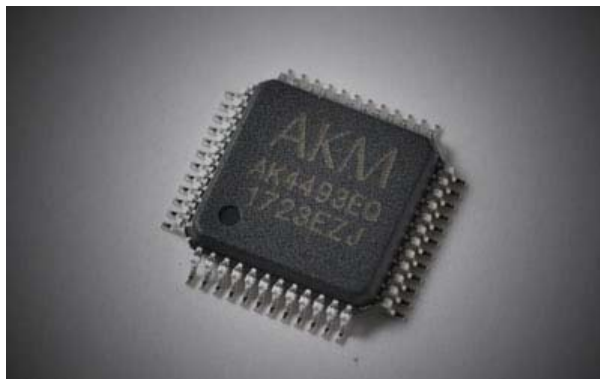


## AK4493EQ

123dB 768kHz/32-bit 2ch Premium DAC



The AK4493EQ is a new generation Premium 32-bit 2ch DAC with VELVET SOUND™ technology, achieving industry's leading level low distortion characteristics and wide dynamic range. The AK4493EQ integrates a newly developed switched capacitor filter "OSR Doubler", making it capable of supporting wide range signals and achieving low out-of-band noise while realizing low power consumption. Moreover, the AK4493EQ has six types of 32-bit digital filters, realizing simple and flexible sound tuning in wide range of applications. The AK4493EQ accepts up to 768kHz PCM data and 22.4MHz DSD data, ideal for a high-resolution audio source playback that are becoming widespread in network audios and USB-DACs.



Premium DAC AK4493EQ

- **Dynamic Sound Playback with Large Amounts of Playback Information: VELVET SOUND architecture is improved**

Not only in the circuit design, but also the LSI manufacturing process was developed at AKM exclusively for AKM's audio devices. The AK4493EQ adopts this process, improving low frequency noise performance and electric margin. 32-bit processing is integrated for the IRD, (Impulse Response Designed), filter, reproducing a detailed and natural signal wave. A harmonic sound filter was newly added to the existing five filters found in our previous generation device. So, six different digital filter types are selectable according to the user's audio and system preferences.

- **Even Higher Performance than the AKM's Best Selling DAC, the AK4490**

Low-distortion technology achieves -113dB THD+N DAC with a 123dB\* S/N characteristic. The AK4493EQ has higher performance than the AK4490. In addition, OSRD, (Over Sampling Ratio Doubler), technology greatly reduces out of band noise. \* 126dB in normal mode.

- **Supporting High Resolution Data**

An industry first, a 22.4MHz DSD input is now supported. The digital input supports up to 768 kHz PCM and 22.4 MHz DSD, (Direct Stream Digital), recreating high-resolution sound that is as close as possible to the original acoustic source.

- **Application**

High-end Audio, Professional Audio, AV Receivers, CD/SACD Players, Network Audio, USB DAC's, USB Headphones, Sound Plates, Sound Bars, PA Equipment, Bluetooth Headphones, HD Audio, Voice Conference Equipment, IC Recorders, Measurement Instruments, Control Systems

## Key Features

Products	AK4493EQ High-end Premium D/A Converter		AK4490EQ High-end Premium D/A Converter	
● DR, S/N	123dB		120dB	
● THD+N	-113dB		-112dB	
● Sampling Rate	8kHz to 768kHz		30kHz to 768kHz	

• DSD Input	22.4MHz	11.2MHz
• Sound Color Filter	<p>Six Types</p> <p>32-bit 8-fold Digital Filters</p> <ul style="list-style-type: none"> <li>- Short Delay Sharp Roll-off, GD=6.25/fs</li> <li>- Short Delay Slow Roll-off, GD=5.3/fs</li> <li>- Sharp Roll-off</li> <li>- Slow Roll-off</li> <li>- Super Slow Roll-off</li> <li>- Low-dispersion Short Delay</li> </ul>	<p>Five Types</p> <p>32-bit 8-fold Digital Filters</p> <ul style="list-style-type: none"> <li>- Short Delay Sharp Roll-off, GD=6.25/fs</li> <li>- Short Delay Slow Roll-off, GD=5.3/fs</li> <li>- Sharp Roll-off</li> <li>- Slow Roll-off</li> <li>- Super Slow Roll-off</li> </ul>
• Resolution	32-bit	
• Number of channel	2ch	
• Output Method	Full Differential Output	
• VELVET SOUND Technology	<ul style="list-style-type: none"> <li>• Low-distortion technology</li> <li>• OSRD technology</li> <li>• Dedicated LSI Process for Premium Audio</li> </ul>	<ul style="list-style-type: none"> <li>• Low-distortion technology</li> <li>• OSRD technology</li> </ul>
• Power Consumption	203mW	145mW
• Power Supply	TVDD=AVDD=3.0 to 3.6V (LDO use) VDDL/R=4.75 to 5.25V	DVDD=AVDD=3.0 to 3.6V VDDL/R=4.75 to 7.2V
• Operation Temperature	-40 to 85°C	
• Package	48-pin LQFP (7mm x 7mm)	
• Sales Start	Jan. 2018	Available Now

• Status	RND*	NRND*
• Samples	Distributors/ Representatives	

[Notes] \* RND: Recommend for New Design \* NRND: Not Recommend for New Design

## Block Diagram

