



TENDZONE

WebGem 1616D

DIGITAL AUDIO PROCESSOR



WeGem 1616D DSP Overview

The WebGem 0808 DSP by Tendzone is equipped with a robust set of multipurpose audio DSP tools aimed at AV integrators. It features eight analog audio input and output channels, and its 16x16 design supports Dante™ signal extension, addressing a wide array of audio processing situations. With an easy-to-navigate Web-UI, the DSPs support standard bidirectional control through RS-232, TCP/IP, and GPI, ensuring they work well with popular third-party control systems. Additionally, users can set up a custom web control interface for localized room operations, compatible with platforms like Windows, iOS, macOS, and Android. Tendzone's WebGem series merges strong audio processing power with adaptable control options, making it an ideal solution for AV integration projects found in conference rooms, educational environments, hotels, and courtrooms.

Features

1. Inputs and Outputs:

- The system includes 16 balanced microphone/line inputs with a soft switch for activating 48V phantom power.
- It offers 16 balanced line outputs and supports network audio through 16x16 Dante with AES67 compatibility.

2. Audio Quality:

- Users experience outstanding audio quality at a sampling rate of 48kHz and 24-bit depth.

3. Preamp Features:

- The preamp is optimized for varying gain levels, adjustable at 0dB, 10dB, 20dB, 30dB, and 40dB, suitable for both MIC and LINE signals.

4. Audio Interfaces and Connections:

- The device includes a USB2.0 audio interface for recording and playback from USB drives.
- A USB-B sound card interface enables a 2x2 audio connection for devices on Windows, iOS, Android, and HarmonyOS for bidirectional audio transmission.

5. Cancellation Technologies:

- The Adaptive Echo Cancellation (AEC) feature effectively eliminates echoes during video calls.
- The Adaptive Feedback Cancellation (AFC) utilizes a fast floating-point digital algorithm to manage feedback for each microphone.

6. Gain Control and Ducker Feature:

- The Automatic Gain Control (AGC) maintains a steady output volume, independent of the speaker's distance from the microphone.
- The intelligent Ducker feature allows users to easily suppress background music for enhanced vocal clarity.

7. Protection and Mixing Features:

- An immediate response limiter protects downstream devices from overload.
- The system supports gain-sharing automatic mixing (AM) and threshold-based automatic mixing (GAM) for managing multiple microphones.

8. Input/Output Level Management:

- Users can set specific ranges for input and output levels, with maximum and minimum limits for easier control.

9. Graphical Software Control:

- The graphical control interface, based on a B/S architecture, allows audio parameter modifications through web browsers, available in English or Chinese.
- It can be customized to user preferences and is compatible with various operating systems, including Android, iPad, Windows, HarmonyOS, and KylinOS.

10. Display and GPIO Interfaces:

- A 1.8-inch color LCD displays critical information, including device name, IP address, input/output levels, mute status, current scene, and software version.
- It features 8 GPIO interfaces that can be configured as either input or output through software settings.

11. Third-Party Control Protocols:

- The system supports open third-party control protocols via UDP or RS-232 for device management and operation.

Application



SPECIFICATIONS

General Performance	
Frequency Response(A/D/A)	20Hz~20kHz (±0.5dB)
Sampling Rate	48kHz,24bit
Dynamic Range(A/D/A)	>110dB, A-weighted (20Hz-20kHz@0dB Gain)

THD	≤0.005%@1kHz, +4dBu
Latency (A/D/A)	5.8 mS, inputs routed to outputs
Noise Floor (A-weighted)	≤-90dBu
Crosstalk	≤-105dB@+20dBu, 1kHz
S/N Ratio	>110dB, A-weighted (20Hz-20kHz@0dB Gain)
Channel Isolation	≤-105dB@+20dBu, 1kHz
Preset Numbers	50
Audio Input/Output	
Model	WebGem 1616D
Connector	3.81 mm terminal blocks
Number of Analog Channels	16in16out
Number of Dante Channels	16in16out
Phantom Power	DC 48±6V,10mA
Input Impedance	2KΩ balance
Output Impedance	200Ω balance
Maximum Input Level	20dBu
Maximum Output Level	20dBu
Max Input Gain	40dB
Front Panel	
Indicator Light	Power/RUN/LINK
Display Screen	1.8" colour LCD display Displays device name, IP address, input/output level and mute status, current scene, software version
Select Button	A push-to-turn button
Rear Panel	
UAC(USB Bidirectional Audio)	2x2 sound card, sampling rate 48kHz,16bit, interface type USB-B, data transmission protocol USB2.0;
USB	Interface type is USB-A and the data transfer protocol is USB2.0. Support recording and playback, can play MP3/WAV format audio files, support FAT32 format U disk, recording file format WAV
Dante PRIMARY&SECONDARY	2X1000MRJ-45; 16x16; Support redundancy, switching mode;
RS232	4pin 3.81Phoenix terminal
GPIO	8ch ,customized input and output, 12pin 3.81 Phoenix terminal
LAN (TCP/IP Network Port)	Ethernet 10/100/1000MB RJ45
Electrical and Physical Parameters	
Power Supply	AC100-240V±10%, 50/60Hz

Power Consumption	36W
Operating Temperature	0°C-45°C
Relative Humidity	30%~70%R.H.
Dimensions	484mm*280mm*44mm
Package size	570mmx410mmx135mm
Net Weight	3.2Kg
Shipping Weight	3.7Kg

Rear Panel

