

# Replacing, Expanding and Mixing Line interface boards

INSTALLATION INSTRUCTION



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# 1 INTRODUCTION

MX-ONE (from now named the exchange in this document) is a communication solution for enterprises. The exchange integrates voice communication in fixed and mobile networks for public as well as private service. The exchange can be integrated into an existing Local Area Network (LAN) infrastructure. The exchange supports both IP telephony and functions found in classic circuit-switched PBXes (Private Branch Exchanges).

## 1.1 SCOPE

This document describes the procedure when replacing boards, expanding with more boards, or mixing new and older boards from an existing exchange or a group switch in Stackable and 19" cabinets.

For more information see the installation instructions for INSTALLING MX-ONE.

**Note:** All boards are supported in the same building practice as they first were delivered in new sales. To place boards in other building practices may result in malfunctioning, or even worse, damaging the system.

## 1.2 TARGET GROUP

The target group for this document is personnel involved in replacing, expanding, or mixing an existing exchange or a group switch.

## 1.3 PREREQUISITES

This section lists requirements that must be fulfilled before the installation starts.

### 1.3.1 ELECTRICAL CONNECTIONS

Installation procedures involving connection of power cables and batteries must be performed according to local regulations.

### 1.3.2 SAFETY

All personnel involved in installation must read and understand the safety instructions prior to installation, see the description for SAFETY INFORMATION.

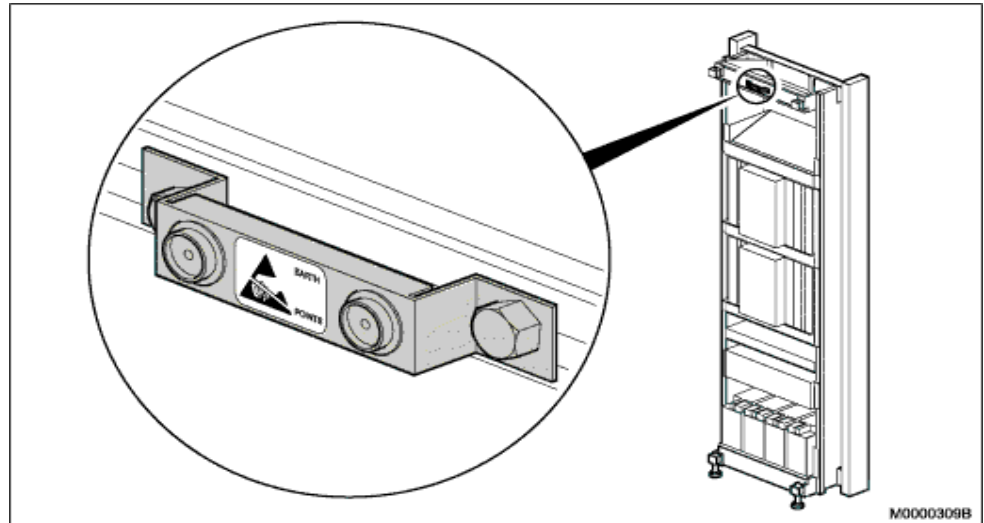
### 1.3.3 TOOLS

For tools required for hardware installation see the installation instructions for INSTALLING MX-ONE.

### 1.3.4 ESD WRIST STRAP IN CONJUNCTION WITH SERVICE

It is recommended that the personnel uses ESD (Electrical Static Discharge) wrist straps connected to earth when carrying out service. Two earth points are placed at the

top of each BYB 501 cabinet see 1 ESD-earth Points in BYB 501 Cabinet on page 4.  
For Stackable one earth point is placed at the bottom of each module. The earth points are designed for banana plugs.  
There is a designation label, *ESD*, beside each jack, see Figure 2 ESD-label on page 4.



**Figure 1: ESD-earth Points in BYB 501 Cabinet**



**Figure 2: ESD-label**

## 2

## PRINCIPLES FOR EXPANSION

It is possible to use the MX-ONE-boards in the earlier Stackable version and it is of course also possible to add new boards, acc to document HW STATUS ASP11301, to an existing system. In both cases the latest version of MX-ONE SW must be used.

The principle for expansion of boards in Stackable is to add boards in empty positions. It is also possible to expand the capacity of the exchange by replacing older boards with new ones. The boards are presented in Table 1 Boards with Front on page 6.

For cabinet expansion, new 19" cabinets, must be added beside the previous Stackable.

The principle for expansion of boards in 19" cabinet is to add boards in positions where dummy fronts are located.

### 2.1

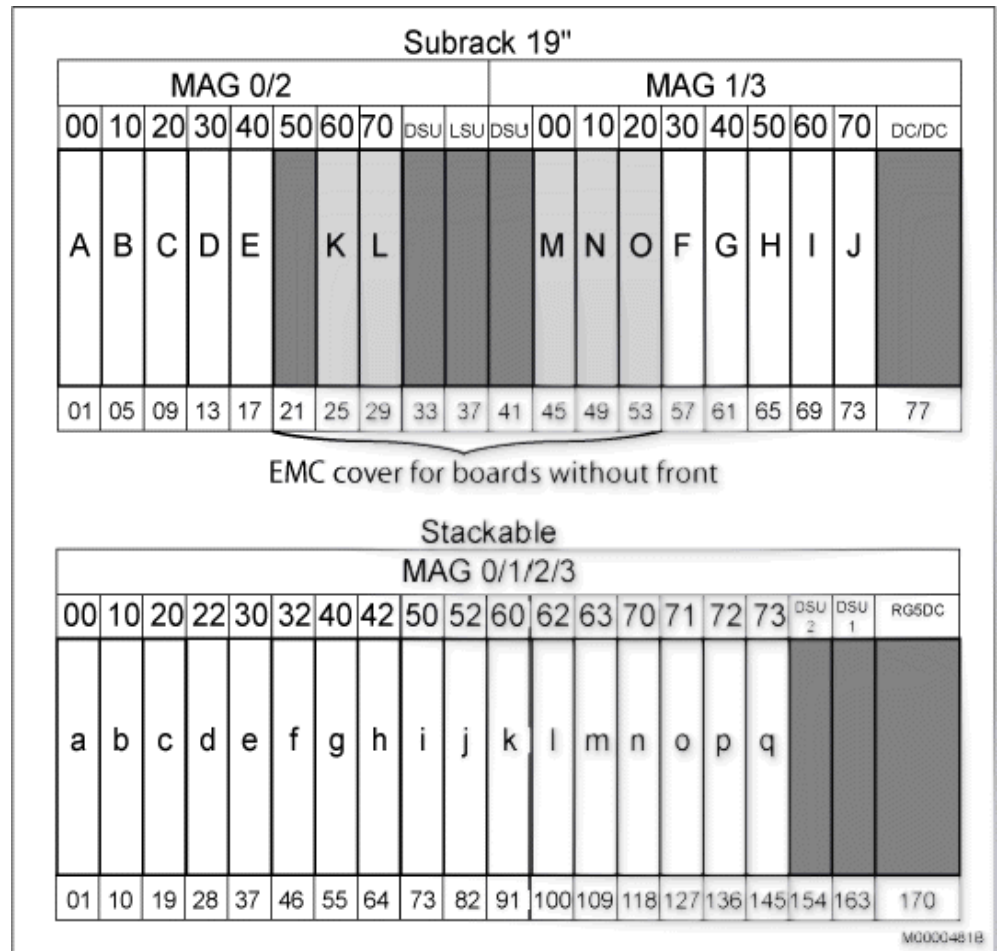
### BOARDS

For explanation of the board positions (**Pos.**) in the previous Stackable and in 19" magazines see Figure 3 Board Positions in the Magazines on page 6, and table 1 Boards with Front on page 6.

**Note:** When installing a 19" board with front in Stackable OR behind the EMC cover in a 19" Subrack the board front must be removed. A support front must also be mounted, see 4.1 Removing the Fronts on Boards for 19" Subrack on page 14 and see 4.2 Mounting the Support Front on page 14.

**Subrack 19"** , the board positions in the figure are marked **A - O**.

**Stackable**, the board positions in the figure are marked **a - q**.

**Figure 3: Board Positions in the Magazines**

Building height is mm for LBP22 and M (2.54 mm) for previous racks.

**Note:** Bold letter indicates where it is possible to put the board, non bold letters after indicates the positions not to use if previous bold letter is occupied by the board.

**Table 1 Boards with Front**

Board	Product number	Building height	Time Slots	Pos. in Stackable	Remarks
ALU2/11	ROF 137 5373/11	20mm/8M	8	<b>l, m, n, o, p, q, k, j</b>	Replaces ALU2/1
DC/DC	ROF 137 6303/1	40mm	---		
DSU/14	ROF 131 4414/14	20mm/8M	---	DSU:0 / DSU:1	Distributed Switch Unit
ELU26/12	ROF 137 5321/12	20mm/8M	8	<b>q, p, o, n, m, l, k, j, i, h, g, f, e, d, c, a</b>	Replaces ELU26/2
ELU31/4	ROF 137 5412/4	20mm/8M	32	<b>g</b> (+h), <b>i</b> (+j), <b>e</b> (+f), <b>c</b> (+d), <b>k</b> (+l+m), <b>n</b> (+o+p+q), <b>a</b>	For DECT-extensions replaces ELU31/2 and /3
ELU31/4	ROF 137 5412/4	20mm/8M	16	<b>g</b> , <b>h, i, f, e, d, c, j, k, l</b> (+m), <b>n</b> (+o), <b>p</b> (+q), <b>a</b>	For DECT-extensions replaces ELU31/1, /2 and /3

## REPLACING, EXPANDING AND MIXING LINE INTERFACE BOARDS

Board	Product number	Building height	Time Slots	Pos. in Stackable	Remarks
ELU33/1	ROF 137 5062/1	20mm/8M	32	<b>c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>k</b> (+l+m), <b>n</b> (+o+p+q), <b>a</b>	Digital extensions replaces ELU28, but can coexist.
ELU33/1	ROF 137 5062/1	20mm/8M	16	<b>c, d, e, f, g, h, i, j, k, l</b> (+m), <b>n</b> (+o), <b>p</b> (+q), <b>a</b>	Digital extensions replaces ELU28, but can coexist.
ELU34/1	ROF 137 5064/1	20mm/8M	32	<b>k</b> (+l+m), <b>i</b> (+j), <b>g</b> (+h), <b>e</b> (+f), <b>c</b> (+d), <b>n</b> (+o+p+q), <b>a</b>	Analogue extensions with message waiting. Replaces ELU29 and ELU30, but can coexist.
ELU34/1	ROF 137 5064/1	20mm/8M	16	<b>k,j,i,h,g,f,e,d,c</b> , <b>l</b> (+m), <b>n</b> (+o), <b>p</b> (+q), <b>a</b>	Analogue extensions with message waiting. Replaces ELU29 and ELU30, but can coexist.
ELU34/2	ROF 137 5064/2	20mm/8M	32	<b>k</b> (+m), <b>i</b> (+j), <b>g</b> (+h), <b>e</b> (+f), <b>c</b> (+d), <b>n</b> (+o+p+q), <b>a</b>	Analogue extensions with message waiting. Replaces ELU29 and ELU30 (for China only).
ELU34/2	ROF 137 5064/2	20mm/8M	16	<b>k,j,i,h,g,f,e,d,c</b> , <b>l</b> (+m), <b>n</b> (+o), <b>p</b> (+q), <b>a</b>	Analogue extensions with message waiting. Replaces ELU29 and ELU30 (for China only).
FTU2/11	ROF 137 5415/11	20mm/8M	8	<b>q,p,o,n,m,l,k,j,i,h,g,f,e,d,c</b>	Replaces FTU2/1
GJUL4/11	ROF 137 5393/11	20mm/8M	32	<b>a, c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>k</b> (+l+m), <b>n</b> (+o+p+q)	Replaces GJUL4/1
GJUL4/12	ROF 137 5393/12	20mm/8M	32	<b>a, c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>k</b> (+l+m), <b>n</b> (+o+p+q)	Replaces GJUL4/2
IPLU	ROF 137 5067/1	20mm/8M	32	<b>a,c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>k</b> (+l+m), <b>n</b> (+o+p+q)	Replaces ELU32, but can coexist.
SPU4/11	ROF 137 5430/11	20mm/8M	32	<b>c, d</b> , <b>e, g, h, i, j, k</b> , <b>l</b> (+m), <b>n</b> (+o), <b>p</b> (+q)	Board for digital signal processing. Voice Compression(asVCU3)
TLU76/11	ROF 137 5338/11	20mm/8M	32	<b>a,c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>k</b> (+l+m), <b>n</b> (+o+p+q)	Replaces TLU76/1
TLU76/12	ROF 137 5338/12	20mm/8M	32	<b>a,c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>k</b> (+l+m), <b>n</b> (+o+p+q)	Replaces TLU76/2
TLU76/13	ROF 137 5338/13	20mm/8M	32	<b>a,c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>k</b> (+l+m), <b>n</b> (+o+p+q)	Replaces TLU76/3
TLU76/14	ROF 137 5338/14	20mm/8M	32	<b>a,c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>k</b> (+l+m), <b>n</b> (+o+p+q)	Replaces TLU76/4
TLU77/11	ROF 137 5387/11	20mm/8M	32(23)	<b>a,c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>l</b> (+m+n), <b>o</b> (+p+q)	ISDN. Replaces TLU77/1

Board	Product number	Building height	Time Slots	Pos. in Stackable	Remarks
TLU77/12	ROF 137 5387/12	20mm/8M	32(23)	<b>a,c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>l</b> (+m+n), <b>o</b> (+p+q)	DPNSS. Replaces TLU77/2
TLU77/13	ROF 137 5387/13	20mm/8M	32(23)	<b>a,c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>l</b> (+m+n), <b>o</b> (+p+q)	CAS. Replaces TLU77/3
TLU79/11	ROF 137 5349/11	20mm/8M	8	<b>n,a,q,p,o,m,l,k,j,i,h,g,f,e,d,c</b>	Replaces TLU79/1
TLU80/11	ROF 137 5406/11	20mm/8M	8	<b>q,p,o,n,m,l,k,j,i,h,g,f,e,d,c,a</b>	Replaces TLU80/1
TLU83/1	ROF 137 6305/1	20mm/8M	8(12)	<b>q,p,o,n,m,l,k,j,i,h,g,f,e,d,c,a</b>	Replacing TLU75 or TLU82
TLU83/1	ROF 137 6305/1	20mm/8M	16	<b>g,h,i,f,e,d,c,j,k,l</b> (+m), <b>n</b> (+o), <b>p</b> (+q), <b>a</b>	Used with 12 timeslots.
TLU83/2	ROF 137 6305/2	20mm/8M	8(12)	<b>q,p,o,n,m,l,k,j,i,h,g,f,e,d,c,a</b>	Replacing TLU75 or TLU82
TLU83/2	ROF 137 6305/2	20mm/8M	16	<b>g,h,i,f,e,d,c,j,k,l</b> (+m), <b>n</b> (+o), <b>p</b> (+q), <b>a</b>	Used with 12 timeslots
TMU/12	ROF 137 5335/12	20mm/8M	32	<b>a,c</b> (+d), <b>e</b> (+f), <b>g</b> (+h), <b>i</b> (+j), <b>k</b> (+l+m), <b>n</b> (+o+p+q)	Replaces TMU/2

## 2.2

## CABLES

**Table 2 Cables**

Type of cable	Product Number	Description
Internal	TSR 901 1227/400*)	ELU31/4 - ELU31/4 (Sync Bus).
	TSR 901 1228/3000*)	ELU31/1 or /2 - ELU31/4 (Sync Ring).
	TSR 901 1229/400*)	ELU31/1 or /2 - ELU31/4 (Sync Bus).
	TSR 901 1235/1*)	ELU31/4 - ELU31/4 (Sync Ring + Bus).
	TSR 901 1236/1*)	ELU31/4 - ELU31/1 or /2 (Sync Ring + Bus).
	TSR 901 0340/16000	GJUL4 - GJUG5 (LIM - GSM)
	TSR 901 0340/8000	GJUL4 - GJUG5 (LIM - GSM)
	TSR 491 406/120	LSU/16 - DSU/14(n) (for magazine 0)
	TSR 491 406/1050, /1850	LSU/16 - DSU/14(n) (for magazine 1-3)
	TSR 491 409/100	LSU(E) - DSU(n) (for magazine 0)
	TSR 491 411/1850	LSU(E) - DSU(n) (for magazine 1-3)
Adapter cables	TSR 910 1056/2000	Adapter ELU31/4, ELU33, ELU34, TLU80 (1x Euro1/1 - FCI)
	TSR 910 1058/2000	Adapter ELU33, ELU34 (2 x Euro1/1 - FCI)
	TSR 491 415/2000	Adapter ELU26
	TSR 491 417/100	Adapter LSU/16 - LSU/6



\*) For information about sync ring and bus cabling to the ELU31/4 see the CORDLESS TELEPHONY/INTEGRATED DECT.

## 3

## STACKABLE AND 19" CABINET

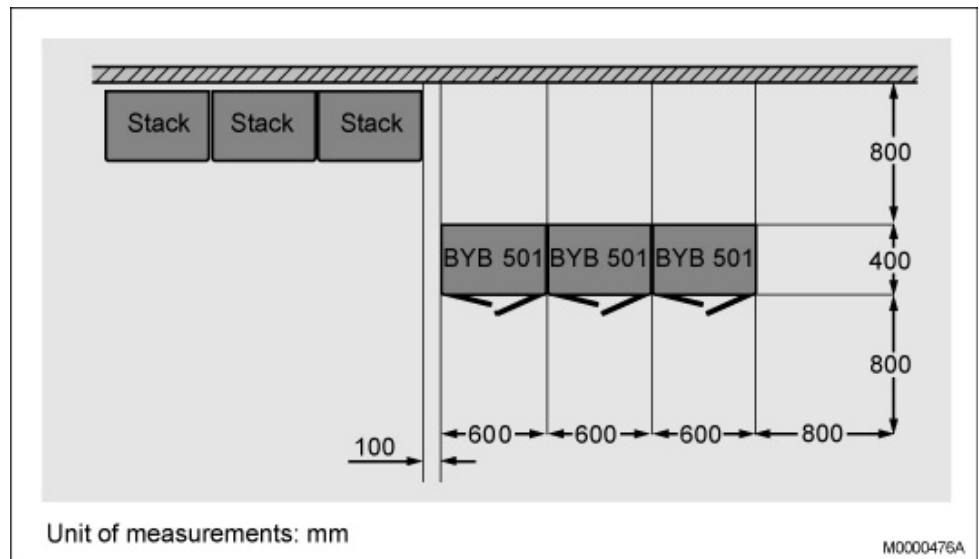
This section describes how to add 19" cabinets to an existing exchange with Stackable and how to place the cabinets in the exchange room.

## 3.1

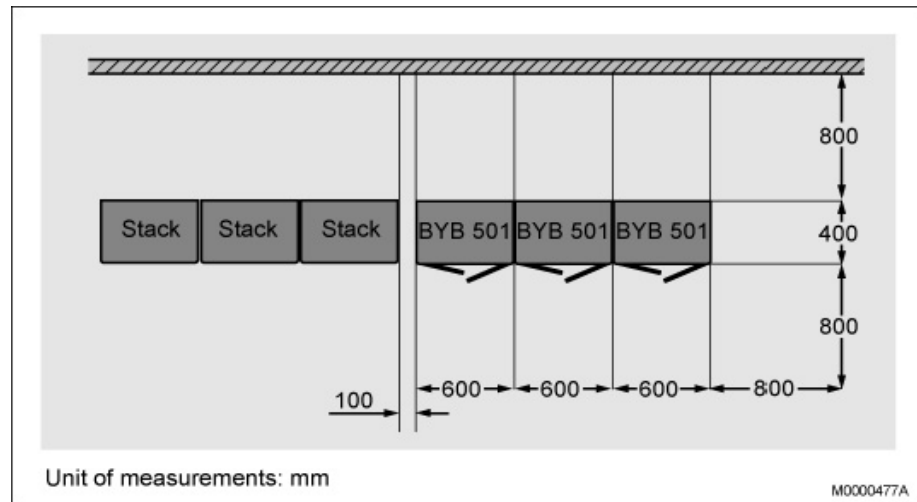
## STACKABLE TO 19" CABINET

This section is an overview on how to expand an existing exchange with new 19" cabinets.

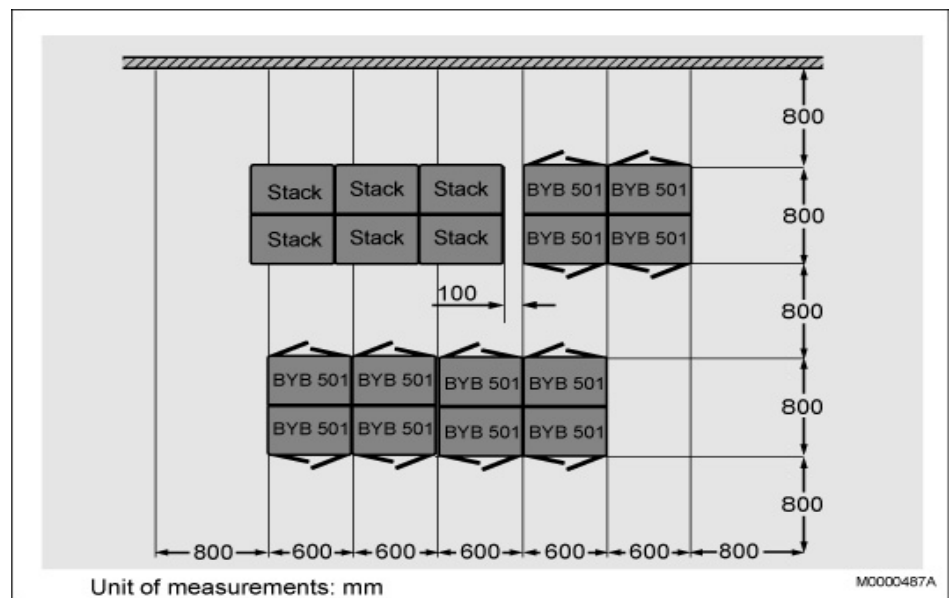
Place the new 19" cabinets (BYB 501) beside the earlier Stackable racks in one row if an earlier site is to be expanded. If the Stackable row is against a wall and shall be expanded with 19" cabinets, see 4 Stackable Against a Wall on page 10. See 5 Single Row Configuration on page 11 shows a one row configuration, which makes it easy to work from booth sides of the row. See 6 Double Row Configuration on page 11 shows a Stackable double row configuration and how to expand it with new 19" cabinets. The distance 100 mm between the Stackable row and the 19" cabinet row is approximate and makes it possible to remove the side plates.



**Figure 4: Stackable Against a Wall**



**Figure 5: Single Row Configuration**



**Figure 6: Double Row Configuration**

## 3.2 CABLE LADDERS

New cable ladders and cable chutes must be adapted to the existing system for the cables.

### 3.3

## EARTHING

This section describes the principle for earthing.

#### 3.3.1

### EARTHING THE CABINETS

The BYB 501 cabinets must be multi-point earthed. The figure 7 Earthing Overview on page 13 shows the principles for earthing when adding new BYB 501 cabinets to Stackable.

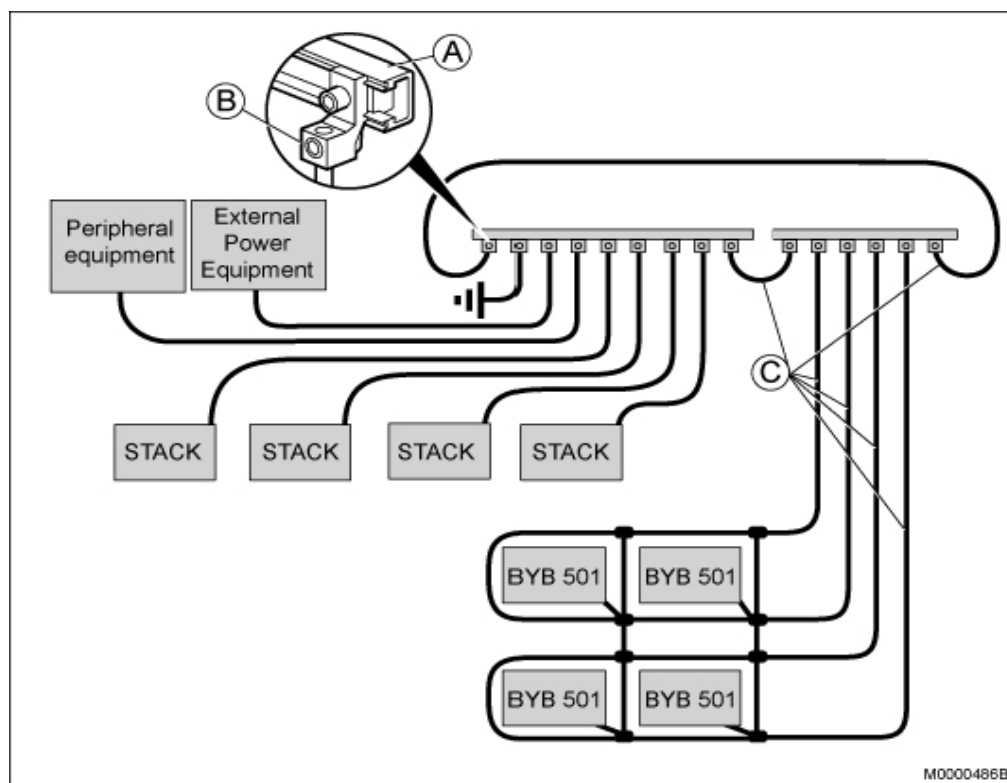
Use the following material sets to earth the BYB 501 cabinets:

**Table 3 Earthing Material, Basic**

NTM 503 46/122 Earthing Material, Basic			
Pos.	Title/Function	ProductNumber	Quantity
A	Earth bar	SNV 103 04	1
B	Earth clip	105 4546/1	5
C	CABLE 50 mm <sup>2</sup> , isolated	TFL 104 510/08	25 M

**Table 4 Earthing Material, Extra**

NTM 503 46/123 Earthing Material, Extra			
Pos.	Title/Function	ProductNumber	Quantity
B	Earth clip	105 4546/1	5
C	CABLE 50 mm <sup>2</sup> , isolated	TFL 104 510/08	25 M



**Figure 7: Earthing Overview**

A new earth bar is installed and connected in both ends to the existing earth bar, see Figure 7 Earthing Overview on page 13.

## 4

# ADDING BOARDS AND CABLES IN STACKABLE MAGAZINES

This section describes how to add boards and cables in an existing exchange.

### 4.1

## REMOVING THE FRONTS ON BOARDS FOR 19" SUBRACK

When installing a 19" board with front in Stackable (or behind the EMC cover in a 19" subrack), the board front must be removed. For the boards listed below a support front must be mounted, see 4.2 Mounting the Support Front on page 14.

- ALU2/11
- ELU26/12
- ELU31/4
- ELU33
- ELU34
- FTU2/11
- GJUL4/11, /12
- TLU76/11, /12, /13, /14
- TLU77/11, /12, /13
- TLU79/11
- TLU80/11
- TLU83
- TMU/12

### 4.2

## MOUNTING THE SUPPORT FRONT

This section describes how to change a board front on ELU33, ELU34, ELU31/4, FTU2/11, and TMU/12. When installing one of these boards in Stackable the front on the board must be changed to a support front, according to the following instruction.

**Table 5 Material Set for Changing the Board Front**

Title/Function	ProductNumber	Quantity
<b>Material Set NTM 144 269</b>		
Support front ELU33, ELU34, FTU2, TLU80, TLU83	SXA 112 3022/03	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1
<b>Material Set NTM 144 269/2</b>		
Support front ELU31/4	SXA 112 3022/06	1

Title/Function	ProductNumber	Quantity
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1
<b>Material Set NTM 144 269/3</b>		
Support front TMU/12, MFU, DSU, TLU79, ELU26, FAN	SXA 112 3022/08	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1
<b>Material Set NTM 144 269/4</b>		
Support front ALU2, LSU-E	SXA 112 3022/05	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1
<b>Material Set NTM 144 269/5</b>		
Support front IPLU	SXA 112 3022/04	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1
<b>Material Set NTM 144 269/6</b>		
Support front TLU77	SXA 112 3022/20	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1
<b>Material Set NTM 144 269/7</b>		
Support front TLU76 and GJUL4	SXA 112 3022/10	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1

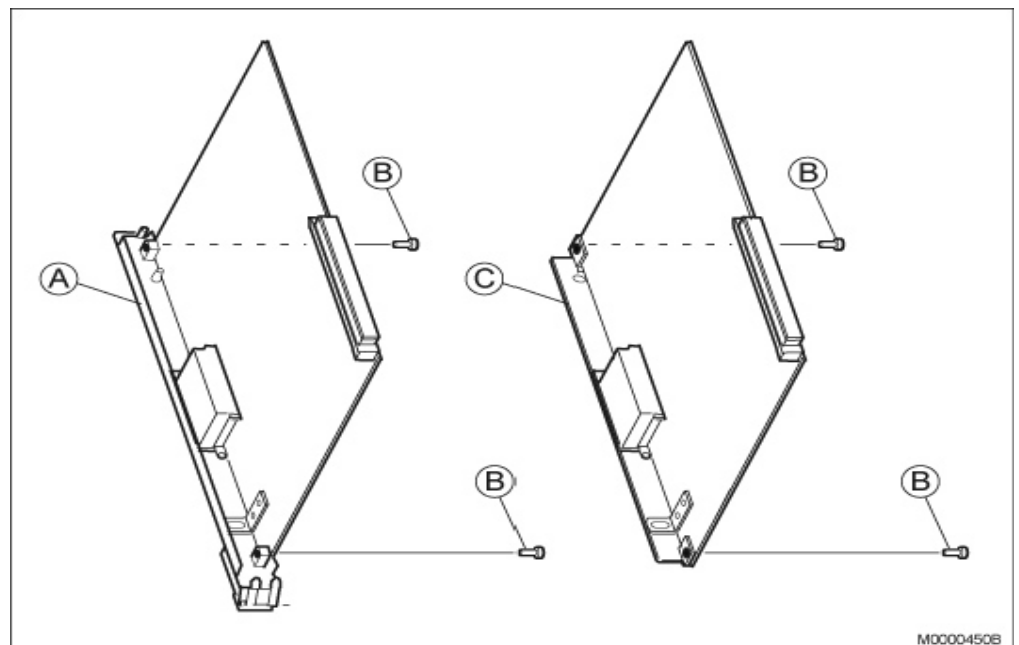


Figure 8: Changing Board Front

1. Remove the two screws (B), see Figure 8 Changing Board Front on page 15 that holds the front to the board using a Torx T8 screwdriver.
2. Remove the front (A).
3. Place the support front (C) in position.
4. Fasten the two screws (B) to the front
5. Place a suitable label on the new support front to be able to recognize the board.



## 4.3

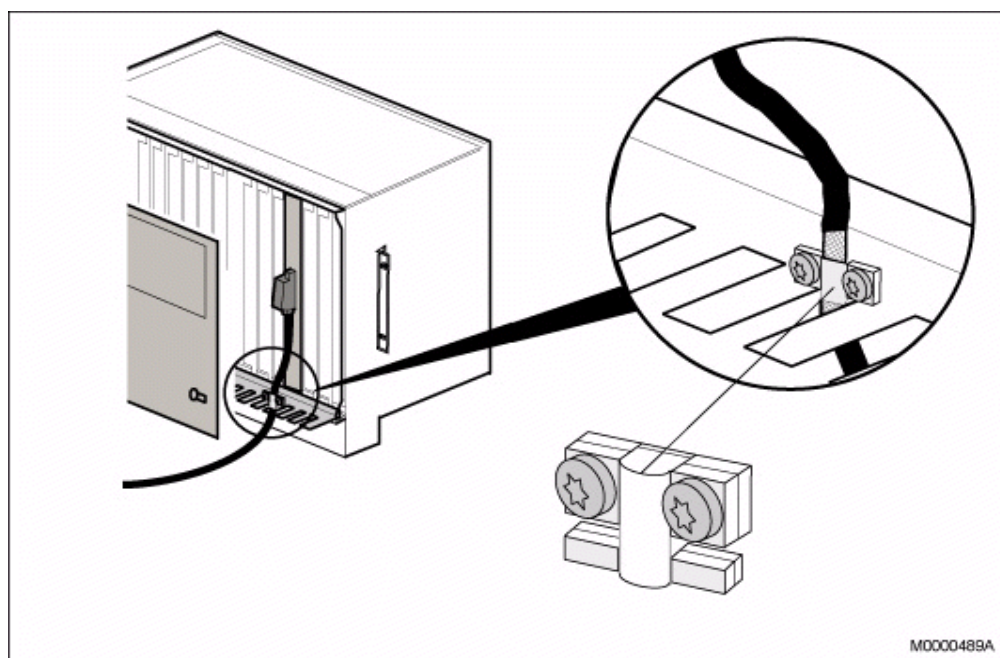
## CABLING

The cables must be dismantled for earth clip installation according to the following instruction.

**Table 6 Material Set for earthing the cables**

Title/Function	ProductNumber	Quantity
<b>Material Set NTM 144 270</b>		
Contact plate	SXA 112 4631/1	10
Contact bar	SXA 112 4632/1	10
Screw	24/SBF 226 030/0060	20
Designation	SVA 103 305/1	1

The earth clips must be adjusted to the correct position and inserted into the finger plate, see Figure 9 Earth Clip Installation on page 17.



**Figure 9: Earth Clip Installation**

**Note:** Earth clips must be installed to fulfill the EMC requirement.

# 5

## ADDING BOARDS IN 19" CABINETS

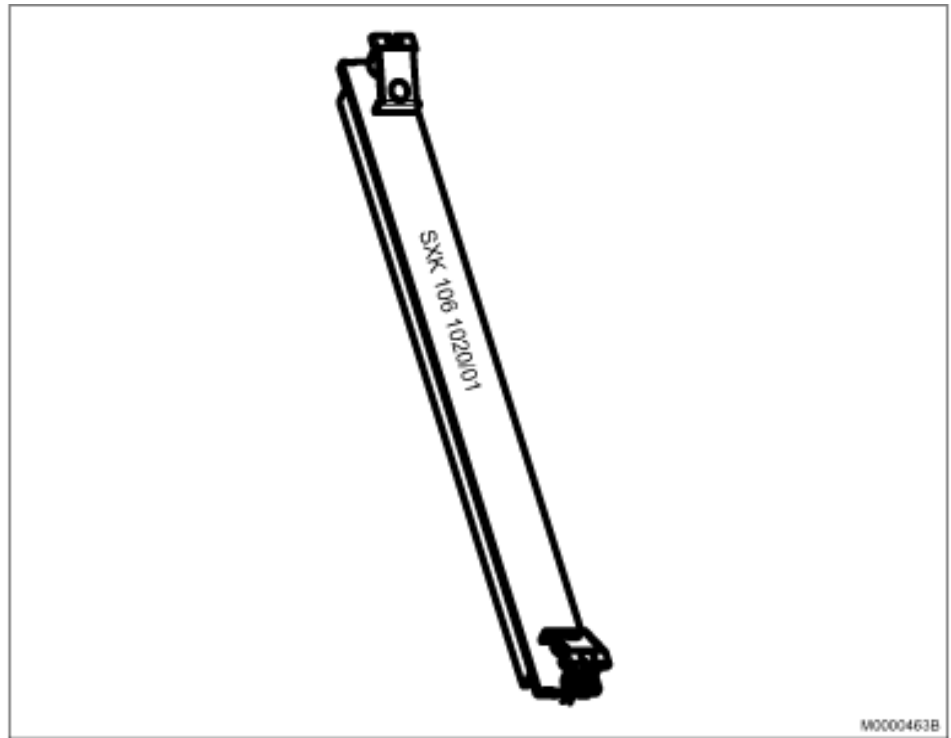
This section describes how to add boards in 19" cabinets.

Dummy fronts are installed at all empty positions in the 19" magazines. New boards can be installed at these positions. Remove the dummy front at the position where the new board is to be installed and insert the new board.

**Note:** All empty board positions must be covered with dummy fronts to fulfill the EMC requirement.

**Table 7** Dummy Front

Title/Function	ProductNumber	Quantity
Front 20 mm	SXK 106 1020/01	1



**Figure 10:** Dummy Front

**Note:** When inserting a board behind the EMC cover, the front cables must be earth connected.

## 6

## REPLACING BOARDS IN STACKABLE

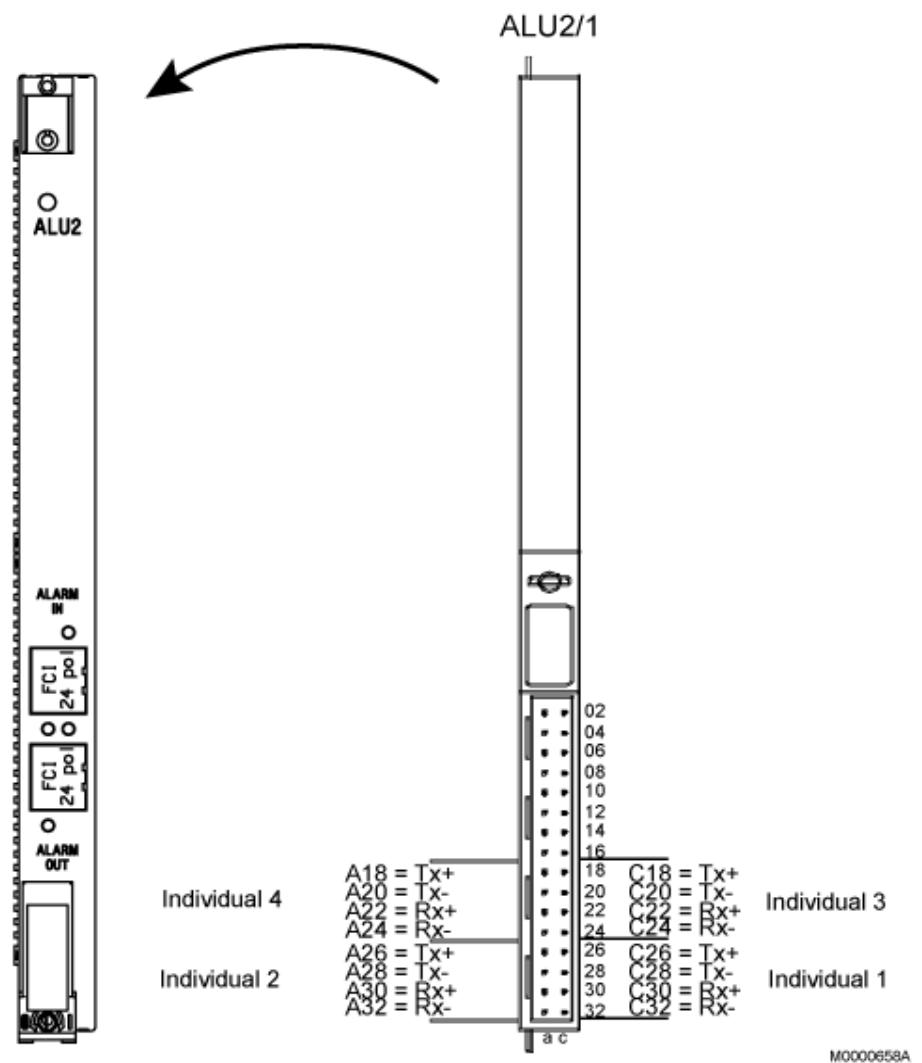
Previous boards can be replaced with new boards according to the following list:

- ALU2/1 can be replaced by ALU2/11, see Figure 6.1 ALU2/11 on page 19.
- ELU26/2 can be replaced by ELU26/12, see Figure 6.2 ELU26/12 on page 21.
- ELU28 can be replaced by ELU33, see Figure 6.4 ELU33 and ELU34 on page 26.
- ELU29 and ELU30 can be replaced by ELU34 (installed ELU34 cannot be replaced by ELU29 or ELU30). See Figure 6.4 ELU33 and ELU34 on page 26.
- ELU31/1, /2 or /3 can be replaced by ELU31/4, see Figure 6.3 ELU31/4 on page 23.
- ELU32 must be replaced by IPLU, see Figure 6.7 IPLU on page 32
- FTU2/1 can be replaced by FTU2/11, see Figure 6.5 FTU2/11 on page 29.
- GJUL4/1, /2 can be replaced by GLUL4/11, /12, see Figure 6.6 GJUL4/11 and /12 on page 31.
- TLU75 can be replaced by TLU83, see Figure 6.12 TLU83 on page 39.
- TLU76/1, /2, /3, or /4 can be replaced by TLU76/11, /12, /13, or /14. See Figure 6.8.1 Cabling TLU76/11, /12, /13, and /14 on page 34
- TLU77/1, /2, /3, can be replaced by TLU77/11, /12, /13. See [see 6.9 TLU77/11, /12 and /13 on page 35](#)
- TLU79/1 can be replaced by TLU79/11, see Figure 6.10 TLU79/11 on page 36
- TLU80/1 can be replaced by TLU80/11, see Figure 6.11 TLU80/11 on page 37
- TLU82 can be replaced by TLU83, see Figure 6.12 TLU83 on page 39
- TMU/2 can be replaced by TMU/12. See Figure 6.13 TMU on page 41

### 6.1

### ALU2/11

The ALU2/11 board replaces the previous ALU2/1 board.



**Figure 11: ALU2/11 and ALU2/1**

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14

**Table 8 NTM 144 269/4 Material Set for Changing the Board Front**

Title/Function	ProductNumber	Quantity
Support front LSU-E, LSU	SXA 112 3022/05	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1

### 6.1.1

### CABLING ALU/11

The previous cable must be replaced with a new TSR 491 0306/20M

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.

6.2 ELU26/12

The ELU26/12 board replaces the previous ELU26/2 board.

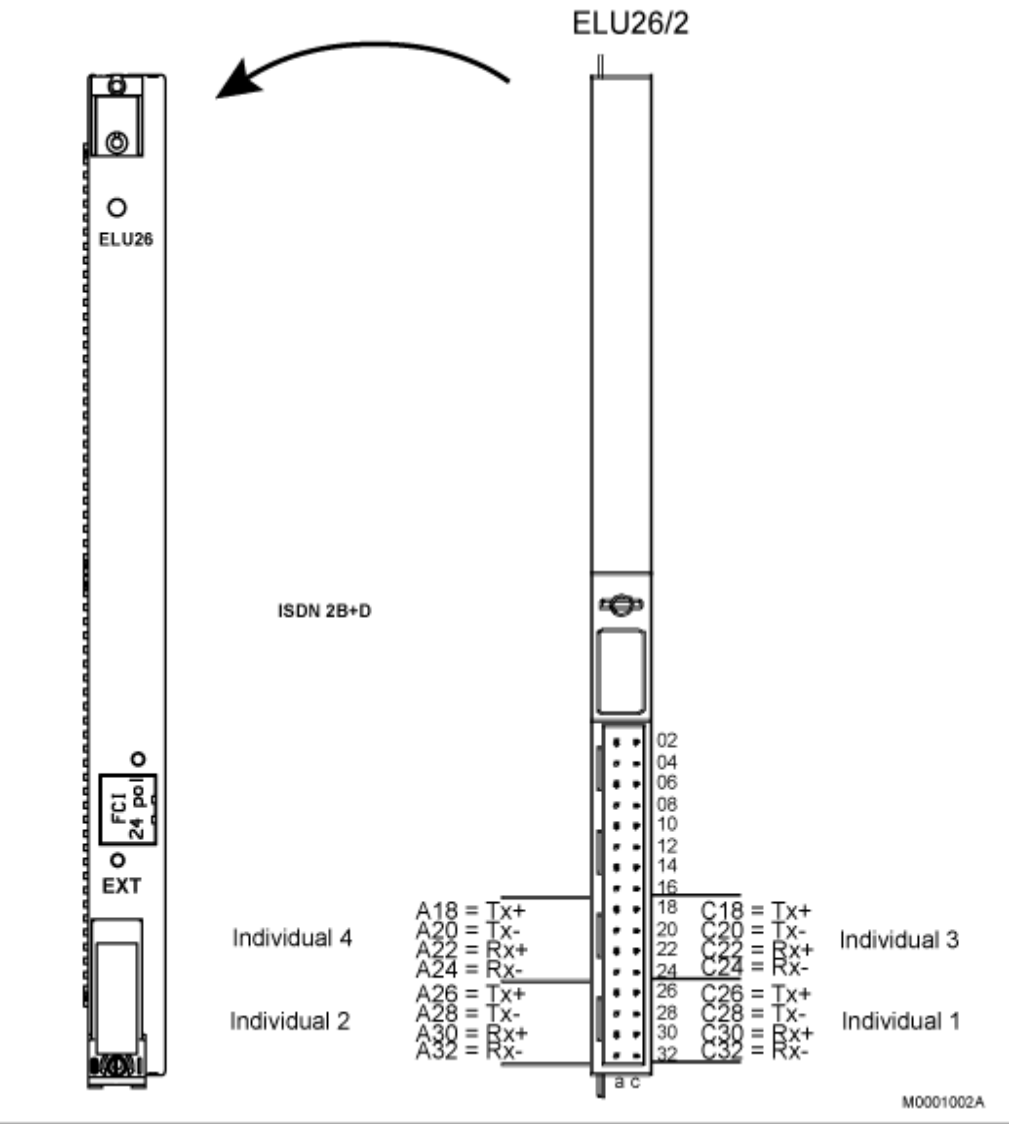


Figure 12: ELU26/12 and ELU26/2

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

Table 9 NTM 144 269/3 Material Set for Changing the Board Front

Title/Function	ProductNumber	Quantity
Support front	SXA 112 3022/08	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1

## 6.2.1

## CABLING ELU26/12

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the correct position and inserted into the finger plate.

The adapter cable makes it possible to replace the board without any changes in the MDF. Note the position of the 1/2-connector. See figure 13 Cabling ELU26 on page 22.

The principle for using the adapter cable is to connect the 1/1 connector from the replaced board into the 1/2 connector from the adapter cable. The free fork connector is connected to the new board. The 1/2 and 1/1 connectors are placed as far as possible from the magazine behind the side plate or at the bottom of the cabinet. See Figure 12 ELU26/12 and ELU26/2 on page 21 describes the principle for replacing the previous boards ELU26 with ELU26/12. There are two possible solutions, use the adapter cable TSR 491 415/2000 and use the old cabling to the MDF, or make a new cabling by using cable TSR 491 414/32M to the MDF. 8 individuals are used.

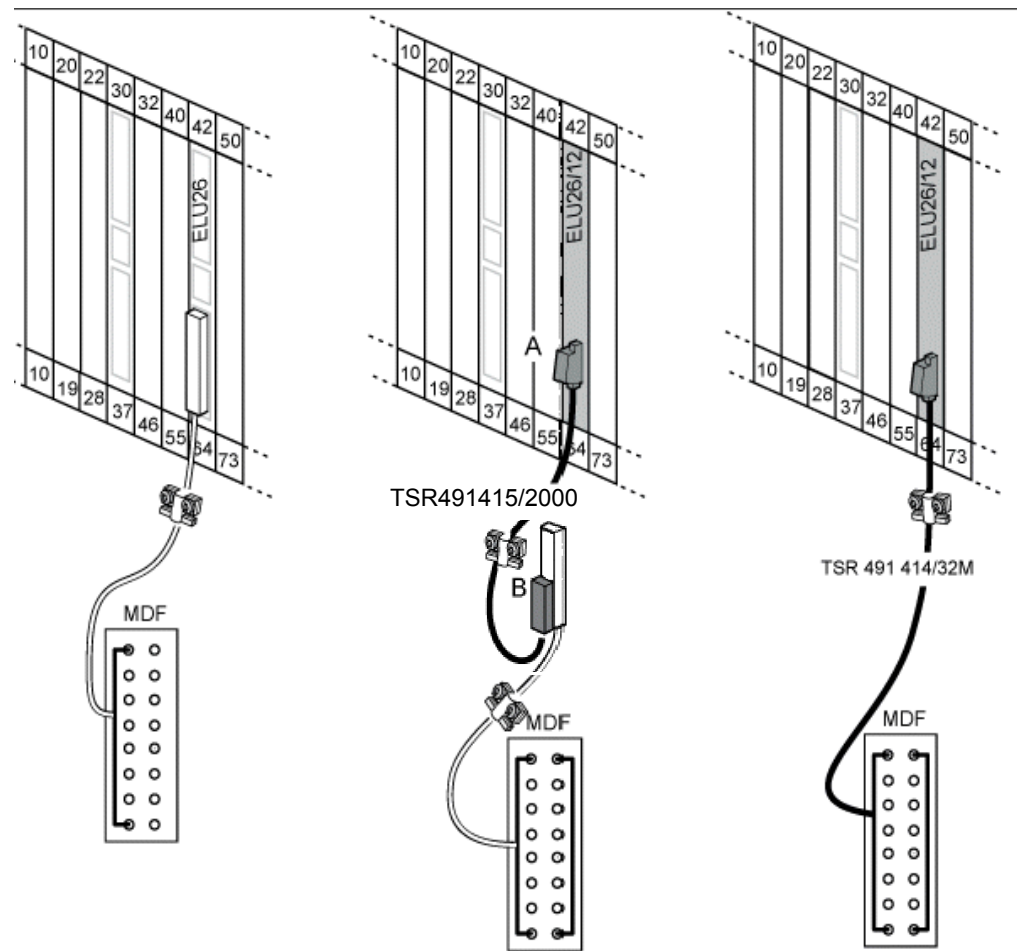


Figure 13: Cabling ELU26

6.3 ELU31/4

The ELU31/4 board replaces the earlier ELU31/2 board.

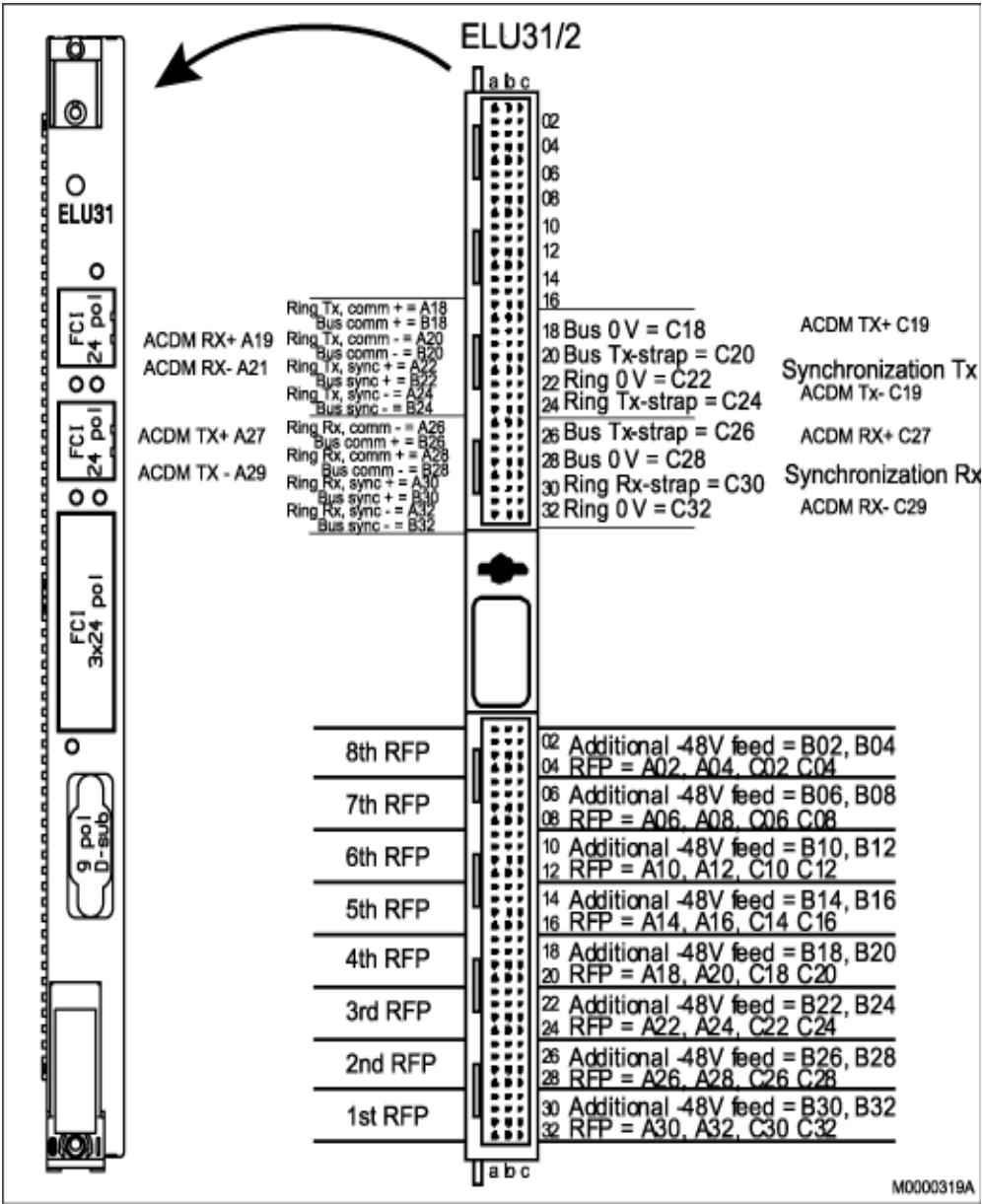


Figure 14: ELU31/4 and ELU31/2

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

**Table 10 NTM 144 269/2 Material Set for Changing the Board Front**

Title/Function	ProductNumber	Quantity
Support front ELU31/4	SXA 112 3022/06	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1

## 6.3.1

## CABLING ELU31/4

For information about sync ring and bus cabling to the ELU31/4, see installation instructions for CORDLESS TELEPHONY/INTEGRATED DECT. (sync ring and bus cables must be replaced with new cables if /1 and /2 boards are affected).

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.

See Figure 15 Cabling ELU31 on page 25 describes the principle for replacing the previous board ELU31/2 with ELU31/4. Use the adapter cable TSR 910 1056 and connect the 1/1 connector into the 1/1 connector (C) from the adapter cable. The free fork connector from the adapter cable is connected to the new board (ELU31/4). The 1/1 connectors are placed as far as possible from the magazine behind the side plate or at the bottom of the cabinet.

For 32 individuals the board position to the right of the new board must be empty.



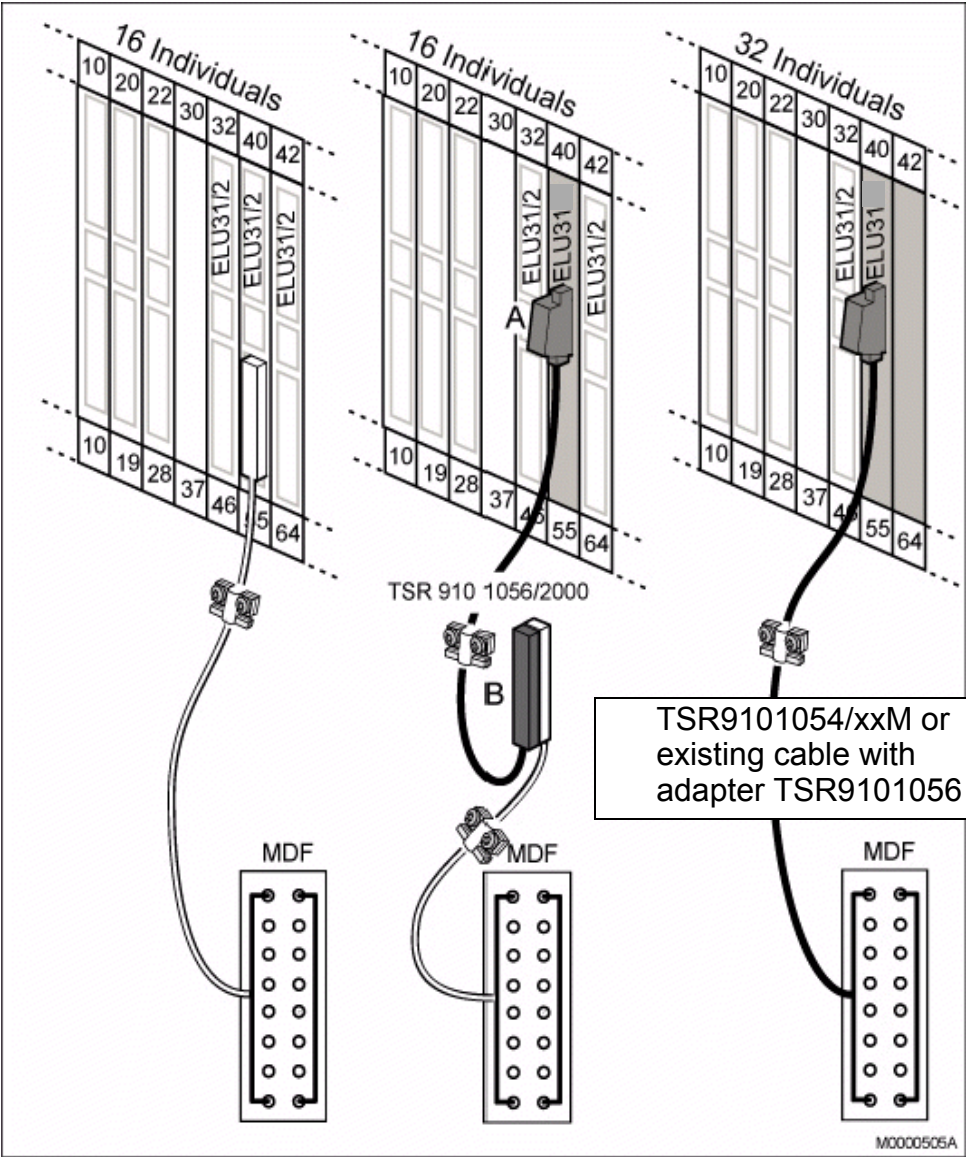
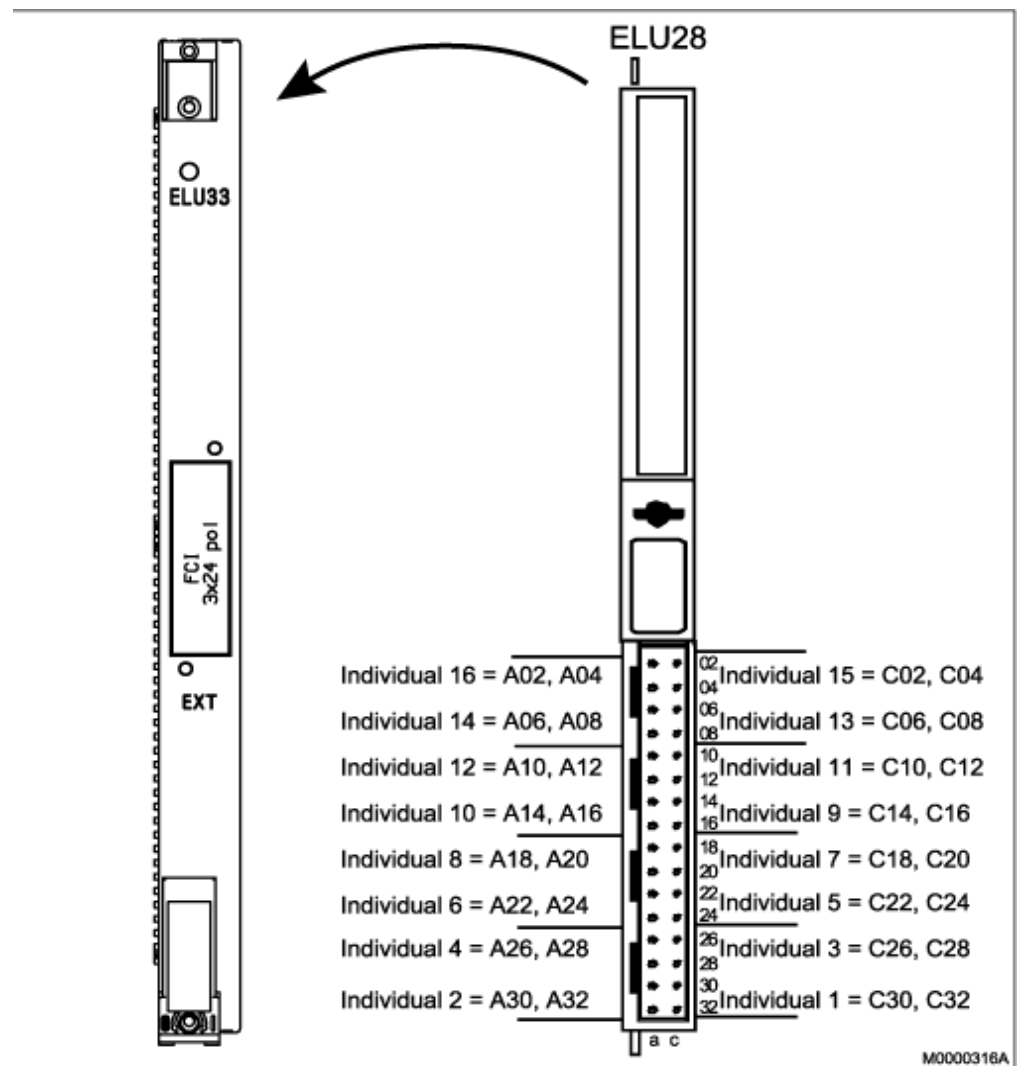


Figure 15: Cabling ELU31

## 6.4

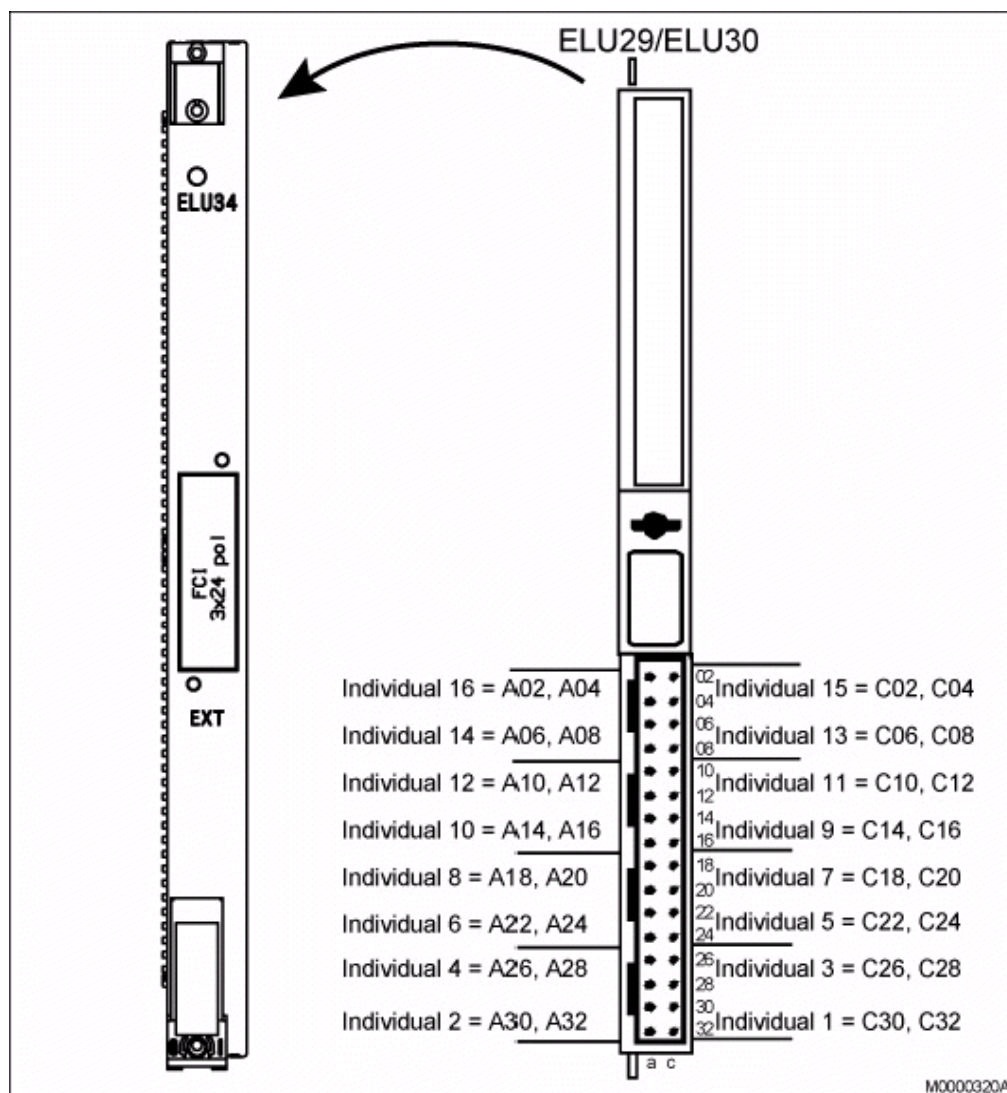
## ELU33 AND ELU34

The ELU33 board replaces the previous ELU28 board.



**Figure 16: ELU33 and ELU28**

The ELU34 board replaces the previous ELU29 or ELU30 board. It is not possible to replace a ELU34 board with the ELU29 or ELU30 board.



**Figure 17: ELU34 and ELU29/ELU30**

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

**Table 11 NTM 144 269 Material Set for Changing the Board Front**

Title/Function	ProductNumber	Quantity
Support front ELU33, ELU34, FTU2/11	SXA 112 3022/03	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1

#### 6.4.1

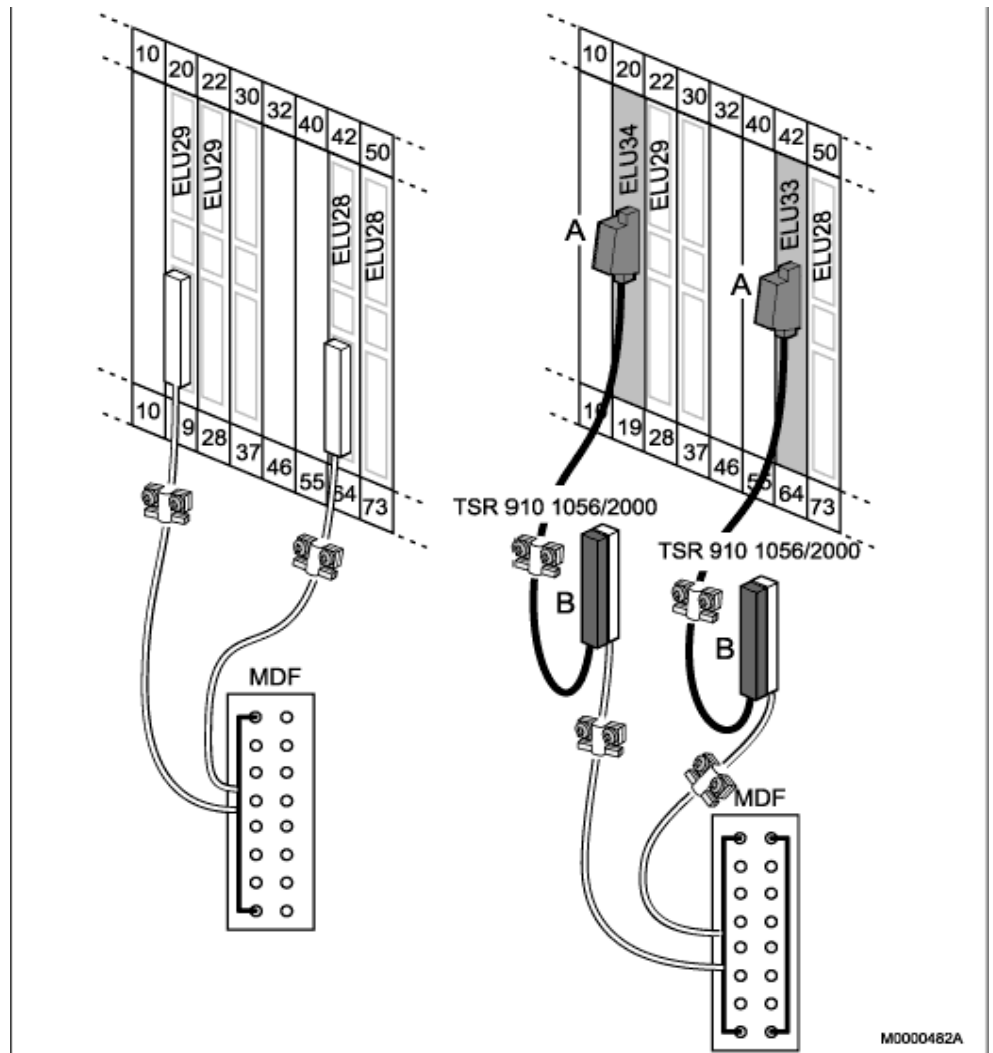
#### CABLING ELU33 AND ELU34

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the correct position and inserted into the finger plate.

The two adapter cables makes it possible to replace the board without any changes in the MDF.

The principle for using the adapter cable is to connect the 1/1 connector from the replaced board into the 1/1 connector from the adapter cable. The free fork connector is connected to the new board (ELU33 or ELU34). The 1/1 connectors are placed as far as possible from the magazine behind the side plate or at the bottom of the cabinet.

See Figure 18 Using 16 Individuals on page 28 describes the principle for replacing the previous boards ELU29 and ELU28 with ELU34 and ELU33. In this case 16 individuals are used.



**Figure 18: Using 16 Individuals**

See Figure 19 Using 32 Individuals on page 29 describes the principle for replacing the previous boards ELU29 and ELU28 with ELU34 and ELU33. In this case 32 individuals are used, the board position to the right of the new boards must be empty. There are two possible solutions, use the adapter cable TSR 910 1058 and use the old cabling to the MDF with 16 individuals, or make a new cabling by using cable TSR 910 1054/16M or /32M with 32 individuals to the MDF.

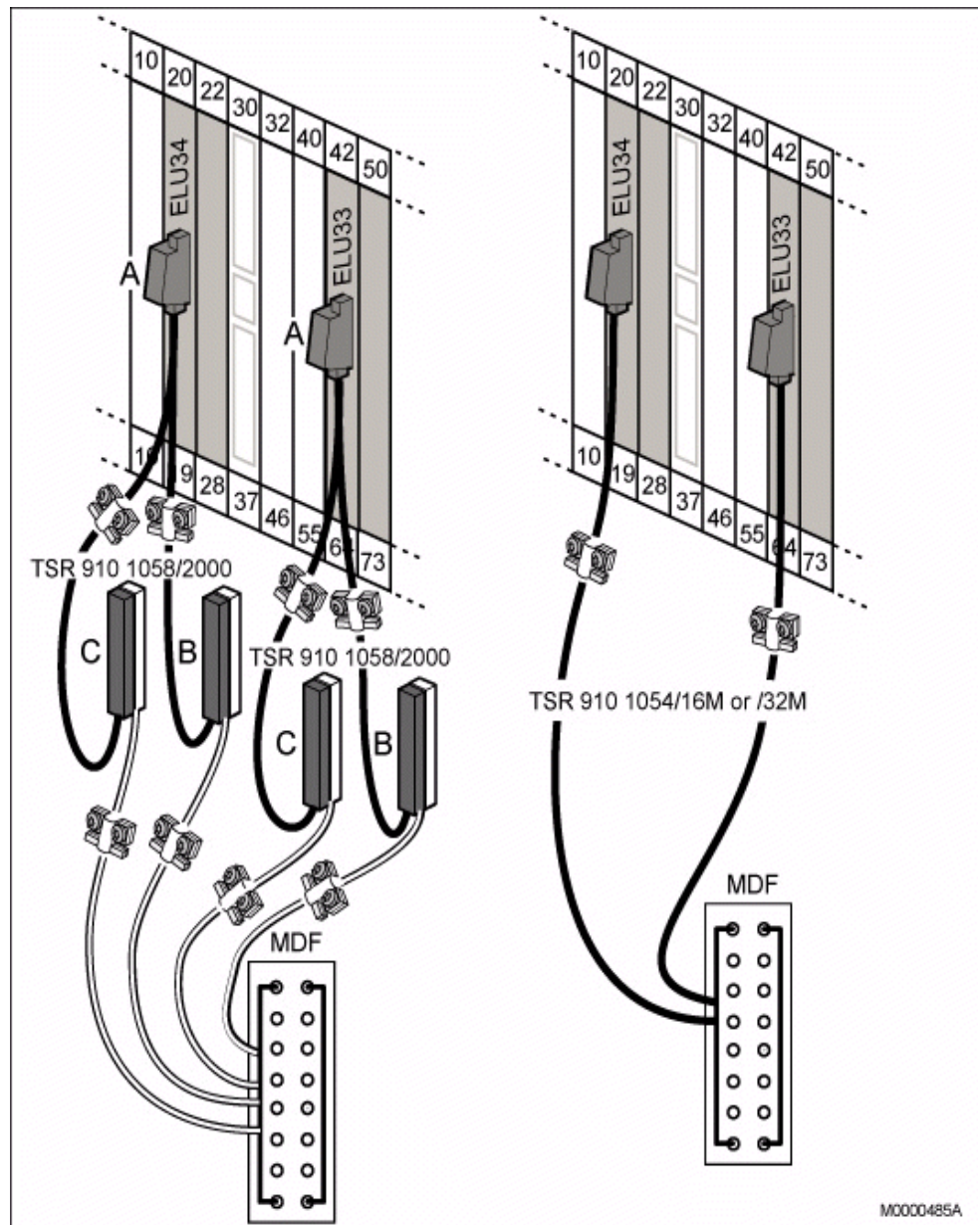
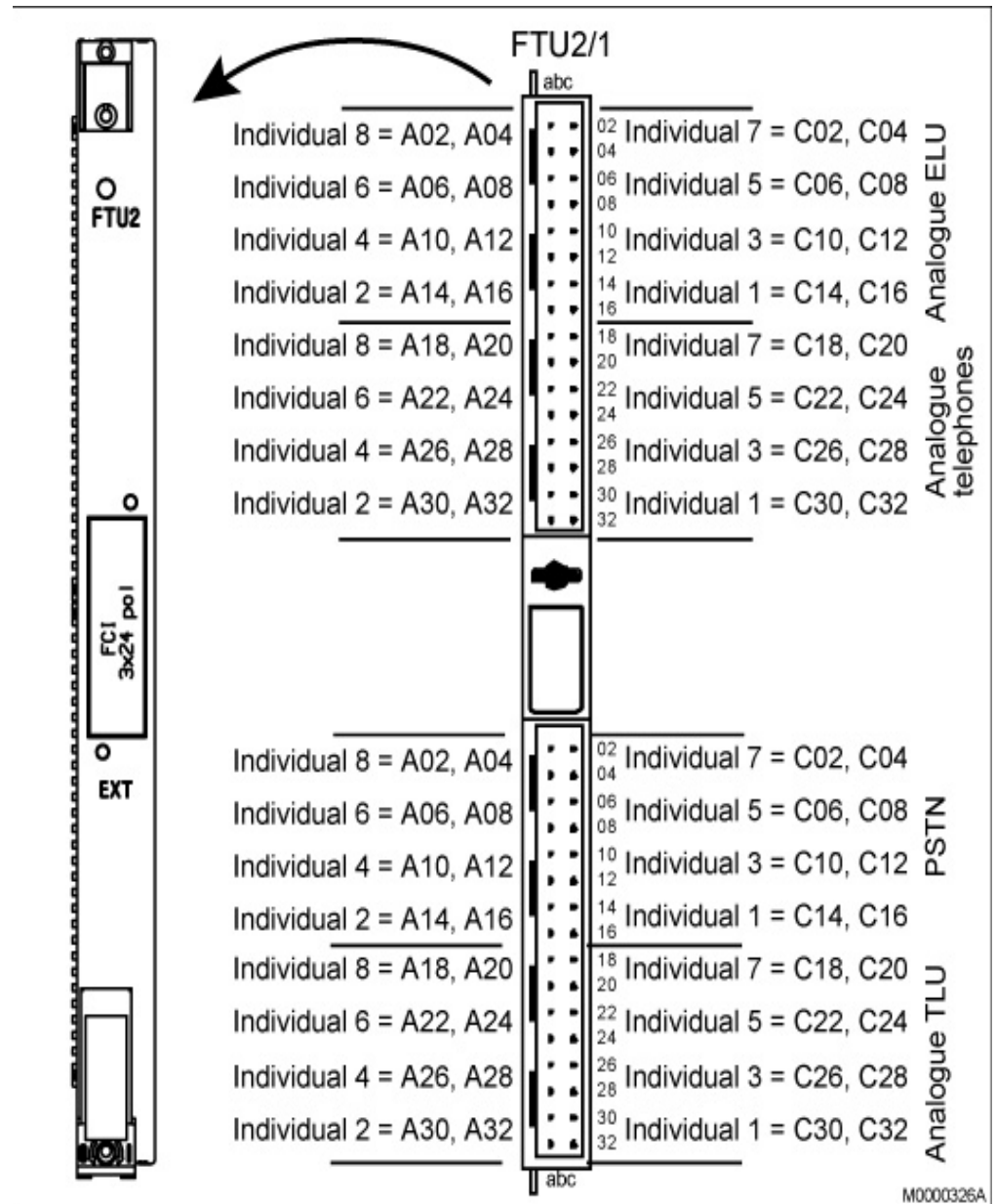


Figure 19: Using 32 Individuals

## 6.5

### FTU2/11

The FTU2/11 board replaces the previous FTU2/1 board.



**Figure 20: FTU2/11 and FTU2/1**

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

**Table 12 NTM 144 269 Material Set for Changing the Board Front**

Title/Function	ProductNumber	Quantity
Support front ELU33, ELU34, FTU2/11	SXA 112 3022/03	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1



## 6.5.1

## CABLING FTU/11

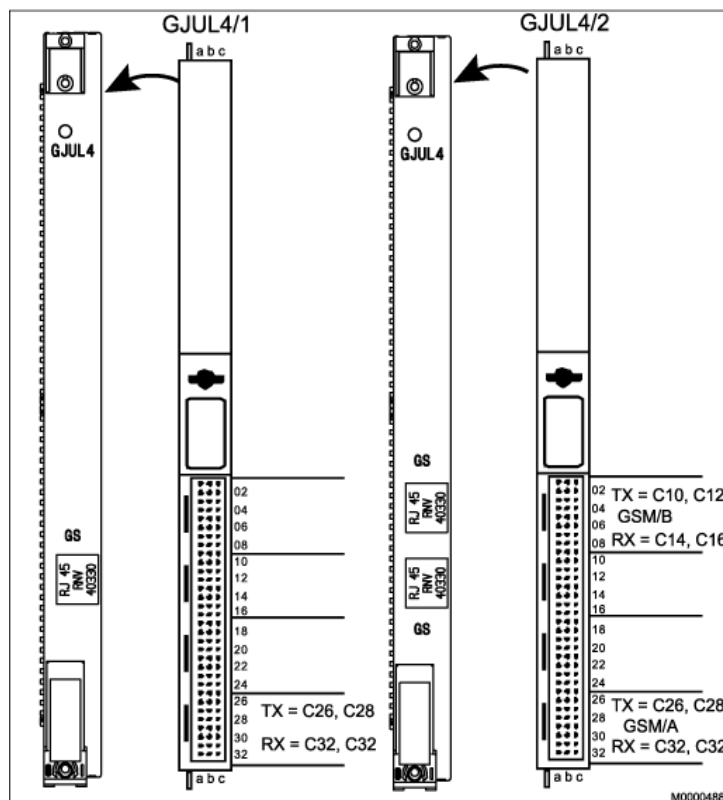
The previous cable must be replaced with a new TSR 910 1059/32M.

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.

## 6.6

## GJUL4/11 AND /12

The GJUL4/11 and /12 boards replace the previous GJUL4/1 and /2 boards.



**Figure 21: GJUL4/11 and /12 Replaces Previous GJUL4/1 and /2**

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

**Table 13 NTM 144 269/7 Material Set for Changing the Board Front**

Title/Function	ProductNumber	Quantity
SupportfrontTLU76andGJUL4	SXA 112 3022/10	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1

## 6.6.1

## CABLING GJUL4/11 AND /12

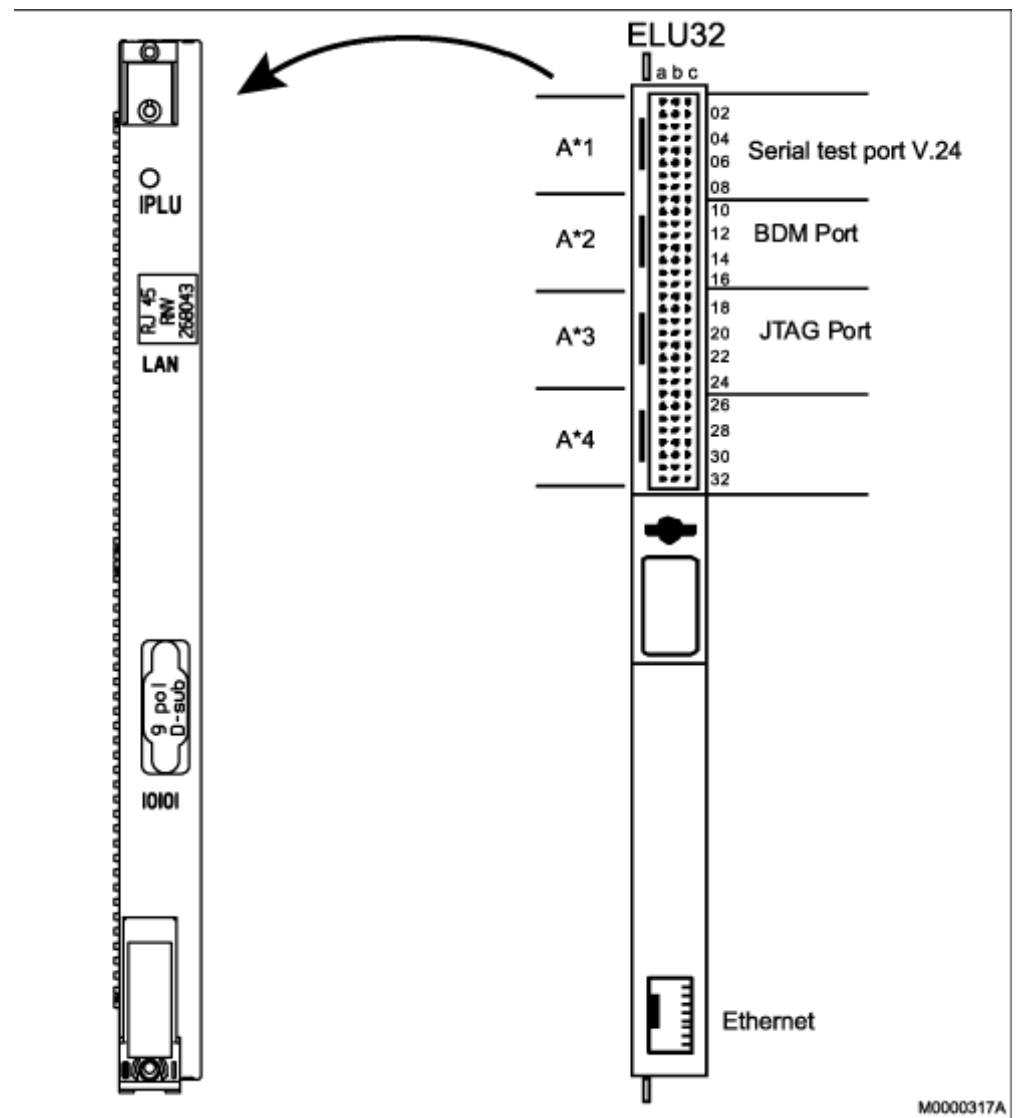
The previous cable must be replaced with a new TSR 482 0211/2400 or /20M.

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.

## 6.7

## IPLU

The IPLU board replaces the previous ELU32 board.



**Figure 22: IPLU and ELU32**

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

**Table 14 NTM 144 269/5 Material Set for Changing the Board Front**

Title/Function	ProductNumber	Quantity
Support front IPLU	SXA 112 3022/04	1
Designation	SVA 103 304/1	1
Label set	SVH 277 032/1	1

## 6.7.1

## CABLING IPLU

The previous cable must be replaced with a new TSR 482 0211/2400 or /20M.



**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.

6.8 TLU76/11, /12, /13, AND /14

The TLU76/11, /12, /13, and /14 boards replace the previous TLU76/1, /2, /3, and /4 boards.

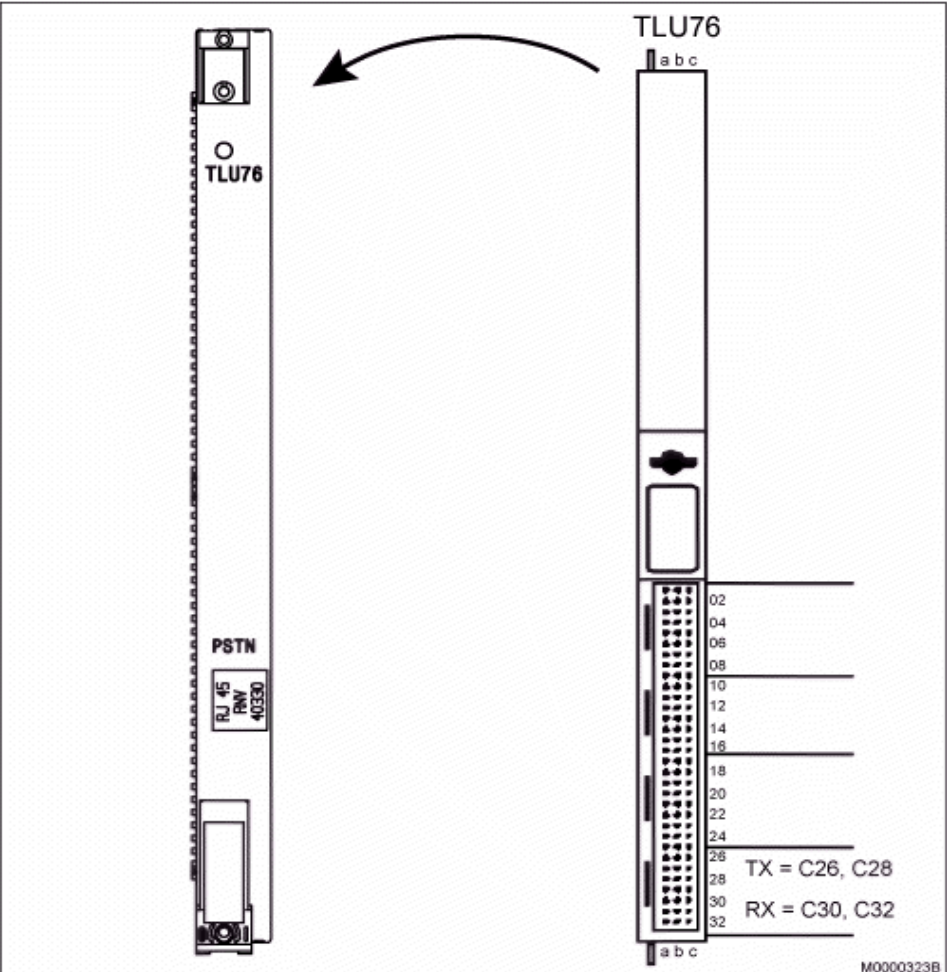


Figure 23: TLU76/11, /12, /13, and /14 Replaces Previous TLU76/1, /2, /3, and /4

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

Table 15 NTM 144 269/7 Material Set for Changing the Board Front

Title/Function	ProductNumber	Quantity
Supportfront TLU76 and GJUL4	SXA1123022/10	1
Designation	SVA103304/1	1
Label set	SVH277032/1	1

## 6.8.1

## CABLING TLU76/11, /12, /13, AND /14

The previous cable must be replaced with a new TSR 482 0211/2400 or /20M.

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.

6.9 TLU77/11, /12 AND /13

The TLU77/1x board, where x is 1, 2, or 3, replaces the previous TLU77/x board.

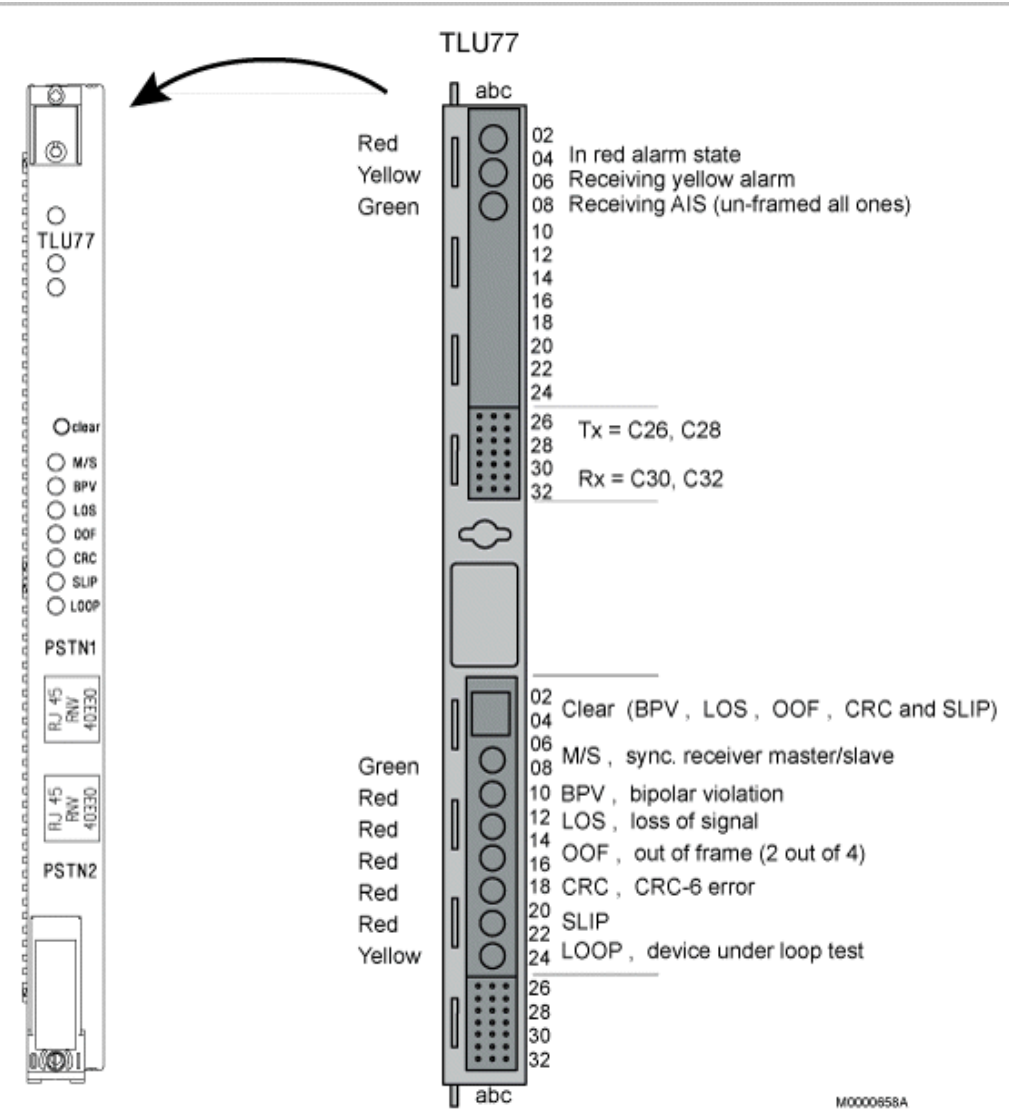


Figure 24: TLU77/11, /12, /13 and TLU77/1, /2, /3

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

Table 16 NTM 144 269/6 Material Set for Changing the Board Front

Title/Function	ProductNumber	Quantity
Supportfront	SXA 1123022/20	1
Designation	SVA 103304/1	1
Labelset	SVH277032/1	1

6.9.1 CABLING TLU77

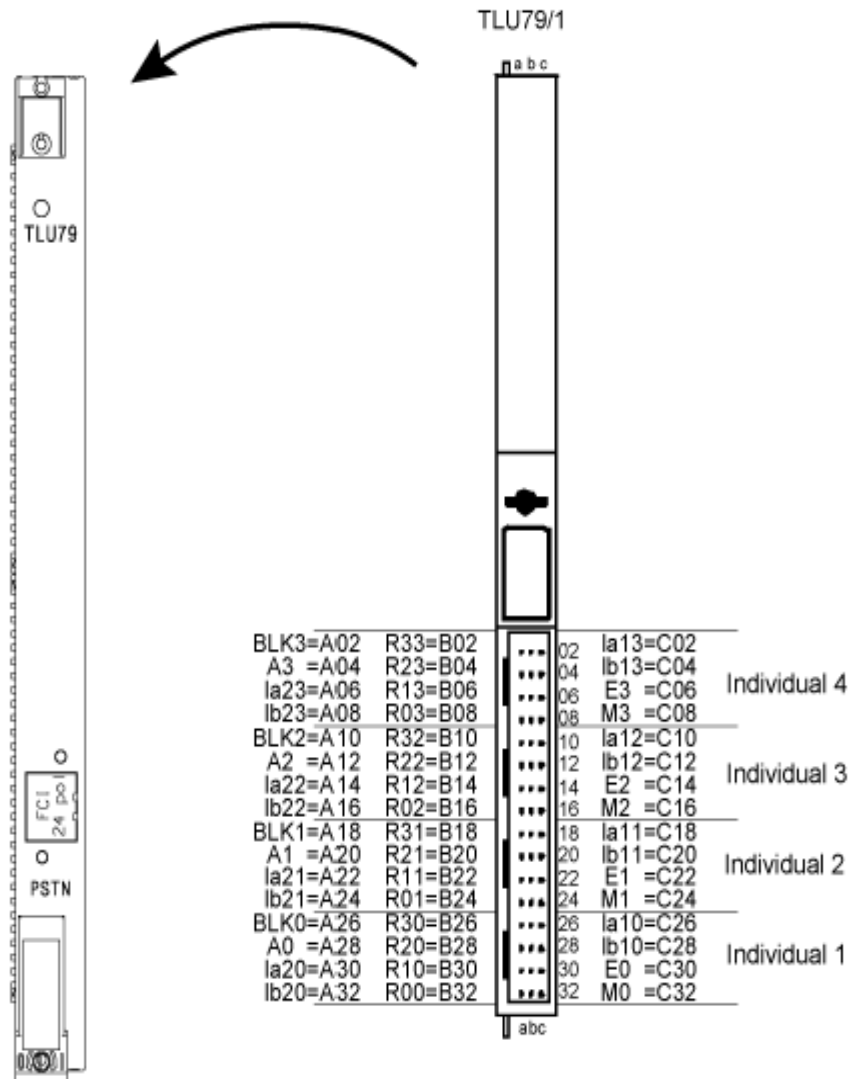
The previous cable must be replaced with a new TSR 482 0211/2400 or /20M.

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.

## 6.10

### TLU79/11

The TLU79/11 board replaces the previous TLU79/1 board.



M0000656A

**Figure 25: TLU79/11 and TLU79/1**

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

**Table 17 NTM 144 269/3 Material Set for Changing the Board Front**

Title/Function	ProductNumber	Quantity
Supportfront	SXA 1123022/08	1

Title/Function	ProductNumber	Quantity
Designation	SVA 103 304/1	1
Labelset	SVH277 032/1	1

## 6.10.1

## CABLING TLU79/11

The previous cable must be replaced with a new TSR 491 414/32M

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the correct position and inserted into the finger plate.

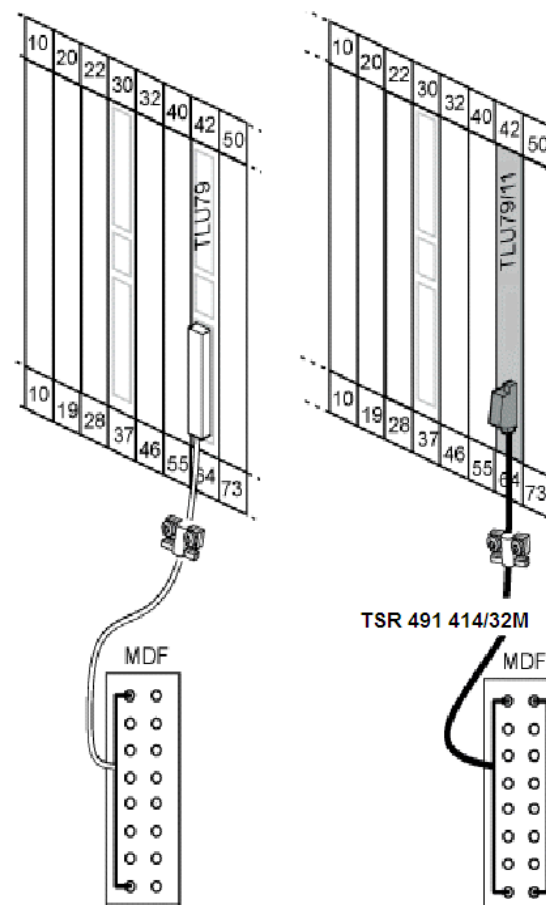
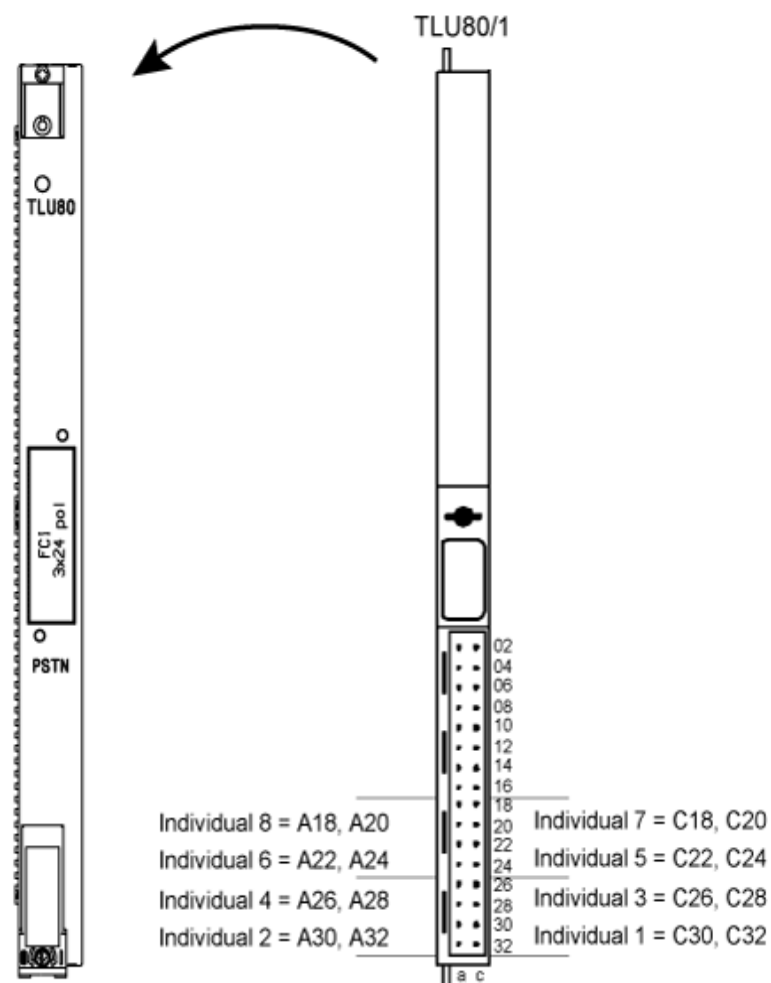


Figure 26: Cabling TLU79

## 6.11

## TLU80/11

The TLU80/11 board replaces the previous TLU80/1 board.



M0000657A

**Figure 27: TLU80/11 and TLU80/1**

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

**Table 18 NTM 144 269 Material Set for Changing the Board Front**

Title/Function	ProductNumber	Quantity
Supportfront	SXA1123022/03	1
Designation	SVA103304/1	1
Labelset	SVH277032/1	1

### 6.11.1

### CABLING TLU80/11

The previous cable must be replaced with a new TSR 910 1054/16M or /32M.

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.

6.12 TLU83

The TLU83 board replaces the previous TLU75 and TLU82 boards. When it is used as such a replacement it uses 8 time slots. If it is used as a general analog both-way trunk it is initiated with 12 individuals and occupies 16 time slots.

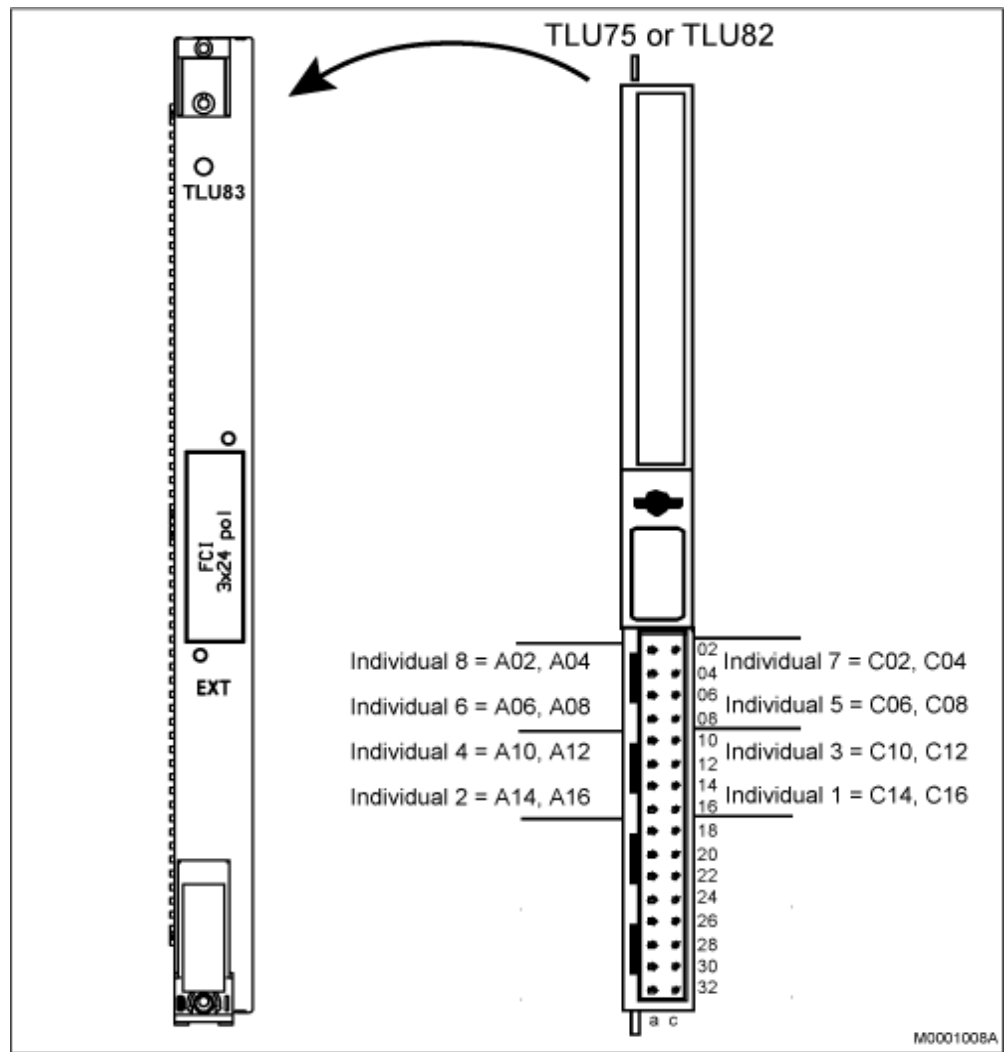


Figure 28: TLU83 and TLU75 or TLU82

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

Table 19 NTM 144 269 Material Set for Changing the Board Front

Title/Function	ProductNumber	Quantity
Supportfront	SXA 1123022/03	1
Designation	SVA 103304/1	1
Labelset	SVH277032/1	1

6.12.1 CABLING TLU83

The previous cable must be replaced with a new TSR 910 1054/16M or /32M.

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.



6.13

TMU

The TMU/12 board replaces the previous TMU/2 board.

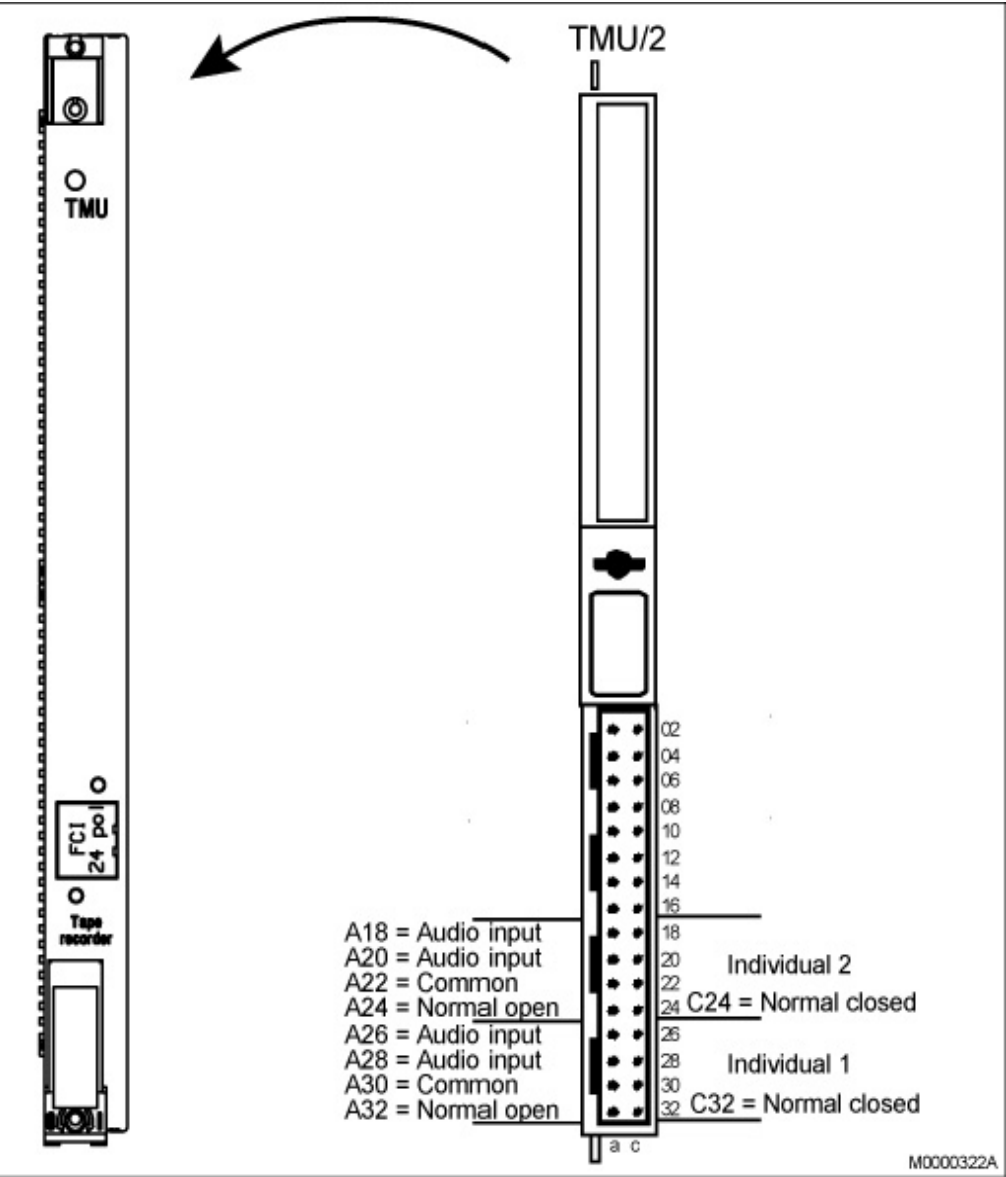


Figure 29: TMU/12 and TMU/2

When the new board is to be installed in Stackable the front must be changed to a support front, see 4.2 Mounting the Support Front on page 14.

**Table 20 NTM 144 269/3 Material Set for Changing the Board Front**

<b>Title/Function</b>	<b>ProductNumber</b>	<b>Quantity</b>
SupportfrontTMU/12	SXA 1123022/08	1
Designation	SVA 103304/1	1
Labelset	SVH277032/1	1

## 6.13.1

## CABLING TMU/12

The previous cable must be replaced with a new TSR 491 0306/20M.

**Note:** The cables must be dismantled for earth clip installation. The earth clips must be adjusted to the right position and inserted into the finger plate.