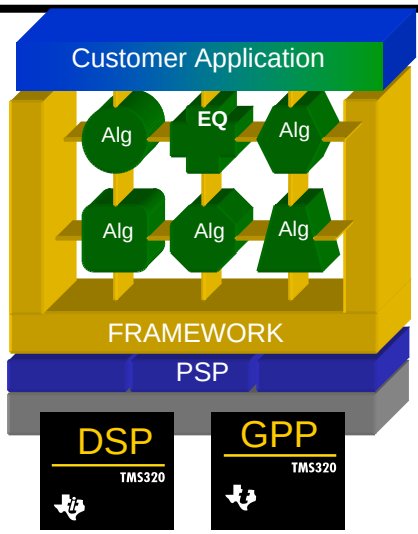
- **EQ for TI c55x DSP family**
- **eXpressDSP™ compliant**



Description

- N bands
- Gain adjustable from –15dB to +15dB in 1 dB steps
- Distortion free flat spectrum at 0 dB gain
- No unpleasant audible artifacts during gain changes
- 16-bit mono PCM input and output audio data
- Center frequencies and bandwidths are configurable off – line
- Implemented by 2nd order IIR sections in cascade.

PRODUCT PREVIEW

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PRODUCT PREVIEW

Summary of performance

Table 1. Configuration Table

CONFIGURATION	ID
N=5 (All 5 Gains changed)	EQ_001

Table 2. Cycles Information–Profiled on C55X SKYWALKER board

CONFIGURATION ID	TEST FILE PARAMETERS	PERFORMANCE STATISTICS (IN MHZ)	
		AVERAGE	PEAK
EQ_001	Oops_44khz.pcm(mono)	7.637	7.585

Table 3. Memory Statistics - Generated with Code Generation Tools Version 2.56

CONFIGURATION	MEMORY STATISTICS[1]				
	PROGRAM MEMORY	DATA MEMORY			TOTAL
		INTERNAL	EXTERNAL	STACK	
EQ_001	.98	.71	0	1.19	2.88

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

Table 4. Internal Data Memory Split-up

CONFIGURATION	DATA MEMORY – INTERNAL[1]		
	SHARED		INSTANCE [2]
	CONSTANTS	SCRATCH	
EQ_001	.29	0	0.42

[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 = 128 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

references

Texas Instruments “EQ reference Manual” Ver 2.1

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

EQ	Equalizer

PRODUCT PREVIEW

REVISION HISTORY

Scope: Applicable updates to the Audio Sample Rate Converter have been incorporated.

DATE	VERSION	ADDITIONS/CHANGES/DELETIONS
23rd DEC 03	2.2	Data sheet modified according to new template.

PRODUCT PREVIEW

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