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Using the BLU-103 APPLICATION GUIDE

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This design file for the Soundweb™ London BLU-103 provides the functionality required for a simple VoIP conferencing system. This design utilizes Acoustic Echo Cancellation for Audio and Video Teleconferencing applications.

This system has the following features:
- ~ 7 Microphone inputs with Acoustic Echo Cancellation [AEC]
- ~ Mono Line level input and output for external Video Conferencing [VTC]
- ~ VoIP Telephone Line 1 for a phone interface (Line 2 N/C) [ATC]
- ~ Separate outputs for: Speakers, Record and the Assisted Listening System [ALS]
- ~ Separate signal paths for AEC and dry microphones for voice lift applications

The BLU-103 is a very cost effective Digital Signal Processor for conferencing applications. This file illustrates the correct method for processing the AEC and dry microphone signals and how to correctly route their AEC reference.
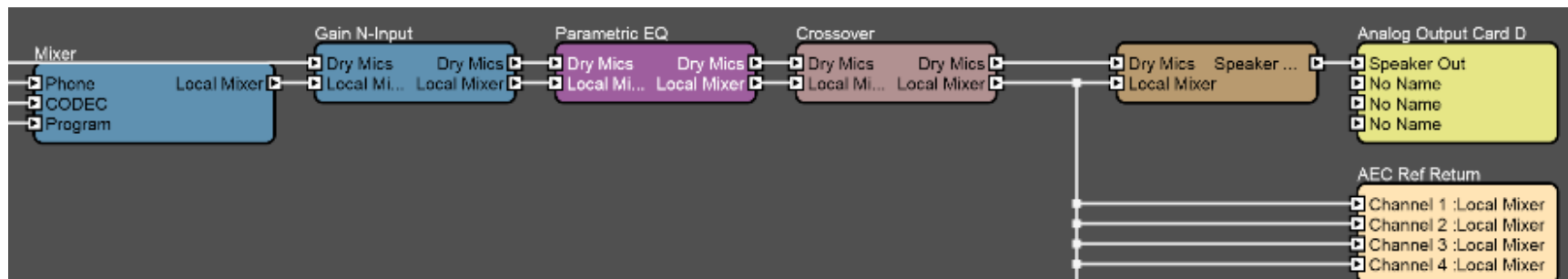
The BSS Audio method of AEC is a frequency based algorithm not a time based algorithm. Because of this, it is important to process both the referenced and un-referenced signal paths with the same settings. The reference should be exactly what is coming out of the loudspeaker minus any dry microphones used for voice lift. To accomplish this we utilize 2 channel processors for the loudspeaker outputs to maintain continuity between the two signal paths.
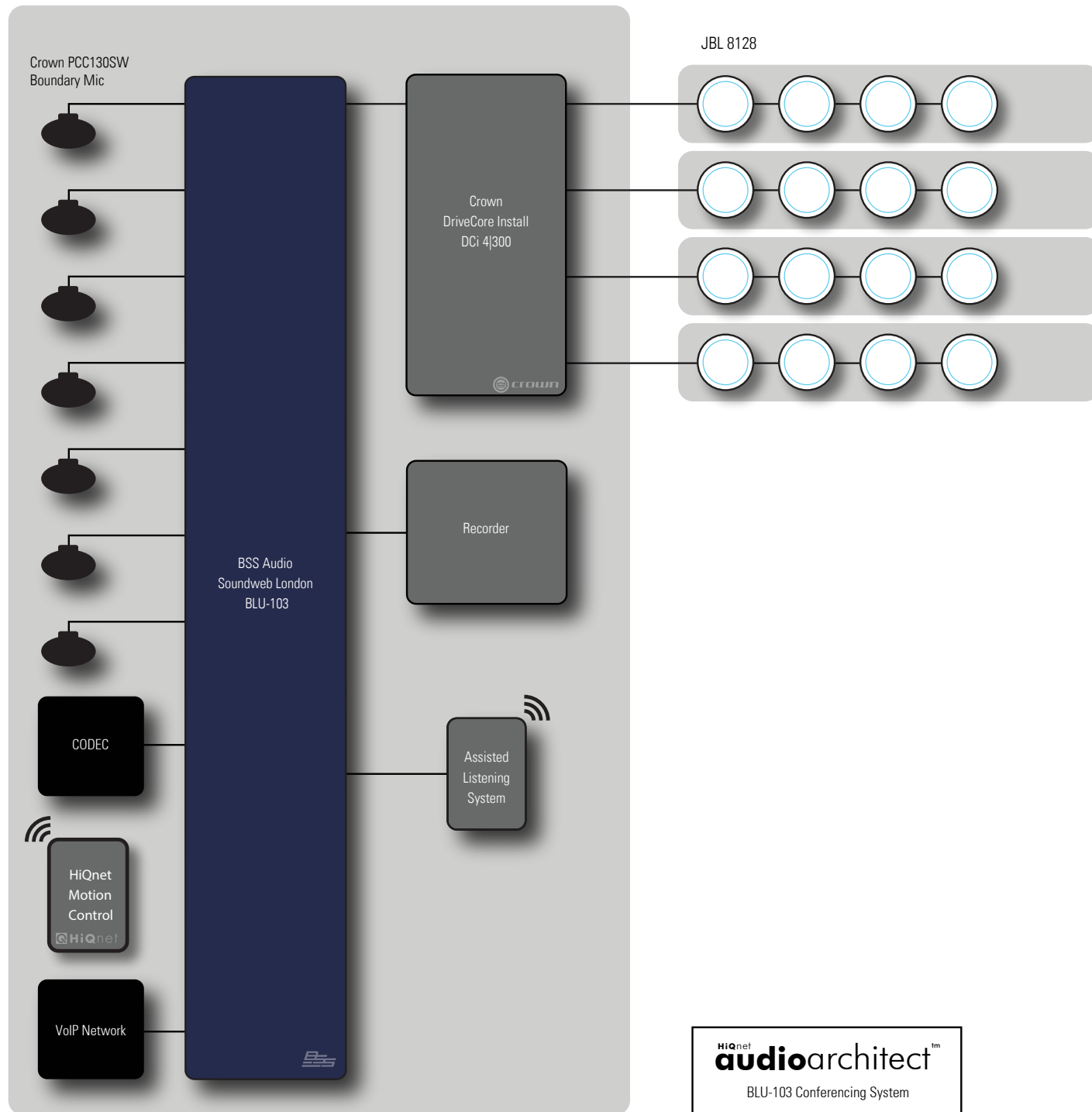
Right before the output we pick off the Local Mixer signal to feed to the AEC reference. The two signal paths are then summed to the loudspeaker output.
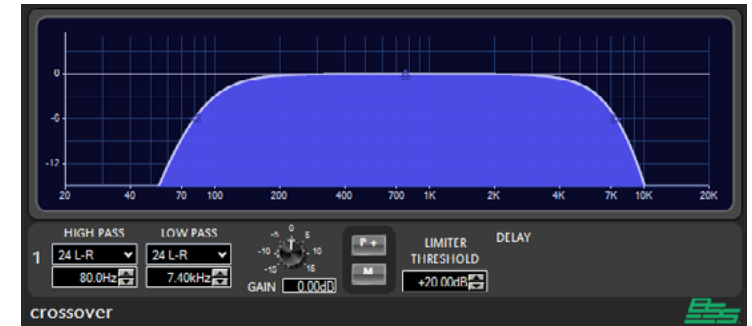
The Crossover processing objects used on both the inputs and outputs provide High Pass filter, Low Pass filter, Gain, Polarity, Limiter and Delay if needed.

A Fire Alarm interface is provided for by linking all the output card channel mutes and attaching one of them to Control Input number 1. If this feature is not needed, simply place a jumper between Control Input 1 and Common.

Crown PCC130SW
Boundary Mic

JBL 8128

Crown
DriveCore Install
DCi 4|300

crown

Recorder

BSS Audio
Soundweb London
BLU-103

CODEC

Assisted
Listening
System

HiQnet
Motion
Control

HiQnet

VoIP Network

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BLU-103 Conferencing System

DSP CONFIGURATION

The outputs of the Mixers have been named to help identify which signals need to be routed to which outputs. For the speaker outputs we have two sperate signal types labeled as 'Local Mixer' and 'Dry Mics'. The 'Local Mixer' output is for the Media, the VTC and the ATC signals. This is the signal path that will be routed to the AEC reference just before the output. This effectively removes these signals from the microphone inputs at the AEC processing block, preventing any echo at the far side.

The 'Dry Mics' output from the mixer should only be used if local voice lift is required. If this feature is not needed, simply Mute the master output of the Dry Mixer. The mixers are already correctly configured to allow the AEC processed signals to feed the VTC, ATC, ALS and record outputs. The VTC and ATC signals are routed to each other allowing the system to bridge the two connections providing the capability for a three way conference. All media and mics are also sent to the mixers for Record and ALS output.
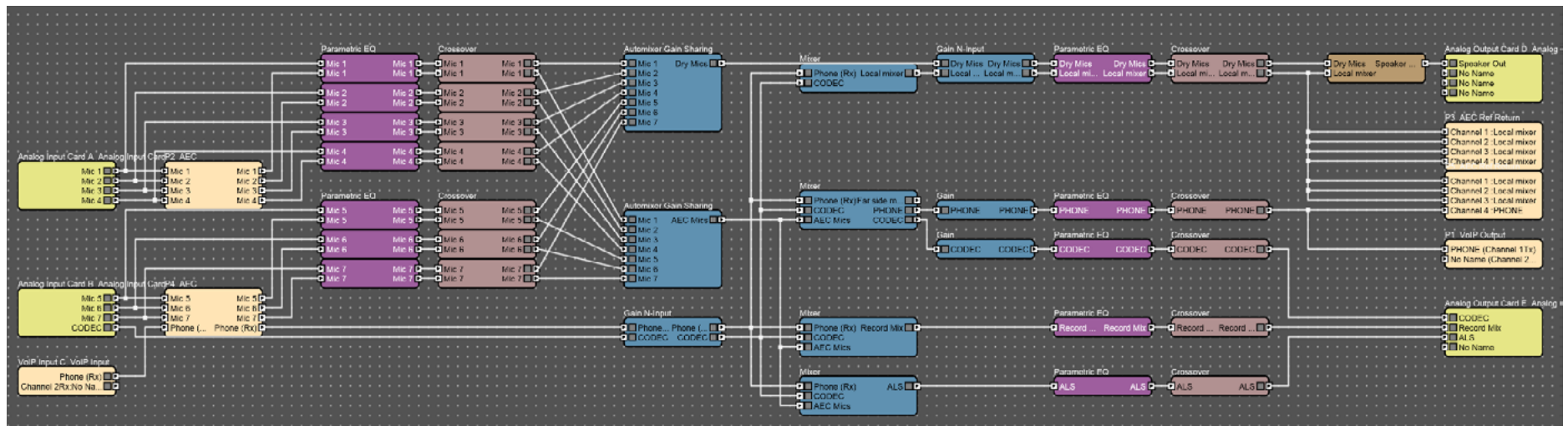
THE IOS PANELS

Using Motion Control 1.1.4(1) or greater we can load a dialer panel to an iOS device. There are 2 iPad panels that can be used or exported to an existing design file. The panel can be used for basic control and feedback of the softphones Line 1 and Line 2.

It is not necessary to rebuild the entire panel from scratch. Using the export/import feature built into Audio Architect, layout panels are easily added to an existing or new design file. The parameters are assigned to the current HiQnet node of the BLU-103 in the example file. After importing to a new file it may be necessary to readdress parameters. To do this simply select similar paramters (ie 0-9, *,#), right-click and select readdress.