

# Panasonic Telephone Systems

## DECT 6.0/900 MHz/2.4 GHz/5.8 GHz Digital Enhanced Cordless Telephones



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Phone: 877-289-2829

Panasonic KX-TD7685, KXTD7685, TD7685, KX-TD7695, KXTD7695, TD7695, KX-TD7696, KXTD7696, TD7696

### DECT 6.0 vs 900 MHz vs 2.4GHz vs 5.8 GHz

DECT 6.0 (1.9 GHz)	900 MHz	2.4 GHz	5.8 GHz
FCC approved frequency for cordless telecommunication	Baby monitors, microwave oven	Wi-Fi electronics (routers), wireless stereophones, wireless gaming pad	Some Static Electronic devices.
	Interference, bad sound quality	Interference, bad sound quality	

### What is DECT?

DECT stands for Digital Enhanced Cordless Telecommunications.

DECT is a digital wireless technology which was originated in Europe that's why earlier DECT used to stand for Digital European Cordless Telecommunication, but is now being adopted increasingly worldwide especially America, for cordless telephones. DECT has been especially designed and specified to interwork with many other types of network which allows communication, such as the PSTN (conventional telephone networks), ISDN (new digital and data phone networks), GSM (mobile phone networks) and more.

DECT has been developed for short distance communication and large number of users which make them ideal for home cordless phones.

Some DECT properties:

- Audio codec: [G.726](#)
- Net bit rate: 32 kbit/s
- Frequency: 1880 MHz–1900 MHz in Europe, 1920 MHz–1930 MHz in the US

- Carriers: 10 (1,728 kHz spacing) in Europe, 5 (1,728 kHz spacing) in the US
- Time slots: 2 x 12 (up and down stream)
- Channel allocation: dynamic
- Average transmission power: 10 mW (250 mW peak) in Europe, 4 mW (100 mW peak) in the US

### Advantages of DECT

- High Subscriber Density
- 1.8Ghz Frequency Band specially allocated for DECT devices.
- Interference Free Communication
- Can be used in Health monitor devices such as Philips Baby Monitor
- Faster and Secure Communication

### Future of DECT

In year 2006 more than 1 million DECT 6.0 devices which includes DECT 6.0 cordless phones, DECT 6.0 baby monitors etc. have been sold to US customers. DECT 6.0, the interference free wireless communication technology for family homes and small and medium sized enterprises, has become a broadly accepted technology for cordless telephones. The whole spectrum of the cordless phone industry, semiconductor vendors, manufacturers, retailers, distributors and operators, have driven the successful proliferation of DECT 6.0 in the USA. DECT 6.0 is allocated in an own frequency band (1920-1930 MHz) to avoid interference with legacy products. It has been expected there will be a remarkable increase in market share in 2007, 2008 and 2009 due to the fact that even more vendors will enter DECT 6.0 wireless communication products into the medium and low price market segments.

### DECT 6.0 & Skype & Voip

This is a much popular term these days "cordless Skype phone". A cordless phone comfort for their VoIP calls and DECT technology to enhance security and voice quality. With the help of skype enabled DECT 6.0 cordless phones user can make free Skype calls as well as normal landline calls. You can make and take calls on both networks from one single handset, and you can see who is online without going to the PC, just by looking at the display

## Why DECT ?

Key Benefits	Description
DECT	Digital Enhanced Cordless Telecommunications. Main aim of Digital technology is improved sound quality and provides secure voice transmission. With DECT 6.0 cordless phones you can make and take calls where it suits you. Most DECT 6.0 Cordless Phones provide communication up to 50 meters indoors and 300 meters outdoors.
Security	DECT cordless phones provide secure voice transmission through socket layers. Analogue phone calls are susceptible to eavesdropping and can be overheard by someone using a scanner elsewhere in the neighborhood. Any communication from DECT cordless phone saves users from this danger.
Sound Quality	DECT phones have clear reception and a minimum of line noise and loudness. DECT phones provide better sound quality over analogue cordless phones that give static noises when you move and talk
Standard Features	<ul style="list-style-type: none"> <li>• Handset ringer with a talk (on/off) switch</li> <li>• a redial key</li> <li>• security coding between base and handset</li> <li>• an alpha-numeric keypad</li> <li>• at least 7 channels</li> <li>• one way paging from base to handset</li> <li>• a wall mounting options for the base</li> <li>• caller ID</li> <li>• an intercom</li> <li>• redialing features &amp; favorite number storage.</li> </ul>
Low electromagnetic radiation	The risk, if it exists, will be even lower with cordless phones. They have a much lower power output.
Recharging	Some models use NiCad batteries, which are said to suffer from a "memory" effect - if you recharge them before they are fully run down, they may only use the new store of energy before needing to be recharged again. While we know of no studies, which prove "memory" effect exists, if you want to be on the safe side, make sure they are fully wound down before you can recharge them again.
	101 line

## History of DECT – the early years

The killer application for DECT is definitely voice and the primary objective in the DECT standardization work carried out at ETSI was to standardize a digital technology for cordless phones (mainly targeted at the European area). After the first edition of the DECT standard became available in 1992, the DECT

standardization work concentrated on the definition of the well-known Generic Access Profile (GAP). The rationale behind GAP was to ensure interoperability between DECT equipment from different manufacturers. This work and additional demands from the DECT market initiated several extensions and enhancements to the base standard enabling even more effective application of DECT products, which led to the 2nd edition of the base standard being finalized by the end of 1995. The evolution of DECT did not stop here, however; a number of other profiles were also included in the standard. Among these a profile that builds upon a packet-oriented data protocol, DECT Packet Radio Service (DPRS), which enables DECT to carry up to 552 kbps of data per channel.

### **Different types of 900MHz, 2.4GHz, and 5.8GHz**

<b>Worst</b>	<b>Analog</b>	<b>No Security</b>
Better	Digital (difficult to decode)	Minimal Security
Even Better	Digital Spread Spectrum (DSS) Transmits on several channels at once	Good for Security
Best	Frequency-Hopping Digital Spread Spectrum (FHSS) Constantly hops channels while transmitting	Best for Security

What is your concern?      Range?                      Clarity?                      Security?

In a wide open field, a higher frequency phone can out-perform a lower frequency phone of equivalent design - but do you live in a field? What can add a lot more quality to your signal is not so much the frequency as the method of transmission. Almost all 2.4Ghz phones are hybrid. They RECEIVE on 900Mhz and TRANSMIT digital on 2.4Ghz.

More important than frequency, according to experts, is analog vs. digital vs. digital spread spectrum (DSS) vs FHSS.

Due to the multiple factors involved, the range and clarity of cordless phones vary. In general, you can expect better clarity as you move from 46-49 MHz models (which are overcrowded with baby monitors and walkie-talkies) to 900 MHz models (which most homes use for cordless phones) to 2.4 GHz models. The primary benefit of 5.8 GHz models is the avoidance of interference with 802.11b WLANs and microwaves. If interference is your primary concern, make sure you purchase a fully 5.8 GHz phone.<sup>2</sup> Otherwise, a dual transmission phone will give you better battery life.

As for range, here are some average maximum distances for the different technologies. Keep in mind that these numbers are very subjective and depend on factors such as obstructions, frequency interference, transmission technology, and even weather. The higher figure listed assumes ideal conditions are present.

46-49 MHz - 40 to 250 feet  
900 MHz - 75 to 400 feet  
900 MHz w/spread spectrum - 200 to 1500 feet  
2.4 GHz w/spread spectrum - 300 to 2000 feet  
5.8 GHz w/spread spectrum - 300 to 2000 feet

In addition to their other advantages, the 2.4 GHz and 5.8 GHz frequency bands are above the range that most scanners can intercept, making it much more difficult for eavesdroppers to listen to your conversations

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