

# FAQ

## MAX EX and MAX Wireless

MAX EX  
MAX Wireless

CLEARONE DOCUMENT 800.158.017  
(REVISION 1.2) November, 2008.

### GENERAL MAX QUESTIONS

#### Why do the MAX conferencing phones deliver superior audio quality?

MAX incorporates technologies developed by ClearOne for its high-end, professionally installed conferencing phones. High-definition audio technologies found in MAX include:

- Distributed Echo Cancellation® to eliminate echo.
- Noise cancellation to remove background noise from such sources as computer or projector fans and HVAC systems.
- Full-duplex sound so participants can speak and listen at the same time.
- Automatic level control, to keep participants' audio balanced and consistent.
- First-microphone priority to eliminate hollow "tunnel" sound by activating only the microphone closest to the person speaking.

#### Can I use the MAX with a video codec?

No. MAX Wireless and MAX EX do not have line inputs or outputs.

#### What tools do I need to install MAX phones?

You don't need any tools to install MAX. Plug in the power cord to the base unit and connect the provided telephone line from the base unit to a standard analog telephone jack.

#### What type of phone line do the MAX phones require?

The MAX phone requires an analog telephone line. A POTS line is recommended but an analog line from a PBX may be used if configured properly. Please refer to [Tech Note 104](#) for the electrical characteristics the MAX phone requires from a PBX line.

#### Why doesn't my MAX phone get a dial tone while other analog phones will?

The MAX phone requires a standard POTS line providing 15-24 VDC. If the PBX does not provide enough voltage or current the phone will not recognize the phone line.

You can see all of the electrical characteristics in [Tech Note 104](#).

## **How do I make place a conference call on a MAX phone?**

The MAX phone does not join conference calls on its own; it is an analog phone and only knows how to dial numbers and flash signals. Making conference calls on a MAX phone is completely dependent on an external conference system. This service is usually provided by your internal phone system, or sometimes an outside provider that you dial directly.

The conference button on MAX phones is a configurable speed dial button that can be programmed with the phone number or numeric code that activates your particular conference service. This number cannot contain special characters (# or \*) and can only be dialed while the phone is OFF. It will not dial when a call is already connected. If you need to dial flash codes or special characters to activate your conference service, you will need to manually dial this code on the keypad.

If you need assistance or instructions on using your conference service, please contact your phone service provider and ask how to make conference calls on an analog phone.

Please see the Installation & Operation Manual for details on how to program the Conference Button. It is referred to as a "Speed Dial Button" in the manual.

## **Why does my MAX phone occasionally ring only once or make a chirping sound every few minutes?**

This is caused by the PBX sending out a "polling" signal to check the line. (Actual name of the signal may vary with PBX manufacturer.) It will most likely have a pattern of a single ring every 15, 20 or 30 minutes (perhaps longer). The time frequency will vary with the PBX but will be consistent if monitored long enough. The best solution to this is to have the PBX administrator disable this feature on the line that the MAX phone is connected to.

Alternatively, you can also take a line splitter and connect up an older phone that has a REN (Ringer Equivalent Number) value of 1 or greater to the same line that the MAX is connected to. This will place a greater load on the line and should prevent the MAX from ringing when this polling voltage is applied. (Look for the REN number on the FCC label of your phone.) The MAX phone has an REN of 0.1B. This means that it takes very little current to cause the phone to ring. The ringer will ring with an AC voltage as low as 24 Vrms and virtually no current.

You can see all of the electrical characteristics in [Tech Note 104](#).

## **Why won't my MAX phone ring?**

If your phone line meets the requirements listed in [Tech Note 104](#), then you may have a problem with how the extension is configured. Some PBX systems are configured to have distinct ringing to distinguish if a call is from an internal extension or an outside line. The ring detection on the MAX phone cannot recognize custom ring patterns. The solution is to have the PBX administrator disable all distinctive ring patterns on the extension the MAX is connected to. A simple generic should be used.

## **MAX EX QUESTIONS**

### **How many pods can be connected to my MAX EX and what are my distance limitations?**

The MAX EX will support up to 4 pods connected with no more than 61 feet from the base unit to the final pod.

The MAX Wireless only supports up to 2 pods and must be purchased that way. It cannot be expanded from a single pod to an Attach system. The distance that the MAX Wireless can be from the base unit depends on the environment but is typically 100 feet.

### **How long does the warranty last on my MAX phone?**

Your phone is covered for two years from your original date of purchase.

### **What is the optimal room size for the MAX EX?**

Because of the unique expansion capabilities of MAX EX, it is ideal for a wide variety of applications and room sizes. As a single unit, it is ideal for small conference rooms for up to 8 people. Link additional units (up to four) and it is perfect for medium conference rooms, large boardrooms or training rooms for up to 40 people.

### **What differentiates MAX EX from other expandable conferencing phones?**

MAX EX is unique in its expansion capabilities — you expand it by connecting additional phone units, not just microphones (as is the case with competing conferencing phones). This creates an even distribution of microphones, loudspeakers and controls for better sound quality and user access.

## **MAX Wireless Questions**

### **What wireless communication standard does MAX Wireless use?**

MAX Wireless uses either the Digital Enhanced Cordless Telecommunications (DECT) or Worldwide Digital Cordless Telecommunications (WDCT) standard, depending on the country the phone will be sold into. The DECT standard broadcasts at a 1.880 to 1.9 gigahertz (GHz) frequency using Time Division Multiple Access (TDMA) to allow up to 120 available channels. Audio is transmitted at 32 kbps using the G.726 ADPCM coding ITU standard. The WDCT standard is the North American equivalent of DECT with one exception: WDCT broadcasts on the 2.4 Ghz frequency with 75 channels available.

The MAX Wireless uses digital spread spectrum and pseudo-random channel hopping to jump between the 75 channels in the 2.4 Ghz range to provide security for audio calls. As the MAX Wireless is broadcasting it will detect interference from other devices transmitting on the same frequency and will then attempt to skip that channel to avoid the interference.

### **Will MAX Wireless interfere with my wireless LAN?**

No. Using frequency hopping prevents MAX phones from interfering with wireless local area networks (LANs). Typically, 802.11 wireless LANs use direct sequence transmission, which means they use a constant band of frequencies. If the MAX phone tries to transmit on one of the frequencies being used by the wireless LAN, it will detect the LAN and avoid that channel if possible. If MAX uses the same frequency, audio quality will not be affected and conversations will not be interrupted. It is possible that the LAN may slow down for 100 milliseconds. However, since LANs are packet-based, the interference from MAX will not be noticeable.

### **Is MAX Wireless secure?**

Yes. MAX Wireless is designed with digital spread spectrum technology — one of the most reliable wireless technologies available — to ensure calls are private and secure. Spread spectrum technology has been used for more than 50 years by the military because it has a low probability of signal interception and interference. (See the MAX Wireless Security brief for additional information.)

### **Can more than one MAX Wireless be used in the same area?**

Yes. The MAX pod and base unit will automatically adjust the frequency-switching pattern when interference (another device transmitting on the same frequency) is detected on the channel. This eliminates the possibility of interference when using multiple MAX Wireless units are used in close proximity. Up to 15 MAX phones may be used in the same vicinity with no discernible interference between phones, provided the base units and pods are not placed within six inches of other base units and pods.

### **How many pods can be connected to my MAX Wireless and what are my distance limitations?**

The MAX Wireless supports up to 2 pods and must be purchased that way. It cannot be upgraded from a single pod to a dual-pod system after you have purchased it.

The range of the MAX Wireless pod is up to 150 feet from the base.

### **How do I find the MAX Wireless if it is misplaced?**

The base unit has a paging button, which will cause the pod to beep.

### **Why does my MAX Wireless no longer get a dial tone when I turn it on?**

If your MAX Wireless pod is no longer connecting, look at the LCD screen of the pod and check the Y-shaped antenna icon. During normal operation, this icon should be solid. If the pod has lost its connection to the base station it will blink. The phone pod may not display anything on the LCD when this happens, so a good test is to press the page button on the base to see if the pods respond. If they do not, a re-sync is necessary.

This problem can be fixed by following the steps in (Insert tech doc URL when available).

**What can I do about static on the MAX Wireless speakerphone when I am connected?**

Try disconnecting the battery from your pod (or from both pods if you have two) and powering it off. Reconnect the battery and try to make a phone call. If there is still static or noise, call technical support.

**How long will the battery last?**

The battery will provide 8 hours of talk time or 2 days of standby time before it needs to be recharged.

The phone provides several alerts when the battery's power begins to run low, including a numeric counter showing the amount of talk time left on the battery's current charge, a battery icon that flashes when the battery requires charging, and an audible tone that sounds periodically as the battery life runs down.

If the battery runs low during a call simply plug in the power supply and continue your conference while you recharge the MAX. The battery can be recharged up to 500 - 1000 times, which gives it a life of approximately two years.

**If I unplug the base unit, the battery loses its charge very quickly. Why does this happen?**

If the pod (phone unit) cannot locate the base, it switches to high power mode and resumes its search, which can drain the battery very quickly. To prevent this, keep the base unit plugged in at all times. The pod will go into a low power mode when not in use during a call.

**What if my MAX Wireless is not charged when I need it?**

Plug in the power supply and charge the phone while you conference.