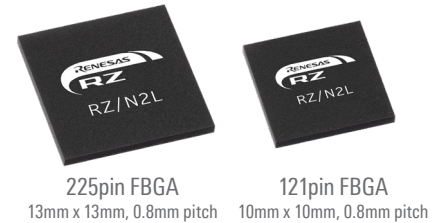


Arm® Cortex®-R52 Based MPU RENESAS RZ/N2L GROUP

Easily Implement Industrial Ethernet and TSN on Industrial Systems

The RZ/N2L industrial Ethernet microprocessor (MPU) easily adds network functionality onto industrial equipment and machine. RZ/N2L is optimized as a dedicated networking companion chip that can easily implement industrial Ethernet communication and TSN in industrial equipment. The RZ/N2L is a single chip solution for both industrial network and application processing.



Key Features

- Arm® Cortex®-R52 @ Max 400MHz
- A tightly coupled memory (256KB) directly connected to CPU
- 3-port Gigabit Ethernet switch supporting next-generation network standard TSN and EtherCAT® salve controller
- Host interface allows application CPU to directly connect to RZ/N2L, and access at high speed
- Application CPU can directly access to the system RAM of RZ/N2L
- ELC (Event Link Controller) can be operated without the support of CPU processing
- Supports functional safety like a safety MCU

Benefits

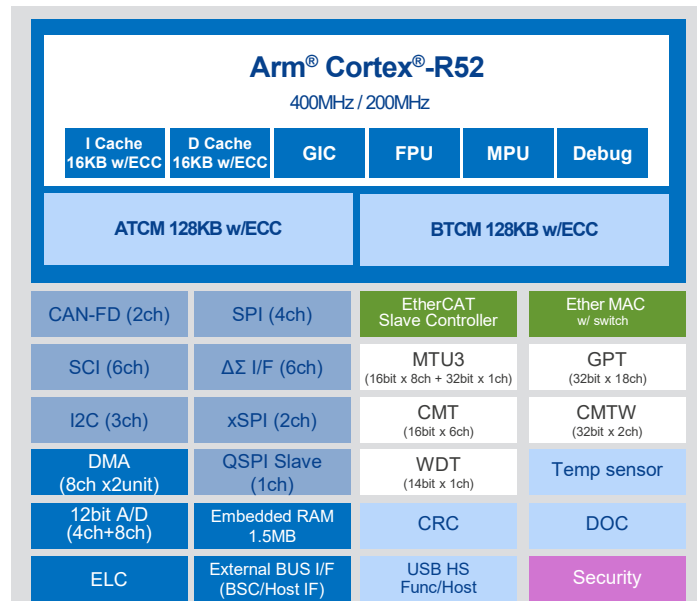
- Enable next-generation network standard TSN, and major industrial Ethernet protocols such as EtherCAT®, PROFINET, EtherNet/IP™
- Add industrial Ethernet features to industrial equipment without major system change
- Operate industrial Ethernet and user application on one chip
- Realize synchronized operation with low latency to the time synchronization in TSN network
- Accelerate functional safety (FuSa) development and certification through upcoming certified FuSa solution for RZ/N2L

Target Applications

- Communication unit
- Remote IO
- Sensor Hub
- Gateway
- Motor Drive

Block Diagram

- Arm® Cortex®-R52 400MHz
- FPU
- TCM 256KB (with ECC)
- Embedded 1.5MB (with ECC)
- 3-port Gigabit Ethernet switch with TSN
- EtherCAT slave controller
- Serial host I/F, Parallel host I/F
- xSPI
- CAN-FD
- PWM Timer
- ΔΣ I/F
- ADC
- Trigonometric function unit



RENESAS RZ/N2L GROUP

Industrial Network Protocol Supported

- EtherCAT®
- PROFINET RT/IRT
- EtherNet/IP™
- OPC UA over TSN
- TSN (IEC/IEEE 60802 Industrial Profile)
- CC-Link IE Field Basic/TSN class A
- Modbus/TCP
- POWERLINK
- DeviceNet
- PROFIBUS
- CANopen
- Modbus/RTU, ASCII
- BACnet

Evaluation Environment and Software

- Renesas e²studio + J-Link by Segger
- IAR Embedded Workbench for Arm + I-Jet ICE/ I-Jet Trace by IAR
- Flexible Software Package (FSP)
 - Hardware drivers
 - FreeRTOS
- Industrial network protocol (sample code)
- Security software package



Renesas Starter Kit+ for RZ/N2L
(P/N:RTK9RZ2L0S00000BE)

Product Information

Part Number	R9A07G084M08GBG	R9A07G084M04GBG	R9A07G084M08GBA	R9A07G084M04GBA
CPU	Cortex®-R52 (Max 400MHz)			
Tightly Coupled Memory	ATCM 128KB (w/ECC) / BTCM 128KB (w/ECC)			
RAM	1.5MB (w/ECC)			
External bus	8, 16bit		Not supported	
Host I/F	Serial Host	OSPI/QSPI		QSPI
	Parallel Host	8, 16bit		Not supported
Industrial Ethernet Protocol	EtherCAT®, PROFINET RT/IRT, EtherNet/IP™, TSN (IEC/IEEE 60802 Industrial Profile), CC-Link IE Field Basic, OPC UA over TSN			
Ether Port	3 ports		2 ports	
Motor Control Peripherals	PWM Timer (MTU3, GPT), ADC*, $\Sigma\Delta$ Interface, Trigonometric function unit			
Security	Supported	Not Supported	Supported	Not Supported
Power	1.1V, 1.8V, 3.3V			
Operating Temperature	Tj = -40 to +125°C			
Package	FBGA		FBGA	
Pin Count	225pin		121pin	
Package Information	13mm x 13mm, 0.8mm pitch		10mm x 10mm, 0.8mm pitch	

*225pin only

Visit www.renesas.com/rzn2l to learn more about RZ/N2L.

Visit www.renesas.com/rskrzn2l for more information about the evaluation kit of RZ/N2L.

renesas.com

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