

All-in-One Digital Signal Processing System

MODEL: HT-ADS-40P MATRIX SYSTEM

High-performance integrated digital acoustic matrix processor featuring dual-channel wireless microphone ingestion, onboard multi-channel power amplification, USB telepresence audio bridge, and active voice-tracking PTZ camera control for corporate boardrooms and smart conference auditoriums.

HT-ADS-40P VECTOR HARDWARE ILLUSTRATION & FRONT CONTROL PANEL



32-BIT / 300MHZ ENGINE

Ultra-low-latency processing core (< 1ms delay) @ 300MHz clock rate with 24-bit / 48kHz sampling.

TRI-CORE ACOUSTIC SUITE

Simultaneous Acoustic Echo Cancellation (AEC), Feedback Suppression (AFC), and Adaptive Noise Cancellation (ANC).

INTEGRATED POWER AMP

Built-in 2-channel Class-D amplifier (2 x 150W RMS) driving passive architectural speakers directly.

KEY ARCHITECTURAL FEATURES & CAPABILITIES

- **Flexible 4x4 Analog Matrix Architecture:** 4 balanced microphone/line inputs and 4 line-level outputs on 3.81mm Phoenix connectors, complete with software-selectable +48V phantom power.
- **Integrated Telepresence USB Audio Bridge:** Drive-free USB Micro-B interface establishing a bi-directional audio link with PC hosts running Microsoft Teams, Zoom, or Webex.
- **Complete Wireless Microphone Ingestion:** Built-in dual-channel wireless receiver bundled with factory-matched handheld and headband transmitters operating across a 15m+ range.
- **Automated Voice Tracking PTZ Camera Logic:** Integrated RS232/RS485 camera control protocols triggering precise Pan-Tilt-Zoom preset positioning based on localized speaker amplitude.
- **Granular Channel Signal Conditioning:** Every input channel features digital preamp, noise generator, expander, compressor, AGC, and 16-band PEQ. Output channels include alignment delay, crossover, peak limiter, and 10-band PEQ / 31-band GEQ.

TECHNICAL SPECIFICATIONS & PERFORMANCE DATA

Specification Parameter	HT-ADS-40P Technical Value & Operating Parameters
Digital Signal Processing & Converter Architecture	
DSP Core Architecture	32-bit fixed/floating-point DSP topology @ 300MHz clock frequency
System Processing Delay	< 1ms ultra-low latency computation
Conversion Resolution & Sample Rate	24-bit dual A/D D/A converters @ 48kHz native sampling rate
Dynamic Range & SNR	105dB to 120dB (A-weighted Line), 95dB (Mic)
Total Harmonic Distortion (THD+N)	-90dB (≤ 0.003%) @ 1kHz, +12dBu A-wt Line; -86dB @ Mic level
Frequency Response	20Hz – 20kHz (±0.5dB Line), 20Hz – 20kHz (±1.5dB Mic)
Analog Input Stage & Preamplification	
Input Channels	4-channel balanced Mic/Line level (3.81mm Phoenix plug block connectors)
Input Impedance & Maximum Level	11.5kΩ (Mic) / 20kΩ (Line); Max level +12dBu Line, -7dBu Mic
Phantom Power Supply	+48VDC (6.5mA) independently switchable per input channel (software/hardware)
Sensitivity & Gain Control	9-level selectable microphone sensitivity adjustment
Analog Output Stage & Built-in Power Amplification	
Line Output Channels	4-channel balanced line level (3.81mm Phoenix plug connectors, 150Ω impedance)
Integrated Power Amplifier	Built-in 2-channel Class-D digital power amplifier (2 x 150W RMS @ low impedance)
Wireless Microphone Ingestion & Telepresence Bridge	
Wireless Microphone Receiver	Integrated dual-channel receiver module (15m+ operational range)
Bundled Transmitters	1 x Wireless Handheld transmitter + 1 x Ergonomic Wireless Headband transmitter
USB Telepresence Interface	Micro-B USB port, drive-free bi-directional audio bridge for PC video conferencing
Logic Control, Algorithms & Acoustic Management	
Network & Telemetry Ports	1x RJ-45 TCP/IP Network port, 1x RS232, 1x RS485, 10-pin GPIO terminal
Front Panel Displays & Controls	LED status indicators (Power, Link, +48V, Audio In/Out); Rotary push-encoder dial
DSP Algorithms (Input / Output)	Input: Digital Preamp, Signal Generator, Expander, Compressor, AGC, 16-band PEQ Output: Alignment Delay, Active Crossover, Peak Limiter, 10-band PEQ / 31-band GEQ
Acoustic Processing Suite	Automatic Matrix Mixing, Acoustic Echo Cancellation (AEC), 2-level Acoustic Feedback Suppression (AFC), Adaptive Noise Cancellation (ANC)
Camera Tracking Logic	Native PTZ camera voice-tracking control via acoustic amplitude detection
Electrical & Power Requirements	
Power Supply Voltage	Universal AC 100V – 240V, 50/60 Hz switch-mode power supply
Maximum Power Consumption	≤ 350 Watts (under full amplifier & processing load)