

# Codan Envoy Digital Voice

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### ENVOY™ – DIGITAL VOICE

Envoy™ combines advanced DSP technology and leading edge Vocoder technology to delivery clear voice communications over HF radio frequencies. Users of analogue HF transceivers will know the challenges and technical knowledge required to establish a communication link over HF.

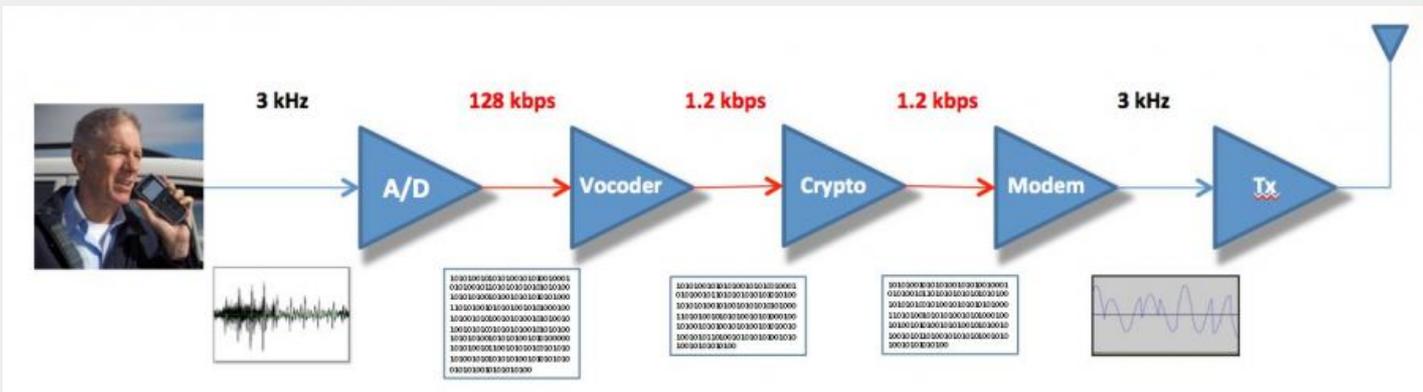
By using advanced design techniques in the Envoy™, we have been able to deliver a radio that is simpler to use and provides clear voice communication in some of the worst radio conditions especially in mission critical environments where you need your operators to focus on the message rather than the technology.

Envoy™ delivers the best possible analogue voice quality using;

- Dynamic range compression for maximum power and range
- Market leading receiver sensitivity ensuring reception of the weakest signals
- Easitalk™ - Patented DSP based noise reduction algorithm which eliminates background noise such as hiss, pops and tones
- Three different DSP options available for different conditions
- High grade DSP based (128-bit equivalent) encryption available

Due to the variability in HF communications, even the most experience operators can still find it challenging. To overcome this variability, Envoy™ comes with Digital Voice as standard. The advanced Vocoders in the Envoy™ use sophisticated modems with error detection and correction to produce clear voice in poor channel conditions.

Digital voice is commonplace in cellular, P25, Tetra and other digital mobile platforms however these use data rates around 5kbps that are too high for the variability and signal bandwidth available on HF frequencies. HF typical only has 3kHz of bandwidth available. The Envoy™ is able to optimally use this bandwidth to deliver speech over data rates as low as 600bps in real time.

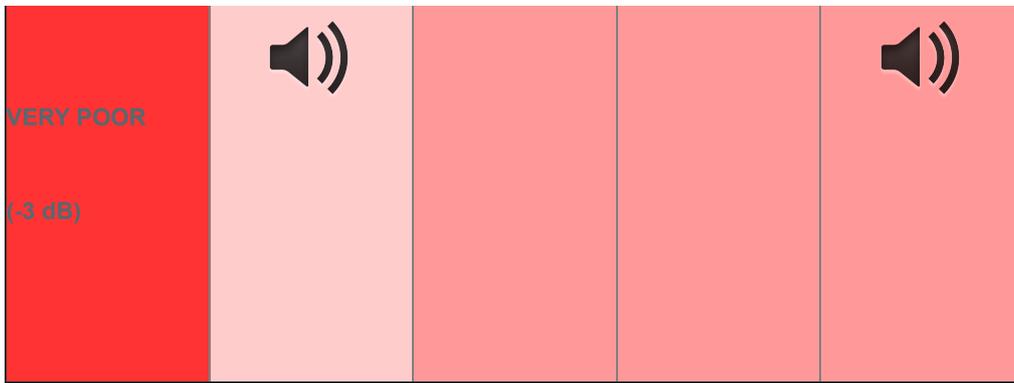


Voice communications in non-real time is possible down to 300bps – this feature will be available soon. The benefit of the software-defined architecture used in the Envoy™ allows us to upgrade your radio in the field when this capability is released.

As the voice is converted to a digital data stream we are able to add military high-grade security by encrypting the data using AES-256 bit standard used by defence and banking internationally.

To hear the difference for your self click on the links below:

CHANNEL CONDITION (SNR)	ANALOGUE VOICE	CODAN  envoy		
		DIGITAL VOICE		
		2400 bps	1200 bps	600 bps
GOOD (+16 dB)				
AVERAGE (+6 dB)				
POOR (0 dB)				



In the audio examples above you can hear that in the Poor channel conditions analogue voice is almost completely unintelligible however using the Envoy™ digital voice mode even in the lowest data rate the message can be understood. Even when the channel conditions are very poor the Envoy™ is able to decode the message providing an acceptable level of understanding for mission critical communication applications.

**Codan - Digital Voice - HF Transceiver - Envoy**