Documentation

HiPath 4000 V5
IP Solutions - IP Terminals

Service Documentation

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Service Manual HiPath 4000 V5 - IP Solutions - IP Terminals - Contents

1 Supported IP Terminals

The following IP terminals are supported:

- optiPoint 410
- optiPoint 420
- optiPoint 600
- OpenStage 15
- OpenStage 20
- OpenStage 20 E
- OpenStage 40
- OpenStage 60
- OpenStage 80
- OpenStage 20 G
- OpenStage 40 G
- OpenStage 60 G
- OpenStage 80 G
- OpenStage 20E

2 Boards

IP terminals can be configured on the following boards with an Ethernet interface:

- STMI2 (Q2316-X)

- STMI2 (Q2316-X10)

- STMI4 (Q2324-X500)

- STMI4 (Q2324-X510)

NOTE: To simplify matters, the following document only refers to the STMI board. This term will be used generically for all suitable boards.
The term "HFA port" is used in the following to describe an IP port to which all IP system telephones can be connected (see Chapter 3, "Description of optiPoint IP Terminals" and Chapter 4, "Description of OpenStage IP Terminals").

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3 Description of optiPoint IP Terminals

3.1 General Information

You can connect additional terminals to an optiPoint IP telephone using the appropriate adapters that must be attached to or are already integrated in the telephone:

- The USB adapter (OPTIUSB) is already integrated as a hardware module in most optiPoint 410 telephones and optiPoint 600.

- Every optiPoint 410 or optiPoint 600 is assigned "control adapter" functionality during configuration so that a PC can be connected as a simple dialer using the USB adapter.

You can connect up to two key modules to an optiPoint 410 or optiPoint 600 IP telephone. These must be specified with the **REP** parameter. You can configure other key modules but they won't work.

NOTE: Analog terminals require the optiPoint to be fed locally via a plug-in power supply. (Attention: optiPoint 400 power supplies are not compatible with optiPoint 600.)
Country- and transmission-specific settings are made centrally using the `AMO ZAND:TYPE=OPTISET,TAABCTID=<string>`.

3.2 optiPoint 400 Terminal Types

There are a number of different optiPoint 400 telephone types that differ only on the basis of their functional scope. The following table provides an overview:

optiPoint telephone types	No. of function keys	Display *) lit	No. of adapter slots	Poss. no. of key modules	Mini switch	USB 1.1 *) master	Headset port
optiPoint 400 economy	12	No	0	0	No	Yes	No
optiPoint 400 standard	12	No	0	0	Yes	Yes	No

optiPoint 400 supports Power over LAN feeding (IEEE 802.3af).

NOTE: optiPoint 400 telephones do not support encryption. Only basic HFA functions are supported.

3.3 optiPoint 600 Terminal Types

optiPoint 600 telephones can also be deployed as IP terminals. The following table provides an overview:

optiPoint telephone types	No. of function keys	Display *) lit	No. of adapter slots	Poss. no. of key modules	Mini switch	USB 1.1 *) master	Headset port
optiPoint 600 IP	19	Yes **)**	1	2	Yes	Yes **)**	Yes

optiPoint 600 supports Power over LAN feeding (Cisco or IEEE 802.3af). A plug-in power supply unit can be used at the same time as Power over LAN.

3.3.1 Adapters and add-on devices

The following optiPoint adapters and add-on devices can be operated at the optiPoint 600 system telephone:

Device type	Function	AMO parameter
optiPoint USB adapter (already integrated in the telephone)	For connecting standard S_0 data terminals	OPTIUSB
optiPoint key module	Key module with 15 programmable function keys (and 1 SHIFT key)	REP
optiPoint signature module	Key module with smart card reader	IDCR

3.3.2 Additional Adapters and Key Modules for optiPoint 500/600

Device type	Function
optiPoint recorder adapter	For connecting a second headset or an external recorder
optiPoint acoustic adapter	For connecting accessories (such as loudspeakers, microphones, headsets, etc.)

3.3.3 USB Interfaces at the optiPoint 600 Telephone

The USB interfaces are already integrated in the telephone and do not have to be plugged in. They comply with the USB specification 1.1 and feature an external B jack (USB slave, e.g. for TAPI applications) and A jack (USB master for printers or keyboards).

The following features are supported by the integrated USB controller:

- 12 Mbps speed (on USB side)

- 15 FW - configurable endpoints in addition to the bidirectional control endpoint 0

- 16 configurations, 16 interfaces and 16 alternative settings are supported

- Flexible memory management to support different endpoint buffer sizes

- The transfer types isochronous, bulk or interrupt are supported by every non-control-transfer endpoint

- Protective circuit for EMC/EMI

You can use the AMO SBCSU to indirectly query whether or not a USB is available (**OPTIUSB**).

```
DIS-SBCSU:STNO=number;
```

3.3.4 Modifying Key Functions at the optiPoint 600 Telephone or Key Module

When you configure an optiPoint IP telephone or key module, you use the AMO SBCSU to assign a standard key layout to the telephone.

You can use the AMO TAPRO to modify the functions of individual function keys on the optiPoint IP telephone or a key module or you can assign a different standard key layout.

- To change the function key xx (with xx=1 - 8/12/19) on an optiPoint IP telephone, enter:

  ```
  CHANGE-TAPRO:STNO=number,TDxx=param;
  ```

- To change the function key xx (with xx=1 - 15) for an optiPoint IP key module, enter:

  ```
  CHANGE-TAPRO:STNO=number,DIGTYP=OPTIBy,TDxx=param;
  ```

  (with y=1 .. 2)

- To assign another standard key layout to an optiPoint IP telephone, enter:

  ```
  CHANGE-TAPRO:STNO=number,STD=z;
  ```

  (with z=0 .. 255)

The 255 standard key layouts available for optiPoint IP telephones are set by default but can be modified with the AMO TAPRO. Each standard key layout is assigned a code which indicates the optiPoint IP telephone recommended for this layout. For example:

OPTIT8   optiPoint 410 telephones with 8 function keys

OPTIT12   optiPoint 410 telephones with 12 function keys (optiPoint 410 standard)

OPTIT19   optiPoint 410 telephones with 18 function keys (optiPoint 410 advance) (and optiPoint 600 with 19 keys)

- To change function key xx (with xx=1 - 8/12/18/19) with standard key layout z (z=0 - 255) for optiPoint 500 telephones with 8/12/19 function keys, enter:

  `CHANGE-TAPRO:STD=z,DIGTYP=OPTIT/8/12/18/19,TDxx=param;`

- To change the function key xx (with xx=1 - 15) with the standard key layout z (with z=0 - 255) for optiPoint 500 key module y (with y=1 - 2), enter:

  `CHANGE-TAPRO:STD=z,DIGTYP=OPTIBy,TDxx=param;`

3.3.5 Additional Ports

3.3.5.1 LAN Port

In the case of optiPoint 600, a mini-switch is built into the telephone; an adapter is not required for this functionality and no PBX configurations are needed.

Note: Port 1 is the LAN connection to the network.

Note: For a detailed description and examples of connections to the adapter, please see the optiPoint 600 Service Manual.

3.3.5.2 Headset Port

In the case of optiPoint 600, a headset connection option is built into the telephone; an acoustic adapter is not required for this functionality.

NOTE: Only one headset is permitted per optiPoint 600.

3.4 optiPoint 410 Terminal Types

There are a number of different optiPoint 410 telephone types that only differ on the basis of their functional scope and expansion capabilities. The following table provides an overview:

optiPoint telephone types	No. of function keys	Display *) lit	No. of adapter slots	Poss. no. of key modules	USB 1.1 *) master	Headset port
optiPoint 410 entry	8	No	0	0	No	No
optiPoint 410 economy	12	Yes	0	0	No	No
optiPoint 410 standard	12	Yes *)	2	2	Yes	Yes
optiPoint 410 advance	19	Yes *) **4 lines**	1	2	Yes *)	Yes
optiPoint 420 advance (up to 12 characters per label)	18	Yes *) **4 lines**	1	2	Yes *)	Yes

All optiPoint 410 models support Power over LAN feeding (Cisco or IEEE 802.3af). A plug-in power supply unit can be used at the same time as Power over LAN.

3.4.1 Adapters and key modules

The following optiPoint adapters and add-on devices can be operated at the optiPoint 410 system telephone:

Device type	Function	AMO parameter
optiPoint USB adapter (already integrated in the telephone)	For connecting standard S_0 data terminals	OPTIUSB
optiPoint key module	Key module with 15 programmable function keys and 1 SHIFT key	REP
optiPoint 420 key module	Key module with 13 keys with electronic key labeling, 12 of which are programmable (up to 12 characters per label) and 1 SHIFT key	REP
optiPoint signature module	Key module with smart card reader	IDCR

3.4.2 Additional adapters and key modules for the optiPoint 410 series of telephones

Device type	Function
optiPoint display module	For providing the LDAP/WAP and ENB function, as well as JAVA VM
optiPoint recorder adapter	For connecting a second headset or an external recorder
optiPoint acoustic adapter	For connecting accessories (such as loudspeakers, microphones, headsets, etc.)

3.5 optiPoint WL2 professional

The optiPoint WL2 professional telephone is the enhanced telephone for mobile workplaces that use WLAN technology for transmission. It is interpreted by HiPath 4000 as an optiPoint 420 and thus offers the complete range of HiPath features (HFA).

More information on the optiPoint WL2 professional may be found on the intranet via the following link: http://netinfo2db.icn.siemens.de:8080/edoku/jsp/search.jsp?uc=search&systemclass=&product=optiPoint+WL2+professional&doctype=&language=de&releasemonth=dummy&releaseyear=dummy

For HiPath 4000 configuration see Section 7.4, "optiPoint WL2 professional Configuration".

3.6 More Adapters and Ports

3.6.1 optiPoint Recorder Adapter

The recorder adapter lets you connect an analog recording device or a second headset to an existing optiPoint 410 or optiPoint 600 device.

NOTE: This adapter is not configured in the PBX and consequently does not feature a parameter value in the AMO SBCSU display mask.

3.6.1.1 Port for Recording Device (Data cannot be modified)

During a call, the RX and TX handset signals are both routed to the jack.

– Impedance: 6 kOhm

– Frequency range: 300 to 3000 Hz (+/- 3 dB)

– Level: 1.77 Vrms at 600 Ohm

Jack   MW6/4 assignment:

pin 1 = unassigned
pin 2 = AF +
pin 3 = AF +
pin 4 = AF
pin 5 = AF
pin 6 = unassigned
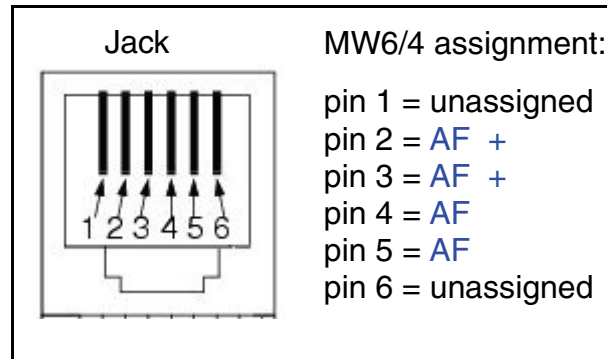
Figure 1   Recorder interface assignment

3.6.1.2 Second Headset Port

A second headset can be used as soon as it is connected and uses the same volume setting as the telephone to which the adapter is connected.

The volume cannot be separately set for this port.

Jack   MW4/4 assignment:

pin 1 = unassigned
pin 2 = AF +
pin 3 = AF -
pin 4 = unassigned
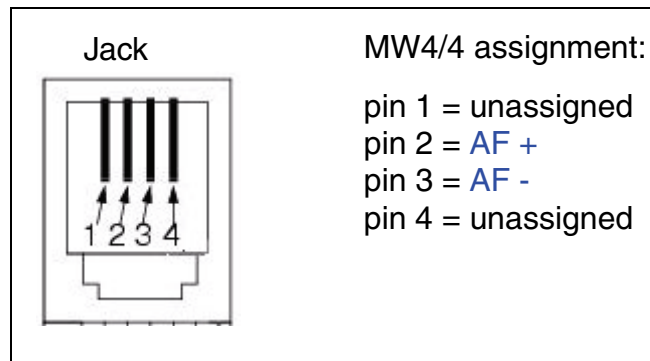
Figure 2   Second headset port assignment

3.6.2 optiPoint Acoustic Adapter Data

The acoustic adapter lets you connect an external microphone and speaker as well as a headset (cordless or corded) to an existing optiPoint 410 or optiPoint 600 device. The adapter also features two floating contacts.

NOTE: This adapter is not configured in the PBX and consequently does not feature a parameter value in the AMO SBCSU display mask.

3.6.3 Microphone and Loudspeaker Port

You can operate an add-on microphone and an external speaker at this port by using a cable-sharing adapter.

NOTE: Any external devices connected cancel out the corresponding internal devices. No configuration changes are necessary at the PBX.

– The volume can be modified in the same way as for the telephone.

– The external loudspeaker must have a separate amplifier and power supply.
.

RJ45 jack

MW8/8 assignment:

pin 1 = MIC power +
pin 2 = MIC power GND
pin 3 = MIP (AF in)
pin 4 = MIC sense lead
pin 5 = SPKR sense lead
pin 6 = LSP (AF out)
pin 7 = reserved (BOOT)
pin 8 = GND
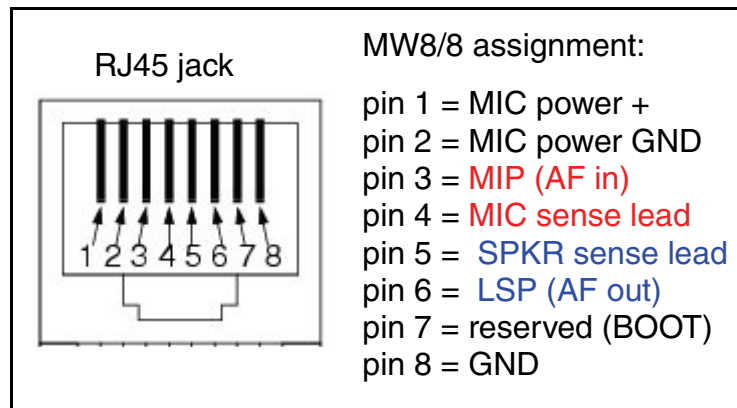
Figure 3   Microphone/loudspeaker port assignment

3.6.4 Headset Port

Headsets with and without key as well as wireless or wired units can be operated at this port.

NOTE: If you are using a headset without hardware detection (that is, connection/disconnection is n o t recognized by the hardware), you must confirm its presence by pressing the HS key (HandSet, assigned with the AMO TAPRO). The parameter HEADSET must be set to NOIND in the AMO SBCSU and HSKEY must be set to correspond to the function.

A headset with a MW4/4 port needs an adapter.

RJ45 jack

MW8/8 assignment:

pin 1 = serial interface TX bus
pin 2 = GND
pin 3 = TX Audio
pin 4 = RX Audio
pin 5 = RX Audio
pin 6 = TX Audio +Power electret mic.
pin 7 = reserved (+3V3)
pin 8 = serial interface RX bus
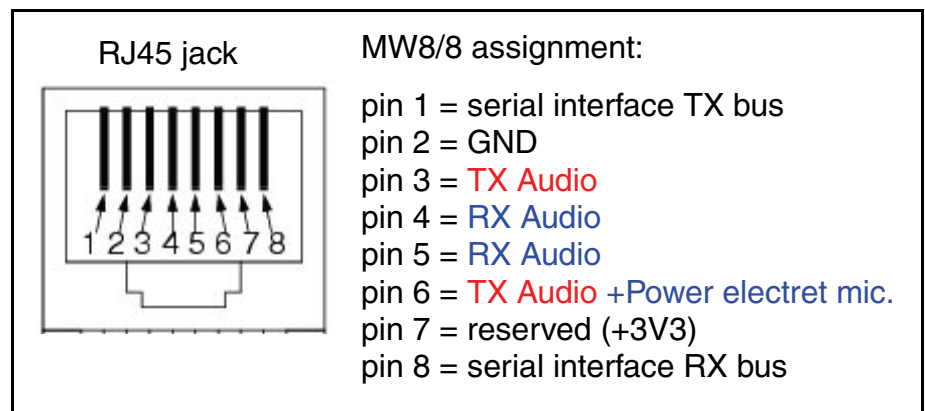
Figure 4   Headset port assignment

3.6.5 Contact Port

The "bell" contact is activated when an alert message is received for the terminal.

The second contact "activity" can be activated by pressing the keys configured with the AMO TAPRO (BUSYLAMP or DOOROPEN).
The contact is closed the first time you press the "BUSYLAMP" button and re-opened when you press it a second time.
(The LED for the associated key is set and then re-set at the same time.)

NOTE: This adapter is not configured in the PBX but must be present so that the door opener and busy lamp field function can be key-operated.

- – The contacts are galvanically isolated from the telephone.

- – Load capacity for the AC contacts: 24 V/5 W

– Load capacity for the DC contacts: 60 V/5 W


<div style="text-align:center">

Jack   MW4/4 assignment:

pin 1 = activity 1
pin 2 = activity 2
pin 3 = bell 1
pin 4 = bell 2

</div>
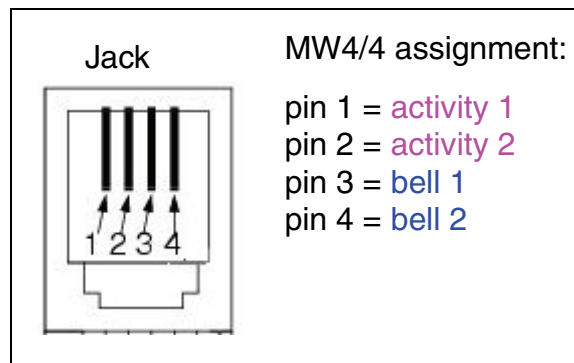
Figure 5   Contact port assignment

NOTE: An external power supply must be available for the bell contact function. (Not necessary if only using a headset or microphone/loudspeaker.)

3.6.6 optiPoint Analog Adapter

The analog adapter (OPTIABA) must be used to connect an analog terminal (for example, default T/R telephone, answering machine) to an existing optiPoint 410 device.

- The analog adapter does not support self-tests
  (supply voltage 60 V and loop current 30 mA).

- The external power supply provided is essential for operation and must be connected to the optiPoint 410.

- DTMF is pre-set as the signaling method (DTMF tones, according to EIA/TIA 464A).

- The country-specific values are set for the T/R interface with the AMO ZAND. TAABCTID is set by default to 02 for Germany.

  `CHANGE-ZAND:TYPE=OPTISET,TAABCTID=string;`

  Specify the TA T/R country code as a Hex value (currently 00H - 32H) to define multiple applications for a single country (for example, England1 and 2).
  The definitions for Germany also apply to a series of countries and Hex values that have not yet been assigned.

- Default values for Germany:

  – Off-hook >= 45 ms

  – On-hook >= 195 ms

– Flash = 45/115 ms

– Input impedance/balancing network = N2/N2 (220 Ohm + 820 Ohm//115 nF)

– Input/output level = 3/-10 dBr

– Ring frequency = 25 Hz

– AC ringing voltage = 64 Veff

– Reorder/congestion tone if there are no free B channels: cadence = 1 sec

- Values deviating from German defaults:

  – Off-hook >= ITL, FIN:15; AUS:35; SPA:75; POR:95; SWZ:115; NDL:295 [ms]

  – On-hook >= POR:105; SPA:145; SWZ:295; FRA:355; BEL:395; RSA:795; USA:1105 [ms]

  – Flash = FIN:35/105; GBR:35/135; ITL, RSA, SPA, SWZ:45/135; AUT:75/125; NDL:85/135; BEL:85/165; FRA:185/355; USA:295/1105 [ms]

  – Input impedance/balancing network (see table below for Nx values)= GBR: N16/N8; NDL: N10/N13; SPA, AUS: N11/N11; POL: N10/N2 POR, USA, BRZ: N10/N10; ITL: N3/N12; FRA: N8/N8; AUT: N2/N10; BEL: N1/N10; CHN: N5/N6; FIN: N4/N14; LUX, RSA, SWZ: N2/N2;

  – Input/output level = GBR1, RSA: 3 /-9; GBR2: -1/-9; FRA: -1.9/-8.9; USA: 3/-6; FIN: 1.5/-8.5; SWZ: 0/-6.5; BRZ:0.2/-7.2; NDL, SPA, POR, ITL, AUT, BEL, CHN, LUX, POL, AUS: 0/-7 [dBr]

  – Ring frequency = FRA, AUT: 50; AUS: 17 [Hz]

  – AC ringing voltage = NDL, SPA, POR, ITL, BEL, FIN, BRZ: 72 [Veff] GBR, USA, RSA, AUS: 89 [Veff]

  – Reorder/congestion tone: Cadence = USA: 0.5 sec

Type	Network
N1	150 Ohm + 830 Ohm // 72 nF
N2	220 Ohm + 820 Ohm // 115 nF
N3	180 Ohm + 620 Ohm // 60 nF
N4	270 Ohm + 910 Ohm // 120 nF

Type	Network
N5	200 Ohm + 560 Ohm // 100 nF
N6	470 Ohm + 620 Ohm // 85 nF
N7	300 Ohm + 1 k Ohm // 120 nF
N8	215 Ohm + 1 k Ohm // 137 nF
N9	370 Ohm + 620 Ohm // 310 nF
N10	600 Ohm
N11	220 Ohm + 820 Ohm // 120 nF
N12	750 Ohm // 18 nF
N13	340 Ohm + 422 Ohm // 100 nF
N14	390 Ohm + 620 Ohm // 100 nF
N15	220 Ohm + 1.2 kOhm // 120 nF

– No other OPTIABAs can be operated at an optiPoint 500 or optiPoint 600 client.

Jack

MW6/4 assignment:

pin 1 = unassigned
pin 2 = AUX_PWR+ (opt.)
pin 3 = La
pin 4 = Lb
pin 5 = AUX_PWR- (opt.)
pin 6 = unassigned
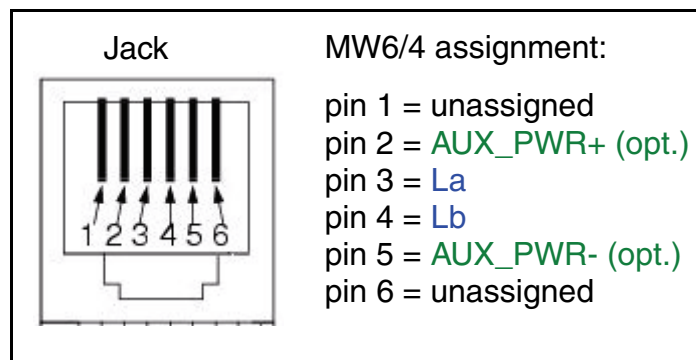
Figure 6   OPTIABA assignment

4 Description of OpenStage IP Terminals

10/100 MBit variants:

- OpenStage 15

- OpenStage 20

- OpenStage 40

- OpenStage 60

- OpenStage 80

- OpenStage 20E

1 GBit variants:

- OpenStage 20 G

- OpenStage 40 G

- OpenStage 60 G

- OpenStage 80 G

NOTE: **SIP will not** be supported by OpenStage terminals on HiPath 4000.

4.1 Hardware and General Features

Please refer to the data sheet of the OpenStage terminals (http://apps.g-dms.com:8081/techdoc/en/P31002S2000D101017629/index.htm)

NOTE: There are no adapters for OpenStage telephones.

NOTE: Both key modules, the application modules, the display modules, the busy lamp field and the adapters in the optiPoint series of telephones cannot be deployed or operated together with OpenStage. The only exception is the external power supply (L30250-F600-A190-A191-A192) for the telephones.

4.2 Key Assignment

OpenStage telephones have fixed keys. For this reason, the correct standard key layouts must be assigned. The keys 1-8 must correspond to the examples illustrated in Section 7.5, "OpenStage Configuration". The variable keys start from key 9 onwards.

A **SHIFT key** can also be programmed for the telephone itself.

4.3 Key Modules

OpenStage telephones may have up to two key modules. The **SHIFT key** can be used to switch between two levels.

Device type	Function	AMO parameter
OpenStage key module	Key module with 15 programmable function keys (and 1 SHIFT key)	REP

SHIFT key

When the SHIFT key is pressed on an optiPoint key module, the same action is performed on all other key modules. In other words, the SHIFT level is also activated on the second and fourth key modules.

This is not the case on OpenStage telephones and key modules.   In this case, the SHIFT level is only activated on the telephone/key module on which the SHIFT key was pressed.

4.4 OpenStage Terminal in Connection with optiClient

The following administration instructions and restrictions are temporarily for the first roll-out of the release 2. An improved handling will be enabled as soon as possible.

• The openStage of type "nn" has to be configured with the fitting standard key layout "openStage nn".

• It is not allowed to change the key assignment for a phone (AMO TAPRO) while the optiClient is active.

• The individual change of key settings by the subscriber must **not** be enabled for the combination optiClient/openStage.

- When the user previously owned the combination optiClient/optiPoint then he/she is to be informed about the new key layout which can be seen in the optiClient application. Reason for this are the fixed key functions at openStage phones.

In case of disregarding the mentioned restrictions the proper key assignment cannot assured when changing from openStage to optiClient and vice versa. This can be repaired only with deleting and configuring the complete connection again.

Configuration of a new optiClient/openStage connection:

New configuration of the openStage phone with the proper standard key layout together with the configuration of the optiClient (OPTIIP&API).

The device "optipoint 420 advance" is to be chosen in the optiClient application.

Replacement of an existing optiClient/optiPoint configuration with optiClient/openStage:

1. Regeneration of the user data

2. Delete the connection completely

   Note: the deletion is necessary because it is currently the exclusive way to delete the so-called shadow table for key assignments. If it is not cleared correctly, the proper key assignment is not assured neither at the optiClient nor at the openStage. It depends on what had happened at the connection previously (i.e. different phone types were connected etc) if the shadow table has to be cleared.

3. The phone can be exchanged now

4. New configuration of the openStage phone as described above

5. Or the phone can be exchanged now

5 optiPoint System Telephones and optiClient with SIP-IP Connection

See „SIP Connectivity" > Chapter 9, "SIP Subscriber"..

6 Service Information

6.1 General Configuration Rules and Information

- IP terminals must be configured not only in the system but also at the terminal itself.

- An optiClient 130 is configured like an optiPoint telephone.
  (You can therefore replace an optiPoint IP telephone with an optiClient 130 soft client.)

- LAN port settings should always be made on the telephone to avoid duplex mismatch.

- There is no adapter for OpenStage telephones.

- Don't activate DMC with OpenStage telephones!

- A host/client configuration is only possible with OpenStage telephones.

6.2 Adapter for optiPoint Telephones

- If not already available, an OPTIUSB (optiPoint USB adapter) is automatically configured when you set up a functional terminal.

  A physical adapter is not necessary because the function, depending on the terminal, is already implemented.

- optiPoint IP telephones cannot be used for host/client configurations.

  NOTE: The command DISPLAY-SBCSU:STNO=number; displays all configured adapters, that is, both the ones that were explicitly configured and those that were automatically configured.

6.3 Modules for optiPoint Telephones

- Only one optiPoint signature module is permitted per optiPoint telephone.

- An optiPoint 420 key module must be de-energized before it is connected to an optiPoint 410.

- No specific configuration is necessary in the system for the optiPoint display module.

NOTE: A suitable plug-in power supply must be connected for configuration with the optiPoint acoustic adapter when using the contact.

- You can only connect one optiPoint display module to the optiPoint 410.

- An optiPoint display module should always be directly connected to the optiPoint 410 as the first key module.

- The optiPoint display module from the 410 series cannot be operated at an optiPoint 500 or optiPoint 600.

6.4 Key Layout on optiPoint Telephones

- The optiPoint 410 advance and the optiPoint 420 advance use different key layouts.
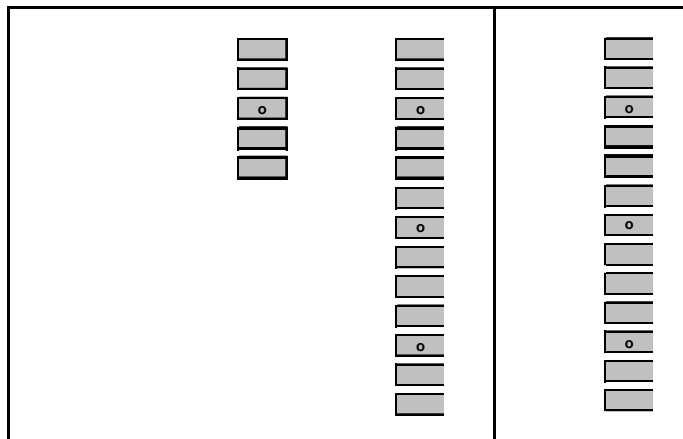
Figure 7   *Key layout: optiPoint 420 advance and optiPoint 420 key module*

7   IP Terminal Generation

For detailed information on HiPath Feature Access (HFA), refer to "HiPath Feature Access (HFA)".

Please note that all types of generation require settings to be made at the terminal itself.

The necessary settings to be made include the following network-specific data (this data can also be automatically programmed via DHCP if the telephone is appropriately configured (default factory setting)):

* **Terminal IP Address (STN IP)**

* **Terminal Mask (netmask)**

* **Default Gateway**

* (VLAN ID)

The mandatory system parameters for HFA operation are:

* **PBX Address**

* **Subscriber Number**

7.1   An optiPoint 400 or optiPoint 410 or optiPoint 600 or OpenStage at STMI
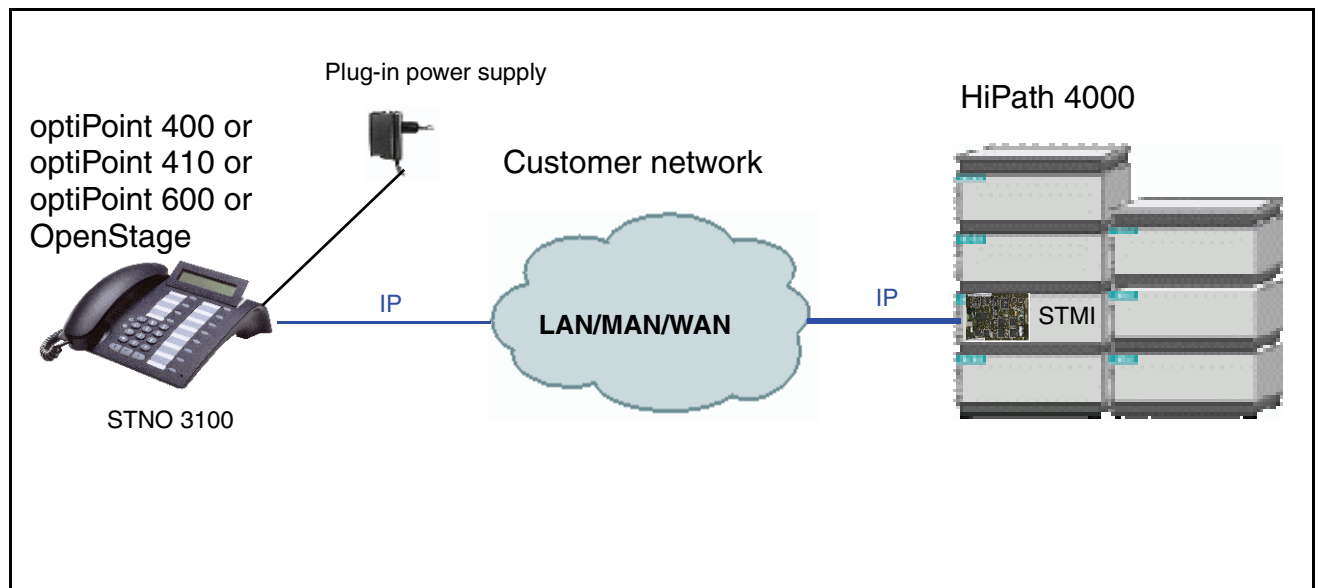
Figure 7-1   HFA (IP) terminal with plug-in power supply
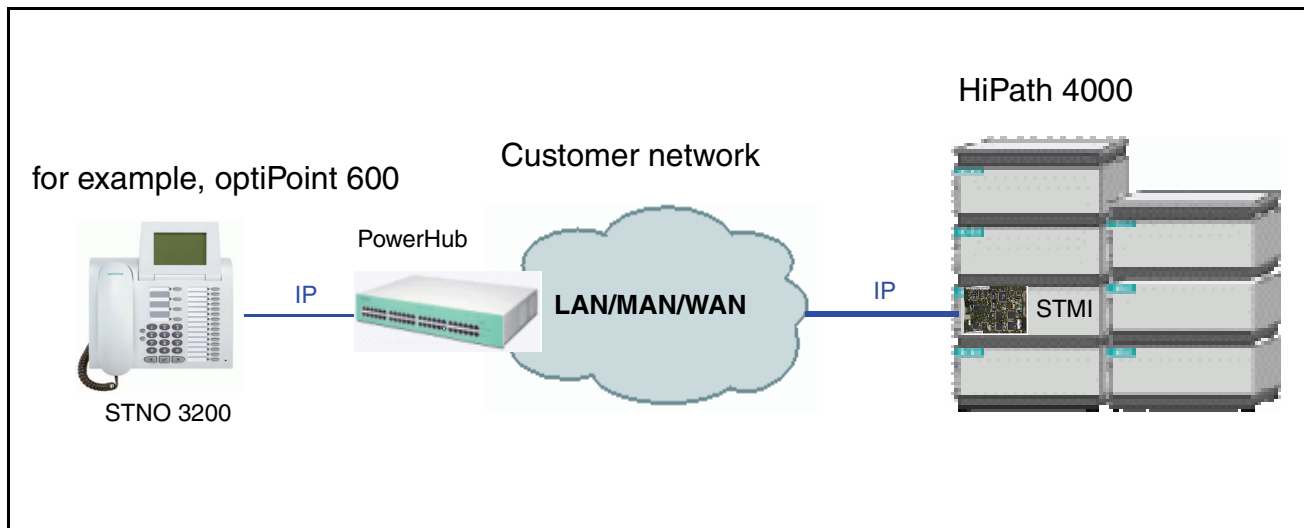
Figure 7-2   HFA (IP) terminal with PowerHub power supply

To configure an IP telephone at the STMI, enter:

```
ADD-SBCSU:STNO=<number>,TYPE=OPTI,CONN=IP2,PEN=<ltg-ltu-slot-cct>,
DVCFIG=OPTIIP,COS1=<number>,COS2=<number>,LCOSV1=<number>,
LCOSV2=<number>,LCOSD1=<number>,LCOSD2=<number>,ITR=<number>,
DPLN=0,STD=<number>,[IPPASSW=<Password>];
```

7.2   PC After optiPoint 400 or optiPoint 410 or optiPoint 600
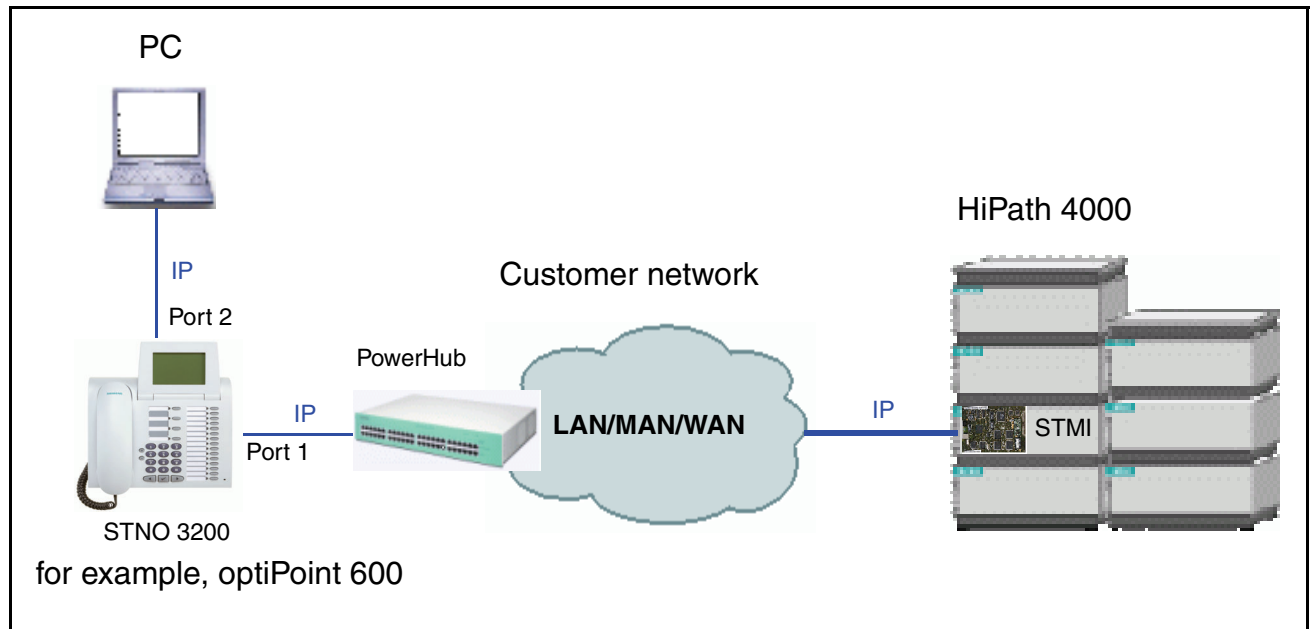
Figure 7-3   PC and HFA station with "single wire to the desk"

- To configure an IP telephone at the STMI, enter:

  ```
  ADD-SBCSU:STNO=<number>,TYPE=OPTI,CONN=IP2,PEN=<ltg-ltu-slot-cct>,
  DVCFIG=OPTIIP,COS1=<number>,COS2=<number>,LCOSV1=<number>,
  LCOSV2=<number>,LCOSD1=<number>,LCOSD2=<number>,ITR=<number>,
  DPLN=0,STD=<number>,[IPPASSW=<Password>];
  ```

No special HiPath 4000 configuration is necessary for the PC. You only have to coordinate the port settings on the telephone with those on the PC network card.

> You cannot connect a PC without 802.1p/q to an optiPoint 400/410/600 where 802.1p/q is active. The 802.1p/q settings should be activated at the telephone and in the AMO HFAB, as well as in the LAN components.

7.3   An optiPoint 400 or optiPoint 600 and USB for Simple Dialer
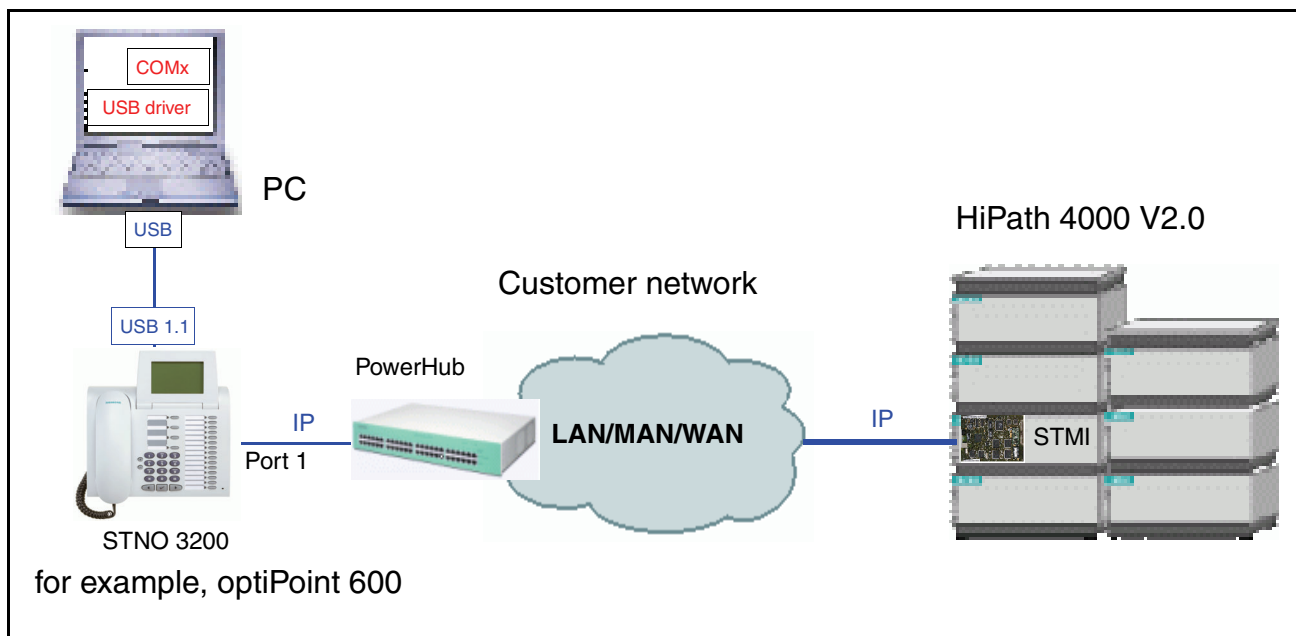
Figure 7-4   optiPoint and USB for Simple Dialer

● To configure an IP telephone at the STMI, enter:

ADD-SBCSU:STNO=<number>,TYPE=OPTI,**CONN=IP2**,PEN=<ltg-ltu-slot-cct>,
DVCFIG=OPTIIP,COS1=<number>,COS2=<number>,LCOSV1=<number>,
LCOSV2=<number>,LCOSD1=<number>,LCOSD2=<number>,ITR=<number>,
DPLN=0,STD=<number>,**[IPPASSW=<Password>]**;

No other configuration steps are necessary.

7.4   optiPoint WL2 professional Configuration

Device configuration

optiPoint WL2 professional devices are configured in the same way as optiPoint devices:

ADD-SBCSU:STNO=58798,TYPE=OPTI,CONN=IP2,PEN=1-1-9-0,DVCFIG=OPTI-
IP,TSI=1,COS1=23,COS2=23,LCOSV1=22,LCOSV2=22,LCOSD1=1,LCOSD2=1,DPLN=0,ITR=0
,SSTNO=N,COSX=0,SPDI=30,SPDC1=0,SPDC2=1,IDCR=N,REP=0,STD=23,SECR=N,INS=Y,AL
ARMNO=0,RCBKB=N,RCBKNA=N,DSSTNA=N,DSSTNB=Y,DIGNODIS=N,CBKBMAX=5,HEADSET=N,H
SKEY=NORMAL,CBKNAMB=Y,TEXTSEL=AMERICAN,HMUSIC=0,CAL-
LOG=ALL,PMIDX=2,COMGRP=0,DNIDSP=Y,IPCODEC=G711PREF;

CHANGE-SDAT:STNO=58798,TYPE=DATA1,NNO=1-1-301;

Key assignment

```
DISPLAY-TAPRO:STN,58798;

H500:  AMO TAPRO STARTED

+-------------+----+--------+--------------------------------------------+
|   STATION   |STD | DIGTYP |  FUNCTION KEYS WHICH DIFFER FROM STANDARD   |
+-------------+----+--------+--------------------------------------------+
|  58798      | 23 | OPTISET|                                            |
+-------------+----+--------+--------------------------------------------+

AMO-TAPRO-111        PROGRAMMABLE KEY DEFINITION FOR DIGITAL TERMINALS

DISPLAY COMPLETED;



DISPLAY-TAPRO:FORMAT=STD,STD=23,DIGTYP=OPTISET;

H500:  AMO TAPRO STARTED

+-----+---------+----------------------------------------------------------+
| STD | DIGTYP  | "SERVICE INFORMATION"       KEY LAYOUT                    |
+-----+---------+----------------------------------------------------------+
| 23  | OPTIT12 | "12 OPTISET TAC STANDARD                     "           |
|     |         | 1 DCPA      2 CONS      3 CNCT      4 HOLD      5 PHML    |
|     |         | 6 SNR       7 CONF      8 FWD       9 MUTE     10 SPKR    |
|     |         | 11 LINE  12 LINE                                         |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA1  | 1 NAME      2 NAME      3 NAME      4 NAME      5 NAME    |
|     |         | 6 NAME      7 NAME      8 NAME      9 NAME     10 NAME    |
|     |         | 11 NAME    12 NAME     13 NAME     14 DSS      15 DSS     |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA2  | 1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT  |
|     |         | 6 VACANT    7 VACANT    9 VACANT    9 VACANT   10 VACANT  |
|     |         | 11 VACANT  12 VACANT   13 VACANT   14 VACANT   15 VACANT  |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA3  | 1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT  |
|     |         | 6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT  |
|     |         | 11 VACANT  12 VACANT   13 VACANT   14 VACANT   15 VACANT  |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA4  | 1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT  |
```

```
|     |        |   6 VACANT      7 VACANT     8 VACANT      9 VACANT       10 VACANT    |
|     |        |  11 VACANT     12 VACANT    13 VACANT     14 VACANT       15 VACANT    |
+-----+--------+-------------------------------------------------------------------+

AMO-TAPRO-111        PROGRAMMABLE KEY DEFINITION FOR DIGITAL TERMINALS

DISPLAY COMPLETED;
```

Integrated key functionality

```
ADD-
KCSU:STNO=58798,TYPE=PRIM,PRIMKEY=11,RIOP=YES,ORLNPF=PRIME,TMLNPF=RING,SGLB
MOD=YES,BUSYRING=ALERT,APRIVAT=NO,AICS=NO,LINETONE=NO,BUSYSIGN=DEACTIVE,PRI
OCALL=NOTONE,SAMEPRIO=NOSIGNAL,RINGTYPE=1,RINGVOL=1,OFFTYPE=DC;
```

7.5 OpenStage Configuration

Key assignment

Sample standard key layouts for the various OpenStage variants:

```
DIS-TAPRO:TYPE=STD,STD=55&&58;

H500:  AMO TAPRO STARTED

+-----+--------+-------------------------------------------------------------------+
| STD | DIGTYP | "SERVICE INFORMATION"         KEY LAYOUT                           |
+-----+--------+-------------------------------------------------------------------+
| 55  | OPENST20|  "8 KEYS I.M. OPENSTAGE PHONE - 20                    "           |
|     |        |   1 SPKR-PRO    2 PROT        3 MUTE-PRO    4 SNR-PROT    5 FWD-PROT|
|     |        |   6 RLS-PROT    7 MENU-PRO    8 MSG-PROT    9 VACANT      10 VACANT |
|     |        |  11 VACANT     12 VACANT     13 VACANT     14 VACANT      15 VACANT |
|     |        |  16 VACANT     17 VACANT     18 VACANT     19 VACANT               |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA1 |   1 VACANT      2 VACANT      3 VACANT      4 VACANT      5 VACANT  |
|     |        |   6 VACANT      7 VACANT      8 VACANT      9 VACANT     10 VACANT  |
|     |        |  11 VACANT     12 VACANT     13 VACANT     14 VACANT     15 VACANT  |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA2 |   1 VACANT      2 VACANT      3 VACANT      4 VACANT      5 VACANT  |
|     |        |   6 VACANT      7 VACANT      8 VACANT      9 VACANT     10 VACANT  |
|     |        |  11 VACANT     12 VACANT     13 VACANT     14 VACANT     15 VACANT  |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
```

```
|     | OPTIA3  |   1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|     |         |   6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|     |         |  11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA4  |   1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|     |         |   6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|     |         |  11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
+-----+---------+------------------------------------------------------------+
| 56  | OPENST40| "14 KEYS I.M. OPENSTAGE PHONE - 40                    "     |
|     |         |   1 SPKR-PRO   2 HS-PROT   3 MUTE-PRO   4 SNR-PROT  5 FWD-PROT |
|     |         |   6 RLS-PROT   7 MENU-PRO  8 MSG-PROT   9 VACANT   10 VACANT   |
|     |         |  11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|     |         |  16 VACANT   17 VACANT   18 VACANT   19 VACANT              |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA1  |   1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|     |         |   6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|     |         |  11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA2  |   1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|     |         |   6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|     |         |  11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA3  |   1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|     |         |   6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|     |         |  11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|     + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|     | OPTIA4  |   1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|     |         |   6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|     |         |  11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
+-----+---------+------------------------------------------------------------+
| 57  | OPENST60| "16 KEYS I.M. OPENSTAGE PHONE - 60                    "     |
|     |         |   1 SPKR-PRO   2 HS-PROT   3 MUTE-PRO   4 PROT      5 FWD-PROT |
|     |         |   6 RLS-PROT   7 MENU-PRO  8 MSG-PROT   9 VACANT   10 VACANT   |
|     |         |  11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|     |         |  16 VACANT   17 VACANT   18 VACANT   19 VACANT              |
```

```
|    + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|    | OPTIA1 |  1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|    |        |  6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|    |        | 11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|    + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|    | OPTIA2 |  1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|    |        |  6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|    |        | 11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|    + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|    | OPTIA3 |  1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|    |        |  6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|    |        | 11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|    + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|    | OPTIA4 |  1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|    |        |  6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|    |        | 11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
+-----+---------+----------------------------------------------------------------+
| 58  | OPENST80|  "17 KEYS I.M. OOPENSTAGE PHONE - 80                 "       |
|     |        |   1 SPKR-PRO   2 HS-PROT   3 MUTE-PRO   4 PROT       5 FWD-PROT |
|     |        |   6 RLS-PROT   7 MENU-PRO  8 MSG-PROT   9 VACANT    10 VACANT   |
|     |        |  11 VACANT    12 VACANT   13 VACANT    14 VACANT    15 VACANT   |
|     |        |  16 VACANT    17 VACANT   18 VACANT    19 VACANT                |
|    + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|    | OPTIA1 |  1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|    |        |  6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|    |        | 11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|    + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|    | OPTIA2 |  1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|    |        |  6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|    |        | 11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|    + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
|    | OPTIA3 |  1 VACANT    2 VACANT    3 VACANT    4 VACANT    5 VACANT   |
|    |        |  6 VACANT    7 VACANT    8 VACANT    9 VACANT   10 VACANT   |
|    |        | 11 VACANT   12 VACANT   13 VACANT   14 VACANT   15 VACANT   |
|    + - - - - + - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -+
```

```
|     | OPTIA4  |  1 VACANT       2 VACANT     3 VACANT       4 VACANT       5 VACANT    |
|     |         |  6 VACANT       7 VACANT     8 VACANT       9 VACANT      10 VACANT    |
|     |         | 11 VACANT      12 VACANT    13 VACANT      14 VACANT      15 VACANT    |

+-----+---------+-----------------------------------------------------------------+
```

SHIFT key

A **SHIFT key** can also be configured on OpenStage terminals (previously this was only possible on key modules). This is achieved with the **AMO TAPRO** or via the Service menu on the terminal.

AMO TAPRO

`CHANGE-TAPRO:STNO=<station number>,KYxx=SHIFT;`

> xx must be greater than 08 since the first 8 keys are fixed. Only key 9 and onwards can be freely assigned.

8 Deletion at the IP Port

8.1 Deleting All Devices Assigned a Station Number at the IP Port

To delete all devices that are assigned a station number, enter (the optional OFFTYPE parameter with its default setting DC="deactivate with camp-on" takes over the mandatory task of disabling the terminals prior to deletion; this would otherwise be performed with the AMO DSSU):

```
DEL-SBCSU:STNO=number,SVC=ALL[,OFFTYPE=DI];
```

NOTE: You can only delete the device with the main station number if there are no other devices configured under a secondary station number.

8.2 Deleting NV Services at the IP Port

To delete individual NV services at the IP port, enter (the optional OFFTYPE parameter with its settings DC="deactivate with camp-on" and DI="deactivate immediately" takes over the mandatory task of disabling all terminals prior to deletion and enabling the remaining terminals again afterwards; this would otherwise be performed with the AMO DSSU):

```
DEL-SBCSU:STNO=number,SVC=param [,OFFTYPE=DI];
```

NOTE: If you used OFFTYPE=NL (no lock) to delete an NV service, then you must use DSSU to put the remaining terminals back into operation (in particular the voice terminal as this was not deleted).

8.3 Deleting the IP Telephone's Key Module

To delete all key modules assigned to a telephone, proceed as follows:

```
CHANGE-SBCSU:STNO=number,OPT=OPTI,REP=0;
```

8.4 Deleting IP Telephone Adapters

NOTE: This section only applies to optiPoint and optiClient terminals.

- You cannot delete the **optiPoint USB adapter** with an AMO command; it is automatically deleted at the same time as the last (functional) S_0 device at the IP port.

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