



## Description

It is a high-performance audio processor with 4 analog balanced inputs and 4 analog balanced outputs. Integrated dynamic range control (DRC), automatic gain control (AGC), auto feedback control (AFC), adaptive noise reduction (ANS), adaptive echo cancellation (AEC), audio filters (GEQ, PEQ, crossover) and other functions. It is mainly used in professional sound reinforcement scenarios to meet the application requirements of sound reinforcement systems such as conference rooms, courtrooms, auditoriums, multi-function halls, performances, classrooms.

## Feature

- \* High-performance 64-bit DSP processor (800M main frequency), 32-bit/48KHz AD/DA, professional DSP processing, providing excellent high-quality sound.
- \* Support 4 in 4 out audio matrix function, support touch screen for 4X4 arbitrary matrix switching and mixing output, the input sensitivity can be adjusted according to different audio sources. Each input supports 48V phantom power supply, which can be individually configured to be turned on and off, flexible and convenient.
- \* Support the ducker function, which is used for background music to automatically duck the microphone to speak, and provide a variety of parameter settings, which is convenient for flexible use on site.
- \* Support the automatic gain function of the microphone, which is used to control the dynamic range of the pickup signal of the microphone to achieve consistent sound quality from far and near.
- \* Support intelligent mixing function, including gain sharing mixing and threshold automatic mixing. The input channel can independently choose whether to participate in intelligent mixing, and can choose the corresponding mixing mode according to the application requirements of different scenarios. It can effectively solve the pain points that the sound reinforcement system is unstable and easy to howl due to the multi-opening of the microphone.
- \* Support equalizer function, provide parametric equalizer and graphic equalizer, each input/output with 12-band parametric equalizer/10-band graphic equalizer/15-band graphic equalizer/31-band graphic equalizer optional. The parametric equalizer supports three types of EQ highshelf, EQ lowshelf and peak filters, and the graphic equalizer supports single-point bandwidth adjustment.
- \* Support crossover function, provide Bessel, Linkwiche-Rayleigh, Butterworth three filter types for selection, and support 6/12/18/24/32/40/48db/oct slope settings, the filter is adjustable in the whole frequency band.
- \* Support the expander function to expand the dynamic range of the signal and to eliminate the noise floor of the device.
- \* Support compressor function to compress the dynamic range of the signal, commonly used to compress the output signal.
- \* Support the limiter function to limit the output signal range, and prevent damage to the sound reinforcement equipment.
- \* Support the delayer function, providing a maximum delay adjustment of 2000ms, which is used to adjust the delay of each output signal, so that each audio signal remains synchronized when reaching the listener's ears.
- \* Support the echo cancellation function, which is used for remote audio and video conferences to eliminate echo and increase voice clarity.
- \* Support noise cancellation function, which can effectively eliminate environmental noise such as air conditioner sound and fan sound, and improve voice clarity.
- \* Support auto feedback control function, two processing schemes of notch filter + frequency shifter, effectively solve the problem of acoustic feedback.
- \* With ultra low system processing delay, the delay is less than 3ms.



## Audio Processor

### TS-DP440

- \* 2-inch IPS real color display on the panel, supporting the display of device network information, real-time level, channel mute status, matrix mixing status and other status.
- \* Panel with USB interface, supports multimedia storage, and can store, record or play.
- \* Support scene preset, import, export, support up to 8 scenes.
- \* Support the function of restoring factory settings.
- \* With RS-232 interface, it can be used to connect to the external central control system to achieve centralized control.
- \* With RS-485 interface, it can be connected to the central control system and camera tracking system to achieve automatic camera tracking function.
- \* With 8-channel programmable GPIO control interface (customizable input and output).
- \* Support channel copy, paste, and gang control functions.
- \* Ethernet multi-purpose data transmission and control port, can support real-time management of single and multiple devices.
- \* Support access to equipment through PC software, with management and control software: intuitive and graphical interface, support Windows7, 8, 10 and other system.
- \* Support operation control through Android mobile phone APP software, device login, scene switching, input and output, matrix routing and channel setting and other functions.
- \* Support automatic power-off protection memory function.
- \* The rear panel has 4 line audio Phoenix terminal balanced input interfaces (with 48V phantom power supply), 4 line audio Phoenix terminal balanced output interfaces, 1 DIP switch, 1 RJ45 interface, 1 RS232 interface, 1 RS485 interface, 8 programmable GPIO control interfaces, and 1 grounding column; the front panel has a 2.0-inch IPS true color display, 1 encoding knob, and 1 USB storage device interface.
- \* The device has a unified centralized control function and supports 65,535 devices to be centrally controlled through software.
- \* It has a matrix gain adjustment function. The gain of each input channel participating in the mixing is adjustable, and the gain adjustment range is -72db to 12db.
- \* The device has an encoding knob and an IPS screen, which can be used to control and configure the device mute, gain, and scene; the IPS screen can display the IP address and the real-time level of the input and output channels.
- \* It has a device positioning function. The client can locate similar devices in the LAN with one click, and the located device will display the positioning information.
- \* The audio processor software can be integrated into the conference audio integrated management platform to achieve unified management of audio equipment. The platform can scan the online status of digital conference hosts, audio processors, mixers, suppressors, and amplifiers. Multiple online devices of the same product can also be scanned, and the device hardware name, hardware IP address, online and offline status information can be displayed; it has the function of uploading configuration information to the cloud or saving it locally for backup and restoring configuration information with one click.
- \* It has the function of Web page management, and the control software can be downloaded through the Web page, and the gain of each channel can be adjusted through the Web page.
- \* It supports the central control function, which can realize gain addition and subtraction, gain limitation, query of each channel level bar, and setting of gain addition and subtraction step value.
- \* It has the function of dual-machine hot backup.



### Specification

<b>Input channel</b>	4 balanced MIC/LINE inputs, using bare wire interface terminals, balanced connection
<b>Output channel</b>	4 balanced line outputs, using bare wire interface terminals, balanced connection
<b>Input channel</b>	Preamplifier, signal generator, 12-band parametric equalizer, input module, input equalizer, expander, compressor, automatic gain, ducker, feedback suppression, echo cancellation, noise cancellation
<b>Output channel</b>	31-segment graphic equalization adjustment, limiter, output equalizer, delay, and output module
<b>Processor</b>	48kHz sampling frequency, 64-bit DSP processor; 32-bit A/D and D/A conversion
<b>Phantom power</b>	DC 48V
<b>Frequency response</b>	20Hz ~ 20KHz
<b>THD + N</b>	≤0.002% OUTPUT=24dBu/1kHz
<b>SNR</b>	≥110dB@1kHz 24dBu (A-weighted)
<b>Channel isolation</b>	≥100dB@1kHz 24dBu (A-weighted)
<b>Input impedance (balanced)</b>	20KΩ
<b>Maximum output impedance (balanced)</b>	100Ω
<b>Input range</b>	≤+24dBu
<b>Howling searching and suppression methods</b>	Fully automatic wave trap
<b>Notch filter</b>	24 (static points and dynamic points can be configured)
<b>Q value range</b>	10-50
<b>Frequency resolution</b>	1Hz
<b>Howling searching time</b>	0.1—0.5S
<b>Sound transmission gain</b>	4—10dB
<b>System gain</b>	0dB
<b>Crossover</b>	With Butterworth, Bessel, Linkwich-Rayleigh three high and low pass filters
<b>Equalizer</b>	31-band graphic equalizer + 12-band parametric equalizer
<b>Display</b>	2-inch IPS true color display, resolution 320×240
<b>Power supply</b>	AC 110V-220V 50/60Hz
<b>Power consumption</b>	≤20W
<b>Working temperature</b>	-10°C ~ +45°C
<b>Working humidity</b>	20%~80% relative humidity, no condensation
<b>Cooling method</b>	Fan forced cooling
<b>Dimension (L×D×H)</b>	484×298.2×45mm
<b>Net weight</b>	3.3kg
<b>Analog/digital dynamic range</b>	116dB
<b>Digital/analog dynamic range</b>	120dB