

IP Catalog

AAC-LC Decoder on ARM-9E

Product Summary:

Company Info	Network Systems & Technologies (NeST)
Product Type	Application Software
Component	Audio codec
Application(s)	Multimedia
Market	Consumer Electronics
DSP Generation	ARMv5TE
DSP device	ARM926EJ-S
Product Info	AAC-LC decoder on ARM9E

Description:

AAC (Advanced Audio Coding) is the standardized lossy compression and encoding scheme for digital audio. It is one of the most popular audio compression standards across wide spectrum of application ranging from portable player, cell phones, music systems, internet, broadcasting and so forth. The MPEG-2 ISO-IEC-13818-7 is the audio standard which provides the syntax and decoding process for compresses AAC audio streams. Mostly AAC Streams have the file extension of .aac. The two main types of AAC streams are ADIF and ADTS. ADIF (Audio Data Interchange Format) streams have a file extension of .adif whereas ADTS (Audio Data Transport Stream) streams have a file extension of .adts.

Features:

- MPEG-2 AAC Low complexity (LC) profile
- Supports files encoded with compliant ISO/IEC 13818-7 encoders (ADIF and ADTS formats supported)
- 2 channel (stereo)
- Sampling Frequency from 8 KHz to 96 KHz
- Bit-rate up to 576 Kbps
- Supports - TNS,MS and IS
- Output : 16 bit LPCM
- Constant and Variable Bit-rates
- Supports CRC protection checking
- Simple and C callable API set
- Optimized implementation

CPU Usage:

Stream	Peak MCPS*	Average MCPS*
44 kHz 320 kbps	16.54	15.79
44 kHz 128 kbps	12.22	11.68

* Please see the below notes

Memory Usage (in kB):

Program memory kB	Constant tables (ROM)	Heap (RAM)	Stack
34	19	36	24

Notes:

- Performance on Code composer Studio v3.3 ARM926EJ-S cycle accurate simulator with 0 wait state memory access.
- Peak MCPS specified is peak per second for 44 kHz 320 kbps (*ti01_320_aachev2_itm_encoded.aac*) with TNS and 44 kHz 128 kbps (*mix1_44_128.aac*) with TNS worst case stream.
- MCPS figure indicates CPU usage for stereo streams
- MCPS figures on hardware will vary with the I-Cache and D-Cache size and with the memory configuration/placement and data alignment.
- Program memory doesn't include the test application and standard library functions.