Y-TEQ – SATURN

Y-TEQ – Saturn 8 Datasheet

Introducing Saturn 8 our state-of-the-art audio processing device with 8 analog inputs and 8 analog outputs, Saturn 8 offers support for Line level and Mic level for easy selection. Additionally, our device offers Dante network audio 4x4 to elevate your audio processing experience and making it easy to integrate into any modern digital audio system. The DSP also includes 48V phantom power for each mic level input and 9 level sensitivity for precise control over your sound. The processor offers advanced features such as Automatic Feedback Control (AFC) and Acoustic Echo Cancellation (AEC), which ensures clear and crisp audio for video conferencing and local meetings. Additionally, the built-in Acoustic Noise Control (ANC) provides optimal audio processing needs, resulting in an enjoyable and entertaining experience for the multi-function hall. With 31 PEQ inputs and 10 PEQ outputs, our processor offers High Pass Filter (HPF), Low Pass Filter (LPF), Butterworth, Bessel, Linkwitz-Riley, LSLV, HSLV, and ALL-PASS filters, which can be easily customized to meet your specific sound requirements. Additionally, Saturn 8 supports camera tracking control and most camera control protocols, allowing for seamless integration with your video system. With control connections through USB or TCP/IP, along with configuration through RS232/RS485 and GPIO external control connection, Saturn 8 offers the convenience of connecting and controlling your audio processing device in a variety of ways. Saturn 8 also offers a nice GUI Windows software and Android app for network control, and the option of the Mercury touch control panel for enhanced ease of use.

ENGINEERING SPECIFICATION

The digital signal processor (DSP) is required to have fixed-architecture configuration and be enclosed in a 19-inch, 1U chassis. It is expected to provide eight (8) analog audio inputs, a USB/Ethernet interface, and GPIO connectivity. The Network Interface should enable daisy chaining for up to 5 units, and it should offer native Dante audio networking at 4x4 channels, as well as comply with AES67. The DSP should have three individual processors with a 24-bit architecture and include algorithms for Automatic Feedback Control, Acoustic Echo Cancellation and Acoustic Noise Control. Additionally, it is necessary for the DSP to support proprietary control products like Mercury that are powered by Power-over-Ethernet to IEEE 802.3af, class 0 standard and the external control engine must be available to offer third-party command execution through the Lua scripting language. The DSP is required to feature advanced signal processing algorithms, including but not limited to various forms of mixers, equalizers, filters, crossovers, dynamics/gain controls, and delays. It must be linkable to other units of its kind. The program memory of the DSP must be non-volatile to provide program security in case of a power failure. It should conform to CE standards. The DSP shall be the Y-TEQ Saturn 8

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TECHNICAL SPECIFICATIONS

DSP

Processors	450MHz Sharc + 2x Sigma 300Mhz
System Delay	< 1ms
AD/DA	24-bit 48kHz
Cooling System	Dual Fan System

Audio Inputs and Outputs

Inputs	8x Mic/line level balanced analog or 4x Dante (selectable for Ch 1-4)
Input Impedance	5.7KΩ
Max. Input Level	13dBu / Line, -7dBu / Mic
Phantom Power	+48VDC, 6.5mA for each Channel
Outputs	8x line level balanced analog, 4x Dante (parallel to 1-4)
I/O Interface	3.81mm screw terminals, 12-pin blocks
Output Impedance	150Ω

Audio Performance

Frequency Response	20Hz~20kHz (±0.5dB) @ Line ; 20Hz~20kHz (±1.5dB) @ Mic (+20dB)
THD+N (A-weighted)	-90dB (@12dBu, 1kHz) @ Line ; -86dB (@-7dBu, 1kHz) @ Mic (+20dB)
SNR (A-weighted)	105dB (@12dBu, 1kHz) @ Line ; -95dB (@-7dBu, 1kHz) @ Mic (+20dB)

Connections and Display

TCP/IP interface	1x RJ-45 Control, 2x Dante
USB	Type-B, Class Compliant
GPIO	8x 3.81mm screw terminals (function free configurable)
Serial Ports	1x RS232 / 1x RS485 (3.81mm screw terminals)
Indicator lights	Power, Link, +48V, Input and Output Signal

Electrical and Physical

Internal PSU	AC100 ~240 50/60Hz
Unit dimensions	483*265*44mm, 1U
Parcel dimension	542*453*77mm
Net weight	3.8kg
Packaged weight	4.25kg
Operating Temperature	-20°C ~80°C

General

Compliance	CE EMC, CE EN62368