

BusinessPhone Communication System



The BusinessPhone communication system offers large-system capabilities in a package that is cost-effective for small and medium-sized organizations requiring between 8 and 200 extensions. The system provides ISDN connectivity, cordless extensions, intelligent voice messaging, full call center facilities, and the ability to create private networks of BusinessPhone and other PBXs.

An integrated IP gateway enables private networking using the corporate IP network. BusinessPhone also offers

advanced IP telephony with Ericsson IP devices; the Dialog 3413 telephone and the new PC client, BackStage iClient.

As a modular system, BusinessPhone can be tailored to precisely meet a variety of communications needs. It can be expanded or enhanced with new features at any time in the future, protecting investment.

Overview

The BusinessPhone communication platform is available in three versions:

- BP50, housed in a compact cabinet, is optimized for telephone systems with up to 64 extensions.
- BP128i, a 19-inch cabinet, designed to fit the rack, power backup and cabling of the existing data infrastructure.
- BP250 caters for organizations needing up to 200 extensions.

All system hardware and software in the BusinessPhone solution is modular. This makes it adaptable to a wide range of capacity and functional requirements, provides the capability



BusinessPhone 250



BusinessPhone 50

for further system expansion and feature enhancement at any time, and protects investment.

The BusinessPhone solution offers an integrated IP gateway that can be used to build corporate networks based on IP. BusinessPhone also offers advanced IP telephony with Ericsson IP devices; the Dialog 3413 telephone and the new PC client, BackStage iClient.

Built-in configuration alternatives

Through various combinations of hardware and software modules, the core BusinessPhone system may be configured as:

- a key system, with no central operator
- an operator-assisted PBX
- a multi-PBX, which can serve several separate companies or divisions
- an Automatic Call Distribution (ACD) system
- a hospitality system
- a combination of any of these.

In addition, BusinessPhone Networking packages are available that enable corporate digital voice and data networks to be created covering different sites using IP or other networking protocols.

VoIP Networking

The BusinessPhone VoIP solution allows two or more BusinessPhone systems to be networked with other PBX systems, including the Ericsson MD110, through the integrated VoIP gateway over existing IP infrastructure, – thereby offering combined voice and data communications – rather than using leased lines for voice only. Four, eight or sixteen bi-directional VoIP channels per board are available at present. The network supports full feature transparency including supplementary services.

IP Telephony

To integrate IP extensions BusinessPhone uses a H.323 Gatekeeper. The implementation is based on the H.323 standard with an additional proprietary enhancement to support the Ericsson IP devices; the Dialog 3413, a fully featured IP telephone, and BackStage iClient, a PC client.

BusinessPhone terminals

A wide range of terminals is available to suit different organizations and individuals.

The digital system telephones offer advanced telephony for the in-house office worker. There are four models ranging from basic to executive.

With the optional cordless system enhancement a variety of cordless phones are available including office and ruggedized outdoor types, with

the facility for short text messaging, group calls, paging and alarm handling. Ericsson offers a range of analog phones to complement the BusinessPhone digital phones. Fax machines and modems may also be connected to the BusinessPhone system.

Operator services

BusinessPhone can be offered with two types of operator consoles, which can be plugged into a standard telephone outlet so units can easily be added or moved to another location:

- The advanced Operator Suite (OPS), a PC based console for call handling and management
- The Dialog 3214 Operator Telephone, a dedicated but cost-effective system phone with digital display and single-key access to the most commonly used operator functions and with an option to add up to four extra key panels providing 68 programmable keys.

BusinessPhone 50

The BusinessPhone 50 central system is a single compact wall cabinet with five board slots, that can cater for between eight and 64 extensions. The cabinet has a built-in switched-mode power supply, with the option of an external battery back-up unit or alternative DC power supply. The BusinessPhone 50 system is particularly cost-effective for small offices.



BusinessPhone 128i



Digital System Telephone Executive

BusinessPhone 128i

The cabinet size enables it to be mounted into 19-inch racks, the industry standard for data equipment like routers, hubs and switches. Therefore it is easy to install and integrate into the data infrastructure. The BP128i has an integrated patch panel which makes adds, moves and changes to the configuration a simple and fast process.

BP128i is a single, compact cabinet with five board slots. Since it is possible to stack two systems, it can serve up to 128 extensions and 60 trunks. The cabinet has a built-in switched-mode power supply.

BusinessPhone 250

The central system is comprised of between one and three wall-mounted cabinets, each with nine board slots, that can cater for between 20 and 200 extensions (or 300 for the special Hospitality solution). Each cabinet has a built-in transformer, with the option of a battery back-up unit or alternative DC power supply.

Expansion

The BusinessPhone platform is a modular system that can start small and be extended incrementally to match user requirements.

There is a multi-function board that combines trunk and extension interfaces with voice processing and messaging functions. This means only two boards are needed to build a fully fea-

tured business telephone system, leaving three slots (for each cabinet) free to add more capacity or additional functionality.

The systems may be extended in the following incremental steps:

- 8, 16 or 32 digital extensions
- 8 or 16 analog extensions
- 4 or 8 analog trunks
- 4 or 8 x 2-channel ISDN Basic Access (BA) trunks
- 30-channel ISDN Primary Rate Access (PRA) trunks
- 30-channel digital trunks with CAS (Channel Associated Signaling)
- 4, 8 or 16 bi-directional IP channels used for
 - up to 128 IP extensions per board
 - up to 16 trunks per board

Optional system enhancements

The BusinessPhone system can be enhanced to provide a variety of advanced call handling and specialized communication solutions such as: Call Center, Computer Telephony, Networking, Cordless Communication (DECT), Voice Messaging, Hospitality Application, Call Accounting, Operator Suite, BusinessPhone Management Suite and Ericsson-certified applications from specialist suppliers.

The additional hardware and software modules are fully integrated into the BusinessPhone central unit.

Operation and Maintenance

In addition to being a tool for the administrator and the end-user the BusinessPhone Management Suite is a technician's tool for system configuration, administration, upgrading and maintenance.

The BusinessPhone Management Suite supports a range of access methods, including LAN, dial-up or Internet connection.

The BusinessPhone system together with BMS also allows:

- Hot swapping of boards — boards can be replaced during system operation, minimizing engineering time and system down-time. Boards of most types can be replaced, and the new boards inserted into the free slots
- Remote upgrading of central software — possible on the CPU-D4 board, giving faster and more efficient handling of failures and upgrades
- Remote upgrading of firmware — on MFU, BTU-B, BTU-D, ELU-D3 boards, for easier system administration



Function Table

System functions

| Name | Description |
|---|--|
| <i>Alarm function</i> | allows an alarm signal to be sent from a telephone with a connected Alarm Interface Unit (AIU) to a predefined for instance from a hotel room to the concierge |
| <i>Answer position(s) for trunks</i> | re-routing on busy or no answer |
| <i>Automatic time synchronization with ISDN</i> | synchronizes with the time information received from public ISDN to enable automatic change of summer/winter time (daylight saving time). |
| <i>Background music</i> | music from an external source may be played through phone speakers |
| <i>Bypass call diversion and follow me</i> | a specific code may be dialed to bypass call forwarding |
| <i>Call charge control</i> | individual extension call metering and central call information logging |
| <i>Class of service to extensions</i> | varying levels of restriction on access to functions and traffic authorization may be assigned to extensions |
| <i>Common bell</i> | all extensions may pick a call from an extension that has been predefined as a common bell extension |
| <i>CT call setup notification on cordless and analog phones</i> | after starting a call by dialing from a directory in the PC a ringing signal reminds the user to go off-hook on the phone. |
| <i>CTI groups</i> | allows two-stage automated distribution of incoming calls to ACD groups or IVR systems |
| <i>Diagnostic functions</i> | built-in diagnostic facilities, accessible by using a local PC or via a modem |
| <i>Differentiated ring and tone signals</i> | indicate, for example, whether call is internal, external or call back |
| <i>Direct In Dialing (DID)</i> | If permitted by local PTT regulations |
| <i>DISA</i> | enables external dial in with access to all services |
| <i>Door phone (optional)</i> | one or more extensions may be used to monitor the entrance to premises and control the door lock remotely |
| <i>Fictive numbers</i> | up to 1000 logical extension numbers in up to 16 groups, to support hotdesking, recognition of incoming call type, fax server applications, etc. |
| <i>Flexible numbering plan</i> | up to eight digits with number translation |
| <i>ISDN basic functions</i> | BA, PRA, S-interface, T-interface |
| <i>ISDN supplementary services</i> | CLIP, CLIR, COLP, COLR, DDI, MCID, AOC, MSN, SUB, CFPR |
| <i>IP extension</i> | support of Ericsson or 3rd party IP clients |
| <i>IP gatekeeper</i> | to serve IP clients (see above) |
| <i>Least Cost Routing</i> | automatic selection of the cheapest route in the network |
| <i>Music on hold</i> | from internal or external sources, up to 13 channels, which can be assigned to different groups, based on extensions, PBX groups or ACD groups |
| <i>Networking</i> | corporate networking of BusinessPhone and MD110 systems via analog, digital ISDN and IP lines |
| <i>Night service</i> | re-routing of calls during restricted hours |

| Name | Description |
|--|---|
| <i>Advanced Operator functions</i> | identification, parking loops, queue indication, serial calls, metered calls, etc. |
| <i>PBX groups with parallel or serial distribution</i> | up to 20 extensions per group, and up to 16 groups per system |
| <i>PBX group flexible display</i> | PBX group members can have different caller information (first called party, calling party or PBX group name and number) on the display, depending on requirement. |
| <i>Power failure circuit</i> | for battery backup |
| <i>Pre-recorded voice announcements</i> | for automated attendant |
| <i>Programming of system parameters via service terminal</i> | |
| <i>Remote configuration, service and maintenance</i> | via built-in V.24 modem or Internet connection. Web browser-based Management Suite allows remote system changes and upgrades monitoring, fault analysis and correction |
| <i>Re-routing</i> | on busy or no answer |
| <i>Route selection</i> | different routes can be defined for incoming and/or outgoing calls, for example, for multi-tenant offices |
| <i>Tandem configuration</i> | a wired (desktop) phone and cordless (portable) phone are treated as one logical unit |
| <i>Tariff calculation</i> | makes it possible to set up a tariff structure, including your margin, for guests using your telephony system, independent of whether the network operator sends pulses or real costs to the PBX. |
| <i>Tone (DTMF) and pulse dialing</i> | internal and external |
| <i>Traffic group matrix</i> | individual control over extension and trunk line access for internal and external calls |
| <i>Trunk Call Discrimination</i> | several levels of restriction on external calling from extensions |

Extension functions

| Name | Description |
|--|---|
| <i>Abbreviated number dialing</i> | common and individual numbers |
| <i>Account number</i> | a number, such as a project code, may be keyed in before or during a call for call accounting purposes. As an option, verification of the code against a predefined list can be done, before the user gains access to the system. |
| <i>Authorization code</i> | by dialing special codes, extensions may be temporarily barred for calls, or class of service may be transferred to another extension |
| <i>Automatic call back (busy/free extension)</i> | callers to a busy or unanswered extension may book an automatic call back |
| <i>Automatic call back (trunk/route)</i> | callers to a busy trunk or route may book an automatic call back |
| <i>Automatic redial</i> | initiates automatic redial to an external number when busy or on no answer. Up to 5 numbers can be stored. |

| Name | Description |
|--------------------------------|---|
| <i>Call metering</i> | displayed during and after an external call on the telephone display (actual call, last call and accumulated fee); printouts are also available |
| <i>Call pick-up</i> | calls to any extension can be picked up from other extensions (individual, group, common) |
| <i>Call waiting indication</i> | if dialed extension is busy, a special "call waiting" tone may be sent by the caller to indicate an important call |
| <i>Camp on busy</i> | notifies a busy extension that a call is waiting |
| <i>Conference</i> | up to six-way, internal and external |
| <i>Conversation recording</i> | record a call in the mailbox |
| <i>Display indications</i> | telephone display can show information such as date and time, temperature, calling number and name, directory entries, and messages from other extensions |
| <i>Diversion</i> | automatically diverts calls to another destination, internal or external (direct, on busy, or on no reply) |
| <i>Dual line access</i> | allows a second call to be taken during the first call (which is put on hold) |
| <i>Fax extension</i> | extensions can be programmed specifically to handle incoming faxes |
| <i>Flexible CIL format</i> | to be compatible with various Call Information Logging software products |
| <i>Follow me</i> | users can request that their incoming calls are transferred to a designated internal or external number |
| <i>Group functions</i> | functions such as call pick-up, group call, and call diversion may be programmed for certain work groups |
| <i>Group (PBX-) hunting</i> | a group of extensions may be called using a common group number. Calls may be distributed to free extensions in a predefined order |
| <i>Hands-free</i> | loudspeaker and microphone for conversation without handset. |
| <i>Hot line</i> | may be initiated, either immediately or delayed, by lifting the handset |
| <i>Absence Information</i> | all types of telephone can be used to leave voice or text information for callers while the user is absent |
| <i>Intercom</i> | single-key, hands-free extension-to-extension calling with automatic answer |
| <i>Intrusion</i> | authorized users can intrude into an ongoing call |
| <i>ISDN caller list</i> | stores details of incoming ISDN calls that did not get through either because the user was busy or did not answer |
| <i>Message system</i> | voice, text and call-me messages can be sent or forwarded from extension to extension/s. |
| <i>Monitoring</i> | the operator may monitor an external call whilst continuing to put through new calls |
| <i>Outcall notification</i> | the user can be notified that there is a new message in the voice mailbox with a call to a predefined external number. Messages can be retrieved immediately. |
| <i>Parking</i> | ongoing calls may be temporarily parked for later retrieval or pick-up from another extension (common or individual) |
| <i>Personal greeting</i> | a personal greeting can be recorded in the voice messaging system. |
| <i>Private trunk line</i> | provides access only to nominated extensions |
| <i>Recall</i> | after a predetermined time, calls that have been parked, camped on or transferred without answer recall the initiating extension |
| <i>Reminder service</i> | user may set time for reminder, at which the extension gives a special ringing tone |
| <i>Save/redial</i> | dialed or incoming numbers are stored for quick call back of incoming answered calls. |
| <i>Secretary function</i> | includes direct call, busy indication, call pick-up, intercom and diversion |
| <i>Supervision</i> | user may monitor individual directory numbers to determine status, answer incoming calls or call the monitored party |
| <i>Telephone directory</i> | for internal and external numbers |
| <i>Transfer</i> | before or after answering |

The table below is based on typical business configurations, i.e. it can be used as average. The real limitations may differ to some extent, dependent on the customer configuration.

| Capacity | BP50 | BP128i | BP250 | Modularity |
|---|------------------|--------------------|---------------------------------|-------------|
| Extension Capacity (theoretical) | 300 | 300 | 300 | - |
| Extension Capacity (typical) | 64 | 128 | 200 | - |
| <i>Digital</i> | 8 – 64 | 8 – 128 | 8 – 200 (300 for Hotel systems) | 8/16/32 |
| <i>Analog</i> | 4 – 32 | 4 – 128 | 8 – 200 (300 for Hotel systems) | 4/8/16 |
| <i>Cordless</i> | 1 – 64 | 1 – 64 | 1 – 210 | as per FECU |
| <i>Operator</i> | 1 – 3 | 1 – 3 | 1 – 3 | 1 |
| <i>S-interface Terminals</i> | 1 – 64 (8x 2B+D) | 1 – 128 (16x 2B+D) | 1 – 192 (24x 2B+D) | 4/8 |
| <i>H.323 clients</i> | 256 | 256 | 256 | 1 |
| Trunk Capacity (theoretical) | 120 | 120 | 120 | - |
| Trunk Capacity (typical) | 30 | 60 | 60 | - |
| <i>Analog trunk</i> | 4 – 16 | 4 – 32 | 4 – 60 | 4/8 |
| <i>Digital trunk PRA</i> | 30 (1x 30B+D) | 60 (2x 30B+D) | 60 (2x 30B+D) | 30 |
| <i>Digital trunk with CAS</i> | 30 (1x 30B+D) | 60 (2x 30B+D) | 60 (2x 30B+D) | 30 |
| <i>Digital trunk BA</i> | 16 (8x 2B+D) | 32 (16x 2B+D) | 48 (24x 2B+D) | 8/16 |
| <i>S-interface Terminals (channels)</i> | 16 (8x 2B+D) | 32 (16x 2B+D) | 48 (24x 2B+D) | 8/16 |
| <i>VoIP lines</i> | 4 – 32 | 4 – 64 | 4 – 64 | 4/8/16 |
| <i>Analog tie line</i> | 4 – 8 | 4 – 16 | 4 – 56 | 4/8 |
| <i>Base Station</i> | 12 | 12 | 60 | 1 |
| <i>Free slots for PBA's (except CPU-D4)</i> | 4 | 4 + 5 | 8 + 9 + 9 | - |
| <i>RJ45 sockets available</i> | N/A | 72 + 72 | N/A | - |

| System cabinet | BP128i | BP50 | BP250 |
|--------------------------------|---------------|---------------|---------------|
| <i>Cabinets, wall-mounted</i> | 1 or 2 | 1 | Up to 3 |
| <i>Dimensions (HxWxD)</i> | 125x483x396mm | 500x400x155mm | 435x260x300mm |
| <i>Weight (fully equipped)</i> | 14,5 kg | 13 kg | 19,2 kg |

Technical data

Power supply

- *Mains supply:*
110–127VAC ±10%, or
220–240VAC ±10%
- *Emergency power supply*
(battery): –48VDC +8V/–5V

Analog trunk lines

- *Max. line resistance:* 2000 Ohms at –48VDC
- *Make/break ratio:*
33/67ms or 40/60ms
- *DTMF signaling:*
ITU-T Q.23/Q.24

Digital trunk lines

- *Channel associated signaling*
(CAS) 2Mbit/s interface
according to ITU-T G.703 and
G.704

- *CAS R2 according to ITU-T*
Q.421-424

- *ISDN interfaces according to*
ITU-T I.430 (BA), I.431 (PRA),
I.440, I.450, I.441, I.451, G.703
(PRA), G.704 (PRA), ETSI CTR3
(BA) and CTR4 (PRA), and
AUSTEL specifications

IP unit

- *Interfaces:*
Ethernet 10/100BaseT
- *Protocols:* IP v.4, BOOTP,
coding of speech packets
according to RTP, TCP, UDP,
FTP, NTP, H.323, H.225 and H.245
- *Voice support:* up to 16 parallel
calls
- *Quality of Service support:*
queuing prioritization, Type of
Service (TOS)
- *IP Telephony functions:*
- Networking over IP
- Interpretation of a H.323
Gatekeeper for IP client support

Environmental Performance

Substances – The BusinessPhone Communication System complies with Ericsson's policy on the use of banned and restricted substances.

End of Life Treatment – Ericsson offers recycling service for old Ericsson products to all our certified Partners in the EU, Norway and Switzerland. After the material has arrived to our collection point, we will free of charge take care of disposal through approved recycling companies in compliance with EU or other national legislation.

Networking

- Common corporate numbering plan: co-ordinated, location code based or mixed
- Definition of up to 1000 corporate network nodes
- Corporate network routing with first choice and up to three alternative route choices
- Enhanced set of telephony features via the network

ISDN access

- Basic Rate (2B+D, 144kbit/s)
- Primary Rate (30B+D, 2Mbit/s)
Interfaces:
- Q interface (leased-line QSIG)
- T interface (switched public ISDN line with DSS1)

Analog links

- E&M continuous (A- and D-format)
- E&M discontinuous
- CEPT L1
- SSAC 15
- Loop signaling (DC)

Analog extensions

- Max. loop resistance (incl. telephones) 2500 Ohms
- Current feed: 2x400mA, -48VDC, or 2x800mA, -48VDC
- Impulse speed: 10Hz ±10%
- Make/break ratio: 33/67ms or 40/60ms
- DTMF signaling: ITU-T Q.23
- Timed break of loop: 80-120ms
- Leakage resistance: 40 kOhms

Digital extensions

- Max. line length: 800m with 0.5mm diameter cable

ISDN S-interface

According to ETSI and AUSTEL recommendations, supporting:

- Group 4 fax
- PC with ISDN board
- PC with ISDN board and telephone
- terminal adapter
- videophone
- ISDN telephone

Bearer services supported include:

- speech
- unrestricted 64kbit/s
- unrestricted digital information (with tones/announcements, 7kHz)
- 3.1kHz audio
- video

Maximum range:

- short passive bus: up to 250m
- extended passive bus: up to 500m

Environmental

Operating temperature:
+5°C to +40°C

Relative humidity: 15-80%

Electrostatic discharge:
>8kV at 30% humidity, complies with IEC 801-2

System programming

- Local programming via V.24 (RS-232) interface

- Web-browser-based Management Suite for local (via V.24 or LAN connection) or remote (via built-in V.22 modem or Internet connection) configuration, O&M and upgrades

EMC Standards Compliance

Emission: EN 55022 Class A/Class B

Immunity: EN 55024

Regulative Compliance Information: Hereby, Ericsson Austria AG, Product Unit Communication Systems, declare that BusinessPhone BP250, BP50 and BP128i are in conformity with the essential requirements and other relevant provisions of EU directive 1999/5/EC

Digital corporate networking (QSIG standards)

Basic Call Control

ETS 300 172/ISO 11572, ISO 11574 GFP (within the scope of the supported supplementary service listed below)

ETS 300 239/ISO 11582

Supplementary services

CLIP, COLP, CLIR:
ETS 300 173/ISO 14136

CNIP, CONP, CNIR:
ETS 300 238/ISO 13864, 13868

AOC: ECMA 211/212

Protocol compliance

Layer 1: ETS 300 011/ETS 300 012

Layer 2: ETS 300 170

Layer 3: ETS 300 172

Region Asia Pacific
Ericsson Enterprise
Jalan SS7/19, Kelana Jaya
47301 Petaling Jaya
Selangor
MALAYSIA
Phone: +60 3 708 7000
enterprise.asiapacific@ebc.ericsson.se

Region Latin America
Ericsson Enterprise
2385 Executive Center Drive
Suite 400
Boca Raton, FL 33431
USA
Phone: +1 561 999-4860
enterprise.latinamerica@ebc.ericsson.se

Region Western Europe
Ericsson Enterprise
Avenue du Bourget 44 Bourgetlaan
1130 Brussels
BELGIUM
Phone: +32 2 745 12 11
enterprise.westerneurope@ebc.ericsson.se

Region Central and Eastern Europe, Middle East, Africa
Ericsson Enterprise
Pottendorferstr. 25-27
A-1121 Vienna
AUSTRIA
Phone: +43 1 81 10 00
enterprise.centraleurope@ebc.ericsson.se

Region North America, Japan
Ericsson Enterprise
1555 Adams Drive
Menlo Park, CA 94025
USA
Phone: +1 650 324-6100
enterprise.northamerica@ebc.ericsson.se

Region Nordic
Ericsson Enterprise
Lindhagensgatan 80
126 25 Stockholm
SWEDEN
Phone: +46 8 579 18 000
enterprise.nordic@ebc.ericsson.se