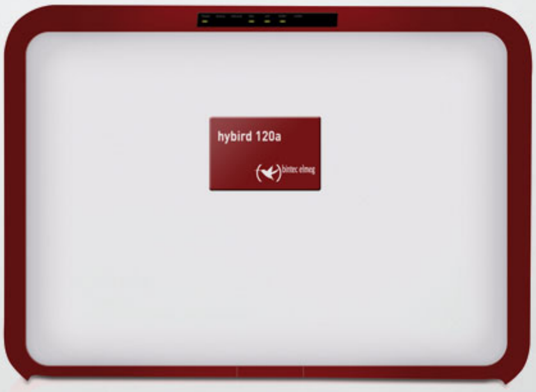
COMMUNICATION SOLUTION



The centralised, compact communications solution for SMEs

elmeg hybird 120a

- Communications center for SME with up to 20 users
- Integrated ADSL 2+ modem (Annex A)
- Telephony system, IP-based with ISDN and POTS
- Integrated IP router with VPN
- WLAN Controller solution for one bintec access point
- Voice solutions: voicemail, auto attendant, ...
- Configuration via Web browser—custom user portal

elmeg hybird 120a

The centralised, compact communications solution for SMEs

The elmeg hybird 120a provides professional features for business telephony, IP routing, and WLAN in a single system. LAN management, xDSL internet access, and IP telephony provide high flexibility for future requirements.

Product description

The elmeg hybird family of products comprises convergent IP products which have all been based on the same operating system, the BOSS software platform. The shared software platform now unites the core strengths of elmeg telecommunications systems with those of bintec router and gateway products. The hybird 120a is a shining example of seamless integration of legacy and next-generation VoIP technology. The following standards are supported: SIP, ISDN, and POTS.

With the elmeg hybird 120a, bintec elmeg GmbH presents a new, convergent communications solution. This flexible, full-featured system provides professional IP routing, WLAN, and business telephony capabilities in a single system. The elmeg hybird 120a has been developed for use with high-speed xDSL internet connections at SMEs, home offices, branch locations, or even in the homes of consumers who desire a professional central communications solution.

The elmeg hybird 120a has been developed for companies with up to 20 users. The system provides internet access, LAN management, and a professional IP-based telephony solution. The hybird 120a provides ports both for IP and hybrid technologies. This hybird system is equipped with a wide range of telephony capabilities. With voicemail, auto attendant, mini call center applications, and even mobile subscribers, everything a small or mid-sized business needs is already included. An access router with an extensive feature set and VPN support for secure communications between headquarters and the home office is part of the package. Even Teldat's WLAN Controller software is integrated into this complete solution. The WLAN Controller allows administrators to operate and manage an access point to deploy a wireless network.

The elmeg hybird 120a comes equipped for native IP telephony and ISDN or POTS. The device supports both external IP telephony providers and dedicated SIP phones. FXO and FXS ports have been implemented to enable use with ISDN or POTS out of the box. This compact communications system includes a number of interfaces that have been implemented directly on the motherboard: 2 switchable S/U interfaces that can be used as S0 internal / S0 external or Up0 as desired. 4 FXS ports are available for connecting analog telephones, fax machines, or door intercom systems. An FXO port for connecting an analog subscriber line has also been implemented. Two analog devices can be directly connected to the RJ sockets and the system's two ISDN ports can be used directly with the RJ sockets as well. The connection of additional devices over the cable network can be performed using the wire terminals integrated into the housing.

The elmeg hybird 120a connects to an existing LAN or creates its own network via the integrated switch and four Ethernet ports. IP terminals can also be connected to the system using these ports. For media conversion (connecting legacy telecommunications equipment to IP telephones or SIP providers), the elmeg hybird comes equipped with 9 DSP channels - 4 channels with compression (G.729 and G.726 codecs) as well as 5 G.711 channels.

The base configuration of the elmeg hybird 120a is as follows: 10 terminal devices, 2 external SIP channels and 2 SIP clients. A flexible licensing model provides expansion options for the 120a.

The hybird systems provide numerous professional features as well as comprehensive team functionality and mini call center solutions. The following list of system features provides detailed information on the unit's capabilities.

Terminals with system telephony features

The new elmeg S530/560 system telephones are used as digital terminals. This family of terminal devices is perfectly tailored to the feature set of the hybird systems. Menus provide for excellent usability. The elmeg hybird assumes centralized management duties for the system telephones. Consequently, the system telephones are configured from the hybird system. The main configuration parameters are transferred directly to the system telephones. This makes it much easier to configure the system-there is no longer a need to perform configurations directly on the telephone.
As IP system telephones elmeg IP120/IP130/IP140 are used. Here are no SIP-Client licenses at the hybird system required. There is an automated setup via the hybird communication system (auto provisioning). This terminals access the central system telephone book of the hybird via LDAP. Advanced features like BLF keys and MWI signalling are supported.

Safeguarding previous investments was also a high priority in developing the hybird systems. As a result, existing infrastructure or equipment such as the system telephones elmeg CS290, CS400xt, CS410 or elmeg IP-S290/IP-S400 can continue to be used.

Integrated router solution

The hybird 120a provides more than just professional telephony. A fully-featured and extremely flexible router has been integrated into the elmeg hybird 120a. Also included is an integrated ADSL 2+ modem that supports Annex A ADSL. The elmeg hybird 120a's four Gigabit Ethernet ports can be configured as desired for use as part of a LAN, WAN, or DMZ. Two VPN tunnels and two PPTP connections that require no additional licenses are also included.

The routing solution of the elmeg hybird 120a provides features that go far beyond mere routing capabilities, allowing the 120a to also be integrated into complex IT infrastructures. Comprehensive multicast support makes the device ideal for use in multimedia and streaming environments. The Stateful Inspection Firewall (SIF) provides packet filtering for effective protection against attacks from the internet.

Quality of Service is more than just a slogan with the elmeg / bintec devices. With the increasing convergence of voice and data, classifying streams of data has become more important. This routing solution provides QoS functionality that allows VoIP traffic, for instance, to be given higher priority than normal internet traffic, ensuring there is always sufficient bandwidth for IP voice applications. It's also possible to give regular data priority over e-mail traffic. Furthermore, the bintec QoS implementation makes it possible to give voice data preference, for instance over e-mail data, within a VPN tunnel. The DNS proxy feature supports your LAN by handling address translation and the integrated DHCP server can automatically perform the IP configuration for your client PCs. The integrated IPSec implementation uses both pre-shared keys and certificates. This makes it possible to build a public key infrastructure to provide maximum security.

Integrated WLAN Controller

The integrated WLAN Controller in the complact elmeg hybird systems allows administrators to set up and manage bintec access points, even without in-depth knowledge of wireless networking. The automatic RF (radio frequency) management system handles the time-consuming search for free wireless channels and automatically selects the best channels for the access point.

- Wizard-guided installation in just five steps
- Support for bintec W1002n, WIx40n, and WIx65n devices
- Automatic detection and installation of brand-new access points
- Frequency management with automatic radio channel selection
- VLAN and multi-SSID support
- Changing a configuration such as adding a new SSID and redistributing the devices only takes a few clicks and can be done in just a few seconds' time.
- Configuration management: the configuration is stored in a central location and is automatically re-broadcast, for instance in the event of an electrical outage.

Additional access points can be added to the wireless LAN at any time. In this case, the WLAN Controller of an access point configured as an AP must be used instead of the hybird's integrated controller.

Management and user portals

The management of the compact elmeg hybird systems is carried out using the FCI configuration interface through a Web browser and requires a username and password for access. The FCI is a Web-based graphical user interface that can be accessed via HTTP or the encrypted HTTPS protocol from any PC with a current Web browser. Administrators can also configure the devices locally or remotely using telnet, SSH, or an ISDN login. Administrators are provided assistance here in the form of context-sensitive help.

Users can adjust the settings for important features themselves through dedicated user portals, saving the administrator work. The integrated applications (mini call center, telephone book management, etc.) also each have their own individual portals. This allows companies to assign the administration of the integrated solutions to a specific employee.

Integrated voice applications

Mini call center
The mini call center is a dedicated solution with its own administrator access and provides features for a small call center team of up to 16 employees. This solution is ideal for smaller groups within the company with high and varying call volumes such as internal sales, support, order hotlines, order processing, and customer service.

Features:

- Flexible allocation of lines and agents to the call center Supervisors can make changes on the fly (according to call volume)
- Queue management (calls distributed to agents after a break)
- Statistics on lines and agents
- Web portal for administration

Voice applications
The integrated voice applications are based on WAV files and provide a wide range of solutions:

- Auto attendant: with the option of selecting the desired department by entering a number on the keypad after the announcement, or dialing an extension directly
- MoH: customized music is played to callers on hold

• Greeting / announcement: recorded message for the caller, for instance hours of operation

Calendars are used to schedule features and applications to run on specific dates at specific times. There are calendars for the team features (call types), nighttime answering service, door intercom functionality, class of service, etc.

TAPI

The newly developed elmeg hybird TAPI interface is 64-bit compatible and allows for a wide variety of CTI applications. The compatibility to ESTOS and C4B enables the integration of CTI functions in different applications (Exchange, Outlook, Lotus Notes, Tobit, David, CRM systems etc). All system telephones as well as analogue and ISDN standard terminals can be connected via the "new" TAPI. The interface enables TAPI clients to be connected to the LAN; either with or without using a TAPI server.

External applications server

The connection to MS Exchange implements the following unified messaging functions:
• Voice Messaging – access to messages, appointments, contacts and voice messages by voice/tone dialling; any messages in the mailbox are read.
• Voice control – any messages in the mailbox can be controlled using your voice.
• Answering machine – the exchange mailbox can be used as an answering machine.
• Auto Attendant (16 languages) – transfer of calls with possibility to search in address book as well.

LDAP

elmeg hybird provides an integrated LDAP server. LDAP-capable devices such as standard IP telephones can access the central system telephone book of the hybird. Accessing the private telephone book of a user is also possible — with username and password protection.

Mobility

To equip employees with cordless telephones, a DECToIP system can be connected to the hybird using the SIP protocol — without an integrated module. This mobility solution combines two proven technologies: DECT is employed to connect base stations and terminal devices (good radio coverage and voice quality), and IP is used between the DECT base stations and the elmeg hybird. Radio coverage can be adapted to the site of the installation thanks to the flexibility of positioning base stations and DECT repeaters.

Interoperability note

On the basis of country-specific characteristics in each country a full interoperability specifically for ISDN and analogue connections can not be guaranteed. We therefore recommend preferably the IP / SIP-based use of the system.

Variants

elmeg hybird 120a (5510000322)	Communication system with system telephony; 2xS/U, 4xFXS, 1xFXO; integr. ADSL+ modem (Annex A), IP Router, VPN; TAPI, Voice Appl., VoIP 9xDSP channels; integr. licenses: 10xterminals/7xVM boxes/2xSIP ch./2xVPN & 2xSIP clients; wall mounting

Features

PABX functions	
PABX menu	Access to system functions of system telephone: phone book, follow me, direct call, editing of public holidays in calendars
Alphanumeric central phonebook	1000 entries in phonebook, individual authorisation for phonebook access, import/export possibility, name display on phonebook
Analogue ports - internal	To connect analogue terminals: MFC dialling method, adjustable flash times, setting as: phone/fax/modem/answ.machine/combination device, name display on phonebook for (CNIP/CNIR), transfer of phone numbers to internal analogue ports (CLIP, CLIP off Hook)
Internal call waiting	Call waiting is signalled by a call waiting tone on FXS ports. Possible procedures: ignore call waiting (timeout after 30 secs), accept directly, accept through hold for enquiry, reject
Call waiting protection	The call waiting protection is configurable per FXS extension (Ext.) as well as via Class of Service (CoS); the ext. is implemented in the terminal for ISDN extensions.
Do not disturb feature for internal ports (1)	The do not disturb feature (at rest) for FXS ports is configurable for a) just internal calls, b) just external calls, or c) internal and external calls;
Do not disturb feature for internal ports (2)	A special dial tone signals that the do not disturb feature is active; it shall however be possible to accept calls whilst in do not disturb mode.
Call assignments	Team and door terminal lists can be automatically switched on via programmable weekly calendars. It shall be possible for an authorised extension to manually switch on
Set up call forwarding remotely	Call forwarding can be remotely carried out in the system.
Call forwarding (CF) immediately/after a period of time/when busy (2)	Set up of call forwarding for internal extensions via user portal as well. The call forwarding set up is also possible with standard telephones via the telephone code procedure; this can also be done externally via the 2nd B channel.
Call forwarding during a call (CD - call deflection)	Automatic call deflection to PtMP connector if an incoming external call is to be forwarded externally.
Call forwarding during a call (partial rerouting) for PtP	Automatic execution if a internal extension has set up an external call forwarding. In the event of failure the call forwarding is done via the 2nd B channel.
Release (if dialled incorrectly, or if no answer)	Release to a configurable destination in the event of: incomplete DDI (after a period of time); if dialled incorrectly and if all team extensions are logged out etc.
Call assignment	External calls can be flexibly assigned to extensions, teams or to voice applications as well.
Exchange access right	The exchange access right can be set at different levels per user: internal, incoming, local, national, unlimited.

PABX functions	
Switchable exchange access right	The exchange access right can be controlled via the calendars through appropriate authorisation in the CoS
Automatic outside line	The automatic outside line is configurable per user; an internal number can therefore be dialled by pressing *
Global exchange access	The dialling code (typically 0) can be programmed freely.
ARS	Automatic route selection (LCR) is a dial control with a telephone number-dependent bundle selection. ARS is configurable per extension via the CoS.
Authority matrix (Class of Service)	The CoS contains a list of functions for the user; the CoS can be switched via the calendars/manually.
Bundle formation/division	Authorisation to assign a bundle is done via the CoS.
Specified bundle assignment	The bundle assignment can be done via the code on standard terminals or via the bundle key on SysTel.
Call Through (2)	Cheap tariffs, e.g. when dialling abroad, can therefore be used. When the ARS is switched on, routing is also possible via internal analogue GSM gateways.
Boss/secretary function	Functional linking of 2 system telephones - routing of calls via call function
CLIP no screening for point-to-points	Sending of call number that does not belong to connector, e.g.: as central call number for call centre. Application to the provider necessary
CLIPO (Calling Line Identification Presentation Override)	Transmission of suppressed numbers to special connectors (e.g. police)
Data protection for analogue extensions	The data protection option prevents call waiting for analogue faxes, modems and door intercoms.
Date/time	Implemented through clock component, clock software, time servers etc. The clock can be adjusted via FCI, synchronisation with ISDN network time is possible. Automatic changeover to summer/winter time
Diagnostic function	Fault logbook and diagnostic history memory in the system (to be saved to SD card)
Direct call	Automatic call setup after x secs to a preset destination after the receiver is lifted without dialling; can be programmed per user, special dialling tone for active direct calls; adjustable reaction time of 0 - 39 secs can be adjusted centrally
Three-party conference call	Up to 8 three-party conference calls for TDM terminals. Possible procedures during the conference call: Disconnect individual extensions, return to active connections and connections on hold
Announcement/announcement block	Announcement to system telephone with notification tone for both the calling party and the called party; can be set per extension
Advanced call assignment for point-to-points	Additional MSNs (exceptional call numbers) that can be configured centrally for all point-to-points. For non-configured call numbers, the call is released to a configurable global default destination.
Fax connection possibility	Connection possibility of a fax to analogue or ISDN internal connectors:
Follow me (1)	Tracing of call diversion of internal extensions via the code procedure; configuration of follow me function externally possible by dialling externally in the PABX (service call number) - protected by PIN2
Follow me (2)	The remote switching authorisation is set centrally.

PABX functions	
Charges (1)	Transmission both during (AOC-D) and at the end (AOC-E) of the call in units or currency amounts; operation of pay phones at the internal So bus possible
Charges (2)	Forwarding of charges to internal analogue/digital connectors, charge pulses 12 kHz/16 kHz, charge meter per extension
GSM gateway	GSM gateways can be switched on on hybird external ISDN ports. The automatic routing via ARS can be adjusted. The post-dial delay on analogue GSM gateway ports can be configured centrally, the ISDN clock synchronisation can be switched.
Pickup	Pickup of calls to other extensions: Pickup within a group; group assignment can be programmed per extension.
Pickup specified	Specified pickup by entering the extension call number; this covers all groups
Pickup of answering machine	Pickup of a call that has already been answered from an answering machine
ISDN connectors, point-to-multipoint/point-to-point with DDI (also mixed)	In the hybird both external point-to-points (P-P) as well as point-to-multipoints (P-MP) can be set up.
Calendars (PBX Day/Night, CoS, door terminal, teams) (2)	Several different switching times can be selected for each weekday. Exceptions for public holidays can be configured
Changeable codes for important functions	Programmable telephone codes: exchange access, pickup, specified pickup, speeddial number, project number, bundle assignment, open hold for enquiry
Keypad procedures in exchange	Control of performance features in the exchange, authorisation per extension in the CoS
Speeddial number	Access to entries in the phone book via a code combined with the respective entry index (000-999)
Layer 2 on exchange connector switched to active non-stop	The ISDN Layer 2 is kept active non-stop. Can be configured per exchange connector
Brokering	Any change between internal and external connections; the respective caller on hold hears MoH.
Save message on SysTel	Signalling via UUS 1
Name display in the call and in the connection	During the call as well as during the connection, the caller"s number is displayed (CLIP). If the call number is entered in the phone book, the corresponding name is displayed.
Name assignment for connectors, terminals and teams	In the configuration, names can be assigned to the individual ports. For internal calls the name is displayed on the terminal. In addition the name is also visible in the PABX menu and in FCI, as well as on the terminal for team calls.
Emergency functions with priority circuit (blockade break for ISDN)	A terminal that is configured as an emergency telephone disconnects an occupied exchange port if it is attempting to use an exchange. Any internal extensions can be configured as emergency telephones.
Emergency number storage/emergency telephone/alarm point-to-point (1)	In the hybird, 10 emergency numbers (up to 20 digits) can be set up. The occupied ISDN exchange is then subject to a blockade break if one of the saved emergency numbers is dialled.
Emergency number storage/emergency telephone/alarm point-to-point (2)	The emergency number dial is, provided that all exchange lines (incl. SIP provider) are occupied, always routed via ISDN (VoIP blocked).
Open hold for enquiry - park in system	By using the open hold for enquiry function, the caller is held in the system queue. The call can be transferred to any telephone via the code procedure or with SysTel park keys.

PABX functions

Internal and external room monitoring	Room monitoring via a telephone that has been approved for this and whose receiver has been lifted or whose hands free has been switched on. Room monitoring can also be remotely activated.
Separation of direction	A fixed exchange/bundle assignment can be configured for each user.
Call number plan	Flexible internal call number plan can be programmed in a variable manner from 1 to 4 digits
Call number prefix	The national/international dialling code can be set up centrally.
Call number transmission/suppression	The transmission and suppression of call numbers is implemented in the hybird via (CLIP/CLIR/COLP/COLR)
Ringing AC voltage (frequency)	For all FXS ports, the frequency of the ringing AC voltage can be adjusted centrally between 25/50 Hz.
Day/night operation	Switching to the respective operating status for the enitre system
Display extension status data	The current settings for a particular user can be displayed. Call number (MSN), name, current authorisation class, assigned interfaces, costs
On-hold queue	Callers can be switched to on-hold queues and then retrieved by pressing the correct code.
Music on hold	The MOH to be used for each extension can be configured via Class of Service. Options: no MOH, internal melody 1, internal melody 2, external connector, voice application MOH (external source via jack or WAV file)
Queue	The number of calls on-hold for the team can be individually set.
Return call (1)	A return call shall occur: when put on hold for enquiry, when dialling, when busy, if transferred incorrectly; after a period of time (30 secs). Return call from open hold for enquiry
Return call (2)	The time for the return call can be adjusted separately for iUbA, busy and open hold for enquiry.
Dial control (blacklist/whitelist)	Up to 30 16-digit blacklist numbers and up to 60 16-digit whitelist numbers can be set up in the system. Assignment to the various extensions is done via the CoS.
Simplex operation/simplex operation block	Simplex operation is typically only possible with SysTels. By using this function, the called device is switched immediately to hands free mode and the call is accepted. A simplex operation is ended after 2 minutes for security reasons.
X.31	Connection of X.25 Point of Sale terminals (data transmission in D channel) X.31 case B; up to 4 TEIs with fixed internal/external allocation can be configured
Central configuration of (system) telephones via PABX	Installation and administration of important system telephone parameters in the hybird

Application portals

Application portals - General	For the integrated solutions, i.e. phone book, mini call centre, call data etc, the individual application portals are available.

Hardware - Basic configuration

IP	Integrated ADSL / ADSL 2+ modem (Annex A), 4 x Gigabit LAN
ISDN	2 ISDN ports: Operates as S0 internal / external (PtP, PtMP) and Up0

Hardware - Basic configuration

Analogue internal ports (FXS)	4 FXS
Analogue external ports (FXO)	1 FXO
DSP channels	9 DSP channels (G.711) from which 4 DSP are with compression (G.729, G.726)
SD Card slot	For use with an SD memory card SD 1.0, 1.1, 2.0 (SDHC) for storing announcements, messages, fees, etc.
User / terminals	10 free, max. 20 via licenses
Ethernet interfaces	4 x LAN (WAN, DMZ via SW configurable)
Switch	10/100/1000 Mbit/s, auto sensing
USB client	Additional service interface with access to the management console for service and diagnostics (USB type A jack)
Reset key/factory settings	Restart or reset to ex works state
Status LEDs	7 LEDs to display the operational states

Content of Delivery

Yellow Ethernet cable	1 cable, 3 m
Power supply	1 piece
ISDN / BRI cable	1 cable, 3m
Sd card	With data for voice mail
Documentation	Quick start guide, user manual, setup manual, safety instructions, (additional documentation on CD)

Max. system values

Number of ISDN S0 ports	2 ports for internal / external operation: internal for connecting S0 standard or system telephones, (external: PtP, PtMP)
Terminals	Max. number: 20
Up0 ports	2 Up0 ports for ""U"" systels
IP phones (IP systels)	Max. 20 IP system telephones
Internal, analog interfaces	For operating 4 analog terminal devices
Door terminals	Max. 4 door terminals
SIP providers (VoIP)	Max. 25 SIP providers
External SIP channels	Max. 2-7 external SIP channels
Media interfaces (TDM / IP)	9 DSP channels (G.711) from which 4 DSP are with compression (G.729, G.726)
Standard IP telephones (SIP)	2 per default license, max 20
Analog subscriber line	1 FXO interface
Calendar / switching points	Up to 20 calendars can be setup across all types with up to 10 switching points each

Max. system values	
Voice mailboxes	7 voice mailboxes included
VPN / IPSec tunnels	Up to 2 provided with included default license
WLAN Controller	1 included with default license

Options per license	
Terminals	Default 10, expandable with 5 or 10 license packs
SIP clients	Default 2, expandable to 10 clients
External SIP connections	Default: 2, expandable with 5 license packs
Voicemail	Default: 7, expandable with 5 or 10 license packs

Maintenance	
Web browser access	Access over ISDN: Configuration, SW update, system status, readout of important system data, tracing, fault diagnosis
ISDN Login	Telnet (console) access, access to diagnostic memory, traces

Quality of Service (QoS)	
Liability	2 year manufacturer guarantee including advance replacement
Software update	SW system, SW management etc.
Bandwidth reservation	Dynamic bandwidth reservation, assigning guaranteed and maximum bandwidths
DiffServ	Priority queuing of packets using the DiffServ/TOS field.
Layer2/3 tagging	Mapping 802.1p layer 2 priority information to layer 3 Diffserv attributes.
Policy-based traffic shaping	Dynamic bandwidth management using IP traffic shaping
TCP download rate control	Reserves bandwidth for VoIP connections.

Team functions	
Team function - General (2)	16 extensions can be put into one team. Divisible call signalling can be configured for each team. Team call assignments are allocated to each team. The switching on of call assignments can either be done manually or automatically.
Release	For a particular team, a release to another team can be configured.
Call assignments	4 call assignments are allocated to each team, these can be switched on either manually or via calendars.
Call forwarding (2)	It can also be set up whether a call forwarding should be done externally in the VST via call deflection/partial rerouting and should be cancelled if the entire team call is successful.
Call list control (SysTels)	If an answering machine within the team accepts the call, the call will remain in the call lists for all telephones.

Team functions

Automatic call acceptance (with parallel signalling within the team)	Team calls can be accepted with MOH; the team extensions are then called in parallel. Once a team extension accepts the call, the connection is made.
Call signalling	Call signalling can be individually configured for each team: simultaneous, linear, rotating, constructing, parallel after a period of time, uniform call assignment according to average talk time.
Team call signalling to internal/external terminals	The team call signalling can be done to internal team extensions or to external call numbers. The allocation is done in the call assignments, which can be controlled via the calendars.
Team log in/log off	Team extensions can log themselves in and out of the team. This is possible for both individual as well as all teams; if all extensions are logged out then a call is released to the default destination.
Transfer functions	Transfer functions can be configured for each team: busy options, release options, transfer to busy extensions, automatic release immediately/if busy/if no reply.

Door terminals

Door terminals - General (1)	Door terminals can be switched on on internal FXS ports. For each door terminal, 8 internal extensions or 1 external call nr. (chemist"s circuit) are included in the call signalling each time it is rung. Refer to call signalling in the day/night ser
Door terminals - General (2)	Door terminal authorisations (call door terminal/open door) are done via the CoS. The door terminal switching authorisation (day/night) can be configured for each extension via CoS; door intercom calls can be picked up.
Doorbell signalling	The signalling time can be programmed for both internal and external use. The monitoring can be switched on or off.
Door terminal external call monitoring	A timer limits the call duration. Can be configured for each door terminal and doorbell
Door terminal call signalling	The call signalling duration can be adjusted.

Call transfer

Hold for enquiry	Can be freely executed on all internal or external extensions. Possible functions: Disconnect active connection, disconnect connection on hold, redial. The extension on hold shall hear MoH.
Hold for enquiry	Hold for enquiry from an active connection to an internal/external extension. The other extension is held in the system.
Transfer to busy extension	A call can be transferred to a busy extension. At the end of the call the connection is made. Automatic return to the original extension after time has expired.
Exchange to exchange transfer	Following the return of an existing exchange connection to the exchange, both external channels can then be interconnected. Not available for FXO
Transfer without advance notice (blind transfer)	Transfer a call by replacing the receiver from the hold for enquiry.
Transfer with advance notice	Transfer a call by replacing the receiver from the hold for enquiry after notifying the extension
Transfer (ECT)	Transfer of calls in exchange (if LM available). Can be reached via FCI, although external-external ECT is allowed.

Call transfer

Transfer of active call through call waiting	Analogue terminals can transfer the incoming call with R5 etc whilst on the call via the code procedure.

Voice applications

General voice applications	Voice applications are based on WAV files with music, announcements etc. Max. 8 voice applications can be configured as: announcement before query, infobox, wake-up message or MOH; WAV files are stored on the memory card (SD).
Announcement/infotext	A WAV file can inform the caller of any changes to opening hours in the form of an announcement/infotext.
Volume control of files	The WAV files can be adjusted by a volume control.
Music on hold	Music on hold (MoH) can be configured based on WAV files.

VoiceMail

E-mail messaging	The owner of the voice mailbox can receive new voice messages in an e-mail attachment.
Listen to messages remotely	The administration of the voicebox and listening to messages is possible both from internal and external telephones.
Message waiting indication	The owner of a voicebox is informed of new messages by a MWI, an e-mail, or special ringtones.
PIN protection & configuration	Subscriber access to the voicebox for use and configuration is protected with an individual user PIN. The configuration can also be performed over the user portal.
Storing announcements and messages on the SD card	Announcements and messages from the voicemail system are stored on the system"s SD card.
Voice-driven menus	While navigating through the menus of the voicemail system, the user will hear announcements and information about how to use the system.

Compilation of call data

General compilation of call data (1)	Compilation of records in FLASH with: iinternal extension no., external call number suppressed/shortened/not shortened), date/time, call duration, currency amount, project number, connector type, exchange line no./MSN/DDI index;
General compilation of call data (2)	can be configured for each extension; storage of incoming calls either generally or only by entering a project number.
Output of records	Available
Storage of records per user can be configured (1)	Possible output of call records on V.24 printer. Output of records in currencies standardised by a ratio of 1/1000; the factor and currency text can be configured.
Storage of records per user can be configured (2)	Shortened numbers are indicated with # character. Printout via V.24 can be switched via PABX menu
Call records in memory	2000 records are held in the memory.
Shortened storage of external call numbers.	The storage of shortened call numbers (privacy) is possible.

Mobile extensions

Mobile extensions - General (1)	Integrated application: parallel signalling of incoming calls to an internal terminal and an external call number (e.g. mobile phone). The assignment can be switched on or off via a code.
Mobile extensions - General (2)	The parallel call is initiated by directly dialling the internal extension. During the external connection, hold for enquiry and call transfer to hybird extensions are both possible via DTMF code procedures.

TAPI

TAPI - General	TAPI is supported for: TDM and IP system telephones. MS Windows XP, Vista, Win7. Support for 32 bit/64 bit, 1st and 3rd parties via LAN, TAPI authorisation for each extension can be adjusted via Class of Service
TAPI functions (1)	Automatic call acceptance via elmeg system telephones, incoming and outgoing calls, call forwarding, hold for enquiry, brokering, call transfer, three-party conference call, call waiting, charge information, call deflection, pickup of calls
TAPI functions (2)	Signalling of call forwarding number(s), MSN/DDI signalling, cause signalling, specified pickup, park/unpark

User - configuration portal

User-configuration portal - General	Each user within the system has access to their own telephones and settings. Individual user names/PIN are accessed via the user portal.

Mini call centre

Mini call centre - General	Integrated solutions for up to 16 agents ffor small groups that need to communicate both frequently and in a dynamic manner. The administration is done via a separate portal.
Functions	Flexible assignment of agents and lines, dynamic customisation depending on call volume, call assignment with idle periods for agents, statistical information on agents and lines
Status information (1)	Different status information is displayed, e.g.: lines and assigned agents, number of agents logged on per line.
Status information (2)	Agents in post-processing, active calls (active connections), calls on hold, number of calls accepted today, number of missed calls today.

DECT connection

Singlecell/multicell via LAN	As DECToIP system used with existing Ethernet interfaces via SIP protocol

Configuration access

General configuration	The hybird is configured using a Web browser to access the Configuration Interface (FCI). Supported browsers: Internet Explorer, vers. 7 or later, Firefox 2 or later
Web configuration	Configuration access is performed locally and remotely over IP: HTTP / HTTPS without a signed certificate.

Configuration access	
Remote configuration via ISDN (1)	Access to the hybrid can be done both remotely as well as via S0. Remote web browsing accessed via external ISDN S0 with X.75 / HTTP protocol
Remote configuration via ISDN (2)	Remote access can be turned on either for 30 minutes or continuously; Access is only available with a special service configuration management tool
Remote maintenance over IP	Remote maintenance via Telnet, SSH, HTTP
Firmware download	Via IP
DIME Manager support	The hybrid can also be configured via the DIME Manager.
Management	Management via SNMP, SSH
SNMP browser	Integrated in FCI
Device Discovery Function	Device discovery via SNMP Multicast (DIME Manager)
Telnet access	Telnet (console) login for access to diagnostics results, traces, etc.
Export and import configuration	Load and save the configuration; Optionally save encrypted configuration; Optionally runs automatically from the scheduler.
Configurable scheduler	Controlling actions using both scheduling and event-driven criteria, for instance Reboot Device, Activate/Deactivate Interface, Trigger Software Update, and Configuration Backup.

Logging / Monitoring / Reporting	
E-Mail alert	Automatic e-mail notification for specified actions or statuses.
External Systemlogging	Syslog, multiple syslog servers can each be configured with a separate syslog level.
Interfaces Monitoring	Statistics on all physical and logical interfaces (ETH0, ETH1, ...), output over the Web-based configuration interface (http/https).

Protocols / Encapsulations	
DHCP	DHCP client / server / proxy for simplified TCP/IP configuration
DNS	DNS client, DNS server, DNS relay and DNS proxy
DNS forwarding	Makes it possible to forward DNS queries from any specified domain for resolution by certain DNS servers.
DynDNS	Makes it possible to assign dynamic IP addresses through a dynamic DNS provider, for instance when setting up VPN connections.
PPPoE (server/client)	Point-to-Point Protocol over Ethernet (client/server) for creating PPP connections over Ethernet/DSL (RFC2516).

IP Routing	
Multicast IGMP	Support for Internet Group Management Protocol (IGMP V1, V2, V3) for simultaneous distribution of IP packets to multiple stations.
Multicast IGMP proxy	For simple forwarding of multicast packets to dedicated interfaces.

IP Routing

Policy-based routing	Advanced routing (policy-based routing) depending on various criteria such as IP protocols (layer 4), source/destination IP address, source/destination port, TOS/DSCP, source/destination interface and destination interface status.
Switch/Port Separation	Logical separation of ports at the Ethernet switch to connect a system behind a VDSL modem.

IP Telephony

NTP Client/Server	Automatic update of date/time from time server. Internal time server for connected IP terminals.
System interface, sub-system operation via IP	For the system interface, 2 systems are interconnected via a bidirectional connection - without global performance feature. The sub-system operation represents a single connection from the main system to the sub-system.
Connection to SIP provider	A connection to an SIP provider can be configured by using an individual telephone number or extension.
Connecting standard SIP terminal devices / IP system telephones (1)	Standard SIP telephony over the LAN Telephony over (WAN) SIP provider; general SIP and router settings: SIP RTP port, TOS value (SIP packets), TOS value (RTP packets)
Connecting standard SIP terminal devices / IP system telephones (2)	System telephony with IP-S290 & IP-S400 (tunnel for ISDN systel protocol via RTP), firmware download via http; VoIP initiation protocol with the IP systels for using codecs that perform compression.
Number of simultaneous SIP connections per provider	The number of simultaneous SIP connections to the provider can be configured.
Offsite extensions	Offsite extensions can be set up with IP system telephones or SIP telephones.
Bandwidth management with support for multiple locations (1)	Locations can be set up in order to use the bandwidth management. A location is identified with the aid of its fixed IP address or DynDNS address, or by using the interface to which the device is connected.
Bandwidth management with support for multiple locations (2)	The available VoIP bandwidth (upstream and downstream) can then be set up for each location.
Codecs	Codecs G.711, G.726, G.729, DTMF inband, DTMF outband, SIP INFO,
Codec profiles for sites, SIP providers, or IP terminals	Various codec profiles can be defined to influence voice quality and meet the specific requirements of individual providers. Codecs can be sorted according to various criteria and presented according to quality or bandwidth, for instance.
Early media connect	Early media connect connects voice or audio data (e.g.: announcements) before the call was accepted.
Quality of Service	DSCP header / ToS bits configurable
SIP 2.0	RFC 3261 compliant
STUN	A STUN server is required to provide VoIP devices behind an active NAT with access to the internet. In such cases, the current, public IP address of the connection is determined and utilized to ensure a precise address is available from the outside.
Dialling end identifier/shortening via #	The time after which the system begins to dial externally; i.e. after dialling the last digit of a call number. The time can be shortened by entering #.

Security

Security	
Admin password	Administrator system access for the Web configuration
Passwords for application portals	Access to the Web configuration of the integrated solutions: mini call center, phone book, call logs
Password for user portal	User access to the Web configuration of the custom settings
PIN protection for remote access	Remote access to the system is protected with a 6-digit, programmable PIN
NAT / PAT	Symmetrical network and port address translation (NAT / PAT) with randomly generated ports including multi-NAT (1:1 translation of the entire network)
Packet filter	Filtering of IP packets based on various criteria such as IP protocols, source/destination IP address, source/destination port, TOS/DSCP, layer-2 priority can be individually configured for each interface
PIN protection for voicemail system	Access to the voicemail system is protected by the individual user PINs.
Policy-based NAT/PAT	Network and port address translation using different criteria such as IP protocols, source/destination IP address, source/destination port.
Stateful inspection firewall	Directional packet filtering with monitoring and interpretation of the respective status of the individual connections.

VPN	
Number of VPN tunnels	2 simultaneous VPN connections
IPSec	Internet Protocol Security for establishing VPN connections
L2TP	Layer 2 Tunneling Protocol including PPP user authentication.
PPTP (PAC/PNS)	Point to Point Tunneling Protocol for establishing Virtual Private Networks.

Technical data	
Dimensions	305 x 218 x 41 mm
Housing	Plastic housing, internal cable terminals; ports on the front and right sides
Power Supply	Separate wall power supply
Power consumption	Idle: 12 W
Power consumption	Under load: 21.5 W
Weight	0.86 kg - without packaging and accessories
Operating conditions	Operating temperature: +5° C to +40° C; storage: -20°C to +70°C; relative humidity: max. 85 % non-condensing, dry rooms, dust-free
Standards and certifications	R&TTE Directive 1999/5/EC (EN 55022; EN 555024); Low Voltage Directive 2006/95/EC (EN 60950-1); Ecodesign/ERP Directive 2009/125/E

Accessoires

Software Licenses

Software Licenses

License upgrade 5 terminals (5500001209)	License to enhance the system by 5 additional terminals
License upgrade 10 terminals (5500000947)	License to enhance the system by 10 additional terminals
License upgrade 5 VM boxes (5500001154)	License to enhance the system by 5 additional hybird VoiceMail boxes
License upgrade 10 VM boxes (5500001155)	License to enhance the system by 10 additional hybird VoiceMail boxes
License upgrade 5 SIP channels (5500000869)	License to enhance the system by 5 additional SIP channels
License upgrade 10 SIP clients (5500000868)	License to enhance the system by 10 additional SIP clients

Pick-up Service / Warranty Extension

Service Package 'medium' (5500000812)	Warranty extension of 3 years to a total of 5 years, including advanced replacement for bintec elmeg products of the category 'medium'. Please find a detailed description as well as an overview of the categories on www.bintec-elmeg.com/servicepackages.

Add-ons

SD card (5500001380)	SD memory card for elmeg hybird systems, pre-initialized with multi-lingual voice mail voice messages, and firmware for system telephony

DECT150 (5530000087)	DECT over IP singlecell base station for 6 handsets / 4 voice channel (elmeg D130, elmeg D140); powerded by PoE; power supply
DECT200M (5530000088)	DECT over IP multicell manager for 100 handsets / 30 voice channel (elmeg D130, elmeg D140; elmeg DECT200 basestations neccessary); seamless roaming & handover; powerded by PoE; power supply not included
DECT200 (5530000089)	DECT over IP multicell base station for 100 handsets / 30 voice channel (elmeg D130, elmeg D140); seamless roaming & handover; powerded by PoE; power supply not included
D130 (5530000090)	DECT handset, brilliant, 1.8 TFT colour display with 7 lines, intuitive, icon-based user interface; Headset connection via Bluetooth® or 2.5 mm jack, integration of hybird phone book and voicemail, incl. charging tray
D140 (5530000091)	Slim line DECT handset, brilliant, 1.8 TFT colour display with 8 lines, intuitive, icon-based user interface; vibration function, headset connection via Bluetooth® or 2.5 mm jack, integration of hybird phone book and voicemail, incl. charging tray
D150R (5530000181)	DECT handset, IP65 standards (dust, waterproof, shock resistance), functionality and equipment like D130, no Bluetooth, additional vibration alert and LED torch, Rubber surface for perfect grip, incl. Charging tray