XAP 800 Architectural and Engineering Specification

The echo canceller/automatic mic mixer shall incorporate microphone mixing, echo cancellation, matrix mixing, and signal processing in a single rack space unit.

The echo canceller/automatic mic mixer shall have 12 inputs and outputs: four line-level inputs, eight microphone/line selectable inputs, and 12 line-level outputs. Each mic/line input shall have four selectable filters, adjustable automatic gain control, phantom power, speech leveling, and automatic microphone mixing capabilities. Each mic/line input shall also feature acoustic echo cancellation with a maximum 130ms of tail time and noise cancellation with up to 15dB attenuation, adjustable in 1dB increments. Each input shall also be able to reference any output or any of four global reference buses for echo cancellation. The unit shall have four internal and four global automatic microphone mixers, each with fully adjustable parameters. The microphone mixer shall use PA adaptive, adaptive ambient, chairman override, first mic priority, last mic mode, number of open mics, and look-ahead gating.

The echo canceller/automatic mic mixer shall have a 32x32 internal matrix mixer with attenuation at every cross point in .5dB steps. Any input can be routed to any output or multiple outputs. The matrix shall consist of 12 analog inputs/outputs, 12 digital inputs/outputs from the network bus, and eight inputs/outputs from the processing blocks.

Signal processing shall be provided by eight assignable processing blocks, each with 15 programmable filters, delay, and compression. The processing blocks shall include such filters as high pass, low pass, all pass, low shelving, high shelving, notch, parametric EQ, CD horn, Bessel crossover, Butterworth crossover, and Linkwitz-Riley crossover. Filter setup shall be real-time. The unit shall include a signal generator for pink noise, white noise, and tone sweep capabilities, and shall be assignable to any input on any linked unit.

The echo canceller/automatic mic mixer shall have up to 32 presets. Multiple presets can be used simultaneously without interruptions or interference with other presets. The unit shall feature a macro recorder to create up to 255 macros for simple remote control management of the system.

The unit shall have a 12-channel bi-directional audio bus to pass audio, system control, four channels of echo cancellation, and four channels of NOM for four sub-mixers to other units. The maximum distance between linked units shall be 80 feet (24 meters). Up to eight units can be linked for up to 32 line inputs and 64 mic inputs.

System settings shall be saved in the unit, and shall include password protection.

The unit shall be set up and operated with intuitive software that allows complete configuration of the system. Additional control shall be handled via custom setup software, RS-232 protocol, RS-485 control panels, or contact closure with communication speeds up to 57,600 baud.

The unit shall have the ability to meter a group of inputs or an entire signal flow. Meters shall be provided on inputs, processing, and outputs for echo return loss, echo return loss enhancement, and gate parameters.

The unit shall have a frequency response of 20Hz to 20kHz and a signal to noise ratio of 80dB re 0dBu, A Weighted. It shall have a 48kHz sample rate. It shall operate in environments with up to 12dB of room gain.

The unit shall have an internal power supply that automatically adjusts between 100-240VAC of power input. The unit shall comply with FCC, CSA, IC, CE, NOM, ACA, SABS, VCCI, and JATE requirements.

The ClearOne XAP 800 is specified.