- **eXpressDSP Algorithm Interface Standard (XDAIS) compliant**
- **Supports both REV2 and REV3 versions of C55x.**
- **16-bit PCM samples supported as input**
- **Constant Bit Rate (CBR) encoding supported.**
- **Input sampling frequencies from 8 KHz to 96 KHz supported**
- **Only AAC-LC output format supported**
- **Mono and stereo input files supported**
- **Bit rates based on sampling frequency and number of channels supported**
- **Audio Data Interchange Format (ADIF), and Audio Data Transport Stream (ADTS) output format supported**
- **ISO/IEC 14496-3 (MPEG 4 AAC) and ISO/IEC 13818-7 (MPEG 2-AAC) standards compliant**
- **Validated on TMS320C5505 EVM with Code Composer Studio version 3.3 and Code Generation Tools version 4.3.3**

PRODUCT PREVIEW

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 TMS320C5505 EVM with Code Composer Studio version 3.3 and Code Generation Tools version 4.3.3.

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Summary of performance

Table 1.   Configuration Table

CONFIGURATION	ID
AAC_LC	AACLC_ENC_001

Table 2.   Cycles Information – Profiled on TMS320C5505 EVM with Code Generation Tools Version 4.3.3

CONFIGURATION ID	PERFORMANCE STATISTICS (IN MEGA CYCLES PER SEC)[1]		
	TEST DESCRIPTION	AVERAGE	PEAK
AACLC_ENC_001	44.1 kHz – Stereo 64 kbps	48.85	62.4

[1] Measured with stack, instance, and scratch in DARAM and rest in SARAM,

Table 3.   Memory Statistics - Generated with Code Generation Tools Version 4.3.3

CONFIGURATION ID	MEMORY STATISTICS[2]				
	PROGRAM MEMORY	DATA MEMORY			TOTAL
		INTERNAL	EXTERNAL	STACK	
AACLC_ENC_001	48	77.25	0	2.0	127.25

[2] 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	28	6.25	43

[4] All memory requirements are expressed in kilobytes
[5] Does not include I/O buffers

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Notes

- I/O buffers:
- − Output buffer size = 2048 bytes
- − Input buffer size = 1024 samples 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 C55x

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

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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

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