

## IP Solution for Remote Workers

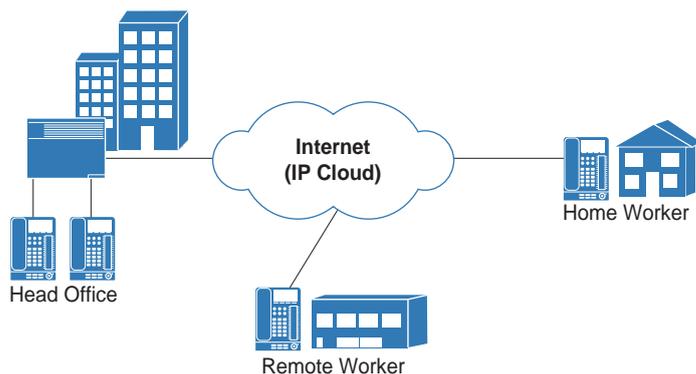


The Panasonic KX-NT136 IP Phone supports the latest VoIP technology. IP Phones - together with virtually ever-present broadband Internet access and affordable IP VPN routers are a compelling way for companies to offer Remote Employees access to corporate voice services.

With Panasonic IP Phones - let us help you focus on your business and let us handle all the VoIP rocket science!

### ■ Achieve Customer Satisfaction by Empowering your Staff

As companies require more flexibility due to the trend of having geographically dispersed office locations or need to provide corporate voice communication to the growing number of Remote / Home workers, the challenge is to integrate all remote employees back into the central business telephony systems without compromising on voice communication. The VoIP enabled Panasonic NT136 intuitive IP telephony solutions address the needs of such businesses by empowering remote employees with easy access to the TDA Hybrid IP PBX feature rich capabilities back at the corporate office - regardless of their geographical location.



By enabling transparent access to remote workers through the office TDA PBX - your business customers will appreciate how easy it is to communicate with your organisation. Remote employees can work more efficiently and maximise their productivity with seamless access to the corporate TDA PBX from any location. Managers and supervisors can even use call accounting to keep tabs on all calls handled centrally through the TDA PBX in order to maintain and help lower cost.

### ■ Reduces Installation and deployment costs

Panasonic IP phones run off of IP Extension 16 Option card (KX-TDA0470) allowing for programming using familiar PC Maintenance Console software and without the need to learn any new programming interface. Additionally the phones look and work almost like standard system phones reducing the need for any re-learning by end-users - all to help reduce support costs. Additionally IP phones do not require any additional cabling as they use standard Ethernet network cables - reducing cost of deployment. Employee moves within the enterprise network are easy as it simply requires unplugging the phone from one LAN location and plugging it back at a different location with virtually zero reprogramming.



KX-NT136 IP Proprietary Telephone

### ■ Reduces communication costs

Panasonic IP telephony solutions offer variable voice compression rates to maximise your IP network bandwidth resources, and improve network efficiency. Communication savings can be realised because IP phones do not need any PSTN access and can use standard broadband Internet access. Additional savings can also be realised from the consolidation of long distance calling through the use of corporate central TDA PBX voice network and dialling plan.

## ■ Simple Remote Site Installation

By using standard low cost IP VPN routers (e.g. Linksys BEFSX41 or Linksys WAG54G) a VPN tunnel can be established over standard Digital Subscriber Line (DSL) broadband between the remote site and the main office. By first registering the IP phone to the corporate TDA PBX - installation at the remote site is simplified to just plugging the IP phone behind the remote VPN router and assigning it an IP address (using phone keypad or using local DHCP). The NT136 also has a built-in Ethernet switch in case users need to connect a PC at the remote site.



## ■ Ensures superior voice quality

The Panasonic IP telephony products convert digital voice into standard RTP\*/IP packets, which are then transmitted over TCP/IP network. The product facilitates Quality of Service by supporting VLAN tagging (802.1p/Q) to enable dedicated bandwidth to handle voice traffic. Further - IP VPN tunnel can ensure that voice speech is encrypted so there is no chance of any eavesdropping as the voice packets travel over the Internet.

\*RTP = Real Time Protocol

## ■ Ensure maximum flexibility with Panasonic IP Telephony

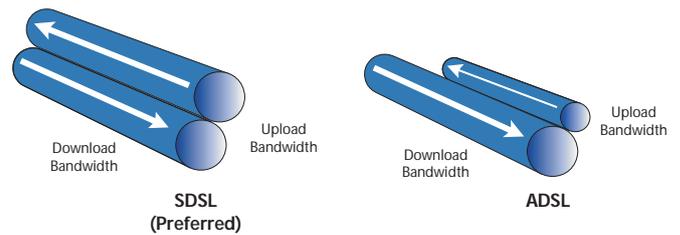
As your business transitions to a converged voice and data network, Panasonic IP telephony products provide a managed migration path to IP telephony, working seamlessly over traditional and next generation networks without the need of expensive disruptive upgrades. As your business grows, the Panasonic IP telephony products ensure ongoing scalability, enabling you to mix and match remote worker requirements to provide the perfect solution for your distributed telephony deployment needs.

## ■ Appropriate use of DSL

Various different DSL technologies (generally called xDSL) are available from Internet / Telecom Service Providers. The most common types include:

- ADSL - Asymmetric Digital Subscriber Line, and
- SDSL - Symmetric Digital Subscriber Line

The term Asymmetric in ADSL means that the download and upload available bandwidth are different.

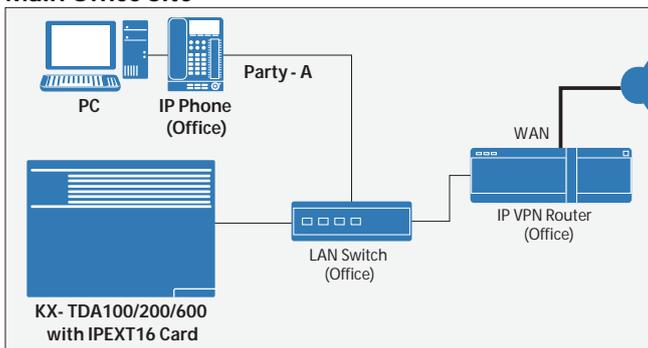


As ADSL has more downstream bandwidth than upstream, and since voice is time sensitive in both directions - it is important to understand that having different bandwidth for uploading and downloading can easily cause voice degradation. A much better and recommended service especially for business users and IP Telephony is SDSL. The term Symmetric in SDSL means that the bandwidth available for both downloading and uploading is the same (see Figure above). This means that a typical 1Mbps SDSL service provides 1.024 Mbps each for downloads and uploads. This means that Voice (VoIP) packets travel much more efficiently over SDSL and there is much less change of any voice degradation.

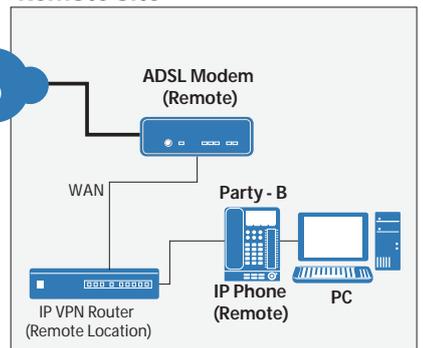
Further - it should be noted that all ISPs share a fixed bandwidth between users. For home users the typical contention ratio is around 50:1 while for office users it is approximately 20:1. Ensure to use business grade service with the lower contention ratio when using IP telephony.

Note: It should be noted that since Internet is an unmanaged IP network - in order to ensure that the data and voice communication over Internet is reliable as well as secure - an IP Virtual Private Network (IP VPN) must be established over business grade Broadband Internet access.

### Main Office Site



### Remote Site



A typical simplified network for setting up remote IP Telephony over ADSL modem