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RA2A1

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32-bit Microcontrollers with 48MHz Arm® Cortex®-M23 and Integration of 24-bit Sigma-Delta ADC

The RA2A1 Group of microcontrollers (MCUs) uses a high-performance Arm® Cortex®-M23 core and offers highly integrated, high-accuracy analog capabilities. This group of ICs offers a complete MCU with analog solution for signal conditioning and measurement. The RA2A1 Group supports a wide operating voltage range of 1.6V to 5.5V. It includes a 16-bit SAR ADC, 24-bit Sigma-Delta ADC, comparators, operational amplifiers, and DACs. The RA2A1 MCU targets cost sensitive and low power industrial sensor applications where high resolution analog will become a cost benefit.

Features

- 48MHz Arm® Cortex®-M23
- 256kB Flash memory and 32kB SRAM
- 8kB Data Flash to store data as in EEPROM
- Scalable from 32-pin to 64-pin packages
- Capacitive touch sensing unit
- 16-bit SAR A/D, 24-bit SD A/D
- 12-bit D/A, 8-bit D/A
- OPAMP (3ch), ACMP-HS/LP
- USB 2.0 Full Speed
- CAN 2.0
- SCI (UART, Simple SPI, Simple I2C)

Applications

- Industrial automation (photoelectric sensor, fiber sensor, temperature sensor)
- Process automation (pressure sensor, flow control meter, single phase meter)
- Building automation/home appliance (smoke detector)
- Healthcare (pulse oximeters, body composition measurement)
- General purpose

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RA2A1 Block Diagram

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Documentation & Downloads

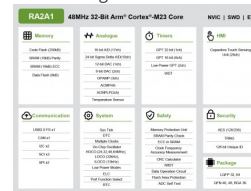| Title	Other Languages	Type	Format	File Size	Date
Datasheets & Errata					
Renesas RA2A1 Group Datasheet	–	Datasheet	PDF	1.22 MB	Mar 16, 2020
User Guides & Manuals					
Renesas RA2A1 Group User's Manual: Hardware	–	Manual	PDF	15.97 MB	Oct 8, 2019
Application Notes & White Papers					
Renesas Flash Programmer Usage from the Command Line	日本語	Application Note	PDF	208 KB	May 21, 2020
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Unification of a JEDEC tray and a embossed carrier tape for LQFP package (Additional Information & Correction)	日本語	Product Change Notice	PDF	4.86 MB	Jan 30, 2018
Other					

Title	Other Languages	Type	Format	File Size	Date
Errata for User's Manual: Hardware for accessing data flash without using a device driver	–	Technical Update	PDF	125 KB	Mar 19, 2020
Renesas Software and Tools Flash Memory Programmer PG-FP6	日本語	Brochure	PDF	417 KB	Mar 16, 2020
RA2A1 Group Flyer	日本語	Flyer	PDF	333 KB	Mar 12, 2020

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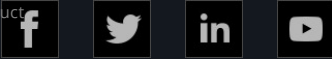▶ See All Related Documentation & Downloads

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