

## HD Voice for Field Reports and Interviews

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Many wireless carriers and VoIP providers now offer improved voice quality using what is commonly referred to as HD Voice, or Wide-Band Speech technology. HD Voice is already available on many third party headsets and mobile phones, offering wireless freedom with a significant improvement in audio quality.

While standard phone calls (G.711, AMR-NB, PSTN, or POTS) are limited to 300 Hz – 3.4 kHz bandwidth, HD Voice (or Wideband Speech) technology supports (G.722, AMR-WB) 50 Hz – 7 kHz bandwidth. The extra 1.5 octaves of low frequency energy provide a richer, more natural sound, while the extra octave of high frequency information dramatically improves clarity and intelligibility. Extra bandwidth is just half the picture, as voice quality takes a big step forward. Voices sound more natural and less raspy or mechanical, while background noise is reduced or eliminated.

There are many variations of HD Voice codecs. Wireless carriers determine which codec best suits their network based on the available transmission bandwidth. In some cases, voice quality may vary depending on network traffic. Typically, the network side of the call uses a speech-based codec to conserve transmission resources. While this is the most efficient way of transmitting wideband speech, speech-based compression algorithms traditionally do not perform as well with ambient sounds, music, multiple voices, or non-speech test signals.

To take advantage of this extended voice bandwidth, both phones on the call must support HD Voice, and both phones must be on the same carrier or network, in coverage areas that support HD Voice. To date, there are no universal HD Voice bridges between wireless carriers, or between VoIP calls and wireless calls. While there may be some exceptions, for the most part VoIP HD Voice calls stays within the VoIP network, while wireless HD Voice calls stay within each wireless carrier's network. For now at least, calls between competing carriers or networks default to standard voice bandwidth. This is expected to improve over time.

While HD Voice brings an increase in transmission bandwidth and quality, the limiting factor is still the microphone and earpiece within the phone. The wider bandwidth is lost on the poor acoustics of the smartphone. A significant increase in quality occurs when using an external professional microphone and headphones. JK Audio makes several products that take advantage of HD Voice by routing audio through the headset jack of the above wireless phones.

JK Audio Products that support HD Voice through the headset interface jack:

<http://www.jkaudio.com/daptor2.htm>

<http://www.jkaudio.com/compact.htm>

<http://www.jkaudio.com/outerloop-3-5.htm>

<http://www.jkaudio.com/remotemix-one.htm>

<http://www.jkaudio.com/remotemix-2.htm>

<http://www.jkaudio.com/remotemix-3-5.htm>

<http://www.jkaudio.com/remotemix-4.htm>

<http://www.jkaudio.com/interchange.htm>

<http://www.jkaudio.com/interchange-ltd.htm>

## Bluetooth HD Voice

Bluetooth HD Voice (mSBC Wideband Speech) uses a waveform codec instead of a speech-based codec. This provides a significantly better sounding point-to-point, full-duplex, low-latency wireless link. A waveform codec allows transmission of ambient sounds, music, test tones, and non-speech waveforms.

Many wireless headset manufacturers quickly adopted the HD Voice standard long before phones and carriers were ready for HD Voice headsets. Unfortunately, not all phones capable of HD Voice network calls will support a Bluetooth HD Voice capable headset. A minimum of Bluetooth Standard 3.0 and Bluetooth Hands Free Profile HFP 1.6 are required on both the phone and headset in order to provide wireless HD Voice through the phone and headset. This detailed information is not easy to find, and still does not guarantee Bluetooth HD Voice capability.

As new smartphones abandon the headset jack in favor of Bluetooth wireless headsets, JK Audio offers a wide selection of audio interfaces that keep you connected.

JK Audio products that support HD Voice through Bluetooth Wireless Technology:

<a href="http://www.jkaudio.com/bluepack.htm">http://www.jkaudio.com/bluepack.htm</a>	(HD Voice feature added July 2013)
<a href="http://www.jkaudio.com/interloop.htm">http://www.jkaudio.com/interloop.htm</a>	(HD Voice feature added July 2013)
<a href="http://www.jkaudio.com/outerloop.htm">http://www.jkaudio.com/outerloop.htm</a>	(all units support HD Voice)
<a href="http://www.jkaudio.com/remotemix-3-5.htm">http://www.jkaudio.com/remotemix-3-5.htm</a>	(HD Voice feature added January 2014)
<a href="http://www.jkaudio.com/remotemix-4.htm">http://www.jkaudio.com/remotemix-4.htm</a>	(HD Voice feature added January 2014)
<a href="http://www.jkaudio.com/bluedriver.htm">http://www.jkaudio.com/bluedriver.htm</a>	(HD Voice feature added April 2014)
<a href="http://www.jkaudio.com/blueset.htm">http://www.jkaudio.com/blueset.htm</a>	(HD Voice feature added April 2014)

Connection of the above JK Audio products together, or to a third party Bluetooth HD Voice headset or phone will result in an HD Voice connection using the Bluetooth mSBC waveform codec for excellent full-duplex audio quality.

## Bluetooth HD Voice for Smartphone Video

Video recording apps on smartphones and tablets use the internal microphone to capture the audio signal. Unfortunately, the internal microphone picks up every sound in the area, resulting in a poor audio recording when there is a lot of ambient noise, or when the subject is at an appreciable distance from the camera. Fortunately, most smartphones and tablets already allow the use of Bluetooth audio input for wireless communication, allowing direct wireless input without the need for an external receiver attached to your phone.

While any of our Bluetooth products could be used to send audio into the smartphone, BlueDriver-F3 was designed for the task. BlueDriver-F3 isolates the audio you want and allows Bluetooth audio recording directly into your smartphone or tablet using your existing professional dynamic microphone. Click here for details:

<http://www.jkaudio.com/audio-for-video.htm>

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