



HiPath HG 1500 V3.0 Multimedia communication in medium-size companies

HiPath™ HG 1500 is the LAN and gateway board for the HiPath 3000 Real Time IP system for small and medium-size companies. HiPath HG 1500 permits the direct connection of Ethernet LANs (10/100 Mbps) to HiPath 3000 systems.

This makes voice, fax, and data communication possible via an ISDN carrier network from any PC networked via the LAN. HiPath HG 1500 includes an H.323 gateway which supports standardized voice communication over IP networks (Voice-over-IP).

SIEMENS

Global network of innovation

The HiPath 3000 Real Time IP system series provides interfaces to the company's Ethernet LAN, allowing communication solutions and applications with multi-station capability to be implemented:

- Workpoint clients and access points
- LAN-LAN coupling via ISDN
- Remote LAN access / teleworking
- Access to the Internet
- Telematic services such as fax transmission and Eurofile Transfer
- Computer Telephony Integration (CTI) via TAPI and CAPI

Depending on the required bandwidth, HiPath HG 1500 makes flexible use of the ISDN lines and LCR intelligence of the HiPath 3000 system for voice, fax, and data communication. No external routers, no additional servers or ISDN PC cards are required for LAN PCs because the router functionality, firewall functions, and security are already integrated in HiPath HG 1500.

It can be incorporated in a standardized network management system with SNMP, i.e. administration, alarm, and performance management in a central management platform.

Maximum investment protection is provided through the flexible expansion capability in stages of two B channels or first IP user licenses and through soft migration to individual workstation multifunctionality.

Gateway functions

Voice over IP

- **optiClient 130 V4.0**

As the youngest member of the Siemens workpoint client family, optiClient 130 V4.0 makes all the functions offered by a conventional telephone available at an end-user's desktop PC.

optiClient 130 V4.0 provides users with three different user interfaces which they can choose according to their needs.

- **optiPoint 600 office TDM and IP-based feature telephone with large display**

The optiPoint 600 office convergence telephone provide users with maximum flexibility as regards the network and communication protocols to be used. Whether it is voice via data networks (Voice over IP) or TDM-based switching, optiPoint 600 office supports both variants and enables complete access to all the HiPath 3000 Real Time IP system telephone features.

optiPoint 600 office also provides access to WAP and Internet services.

- **optiPoint 400 standard V3.0**

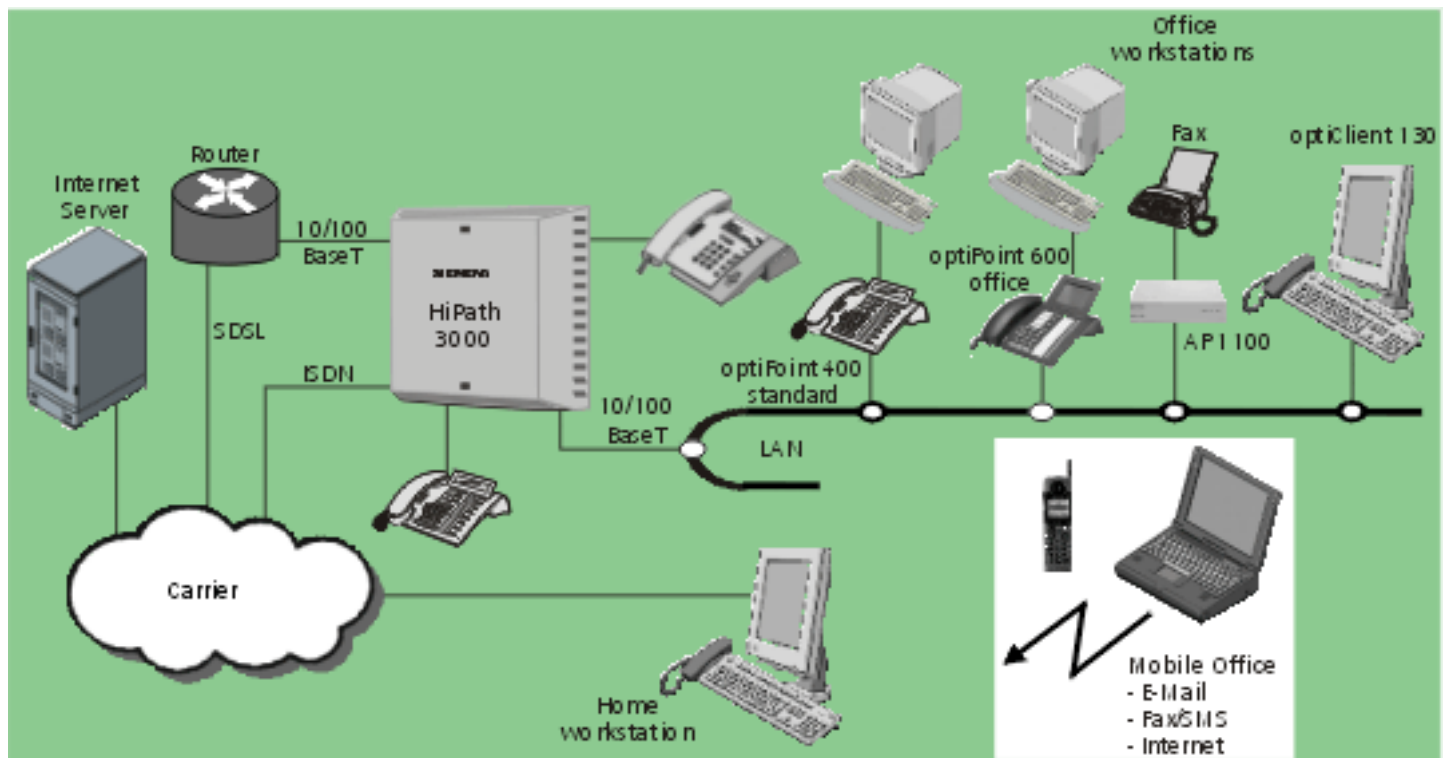
IP-based feature telephone with miniswitch and power over LAN
The multiprotocol-capable optiPoint 400 standard IP telephone enables users to conduct calls via a data network in a straightforward and familiar way. It also provides complete access to all the HiPath 3000 Real Time IP system telephone features.

- **optiPoint 400 economy V3.0**

optiPoint 400 economy V3.0 is based on the same technology and design as optiPoint 400 standard V3.0 and supports the same features except for the miniswitch and hands-free talking. The new optiPoint 400 economy IP telephone rounds off the product range of the HiPath workpoint portfolio as a low-cost entry model.

- **HiPath AP 11x0**

The HiPath AP 11x0 terminal adapter enables analog terminals to be connected to an IP-based data network. In addition to analog telephones, fax machines (Group 3), modems (up to 33.6 kbps) and DECT telephone can also be included in a Real Time communication solution.



Routing functions

Second LAN interface

In Version 2.0 or later, HiPath HG 1500 has a second LAN interface. This can be used, for instance, for an ADSL line (T-DSL) or for connection to an SDSL connection behind a "3rd-party" SDSL router in order to provide faster Internet access.

Alternatively, the second LAN interface can also be employed for coupling (routing) two LAN segments (LAN-LAN).

LAN-LAN coupling

Through LAN-LAN coupling, Ethernet LANs at different locations are linked into a single corporate network using ISDN dialup lines. This makes it possible for outside locations to access central files or files at other locations, thereby meeting the requirement for interactively combining workflows in organizational units at different locations.

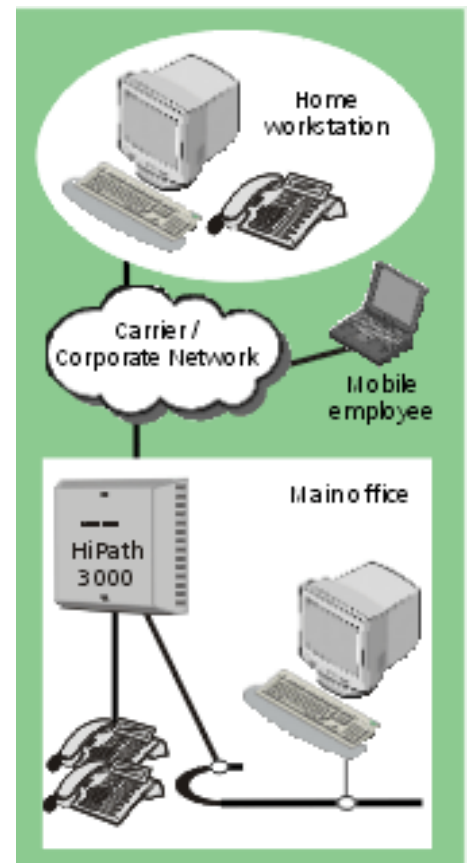
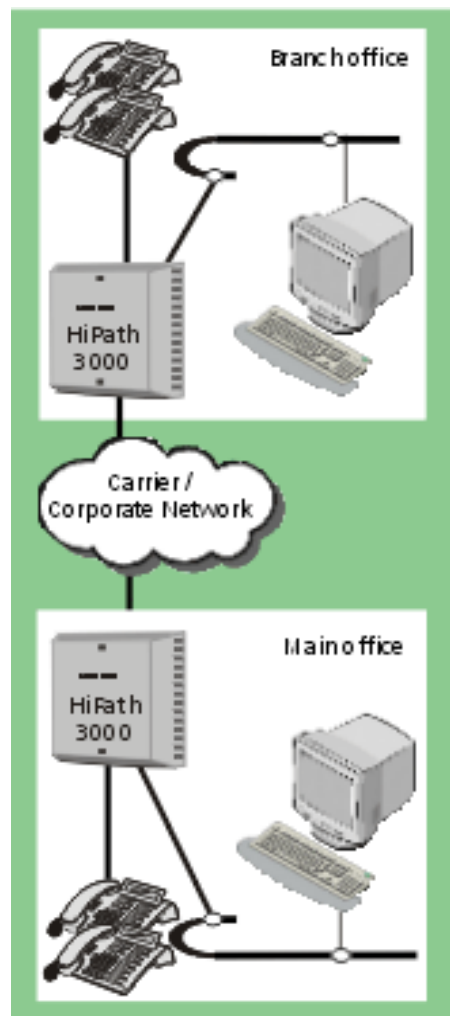
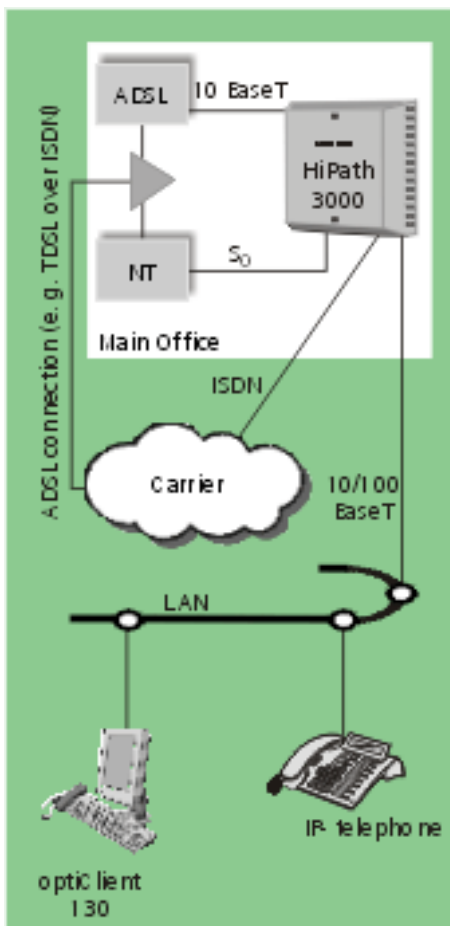
Remote LAN access

By linking PCs that are installed outside the corporate LAN, an authorized group of people can be allowed to access central DP applications and information sources from an external location.

This means home workstation users can access the same LAN services as users of PCs connected to the corporate LAN (data, e-mail, PC programs).

Dynamic channel bundling

In the case of LAN-LAN coupling via ISDN up to 16 B channels are bundled automatically depending on the transmission volume and the application packages implemented. The threshold values for dynamic channel bundling can be set. The number of B-channels can be configured for each routing partner.



Major functions

Internet access

In addition to LAN-LAN coupling there is the possibility of Internet routing with the following features:

- Dynamic IP address procurement from the Internet provider
- Internet accessing using just one IP address of the Internet provider, i.e. cost-effective solution for all PCs in the network
- Dynamic or static channel bundling (load-dependent B-channel switching)

The Internet provider must also support these features.

IP accounting

HiPath HG 1500 makes an internal interface available via which the TeleData Office (version 2.0 or later) charge solution can also collect and evaluate charge records of pure data connections.

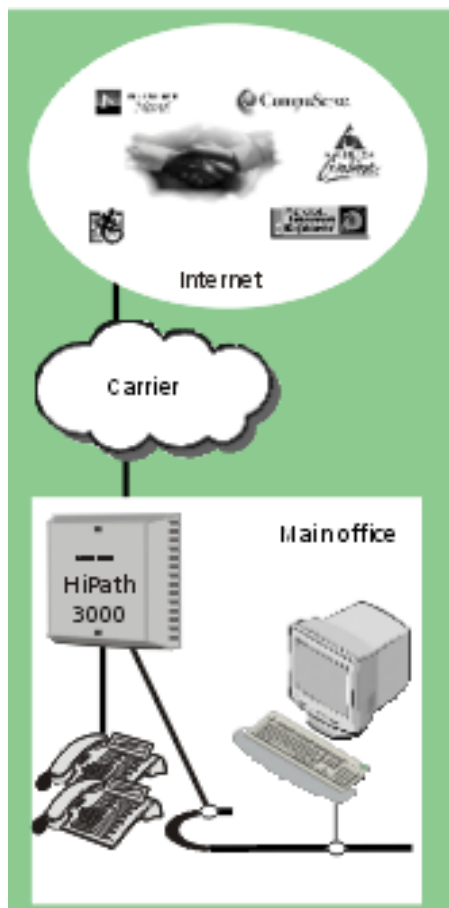
Authentication

The PAP (Password Authentication Protocol) and CHAP (Challenge Handshake Authentication Protocol) protocols were developed in response to increasing demands placed on the security aspects of data networks. The PAP/CHAP/MS-CHAP (MS=Microsoft) procedures can be employed to authenticate the users if an external connection (WAN) is set up via HiPath HG 1500.

Access control

Access control (firewall) prevents unauthorized persons from accessing the corporate LAN. The firewall mechanisms are:

- ISDN call number checking
- Automatic callback without setting up an ISDN toll call
- Checking the IP addressing
- MAC firewall (checking the MAC/IP address combination in the internal LAN)
- Port filtering
Enabling and disabling services according to IP addresses



Special applications

Computer Telephony Integration (CTI)

The "Smartset 2000 for ISDN" software is an application for computer-supported dialing using the LAN. This solution can be employed for analog and digital terminals.

Other features are:

- Dialing from the telephone book
- Caller identification using the telephone book entry
- Evaluating incoming directory numbers (e.g. ISDN, mobile call number, directory number of the terminals)
- Caller list
- "Still to be called" list
- Private and business telephone book
- Connection of databases via TAPI or DDE open interfaces

Telematic services

Access to telematic services is provided via, for example, the Fritz!32 telematic software. This ensures the transmission of fax reports and files to/from any PC.

- Group 3 fax up to 14,400 bps
- Fax-on-Demand in receive direction
- ISDN file transfer

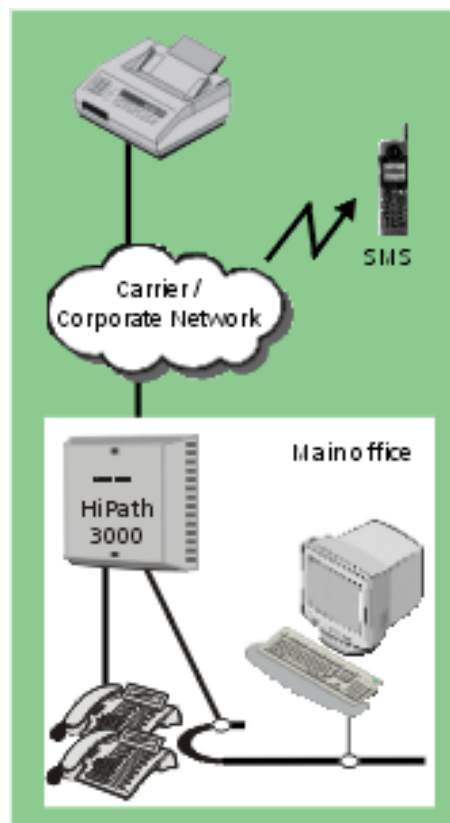
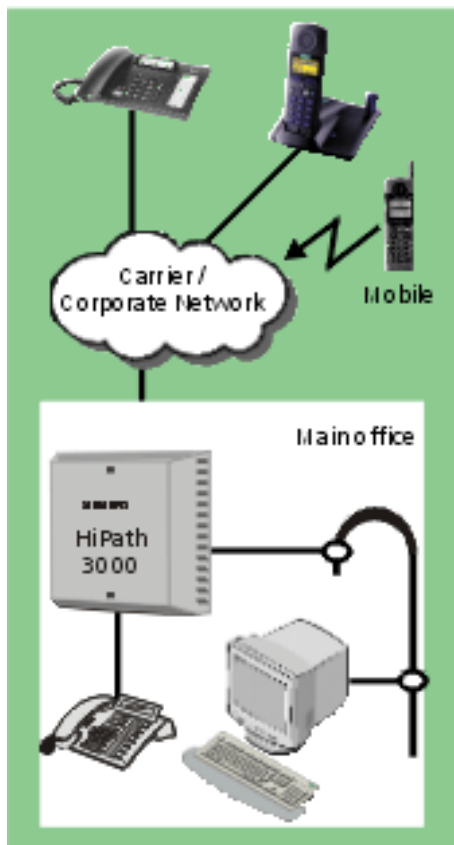
Administration

In the case of HG 1500 V3.0, all the important functions, e.g. directory number and IP addresses of external partners, timer settings, and the required security mechanisms can be customized via a Web-Based Management directly via the LAN.

- Use of Microsoft® Internet Explorer for administration
- Intuitive user interface
- Administration, maintenance, and software upgrading on site or via remote A&M
- Own administration by the customer via LAN
- SNMP (Single Network Management Protocol) for incorporation in a network management system.

HiPath QoS 2000

IP networks give the same priority to all applications - from Web access to database queries and Real Time applications such as VoIP. Together with HiPath HG 1500, HiPath 3000 IP trunking uses the advantages of IP networks for Real Time communication but competes with other company applications for existing resources in the network. Therefore, the required communication quality via IP trunking is not instantly guaranteed. This problem can be resolved using the Quality of Service solution, HiPath QoS, which guarantees sufficient resources for all applications in the network, Real Time and business-critical applications in particular, thus ensuring optimal voice quality on HiPath 3000 IP trunking connections.



Cost saving and controlling

The integration of router functionality in the HiPath system and the simultaneous use of fax and CTI application software via HiPath HG 1500 offers significant cost advantages for the company:

- Shared use of the HiPath system's existing external ISDN lines
- Transparency of all communication costs (voice, fax, and data) in the company by means of common connection/call cost logging
- Through the "automatic callback" function, data transmission costs are debited to the company and not to the home workstation
- Search for the most cost-effective connection path with the HiPath system's Least Cost Routing, i.e. not only for voice communication but also for data transmission
- Minimizing of Internet connection costs or Internet access licenses by the simultaneous use of a connection by a number of users in the LAN (multiple access)
- Cost saving during data transmission with the 'short hold' function, i.e. the connection is automatically cleared down if no data is transmitted. HiPath HG 1500 automatically re-establishes the connection when there are new data packets to be transmitted.

Technical data

System requirements

- HiPath 3000 V3.0/V4.0
- At least one Euro-ISDN basic access (connection to the network or another HiPath system)
- At least one free slot in the basic system

Maximum number of HiPath HG 1500 gateways that can be used in the system

- HiPath 3300/3350: 1 gateway
- HiPath 3500/3550: 3 gateways
- HiPath 3700/3750: 4 gateways per box, 8 gateways per system

PC/LAN

- Microsoft Windows® 98/NT 4.0/2000/XP
- Microsoft Internet Explorer 5.5/6.0®
- TCP/IP network protocol

Voice-over-IP clients supported

- optiClient 130 V4.0
- optiPoint 600 office
- optiPoint 400 standard
- optiPoint 400 economy
- HiPath AP 1100/ AP 1140
- Standard H.323 Client

System environment

- Switched LAN 10/100 BaseT
- Client/server and peer-to-peer networks with TCP/IP protocol

IP networking

With the aid of HiPath HG 1500 it is possible to network HiPath 3000 systems with each other via IP. 2,000 call numbers can be administered for this and other purposes in the routing table of the HiPath HG 1500. More than 1,000 users and up to 32 nodes can be accessed in the network simultaneously through LCR entries in the HiPath 3000 system.

Upward of HiPath HG 1500 V2.0 the connection to the corporate IP network can be provided via the second LAN interface, e.g. for a second LAN segment. No additional routers are required.

Interfaces and protocols

- Possibility of using up to 16 channels in HiPath HG 1500, flexible for voice and data connections
- 2 Ethernet interfaces:
 - 10/100 Mbps
 - 10/100 Mbps (DSL with PPPoE/PPTP)
- SNMP
- CAPI 2.0 interface
- TAPI 2.2/3.0 interface
- Support for PAP/CHAP/MS-CHAP security protocols
- H.323 (ITU standard)
- G.711, G.723.1 and G.729 (for IP networking) voice coding
- PPP and PPP Multilink protocol V.34bis and V.90 for analog remote access
- V.110 bit rate adaptation for remote access via GSM
- QoS as per DIFFSERV, IEEE 802.1p and TOS

Basic package

- Second LAN interface
- HiPath HG 1500 with two B-channels
- Windows driver for CAPI 2.0 interface
- Operating documentation
- SNMP interface for fault signaling
- HiPath TAPI 120 V2.0 1st-party TAPI Service Provider for connecting up to 6 clients in small networks.

Network topology

HiPath HG 1500 supports Ethernet LANs and is equipped as standard for twisted-pair port (RJ45).

Expansion options

- Expansion in steps of 2 additional B-channels (to max. 16 B-channels)
- Expansion Module PDM1 for 8 additional b-channels. Hardware Module to extend from 8 to max. 16 b-channels for HiPath 33x0 and HiPath 35x0
- IP user licences can be obtained in the following package sizes:
 - Package with 1 IP user license
 - Package with 10 IP user licenses
 - Package with 25 IP user licenses
 - Package with 50 IP user licenses
 - Package with 100 IP user licenses
- HiPath TAPI 120 V2.0 1st-party TAPI Service Provider for connecting up to 6 clients. The supplied CSTA Message Dispatcher (CMD) should be installed. Available for delivery in different expansion packages.
- HiPath TAPI 170 V2.0 (TAPI driver for connecting TAPI-enabled 3rd-party applications) 3rd-party TAPI Service Provider. Available for delivery in various basic and expansion packages.
- Smartset 2000 for ISDN (CTI application for PC-supported telephony)
- "Fritz!32" telematic software (application for Group 3 fax, Fax-on-Demand, ISDN file transfer)
- Routing application package
- DSL routing application package

Product software

HiPath HG 1500 Version 3.0

Our strengths - Your advantages

Siemens is known worldwide as a trailblazer in the advancement of information and communication technologies. No other company offers such a comprehensive and innovative product portfolio.

With Siemens' unique HiPath Convergence Architecture, customers can migrate securely and flexibly into the world of innovative IP convergence solutions.

www.hipath.de

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