LION X Series

Digital Signal Processor

Product Introduction

The Digital Signal Processor equipped with a high-performance 32-bit floating-point DSP processor and 24-bit A/D ~ D/A converter, 48kHz sampling rate, high-quality 17-stage preamplifier circuit, DSP processing bus structure built-in Acoustic Feedback Canceler, Acoustic Echo Canceler, Adaptive Noise Suppressor, Automatic Mixer and other audio core algorithms, to restore high-quality sound, with a comprehensive matrix mixing function It supports multiple scene presets, scene saving and other functions, and user-friendly control software interface. Mainly used in a variety of large places, can meet the theatre, concert halls, remote video conferencing, stadiums, churches, conference center, theme parks, public sound reinforcement systems and other aspects of the application needs.

Product Features

- Highly integrated, integrating a variety of traditional Analog audio processing equipment in a Digital Signal Processor;
- High-performance 32-bit floating-point DSP processor, all-digital processing, fast response to AGC (Automatic Gain Control), AM (Automatic Mixer), AFC (Acoustic Feedback Canceler), AEC (Acoustic Echo Canceler), ANS (Adaptive Noise Suppressor) and other audio processing;
- 24-bit high-performance A/D, D/A converter, 48kHz sampling rate, high-quality Analog → Digital, Digital → Analog conversion;
- 8 Analog input channels and 8 Analog output channels, very small distortion and ultra-low noise floor;

- Integrated design of audio processing and amplifier output;
- Humanization, graphical, intuitive and easy-to-operate control software interface;
- Comprehensive matrix mixing functions;
- Scene storage is different from the Analog equipment is one of the most practical and significant features, can store 100 complete scenes, all the scenes can be exported to an external storage device for storage backup, so that the later call at any time.

Functions

- Comprehensive matrix mixing function, 48kHz sampling rate, 24-bit high performance A/D, D/A converter and 32-bit floating point DSP processor;
- DSP audio processing, built-in automatic mixing console, including mixing and automatic mixing functions, but also has a mixing component control function; at the same time with AFC, AEC, ANS module; AFC: Support notch feedback cancellation algorithm, manual and automatic notch feedback canceler, with manual, dynamic, fixed three modes, can automatically capture the feedback point or manually set the feedback point, the maximum support for the capture of 16 feedback points, the maximum depth of inhibition up to 24dB;
- Inputs per channel: Preamplifier 51dB, Invert, Signal Generator, Expander, Equalizer (5/8/12-band Parametric Equalizer, 10/15/31-band Graphic Equalizer), Compressor, Automatic Gain Control (AGC), AM (Gain Sharing Automatic Mixer or Gating Automatic Mixer), Ducker, Acoustic Feedback Canceler (AFC), Acoustic Echo Canceler (AEC), Adaptive Noise Suppressor (ANS), Parametric Equalizer filter type selectable (Low Shelf, High Shelf, Low Pass Filter, High Pass Filter);
- Outputs per channel: Delay, Crossover, Equalizer (5/8/12-band Parametric Equalizer, 10/15/31-band Graphic Equalizer), Limiter, Invert, Parametric Equalizer filter type selectable (Low Shelf, High Shelf, Low Pass Filter, High Pass Filter);
- Integrated design of audio processor and amplifier output;
- Test signal generator, Sine wave, Pink Noise, White Noise, frequency and level magnitude selectable;
- Input phase button, mute button, phantom power button;
- Output mute button, phase button per channel;
- One-click display of all function modules;
- Storing user manual and software with the device;

- ✧ Central control code generated in the control software; power failure automatic protection memory function; one-click reset function;
- ✧ Channel copy, paste, group control function;
- ✧ Supports setting the maximum and minimum volume range for each channel;
- ✧ The same host allows 10 users to manage;
- ✧ Device name can be modified;
- ✧ Editable preset mode, new, delete, modify, one-click reset, preset mode can be stored to computer and one-click reset;
- ✧ With camera tracking function, can independently adjust the preset position of a camera, compatible with VISCA, PELCO-D, PELCO-P three control protocols, support for custom commands;
- ✧ Convenient and fast web control: Built-in web controller for fast operation on Windows, macOS, Linux, Android, iOS and other OS platforms;
- ✧ Ethernet multi-purpose data transmission and control port, can support real-time management of single and multiple devices;
- ✧ Intuitive image, simple and easy to understand the graphical software control interface, for customers to bring fast, real-time operating experience;
- ✧ The device does not need a CD, comes with installation software, a device for a software version, to solve the troubles caused by the loss of the installation CD and the confusion of multiple software versions;
- ✧ Extendable USB interface, support U disk recording and playback, or USB Audio Class, please refer to the actual device;
- ✧ Configuration of bi-directional RS232 interface, standard Ethernet control interface;
- ✧ Support 100 groups of scene presets, scene new, save, delete and other functions;
- ✧ Intuitive, graphical software control interface, works on Windows XP, 7, 8, 10, 11, etc.;
- ✧ Support mobile iOS, iPadOS, Android control software.

Specification

Category	Parameter Item	Parameter Description

Peripherals	Input Interfaces	4/8 Analog
	Output Interfaces	4/8 Analog
	Digital Amplifier Channels	2×150W
	Control Interfaces	1 RJ45 interface, 1 RS232 interface
Audio processing	Processor	TI 456MHz FLOPS dual-core 32-bit DSP processor; 24-bit A/D and D/A converter, 48kHz sampling rate
	Input Channel	Functional component: Preamplifier 51dB, Signal Generator, Expander, Equalizer (5/8/12-band Parametric Equalizer, 10/15/31-band Graphic Equalizer), Compressor, Automatic Gain Control (AGC), AM (Gain Sharing Automatic Mixer or Gating Automatic Mixer), Ducker, Acoustic Feedback Canceler (AFC), Acoustic Echo Canceler (AEC), Adaptive Noise Suppressor (ANS), Parametric Equalizer filter type selectable (Low Shelf, High Shelf, Low Pass Filter, High Pass Filter). Physical interface: Balanced Phoenix terminals.
	Output Channel	Functional component: Delay, Crossover, Equalizer (5/8/12-band Parametric Equalizer, 10/15/31-band Graphic Equalizer), Limiter, Parametric Equalizer filter type selectable (Low Shelf, High Shelf, Low Pass Filter, High Pass Filter). Physical interface: Balanced Phoenix terminals.
	Phantom Power	DC 48V
	Input Impedance	Balanced: 20KΩ
	Output Impedance	Balanced: 100Ω
	Common Mode Rejection Ratio	>60dB@50Hz

	Input Dynamic Range	108dB
	Frequency Response	20Hz～20KHz, ±0.2dB
	Noise Floor	-90dBu
	Signal to Noise Ratio	106dB
	THD+N	≤0.003% @1kHz, +4dBu
	Channel Isolation	>100dB@1kHz
	Input Range	≤+18dBu (A-Weighting)
	Crossover	Three types of high and low pass filters: Butterworth, Bessel and Linkwitz-Riley
	Equalizer	Parametric Equalizer: Frequency: 20～20kHz, Gain: -15～+15dB, Bandwidth: 0.02～4 Graphic Equalizer: Frequency: 20～20kHz, Gain: -15～+15dB
	System Latency	≤9ms
	Maximum Output Level	18dBu
	Maximum Input Level	18dBu
	Analog/Digital Dynamic Range	114dB
	Digital/Analog Dynamic Range	120dB
	Equivalent Input Noise	≤-125dBu
General specification	Operating Voltage	AC 100V～240V, 50Hz/60Hz
	Maximum Power	330W
	Operating Temperature and Humidity	0℃～40℃, 10%～90%RH, No condensation

	Chassis	1U
	Product Dimensions (L×W×H)	482.4mm×260.5mm×44mm
	Net Weight	3kg
	Package Dimensions (L×W×H)	590mm×430mm×110mm
	Package Weight	3.5kg