Make: Dynacord

Model: IPX5:4 DSP power amplifier, 4 x 1250 W

The device shall have both loudspeaker signal processor and power amplification for each discrete output channel of the device. The amplifier stage shall be a fixed frequency crystal stabilized class D switching stage, able to power both Hi-Z and Lo-Z loads on discrete channels simultaneously with an input to output latency of 0.53 ms at 96 kHz. The device shall also have digital controlled Power Factor Correction (PFC) with dual interleaved boost stages that shall ensure the best utilization of the mains service and the best possible efficiency under all power conditions; that also lowers the duty cycle on the device. Audio networking for Dante and networked control via OCA/AES70 shall be integrated.

The front panel shall have a OLED screen with 3 buttons for user control. Status LEDs for Power Standby, fault and the OMNEO/Dante network connectivity shall be included on the front panel.

All input and output connectors shall be on the rear of the device and facilities for both analogue and OMNEO/Dante shall be provided. The analogue connectors shall be two 6-pin Euroblock and output connectors shall be one 8-pin Euroblock connectors. Facilities shall be provided to route any of up to eight OMENO/Dante channels to the device via the two Ethercon redundant network ports. A default setting for redundant OMNEO networking with Rapid Spanning Tree Protocol (RSTP) and fallback to analogue shall be user programmable. All outputs shall be able to be configured independently by the user for either low Z and 70/100/140/200 V operation. 3 GPIO control ports shall be provided with a supervised reference voltage of +10V, and a galvanic isolation relay for ready/fault notification.

The signal processor shall be a 32/40bit floating point DSP. The processing shall be per channel and broken into 3 distinct parts User, Array and Speaker processing. The User processing shall contain 12 filters per channel, selectable as PEQ, Lo-Shelf, Hi-Shelf, Lo-ShlevQ, Hi-ShlevQ, Hi-Pass, Lo-Pass, All-pass and Notch, 2 of these filters will be selectable as asymmetric filters; delay of 0-2000ms shall also be available. The array processing shall contain five filters per channel, selectable as PEQ, Lo-Shelf, Hi-Shelf, Hi-Pass, Hi-ShelvQ, Lo-ShelvQ, Lo-Pass and All-Pass with a delay of 0 to 500ms per channel. The Speaker processing shall have 10 filters per channel, selectable as PEQ, Lo-Shelf, Hi-Shelf, Hi-Pass, Lo-Pass and All-Pass, the Crossover with Hi-Pass and Lo-Pass per channel, 6/12/18/24/30/36/42/48 dB Bessel/Butterworth, 12/24/48 dB Linkwitz-Riley; Alignment Delay, 0 to 20ms per channel, FIR filters up to 1025 taps, Linear Phase Filter, Linear Phase Brick-wall X-Over and speaker limiting facilities shall also be provided with Peak Anticipation Limiter and RMS/TEMP Limiter per channel. Other functions of the DSP shall include; source selection with level mixing, Level control, Mute, Polarity, Sine and Noise Generator, Pilot Tone Generator and Detection, Level Meters, Impedance Measurement and Load Monitoring.

The power density shall be 5 kW output per device, divided into 4 discrete channels with an all channels driven power output of 1.250 W into 4 Ohms per channel with a cross talk not exceeding -80 dB. The output voltage must be 150 V peak per channel and a maximum current 41 A. The amplifier can be operated also in parallel mode, bridge mode or parallel bridge mode to achieve output ratings of up to 5.000 W at 4 ohms. The 70/100 V output power shall be 1.250 W per channel and 140/200 V output power of 2.500 W per two channels in bridge mode. All outputs can be configured to run

70/100/140/200 V or low impedance with complete stability in 2 Ohm conditions. The device shall be a 96 kHz device with the ability to switch to 48 kHz sample rates, have a signal to noise of 112dB(A) for analogue and 115dB(A) for digital inputs, a THD <0.05%, and a output noise of -73dBu.

A low power consumption mode that reduces idle power consumption by up to 50% and allows the amplifier to have complete DSP and network functionality with the ability to play low level modulation (BGM or pilot tone) in this mode of operation. This mode shall allow for immediate and instant access to full power output without any delay or loss of the first syllable or have any big inrush current into the amplifier. After a mains power outage the amplifier's DSP shall stay operable for a minimum of 15 seconds, to allow immediate audio performance if backup power is available. The device shall have a rated power consumption of 700 W.

The amplifier shall be protected from shutdown in very low impedance load conditions by a cycle by cycle current limiter which ensures stability in 2 ohm conditions. All relevant power components and semiconductors must be supervised for thermally safe operation using the SOAR algorithm. Mains Circuit Breaker Protection (MCBP) will be provided to ensure that the amplifier is always operated in a safe operating point of the circuit breaker, thus avoiding overloading during normal operation. The mains voltage shall be permanently supervised on the primary side of the PSU to ensure safe operation in overvoltage situation of 264 VAC and temporarily handle up to 400 VAC without shutdown or damage.

The amplifier shall be in a 19", 2 U housing , with a weight of 14.3kg ( 31.5 lb)

Suggested make and model: Dynacord IPX5:4