



Architectural & Engineering Specifications

IQ-USM 810

The digital processor/digital mixer shall be an 8x10 mixer with dual input processing paths. As an IQ component, the digital processor/digital mixer shall be capable of being controlled by an IQ System, and with its distributed intelligence capability, continue to operate when an IQ System is not connected. The digital processor/digital mixer shall be capable of acting as an IQ2-compatible system interface to other IQ components.

The digital processor/digital mixer shall implement 24-bit A/D and D/A converters along with 240MIPS of full 32-bit floating point DSP.

Each audio input shall include Filters and Delay. Each dual input processing path shall include a full complement of signal processing features, including Delay, Input Gate, Auto-Leveler, Filters, Input Compressor and Automixing. Automixing functions shall include NOM Attenuation, Priority Ducking, and Adaptive Gating processing. A Muter/Inverter shall be provided at each input processing path.

A full 8x8 Matrix Mixer shall allow any combination of routing and mixing from any input to any output. The Matrix Mixer outputs shall be routed to the two Main Audio Outputs and eight AUX Audio Outputs.

The Main and AUX Audio Output sections shall further process the signal with individually adjustable signal delay and filters along with an Ambient-Leveler and a high performance Output Limiter for system protection, a fader muter/inverter.

Each filter group shall be capable of being configured for any combination of up to seven different filter types. Different filter types shall include Low-Pass Crossover Filter (1st-4th order), High-Pass Crossover Filter (1st-4th order), Parametric Equalization Filter (2nd order), Low-Pass Equalization Filter (2nd order), High-Pass Equalization Filter (2nd order), Low-Pass Shelving Equalization (1st order) and High-Pass Shelving Equalization (1st order). 32 filters per DSP processor shall be available for a total of 128 filters within the digital processor/digital mixer.

A Multi-Function Control Port shall implement analog and digital I/O for control and monitor by external circuits. Sixteen outputs and sixteen inputs along with power supply outputs and common grounds shall be provided. All sixteen (1-16) outputs shall be digital "logic outs." The upper eight inputs (9-16) shall be capable of monitoring digital and analog external signals.

All digital processor/digital mixer parameters shall be backed up via FLASH memory. System configurations shall be capable of being stored for recall from any of thirty-two system presets from the front panel control, switch

closure, via IQ for Windows software or scheduled from the internal real-time clock/calendar. If communication between the host computer and the digital processor/digital mixer is lost, the unit shall continue to function with the last commands received.

The digital processor/digital mixer shall be capable of operating on any AC voltage ranging from 100VAC to 240VAC at 50/60 Hz, 35VA nominal.

The digital processor/digital mixer shall meet or exceed the following audio specifications: Phantom Voltage: +24VDC at 10 mA. Input Gain Range: +20 dBu to -12 dBu (additional 25 dB for mic setting). Digital Sampling: 24 bit, 48 kHz. Input Impedance: 20 k ohms balanced, 10 k ohms unbalanced. Dynamic Range: Greater than 100 dB (A-weighted, 20 Hz-20 KHz). Frequency Response: ± 0.5 dB, 20 Hz-20 kHz. Common Mode Rejection: 50 dB (typical). Crosstalk: Greater than 80 dB at 10 kHz. Total Harmonic Distortion: Less than 0.05% THD + N (1 kHz, 0 dBu). Output Impedance: 100 ohms balanced, 50 ohms unbalanced. Max Input Level: +32 dBu (line) or +7 dBu (mic). Max Output Level: +20 dBu.

The digital processor/digital mixer shall meet or exceed the following RS232 Data Communication specifications: Baud Rate: Selectable to 19.2 K, 38.4 K, 57.6 K, or 115.2 K BAUD. Data Format: Serial, binary, asynchronous; 1 start bit; 1 stop bit; 8 data bits; no parity.

The digital processor/digital mixer shall meet or exceed the following Crown Bus Data Communication specifications: Data Rate: 38.4 K BAUD. Data Format: Serial, binary, asynchronous; 1 start bit; 1 stop bit; 8 data bits; no parity. Crown Bus Interface Type: Optically isolated 20 mA current loop. Operation: Half-duplex. Transmission Distance: Variable from 200 to 3000 feet (61 to 914 meters), depending upon wire capacitance. Typically 1000 feet (305 meters) using shielded twisted-pair wire, #26 AWG or larger. Transmission distance shall be capable of being extended with a Crown IQ Repeater unit.

The digital processor/digital mixer shall meet or exceed the following Control Port specifications: Power Supply: +5VDC and +10VDC outputs shall be provided. The total output current shall be limited to 1A. Control Port Outputs, Logic Low: less than 0.1V. Logic High: 10V (via internal pull-up). Output Current shall be limited to 10ma max per pin. Control Port Inputs, Input Impedance: greater than 50kohm. Logic Low: less than 0.5V. Logic High: greater than 5V Analog Range: 0 to 10V (for inputs 9-16 only). Max Input Voltage: 25V.

The digital processor/digital mixer shall be designated the Crown IQ-USM 810.



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