



- eXpressDSP compliant
- eXpressDSP Digital Media (XDM) compliant
- 16-bit and 32-bit PCM samples supported as input. In case of 32-bit PCM it takes the most significant 16-bits as input internally.
- Constant Bit Rate (CBR) encoding and Variable Bit Rate (VBR) encoding supported
- Input sampling frequencies from 8 KHz to 96 KHz supported
- Only AAC-LC output format supported
- Mono, stereo and dual mono input files supported
- Bit rates based on sampling frequency and number of channels supported
- Audio Data Interchange Format (ADIF), Audio Data Transport Stream (ADTS), and raw output format supported
- ISO/IEC 14496-3 (MPEG 4 AAC) and ISO/IEC 13818-7 (MPEG 2-AAC) standards compliant
- Validated on DM6437 EVM with Code Composer Studio version 3.2.37.12 and Code Generation Tools version 6.0.8



description

AAC is one of the most popular audio compression standards across wide spectrum of application ranging from portable player, cell phones, music systems, internet, and so forth. It is validated on DM6437 EVM with Code Composer Studio version 3.2.37.12 and Code Generation Tools version 6.0.8.



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PRODUCT PREVIEW



summary of performance

Table 1. Configuration Table

CONFIGURATION	ID
AAC_LC	AACLC_ENC_001

Table 2. Cycles Information – Profiled on DM6437 EVM with Code Generation Tools Version 6.0.8

CONFIGURATION ID	PERFORMANCE STATISTICS (IN MEGA CYCLES PER SEC) ¹		
	TEST DESCRIPTION	AVERAGE	PEAK ²
AACLC_ENC_001	44 KHz – 128 kbps	31.65	38

¹ Profiling is done by thrashing cache after encoding each frame of AAC

² Measured with program memory, stack, and I/O buffers in external memory and with cache configuration 32K-bytes L1P cache, 16K-bytes L1D cache, 64K-bytes L2 cache

Table 3. Memory Statistics - Generated with Code Generation Tools Version 6.0.8

CONFIGURATION ID	MEMORY STATISTICS ³				
	PROGRAM MEMORY	DATA MEMORY			TOTAL
		INTERNAL	EXTERNAL	STACK	
AACLC_ENC_001	109	Not used	107	5.5	222

³ All memory requirements are expressed in kilobytes (1K-byte = 1024 bytes).

Table 4. Internal Data Memory Split-up

CONFIGURATION ID	DATA MEMORY – INTERNAL ⁴		
	SHARED		INSTANCE ⁵
	CONSTANTS	SCRATCH	
AACLC_ENC_001	Not used	Not used	Not used

⁴ All memory requirements are expressed in kilobytes

⁵ Does not include I/O buffers

Table 5. External Data Memory Split-up

CONFIGURATION ID	DATA MEMORY – EXTERNAL ⁶		
	SHARED		INSTANCE ⁷
	CONSTANTS	SCRATCH	
AACLC_ENC_001	22	8.2	76.5

⁶ All memory requirements are expressed in kilobytes

⁷ Does not include I/O buffers

**notes**

- I/O buffers:
 - Input buffer size = 1536 bytes
 - Output buffer size = 1024 words per channel
- Total data memory for N non pre-emptive instances = Constants + Runtime Tables + Scratch + N*(Instance + I/O buffers + Stack)
- Total data memory for N pre-emptive instances = Constants + Runtime Tables + N*(Instance + I/O buffers + Stack + Scratch)

references

- ISO/IEC IS 14496-3 Information Technology -- Coding of Moving Pictures and Associated Audio for Digital Storage Media at up to about 1.5 Mbps -- Part 3: Audio
- ISO/IEC IS 13818-7 Information Technology -- Generic Coding of Moving Pictures and Associated Audio Information -- Part 7 Advanced Audio Coding
- User Guide for AAC Encoder on C64x+ (SPRUEY8)

glossary

Constants	Elements that go into .const memory section
Scratch	Memory space that can be reused across different instances of the algorithm
Shared	Sum of Constants and Scratch
Instance	Persistent-memory that contains persistent information - allocated for each instance of the algorithm



Acronyms

AAC	Advanced Audio Coding
ADIF	Audio Data Interchange Format
ADTS	Audio Data Transport Stream
CBR	Constant Bit Rate
EVM	Evaluation Module
Kbps	Kilo bits per second
KHz	Kilo Hertz
LC	Low Complexity
MPEG	Moving Picture Experts Group
PCM	Pulse Code Modulation
VBR	Variable Bit Rate
XDAIS	eXpressDSP Algorithm Interface Standard
XDM	eXpressDSP Digital Media

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