ADAPTIVE DIGITAL
TECHNOLOGIES, INC.

HD AEC Linux VoIP Engine BeagleBone Green Demo

Demonstrating High Definition Acoustic Echo Cancelation (HD AEC) with multi-microphone capability.
LnxVoice is a simple, command like based VoIP Demo software built from our Linux VoIP SDKs.

HD AEC

HD AEC is a software-only, high definition voice quality library which integrates Noise Reduction (NR) and Auto Gain Control (AGC) into the Acoustic Echo Cancellation (AEC) algorithm, with the appropriate hooks to make them seamlessly work together to provide superior speech enhancement.

- The inclusion of Noise Reduction in the HD AEC algorithm results in a far cleaner audio stream.
- HD AEC adapts to gain changes in the acoustic path (including gain/loss changes). When the changes are known, like in the case of controlled gain changes, the HD AEC communicate with the application to tell it the nature of the gain change so it can adjust immediately rather than take time to reconverge.

LnxVoice™

Linux VoIP Engine SDK is a complete VoIP stack solution that handles all voice processing from the system's audio interface to the packet interface, and back. LnxVoice allows developers to easily develop Linux based VoIP applications without having to worry about the VoIP functionality.

The solution is provided as a C-callable static library built for Linux Cortex-A8 architecture.

Three sub-variants: **single microphone** (standard), **multi-microphone**, and **dual-microphone with noise reduction**.

VoIP ENGINE SOFTWARE LnxVoice includes: SIP Phone Application, SIP Client Protocol

- **HD Acoustic Echo Cancellation**
- RTP/Jitter Buffer
- SRTP
- Conferencing (up to 4 users)
- G.711 mu-law and a-law with packet loss concealment

- G.729A 8 kbps speech compression
- G.722 16 kbps speech compression
- Noise Reduction
- Automatic Gain Control
- Tone Generation
- Tone Relay Transmit

The demonstration software runs on **BeagleBone Green**(BBG), & **BeagleBone Green Wireless** (BBGW).
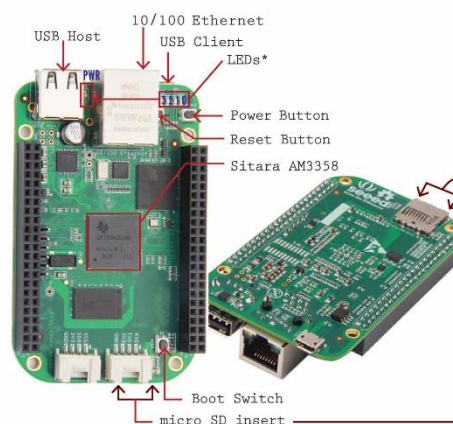
BEAGLEBONE GREEN

SeeedStudio BeagleBone Green **(BBG), & BeagleBone Green Wireless (BBGW)** are ARMv7a based Linux systems.
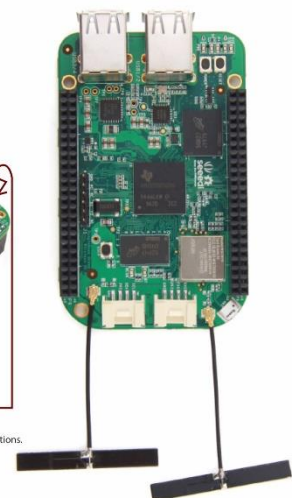Processor: AM335x 1GHz ARM® Cortex-A8

Lnxvoice Demo Software is pre-built executable that can run on the BeagleBone Green Wireless and BeagleBone Green once configured (See Quick Start Guide).

Affordability: BeagleBone Green boards are reasonably priced < $50 | Additional Hardware requirements: Microphone and speaker, and USB audio converter.

BeagleBone Green (BBG) — USB Host, 10/100 Ethernet, USB Client, LEDs*, Power Button, Reset Button, Sitara AM3358, Boot Switch, micro SD insert. BeagleBone Green Wireless (BBGW).

* PWR LED lit steadily. Within 10 seconds, you should see the other LEDs blinking in their default configurations.
USR3 is configured at boot to light during eMMC accesses
USR2 is configured at boot to light during CPU activity
USR1 is configured at boot to light during microSD card accesses
USR0 is configured at boot to blink in a heartbeat pattern

HD AEC is available for evaluation on several DSPs and platforms.