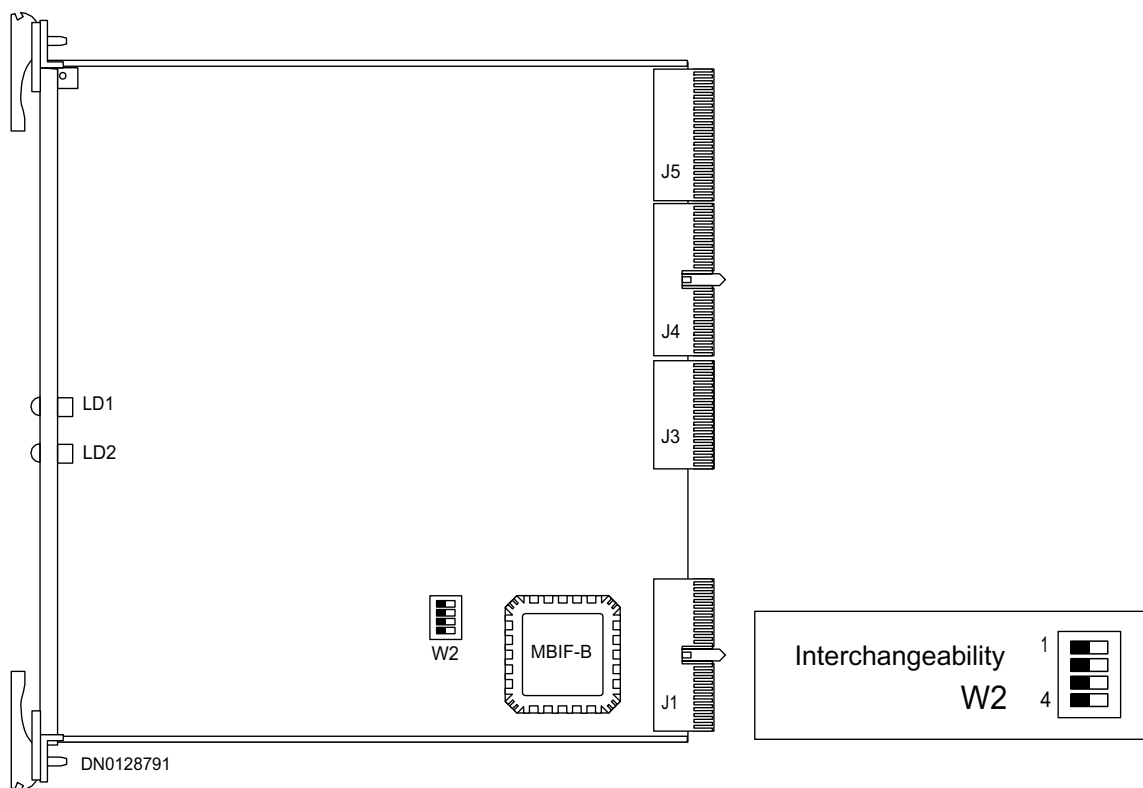


Figure 32. Switch W2, LED indicators, and backplane connectors

DIP-switch W2 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

There are no standard nor alternative settings available on the plug-in unit.

The other jumper groups are used only for tests or other special purposes.

## Interchangeability code settings (W2)

Interchangeability is coded with four bits using a DIP-switch W2. Interchangeability codes are described in the table below.



### Note

Switch 1 = MSB (the most significant bit) and switch 4 = LSB (the least significant bit).

OFF = the switch is on the left; ON = the switch is on the right.

Table 61. Interchangeability code settings of MBIF-B (W2)

ICC code	Switch (W2) settings			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF
Not defined	ON	ON	ON	ON



# 27 PCU2-D C108407

The jumper groups and LED indicators of the PCU2-D plug-in unit are shown in the figure below.

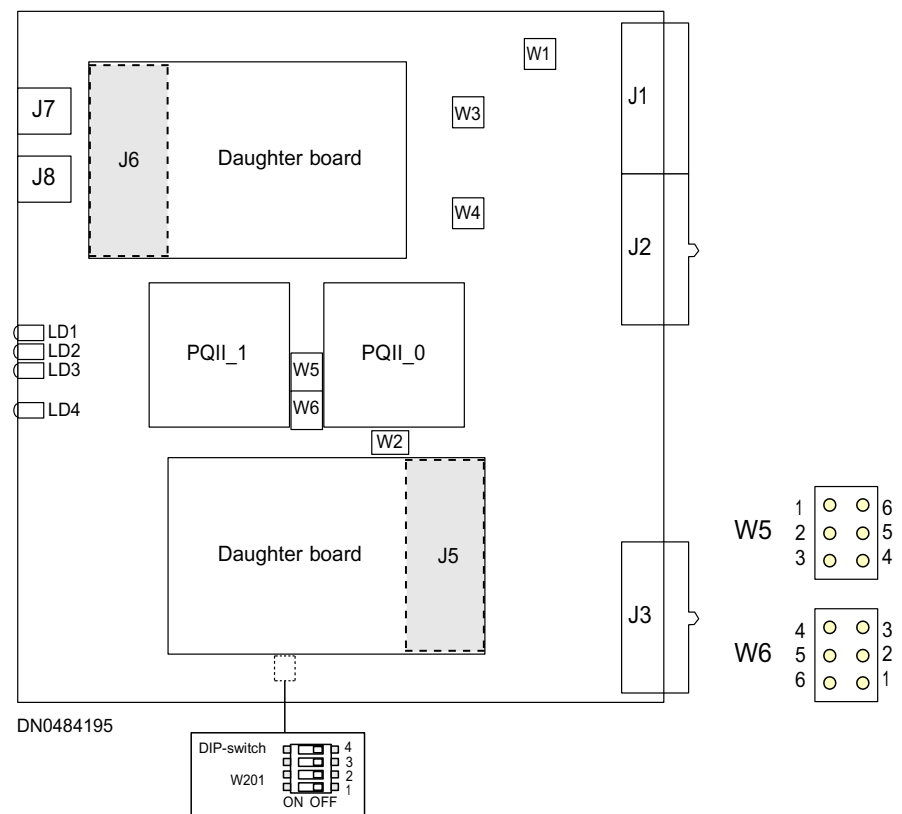


Figure 33. The connectors, LED indicators and DIP switch group of the PCU2-D

There are two switches for jumper settings on the primary side of the PCU2-D: The 6-pin W5 is used for indicating the place of the PCM, selecting MII-MUX mode, and for selecting 4M or 8M PCM. The 6-pin W6 is used for selecting of the emulator, disabling the watchdog, and for selecting the debugging mode. There are also two switches that the user does not have to set, namely: W1 for testing side selection and W2 for JTAG chain selection. In addition, there are two emulators, W3 (PQII\_1) and W4 (PQII\_0).

On the secondary side of the PCU2-D, there is a microswitch W201 for setting the interchangeability code.

## W5

The table below presents the use of W5.

Table 62. The use of W5.

Selection criteria	Setting	Explanation
The PCM in place	1-6	0 = PCM5; PCM from cartridge cross connection 1 = PCM3; PCM straight from Group Switch
Setting MII-MUX mode	2-5	0 = MII-MUX active 1 = MII-MUX bypass
4M/8M	3-4	0 = 4M 1 = 8M

0 = the jumper is off; 1= the jumper is on

## W6

The table below presents the use of W6.

Table 63. The use of W6.

Selection Criteria	Setting	Explanation
Selection of emulator	1-6	0 = Emulator not in place 1 = Emulator in place
Watchdog disabled	2-5	0 = Watchdog not disabled

Table 63. The use of W6. (cont.)

Selection Criteria	Setting	Explanation
		1 = Watchdog disabled
Debugger mode	3-4	0 = Debugger mode not selected 1 = Debugger mode selected

0 = the jumper is off; 1= the jumper is on

### W201

Interchangeability code is set with a 4-switch DIP-switch group located on the secondary side of the circuit board of the PCU2-D (see the table below).

Table 64. Setting the interchangeability code.

Code	Jumper setting			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	Off	Off	Off	Off
B	Off	Off	Off	On
C	Off	Off	On	Off
D	Off	Off	On	On
E	Off	On	Off	Off
F	Off	On	Off	On
G	Off	On	On	Off
H	Off	On	On	On
J	On	Off	Off	Off
K	On	Off	Off	On
L	On	Off	On	Off
M	On	Off	On	On
N	On	On	Off	Off
P	On	On	Off	On
R	On	On	On	Off



## Note

The use of letters I, O and Q as interchangeability codes is not allowed.

## PCU2-D jumper settings in BSC3i

The following information is specifically for BSC3i network elements.

### W5

The table below presents the use of W5 for PCU2-D in BSC3i.

Table 65. The use of W5 for PCU2-D in BSC3i.

Selection criteria	Setting	Explanation
The PCM in place	1-6	0 = PCM5; PCU2-D connected to GSWB 1 = PCM3; PCU2-D connected to GSW1KB/GSW2KB
Setting MII-MUX mode	2-5	0 = MII-MUX active
Selection of PCM mode	3-4	0 = 4M; PCU2-D equipped to slots 06 and 07 1 = 8M; PCU2-D equipped to slots 03, 04 and 05

0 = the jumper is off; 1= the jumper is on

### W6

The table below presents the use of W6 for PCU2-D in BSC3i.

Table 66. The use of W6 for PCU2-D in BSC3i.

Selection criteria	Setting	Explanation
Selection of emulator	1-6	0 = Emulator not in place
Watchdog disabled	2-5	0 = Watchdog not disabled
Debugger mode	3-4	0 = Debugger mode not selected

0 = the jumper is off; 1= the jumper is on



# 28

## PCU-B C104512

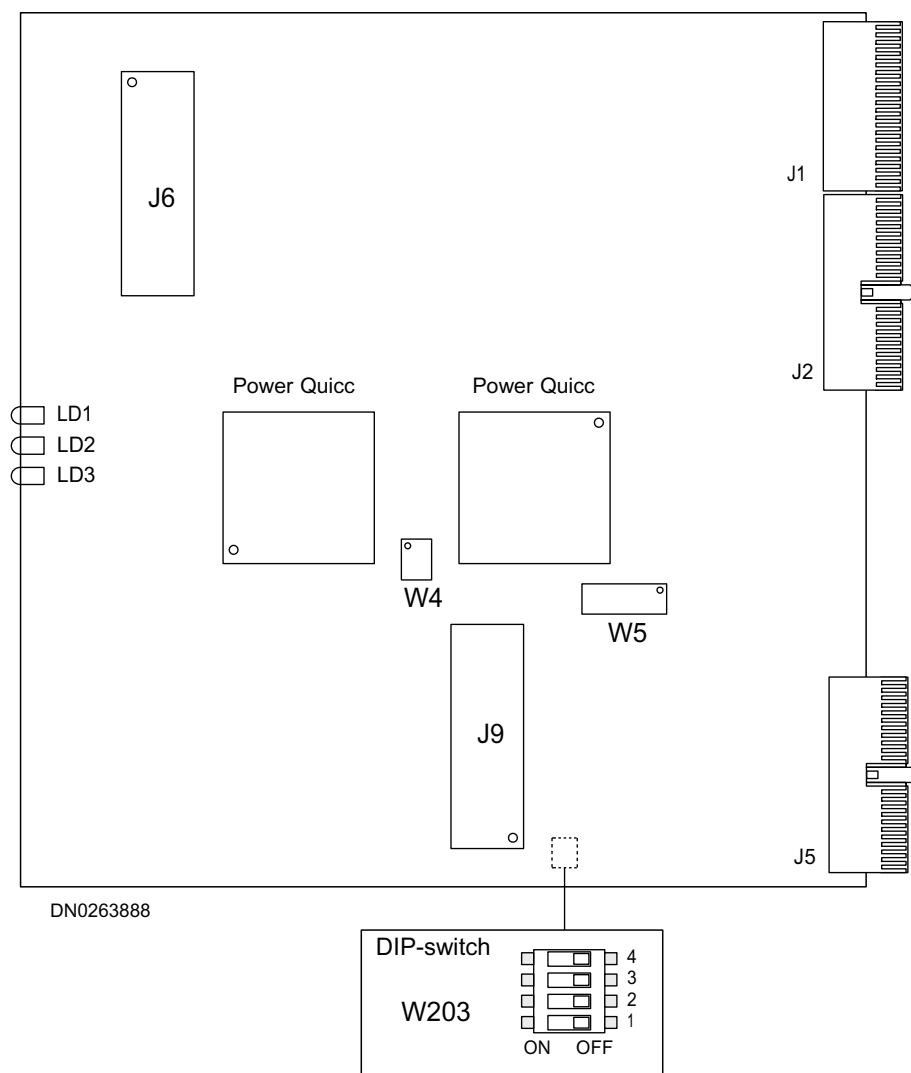


Figure 34. Jumper groups, LED indicators and the DIP-switch group of the PCU-B





### Note

In the figure above, the circuit board of the PCU-B is presented primary side up. The DIP-switch group used for selecting interchangeability code (W203) is located on the secondary side of the circuit board of the PCU-B, and the location of the DIP-switch is indicated with a dash line. The detailed presentation of the DIP-switch shows the group as it is seen on the secondary side.

### Standard settings (W4, W5)

Jumper groups W4 and W5 is used for testing. In normal operation, the jumper groups have no settings (see the table below).

Table 67. Standard settings of PCU-B ( W4, W5).

Jumper	Setting	Meaning
W4: ALL	OFF	For testing purposes
W5: ALL	OFF	For testing purposes

### Interchangeability code settings (W203)

A 4-switch DIP-switch group (W203) is used for setting the interchangeability code of the plug-in unit, when required. (see the table below).

Table 68. Setting the interchangeability code (W203).

ICC code	Jumper setting W301			
	Switch 1 (MSB)	Switch 2	Switch 3	Switch 4 (LSB)
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF

Table 68. Setting the interchangeability code (W203). (cont.)

ICC code	Jumper setting W301			
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

# 29 SBMUX-A C109365

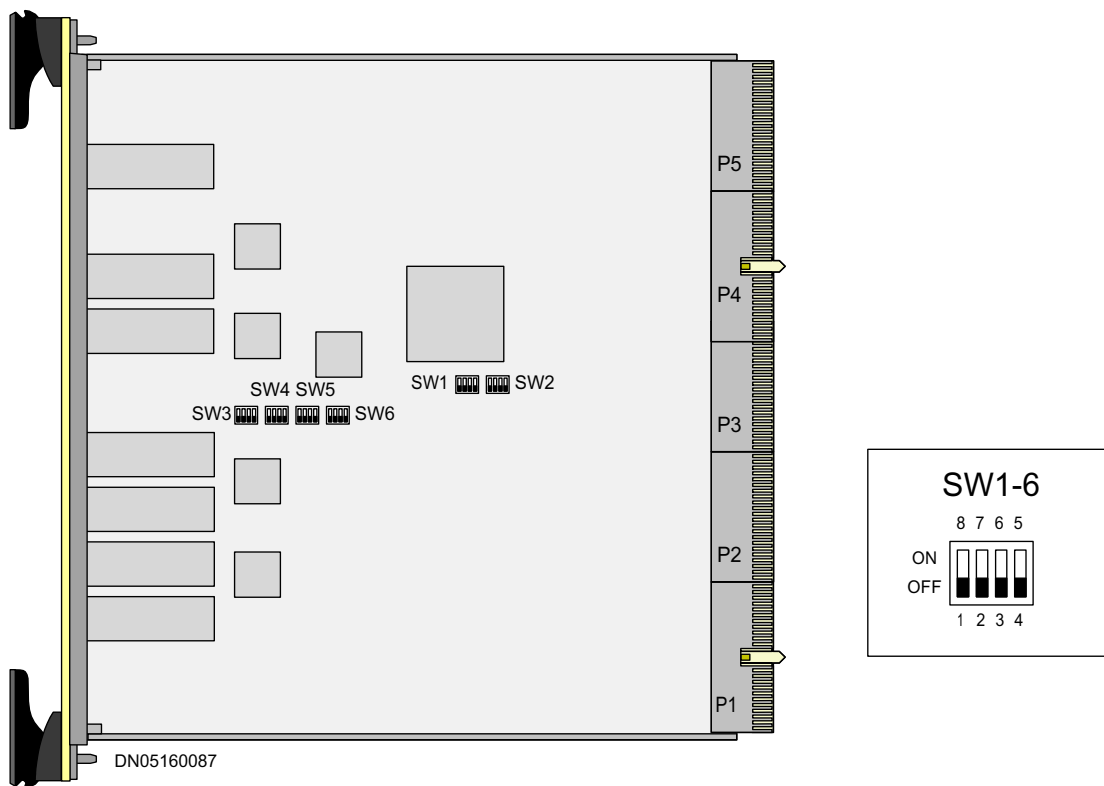


Figure 35. Connectors, micro switch and settings of the SBMUX-A.

The SBMUX-A has six micro switch packages with four switches each. The switches are used for setting PCM mode, Serial Broadband Interface capacity and Interchangeability code.

## PCM mode settings (SW1)

The PCM mode set up is made with micro switches:

- 4M/8M mode for serial buses R0...R31, T0...T31
- 4M/8M mode for serial buses R32...R63, T32...T63

Table 69. PCM mode settings on the SBMUX-A (SW1).

Switch	Default setting	Function
1-8	OFF (4M)	4M/8M mode for PCM circuits 0...127 OFF 4M mode selected: PCM circuits 0 ... 63 are connected through R0...R31, T0...T31 serial buses. ON 8M mode selected: PCM circuits 0 ... 127 are connected through R0...R31, T0...T31 serial buses.
2-7	OFF (4M)	4M/8M mode for PCM circuits 128...255 OFF 4M mode selected: PCM circuits 128 ... 191 are connected through R32...R63, T32...T64 serial buses. ON 8M mode selected: PCM circuits 128 ... 255 are connected through R32...R63 T32...T63 serial buses.
3-6		Reserved
4-5		Reserved

### Interchangeability code settings (SW2)

The setting of the interchangeability code (ICC code) is presented in the table below.

Table 70. Interchangeability settings on the SBMUX-A (SW2).

Switch	Default setting	Function
1-8	OFF	Interchangeability code bit 3
2-7	OFF	Interchangeability code bit 2
3-6	OFF	Interchangeability code bit 1
4-5	OFF	Interchangeability code bit 0

The table below presents the setting of the interchangeability code.

Table 71. Interchangeability code (ICC) settings (SW2).

ICC code	Switch setting			
	Switch 1	Switch 2	Switch 3	Switch 4
A	OFF	OFF	OFF	OFF
B	OFF	OFF	OFF	ON

Table 71. Interchangeability code (ICC) settings (SW2). (cont.)

ICC code	Switch setting			
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

The first interchangeability code A corresponds to all switches OFF, after which the settings start to roll for each interchangeability code change.

### Serial Broadband SB1 settings (SW3)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 72. Serial Broadband Interface SB1 settings on the SBMUX-A (SW3).

Switch				Function
1	2	3	4	
OFF	OFF	OFF	OFF	SB1 interface is disabled.
ON	OFF	OFF	OFF	PCM circuits 0...15 are connected through Serial Broadband 1 interface.
OFF	ON	OFF	OFF	PCM circuits 0...31 are connected through Serial Broadband 1 interface.
ON	ON	OFF	OFF	PCM circuits 0...47 are connected through Serial Broadband 1 interface.
OFF	OFF	ON	OFF	PCM circuits 0...63 are connected through Serial Broadband 1 interface.

Table 72. Serial Broadband Interface SB1 settings on the SBMUX-A (SW3).  
(cont.)

Switch				Function
ON	OFF	ON	OFF	PCM circuits 0...79 are connected through Serial Broadband 1 interface.
OFF	ON	ON	OFF	PCM circuits 0...95 are connected through Serial Broadband 1 interface.
ON	ON	ON	OFF	PCM circuits 0...111 are connected through Serial Broadband 1 interface.
OFF	OFF	OFF	ON	PCM circuits 0...127 are connected through Serial Broadband 1 interface.

### Serial Broadband SB2 settings (SW4)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 73. Serial Broadband Interface SB2 settings on the SBMUX-A (SW4).

Switch				Function
1	2	3	4	
OFF	OFF	OFF	OFF	SB2 interface is disabled.
ON	OFF	OFF	OFF	PCM circuits 64...79 are connected through Serial Broadband 2 interface.
OFF	ON	OFF	OFF	PCM circuits 64...95 are connected through Serial Broadband 2 interface.
ON	ON	OFF	OFF	PCM circuits 64...111 are connected through Serial Broadband 2 interface.
OFF	OFF	ON	OFF	PCM circuits 64...127 are connected through Serial Broadband 1 interface.
ON	OFF	ON	OFF	PCM circuits 64...143 are connected through Serial Broadband 2 interface.
OFF	ON	ON	OFF	PCM circuits 64...159 are connected through Serial Broadband 2 interface.
ON	ON	ON	OFF	PCM circuits 64...175 are connected through Serial Broadband 2 interface.
OFF	OFF	OFF	ON	PCM circuits 64...191 are connected through Serial Broadband 2 interface.

## Serial Broadband SB3 settings (SW5)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 74. Serial Broadband Interface SB3 settings on the SBMUX-A (SW5).

Switch				Function
1	2	3	4	
OFF	OFF	OFF	OFF	SB3 interface is disabled.
ON	OFF	OFF	OFF	PCM circuits 128...143 are connected through Serial Broadband 3 interface.
OFF	ON	OFF	OFF	PCM circuits 128...159 are connected through Serial Broadband 3 interface.
ON	ON	OFF	OFF	PCM circuits 128...175 are connected through Serial Broadband 3 interface.
OFF	OFF	ON	OFF	PCM circuits 128...191 are connected through Serial Broadband 3 interface.
ON	OFF	ON	OFF	PCM circuits 128...207 are connected through Serial Broadband 3 interface.
OFF	ON	ON	OFF	PCM circuits 128...223 are connected through Serial Broadband 3 interface.
ON	ON	ON	OFF	PCM circuits 128...239 are connected through Serial Broadband 3 interface.
OFF	OFF	OFF	ON	PCM circuits 128...255 are connected through Serial Broadband 3 interface.

## Serial Broadband interface SB4 settings (SW6)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 75. Serial Broadband Interface SB4 settings on the SBMUX-A (SW6).

Switch				Function
1	2	3	4	
OFF	OFF	OFF	OFF	SB4 interface is disabled.
ON	OFF	OFF	OFF	PCM circuits 192...207 are connected through Serial Broadband 4 interface.

Table 75. Serial Broadband Interface SB4 settings on the SBMUX-A (SW6).  
(cont.)

Switch				Function
OFF	ON	OFF	OFF	PCM circuits 192...223 are connected through Serial Broadband 4 interface.
ON	ON	OFF	OFF	PCM circuits 192...239 are connected through Serial Broadband 4 interface.
OFF	OFF	ON	OFF	PCM circuits 192...255 are connected through Serial Broadband 4 interface.
ON	OFF	ON	OFF	Not specified
OFF	ON	ON	OFF	Not specified
ON	ON	ON	OFF	Not specified
OFF	OFF	OFF	ON	Not specified

### SBMUX-A jumper settings in combined BSC3i/TCSM3i installation

The following information is specifically for combined BSC3i/TCSM3i network elements.

#### PCM mode settings ( SW1)

- 4M/8M mode for serial buses R0...R31, T0...T31
- 4M/8M mode for serial buses R32...R63, T32...T63

Table 76. PCM mode settings on the SBMUX-A (SW1).

SW1	Switch					
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	Note
SBMUX-A	01	ON	ON	OFF	OFF	Internal PCMs 0-255 8M mode selected
SBMUX-A	02	ON	ON	OFF	OFF	Internal PCMs 0-255 8M mode selected

### Serial Broadband 1 Interface settings (SW3)

The setting of the Serial Broadband Interface capacity is presented in the table below.



Table 77. Serial Broadband Interface SB1 settings on the SBMUX-A (SW3).

SW3	Slot	Switch				Note
		1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	
SBMUX-A	01	ON	ON	OFF	OFF	SB1 interface, internal PCM circuits 0-47 connected.
SBMUX-A	02	ON	ON	OFF	OFF	SB1 interface, internal PCM circuits 0-47 connected.

### Serial Broadband SB2 settings (SW4)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 78. Serial Broadband Interface SB2 settings on the SBMUX-A (SW4).

SW4	Slot	Switch				Note
		1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	
SBMUX-A	01	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, internal PCM circuits 64-127 connected.  A) When TCSA 0 cabinet is in question, selected if interface 0 of ETS2 in GTIC 2 slot 05 connected.  B) When TCSA 1 cabinet is in question, selected if interface 0 of ETS2 in GTIC 5 slot 05 connected.  C) When TCSA 2 cabinet is in question, selected if interface 0 of ETS2 in GTIC 8 slot 05 connected.

Table 78. Serial Broadband Interface SB2 settings on the SBMUX-A (SW4).  
(cont.)

SW4		Switch				
SBMUX-A	02	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, internal PCM circuits 64-127 connected.  A) When TCSA 0 cabinet is in question, selected if interface 0 of ETS2 in GTIC 3 slot 05 connected.  B) When TCSA 1 cabinet is in question, selected if interface 0 of ETS2 in GTIC 6 slot 05 connected.  C) When TCSA 2 cabinet is in question, selected if interface 0 of ETS2 in GTIC 9 slot 05 connected.
1) If ETS2 is not connected in this PCM position, switch must be OFF.						

### Serial Broadband SB3 settings (SW5)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 79. Serial Broadband Interface SB3 settings on the SBMUX-A (SW5).

SW5		Switch				
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	Note

Table 79. Serial Broadband Interface SB3 settings on the SBMUX-A (SW5).  
(cont.)

SW5		Switch				
SBMUX-A	01	OFF	OFF	ON <sup>1)</sup>	OFF	SB3 interface, internal PCM circuits 128-191 connected.  A) When TCSA 0 cabinet is in question, selected if interface 1 of ETS2 in GTIC 2 slot 05 connected.  B) When TCSA 1 cabinet is in question, selected if interface 1 of ETS2 in GTIC 5 slot 05 connected.  C) When TCSA 2 cabinet is in question, selected if interface 1 of ETS2 in GTIC 8 slot 05 connected.
SBMUX-A	02	OFF	OFF	ON <sup>1)</sup>	OFF	SB3 interface, internal PCM circuits 128-191 connected.  A) When TCSA 0 cabinet is in question, selected if interface 1 of ETS2 in GTIC 3 slot 05 connected.  B) When TCSA 1 cabinet is in question, selected if interface 1 of ETS2 in GTIC 6 slot 05 connected.  C) When TCSA 2 cabinet is in question, selected if interface 1 of ETS2 in GTIC 9 slot 05 connected.
1) If ETS2 in not connected in this PCM position, switch must be OFF.						

## Serial Broadband interface SB4 settings (SW6)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 80. Serial Broadband Interface SB4 settings on the SBMUX-A (SW6).

SW6		Switch				
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	Note
SBMUX-A	01	OFF	OFF	ON <sup>1)</sup>	OFF	<p>SB4 interface, internal PCM circuits 192-255 connected.</p> <p>A) When TCSA 0 cabinet is in question, selected if interface 0 of ETS2 in GTIC 2 slot 06 connected.</p> <p>B) When TCSA 1 cabinet is in question, selected if interface 0 of ETS2 in GTIC 5 slot 06 connected.</p> <p>C) When TCSA 2 cabinet is in question, selected if interface 0 of ETS2 in GTIC 8 slot 06 connected.</p>

Table 80. Serial Broadband Interface SB4 settings on the SBMUX-A (SW6).  
(cont.)

SW6		Switch				
SBMUX-A	02	OFF	OFF	ON <sup>1)</sup>	OFF	<p>SB4 interface, internal PCM circuits 192-255 connected.</p> <p>A) When TCSA 0 cabinet is in question, selected if interface 0 of ETS2 in GTIC 3 slot 06 connected.</p> <p>B) When TCSA 1 cabinet is in question, selected if interface 0 of ETS2 in GTIC 6 slot 06 connected.</p> <p>C) When TCSA 2 cabinet is in question, selected if interface 0 of ETS2 in GTIC 9 slot 06 connected.</p>
1) If ETS2 is not connected in this PCM position, switch must be OFF.						



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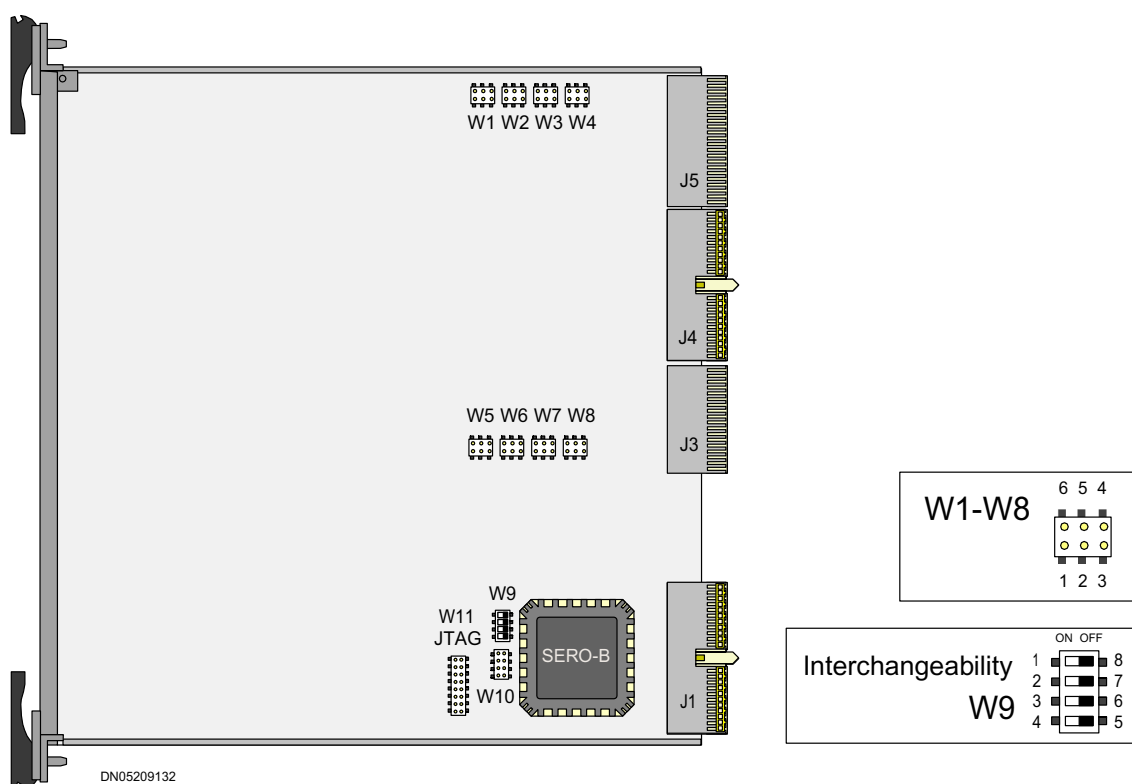


Figure 36. Jumper and micro switch settings of the SERO-B

Alternative settings on jumper groups W1 through W8 depend on the application as presented in the table below.

Micro switch W9 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

Jumper group W11 is a PRTA connector and W10 an SPI connector. There are no jumpers on these during normal operation.

## Alternative settings

Table 81. Alternative setting of SERO-B

Meaning	Jumper	Setting
<i>Channel 0 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W3;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W3;1 - 2	ON
<i>Channel 1 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W3;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W3;5 - 6	ON
<i>Channel 2 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W1;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W1;1 - 2	ON
<i>Channel 3 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W1;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W1;5 - 6	ON
<i>Channel 4 (V.28 or V.11)</i>		
V.28 in use: CTS (Clear To Send) control comes from an external device	W4;2 - 3	ON
V.28 in use: External CTS control not used, set to state 0 (Default setting)	W4;1 - 2	ON
V.11 in use	W4;1 - 2	ON
<i>Channel 5 (V.28 or V.11)</i>		
V.28 in use: CTS (Clear To Send) control comes from an external device	W4;4 - 5	ON
V.28 in use: External CTS control not used, set to state 0 (Default setting)	W4;5 - 6	ON
V.11 in use	W4;5 - 6	ON
<i>Channel 6 (V.28 or V.11)</i>		
V.28 in use: CTS (Clear To Send) comes from an external device	W2;2 - 3	ON
V.28 in use: External CTS not used, set to state 0 (Default setting)	W2;1 - 2	ON
V.11 in use	W2;1 - 2	ON
<i>Channel 7 (V.28 or V.11)</i>		
V.28 in use: CTS (Clear To Send) control comes from an external device	W2;4 - 5	ON
V.28 in use: External CTS control not used, set to state 0 (Default setting)	W2;5 - 6	ON
V.11 in use	W2;5 - 6	ON
<i>Channel 8 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W8;2 - 3	ON



Table 81. Alternative setting of SERO-B (cont.)

Meaning	Jumper	Setting
External CTS control not used, set to state 0 (Default setting)	W8;1 - 2	ON
<i>Channel 9 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W8;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W8;5 - 6	ON
<i>Channel 10 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W7;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W7;1 - 2	ON
<i>Channel 11 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W7;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W7;5 - 6	ON
<i>Channel 12 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W5;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W5;1 - 2	ON
<i>Channel 13 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W5;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W5;5 - 6	ON
<i>Channel 14 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W6;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W6;1 - 2	ON
<i>Channel 15 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W6;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W6;5 - 6	ON

## Interchangeability settings (W9)

The interchangeability code selection (micro switch W9)

Table 82. Interchangeability code settings of SERO-B (W9)

ICC code	W9 settings			
	1 - 8	2 - 7	3 - 6	4 - 5
A	ON	ON	ON	ON
B	OFF	ON	ON	ON

Table 82. Interchangeability code settings of SERO-B (W9) (cont.)

ICC code	W9 settings			
C	ON	OFF	ON	ON
D	OFF	OFF	ON	ON
E	ON	ON	OFF	ON
F	OFF	ON	OFF	ON
G	ON	OFF	OFF	ON
H	OFF	OFF	OFF	ON
J	ON	ON	ON	OFF
K	OFF	ON	ON	OFF
L	ON	OFF	ON	OFF
M	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF
P	OFF	ON	OFF	OFF
R	ON	OFF	OFF	OFF

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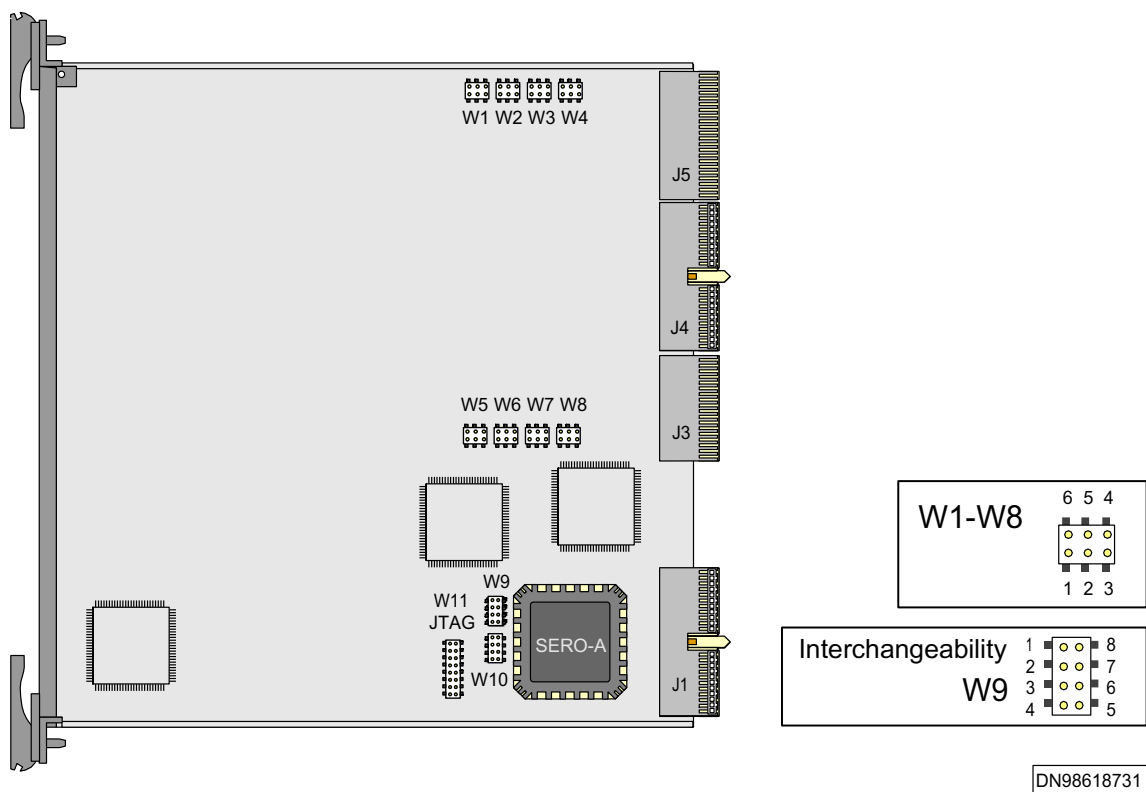


Figure 37. Jumpers of the plug-in unit SERO-A

Alternative settings on jumper groups W1 through W8 depend on the application as presented in the table below.

Jumper group W9 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

Jumper group W11 is a PRTA connector and W10 an SPI connector. There are no jumpers on these during normal operation.

## Alternative settings

Table 83. Alternative setting of SERO-A

Meaning	Jumper	Setting
<i>Channel 0 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W3;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W3;1 - 2	ON
<i>Channel 1 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W3;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W3;5 - 6	ON
<i>Channel 2 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W1;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W1;1 - 2	ON
<i>Channel 3 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W1;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W1;5 - 6	ON
<i>Channel 4 (V.28 or V.11)</i>		
V.28 in use: CTS (Clear To Send) control comes from an external device	W4;2 - 3	ON
V.28 in use: External CTS control not used, set to state 0 (Default setting)	W4;1 - 2	ON
V.11 in use	W4;1 - 2	ON
<i>Channel 5 (V.28 or V.11)</i>		
V.28 in use: CTS (Clear To Send) control comes from an external device	W4;4 - 5	ON
V.28 in use: External CTS control not used, set to state 0 (Default setting)	W4;5 - 6	ON
V.11 in use	W4;5 - 6	ON
<i>Channel 6 (V.28 or V.11)</i>		
V.28 in use: CTS (Clear To Send) comes from an external device	W2;2 - 3	ON
V.28 in use: External CTS not used, set to state 0 (Default setting)	W2;1 - 2	ON
V.11 in use	W2;1 - 2	ON
<i>Channel 7 (V.28 or V.11)</i>		
V.28 in use: CTS (Clear To Send) control comes from an external device	W2;4 - 5	ON
V.28 in use: External CTS control not used, set to state 0 (Default setting)	W2;5 - 6	ON
V.11 in use	W2;5 - 6	ON
<i>Channel 8 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W8;2 - 3	ON

Table 83. Alternative setting of SERO-A (cont.)

Meaning	Jumper	Setting
External CTS control not used, set to state 0 (Default setting)	W8;1 - 2	ON
<i>Channel 9 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W8;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W8;5 - 6	ON
<i>Channel 10 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W7;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W7;1 - 2	ON
<i>Channel 11 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W7;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W7;5 - 6	ON
<i>Channel 12 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W5;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W5;1 - 2	ON
<i>Channel 13 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W5;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W5;5 - 6	ON
<i>Channel 14 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W6;2 - 3	ON
External CTS control not used, set to state 0 (Default setting)	W6;1 - 2	ON
<i>Channel 15 (V.28)</i>		
CTS (Clear To Send) control comes from an external device	W6;4 - 5	ON
External CTS control not used, set to state 0 (Default setting)	W6;5 - 6	ON

## Interchangeability settings (W9)

The interchangeability code selection (jumper group W9)

Table 84. Interchangeability code settings of SERO-A (W9)

ICC code	W9 settings			
	1 - 8	2 - 7	3 - 6	4 - 5
A	ON	ON	ON	ON
B	OFF	ON	ON	ON

Table 84. Interchangeability code settings of SERO-A (W9) (cont.)

ICC code	W9 settings			
C	ON	OFF	ON	ON
D	OFF	OFF	ON	ON
E	ON	ON	OFF	ON
F	OFF	ON	OFF	ON
G	ON	OFF	OFF	ON
H	OFF	OFF	OFF	ON
J	ON	ON	ON	OFF
K	OFF	ON	ON	OFF
L	ON	OFF	ON	OFF
M	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF
P	OFF	ON	OFF	OFF
R	ON	OFF	OFF	OFF

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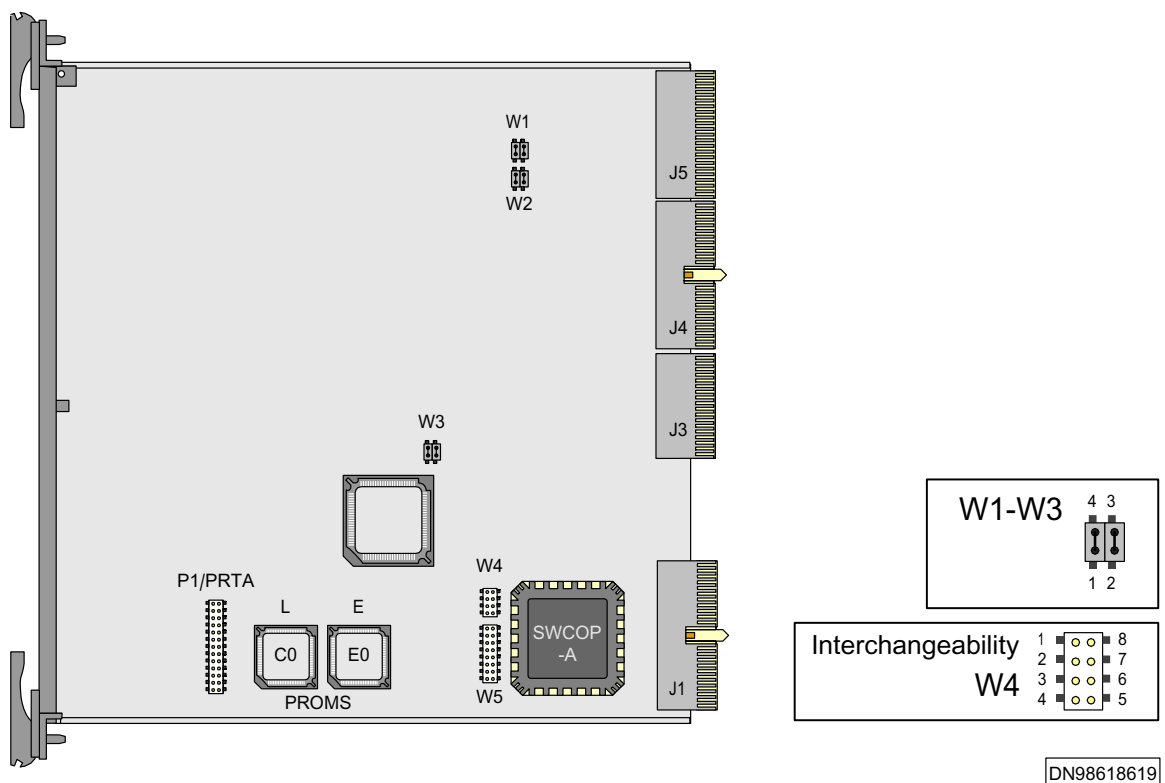


Figure 38. Jumpers and read-only memory circuits of the plug-in unit SWCOP-A

Jumper group W5 has no settings. P1 is a test connector (PRTA) and has no settings.

The *Standard settings* table below presents the W1, W2, and W3 jumpers which must be set as shown during normal operation.

Jumper group W4 is used for setting the interchangeability code of the plug-in unit when required, see the table below.

### Standard settings (W1, W2, W3)

Table 85. Standard settings of SWCOP-A (W1, W2, W3)

Jumper	Setting	Meaning
W1;1 - 4	ON	For testing (16 MHz clock signal for PLL circuit)
W1;2 - 3	ON	For testing (8 MHz clock)
W2;1 - 4	ON	For testing (32 MHz clock)
W2;2 - 3	ON	For testing (16 MHz clock)
W3;1 - 4	ON	For testing (30 MHz clock signal to CPU)
W3;2 - 3	ON	For testing (RESET signal to CPU)

### Interchangeability code settings (W4)

Table 86. Interchangeability code settings of SWCOP-A (W4)

ICC code	W4 settings			
	1 - 8	2 - 7	3 - 6	4 - 5
A	ON	ON	ON	ON
B	OFF	ON	ON	ON
C	ON	OFF	ON	ON
D	OFF	OFF	ON	ON
E	ON	ON	OFF	ON
F	OFF	ON	OFF	ON
G	ON	OFF	OFF	ON
H	OFF	OFF	OFF	ON
J	ON	ON	ON	OFF
K	OFF	ON	ON	OFF
L	ON	OFF	ON	OFF
M	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF
P	OFF	ON	OFF	OFF
R	ON	OFF	OFF	OFF







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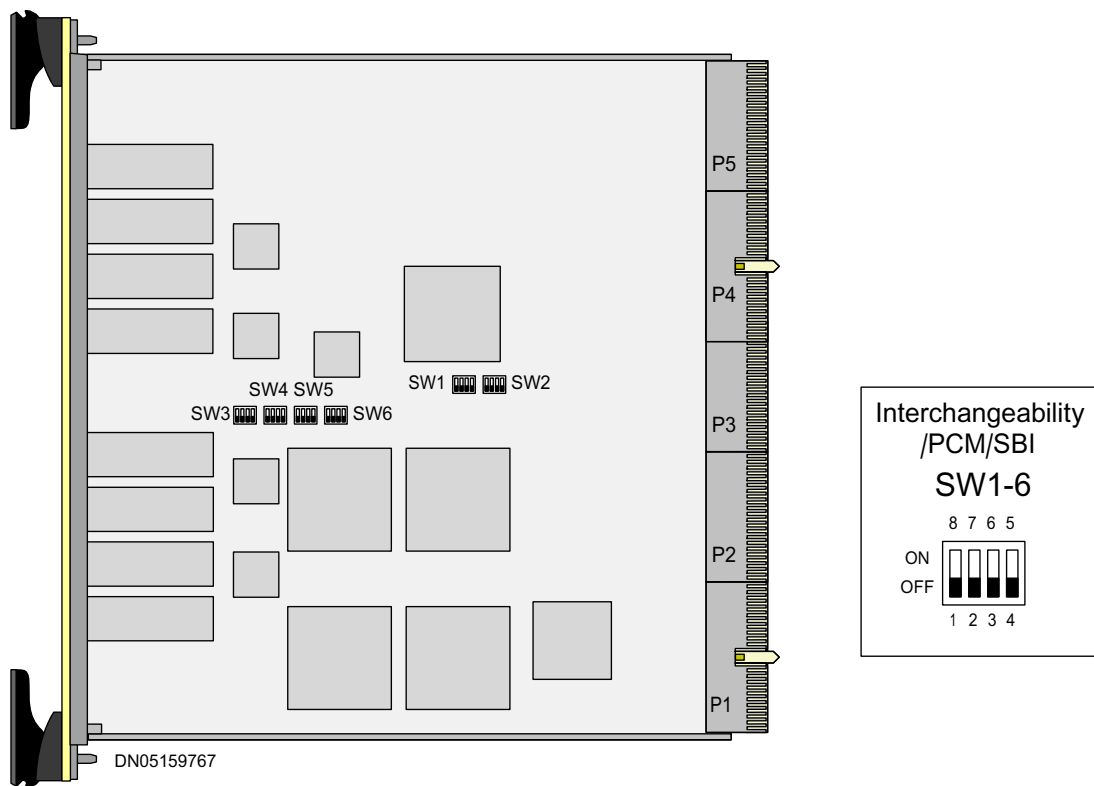


Figure 39. Connectors, micro switch and settings of the SW256B

The SW256B has six micro switch packages with four switches each. The switches are used for setting PCM mode, Serial Broadband Interface capacity and Interchangeability code.

## PCM mode settings (SW1)

The PCM mode set up is made with micro switches:

- 4M/8M mode for serial buses R0...R31, T0...T31
- 4M/8M mode for serial buses R32...R63, T32...T63

Table 87. PCM mode settings on the SW256B (SW1).

Switch	Default setting	Function
1-8	OFF (4M)	4M/8M mode for PCM circuits 0...127 OFF 4M mode selected: PCM circuits 0 ... 63 are connected through R0...R31, T0...T31 serial buses. ON 8M mode selected: PCM circuits 0 ... 127 are connected through R0...R31, T0...T31 serial buses.
2-7	OFF (4M)	4M/8M mode for PCM circuits 128...255 OFF 4M mode selected: PCM circuits 128 ... 191 are connected through R32...R63, T32...T63 serial buses. ON 8M mode selected: PCM circuits 128 ... 255 are connected through R32...R63 T32...T63 serial buses.
3-6		Reserved
4-5		Reserved

### Interchangeability code settings (SW2)

The setting of the interchangeability code (ICC code) is presented in the table below.

Table 88. Interchangeability settings on the SW256B (SW2).

Switch	Default setting	Function
1-8	OFF	Interchangeability code bit 3
2-7	OFF	Interchangeability code bit 2
3-6	OFF	Interchangeability code bit 1
4-5	OFF	Interchangeability code bit 0

The table below presents the setting of the interchangeability code.

Table 89. Interchangeability code (ICC) settings (SW2).

ICC code	Switch setting			
	Switch 1	Switch 2	Switch 3	Switch 4
A	OFF	OFF	OFF	OFF

Table 89. Interchangeability code (ICC) settings (SW2). (cont.)

ICC code	Switch setting			
B	OFF	OFF	OFF	ON
C	OFF	OFF	ON	OFF
D	OFF	OFF	ON	ON
E	OFF	ON	OFF	OFF
F	OFF	ON	OFF	ON
G	OFF	ON	ON	OFF
H	OFF	ON	ON	ON
J	ON	OFF	OFF	OFF
K	ON	OFF	OFF	ON
L	ON	OFF	ON	OFF
M	ON	OFF	ON	ON
N	ON	ON	OFF	OFF
P	ON	ON	OFF	ON
R	ON	ON	ON	OFF

The first interchangeability code A corresponds to all switches OFF, after which the settings start to roll for each interchangeability code change.

### Serial Broadband SB1 settings (SW3)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 90. Serial Broadband Interface SB1 settings on the SW256B (SW3).

Switch				Function
1	2	3	4	
OFF	OFF	OFF	OFF	SB1 interface is disabled.
ON	OFF	OFF	OFF	PCM circuits 0...15 are connected through Serial Broadband 1 interface.
OFF	ON	OFF	OFF	PCM circuits 0...31 are connected through Serial Broadband 1 interface.
ON	ON	OFF	OFF	PCM circuits 0...47 are connected through Serial Broadband 1 interface.
OFF	OFF	ON	OFF	PCM circuits 0...63 are connected through Serial Broadband 1 interface.

Table 90. Serial Broadband Interface SB1 settings on the SW256B (SW3).  
(cont.)

Switch				Function
ON	OFF	ON	OFF	PCM circuits 0...79 are connected through Serial Broadband 1 interface.
OFF	ON	ON	OFF	PCM circuits 0...95 are connected through Serial Broadband 1 interface.
ON	ON	ON	OFF	PCM circuits 0...111 are connected through Serial Broadband 1 interface.
OFF	OFF	OFF	ON	PCM circuits 0...127 are connected through Serial Broadband 1 interface.

### Serial Broadband SB2 settings (SW4)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 91. Serial Broadband Interface SB2 settings on the SW256B (SW4).

Switch				Function
1	2	3	4	
OFF	OFF	OFF	OFF	SB2 interface is disabled.
ON	OFF	OFF	OFF	PCM circuits 64...79 are connected through Serial Broadband 2 interface.
OFF	ON	OFF	OFF	PCM circuits 64...95 are connected through Serial Broadband 2 interface.
ON	ON	OFF	OFF	PCM circuits 64...111 are connected through Serial Broadband 2 interface.
OFF	OFF	ON	OFF	PCM circuits 64...127 are connected through Serial Broadband 2 interface.
ON	OFF	ON	OFF	PCM circuits 64...143 are connected through Serial Broadband 2 interface.
OFF	ON	ON	OFF	PCM circuits 64...159 are connected through Serial Broadband 2 interface.
ON	ON	ON	OFF	PCM circuits 64...175 are connected through Serial Broadband 2 interface.
OFF	OFF	OFF	ON	PCM circuits 64...191 are connected through Serial Broadband 2 interface.

## Serial Broadband SB3 settings (SW5)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 92. Serial Broadband Interface SB3 settings on the SW256B (SW5).

Switch				Function
1	2	3	4	
OFF	OFF	OFF	OFF	SB3 interface is disabled.
ON	OFF	OFF	OFF	PCM circuits 128...143 are connected through Serial Broadband 3 interface.
OFF	ON	OFF	OFF	PCM circuits 128...159 are connected through Serial Broadband 3 interface.
ON	ON	OFF	OFF	PCM circuits 128...175 are connected through Serial Broadband 3 interface.
OFF	OFF	ON	OFF	PCM circuits 128...191 are connected through Serial Broadband 3 interface.
ON	OFF	ON	OFF	PCM circuits 128...207 are connected through Serial Broadband 3 interface.
OFF	ON	ON	OFF	PCM circuits 128...223 are connected through Serial Broadband 3 interface.
ON	ON	ON	OFF	PCM circuits 128...239 are connected through Serial Broadband 3 interface.
OFF	OFF	OFF	ON	PCM circuits 128...255 are connected through Serial Broadband 3 interface.

## Serial Broadband SB4 settings (SW6)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 93. Serial Broadband Interface SB4 settings on the SW256B (SW6).

Switch				Function
1	2	3	4	
OFF	OFF	OFF	OFF	SB4 interface is disabled.
ON	OFF	OFF	OFF	PCM circuits 192...207 are connected through Serial Broadband 4 interface.

Table 93. Serial Broadband Interface SB4 settings on the SW256B (SW6).  
(cont.)

Switch				Function
OFF	ON	OFF	OFF	PCM circuits 192...223 are connected through Serial Broadband 4 interface.
ON	ON	OFF	OFF	PCM circuits 192...239 are connected through Serial Broadband 4 interface.
OFF	OFF	ON	OFF	PCM circuits 192...255 are connected through Serial Broadband 4 interface.
ON	OFF	ON	OFF	Not specified
OFF	ON	ON	OFF	Not specified
ON	ON	ON	OFF	Not specified
OFF	OFF	OFF	ON	Not specified

### SW256B jumper settings in BSC3i

The following information is specifically for BSC3i network elements.

#### PCM mode settings (SW1)

The PCM mode set up is made with micro switches:

- 4M/8M mode for serial buses R0...R31, T0...T31
- 4M/8M mode for serial buses R32...R63, T32...T63

Table 94. PCM mode settings on the SW256B (SW1).

SW1		Switch				
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	Note
SW256B 0	01	OFF	OFF	OFF	OFF	PCM 0-255 4M mode selected
SW256B 1	02	OFF	OFF	OFF	OFF	PCM 256-511 4M mode selected
SW256B 2	03	ON	ON	OFF	OFF	PCM 512-767 8M mode selected
SW256B 3	04	ON	ON	OFF	OFF	PCM 768-1023 8M mode selected
SW256B 4	05	OFF	OFF	OFF	OFF	PCM 1024-1279 4M mode selected



Table 94. PCM mode settings on the SW256B (SW1). (cont.)

SW1		Switch				
SW256B 5	06	ON	ON	OFF	OFF	PCM 1280-1535 8M mode selected
SW256B 6	07	ON	ON	OFF	OFF	PCM 1536-1791 8M mode selected
SW256B 7	08	ON	ON	OFF	OFF	PCM 1792-2047 8M mode selected

### Serial Broadband SB1 settings (SW3)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 95. Serial Broadband Interface SB1 settings on the SW256B (SW3).

SW3		Switch				
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	Note
SW256B 0	01	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 1	02	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 2	03	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 3	04	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 4	05	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 5	06	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 6	07	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 7	08	OFF	OFF	ON <sup>1)</sup>	OFF	SB1 interface, PCM circuits 1792-1855 connected. Selected if interface 0 of ETS2 in GTIC 1 slot 03 or interface 0 of ETS2 in GTIC 1 slot 05 connected.
1) If ETS2 is not connected in this PCM position, switch must be OFF						

## Serial Broadband SB2 settings (SW4)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 96. Serial Broadband Interface SB2 settings on the SW256B (SW4).

SW4	Slot	Switch				Note
		1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	
SW256B 0	01	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 64-127 connected. Selected if interface 0 of ETS2 in GTIC 0 slot 01 connected.
SW256B 1	02	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 320-383 connected. Selected if interface 0 of ETS2 in GTIC 0 slot 02 or interface 0 of ETS2 in GTIC 0 slot 03 connected.
SW256B 2	03	OFF	OFF	OFF	OFF	SB2 interface is disabled
SW256B 3	04	OFF	OFF	OFF	OFF	SB2 interface is disabled
SW256B 4	05	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 1088-1151 connected. Selected if interface 0 of ETS2 in GTIC 0 slot 03 or interface 0 of ETS2 in GTIC 0 slot 05 connected.
SW256B 5	06	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 1344-1407 connected. Selected if interface 0 of ETS2 in GTIC 1 slot 01 connected.

Table 96. Serial Broadband Interface SB2 settings on the SW256B (SW4).  
(cont.)

SW4		Switch				
SW256B 6	07	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 1600-1663 connected. Selected if interface 1 of ETS2 in GTIC 1 slot 01 or interface 0 of ETS2 in GTIC 1 slot 02 connected.
SW256B 7	08	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 1856-1919 connected. Selected if interface 1 of ETS2 in GTIC 1 slot 03 or interface 0 of ETS2 in GTIC 1 slot 06 connected.
1) If ETS2 is not connected in this PCM position, switch must be OFF						

### Serial Broadband SB3 settings (SW5)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 97. Serial Broadband Interface SB3 settings on the SW256B (SW5).

SW5		Switch				
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	Note
SW256B 0	01	OFF	OFF	OFF	OFF	SB3 interface is disabled
SW256B 1	02	OFF	OFF	OFF	OFF	SB3 interface is disabled
SW256B 2	03	OFF	OFF	OFF	OFF	SB3 interface is disabled
SW256B 3	04	OFF	OFF	OFF	OFF	SB3 interface is disabled
SW256B 4	05	OFF	OFF	OFF	OFF	SB3 interface is disabled

Table 97. Serial Broadband Interface SB3 settings on the SW256B (SW5).  
(cont.)

SW5		Switch				
SW256B 5	06	OFF	OFF	ON <sup>1)</sup>	OFF	SB3 interface, PCM circuits 1408-1471 connected. Selected if interface 0 of ETS2 in GTIC 0 slot 04 or interface 0 of ETS2 in GTIC 0 slot 07 connected.
SW256B 6	07	OFF	OFF	ON <sup>1)</sup>	OFF	SB3 interface, PCM circuits 1664-1727 connected. Selected if interface 0 of ETS2 in GTIC 1 slot 02 or interface 0 of ETS2 in GTIC 1 slot 03 connected.
SW256B 7	08	OFF	OFF	ON <sup>1)</sup>	OFF	SB3 interface, PCM circuits 1920-1983 connected. Selected if interface 0 of ETS2 in GTIC 1 slot 04 or interface 0 of ETS2 in GTIC 1 slot 07 connected.
1) If ETS2 in not connected in this PCM position, switch must be OFF						

### Serial Broadband SB4 settings (SW6)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 98. Serial Broadband Interface SB4 settings on the SW256B (SW6).

Switch		Switch				
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	
SW256B 0	01	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 192-255 connected. Selected if interface 1 of ETS2 in GTIC 0 slot 01 or interface 0 of ETS2 in GTIC 0 slot 02 connected.

Table 98. Serial Broadband Interface SB4 settings on the SW256B (SW6).  
(cont.)

Switch		Switch				
SW256B 1	02	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 448-511 connected. Selected if interface 1 of ETS2 in GTIC 0 slot 02 or interface 0 of ETS2 in GTIC 0 slot 04 connected.
SW256B 2	03	OFF	OFF	OFF	OFF	SB4 interface is disabled
SW256B 3	04	OFF	OFF	OFF	OFF	SB4 interface is disabled
SW256B 4	05	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 1216-1279 connected. Selected if interface 1 of ETS2 in GTIC 0 slot 03 or interface 0 of ETS2 in GTIC 0 slot 06 connected.
SW256B 5	06	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 1472-1535 connected. Selected if interface 1 of ETS2 in GTIC 0 slot 04 or interface 0 of ETS2 in GTIC 0 slot 08 connected.
SW256B 6	07	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 1728-1791 connected. Selected if interface 1 of ETS2 in GTIC 1 slot 02 or interface 0 of ETS2 in GTIC 1 slot 04 connected.
SW256B 7	08	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 1984-2047 connected. Selected if interface 1 of ETS2 in GTIC 1 slot 04 or interface 0 of ETS2 in GTIC 1 slot 08 connected.
1) If ETS2 in not connected in this PCM position, switch must be OFF						

## SW256 settings in a combined BSC3i/TCSM3i installation

The following information is specifically for combined BSC3i/TCSM3i network element installations.

### PCM mode settings (SW1)

The PCM mode set up is made with micro switches:

- 4M/8M mode for serial buses R0...R31, T0...T31
- 4M/8M mode for serial buses R32...R63, T32...T63

Table 99. PCM mode settings on the SW256B (SW1).

SW1		Switch				
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	Note
SW256B 0	01	OFF	OFF	OFF	OFF	PCM 0-255 4M mode selected
SW256B 1	02	OFF	OFF	OFF	OFF	PCM 256-511 4M mode selected
SW256B 2	03	ON	ON	OFF	OFF	PCM 512-767 8M mode selected
SW256B 3	04	ON	ON	OFF	OFF	PCM 768-1023 8M mode selected
SW256B 4	05	OFF	OFF	OFF	OFF	PCM 1024-1279 4M mode selected. Used when TCSA 2 cabinet is not equipped.
	05	ON <sup>1)</sup>	ON <sup>1)</sup>	OFF	OFF	PCM 1024-1279 8M mode selected. Used when TCSA 2 cabinet is equipped.
SW256B 5	06	ON	ON	OFF	OFF	PCM 1280-1535 8M mode selected
SW256B 6	07	ON	ON	OFF	OFF	PCM 1536-1791 8M mode selected
SW256B 7	08	ON	ON	OFF	OFF	PCM 1792-2047 8M mode selected
1) If TCSA 2 cabinet is not equipped in combined BSC3i/TCSM3i installation, switch must be OFF.						

### Serial Broadband SB1 settings (SW3)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 100. Serial Broadband Interface SB1 settings on the SW256B (SW3).

SW3	Slot	Switch				Note
		1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	
SW256B 0	01	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 1	02	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 2	03	OFF	OFF	OFF	OFF	SB1 interface is disabled
SW256B 3	04	ON <sup>1)</sup>	ON <sup>1)</sup>	OFF	OFF	SB1 interface, PCM circuits 768-815 connected to SBMUX-A in slot 01 of GTIC 5 & GTIC 6 (TCSA 1).
SW256B 4	05	ON <sup>1)</sup>	ON <sup>1)</sup>	OFF	OFF	SB1 interface, PCM circuits 1024-1071 connected to SBMUX-A in slot 01 of GTIC 8 & GTIC 9 (TCSA 2).
SW256B 5	06	ON <sup>1)</sup>	ON <sup>1)</sup>	OFF	OFF	SB1 interface, PCM circuits 1280-1327 connected to SBMUX-A in slot 01 of GTIC 2 & GTIC 3 (TCSA 0).
SW256B 6	07	ON <sup>1)</sup>	ON <sup>1)</sup>	OFF	OFF	SB1 interface, PCM circuits 1536-1583 connected to SBMUX-A in slot 02 of GTIC 2 & GTIC 3 (TCSA 0).
SW256B 7	08	OFF	OFF	ON <sup>1)</sup>	OFF	SB1 interface, PCM circuits 1792-1855 connected. Selected if interface 0 of ETS2 in GTIC 1 slot 03 or interface 0 of ETS2 in GTIC 1 slot 05 connected.
1) If ETS2 or SBMUX-A is not connected in this PCM position, switch must be OFF.						

## Serial Broadband SB2 settings (SW4)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 101. Serial Broadband Interface SB2 settings on the SW256B (SW4).

SW4	Slot	Switch				Note
		1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	
SW256B 0	01	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 64-127 connected. Selected if interface 0 of ETS2 in GTIC 0 slot 01 connected.
SW256B 1	02	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 320-383 connected. Selected if interface 0 of ETS2 in GTIC 0 slot 02 or interface 0 of ETS2 in GTIC 0 slot 03 connected.
SW256B 2	03	OFF	OFF	OFF	OFF	SB2 interface is disabled
SW256B 3	04	ON <sup>1)</sup>	ON <sup>1)</sup>	OFF	OFF	SB2 interface, PCM circuits 832-879 connected to SBMUX-A in slot 02 of GTIC 5 & GTIC 6 (TCSA 1).
SW256B 4	05	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 1088-1151 connected. Selected if interface 0 of ETS2 in GTIC 0 slot 03 or interface 0 of ETS2 in GTIC 0 slot 05 connected.
SW256B 5	06	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 1344-1407 connected. Selected if interface 0 of ETS2 in GTIC 1 slot 01 connected.



Table 101. Serial Broadband Interface SB2 settings on the SW256B (SW4).  
(cont.)

SW4		Switch				
SW256B 6	07	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 1600-1663 connected. Selected if interface 1 of ETS2 in GTIC 1 slot 01 or interface 0 of ETS2 in GTIC 1 slot 02 connected.
SW256B 7	08	OFF	OFF	ON <sup>1)</sup>	OFF	SB2 interface, PCM circuits 1856-1919 connected. Selected if interface 1 of ETS2 in GTIC 1 slot 03 or interface 0 of ETS2 in GTIC 1 slot 06 connected.
1) If ETS2 or SBMUX-A is not connected in this PCM position, switch must be OFF.						

### Serial Broadband SB3 settings (SW5)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 102. Serial Broadband Interface SB3 settings on the SW256B (SW5).

SW5		Switch				
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	Note
SW256B 0	01	OFF	OFF	OFF	OFF	SB3 interface is disabled
SW256B 1	02	OFF	OFF	OFF	OFF	SB3 interface is disabled
SW256B 2	03	OFF	OFF	OFF	OFF	SB3 interface is disabled
SW256B 3	04	OFF	OFF	OFF	OFF	SB3 interface is disabled
SW256B 4	05	ON <sup>1)</sup>	ON <sup>1)</sup>	OFF	OFF	SB3 interface, PCM circuits 1152-1199 connected to SBMUX-A in slot 02 of GTIC 8 & GTIC 9 (TCSA 2).

Table 102. Serial Broadband Interface SB3 settings on the SW256B (SW5).  
(cont.)

SW5		Switch				
SW256B 5	06	OFF	OFF	ON <sup>1)</sup>	OFF	SB3 interface, PCM circuits 1408-1471 connected. Selected if interface 0 of ETS2 in GTIC 0 slot 04 or interface 0 of ETS2 in GTIC 0 slot 07 connected.
SW256B 6	07	OFF	OFF	ON <sup>1)</sup>	OFF	SB3 interface, PCM circuits 1664-1727 connected. Selected if interface 0 of ETS2 in GTIC 1 slot 02 or interface 0 of ETS2 in GTIC 1 slot 03 connected.
SW256B 7	08	OFF	OFF	ON <sup>1)</sup>	OFF	SB3 interface, PCM circuits 1920-1983 connected. Selected if interface 0 of ETS2 in GTIC 1 slot 04 or interface 0 of ETS2 in GTIC 1 slot 07 connected.
1) If ETS2 or SBMUX-A is not connected in this PCM position, switch must be OFF.						

### Serial Broadband SB4 settings (SW6)

The setting of the Serial Broadband Interface capacity is presented in the table below.

Table 103. Serial Broadband Interface SB4 settings on the SW256B (SW6).

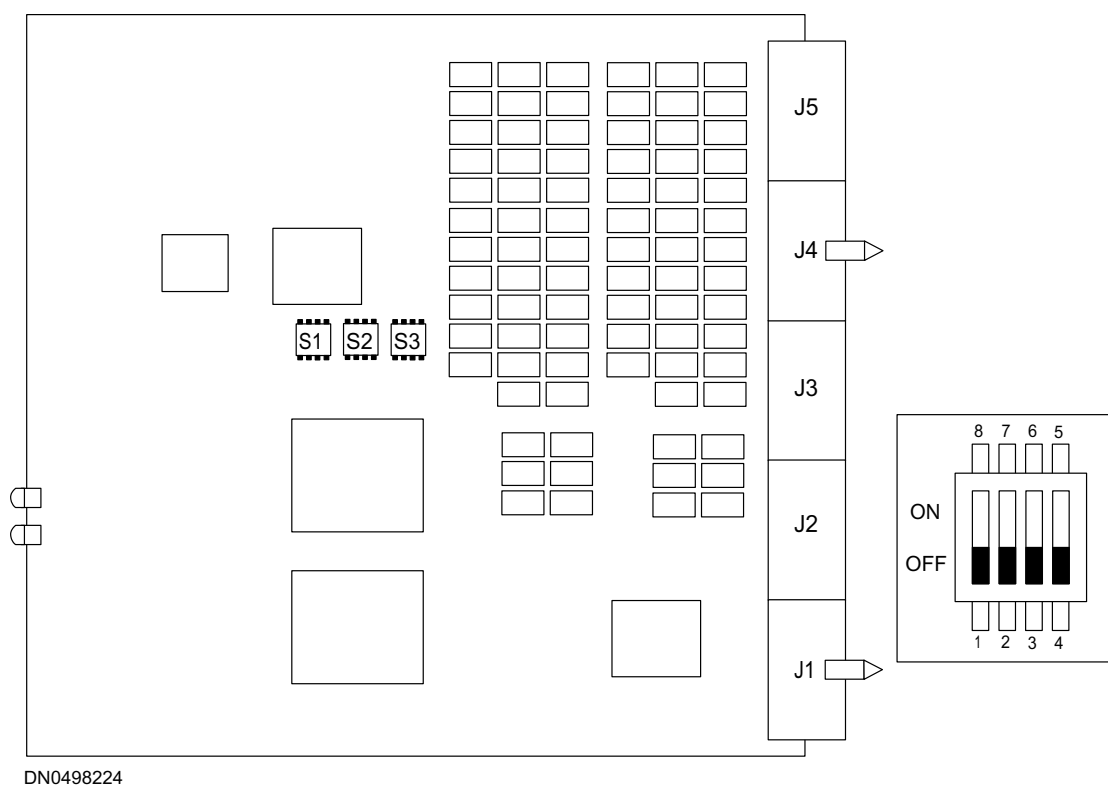
Switch		Switch				
	Slot	1 (1-8)	2 (2-7)	3 (3-6)	4 (4-5)	
SW256B 0	01	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 192-255 connected. Selected if interface 1 of ETS2 in GTIC 0 slot 01 or interface 0 of ETS2 in GTIC 0 slot 02 connected.

Table 103. Serial Broadband Interface SB4 settings on the SW256B (SW6).  
(cont.)

Switch		Switch				
SW256B 1	02	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 448-511 connected. Selected if interface 1 of ETS2 in GTIC 0 slot 02 or interface 0 of ETS2 in GTIC 0 slot 04 connected.
SW256B 2	03	OFF	OFF	OFF	OFF	SB4 interface is disabled
SW256B 3	04	OFF	OFF	OFF	OFF	SB4 interface is disabled
SW256B 4	05	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 1216-1279 connected. Selected if interface 1 of ETS2 in GTIC 0 slot 03 or interface 0 of ETS2 in GTIC 0 slot 06 connected.
SW256B 5	06	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 1472-1535 connected. Selected if interface 1 of ETS2 in GTIC 0 slot 04 or interface 0 of ETS2 in GTIC 0 slot 08 connected.
SW256B 6	07	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 1728-1791 connected. Selected if interface 1 of ETS2 in GTIC 1 slot 02 or interface 0 of ETS2 in GTIC 1 slot 04 connected.
SW256B 7	08	OFF	OFF	ON <sup>1)</sup>	OFF	SB4 interface, PCM circuits 1984-2047 connected. Selected if interface 1 of ETS2 in GTIC 1 slot 04 or interface 0 of ETS2 in GTIC 1 slot 08 connected.
1) If ETS2 in not connected in this PCM position, switch must be OFF						



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DN0498224

Figure 40. Connectors, micro switch and settings of the SW128B

The SW128B has three micro switch packages containing four switches each. The switches are used for setting PCM mode and Interchangeability code.

## PCM mode settings (S2)

The PCM mode set up is made with micro switches as follows:

- 4M/8M mode for serial buses R0...R31, T0...T31
- 4M/8M mode for serial buses R32...R63, T32...T63

Table 104. PCM mode settings on SW128B (S2).

Switch	Default setting	Function
1-8	OFF (4M)	<i>4M/8M mode for PCM circuits 0...63</i> OFF: 4M mode selected - PCM circuits 0...63 are connected through R0...R31, T0...T31 serial buses ON: 8M mode selected - PCM circuits 0...63 are connected through R0...R15, T0...T15 serial buses
2-7	OFF (4M)	<i>4M/8M mode for PCM circuits 64...127</i> OFF: 4M mode selected - PCM circuits 64...127 are connected through R32...R63, T32...T63 serial buses ON: 8M mode selected - PCM circuits 64...127 are connected through R32...R47, T32...T47 serial buses
3-6		Reserved
4-5		Reserved

### Interchangeability code settings (S3)

The setting of the interchangeability code (ICC code) is presented in the tables below.

Table 105. Switches and their function in micro switch package S3.

Switch	Default setting	Function
1-8	OFF	Interchangeability code bit 3
2-7	OFF	Interchangeability code bit 2
3-6	OFF	Interchangeability code bit 1
4-5	OFF	Interchangeability code bit 0

The first interchangeability code A corresponds to all switches OFF. After that, the settings start to roll for each interchangeability code change as shown in the table below.

Table 106. Setting the ICC codes on SW128B (S3).

ICC code	Setting			
	1-8	2-7	3-6	4-5
A	OFF	OFF	OFF	OFF
B	ON	OFF	OFF	OFF
C	OFF	ON	OFF	OFF
D	ON	ON	OFF	OFF
E	OFF	OFF	ON	OFF
F	ON	OFF	ON	OFF
G	OFF	ON	ON	OFF
H	ON	ON	ON	OFF
J	OFF	OFF	OFF	ON
K	ON	OFF	OFF	ON
L	OFF	ON	OFF	ON
M	ON	ON	OFF	ON
N	OFF	OFF	ON	ON
P	ON	OFF	ON	ON
R	OFF	ON	ON	ON



#### Note

The use of letters I, O and Q as ICC codes is not allowed.

### SW128B jumper settings in BSC3i

The following information is specifically for BSC3i network elements.

#### PCM mode settings (S2)

The PCM mode set up is made with micro switches as follows:

- 4M/8M mode for serial buses R0...R31, T0...T31
- 4M/8M mode for serial buses R32...R63, T32...T63

Table 107. PCM mode settings on SW128B (S2) in BSC3i.

Slot	Switch	Default setting	
F 01	1-8	OFF (4M)	<p><i>4M/8M mode for internal PCM circuits 0...63</i></p> <p>OFF: 4M mode selected - PCM circuits 0...63 are connected through R0...R31, T0...T31 serial buses</p>
F 01	2-7	OFF (4M)	<p><i>4M/8M mode for external PCM circuits 64...127</i></p> <p>OFF: 4M mode selected - PCM circuits 64...127 are connected through R32...R63, T32...T63 serial buses</p>
F 02	1-8	OFF (4M)	<p><i>4M/8M mode for internal PCM circuits 0...63</i></p> <p>OFF: 4M mode selected - PCM circuits 0...63 are connected through R0...R31, T0...T31 serial buses</p>
F 02	2-7	OFF (4M)	<p><i>4M/8M mode for external PCM circuits 64...127</i></p> <p>OFF: 4M mode selected - PCM circuits 64...127 are connected through R32...R63, T32...T63 serial buses</p>
F 03	1-8	<p>OFF (4M with ET2 PIUs) /</p> <p>ON (8M with ET4 PIUs)</p>	<p><i>4M/8M mode for internal PCM circuits 0...63</i></p> <p>OFF: 4M mode selected - PCM circuits 0...63 are connected through R0...R31, T0...T31 serial buses</p> <p>ON: 8M mode selected - PCM circuits 0...63 are connected through R0...R15, T0...T15 serial buses</p>



Table 107. PCM mode settings on SW128B (S2) in BSC3i. (cont.)

Slot	Switch	Default setting	
F 03	2-7	OFF (4M with ET2 PIUs) / ON (8M with ET4 PIUs)	<i>4M/8M mode for external PCM circuits 64...127</i>  OFF: 4M mode selected - PCM circuits 64...127 are connected through R32...R63, T32...T63 serial buses  ON: 8M mode selected - PCM circuits 64...127 are connected through R32...R47, T32...T47 serial buses
F 04	1-8	OFF (4M with ET2 PIUs) / ON (8M with ET4 PIUs)	<i>4M/8M mode for internal PCM circuits 0...63</i>  OFF: 4M mode selected - PCM circuits 0...63 are connected through R0...R31, T0...T31 serial buses  ON: 8M mode selected - PCM circuits 0...63 are connected through R0...R15, T0...T15 serial buses
F 04	2-7	OFF (4M with ET2 PIUs) / ON (8M with ET4 PIUs)	<i>4M/8M mode for external PCM circuits 64...127</i>  OFF: 4M mode selected - PCM circuits 64...127 are connected through R32...R63, T32...T63 serial buses  ON: 8M mode selected - PCM circuits 64...127 are connected through R32...R47, T32...T47 serial buses



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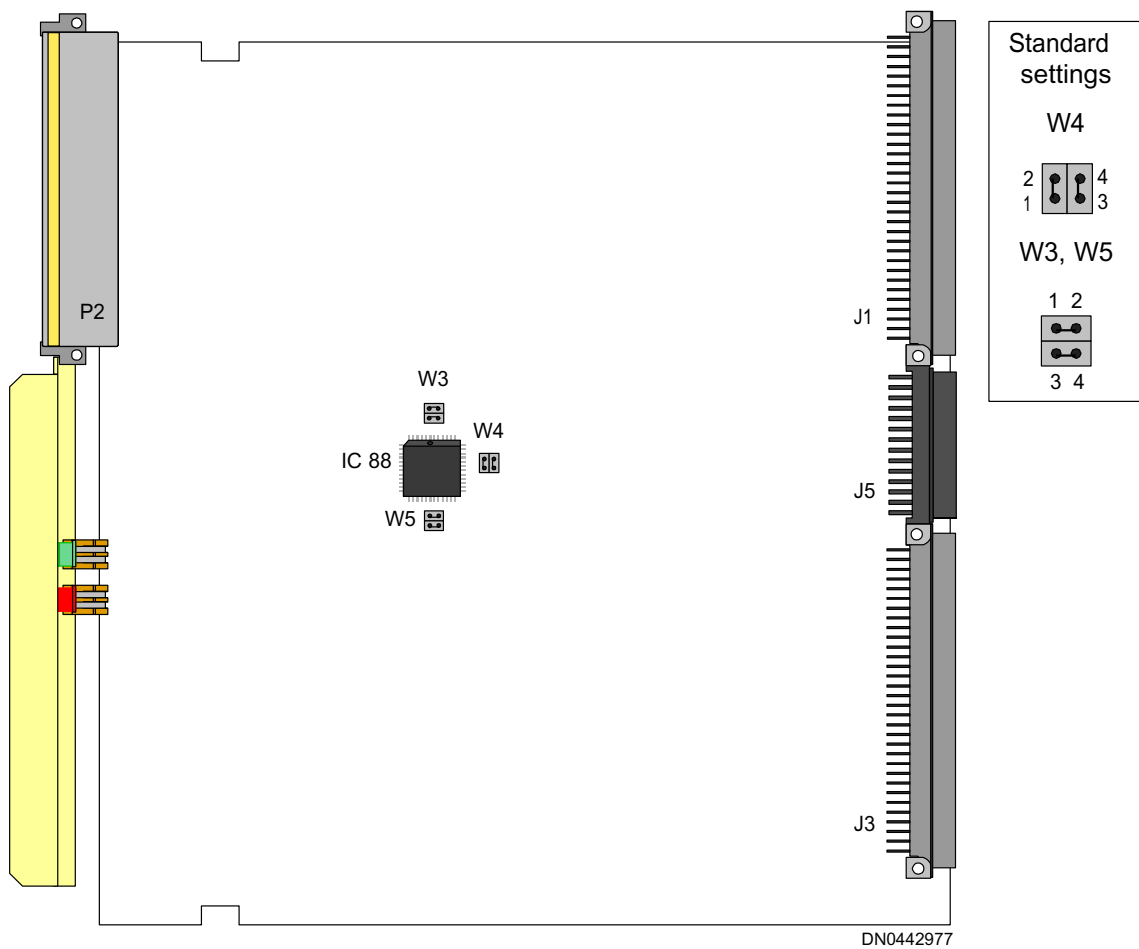


Figure 41. Jumpers of plug-in unit of SW64B (version 5)

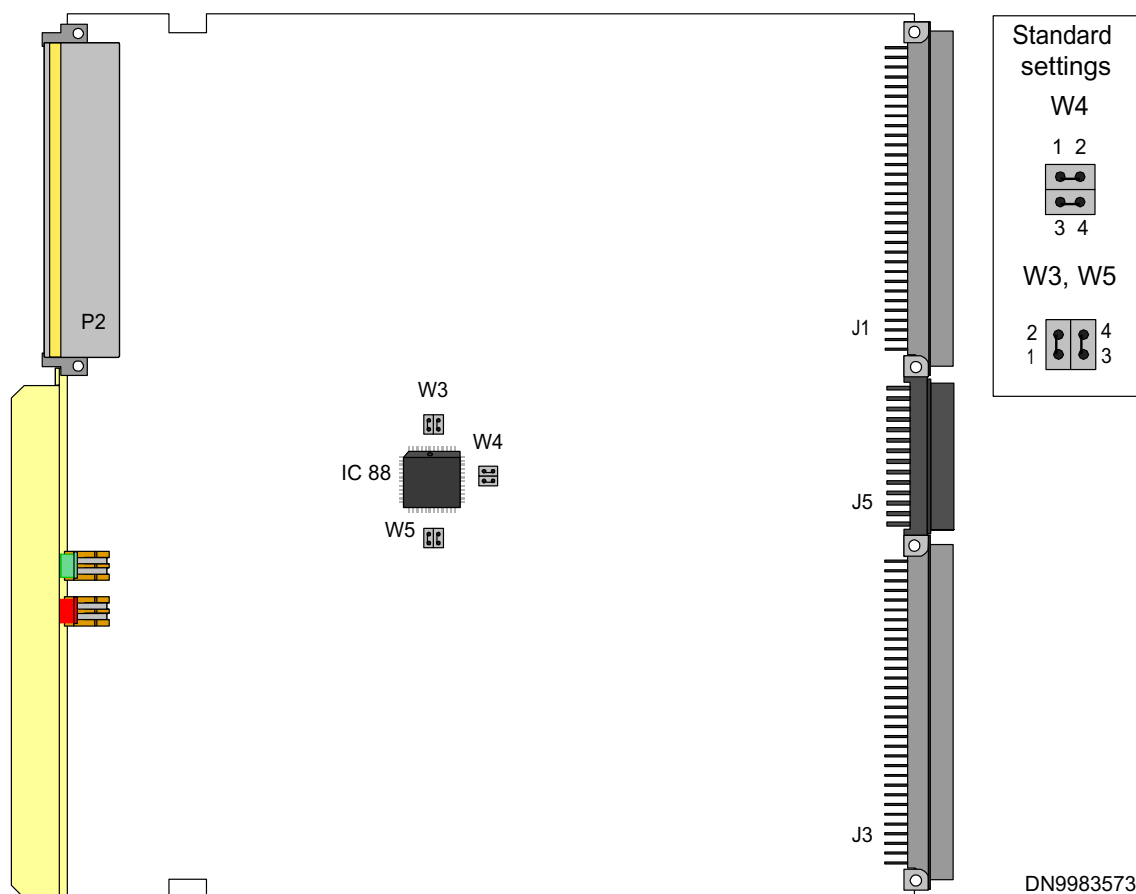


Figure 42. Jumpers of plug-in unit SW64B (versions 1–4)

### Standard settings

Table 108. Standard settings

Jumper group	Jumper
W3	1-2 3-4
W4	1-2 3-4
W5	1-2 3-4





# 36 TR3E C109454, TR3A C109455

## Jumper blocks of the plug-in unit

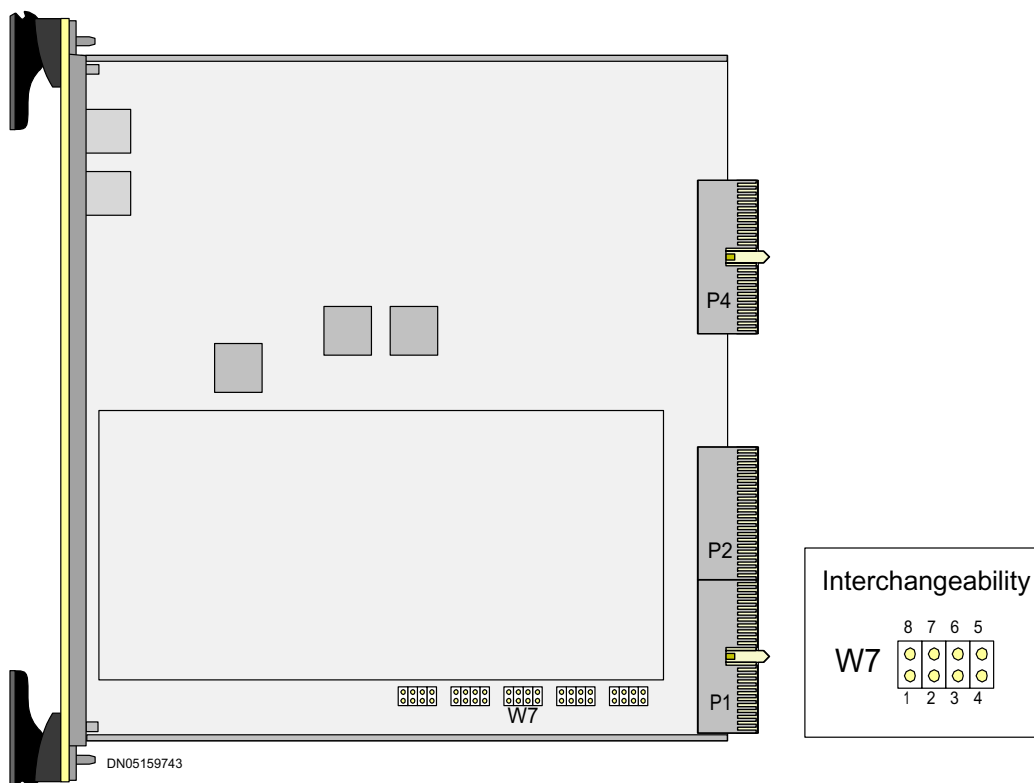


Figure 43. Jumper group of the plug-in unit TR3E/A

### Standard settings

Jumpers for these standard settings are set at the factory, and normally there is no need to change them.

Table 109. Interchangeability code settings of TR3E/A (W7)

ICC code	W7 settings			
	1 - 8	2 - 7	3 - 6	4 - 5
A	ON	ON	ON	ON
B	OFF	ON	ON	ON
C	ON	OFF	ON	ON
D	OFF	OFF	ON	ON
E	ON	ON	OFF	ON
F	OFF	ON	OFF	ON
G	ON	OFF	OFF	ON
H	OFF	OFF	OFF	ON
J	ON	ON	ON	OFF
K	OFF	ON	ON	OFF
L	ON	OFF	ON	OFF
M	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF
P	OFF	ON	OFF	OFF
R	ON	OFF	OFF	OFF



# 37 MO91 drive P01090

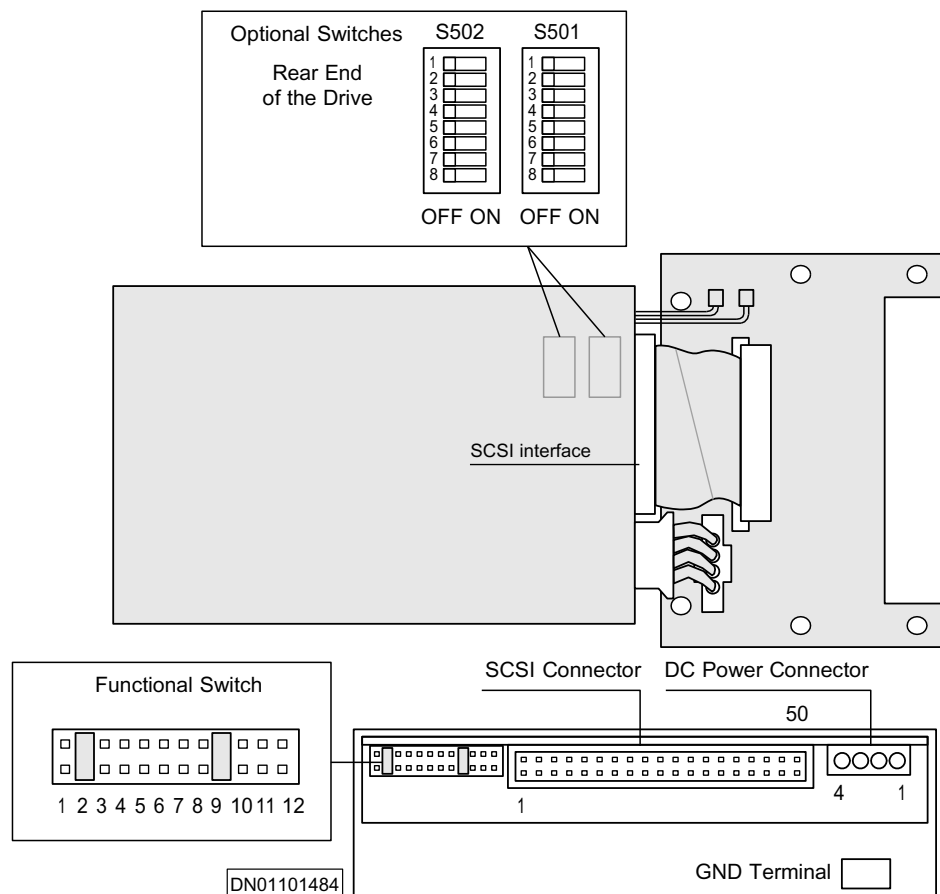


Figure 44. Jumpers of MO91 (Sony SMO-F561)

A magneto-optical unit FDU composed of the MO91 (P01090) mounted on an adapter board ODAD-A (C100640) or ODP-U-A Optical Device Plug-in Unit (C101810).

## Standard settings

Table 110. Standard jumper settings of the MO91 (Functional Switch)

Jumper	Meaning	Default
1	SCSI ID2. Address = 2. Default.	OFF
2	SCSI ID1. Address = 2. Default.	ON
3	SCSI ID0. Address = 2. Default.	OFF
4	Disables SCSI parity checking. Default.	OFF
5	Disables write back caching. Default.	OFF
6	Disables auto spin-up. Default.	OFF
7	Forces verify for write command. Default.	OFF
8	Disables manual eject operation. Default.	OFF
9	Enables Ultra SCSI. Default.	ON
10	Device type. Default.	OFF
11	Enables termination. Default.	OFF
12	Terminator power. Default.	OFF

Table 111. Optional Dip Switch Assignments of the MO91

Optional Switch	Switch number	Description	Default
S501	1	Reserved for internal use. Do not turn on.	OFF
	2	Reserved for internal use. Do not turn on.	OFF
	3	Disables Command Eject.	OFF
	4	Reserved for internal use. Do not turn on.	OFF
	5	Enable Library I/F Mode. Mode will be valid.	OFF
	6	Reserved for internal use. Do not turn on.	OFF
	7	Disables Write Cache.	OFF
	8	Disables Auto Spin-up upon cartridge loading.	OFF
S502	1	Reserved for internal use. Do not turn on.	OFF
	2	Reserved for internal use. Do not turn on.	OFF
	3	Reserved for internal use. Do not turn on.	OFF
	4	Reserved for internal use. Do not turn on.	OFF

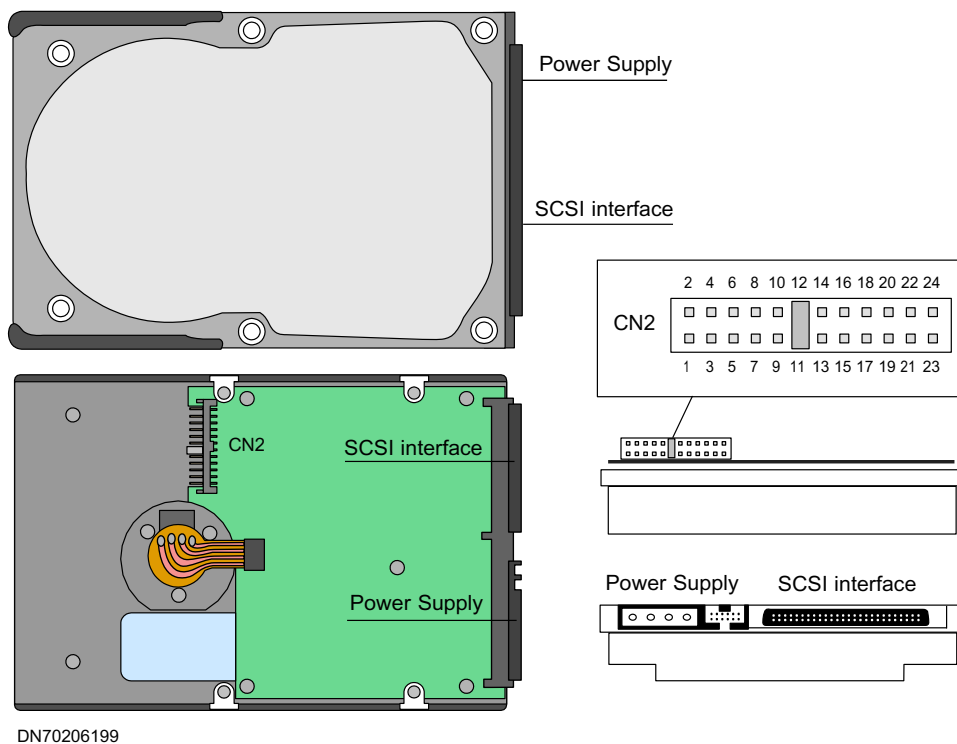
Table 111. Optional Dip Switch Assignments of the MO91 (cont.)

Optional Switch	Switch number	Description	Default
	5	Disables SCAM selection.	OFF
	6	Reserved for internal use. Do not turn on.	OFF
	7	Enables Ultra SCSI.	OFF
	8	Enables Write Cache for Write and Verify Command.	OFF



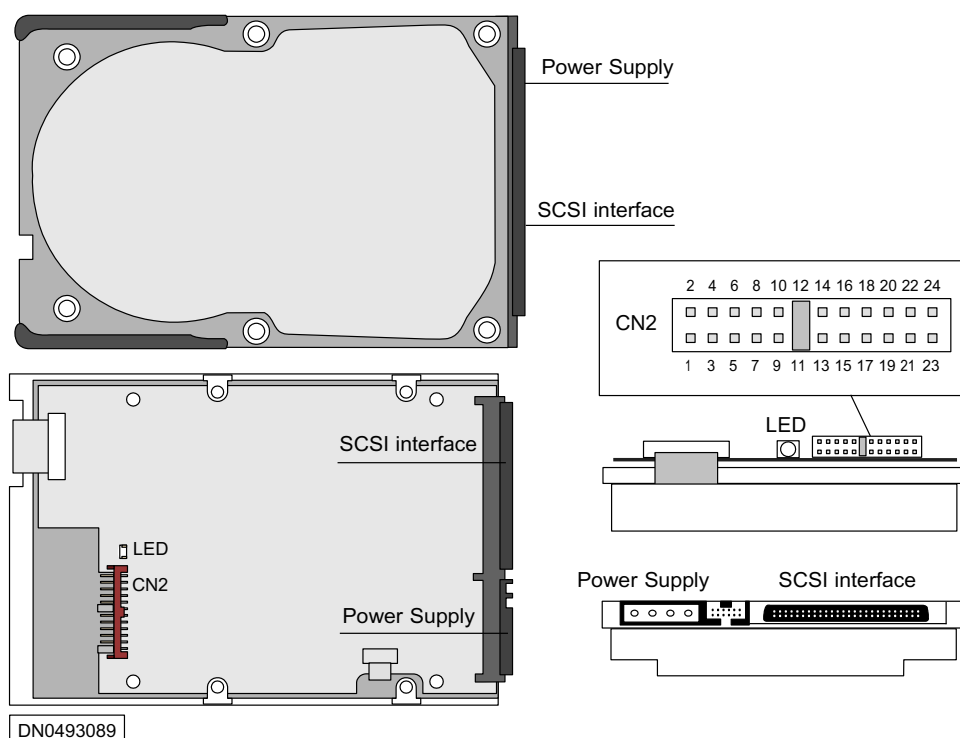
# 38 WDW73 P01098

WDW73 has two variants with different layouts. There are no differences in functionality.



The cooling profile is not shown in the figure.

Figure 45. Jumpers of WDW73



The cooling profile is not shown in the figure.

Figure 46. Jumpers of WDW73

A hard disk drive WDU (HDI) is composed of the WDW73 mounted on an adapter board HDAD2-A (C71770) or HDPU-A Hard Disk Plug-in Unit (C100720).

### Standard settings of WDW73 (CN2)

Table 112. Terminal settings, CN2 (WDW73)

Jumper group	Jumper	Meaning
Terminal setting	1-2, OFF	(A0) SCSI address = 0. Default.
	3-4, OFF	(A1) SCSI address = 0. Default.
	5-6, OFF	(A2) SCSI address = 0. Default.

Table 112. Terminal settings, CN2 (WDW73) (cont.)

Jumper group	Jumper	Meaning
	7-8, OFF	(A3) SCSI address = 0. Default.
	9-10, OFF	Write protection, no protection. Default.
	11-12, ON	Spin-up immediately after power on. Default.
	13-14, OFF	SCSI bus width; 8/16 bit selectable. Default.
	15-16, OFF	SCSI interface operation mode (SE/LVD). Default.
	17-18, OFF	Spindle synchronization signal. Do not connect.
	19-20, OFF	IDD reset signal. Do not connect.
	21-22, OFF	Output signal connector to external LED. Do not connect.
	23-24, OFF	Terminal power supply is off. Default.





# 39 WDW18-S P01091, WDW36 P01096

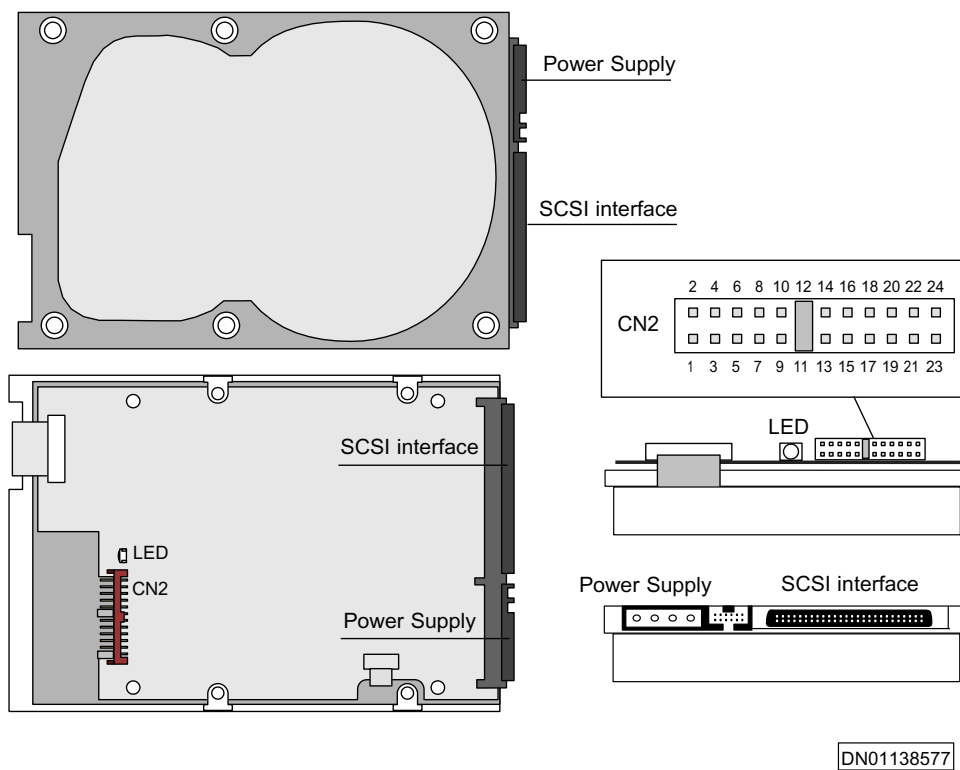


Figure 47. Jumpers of WDW18-S (Fujitsu MAN3184MP) and WDW36 (Fujitsu MAP3367NP). The cooling profile is not shown.

A hard disk drive WDU (H DU) is composed of the WDW18-S (P01091) or WDW36 (P01096) mounted on an adapter board HDAD2-A (C71770) or HDPU-A Hard Disk Plug-in Unit (C100720).

## Standard settings of WDW18-S and WDW36 (CN2)

Table 113. Terminal settings, CN2 (WDW18-S and WDW36)

Jumper group	Jumper	Meaning
CN2 Terminal setting	1-2, OFF	(A0) SCSI address = 0. Default.
	3-4, OFF	(A1) SCSI address = 0. Default.
	5-6, OFF	(A2) SCSI address = 0. Default.
	7-8, OFF	(A3) SCSI address = 0. Default.
	9-10, OFF	Write protection, no protection. Default.
	11-12, ON	Spin-up immediately after power on. Default.
	13-14, OFF	SCSI bus width; 8/16 bit selectable. Default.
	15-16, OFF	SCSI interface operation mode (SE/LVD). Default.
	17-18, OFF	Spindle synchronization signal. Do not connect.
	19-20, OFF	IDD reset signal. Do not connect.
	21-22, OFF	Output signal connector to external LED. Do not connect.
	23-24, OFF	Terminal power supply is off. Default.