

XAP 400 Architectural and Engineering Specification

The echo canceller/automatic microphone mixer shall incorporate automatic microphone mixing, distributed echo cancellation, noise cancellation, matrix mixing, signal processing, a 10W power amp, and a telephone hybrid in a single rack space unit.

The echo canceller/automatic mic mixer shall have eight inputs and nine outputs: four mic/line selectable inputs, four line level inputs, eight line level outputs, and one 10W power amp. 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 130ms of tail time and noise cancellation with up to 15dB attenuation, adjustable in 1dB increments. It shall operate in environments with up to 12dB of room gain. Each input shall also be able to reference any output, any of four global reference buses, or any of four summing virtual references 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 unit shall have front panel control of gain and mute for inputs, outputs, and processing channels.

The echo canceller/automatic mic mixer shall have a 25x26 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 eight analog inputs/outputs, one speaker output, 12 digital inputs/outputs from the network bus, four inputs/outputs from the processing blocks, and one telephone input/output.

Signal processing shall be provided by four assignable processing blocks, each supporting 15 programmable filters, delay, and compression. The processing block filters shall include: 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 unit shall have a 12-channel bi-directional audio bus to pass audio, system control, four channels for echo cancellation referencing, 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 together.

The echo canceller/automatic mic mixer shall have up to 32 presets and shall allow password protection of 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. 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 RS-232 protocol with communication speeds up to 57,600 baud, RS-485 control panels or remote control, or contact closure.

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.

The echo canceller/automatic mic mixer shall have an integrated standard 600. analog telephone hybrid with a nominal level of -9 to -15dB. The unit shall provide two RJ-11 connectors for connection to a telephone line and telephone set. The hybrid shall have telephone line echo cancellation with a tail time of no less than 31ms and noise cancellation with 6–15dB of attenuation. The audio frequency response of the hybrid shall be at least 250Hz to 3300Hz with a signal to noise ratio of >62dB re max level. DTMF dialing capability shall be provided on the hybrid.

The echo canceller/automatic mic mixer shall allow manual enabling/disabling of telephone calls through buttons on the front panel. Additional settings shall be enabled through configuration software.

This software shall allow selection of either burst adapt or auto adapt hybrid null, receive reduction, selectable receive boost of 0, 3, 6, 9, or 12dB, on/off receive automatic level control (ALC), auto answer, auto disconnect, loop drop or call progress, DTMF level, dial tone level, audible hook indication, and audible ringer indication. The unit shall be able to store 10 speed dial numbers.

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 400 is specified.