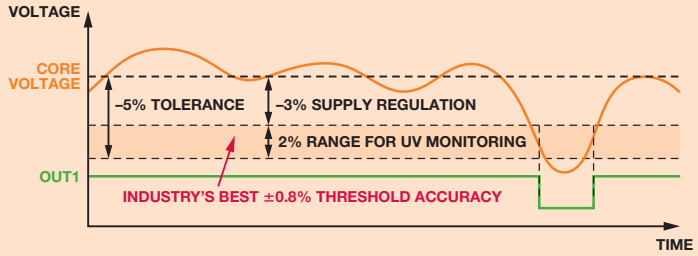
Supervisory Devices Complementary Parts Guide for Xilinx FPGAs

Advanced fabrication techniques and smaller process geometries are resulting in a trend towards lower core voltages. This trend, coupled with legacy I/O standards, results in FPGA-based designs with multiple voltage rails. To ensure system reliability, each of these rails should be supervised. Analog Devices offers an extensive portfolio of voltage supervisors, from simple single channel reset generators to multivoltage supervisors offering industry-leading threshold accuracy (±0.8%). As core voltages decrease, the importance of high threshold accuracy becomes increasingly important.

The core, I/O, and auxiliary (if applicable) voltage requirements of each Xilinx® FPGA family are listed in the Multivoltage Supervisors for Xilinx FPGAs selection table. Core voltages range from 1.0 V to 2.5 V, while the I/O voltage levels are between 1.2 V and 3.3 V.

High Accuracy Is Critical When Monitoring Low Voltage



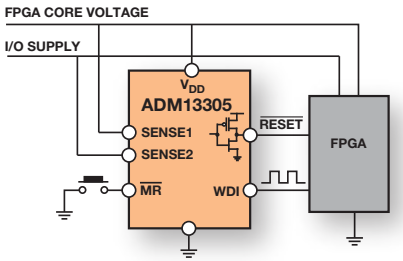
Multivoltage Supervisors for Xilinx FPGAs

Xilinx FPGAs

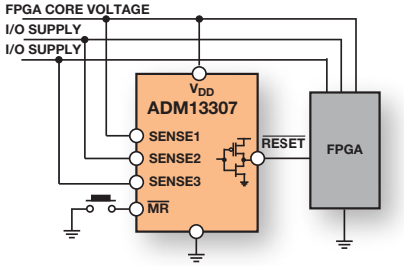
Xilinx FPGA Family	Core Voltage (V)	Auxiliary Voltage (V)	I/O Voltage (V)
Virtex®-5	1.0	2.5	1.2, 1.5, 1.8, 2.5, 3.3
Virtex-4	1.2	2.5	1.2, 1.5, 1.8, 2.5, 3.3
Virtex-II Pro	1.5	2.5	1.2, 1.5, 1.8, 2.5, 3.3
Virtex-II	1.5	3.3	1.2, 1.5, 1.8, 2.5, 3.3
Virtex-E/EM	1.8	N/A	1.5, 1.8, 2.5, 3.3
Virtex-E	1.8	N/A	1.5, 1.8, 2.5, 3.3
Spartan®-3A DSP	1.2	2.5, 3.3	1.2, 1.5, 1.8, 2.5, 3.3
Spartan-3AN	1.2	3.3	1.2, 1.5, 1.8, 2.5, 3.3
Spartan-3A	1.2	2.5, 3.3	1.2, 1.5, 1.8, 2.5, 3.3
Spartan-3E	1.2	2.5	1.2, 1.5, 1.8, 2.5, 3.3
Spartan-3	1.2	2.5	1.2, 1.5, 1.8, 2.5, 3.3
Spartan-IIE	1.8	N/A	1.5, 1.8, 2.5, 3.3
Spartan-II	2.5	N/A	1.5, 1.8, 2.5, 3.3

ADI Multivoltage Monitors

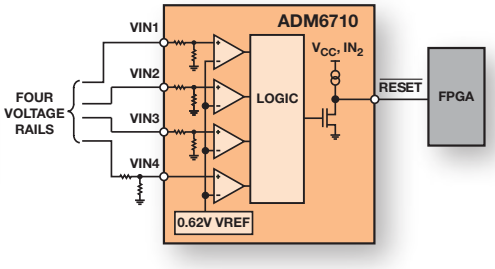
Number of Voltages Monitored	Part Number
1	ADM8616, ADM809, ADM6319
2	ADM13305
3	ADM13307
3 or 4	ADM6710
4	ADM1184



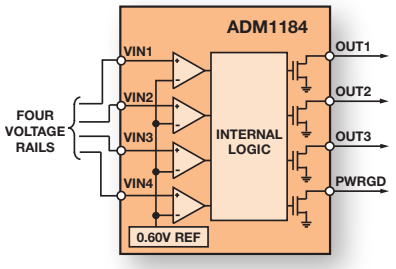
ADM13305: ±0.8% accurate dual processor supervisor with watchdog in 8-lead, narrow-body SOIC package.



ADM13307: ±0.8% accurate triple processor supervisor in 8-lead, narrow-body SOIC package.



ADM6710: ±1.5% accurate triple/quad voltage microprocessor supervisor in 6-lead SOT-23 package.



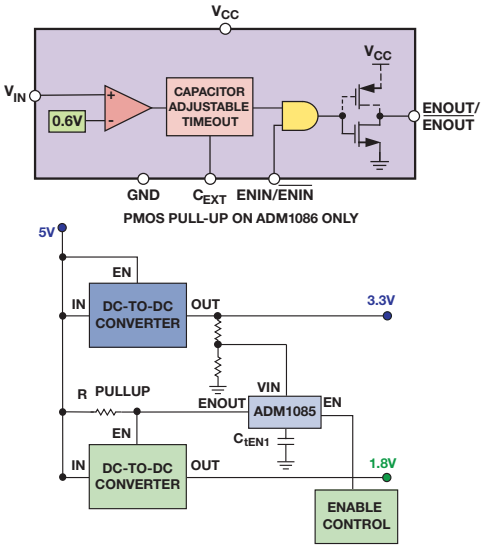
ADM1184: ±0.8% accurate quad voltage monitor in 10-lead MSOP package.

www.analog.com/power

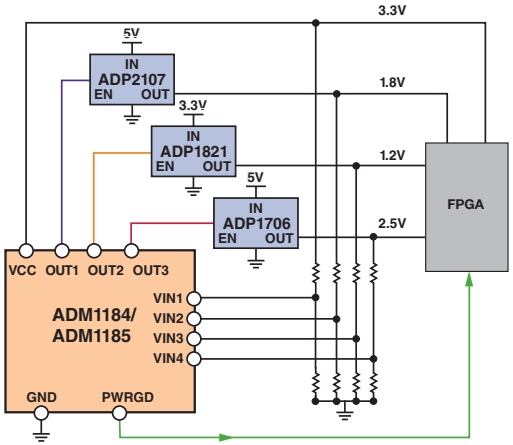
ANALOG DEVICES

Power Supply Sequencing

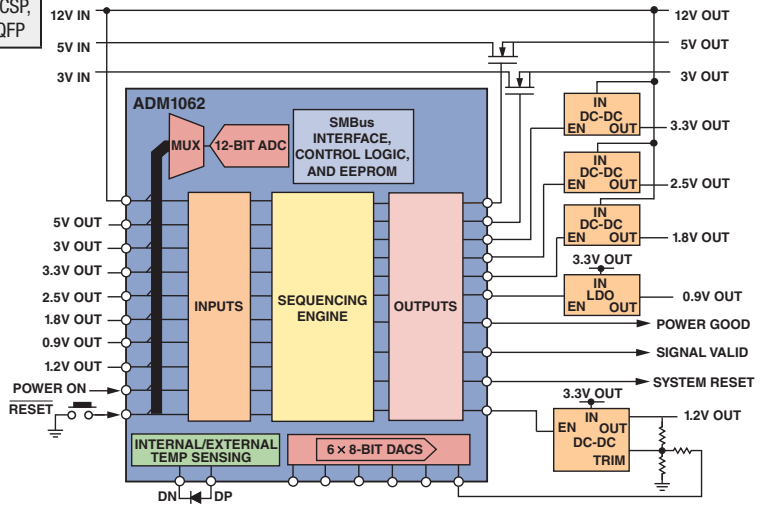
Number of Supplies Monitored	Part Number	Voltage Monitoring Accuracy (±%)	Sequence	FET Drive/Enable Outputs	Programming Method	Package
1: cascadable	ADM1085, ADM1086, ADM1087	<7	Up	Enable	R's, C's	6-lead SC70
2: cascadable	ADM6819, ADM6820	<2.6	Up	FET drive	R's, C's	6-lead SOT-23
4: cascadable	ADM1184, ADM1185	<0.8	Up	Enable	R's, C's	10-lead MSOP
4: cascadable	ADM1186-1	<0.8	Up, down	Enable	R's, C's	20-lead QSOP
4	ADM1186-2	<0.8	Up, down	Enable	R's, C's	16-lead QSOP
7: cascadable	ADM1060	<2.5	Programmable logic	Both	SMBus	28-lead TSSOP
8: cascadable	ADM1068	<1	Programmable state machine	Both	SMBus	32-lead LQFP
8: cascadable	ADM1069	<1	Programmable state machine	Both	SMBus	40-lead LFCSP, 32-lead LQFP
10: cascadable	ADM1062, ADM1063, ADM1064, ADM1065, ADM1067	<1	Programmable state machine	Both	SMBus	40-lead LFCSP, 48-lead TQFP
12: cascadable	ADM1066	<1	Programmable state machine	Both	SMBus	40-lead LFCSP, 48-lead TQFP



Power-up sequencing with the ADM1085/ADM1086/ADM1087.



ADM1184/ADM1185: ±0.8% accurate quad monitor and sequencer.



ADM1062: monitor and sequencer.

Analog Devices, Inc.
Worldwide Headquarters
Analog Devices, Inc.
One Technology Way
P.O. Box 9106
Norwood, MA 02062-9106
U.S.A.
Tel: 781.329.4700
(800.262.5643,
U.S.A. only)
Fax: 781.461.3113

Analog Devices, Inc.
Europe Headquarters
Analog Devices, Inc.
Wilhelm-Wagenfeld-Str. 6
80807 Munich
Germany
Tel: 49.89.76903.0
Fax: 49.89.76903.157

Analog Devices, Inc.
Japan Headquarters
Analog Devices, KK
New Pier Takeshiba
South Tower Building
1-16-1 Kaigan, Minato-ku,
Tokyo, 105-6891
Japan
Tel: 813.5402.8200
Fax: 813.5402.1064

Analog Devices, Inc.
Southeast Asia
Headquarters
Analog Devices
22/F One Corporate Avenue
222 Hu Bin Road
Shanghai, 200021
China
Tel: 86.21.2320.8000
Fax: 86.21.2320.8222

www.analog.com/power

ANALOG DEVICES