Certify it! Functional Safety

RX63N/631 Microcontroller Series, RX111 Microcontroller Series

RENESAS RX

TÜVRheinland® CERTIFIED

Functional Safety Type Approved
www.tuv.com
ID 0600000000

To enable a seamless integration into safety applications, Renesas provides certification packages for the RX63N/631 and the RX111 microcontroller series. They include a safety manual containing the results from a comprehensive analysis based on each function part of the microcontroller, and all relevant information and procedures related to functional safety. A diagnostic software library contains all necessary self-tests for the CPU core, for RAM and ROM. Since the diagnostic coverage of the CPU core is already proven by fault simulation tests, an effective system integration is enabled and system development time is shortened.

Applications

- Industrial Motor Drives
- Programmable Logic Controllers
- Safety Controllers
- Safety Sensors

Key Benefits

- Solution compliant to the safety standard IEC61508:2010
- Safety Manual with relevant information and procedures related to functional safety
- Diagnostic SW library containing test routines for RX CPU core, RAM, and ROM
- High quality RX CPU core self-test, diagnostic coverage proven by fault simulation tests
- Diagnostic SW developed for SIL3 using IEC61508 compliant IAR Embedded Workbench for RX
- Scalable solution applicable to all devices of RX63N/631 or RX111
- Solution compliant to IEC61508
- Certified by TÜV Rheinland
- Enables faster time-to-market

Safety Solution Scheme

SIL2 enabled with one RX MCU

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SIL3 enabled with two RX MCUs
Master   Cross-Monitoring   Watchdog
RENESAS   RENESAS

RX Safety Solution

Safety Manual

Diagnostic SW Library

Certificate from TÜV Rheinland (compliance to IEC61508:2010)

Certify it! Functional Safety for RX63N/631 and RX111 Microcontroller Series
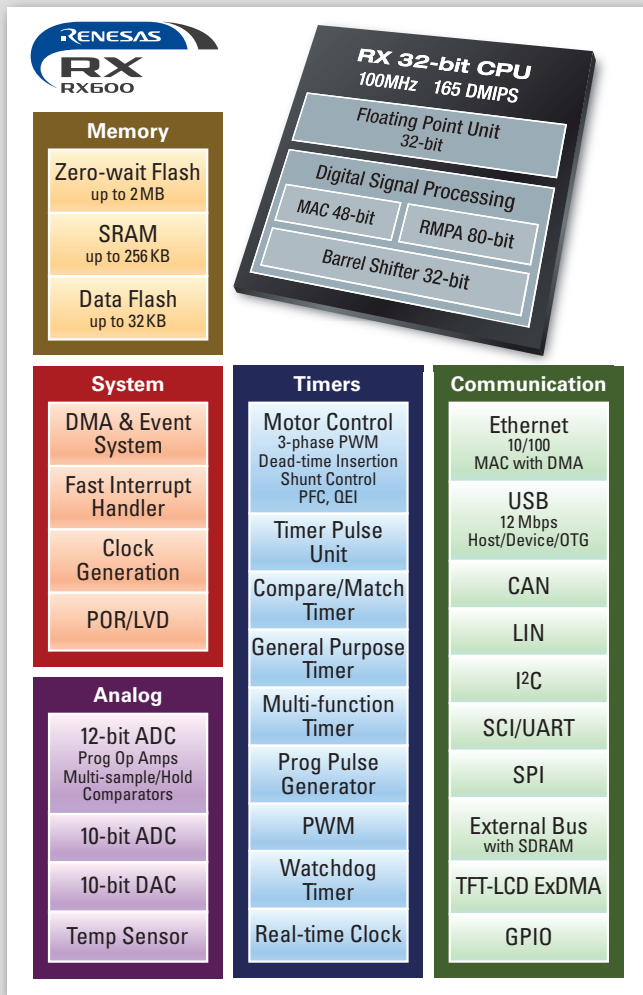
Solution Packages

Functional Safety Evaluation Kit (including Evaluation License)

- Renesas Starter Kit+ for RX63N or Starter Kit for RX111
- Diagnostics library for CPU, RAM, and ROM
- Diagnostics Software User Guide
- Safety Manual Evaluation Version
- IAR Installer EWRX-FS v2.42.4 (Evaluation Version)
- Quick Start Guide
- Video

Functional Safety Production License

- Diagnostics library for CPU, RAM, and ROM (Source Code)
- Diagnostics Software User Guide
- Safety Manual Full Version
- Certificate & Test Report from TÜV Rheinland

About Self-test Diagnostic Software Library
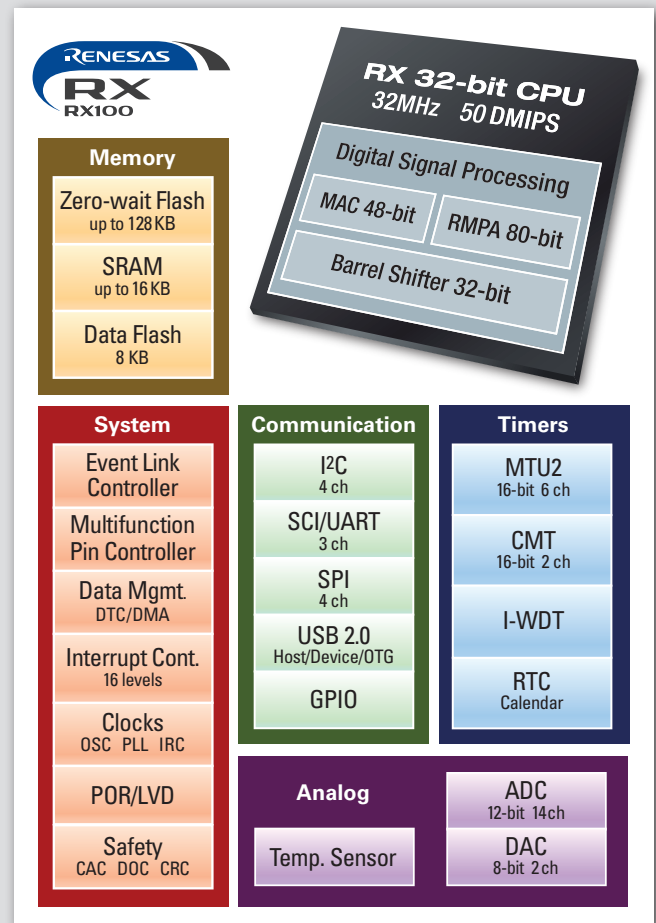
Diagnostic Functions	CPU Core, RAM, Flash ROM
Test Timing	At start up or during run time
Running of Test Condition	In sequences or in slices
Configurability	Independent CPU test segments, flexible memory sizes
Development Tool (C Compiler)	IAR Embedded Workbench for RX Functional Safety Version
Certification	IEC61508 SIL3 Certified by TÜV Rheinland

Ordering Information

Order Code	Product
YCERTIFY-IT-RX63N-EV	RX631/63N Safety Evaluation Kit
YCERTIFY-IT-RX111-EV	RX111 Safety Evaluation Kit

Block Diagram RX63N/631 Series

Block Diagram RX111 Series

Before purchasing or using any Renesas Electronics products listed herein, please refer to the latest product manual and/or data sheet in advance.