



Convergent Communication: Voice Meets Data.

Product Overview 2006



Perfect match.

Funkwerk Enterprise Communications GmbH is one of the leading European vendors of professional telecommunications solutions for companies, authorities, institutions, organizations, and carriers of the network and information technology industries.

Our comprehensive range of solutions ensures the efficient coalescence of voice and data: VoIP and VoVPN®, IP-based routing, as well as ISDN/xDSL systems.

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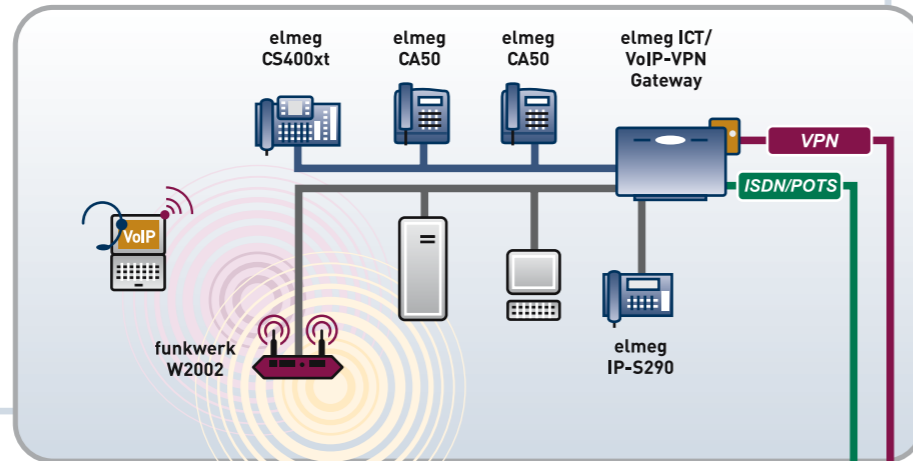
TAILOR-MADE ENTERPRISE COMMUNICATIONS

Convergent Communication for Enterprise Headquarters

With the elmeg ICT IT telecommunication systems, all demands made on modern enterprise communications can be easily met. The modular setup permits tailor-made configuration for companies of all sizes.

The "VoIP-VPN Gateway" module makes it possible to implement a smooth migration to Voice over IP, converting the IT telecommunications system of the elmeg ICT series into a flexible central node for telecommunications and data connection of all types.

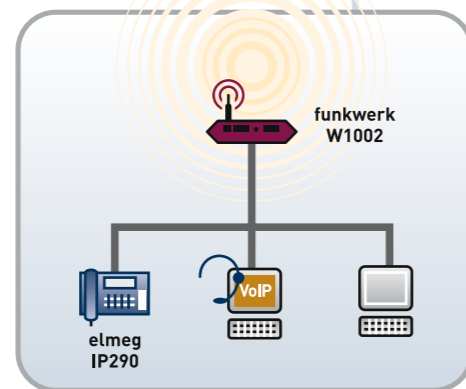
With FEC's voice-data solutions you will be utilising flexible systems which will protect your long term investment.



Wireless Connection of Remote Buildings

The bridging functions offered by the access points of the funkwerk Wx002 series permit the wireless connection of remote buildings or offices to the network and VoIP resources of the company headquarters.

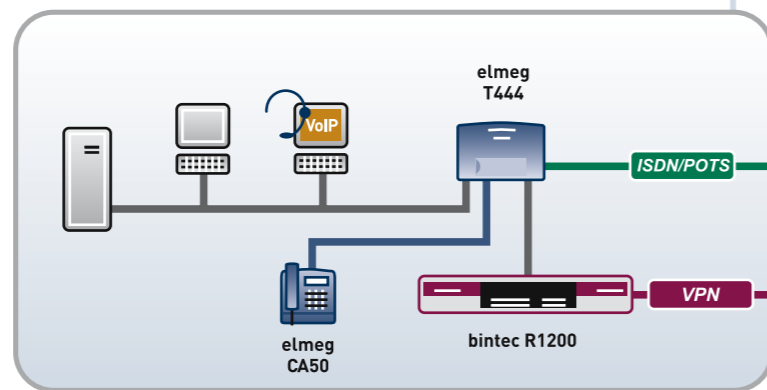
In this way, the connected subsidiaries can simply use the infrastructure of the company headquarters and can be maintained centrally.



Secure Connection of Subsidiaries via Virtual Private Networking

If your company has several subsidiaries, the combination of powerful routers and compact IT telecommunications systems offers the optimum solution for cost-effective telephony and highly available and secure data connections.

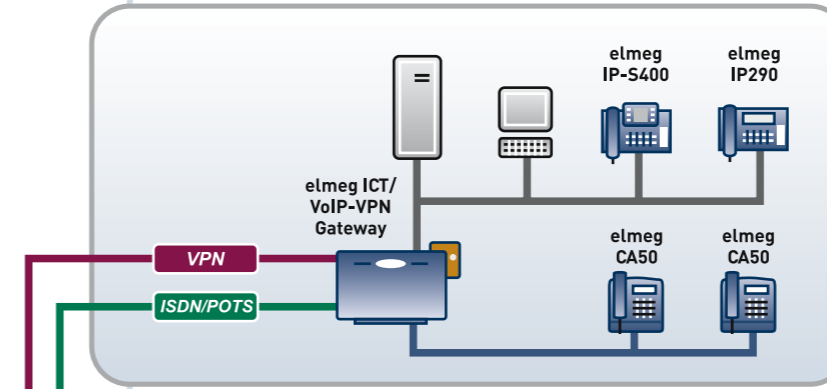
Voice over VPN even enables subsidiaries to access the telephony functions of the central system (e.g. direct dialling).



Integrated Communication for Distributed Company Sites

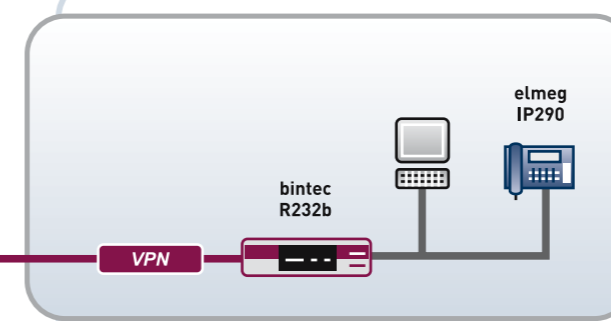
The interconnection of sites via the Internet connects all company sites to a single complete system for easy administration.

Thanks to VPN, even calls can be transmitted in secure mode over the Internet. Hackers do not stand a chance.



Integration of Sales Offices

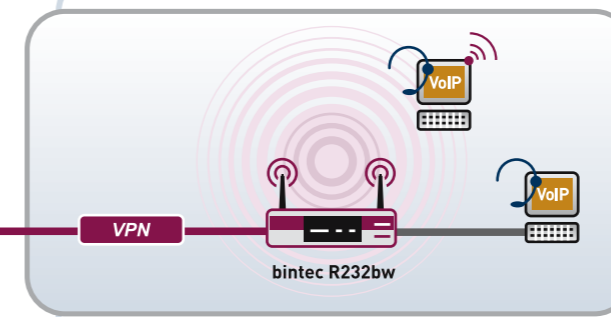
Flexible service and sales concepts of large-scale companies, such as insurance companies or travel agencies, covering complete sales areas require the integration of numerous distributed company sites into the central data processing or VoIP system. The comprehensive portfolio of FEC offers cost-effective solutions for PBX systems of all sizes.



Integration of Home Offices

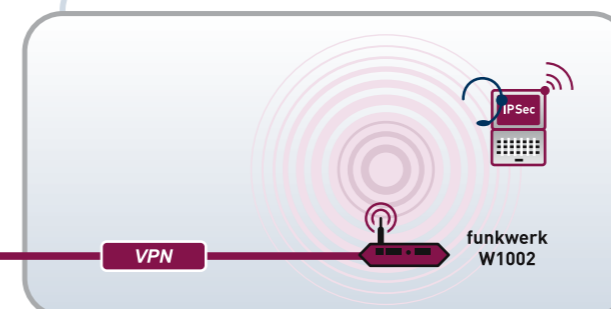
With modern, VPN-capable WLAN routers, FEC offers solutions for small offices/home offices of all sizes and types.

In addition to network access to the server of the company headquarters, VPN also protects the Internet telephone connections at all times and prevents hacker attacks.



Secure Connections to Public Hot Spots

The bintec IPsec Client permits secure access to the central corporate network from outside the company in the area of public hot spots. An integrated firewall and dynamic assignment of only the required network ports guarantee secure access to your central data processing systems even from remote locations.



IP Access

The fast Internet access for small- and medium-scale companies, as well as secure data exchange between subsidiaries, home offices, and company headquarters are the core competence of the IP access solutions of Funkwerk Enterprise Communications.

VPN tunnels not only facilitate secure data traffic between individual sites, but thanks to VoVPN®, reliable transmission of voice data is also possible. IPSec encryption for mobile employees, bandwidth management and load balancing for business-critical applications, as well as support of the newest transfer protocols, such as ADSL2+ and SHDSL, make our IP access solutions the first choice for any professional user.

No matter whether you are acting as a worldwide company, as a large-scale subsidiary, or as a company with a single site in search of a professional solution, our comprehensive router portfolio offers you the optimum solution scaled to your project volume or company size.

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ADSL ROUTERS / WLAN ROUTERS

bintec R230a / bintec R230aw

Replaces the bintec X2301 and X2301w



- ADSL2+ and 4-port switch
- SIP proxy for Internet telephony
- IPSec for secure VPNs
- WLAN with WPA2 and Multi-SSID (R230aw)

The bintec R230a and bintec R230aw are flexible IP access routers with an integrated ADSL modem (Annex A) and a 4-port switch. In addition, bintec R230aw offers WLAN functionality.

The devices can be used optimally in small enterprises or for the connection of branch offices and home offices. They support ADSL2+ with a download rate of up to 24 Mbps.

The wireless interface of the R230aw transmits data at a maximum of 54 Mbps (IEEE 802.11g) and is compatible with the 11 Mbps variant 802.11b. Encryption via the WLAN interface can be performed using WPA or WPA2; and virtual WLAN interfaces can be defined using multi-SSID.

A SIP proxy allows application of the devices in VoIP scenarios, such as Internet telephony. Both devices have a powerful IPSec implementation and are equipped with 2 active VPN tunnels ex-factory. Besides encryption via AES or 3DES, the devices offer authentication via certificates or pre-shared keys.

MODULAR ROUTERS

bintec R4100

Replaces the bintec X4100



- 4x ISDN (switchable), 2x PRI
- VPN-PPTP integrated
- 10 IPSec tunnels included (max. 110)
- DSP slot (VoIP)

The bintec R4100 is a powerful IP router for small and medium-scale enterprises. It can be used as a WAN access router or central remote access server. The bintec R4100 is equipped with two BRI interfaces ex-factory and therefore offers the utilization of up to four ISDN B channels. Up to two PRI interfaces can be opened optionally. Besides the ISDN BRI and PRI interfaces, a DSP slot for up to 30/60 parallel VoIP channels is integrated. The bintec R4100 can therefore be used as VoIP media gateway.

As it supports up to 68 ISDN B channels, bintec R4100 is suited as central remote access server. Besides connecting local end devices, the integrated 4-port switch can also be used in combination with an external modem for WAN connection.

Setup of secure VPN infrastructures is supported by the comprehensive IPSec implementation. The encryption is performed via 3DES or AES. Pre-shared keys or certificates can be used for authentication. A Radius server can be easily integrated.

ADSL ROUTERS / WLAN ROUTERS

bintec R232b / bintec R232bw

Replaces bintec X2302, X2302w, X1000 II, and Bingo DSL II



- Access Router with ADSL2+
- 4-port switch, DMZ port and ISDN
- SIP proxy and IPSec VPN
- WLAN with WPA2 and Multi-SSID (R232bw)

The bintec R232b and bintec R232bw are flexible IP access routers with an integrated ADSL modem (Annex B), a 4-port switch, and a DMZ port, as well as ISDN. In addition, bintec R232bw offers WLAN functionality.

The devices can be used optimally in small enterprises or for connection of branch offices and home offices. A SIP proxy allows application of the devices in VoIP scenarios, such as Internet telephony.

Both devices have powerful IPSec implementation and are equipped with 2 active VPN tunnels ex-factory. Besides encryption via AES or 3DES, the devices offer authentication via certificates or pre-shared keys.

Using ADSL2+, download rates of up to 24 Mbps can be implemented. An ISDN interface is available for a backup path. The wireless interface of the R232bw transmits data with up to 54 Mbps according to IEEE 802.11g. The encryption is performed via WPA or WPA2 and virtual WLAN interfaces can be defined using multi-SSID.

MODULAR ROUTERS

bintec R4300

Replaces the bintec X4300



- 2x ISDN (switchable), up to 2x X.21
- VPN-PPTP integrated
- 10 IPSec tunnels included (max. 60)
- DSP slot (VoIP)

The bintec R4300 is a powerful IP router for small and medium-scale enterprises and can be used as a WAN access router or as central remote access server. The bintec R4300 is equipped with two ISDN BRI and one X.21 interface ex-factory. An additional X.21 interface can be installed by means of a license.

Besides connecting local end devices, the integrated 4-port switch can also be used in combination with an external modem for WAN connection. The separate DMZ port allows the provision of central server services.

The setup of secure VPN infrastructures is supported by the comprehensive IPSec implementation. Encryption is performed via 3DES or AES. Pre-shared keys or certificates can be used for authentication. A Radius server can be easily integrated.

ADSL ROUTERS / WLAN ROUTERS

bintec R3000 / R3000w

Replaces the bintec X2300i and X2300is



- ADSL2/2+ modem, 4+1 port switch
- 2x ISDN (switchable), DSP slot (VoIP)
- WLAN according to IEEE 802.11a(h)/b/g
- 10 IPSec tunnels included (max. 110)

The bintec R3000 is an extensively equipped ADSL multi-protocol router with integrated ADSL(2+) modem and automatic ISDN backup. It can be applied in a flexible manner. The modem of the R3000/R3000w is both suitable for standards ANNEX-A and ANNEX-B and can therefore be used in many countries. The bintec R3000/R3000w is particularly suitable for high-speed Internet access and remote access use in small to medium-scale enterprises and remote offices.

The basic equipment offers a SIP application level gateway for direct connection of IP telephones to the network and registration at VoIP providers. Firewall control is automatically performed by the router which simplifies configuration.

As a wireless router, the bintec R3000w supports the IEEE 802.11a(h)/b/g standard with a gross data rate of 54 Mbps. Besides WEP encryption, the secure WPA or WPA2 mode is available for application of pre-shared keys or of a Radius server in order to protect data transfer over the wireless interface.

MODULAR ROUTERS

bintec X8500-P3 / X8500-P8



- Three or eight slots for extension modules
- Cards for BRI and E1 leased lines
- Diverse resource cards
- Hot-swap function for all cards

The bintec X8500 family offers high-performance, broadband-capable router solutions for large-scale companies and Internet Service Providers (ISPs). The bintec X8500-P3 is equipped with three slots for extension cards, which can be replaced during operation (hot-swap). The bintec X8500-P8 has eight slots.

In the ex-factory state, 3 Fast Ethernet ports are already integrated into the system card of the X8500-P8. Also, the X8500-P8 is equipped with a processor offering higher performance than the variant P3.

Optional resource cards for digital modems, hardware-supported data encryption, or public key acceleration make it possible to use bintec X8500 routers either as remote access servers or as high-performance VPN gateways.

To provide a higher failure safety, the bintec X8500 is equipped with two slots for redundant, hot-swappable power supplies. Optionally available adapter cards for the BRICK-XM/XL modules permit the trouble-free migration and use of older bintec products.

SHDSL AND SERIAL ROUTERS

bintec R3400 / bintec R3800

Replaces the bintec X2404



- 4- or 8-wire SHDSL (up to 9.2 Mbps)
- 10 IPSec tunnels included (max. 60)
- ISDN backup, remote administration
- 4-port switch, DMZ port, QoS, OSPF

The bintec R3400 and bintec R3800 SHDSL routers were specially developed for high-speed Internet access and for VPN connection in medium-scale companies and subsidiaries. By means of access to a 4-wire (R3400) or 8-wire (R3800) copper line, the devices provide transmission capacities of up to 9.2 Mbps.

When operating the devices in back-to-back mode, geographically separated LANs can be networked with symmetrical bandwidths. SHDSL connections provide the company with symmetrical bandwidth, i.e. with identical transmission rates in both directions.

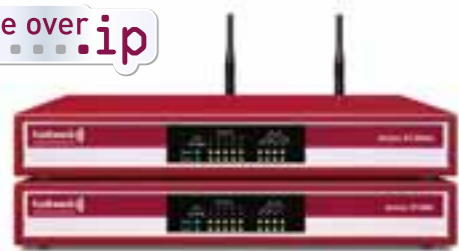
The bintec R3400 supports data rates of up to 2.3 Mbps on a 2-wire copper line. When connected to a 4-wire copper line, it offers transmission rates of up to 4.6 Mbps and, therefore, fulfils the increasing bandwidth demands of the business customer environment.

The bintec R3800 offers the option to bundle a bandwidth of 9.2 Mbps by means of the integrated IMA function (Inverse Multiplexing over ATM).

XDSL ROUTERS

bintec R1200 / bintec R1200w

Replaces the bintec X1000 II, X1200 II, VPN Access 5 / 25 / 100 and X2250



- 4+1 port switch (10/100-Mbit)
- 2x ISDN (switchable), DSP slot (VoIP)
- WLAN to IEEE 802.11a(h)/b/g standard
- 10 IPSec tunnels included (max. 110)

The bintec R1200 is an extensively equipped multi-protocol router with automatic ISDN backup, which can be applied in a flexible manner. It has been developed for high-speed Internet access and can also be used for remote access in small- to medium-scale companies or remote offices. By default, the device is equipped with a 4-port switch and an Ethernet port for WAN access, and also provides over 10 IPSec tunnels including hardware acceleration ex factory.

The basic equipment offers a SIP application level gateway for direct connection of IP telephones to the network and registration at VoIP providers. The firewall control is automatically performed by the router, which simplifies configuration.

As a wireless router, the bintec R1200w supports the IEEE 802.11a(h)/b/g standard with a gross data rate of up to 54 Mbps. Besides WEP encryption, the secure WPA or WPA2 mode is available for the application of pre-shared keys or of a Radius server in order to protect the data transfer over the WLAN interface.

XDSL ROUTER

bintec VPN Access Family (VPN 250, VPN 1000)



- IPSec and PPTP encryption
- Load balancing and diverse backup options
- Application also possible when using dynamic IP addresses

The VPN gateways of the bintec VPN access series are specifically optimized for high-availability application in the VPN environment. IPSec and PPTP encryption functions are implemented in these devices. In addition to numerous encryption procedures, the IPSec implementation also supports the AES algorithm and offers encryption key lengths of up to 256 bits.

The support of certificates permits setup of a public key infrastructure to attain the highest possible security level and to ensure flexibility in the daily operation of a VPN at the same time.

The devices also offer an abundance of additional functions, for instance: load balancing permits the configuration of two out of three Ethernet interfaces as WAN interfaces, the data traffic can therefore be distributed to individual lines depending on the load or type of data.

ISDN callback, which is free of charge, as well as the use of the DynDNS service make sure that dynamic IP addresses can be used without problems.

SOFTWARE

bintec XAdmin



- Automated or event-controlled initial configuration and updates
- Inventory of existing and new target routers
- Success control, logging, reporting

The software tool bintec XAdmin offers a solution for the maintenance and configuration of a large number of routers—simple, quick, and reliable.

For example, the routers can be shipped in the firmware-state to the subsidiaries and home offices and later configured from a central location. The automated performance of mass or individual updates for configuration changes and software images can be implemented easily and reliably via the bintec XAdmin.

Access is possible via a web-based user interface and is, therefore, available from any location within the LAN. To operate the routers at individual sites, it suffices that they are connected to an ISDN line and are switched on.

Complete information on the individual client routers is stored in a central database.

SOFTWARE

bintec Secure IPSec Client



- IPSec client software for any VPN environment
- High security level attained for the client by means of the integrated firewall function
- Secure dial-in within public hot spots

The bintec IPSec Client is the ideal solution for users who often work while travelling or in home offices.

It offers secure remote access, via the existing IPSec gateway, to the headquarters or directly to an IPSec-capable server.

The integrated firewall function offers all-out protection of the end device, as well as the option of secure communication when dialling-in via public hot spots.

FEATURE OVERVIEW IP ACCESS

	bintec R230a	bintec R230aw	bintec R232b	bintec R232bw	bintec R1200	bintec R1200w	bintec R3000	bintec R3000w	bintec R3400	bintec R3800	bintec R4100	bintec R4300	bintec X8500 Family	bintec VPN250	bintec VPN1000	
Interfaces																
10/100 BASE-T	4	4	5	5	5	5	5	5	5	5	5	5	3+6 opt.	3	3	
ISDN S ₀ Ports	-	-	1	1	1+1 opt.	1+1 opt.	1+1 opt.	1+1 opt.	1	1	2+2 opt.	2	1+28 opt.	1	1	
ISDN S ₀ Modi	-	-	external	external	internal/external	internal/external	internal/external	internal/external	external	external	internal/external	internal/external	external	external	external	
ISDN S _{2M} Ports	-	-	-	-	-	-	-	-	-	-	2 opt.	-	30 opt.	-	-	
Serial (X.21/V.35/V.36)	-	-	-	-	-	-	-	-	-	-	-	2 opt.	32 opt.	-	-	
Internal xDSL Modem	ADSL (2+)	ADSL (2+)	ADSL (2+)	ADSL (2+)	-	-	ADSL (2+)	ADSL (2+)	SHDSL	SHDSL	-	-	-	-	-	
DSL Type	ANNEX A	ANNEX A	ANNEX B	ANNEX B	-	-	ANNEX A+B	ANNEX A+B	4-wire	8-wire, IMA	-	-	-	-	-	
DSP Slot internal for VoIP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DSP Channels	-	-	-	-	4***	4***	4***	4***	-	-	8/30 ***	4 ***	-	-	-	
WLAN	-	802.11b/g	-	802.11b/g	-	802.11b/g/a/h	-	802.11b/g/a/h	-	-	-	-	-	-	-	
Hardware Acceleration / Encoding	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Software																
RIP v1/v2 / triggered RIP	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Bridging	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
PPPoE Client	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
PPPoE Server	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
PPPoA	•	•	•	•	-	-	•	•	•	•	-	-	-	-	-	
IPoA	•	•	•	•	-	-	•	•	•	•	-	-	-	-	-	
Multi-VC (ATM)	•	•	•	•	-	-	•	•	•	•	-	-	-	-	-	
QoS	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
TCP Download Rate Control	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
OSPF	-	-	-	-	•	•	•	•	•	•	•	•	•	•	•	
Frame Relay	-	-	-	-	•	•	•	•	•	•	•	•	opt.	-	-	
VLAN	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
SIP Proxy	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Tacacs+	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
RADIUS	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Scheduling	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Keep Alive Monitoring	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
UPnP	•	•	•	•	•	•	•	•	•	•	•	•	-	-	-	
Switch Port Separation	•	•	•	•	•	•	•	•	•	•	•	•	-	-	-	
X.25 over ISDN, X.25 to TCP, XOT, X.25 PAD, TP0 Bridge	-	-	-	-	•	•	•	•	•	•	opt.	opt.	opt.	-	-	
ISDN Leased Line	-	-	-	-	•	•	•	•	•	•	•	•	•	•	•	
Remote CAPI	-	-	•	•	•	•	•	•	•	•	•	•	•	opt.	opt.	
WLAN																
Multi SSID	-	•	-	•	-	•	-	•	-	-	-	-	-	-	-	
WPA, WPA2 (PSK & Enterprise)	-	•	-	•	-	•	-	•	-	-	-	-	-	-	-	
IPSec over WLAN (PSK & Certificates)	-	•	-	•	-	•	-	•	-	-	-	-	-	-	-	
WDS	-	-	-	-	-	•	-	•	-	-	-	-	-	-	-	
Antenna Diversity	-	only 802.11b	-	only 802.11b	-	•	-	•	-	-	-	-	-	-	-	
Security																
IPSec	2 tunnels	2 tunnels	2 tunnels	2 tunnels	10 tunnels**	10 tunnels**	10 tunnels**	10 tunnels**	10 tunnels**	10 tunnels**	10 tunnels**	10 tunnels**	10 tunnels**	optional	250 tunnels	1000 tunnels
Max. number of IPSec tunnels	2	2	2	2	110	110	110	110	60	60	110	60	2000	250	1000	
VPN with PPTP	-	-	-	-	•	•	•	•	•	•	•	•	opt.	•	•	
DynVPN	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
IP address in D channel	-	-	•	•	•	•	•	•	•	•	•	•	•	•	•	
NAT / PAT	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Stateful Inspection Firewall	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Content Filtering	•	•	•	•	•	•	•	•	•	•	•	•	-	-	-	
E-Mail Alert	-	-	-	-	•	•	•	•	•	•	•	•	•	•	•	
Backup																
Device Redundancy	-	-	-	-	•	•	•	•	•	•	•	•	•	•	•	
Load Balancing	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
ISDN Backup	-	-	•	•	•	•	•	•	•	•	•	•	•	•	•	
Analogue Backup	-	-	-	-	•*	•*	•*	•*	•*	•*	•*	•*	•*	•*	•*	
GSM Backup	-	-	-	-	•*	•*	•*	•*	•*	•*	•*	•*	•*	•*	•*	
GPRS Backup	-	-	-	-	•*	•*	•*	•*	•*	•*	•*	•*	•*	•*	•*	

*) External modem and cable required
 **) Additional tunnels available (optional)
 ***) Under preparation

IP Access

IP Access

ITC Systems

Due to their modular architecture, the IT telecommunication systems of Funkwerk Enterprise Communications (FEC) meet the highest and most innovative demands. The modular concept, for instance, enables a company, which already operates an elmeg ICT unit, to extend the functions of this system quickly and in a cost-effective manner by means of VoIP functions. This is done by simply inserting the “VoIP-VPN Gateway” module. Investment already made by the company is, therefore, protected.

With its VoIP-capable compact PBXs, the elmeg T444 and T484, the IP system telephones, the elmeg IP-S290 and IP-S400, and the elmeg ICT series, FEC further extends its leadership claim in the growing VoIP market.

■ ITC UNITS

elmeg ICT46 / ICT88	16
elmeg ICT880 / elmeg ICT880xt	17
elmeg ICT880-rack / elmeg ICT880xt-rack	17
elmeg T484	18
elmeg T444	18
elmeg T240	18

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elmeg CS410 / CS410-U	19
elmeg CS400xt	19
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elmeg IP290	20
elmeg IP-S290	20
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elmeg DECT70	22

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elmeg CA50	22
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elmeg M 4 DSP / M 8 DSP	23
elmeg Module Router ICT	24
elmeg Module DECT multicell 2 / DECT multicell 4	24
elmeg Module 2 POTS / Module 4 POTS	24
elmeg Module 1 POTS	24
elmeg Module PRI	25
elmeg Module 4 Up ₀ / Module 8 Up ₀	25
elmeg Module 2 S ₀ / Module 4 S ₀	25
elmeg Module 4 a/b / Module 8 a/b	25
elmeg Module FSM	26
elmeg Module NSP	26
elmeg Module Contacts	26
elmeg Module 2 a/b	27
elmeg Module Answering Machine	27
elmeg T400 / T400/2	27

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ITC SYSTEMS

elmeg ICT: the ITC System Family for Professional Communication



- Highly flexible architecture with 10 to 118 ports (with PRI)
- Numerous extension options (e.g. BRI, Up₀, DECT)
- Voice applications
- Optional VoIP-VPN gateway module

Due to their modular architecture, the IT telecommunications systems of the elmeg ICT series fulfil even the most demanding requirements. Features such as alternation between lines, 3-party conferences, complex team solutions, central alpha-numeric phone book, hotel check-in/check-out, and many other features ensure that communication in your company is transparent and efficient. Integrated voice applications offer professional features, such as interactive voice response or message texts.

The IT telecommunications systems of the elmeg ICT series can be configured remotely, which means that special settings and loading of new firmware can be performed directly from the facilities of the vendor via ISDN.

The elmeg ICT series of IT telecommunications units and the corresponding security concept provide small- and medium-scale companies with functions which so far have been reserved for large telecommunications systems only.

Maintenance and configuration of the IT telecommunications systems can easily be performed via the PC. The jobs are transferred to the PBX via the RS232 interface, the internal BRI or the USB interface.

ITC SYSTEMS

elmeg ICT880 / elmeg ICT880xt



- ICT880: 4x int./ext. BRI, 8x a/b*
- ICT880: interface for ICT880xt
- ICT880xt: 6x Up₀, 4x a/b*
- Module slots for numerous extension options

* Basic version

The elmeg ICT880 takes another step in the direction of voice-data convergence. The systems concept of the unit permits flexible extension of up to

- 16 digital trunks
- 76 digital internal channels
- 44 analog end devices
- 4 hands-free entrance telephones
- 88/118 ports in total (max. extension ICT880 with ICT880xt and PRI)
- PRI primary multiplex access (30 trunks)

When connecting the elmeg ICT880xt extension frame, this system provides up to 88/118 ports. All current elmeg modules and end devices are compatible as will all future products.

Even the basic version provides the full range of ISDN features on all end devices. The elmeg ICT880 administrates 8 analog end devices and 4 internally/externally switchable ISDN interfaces in the basic version.

The elmeg ICT880xt extension frame is equipped with six Up₀ ISDN interfaces, 4 analog ports, and two further module slots for hands-free entrance telephones and analog or ISDN extension modules.

ITC SYSTEMS

elmeg ICT46 / ICT88



- ICT46: 1x ext. BRI, 1 int./ext. BRI, 6x a/b*
- ICT88: 4x int./ext. BRI, 8x a/b*
- 2 subscriber and 2 special slots for extension modules

* Basic version

Modular extension of the elmeg ICT46 and elmeg ICT88 IT telecommunications systems permits upgrading of up to 20 ISDN accesses (BRI/Up₀, for elmeg ICT88) or 24 analog end devices (elmeg ICT88). Further modules can also be connected. This ensures that the IT telecommunications systems can be integrated seamlessly and precisely into the communications structure of your company and grow with it. Instead of having to change over to new systems again and again, your elmeg IT telecommunications system grows in cost-effectively.

Using the maximum extension of 48 ports with the elmeg ICT88 (up to 78 ports using a PRI module for up to 30 trunks, not available with ICT46), the IT telecommunications systems of the elmeg ICT series provide a high-performance and future-safe communications platform. Until now a comparable performance could only be achieved with much more expensive systems.

With a bandwidth ranging from 10 ports for small offices to 78 ports for hotels and medium-scale companies, all customer requirements can be covered.

ITC SYSTEMS

elmeg ICT880-rack / elmeg ICT880xt-rack



- ICT880 rack: 4x BRI (int./ext.) and 8x a/b*
- ICT880xt rack: 6x Up₀, and 4x a/b*
- Up to 118 ports (with PRI module)
- Ideally suited for 19" IT environments

* Basic version

The elmeg ICT series permits the perfect integration of telecommunications technology into professional network topologies. The 19" variant elmeg ICT880-rack permits the setup of flexible, routable workplace connections in central cabinets, as they are state-of-the-art in both the LAN and ISDN telecommunications sectors.

Due to its design, this variant can be seamlessly integrated into existing network structures and is mounted in a 19" cabinet, together with further network components, such as file servers, switches, hubs, or a CTI server.

As a basic version, the elmeg ICT880-rack is equipped with 4 BRI accesses and 8 analog ports. The modular design is identical with that of the sister modules elmeg ICT46, ICT88, and ICT880 in wall-mounted frames.

An extension of the complete system is implemented with the elmeg ICT880xt-rack extension frame with 4 further analog ports, 6 Up₀ interfaces, and two further slots for modules.

ITC SYSTEMS

elmeg T484

voice over .ip



- Integrated xDSL/ISDN IP router
- System-integrated voice boxes and voice applications via CF card
- Individually extendable by 2x BRI, 4x a/b, or POTS

The elmeg T484 closes the gap between compact PBX systems and modular IT telecommunications systems of the elmeg ICT series for professional IT environments. Since the elmeg T484 can be extended by two additional BRI, 4 a/b, or up to four analog accesses (POTS) and due to its professional scope of functions, it is ideally suited for small to medium-scale offices, handicraft enterprises, and the catering industry.

Even the basic version of the elmeg T484 is remarkable and convincing. Besides eight interfaces for analog end devices and internal ISDN access for digital end devices, the elmeg T484 is equipped with an integrated xDSL/ISDN IP router offering comprehensive firewall functions.

Thanks to the USB port, you can connect your PC to the Internet within a few minutes and also to your LAN. This means, of course, that you can access all printers, scanners, etc. in the network.

Configuration can be performed via USB, LAN, the internal ISDN bus, or remotely.

SYSTEM TELEPHONES

elmeg CS410 / CS410-U



- Optimum headset support
- 7-line, illuminated graphics display
- Audio In/Out ports
- Phone book with up to 250 entries
- USB port

This is the system phone which makes all your wishes come true! The elmeg CS410 is optimally tuned to the modular elmeg PBX systems and offers an abundance of convenient functions.

Its modular design serves to implement individual requirements anytime. An optimally available "call answering" module offers a recording time of up to 48 minutes and can easily and quickly be integrated into the telephone set.

Professional PC interfaces: USB permits the simple installation of CTI functions, Internet access, and data communications and provides these functions for instance to configure your PBX.

Up to 3 T400 keyboard extensions can be connected to your elmeg CS410 in cascading mode, adding up to 65 programmable function keys, for instance with 130 destination numbers in direct access mode.

As the elmeg CS410-U variant, the elmeg CS410 can be used for direct Up₀ access without a converter, including a PRI port for further ISDN end devices.

SYSTEM TELEPHONES

elmeg CS400xt



- 7-line, illuminated graphics display
- Headset connection
- 15 function keys with LED
- Emergency operation in the case of power failure

The new elmeg CS400xt ISDN system phone closes the gap between the elmeg CS290 model for standard workplaces and the elmeg CS410 for the professional telephone workplace.

The elmeg CS400xt is equipped with 10 additional, LED-supported function keys. In addition to short code dialling, they can be used as line keys, to check in/out teams, for daytime-dependent operation, or for other freely programmable functions.

Like the elmeg CS410, the elmeg CS400xt has a large, 7-line display and 7 soft keys for menu navigation. In contrast to the premier module, the elmeg CS400xt goes without the USB port, the audio in/out ports, and the optional call answering machine module.

In combination with the NSP module, the elmeg CS400xt can be operated in emergency situations. Even after power failure you will, therefore, continue to be in touch with your communication partners.

SYSTEM TELEPHONES

elmeg CS290 / CS290-U



- Direct access to the system functions of the PBX
- SMS in the PSTN
- Integrated headset port

The elmeg CS290 offers convincing elegance and excellent ergonomic features. Menu navigation with the 3 soft keys and the alpha-numeric display make operation child's play.

5 freely programmable keys with LED support, some in 2 colours, continuously display the states of important functions to the user. As with "large" elmeg system phones, the keys can be used as line keys, to activate call forwarding, for headset and team functions, to operate an external voice mail system, or to transmit SMS.

The device control board is height-adjustable, offering the user optimum view of all functions. The bright LED, moreover, indicates incoming calls in a clearly visible manner.

Further convenient features for daily work in the office are offered by the list of calls received with 10 possible entries, redialling of the last 5 numbers stored, and a short code dialling memory for 10 further entries (VIP memory).

ITC SYSTEMS

elmeg T444

voice over .ip



- 1x ISDN internal for systems telephony
- Integrated xDSL/ISDN IP router
- Individually extendable by the 2 a/b module or POTS

The compact elmeg T444 PBX combines ISDN systems telephony, compact design, very simple configuration, and an integrated xDSL/ISDN router in an innovative complete solution. 1 ISDN access to the PSTN, 1 internal ISDN bus for digital end devices, and 4 analog accesses for phone and fax are offered by the basic module.

All convenient features of the elmeg systems telephony are offered at the internal ISDN bus: central PBX phone book, creation of teams, daytime-dependent operation, external/internal automatic callback, and many other features.

Separated Ethernet ports for LAN (local network) and WAN (DSL modem) serve to set up a connection to the Internet. An integrated, high-performance router with packet filter firewall, xDSL/ISDN fall-back, LAN-TAPI/LAN-CAPI, and NAT, provides a secure, stable, and centrally configurable Internet access. Configuration of the router function can be performed from any PC in the LAN or via a USB interface of the PBX.

ITC SYSTEMS

elmeg T240



- One ISDN access to the PSTN
- 4x a/b, can be extended to 6x a/b
- ISDN Internet access via USB and CAPI drivers
- Analog operation (POTS) available

Even ISDN newcomers have come to expect more features from their ISDN PBX today. The new, compact elmeg T240 PBX as the successor of the well-known elmeg D@VOS-24.net combines high performance and innovative functions in a compact and shapely form.

4 a/b ports, which can be extended to 6 a/b ports by means of an optional add-on module, support all current industry standards for a/b functions by means of CLIP (Calling Line Identification Presentation) and 12/16 kHz call charge pulse. Any analog end device, such as mobile or wired phones, modems, fax machines, call answering machines, or even hands-free entrance telephones can be wired and configured easily.

Via the USB interface, you can connect your PC directly to the PBX. Of course, the PBX can also be configured via USB. The shipped TAPI and CAPI drivers serve to implement Computer Telephony Integration (CTI) in a simple way.

VOIP TELEPHONES

elmeg IP-S400



- VoIP system telephone
- 7-line, illuminated graphics display
- Optional extension of keys
- Power over Ethernet
- System features like elmeg CS410

The elmeg IP-S400 provides the connection to the VoIP-VPN Gateway module and is state-of-the-art in terms of professional comfort for IP-based system telephones. The illuminated, 7-line display, 7 soft keys for menu navigation, 5 freely configurable function keys, and the full support of all elmeg systems telephony functions make the elmeg IP-S400 the perfect end device in IP-based communication networks.

Two Ethernet ports allow connection of system telephones and PC over a single LAN interface. The elmeg IP-S400 can be connected to the LAN and access Power-over-Ethernet through a single cable making for easy installation.

A separate headset port and comprehensive headset functions allow hands free operation when making your phone calls. Alternatively, you can activate open listening and hands-free talking both giving excellent voice quality.

An intelligent list of calls received, redialling, VIP memory, and a proper internal phone book with 250 possible entries provide optimum user convenience.

SOFTWARE

FEC SIP-Serv / SIP-Serv-Client



- Extendable soft PBX
- Phone calls via mouse click and PC
- Soft clients with Outlook integration and busy lamp field

Enter the world of IP telephony with the FEC SIP-Serv Client plug & play solution. With the SIP-Serv Client, you will benefit from a user-friendly software product, which you can not only use to make phone calls over the Internet, but also to organize your business processes in a convenient and easy-to-survey manner. Due to the integration into Microsoft Outlook, you will always maintain an overview of current projects and can access up-to-date customer data anytime.

Your computer network as a PBX—the SIP-Serv Client grows with your demands. The starter package can be extended according to your very individual demands. Organize telephony from decentralized sites, as in an Internet workgroup: in a decentralized, flexible, and fail-safe manner.

With the SIP-Serv Client, you can seamlessly integrate teleworkers, home offices, subsidiaries, or company sites abroad into the internal communications flow. Each PC is converted into a telephony PBX, and any workplace can take over the functions of a switching center. Moreover, you can take your PBX with you anywhere and will always be reachable by your communication partners.

The SIP-Serv Client is integrated into Microsoft Outlook. As a result, you can work in your familiar office environment and with the interface you are used to. You can also access an additional folder: "SIP-Serv Client". With one mouse click you will obtain an overview of the active and passive PBXs, you activate your contacts, or add notes. If a customer calls you, the corresponding contact window will immediately be opened. All the related information and files are displayed on your screen. Double address book management or journal files are no longer required.

Starting off is conceivably simple: within a very short time you can configure the required PBXs and use the existing networks, such as the intranet, VPN, or Internet, for IP telephony in a cost-effective manner and with top voice quality!

VOIP TELEPHONES

elmeg IP-S290



- VoIP system telephone
- 2-line display with graphics field
- Five programmable function keys
- Headset connection
- System features like elmeg CS290

The new elmeg IP-S290 IP system telephone and the VoIP-VPN Gateway module make elmeg system telephony available over IP networks. As an interface variant of the elmeg CS290, the elmeg IP-S290 supports all of the system features of the ICT systems, such as alternation between lines, call transfer, 3-party conferences, team functions, line keys, access to the systems-internal phone book, and many more.

A proper headset port allows for the easy and flexible use of a headset. The headset can be controlled simply by means of two programmable keys: "Headset in/out" and can perfectly be integrated e.g. into call centers, due to the "automatic call acceptance" function.

Convenient functions such as open listening, VIP memory, and flexible number memory for incoming and outgoing calls make the elmeg IP-S290 the optimum standard system telephone for flexible, network-based office environments.

DECT TELEPHONES

elmeg DECT400



- Multi-cellular DECT system for elmeg ICT
- Up to 4 handsets can be booked in
- Seamless hand-over
- Simple two-wire access (rfp)

Designed particularly for use in conjunction with elmeg ICT series IT telecommunications systems, the elmeg ICT series, the elmeg DECT400 system combines unlimited flexibility of wireless phones with the feature rich range of functions offered by system phones. The system features can, thus, be provided for all elmeg DECT handsets in the wireless mode. This includes direct, alpha-numeric access to the central phone book of the PBX or automatic follow me (automatic forwarding of incoming calls to your elmeg DECT handset when taking it out of the charging set).

The integration of the elmeg DECT400 system as a module into the ICT systems permits central and convenient configuration, such as the activation of specific features for individual handsets.

The elmeg DECT400 system consists of several components (module DECT multicell 2/4, rfp, handsets, repeaters, directional antennas, etc.) and, thus, constitutes a high-performance, wireless complete solution, which can also be used in large-scale companies and in wide-range outdoor application.

VOIP TELEPHONES

elmeg IP290



- 2-line display with graphics field
- RFC 3261-compatible SIP stack
- Hands-free talking and headset connection
- Codecs G.711, G.723.1, G.729a et al.

With the new elmeg IP290 stand-alone device you will enter the age of Internet telephony. The top-quality and innovative elmeg IP290 satisfies all modern business requirements: Comprehensive features such as an internal phone book with 100 entries, call holding / transfer, integrated music on hold, call forwarding, and many more provide business telephony functions with VoIP.

Based on the SIP standard, the elmeg IP290 can be used with software, such as Microsoft Messenger, and with standardized devices.

The RFC 326-compatible SIP stack ensures optimum compatibility with many adapters and VoIP routers currently offered in the market.

Two Ethernet ports supporting VLAN permit the direct connection of the elmeg IP290 to a PC: you only require one LAN port for the PC and the IP telephone!

DECT TELEPHONES

elmeg DECT Handset 400-20 / 400-40



- Optimal extension for elmeg DECT400
- Standard and comfort handsets
- Up to 16 hours talk time and 150 hours stand-by time
- Systems functions available in wireless mode

The elmeg DECT Handset 400-20 and 400-40 mobile handsets are marked by ergonomic and elegant designs, and providing optimum operability and function overview. CLIP (Calling Line Identification Presentation) for incoming calls, menu navigation in clear text, and automatic call acceptance make telephone calls a pleasant task.

The memory stores up to 65 phone book entries and permits redialling of the last 10 numbers stored. With the 3-line graphics display, signalling LED, and muting option, these mobile handsets are able to meet all necessary demands. Being the high-end version, the elmeg DECT handset 400-40 additionally offers vibration alarm, headset connection, and protection against dust and spray water according to IP 54.

Both models are optimized for use with the elmeg DECT400 system. Automatic handover is a fixed part of the system and ensures permanent availability and maximum freedom for the caller. The comprehensive accessories set with leather case, belt clip, etc. is available on request.

DECT TELEPHONES

elmeg DECT70

Replaces the model DECT60



- Phone book for 50 entries
- Hands-free talking with the mobile handset
- Headset jack and belt clip
- Standard NiMH-AAA accumulator cells

The new elmeg DECT70 in the business design compliments wired systems phones in an ideal manner. As a first-class, wireless alternative, the elmeg DECT70 is a top quality product offering flexibility and mobility.

The alphanumeric, inversely illuminated display and the menu-supported user navigation allow for intuitive and easy operation. CLIP support and display of the names stored in the internal phone book of the elmeg IT telecommunications systems (CNIP), hands-free talking with the mobile handset, and muting round off the features on offer.

For people who have to make many calls, elmeg DECT70 offers a jack to connect a headset and a belt clip. A separate R key ensures ease of operation when connecting, alternating between lines, and initiating 3-party conferences.

EXTENSION MODULES

Module VoIP-VPN Gateway for elmeg ICT



- IP telephony/IP systems telephony in the LAN
- Connection of remote PBXs via VPN/IPSec
- Registration at up to ten SIP providers
- LAN-TAPI, LAN-CAPI, RAS dial-in

The VoIP-VPN Gateway module is the ideal supplement to the elmeg ICT systems. The module combines Internet telephony (VoIP) with the secure data exchange over VPN.

2 slots for the extension modules M 4 DSP or M 8 DSP are integrated into the module. They additionally provide the gateway with digital voice channels for the transition into the PSTN.

An elmeg ICT unit which is equipped with the VoIP-VPN gateway is, thus, converted into a communications center and acts as DHCP server. The Internet access as such is also provided by the PBX.

Security aspects are also taken into account: A Stateful Inspection Firewall blocks any unauthorized access from outside and only admits connections which have explicitly been allowed by the administrator. These connections are identified by means of user-defined filters. Preconfigured filters for diverse client and server applications simplify this task.

The elmeg VoIP-VPN Gateway supports SIP and moreover allows encrypted voice communication over IP.

ITC Systems

ITC Systems

ANALOG TELEPHONES

elmeg CA50



- Alpha-numeric LCD display
- Phone book with up to 70 entries
- 3.5 mm headset jack
- Hands-free telephone function

The elmeg CA50 analog table telephone set is more than a standard end device: The sophisticated, high-quality design, the ergonomic operation, and the comfort functions make the elmeg CA50 a first-choice device.

As a cost-effective and robust alternative to ISDN desktop/system phones of the CS series, the elmeg CA50 is an ideal solution for environments with many PBX units, such as hotels, nursing homes, or medium-scale offices.

In spite of its compact dimensions, the elmeg CA50 is a full-scale business telephone with all important features in terms of operation and handling. The ergonomic fixing of the handset and the easy-to-read, 3-line alpha-numeric display make the operation a pleasant task.

CLIP serves to display incoming calls telephone number on the display. Missed calls are signalled via LED and are entered into a list of callers with call number, date, and time. The callback function permits convenient callback upon the touch of a button.

EXTENSION MODULES

elmeg M 4 DSP / M 8 DSP



- M 4 DSP: module with 4 voice channels
- M 8 DSP: module with 8 voice channels
- Codecs: G.711, G.723.1, G.729a/b
- M 4 DSP: also applicable with elmeg T444/T484

The extension modules M 4 DSP and M 8 DSP convert the VoIP-VPN Gateway module into a complete switched network-to-IP gateway. This permits the transition of IP voice data into the traditional voice network and vice versa.

To provide optimum voice quality with minimum bandwidths, the standard voice codecs G.711, G.723.1, G.726, and G.729a/b are supported.

The combination of the elmeg ICT unit, VoIP-VPN gateway, and one or two DSP modems enables any conventional end device, be it analog or ISDN, as well as any IP phone to use IP voice telephony.

The two modules M 4 DSP and M 8 DSP allow them to determine their individual extension levels of the VoIP-VPN gateway themselves. Up to 16 connections can be set up simultaneously between the various technologies, using two 8 DSP modules.

EXTENSION MODULES

elmeg Module Router ICT

Extension for elmeg ICT Family

Integration of xDSL/ISDN data communication into your PSTN communication. Fast and secure connections to the Internet and connections for data transfer are provided via the module Router ICT for your complete corporate network.



- Network integration for elmeg ICT
- Internet access over xDSL or ISDN
- LAN-TAPI and LAN-CAPI

EXTENSION MODULES

elmeg Module PRI

Extension for elmeg ICT Family

This module offers the connection of the IT telecommunications system to a PRI primary multiplexing access. A 4-wire cable provides 30 digital trunks. This solution also satisfies the demands of companies with very high external communication demands.



- Extension of the ICT systems by a PRI access
- Up to 30 external B channels

EXTENSION MODULES

elmeg Module DECT multicell 2 / DECT multicell 4

Extension for elmeg ICT Family

As DECT controllers, these modules are part of the elmeg DECT400 solution for the elmeg ICT systems. They offer the option to connect 2 or 4 elmeg DECT rfp. Each rfp provides up to 4 voice channels simultaneously.



- Basic module for elmeg DECT400
- Connection of 2 or 4 elmeg DECT rfp
- Up to 8 or 16 simultaneous voice channels

EXTENSION MODULES

elmeg Module 4 Up₀ / 8 Up₀

Extension for elmeg ICT Family

Interfaces with ISDN features provided via a 2-wire cable connection (legacy installation) and a range of up to 1000 meters.

Connection to ISDN end devices in combination with Up₀/BRI converter or integrated into elmeg CS290-U and elmeg CS410-U.



- 4 or 8 Up₀ accesses
- 2-wire, long-range installation
- Support of system telephones

EXTENSION MODULES

elmeg Module 2 POTS / 4 POTS

Extension for elmeg ICT Family and elmeg T484

The modules 2 POTS and 4 POTS serve to integrate existing analog telephone lines into the IT telecommunications systems of the elmeg ICT series or the elmeg T484.

A typical field of application is the integration of an existing trunk for a fax machine, which cannot be used at the ISDN access.



- Extension by 2 or 4 analog telephone lines
- Integration of existing analog telephone lines

EXTENSION MODULES

elmeg Module 2 BRI / 4 BRI

Extension for elmeg ICT Family and elmeg T484

For 2 or 4 additional BRIs each for the connection of ISDN telephone sets or ISDN PC cards.

For each module, 1 BRI can be configured as external trunk (PtP and PtMP). All BRIs can be used to connect elmeg system telephones.



- 2 or 4 internal ISDN accesses with systems telephony
- 1 BRI configurable for internal or external use

EXTENSION MODULES

elmeg Module 1 POTS

Extension for elmeg T240 and T444

This module extends the IT telecommunications systems T240 and T444 by an analog trunk (POTS).

This option serves, for instance, to connect an existing analog fax line to your PBX in addition to the external ISDN access.



- Extension module for elmeg T240 and T444
- One analog trunk

EXTENSION MODULES

elmeg Module 4 a/b / 8 a/b

Extension for elmeg ICT Family and elmeg T484

For 4 or 8 further analog PBXs, such as (mobile) phones, fax group 3, call answering machine, external voice mail, or modem.

All a/b port with CLIP support and call charge pulse.



- 4 or 8 analog accesses
- CLIP and call charge pulse
- Range up to 1,000 meters

EXTENSION MODULES

elmeg Module FSM

Extension for elmeg ICT Family and elmeg T484

The fine protection modules serve to protect the accesses of the PBX against over voltage.

The over voltage occurring on the lines will be grounded in the process.



- Over voltage protection for accesses
- for elmeg ICT and elmeg T484

EXTENSION MODULES

elmeg Module 2 a/b

Extension for elmeg T240 / T444

This module extends the T240 and elmeg T444 IT telecommunications systems by 2 internal, analog connections.

It serves to connect up to 6 analog end devices with CLIP and call charge pulse to these PBX systems.



- Two additional, analog accesses with CLIP and call charge pulse
- Range up to 1,000 meters

EXTENSION MODULES

elmeg Module NSP

Extension for elmeg ICT Family and elmeg T484

For the emergency power supply for an ISDN-capable system telephone, e.g. elmeg CS400xt, at an internal BRI bus (the external BRI is passed though).

This option serves to ensure your availability even in the case of a power failure.



- Telephone calls still possible in the case of power failure with an ISDN-capable telephone

EXTENSION MODULES

elmeg Module Answering Machine

Extension for elmeg CS410 / CS410-U

The call answering machine module offers a recording time of up to 48 minutes and easy operation.

A special highlight is the option to provide separate call answering functions for a second system telephone.



- Up to 10 announcement texts, time-controlled
- Message forwarding and remote query
- Saving messages on the PC

EXTENSION MODULES

elmeg Module Switch Contacts

Extension for elmeg ICT Family and elmeg T484

6 sensor inputs and 3 switch contacts connect the most diverse technical devices (e.g. heating, alarm system, proximity switch, or short circuit contact in the case of water leakage) with automatic initiation of calls, signal transmission, etc.



- Six sensor inputs
- Three switch contacts (actuators with a changeover contact each)

EXTENSION MODULES

elmeg T400 / T400/2

Comfortable extension of keys for elmeg CS410, CS410-U, elmeg IP-S400, and elmeg CS400xt

20 function keys (10 keys in the case of elmeg T400/2) can be programmed on two levels and are equipped with a LED each for level 1.

Employees of the company can be reached by pressing a key. Telephone lines can be assigned a key for the purpose of alternation between lines.



- 10 or 20 programmable keys with LEDs
- One or two additional LEDs for status display
- 3 cascading levels (with power supply)

FEATURE OVERVIEW ITC SYSTEMS ELMEG ICT

	elmeg ICT46	elmeg ICT88	elmeg ICT880	elmeg ICT880 with xt
ISDN S ₀ ports, total	2	4	4	4
ISDN S ₀ ports, permanent external	1	-	-	-
ISDN S ₀ bus internal/external, configurable	1	4	4	4
ISDN S ₀ ports, permanent internal	-	-	-	-
Analog internal ports (symmetr.)	6	8	8	12
Modular expansion	•	•	•	•
Compatible with elmeg DECT400 controller mode	•	•	•	•
Compatible with router functions	•	•	•	•
Max. ports	34	48 (78**)	48 (78**)	88 (118**)
Max. SIP channels	16	16	16	16
Max. SIP providers	10	10	10	10
Compatible with elmeg system telephones S ₀ / U _{P0} / IP	• / • / •	• / • / •	• / • / •	• / • / •
RS232 port for PC or serial printer	•	•	•	•
USB port	•	•	•	•
Door intercom units can be connected	1	2	2	4
Comprehensive elmeg WIN-Tools included with system	•	•	•	•
LCR Professional	•	•	•	•
CTI with support for Microsoft TAPI	•	•	•	•
CAPI support, internal via USB	-	-	-	-
WIN-Tools via V.24 / int. S ₀ / USB	• / • / •	• / • / •	• / • / •	• / • / •
Remote configuration possible	•	•	•	•
Download / Remote loading of firmware	• / •	• / •	• / •	• / •
Performance Features (Typical)				
PtM or PtP connection	•	•	•	•
Combined PtM and PtP connection possible	•	•	•	•
Flexible number allocation	•	•	•	•
Maximum number of MSNs	10 per S ₀ ext.	10 per S ₀ ext.	10 per S ₀ ext.	10 per S ₀ ext.
Freely assignable internal numbers	•	•	•	•
Number transfer to all analog ports (CLIP)	•	•	•	•
16 kHz charge rate pulse at analog ports	•	•	•	•
Inquiry call / Broker's call / Call waiting	• / • / •	• / • / •	• / • / •	• / • / •
Three-party conference call with 2x ext. / 1x int. or 1x int. / 2x int.	• / • / •	• / • / •	• / • / •	• / • / •
Comprehensive team functions	•	•	•	•
Call forwarding immediately / delayed / on busy for int./ext. calls	•	•	•	•
SMS in fixed lines network	•	•	•	•
Automatic call-back (internal/external)	• / •	• / •	• / •	• / •
Room monitoring (internal/external)	• / •	• / •	• / •	• / •
Don't disturb / Direct call	• / •	• / •	• / •	• / •
Pick-up	•	•	•	•
Direct exchange line access configurable for each port	•	•	•	•
Emergency call phone / number memory / Emergency call priority	• / • / •	• / • / •	• / • / •	• / • / •
Day/Night Mode / with time control	• / •	• / •	• / •	• / •
Configuration of 6 exchange line authorization levels	•	•	•	•
Specific restricted and unrestricted numbers	•	•	•	•
Recording of charge data, with date, time, duration, connection, external caller, units	•	•	•	•
Charge rate data records in memory	1000	1900	1900	1900
Customer numbers can be assigned to charge rate data records	•	•	•	•
Entries in PABX-specific telephone directory	1000	1000	1000	1000
Remote control: switching contacts can be triggered remotely	•	•	•	•
Internal / External music on hold	• / •	• / •	• / •	• / •
Support for all common ISDN performance features*	•	•	•	•
Easy-to-assemble design, simple installation	•	•	•	•
Plug & Play factory configuration	•	•	•	•
Technical Data				
Enclosure dimensions W x H x D	360 x 275 x 90 mm	360 x 275 x 90 mm	360 x 275 x 90 mm	360 x 275 x 90 mm
Weight	approx. 2,8 kg	approx. 2,8 kg	approx. 2,8 kg	approx. 2,8 kg
Ambient temperature	5-40°C	0-40°C	0-40°C	0-40°C
Power supply	230 V (+/- 10%)	230 V (+/- 10%)	230 V (+/- 10%)	230 V (+/- 10%)
Length of 230V cable	2 m	2 m	2 m	2 m
Length of ISDN exchange cable	2 m	2 m	2 m	2 m

*) Please contact us for further information
 **) With ISDN-30 PRI module (optional)

FEATURE OVERVIEW COMPACT ITC SYSTEMS

	elmeg T484	elmeg T444	elmeg T240
ISDN S ₀ ports, total	2	2	1
ISDN S ₀ ports, permanent external	-	1	1
ISDN S ₀ bus internal/external, configurable	1	-	-
ISDN S ₀ ports, permanent internal	1	1	-
Analog internal ports (symmetr.)	8	4 - 6	4 - 6
Modular expansion	•	•	•
Compatible with elmeg switching module "contacts"	•	-	-
Compatible with router functions	•	•	-
Max. ports	16	10	8
Max. SIP channels / SIP providers	4 / 10	4 / 10	- / -
Compatible with elmeg system telephones S ₀ / U _{P0} / IP-S	• / - / -	• / - / -	- / - / -
Integrated Voice-Box functionality	• (with CF Card)	-	-
USB port	•	•	•
Door intercom units can be connected	1	via analog ports	via analog ports
Comprehensive elmeg WIN-Tools included with system	•	•	•
LCR Professional	•	•	•
CTI with support for Microsoft TAPI	•	•	•
CAPI support, internal via USB	LAN	LAN	•
WIN-Tools via V.24 / int. S ₀ / USB	- / • / •	- / • / •	- / - / •
Remote configuration possible	•	•	•
Download / Remote loading of firmware	• / •	• / •	• / •
Performance Features (Typical)			
PtM or PtP connection	•	•	•
Combined PtM and PtP connection possible	•	-	-
Flexible number allocation	•	•	•
Maximum number of MSNs	10 per S ₀ ext.	10	10
Freely assignable internal numbers	•	•	•
Number transfer to all analog ports (CLIP)	•	•	•
16 kHz charge rate pulse at analog ports	•	•	•
Inquiry call / Broker's call / Call waiting	• / • / •	• / • / •	• / • / •
Three-party conference call with 2x ext. / 1x ext. or 1x int. / 2x int.	• / • / •	• / • / •	• / • / •
Comprehensive team functions	•	•	•
Call forwarding immediately / delayed / on busy for int./ext. calls	•	•	•
SMS in fixed lines network	•	•	•
Automatic call-back (internal/external)	• / •	• / •	• / •
Room monitoring (internal/external)	• / •	• / •	• / •
Don't disturb / Direct call	• / •	• / •	• / •
Pick-up	•	•	•
Direct exchange line access configurable for each port	•	•	•
Emergency call phone / number memory / Emergency call priority	• / • / •	• / • / •	• / • / •
Day/Night Mode / with time control	• / •	• / •	• / •
Configuration of 6 exchange line authorization levels	•	•	•
Specific restricted and unrestricted numbers	•	•	•
Recording of charge data, with date, time, duration, connection, external caller, units	•	•	•
Charge rate data records in memory	500	500	500
Customer numbers can be assigned to charge rate data records	•	•	•
Entries in PABX-specific telephone directory	500	500	500
Remote control: switching contacts can be triggered remotely	•	-	-
Internal / External music on hold	• / -	• / -	• / -
Support for all common ISDN performance features*	•	•	•
Easy-to-assemble design, simple installation	•	•	•
Plug & Play factory configuration	•	•	•
Technical Data			
Enclosure dimensions W x H x D	290 x 310 x 60 mm	290 x 230 x 50 mm	290 x 230 x 50 mm
Weight	approx. 2,2 kg	approx. 1,3 kg	approx. 1,3 kg
Ambient temperature	5-40°C	5-40°C	5-40°C
Power supply	230 V (+/- 10%)	230 V (+/- 10%)	230 V (+/- 10%)
Length of 230V cable	2 m	wall power supply	wall power supply
Length of ISDN exchange cable	2 m	2 m	2 m

FEATURE OVERVIEW ISDN / IP SYSTEM TELEPHONES

	elmeg CS290	elmeg CS290-U	elmeg CS400xt	elmeg CS410	elmeg CS410-U	elmeg IP-S290	elmeg IP-S400
Connection via S ₀ bus / Up ₀ bus / Ethernet	• / - / -	- / • / -	• / - / -	• / - / -	- / • / -	- / - / •	- / - / •
Line access digit adjustable	•	•	•	•	•	•	•
Call waiting / extended / disconnectable (CW)	•	•	•	•	•	•	•
Refusing a call	•	•	•	•	•	•	•
Answering machine integrated	-	-	-	opt. module	opt. module	-	-
Call filter (positive or negative)	-	-	-	•	•	-	-
Caller list with date, time and name	10	10	30	30	30	10	30
Call forwarding (Call deflection / CD)	•	•	•	•	•	•	•
Number of MSN extension number	3	3	10	10	10	3	10
Display date / time	•	•	•	•	•	•	•
Audio-in / Audio-out sockets	-	-	-	•	•	-	-
Selection of the outgoing MSN extension number	•	•	•	•	•	•	•
Direct exchange line access	Δ / •	Δ / •	Δ / •	Δ / •	Δ / •	Δ / •	Δ / •
Carrier selection through programmable keys	•	•	•	•	•	•	•
Direct call (Baby call)	Δ	Δ	•	•	•	Δ	•
Display, alphanumeric (lines x characters)	2x 24	2x 24	7x 21 (lighted)	7x 21 (lighted)	7x 21 (lighted)	2x 24	7x 21 (lighted)
Menu language selection (D, GB, NL, F, DK, N, S, I, E, P, H, CZ, SL)	•	•	•	•	•	•	•
Three-party conference call (3 PTY)	•	•	•	•	•	•	•
Malicious call identification (MCID)	-	-	-	-	-	-	-
Hands-free calling	-	-	• (full duplex)	• (full duplex)	• (full duplex)	-	• (full duplex)
Charge display	•	•	•	•	•	•	•
Charge credit for each MSN extension number	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Explicit call transfer (ECT)	•	•	•	•	•	•	•
Headset features / integrated headset jack	•	•	•	•	•	•	•
Headset (cordless, DSHG interface) connection	-	-	-	•	•	-	•
Variable handset volume	•	•	•	•	•	•	•
ISDN data communication	-	-	-	•	•	-	-
Keypad functionality for use with PABX systems	•	•	•	•	•	•	•
Configuration over RS232 / USB interface	- / -	- / -	- / -	- / •	- / •	- / -	- / -
Open listening	•	•	•	•	•	•	•
Least cost routing*	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Broker's call (Enquiry call) (HOLD)	•	•	•	•	•	•	•
Microphone mute with optical display	•	•	•	•	•	•	•
Vanity numbers	•	•	•	•	•	•	•
Emergency operation (point-to-multipoint and point-to-point access)	-	-	•	-	-	-	-
Notice	-	-	•	•	•	-	•
Parking (TP)	-	-	•	•	•	-	•
Password-protected configuration data	•	•	•	•	•	•	•
Programmable keys, 2 levels, 25-place	5	5	15	5	5	5	5
R key	•	•	•	•	•	•	•
Completion of call to busy subscriber (CCBS)	•	•	•	•	•	•	•
Variable ringing melody and volume	•	•	•	•	•	•	•
CLIP / COLP	• / •	• / •	• / •	• / •	• / •	• / •	• / •
CLIR / COLR	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Acoust. and opt. call signalling for each MSN extension number	•	•	•	•	•	•	•
Download of additional melodies	-	-	•	•	•	-	•
Call forwarding fixed / busy / no response (CFU/CFB/CFNR)	•	•	•	•	•	•	•
Don't disturb (station guarding)	-	-	-	•	•	-	•
Software download over USB / Ethernet / S ₀	- / - / •	- / - / •	- / - / •	• / - / •	• / - / •	- / • / -	- / • / -
Special dial tone (VIP-dial tone)	•	•	•	•	•	•	•
Telephone directory (internal)	-	-	250 alphanumeric	250 alphanumeric	250 alphanumeric	-	250 alphanumeric
Tone dialling when connected	•	•	•	•	•	•	•
USB interface	-	-	-	•	•	-	-
User-to-User Signalling (UUS1)	•	•	•	•	•	•	•
Supports Vanity numbers	•	•	•	•	•	•	•
VIP targets	10 alphanumeric	10 alphanumeric	10 alphanumeric	10 alphanumeric	10 alphanumeric	10 alphanumeric	10 alphanumeric
Dialling from the PC (CTI over TAPI)	•	•	•	•	•	-	-
Dialling with handset in its cradle	•	•	•	•	•	•	•
Dial ranges (restricted / unrestricted numbers)	Δ	Δ	•	•	•	Δ	•
Dialling preparation with correction possible	•	•	•	•	•	•	•
Redialling	5	5	20	20	20	5	20
Wake-up call management (one time / daily / weekly)	-	-	•	•	•	-	•
Dimensions in mm (W x H x D)	257 x 80 x 176	257 x 80 x 176	320 x 95 x 176	257 x 95 x 176	257 x 95 x 176	257 x 80 x 176	257 x 95 x 176
Colour	black-blue / ice grey	black-blue / ice grey	black-blue / ice grey	black-blue / ice grey	black-blue / ice grey	black-blue / ice grey	black-blue / ice grey
System functions with elmeg PABX systems*:							
System-internal alphanumeric telephone directory	•	•	•	•	•	•	•
Busy lamp (line keys / connection keys)	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Boss / secretary function	-	-	•	•	•	-	•
Different acoustic ringing for external / internal calls	•	•	•	•	•	•	•
Send / receive announcement	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Follow Me	-	-	•	•	•	-	•
Line keys for broker's calls (put up to 4 calls on hold)	•	•	•	•	•	•	•
Login key for team / per MSN	•	•	•	•	•	•	•
Macro functions	-	-	•	•	•	-	•
Send / receive SMS	•	•	•	•	•	•	•
Day/Night switchable call mode with LED support	•	•	•	•	•	•	•
Team line key	•	•	•	•	•	•	•
Voice mail function key	•	•	•	•	•	•	•
Intercom call function	-	-	•	•	•	-	•
Central charge acquisition	-	-	•	•	•	-	•
Hotel function: Check-in / Check-out, wake-up call	-	-	•	•	•	-	•

*) for connection to the PABX systems elmeg T444, elmeg T484, elmeg D@VOS-44.dsl, elmeg D@VOS-44.net, elmeg C48.net, elmeg C46xe, elmeg C46xe-rack, elmeg C48m/C88m and elmeg ICT. elmeg CS290, elmeg CS290-U and elmeg IP-S290 can be configured completely via the RS232 or USB interface of the PABX or the internal ISDN port and with the remote configuration and maintenance function; firmware version 5.4 or later

**) only with elmeg T444, elmeg T484, elmeg D@VOS-44.net, elmeg D@VOS-44.dsl, elmeg C48.net and elmeg ICT

*) availability subject to country-specific type

Δ = only in connection with elmeg PABX systems

FEATURES ELMEG DECT400

	elmeg DECT handset 400-20	elmeg DECT handset 400-40
Menu leaded system features		
Automatic Follow-me from system phone	•	•
- autom. forwarding with removing from the charging receptacle	•	•
- autom. switch off the forwarding with move in the charger	•	•
System internal alphanumeric telephone directory	•	•
Using the elmeg system menu	•	•
Name display (autom. from ICT)	•	•
Features with elmeg PABX systems		
Call waiting	•	•
Switch call variants	•	•
Follow me	•	•
Direct exchange line access	•	•
CLIP	•	•
Intercom call function	•	•
Direct call	•	•
Three-party conference call (3 PTY)	•	•
Pick-up	•	•
Broker's call	•	•
Alarm call on/off switchable	•	•
Customer numbers	•	•
Room monitoring	•	•
Call forwarding	•	•
Inquiry call	•	•
Completion of call	•	•
Switching contact	•	•
Phone up internal / external	•	•
Team	•	•
Door intercom	•	•
Send / receive announcement	•	•
Dial proceed (Tone / Pulse)	•	•
Pass calls	•	•
Central short dial directory	•	•
Features DECT handsets		
Alphanumeric keypad	•	•
Automatic handover	•	•
Graphic display, 3 lines plus symbols	•	•
Illuminated display (disengageable)	•	•
CLIP	•	•
Optical call signalling	•	•
Headset jack	-	•
Automatic accepting	•	•
Vibration alarm	-	•
Telephone directory with name	65	65
Redialling	10	10
Variable handset volume	•	•
Silent mode (no tones)	•	•
Microphone mute	•	•
Key lock (also automatic)	•	•
Variable ringing melody and volume	9	9
Welcome text adjustable	•	•
R key	•	•
IP 54 protection (dust and splashed water protection)	-	•
Max. talk time	16 h	16 h
Max. stand-by time	150 h	150 h
Weight	130 g	130 g

WLAN

Many providers consider Wireless LAN simply to be products for wireless communications, i.e. only a further segment of mobile communications.

At a first and superficial glance, this may seem to be true, but Funkwerk Enterprise Communications takes a more far-sighted and thoughtful look at the topic. We not only offer products, but solutions where all components are carefully tuned to each other and harmonize with each other—throughout the complete communication process.

The Wireless LAN solutions of FEC make your communication more efficient and increase the productivity of the workplace. We resort to mechanisms and functions which ensure top-level security for data transfer and the compliance with industry standards. Only in this way can we meet the demand to supply solutions for secure mobile communication for the professional user applications we wish to target.

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ACCESS POINTS

funkwerk W1002 / W2002

Replaces the models artem W1000/W2000



- QoS support for WMM (wireless multimedia)
- Up to 16 virtual access points per radio module
- Power over Ethernet
- IEEE 802.11a(h)/b/g

The access points of the newest generation funkwerk W1002 and W2002 are an advancement and have evolved from the proven artem Wx000 series. They were developed for the professional application in corporate networks and support all up-to-date transmission technologies.

In addition to the access point and bridge mode each dual band radio can be configured in either of the frequency bands 2.4 and 5 GHz. The systems also support WPA2 for highest security levels and IEEE 802.11e for the perfect quality of voice and multimedia transmission.

Moreover, the access points support Multi-SSID and VLAN, which make it possible to create up to 16 virtual access points per radio module. Each virtual access point can be access-protected.

The devices have one (W1002) or two (W2002) radio modules and support the standards IEEE 802.11a(h)/b/g. In Germany, the support of IEEE 802.11h is a prerequisite for creating bridge solutions in the outdoor sector.

An optimum range is provided by 2 or 4 antennas as well as external solutions.

CLIENTS

FEC W-Client PCI .11g



The FEC W-Client PCI .11g is ideally suited for desktop PCs to be equipped with a permanent WLAN interface.

To increase the range, the shipped antenna can be replaced via the RSMA connection by alternative antennas in the Funkwerk Enterprise Communications portfolio.

- 54 Mbps due to IEEE 802.11g
- Prism Nitro™ technology
- External antenna can be connected

ACCESS POINTS

artem ComPoint Butterfly



- 2,4 GHz, IEEE 802.11g
- Easy to configure
- Secure due to 802.1x and WPA
- High range
- Access point and access client mode

The artem ComPoint Butterfly is the optimum newcomer model which serves to provide employees of small-scale companies and SoHos with a wireless network access. The device supports the standard IEEE 802.11g. Via the WPA enterprise mode, it attains the highest possible security level in private and business environments.

Ex-factory, the ComPoint Butterfly is shipped in the access point mode. Via firmware upgrade the device can also be operated as an access client. Devices which are only equipped with one Ethernet port, or devices which have no drivers installed, can, thus, be integrated easily and quickly into the corporate network.

The seamless connection to the LAN is supported via 10/100 Base-T interface Auto Crossover (Auto-MDI/ MDI-X).

The ComPoint Butterfly addresses customers working with a small budget, who are not willing to make compromises with regard to security, stability, and functional scope.

CLIENTS

FEC W-Client USB .11g



The FEC W-Client USB .11g offers a fast connection to the WLAN via a USB interface.

By means of the extension cable included in the scope of delivery, it can be placed at some distance from the USB port—just like an external antenna—in order to improve the wireless link.

- 54 Mbps due to IEEE 802.11g
- Prism Nitro™ technology
- USB 2.0 high speed

CLIENTS

artem W100



- 54 Mbps due to IEEE 802.11g
- Optimum security (WPA)
- Long ranges due to integrated patch antenna
- Driverless and independent from operating systems

The artem W100, which only has a weight of approximately 100 g, can be operated either as an Ethernet client adapter for single devices and small workgroups or as an access point.

The operation as an Ethernet client is a particularly appropriate application because of the integrated patch antenna and the driverless operation. It is possible to connect PCs, embedded PCs, VoIP telephones, printers, or POS terminals to the device.

The application as a leased device, for instance in hot spots, is also conceivable, since the WLAN configuration can be stored in the device and the user does not have to perform installation or configuration tasks on the laptop.

Mobility is ensured via the selectable power supply: either via the plug-in power supply or the USB cable.

You just have to switch over to operate the W100 as an access point. On business trips, for instance, you can setup temporary WLAN cells if the notebook or PDA is already WLAN-capable.

CLIENTS

FEC W-Client CardBus .11g



The FEC W-Client CardBus .11g is ideally suited for computers with CardBus interface.

The integrated diversity antenna allows for high data rates and a stable link. Thanks to its mechanically rugged design, it is suited for daily use.

- 54 Mbps due to IEEE 802.11g
- Prism Nitro™ technology
- Integrated diversity antennas

IWLAN

funkwerk WI1002 / WI2002 / WI3002



- SFP slot for fibre and Gigabit Ethernet extension modules
- IEEE 802.11e and WMM (quality of service, wireless multimedia)
- Wide temperature range from -20 to +70 °C
- Safety class IP 65, protection against theft

The latest product line funkwerk Wix002 is the newest generation of industry-proof access points. It was specially optimized for the professional application in rugged environments and in vehicles. Due to the safety class IP 65, these devices are optimally suited for use in outdoor and dirty environments. Diverse installation options, such as wall, mast, or rail assembly are available.

The series Wix002 supports the modes including access point, access client, or bridge in the frequency bands 2.4 and 5 GHz. For optimum transmission of multimedia data, the access points support IEEE 802.11e. Diverse slots offer flexible extension options, e.g. via SFP slot for 10/100 BaseT-Ethernet, fibre, or further serial interfaces (in preparation).

The access points have one (WI1002), two (WI2002), or three (WI3002) radio modules and support the standards IEEE 802.11a(h)/b/g. In Germany, the support of .11h is a prerequisite for creating bridge solutions in the outdoor sector. The wireless link can be further optimized by means of external antennas and diversity.

ACCESSORIES

FEC WLAN Antennas



- Extension of the range of access points
- Optimization of the coverage
- Special antennas for outdoor use
- Antennas for the 2.4 and 5 GHz range

The best position for an access point is not always the best position for achieving an optimum performance of the WLAN infrastructure—separately positioned antennas are the solution. The WLAN antenna portfolio of Funkwerk Enterprise Communications (FEC) enables optimum coverage in every situation coupled to the access points external antenna ports.

Besides patch and dish antennas, the portfolio comprises omni- and dual-band antennas, as well as special antennas for outdoor use.

The high-quality antennas optimize the coverage of the wireless LAN or extend the length of bridge links—optimized for various requirements.

By means of a professional site survey, the optimum antenna positions can be determined.

The antenna configurator on the FEC web pages helps you find the appropriate solution.

ACCESSORIES

FEC WLAN Cable Portfolio



- Ideal balance between cable and attenuation
- Adapter for simple and quick connection of the cables

Besides the comprehensive WLAN antenna portfolio, Funkwerk Enterprise Communications (FEC) also offers you the corresponding range of cables for connecting the antennas to the access points.

The cable connection between access point and antenna is often regarded as of little importance—but high-frequency signals as used in WLANs often suffer from significant loss in data throughput due to use of poor quality, inappropriate cable or cable length.

With its sophisticated cable and adapter portfolio, FEC offers the ideal solution for every situation regarding cable and attenuation. Thus, the combination of access point, antenna and cable always provides an optimum solution.

Diverse adapters permit the simple and quick connection of the cables to antenna and access point—whether RTNC, RSMA, TNC plug, or N jack.

FEATURE OVERVIEW ACCESS POINTS

	artem W100	artem ComPoint Butterfly	funkwerk W1002	funkwerk W2002
WLAN				
Number of internal radio modules	1	1	1	2
External antenna connectors RTNC / RSMA	- / -	- / 1	2 / -	4 / -
Integrated 6 dBi High Gain antenna	•	-	-	-
Output power max. 100 mW, 20 dBm e.i.r.p.	•	•	•	•
Automatic Rate Selection (ARS)	•	•	•	•
IEEE 802.11b / .11g / .11a(h)	• / • / -	• / • / -	• / • / •	• / • / •
Channel sets according to IEEE 802.11d	-	•	•	•
Operating freq. 2.412 – 2.472 GHz, 13 channels (Europe ETSI version)	•	•	•	•
Operating frequency 5150 – 5350 MHz / 5470 – 5725 MHz, 19 channels (Europe ETSI version)	-	-	•	•
Operation modes “Ethernet Adapter Mode” / “AP Mode”	•	•	-	-
ARP Translation, Protocol filter, Advanced Comprehensive MAC Filter	-	-	•	•
Display of signal and noise, per client and data rate	-	•	•	•
Table of connected clients (nodes)	-	•	•	•
Broadcast SSID enable / disable	•	•	•	•
Multi-SSID (up to 16 SSIDs per radio module)	-	-	•	•
TPC (Transmission Power Control) for 5 GHz	-	-	•	•
DFS (Dynamic Frequency Selection) for 2,4 and 5 GHz	-	-	•	•
RTS/CTS Threshold adjustable	-	•	•	•
DTIM Period adjustable	-	•	•	•
Security				
Encryption with RC4 WEP 64 (40 bit key), 128 (104 bit key)	•	•	•	•
WPA Personal Mode / Enterprise Mode	• / -	• / •	• / •	• / •
WPA2 Personal Mode / Enterprise Mode	- / -	- / -	• / •	• / •
Access authorization via RADIUS-Server (.1x authentication)	-	•	•	•
802.1x/EAP/-MD5/-TLS/-TTLs/-PEAP	-	•	•	•
Layer 2 Filter: Filtering of MAC Frames to different criteria	-	-	•	•
VLAN, Multi-SSID	-	-	•	•
Inter Traffic Blocking for Public Hot Spot (PHS)	-	-	•	•
Access Control List (ACL) local	•	•	•	•
ACL Local and Remote (Artem Security Manager via Central Server)	-	-	•	•
Software / Management				
WMM (Wireless Multimedia); Data Priorisation at 802.1d/p,	-	-	•	•
DSCP, TOS; SpectraLink Voice Priorisation (SVP)	-	-	•	•
Broken Link Detection (BLD)	-	-	•	•
Bridge (Point-To-Point, Point-To-Multipoint)	-	-	•	•
Wireless Distribution Service (WDS)	-	•	-	-
Windows based Setup Tool with Discovery function	•	•	•	•
Configuration via HTTP	•	•	•	•
DHCP Client	•	•	•	•
Configuration via SSH, HTTPS, Telnet	-	-	•	•
SNMP System Group via SNMP V1	-	•	•	•
SNMP V1, V2, V3	-	-	•	•
Loading and saving of configuration	-	-	•	•
No restart after changed configuration	-	-	•	•
Discovery Protocol Madge / Artem	- / •	- / •	• / •	• / •
Hardware				
Number of RJ45 for 100BaseT Ethernet ports with	1	1	2	2
Auto Crossover MDI/MDI-X, Auto Sensing	•	•	•	•
Serial interface RS232 (console/debug)	-	-	•	•
Power supply optional via USB adapter cable	•	-	-	-
External AC/DC converter included	•	•	•	•
Power Over Ethernet according to IEEE 802.3af	-	-	•	•
Status LEDs for Power, Wireless, Ethernet	•	•	•	•
Screws for wall mounting	•	•	•	•
Window mounting kit	•	-	-	-
Anti-theft protection adjustable	-	-	•	•
Medicine admission according to EN 60601-1-2	-	-	•	•
Complies with R&TTE-Directive 1999/5/EG	•	•	•	•

FEATURE OVERVIEW CLIENTS

	W-Client USB .11g	W-Client CardBus .11g	W-Client PCI .11g
WLAN			
IEEE 802.11g	•	•	•
Frequency band 2,400 – 2,4835 GHz	•	•	•
Number of channels in 2 GHz band	13	13	13
Operation modes “Infrastructure” or “Ad Hoc”	•	•	•
Automatic Rate Selection (ARS)	•	•	•
Channel settings according to IEEE 802.11d	•	•	•
Max. output power	15 dBm +/- 4 dB	15 dBm +/- 4 dB	15 dBm +/- 4 dB
Two internal antennas with diversity, 1.09 dBi gain (max.)	•	•	-
One external antenna with RSMA jack, no diversity	-	-	•
Software			
PC drivers for Windows 98/Me/2000	•	•	•
Drivers for Windows CE (for x86 processor, supports WEP and WPA-PSK)	•	-	-
Encryption with RC4 WEP 64 (40 bit key), 128 (104 bit key)	•	•	•
WPA-PSK (Personal Mode)	•	•	•
WPA Enterprise Mode	•	•	•
WPA2-PSK (Personal Mode)	•	•	•
WPA2 Enterprise Mode	•	•	•
Hardware			
Operating voltage (+/- 5 %)	5 V	3,3 V	3,3 V
Interface	USB 2.0	32 Bit CardBus, Type II PC Card	32 Bit PCI, Vers. 2.2
Current consumption Transmit	480 mA max.	480 mA max.	480 mA max.
Current consumption Receive	430 mA max.	430 mA max.	430 mA max.
Approvals according to R&TTE directive 1999/5/EG, EN 60950 (IEC60950), EN 300 328, EN 301 489-17	•	•	•
Operating temperature	0 °C up to +55 °C	0 °C up to +55 °C	0 °C up to +55 °C
Storage temperature	-10 °C up to +65 °C	-10 °C up to +65 °C	-10 °C up to +65 °C
Humidity (not condensing)	5% up to 95%	5% up to 95%	5% up to 95%
Dimensions in mm (L x W x H)	82,2 x 13,3 x 26,4	117,6 x 54 x 4,5	134 x 121 x 22
Chipset: Conexant Cohiba (GW3887IK)	•	-	-
Chipset: Conexant Javelin (ISL3886IK)	-	•	•
MTBF (Mean Time Between Failure)	187,719 h	143,433 h	144,789 h
Weight	<30 g	<50 g	<80 g

ANTENNA OVERVIEW

Name	Type	Indoor	Outdoor	gain in dB (2,4 GHz)	gain in dB (5 GHz)	Cable length	Connector
ANT-D-8/11-dual-0,2m	Patch antenna, dual band	•	-	8,5	10,5	20 cm	RTNC plug
ANT-Omni-5-2G-1,2m	Dipole antenna	•	•	5 (4*)	-	1,2 m	RTNC plug
ANT-N-Omni-4-2G	Semispherical antenne, needs cable 600507 or 600530	•	-	4	-	-	N jack
ANT-Omni-Vehicle-1,2m	Vehicle antenna	•	•	5 (4*)	-	1,2 m	RTNC plug
ANT-N-D-22-2G	Dish antenna	-	•	22	-	-	N jack
ANT-N-D-13/15-dual	Patch antenna, dual band	-	•	13,5	15,5	-	N jack
ANT-N-D-23-5G	Patch antenna	-	•	-	23	-	N jack
ANT-RSMA.KS-D-060-03-1m	Desktop antenna	•	-	6 (4*)	-	1,0 m	RSMA plug
ANT-TNC.S-O-022-01	Standard antenna	•	-	2	-	-	TNC plug
ANT-RTNC.S-O-022	Standard antenna	•	-	2	-	-	RTNC plug
ANT-RSMA.S-O-017	Standard antenna	•	-	2	-	-	RSMA plug
ANT-BRKIT-700m-3,5m	Patch antenna with 3,5 m cable, needs adapter	•	•	8,5 (5*)	-	3,5 m	TNC plug
ANT-TNC.KS-D-085-01-3,5m	Patch antenna with 3,5 m cable, needs adapter	•	•	8,5 (5*)	-	3,5 m	TNC plug

*) including cable



Perfect match.

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