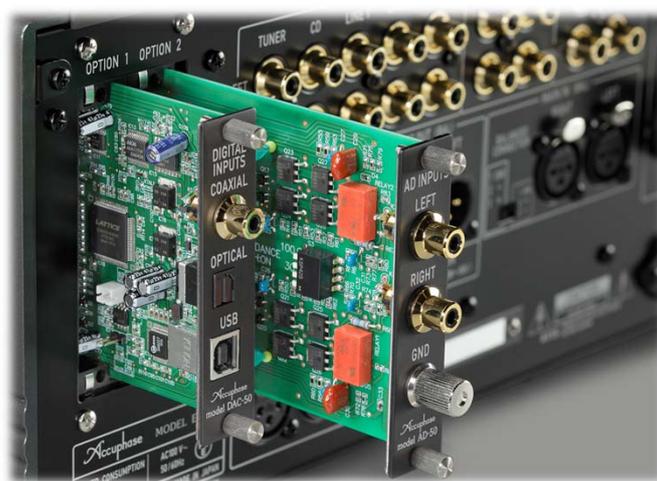


# Digital Input Board DAC-50



Accuphase Laboratory, Inc.

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With the release of E-650, Accuphase renews the dedicated Digital Input Board DAC-50 to expand the optional capabilities.

DAC-50 is the 4<sup>th</sup> generation dedicated Digital Input Board.

The greatest technical feature is ultra low THD(Total Harmonic Distortion)+Noise.

# Digital Inputs

- Digital Inputs:
  - USB-B: PCM - 384kHz/32bit  
DSD by ASIO - 11.2896MHz/1bit  
DSD by DoP - 5.6448MHz/1bit
  - Coaxial: 192kHz/24bit
  - Optical: 96kHz/24bit



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DAC-50 has 3 digital inputs, Coaxial, Optical and USB Type-B.

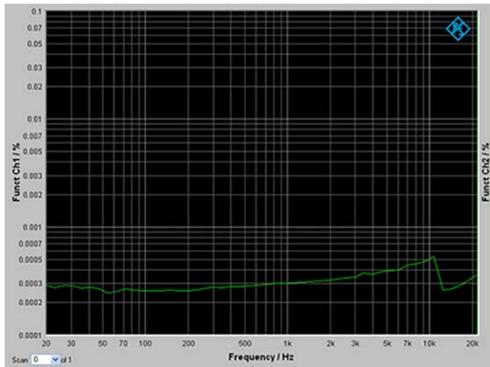
USB Type-B input accepts up to 384kHz/32bit-PCM and 11.2896MHz-DSD.

DSD data can be received both DoP(DSD over PCM) and ASIO2.1(11.2896MHz: ASIO only).

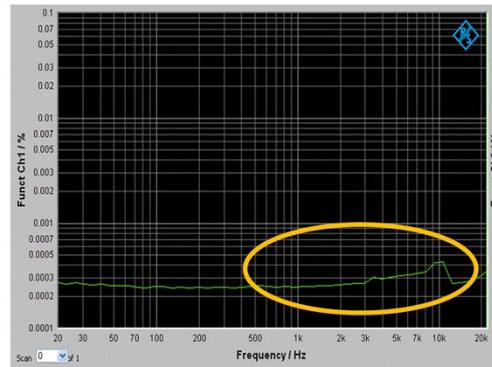
\*\*DAC-40 is capable of up to 192kHz/24bit-PCM and no DSD signal is accepted.

# Electrical Performance

- Ultra low THD+Noise



DAC-40



DAC-50

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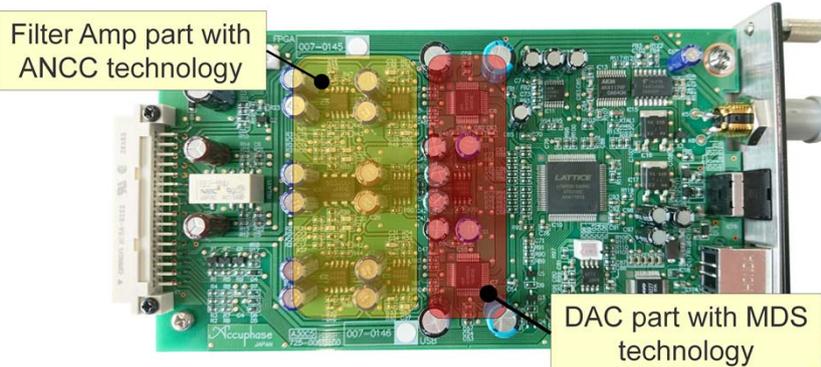
3

DAC-50 proudly demonstrates the great THD(Total Harmonic Distortion)+Noise characteristics which are quite important for the quality of music playback.

And this chart proves that DAC-50 is superior in the frequency above 1 kHz compared to the former model DAC-40.

# D/A converter

- paralleled D/A converters per channel
  - Featured AK4490EQ (AKM Corporation)
  - MDS Architecture for all digital signals
  - ANCC for ultra low noise and distortion



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For D/A converter section, for DAC-50, Accuphase updates the DAC chip to Asahi Kasei Micro Electronics' Premium DAC AK4490EQ.

※DAC-40's DAC chip is TEXAS INSTRUMENTS PCM1796DB.

AK4490EQ chip has 2 DACs inside, DAC-50 uses 2 DACs connected in parallel per channel with the Accuphase unique technology, MDS (Multiple Delta Sigma) conversion system.

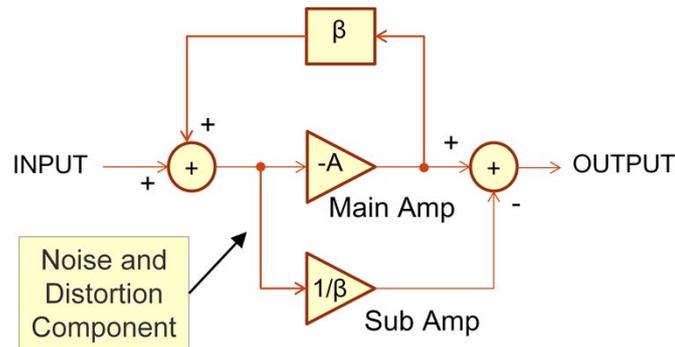
To obtain the extreme low distortion and noise performance, Accuphase developed the new circuit technology named ANCC(Accuphase Noise and distortion Cancelling Circuit).

This technology is for the filter amp circuit that compensates the distorted waveform of circuit. The circuit works as 4<sup>th</sup> order LPF to reduce the noise from DACs.

# ANCC

(Accuphase Noise and distortion Cancelling Circuit)

- Noise and distortion improving architecture by using feedback and feedforward method
  - Distortion can be minimal, noise from main-amp and sub-amp is swapped



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ANCC is the latest Accuphase unique technology. To reduce the noise from DACs, filter amp requires the wide dynamic range and linearity.

High voltage power supply and complicated architecture are required to obtain expected performance.

The ANCC is consisted of a general main amplifier and a low noise OP-AMP as the sub-amplifier.

Feedback loop reduces the distortion of main amp and feedforward loop negates the detected distortion.

The same effects are also come up on the noise.

This new technology contributes to make accurate D/A conversion with a quite simple circuit.

# Backward compatibility

- Available model

- E-650
- E-600/470/370/270, C-2120 \*1
- E-560/550/530/460/450/408/360/350/307/260/250/213 \*2
- C-2110/2000/245, CX-260 \*2

\*1: The display will show the sampling frequencies less than PCM192kHz.

\*2: Only the automatic switchover is available for Input selection, and the display does not show the sampling frequency.



E-530 in 2002



E-650 in 2017

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DAC-50 has a wide backward compatibility, it can be used with not only the current models but lots of legendary amplifiers.