

AVR Microcontroller, AVR Family AT32UC3A1 Series Microcontrollers, AVR, 32bit, 66 MHz, 512 KB

Manufacturers	Microchip Technology, Inc
Package/Case	TQFP-100
Product Type	Embedded Processors & Controllers
RoHS	Green
Lifecycle	



Images are for reference only

Please submit RFQ for AT32UC3A1512-AUR or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

General Description

High-performance, low-power 32-bit AVR RISC-based microcontroller combines 512KB flash, 64KB SRAM, 10/100 ethernet MAC, full-speed (12 Mbps) USB 2.0 with embedded host capability, I2S, and a built-in audio D/A converter.

The MCU achieves 91 Dhrystone MIPS (DMIPS) at 66 MHz while consuming only 40 mA at 3.3V.

The Peripheral Direct Memory Access (PDCA) controller transfers data between peripherals and memories without processor involvement, drastically reducing processing with continuous large data streams within the MCU.

Features

Microcontroller Features

Core

High Performance, Low Power 32-Bit Atmel® AVR® Microcontroller

Up to 91 DMIPS Running at 66 MHz from Flash (1 Wait-State)

Up to 49 DMIPS Running at 33MHz from Flash (0 Wait-State)

Memory Protection Unit (MPU)

Multi-hierarchy Bus System

Memories

512K Bytes, 256K Bytes, 128K Bytes Versions, Single Cycle Access up to 33 MHz

64K Bytes (512KB and 256KB Flash), 32K Bytes (128KB Flash)

External Memory Interface on AT32UC3A0 Derivatives

SDRAM / SRAM Compatible Memory Bus (16-bit Data and 24-bit Address Buses)

System

Power and Clock Manager Including Internal RC Clock and One 32KHz Oscillator

Two Multipurpose Oscillators and Two Phase-Lock-Loop (PLL) allowing Independent CPU Frequency from USB Frequency

Watchdog Timer, Real-Time Clock Timer

5V Input Tolerant I/Os

Single 3.3V Power Supply or Dual 1.8V-3.3V Power Supply

Package

100-pin TQFP (69 GPIO pins), 144-pin LQFP (109 GPIO pins), 144 BGA (109 GPIO pins)

Temperature operating range

Industrial (-40° C to +85° C)

Peripheral Features

USB 2.0 Device: Full Speed and On-The-Go (OTG) Low Speed and Full Speed

Flexible End-Point Configuration and Management with Dedicated DMA Channels

On-chip Transceivers Including Pull-Ups

Ethernet MAC 10/100 Mbps interface

802.3 Ethernet Media Access Controller

Supports Media Independent Interface (MII) and Reduced MII (RMII)

One Three-Channel 16-bit Timer/Counter (TC)

One 7-Channel 16-bit Pulse Width Modulation Controller (PWM)

Four Universal Synchronous/Asynchronous Receiver/Transmitters (USART)

Independent Baud rate Generator, Support for SPI, IrDA and ISO7816 interfaces

Support for Hardware Handshaking, RS485 Interfaces and Modem Line

Two Master/Slave Serial Peripheral Interfaces (SPI) with Chip Select Signals

One Synchronous Serial Protocol Controller

Supports I2S and Generic Frame-Based Protocols

One Master/Slave Two-Wire Interface (TWI), 400kbit/s I2C-compatible

Analog Features

One 8-channel 10-bit Analog-To-Digital Converter\

16-bit Stereo Audio Bitstream

Sample Rate Up to 50 KHz

Debugger Development Support

On-Chip Debug System (JTAG interface)

Nexus Class 2+, Runtime Control, Non-Intrusive Data and Program Trace

Related Products



[ATSAMA5D36A-CU](#)

Microchip Technology, Inc
LFBGA-324



[ATXMEGA128D3-AU](#)

Microchip Technology, Inc
TQFP-64



[ATMEGA64M1-15AZ](#)

Microchip Technology, Inc
TQFP-32



[ATTINY48-MU](#)

Microchip Technology, Inc
VQFN-32



[ATMEGA32M1-AU](#)

Microchip Technology, Inc
TQFP-32



[ATTINY2313V-10SU](#)

Microchip Technology, Inc
SOIC-20



[ATMEGA16L-8PU](#)

Microchip Technology, Inc
PDIP-40



[ATTINY4-TSHR](#)

Microchip Technology, Inc
SOT-23-6