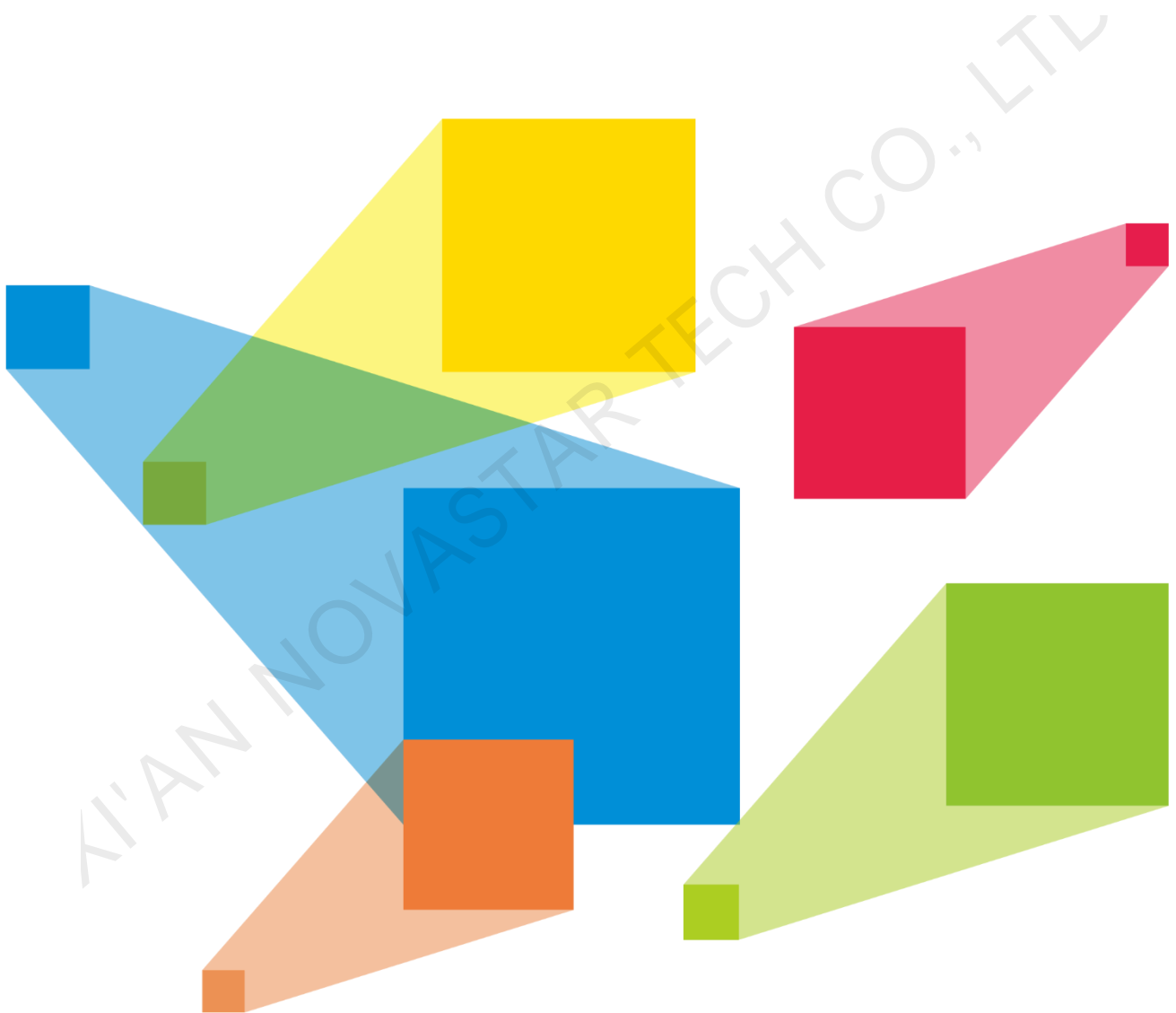


H-DAP1616

Digital Audio Processor



Specifications

Change History

Version	Release Date	Description
V1.0.1	2021-12-02	Optimized the product description.
V1.0.0	2021-04-22	First release

Introduction

The H-DAP1616 digital audio processor is an audio processing and control system that can be freely designed. It can convert analog signals input from multiple channels into digital signals and process the signals through professional algorithms to meet the requirements of sound quality improvement, automix, noise cancellation, echo cancellation, feedback suppression, and more. This digital audio processor is perfect for various conferences in design, health care, education, and many other industries.

The H-DAP1616 adopts advanced DSP processing technology and comes with new algorithms such as automix and feedback cancellation, which can solve various practical problems in applications. Since most of the controls are done through software operations, the appearance is more concise. The user only needs to click the mouse, and it is no longer necessary to adjust the complex large-scale mixing console on the spot to complete the function conversion as before, which greatly simplifies the operation.

The H-DAP1616 comes with a highly flexible operating system, which brings users a more intuitive operation experience and a more intelligent audio processing experience. The client software is available for Windows, iOS and Android. Browsers including IE, Chrome and Firefox also can be used for control. The H-DAP1616 supports multiple analog input and output channels simultaneously, allows for USB recording and playback, and is designed with RS232, RS485 and GPIO control connectors, making it easy to connect to a variety of audio devices.

Certifications

None

If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact NovaStar to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or NovaStar has the right to claim compensation.

Features

- Ti dual-core high-speed floating-point DSP
- 16 input and output channels
- A variety of control connectors
 - 1x Ethernet
 - 1x RS232
 - 1x RS485
 - 8x GPIO
- USB 2.0 port for high-quality recording/playback
- Mixer volume gain adjustment
- Built-in installation software and no CD is required, making sure the uniqueness of software
- DSP audio processing, built-in automatic mixing console, and optional feedback cancellation, echo cancellation and noise cancellation modules
- Full-featured matrix mixing function
- Built-in automatic camera tracking function
- Support for presets
- Flexible user interface
 - Function modules can be enabled quickly and each module can be enabled/disabled separately.
 - The level value can be displayed with an accurate number.
 - Multiple processors can be managed and multi-user management mode is also supported.
 - Operations can be done with client software and browser.
 - App control on a tablet or mobile phone is supported.
- AEC echo cancellation technology
 - Supports setting the echo path length. The maximum echo tail-off is up to 512 ms.
 - With the robust Double Talk detection method, the residual echo does not increase during simultaneous speech by both parties.

- Comes with high anti-interference performance and works well in all possible applications and environments.
- ANC noise cancellation technology
 - Noise suppression is up to -30 dB and there is no distortion during sound transmission.
 - Supports processing of non-stationary noise, allowing fast tracking of noise changes.
- AFC feedback cancellation technology
 - Acoustically model the room feedback path and adaptively eliminate acoustic feedback.
 - Sensitive track the feedback path changes and enhance the ability to suppress howling.
 - The microphone gain is greatly improved and can be increased from the common 6 dB to 18 dB, which is suitable for conference rooms of various sizes.
- Automix algorithm
 - Improve the transparency and clarity of speech.
- Significantly reduce feedback, reverb and comb filtering effects.
- Automatic adjustment, simplified setup, plug and play
- Common problems such as insufficient gain before feedback and unclear speech can be solved.
- Each input channel has a dual-band equalizer.
- Adaptive noise thresholding distinguishes between persistent background noise (such as air conditioners) and changing sounds (such as speech) for each input channel. The channel activation threshold is continuously adjusted so that the channel is only activated when the volume of the speech is higher than the background noise.
- Lock the last microphone until the next microphone is activated, ensuring that the ambient sound is always present.
- Precisely control the priority of each microphone to lock down the speaker.
- Support automatic memory after power failure.

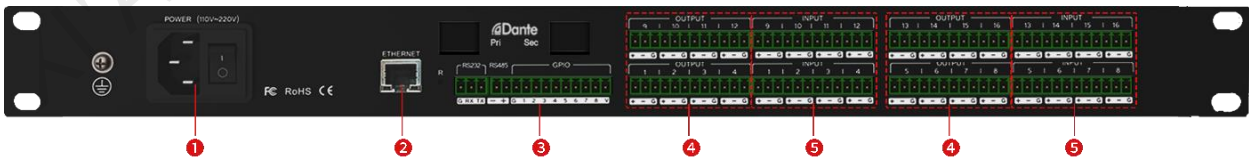
Appearance

Front Panel



Button	Description
PWR	Power indicator
SYS	System indicator
USB	Storage device connector

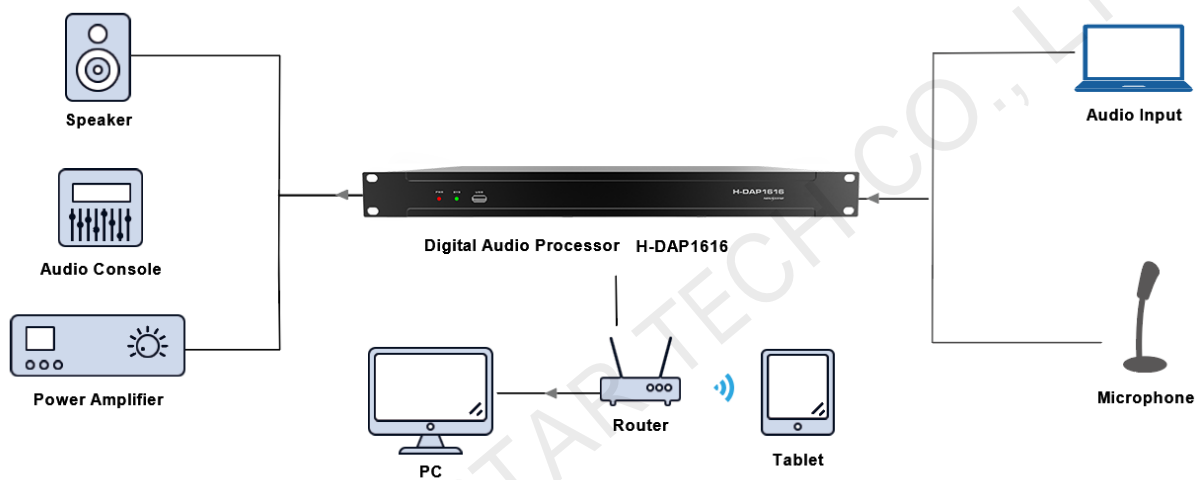
Rear Panel



No.	Connector	Description
1	POWER	Power connector Connect to a 110 V~220 V AC power supply. The processor's power is controlled through a rocker switch.
2	ETHERNET	Network control connector Connect to a PC for debugging and monitoring the device.

No.	Connector	Description
3	RS232+RS485+GPIO	Control connectors Connect to the control terminal or central control device.
4	OUTPUT	Signal output connectors Connect to the power amplifier, active speaker and other devices.
5	INPUT	Signal input connectors Connect to devices such as microphones, DVDs, etc.

Applications



Notes:

- This product can only be placed horizontally. Do not mount vertically or upside-down.
- The product can be mounted in a standard 19-inch rack capable of withstanding at least four times the total weight of the mounted equipment. Four M5 screws are required to fix the product.

Dimensions



Tolerance: ± 0.3 Unit: mm

Specifications

Overall Specifications	
DSP processing	Ti 456MHz FLOPS DSP
Analog channels	16 inputs + 16 outputs
Core algorithms	Automix, feedback cancellation, echo cancellation, noise cancellation
GPIO	8 connectors used for input or output
RS232/RS485	1
RJ45 control connector	1
USB port	1
RJ11 phone connector	0
DANTE network connector	0
Quantization bits	24-bit
Sampling rate	48 kHz
Frequency Response (20 Hz~20 kHz)	± 0.2 dB
A/D dynamic range (A-weighted)	114 dB

D/A dynamic range (A-weighted)	120 dB	
THD+N	≤0.003%, 4 dBu	
Background noise	-90 dBu	
Delay from analog input to analog output	3 ms	
Input impedance (balanced)	20 kΩ	
Output impedance (balanced)	100 Ω	
Maximum input level	+18 dBu, balanced	
Maximum output level	+18 dBu, balanced	
Equivalent input noise EIN (20 Hz~20 kHz, A-weighted)	≤-131 dBu	
Phantom power	DC 48 V	
Frequency response	20 Hz~20 kHz, ±1 dB	
Input Common-Mode Rejection	70 dB @80 Hz	
Channel isolation	104 dB @1kHz	
THD+N	≤0.002%@1k, 4 dBu	
Echo suppression ratio	>60 dB	
Steady state noise cancellation ratio	≤ 30 dB	
Background noise	-90 dBu	
Working power	AC 110 V-220 V, 50 Hz/60 Hz	
Rated power consumption	34 W	
Operating Environment	Temperature	0°C to +55°C
	Humidity	0% RH to 75% RH, non-condensing
Storage Environment	Temperature	-20°C to +75°C
	Humidity	0% RH to 85% RH, non-condensing
Physical Specifications	Dimensions	486.0 mm × 260.9 mm × 44.0 mm
	Weight	6 kg
Packing Information	Packing box	610 mm × 410 mm × 110 mm

	Accessories	<ul style="list-style-type: none">• 9x 12-pin Phoenix connectors• 1x 3-pin Phoenix connectors• 1x Power cord• 1x Small screwdriver• 1x Certificate of Approval• 1x Quick Start Guide
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