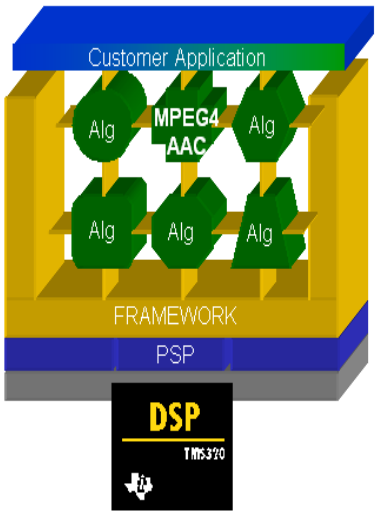
- **eXpressDSP™ compliant**
- **Supports sampling frequency conversion from any to any frequency within the standard set (8, 11.025, 16, 22.05, 24, 32, 44.1, 48) KHz**



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 conversionm
- 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

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

[1] All 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

[1] All 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

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

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
22ND May 03	v1.0	Initial
28TH May 03	v1.1	Review Comments Incorporated

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