



Fraunhofer

IIS

**FRAUNHOFER INSTITUTE FOR
INTEGRATED CIRCUITS IIS**

THE AAC AUDIO CODEC FAMILY

**A PERFECT SOLUTION FOR ANY AUDIO
APPLICATION**



The MPEG AAC codec family's efficiency, flexibility and transparent licensing model make it the best choice for any audio application. The application-specific modes are designed to enrich broadcast,

streaming and communications by fulfilling unique requirements that include high quality speech and audio at low bit rates, delay-optimized audio, surround sound and metadata support.

Codecs	Features	Applications	Typical bit rates
AAC-LC (AAC Low Complexity)	Excellent audio quality for mono, stereo and multichannel audio (up to 48 channels). Supports audio-specific metadata.	<ul style="list-style-type: none">– music and video download (e.g. Apple iTunes)– TV broadcast	stereo: 128 to 256 kbit/s 5.1 surround: 256 to 320 kbit/s
HE-AAC (High Efficiency AAC) v1 (SBR) & v2 (PS)	High quality mono, stereo and multichannel audio (incl. 7.1 profile) at low bit rates. Supports audio-specific metadata.	<ul style="list-style-type: none">– Ideal for channels with limited capacity (e.g. in TV & radio broadcast)– De facto standard for streaming (e.g. Google Play, Netflix, Pandora)	stereo: 32 to 96 kbit/s 5.1 surround: 96 to 256 kbit/s
xHE-AAC (Extended High Efficiency AAC)	The first audio codec to integrate speech and music coding tools for an unprecedented audio quality at ultra-low bit rates.	<ul style="list-style-type: none">– For applications with a mix of speech and general audio content, e.g. in radio broadcast– First adoption by Digital Radio Mondiale	stereo: 16 kbit/s 5.1 surround: 96 to 256 kbit/s
AAC-ELD (Enhanced Low Delay AAC) family	AAC-LD, AAC-ELD and AAC-ELD v2 for Full-HD Voice audio quality at a coding delay as low as 15 ms.	<ul style="list-style-type: none">– Video conferencing systems– VoIP– Consumer video telephony applications (e.g. Apple FaceTime)– Low delay audio streaming	mono/stereo: 24 to 128 kbit/s

WWW.IIS.FRAUNHOFER.DE/AMM

Learn more about the AAC
audio codec family:



<http://s.fhg.de/audiocodecs>

*Fraunhofer Institute for
Integrated Circuits IIS*

*Director
Prof. Dr.-Ing. Albert Heuberger*

*Am Wolfsmantel 33
91058 Erlangen*

www.iis.fraunhofer.de