HiPath 1100

HiPath 1120
HiPath 1130
HiPath 1150
HiPath 1190
Service Manual

SIEMENS

Global network of innovation

HiPath 1100

Models HiPath 1120/1130/1150/ 1190

Service Manual

CE Mark

This device complies with EU Directive 1999/5/EG, as attested by the CE Mark.

Environmental Certification

This device is manufactured according to Siemens's Certified System for Environmental Management (ISO 14001). This process ensures that energy and raw material consumption, as well as emissions produced from industrial waste, are kept to a minimum.

A31003-K1250-S100-12-7619

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1 Important Information

HiPath 1100 Telecommunications Systems are compatible with TN-S and TN-C-S power systems featuring a PEN conductor divided into two parts: a safety ground conductor (PE) and a neutral conductor (N) as defined in IEC 364-3.

Warning
Only service and installation personnel should open the PABX box and/or connect and handle trunk and extension lines.

1.1 Safety Information

The following information is intended for service personnel and authorized technicians.

Read carefully all the information pertaining to this equipment and follow all safety guidelines. Become familiar with all emergency numbers.

Whenever work conditions are not absolutely safe, make sure to discuss the situation with a supervisor before starting to work. For example, humidity or risk of an explosion due to the presence of gas should be talked about before proceeding.

Safety Symbols

The following symbols are used to indicate potential hazards:

Danger	This symbol indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
Warning	This symbol indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
Caution	This symbol indicates a potentially hazardous situation which may lead to a minor to moderate injury or may damage the hardware or software.
	This symbol identifies useful information.

Other symbols that indicate potential hazardous situations

Most of these symbols do not appear in this manual but may appear on the equipment.

Electricity Weight Heat Fire Chemicals ESD* Laser

*Electrostatically Sensitive Device

1.1.1 Safety Information: danger

Ground Safety

Ensure that all proper ground connections have been made before operating the system.
Never operate the equipment before connecting the ground wire.

Dangerous Voltages

Voltages higher than 30 VAC (alternating current) or 42 VDC (direct current) are classified as dangerous voltages (EN 60950).

Damage

- Replace the power cord immediately if there is any sign of damage.
- Replace any damaged safety equipment immediately (covers, labels, safety cables).
- Use Siemens-approved cables and modules only. The use of accessories that are not recommended for the system may cause it to malfunction.

Make sure power is turned off while equipment is being serviced.

When maintenance services require shutting down the system, make sure to disconnect all power supplies.

Working on low voltage network circuits

- Only qualified technical personnel should work on low voltage network systems (100-240 V ac).
- Never work alone when working with high voltage circuits. Make sure there is another person present who knows the location of the circuit breakers.
- Never touch live wires that are not properly insulated.
- Ensure that no other power source is connected to the equipment. Make sure that the power source being used is protected by means of an additional breaker or fuse.
- Make sure that no circuit is powered up before you start working on the equipment. Never assume that all circuits are automatically disconnected every time a breaker or additional fuse is disconnected.
- Do not connect or remove telephone lines or circuit boards during a thunderstorm.
- Always consider the possibility that a leakage current may be present.
- When working outdoors, never leave the equipment unsupervised.

1.1.2 Safety Information: warning

Hazards when working with large gauge cables

Low voltages and large gauge cables increase the risk of hazardous situations. While large gauge cables are usually of low voltage, their current values are higher. This results in higher risk, specifically in the event of a short-circuit.

Protective Clothing/Equipment

- When working with the equipment, do not wear loose-fitting clothes. Contain long or free-flowing hair.
- To avoid injury and the risk of short-circuiting, do not wear jewelry, watches with metallic wristbands, clothing with metallic accessories or rivets when working with the equipment.
- Always use appropriate eye protection.
- Wear a safety helmet in hazardous situations where there is a risk of injury from falling objects.

Safety Measures

- Shiny or reflective surfaces are conductive. Never touch a live component with a mirror. This can lead to short-circuiting, which may lead to personal injury.
- Unless the equipment's operating instructions specify otherwise, shut-down the power when working in close proximity to a power supply or DC converter.
- Do not try to lift heavy objects by yourself.

1.1.3 Safety Information: Caution

Checking and Measuring Voltage

- Check rated voltage for recommended system installation.
- Proceed very carefully when making measurements on live components or when servicing equipment with the power on.

Main Circuit Breaker

Know the location of the system's main circuit breaker and its conductive capacity. Check this information against the exchange specifications in "Technical Data" on page 2-7 to assess compatibility.

Damage

Only use tools and equipment that are in perfect condition. Do not operate equipment that is damaged. Report any problems to your supervisor.

ESD Protection for Components (ESD)

To protect an electrostatically sensitive device:

- Wear an anti-static wristband before servicing or maintaining the system or any of its modules.
- Always transport the system or its modules in appropriate protective packaging.
- When working with boards, always place them on a grounded conductive base.
- Use grounded soldering irons with only.

Layout of the Cables

Position cables in a manner to prevent damaging them or causing accidents and injuring people.

1.1.4 General Information

Line/Cable Connections

- All cables coming out of the system must be protected along their entire path inside conduits, ducts or other appropriate routes of conveyance.
- Cables must be connected only to their specified connections points.

Location of Safety Equipment

Once maintenance is finished, return all safety equipment to its proper location.

Inspecting your Tools

Inspect tools regularly. Only tools in perfect condition should be used.

Condensation

When moving the equipment from a cold environment to a location at room temperature, take into consideration "Environmental Conditions" on page 2-9 to prevent the occurrence of condensation. Wait until the equipment is at room temperature and completely dry before turning it on.

Wall Mounting

- Some types of walls (e.g., drywall) have limited weight-bearing capacity. Before installing the equipment, check the following:
- Examine the condition of the walls to ensure that there are no cracks or damage that indicates the presence of humidity.

Flammable Materials

Do not store flammable materials in close proximity to the equipment.

Hazards at the location of operation

- Ensure that the location is well lit.
- There is a higher risk of an accident occurring in or near unorganized premises.

1.1.5 What to do in Case of an Emergency

Procedures to follow during Accidents

- In the event of an accident stay calm and proceed with caution.
- Turn off the power before touching the victim of an electrical accident.
- If the power cannot be shut down immediately, use an object made of a non-conductive material such as wood to touch the victim and isolate him/her from any electrical current.

First Aid

- You should have knowledge of the first aid principles to follow for victims of electric shock. In the event of an emergency of this kind, it is critical to know CPR in order to help victims who have suffered cardiac arrest or who have stopped breathing. It is also essential to have basic knowledge of the kind of first aid administered to burn victims.
- If the victim is not breathing, perform mouth-to-mouth or mouth-to-nose resuscitation immediately.
- If you have had proper training and the victim's heart is not beating, promptly commence a heart massage.

Emergency Call

Call an ambulance or doctor immediately and provide the following information calmly and rationally:

- Where did the accident occur?
- What happened?
- What type of injuries were sustained?

Finally, be ready to provide any additional information needed for rendering emergency services.

1.1.6 Accident Report

- Promptly report to a supervisor all accidents, near-accidents and potential hazards.
- Report all electrical shocks, even minor ones.

1.2 Data Protection and Confidentiality

Handling of Personal Information

This telephone exchange uses and processes personal information (call detail records, display messages, and customer data records, for instance).

Comply with all local and country-specific laws and regulations concerning use and protection of such information.

Information Protection laws are designed to prevent violation of individual privacy rights through misuse of personal data.

By safeguarding data against misuse during all stages of processing, information protection laws protects your rights as well as those of third parties

Guidelines for Siemens Employees

Siemens company policy and procedures require secure business practices and employee data confidentiality.

The following rules must be strictly followed in order to ensure compliance with job-related statutory requirements (be they company functions or outsourced maintenance and management). This serves to safeguard our customers' interests and provide additional personal protection.

Guidelines for Handling Information

A conscientious, responsible approach helps to protect and safeguard information:

- Make sure that only authorized personnel have access to customer information.
- Always use password assignment features; no exceptions allowed. Never disclose passwords to unauthorized personnel.
- Ensure that no unauthorized personnel are able to process (store, modify, transmit, override, delete) or make use of customer information.
- Block all access by unauthorized personnel to data such as backup disks or record printouts.
- See that all unnecessary recording media are completely destroyed and that no documents are stored or left in unsecured places.
- **Working together with the customer builds trust and makes our easier.**

1.3 Structure of this Service Manual

Introduction

This manual provides information about the HiPath 1100 Communications Systems.

This manual was designed to provide information in information mapping format. It is divided into sections and units that present, as clearly as possible, all steps required to perform specific tasks when operating the system. It makes it easy for technical personnel to find the information needed and learn it quickly.

Main sections of this Manual.

- Chapter 2, "System Data" provides a description of the HiPath 1100 system, technical information, and a list of relevant documentation.
- Chapter 3, "Modules" describes all the modules that comprise the HiPath 1100 system as well as their characteristics.
- Chapter 4, "Installation" provides information on how to setup and install the HiPath 1100, including recommendations and important notes.
- Chapter 5, "Telephones" describes Standard and System Telephones.
- Chapter 6, "Operation" describes the procedures for starting up the HiPath 1100.
- Chapter 7, "Configuring the System Specifically for the Client" lists all programming codes and their functions.
- Chapter 8, "Feature Access Codes" contains a summarized table of all the features of the HiPath 1100 system.

2 System Data

2.1 Overview

This manual describes the HiPath 1100 systems and their characteristics. Read all the chapters in this manual carefully. Only trained technical personnel should handle and service this system.

About this Chapter

This chapter covers the following topics:

2.2 Introduction

Power Systems

The HiPath 1130/1150/1190 systems are designed to connect to TN-S and TN-C-S-type power systems that feature a PEN conductor divided in two: a ground or protective earth conductor (PE) and a neutral conductor (N). In the HiPath 1120 system, however, only the CND version uses a safety ground conductor (PE - Protective Earth).

Warning

Nonetheless, in both cases the shields for extensions and external lines must have a separate ground connection (≤ 10 Ω).

The HiPath 1100 systems are designed for residential, private or commercial use. Additional safety measures to prevent external interference may be required in industrial environments (For additional information see "Environmental Conditions," section 2.7.2).

2.3 HiPath 1100 Configurations

HiPath 1100 systems are designed to meet the requirements for a wide range of clients and are, therefore, offered in the following configurations:

- **HiPath 1120:** Wallmount, standard configuration for 2 external lines, 8 extensions and 4 system telephone interfaces. It provides a total maximum capacity for 6 external lines, 16 extensions and 4 system telephone interfaces.
- **HiPath 1130:** Wallmount, standard configuration for 2 external lines, 10 extensions and 8 system telephone interfaces. It provides a total maximum capacity for 17 external lines, 20 extensions and 8 system telephone interfaces.
- **HiPath 1150:** Wallmount, standard configuration for 2 external lines, 10 extensions, 8 system telephone interfaces. Depending on the combination of modules used in slots 1 to 4, the system can be configured for a maximum of 10 external lines, 50 extensions and 8 system telephones interfaces; or 16 external lines, 40 extensions and 8 system telephone interfaces; or 17 external lines, 46 extensions and 8 system telephone interfaces (see "Modules Location" on page 4-16).
- **The HiPath 1190** comes in two versions:
  - **HiPath 1190:** External cabinet with one CPU, 2 backplanes, 3 power supplies units, and 2 connection boards. It can hold up to 21 modules (expansion and option modules).
  - **HiPath 1190R:** Rackmount cabinet in a standard 19" rack with a CPU, 2 backplanes, 3 power supplies units, and 2 connection boards. It can hold up to 21 modules (expansion and option modules).

For information about country-specific versions please ask one of our distributors.

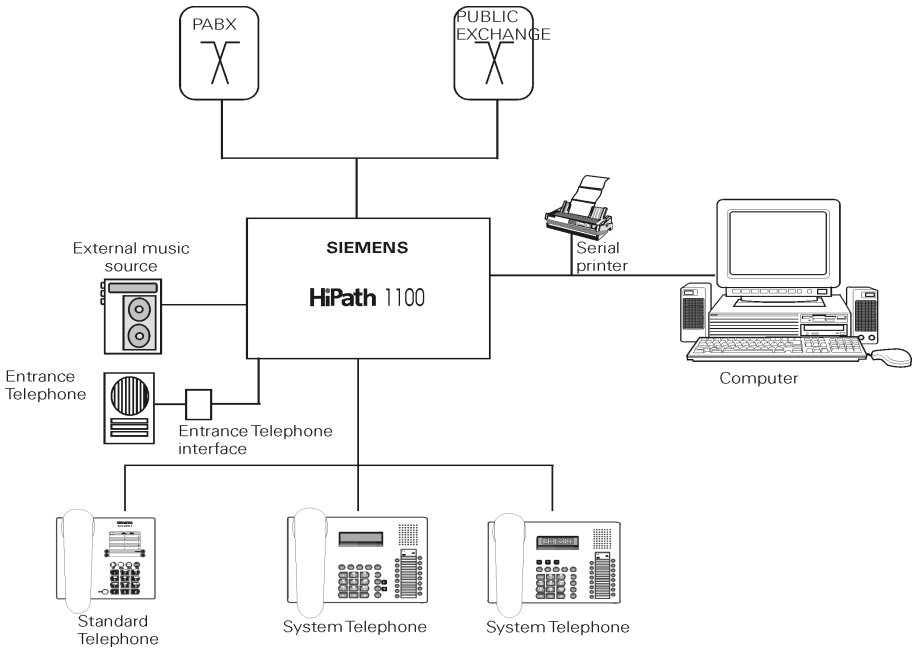


Figure 2-1 System Overview

2.4 HiPath 1100 System Periphery

- **HiPath 1120**

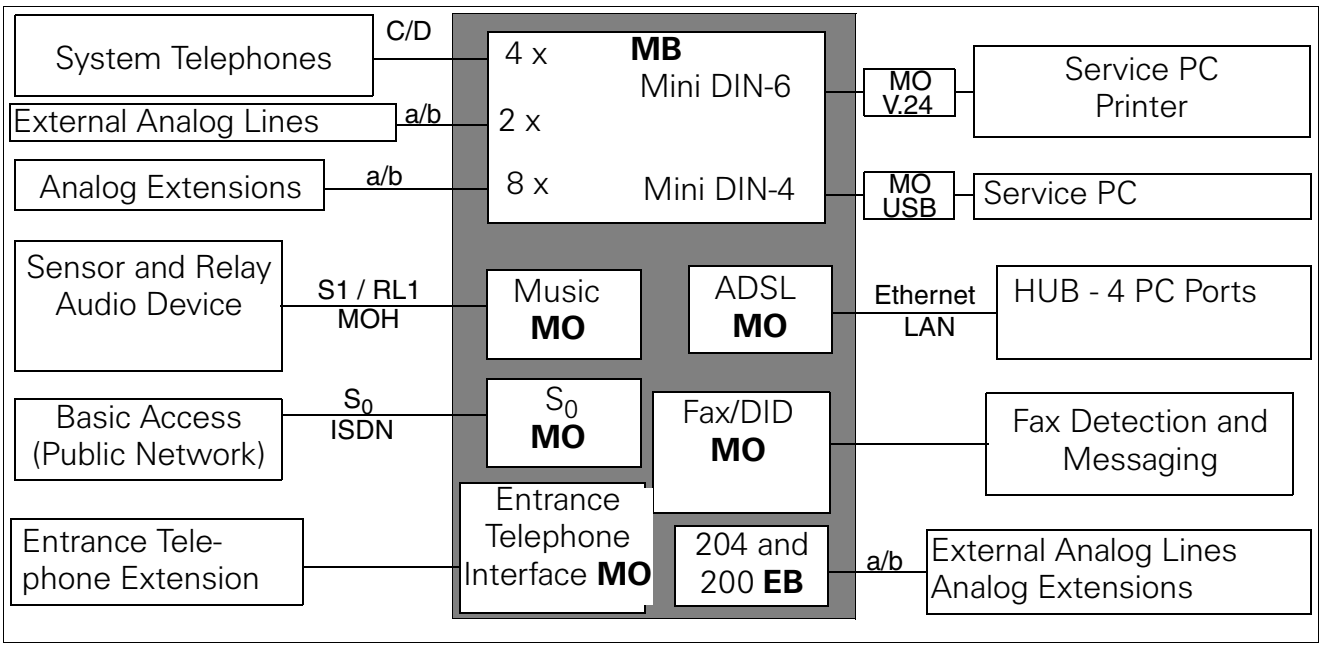


Figure 2-2 HiPath 1120 Periphery

- **HiPath 1130/1150**

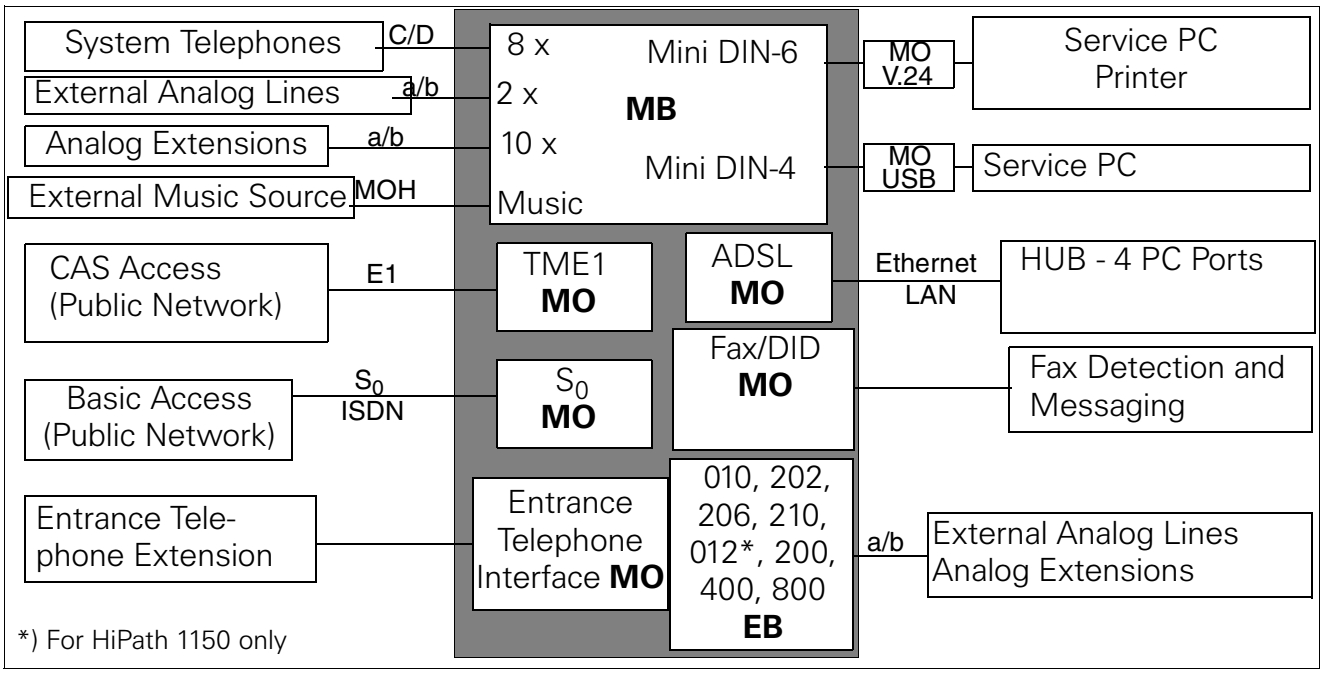


Figure 2-3 HiPath 1130/1150 Periphery

- **HiPath 1190**

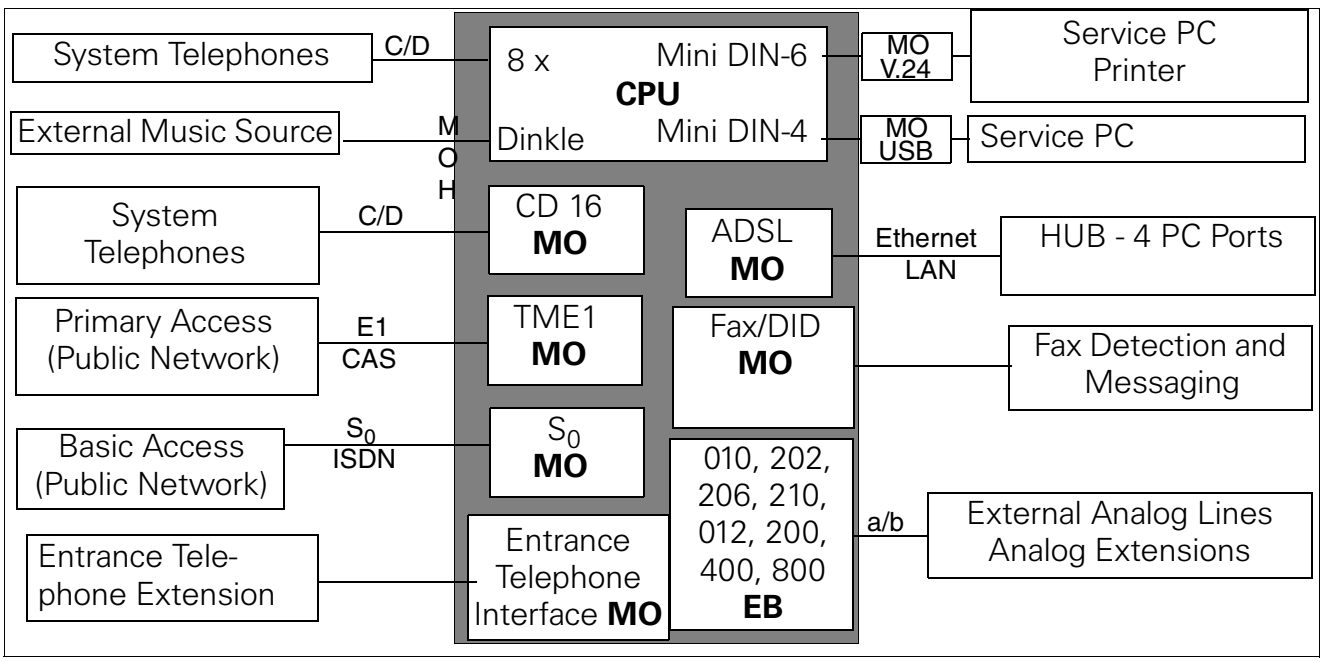


Figure 2-4 HiPath 1190 Periphery

2.5 Limitations to System Expansion

Table 2-1 Specific limitations to system expansion

	HiPath 1120	HiPath 1130	HiPath 1150	HiPath 1190
Standard Configuration:				
External Analog Lines	2			0
Analog Extensions	8	10		0
System Telephone Interface*	4	8		8
Expansion Modules:**				
EB 010 (10 extensions)	0	1	4	14
EB 012 (12 extensions)	0		3	8
EB 202 (2 ext. lines and 2 extensions)	0	2	4	20
EB 204 (2 ext. lines and 4 extensions)	2	0		0
EB 206 (2 ext. lines and 6 extensions)	0	1	4	16
EB 210 (2 external lines and 10 extensions)	0	1	4	8
EB 200 (2 external lines)	2	2	4	16
EB 400 (4 external lines)	0	2	3	8
EB 800 (8 external lines)	0	1		4
Option Modules:* **				
$S_{0\ Module}$	1			2
TME1 Module	0	1		2
ADSL Module	1			1
Fax/DID Module	1			1
CD Module	0			1
Music Module	1	On Board		
TFE Entrance Telephone Interface	4			
Total System Capacity:				
External lines/extensions/system telephones	6/16/4	17/20/8 12/20/8	10/50/8 or 16/40/8 or 17/46/8	32/140/24 or 45/140/24
External analog lines without TME1 or S_0 modules****	6	14	16	32

* Each system telephone that is connected occupies one analog telephone slot.

** If the maximum capacity of an analog external line is exceeded due to the installation of an EB or TME1 module, the system disables a corresponding number of analog external lines, according to each system's capacity. The extension slots, however, will continue to operate as usual.

*** S_0 and TME1 modules cannot be used simultaneously.
An ADSL module and a TME1 module cannot be used simultanously on the HiPath 1150/1190.

**** When using digital trunks, you can determine the maximum number of analog lines by subtracting the number of lines assigned to each module from the total line capacity for the systems.

HiPath 1190 Note

- The HiPath 1190 system with a single rack supports up to 80 extensions
- TME1 Module
  It must only be mounted in slots 1 and 11. The system must thus have both racks mounted in order to run two modules.
  Within the maximum limit of 32 external analog lines or 45 external digital lines and 140 extensions, the system may consist of:

Table 2-2 Examples of HiPath 1190 System Configurations

Slots	Modules
1 and 2	2 x EB 800, 2 x EB 012 or 2 x EB 210 or 1 x TME1 in slot 1 (in this case slot 2 must remain free).
3, 4 and 14	Module configuration for extensions or external lines must not exceed 32 ports (e.g., 3 x EB 010 or 2 x EB 012 or 2 x EB 210).
5, 6 and 7	Module configuration for extensions or external lines must not exceed 32 ports.
8, 9 and 10	Module configuration for extensions or external lines must not exceed 32 ports.
11, 12 and 13	Module configuration for extensions or external lines must not exceed 32 ports or 1 x TME1 in slot 11 and 1 x EB 010, EB 012 or EB 210 in slot 13 (in this case slot 12 must remain free).
15, 16 and 17	Module configuration for extensions or external lines must not exceed 32 ports.
18, 19 and 20	Module configuration for extensions or external lines must not exceed 32 ports.

Each of the system's Highway supports up to 32 ports. For example, Highway 2 (slots 3, 4, and 14) can accommodate two EB 800 and one EB 206, totalling 24 ports. However, for Highway 1 (Slots 1 and 2), when a TME1 module is placed in Slot 1 (totalling 30 ports), Slot 2 must remain free (except for an ASDL module, which can be installed in Slot 2).

Table 2-3 shows the slots and their Highways.

Table 2-3 Distribution of modules on the HiPath 1190 backplanes

Slot	11	12	13	14	15	16	17	18	19	20
Highways										
2				X						
5	X	X	X							
6					X	X	X			
7								X	X	X
Slot	01	02	03	04	05	06	07	08	09	10
Highways										
1	X	X								
2			X	X						
3					X	X	X			
4								X	X	X

2.6 Technical Data

Table 2-4 Technical Data

Element	HiPath 1120	HiPath 1130	HiPath 1150	HiPath 1190
Dimensions for a Standard Enclosure				
Length	14.17" (360 mm)	18.50" (470 mm)		16.53" (420 mm)
Depth	11.33" (288 mm)	14.56" (370 mm)		15.51" (394 mm)
Height	2.53" (64.4 mm)	2.83" (72 mm)	3.93" (100 mm)	19.60" (498 mm)
Weight	2.64 lb (1.2 kg)	8.04 lb (3.65 kg)	9.36 lb (4.25 kg)	49.60 lb (22.5 kg)
Electrical Specifications for the Power Supply Units (PSUs)				
Power Requirements (Input)	220V / 127mA 127V / 331mA 110V / 381mA	110 - 230V, Full range / 1.5A		
Operation Frequency	50/60Hz	50/60Hz		
Rated Voltage (Output)	U1: 8 V_{rms} U2: 23 V_{rms}	5.1 V_{DC} . 26.4 V_{DC} .		

Table 2-4 Technical Data

Element	HiPath 1120	HiPath 1130	HiPath 1150	HiPath 1190
Call Voltage	U3: 40 V_{rms}/60Hz 65 V_{rms}/20Hz (CND) 65 V_{rms}/25Hz (SPA) 42 V_{rms}/25Hz (RSA)	50 V_{AC} + 97 V_{DC} / 0.13A - 25Hz 42 V_{AC} + 85.8 V_{DC} / 0.13A - 25Hz (RSA)		
Dialing Modes for Calls to other Public or Private Exchanges:				
• **MF Transmission Level:**				
Low Group*	-11 dBm			
High Group*	-9 dBm			
Pre-Emphasis	2 dB			
Pulse Duration**	90ms min.			
Inter-digit Pause**	90ms min.			
• **DP (Dial Pulse):**				
Pulse/Pause Ratio**	2:1 (approximately 70:30ms = 10 Hz)			
Inter-digit Pause**	800ms			
Open loop isolation resistance between a/b or a/ground or b/ground	> 10MΩ			
Closed loop line resistance/continuous loop current	Complies with national requirements/standards			
Incoming Call Detection	> $9V_{RMS}$			

*⟩ Values vary according to the country. The values shown are specifically for Brazil.
**⟩ Values depend on the country settings, which are configurable. The values shown are default values for Brazil.

Values shown are approximate. When making connections, consider the specific level of tolerance that applies.

2.7 Technical Standards and Compliance

Table 2-5 Standards and Compliance

Compliance	Standard	Note
Electrical Safety	EN60950 IEC 60950 UL 60950-1	
Environmental Conditions	IEC 721	*
Power Surge	IEC61000-4-5 (IEC 801-5) TIA-968-A	Level 3
Fast Transients	IEC61000-4-4 (IEC 801-4)	Level 3
Static Electricity Discharge	IEC61000-4-2 (IEC 801-2)	Air - Level 3 (8kV) Contact - Level 2 (4kV)

*) Weather conditions: Operation 3K3 Transportation 2K4 Storage 1K3.
Mechanical: Operation 3M3 Transportation 2M2 Storage 1M2.

2.7.1 International Safety Standard

- IEC 60950

2.7.2 Environmental Conditions

Table 2-6 Environmental Conditions

	Operation	Transportation	Storage
Air Temperature (^{o}F)	41 to 104	-13 to +158	23 to 113
Relative Humidity	5% to 85 %	95%	5% to 95%

Servicing Conditions (Mechanical)

- This system was essentially designed for installation at a fixed location.

Warning

- To avoid condensation when shipping the system in extremely low temperatures keep the equipment in its packaging until it reaches room temperature. Proceed thereafter with the installation (acceptable temperature range: 45.5°F/ 30 min)
- Do not expose the equipment to direct sunlight or place it in the proximity of any heat sources (to avoid a localized increase of temperature)
- Make sure the installation area is dry. During system operation avoid any conditions that may cause condensation.
- Install the equipment in a ventilated area where there is no risk of exposure to direct sunlight.
- Forced ventilation is not required.
- Do not block the natural flow of air around the equipment.
- Do not expose the equipment to the weather.

2.8 Documentation List

Table 2-7 Documentation List for HiPath 1100

Documentation	**Order Number**
User Manual	A31003-K1250-B811-*- **19
Programming Manual	A31003-K1250-B812-*- **19
Standard and System Telephones Quick Reference Guide	A31003-K1250-B813-*- **19
System Telephones Instruction Manual	A31003-K1250-B814-*- **19
Attendant Console Quick Reference Guide	A31003-K1250-B815-*- **19
Warranty Certificate (Brazil only)	A30817-X831-V10-*- 76K5
Service Guide (Brazil only)	A30808-X5226-V104-*- 76F7
Client's Documentation Kit	A31003-K1250-B800-*-**19
Options (Brazil)	
Interaction Center Smart User Manual	A30808-X5226-E175-*-7618
TAC Smart Quick Reference Guide	A30808-X5226-V103-*-7619

3 Modules

3.1 Overview

About this Chapter

This chapter covers the following topics:

3.2 Abbreviations

Table 3-1 Abbreviations

BRA	Brazil
IM	International Market
RSA	South Africa
CND	Canada
ARG	Argentina
SPA	Spain
IND	India
CHN	China

3.3 List of Modules

List of Modules/Components - HiPath 1120

Table 3-2 List of Modules/Components - HiPath 1120

Module / Component	Reference
BOX	
HiPath 1120	110V: S30817-U0857-B301-* (IM) 220V: S30817-U0857-A301-* (IM) S30817-U0857-C301-* (ARG) S30817-U0857-A303-* (CND) S30817-U0857-A312-* (SPA) S30817-U0857-A364-* (IND) S30817-U0857-A397-* (RSA)
Motherboard (MB)	
MB	S30817-Q0845-A301-* (IM, SPA and IND) S30817-Q0845-A364-* (IND) S30817-Q0845-A303-* (CND) S30817-Q0845-A397-* (RSA)
Expansion Module (MO)	
EB 204	S30817-H0844-A301-* (IM and SPA) S30817-H0844-A303-* (CND) S30817-H0844-A364-* (IND) S30817-H0844-A397-* (RSA)

Table 3-2 List of Modules/Components - HiPath 1120

Module / Component	Reference
EB 200	S30817-H0844-B301-* (IM and SPA) S30817-H0844-B303-* (CND) S30817-H0844-B364-* (IND) S30817-H0844-B397-* (RSA)
Option Modules (MO)	
S0 Module	S30817-H843-A282-*
ADSL Module	S30817-H0842-A382-* (BRA) S30817-H0842-A301-* (IM, IND, SPA and RSA) S30817-H0842-A303-* (CND)
Fax/DID Module	S30817-H0845-A882-*
Music Module	S30817-H0860-A301-* (IM, IND, SPA and RSA)
Entrance Telephone Interface	See Note 1
General Components	
V.24 Adapter Cable	S30122-X5468-X005-*
USB adapter cable	
Power Supply Unit (PSU)	110/127V: S30122-X7646-X100-* (BRA and IM) S30122-X8009-X007-* (CND) 220V: S30122-X7646-X-* (BRA, IM and IND) S30122-X7646-X200-* (ARG) S30122-X8009-X005-* (SPA) S30122-X8009-X006-* (RSA)
Interconnect cable (flat cable)	C39195-Z7001-C088
Power/Connection Cable	C39195-A7700-B1 (CND)
ADSL connection cable (included with the ADSL Module)	C39195-A9700-B538-1-1K06 (CND)
Separator (included with the Fax/DID Module)	C39165-Z9700-C6

*) Module/Component Version.

Note 1: See “Entrance Telephone Interface” on page 3-49

TFE Entrance Telephone Interface S30122-K7696-T313 - with an amplifier

TFE Entrance Telephone Interface S30817-K930-A300 - without an amplifier

Entrance Telephone Interface, Brazil, S30817-Q936-C282

List of Modules/Components - HiPath1130/1150/1190

Table 3-3 List of Modules/Components - HiPath1130/1150/1190

Module / Component	Reference
BOX	
HiPath 1130	S30817-U0852-A220-* (CHN) S30817-U0852-A301-* (IM) S30817-U0852-A397-* (RSA) S30817-U0852-A364-* (IND)
HiPath 1150	S30817-U0853-A220-* (CHN) S30817-U0853-A301-* (IM) S30817-U0853-A397-* (RSA) S30817-U0853-A364-* (IND)
HiPath 1190	Full (2 shelves) S30777-U770-A282-* (BRA)
	Medium (1 shelf) S30777-U770-B282-* (BRA)
HiPath 1190R	Full (2 shelves) S30777-U770-C282-* (BRA)
	Medium (1 shelf) S30777-U770-D282-* (BRA)
Expansion Kit HiPath 1190	
Power Supplies, Cables and Backplanes	S30777-H770-B282-* (BRA)
Motherboard (MB) HiPath 1130	
MB	S30817-Q0848-A220-* (CHN) S30817-Q0848-A301-* (IM) S30817-Q0848-A364-* (IND) S30817-Q0848-A397-* (RSA)
Motherboard (MB) HiPath 1150	
MB	S30817-Q0848-B220-* (CHN) S30817-Q0848-B301-* (IM) S30817-Q0848-B364-* (IND) S30817-Q0848-B397-* (RSA)
Motherboard (MB) HiPath 1190	

Table 3-3 List of Modules/Components - HiPath1130/1150/1190

Module / Component	Reference
MB	S30817-Q856-A282-* (BRA)
Expansion Modules	
EB 010	S30817-H0858-B220-* (CHN) S30817-H0858-B301-* (IM) S30817-H0858-B397-* (RSA)
EB 012 (HiPath 1150 only)	S30817-H0858-A301-* (BRA and IM) S30817-H0858-A220-* (CHN) S30817-H0858-A397-* (RSA)
EB 202	S30817-H0847-C282-* (BRA) S30817-H0847-C220-* (CHN) S30817-H0847-C301-* (IM) S30817-H0847-C364-* (IND) S30817-H0847-C397-* (RSA)
EB 206	S30817-H0847-B220-* (CHN) S30817-H0847-B301-* (IM) S30817-H0847-B364-* (IND) S30817-H0847-B397-* (RSA)
EB 210	S30817-H0847-A220-* (CHN) S30817-H0847-A301-* (IM) S30817-H0847-A364-* (IND) S30817-H0847-A397-* (RSA)
EB 200	S30817-H0850-C282-* (BRA) S30817-H0850-C220-* (CHN) S30817-H0850-C301-* (IM) S30817-H0850-C364-* (IND) S30817-H0850-C397-* (RSA)
EB 400	S30817-H0850-B220-* (CHN) S30817-H0850-B301-* (IM) S30817-H0850-B364-* (IND) S30817-H0850-B397-* (RSA)
EB 800	S30817-H0850-A220-* (CHN) S30817-H0850-A301-* (IM) S30817-H0850-A364-* (IND) S30817-H0850-A397-* (RSA)
Option Modules (MO)	
S0 Module	S30817-H851-A282-*
TME1 Module	S30817-H0846-A282-*

Table 3-3 List of Modules/Components - HiPath1130/1150/1190

Module / Component	Reference
ADSL Module	S30817-H0849-A282-*
Fax/DID Module	S30817-H0845-B882-*
Entrance Telephone Interface	See Note 2
General Components	
Coax Cable for TME1 Module	C39195-A9700-B531
TME1 Serial Cable	C39195-A9700-B532-*
Separator for Fax/DID Module	C39165-Z9700-C6
V.24 Adapter Cable	S30122-X5468-X005-*
USB adapter cable	
Interconnect Cable, 250 mm (included with ADSL module)	V42405-J1-A159
Power Cable	C39195-Z7001-C11 C39195-Z7001-C12 (USA)
Power Supply Unit (PSU)	
HiPath 1130	S30122-K7642-X002-* (BRA, IM, CHN and IND) S30122-K7642-X004-* (RSA)
HiPath 1150	S30122-K7642-X001-* (BRA, IM, CHN and IND) S30122-K7642-X003-* (RSA)
Backplane	
HiPath 1130	S30817-Q852-A282-*
HiPath 1150	S30817-Q853-A282-*

Note 1: HiPath 1100 For more details on the system's total capacity see Table 2-1 on page 2-5 "Specific Limitations to System Expansion."

Note 2: See "Entrance Telephone Interface" on page 3-49

- TFE Entrance Telephone Interface S30122-K7696-T313 - with an amplifier
- TFE Entrance Telephone Interface S30817-K930-A300 - without an amplifier
- Entrance Telephone Interface, Brazil, S30817-Q936-C282

Warning
Before inserting or removing any of the modules on the HiPath 1100, make sure power is turned off.

3.4 Motherboard (MB)

Introduction

The MB is the main board for the HiPath 1100 system. The MB provides all functions required for PABX operation.

Functions

- CLIP - external calling number identification (service must be provided by local carrier)
- Central Processing Unit (CPU)
- DTMF generator and detector
- Conference circuits
- Tone generators
- Music source
- Memory (software + client's data base)
- Digital switch
- Signaling

3.4.1 HiPath 1120

Outputs/Inputs

- 8 interfaces for Standard Telephones and 4 for System Telephones
- 2 external analog lines
- Mini DIN-6 connector for V.24 adapter
- Mini DIN-4 connector for USB adapter
- Power supply

MB Interfaces

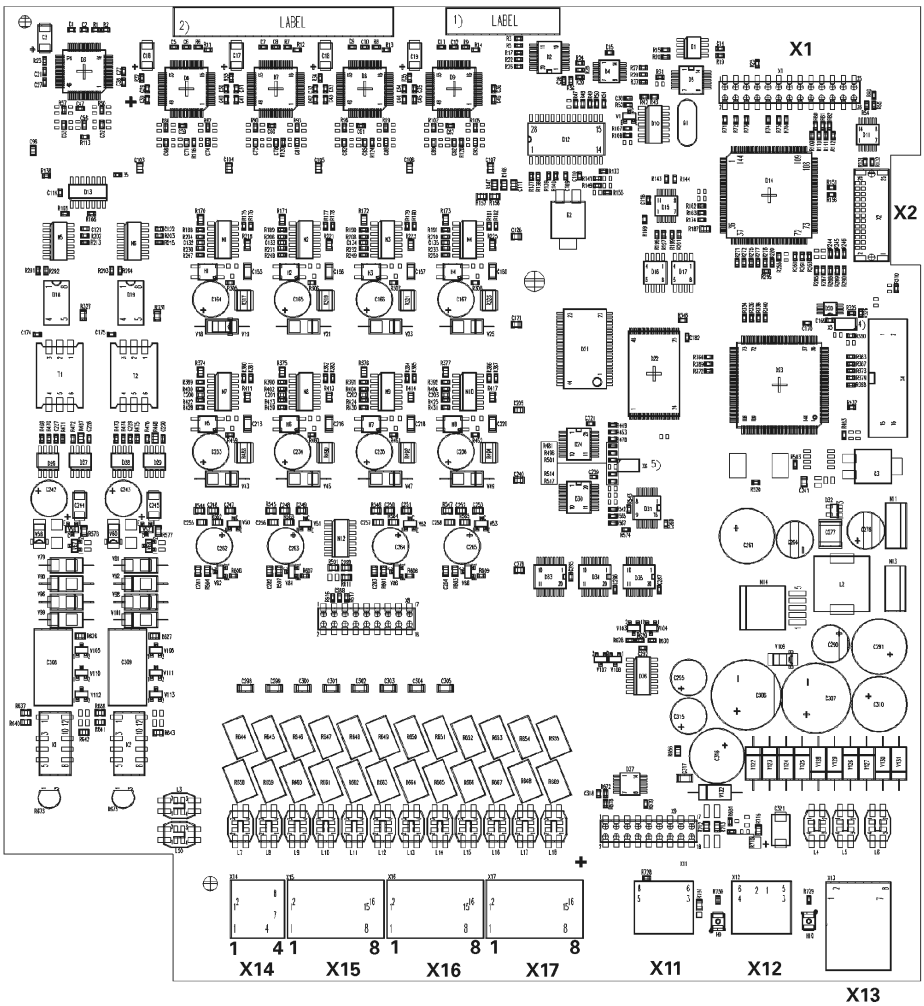


Figure 3-1 HiPath 1120 Motherboard

Motherboard Connector Assignments - HiPath 1120

Table 3-4 HiPath 1120 MB connector assignments

Contact	X14 Connector	X15 Connector	X16 Connector	X17 Connector
1	a1 - trunk 1	a1 - extension 1	a5 - extension 5	C-interface 1
2	b1 - trunk 1	b1 - extension 1	b5 - extension 5	D-interface 1
3	a2 - trunk 2	a2 - extension 2	a6 - extension 6	C-interface 2
4	b2 - trunk 2	b2 - extension 2	b6 - extension 6	D-interface 2
5		a3 - extension 3	a7 - extension 7	C-interface 3
6		b3 - extension 3	b7 - extension 7	D-interface 3
7		a4 - extension 4	a8 - extension 8	C-interface 4
8		b4 - extension 4	b8 - extension 8	D-interface 4

	X1 Connector	X2 Connector	X11 Connector	X12 Connector	X13 Connector
	For Fax/DID Module	Flat cable for modules	V.24 serial USB	V.24 serial interface	Power Supply Unit (PSU)

- **CND Version**

Outputs/Inputs

- 8 interfaces for Standard Telephones and 4 for System Telephones
- 2 external analog lines
- Mini DIN-6 connector for V.24 adapter
- Mini DIN-4 connector for USB adapter
- Power supply

MB Interfaces

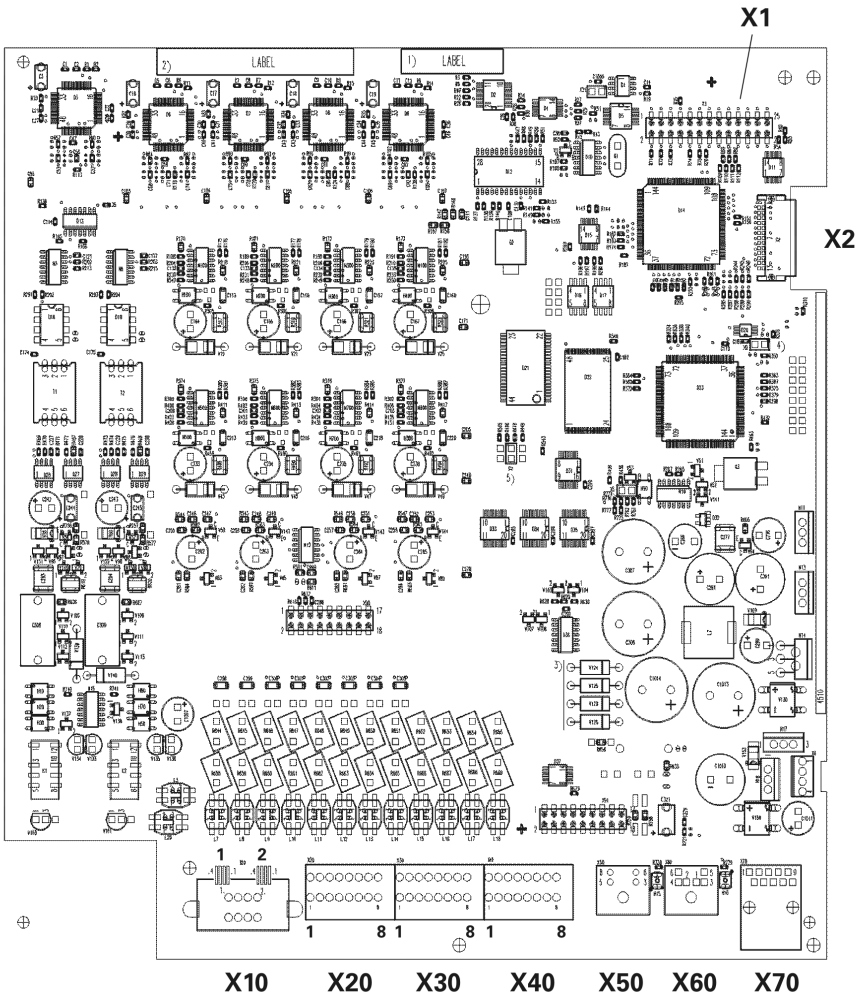


Figure 3-2 HiPath 1120 MB - CND

MB connector assignments (HiPath 1120 - CND)

Table 3-5 HiPath 1120 MB connector assignments - CND

Contact	X10 Connector	X20 Connector	X30 Connector	X40 Connector
1	trunk 1	a1 - extension 1	a5 - extension 5	C-interface 1
2	trunk 2	b1 - extension 1	b5 - extension 5	D-interface 1
3		a2 - extension 2	a6 - extension 6	C-interface 2
4		b2 - extension 2	b6 - extension 6	D-interface 2
5		a3 - extension 3	a7 - extension 7	C-interface 3
6		b3 - extension 3	b7 - extension 7	D-interface 3
7		a4 - extension 4	a8 - extension 8	C-interface 4
8		b4 - extension 4	b8 - extension 8	D-interface 4

	X1 Connector	X2 Connector	X50 Connector	X60 Connector	X70 Connector
	For Fax/DID Module	Flat cable for MOs	USB Interface	V.24 serial interface	Power Supply Unit (PSU)

3.4.2 HiPath 1130/1150

Outputs/Inputs

- 10 analog interfaces for extensions
- 2 external analog lines
- 8 interfaces for system telephones (C/D)
- Mini DIN-6 connector for V.24 adapter
- Mini DIN-4 connector for USB adapter
- Connections for external music source
- Power supply
- Connection for backplane
- Connection for Fax/DID module

MB Interfaces

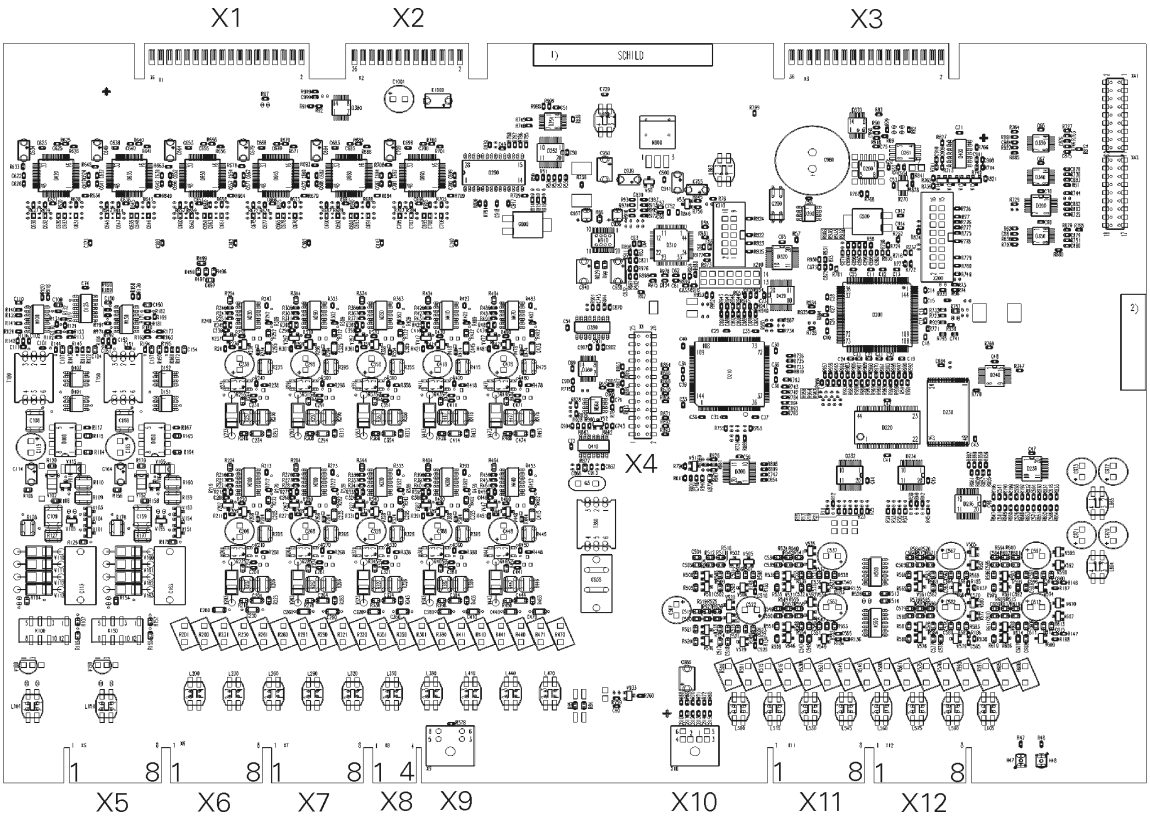


Figure 3-3 Overview of the HiPath 1130/1150 MB

MB Connector Assignments (HiPath 1130/1150)

Table 3-6 HiPath 1130/1150 MB connector assignments

Contact	X5 Connector	X6 Connector	X7 Connector	X8 Connector	X11 Connector	X12 Connector
1	a1 - trunk 1	a3 - extension 3	a7 - extension 7	--	C-interface 1	C-interface 5
2	b1 - trunk 1	b3 - extension 3	b7 - extension 7	--	D-interface 1	D-interface 5
3	a2 - trunk 2	a4 - extension 4	a8 - extension 8	Music - A wire	C-interface 2	C-interface 6
4	b2 - trunk 2	b4 - extension 4	b8 - extension 8	Music - B wire	D-interface 2	D-interface 6
5	a1 - extension 1	a5 - extension 5	a9 - extension 9		C-interface 3	C-interface 7
6	b1 - extension 1	b5 - extension 5	b9 - extension 9		D-interface 3	D-interface 7
7	a2 - extension 2	a6 - extension 6	a10 - extension 10		C-interface 4	C-interface 8
8	b2 - extension 2	b6 - extension 6	b10 - extension 10		D-interface 4	D-interface 8
	X1 Connector	**X2 Connector**	**X3 Connector**	**X4 Connector**	**X9 Connector**	**X10 Connector**
	Backplane, slot 1 and 2*	Power supply (PSU)	Backplane Slot 3 and 4*	Fax/DID Module	USB Interface	V.24 Serial interface

* Slots used only on HiPath 1150.

3.4.3 HiPath 1190

Outputs/Inputs

- 8 interfaces for system telephones (C/D)
- Connection for external music source and GND (0V)
- Mini DIN-6 connector for V.24 adapter
- Mini DIN-4 connector for USB adapter
- Connection for Fax/DID module
- Connection for backplane

MB Interfaces

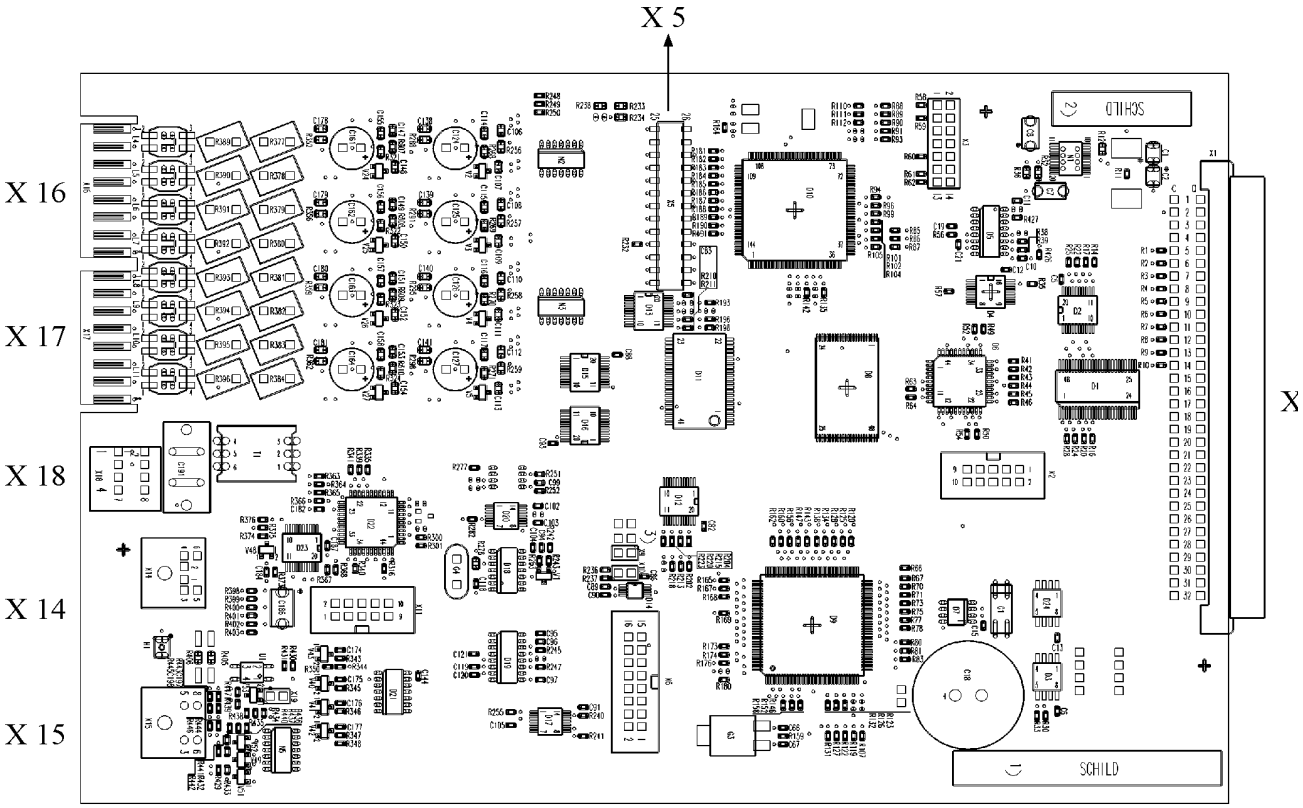


Figure 3-4 Overview of the HiPath 1190 MB

MB Connector Assignments (HiPath 1190)

Table 3-7 HiPath 1190 MB connector assignments

Contact	X16 Connector	X17 Connector	X18 Connector	
1	C-interface 1	C-interface 5	Music - A wire	
2	D-interface 1	D-interface 5	Music - B wire	
3	C-interface 2	C-interface 6		
4	D-interface 2	D-interface 6		
5	C-interface 3	C-interface 7		
6	D-interface 3	D-interface 7		
7	C-interface 4	C-interface 8		
8	D-interface 4	D-interface 8		
	X1 Connector	**X15 Connector**	**X5 Connector**	**X14 Connector**
	Backplane	USB Interface	Fax/DID Module	V.24 serial interface

3.5 Expansion Module (EB)

3.5.1 HiPath 1120

Introduction

These modules consist of extensions and external analog lines for expanding the number of analog interfaces (a/b) for standard telephones, analog trunks and additional equipment (Fax, TFE interface, and others).

Limitations

- 200 - 2 external analog lines
- 204 - 2 external analog lines and 4 analog extensions.

EB 200 Expansion Module

Interfaces

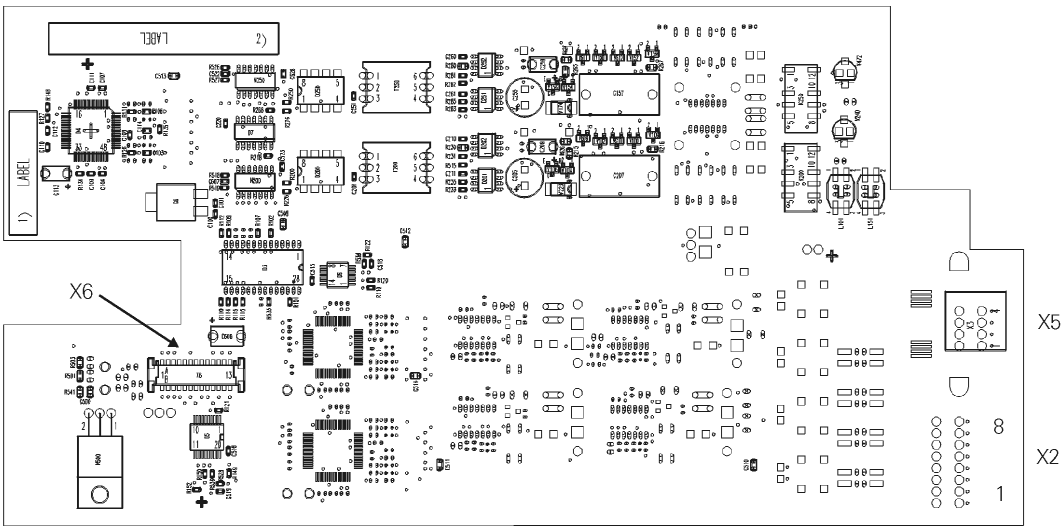


Figure 3-5 Module EB 200 Overview

Figure 3-5 shows the distribution of extensions and external lines associated with the EB 200 module connectors.

EB 200 Module Connector Assignments

Table 3-8 EB 200 Connector Assignments

Contact	X6 Connector	X5 Connector
1	Connects to the MB through an interconnect cable (flat cable)	a1 - external line 1
2		b1 - external line 1
3		a2 - external line 2
4		b2 - external line 2

EB 204 Expansion Module

Interfaces

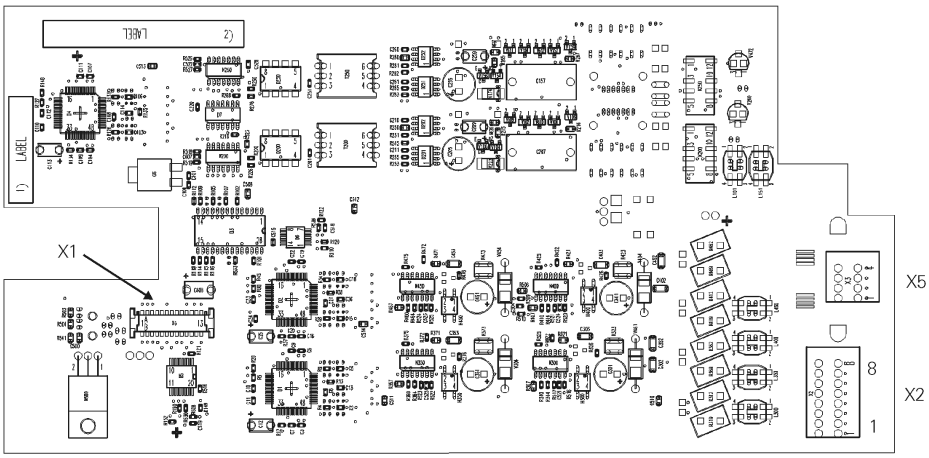


Figure 3-6 EB 204 Module Overview

Figure 3-6 shows the distribution of extensions and external lines associated with the EB 204 module connectors.

EB 204 Connector Assignments

Table 3-9 EB 204 Connector Assignments

Contact	X1 Connector	X2 Connector	X5 Connector
1	Connects to the MB through an interconnect cable (flat cable)	a1 - extension 1	a1 - external line 1
2		b1 - extension 1	b1 - external line 1
3		a2 - extension 1	a2 - external line 2
4		b2 - extension 2	b2 - external line 2
5		a3 - extension 3	
6		b3 - extension 3	
7		a4 - extension 4	
8		b4 - extension 4	

- **CND Version**

EB 200 Expansion Module

Interfaces

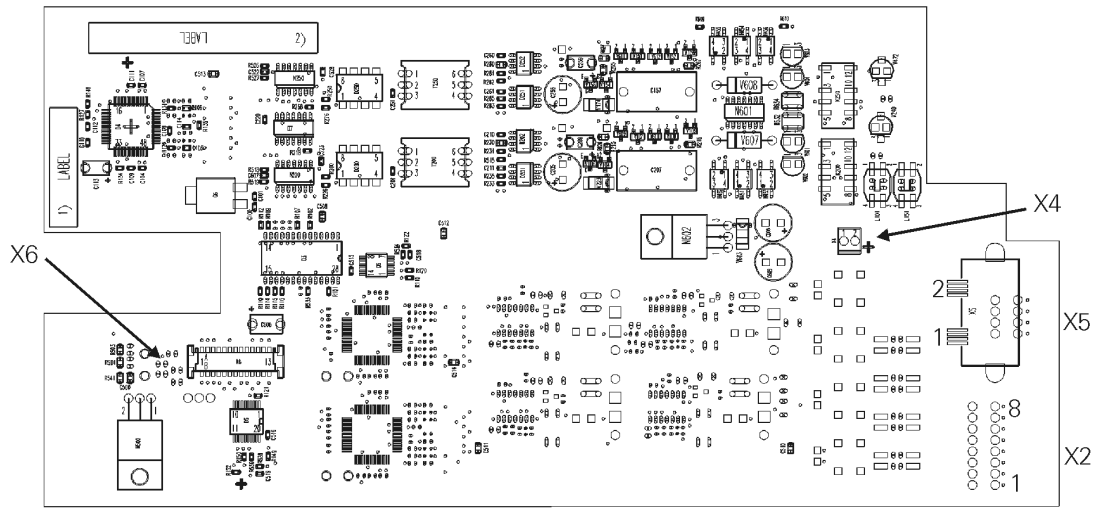


Figure 3-7 EB 200 Module Overview - CND

Figure 3-7 shows the distribution of extensions and external lines associated with the EB 200 module connectors.

EB 200 Connector Assignments (CND)

Table 3-10 EB 200 Connector Assignments - CND

Contact	X4 Connector	X6 Connector	X5 Connector
1	Connects to MB through a power/connection cable	Connects to the MB through an interconnect cable (flat cable)	external line 1
2			external line 2

EB 204 Expansion Module

Interfaces

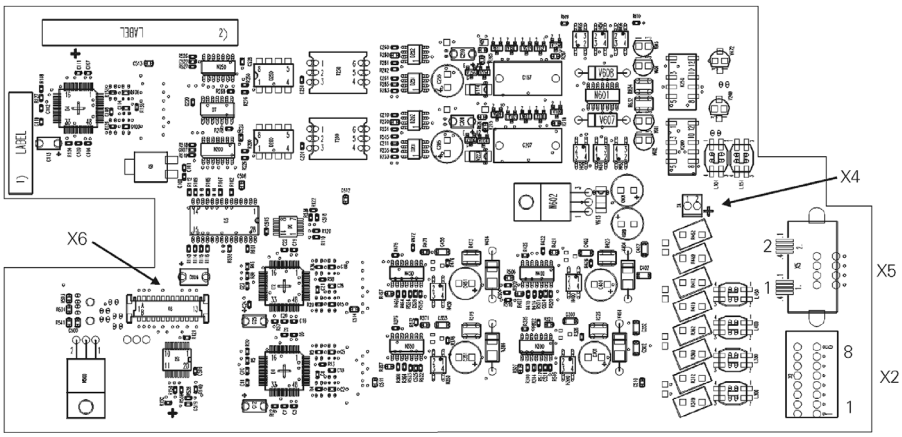


Figure 3-8 EB 204 Module Overview - CND

Figure 3-8 shows the distribution of extensions and external lines associated with the EB 204 module connectors.

EB 204 Connector Assignments (CND)

Table 3-11 EB 204 Connector Assignments - CND

Contact	X4 Connector	X6 Connector	X2 Connector	X5 Connector
1	Connects to MB through a power/ connection cable	Connects to the MB through an interconnect cable (flat cable)	a1 - extension 1	external line 1
2			b1 - extension 1	external line 2
3			a2 - extension 2	
4			b2 - extension 2	
5			a3 - extension 3	
6			b3 - extension 3	
7			a4 - extension 4	
8			b4 - extension 4	

3.5.2 HiPath1130/1150/1190

Limitations

- 800 - 8 external analog lines
- 400 - 4 external analog lines
- 200 - 2 external analog lines
- 210 - 2 external analog lines and 10 analog extensions
- 206 - 2 external analog lines and 6 analog extensions
- 202 - 2 external analog lines and 2 analog extensions
- 012 - 12 analog extensions (for HiPath 1150/1190 only)
- 010 - 10 analog extensions.

EB 210, EB 206 and EB 202 Expansion Modules

Interfaces

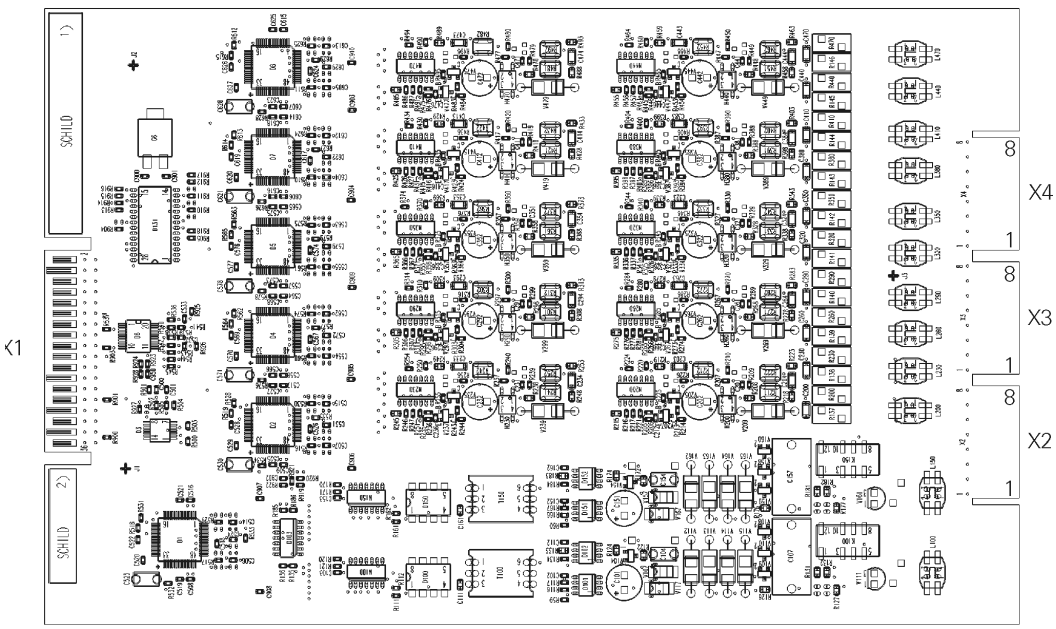


Figure 3-9 EB 210 Module Overview

Figure 3-9 shows the distribution of extensions and external lines associated with the EB 210 module connectors. The distribution associated with the EB 206 and 202 modules is limited by their capacity.

Connector Assignments for EB 210, EB 206 and EB 202 Modules

Table 3-12 Connector assignments for Modules EB 210, EB 206 and EB 202

Contact	X1 Connector	X2 Connector	X3 Connector	X4 Connector
1	Connection to MB through backplane connector	a1 - external line 1	a3 - extension 3	a7 - extension 7
2		b1 - external line 1	b3 - extension 3	b7 - extension 7
3		a2 - external line 2	a4 - extension 4	a8 - extension 8
4		b2 - external line 2	b4 - extension 4	b8 - extension 8
5		a1 - extension 1	a5 - extension 5	a9 - extension 9
6		b1 - extension 1	b5 - extension 5	b9 - extension 9
7		a2 - extension 2	a6 - extension 6	a10 - extension 10
8		b2 - extension 2	b6 - extension 6	b10 - extension 10

Note 1: X2 connector used for EB 210, EB 206, and EB 202 X3 connector used for EB 210 and EB 206; X4 connector for EB 210.

EB 012 and EB 010 Expansion Modules

Interfaces

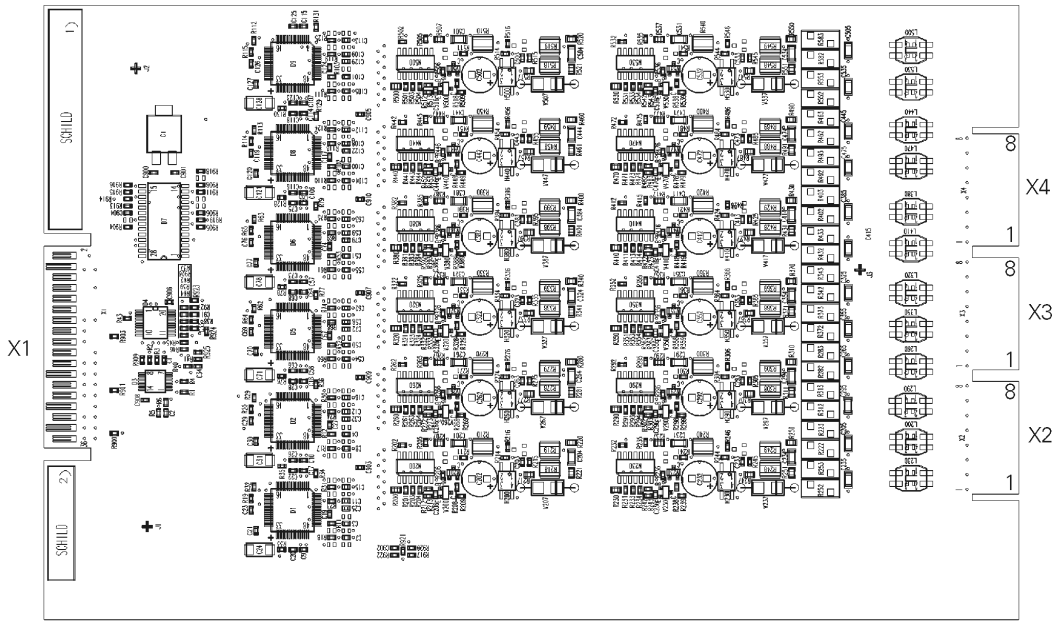


Figure 3-10 EB 012 Module Overview

Figure 3-10 shows the distribution of extensions and external lines associated with the EB 012 module connectors. The distribution associated with the EB 010 module is limited by its capacity.

Connector assignments for the EB 012 and EB 010 Modules

Table 3-13 EB 012 and EB 010 Connector Assignments

Contact	X1 Connector	X2 Connector	X3 Connector	X4 Connector
1	Connection to MB through backplane connector	a1 - extension 1	a5 - extension 5	a9 - extension 9
2		b1 - extension 1	b5 - extension 5	b9 - extension 9
3		a2 - extension 2	a6 - extension 6	a10 - extension 10
4		b2 - extension 2	b6 - extension 6	b10 - extension 10
5		a3 - extension 3	a7 - extension 7	a11 - extension 11
6		b3 - extension 3	b7 - extension 7	b11 - extension 11
7		a4 - extension 4	a8 - extension 8	a12 - extension 12
8		b4 - extension 4	b8 - extension 8	b12 - extension 12

Note 1: X4 connector uses contacts 5 through 8 on the EB 012 only.

EB 800, EB 400 and EB 200 Expansion Modules

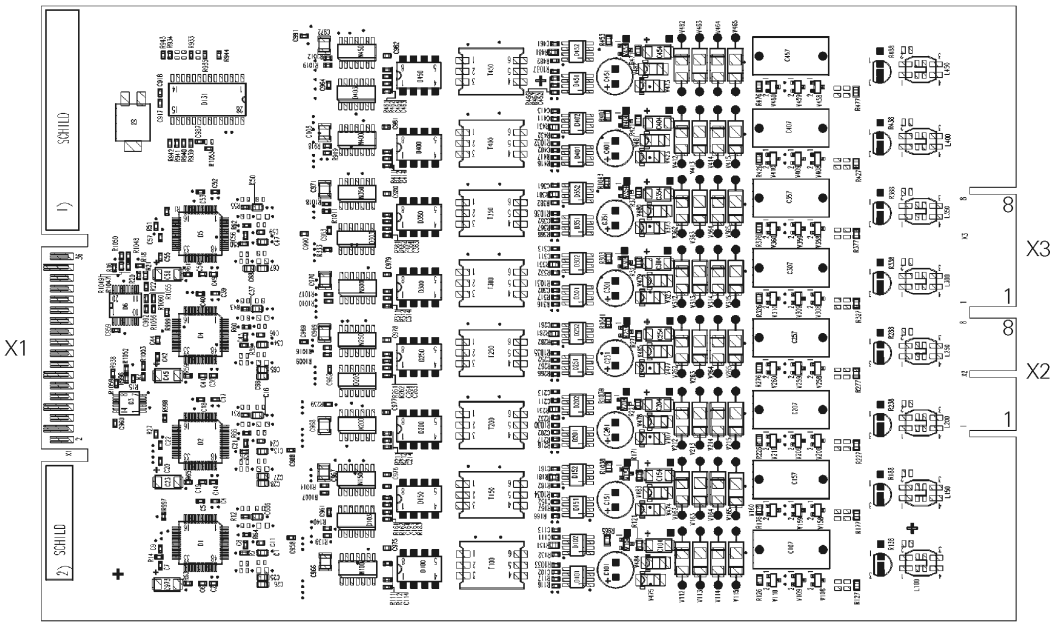


Figure 3-11 EB 800 Module Overview

Figure 3-11 shows the distribution of extensions and external lines associated with the EB 800 module connectors. The distribution associated with the EB 400 and EB 200 modules is limited by their capacity.

Connector Assignments for EB 800, EB 400 and EB 200 Modules

Table 3-14 EB 800, EB 400 and EB 200 connector assignments

Contact	X1 Connector	X2 Connector	X3 Connector
1	Connection to MB through backplane connector	a1 - external line 1	a5 - external line 5
2		b1 - external line 1	b5 - external line 5
3		a2 - external line 2	a6 - external line 6
4		b2 - external line 2	b6 - external line 6
5		a3 - external line 3	a7 - external line 7
6		b3 - external line 3	b7 - external line 7
7		a4 - external line 4	a8 - external line 8
8		b4 - external line 4	b8 - external line 8

Note 1: Modules EB 800, 400, and 200 do not have circuit breakers for power outages.

X2 connector used for EB 800, EB 400, and EB 200

X3 connector used for EB 800.

3.6 Option Modules (MO)

3.6.1 S_0 Module

Introduction

This module provides access to ISDN networks and network resources through 2/5 S_0 standard digital access channels (10 or 4).

Functions

- Each ISDN access enables two communications channels. The ISDN line may also be used for video conferencing (external connection, outside the exchange).
- Depending on your carrier, some features may be provided, including Caller ID, Caller ID Blocking, Direct Dialing to Extensions and so on.

- **HiPath 1120**

Interfaces

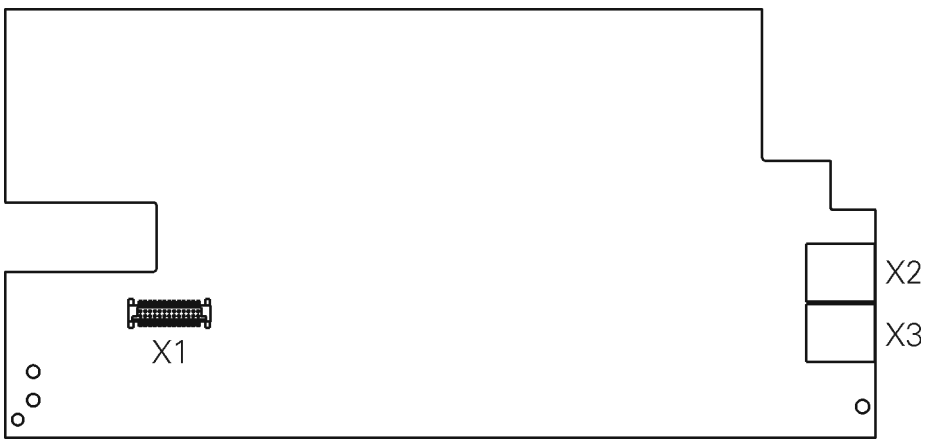


Figure 3-12 S_0 HiPath 1120Module

The Figure 3-12 features a 2-Port S_0 module; also available as a single-Port option.

Table 3-15 S_0 module connectors HiPath 1120

Port 1 X2 and X3	Port 2 X4 and X5
Slot 1 and 2 - without RT (Resistive Termination) (factory default)	
Slot 3 and 2 - with RT (Resistive Termination)	

S_0 Module Connector Assignments

Table 3-16 S_0 module connectors HiPath 1120

X1 Connector	X2 Connector	X3 Connector
Connection to the MB is through a pin connector	RJ 45	RJ 45

- **HiPath1130/1150/1190**

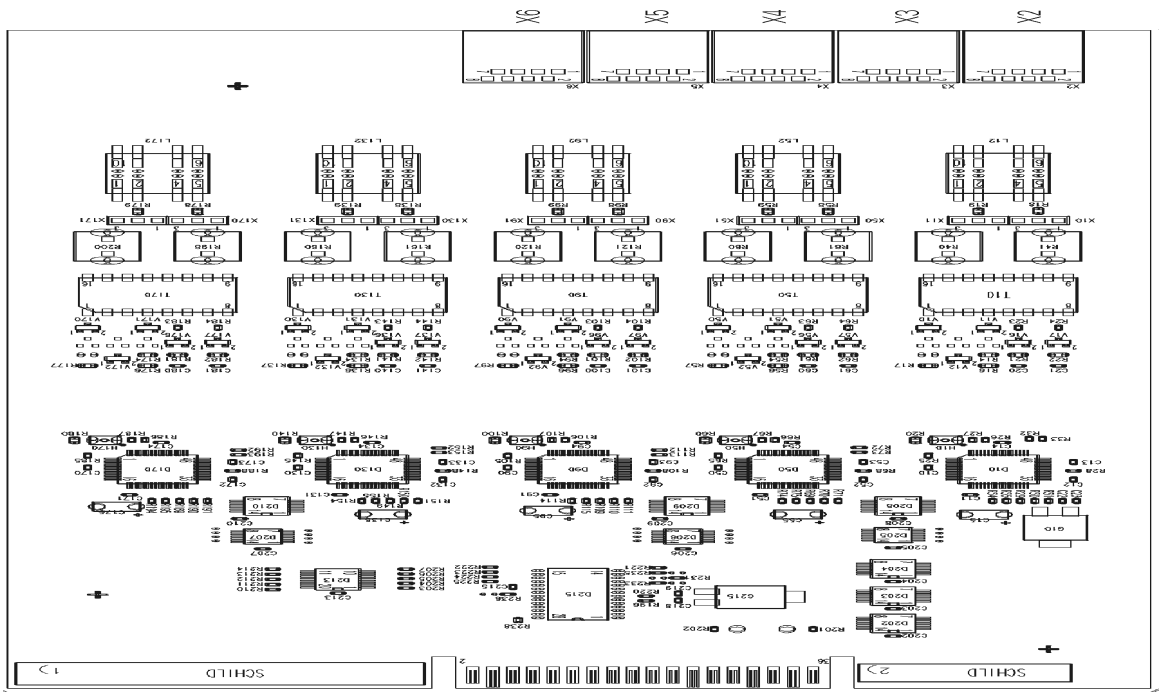


Figure 3-13 S_0 Module HiPath1130/1150/1190

The Figure 3-13 features a 5-Port S_0; also available as a 2-Port option.

Table 3-17 S_0 module connectorsHiPath 1120/1130/1150/1190

Port 1 X10 and X11	Port 2 X50 and X51	Port 3 X90 and X91	Port 4 X130 and X131	Port 5 X170 and X171
Slot 1 and 2 - without RT (Resistive Termination) (factory default)				
Slot 3 and 2 - with RT (Resistive Termination)				

Connector Assignments

Table 3-18 S_0 module connectors HiPath1130/1150/1190

X1 Connector	X2 Connector	X3 Connector	X4 Connector	X5 Connector	X6 Connector
Connection to the MB is through a pin connector	RJ 45	RJ 45	RJ 45	RJ 45	RJ 45

S_0 Basic Access

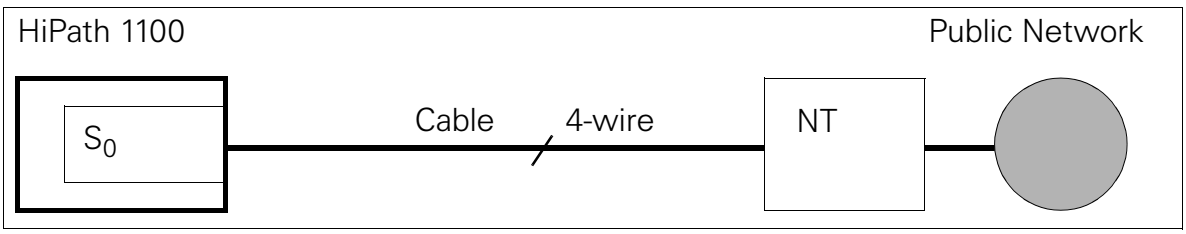


Figure 3-14 S_0 Basic Access Connection

S_0 Module Connector

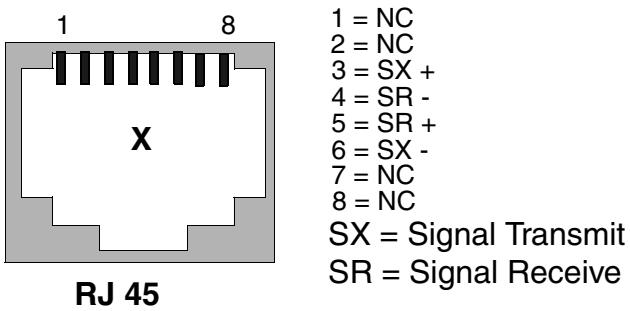


Figure 3-15 S_0 connector signal distribution

3.6.2 TME1 Module

Introduction

The TME1 Module is a Digital Interface Unit (DIU) used for connecting the HiPath1130/1150/1190 to the PSTN via an E1 trunk. The E1 trunk can carry 30 digital voice channels. However, the HiPath 1130/1150 systems use 15 channels, while the HiPath 1190 systems use up to 30 channels with the TME1 module allocated to slot 1 and up to 15 channels when it is allocated to slot 11.

The E1 interface uses CAS signaling for controlling calls between the PABX and the PSTN.

HiPath 1190: In the event of a problem occurring with the Master TME1 link (see "TME1 module display readings" on page 3-32) during an external call, the system will go into a mute state for 3 seconds while the system clock is synchronized.

When the total number of digital trunks configured for the module plus the number of external analog lines exceed the maximum capacity of the system, the external analog lines for the EB 202, EB 206 and EB 210 expansion modules are disabled. The extensions, however, will continue to work as usual. Lines are disabled in the order that they are physically installed (1, 2, etc.). This process continues until the total number equals the required number of trunks. The remaining modules continue operating as usual.

However, in the case of the EB 200, EB 400 and EB 800 modules, we strongly recommend that you change their slot to prevent deactivation. These modules become inoperable if any one of their external line slots is disabled.

Functions

- Increases the system's number of external lines
- Provides Caller ID (CLIP) and Direct Dialing to Extensions (DID) to help reduce call loss rate while simplifying access for the user.

TME1 interfaces

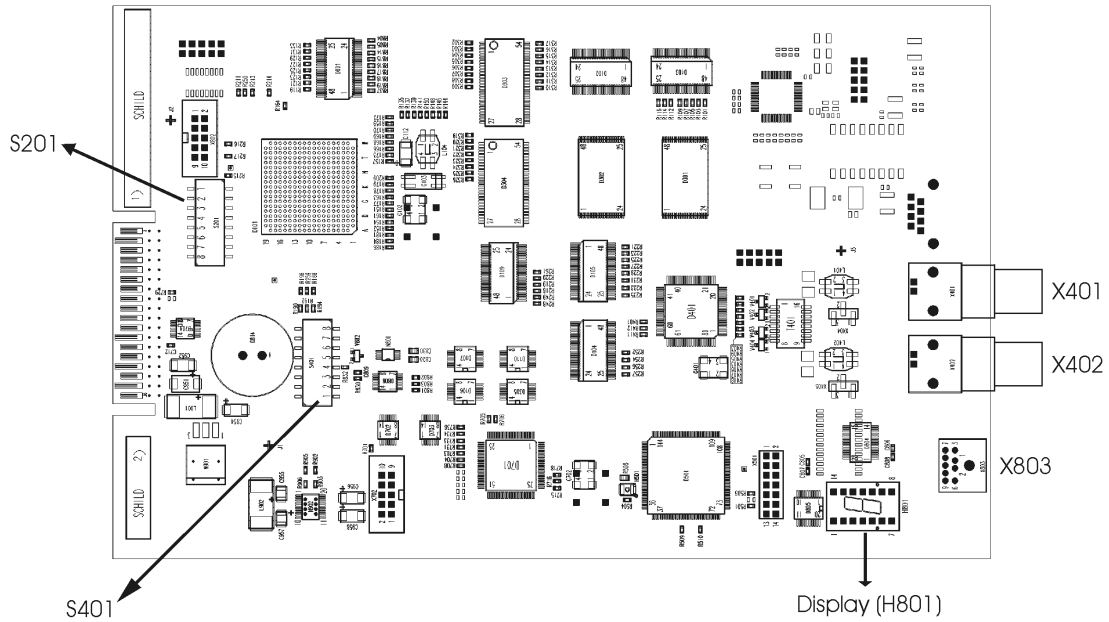


Figure 3-16 TME1 Module

Table 3-19 TME1 Module Components

S201 Component	S401 Component	H801 Component
DIP Switch 1	DIP Switch 2	Display

TME1 Module Connector Assignments

Table 3-20 TME1 Module Connector Assignments

X803 Connector	X402 Connector	X401 Connector
Serial interface Module-PC connection	BNC RX connector Module-E1 Trunk connection	BNC TX connector Module-E1 Trunk connection

Primary Access

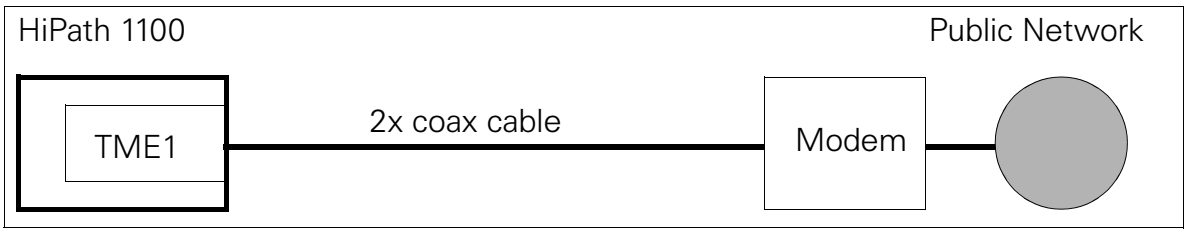
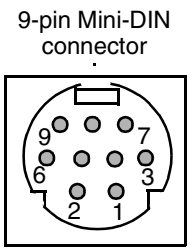


Figure 3-17 TME1 CAS access connection

Connector for TME1 Module Configuration

The connector's function is to connect a PC or modem to a module using a TME1 serial cable (see "TME1 Serial Cable" on page 3-55). This allows you to program the module using the HiPath 1100 E1 Trunk Manager tool.



1 = DCD
2 = RX
3 = TX
4 = DTR
5 = GND
6 = DSR
7 = RTS
8 = CTS
9 = RI

Figure 3-18 Signal distribution on the TME1 module connector

Warning

Do not touch the TME1 module's administrative serial interface connector (X803) without first disconnecting all analog extensions and trunk connectors. Failure to follow this procedure may expose the user to dangerous voltages.

The administrative serial interface connector (X803) as well as all other connectors and interconnect cables should only be serviced by trained technical personnel.

DIP Switch Positions for the TME1 Module

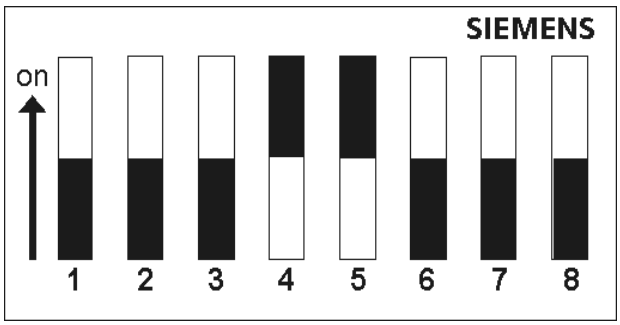


Figure 3-19 DIP Switch for the TME1 Module

By changing the positions of the DIP switches to ON (120 Ohms) or OFF (75 Ohms) the following settings can be configured:

- **DIP Switch 1 (S201)**

  It allows you to clean the Flash memory, select the baud rate and execute an autotest.

Table 3-21 TME1 module, DIP switch 1

Switch	Procedure	Meaning	Possible Settings
1	FE	Delete Flash memory	ON - Deletes Flash memory when the PABX is turned on OFF - System will work as usual (default).
2	EST	Extended autotest	ON - Activates autotest OFF - Skips autotest (default).
3	BR1	Baud rate configuration	(3) OFF, (4) OFF and (5) OFF: 9600 bps (3) OFF, (4) OFF and (5) ON: 19200 bps (3) OFF, (4) ON and (5) OFF: 38400 bps (3) OFF, (4) ON and (5) ON: 57600 bps (default)
4	BR2		
5	BR3		
6	RES	For future applications	
7	RES		
8	RES		

If an error occurs during software installation, clear the Flash memory and reinstall the software. Follow these instructions:

- Turn the PABX off
- Set Switch 1 (FE) to ON
- Turn the PABX on again
- Wait for F and E to show on the display
- Turn the PABX off
- Set switch 1 (FE) to OFF again
- Turn on the PABX

- **DIP Switch 2 (S401)**

It is recommended that you do not change the DIP Switch 2 default setting.

Table 3-22 TME1 module, DIP switch 2

Switch	Procedure	Default
1	DSP - BIO	OFF
2	Reserved	OFF
3	Reserved	OFF
4	Battery connection	OFF
5	MODCK2	ON
6	WDI	ON
7	MODCK1	OFF
8	E1 Interface impedance	OFF

7-segment Display Readings (H801)

Table 3-23 TME1 module display readings

Display	Reading	Meaning
8	Continuous	Module is powered.
1	Continuous	Starting TME1 module.

Table 3-23 TME1 module display readings

Display	Reading	Meaning
E	Continuous	Waits 10 seconds for a command from the software (HiPath 1100 E1 Trunk Manager). If it receives no command after the specified time, the system resumes its usual operation.
8	Continuous	Transferring memory contents to DRAM memory.
	Continuous	Checking and validating contents of Flash memory.
P	Continuous	TME1 module is active but CAS link is out of service.
A	Continuous	TME1 module is active with CAS link.
1	Continuous	"Unpacking" HiPath E1 Trunk Manager.
3	Continuous	
7	Continuous	Writing software to Flash memory.
F	Continuous	Checking transferred data.
O	Continuous	E1 and CAS links are still out of service; the reason is unknown.
3	Cycle - Live	Clearing Flash memory.
F E	Alternating	Flash memory cleared.
H	Continuous	No software in Flash memory. Waiting for Tool to download software
A.	Continuous	Module is working as a Master and synchronizing TME1 modules.

3.6.3 ADSL Module

Introduction

With this module you can create a small LAN network for home, office or other uses.

This module is designed for use on the HiPath 1100 based on ADSL (Asymmetric Digital Subscriber Line) technology. It is possible, therefore, to receive high-speed data and voice (up to 8 Mbit/s) through a single pair on a standard telephone line (POTS).

The V.24 serial interface module cannot be used if the system has an ADSL Module installed.

Functions

- ASDL modem with Full ADSL (8 Mbps downstream and 1 Mbps upstream - ITU G.922,1) and ADSL G2.Lite (1.5 Mbps downstream and 512 kbps upstream - ITU G2.922,2, ANSI T1.413-1998 Standard) capability.
- 4 10/100 Base-T standard HUB ports with four ports for building a small LAN.
- Module with built-in microfilter to separate voice and data signals.

Interfaces

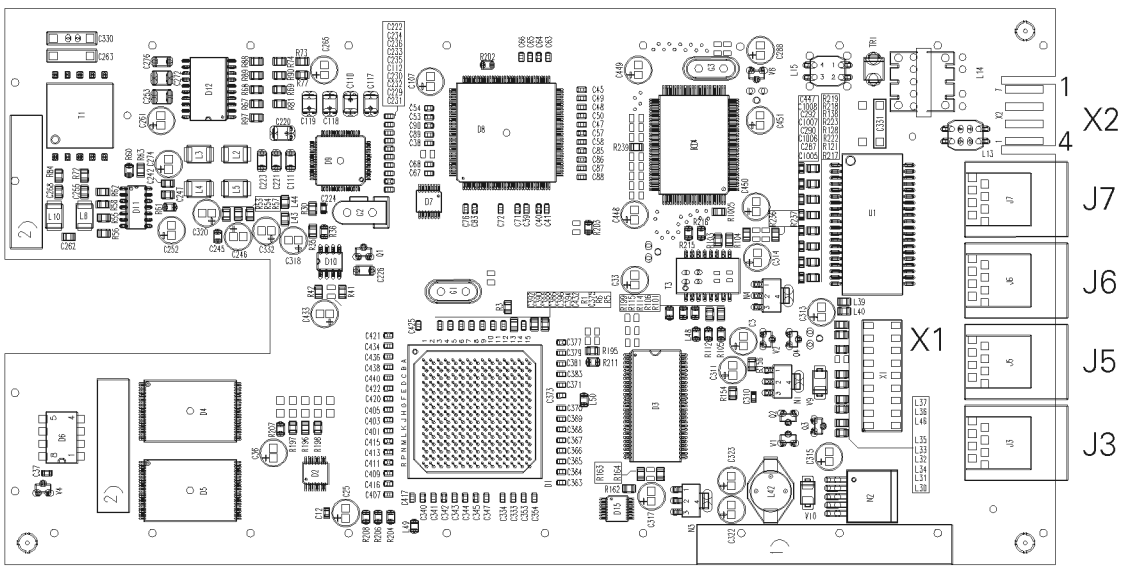


Figure 3-20 ADSL Module HiPath 1120

ADSL Module Connector Assignments

Table 3-24 HiPath 1120 ADSL module connectors

Contact	X1 Connector	X2 Connector	J3 Connector	J5 Connector	J6 Connector	J7 Connector
1	Connection to the MB is through a pin connector	ADSL input	RJ45 connector HUB	RJ45 connector HUB	RJ45 connector HUB	RJ45 connector HUB
2						
3		External analog line output				
4						

Note: Connect X2 connector slots 3 and 4 to a HiPath 1120 external analog line input using the cable included with the module.

- **HiPath 1120 - CND version**

Interfaces

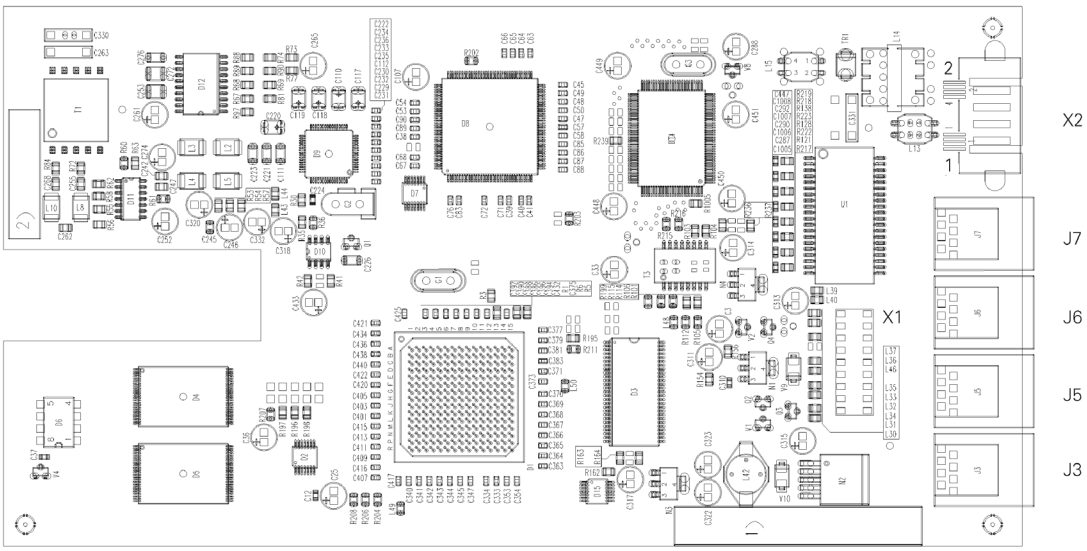


Figure 3-21 ADSL Module HiPath 1120 - CND

ADSL Module Connector Assignments

Table 3-25 ADSL Module Connector Assignments HiPath 1120 - CND

Contact	X1 Connector	X2 Connector	J3 Connector	J5 Connector	J6 Connector	J7 Connector
1	Connection to the MB is through a pin connector	ADSL input	RJ45 connector HUB	RJ45 connector HUB	RJ45 connector HUB	RJ45 connector HUB
2		External analog line output				

Note: Connect the X2 connector slot 2 to a HiPath 1120 external analog line input using the cable included with the module.

- **HiPath1130/1150/1190**

Interfaces

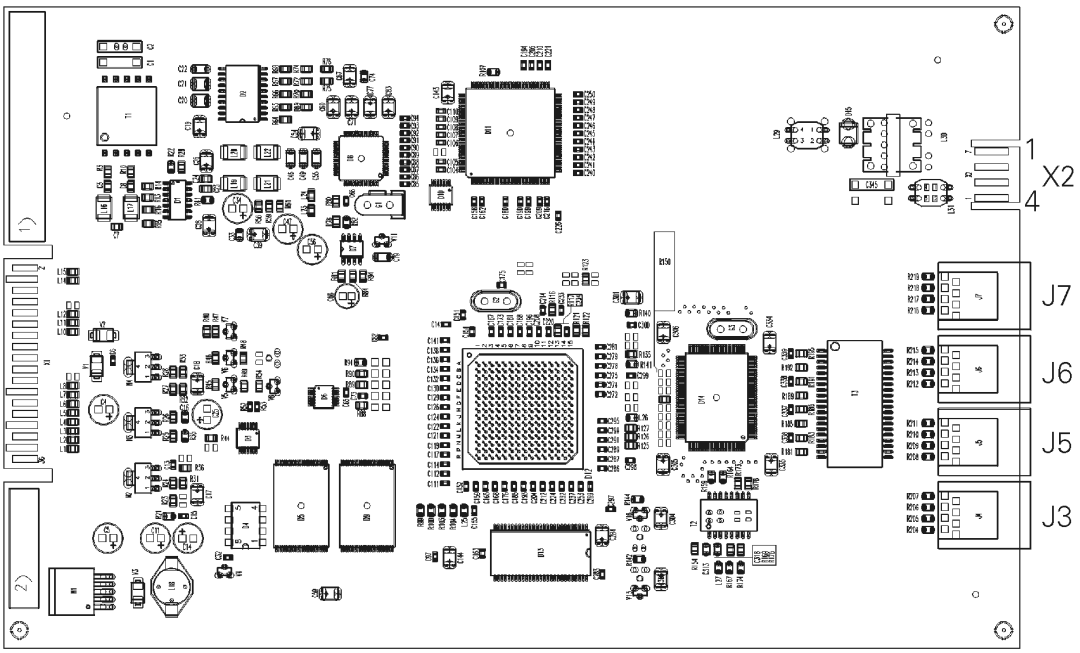


Figure 3-22 ADSL Module HiPath1130/1150/1190

ADSL Module Connector Assignments

Table 3-26 ADSL Module Connector Assignments HiPath1130/1150/1190

Contact	X2 Connector	J3 Connector	J5 Connector	J6 Connector	J7 Connector
1	ADSL input	RJ45 connector HUB	RJ45 connector HUB	RJ45 connector HUB	RJ45 connector HUB
2					
3	External analog line output				
4					

Note: Connect X2 connector slots 3 and 4 to a HiPath1130/1150/1190 external analog line input using the cable included with the module.

3.6.4 Fax/DID Module

Introduction

These modules enable the automatic answering of external lines while providing the following functions:

Functions

- Playback of recorded announcements and/or prompts
- Fax signal detection and forwarding
- Touch-tone dialing detection (DTMF)
- Remote configuration of the system
- Answering modes: Fax, DID or Fax/DID
- Transfer to a second extension
- Alarms
- In the HiPath 1120 this module also enables the operation of the clock.

- **HiPath 1120**

Interfaces

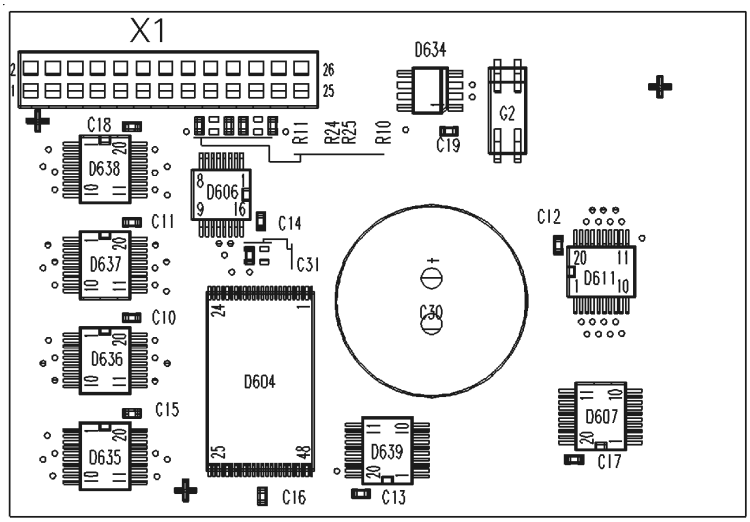


Figure 3-23 **Fax/DID Module** HiPath 1120

Connector Assignments

Table 3-27 Fax/DID Module Connector Assignments HiPath 1120

X1 Connector
Connects to MB through a pin connector

- **HiPath1130/1150/1190**

Interfaces

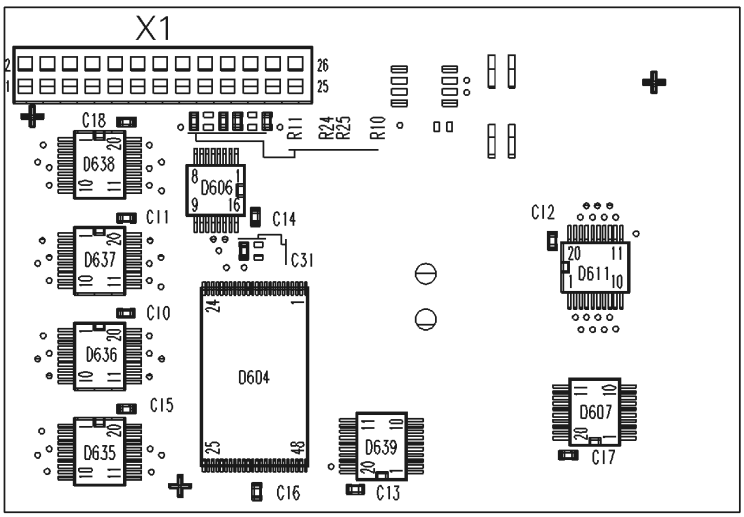


Figure 3-24 Fax/DID Module HiPath1130/1150/1190

Connector Assignments

Table 3-28 HiPath1130/1150/1190 Fax/DID Module Connector

X1 Connector
Connects to MB through a pin connector

3.6.5 CD 16 Module

Introduction

This is an expansion module to provide support for over 16 CD interfaces on the HiPath 1190 and for connecting more than 16 system telephones.

CD 16 Interfaces

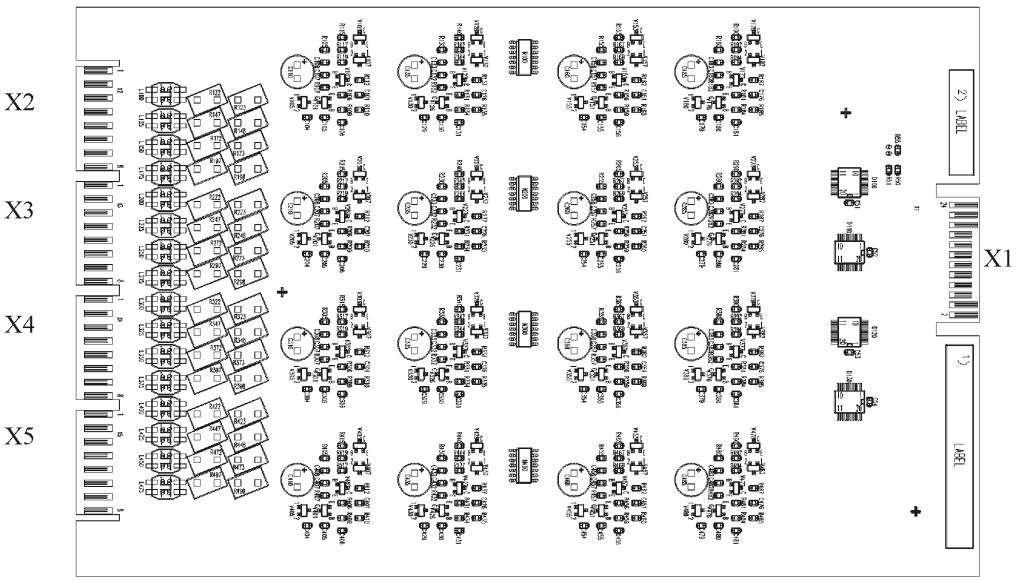


Figure 3-25 CD 16 Module

CD 16 Module Connector Assignments

Table 3-29 CD 16 Module Connector Assignments

Contact	X1 Connector	X2 Connector	X3 Connector	X4 Connector	X5 Connector
1	Connection to the CPU by means of the backplane connector	C - port 1	C - port 5	C - port 9	C - port 13
2		D - port 1	D - port 5	D - port 9	D - port 13
3		C - port 2	C - port 6	C - port 10	C - port 14
4		D - port 2	D - port 6	D - port 10	D - port 14
5		C - port 3	C - port 7	C - port 11	C - port 15
6		D - port 3	D - port 7	D - port 11	D - port 15
7		C - port 4	C - port 8	C - port 12	C - port 16
8		D - port 4	D - port 8	D - port 12	D - port 16

3.6.6 Music Module

Introduction

Allows music input for external calls on hold.

Functions

- Links a recorded announcement or an external music source (MOH) to a UCD Group when all group extensions are busy.
- It also features a relay and a sensor for supporting additional devices such as Entrance Telephones, Door Openers, alarms, etc.
- Inputs music to external calls on hold (MOH - Music On Hold) from an internal music source (music generated by the system or an external music source connected to an extension) or from an external one (e.g., a radio connected directly to the system's external music link).

- **HiPath 1120**

Interfaces

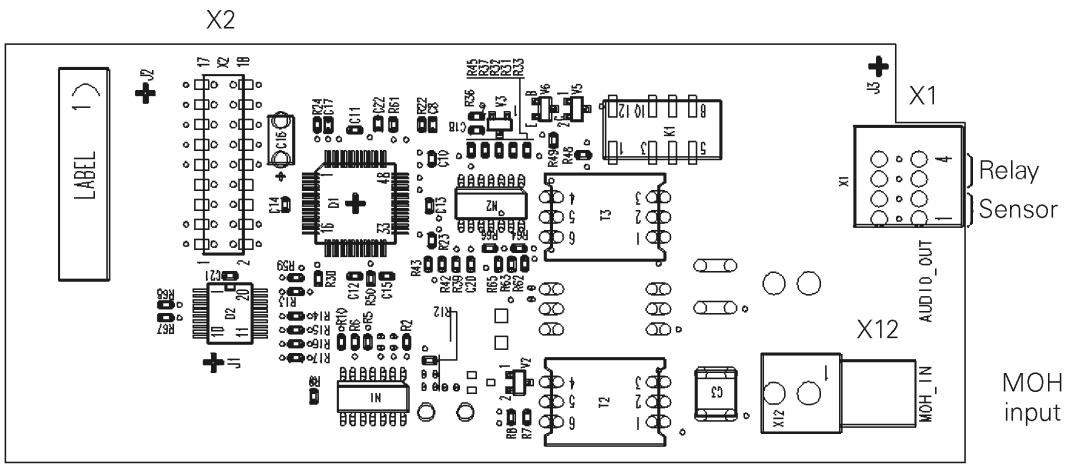


Figure 3-26 Music Module

Music Module Connector Assignments

Table 3-30 Music Module Connector Assignments

X1 Contact	X1 Connector	X12 Connector RCA	X2 Connector
1 and 2	Sensor	External music input (MOH)	Connection to the MB is through a pin connector
3 and 4	Relay	---	

The activation logic based on the initial position of the sensor contacts as well as its resulting actions are programmable.

If a sensor is programmed, the relay can be activated through that sensor. It can be activated either manually or automatically after a specified time. When the relay is activated, the contacts close. When it is deactivated, the contacts open.

Electrical Requirements for Sensors and Relays

Table 3-31 Electrical requirements for sensors and relays

Sensor	
Maximum loop resistance	100 Ω
Relay	
Maximum switching current (AC)	1.25 A
Maximum switching current (DC)	2.00 A
Maximum switching voltage (AC)	30 V_{RMS}
Maximum switching voltage (DC)	24 V
Maximum power factor	0,95

- **HiPath1130/1150/1190**

  On the HiPath1130/1150/1190 the external audio source (e.g., music) is connected directly to the MB at the X8 slot (see Figure 3-3).

- **Connection Values for an External Music Source***

Internal Resistance	2.4kΩ
Maximum Input Voltage	-10 dBm

*〉 This port supports commercial CD players, receivers, MD, etc. (See Figure 4-33, “Protection and Grounding Connection Diagram”, on page 4-43).

3.7 Power Supply Unit (PSU)

Introduction

The power supply unit (PSU) provides the required voltages for the proper operation of the entire system.

Functions

- Ring Generator (RUF)
- DC voltage source for circuits
- AC input voltage converter/filter

3.7.1 HiPath 1120

Description

Two versions of power supply units are available for the HiPath 1120:

- **BRA and IM**: Supply voltage: 110 Vac - 50/60 Hz or 220 Vac - 50/60 Hz
- **CND**: Supply voltage: 110 Vac - 50/60 Hz
- **RSA**: Supply voltage: 220 Vac - 50/60 Hz
- **ARG**: Supply voltage: 220 Vac - 50/60 Hz
- **SPA**: Supply voltage: 220 Vac - 50/60 Hz.

PSU Interfaces

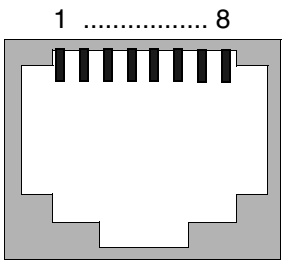


Figure 3-27 HiPath 1120 System PSU Connector

PSU Connector Assignments (HiPath 1120)

Table 3-32 PSU Connector Assignments - HiPath 1120

Contacts	Function
1 - 2	8 V_{rms}
3 - 4	23 V_{rms}
5 - 6	40 V_{rms}

PSU Interfaces CND, RSA and SPA

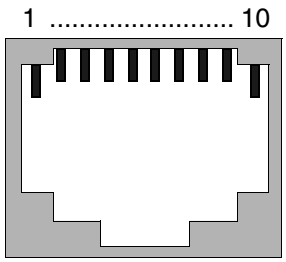


Figure 3-28 HiPath 1120 System PSU Connector - CND, RSA and SPA

PSU Connector Assignments (HiPath 1120) - CND, RSA and SPA

Table 3-33 PSU Connector Assignments HiPath 1120 - CND, RSA and SPA

Contacts	Function		
	CND	RSA	SPA
1	Free	Free	Free
2 - 3	8 V_{rms}	8 V_{rms}	8 V_{rms}
4 - 5	23 V_{rms}	23 V_{rms}	23 V_{rms}
6 - 7	65 V_{rms}	42 V_{rms}	65 V_{rms}
8 - 9	45 V_{rms}	Free	Free
10	Ground	Free	Free

Warning
Turn the system power ON or OFF by means of the supply's power cable or the input circuit breaker.

3.7.2 HiPath1130/1150/1190

- Supply voltage: 110 - 230 VAC - 50/60 Hz, full range
- The power supply 5 x 20mm input (VAC) contains two FAST fuses (250V - 4A).

Warning
If the power supply is not supplying the output voltages shown in Tabela 3-34, open it and check the condition of the fuses.

HiPath 1130/1150 PSU Interfaces

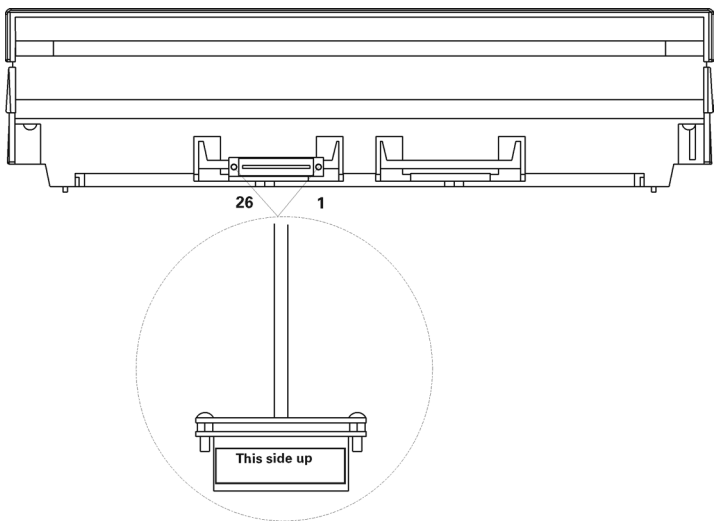


Figure 3-29 HiPath 1130/1150 PSU connectors

HiPath 1190 PSU Interfaces

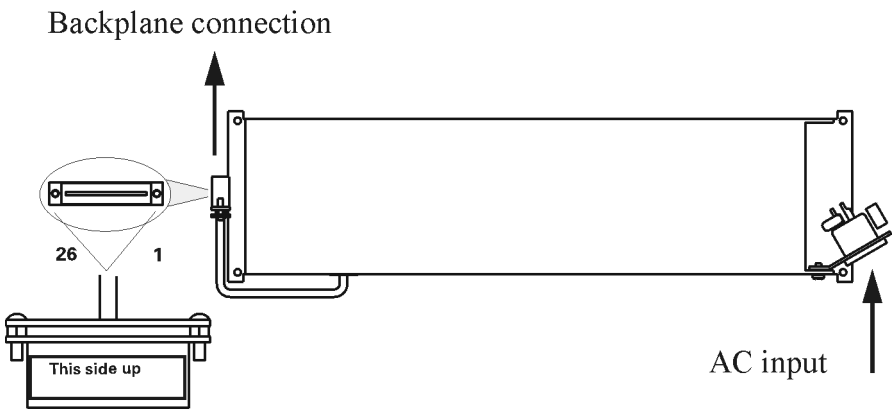


Figure 3-30 PSU connectorsHiPath 1190

PSU Connector Assignments (HiPath1130/1150/1190)

Table 3-34 PSU Connector Assignments - HiPath1130/1150/1190

Contact	Function	Contact	Function
1	+5.1 V_{DC}	2	+5.1 V_{DC}
3	+5.1 V_{DC}	4	+5.1 V_{DC}
5	+5.1 V_{DC}	6	+5.1 V_{DC}
7	GND	8	GND
9	GND	10	GND
11	GND	12	GND
13	26.4 V_{DC}	14	26.4 V_{DC}
15	26.4 V_{DC}	16	26.4 V_{DC}
17	26.4 V_{DC}	18	26.4 V_{DC}
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	50 V_{AC} + 97 V_{DC} 42 V_{AC} + 85.8 V_{DC} (RSA)	26	50 V_{AC} + 97 V_{DC} 42 V_{AC} + 85.8 V_{DC} (RSA)

3.8 Main Distribution Frame

Introduction

The Main Distribution Frame (MDF) connects cabling to a public exchange and extensions by means of connectors.

Follow the procedures described in Chapter 4.7, "Connecting Extensions to the System's Internal MDF (Main Distribution Frame)" on page 4-32 to attach the cables to the MDF connectors.

All connectors required for attaching the cables are provided with the modules and systems.

MDF Interfaces

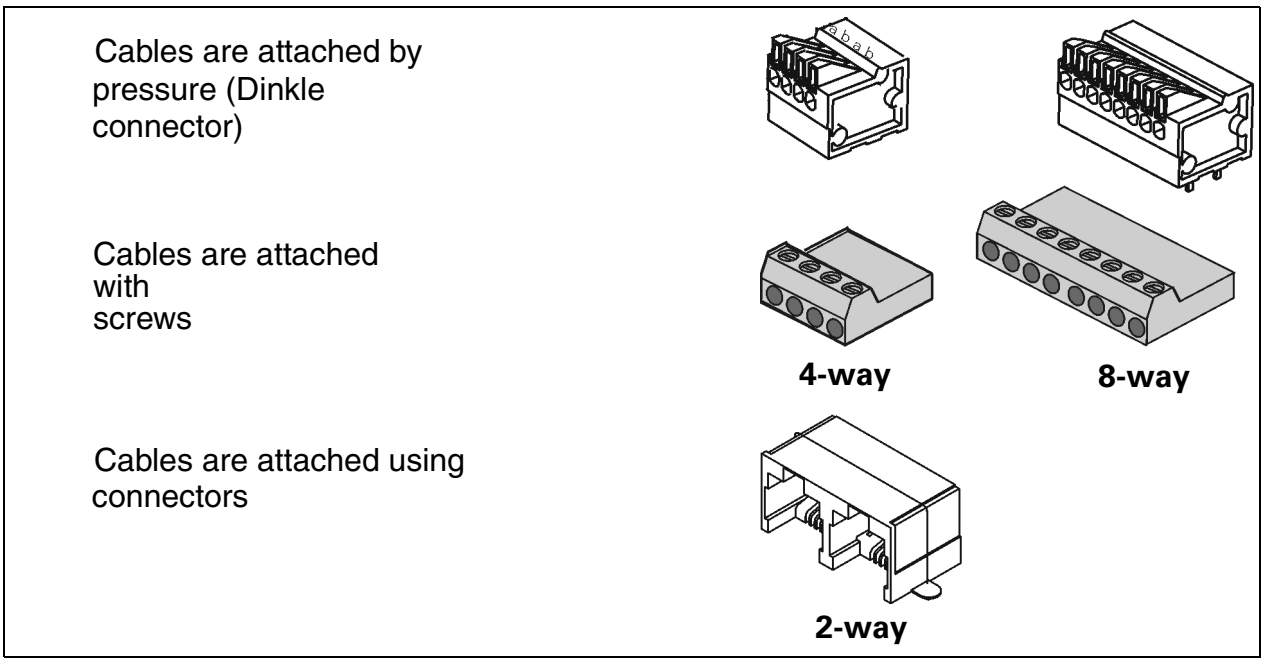


Figure 3-31 MDF - Connectors

3.9 Backplane

Introduction

In the HiPath1130/1150/1190 systems, a set of connectors mounted on a printed circuit board known as the backplane connects the modules to the motherboard.

- **HiPath 1130/1150**

Interfaces

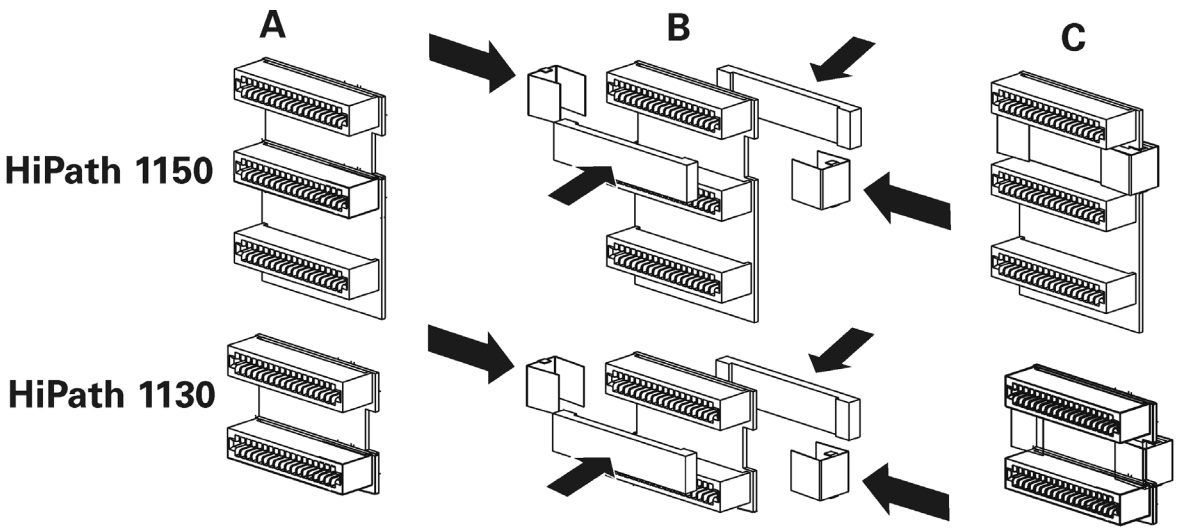


Figure 3-32 Backplane HiPath 1130/1150

Two identical backplanes are provided with the systems as shown in Figure A. In some cases you may need to insert a ferrite bead into the backplane. If the module came with a ferrite bead, install it as shown in Figures B and C.

- **HiPath 1190**

Interfaces

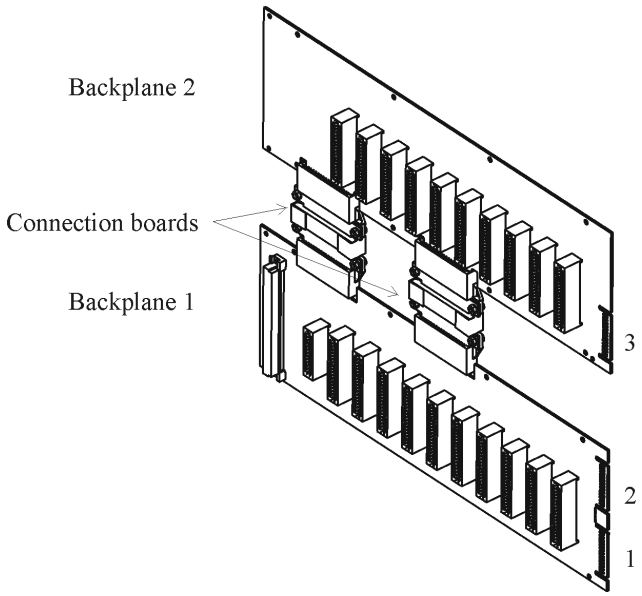


Figure 3-33 HiPath 1190 Backplanes

HiPath 1190 Backplane Connector's Assignments

Table 3-35 HiPath 1190 Backplane Connectors

Connectors 1, 2 and 3
DC input (PSU)

3.10 Entrance Telephone Interface

Introduction

The HiPath 1100 allows for the connection of up to four Entrance Telephones/Door Openers on extension slots. The connection is made by means of an interface between the Entrance Telephone and the PABXs.

Functions

- Interface between the Entrance Telephone and the HiPath 1100.

Interfaces

- **Model: S30817-K930-A300 - TFE**

  Without amplifier, for installation of the following models:

  - EGUCOM (Ackermann, Emmerich)
  - Grothe,Telegärtner
  - HDL - Brazil (models: F3A, F4A, F5A)

  Follow the diagram on Figure 3-34 for installing HDL models for Brazil.

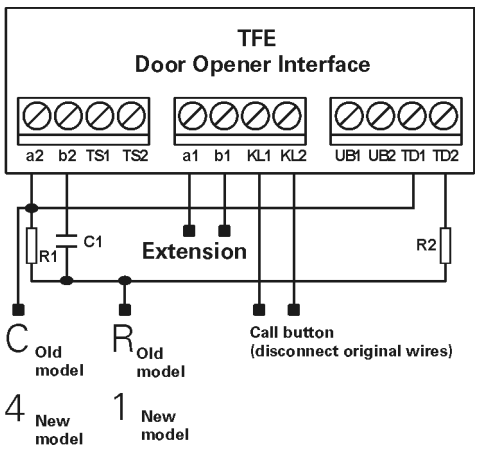


Figure 3-34 TFE Interface Overview - S30817-K930-A300

Additional components include: R1 (1.2 k Ω / 0.25W / 5%) and R2 (33Ω / 0.25W / 5%) resistors, and C1 capacitor (1.0 µ F / 250 Vac / Non-polarized). The connection to the PABX is made with two wires (a1 / b1) while the connection to the Entrance Telephone interface is made with four wires (a2 / b2, KL1, KL2).

- **Model: S30122-k7696-F313 - TFE**

  With amplifier, for installation of the following models

  - Telekom Doorline M202
  - Siedle
  - Ritto

For more information, see the TFE Adapter Installation Manual A31003-E8000-X167-*-19 included with the TFE interface.

- **Model S30817-Q936-C282 - Brazil**

  For installation in models:

  - HDL, F5AZ
  - HDL, F8AZ
  - HDL, F9AZ

  Follow the diagram in the Figure 3-35.

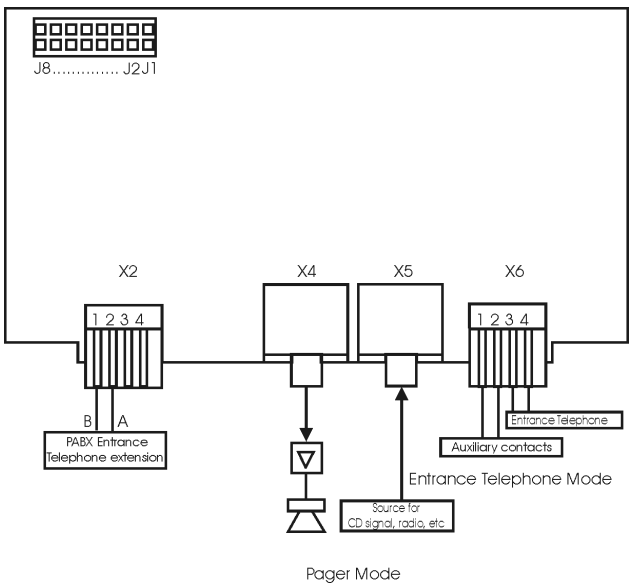


Figure 3-35 TFE Interface Overview - S30817-Q936-C282

- Each module of the TFE interface allows only one entrance telephone to be connected.
- Each TFE module works as an entrance telephone OR pager interface. To use both functions, two modules are required.

3.11 V.24 Adapter Cable

The V.24 serial interface module cannot be used if the system has an ADSL Module installed.

A V.24 adapter cable (S30122-x5468-x5-*) is used for connecting to a PC, a modem (for programming the system using the HiPath 1100 Manager software, and for enabling CTI features) or a printer (for printing call or configuration data). .

Additional electronics built into the cables provide level adaptation. V.24 operation requires level adaptation.

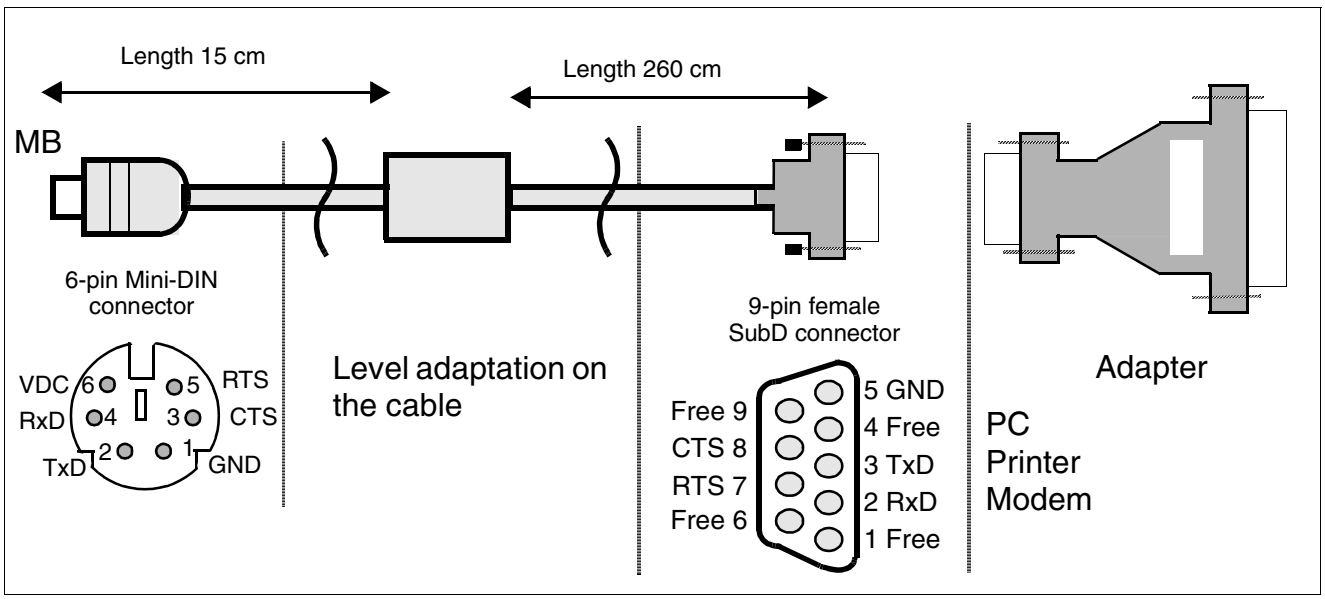


Figure 3-36 V.24 Adapter Cable Connection System

V.24 adapter cable signals

Table 3-36 V.24 adapter cable signals

Pin	Signal
CTS	Clear To Send
GND	Ground
RTS	Request To Send
RxD	Receive Data
TxD	Transmit Data

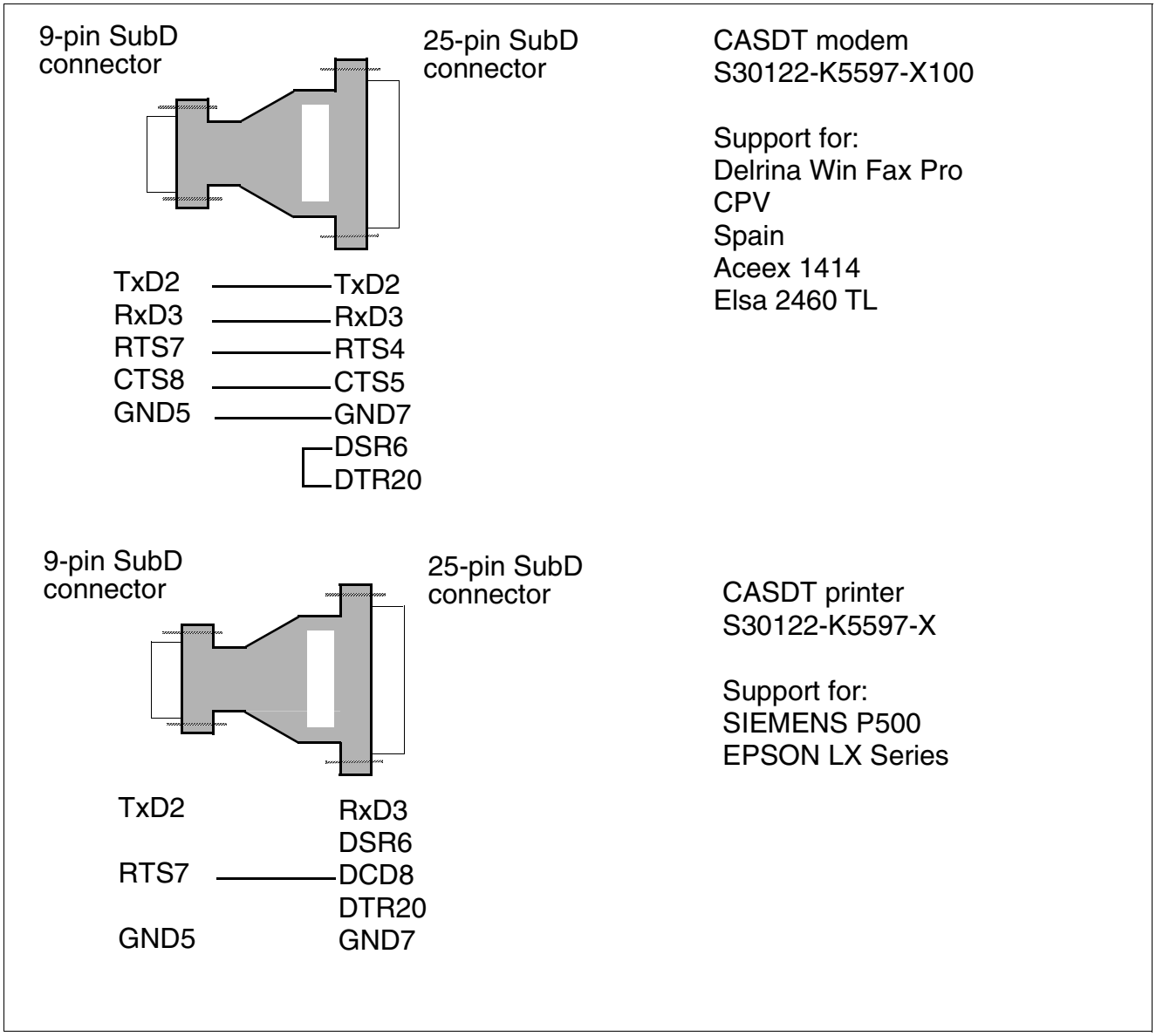


Figure 3-37 Modem and printer adapter connection system

3.12 USB adapter cable

An USB adapter cable is used for connecting to a PC or a modem (for programming the system using the HiPath 1100 Manager software, and for enabling CTI features).

Additional electronics in the cable (EN 60950-1) provide galvanic insulation between the HiPath and the PC. This product draws power from both the HiPath and a PC, and may therefore only be used on HiPath 1100 switches. A USB connection in other types of equipment will not work with this cable. Siemens does not recommend any other means of connecting the HiPath 1100 to the PC.

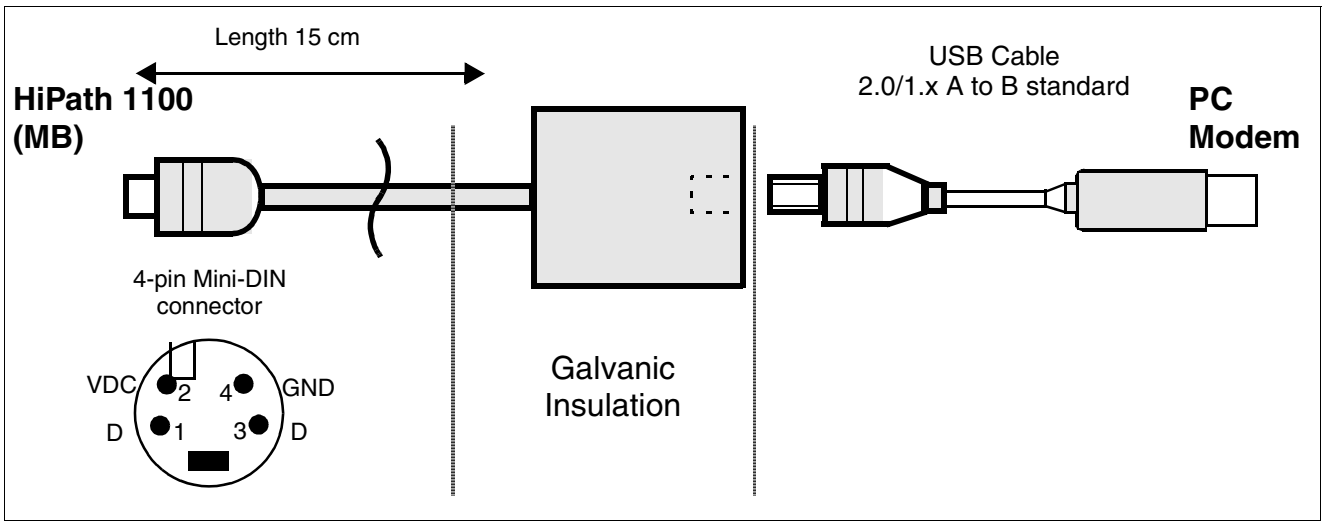


Figure 3-38 USB Adapter Cable Connection System

USB adapter cable signals

Table 3-37 USB adapter cable signals

Pin	Signal
D^+ and D^-	Data, specifies communication speed
GND	Ground

3.13 TME1 Serial Cable

The TME1 serial cable (C39195-A9700-B532-*) is used for connecting to a PC or modem in order to program the system using the HiPath 1100 E1 Trunk Manager tool.

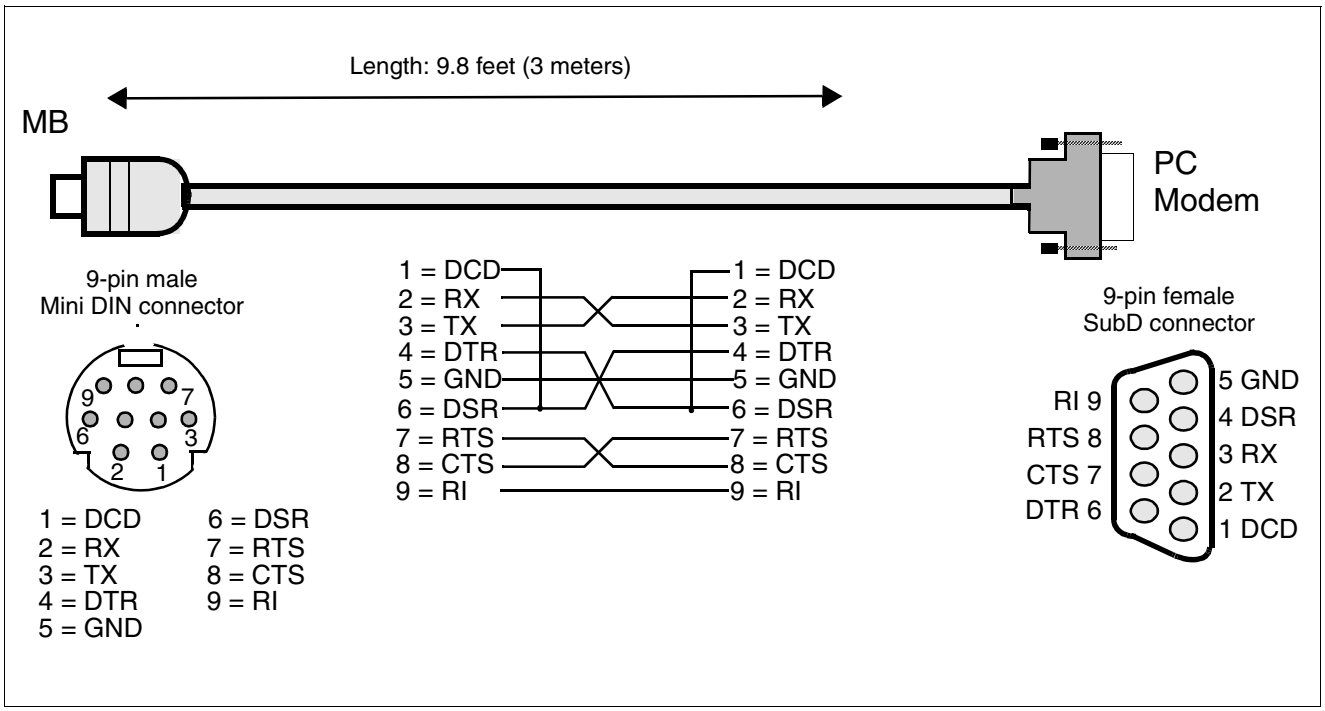


Figure 3-39 Serial cable connection to TME1

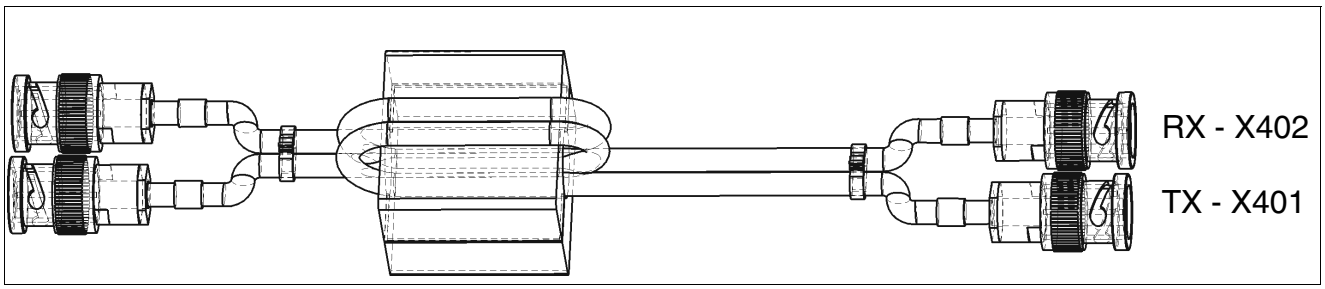
TME1 serial cable signals

Table 3-38 TME1 serial cable signals

Pin	Signal
DCD	Date Carrier Detect
CTS	Clear To Send
DSR	Date Send Ready
DTR	Date Station Ready
GND	Ground
RTS	Request To Send
RX	Receive Data
TX	Transmit Data
RI	Ring indicator

3.14 TME1 Coax Cable

The TME1 coax cable (C39195-A9700-B531-*) is used for connecting to the E1 interface by means of a NT modem.



TME1 coax cable signals

Table 3-39 TME1 coax cable signals

Pin	Signal
RX	Receive Data
TX	Transmit Data

4 Installation

4.1 HiPath 1100 Installation

About this Chapter

This chapter contains information on:

- Setting up HiPath 1100 systems. More information on additional equipment and expansions can be found in the "List of Modules" on page 3-2.
- Configuration (installation of modules).

Danger

Only authorized technical personnel should install this system.

Tools and Equipment Required

The following tools are required for installing a HiPath 1100 system:

- Cutters and flat nose pliers
- Standard screwdriver
- Phillips screwdriver
- Tool for attaching wires to the Main Distribution Frame
- Drill
- Hammer
- Level
- Tape measure
- Digital multimeter for checking power and ground connections.

4.2 Installation Procedures

Warning

Before installing the equipment, read carefully all information and recommendations provided in Chapter 1, "Important Information"

When connecting to digital lines of terminals powered by an external AC power source, the maximum number of terminal equipment allowed is 14 per system. Exceeding this limit may damage the equipment and present a hazard to the safety of the user.

Table 4-1 HiPath 1100 - Equipment installation procedures

Step	Installation Procedures (Information)	
1.	"Select the location for installing the equipment" (Usually already setup)	page 4-4
2.	"Unpacking System Components"	page 4-4
3.	"Getting to Know your Systems"	page 4-5
4.	"HiPath1120/1130/1150 Wall Mounting Instructions"	page 4-8
5.	"Installation of Expansion and Option Modules"	page 4-16
6.	"Connecting Extensions to the System's Internal MDF (Main Distribution Frame)"	page 4-32
7.	"Installing a V.24 Interface"	page 4-38
8.	"Installing an USB Interface"	page 4-39
9.	"Installing an External Audio Source"	page 4-40
10.	"Installing a TFE - Entrance Telephone Interface"	page 4-40
11.	"Recommendations concerning the Power Supply and Protection of the System"	page 4-42
12.	"Protective Power Outage Relays"	page 4-45
13.	"System Cabling"	page 4-46
14.	"Installing Telephone Terminals"	page 4-46
15.	"Performing a Visual Inspection"	page 4-48

Caution

Always use an anti-static wrist band when working with the HiPath 1100 systems (particularly when handling the modules). Make sure the wrist band is grounded.

4.3 Select the location for installing the equipment

Installation Location

The system's installation site has been previously selected and agreed to by the client.

The following precautions must be taken:

- Do not expose the equipment to any external heat source (e.g., sunlight, heaters, etc.).
- Do not expose the equipment to excess dust
- Do not install the equipment in areas where there is a risk of condensation when the equipment is in use. If condensation occurs, dry the equipment before starting operation.
- Do not install inside closets.
- The power outlet for connecting the system's power supply must be located close to the equipment and must be easily accessible.
- Follow all environmental guidelines described in the chapter "System Data" (see"Environmental Conditions" on page 2-9).

Warning

When using the RSA version, extension lines with a C/D interface must only be installed indoors. Only regular extensions (without a C/D interface) can be installed outdoors.

Note 1: See Section "HiPath 1100 Configurations" on page 2-2 for more information regarding system configurations.

4.4 Unpacking System Components

Procedure

Step	Procedure
1.	Check to see that all components listed on the receipt are included in the package.
2.	Inspect all items for any damage that may have occurred during transportation. If any damage occurred, report it immediately to the place of purchase.
3.	Discard packaging materials according to local and national environmental regulations.

Warning

Use only equipment and systems that are in perfect condition. Never operate a damaged system.

4.5 Getting to Know your Systems

4.5.1 HiPath 1120

Dimensions for the HiPath 1120

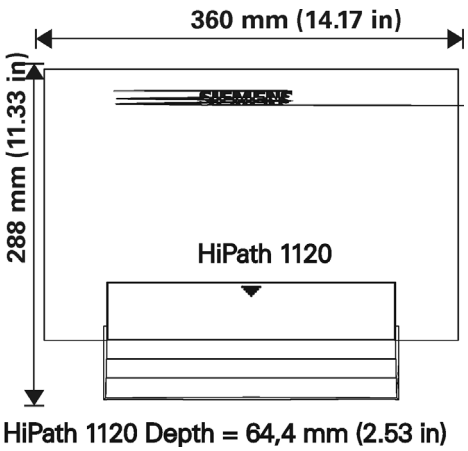


Figure 4-1 Size of the HiPath 1120

Opening the Main Distribution Frame

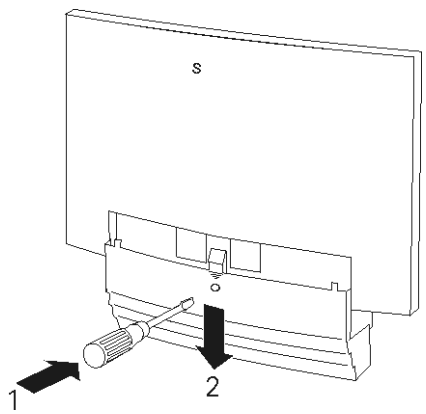


Figure 4-2 Opening the HiPath 1120 Main Distribution Frame

Components Location

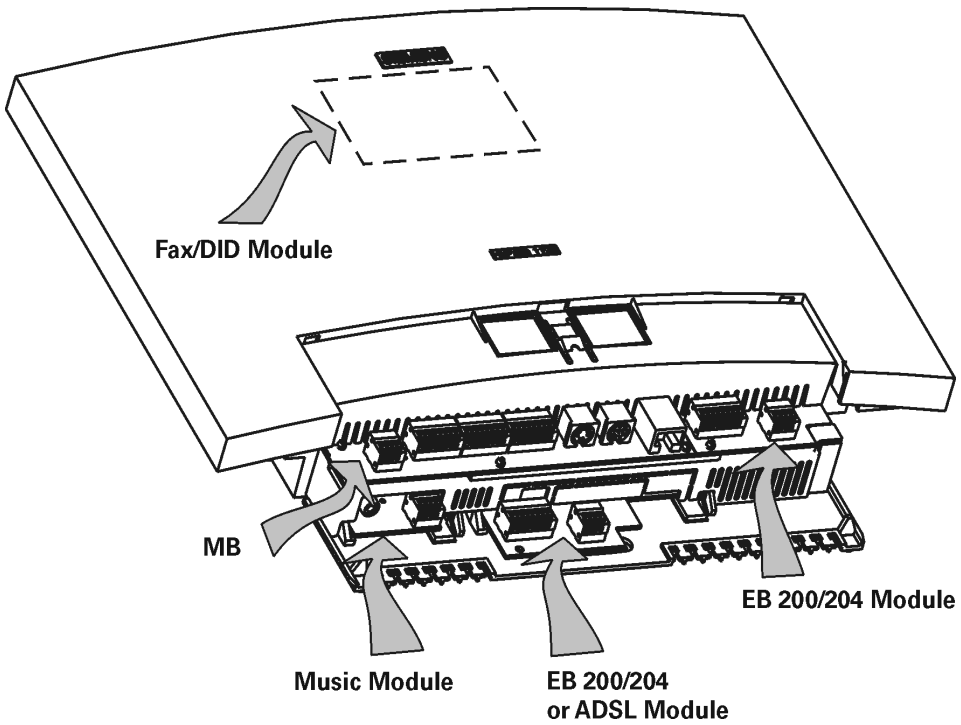


Figure 4-3 HiPath 1120 system installation overview

4.5.2 HiPath 1130/1150

The enclosures of the HiPath 1130/1150 systems are very similar in design. Look for the number indicated on each module before connecting it.

Dimensions for the HiPath 1130/1150

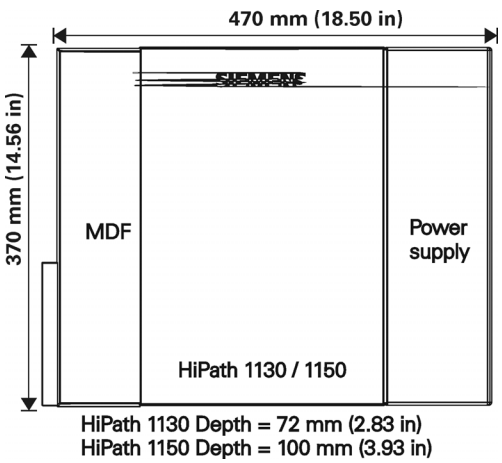


Figure 4-4 Dimensions for the HiPath 1130/1150

Opening the Main Distribution Frame

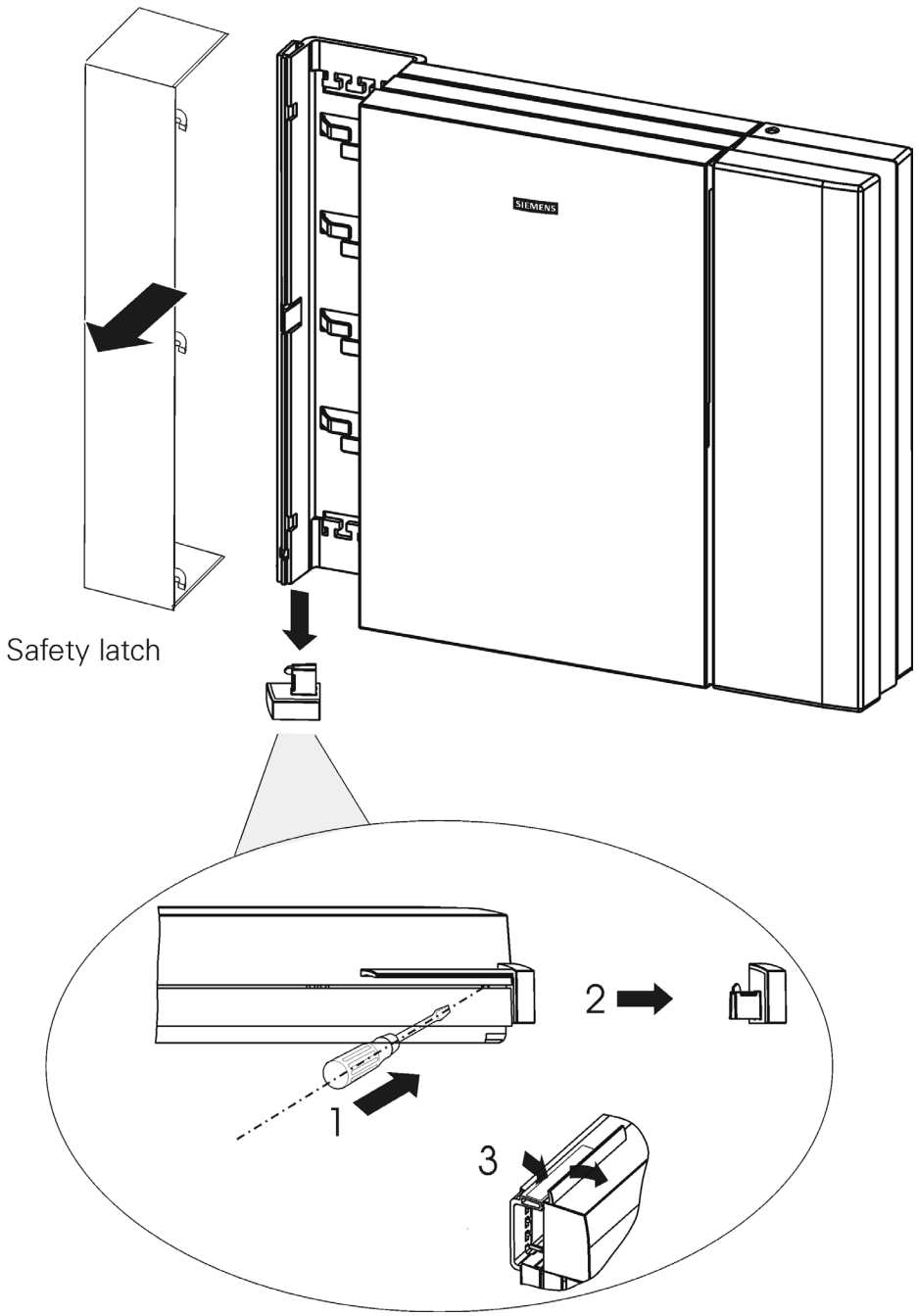


Figure 4-5 Opening the HiPath 1130/1150 Main Distribution Frame

Components Location

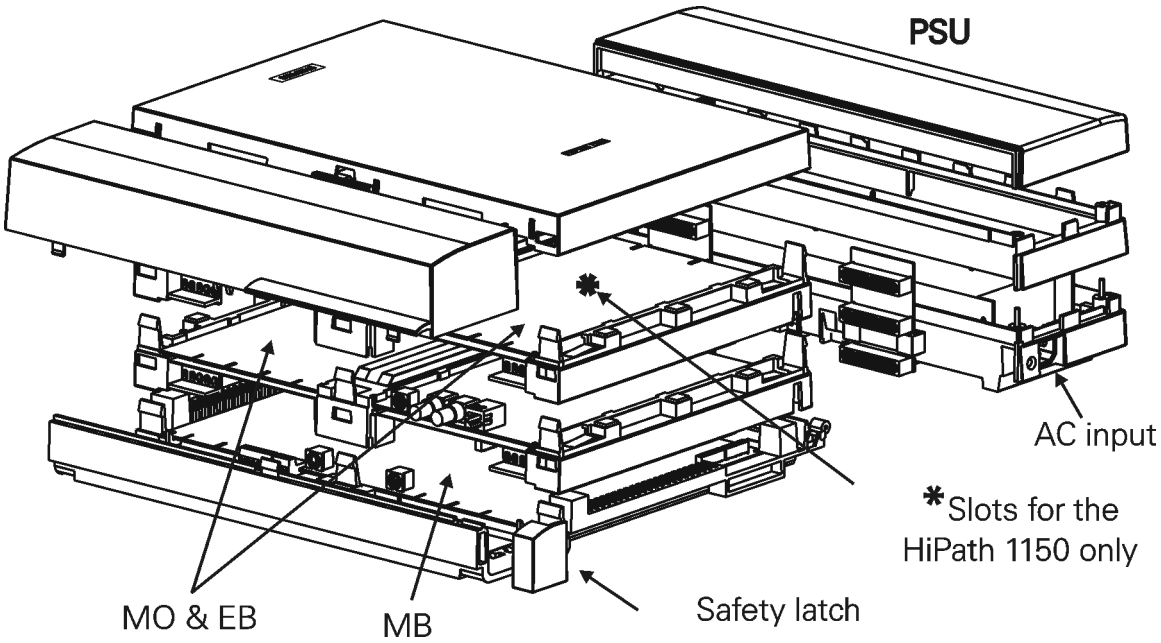


Figure 4-6 HiPath 1130/1150 system installation overview

4.5.3 HiPath1120/1130/1150 Wall Mounting Instructions

Step	Procedure
1.	Drill a hole in the wall at a height of 4.10 ft (1.25 m) from the floor.
2.	Place the bushing over the hole then insert the screw and tighten it until only 0.19" (5 mm) protrude.
3.	Hang the system at the top of ①, on the screw (see Figure 4-7 and Figure 4-8).
4.	Mark additional holes for washers ② and remove the system.
5.	Drill the remaining holes as marked, install washers and screws then tighten them letting 0.19" (5 mm) protrude.
6.	Hang the system again and align it by tightening the lower screws.

Back of the enclosures

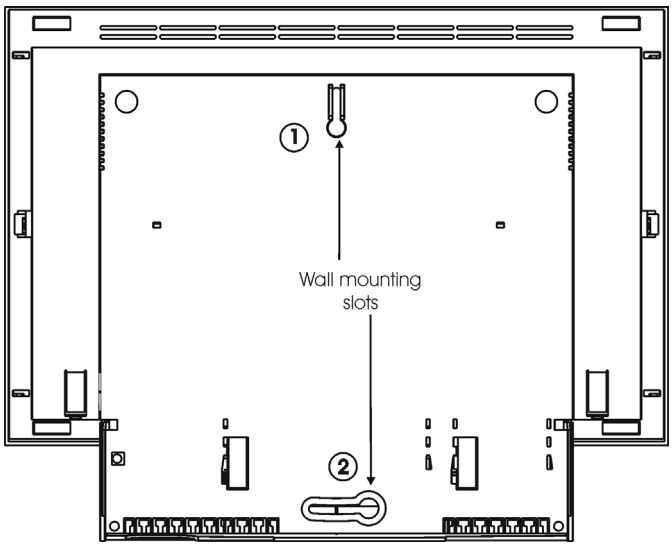


Figure 4-7 Installing the HiPath 1120

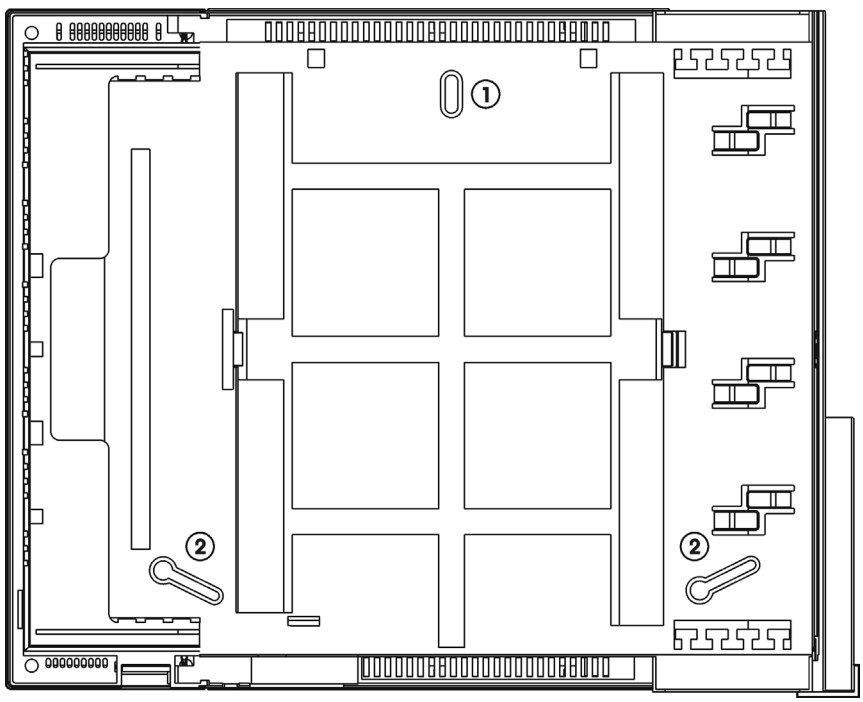


Figure 4-8 Installing the HiPath 1130/1150

4.5.4 HiPath 1190

The HiPath 1190 and HiPath 1190R systems are identical, except for a "side tab" on the HiPath 1190R model, which is used for attaching a 19" rack, and the fact that there are no side covers.

Dimensions for the HiPath 1190/1190R

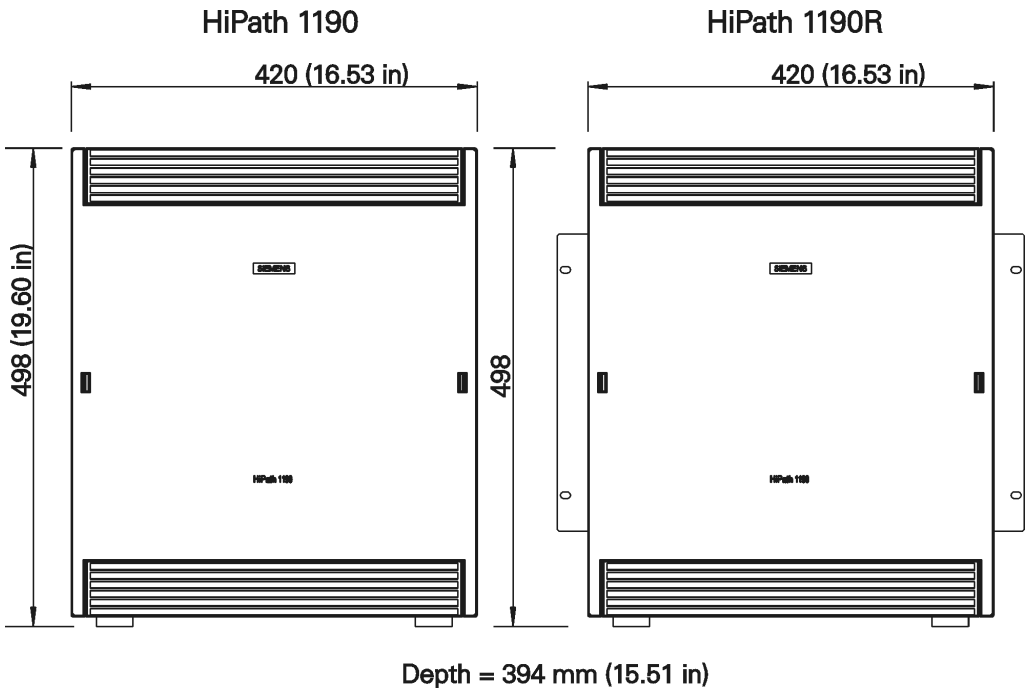


Figure 4-9 Dimensions for the HiPath 1190/1190R

Opening the System's Cabinet

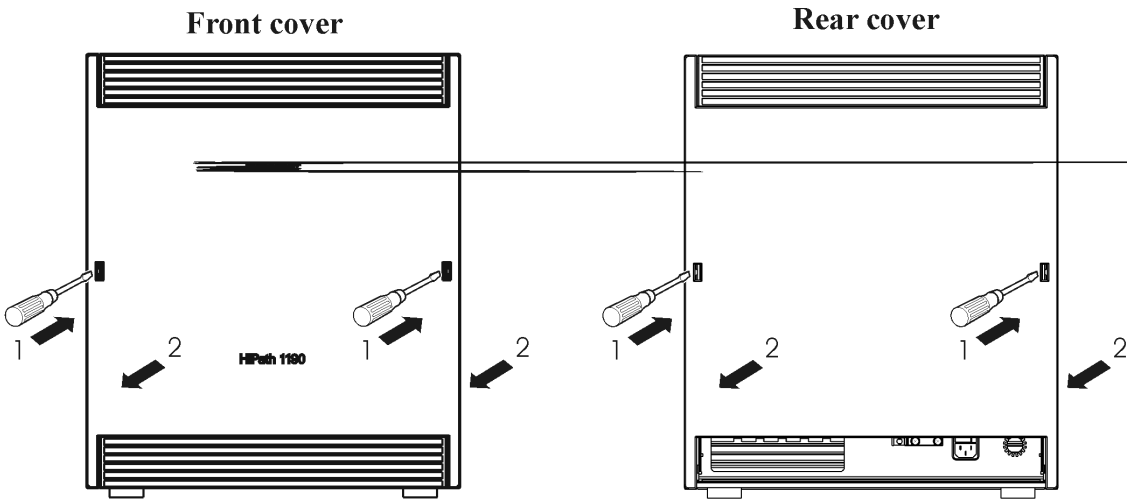


Figure 4-10 Opening the HiPath 1190/1190R

Procedure for Opening the System's Cabinet

Step	Procedure
1.	Insert screwdriver as shown above.
2.	Use the screwdriver as shown to remove the cover.

Components Location

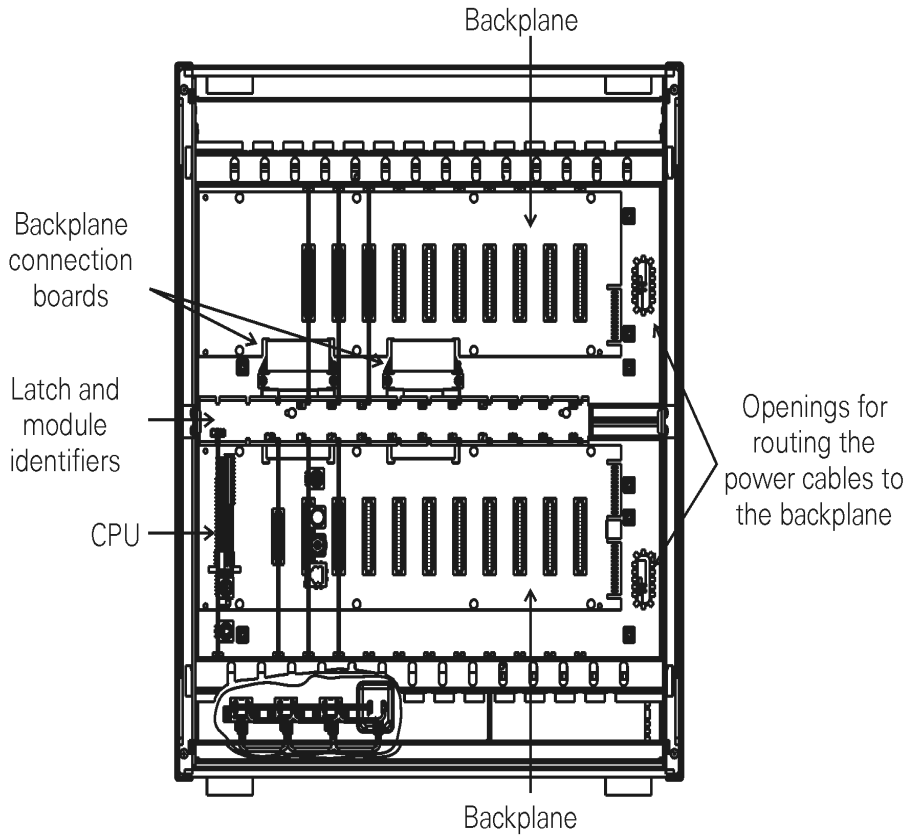


Figure 4-11 HiPath 1190/1190R front view

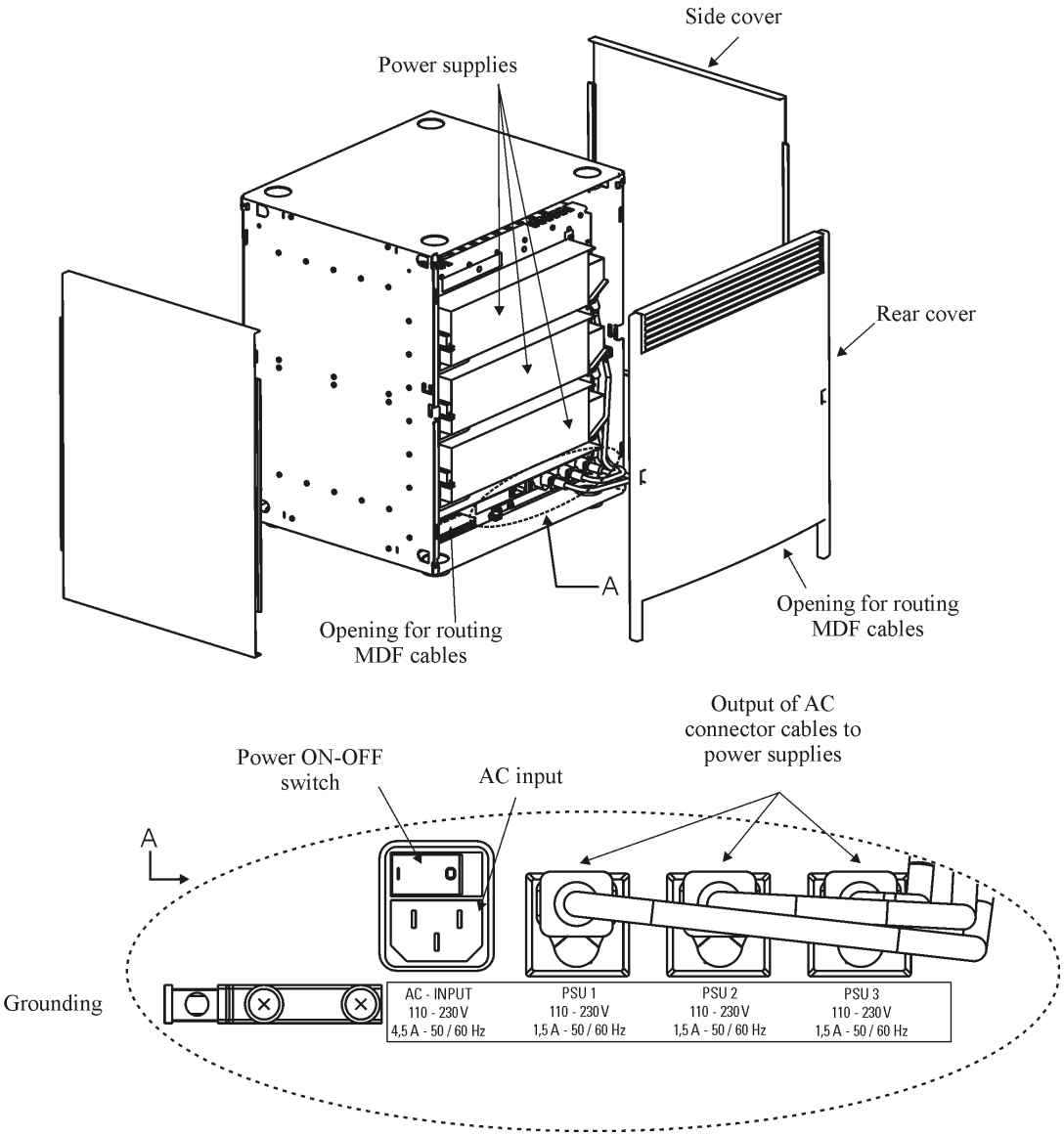


Figure 4-12 HiPath 1190/1190R back view

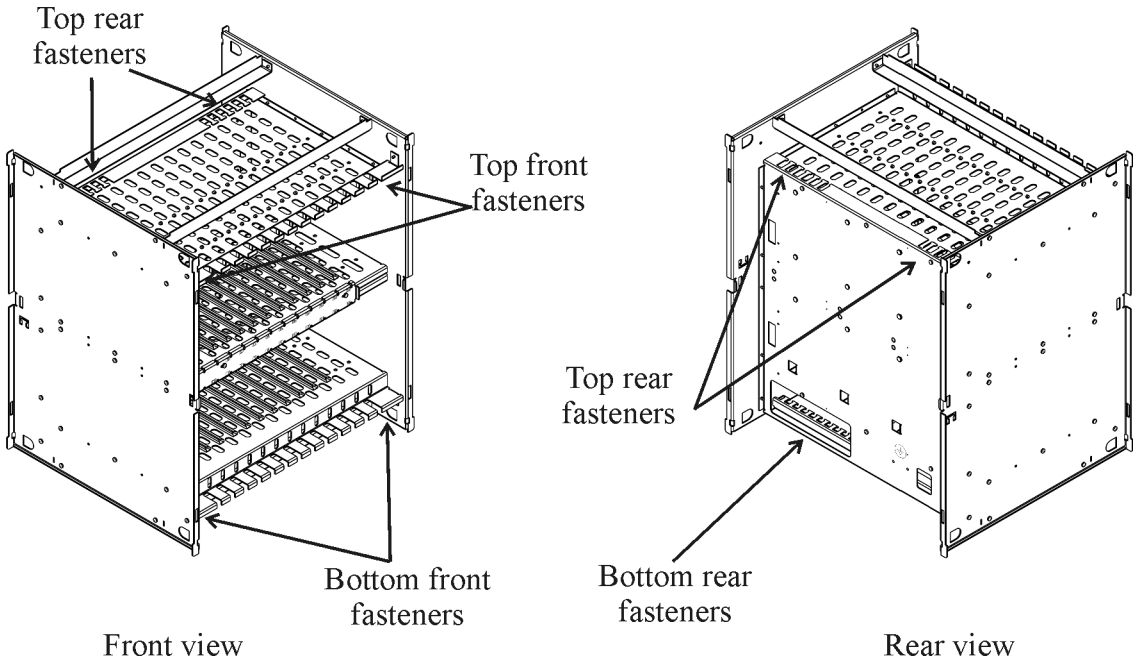


Figure 4-13 HiPath 1190/1190R cable anchors

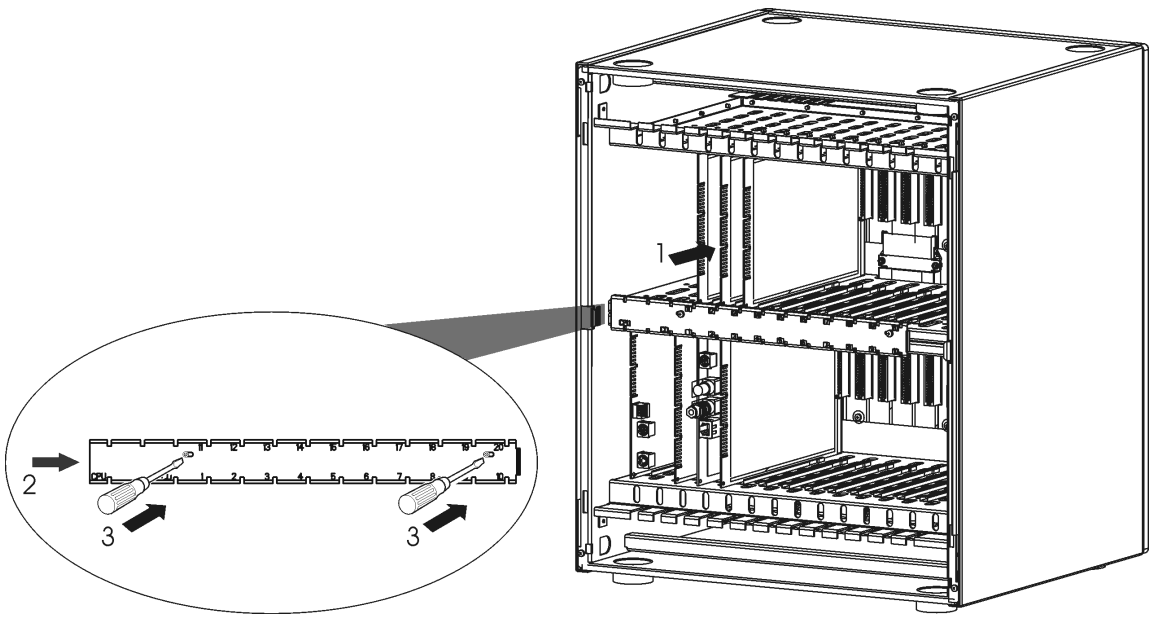


Figure 4-14 Installing modules on the HiPath 1190/1190R systems

Module Installation Procedure

Step	Procedure
1.	Insert module into the appropriate slot.
2.	Move the latch to the right to secure each module in place.
3.	Secure each latch using the screws.
4.	Use the reverse procedure to remove the modules.

Installation on a 19" Rack

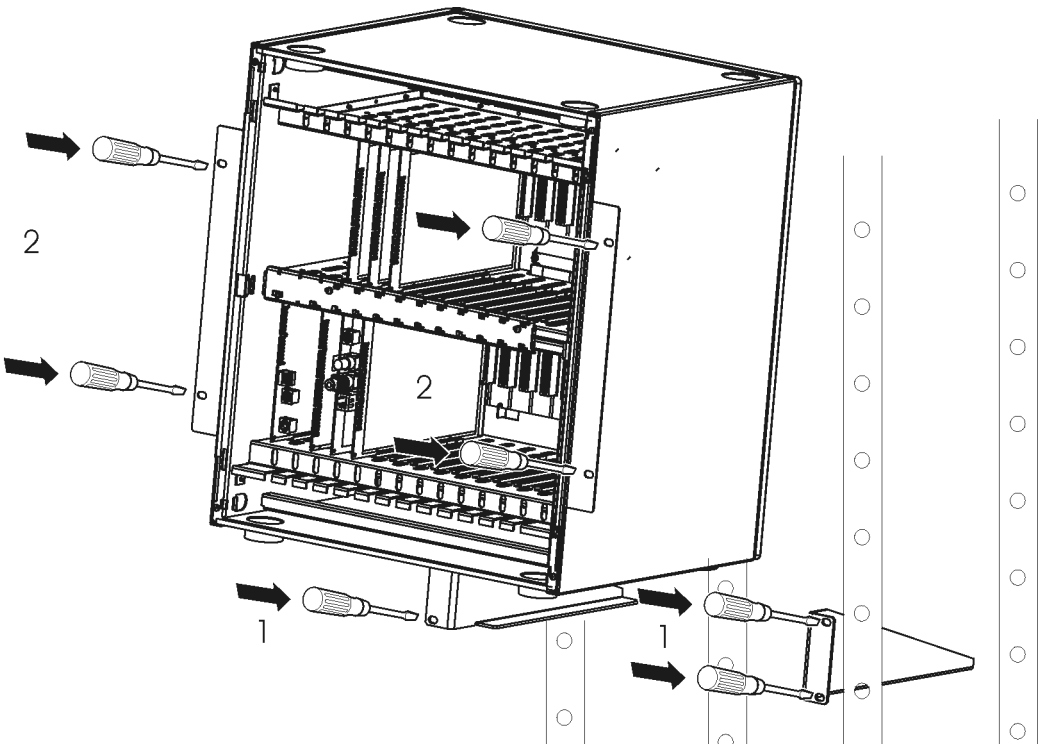


Figure 4-15 Installing the HiPath 1190R on a 19" rack

Rack-Mounting Procedure

Step	Procedure
1.	Install the system's brackets on the 19" rack using the screws as shown.
2.	Insert the switch into the 19" rack.
3.	Secure the switch on the 19" rack using the screws.

4.6 Installation of Expansion and Option Modules

Installation Information

In the HiPath 1120 system the CPU and the modules are interconnected through a flat cable and/or pin connector. In the HiPath1130/1150/1190 systems, the modules are interconnected through the backplane connector.

Insert modules only when the power supply is turned OFF. For information on how to expand your system, see"Limitations to System Expansion" on page 2-5.

4.6.1 Modules Location

- **On the HiPath 1120**

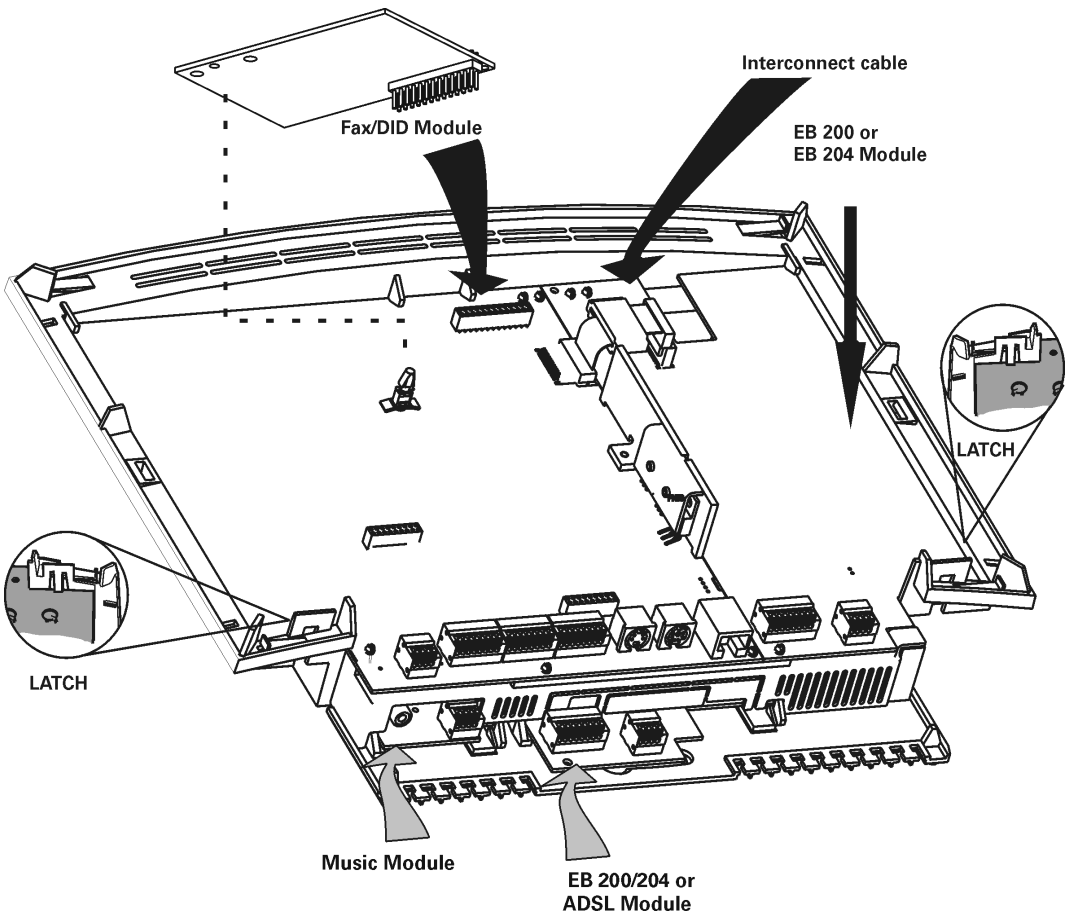


Figure 4-16 Location of the Modules on the HiPath 1120

- **On the HiPath 1120 - CND Version**

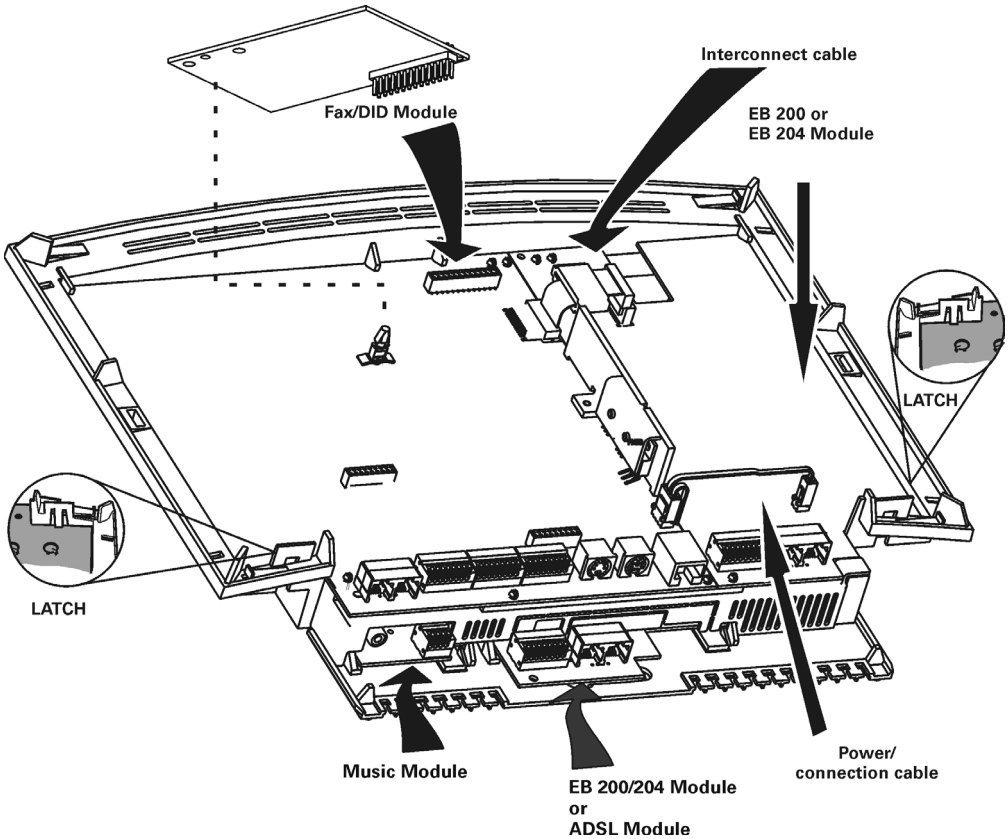


Figure 4-17 Location of the Modules on the HiPath 1120 - CND

- **On the HiPath 1130/1150**

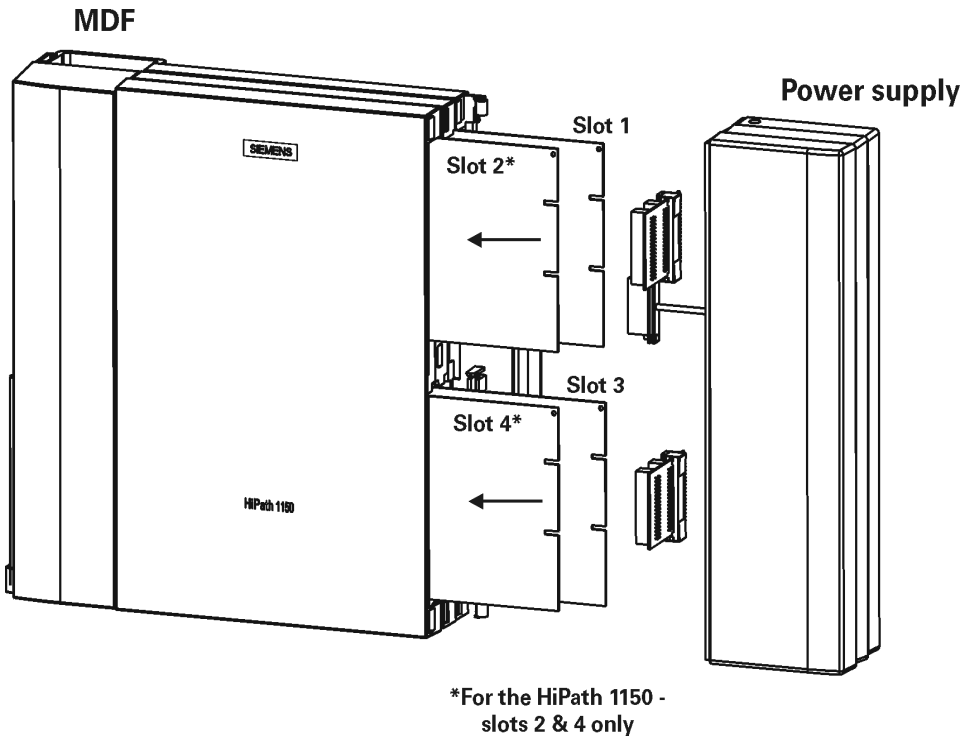


Figure 4-18 Location of the Modules on the HiPath 1130/1150

Table 4-2 shows the modules and the slots where they can be installed with respect to each system's limitations.

Table 4-2 Slot / Type of module for the HiPath 1130/1150

	HiPath 1130	HiPath 1150	HiPath 1150 only	
Slot 1	**Type of Module**		**Slot 2**	**Type of Module**
Expansion Modules	EB 010		**Expansion Modules**	EB 010
	---	EB 012		EB 012
	EB 202			EB 202
	EB 206			EB 206
	EB 210			EB 210
	EB 200			EB 200
	EB 400			EB 400
	EB 800			EB 800
Slot 3	**Type of Module**		**Slot 4**	**Type of Module**
Expansion Modules	EB 010		**Expansion Modules**	EB 010
	---	EB 012		EB 012
	EB 202			EB 202
	EB 206			EB 206
	EB 210			EB 210
	EB 200			EB 200
	EB 400			EB 400
	EB 800			EB 800
Option Modules	S_{0} Module		**Option Modules**	ADSL Module
	ADSL Module			
	TME1 Module			

- **On the HiPath 1190/1190R**

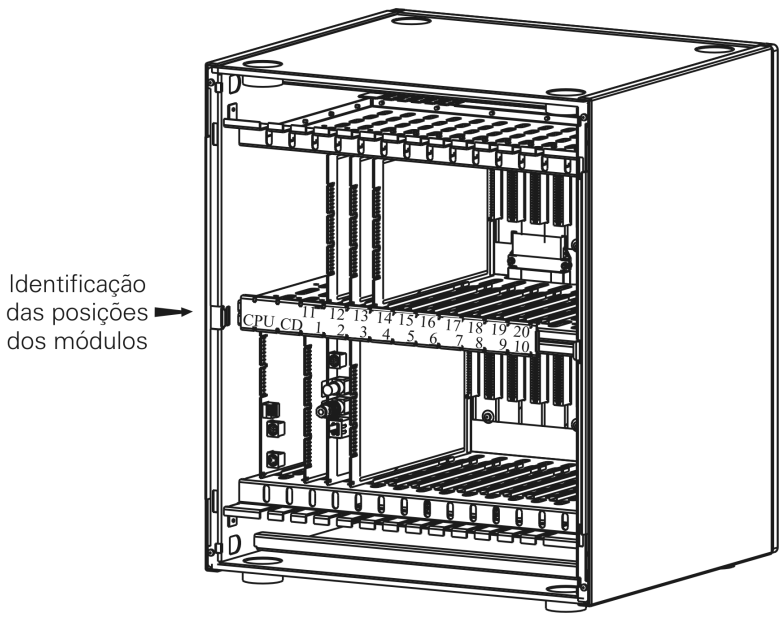


Figure 4-19 Location of the Modules on the HiPath 1190/1190R

Table 4-3 shows the modules and their slots on HiPath 1190 andHiPath 1190R (see"Limitations to System Expansion" on page 2-5):

Table 4-3 Slot / Type of module on HiPath 1190/1190R systems

Slot 1	Type of Module	Slot 2	Type of Module
Expansion Modules	EB 010	Expansion Modules	EB 010
	EB 012		EB 012
	EB 202		EB 202
	EB 206		EB 206
	EB 210		EB 210
	EB 200		EB 200
	EB 400		EB 400
	EB 800		EB 800
Option Modules	S_{0} Module	Option Modules	ADSL Module
	TME1 Module		
Slot 3	**Type of Module**	**Slot 4**	**Type of Module**
Expansion Modules	EB 010	Expansion Modules	
	EB 012		EB 010
	EB 202		EB 202
	EB 206		EB 206
	EB 210		EB 200
	EB 200		EB 400
	EB 400		EB 800
	EB 800		
Slot 5	**Type of Module**	**Slot 6 and 7**	**Type of Module**
Expansion Modules	EB 010	Expansion Modules	
	EB 012		EB 010
	EB 202		EB 202
	EB 206		EB 206
	EB 210		EB 200
	EB 200		EB 400
	EB 400		EB 800
	EB 800		
Slot 8	**Type of Module**	**Slot 9 and 10**	**Type of Module**
Expansion Modules	EB 010	Expansion Modules	
	EB 012		EB 010
	EB 202		EB 202
	EB 206		EB 206
	EB 210		EB 200
	EB 200		EB 400
	EB 400		EB 800
	EB 800		
Slot 11	**Type of Module**	**Slot 12**	**Type of Module**

Expansion Modules	EB 010	**Expansion Modules**	EB 010
	EB 012		EB 202
	EB 202		EB 206
	EB 206		EB 200
	EB 210		EB 400
	EB 200		EB 800
	EB 400		
	EB 800		
Option Modules	$S_{0\ Module}$		
	TME1 Module		
Slot 13 and 14	**Type of Module**	**Slot 15**	**Type of Module**
Expansion Modules	EB 010	**Expansion Modules**	EB 010
	EB 202		EB 012
	EB 206		EB 202
	EB 200		EB 206
	EB 400		EB 210
	EB 800		EB 200
			EB 400
			EB 800
Slot 16 and 17	**Type of Module**	**Slot 18**	**Type of Module**
Expansion Modules	EB 010	**Expansion Modules**	EB 010
	EB 202		EB 012
	EB 206		EB 202
	EB 200		EB 206
	EB 400		EB 210
	EB 800		EB 200
			EB 400
			EB 800
Slot 19 and 20	**Type of Module**		
Expansion Modules	EB 010		
	EB 202		
	EB 206		
	EB 200		
	EB 400		
	EB 800		

Note: The CD module and the CPU have fixed slots in the HiPath 1190/1190R systems, which are marked on the modules latch (Figure 4-19 on page 4-19 and Figure 4-11 on page 4-12).

4.6.2 Installing Modules

- **On the HiPath 1120**

Installation Procedures

Step	Procedure
1.	Turn off the power supply.
2.	Remove the system's cover
3.	Insert the module into one of the slots shown in Figure 4-16.
4.	Connect the module to the MOB using the flat cable on the top slot. In the CND version, the EB module and the motherboard must be connected using a power/connection cable.
5.	To install on the bottom slot lift the top slot and use the pin connector to make the connection.
6.	Connect to module connectors (see Figure 4-27).
7.	Reassemble the entire set.
8.	"Performing a Visual Inspection" on page 4-48.
9.	Turn on the power supply.
10.	Configure the required data (see "Operation" on page 6-1).

- **On the HiPath 1130/1150**

Installation Procedures

Step	Procedure
1.	Remove the power supply.
2.	Remove the backplane.
3.	Insert the module into one of the slots shown in Figure 4-18.
4.	Reassemble the entire set.
5.	"Performing a Visual Inspection" on page 4-48.
6.	Turn on the power supply.
7.	Configure the required data (see "Operation" on page 6-1).

- **On the HiPath 1190/1190R**

Installation Procedures

Step	Procedure
1.	Turn off the power supply.
2.	Remove the system's front cover.
3.	Remove the system's back cover.
4.	Move the module's latch as shown in Figure 4-14.
5.	Insert the module into one of the slots shown in Table 4-3.
6.	Move the module's latch back to secure module.
7.	Connect the Main Distribution Frame cables as follows: For modules allocated to the system's bottom slots (slots 1 to 10) use the bottom opening (see Figure 4-12). For modules allocated to the system's top slots (slots 11 to 20) route the cables through the top anchors (see Figure 4-13).
8.	Connect to the appropriate module connectors (see "Expansion Module (EB)" on page 3-16).
9.	Attach cables to anchors using plastic brackets.
10.	"Performing a Visual Inspection" on page 4-48.
11.	Reassemble the entire set.
12.	Turn on the power supply.
13.	Configure the required data (see "Operation" on page 6-1).

4.6.3 Installing a S0 Module

Warning

For proper system synchronization make sure to connect S_0 interfaces sequentially. For example, for a 5-interface module with only 2 S_0 lines NT1 must be connected to the first interface and NT2 to the second interface. The clock reference is only provided by the S_0 module's first interface.

4.6.4 Installing a TME1 Module

Warning

Remember to set the DIP switches (see"TME1 Module" on page 3-27).

4.6.5 Installing an ADSL Module

Installation Procedures

Step	Procedure
1.	Connect the carrier's ADSL line to slot 1 and 2 of the X2 connector (voice output). In the CND version, connect the carrier's ADSL line to slot 1 of the X2 connector.
2.	Connect slots 3 and 4 of the X2 connector to the external line input for the HiPath 1100. 99 slots In the CND version, connect to slot 2 of the X2 connector.
3.	Connect your network cables to the HUB (J3, J5, J6 and J7 connectors).

4.6.6 Installing a Fax/DID Module

- **On the HiPath 1120**

Installation Procedures

Step	Procedure
1.	Turn off the power supply.
2.	Remove the system's cover
3.	Attach the separator provided with the module to the MB.
4.	Attach the module to the MB's pin connector and to the separator.
5.	Reassemble the entire set.

Step	Procedure
6.	"Performing a Visual Inspection" on page 4-48.
7.	Turn on the power supply.
8.	Configure the required data (see "Operation" on page 6-1).

Installation Diagram

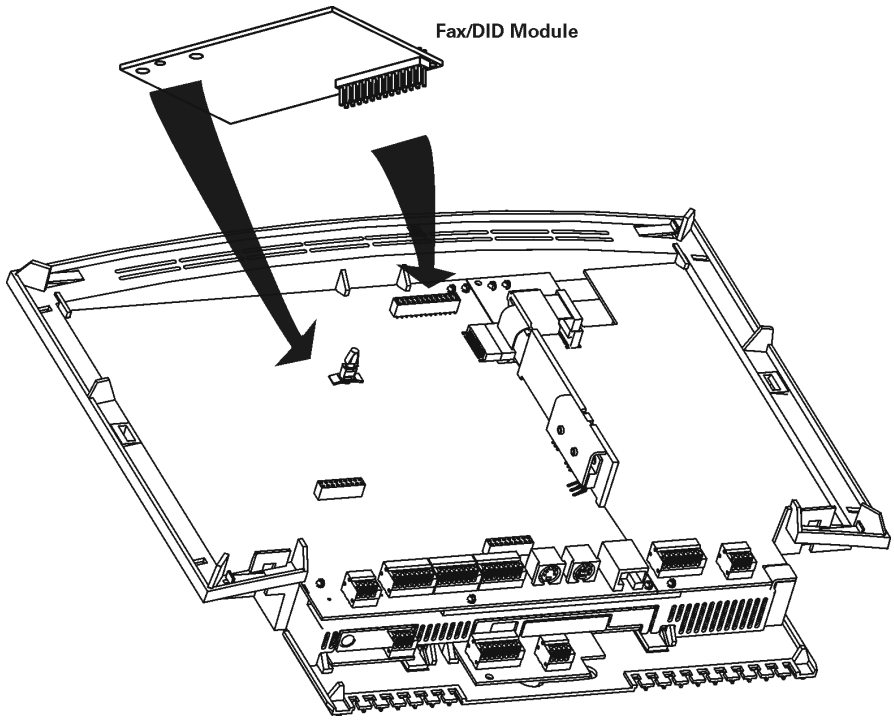


Figure 4-20 Installing a Fax/DID ModuleHiPath 1120

- **On the HiPath 1130/1150**

Installation Procedures

Step	Procedure
1.	Remove the power supply.
2.	Remove the Main Distribution Frame's cover.
3.	Remove the backplane.
4.	Remove the slots above the MB.
5.	Attach the separator provided with the module to the MB.
6.	Attach the module to the MB's pin connector and to the separator.
7.	Reassemble the entire set.

Step	Procedure
8.	"Performing a Visual Inspection" on page 4-48.
9.	Turn on the power supply.
10.	Configure the required data (see "Operation" on page 6-1).

Installation Diagram

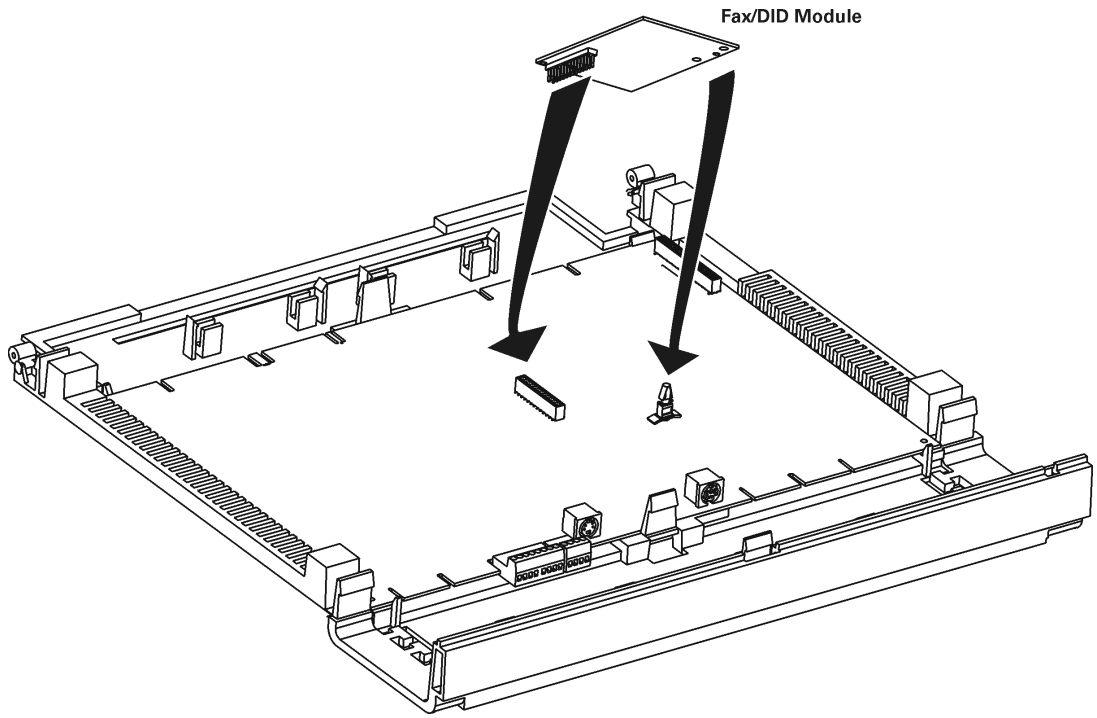


Figure 4-21 Installing a Fax/DID Module HiPath 1130/1150

- **On the HiPath 1190/1190R**

Installation Procedures

Step	Procedure
1.	Turn off the power supply.
2.	Remove the system's front cover.
3.	Disconnect the Main Distribution Frame's cables from the CPU.
4.	Move the module's latch as shown in Figure 4-14.
5.	Remove the CPU.
6.	Attach the separator provided with the Fax/DID module to the CPU.
7.	Attach the module to the CPU's pin connector and the separator.

Step	Procedure
8.	Insert the CPU into the system.
9.	Move the module latch back to secure module.
10.	Connect the Main Distribution Frame's cables.
11.	Reassemble the entire set.
12.	"Performing a Visual Inspection" on page 4-48.
13.	Turn on the power supply.
14.	Configure the required data (see "Operation" on page 6-1).

Installation Diagram

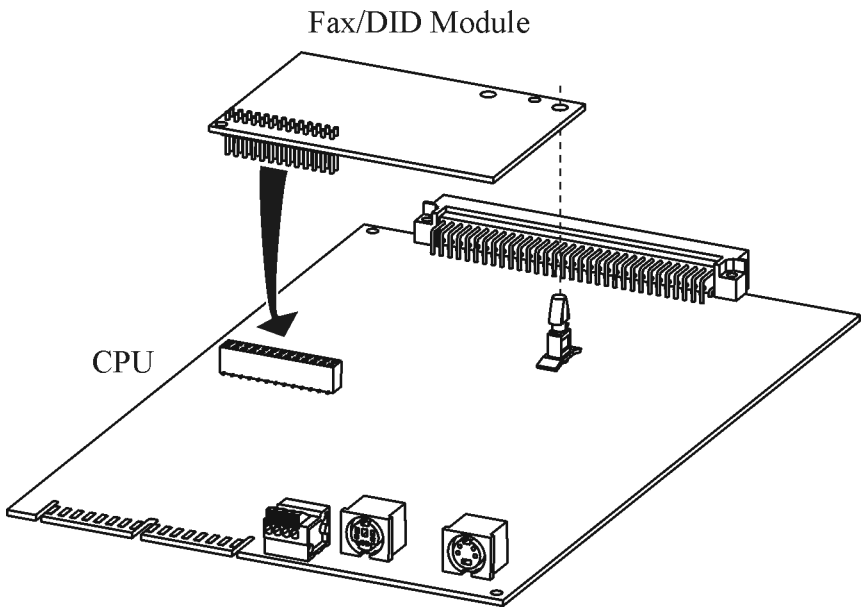


Figure 4-22 Installing a Fax/DID Module on the HiPath 1190/1190R

4.6.7 Installing a Music Module

- **On the HiPath 1120**

Installation Procedures

Step	Procedure
1.	Turn off the power supply.
2.	Remove the system's cover
3.	Raise the system's top slot (MB).
4.	Insert the module in the slot show on Figure 4-23.
5.	Attach the MB to the module.
6.	Make the connections to the appropriate module connector (see"Music Module" on page 3-41).
7.	Reassemble the entire set.
8.	"Performing a Visual Inspection" on page 4-48.
9.	Turn on the power supply.
10.	Configure the required data (see "Operation" on page 6-1).

Installation Diagram

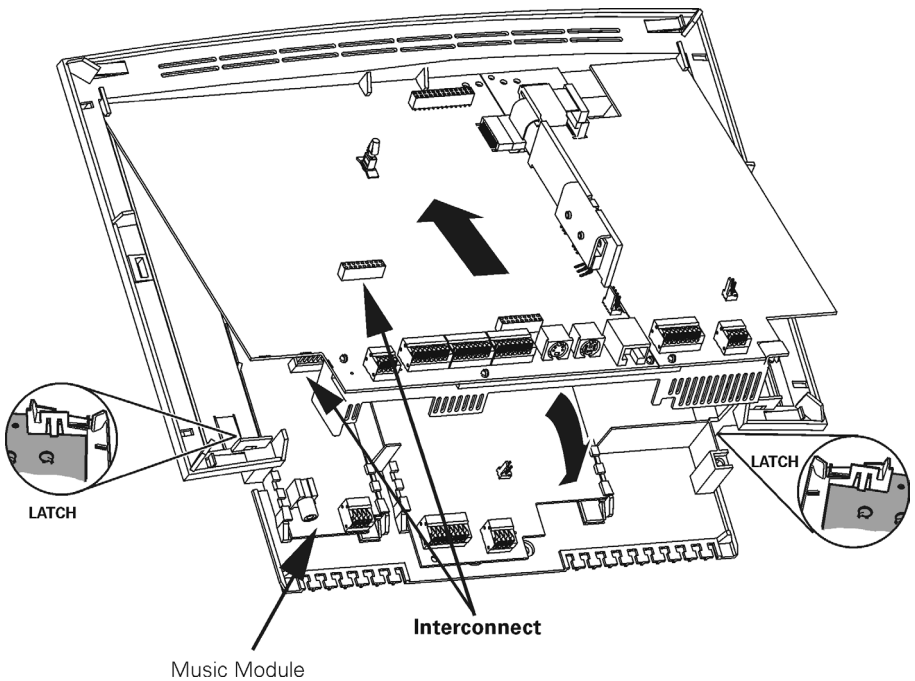


Figure 4-23 Installing a Music Module HiPath 1120

4.6.8 Installing a Power Supply

Introduction

Before connecting the power supply to the system, see "Technical Data" on page 2-7 " and "Power Supply Unit (PSU)" on page 3-43.

- **On the HiPath 1120**

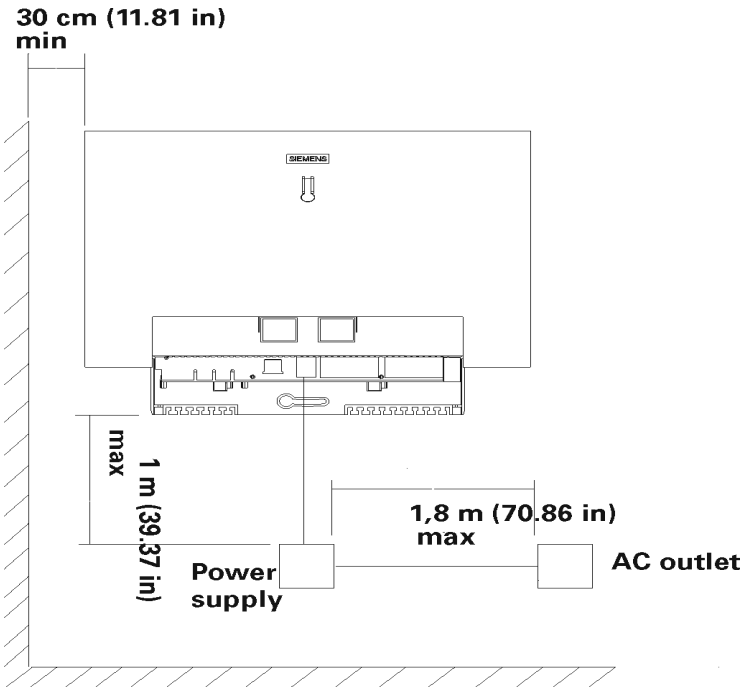


Figure 4-24 Installing a Power Supply HiPath 1120

Procedure after Installation

Step	Procedure
1.	Check network voltage
2.	If the voltage is within the power supply's voltage range, connect the power supply.
3.	"Performing a Visual Inspection" on page 4-48
4.	Configure the required data (see "Operation" on page 6-1).

Warning

To turn the power on or off to the system use the power supply's cable.

- **On the HiPath 1130/1150**

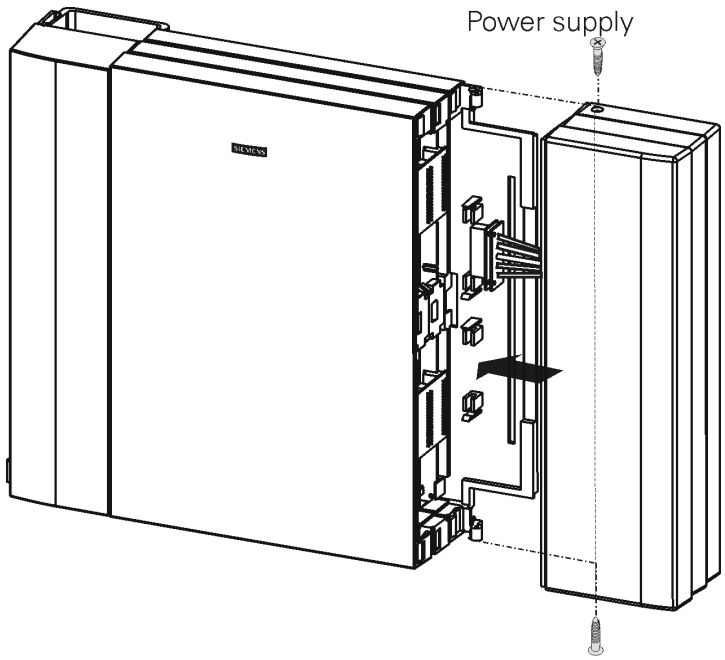


Figure 4-25 Installing a Power Supply HiPath 1130/1150

Procedure after Installation

Step	Procedure
1.	Check network voltage
2.	If the voltage is within the power supply's voltage range, connect the power supply.
3.	"Performing a Visual Inspection" on page 4-48
4.	Configure the required data (see "Operation" on page 6-1).

Warning

To turn the power on or off to the system use the cable of the power supply.

- **On the HiPath 1190/1190R**

Step	Procedure
1.	Check network voltage
2.	Remove the system's back cover.
3.	If the voltage is within the power supply's range, insert the power supply into the slots shown in Figure 4-26.
4.	Plug the system's AC cord into the AC input on the power supply (see Figure 3-30).
5.	Connect to the backplane.
6.	Reassemble the entire set.
7.	"Performing a Visual Inspection" on page 4-48
8.	To turn on the system use the switch located on the back of the cabinet (see Figure 4-12).
9.	Configure the required data (see "Operation" on page 6-1).

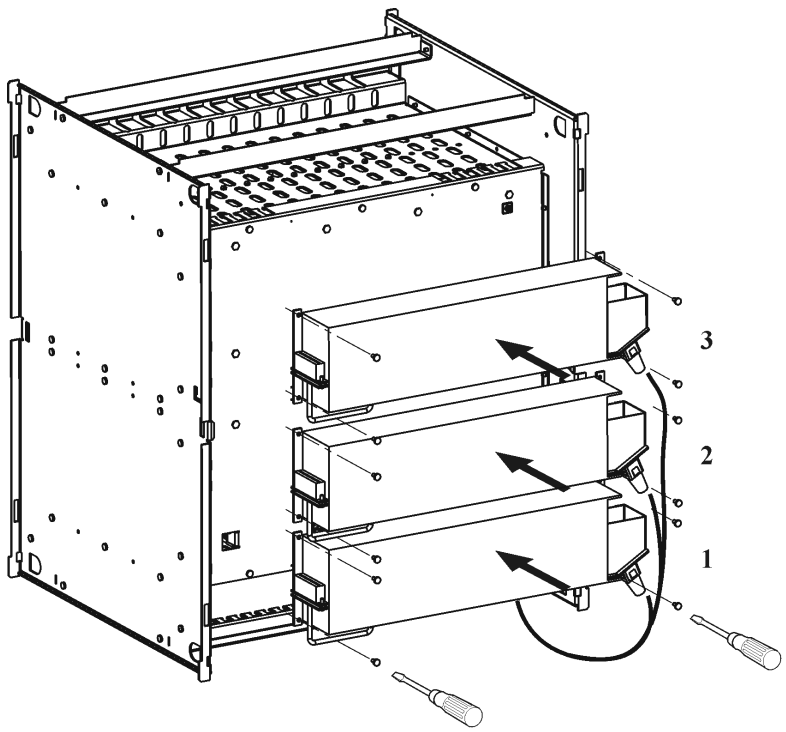


Figure 4-26 Installing power supplies on the HiPath 1190/1190R

Warning

Before powering up the system, ensure that the chassis is properly grounded. Turn system power on or off by using the switch located on the system's AC input.

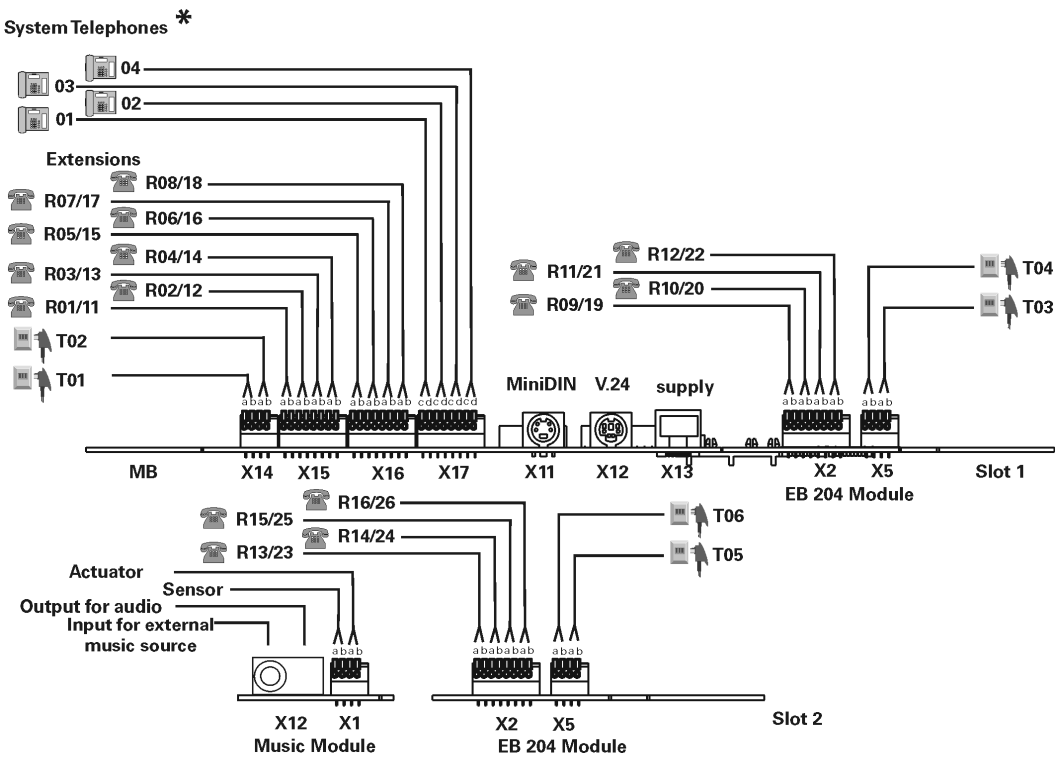
4.7 Connecting Extensions to the System's Internal MDF (Main Distribution Frame)

Introduction

Attach cables to the system's Main Distribution Frame and route them through the conduits and openings to reach the carrier's main telephone distribution cabinet.

4.7.1 HiPath 1120

For example,



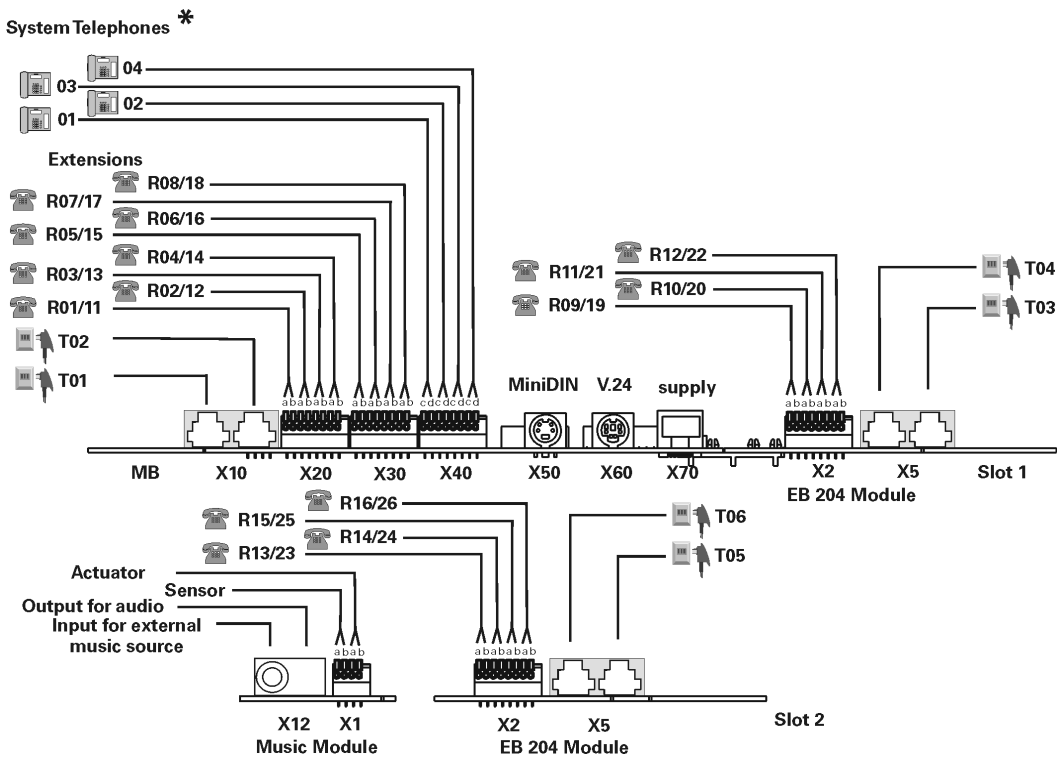
*The installation of a system telephone requires using a CD pair in conjunction with an a/ extension slot (see "Installing Telephone Terminals" on page 4-46).

Figure 4-27 Distribution of extensions on the HiPath 1120 Main Distribution Frame

.

> **Warning**
>
> When using the RSA version, extension lines with a C/D interface must only be installed indoors. Only regular extensions (without a C/D interface) can be installed outdoors.

- **CND Version**



***The installation of a system telephone requires u**sing a CD pair in conjunction with an a/b extension slot (see "Installing Telephone Terminals" on page 4-46).

Figure 4-28 Distribution of extensions on the HiPath 1120 Main Distribution Frame - CND

Table 4-4 Example of the location of extensions on the HiPath 1120 Main Distribution Frame

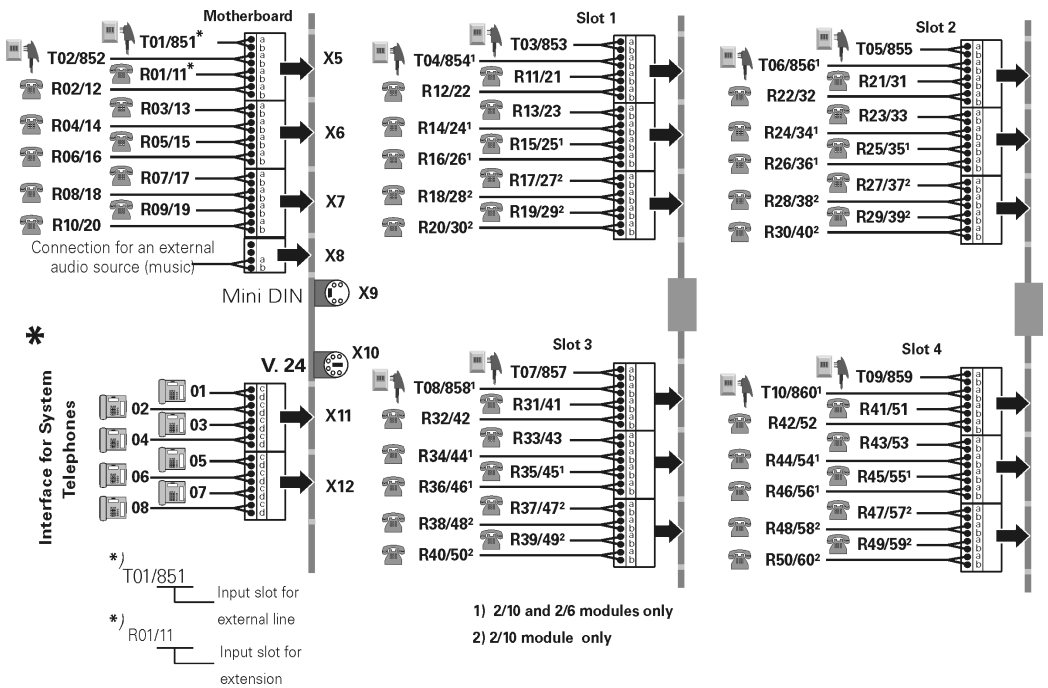
Slot	Slot Position	Extension Slot	Internal Number	Slot	Slot Position	Extension Slot	Internal Number EB 204 Module
MB	01 02		801 802	**Slot 1**	03 04		803 804

a/b		1 2 3 4 5 6 7 8	11 12 13 14 15 16 17 18
Slot	**Slot position**	**Extension slot**	**Internal Number EB 204 Module**
Slot 2	05 06		805 806
a/b		13 14 15 16	23 24 25 26

a/b		9 10 11 12	19 20 21 22

4.7.2 HiPath 1130/1150

For example,



*The installation of a system telephone requires using a CD pair in conjunction with an a/b extension slot (see "Installing Telephone Terminals" on page 4-46).

Figure 4-29 Distribution of extensions on the HiPath 1130/1150 Main Distribution Frame

To access the inside of the Main Distribution Frame remove the safety latch using a small screwdriver (See Figure 4-5). After completing the procedure on the system's Main Distribution Frame, replace the safety latch.

Note: Slots 2 and 4 are used only with the HiPath 1150 system.

Table 4-5 Example of extension locations on the HiPath 1130/1150 Main Distribution Frame

Slot	External Digital	Extension slot	Internal Number
MB	01 02		801 802
a/b		1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20

Slot	External Digital	Extension slot	Internal Number EB 210	Internal Number EB 206	Internal Module Number	Internal Number Module	Internal Number EB 400	Internal Number EB 800
Slot 1	03 04		803 804	803 804	803 804	803 804	803 804	803 804
a/b		11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	21 22 23 24 25 26	21 22		805 806	805 806 807 808 809 810

Slot	External Digital	Extension slot	Internal Number EB 210	Internal Number EB 206	EB 202 Module Internal #	Internal Number EB 200	Internal Number EB 400
Slot 2 (HiPath 1150 only)	05 06		805 806	805 806	805 806	805 806	807 808

a/b		21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	27 28 29 30 31 32	23 24		809 810
Slot	**External Digital**	**Exten-sion slot**	**Internal Number EB 210**	**Internal Number EB 206**	**EB 202 Module Internal #**	**Internal Number EB 200**	
Slot 3	07 08		807 808	807 808	807 808	807 808	
a/b		31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	33 34 35 36 37 38	25 26		
Slot	**External Digital**	**Exten-sion slot**	**Internal Number EB 210**	**Internal Number EB 206**	**EB 202 Module Internal #**	**Internal Number EB 200**	
Slot 4 (HiPath 1150 only)	09 10		809 810	809 810	809 810	809 810	
a/b		41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	39 40 41 42 43 44	27 28		

4.7.3 HiPath 1190

Warning

On the HiPath 1190, trunks and extensions lines must be routed to use the shortest path inside the cabinet.

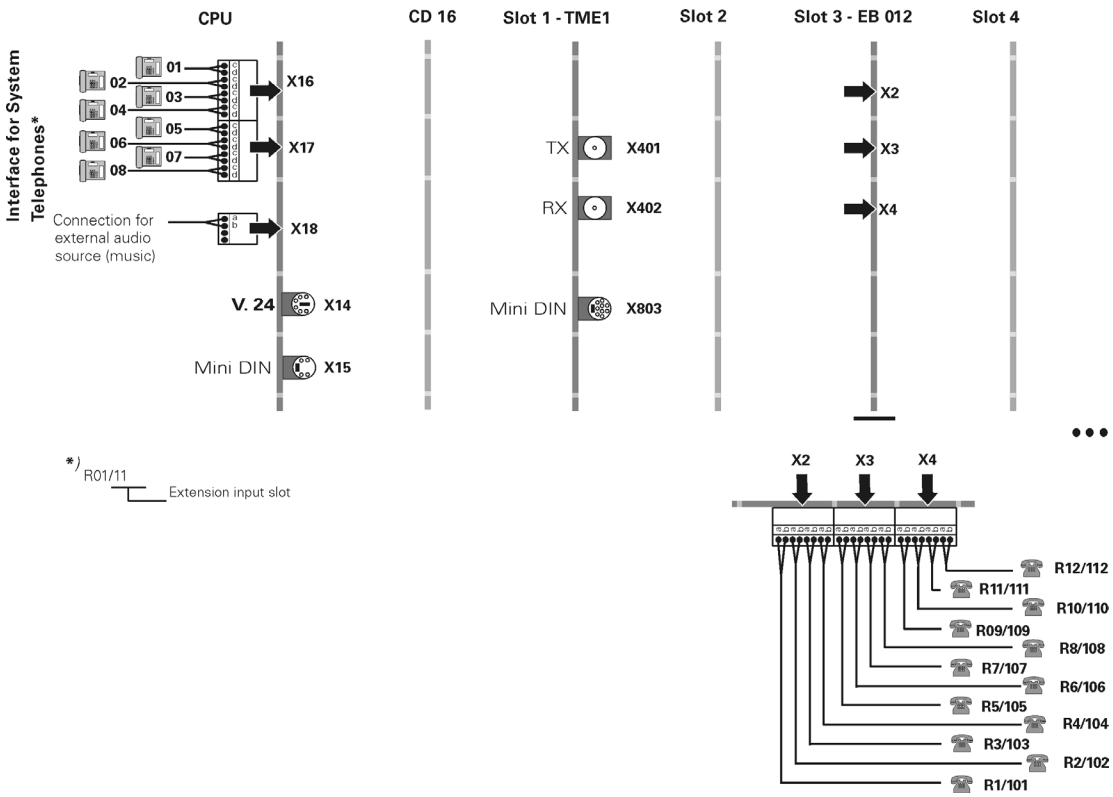
Example:

Due to the flexibility of the HiPath 1190 systems, the configuration of expansion and option modules can vary according to each client's needs. Here is an example of a possible configuration:

For a system with a TME1 module in slot 1 and an EB 012 module in slot 3. The Main Distribution Frame would be configured as follows:

Table 4-6 Example of extension locations on the Main Distribution Frame

Module	Slot	External Digital Line Number	Extension Slot	Internal Number
TME1	Slot 1	01 to 30	---	801 to 830
EB 012	Slot 3	---	1 to 12	101 to 112



*The installation of a system telephone requires using a CD pair in conjunction with an a/b extension slot (see "Installing Telephone Terminals" on page 4-46).

Figure 4-30 Distribution of extensions on the HiPath 1190/1190R Main Distribution Frame

4.8 Installing a V.24 Interface

Introduction

To connect a PC or a printer to the HiPath 1100 using the RS 232 serial interface you must have a V.24 adapter cable (see"V.24 Adapter Cable" on page 3-52). This interface allows you to use some applications developed specifically for configuring and managing user features.

Connections

Step	Procedure
1.	Attach the end of the V.24 serial interface cable with the Mini DIN connector (male) to the MB's serial Mini DIN connector . Attach the other end to the printer or PC serial port. When connecting to a PC, make sure that either the COM 1 or COM 2 port is available.
2.	The following parameters can be configured when using a PC: • 9600 / 14400 / 19200 (default) / 38400 / 56000 / 57600 / 115200 / 128000 / 256000 baud Fixed settings: • 8 Bits • 1 Stop Bit • No Parity
3.	When connecting to a printer, make sure the current time at the PABX is set correctly.

Note

With an ADSL module do not use the MB's serial connector since the HiPath 1100 serial connection is assigned to the ADSL module. All functions of the serial port are now executed over the LAN.

4.9 Installing an USB Interface

Introduction

To connect a PC to the HiPath 1100 using an USB interface you must have an USB adapter cable (see"USB adapter cable" on page 3-54). This interface allows you to use some applications developed specifically for configuring and managing user features.

Connections

Step	Procedure
1.	Plug the USB adapter cable (with the male Mini DIN connector) into the 4-pin Mini DIN connector on the motherboard (Figure 4-31)
2.	Connect the A to B Standard end of the USB cable to the USB adapter, and connect the other end to the computer or modem.
3.	See System Programming Mode in the"Programming with a Computer" on page 6-3.

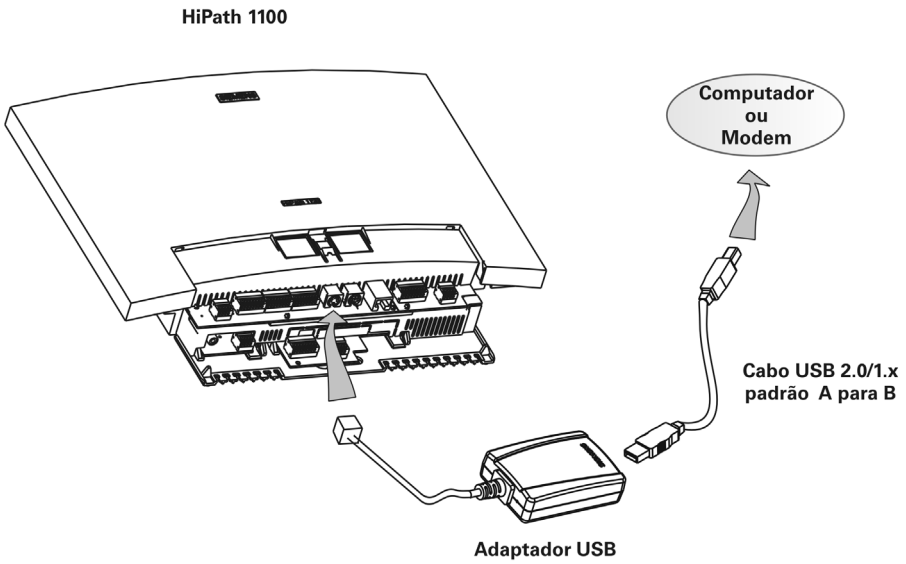


Figure 4-31 Illustration of USB cable connection

4.10 Installing an External Audio Source

The HiPath 1100 systems provide connections for audio devices, such as radios, tuners, CD, MD, and others.

- HiPath 1120
  The audio source must be connected to a Music Option Module using an RCA connector in slot X1 (see Figure 4-27 on page 4-32).
- HiPath1130/1150/1190
  The audio source must be connected to the MB in slot X8, pins 3 and 4 (see Figure 4-29 on page 4-34).

4.11 Installing a TFE - Entrance Telephone Interface

4.11.1 Models: S30817-K930-A300 and S30122-K7696-T313

- S30817-K930-A300 (without amplifier)
- S30122-K7696-T313 (with amplifier)

Installation Procedures

Step	Procedure
1.	Connect your system to the TFE interface. See"Entrance Telephone Interface" on page 3-49.
2.	Connect the Entrance Telephone to the TFE interface
3.	"Performing a Visual Inspection" on page 4-48.
4.	Configure the required data (see "Operation" on page 6-1).

4.11.2 Model S30817-Q936-C282 - Brazil

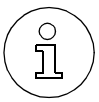
Installation Procedures

This interface can be configured to work in Pager or Entrance Telephone mode.

- **Pager Mode**

Step	Procedure
1.	Set jumper 1 (J1) to ON and jumper 2 (J2) to OFF (see"Entrance Telephone Interface" on page 3-49).
2.	Configure the system for Entrance Telephone/Door Opener mode and specify the extensions for answering calls. Specify also at which extension the interface will be installed.

Step	Procedure
3.	Connect the interface to the Entrance Telephone extension by using contacts 1 and 2 on the X2 connector.
4.	To activate Pager mode, lift the handset at one of the answering extensions and dial the Entrance Telephone number. Once the appropriate number is dialed, the calling extension is connected to the Entrance Telephone, but without voice capability.
5.	For voice capability, dial "8." The ambient sound will stop and you will be able to leave a message. The sound will be amplified in all speakers connected to the amplifier.
6.	To disable voice capability, dial "9." If the sound is not disabled manually, it will timeout automatically after 15 seconds. To enable the automatic timeout, set jumper 3 (J3) to OFF.
7.	"Performing a Visual Inspection" on page 4-48.
8.	Configure the required data (see "Operation" on page 6-1).



The length of the cables between the X2 connector and the PABX must not exceed 32.8 feet (10 meters).

- **Entrance Telephone Mode**

Step	Procedure
1.	Set jumper 1 (J1) to OFF (see"Entrance Telephone Interface" on page 3-49).
2.	Configure the system for Entrance Telephone/Door Opener mode and specify the extensions for answering calls. Specify also at which extension the interface will be installed.
3.	Connect the interface to the Entrance Telephone extension by using contacts 1 and 2 on the X2 connector.
4.	Connect the Entrance Telephone to contacts 3 and 4 on the X6 connector, wiring it as instructed by the manufacturer.
5.	When the person at the door presses the Entrance Telephone button it causes it to ring at extensions configured for answering calls. When an extension answers the call, the voice capability is automatically enabled.
6.	Dial the code for the Door Opener.
7.	To disable voice capability the attendant extension must dial "9." To enable voice again the attendant extension must dial "5." If the sound is not disable manually, it will automatically timeout after 5 minutes.

Step	Procedure
8.	"Performing a Visual Inspection" on page 4-48.
9.	Configure the required data (see "Operation" on page 6-1).

4.12 Recommendations concerning the Power Supply and Protection of the System

Instructions for Solving Possible Ground Return Problems

To avoid ground return signals from remote systems use the same phase for the different systems' power supply.
If the building's features make this impossible, use an intermediate transformer to detach the external system so that damage may be avoided during operation.

Protective Ground Connection

Danger

The HiPath1130/1150/1190 power supplies must be protected by an earth ground in a separate safety ground conductor (PE - green/yellow) (TN-S system, minimum section = 2.5 mm^2) as shown in Figure 4-32.
Any additional servicing of low voltage networks (100 - 240 V AC) must be done by qualified technical personnel only.
Do not use as a grounding point:
- Central heating systems
- Sewer systems
- Ground wire for antennae systems.

Failure to comply with these recommendations may lead to hazardous conditions.

Example of a Power Supply Configuration for the HiPath1130/1150/1190 Systems

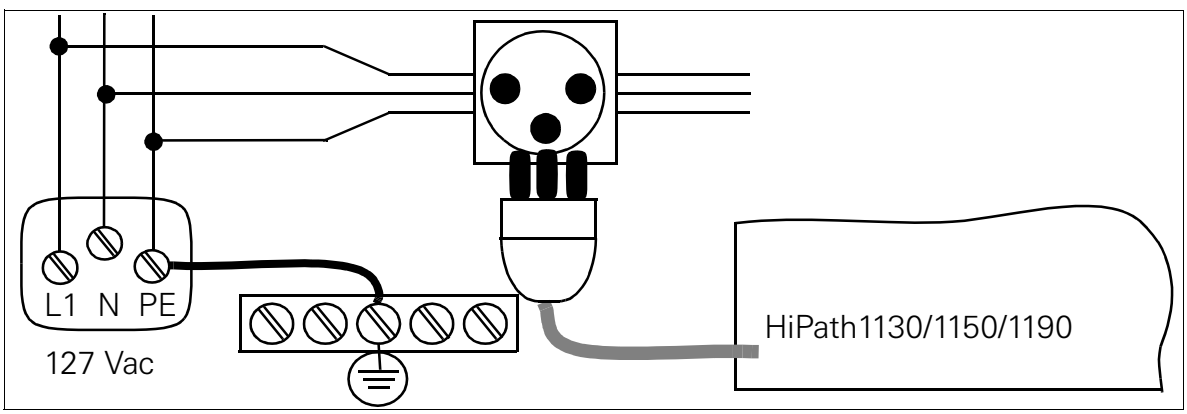


Figure 4-32 Diagram of Power Supply Configuration for the HiPath 1130/1150 Systems

4.12.1 Protection of External Lines and Extensions

The primary protection of external lines and extensions must be provided by grounding the system through a separate cable (minimum section = 2.5 mm ^{2}) set up exclusively for the protection of the telephone system. The secondary protection of external lines and extensions is between wires A and B.
For primary protection for a distribution box that is external to the PABX use a MPT250 shield with two PTCs (A and B wires) for overcurrent protection along with a gas capsule connected to the ground wire through a separate cable that is independent of the cable used for grounding the power supply.
The connection between the HiPath 1100 system and the distribution box must be made using multipair cables, preferably foil shielded. This type of flat cable has a special grounding wire that must be connected to the safety ground, but only at the distribution box end.

For the RSA version the primary protection for external lines and extensions must be provided according to local regulations.

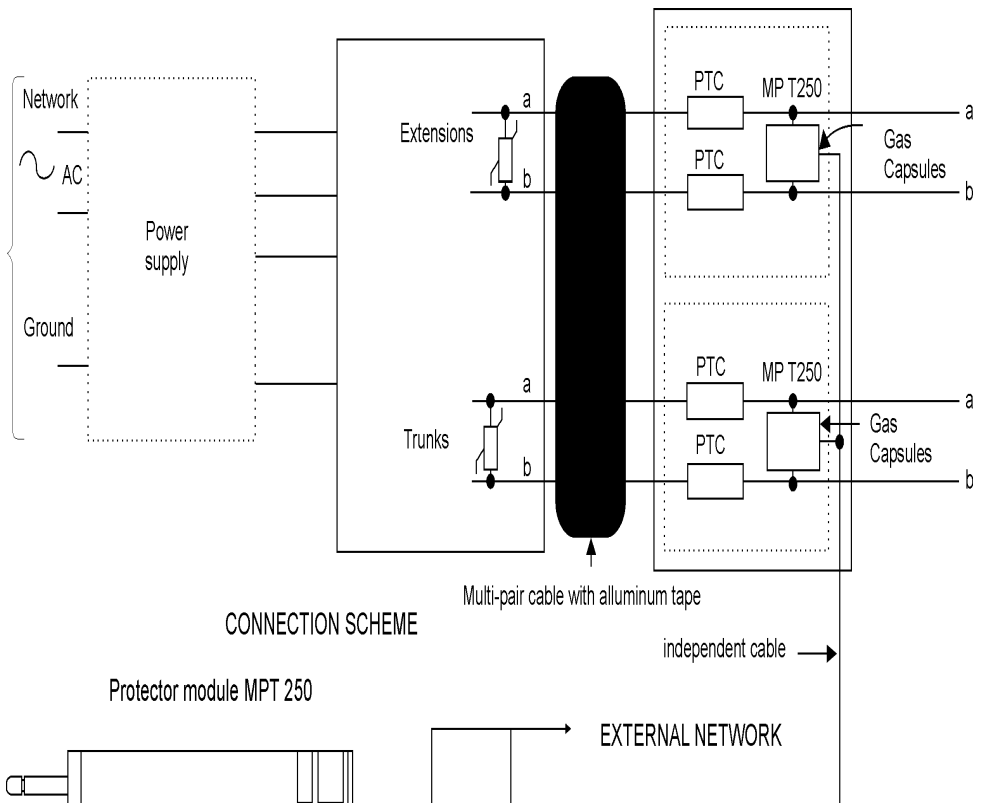


Figure 4-33 Protection and Grounding Connection Diagram

4.12.2 Connecting a Safety Ground Wire

For the safety of the user and the technician the HiPath 1190 system has a dedicated terminal for grounding its metal enclosure. This terminal is located on the back of the enclosure. Connecting a ground wire protects the accessible metal parts of the equipment against high voltage and power levels in the event of a surge or a failure.

The ground connection is critical and must be wired before connecting the system to a power grid or a telecommunications network (internal or external). To make this connection follow these guidelines:

- For an indoor environment, use a safety ground conductor (PE) with a cross-section larger than 2.5 mm^2. For an outdoor environment, use a safety ground conductor (PE) with a cross-section larger than 4 mm^2.
- The wire insulation should be color-coded yellow and green.
- The grounding system's impedance must not exceed 10 Ohms.

When uninstalling the system, the safety ground wire (PE) should be the last one disconnected.

The ground wire connection does not preclude the need to provide functional grounding to the system by means of an appropriate power supply circuit (see"Power Systems" on page 2-1).

The ground wire must be connected to the protective ground of the building, never to water pipes, lightning rods, etc.

Checking the Safety Ground Connection

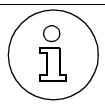
Procedure

To ensure proper grounding connection perform the tests described in the table below before powering up and initializing the systems.

Step	Procedure	Result (Rated Value)
1.	Measure the Ohmic Resistance between the ground connection and the grounding bar.	< 1 Ohm
2.	Measure the ohmic resistance between the network's protective earth ground (PE) and the outlet or the Main Distribution Frame.	< 1 Ohm
3.	Measure the ohmic resistance of the outlet's neutral conductor in relation to the earth.	< 10 Ohm

4.13 Protective Power Outage Relays

Each external analog line on the EB 202/204/206/210 modules features a relay that forwards the line to the first two extension slots on each EB module in the event of a power outage.



Expansion modules EB 200/400/800 do not feature protective relays.

4.14 System Cabling

Introduction

The connection between the extensions and the system is provided with cables as follows:

Table 4-7 Color code for cables

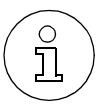
Color Group	Pair	A Wire	B Wire	Color Group	Pair	A Wire	B Wire
1	1	br/az	az/br	3	11	pt/az	az/pt
	2	br/lr	lr/br		12	pt/lr	lr/pt
	3	br/vd	vd/br		13	pt/vd	vd/pt
	4	br/ct	ct/br		14	pt/ct	ct/pt
	5	br/cz	cz/br		15	pt/cz	cz/pt
2	6	vm/az	az/vm	4	16	am/az	az/am
	7	vm/lr	lr/vm				
	8	vm/vd	vd/vm				
	9	vm/ct	ct/vm				
	10	vm/cz	cz/vm				

The end of the cable that is attached to the system's Main Distribution Frame uses one of the connector types shown in"Main Distribution Frame" on page 3-47.

4.15 Installing Telephone Terminals

A **System Telephone** has four wires (A, B, C, D), two used for voice (A, B), and two for data (C, D).

A **Standard Telephone (DP/MF)** has only two wires (A, B), both used for voice.



Standard Telephones (DP/MF) must be connected to the HiPath 1100 system using only wires A and B. Do not use wires C and D.

Connections

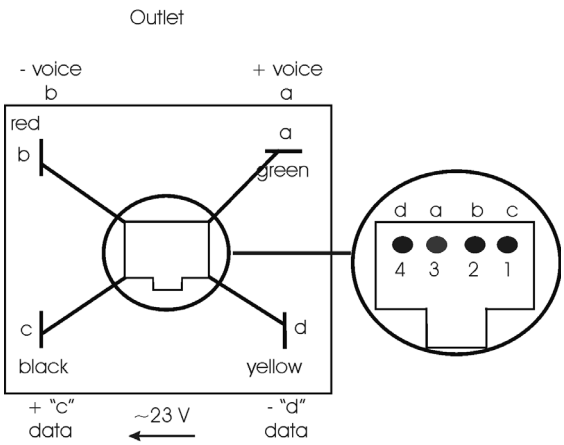


Figure 4-34 Connections for telephone jacks (for Brazil)

Red wire (R) = voice (extension's B wire).

Green wire (G) = voice (extension's A wire).

Black wire (BK) =CD card's C wire (positive in relation to D).

Yellow wire (Y) =CD card's D wire (negative in relation to C).

Installation Procedures

Step	Procedure
1.	Install telephone jacks at the extensions.
2.	Connect each extension jack to the desired a/b slot on the Main Distribution Frame.
3.	System telephones are preset at factory default for C/D pairs. If you need to select a different C/D pair, see Figure 4-27 or Figure 4-29 then program the new C/D interface assignment.
4.	Install the telephone sets.
5.	"Performing a Visual Inspection" on page 4-48.
6.	Configure the required data (see "Operation" on page 6-1).

System telephones are powered through the C and D wires. Take the necessary precautions to avoid short circuits at the interconnect block.
If a short circuit occurs between wires C and D, the interface's protection will take the extension out of service. To activate the extension again, remove the short, disconnect the system telephone then reconnect it. The interface should start operating normally now.

With 2-wire analog telephone sets (A, B) there is no problem in the event of a momentaryshort circuit.

The maximum distance for installing a system telephone using a two-pair cable with a 0.4 mm^2 copper wire is 0.3 miles (500 meters). For Standard Telephones the maximum distance is 1.5 miles (2,500 meters).

4.16 Performing a Visual Inspection

Introduction

Before starting up the system, perform a visual inspection of all hardware, cables and power supply. This procedure should be performed with the entire system turned **OFF**.

Warning

Before starting to work on the HiPath 1190, make sure the system is grounded and disconnected from all power sources.
Follow all guidelines to protect the system from electrostatic discharge (see "Safety Information: Caution" on page 1-5).

Visual Inspection Procedure

Table 4-8 Visual Inspection Procedure

Step	Procedure	Aids/ Notes	Measure
1.	Compare the installation position of modules on the slots against the installation diagram.	Module Installation Diagram.	Make the appropriate corrections to the modules and notify the appropriate person.
2.	Check to see that all modules are securely and properly attached.	See "System Data" on page 2-1.	Attach or secure modules as needed.
3.	Check the network's line voltage.	Multimeter.	Verify voltage at power source.

5 Telephones

This chapter describes the characteristics of System Telephones and Standard Telephones (DP/DTMF).

5.1 Overview

This chapter covers the following topics:

5.2 System Telephones

System telephones are designed exclusively for HiPath 1100 systems. In addition to special features, system telephones display the status of external lines and extensions by means of programmable LED keys.
The programming for the system is described in Chapter 7, "Configuring the System Specifically for the Client".

5.2.1 Keys

Status LED Keys

These keys display the extension and external lines status based on the Profiset 3030, E821 ST and E822 ST LED key blinking rates.

Symbol	Description
	LED Key OFF: Extension or external light is free.
	LED key ON: Extension or external line is busy.
	Blinking LED key: An incoming call or callback signal.

Function Keys for Profiset 3030

Symbol	Description
	FIL/FLASH Key: Generates a Flash function on an external line.
	MENU Key: Accesses the various menu levels.
	FEATURE Key: Activates system features (E.g., Call Block, Call Forwarding, Do Not Disturb etc.).
	MUTE Key: Deactivates voice capability so the called party is not able to hear any sound at the callers end. To resume Talk Mode, press this key again.
	SPEAKER Key: Enables the speakerphone by activating the microphone and speaker.
	ENTER Key.
	Menu Navigation Key.
	Menu Navigation Key.

Function Keys for the E822 ST

Symbol	Description
	FIL/FLASH Key: Generates a Flash function on an external line.
	HIGH Key: Increases the speaker volume.
	LOW Key: Lowers the speaker volume.
	SPEAKER Key: Enables the speakerphone by activating the microphone and speaker.
	ENTER Key.
	Next Key.
	Back Key.

Function Keys for E821 ST

Symbol	Description
	REDIAL Key: Redials the last number that was dialed.
	PARK Key: Parks or resumes a call.
	FWD Key : Forwards the call to an extension or external telephone.
	FIL/FLASH Key: Generates a Flash function on an external line.
	Adjustment key.
	Adjustment key.

5.2.2 Profiset 3030 System Telephone

Allows direct access to some PABX facilities while providing special features for tracking extension and external line status by means of indications from a set of programmable keys. This telephone features a display with the lines:

- The Header Line displays MUTE ( ), repeated calls (REP), repeated calls counter (8 8), time and date, and duration of outgoing calls.
- The Numeric Line displays the number of internal calls (including Entrance Telephone calls), external calls and external callbacks, in this order.
- The Menu Line displays the extension number and system messages pertaining to feature selection options.
- When the ">" or "<" symbol appears next to the line, it means there is additional information to be displayed. Select Next or Back to display the information.
- When the ▲ or ▼ symbol appears next to the line, it means there are additional lines to be displayed. Select the "Menu" key to access the next line or the previous line.

Profiset 3030 Telephone Layout

Figure 5-1 Profiset 3030 System Telephone Layout

1) Handset cradle
2) Feature keys
3) Programmable LED keys for status indication
4) Speakerphone speaker
5) Speakerphone microphone
6) Display

5.2.3 E822 ST System Telephone

The E822 ST System Telephone features a 2-line, 16-character alphanumeric display.

This system telephone features a 2-line display:

- The Information Line displays the time, the duration of outgoing calls, the number of internal calls (including Entrance Telephone calls), external calls and external callbacks.
- The Menu Line displays the extension number and system messages pertaining to feature selection options. If the ">" appears on the right, it means there are more options available. To navigate through the options use the arrow keys. To select an option press the Enter key.
- When the ">" symbol appears next to the line, it means there are additional lines to be displayed. Select [>] Next or [<] Back to access a line.

E822 ST System Telephone Layout

Figure 5-2 E822 ST System Telephone Layout

1) Alphanumeric LCD display
2) Programmable LED keys for status indication
3) Function keys
4) SPEAKER (Speakerphone) Key - The speakerphone is disabled when the handset is lifted. To switch from Speakerphone to Normal mode lift the handset and press the SPEAKER key.

5.2.4 E821 ST System Telephone (for Brazil only)

This telephone features keys for direct access to TOGGLE, PICK UP and CONFERENCE facilities. It also features programmable keys for extensions and external lines.

E821 ST System Telephone Layout

Figure 5-3 E821 ST System Telephone Layout

1) Programmable LED keys for status indication
2) Special function keys
3) Handset release key.

5.2.5 Programmable Feature Keys

Programmable keys provide easy access to the most frequently used system features.

- Internal calls
- External calls
- Answering an internal or external call
- Consultation (internal or external)
- Transfer (internal or external)
- Line reservation
- Individual pickup
- Toggle/Hold

5.2.6 Settings

System telephone settings can be configured individually according to each user's preferences. For more information on how to configure a system telephone, see the manual included with the unit:

Documentation	**Number**
Profiset 3030	A31003-K1250-B816 -**- 3P19
E821 ST and E822 ST	A31003-K1250-B814 -**- 3P19

5.3 Dial Pulse (DP) and Dual Tone Multifrequency (MF)

5.3.1 Dial Pulse (DP) Telephone

Analog telephones, wireless telephones, fax machines and any device that uses pulse dialing. Procedures for using these types of telephones are outlines following the symbol**"DP"**.

5.3.2 Dual Tone Multifrequency Telephone (MF)

Analog telephones, wireless telephones, fax machines and any equipment that uses touch-tone dialing. This dialing mode is recognized by the dual-tone it generates, which can be heard by the caller on the handset as the numbers are dialed. Procedures for using these types of telephones are outlined following the symbol **"DTMF"**.

Important
Instructions for the "Flash" feature is valid only for a DTMF telephone. If you have a touch-tone telephone (MF) that does not feature a "Flash" key, placing the phone on-hook and off-hook momentarily will simulate the action of the Flash key.

5.3.3 DP/DTMF Telephone Models

Siemens provides DP and MF telephones and many additional features:

- Memory storage of the most frequent numbers dialed
- Key for redialing the last number dialed.
- Microphone Mute Key
- Caller ID, Phonebook, Clock etc.
  Note: The Caller ID feature must be provided by a local carrier.

- **Profiset 3005, Profiset 3010 and Profiset 3025 Models:**

Profiset 3005 Telephone Layout

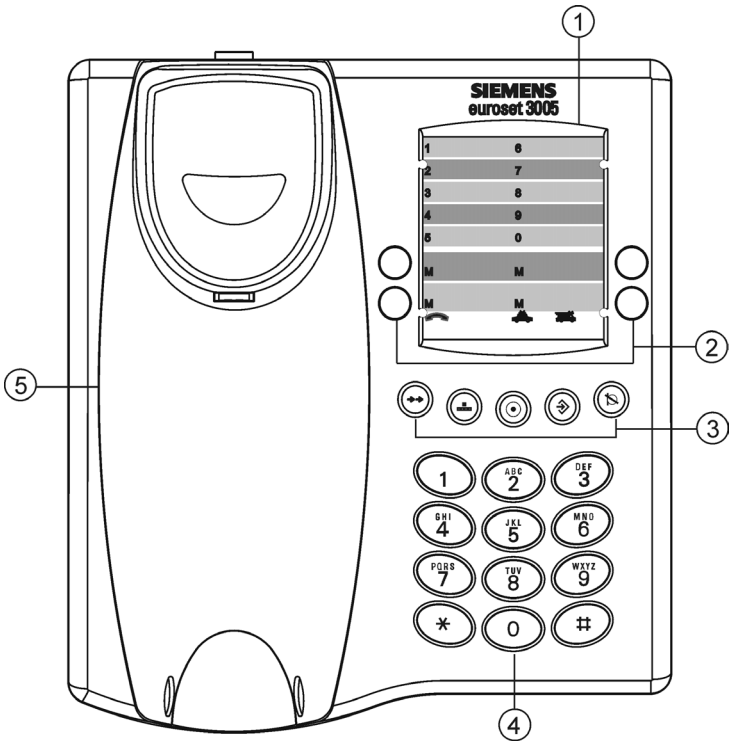


Figure 5-4 Profiset 3005 Telephone Layout

1) Phonebook labels
2) One-touch memory key
3) Feature keys
4) Numeric keypad
5) Handset cradle.

Profiset 3010 Telephone Layout

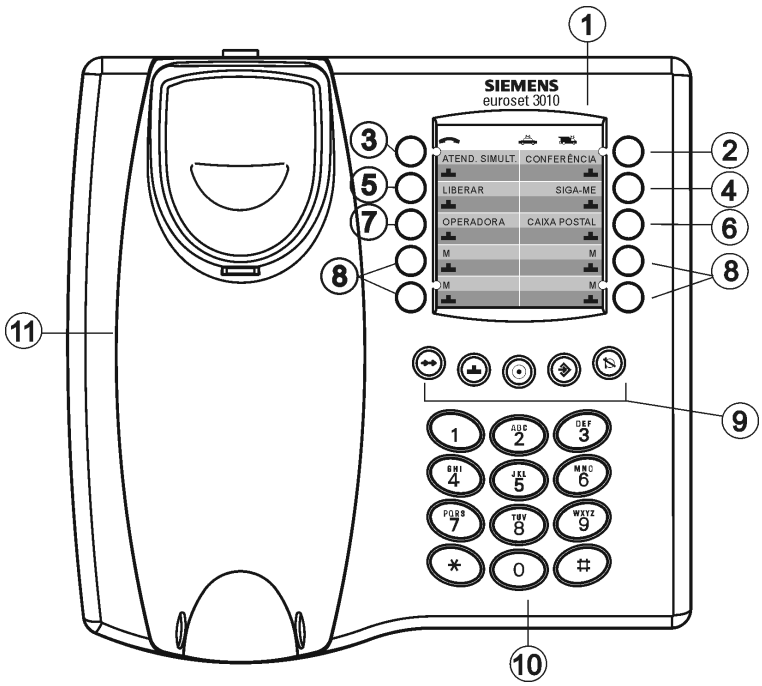


Figure 5-5 Profiset 3010 Telephone Layout

1) Phonebook labels
2) Two-touch memory and Conference key
3) Two-touch memory and Call Waiting key
4) Two-touch memory and Follow Me key
5) Two-touch memory and Release key
6) Two-touch memory and Voice Mail key
7) Two-touch memory and Attendant key
8) One- and two-touch memory keys
9) Feature keys
10) Numeric keypad
11) Handset cradle.

Profiset 3020 Telephone Layout

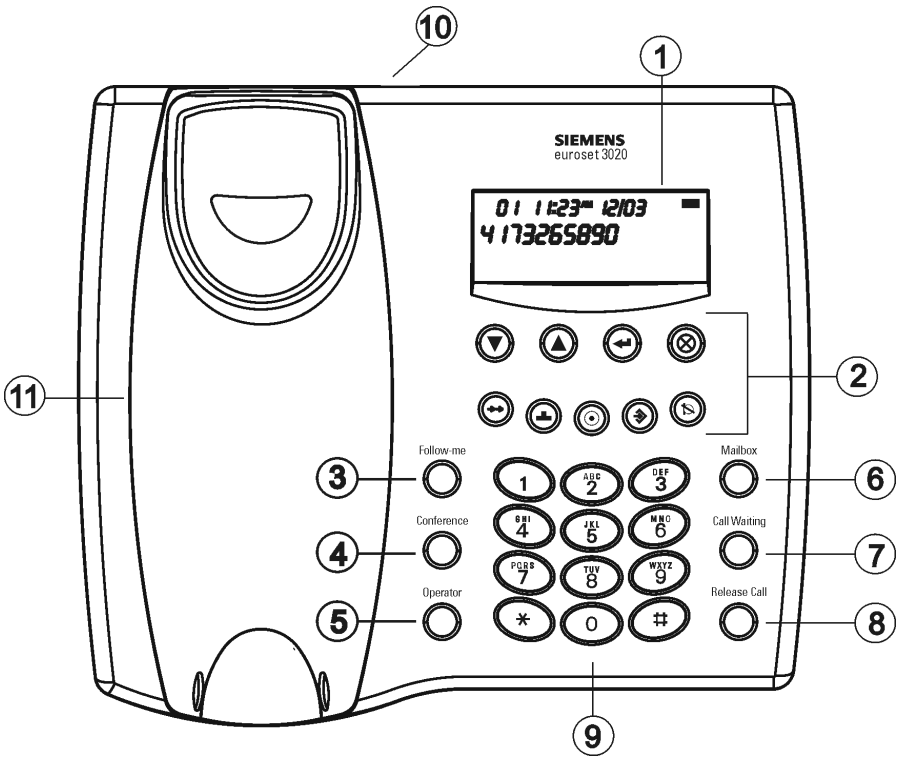


Figure 5-6 Profiset 3020 Telephone Layout

1) Display
2) Features keys
3) Follow Me key
4) Conference key
5) Attendant key
6) Voice Mail key
7) Call Waiting key
8) Call Release key
9) Numeric keypad
10) External power supply input
11) Handset cradle.

Profiset 3025 Telephone Layout

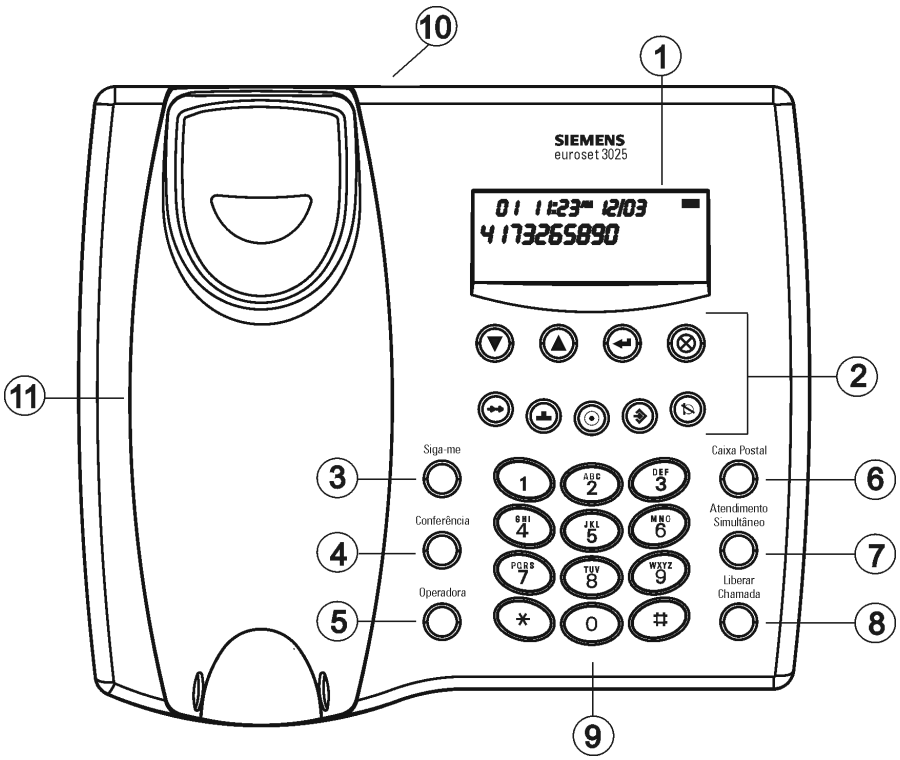


Figure 5-7 Profiset 3025 Telephone Layout

1) Display
2) Features keys
3) Follow Me key
4) Conference key
5) Attendant key
6) Voice Mail key
7) Call Waiting key
8) Call Release key
9) Numeric keypad
10) External power supply input
11) Handset cradle.

For more information on the operation of system telephones, refer to the Instructions Manual provided with your telephone:

Documentation	Number
Profiset 3005	A30054 - X5790 - A - ** - **19
Profiset 3010	A30054 - X5791 - A - ** - **19
Profiset 3020	A30054 - X5792 - A - ** - 7619

- **E805 S and E805 C Models:**

E805 S Telephone Layout

Figure 5-8 E805 S Telephone Layout

1) Keypad
2) Function key
3) Memory key
4) Label

E805 C Telephone Layout

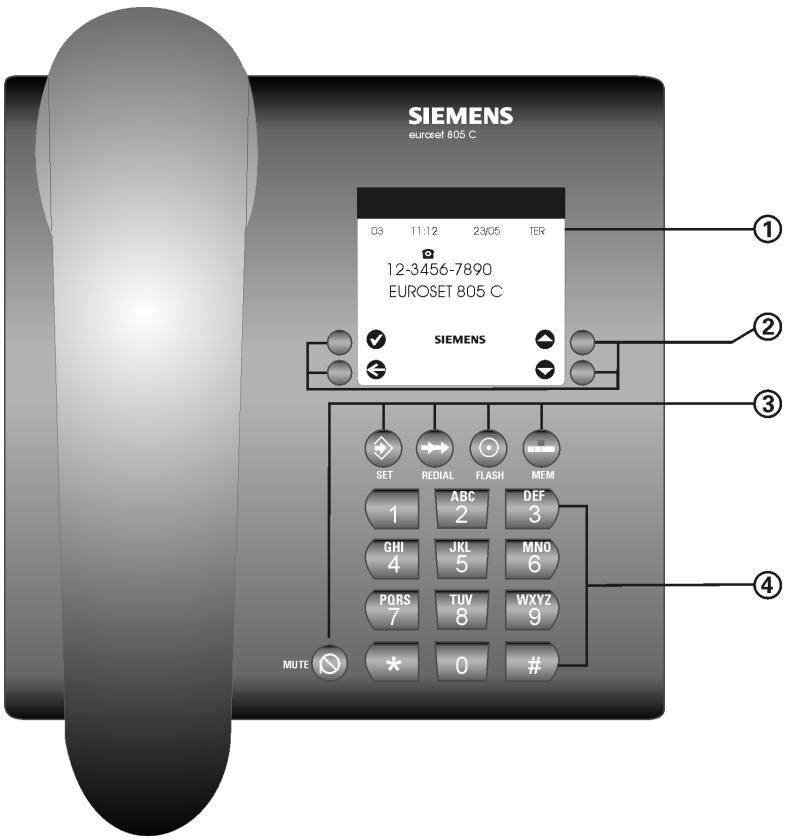


Figure 5-9 E805 C Telephone Layout

1) Display
2) Caller ID control key
3) Function key
4) Alphanumeric keypad

For more information on the operation of system telephones, refer to the Instructions Manual provided with your telephone.

6 Operation

This chapter describes the procedures for powering up and initializing the systems.

Warning
Powering up and initializing the system is a task that must be performed only by authorized technical personnel.

This chapter covers the following topics:

6.1 Connecting the System to the Power Supply

Procedure

Step	Procedure
1.	Complete installation of all modules (Chapter 4, "Installation").
2.	Plug in power cord
3.	Wait a few moments for the system to load the software.

6.2 Updating the Software

If your computer already has a version of the HiPath 1100 software installed, you may update it with the latest version.

The software update for version 5.2 uses version 5.1 update (from version 3.4) for updating version 5.1 to version 5.2.

In the first window of the 5.2 software update you will be asked if you are updating your software from version 5.1 to version 5.2. If so, the 5.1 software update will be invoked by the APS and a message will be displayed indicating the conversion required for the database backup file.

To update to a more recent version than the one already provided, the process must be repeated. On the second time the software update will run as it usually does (that is, it will not call the 5.1 update), and you will be able to load the latest version.

To retrieve the database backup from 5.1 and update it to 5.2 you must use version 5.2 HiPath 1100 Manager.

6.3 Starting the Programming Mode

The HiPath 1100 system comes with a factory default configuration, which is described in the programming tables.

If an update or modification is required, there are three possible programming options:

Programming Options	Page
Using a system telephone or a Standard MF telephone	page 6-2
Using a computer	page 6-3

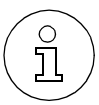
6.3.1 Programming with a Telephone Set

To program the system, you can use a Standard MF telephone or a system telephone connected to and extension configured as the **Programming Extension**(first available analog extension). This extension remains unavailable during the entire programming procedure.

The reason for initially using a system telephone at extension slot 11/101 is that the systems are shipped from the factory with the following default settings:

- A1 and B1 slots are assigned to C1 and D1 slots on the motherboard (see "Connecting Extensions to the System's Internal MDF (Main Distribution Frame)" on page 4-32).

When using a system telephone with a display, you can follow the programming steps visually on the display.



To access the Programming Mode on the specified extensions:

- Programming Extension: *95 + PASSWORD (default: 31994).

Programming Mode Syntax

All the programming is done by entering a code then a setting.

Each additional setting entered is followed by a confirmation tone (1 beep). When the setting's entry is incorrect, it is followed by 3 beeping tones after which the system returns to its initial programming state.

There are three different ways to finalize the configuration of a setting and return to the initial state of the Programming Mode:

- Letting the entry of the setting complete automatically
- Pressing the # key after entering the setting

- Waiting 5 seconds after entering the setting.

If no code or setting is entered, the system will continue to wait for an entry or will assume that a "null entry" occurred. It will proceed to the next programming step according to the code first entered.

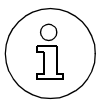
After a setting is programmed, the display will return to the initial state of the Programming Mode. To exit Programming Mode simply replace the handset.

Issues Concerning Changes to the Default Password

Access to the system's Programming Mode is protected by password to prevent unauthorized access.

To change the default password (31994) you must enter Programming Mode:

- Programming Extension: * 95 +31994 + 80 + (XXXX (new password) + XXXXX (confirm new password)
- Make a note of the new password and store it in a safe place.



If you forget your password, you can use the following code sequence to regain access for programming:

- # + 95 + 31994431.

This information should not be made available to the user.

6.3.2 Programming with a Computer

The system CD contains the software packages required for installation (see "HiPath 1100 Applications" on page 6-25).

Follow these steps when programming with a computer:

Topic	Page
Basic Requirement:	page 6-4
Software Installation	page 6-4
Software Uninstall	page 6-24

Basic Requirement:

- IBM PC, Pentium 333 MHz processor (minimum)
- 128 MB RAM (minimum)
- Microsoft Windows 98 SE, Windows 2000, Windows ME, Windows NT 4.0 (Service Pack 3) or Windows XP
- SVGA Color Monitor, 800x600 resolution (minimum)
- Free disk space: 150 MB (minimum).

Installation:

The system may be programmed using a computer by selecting one of the following options:

Computer <--> HiPath 1100 Connection	Page
With an S_0 Module	page 6-4
With a V.24 Serial Interface	page 6-6
With an ADSL Module	page 6-7
With an Analog Modem	page 6-8
With an USB Interface: Without using online services	page 6-12
With an USB interface: Using online services	page 6-13

S_0 Module

For this option, only the HiPath 1100 applications are installed. After restarting the computer configure the settings on the CommServer.

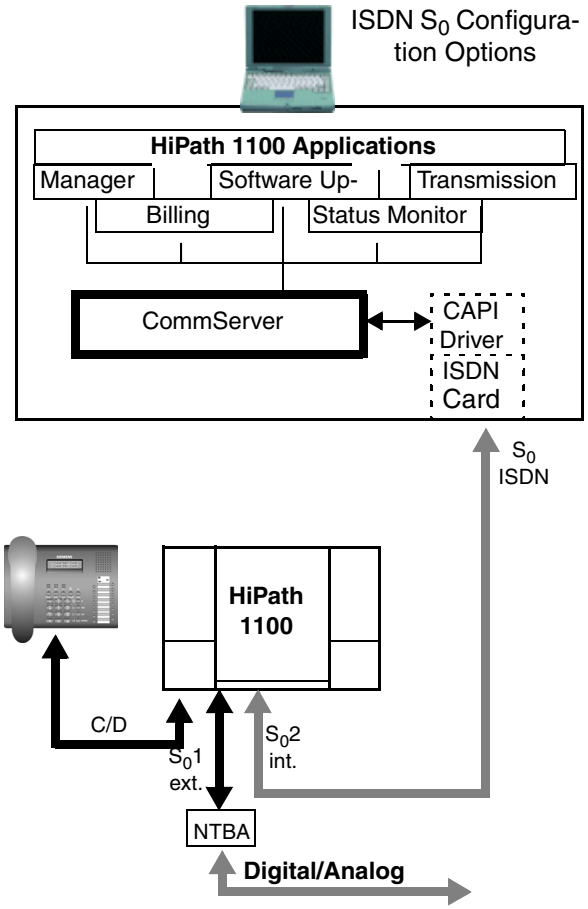


Figure 6-1 ISDN Configuration Options

Procedure:

1. Check whether the HiPath 1100 system is turned on and the computer has re-started.
2. Insert the system CD in the CD drive
   If Auto-Run is not configured, go to the Start menu on Windows, click Run and then select the Browse button in the dialog box. Open the file SETUP.EXE on the CD drive.
3. In the Setup window, select the language you want to use
4. Click "Install."
   A window will appear where you can select the software to be installed
5. Install your selected software components sequentially. For programming the HiPath 1100 system, the following applications must be installed:

- HiPath 1100 Manager E

- CommServer (installs automatically).

6. After installation of each component, a message is displayed indicating that the installation was successfully completed. Select "Finish" to complete the installation.
7. Select "Close" to close the installation window. Installation is then completed and the computer has to be restarted.
8. Following the boot sequence, configure the CommServer. Right-click the CommServer icon on the Windows status bar and select Properties. Specify these settings:

- Type of connection: ISDN connection
- Phone #: ---
- Your MSN: ---

9. When a HiPath 1100 application is activated, the server starts automatically.

V.24 Serial Interface

For this option, only the HiPath 1100 applications are installed. After restarting the computer configure the settings on the CommServer.

Procedure:

1. Check whether the HiPath 1100 system is turned on and the computer has restarted.
2. Insert the HiPath 1100 CD in the CD drive
   If Auto-Run is not configured, go to the Start menu on Windows, click Run and then select the Browse button in the dialog box. Open the file SETUP.EXE on the CD drive.
3. In the Setup window, select the language you want to use
4. Click "Install."
   A window will appear where you can select the software to be installed
5. Install your selected software components sequentially. For programming the HiPath 1100 system, the following applications must be installed:

- HiPath 1100 Manager E
- CommServer (installs automatically).

6. After installation of each component, a message is displayed indicating that the installation was successfully completed. Select "Finish" to complete the installation.
7. Select "Close" to close the installation window. Installation is then completed and the computer has to be restarted.

8. Following the boot sequence, configure the CommServer. Right-click the CommServer icon on the Windows status bar and select Properties. Specify these settings:

- 9600 / 14400 / 19200 (default) / 38400 / 56000 / 57600 / 115200 /128000 / 256000 baud
- 8 Bits
- 1 Stop Bit
- No Parity

9. When a HiPath 1100 application is activated, the server starts automatically.

ADSL Module

For this option, only the HiPath 1100 applications are installed. After restarting the computer configure the settings on the CommServer.

Procedure:

1. Insert the HiPath 1100 CD in the CD drive
   If Auto-Run is not configured, go to the Start menu on Windows, click Run and then select the Browse button in the dialog box. Open the file SETUP.EXE on the CD drive.
2. In the Setup window, select the language you want to use
3. Click "Install."
   A window will appear where you can select the software to be installed
4. Install your selected software components sequentially. For programming the HiPath 1100 system, the following applications must be installed:

- HiPath 1100 Manager e
- CommServer (installs automatically).

5. After installation of each component, a message is displayed indicating that the installation was successfully completed. Select "Finish" to complete the installation.
6. Select "Close" to close the installation window. Installation is then completed and the computer has to be restarted.
7. Following the boot sequence, configure the CommServer. Right-click the CommServer icon on the Windows status bar and select Properties. (See the application Help file for the proper configuration).
8. When a HiPath 1100 application is activated, the server starts automatically.

External Analog Modem

For this option, only the HiPath 1100 applications are installed. After restarting the computer configure the settings on CommServer, HiPath 1100 Manager and the HiPath 1100 system.

Procedure:

1. Use the Analog Modem (**preferably US Robotics**) as follows:

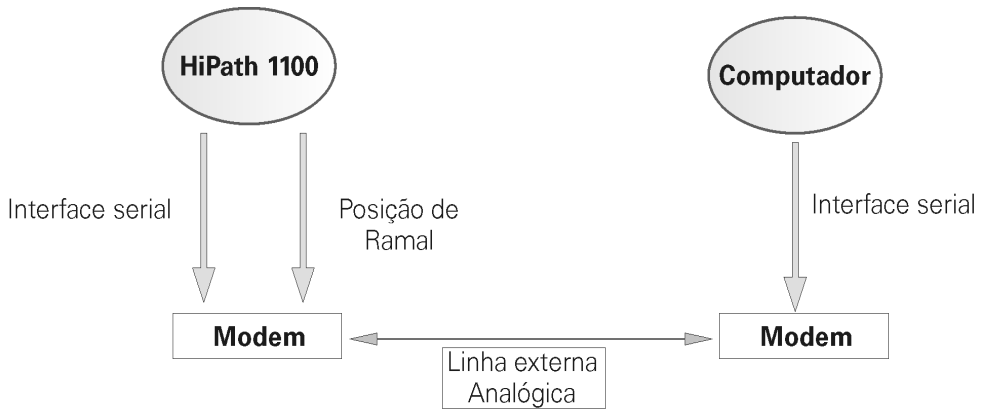


Figure 6-2 External analog modem connection

2. Insert the HiPath 1100 CD in the CD drive
   If Auto-Run is not configured, go to the Start menu on Windows, click Run and then select the Browse button in the dialog box. Open the file SETUP.EXE on the CD drive.
3. In the Setup window, select the language you want to use
4. Click "Install."
   A window will appear where you can select the software to be installed
5. Install your selected software components sequentially. For programming the HiPath 1100 system, the following applications must be installed:

- HiPath 1100 Manager e
- CommServer (installs automatically).

6. After installation of each component, a message is displayed indicating that the installation was successfully completed. Select "Finish" to complete the installation.
7. Select "Close" to close the installation window. Installation is then completed and the computer has to be restarted.

8. After restarting the computer, check the default modem (US Robotics) configuration on the HiPath 1100 Manager and change the following settings to match your modem (see the modem's manual, if necessary):

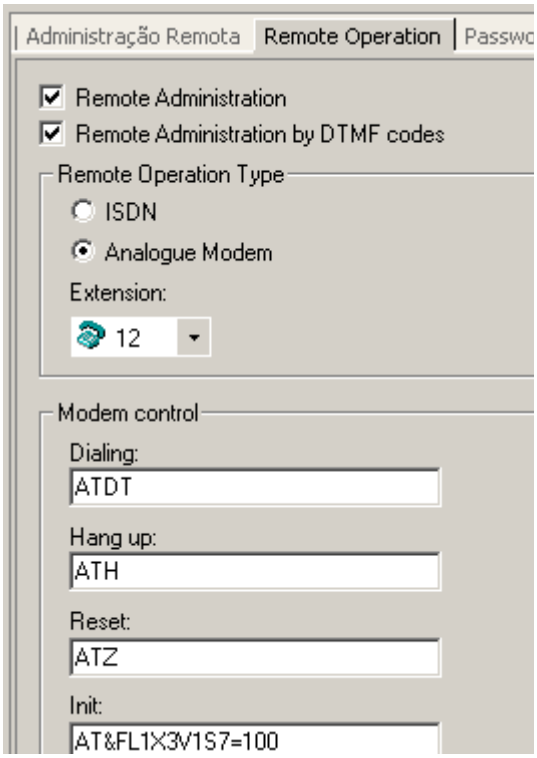


Figure 6-3 HiPath 1100 Manager Configuration - Analog Modem

9. On the HiPath 1100 remote system, check the default modem configuration (US Robotics) and change the following settings on the CommServer to match your modem (see the modem's manual, if necessary):

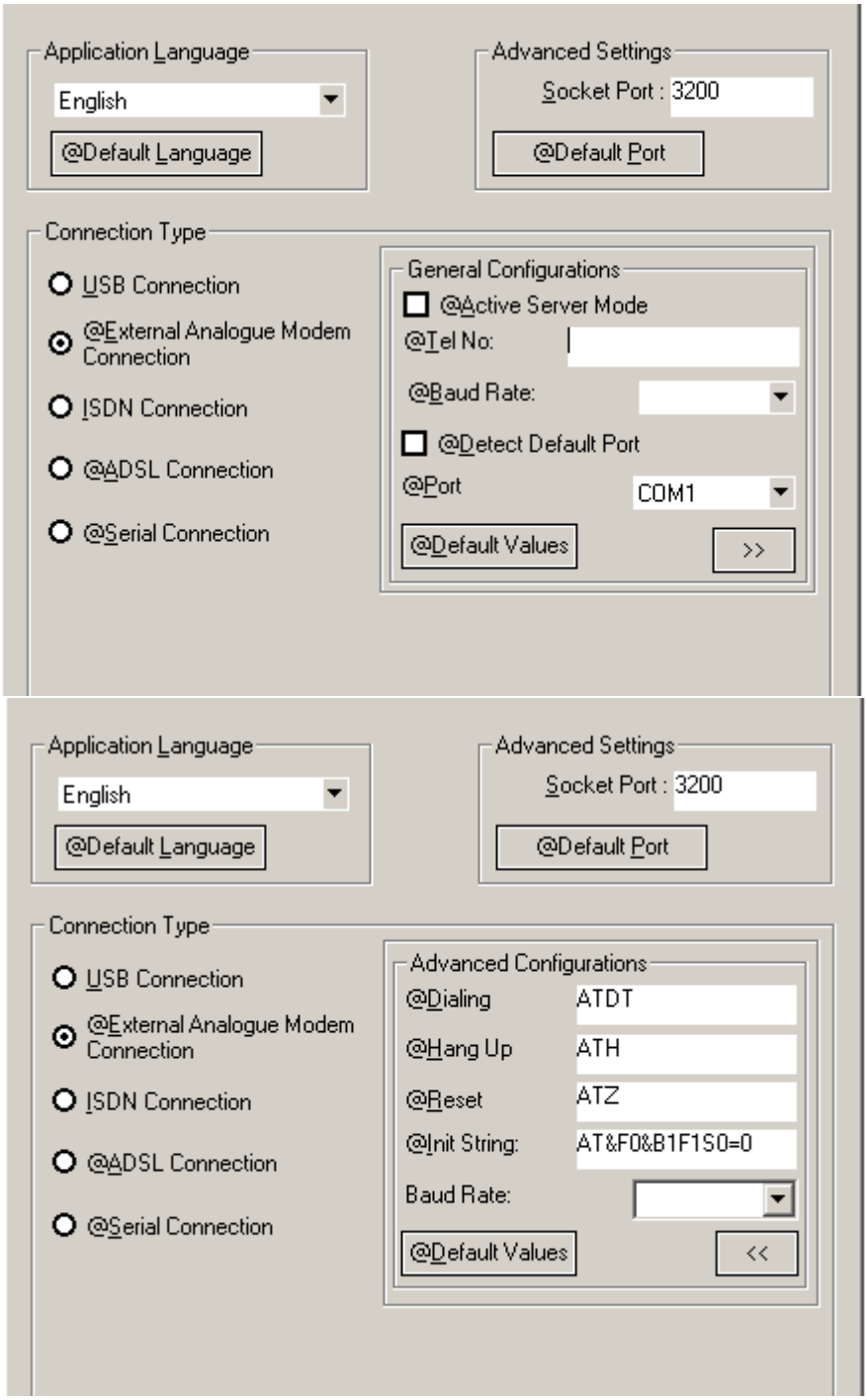


Figure 6-4 CommServer Configuration - Remote Analog Modem

10. After exiting the CommServer, the server will restart automatically whenever a HiPath 1100 application is activated.

USB Interface

In this case there are two possibilities: with or without the CAPI Interface

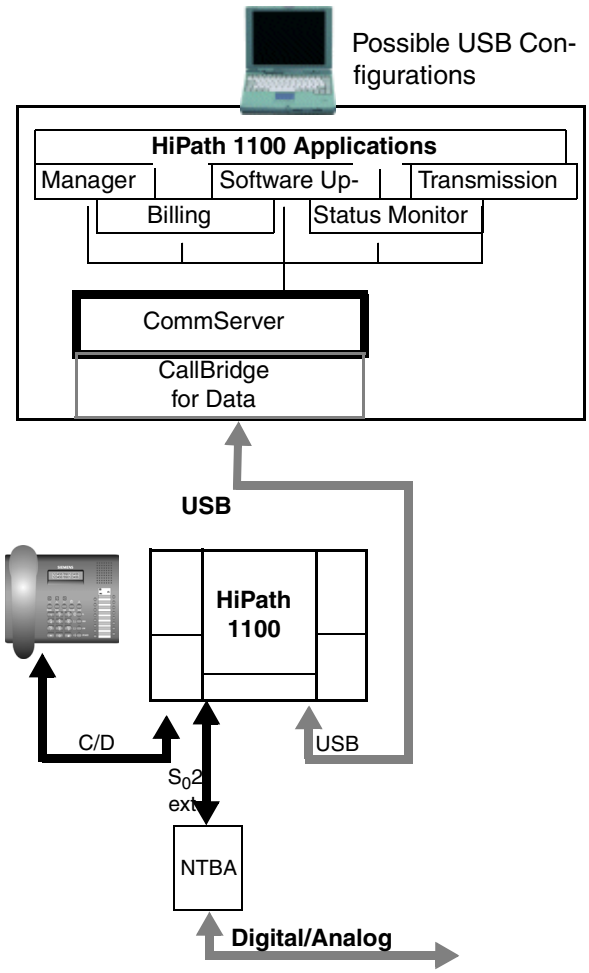
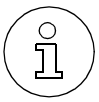


Figure 6-5 Possible USB Configurations

USB with CAPI Interface

If your computer is connected to the system through a USB cable only for HiPath 1100 administration purposes, the corresponding USB drivers must be installed before installing HiPath 1100 applications in order for the computer to communicate with the system.



Administrator access is required for performing the installation under Windows 2000/XP.

Procedure:

1. Check whether the HiPath 1100 system is turned on and the computer has restarted.
2. Insert the HiPath 1100 CD in the CD drive
3. Connect the system to your computer using the USB cable. A window will announce that new hardware has been found
4. The New Hardware Wizard will appear. Select the option "Automatically install software" and confirm by selecting "Next"
5. The correct HiPath 1000 driver will be searched for and found (on the system CD) (CallBridge for Data Eval). For Windows 2000 and Windows XP, a message will repeatedly announce that the software being installed does not have a Microsoft digital signature or has not passed the Windows logo test. Answer the prompts by clicking "Yes" or "Continue"
6. In the next window click Finish.
7. The Wizard window will again appear and search for new hardware. Select "Automatically install software" and confirm by selecting "Next"
8. The correct HiPath 1000 driver will be automatically selected (USB HiPath 1000 interface). For Windows 2000 and Windows XP, a message will repeatedly announce that the software being installed does not have a Microsoft digital signature or has not passed the Windows logo test. Answer the prompts by clicking "Yes" or "Continue."
9. Select "Finish" to complete the installation.

Begin installing the HiPath 1100 applications:

1. If Auto-Run is not configured, go to the Start menu on Windows, click Run and then select the Browse button in the dialog box. Open the file SETUP.EXE on the CD drive.
2. In the Setup window, select the language you want to use
   Once the language has been selected, all corresponding country-specific settings will be established.

3. Click "Install."
   A window will appear where you can select the software to be installed
4. Install your selected software components sequentially. For programming the HiPath 1100 system, the following applications must be installed:

- HiPath 1100 Manager E
- CommServer (installs automatically).

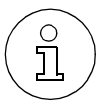
5. After installation of each component, a message is displayed indicating that the installation was successfully completed. Select "Finish" to complete the installation.
6. Select "Close" to close the installation window. Installation is then completed and the computer has to be restarted.
7. Following the boot sequence, configure the CommServer. Right-click the CommServer icon on the Windows status bar and select Properties. Specify these settings:

- Type of connection: ISDN connection
- Phone #: ---
- Your MSN: ---

8. Exit CommServer. When a HiPath 1100 application is activated, the server starts automatically.

USB Interface without a CAPI Interface

If in addition to administering the HiPath 1100 system you also wish to use online services on your computer, you need to install specific USB drivers and CAPI applications from the "CallBridge for Data" software package. This will enable communications between your computer and the system.



If CAPI drivers or an ISDN card from other manufacturers are already installed on the system, they must be completely uninstalled before installing "CallBridge for Data."

Since the installation of these components starts automatically once a USB cable is connected, the CallBridge for Data software must be first configured as follows:

Procedure:

1. Check whether the HiPath 1100 system is turned on and the computer has restarted.
2. Insert the system CD in the CD drive If Auto-Run has been configured, minimize the installation window on the Windows status bar.
3. In Windows Explorer, go to the directory:
   <CD Drive>:\Software\CAPI Drivers

4. Double-click to run the following file: CAPI_HiPath 1000_XXX.exe. In the corresponding window, use “Browse“ to choose the installation path for decompressing “Call-Bridge for Data“ (e.g., the temporary folder and C:\Temp) then decompress the file using “Decompress.“

Proceed with the installation which matches your operating system:

Operating System	
Windows 98 SE	page 6-14
Windows ME	page 6-16
Windows 2000	page 6-18
Windows XP	page 6-20

Next, install the CAPI applications.

Windows 98 SE

Additional system components may need to be installed during driver installation. So please have the Windows 98 CD available.

1. The Add New Hardware Wizard window appears. A message will appear indicating that Setup will search for new Composite USB device drivers. Click "Next" to proceed.
2. Select the option "Search for the best driver for your device" and click "Next."
3. Select the “Specify a location:“ checkbox and click “Browse“ to select the directory where the uncompressed CallBridge for Data is stored (e.g., C:\Temp). Click "Next" to proceed.

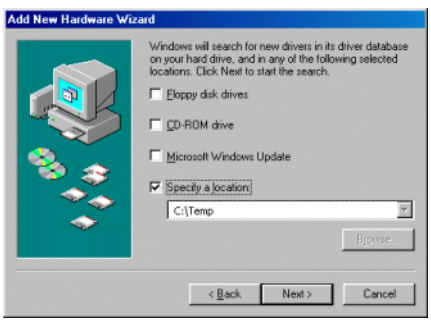


Figure 6-6 Windows 98 SE - USB/CAPI driver installation location

4. A message will appear indicating that the best driver for the hardware has been found.
   Click "Next" to proceed.
5. A message appears confirming that the Composite USB device installation was completed. Click "Finish."

6. A message will appear indicating that Setup will search for a driver for the HiPath 1000. Repeat hardware driver installation (steps 1 through 4) for the following components:

- HiPath 1000 Virtual COM Port
- HiPath 1000 (CAPI Interface).

7. During installation of the HiPath 1000 (CAPI Interface) configure these two settings:

- In the next window select "EUROISDN (DSS1)" and click "Next":

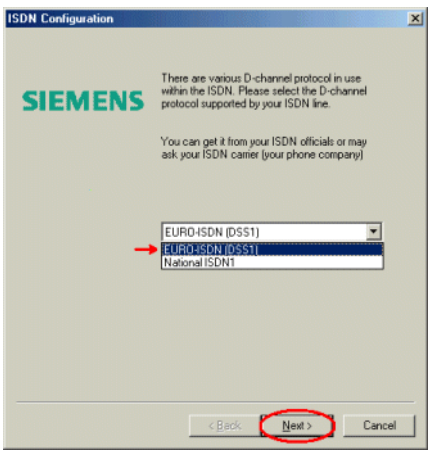


Figure 6-7 Windows 98 SE - selection for ISDN

- In the "Phone # (MSN)" field enter an available internal telephone number. Confirm by clicking “Next.“ The same window appears again. Click "Next" one more time without entering anything in any field:

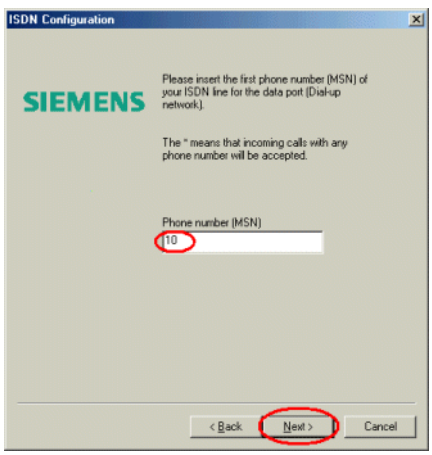


Figure 6-8 Windows 98 SE - MSN Number

10. The installation of the USB drivers is now completed. CAPI applications installation will now start automatically (see “Installing CAPI Applications” on page 6-23).

Windows ME

1. The Add New Hardware Wizard window appears. A message will appear indicating that Setup will search for new drivers for the HiPath 1000. Choose "Specify the location of the driver (Advanced)" and click "Next."

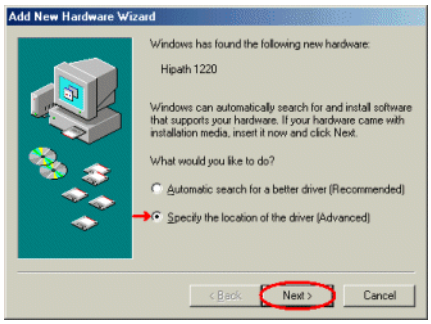


Figure 6-9 Windows ME - Specify installation folder

2. Select the option "Search for the best driver for your device (Recommended)."
3. Select the "Specify a location:" checkbox and click "Browse" to select the directory where the uncompressed CallBridge for Data is stored (e.g., C:\Temp).
4. Click "Next" to proceed.

Figure 6-10 Windows ME - USB/CAPI driver installation location

5. A message will appear indicating that Setup will search for a driver for CallBridge for Data (Eval). Click "Next" to proceed.
6. A message appears confirming that the CallBridge for Data (Eval) installation was completed. Click "Finish."
7. A message will appear indicating that Setup will search for a driver for the HiPath 1000. Repeat hardware driver installation (steps 1 through 6) for the following components:

- HiPath 1000 Virtual COM Port
- HiPath 1000 (CAPI Interface).

8. During installation of the HiPath 1000 (CAPI Interface) configure these two settings:

9. A message will appear indicating that the best driver for the hardware has been found.
   Click "Next" to proceed.

- In the next window select "EUROISDN (DSS1)" and click "Next":

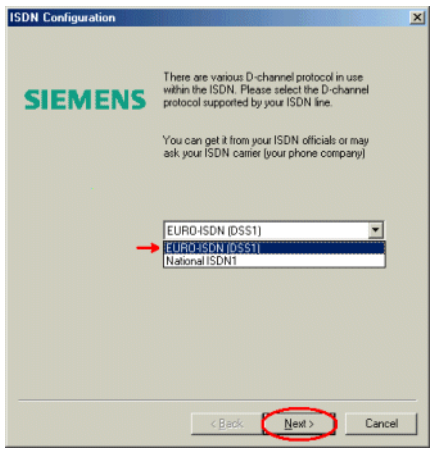


Figure 6-11 Windows ME - selection for ISDN

- Enter an available extension number in the "Phone # (MSN)" field. Confirm by clicking “Next.“ The same window appears again. Click "Next" one more time without entering anything in any field:

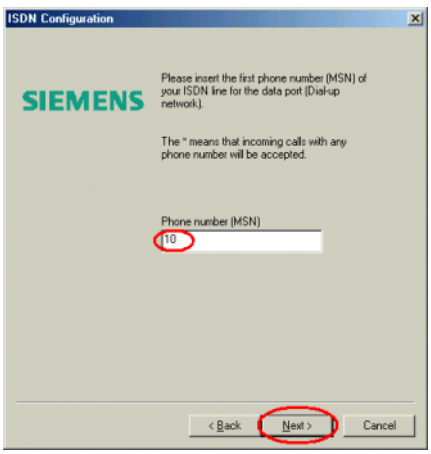


Figure 6-12 Windows SE - MSN Number

10. The installation of the USB drivers is now completed. CAPI applications installation will now start automatically (see “Installing CAPI Applications” on page 6-23).

Windows 2000

In order to install any software you must have Administrator's access privileges.

Proceed as follows:

1. A window displays a message informing you that new hardware was found. The "Found New Hardware Wizard" box appears to guide you through the installation of the drivers. Click "Next" to proceed.
2. Select the option "Search for the best driver for your device" and click "Next."
3. Select the "Specify a location:" checkbox, if it is not selected yet, then click "Next."
4. A second window opens. Click Browse to select the directory where the uncompressed CallBridge for Data is stored (e.g., C:\Temp). Click Next to proceed.

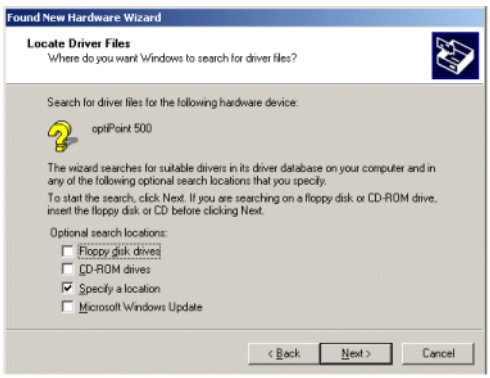


Figure 6-13 Windows 2000 - Driver location

5. A message will appear indicating that a driver has been found. Click "Next" to proceed.
6. A message appears to the effect that the software to be installed does not have a Microsoft digital signature. Acknowledge the message by clicking "OK."
7. In the "Select Port Number" window select the port number for the HiPath 1000 Virtual COM Port (by default, the last free port) and click "OK."

8. A message appears indicating that the hardware selected is installed. Click "Finish" to complete installation.

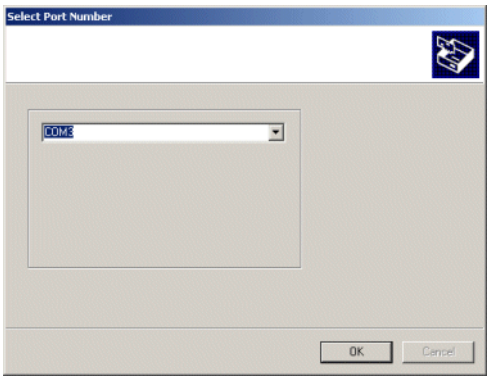


Figure 6-14 Windows 2000 - Port setting

9. The HiPath 1000 (CAPI Interface) installation will now be launched. The window with the warning about a Microsoft digital signature appears twice. Click "OK" every time it appears.

10. In the ISDN - HiPath 1000 window select “European ISDN (DSS1)“ then click “Next.“

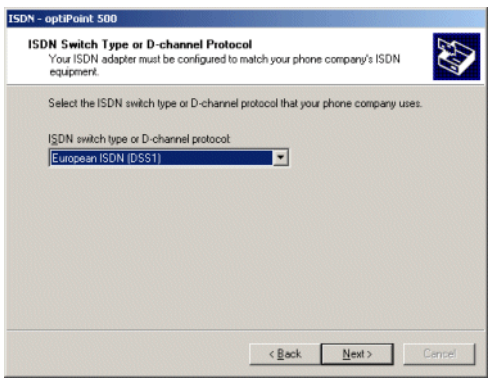


Figure 6-15 Windows 2000 - ISDN selection

11. Enter the MSN-CAPI number (see Table 7-2 on page 7-2) in Add, in the Multi-Subscriber Numbers field.

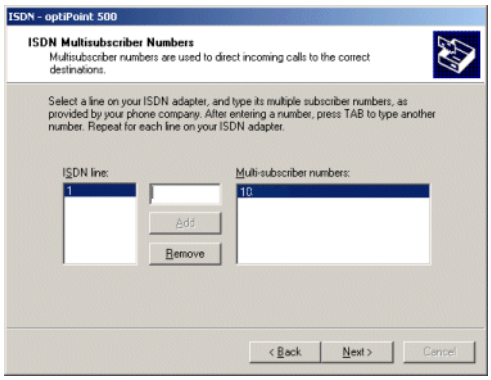


Figure 6-16 Windows 2000 - MSN

12. The installation of the USB drivers is now completed. CAPI applications installation will now start automatically (see “Installing CAPI Applications” on page 6-23).

Windows XP

In order to install any software you must have Administrator’s access privileges.

Proceed as follows:

1. A window displays a message informing you that new hardware was found. The "Found New Hardware Wizard" box appears to guide you through the installation of the drivers. Choose "Install from a list or specific location (Advanced)." Click "Next" to proceed.
2. Select the "Specify a location:" checkbox, if it is not selected yet, then click "Next."
3. A second window opens. Click Browse to select the directory where the uncompressed CallBridge for Data is stored (e.g., C:\Temp). Click Next to proceed.
4. Once this is completed, the installation of the HiPath 1000 will start. A message appears (three times) to the effect that the software installation did not pass the Windows logo test. Click "Continue" every time this message appears.

5. In the ISDN - HiPath 1000 window select “European ISDN (DSS1)“ then click “Next.“

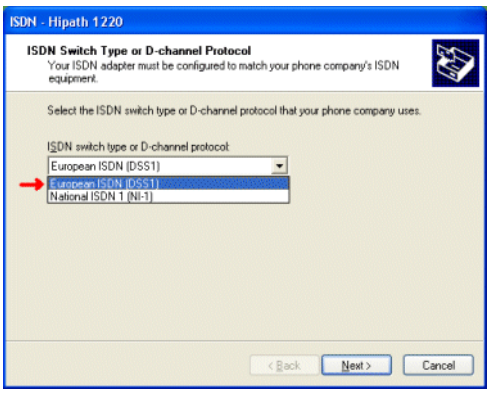


Figure 6-17 Windows XP - ISDN

6. Enter the MSN-CAPI number (see Table 7-2 on page 7-2) in Add, in the Multi-Subscriber Numbers field.

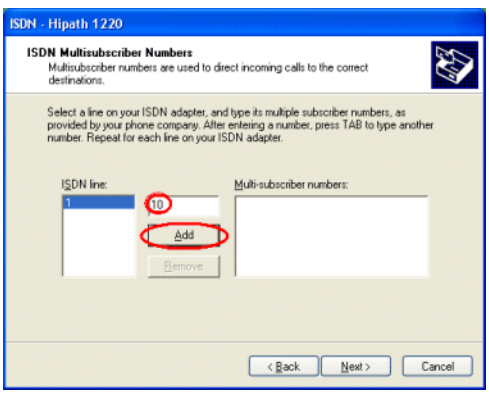


Figure 6-18 Windows XP - MSN

7. In the next window click Finish.
8. The "Found New Hardware Wizard" box appears. Select the option "Install from a list or specific location (Advanced) then click "Next."
9. Click "Browse" to select the directory where the uncompressed CallBridge for Data is stored (e.g., C:\Temp).

10. Click "Next" to proceed.

Figure 6-19 Windows XP - Driver location

11. A message appears twice to the effect that the driver does not have a Windows logo. Click "Continue" every time this message appears.
12. In the Select Port Number window select the port number for the HiPath 1000 Virtual COM Port (by default, the last free COM port).
13. A message appears indicating that the hardware selected is installed. Click "Finish" to complete installation.

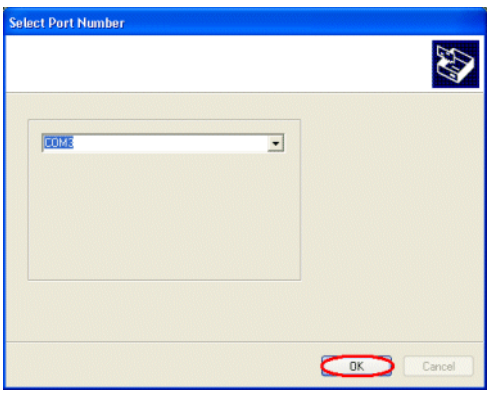


Figure 6-20 Windows XP - Port selection

14. The installation of the USB drivers is now completed. CAPI applications installation will now start automatically (see “Installing CAPI Applications” on page 6-23).

Installing CAPI Applications

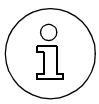
CAPI applications installation is very simple and is the same for all Windows operating systems.

Upon conclusion of USB driver installation, the CAPI applications installation window will appear. Proceed as follows:

1. In this window select the language you want to use and click "OK" to confirm.
2. When the Welcome window appears, click "Next" to proceed. Next, the installation window will display the (default) path for installation of the CAPI applications (CallBridge for Data Utilities). You can choose a different path by selecting "Browse." Click "Next" to proceed.
3. In the next window, create a new program folder or choose an existing folder in which to store program icons for running the corresponding applications.
4. To complete the installation process answer the introductory messages by clicking "Next" Click "Finish" to close the installation window.

The following applications are then installed on your computer:

- ISDN Setup Wizard (Windows 98 SE/ME)
- CAPI Monitor
- Uninstall
- FaxComm + Installation
- Loopback Test
- Outgoing Numbers Configuration (MSN) (Windows 2000/XP).



Restart the computer after installation of USB drivers and CAPI applications.

After restarting the system, the CommServer must be configured.

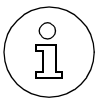
Right-click the CommServer icon on the Windows status bar and select "Properties." Use the following settings:

Type of connection: USB connection

Phone #: ---

Your MSN: ---

For the new settings to take effect you must exit CommServer. When a HiPath 1100 application is activated, the server starts automatically.



The USB drivers are Plug&Play compatible, so that after installation, the HiPath 1100 system may be removed and added again to the computer configuration - by simply unplugging or connecting the USB cable. The drivers do not need to be reinstalled. The equipment is ready for operation.

Uninstall:

- For the S_0 connection, follow steps 1, 6 and 7 of the procedure.
- For the USB connection, follow steps 1 through 7 of the procedure.

Procedure:

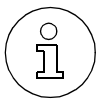
1. To exit CommServer right-click the CommServer icon on the Windows Status bar and select Finish.
2. Exit all online services for CallBridge for Data
3. Unplug from your computer the USB cable connected to the HiPath 1100 system.
4. To remove the USB drivers, proceed as follows:
   For FULL removal use Uninstall, or the Uninstall feature on the CD.
5. Uninstall CallBridge for Data Utilities (if previously installed to use online services or USB connections), by running the Uninstall program as follows:
   Start/Programs/CallBridge for Data Utilities/Uninstall CallBridge for Data Utilities.
   Once CallBridge for Data Utilities has been uninstalled, answer "No" when asked if you want to restart your computer, and proceed with step 6.
6. Uninstall all HiPath 1100 components as follows:
   Start/Settings/Control Panel/Software, then click on "Remove Software"
7. Next, restart your computer.

6.3.3 HiPath 1100 Applications

CTI Functionality

When the system is connected to a computer, system features can be executed from the PC. The functionality provided by the connection between a telephone system and a PC is known as CTI (Computer Telephony Integration).

For example, CTI functionality and other compatible MS-TAPI applications can be enabled by TAPI (Telephony Applications Programming Interface) drivers. TAPI drivers provide an interface between a Windows operating system and a TAPI-compatible telephone system.



TAPI only monitors physical ports. To operate correctly, a DISA feature must use special ports, and those cannot be monitored. If a physical port is used when the DISA feature is active, the TAPI will be able to monitor it.

If the system is connected to a PC running as a LAN server, all network clients will also have CTI capability available.

Comm Server:

This is an application that receives data from the system through a serial port and then distributes the data to different applications.

- Call detail recording packets
- TAPI packets
- Data administration packets with the administrative tool

CDR data are sent to the CDR application (Call Detail Report Manager) through TCP/IP sockets. CDR displays CDR information on the PC screen and stores it in text file format. It also makes CDR data available to a printer or a serial port, for example, for billing using the Call Report software.

Events for Call Detail Records received from the system are sent through TAPI messages to a TSP (TAPI Server Provider) using TCP/IP sockets, to provide data to other applications.

HiPath 1100 Manager

The HiPath 1100 Manager is an administrative program for programming the HiPath 1100 systems without using a telephone set.

The system can be accessed locally through a LAN as long as there is a network PC connected to the HiPath 1100 via serial interface or an ADSL module.

You can also update the HiPath 1100 software using the
HiPath 1100 Software Update and store the database containing the system configuration settings. Read the HiPath 1100 Manager Help file before proceeding with this operation.

HiPath 1100 ADSL Manager

The HiPath 1100 ADSL Manager is an administrative program for programming an ADSL module.

Hardware Requirements:

– 10/100 BaseT network interface card

General Information:

– TCP/IP protocol

– Default IP: 10.0.0.1

– Default Subnet Mask : 255.255.255.0.

If you need to reset the IP or Subnet Mask, enter code 013 for "Restoring an ADSL Module Default Settings."
When using an ADSL module, do not connect the V.24 serial interface adapter cable to the PABX

After activating ADSL access to your provider and connecting to the HiPath 1100, you must configure the appropriate settings for WAN and LAN connection. The HiPath 1100 ADSL Manager software application was designed for this purpose. It provides viewing, editing and updating capabilities for system configuration.

For more details on how to configure an ADSL module see the HiPath 1100 ADSL Manager “Help” system.

HiPath 1100 E1 Trunk Manager

The HiPath 1100 E1 Trunk Manager is an administrative program for configuring a TME1 module.

Hardware Requirements:

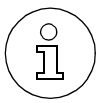
– Serial interface communications (COM port).

General Information:

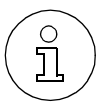
Using the HiPath 1100 E1 Trunk Manager you can:

- Download software and databases
- Select the software's type of connection to the module (local or via modem)
- Select a COM port
- Select a Country when installing the program, including the appropriate protocol and CAS signaling (e.g.,line signaling (1bit-E&M and 2bit-R2), and record signaling (DP, DTMF and MFCR2)).

For more details on how to configure a TME1 module refer to the program's "Help" system.



If the module does not initialize, check its status on the 7-segment display (see "TME1 Module" on page 3-27).



Availability of the HiPath 1100 Manager, HiPath 1100 ADSL Manager and HiPath 1100 E1 Trunk Manager administration software is subject to the client's completion of the technical course for users of the equipment.

Account Manager

Billing Data Software

To launch the Account Manager select:

Start/Programs/HiPath 1100/Call Detail Recording

Status Monitor Indicator

Status Monitor Indicator on the computer.

To start a Status Monitor Indicator, select:

Start/Programs/HiPath 1100/StatusMonitor

MOH Transfer Wizard

MIDI Transmission Wizard for converting MIDI files to HiPath 1100 format and transferring to the system.

To start the MIDI Transmission Wizard select:

Start/Programs/HiPath 1100/MOH Transfer

Software Update

System Software Update Wizard

To start the System Software Update Wizard select:

Start/Programs/HiPath 1100/Software Update

CAPI Applications

CallBridge for Data Utilities. ISDN software for applications such as Internet access, sending and receiving group Fax 3/4, Euro File Transfer, telephone emulation, etc.

Interaction Center Smart (Optional Software)

This software application can be used with the HiPath1130/1150/1190 systems. It provides monitoring and tracking capabilities for supervisors of one or more UCD Groups and up to 32 Agents. The application provides real time data with respect to agent status, incoming calls, queues, answered calls detailing statistics by group or agent, as well as other data to help manage a Call Center. With the Smart software you can determine the number of calls received, the number of calls lost, the time periods with a higher volume of calls, and other information.

The system helps you assess and improve your organization's service by providing information through an online tool or by generating reports to help reduce client loss while helping estimate the number of attendants needed. The
Interaction Center Smart solution consists of two tools:

Monitor - A tool that provides continuous tracking of services for real time management of agents, queued calls, group statistics including the number of calls answered, calls abandoned.

Analyst - A tool that provides supervisors with complete flexibility to perform statistical analysis by group or by agent, and for specific periods of time. Reports can be configured to show detailed information on the number of calls received, calls answered, calls abandoned, calls transferred, calls answered within or outside a profile set, ACD calls duration, total talk time, total queue time, and other data.

TAC Smart - Telephony Advanced Control (Optional Software)

This application can be used with the HiPath1130/1150/1190 systems to help identify and display all information about a specific call. It delivers key telephony functions to the user's PC, including extension status monitoring, speed dialing capability, list of calls made and calls received, contacts, all the while making calls automatically to a preset list of numbers.

This software integrates with other systems to display pop-up screens and send data to existing applications.

CallReport (optional software)

CallReport is a billing system that allows you to record information about calls originated or received by your PABX system.

CallReport runs on a regular PC under a Windows 95 / 98 /NT 4.0 / 2000 / XP environment. It receives data sent by the PABX that are then processed and stored in a PC hard disk and identified by extension, time, call duration, trunk, outgoing route and call cost. Based on this data the software can generate reports including total costs per extension, sector, group, in addition to traffic reports for both outgoing and incoming calls.

All information is defined in the CallReport database and can be handled by any user logged in as Administrator.

VMIe Protocol (Voice Mail Interface - extended)

Voice Mail with analog connections require the VMIe protocol. Voice Mail communication takes place via DTMF signals that contain the following information:

1	Type of Call (TOC) Required item Fixed size: 4 characters Format: "***n" (n = code in table below)

Code	Type of Call	Code	Type of Call
1	Internal call to the Voice Mail System	2	Not used
3	Call Forwarding (*11)	4	Second Attendant (*14)
5	Not used	6	Not used
7	Not used	8	Not used

2	Calling Extension Required item Fixed size: 6 DTMF signals Format: "****I" (I = calling extension) External call format: always "******" **Note:** If the extension number is longer, the DTMF digit "*" in the protocol is replaced by the extension's additional digit.
3	Extension called Required for all Type 3 and 4 calls The item remains empty for all other types of calls Fixed size: 6 DTMF signals Format: "****I" (I = extension called) **Note:** If the extension number is longer, the DTMF digit "*" in the protocol is replaced by the extension's additional digit.
4	Additional information about the calling extension Optional item Fixed size: 2 DTMF signals Format: "*I" (I = code in table below)

Code	Information
1	The Calling Extension is a standard internal extension
2	Not used
3	The Calling Extension is an external caller on an analog line
4	The Calling Extension is an external user on a digital line

Examples:

1. Internal call from Extension 16 to the VMIe Group: ***1***16*1
2. Direct internal call from Extension 15 to Extension 11, forwarded (*11) to the VMIe Group: ***3****15****11*1
3. Direct internal call from Extension 11 to Extension 15, forwarded to the VMIe Group configured as second Attendant. ***4****11****15*1
4. Incoming call over an external analog line to Extension 11, forwarded (*11) to the VMIe Group: ***3**********11*3
5. Incoming call over an external digital line to Extension 11, forwarded (*11) to the VMIe Group: ***3**********11*4
6. Incoming call over an external analog line to Extension 12, forwarded to the VMIe Group configured as second Attendant. ***4**********12*3
7. Incoming call over an external digital line to Extension 12, forwarded to the VMIe Group configured as second Attendant. ***4**********12*4

8. Direct internal call from Extension 1015 to Extension 1011, forwarded (*11) to the VMIe Group: ***3**1015**1011*1
9. Direct internal call from Extension 10015 to Extension 10011, forwarded to the VMIe Group configured as second Attendant. ***4*10015*10011*1.

Voice Mail protocol for the system:

The Voice Mail signals to indicate when there is a message waiting at an extension's mailbox. For this purpose it uses a DTMF service code (*68) followed by the extension number. When a message is erased, a different DTMF code (#68) is used to deactivate the signal at the extension that belongs to the VMIe Group. In the event these codes are not supported by the Voice Mail System they can be re-programmed. Please refer to "Deactivate Internal MWI #68" and "Activate Internal MWI *68" in the "System Settings - Service Codes" folder, in the HiPath 1100 Manager.

Example:

1. The Voice Mail System indicates that Extension 13 has a message waiting in mailbox: *6813
2. The Voice Mail System indicates that the mailbox for Extension 12 is empty: #6812.

7 Configuring the System Specifically for the Client

Procedure Summary

Table 7-1 Configuration procedure summary

Step	System Telephone/Standard MF Telephone	HiPath 1100 Manager
1.	System programming can only be executed using the system's first extension slot (analog extension (MF) or system telephone).	Connect the PC to the system.
2.	Programming Mode: *95 + PASSWORD (default: 31994).	Configure CommServer.
3.	Valid parameter or slot: *beep (Brazil).*	Start the program.
4.	When an incorrect setting is entered: *3 beeps (Brazil)*.	System data are automatically imported.
5.	When completed: 1 *beep (Brazil).*	Start programming.
6.	End programming: press "#" key or replace handset.	Export the new configuration settings.

7.1 Table of the System's Programming Codes

The Numbering Plan is configured based on the modules detected by the system.

- For the HiPath 1120:

Motherboard

S0 Module

Analog Modules

- For the HiPath 1130/1150:

TME1 Module 1

Motherboard

S0 Module

Analog Modules

- For the HiPath 1190:

Analog Modules

TME1 Module 1

S0 Module

Numbering Plan

Table 7-2 Numbering Plan

Description	HiPath 1120	HiPath 1130	HiPath 1150	HiPath 1190
External Line	801 to 806	801 to 817	801 to 817	801 to 845
Extension, including S_0	11 to 30	11 to 60 610 to 621	11 to 60 610 to 645	101 to 240
Group of external lines	0 or 890 to 899			
Call Group (CG)	770 to 779			
Hunt Group (HG)	780 to 789			
UCD Subscriber Group	790 to 799			
MSN-CAPI Line	10	10	10	100

Programming Tables

Table 7-3 Classification of programming tables

Table	Explanation	
1.	Important settings	page 6-3
2.	External line settings	page 6-4
3.	Programming an Extension	page 6-6
4.	DISA	page 6-10
5.	General settings	page 6-11
6.	Updating the Software	page 6-13
7.	Remote Administration	page 6-13
8.	Entrance Telephone	page 6-14
9.	Call Detail Recording	page 6-14
10.	Fax/DID Module	page 6-17
11.	Digital trunk settings	page 6-18
12.	ADSL Module	page 6-20
13.	Relay and sensor on the HiPath 1120	page 6-20

For information on the programming of each feature see "Comments about the System's Programming Codes" on page 7-21

Important settings

Table 7-4 Important settings

Programmed Functions	Code	Intermediate Data	Data to Program	Completing Data Entry	Default
Default Access to a Group of External Lines	002	Extension	Group of external lines	# instead of extension	0
COS assignment	11	Group of external lines **Day COS:** class - 0 (No Permission) Class - 1 (Denied List 1) Class - 2 (Denied List 2) Class - 3 (Denied List 3) Class - 4 (Permission List 1) Class - 5 (Permission List 2) Class - 6 (Permission List 3) Class - 7 (default for all lines) **Night Service COS:** Class - 1 (Denied List 1) Class - 2 (Denied List 2) Class - 3 (Denied List 3) Class - 4 (Permission List 1) Class - 5 (Permission List 2) Class - 6 (Permission List 3) Class - 7 (Default for all lines)	Extension	# instead of extension	Class - 77 for all extensions. Note: Class - 7 Day Class - 7 Night
Phonebook/Speed Dialing	12	Phonebook entry: 000 to 249*	Number (up to 20 digits)	5 seconds time-out	All entries are blank
Dialing Mode on an External Analog Line	19	External analog line	1 - Analog line: Pulse (DP) 2 - Analog line: Multifrequency (MF)	# instead of external line	2 - MF
Denied List	23	Class of Service: 1, 2 or 3 **+** List 1 - COS 1 - Slots 01 to 04 List 2 - COS 2 - Slots 01 to 10 List 3 - COS 3 - Slots 01 to 35	Number (up to 10 digits)	5 seconds time-out	See Table 7-7 on page 7-9
Permission List	24	Class of Service: 4, 5 or 6 **+** List 1- COS 4 - Slots 01 to 04 List 2 - COS 5 - Slots 01 to 10 List 3 - COS 6 - Slots 01 to 25	Number (up to 16 digits)	5 seconds time-out	
Analog Line Attendants	42	External Line **+** 1 - Day Service 2 - Night Service 3 - Day Service after a specified time 4 - Night Service after a specified time	Up to 10 extensions or call groups or * - To delete	# instead of extension	None

Table 7-4 Important settings

Programmed Functions	Code	Intermediate Data	Data to Program	Completing Data Entry	Default
Attendant Console	50		extension or * - To delete	# instead of extension	None
Permission for using Speed Dial numbers without COS analysis	072		* - To enable # - To disable	Automatic	# - To disable
Language	64		0 - Custom 1 - Portuguese 2 - Spanish 3 - English 4 - French	Automatic	3
Country/Group of Countries	65		See Table 7-14 on page 7-15	Automatic	01 - Brazil
COS Changeover	78	Extension	* - To enable # - To disable	# instead of extension	# - disabled
Warning Tone for Calls without LCR	092		* - To activate # - To deactivate	# instead of extension	# - To deactivate

* To dial an external number enter the external line number instead of the external access code "0."

External line settings

Table 7-5 External line settings

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Groups of external lines	56	Group of external lines	External Line	# instead of group	0
Seizure priority by type of external line	94		1 - Standalone 2 - Digital 3 - Analog	Automatic	1 - Standalone
External analog line seizure protocol	017	External analog line	1 - Loop seizure 2 - Ground seizure	# instead of external line	2 - Canada 1- Other countries
Identification on an analog line	005	External analog line	0 - Disabled 1 - DTMF1 2 - DTMF2 3 - FSK	# instead of external line	1 - Brazil 2 - Peru and IM 3 - Other countries
External Line Call Direction	55	External Line	1 - Bi-directional 2 - Incoming unidirectional 3 - Outgoing unidirectional	# instead of external line	1 - Bi-directional

Table 7-5 External line settings

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Flash duration	18	External analog line	05 to 99 05 - 50 ms 99 - 990 ms	# instead of external line	Country*
Reseizure time for external line	29		05 to 99 05 - 500ms 99 - 9900ms	Automatic	05 - 500 ms
Maximum time between rings for an incoming call	17		05 to 20 seconds	Automatic	13 seconds for Argentina, 06 seconds for all other countries
Coefficient for an external analog line	47	External analog line	1 - Standard line, 900 Ω 2 - 600 Ω line 3 - Long line 4 - Short line	# instead of external line	1 - Standard line
Polarity Inversion**	58	External analog line	* - Yes # - No	# instead of external line	# - No
Dial tone detection	60	External analog line	* - Yes # - No	# instead of external line	* - Yes
External line connection.	33	External analog line	1 - Direct 2 - Satellite PABX	# instead of external line	1 - Direct
Second external access code	34		0 to 9 or 00 to 99 or none (no code)	5 seconds timeout	0
Auto-Seizure Mode for an External Line	036		* - Yes # - No	Automatic	# - No
False tone	063		# - No: Brazil, Argentina and India * - Yes: all other countries	Automatic	# - No: Argentina and India
External analog present	079	External Line	* - Yes # - No	# instead of external line	* - Yes
Waiting time for a Second Attendant to answer a call on an external analog line	083	External Line	(00 to 99) in 5-second cycles	Automatic	06 (30 s)

* 24/10 for Brazil, Chile, Venezuela, Mexico, Vietnam, IM, China, Pakistan and the Ukraine
35/10 for Argentina 30/08 for Thailand, Malaysia and Singapore 18/10 for Portugal
9/9 for Spain 30/9 for India
27/9 for Greece.
8/8 for Russia
** Ask local carrier about availability.

Programming an Extension

Table 7-6 Programming an Extension

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Pickup Groups	43	Pickup groups 01 to 16	extension or * - To delete a group	# instead of extension	None
Call Groups (CG)	13	Call Group (CG)	extension (up to 10) * - To delete	# instead of extension	Extensions 11/101 to 20/110
Alert Ring Timeout for Pickup Groups	035		Time: 00 to 59 seconds or * - To disable	Automatic	* - To disable
Callback/Urgent Call activation by time-out	037		* - To enable # - To disable	Automatic	# - To disable
Caller ID by name or number	039		1 - Name and Number 2 - Name 3 - Number	Automatic	1 - Name and Number
UCD Subscriber Groups	023	UCD Subscriber Group	Extension (up to 32 agents) * - To delete	# instead of group	None
Collect Call Barring for a UCD Subscriber Group	007	UCD Subscriber Group	* - To enable # - To disable	# instead of group	# - (To disable)
Message Waiting for UCD queue	024	UCD Subscriber Group	extension or * - MOH (Music on Hold)	# instead of group	* - MOH
UCD Queue size	025	UCD Subscriber Group	00 to 99 slots	# instead of group	99 slots
Time for Message Waiting connection to UCD Queue	026	UCD Subscriber Group	(00 to 99) in 5-second cycles	# instead of group	0
UCD overflow call destination	027	UCD Subscriber Group	Extension or UCD Group or * - To delete	# instead of group	None
Round-robin distribution to agents	028	UCD Subscriber Group	* - To enable # - To disable	# instead of group	* - To enable
Time for Agent's Notes	029	UCD Subscriber Group	(00 to 99) in 5-second cycles	# instead of group	00 (0 seconds)
Ring Signal Time at an Agent	030	UCD Subscriber Group	(01 to 99) in 5-second cycles	# instead of group	06 (30 seconds)
Time in UCD Queue	031	UCD Subscriber Group	(00 to 99) in 5-second cycles	# instead of group	12 (1 minute)
On Hold Message before Signaling UCD Call	032	UCD Subscriber Group	* - To enable # - To disable	# instead of group	# - To disable

Table 7-6 Programming an Extension

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Minimum Time for UCD Queue On Hold Message	033	UCD Subscriber Group	(00 to 99) in 5-second cycles	# instead of group	00 (0 seconds)
Hunt Groups (HG)	021	Hunt Group (HG)	extension or * - To delete	# instead of group	None
Hunt Group Selection (HG)	022	Hunt Group (HG)	1 - Linear 2 - Round-robin	# instead of group	1- Linear
Override	44	Extension	0 - Without permission 1 - With permission and beep	# instead of extension	0
Silent Monitoring	046	Extension	* - To enable # - To disable	# instead of extension	# - To disable
Caller ID for analog extension (CLIP)	010	Analog extension	0 - No Caller ID 1 - DTMF before ringing 2 - DTMF during ringing 3 - FSK before ringing 4 - FSK during ringing	# instead of extension	0
Electronic Lock Password Reset	26	Extension		Automatic	00000
Timeout when there is no answer	30		(01 to 99) in 5-second cycles	Automatic	06 (30 seconds)
Dialing Mode	68	Extension	Detection: 0 - Automatic 1 - Pulse (DP) 2 - Tone (DTMF)	# instead of extension	0 - Automatic
Flash Detection Time	31	Extension	1 - 280 ms* 2 - 750 ms 3 - 1200ms	# instead of extension	1- (Country-specific)
Overflow Extension/ Escape Extension**	32	1 - No answer 2 - Busy 3 - Wrong number	Extension	Automatic	Extension 11/ 101
Hotline	45	Extension (except 11/110)	Phonebook entry 000 to 249 or * - without Hotline	# instead of extension	* - Without Hotline
Warmline	62	Extension (except 11/110)	0 to 9 seconds	# instead of extension	0 seconds
Executive/Secretary	51	Executive extension (up to 8)	Secretary extension (up to 15) or * - To delete	# instead of extension	None

Table 7-6 Programming an Extension

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
CD Interface Assignment (for System Telephones)	46	Interface: HiPath 1120: 01 to 04 HiPath 1130/1150: 01 to 08 HiPath 1190: 01 to 24 or * - To delete	Extension	# instead of extension	HiPath1120/ 1130/1150: 1st - 11, 2nd - 12, etc HiPath 1190: 1st - 101
Extension Coefficient	48	Analog extension	Line Type (Brazil): 1 - 900 ohms 2 - 600 ohms 3 - 900 ohms 4 - 600 ohms	# instead of extension	1 - Default extension
Activating External Message Waiting Indicator	014		* - To enable # - To disable	Automatic	# - To disable
External MWI Group	015		extensionor * - To delete	# instead of extension	None
Message Waiting server number	065		MSN number (up to 20 digits)	# instead of number	None
Internal Voice Mail Interface	016		UCD Subscriber Group or * - To delete	Automatic	None
Collect Call Barring by extension	93	Extension	* - To enable # - To disable	# instead of extension	# - To disable
Type of equipment connected to the extension	003	Extension	0 - Normal 1 - Fax 2 - DID 3 - Music Module	# instead of extension	0 - Normal
Auto-Answering Mode	034	Extension	* - To enable # - To disable	# instead of extension	# - To disable
Billing alert for analog extension	041	Analog extension	* - To enable # - To disable	# instead of extension	# - To disable
Timer for outgoing external calls	047	Extension	Call duration: 0000 to 9999 seconds	# instead of extension	180 seconds
Activate/Deactivate timer for outgoing external calls	048	Extension	* - To enable # - To disable	Automatic	# - To disable
Second Attendant for MSN	082	Index: 001 to 140	(00 to 99) in 5-second cycles	Automatic	06 (30 seconds)
Modem extension	085	Extension		Automatic	None
MSN and extension assignment	086	Extension + 1 - Day 2 - Night	Index: 001 to 140	Automatic	None

Table 7-6 Programming an Extension

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
External-to-External Transfer	091	Extension	* - To activate # - To deactivate	# instead of extension	# - To deactivate

* - Brazil, China, Vietnam, Chile, Venezuela, Mexico, IM English, IM Spanish, IM French, Malaysia, Singapore, Pakistan and the Ukraine: 1 - 280 ms, 2 - 750 ms and 3 - 1200 ms
- Portugal, India, Argentina and Greece: 1 - 350 ms, 2 - 750 ms and 3 - 1200 ms
- Spain: 1 - 130 ms, 2 - 750 ms and 3 - 1200 ms
- Thailand: 1 - 750 ms, 2 - 350 ms and 3 - 1500 ms

** The overflow extension can be accessed through the specified internal number and cannot be used or programmed as a Fax extension.

Table 7-7 Default settings for EWACO

Country	Permission List		Denied List
Brazil	190 0800	193 0810	0900 900
Argentina			
Portugal	112		64
Chile	800		
Venezuela			
Mexico			
Vietnam			
IM Spanish	190		
IM English			
IM French			
China			
Malaysia			
Singapore	999 995	1800 1608	#571#
Thailand	01 2 3 4 5 6 7 8 9	11 12 13 14 15 16 17 18 19	001 100 101
Greece	100 166	199 0800	090
India			
Pakistan			

Table 7-7 Default settings for EWACO

Country	Permission List		Denied List
Spain	091 112	1003 900	903 905 906
Peru	190		
Philippines			
Canada			
South Africa	1 2 3 4 5 6 7 8 9	072 073 074 082 083 084 086 0800	09

DISA

Table 7-8 DISA

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
DISA Permission	018	Extension	* - To enable # - To disable	# instead of extension	# - To deactivate
MSN DISA	019		MSN number (up to 20 digits)	# instead of number	None
DISA external line	020	External analog line	1 - Never 2 - Night only 3 - Day only 4 - Always	# instead of external line	1 - Never

General settings

Table 7-9 General settings

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Music on Hold	36		0 - No music 1 - To activate external source 2 - To activate external source - extension 3 - To activate internal source 4 - To activate internal PCM source	Automatic	3 - To activate internal source
Assigning Extensions to MOH Groups	087	1 or 2 - MOH Group	extension or * - To delete	# instead of extension	None
Music source for the MOH Group	088	1 or 2 - MOH Group	0 - No music 1 - External music source 2 - External music source (extension 3 - Internal music source 4 - To activate internal PCM source	# instead of group	0 - No music
Music Source Extension	089	1 or 2 - MOH Group	Extension or * - To delete	# instead of group	None
External Music Source - Extension Assignment	064	extension or * - To delete		Automatic	None
Setting the time for an external Room Monitor	69		Connection time: 01 to 99 seconds	Automatic	10 seconds
Types of caller lists	049		1 - External 2 - Internal and external	Automatic	2 - Internal and external
Deleting digits from the Caller List	71		Initial sequence of digits (up to 6 digits)	5-second time-out	None
Date/Time - Manual setting	14		DD - Day, from 1 to 31 MM - Month, from 1 to 12 YY - Year, from 00 to 99 HH - Hour, from 00 to 23 MIMI - Minutes, from 00 to 59	Automatic	
Updating Date/Time while using an ISDN Line	038		* - To enable # - To disable	Automatic	* - To enable
Call Charge Unit	95		Value: 00000 to 99999 + Comma position: 0 to 4	Automatic	factor - 00001 slot - 0

Table 7-9 General settings

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Multiple for Call Charge Factor	042	1 - Factor 1 2 - Factor 2	Pulse multiplier: 000 to 254	Automatic	001 - Value 1
Call Charge Factor for extensions	043	Extension	1 - None 2 - Factor 1 3 - Factor 2	# instead of extension	1 - None
Call Charge Value by Extension	97	Extension	Value: 00000 to 99999 **+** Comma position: 0 to 4	Automatic	factor - 00001 slot - 0
Call Cost Limit by Extension	044	Extension	* - To enable # - To disable	Automatic	# - To disable
Date for Updating the Call Cost Limit for an Extension	045		dd (day, from 01 to 31) or * - To disable	Automatic	* - To disable
Setting a System Password	80		New password (5 digits)	Confirm new password	Password - 31994
Night Service Password	49		00000 to 99999	Automatic	Password - 31994
Restoring Default Settings	99	System password (default: 31994)		Automatic	
Regular Timers	39	**01 to 35: Timer code	New setting: 0 to 65535	#	Factory default
System Timers	40	**1 to 34: Table entry	New setting: 0 to 255	#	
Emergency Numbers	040	Slot: 1 to 5	Number (up to 10 digits)	5-second time-out	Brazil -190 and 193 Portugal and Spain - 112
Module Detection	061	00 - Detect all modules or 01 to 20		# instead of slot	00
Type of MSN Signal	073	Slot: 001 to 140	Type of signal: 1 to 4	Automatic	1
Reference Clock	090	slot or 00 + * - Erases (switches to Auto mode)	Physical Interface: 1 to 5	Automatic	Automatic Mode
Assigning a Temporary MSN	093		Input data type: 1 - MSN Number 2 - MSN Number slot	Automatic	None

**〉 For more details on how to set timers refer to the Help file of the HiPath 1100 Manager administrative software. See the sections on timers specifically.

Updating the Software

Table 7-10 Updating the Software

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
SW Information	001	* - Displays the software release and version number, product name, APS, and serial number.		Any key to finalize entry.	
Local SW Update	060			Automatic	
Activating a SW Update	055		* - To enable # - To disable	Automatic	# - To disable
Day for SW Update	054		dd (day, from 01 to 31) or	Automatic	01
Time for SW Update	058		hh:mm (hh from 00 to 23 and mm from 00 to 59)	Automatic	00:00
External Number for Updating the Software	056		Number (up to 20 digits)	# instead of number	None
Frequency for SW Update	057		Month (01 to 12)	Automatic	01
Uploading the SW Update	059		hh:mm (hh from 00 to 23 and mm from 00 to 59)	Automatic	00:00

Remote Administration

Table 7-11 Remote Administration

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Service Call	*994	Number of Service Center	# - To confirm	Automatic	
Remote Software Update	*9415			Automatic	
Remote Operation Mode	084		1 - Via ISDN 2 - Via Modem	Automatic	1 - Via ISDN
Remote Administration Activation	066		* - To enable # - To disable	Automatic	# - To disable
External Number Configuration	067	Slot: 1 to 4	Number (up to 20 digits)	# instead of slot	None
Remote Administration Password	068	Slot: 1 to 4	00000 to 99999	# instead of slot	None
Remote MSN	069		Slot: 001 to 140 or * - To delete	Automatic	None

Table 7-11 Remote Administration

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Service Call	*994	Number of Service Center	# - To confirm	Automatic	
Remote Software Update	*9415			Automatic	
Without MSN Verification	070		* - To enable # - To disable	Automatic	# - To disable
Remote Administration via DTMF	57		* - To enable # - To disable	Automatic	* - To enable
Ending Remote Administration	96			Automatic	

Entrance Telephone

Table 7-12 Entrance Telephone

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Configuring an Entrance Telephone	15	Slot: 1 to 4	Extension or * - To delete	# instead of slot	# - No
Door Lock	16	Slot: 1 to 4	* - To enable # - To disable	Automatic	# - To disable
DIDs for Entrance Telephones	59	Slot: 1 to 4	Extension (up to 10) + * or * - To delete	# instead of extension	Extension 11/ 101
Permission for Opening Door	25	Slot: 1 to 4	Extension + * or * - To delete	# instead of extension	All extensions

Call Detail Recording

Table 7-13 Call Detail Recording

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Ticket Cost Code	095		* - To enable # - To disable	Automatic	# - To disable
Data Transmission Rate	20		1 - 9600b 2 - 14400b 3 - 19200b 4 - 38400b 5 - 56000b 6 - 57600b 7 - 115200b 8 - 128000b 9 - 256000b	Automatic	5

Table 7-13 Call Detail Recording

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
25-digit Suppression in CDR records	21		0 to 9 (suppress digits)	Automatic	0
Call Detail Report for Incoming Calls*	61		1 - Incoming/Outgoing calls 2 - Outgoing calls 3 - Incoming/Outgoing calls + CLIP 4 - Outgoing calls + CLIP	Automatic	1 - Incoming/ Outgoing
Call Detail Report Filter	67		Sequence consisting of the first 25 digits of the number to be billed (up to 4 digits)	5 seconds time-out	None
Call Detail Report with a Serial Interface	006		* - To enable # - To disable	Automatic	* - To enable

* If the system is enabled for Caller ID over digital or analog lines by the local carrier.

Table 7-14 Country/Group of Countries (65)

Code	Group	Country	Display Language
01	Brazil (default)	Brazil Bolivia Paraguay*	Portuguese Spanish Spanish
02	Argentina	Argentina	Spanish
03	Portugal	Portugal	Portuguese
04	Chile	Chile	Spanish
05	Venezuela	Venezuela	Spanish
06	Mexico	Mexico	Spanish
07	Vietnam	Vietnam	English
08	IM Spanish	Colombia Uruguay Ecuador Central America Indonesia**	Spanish English
09	IM English	Saudi Arabia Bahrain Egypt United Arab Emirates Ghana Yemen	English

Table 7-14 Country/Group of Countries (65)

Code	Group	Country	Display Language
09	IM English	Iran Jordan Kuwait Libya Nigeria Oman Kenya Zimbabwe Syria Sudan Tanzania Serbia/ Montenegro	English
10	IM French	Algeria Cameroon Ivory Coast Lebanon Morocco Senegal Tunisia	French
11	China	China	English
12	Malaysia	Malaysia	English
13	Singapore	Singapore	English
14	Thailand	Thailand	English
15	Greece	Greece	English
16	India	India	English
17	Pakistan	Pakistan	English
18	Spain	Spain	Spanish
19	Russia	Russia	English
20	Ukraine	Ukraine	English
21	Peru	Peru	Spanish
22	China 2	China 2	English
23	Philippines	Philippines	English
24	Canada	Canada	English
25	South Africa	South Africa	English
26	Turkey	Turkey	English
27	Latvia	Latvia	English
28	Lithuania	Lithuania	English
29	Italy	Italy	English

* For Bolivia and Paraguay, set "01=Brazil" for country/groups of countries then "02=Spanish" for language.
** For Indonesia set "08=Intern. Spanish" for country/group of countries. then "03=English" for language.

Table 7-15 Analog CLIP Protocol (005)

Country	Protocol	Code
Brazil (01)	DTMF1	1
IM - Spain (08), IM - English (09) and Peru (21)	DTMF2	2
Other countries	FSK	3

Fax/DID Module

Table 7-16 Fax/DID Module

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Answering Menu	009	Select forwarding digit: 0 to 9 or *	Enter the Extension or Call Group number to be assigned to the digit	# instead of the forwarding digit	None
Announcement Recording	37	9 - Record 0 - Play + Type of announcement: 01 to 12	Type of announcement: Fax Mode: 01 - Greeting for business hours (24 s) 02 - Greeting for Night Service (24 s) 03 - Transfer (16 s) DID Mode: 04 - Greeting for business hours (32 s) 05 - Greeting for Night Service (32 s) 06 - Transfer (16 s) Fax/DID Mode: 07 - Greeting for business hours (32 s) 08 - Greeting for Night Service (32 s) 09 - Call Forwarding (16 s) 10 - Identification announcement (16 s) 11 - Alarm (8 s) 12 - Reservation	#	
Call Answering Mode Configuration	27	External Line	0 - Module disabled 1 - Fax 2 - DID 3 - Fax/DID 4 - Announcement 5 - Autofax	# instead of the number of the free line	0
Fax Reception Extension	28	External Line	Extension or * - To delete	# instead of external line	None

Table 7-16 Fax/DID Module

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Collect Call Barring	008	1 - Fax 2 - DID 3 - Fax/DID 4 - Message (announcement)	* - To enable # - To disable	# instead of mode	# - To disable
MSN Answering for Fax/DID	080	Slot: 001 to 140	0 - Deactivated 1 - Fax 2 - DID 3 - Fax/DID 4 - Message 5 - Autofax	# instead of slot	00 - Deactivated
Fax Extension for MSN	081	Slot: 001 to 140	Extension	# instead of slot	None
Fax/DID Release after a Timeout	094		(00 to 99) in 5-second cycles	Automatic	06 (30 seconds)

Digital trunk settings

Table 7-17 Digital trunk settings

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
S_0 Ports(HiPath 1190	062	Slot: 01 to 20	1 - External line and extension 2 - External line 3 - Extension	# instead of slot	1 - External line and extension
Mode of Operation*	90	Slot + Physical Interface	1 - Point-to-point connection (PP) 2 - Point-to-Multipoint connection (PMP) 3 - $S_{0\ Bus\ line}$	# instead of slot	1 - First port 3 - All other ports
Symmetric Call	074		* - To enable # - To disable	Automatic	* - To enable
Absence of ACK Setup for external ISDN Line	075		* - To enable # - To disable	Automatic	# - To disable
Notify	076		* - To enable # - To disable	Automatic	* - To enable
Automatic Keypad	077		* - To enable # - To disable	Automatic	# - To disable
Assignment of an external ISDN line to a MSN	078	Slot: 001 to 140	external line or * - To delete	# instead of slot	All assigned lines
External line prefix	89	1 - National 2 - International	Line prefix (up to 5 digits)	# instead of the digit or Automatic	None

Table 7-17 Digital trunk settings

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
External Number Registration	91	Slot: 001 to 140	DID final digits (up to 20 digits)	# instead of slot	None
Assigning an external number to an extension	92	Slot: 001 to 140 **+** 1 - Day, incoming 2 - Night, incoming 3 - Day, incoming with delay 4 - Night, incoming with delay	Extension or Subscriber Group (up to 10 extensions/ groups) * - To delete	# instead of extension	None
Busy Signal**	004	Slot: 001 to 140 **+** 1 - Day 2 - Night	Busy Signaling Group: 001 to 140	# instead of the code	All MSNs - 001
Local area code filter	011		Enter the local area code (up to 10 digits)	# instead of the code	None
Country code filter	012	See Table 7-18 on page 7-19	Enter the country code (up to 10 digits)	# instead of the code	55 - Brazil

* For E1 external digital lines select PP connection.

** This feature is valid only for digital lines with an attendant number. It is not valid if more than one extension is configured for the slot/DID number/MSN. If the Fax/DID module is installed and configured for digital lines, this feature will also be invalid.

For more details on how to install S_0 MOs see "Limitations to System Expansion" on page 2-5.

Table 7-18 CAC Code (012)

Country	CAC	Country	CAC
South Africa	27	Latvia	371
Argentina	54	Lithuania	370
Brazil	55	Malaysia	60
Canada	1	Mexico	52
Chile	56	Pakistan	92
China	86	Peru	51
China 2	86	Portugal	351
Spain	34	Russia	7
Philippines	63	Singapore	65
Greece	30	Thailand	66
IM Spanish	-	Turkey	90
IM French	-	Ukraine	380
IM English	-	Venezuela	58
India	91	Vietnam	84
Italy	39	-	-

ADSL Module

Table 7-19 ADSL Module

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Restore ADSL module default settings	013			Automatic	IP 10.0.0.1

Relay and sensor on the HiPath 1120

Table 7-20 Relay and sensor on the HiPath 1120

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Sensor function configuration	70		0 = Deactivate the sensor's function (default) 1 = Dial the number specified in "Number Dialed by Sensor Activation" (Code 052). 2 = Activate the relay through the sensor 3 = Detect DTMF code. When this setting is selected, the number that was called must acknowledge or ignore an alarm call by sending an acknowledgement code ("#" DTMF signal)	Automatic	0
Sensor activation logic	74		0 - Contacts closed 1 - Contacts open	# instead of the sensor	0 - Contacts closed
Time between Attempts for Activating the Sensor	050		Time: 00 to 10 minutes	Automatic	03 (3 minutes)
MSN Assignment for the Sensor	051		Slot: 001 to 140 or * — To delete	Automatic	None
Number Dialed by Sensor Activation	052		Number (up to 20 digits)	Automatic or #	None
Number of Attempts for Activating the Sensor	053		001 to 100 (attempts)	Automatic	001 (1 attempt)
DTMF signals for the Relay	77		Number (up to 20 digits) # - To confirm	Automatic	None

Table 7-20 Relay and sensor on the HiPath 1120

Programmed Functions	Code	Intermediate Data	Data to be Programmed	Completing Data Entry	Default
Relay*	75		1 - Switch 2 - Monoflop 3 - Invert 4 - Music on Hold 5 - External signal	Automatic	1 - Switch
Timer for Deactivating the Relay	73		000 to 255 (intervals of 0.5 s)	# instead of number	002 - (1 second)
External Ring for Activating the Relay	071	Extension		Automatic	None

* When playing music from an external music source all regulations relating to copyrights for the country in question have to be followed.

7.1.1 Run quick test

Checking terminals

- Check the display of each terminal (for Time and Date). If there is nothing on the display, it means that there is a problem with the terminals or cables. Replace the terminal or inspect cables.
- Check analog terminals.

Checking to see if the systems starts up properly

- Make random internal and external calls.

7.2 Comments about the System's Programming Codes

7.2.1 Important settings

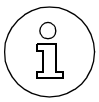
Dialing Mode on an External Analog Line (19)

The system supports two dialing modes for external and absent lines (for unused external line slots):

- DP - Dial Pulse
- MF - Multifrequency (Tone)

Default Access to a Group of External Lines (002)

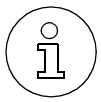
This setting determines how each extension will access a group of external lines.



If the user enters an external access code of "0," the system will search for a free line in the group assigned. If there is no free line, the system will search for a line in another group.

Analog Line Attendants (42)

These define the extensions or Consecutive Groups that will first answer calls received from a specific external line during a specified time period (Day/Night).



If an extension is connected to a Door Opener device, the device cannot be configured as an Attendant.

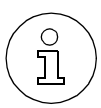
When no first DID is configured, the call will be forwarded to the Overflow extension. In the event that an Overflow extension is not configured, the call will end. In such cases no extension is signaled and the call cannot be captured. Meanwhile, the system will continue to wait for an available external line.

Speed Dialing/Phonebook (12)

You can store up to 250 telephone numbers of up to 20 digits each in the System Speed Dialing. You can assign a name of up to 10

characters to each number. This allows you to do alphanumeric searches (see the section on Alphanumeric Search in the User Manual).

You can look for phone numbers in the Speed Dial Phonebook by entering their assigned speed-dial number. This can be done from any extension. By default there are no speed-dial numbers stored in the Phonebook.



For the HiPath 1120, the Phonebook entry 249 is reserved for relay and sensor functions.
To dial an external number enter the external line number instead of the external access code "0."

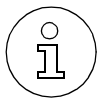
Denied Numbers List (23)

There are 3 Denied Numbers Lists valid for all extensions in the category "Restricted Trunk Access (with Denied List)." List 1 allows you to store 4 numbers; list 2, up to 10 numbers; and list 3 up to 35 numbers.

To change a blocked number enter its Phonebook entry number then the new number.

Permission List (24)

There are 3 Permission Lists that are available for dialing from any extensions in the category "Outward-Restricted Trunk Access." List 1 allows you to store 4 numbers; list 2, up to 10 numbers; and list 3 up to 25 numbers.



To change a released number enter its Phonebook entry number then the new number.

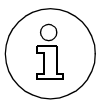
Permission for using Speed Dial numbers without COS analysis (072)

This code allows users of a class with no designated permission to make external calls using the Speed Dialing Phonebook.

COS assignment (11)

There are up to 8 access categories for accessing external lines that can be assigned to extensions:

- No Trunk Access (No Permission) - For making internal calls and answering external calls;
- Outward-Restricted Trunk Access - For receiving internal and external calls, and for answering and receiving transferred calls. However, it does not have normal access to make external calls, except for calls dialed directly from the Phonebook or from Permission Lists.
- Restricted Trunk Access (with Denied List) - For receiving internal and external calls and for making external calls to any number that is not included in the Denied List.
- Unrestricted Trunk Access - Can make any type of call.



An extension may be assigned two different categories, one for Day and one for Night Service.

COS Changeover (78)

This code allows extensions to use a feature for temporarily changing over the Class of Service. Therefore, it is possible to allow or deny an extension to transfer temporarily its Class of Service to another telephone.

Language (64)

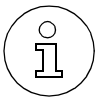
Defines the language for displaying messages on the system telephone display.

Country/Group of Countries (65)

Specifies the country where the system will be used, configuring regional settings accordingly.
After Country settings are configured, the system is restarted.

Attendant Console (50)

This streamlines the flow of calls to one console equipped with a system telephone with a display.

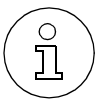


The Attendant Console does not receive "Direct message to the speakerphone" and it must not belong to any Executive/Secretary group.

Warning Tone for Calls without LCR (092)

This feature alerts the user to the fact that the HiPath 1100 is making a call that may be charged by the Carrier at a higher rate than usual. This may be due to the unavailability of an external line for LCR (Least Cost Routing).

When using a standard telephone, a warning tone indicates to the user that a different carrier is completing the call at this time. When using a system telephone, the carrier's name will show on the display.



In order to use this feature the HiPath 1100 must have been enabled for LCR (programmed via the HiPath 1100).

7.2.2 External line settings

Group of External Lines (56)

Allows you to configure the access to an external line or a group of external lines using the access code "0" or another than.

Seizure priority by type of external line (94)

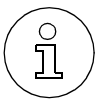
This setting specifies which type of external line will be seized when making an outgoing call.
External lines can be accessed using the access code "0" or the code specified for a group of lines.
If the PABX has digital and analog lines, you can specify which type of line will have priority.

External analog line seizure protocol (017)

This feature specifies the protocol to be used by the system for seizing an external analog line, based on the local carrier's information.

ID for Analog Lines (005)

Enabled by the local Carrier, this service provides Caller ID over FSK and DTMF protocols on analog lines.



When a Country setting is specified, the appropriate protocol is automatically selected.

External Line Call Direction (55)

Specifies how to access external lines when receiving or making a call.
An external line can be:

1 = Bi-directional

2 = Incoming unidirectional

3 = Outgoing unidirectional

Flash Duration (18)

Specifies the time during which the Flash signal remains active on the external analog line in relationship to the detection defaults set at the exchange.

Reseizure Timeout for an External Line (29)

This setting specifies the timeout to reseize the external line after a call has been completed.

Maximum time between rings for an incoming call (17)

This setting defines a time interval of approximately 6 seconds between two pulses transmitted by the local carrier. At the end of this time interval, the system disconnects from the external line and gets ready to receive other calls.

Coefficient for an external analog line (47)

This function couples the impedances for a system and the public network external analog line to which it is connected.

Polarity Inversion (58)

If your Carrier provides this feature, call detail recording occurs in real time. That is, when the called party answers the phone, the public exchange sends a signal for the system to start call detail recording.

Dial Tone Detection (60)

This setting has the system wait for a dial tone detection on the public exchange before making it available to the user. With Standard MF telephones the number dialed will be transmitted to the external line approximately 4 to 5 seconds after the last digit is dialed.

Connection Type (33)

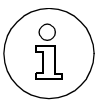
This setting determines whether the external analog line that is connected to one of the HiPath 1100 systems is also interconnected to another C.O. or PABX.

Second External Access Code (34)

This setting determines the code to be sent by the Satellite PABX in accordance with the access code for external lines on the Master PABX. This code is used for determining the availability of a dial tone on an external line.

Auto-Seizure Mode for an External Line (036)

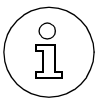
This feature dials an external call when the handset is lifted, without using an access code (e.g., 0). When this setting is selected you must enter a code to dial internal calls or activate the Extension key.



Activating this feature may impact the programming of the Dialing Mode (Code 68), assuming option 0 (Automatic ID) is selected. It is recommended that you reconfigure the Dialing Mode (Pulse or Tone) for the extensions.

False tone (063)

This sends an external line dial tone even when there is no external line available.



If LCR (configured via the HiPath 1100 Manager) or Emergency Numbers is enabled, the user will hear a False Tone.

External line present (079)

This setting allows you to determine whether a given external line exists.

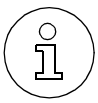
Waiting time for a Second Attendant to answer a call on an external analog line (083)

This setting specifies a timeout before the call starts ringing at the extension.

7.2.3 Programming an Extension

Pickup Groups (43)

You can classify extensions in up to 16 Pickup Groups so that an extension from one group can answer calls that ring at other extensions in the same group.



You can also add extensions to an existing Pickup Group.

Call Groups (CG) (13)

This setting groups extensions in Call Groups (CG) that can be accessed through numbers 770 to 779. Whenever this number is dialed, every telephone in the group rings until one of them answers.

Alert Ring Timeout for Pickup Groups (035)

Incoming calls are signaled on standard telephone sets within a pickup group (Code 43); in telephones without a display they are signaled by an alert ring signal. The duration of the ring tone can be specified.

Activating Callback/Urgent Call with Timeout (037)

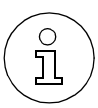
When an extension or external number is busy, this configuration provides the means for setting a timeout for activating the Callback or Urgent Call features after approximately 7 seconds.

Call Name/Number Display (039)

This setting specifies the type of Caller ID information that will be shown on the telephone display.

UCD Subscriber Groups (023)

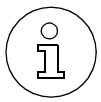
This setting creates a group of extensions that can receive internal and external calls.
A Subscriber Group is a group of extensions available for answering calls made to a specific number assigned to it.
An internal or external call directed to this group will be answered by the extension that has been free the longest.
In the event that all extensions in the group are busy external calls are routed to a hold queue.



If Data Protection or Urgent Call Barring are activated for a specific extension in the group, this function will be effective for all extensions in the Subscriber Group.

Collect Call Barring for UCD Group (007)

When collect call barring is activated, all collect calls are automatically rejected by the system (for Brazil only). The system bypasses Collect Call Barring for members of a UCD Group, that is, call barring for the group is only verified.



If a call has been answered at least once by the system, Collect Call Barring cancels the blocking.

When an incoming call over a digital line is forwarded for not being answered (*14) and Collect Call Barring is activated, the call will ring at the first DID for the external line.

Message Waiting for UCD Queue (024)

Links a recorded announcement (or Music on Hold) for a UCD Group when all group extensions are busy.

UCD Queue Size (025)

This setting specifies the UCD Queue size for calls on hold for each UCD Group.

Timeout for Activating a Call Waiting Message for a UCD Queue (026)

This setting specifies the time between queued calls and the recorded announcement (or music).

UCD Overflow Call Destination (027)

This setting specifies the location to which a UCD will be forwarded when:

- All agents are logged out
- A UCD Queue reaches the maximum number of calls waiting
- The queue's overflow timeout expires.

Different overflow locations can be set for each UCD Group.

Round-robin Distribution of Calls to Agents (028)

This setting allows you to configure a round-robin type distribution of calls so each call rings automatically at the station of the next available agent. If no agents are logged in, calls are forwarded to an overflow call destination.

Time for Agent's Notes (029)

This features allows you to set a period of time for the agent to leave the Group without being disturbed and make notes about a call.

Ring Signal Time at an Agent (030)

This setting specifies how long an incoming call will keep on ringing at an agent's station.

Time in a UCD Queue (031)

This setting specifies the maximum length of time a call is allowed to remain in a UCD Queue.

Once the time expires the call is disconnected or forwarded to a UCD overflow call extension.

Waiting Message before Signaling a UCD Call (032)

This feature allows you to connect a call waiting message for incoming calls before they ring at an extension.

Minimum Time for Call Waiting Message in a UCD Queue (033)

This setting specifies a minimum length of time until a message is played for calls waiting in a queue.

Hunt Groups (HG) (021)

This setting allows you to group extensions into a maximum of 10 Hunt Groups (780 to 789).

A Hunt Group (HG) is a group of extensions assigned for answering calls made to a specific number.

When an extension does not answer an internal or external call within a specified period of time, the call rings consecutively at the available and the busy extensions in the group. When no one is not available, the extension may disconnect from the Hunt Group.

Search Mode for Hunt Groups (022)

This setting specifies the type of search to be performed for an available extension within a group, whether linear or round-robin.

When a call is received by a Hunt Group configured for Linear distribution, the search starts from the first extension within the group. In a Round-robin distribution the search starts from the extension following the last extension selected.

Override (44)

This setting allows a specific extension to "Override" two other extensions with a conversation in progress.

Within the system, Override has the same limitation as the Silent Monitoring and Conference features. A maximum of 2 simultaneous Silent Monitoring is allowed by the system. Important: The Override feature is ticketed as a Conference.

Silent Monitoring (046)

This setting specifies the extension for performing Overrides without a beep.

Within the system, Silent Monitoring has the same limitation as the Conference and Override features. A maximum of 2 simultaneous conferences is allowed by the system. Important: The Override feature is ticketed as a Conference.

If the monitoring or the monitored party change status, Silent Monitoring will be canceled. This occurs, for example, when a call is placed on hold.

Only for Brazil and India

Caller ID for analog extension (CLIP) (010)

When this feature is enabled and the extension receives an incoming call, the DTMF generator will send a signal and display the callers information at the extension. When a E805C (Brazil) or a Gigaset 4010 telephone is used, the Caller ID information is shown on the display.

Electronic Lock Password Reset (26)

It blocks the extension from making external calls allowing only internal calls or dialing a number directly from the Phonebook. A 5 digit password is used for configuring this setting.

Timeout when there is no answer (30)

This setting specifies the time duration for external calls to ring at an extension before being transferred to a second DID, in case that there is no answer.

Dialing Mode (68)

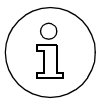
This setting specifies the dialing mode to be used by each extension or whether the dialing mode should be detected automatically. The dialing modes are: pulse (DP) and tone (MF).

Flash Detection Time (31)

The Flash signal generated by a Standard MF telephone will only be detected if it is within the range configured for the system.
Therefore, it is recommended that you check the Flash detection time of MF telephones and adjust the settings to approximate them as much as possible.
The configurations for detection of Flash may vary depending on the country.

Overflow/Escape Extension (32)

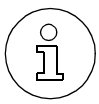
An overflow extension only receives calls when the extension to which it is assigned as overflow is not available.



The overflow extension can be accessed through the specified internal number and cannot be used or programmed as a Fax extension.

Hotline (45)

This function lets you dial automatically a number previously programmed into the Phonebook as soon as the handset is lifted.



Multiple extensions can dial a number programmed in the Phonebook.

Warmline (62)

It allows you to specify a period of time for activating the Hotline.
Each extension can have a different timeout set for the Warmline, from 0 to 9 seconds.

Executive-Secretary (51)

Assigns multiple extensions (Secretary Telephones) to a main telephone set (Executive Telephone).
There are 8 groups available with 16 extensions each (all extensions must use system telephones).

CD Interface Assignment (46)

It allows you to connect a system telephone to any extension slot.

The default setting for this assignment is:

Table 7-21 CD Interface Assignment

HiPath 1120	HiPath1130/1150/1190
A1/B1 ⇒ C1/D1	A1/B1 ⇒ C1/D1
A2/B2 ⇒ C2/D2	A2/B2 ⇒ C2/D2
A3/B3 ⇒ C3/D3	A3/B3 ⇒ C3/D3
A4/B4 ⇒ C4/D4	A4/B4 ⇒ C4/D4

Table 7-21 CD Interface Assignment

HiPath 1120	HiPath1130/1150/1190
	A5/B5 ⇒ C5/D5
	A6/B6 ⇒ C6/D6
	A7/B7 ⇒ C7/D7
	A8/B8 ⇒ C8/D8

Extension Coefficient (48)

This function couples the impedances of the system and the extension line to which it is connected.

Collect Call Barring by extension (93)

When collect call barring is activated, all collect calls are automatically rejected by the system.

If a call has been answered at least once by the system, Collect Call Barring cancels the blocking.

When an incoming call over a digital line is forwarded for not being answered (*14) and Collect Call Barring is activated, the call will ring at the first DID for the external line.

Type of Equipment Connected to an Extension (003)

This setting specifies the type of equipment that is connected to a selected extension slot.

Auto-Answering Mode (034)

This setting specifies the use of the Auto-Answering Mode for the telephone by using a feature code (see Functions used for Making Calls - Speakerphone Auto-Answering Mode in the User Manual).

Billing alert for analog extension (041)

This setting allows you to transmit billing pulses to an analog extension.

Please refer to the documentation provided with the telephone set connected to the extension to find out if a billing indication is supported and which transmission mode is used.

Timer for outgoing external calls (047)

This setting specifies a maximum time for the duration of an outgoing external call for each extension.

The time count starts upon connection of a call and will never restart while the call is in progress (e.g., when there is a transfer). Once the time expires, the call is terminated.

Activate/Deactivate timer for outgoing external calls (048)

Activate/Deactivate the timer for a specified extension.

Second Attendant for MSN (082)

This setting specifies a timeout after which calls start ringing at an extension.

Modem Extension (085)

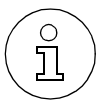
This setting specifies the extension where the modem is connected.

MSN and Extension Assignment (086)

This setting assigns extensions to each MSN to be transmitted to the outgoing calls destination.

External-to-External Transfer (091)

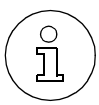
This feature allows a specified extension to transfer an external call (incoming or outgoing) to another external call.



An External-to-External transfer can only be made when at least one of the lines is a digital line.

7.2.4 DISA

This setting allows you to make an external call from an external telephone (as if it was an extension) through your system. In addition, the following features can be activated or deactivated: Call Forwarding, Feature Deactivation, Conference, Night Service, Suffix-Dialing, Door Opener, Electronic Lock, Individual Speed Dialing, System Speed Dialing, Relay, and Do Not Disturb.



Only one external call can be made or one feature can be used at a time. After successful activation of a feature, the call is immediately terminated. In the case of a call, it is terminated right after a caller hangs up.

TAPI only monitors physical ports. To operate correctly, a DISA feature must use special ports, and those cannot be monitored. If a physical port is used when the DISA feature is active, the TAPI will be able to monitor it.

DISA Permission (018)

Activates the DISA feature.

MSN DISA (019)

This specifies from which MSN the DISA features will run.

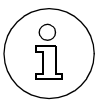
External Line DISA (020)

This setting specifies an external line and the timeout for DISA answering.

The system allows only one DISA call. When there is a DISA call in progress, a second call to a DISA external line or one with a DISA answering mode is treated as a regular call. If a call is received over an external line configured as a Fax/DID and DISA, the call is answered by the Fax/DID. If no digits are entered, the call is forwarded to the DISA after a specified timeout.

7.2.5 External Message Waiting Indicator (MWI)

With this feature a group of extensions called an External MWI Group is able to receive signals generated by the Voice Mail Server that indicate when there is a message waiting in the user's mailbox.



For standard telephones with a display MWI will only be indicated if a CLIP is configured for the extension using option 3 or 4 ("Caller ID for analog extension (CLIP)" on page 7-7).

Activating External Message Waiting Indicator (014)

Activates the MWI feature for a group of extensions.

External MWI Group (015)

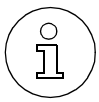
Extensions configured in this group are allowed to receive a Message Waiting Indicator from an external Voice Mail Server where user's messages and announcements are stored.

Message Waiting server number (065)

This setting specifies a MSN number for the Waiting Message server.

Internal Voice Mail Interface (016)

This setting specifies the Subscriber Group that will interface with the internal Voice Mail Server equipment.



Only one Subscriber Group can be configured for Voice Mail. This group's extensions are connected to the server via the HiPath 1100 A/B pair.

7.2.6 General settings

Music on Hold (36)

This setting specifies the type of music the caller on hold will hear.

Assigning Extensions to an MOH Group(087)

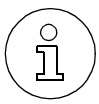
This setting allows you to distribute extensions in two MOH groups.

Music source for the MOH Group (088)

This setting specifies the type of music the caller on hold will hear.

Music Source Extension (089)

This setting specifies the extension to which a music source is connected.



The extension specified here is deactivated when the **External Music Source - Extension Assignment (064)** option is configured.

External Music Source - Extension Assignment (064)

With this feature Music On Hold can be played from a terminal connected to an extension slot.

Setting the time for an external Room Monitor (69)

Allows you to activate room monitoring for a specified period of time, using the telephone's microphone.
If a Fax/DID module is installed in the system, room monitoring can be implemented using an external telephone (Babyphone).

Caller List Type (049)

This setting specifies whether only external calls or all internal and external calls should be displayed in the Caller Lists.

Deleting digits from the Caller List (71)

Specifies the digits that do not need to be repeated when making a call.

Date/Time - Manual Setting (14)

Sets the current Date and Time for the system. When the default configuration is restored (99), the Date setting displays information about the date the software was create and will display the time as 12:00.

Updating Date/Time over an ISDN Line (038)

This setting allows automatic synchronization of the system's date and time during an external call over an ISDN line.

Call Charge Unit (95)

This setting specifies a Call Charge Factor used as a multiplier for the number of pulses so that call charges can be displayed in currency units.

Multiple for Call Charge Factor (042)

This setting specifies the multiplier for Call Charge factors. The default setting specifies that each pulse be multiplied by 1 for both factors.

Call Charge Factor for extensions (043)

This setting specifies whether the extension should be assigned a rate schedule and, if so, which Factor should be used to calculate call charges.

Call Charge Value by Extension (97)

This setting specifies the amount that can be spent by each extension.

Call Cost Limit by Extension (044)

This setting limits the amount available to an extension for Call Charges.

Date for Updating the Call Cost Limit for an Extension (045)

This specifies a day for resetting the Call Charge limit.

Setting a System Password (80)

Changes the default password 31994 to any 5-digit number you select (see"Issues Concerning Changes to the Default Password" on page 6-3).

Night Service Password (49)

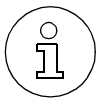
Defines an additional password for activating/deactivating different functions (including Relays, Night Service).

Restoring Default Settings (99)

Restores all default factory settings. After entering this code, the system will restart. Only the settings for Country/Group of Countries (Code 65) will be saved as last configured.

Regular Timers and System Timers (39 and 40)

These settings allow you to reset the times for some features and signals according to the specific characteristics of a user or a country.



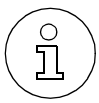
For more details on how to set timers refer to the Help file of the HiPath 1100 Manager administrative software. See the sections on timers specifically.

DTMF signals for the Relay (77)

When an alarm is triggered, the HiPath 1120 makes a call using the Speed Dialing entry 249. The slot number is called and a sequence of digits in DTMF format is repeated every 5 seconds immediately after the connection is established. This sequence of 25 digits is used to determine the source of the alarm so that an alarm exchange, for example, can identify from which PABX the alarm is coming from. If the receiving exchange does not acknowledge the alarm within 1.5 minutes, the procedure is repeated every 3 minutes.

Emergency Numbers (040)

You can specify up to five emergency numbers. When one of these numbers is dialed and all external lines are busy, the call on the first external line will be interrupted and the line used for making the emergency call. A call is not disconnected when it is an incoming call over an external analog line.



The name assigned to these numbers can have up to 15 characters.

Emergency calls never use external lines configured for:

- Internet access
- An absent external line
- An external line configured to accept only incoming calls

Module Detection (061)

This setting specifies the slots to which new modules are connected, so that the system may detect them.

The modules can only be connected/disconnected when the system is turned off.

If the option "Detect all slots" is selected, the system will detect the components in the following order:

1 - External lines/digital extensions

2 - External lines/analog extensions

This means that if there was a previous configuration in which the order of analog lines/extensions was specified, that order will be changed when a TME1 or S0 modules is added to the system.

Example: In a HiPath 1150 system that has only a MB Module (2 external lines and 10 analog extensions) the numbering pattern will be 801 and 802 for the external analog lines, and 11 to 20 for the analog extensions. The insertion of a S0 module produces the following configuration:

- 801 to 805 for the external digital lines
- 806 and 807 for the external analog lines
- 11 to 15 for the ISDN extensions
- 16 to 25 for analog extensions
- Extension 16 as the Programming extension.

If "Detect only specified slot" is selected, the existing numbering configuration will remain. Only the module will be detected by the system.

Type of MSN Signal (073)

This setting specifies the selection of one of four different ring signals to be assigned to registered MSNs.

Reference Clock (090)

This allows you to specify a module slot for the system's Reference Clock.

Assigning a Temporary MSN (093)

This feature allows you to use a temporary MSN from your own directory to make an external call. Or, to use the "Key Assignment" feature to assign a key to a MSN for monitoring incoming and outgoing calls (see Key Assignment - Using a Temporary MSN for Making a Call, in the User Manual).

7.2.7 Updating the Software

SW Information (001)

This displays information about the system's software. To view this information use a system telephone with a display.

Local SW Update (060)

This setting allows you to update the software that is now running on the computer.

Activating a SW Update (055)

This feature allows you to update the system's software automatically at a scheduled date.

Day for Update (054)

This setting specifies a day for starting the data transfer (upload process).

Time for Software Update (058)

This setting specifies the time of day for starting the data transfer on the specified day.

External Number for Updating the Software (056)

This setting specifies a number to be used by the system to update the software.

Frequency for SW Update (057)

This setting specifies regular intervals in months for transferring data.

During a transfer the telephone operates as usual.

Uploading the SW Update (059)

This setting specifies the moment data downloaded will be uploaded to the system's memory.

While this upload is in progress (lasting approximately 3 minutes), the telephone remains out of service.

7.2.8 Remote Configuration

Service Call (*994)

This feature allows you to call a service center and let administration be carried out remotely through the on-going call.

Remote Software Update (*9415)

If authorized, a software update can be started automatically.

Remote Operation Mode (084)

This specifies the remote updating of the software.

An update can be carried out remotely over external digital ISDN lines and analog lines connected to a modem.

Remote Administration Activation (066)

This setting allows the system to be administered remotely.

External Number Configuration (067)

This specifies external numbers (Service MSN without external access code 0) that are able to perform Remote Administration.

Remote Administration Password (068)

This specifies a password (5 digits) for enabling Remote Administration from an external number (Service MSN).

Remote MSN (069)

This setting specifies an ISDN line MSN as the Remote MSN.

The system will only allow Remote Administration when this remote MSN is used.

Without MSN Verification (070)

Remote Administration will be performed without verifying the Service MSN that has been transmitted.

Remote Administration via DTMF (57)

Allows you to configure the system remotely using a Standard MF telephone.

- Remote configuration:
  Remote Configuration must be enabled and the programming extension must have a conversation in progress on the external line over which programming is to be performed.
  In Talk mode enter the code (*991) at the programming extension to transfer control of the HiPath 1100 to the remote programmer. The remote programmer must then enter the system password using a MF telephone.
  To execute the required programming proceed as if the remote telephone was connected directly to the system.
- If there is a Fax/DID module available:
  Enter the code (* 95) using the remote MF telephone after answering the call.
  The remote programmer must then enter the system password using a MF tele-

phone.
To execute the required programming proceed as if the remote telephone was connected directly to the system.

If the system is connected through a serial cable to a PC with access to the telephone system, the programming can also be done using a modem in conjunction with the HiPath 1100 Manager. Refer to the instructions provided in the Help file.

Ending Remote Administration (96)

Ends remote configuration by means of a Standard MF telephone.

7.2.9 Entrance Telephone

Configuring an Entrance Telephone (15)

This function enables the system to use an entrance telephone.

Door Lock (16)

This feature detects when there is a locking device installed.

DIDs for Entrance Telephones (59)

Specifies the extensions that will be called when the Entrance Telephone is activated.

Permissions for the Door Opener (25)

Specifies the extensions that will be able to use the electric Door Opener.

7.2.10 Call Detail Recording

For better control over the calls, the system issues Call Detail Reports with information about calls received and calls made. This information can be sent to a PC or printer via serial interface connection. To generate reports that can help control costs, the Call Detail Report feature must be installed on the PC.

To provide accurate call details, you must update the system's time and date information.

The following information is recorded:

- Current date (Date)
- End of call (Time)

- External line used (Ln)

Note: Example of the (Ln) field content for ticketing:

External Line	(Ln) Field
801	00
802	01

- Extension (Ext)

Some specific types of access will be displayed in this field, indicated by the following numbers:

Access	(Ext) Field
Sensor - Outgoing call	9101
Data Link - Outgoing or incoming data call for system administration	9201
DISA - Incoming call	9301
Fax/DID - Incoming call	9401

- COS Changeover (WCOS)
- Ring duration
- Call duration
- Dialed Number (Number)
  The system allows you to configure a confidentiality feature for the number dialed at the time the CDR record is issued. This is done by replacing the symbol "?" with the last four digits dialed.
- Type of call (I):
  - 1 = Incoming call
  - 2 = Outgoing call
  - 5 = Transferred incoming call
  - 6 = Transferred outgoing call
  - 7 = 3-way conference with incoming
  - 8 = 3-way conference with outgoing call
  - * = Incoming call not answered yet = incoming call
- Impulses (Call fees) with a TME1 Module installed.
- Cost Code (Account code).

Example:

Table 7-22 CDR Header Layout

Date	Time	Ln	Ext	WCOS	Ring	Duration	Number	I	Callfees	Acc. code
22.11.99	14:00:00	01	21		00:14	00:01:34	2222222	1		

When a call is transferred, a new CDR record is created. The Hold Time on an external line is accounted for by the extension that transferred the call.

Ticket Cost Code (095)

External calls can be assigned Cost Codes which provide more control over telephony costs (see Functions Used During a Call - Cost Code, in the User Manual). This information may be presented on the billing ticket.

Baud Rate (20)

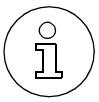
This setting specifies the transmission rate between the system and a printer or a PC.

25-digit Suppression in CDR Record (21)

This setting specifies how many end digits can be omitted in the data output when dialing a call on an external line. They will be replaced by the symbol "?."

Call Detail Report for Incoming Calls (61)

When this option is selected, call details are shown in the CDR record.



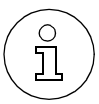
For the system to receive Caller ID information over digital, E1 CAS or analog lines the Caller ID feature must be enabled by the local carrier.

Call Detail Report Filter (67)

Specifies a unique sequence of 4 digits that will be recorded.

Call Detail Report with a Serial Interface (006)

This setting specifies that the Call Detail Report will be done through a serial interface.



CommServer does not work when this setting is enabled.

7.2.11 Fax/DID Module

Provides automatic answering of an external call in addition to message playback and fax signal detection.
On the HiPath 1120 this module is also responsible for the RTC - Real Time Clock.
This module has three modes of operation: Fax, Attendant and Fax/DID If a S_0 or TME1 module is installed, a fourth mode of operation is available: Announcement for a Digital Line.

Call Answering Menu (009)

The Fax/DID module lets you create a customized call answering menu transferring the call to an extension or a group, depending on the number entered.

Announcement Recording (37)

Allows you to record and playback announcements and messages, transfers and alarms. Simply speak to record or listen to the playback of a message right after the end of the sequence.

To stop the recording or playback of an announcement or message press the key "1."

Call Answering Mode Configuration (27)

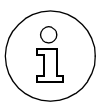
The Fax/DID module has five modes of operation available for the different messaging requirements.

Fax Reception Extension (28)

Specifies to which extension a call will be transferred when a fax signal is detected on an external line.

Collect Call Barring (008)

When collect call barring is activate, all collect calls to a Fax/DID are automatically rejected by the system. Call Barring will not work in the case of calls transferred to a Fax/DID.



If a call has been answered at least once by the system, Collect Call Barring cancels the blocking.

When an incoming call over a digital line is forwarded for not being answered (*14) and Collect Call Barring is activated, the call will ring at the first DID for the external line.

MSN Answering for Fax/DID (080)

This setting specifies a Fax/DID answering mode for each MSN number.

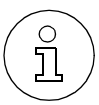
Fax Extension for MSN (081)

After the detection of a fax signal, the Fax/DID Module can transfer a call to a preconfigured MSN number. The DID Mode does not need to be configured for this feature.

Fax/DID Release after a Timeout (094)

When a Fax/DID Module is answering four simultaneous calls (or 2 calls for the HiPath 1120), a fifth call will hear a ring signal generated by the local carrier, which means that the HiPath 1100 has not answered the call yet. If the timeout specified for this feature is shorter than the local carrier's timeout, the call can be routed in two different ways, depending whether the PABX received it over an analog or a digital line:

- In the case of an external analog line, the PABX must bypass the Fax/DID module and forward the call to an analog line attendant (in the event that there is no attendant, the call is forwarded to an overflow extension). Of course, if a channel becomes available in the meantime, the call will be answered as usual and the timeout will be ignored.
  However, if the time specified for this setting is longer than the local carrier's timeout (1.5 minute for Brazil), the call will be disconnected by the local carrier before the PABX can forward it to an attendant.
- In the case of an external digital line (CAS or ISDN) the PABX sends a "disconnect" signal to the line upon receiving the call. This means that the time specified for this setting is ignored in the case of digital lines. When the Fax/DID module is busy answering four simultaneous calls (2 calls, for a HiPath 1120), the external user hears a busy signal.



When the Fax/DID module is busy answering calls, it means that it is playing one of the 12 programmed messages or waiting for the user to press a key (in the case of a DID). If the Fax/DID module has answered a call and forwarded it to an extension (the call is ringing somewhere), that call will no longer considered one of the four calls that is being answered by the Fax/DID module keeping it busy. In summary, once the Fax/DID module has forwarded a call to an extension, the channel is available for another call.

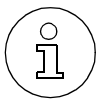
7.2.12 Digital trunk settings

The HiPath 1100 systems can be equipped with digital trunks by means of a S_0 module (ISDN/ISDN access) and a TME1 (E1 CAS access).

TME1 Module

E1 CAS access allows the system to use Caller ID and direct dialing to extensions, reducing the number of lost calls and simplifying access for the user. The HiPath 1130 and the HiPath 1150 can be equipped with one TME1 module (configured for up to 15 channels). The HiPath 1190 can be equipped with two TME1 modules.

When only E1 digital lines are used, you only need to program the External Number Registration. Country Code and Area Code can be left blank.



A TME1 and an ADSL module cannot be used simultaneously only in the HiPath 1130.

S_0 module:

Each ISDN access provides two communication channels (64 kbps each) as well a capability for sharing applications such as video conferencing and Internet access. Depending on your carrier, some features may be provided, including Caller ID, Caller ID Blocking, Direct Dialing to Extensions and so on. The HiPath 1120 can be equipped with a 2-port module; the HiPath 1130/1150 with a 2-port module or one 5-port module; and the HiPath 1190 with two 2- or 5-port modules.

When only ISDN digital lines are being used, the following functions must be configured: DID, External Number Registration, Area Code, Country Code.

S_0 Ports (HiPath 1190) (062)

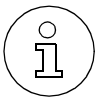
This setting specifies the operating mode for the S0 module maximizing the system's port usage.

This option is best for the HiPath 1190 due to its high port capacity. The goal is to obtain a maximum number of extensions/external lines allowed in relation to the following port detection rules:

External line and extension (default): Each port will decrease the number of external line slots by 2 and extension slots by 1. The connection may be PP, PMP or S0 Bus line (see item Operation Mode");

External line only: Each port will decrease the number of external line slots by 2. The connection must be PP or PMP. If it has been previously configured as a S0 Bus line, the connection will automatically be reversed to PP (which is the default).

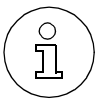
Extension only: Each port will decrease the number of extension slots by 1. The connection must be a S0 Bus line. If it has been previously configured as PP or PMP, the connection will automatically be reversed to S0 Bus line.



After completing the configuration, the system must be restarted.

Mode of Operation (90)

This setting specifies the type of connection, either Point-to-Point, Point-to-Multipoint, or S_0 Bus) between the S_0 module and the local carrier's lines.



With the HiPath 1120, the S0 module's first port can only be a trunk, PP or PMP. It cannot be programmed as a S0 Bus.

With other PABXs, the first port may also be configured as a S0 Bus.

Symmetric Call (074)

This setting configures the system for symmetric calls.

Check with your local carrier to know which operating mode should be configured for your system.

Absence of ACK Setup for external ISDN Line (075)

Check with your local carrier to know which operating mode should be configured for your system.

Notify (076)

Check with your local carrier to know which operating mode should be configured for your system.

Automatic Keypad (077)

Your local carrier can inform you which ISDN features can be controlled by code in your country.

This feature allows you to activate the appropriate ISDN function at the terminal, without the need for external access.

Assignment of an external ISDN line to a MSN (078)

This features allows you to assign the MSNs provided by your local carrier to calls made to ISDN lines.

By default, all ISDN lines are assigned to MSNs.

External Line Prefix (89)

This setting specifies the prefix for the PABX external lines, for domestic and international calls. By default, the type of a programmed called is not specified.

External Number Registration (91)

To use the Attendant feature each external number must be registered to a specific slot.

If the prefix (Code 089) for these numbers has already been configured, only the final digits need to be registered.

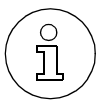
By default, no digits are specified.

Assignment of an External Number to an Extension (92)

With this code the external numbers registered in each slot are assigned to extensions or Subscriber Groups designated to answer external calls made to those numbers. An extension cannot be assigned more than once.

Busy Signaling (004)

This signals the caller that the line is busy, when the system receives an incoming call and the attendant extension is busy.



This feature is valid only for digital lines with an attendant number. It is not valid if more than one extension is configured for the slot/DID number/MSN. If the Fax/DID module is installed and configured for digital lines, this feature will also be invalid.

Local Area Code Filter (011)

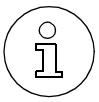
This allows the system to send the Area Code (LAC) to a destination exchange over a digital line. This enables Caller ID.

Country Area Code Filter (012)

This allows the system to send the Country Code (CAC) to a destination exchange over a digital line. This enables Caller ID.

7.2.13 ADSL Module

This provides connection for network PCs for sharing ADSL access, without requiring a splitter, modem, additional ADSL, hub or network cards in any of the PCs.
The PCs are connected to the HiPath 1100 which provides (via LAN) the same functions provided by the V.24 serial interface for integrating the HiPath 1100 Manager, Interaction Center Smart and billing applications.
To configure the ADSL module correctly you need information about the VPI/VCI protocols, DNS servers, user name and password used by the carrier.
All the PCs must have a network card installed and must be on the same network as the ADSL module used as a gateway for accessing the Internet.



When using an ADSL module, do not connect the V.24 serial interface adapter cable to the PABX. All data is delivered through the network.

Restore ADSL Module Default Settings (013)

This code restores the default configuration of the ADSL module assuming an IP of 10.0.0.1.

7.2.14 Relay and sensor on the HiPath 1120

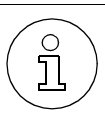
You can connect a Music module to the HiPath 1120 system. This module also provides a Relay and a Sensor for integrating other devices such as an Entrance Telephone, a Door Opener etc.

Sensor:
When the state of a sensor changes (for example, when the sensor changes from an open contact to a closed contact), the following functions can be executed:

- Selection of a number in the Speed Dialing Directory (Phonebook)
- Activation of a relay
- Dialing a number from the Speed Dialing directory and activating a relay.

The activation logic based on the initial position of the sensor contacts as well as its resulting actions are programmable.

Relay:
The relay can be activated via the sensor, assuming that the sensor is configured. It can be activated manually or automatically after a specified time. When the relay is activated, the contacts close. When it is deactivated, the contacts open.



The name assigned to this position may have up to 15 characters.

Sensor Function Configuration (70)

Allows you to select a function for the sensor:

- Deactivate the sensor's function (default)
- Dial the number specified in "Number Dialed by Sensor Activation" (Code 052).
- Activate the relay through the sensor
- Detect DTMF code. When this setting is selected, the number that was called must acknowledge or ignore an alarm call by sending an acknowledgement code ("#" DTMF signal)

Sensor Activation Logic (74)

The main position of the sensor can be set as follows: contacts are closed and the sensor is activated when the contacts are open; or contacts are open and the sensor is activated when the contacts are closed.

Time between Attempts for Activating the Sensor (050)

This setting specifies a timeout after which a new attempt is made to call an internal or external number, assuming that the line was busy on the previous attempt.

MSN Assignment for the Sensor (051)

This settings specifies an MSN for the system. This MSN will be used for outgoing calls. By using this MSN the called party is able to identify the origin of the call. For instance, this would be the case for an alarm.

Number Dialed by Sensor Activation (052)

This setting specifies the number to be automatically dialed when a specific sensor is activated. The number to be dialed when the sensor is activated is stored in the System Speed Dialing. When the number stored in the System Speed Dialing is changed, this field is updated. Similarly, when the number in the field is changed, the change is reflected in the System Speed Dialing.

Number of Attempts for Activating the Sensor (053)

This setting specifies the number of call attempts (between 1 and 100) for the number specified in "**Number Dialed by Sensor Activation**." (See also **Time between Attempts for Activating the Sensor**).

An attempt is made after every call that was not answered (busy signal), or when the "Detect DTMF Code" option (Code 70, Option 3) is enabled and no acknowledgment is received. When this occurs, the call is disconnected and a new attempt is made.

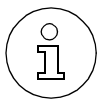
Relay (75)

This setting specifies the operating mode for the relay:

- "Switch" The relay can only be turned on from an extension by entering the proper feature code (see Miscellaneous Functions - Relay in the User Manual).
- "Monoflop": The relay is closed for a specified length of time. Alternatively, the relay can also be opened before the set time by entering the proper feature code (see Miscellaneous Functions - Relay in the User Manual).
- "Invert": The current state of the Relay is reversed when the feature code for activating it is selected at an extension.
- "Music on Hold" The Relay can be used for activating external equipment connected for playing announcements/music.
- "External signal" It is possible to use the Relay to control a second ring for an extension.

Timer for Deactivating the Relay (73)

Specifies the length of time that the relay must remain closed.



If the closing time is set to "000," the relay will remain active until it is manually deactivated.

External Ring for Activating the Relay (071)

This setting lets you use the relay to control a second ring signal for a specified extension.

8 Feature Access Codes

The HiPath 1100 has a Numbering Plan that can be programmed using the HiPath 1100 Manager or by entering codes on the telephone keypad.

8.1 Numbering Plan

Description	HiPath 1120	HiPath 1130	HiPath 1150	HiPath 1190
External Line	801 to 806	801 to 817		801 to 845
Extension, including S_0	11 to 30	11 to 60 610 to 621	11 to 60 610 to 645	101 to 240
Group of external lines	0 or 890 to 899			
Call Group (CG)	770 to 779			
Hunt Group (HG)	780 to 789			
UCD Subscriber Group	790 to 799			
USB/CAPI line	10	10		100
Key substitution *	75			
Key substitution #	76			

Feature	Code
System Telephone Features	
Accessing your Mailbox	Key programmed as MWI
Programming a Feature for a Key (E822 ST and Profiset 3030)	* 9 1 feature to be programmed and
Call Charge Consultation (E822 ST and Profiset 3030)	* 6 5
Call Forwarding (E821 ST)	
Call Forwarding (E821 ST)**-** Deactivation	#
Parking (E821 ST)	0 to 9 slot
Parking - Resuming a call (E821 ST)	0 to 9
Flash on External Line	
Headset - Deactivation	* 4 9 2

Feature	Code
Headset - Deactivation	# 4 9 2
Caller List (E822 ST and Profiset 3030)	# 8 2 list and
Remote Configuration	* 9 9 1
Redial (E821 ST)	
Speaker (E822 ST and Profiset 3030)	- activate/deactivate speakerphone and - activate/deactivate speaker
Virtual Keypad	= LED light ON means Virtual Keypad is active = LED light OFF means Main Keypad is active
Checking Relay Status (E822 ST and Profiset 3030)	* 9 4 1 4
Seizure of an External Line	
External Call	0
External Call by a Group of External Lines	8 9 X external line ("X" is from 0 to 9)
Seizure of an External Line	8 X Y external line ("XY" is from: 01 to 45)
External line reservation -Activating Internet access	* 4 9 3 external line
External line reservation -Deactivating Internet access	# 4 9 3 external line
External line reservation - Busy	Wait for Phone rings external line
Functions Used for Making Calls	
System Speed Dialing	* 7 + 0 0 0 ... 2 4 9
Individual Speed Dialing	* 7 + * X ("X" is from 0 to 4)
Individual Speed Dialing - Programming	* 9 2 + * X wait for ("X" is from 0 a 4)
Speakerphone Auto-Answering Mode - Activation	* 9 6 wait for
Speakerphone Auto-Answering Mode - Deactivation	# 9 6 wait for

Feature	Code
Internal Call	extension
Calling a Call Group (CG)	7 7 0 ... 7 7 9
Calling a UCD Subscriber Group	7 9 0 ... 7 9 9
Calling a Hunt Group (HG)	7 8 0 ... 7 8 9
Urgent call (Busy extension)	(busy) Wait
Hotline (if programmed)	
Override (Busy extension)	busy ( ) * 6 2
Direct Communication Call	* 8 0 wait for say your message
Silent Monitoring (busy extension)	( ) * 9 4 4 extension is busy
Callback - Activation (No Answer or Busy)	**1)** no answer ( ) * 5 8 phone rings **or** **2**) Wait for phonerings
Callback - Deactivation	# 5 8
Attendant	9
Using a Temporary MSN to make a Call	* 4 1 MSN slot or MSN number external line external number
Functions used during Calls	
Cost Code	* 6 0 cost code # number
Conference	( ) ( ) * 3
Consultation (To end a consultation wait for the call to be disconnected)	( )
Parking	( ) * 5 6 + X ("X" is from 0 to 9)
Recovering a Parked Call	# 5 6 + X ("X" is from 0 to 9)
Toggle (Use after consultation for answering a second or urgent call)	( ) * 2
Suffix Dialing (Note 1)	* 5 3 **data**

Feature	Code
Recovering a Call on Hold	(if busy or no answer) **or** (for MF telephones if no answer)
Transfer (For transfers without consultation there is no need to wait before answering)	extension ( )
Functions Used When Receiving Calls	
Accessing your Mailbox	Voice Mail Group
Answering a Call On Hold	
Group Pickup	
Individual Pickup	extension
Call Forwarding on an analog line:	
Call Forwarding to External Number	external line
Internal Call Forwarding	extension or Voice Mail Group
Call Forwarding -Deactivation	
Call Forwarding - Activation (No Answer)	extension or Voice Mail Group
Call Forwarding - Deactivation (No Answer)	
Do Not Disturb - Activation	
Do Not Disturb - Deactivation	
Internal MWI - Activation	
Internal MWI - Deactivation	
Miscellaneous Functions	
Door Opener (After answer by Entrance Telephone)	
General Alarm - Deactivation	password
Electronic Lock password change	current password new password confirm new password

Feature	Code
Electronic Lock - Activation	✆ * 6 6 password ✆
Electronic Lock - Deactivation	✆ # 6 6 password ✆
Busy Signal when extension is busy - Activation	✆ * 9 4 1 1 ✆
Busy Signal when extension is busy - Deactivation	✆ # 9 4 1 1 ✆
Alarm Clock:	
Alarm Clock (Daily)	✆ * 4 6 1 time (e.g., 1230) ✆
Alarm Clock (Daily, except week-ends)	✆ * 4 6 2 time (e.g., 1230) ✆
Alarm Clock (After a specified time)	✆ * 4 6 3 time (e.g., 1230) ✆
Alarm Clock (For a specified time)	✆ * 4 6 4 date/time (e.g., 24121830) ✆
Deactivate Alarm Clock	✆ # 4 6 ✆
Entering System Programming Mode	✆ * 9 5 password codes
Deactivating Features (Call Forwarding, Do Not Disturb, Head-set, Data Protection, Alarm Clock, Headset, Callback)	✆ # 0 ✆
Configuring Language/Country	✆ * 9 4 1 2 country code ✆
Call Group (CG) and Hunt Group (HG) Login	✆ * 8 5 group (if the extension belongs to more than one group) ✆
Call Group (CG) and Hunt Group (HG) Logout	✆ # 8 5 group (if the extension belongs to more than one group) ✆
Room Monitor (Babyphone)	✆ * 8 8 ✆
Music on Hold - Activation	✆ * 9 4 1 0 ✆
Music on Hold - Deactivation	✆ # 9 4 1 0 ✆
Remote Configuration - HiPath 1100 Manager	✆ * 9 9 2 ✆
Remote Configuration - MF tele-phone	✆ * 9 9 1 password

Feature	Code
Data Protection - Activation	✆ * 4 9 0 ✆
Data Protection - Deactivation	✆ # 4 9 0 ✆
Relay - Activation (**HiPath 1120** only)	✆ * 9 0 ✆
Relay - Deactivation (**HiPath 1120** only)	✆ # 9 0 ✆
Night Service - Activation	✆ * 4 4 ⠿ password ✆
Night Service - Deactivation	✆ # 4 4 ⠿ password ✆
Call Waiting tone - Activation	✆ ⠿ ♪ busy # 8 7 ✆
Call Waiting tone - Deactivation	✆ ⠿ ♪ busy * 8 7 ✆
COS (Class of Service) Changeover	✆ * 5 0 8 ⠿ extension ⠿ password ✆
UCD Subscriber Group Functions	
Agent available	✆ * 4 0 2 ✆
Agent unavailable	✆ # 4 0 2 ✆
UCD Agent in Service	✆ * 4 0 3 ✆
UCD Agent out of service	✆ # 4 0 3 ✆
Calling a UCD Subscriber Group	✆ 7 8 X ✆ (“X” is from 0 to 9)
Logging into a UCD Subscriber Group	✆ * 4 0 1 ⠿ group ✆
Logging out of a UCD Subscriber Group	✆ # 4 0 1 ✆
Satellite PABX	
Flash on External Line	(◉) * 5 1
Operation as Satellite PABX	✆ 8 9 X ⠿ line # ✆ (“X” is from 0 to 9)
Functions for ISDN Lines	
Immediate Call Forwarding for MSN - Activation	✆ * 6 4 1 ⠿ external line ♪ ✆

Feature	Code
Immediate Call Forwarding for MSN - Deactivation	# 6 4 1
Call Forwarding - No Answer, for MSN - Activation	* 6 4 2 external line
Call Forwarding - No Answer, for MSN - Deactivation	# 6 4 2
Call Forwarding - Busy, for MSN - Activation	* 6 4 3 external line
Call Forwarding - Busy, for MSN - Deactivation	# 6 4 3
Anonymous Caller ID (Trace)	* 8 4
Sending Restriction for MSN - Activation	* 8 6
Sending Restriction for MSN - Deactivation	# 8 6
Using Features provided by a Carrier on ISDN Lines	* 5 0 3 external line ISDN code

Note 1:

When using standard telephones, Suffix Dialing must be enabled for each new call. When using system telephones, Suffix Dialing is always enabled.

9 Abbreviations

9.1 General List

This list contains the abbreviations used in this manual.

Table 9-1 Abbreviations

Abbreviation	Meaning
ACD	Automatic Call Distribution
ACS	Alternative Carrier Selection
ADSL	Assymetric Digital Subscriber Line
ARG	Argentina
BRA	Brazil
Driver	Common Application Program Interface
CAS	Channel Associated Signaling
CTI	Computer Telephony Integration
COS	Class of Service
CLIP	Calling Line Identification Presentation
CD	Carrier Detect
CHN	China
CND	Canada
CTS	Clear To Send
DP	Dial Pulse (decadic)
DID	Direct Inward Dialing
MDF	Main Distribution Frame
DISA	Direct Inward System Access
DSR	Date Send Ready
DTMF	Dual Tone Multifrequency
DTR	Date Station Ready
ESD	Electrostatic Discharge
ETSI	European Telecomunications Standards Institute
EB	Expansion Board
E1	Primary Access

Table 9-1 Abbreviations

Abbreviation	Meaning
EWAKO	External toll restriction / Denied and Permission Lists
GND	Ground
HKZ	Main Station Interface / Analog Trunk
IM	International Market
IND	India
ISDN	Integrated Services Digital Network
LAN	Local Area Network
MB	Motherboard
MO	Option Module
MOH	Music On Hold
MF	Multifrequency
MSN	Multiple Subscriber Number
NT	Network
PABX	Private Automatic Branch Exchange
PC	Personal Computer
PEN	Protective Earth and Neutral
PMP	Point-to-Multipoint
PP	Point-to-Point
PSU	Power Suply Unit
PTC	Positive Temperature Coefficient
ISDN	Integrated Services Digital Network
RSA	Republic of South Africa
RUF	Ring
RTC	Real Time Clock
RTS	Request To Send
RxD	Receive Data
S_0	Basic Access
SPA	Spain
SW	Software
TAPI	Telephony Application Programming Interface

Table 9-1 Abbreviations

Abbreviation	Meaning
TFE	Türfernsprecher, Entrance Telephone
TN-S	TN-S power supply with phase and neutral (grounded)
TN-C-S	TN-C-S supply with phase, neutral (grounded) and earth
TxD	Transmit Data
UCD	Universal Call Distribution
USB	Universal Serial Bus
VMIe	Extended Voice Mail Interface

10 Index

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The information provided in this document contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products.
An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

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