Altair | HyperWorks®

VisSim/Fixed Point™

Fixed-Point Algorithm Software

Key Highlights

- Automatic radix-point scaling of fixed-point blocks and operations to maximize dynamic range
- Color highlighting at block level for overflow alerts
- High and low watermarks to determine adequate headroom for radix-point settings
- f(x) notation
- Master fixed-point word length control
- Word size between 1 and 32
- Data-type aware blocks
- Intuitive dialog boxes to configure fixed-point options

System Requirements

- Professional VisSim v9.0
- Windows XP, Vista, 7, or 8
- 128 MB RAM
- 125 MB hard disk space

Introduction

VisSim/Fixed Point lets you easily simulate the behavior of fixed-point algorithms prior to code generation and implementation on fixed-point hardware. You can simulate fixed-point algorithms – such as, controllers or filters – together with floating point components – such as, motor or amplifier models – to validate their behavior in a virtual system prototype.

When used in conjunction with VisSim Embedded or VisSim/C-Code, VisSim/Fixed Point produces highly efficient, fixed-point production code for a Texas Instruments C2000 MCU or any fixed-point target supporting a C compiler.

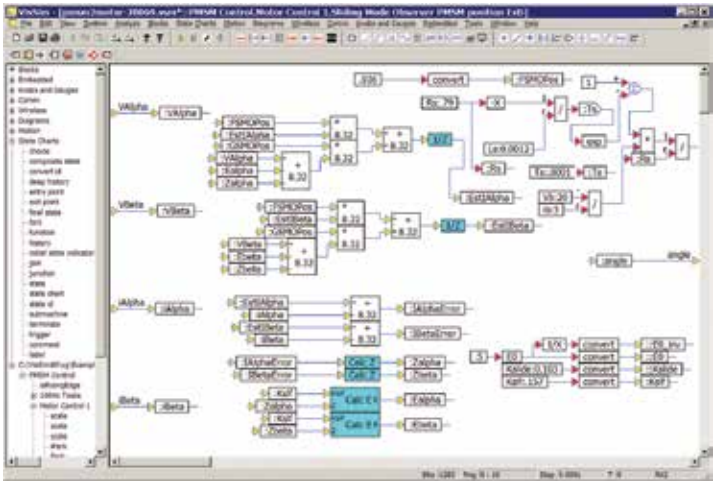
Fixed Point Block Set

Arithmetic
abs
atan2
constant
cos
div
gain
mul
negation
shift
sign
sin
sqrt
sum

Boolean
<
<=
==
!=
>
>=
and
not
or
xor

Dynamic
PI Regulator
PID Regulator
Filter
FIR
IIR
PIcontroller

Other
case
convert
limit
map
merge
sampleHold
unitDelay



Subsystem in a sliding mode observer estimator model that uses a variety of fixed-point blocks.

VisSim Fixed Point is a real boon for developing algorithms on fixed-point processors. The ease with which I can perform mixed simulations in all formats and verify my design before downloading it to the fixed-point processor is really amazing. With the overflow alert messages and optional auto-scaling, I never need to worry about overflows.

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