

# SWIFT X Series

## Digital Signal Processor



### Product Introduction

The Digital Signal Processor equipped with a high-performance 32-bit floating-point DSP processor and A/D ~ D/A converter, support for 24bit/48KHz sampling frequency, high quality 8-stage preamplifier circuit, DSP processing bus structure built-in feedback cancellation, echo cancellation, noise suppression, automatic mixing 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 audio processor;
- High-performance 32-bit floating-point DSP processor, all-digital processing, fast response to feedback cancellation, echo cancellation, noise suppression and other core algorithms;
- High-performance A/D, D/A converter, 24bit/48KHz sampling frequency, high-quality Analog → Digital, Digital → Analog conversion;
- Up to 16 Analog input channels and 16 Analog output channels, very small distortion and ultra-low background noise;
- Rich interface expansion;
- 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, 24-bit/48KHz sampling frequency, high performance A/D, D/A converter and 32-bit floating point DSP processor;
- ✧ DSP audio processing with built-in automixing console, providing Gain Sharing Automatic Mic Mixer and Adaptive Acoustic Feedback Canceler;
- ✧ Inputs per channel: Preamplifier, Invert, Signal Generator, Expander, 5-band Parametric Equalizer, Compressor, Automatic Gain Control (AGC), Automatic Mixer (AM), Acoustic Feedback Canceler (AFC), Acoustic Echo Canceler (AEC), Adaptive Noise Suppressor (ANS);
- ✧ Outputs per channel: Delay, Crossover, Limiter, 31-band Graphic Equalizer, Invert;
- ✧ Test signal generator, Sine wave, Pink Noise, White Noise, frequency and level magnitude selectable;
- ✧ Input Invert button, Mute button, Phantom power button;
- ✧ Output Mute button, Invert button per channel;
- ✧ Supports Simplified Chinese, English and Traditional Chinese languages;
- ✧ One-click display of all function modules;
- ✧ Storing 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;
- ✧ The same host allows 10 users to manage;
- ✧ Device name can be modified;
- ✧ Editable preset mode, new, delete, modify, one-click initialization, preset mode can be stored to computer and one-click recovery;
- ✧ 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;

- ✧ 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;
- ✧ Configuration of bi-directional RS485 interface, standard Ethernet control interface, 2-channel programmable GPIO control interface (customisable inputs and outputs), level support for external inputs 3.3 ~ 24V;
- ✧ Support 8 groups of scene presets, scene create, save, delete and other functions;
- ✧ Intuitive, graphical software control interface, works on Windows XP, 7, 8, 10, 11, etc..

## Specification

| Category         | Parameter Item     | Parameter Description                                                                                                                                                                                                                                                                                           |
|------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Peripherals      | Input Interfaces   | 8/16 Analog                                                                                                                                                                                                                                                                                                     |
|                  | Output Interfaces  | 8/16 Analog                                                                                                                                                                                                                                                                                                     |
|                  | Control Interfaces | 1 RJ45 interface, 1 RS485 interface, 2 GPIO control 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 module: Preamplifier 42dB, Signal Generator, Expander, 5-band Parametric Equalizer, Compressor, Automatic Gain Control (AGC), Automatic Mixer (AM), Acoustic Feedback Canceled (AFC), Acoustic Echo Canceled (AEC), Adaptive Noise Suppressor (ANS). Physical interface: Balanced Phoenix terminals. |

|  |                              |                                                                                                                                                   |
|--|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Output Channel               | Functional module: Delay, Crossover, 31-band Graphic Equalizer, Limiter.<br>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                        | ≤0.004% @1kHz, +4dBu                                                                                                                              |
|  | Channel Isolation            | 104dB@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 to 20kHz, Gain: -15 to +15dB, Bandwidth: 0.02 to 4<br>Graphic Equalizer: Frequency: 20~20kHz, Gain: -15~+15dB |
|  | Maximum Output Level         | 18dBu                                                                                                                                             |
|  | Maximum Input Level          | 18dBu                                                                                                                                             |
|  | Analog/Digital Dynamic Range | 114dB                                                                                                                                             |
|  | Digital/Analog Dynamic Range | 120dB                                                                                                                                             |

|                       |                                         |                                          |
|-----------------------|-----------------------------------------|------------------------------------------|
|                       | Equivalent Input Noise                  | ≤-120dBu                                 |
| General specification | Operating Voltage                       | DC 12V/2A                                |
|                       | Maximum Power                           | 24W                                      |
|                       | Operating Temperature and Humidity      | 0℃～40℃, 10%～90%RH, No condensation       |
|                       | Chassis                                 | 1U                                       |
|                       | Power Supply                            | External power supply, output DC 12V, 2A |
|                       | External Power Supply Dimension (L×W×H) | 43.3mm×73.8mm×35.5mm                     |
|                       | Product Dimensions (L×W×H)              | 482.4mm×210.5mm×44mm                     |
|                       | Net Weight                              | 2.5kg                                    |
|                       | Package Dimensions (L×W×H)              | 590mm×430mm×110mm                        |
|                       | Package Weight                          | 3kg                                      |