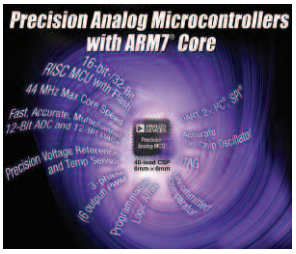
ANALOG DEVICES

ADuC7xxx

Core: ARM7TDMI



Targeted primarily at applications in industrial, instrumentation and communications, and automotive segments, these families of precision analog Flash microcontrollers, or MicroConverter products, address the growing demands for integration and thus ease of design, programmability, and precision analog performance. This is achieved by combining, precision analog functions such as high resolution A/Ds and D/As, voltage reference and temperature sensor together with an industry-standard microcontroller and embedded Flash memory, in a single chip.

Features

Microcontroller

- ARM7TDMI Core, 16-/32-bit RISC architecture
- JTAG Port supporting code download and debug
- Clocked from 3 percent on chip oscillator or external crystal/clock source or internal 1 percent on the ADuC7034/33/32
- 44 MHz PLL with programmable divider
- Up to 126 KB Flash/EE memory
- 8 KB SRAM
- Integrated peripherals
  - Three phase PWM
  - Dual I²C, SPI, UART
  - Quadrature encoder (ADuC7128/9)

  Programmable logic array
- Clocking options
  - Trimmed on-chip oscillator (3 percent low power oscillator or 1 percent precision oscillator on ADuC703x)
  - External watch crystal
  - External clock source

Analog

- Multi-channel, 12-bit, 1 MSPS A/D converter with 0V to VRef analog input range and 12-bit no-missing-codes performance
- Up to 16 A/D converter channels offering either single-ended, pseudo-differential or fully differential input
- Dual or quad 12-bit voltage output DAC
- On-chip voltage reference
- On-chip temperature sensor (±3°C)
- Uncommitted voltage comparator
- 2.7V to 3.6V supply with 5V tolerant I/O

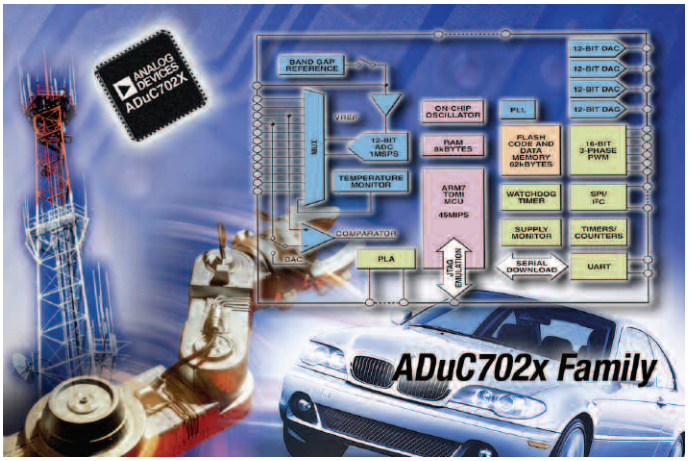
Benefits

- In-circuit download via LIN, UART or I²C.
- Small form-factor (6 mm x 6 mm) chip-scale packaging options
- Programmable logic array
- Three-phase (six output) PWM
- Uncommitted comparator
- QuickStart development tools with IDE
- Operating temperature range is -40°C to +125°C

ADuC7xxx Development Kit

The ADuC7xxx Development System is a fully featured, low-cost development tool-suite supporting all devices in the ARM7 (ADuC7xxx) family of microcontrollers from Analog Devices. The ADuC7xxx QuickStart™ Development System incorporates a complete suite of software and hardware development tools that allow you to quickly and efficiently design, program, simulate, download, and debug a typical precision analog microcontroller application.

ADuC702x Family Block Diagram



Family Comparative Features ▸

Part Number	Memory		Temperature °C	Package Type	Core Variant ID	Max Frequency (MHz)	A/D Bits	AD Channels	Timer Channels	Timer Bits	Serial Interface Description	GPIO	Ethernet	USB	Peripherals
	Flash/ROM (KB)	RAM (KB)													
ADUC7027	62	8	-40 to +125	QFP80	ARM7TDMI	44	12	16	4	2 x 32-bit, 2 x 16-bit	SPI, UART, 2xI²C	40	–	–	PLA, Comparator, PSM, POR, PWM
ADUC7026	62	8	-40 to +125	QFP80	ARM7TDMI	44	12	12	4	2 x 32-bit, 2 x 16-bit	SPI, UART, 2xI²C	40	–	–	Quad 12-bit DAC, PLA, Comparator, PSM, POR, PWM
ADUC7020	62	8	-40 to +125	CSP40	ARM7TDMI	44	12	5	4	2 x 32-bit, 2 x 16-bit	SPI, UART, 2xI²C	14	–	–	Quad 12-bit DAC, PLA, Comparator, PSM, POR
ADUC7021	62	8	-40 to +125	CSP40	ARM7TDMI	44	12	8	4	2 x 32-bit, 2 x 16-bit	SPI, UART, 2xI²C	13	–	–	Quad 12-bit DAC, PLA, Comparator, PSM, POR
ADUC7022	62	8	-40 to +125	CSP40	ARM7TDMI	44	12	10	4	2 x 32-bit, 2 x 16-bit	SPI, UART, 2xI²C	13	–	–	PLA, Comparator, PSM, POR
ADUC7024	62	8	-40 to +125	CSP64	ARM7TDMI	44	12	10	4	2 x 32-bit, 2 x 16-bit	SPI, UART, 2xI²C	30	–	–	Dual 12-bit DAC, PLA, Comparator, PSM, POR, PWM
ADUC7025	62	8	-40 to +125	CSP64	ARM7TDMI	44	12	12	4	2 x 32-bit, 2 x 16-bit	SPI, UART, 2xI²C	30	–	–	PLA, Comparator, PSM, POR, PWM
ADUC7019	62	8	-40 to +125	CSP40	ARM7TDMI	44	12	5	4	2 x 32-bit, 2 x 16-bit	SPI, UART, 2xI²C	14	–	–	Triple 12-bit DAC, PLA, Comparator, PSM, POR
ADUC7128	126	8	-40 to +125	CSP64	ARM7TDMI	44	12	10	5	1 x 48, 3 x 32, 1 x 16	2xUART, 2xI²C, SPI	28	–	–	10-bit DAC, PLA, 16-bit PWM, Quad Encoders, DDS
ADUC7129	126	8	-40 to +125	LQFP80	ARM7TDMI	44	12	10	5	1 x 48, 3 x 32, 1 x 16	2xUART, 2xI²C, SPI	38	–	–	10-bit DAC, PLA, 16-bit PWM, Ext. Bus, Quad Encoders, DDS
ADuC7028	62	8	-40 to +125	BGA64	ARM7TDMI	44	12	10	4	2 x 32-bit, 2 x 16-bit	UART, 2xI²C, SPI	28	–	–	12-bit DAC, PLA, 3 Phase PWM
ADuC7034	32	4	-40 to +115	CSP48, LQFP48	ARM7TDMI	20.48	16	Dual	5	1 x 48, 3 x 32, 1 x 16	LIN, UART, SPI	9	–	–	High-voltage, LIN, Temp. Sensor, Comparator
ADuC7032	96	6	-40 to +105	LQFP48	ARM7TDMI	20.48	16	3	5	1 x 48, 3 x 32, 1 x 16	LIN, UART, SPI	9	–	–	High-voltage, LIN, Temp. Sensor, Comparator
ADuC7033	96	6	-40 to +115	CSP48, LQFP48	ARM7TDMI	20.48	16	Dual	5	1 x 48, 3 x 32, 1 x 16	LIN, UART, SPI	9	–	–	High-voltage, LIN, Temp. Sensor, Comparator
ADuC7060	32	4	-40 to +125	QFP48, CSP48	ARM7TDMI	10.24	24	2	4	2 x 32-bit, 2 x 16-bit	SPI, UART, I²C	16	–	–	Single 14-bit DAC, Vectored Interrupt Controller (VIC)
ADuC7061	32	4	-40 to +125	CSP32	ARM7TDMI	10.24	24	2	4	2 x 32-bit, 2 x 16-bit	SPI, UART, I²C	8	–	–	Single 14-bit DAC, Vectored Interrupt Controller (VIC)
ADuC7062	32	4	-40 to +125	CSP32	ARM7TDMI	10.24	24	1	4	2 x 32-bit, 2 x 16-bit	SPI, UART, I²C	8	–	–	Single 14-bit DAC, Vectored Interrupt Controller (VIC)

Development Tools Matrix ▸

Tool Name	Description	Part Number
MiniKit for ADuC702x-series (ARM7-core) Precision Analog Microcontrollers	ADuC702x-series MiniKits feature debug via UART and an assembly and C-source debugging environment. (Only Supports ADuC7020)	EVAL-ADUC7020MKZ
QuickStart kit for ADuC702x-series (ARM7-core) Precision Analog Microcontrollers	ADuC702x-series QuickStart kits feature debug via UART and an assembly and C-source debugging environment. (Supports ADuC7019, ADuC7020, ADuC7021, ADuC7022)	EVAL-ADUC7020QSZ
QuickStart kit for ADuC7024 & ADuC7025 series (ARM7-core) Precision Analog Microcontrollers	This QuickStart kits feature debug via UART and an assembly and C-source debugging environment. (Supports ADuC7024 & ADuC7025)	EVAL-ADUC7024QSZ
QuickStart kit for ADuC7026 & ADuC7027 series (ARM7-core) Precision Analog Microcontrollers	This QuickStart kits feature debug via UART and an assembly and C-source debugging environment. (Supports ADuC7026 & ADuC7027)	EVAL-ADUC7026QSZ
QuickStart PLUS for ADuC7026 (ARM7-core) Precision Analog Microcontrollers	ADuC7026 QuickStart PLUS features a true non-intrusive JTAG emulation and an assembly and C-source debugging environment. (Supports ADuC7019 and ADuC702x)	EVAL-ADUC7026QSPZ
QuickStart PLUS for ADuC7032 (ARM7-core) Precision Analog Microcontrollers	ADuC7032 QuickStart PLUS features a true non-intrusive JTAG emulation and an assembly and C-source debugging environment. (Only Supports ADuC7032)	EVAL-ADUC7032QSPZ
QuickStart PLUS for ADuC7033 (ARM7-core) Precision Analog Microcontrollers	ADuC7033 QuickStart PLUS features a true non-intrusive JTAG emulation and an assembly and C-source debugging environment. (Supports ADuC7034 and ADuC7033)	EVAL-ADUC7033QSPZ
QuickStart PLUS for ADuC7128 (ARM7-core) Precision Analog Microcontrollers	ADuC7128 QuickStart PLUS features a true non-intrusive JTAG emulation and an assembly and C-source debugging environment. (Only Supports ADuC7128)	EVAL-ADUC7128QSPZ
QuickStart PLUS for ADuC7129 (ARM7-core) Precision Analog Microcontrollers	ADuC7129 QuickStart PLUS features a true non-intrusive JTAG emulation and an assembly and C-source debugging environment. (Only Supports ADuC7129)	EVAL-ADUC7129QSPZ
QuickStart PLUS for ADuC706x (ARM7-core) Precision Analog Microcontrollers	ADuC7060 QuickStart PLUS features a true non-intrusive JTAG emulation and an assembly and C-source debugging environment. (Supports ADuC7060, ADuC7061 and ADuC7062)	EVAL-ADUC7060QSPZ

ADuC7xxx QuickStart™ Development System

For more information on Arrow's ARM solutions, pricing, and availability, **visit www.arrownac.com/arm** or call **1-866-910-3650**.