



C 20:8X

Overview: Channel Modes and Network

The power amplifier shall provide eight discrete channels of amplification. Rear-panel switches shall enable bridging of adjacent channels to allow reconfiguration as a 4-, 5-, 6- or 7-channel amplifier. Each channel shall be capable of independently driving either low-impedance or high-impedance (70 V / 100 V) loads. The output circuit topology shall be Class D. The amplifier shall be equipped with sensing and communication circuits to allow comprehensive remote control and monitoring functions via a separate bridge and network controller. The proprietary control and monitoring network shall employ TCP/IP protocols, use Cat-5 cable for interconnection, and allow remote control from an external PC using proprietary software.

Power Output and Performance

Maximum total output of all eight channels shall be 2000 watts. In discrete eight-channel mode, each amplifier channel shall deliver maximum continuous output power as follows: 250 watts into 16 ohms, 250 watts into 8 ohms; 250 watts into 4 ohms; 125 watts into 2 ohms; or 250 watts into a high impedance (70 Vrms / 100 V peak) load. Maximum output voltage per channel shall be 71 Vrms; maximum output current per channel shall be 8 Arms. In bridged mode, each bridged channel shall deliver maximum continuous output power as follows: 500 watts into 16 ohms; 500 watts into 8 ohms; 250 watts into 4 ohms; or 500 watts into a high impedance (140 Vrms / 200 V peak) load.

Default amplifier gain shall be 32 dB, with rear-panel adjustment from 29 - 38 dB in 3 dB increments, selectable for each channel. For bridged channels, the amplifier shall automatically compensate -6 dB gain internally to maintain consistent output to all channels at selected gain.

The amplifier shall exhibit the following performance parameters with gain set at 32 dB and VPL (Voltage Peak Limiter) at 100 V: Frequency response shall be 2.3 Hz to 56 kHz (+0/-3 dB at 1 watt into an 8 ohm load); channel separation shall be greater than 70 dB; and signal-to-noise ratio shall be greater than 112 dBA. THD at 1 watt (20 Hz - 20 kHz) shall be less than 0.1%; THD at 1 kHz shall be no more than 0.05% at 1 dB below clipping.

A Voltage Peak Limiter shall limit peak output as determined by rear-panel switches. In discrete eight-channel mode, peak voltage shall be selectable in four steps across a range of 100 V to 32 V. In bridged mode, peak voltage shall be selectable in four steps from 200 V to 64 V. The voltage limiter mode shall be selectable for either hard or soft limiting characteristics.

Connectors, Controls, and Indicators

The following connectors and controls shall be provided on the REAR-PANEL of the amplifier. The input connectors shall be electronically balanced, 3-pin Phoenix connectors. The output connectors shall be 2-pole barrier strip screw connectors. DIP-switches shall determine the following: amplifier gain (29 dB to 38 dB in 3 dB increments); fan masked; and bridged mode selection for channel pairs. Additional DIP-switches shall determine Voltage Peak Limiter values (selectable per channel), Hard or Soft limiting characteristic, and insertion of a 35 Hz high pass filter. Two RJ45 connectors shall be provided for input and output of the control and monitoring network signals.

GPIO (General Purpose Input/Output) functions shall be provided on two 2-pole Phoenix connectors and two DIP-switches. GPIO functions shall include power on/off (toggled or same-state) and defeat of on/off commands from the network.

The following indicators and controls shall be provided on the FRONT-PANEL of the amplifier. Eight level control potentiometers, one for each channel, shall be provided beneath a front-panel security cover; potentiometers shall be detented and provide attenuation from 0 dB to infinity in 21 steps. Two separate switches shall be provided for power on/off and remote power on/off enabling. Front-panel LED indicators shall display the status of power on/off, NomadLink® network connection, and Power Average Limiter (PAL™). Additional LED indicators shall be provided for each channel: signal present and high-impedance warning (SIG HI-IMP), Voltage Peak Limiter (VPL), Current Peak Limiter (CPL), Very High Frequency (VHF), high temperature warning and fault (TEMP), and MUTE.

Power Supply, Protection, and Cooling

The power supply shall be a universal type (AC line input between 100 and 240 VAC at 50 or 60 Hz) with Power Factor Correction and a PAL™ (Power Average Limiter) circuit to prevent excessive current draw. A soft start circuit shall limit current inrush at power-up to 5 A. The amplifier shall be cooled by two temperature-controlled, variable-speed fans, with air flow from front-to-back. Adaptive fan on/off function shall be dependent on presence of an output signal.

Physical

The amplifier shall be 483 mm (19 in.) wide, 88 mm (3.5 in / 2 U) high, and 343 mm (13.5 in.) deep. The weight shall be 8.5 kg (18.75 lbs). The chassis shall be black painted steel with a grey painted steel front-panel.

The amplifier shall be approved for use as specified by CE, ANSI/UL, ETL and the FCC. The amplifier shall be the Lab.gruppen C 20:8X.