Empowered by Innovation NEC

On-site wireless telephony on your IP Network

IP DECT AP400 series

NEC's Business Mobility IP DECT provides on-site wireless telephony in a unique solution that combines the benefits of IP technology with the superior quality and facilities of DECT.

The IP DECT AP400 Access Points connect directly to the IP network and can be used both on NEC platforms as well as on different brand PBX platforms with a SIP interface. AP400 series is also designed to offer new CAT-iq based features such as HD-voice.

IP DECT adds the following wireless telephony features:

- Wireless DECT handsets that integrate in any IP telephony network.
- Rich PBX-type features on the handset.
- Unified Communications features with central directory information.
- Powerful messaging, alarming and handset localisation, through the open interface DMLS.
- Supports 11 simultaneous calls or 5 simultaneous calls in HD-Voice quality (G722).
- High scalability up to 750 Access Points.
- Compatible with existing AP200 and AP300 versions of IP DECT Access Points.
- High availability by adding a second DAP controller for redundancy or multiple local DAP controllers for local surviveability.
- Optional G.729 compression with add-on board.
- Secure voice communication through DECT authentication and encryption.
- Support of Handset Messaging up to 160 characters.
- Main and branch office support over LAN/WAN.
- Easy maintenance: downloadable software and web based tooling.
- Increased reachability and productivity of employees.
- Easy deployment and installation: plug and play.
- Cost savings on infrastructure and cellular use.
- All the voice quality, security, availability and feature transparency of DECT.

At a glance

- Next generation Access Points designed for CAT-iq.
- Connect directly to IP network.
- Crystal clear speech and seamless handover.
- Full security and speech encryption.
- Scalable up to 750 APs in one network.
- High availability by redundancy and virtualisation options.
- Open SIP interface to various PBX platforms.
- Compatible with existing AP200 and AP300 Access Points.
- Mountable on wall and ceiling.

AP400 features

Antenna	• Standard: internal omni-directional antenna	• Optional: external antenna (only on AP400E)
Call handling features	• Crystal clear speech • CLIP and name display • Enquiry • Conferencing • Seamless integration with features of PBX platform [1)]	• Central Directory support [1)] • DTMF and call progress tones • Overlap Sending • Multiple call Appearance (2nd call)
Capacity	• Channels: 12 channels providing max. 11 simultaneous calls per AP400 • Maximum number of DECT Access Points is 750 • Maximum number of extensions is 18750 (this number is restricted by the maximum number of extensions supported by the host PBX system)	
Design	• Very compact unit (less than A5 size) with flexible antenna positioning	
Housing	• Indoor use: mounting on wall or under ceiling	• Optional: weather proof outdoor housing
Localisation support	• Supported frequency bands: EMEA, US, Latin America, Thailand [2)] • AP400 is available for EMEA, US and Canada, Latin America, Australia and specific Far East markets • A dedicated AP400 configuration is available for Cruise Line ships that need the frequency band to be switched from EMEA to North American band (based on GPS position)	
Management	• DAP Manager runs on a standard Windows PC, can run in parallel with other applications • DAP Manager is not required for daily use, unless support of wide area roaming or messaging is required	
Messaging	• Messaging (LRMS) support • Maximum message length support: 160 characters [3)]	• Message broadcast support [1)] • Message waiting indication
Menu	• Easy menu programming	
Messaging	• Messaging (LRMS) support • Message waiting (voicemail) • Support of different urgencies/priorities: Normal, urgent and emergency	• Message broadcast support • Set-up of voice call to call back number in message
Mobility/other	• Supports DECT compatible handsets • Roaming and seamless handover	• Full non-blind slot radio • Location detection [1)]
Multi-site support (main and branch offices)	• AP400 can be used in main and branch offices • AP400s in a DECT location are part of the same multi-cast group in the LAN • For use in WAN no multi-cast is required	• DAP manager is required for wide area roaming • Branch and main offices form one combined DECT system
Network aspects	• Connects directly to Local Area Network Ethernet • Multicast	• 10/100 Mbits Ethernet interface • Support of G.711 and G.722 for CAT-iq [5)] • Support of G.729AB compression (with G7A add-on board)
Power supply	• Power over Ethernet (PoE) according to 802.3af	
Security	• Secure DECT authentication on all channels	
Service/ maintenance	• Software upgrading via air interface [4)] • Software upgrading of handsets via air interface [4)]	• Software upgrading via headset connector (2.5 mm) • LED status indicator
SIP protocol support	• AP400 supports SIP protocol (See also the SIP Protocol Support table) • The AP400 adds DECT mobility to a SIP enabled PBX (See also the paragraph on PBX platform compatibility)	
Signalling	• Synchronisation requires 1 channel	
User interface	• Web access (via DAP Manager)	• Directly from DAP Manager application PC

1) Features depend on the capabilities of the PBX and IP DECT system.

2) EMEA DECT frequency band is supported in most Asian markets as well.

3) The maximum number of characters depends on the PBX platform and application used for messaging.

4) See DECT handset datasheets for support of software upgrading through the air.

5) CAT-iq features are enabled by specific R6 versions.

Dimensions

Dimensions	146x174x43 mm (wxhxd) including antenna part mounted horizontally) (in case the antenna part is mounted vertically 146x147x69 mm)
Weight	302 gram (AP400E 306 gram) ABS/polycarbonate
Protection	Handset: IP20
Range	Indoor: 50 m max [5] Outdoor: 300 m max [5]
Power supply	Power over Ethernet (PoE): 36-57 V over spare wire pairs and phantom feed: IEEE802.3af (Class 2)
Colour and finishing	Housing: white (RAL9010), antenna part light grey (RAL7035)
Network	10/100BASE-T IEEE802.3
Connector	8-pin RJ45
Cable	Cat. 5 or CAT 6 UTP
IP version	4, DHCP, TFTP
QoS	IEEE802.1Q, 802.1p
DiffServ	Yes
Audio algorithms	• G.711 • G.729AB (AP400 and AP400E: plus G7A board)
Full non-blind slot DECT RF part	According to EN301406
RF output [6]	10mW average per channel at antenna connection
Sensitivity	Typical -90 dBm measured at antenna connection at BER=0.001
Antenna	Dual omni-directional internal antennas
Frequency bands	• EMEA: 1880 – 1900 MHz • Thailand: 1900 – 1906 MHz • Latin America: 1910 – 1930 MHz • North America: 1920 – 1930 MHz • 10 carrier frequencies (or less, depending on country regulations)
Typical range	• Indoor: 20 – 50 m [5] • Outdoor: 300 m [5]

5) The radio coverage of DECT equipment depends on the environment and presence of obstacles.

6) For specific countries, such as Egypt, the maximum number of channels is 6 channels per base.

AP400 package content

AP400 model	Mounting material

External Antenna

External Directional Antennas	AP400E for external, directional antennas

Outdoor box

Dimensions	291x241x88 mm (wxhxd)
Weight	1.23 kg (inclusive radio & 8dBi antenna and antenna cables)
Protection	Handset: IP20
Material	Polycarbonate
Colour	Grey (RAL 7035)
Mounting of outdoor box	• Base stations are installed inside as a complete unit • Wall mounting material included
Operating with outdoor box	• -20°C to +45°C (class 3.2) • No additional heating required • UV radiation resistant
Relative humidity	5 to 95%
Hermetically closed	IP66
Outdoor box	IEC 62208, UL 508 A, IEC 62262: IK08, NEMA 4.4X: IP66
Industrial use	IEC 439-4

DAP Manager platform

PC Operating System/browser	• Windows 2003 Server SP2 or higher • Windows 2008 SP2 • Windows 2008 R2 • Windows XP Professional SP2 or higher • Windows 7 (Professional, Enterprise and Ultimate) • Browser: Internet Explorer 6.0 or higher
Required PC hardware	• CPU: Minimum 2.4 GHz • RAM: Minimum 1 Gb

PBX platform compatibility

Compatible with all NEC communication platforms: UNIVERGE SL-series, SV8100, SV8300, SV8500.

SIP compatibility has been tested with various 3rd party PBX systems, such as with Mitel 3300, Cisco CUCM R6.1/R8.x) and Alcatel Lucent Omni PCX Enterprise R9.x (ask your local representative for detailed information).

SIP Protocol support

SIP RFC Support	• RFC2246 • RFC2822 • RFC2976 • RFC3264 • RFC3311 • RFC3428 • RFC3578 • RFC3711 • RFC3891	• RFC2327 • RFC2833 • RFC3261 • RFC3265 • RFC3325 • RFC3515 • RFC3665 • RFC3842 • RFC4568

Directives and regulations

Directives and regulations Europe	• R&TTE directive 1999/5/EC • EMC directive 2004/108/EC • LVD directive 2006/95/EC • ROHS directive 2002/95/EC, 2011/65/EU and WEEE directive 2002/96/EC • ERP directive 2009/125/EC
Directives and regulations North America	• FCC part 15C, 15D • RSS 210, RSS 213 North America • HAC/VCHAC/VC

Environmental conditions

Operating:	5°C to +45°C (class 3.2)
Transport:	–40°C to +70°C (class 2.3)
Storage:	–25°C to +60°C (class 1.2)
Relative Humidity	< 90% (non condensing)

Compliance AP400/AP400E/AP400C

European Conformity	The AP400 carries a CE mark
EMC	EN301 489-1, EN301 489-6, EN61000-3-2/3 (AC supply)
DECT	EN301 406, ETS 300 757 (Service Class 2)
Safety & Health	EN60950-1, EN50385

Reliability AP400 and AP400E

MTBF	≤ 4900 FIT (Failure In Time)
Technical Lifetime	≥ 7 years

Maintenance

Maintenance and service	• LED status indication • Web based management tool • Downloadable DAP software

IP DECT architecture

An AP400 based IP DECT configuration can consist of AP400 series Access Points (the system may also include AP200/300 series APs), IP DECT system software (release 6), DAP manager software, a DMLS open interface for messaging and DECT handsets. The AP400 APs connect to the IP network and form a DECT system that provides peer to peer IP communication between DECT handsets and other VoIP users. The connection between AP400s and the host PBX is using either a dedicated IP protocol or a SIP interface. As such, it truly integrates with the host PBX system. With the SIP support (SIP DECT) of AP400, the IP DECT system can be linked to any certified SIP based host PBX system. The features provided will depend on the level of SIP interworking. The IP network can be one single converged voice/data network or a dedicated network.

An Access Point provides 12 DECT channels and supports up to 11 simultaneous calls or 5 HD-Voice calls. One channel is used for signalling between the Access Points. An IP DECT configuration can also support other applications such as voice mail, web-based telephony, central directory, and messaging. A DAP Manager is required for installation, maintenance, subscription, wide area roaming, and messaging. In most configurations the DAP Manager is not required for operational use. AP400 series consists of the following models: AP400 for all IP DECT and SIP DECT applications, AP400E to connect external directional antennas. An external housing comes with the AP400E for outdoor use, as well as to protect the external antenna.

For more information, visit au.nec.com, email contactus@nec.com.au or call 131 632

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NEC Australia specialises in information and communications technology solutions and services in multi-vendor environments. Solutions and services include: IT applications and solutions development, unified communications, complex communications solutions, network solutions, display solutions, identity management, research and development services, systems integration and professional, technical and managed services.

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