

CTs 8200 USP/CN**Architectural & Engineering Specifications****CTs 8200 USP/CN (120 V, 60 Hz models)**

The power amplifier shall be a solid-state eight-channel model employing Multi-Mode® (AB+B) output circuitry.

The amplifier shall contain a 3rd generation DSP-based PIP™ (Program-mable Input Processor) module, which shall connect the amplifier to a 100 Mbps Ethernet network, allowing it to be remotely controlled and monitored via System Architect™ software. In addition, the input module shall allow the transport of real-time digital audio via CobraNet™ over the same Ethernet network.

The input module's processors shall provide digital signal processing. Audio routing, faders, meters, polarity & mute, input compressors, filters, delays, multimode output limiters, error reporting, and load monitoring shall be available. A built in noise generator and sine-wave generator provide noise shall provide masking and test capabilities. The enhanced AUX port capability shall allow the user to interface with the amplifier to provide external manual control and monitoring.

This amplifier shall require Harman Pro System Architect software, available from www.crownaudio/forums.

Amplifier Specifications

The amplifier shall contain protection from shorted, open and mismatched loads, general overheating, DC, high-frequency overloads, under/over voltage, and internal faults.

The amplifier shall contain FIT (Fault Isolation Topology), which isolates channel-specific faults and prevents them from affecting remaining channels.

If an amplifier channel starts to overheat, the Thermal Level Control (TLC) circuit shall engage that channel's input compressor in an amount proportional to the amount of overheating, in order to generate less heat. If the channel becomes too hot for safe operation, the channel shall shut off, and the Thermal Indicator for that channel shall flash brightly to alert the user that a state of thermal stress or overload has caused the channel to shut down.

The front-panel control shall be a power switch.

Rear-mounted controls shall include Channel Level Controls and a Mode Switch. The Mode Switch (used on each consecutive pair of channels) is a four-position switch which selects among Dual 8/4 ohms, Dual 70V, Bridge-Mono 16/8 ohms, and Bridge-Mono 100V.

The recommended load impedance in Dual mode shall be 4/8 and 25 ohms (70V). The load impedance in Bridge-Mono mode shall be 8/16 ohms and 50 ohms (100V). The amplifier shall be safe when driving any kind of load, including highly reactive ones.

Rear-mounted output connectors shall be one four-pole terminal strip for every two channels with a touch-proof cover. Rear-mounted input connectors shall be removable Phoenix-style barrier connectors for balanced input.

Front panel indicators shall include a yellow Bridge-Mode Indicator (one per channel pair) that illuminates when the channel pair's Mode Switch is set to the "Bridge" position (and flashes if the Mode Switch is changed while the amplifier is powered up, indicating that the amplifier must be powered off and on to reset the Mode), a green Ready Indicator (one per channel) that illuminates when the channel is initialized and ready to produce audio output, a green Signal Indicator (one per channel) that illuminates to indicate the presence of input signals above -40 dBu, a red Clip Indicator that illuminates when the THD of the channel's output signal rises to a level typically considered as the onset of audible clipping (and illuminates during Thermal Level Control or input overload), a red Thermal

Indicator (one per channel) that flashes when a state of thermal stress or overload has caused the channel to shut down (and flashes in all channels if the power supply goes into thermal overload), a red Fault Indicator (one per channel) that flashes when a fault condition has occurred in the channel, a yellow Data Indicator that indicates IQ Loop data activity (if the amplifier is equipped with an IQ-MC module and is connected to an IQ Loop), and a blue Power Indicator that illuminates when the amplifier has been turned on and AC power is available (and illuminates when the amplifier shuts off due to an under-/over-voltage condition on the AC mains).

The power amplifier shall meet or exceed the following performance criteria. Input sensitivity for rated output: 1.4 V. Rated output with eight channels driven in Dual mode with 0.1% THD (20 Hz to 20 kHz): 175 watts per channel into 4 ohms; 155 watts per channel into 8 ohms, and 185 watts per channel (70V). Rated output in Bridge-Mono mode with four channel pairs driven at 0.1% THD (20 Hz to 20 kHz): 350 watts per channel pair into 8 ohms; 310 watts per channel pair into 16 ohms, and 185 watts per channel pair (100V). Signal to Noise Ratio below rated power (20 Hz to 20 kHz): 100 dB unweighted. Phase Response: ±35 degrees from 10 Hz to 20 kHz at 1 watt. Frequency Response: 20 Hz to 20 kHz, ±0.5 dB at 1 watt into 8 ohms per channel in Dual mode. Damping Factor: greater than 180 from 10 to 400 Hz. Crosstalk (below rated power, 20 Hz to 1 kHz): greater than 80 dB. Intermodulation Distortion (60 Hz and 7 kHz at 4:1, from 163 milliwatts to full bandwidth power): less than 0.05% typical. Total Harmonic Distortion at 1 watt from 20 Hz to 20 kHz: less than 0.05%. Common Mode Rejection (20 Hz to 1 kHz): greater than 50 dB. DC Output Offset (shorted input): less than 5 mV. Maximum Input Level (before input compression): +22 dBu rms. Power Draw at Idle (120 VAC mains, all channels in 4/8 ohm mode): 58 watts. Power Draw at Idle (120 VAC mains, all channels in 70V mode): 77 watts.

The amplifier chassis shall be constructed of steel with a durable black finish and shall be designed for continuously variable-speed forced-air ventilation from the front panel to the back panel.

The dimensions of the amplifier shall allow for 19 inch (48.3 cm) EIA standard (RS-310-B) rack mounting. The amplifier shall be 5.25 inches (13.3 cm) tall, and 16.25 inches (41.3 cm) deep behind the rack-mounting surface.

The amplifier shall weigh 36 pounds, 6 ounces (16.5 kg).

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Input Module Specifications

The Input Module shall meet the following specifications:

AUX Connector: Configurable for AUX input, AUX output and Listen Bus. Listen Bus is also supported through CobraNet.

Network Connector: The dual RJ45 CobraNet connectors allow a Primary & Secondary connection to the 100Mb Ethernet network. Should the Primary connection lose link activity with the network, the input module will automatically switch to the Secondary connection to ensure uninterrupted audio and control. The indicators on the RJ45 connectors display network information concerning the Ethernet and CobraNet connections.

Preset Indicator: Signals the number of the current preset, if active, by flashing a series of flashes equal to the current preset number. **IQ Data Indicator:** Flashes when the module receives a valid command that is addressed to the CTs 4200 USP/CN and CTs 8200USP/CN. **Reset/Preset Switch:** Used to change presets, restore settings to factory default or restore all the presets to the factory defaults. During operations of the switch, the Data indicator flashes as an aid to the user. Accessible with a straightened paper clip through the rear panel, selects the next user preset if pressed for less than 2 seconds, resets the module to preset "0" if pressed for more than 2 seconds. **Memory Backup:** Non-volatile FLASH memories for backup of run-time parameters, presets, and program storage. **Communications:** 100Mb Fast Ethernet conforming to IEEE 802.3.

Overall Audio Performance: DSP Processing: Two processors, 32 bit, Floating Point, 724 μ s latency. D/A and A/D Conversion: 24 bit. Latency: DSP processing: 1 ms or 1000 μ s, A/D conversion: 250 μ s, D/A conversion: 250 μ s, Amplifier: 100 μ s, Total: 1.6 ms or 1000 μ s. Range: 103 dB typical (A-weighted, 20Hz–20kHz, audio sourced from muted CobraNet channel) Distortion: < 0.1% THD+N, 20Hz–20kHz. Frequency Response: \pm 0.5 dB, 20Hz–20kHz. Input/Output Monitor Accuracy: Typically \pm 1dB. Maximum Input Level: + 20 dBu.

The amplifier shall be designated the Crown CTs 8200 USP/CN.



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