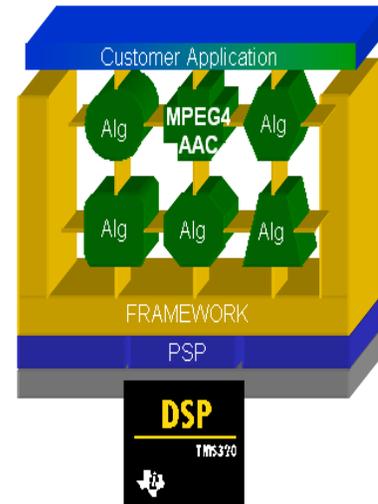




- eXpressDSP™ compliant
- Supports sampling frequency conversion from any to any frequency within the standard set (8, 11.025, 16, 22.05, 24, 32, 44.1, 48) KHz



Description:

- Efficient Stereo SRC implementation on a single TMS320C55x DSP
- Required memory for code and data is 2.6Kw. This makes it capable run on the internal memory of C55x processors.
- Supported Sampling Frequencies (KHz): 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, 48
- 16th Order Lagrange Interpolation for upward conversion
- 2nd Order Lowpass Elliptic Filter to reduce aliasing
- 16th Order Lagrange Interpolation for downward conversion
- TI eXpressDSP compliant
- CCS version 2.0 with CG Tools version 2.0 and Skywalker board with DA250(C5509 core) are used for development.

PRODUCT PREVIEW



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IA_SRC_C55X_V3.0

SAMPLE RATE CONVERTER ON TMS320DA250

RELEASE VERSION V3.0 – 28 MAY 2003

Summary of Performance

Table 1. Configuration Table

CONFIGURATION	ID
For Sampling Rate Conversion from 44.1KHz to 48.0KHz	A

Table 2. Cycles Information–Profiled on TMS320DA250 EVM

CONFIGURATION ID	TEST FILE PARAMETERS	PERFORMANCE STATISTICS (IN MIPS)	
		AVERAGE	PEAK
A	Sampling Frequency 44.1 KHz	6.352	7.062

Table 3. Memory Statistics- Generated with Code Generation Tools Version 2.55

CONFIGURATION ID	MEMORY STATISTICS ¹				
	PROGRAM MEMORY	DATA MEMORY			TOTAL
		INTERNAL	EXTERNAL	STACK	
A	3.864	2.929	0	0.500	7.293

¹All memory requirements are expressed in kilobytes (1 kilobyte = 1024 8-bit bytes).

Table 4. Internal Data Memory Split-up

CONFIGURATION ID	DATA MEMORY – INTERNAL ²		
	SHARED		INSTANCE ¹
	CONSTANTS	SCRATCH	
A	2.343	0	0.586

¹All memory requirements are expressed in kilobytes (1 kilobyte = 1024 8-bit bytes)

² Does not include I/O Buffers

Notes

- I/O Buffers - Input Buffer Size = 1024 bytes,
Output Buffer Size = 128 bytes.
- 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)
- Stack includes stack and sysstack

SAMPLE RATE CONVERTER ON TMS320DA250

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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

SRC	: Sample Rate Converter
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REVISION HISTORY

This data sheet revision history highlights the technical changes made to the SPRA237A data sheet to make it an SPRA237B revision.

Scope: Applicable updates to SRC on TMS320DA250 have been incorporated.

DATE	VERSION	ADDITIONS/CHANGES/DELETIONS
22 ND May 03	v1.0	Initial
28 TH May 03	v1.1	Review Comments Incorporated

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