

RENESAS READY PARTNER ECOSYSTEM QUOTE SHEET



Contents

RZ Ready Partners.....	02
Artificial Intelligence (AI)	02
Board/Hardware Components.....	03
Middleware	04
 RA, RX and RL78 Ready Partners	 05
Security & Safety.....	05
Connectivity & Cloud.....	07
Artificial Intelligence (AI)	08
Human Machine Interface (HMI)	09
Sensing & Control	11
Application Specific/Emerging	12
Tools & User Experience.....	13

RZ Ready Partners

ARTIFICIAL INTELLIGENCE (AI)



Next System uses the latest deep learning technology to develop VisionPose posture estimation artificial intelligence engine .

"By combining Renesas' AI chip and our VisionPose, it will be possible to estimate the attitude of edge-side devices such as AI cameras, and we expect that demand for safety monitoring systems with simpler system configurations will increase."

– Yoshio Fujita of Next System



FPT Software is a global technology and IT services provider focused on digital transformation.

"We are glad to maintain the successful partnership with Renesas in a long time, and currently as a member of RZ Partner Ecosystem. We strongly believe that the RZ MPU/MCU not only leverages the stable performance and robust functions of our AI powered software products related to audio, robotics, automotive industry, and retails, but also enables us to meet the wider range of needs from our global customers."

– Nguyen Thanh Lam, Director of NextG Incubation Center - FPT Software Co.Ltd.



Ignitarium provides engineering services expertise in semiconductor design, multimedia, AI and embedded software.

"Ignitarium is excited to be part of Renesas RZ Ready partner network for Edge AI software. This strategic partnership is a validation of Ignitarium's deep capabilities in 2D and 3D sensor driven AI solution development, and specifically of our proven track record of developing highly optimized custom AI software for applications ranging from Video, Lidar, Radar and Sensor Fusion processing. Renesas RZ AI SoCs enables high performance Edge AI applications at lower power and cost vantage points, targeting Industrial, Consumer & Robotics sectors. With its unique and scalable DRP architecture and its long-term roadmap of AI SoCs, Renesas is enabling customers globally along with a strong ecosystem of RZ Ready partners,"

– Pradeep Sukumaran, VP - AI & Cloud SW of Ignitarium.



Computer Mind Co., Ltd. creates AI solutions for industrial clientele using cutting-edge computer vision technologies.

"The RZ series' small dimensions and low power consumption are very appealing features to our industrial customers. We believe that by leveraging the RZ series for the deployment of high computational cost AI models, the variety of solutions will increase, and the usage of AI will be promoted. By cooperating with Renesas to deploy both specific projects produced for our clients and our in-house "DeepEye" on RZ series, we hope to have a greater impact on society by introducing AI into a wide range of products and services across industries."

BOARD/HARDWARE COMPONENTS



iWave Systems offers an extensive portfolio of System on Modules and telematics solutions.

"iWave Systems a preferred Partner for Renesas working very closely has successfully provided multiple RZ/G1 Series processor SOM with the standard Q7, SODIMM, and SBC form factors. iWave Systems one of the first to adapt the OSM form factor for SOM is supporting the customer with the next-generation Renesas G2UL/ A3UL/ FIVE-based SOM in an OSM v1.1 Size-M specification. With the OSM form factor, we offer improved resilience and compactness, as well as flexibility and scalability for embedded systems. iWave SOM with the best design discipline has been validated for multiple levels of hardware, software, and in-house environmental testing to make sure our products meet versatile applications demands."



ARIES Embedded provides development services and standard products (OSM, SMARC) for demanding industrial applications.

"For applications based on the OSM standard, ARIES Embedded offers modules based on Renesas' RZ/G2UL, RZ/Five, RZ/G2L and RZ/V2L architectures. "These microprocessors are cost optimized and very convenient to use in many different markets," explains Andreas Widder. "ARIES Embedded in particular offers a solution with the RZ/V2L architecture that nicely supports AI applications and leverages this technology already on a MPU level."

– Andreas Widder CEO of ARIES Embedded



SolidRun is a global developer of flexible, energy-efficient embedded systems and network solutions.

"Leveraging Renesas RZ/G2LC microprocessor allowed SolidRun to tap into new customer segments such as HMI and industrial controllers, while expanding its embedded & IoT product portfolio. Renesas RZ/G2LC offers a competitive mix of price and performance enhanced with an extensive roadmap for future developments, making this an ideal solution for embedded mid-market and many IoT applications."

– Dr. Atai Ziv of Solidrun



Ka-Ro electronics provides expertise in manufacturing, electronics development, and Computer on Modules.

"We are very pleased to expand our two, globally successful module families with new variants equipped with Renesas RZ/G2L processors. These products enable us to meet our customers' requirements for availability, long-term availability, outstanding performance, and high hardware-, as well as software quality. Inexpensive eval kits with ready to use Linux kernels and excellent support from our development engineers guarantees easy access to our Renesas SOMs without long training periods."

– Uwe Steinkohl of Ka-Ro electronics GmbH



NovTech, Inc. provides rapid system solutions for automotive, consumer industrial, and home automation industries.

"We found the RZ/G2L and V2L to be a well packed set of peripherals compared with other SoC. The flexibility of the DDR interface signal routing is the best we have faced so far. Our new Single Board Computer (SBC) based on Renesas RZ/G2L and RZ/V2L, is a production ready industrial Raspberry Pi 3+ Form Factor providing access to most of the SoC interfaces and may serve as a core platform in new product design."

— Yossi Har-Nov, Manager of NovTech Inc.

MIDDLEWARE



Sherpa provides integration services for embedded systems, particularly using real-time operating systems.

"When Renesas introduced its Renesas Industrial Engine (R-IN) product line there was a lot of interest from industrial field device makers. At the request of many of these customers, and in collaboration between Softing Industrial Automation, Renesas Electronics and Sherpa, we have developed a toolkit for development of industrial device interface's firmware for the most important industrial protocols. Our firmware development kit takes full advantage of R-IN's hardware OS and built-in hardware capabilities, which allows firmware development for different protocols in a matter of months if not weeks. We strongly recommend R-IN engine-based LSIs for industrial application."



TES Electronic Solutions GmbH "TES" offers a full spectrum of embedded hard and software IP design services.

"Renesas RZ and our Guiliani GUI framework is an ideal solution for stylish UX/UI systems," states Thomas Hase, Senior Business Development Manager at TES Electronic Solutions, "because the RZ family is specifically designed for GUI applications. The major RZ benefits such as cost-effectiveness and many GUI features are perfectly utilized by our scalable, user-friendly, and well supported Guiliani software. We recommend giving it a try to feel the power of Guiliani on RZ for yourself!"

Algorithm Specialist



TMC develops systems and solutions through high quality software and hardware development technology using "DMNA".

"In transcribing the minutes of a meeting from recording or in a human-machine interface by voice command, ambient voice or noise may make it difficult to hear the desired voice clearly. For this reason, the needs for technology that emphasizes only audio in a specific direction is increasing. There is an alternative solution to use a directional microphone, but the cost and size are major issues. TMC has developed and commercialized a software IP that realizes high-quality sound by beam forming and reducing the ambient noise by noise suppressor for the sound picked up by two inexpensive omnidirectional microphones."



MicroEJ is a software vendor of cost-driven solutions for embedded and IoT devices.

"MicroEJ's collaboration with Renesas has opened more possibilities than ever for every device manufacturer. The combination of MicroEJ VEE software container and RZ/A outstanding features and capabilities makes it possible to accelerate the design of innovative products and offer digital capabilities new to the embedded world, making everyday objects software defined. Our field-proven realizations with Renesas RZ/A MCUs in consumer and industrial products make us very confident in the tremendous potential of leveraging MicroEJ technology for Renesas RZ."

— Dr. Fred Rivard, CEO of MicroEJ



GRAPE SYSTEMS INC. provides embedded device solutions and distributes embedded products in Japan.

"As widely known, QR codes are used in many scenarios today, such as automatic ID technology, including QR codes that provides increased user convenience. Grape Systems offers library products that help development vendors easily implement QR code encoding and/or decoding capabilities in their embedded devices and add value to their devices."

We already have a lot of experience with Renesas microcontrollers and look forward to continuing our good partnership with Renesas to meet more market requirements in the future."

— Makoto Yanagida of Grape Systems Inc.

RA, RX and RL78 Ready Partners

SECURITY & SAFETY



Cypherbridge Systems delivers secure IoT solutions from concept to production for device platforms and the cloud.

"We are excited to announce our expanded partnership with Renesas. The RA MCUs bring new mid-range IoT solutions to market, with competitive value points and a long-term roadmap. The Renesas RA Family and Flexible Software Package has everything needed to securely go to cloud, enabling new business value and services that accelerate time-to-solution. Integrating the Cypherbridge SDKPac and uLoadXL secure boot loader solutions with the RA FSP platform delivers a family of SDKs and Toolkits tailored to meet a wide range of IoT applications."

— Steve DeLaney of Cypherbridge Systems



EPS Global provides programming and secure provisioning services.

"While the IoT has many benefits, the reality is the proliferation of connected devices that make up the IoT ecosystem has introduced risk directly into the physical world. To protect IoT devices, security must be built in from the initial application design and throughout the supply chain. Our vision at EPS is to enable security on our partners' devices by offering simple, cost-effective provisioning-as-a-service through our global network of programming centers. Our partnership with Renesas and its RA Family of 32-bit MCUs means we can leverage their award-winning security platforms, along with our own in-house production technology, and deliver real value to customers."
— Colin Lynch, CEO of EPS Global

0x5 HEX-Five Security

Hex Five® delivers MultiZone® Security, the quick and safe way to add security and separation to Renesas Cortex-M devices.

"Securing Cortex-M applications is particularly challenging as these devices typically lack hardware security mechanisms like TrustZone. In the past, to comply with security regulations, developers had no choice but to upgrade hardware and firmware - resulting in lengthy and costly system redesigns. Today, Renesas customer have a new option: MultiZone Security offers a convenient alternative path to a hardware upgrade. MultiZone can retrofit existing Cortex-M applications: if you don't have TrustZone, or if you require finer granularity than one secure world, you can take advantage of high-security hardware separation without the need for a system redesign."
— Cesare Garlati, Founder Hex Five Security



IAR Systems supplies future-proof software tools and services for embedded development.

"To help our customers meet their increasing security requirements, we focus on easing security implementation, both in existing and new designs. By supporting both the RA and RX families, we deliver a security solution that enables developers to leverage their security investment across several architectures without the need for extensive redesign or rework."
— Clive Watts, Director of Product Management, Embedded Security Solutions at IAR Systems



SMARTAXIOM

SmartAxiom software manages and secures IoT devices through a patented, lite blockchain technology.

"Security experts care a lot about 'defense in depth' and the excellent security features built into the Renesas RA MCU and RZ MPU families such as secure boot and crypto engine, which make a great foundation for SmartAxiom's endpoint-to-cloud IoT management and security solution. They also have impressive power capabilities at an excellent price point to enable compelling solutions for our joint customers in smart buildings, industrial automation, and logistics."
— Trent Poltronetti, VP Sales and Marketing at SmartAxiom



Veridify Security provides fast, small, ultra-low-energy, and quantum-resistant security solutions.

"We are happy to show the power and scalability of device-level security management on the Renesas RA Family of MCUs. Our new DOME™ platform gives RA MCU users zero-touch onboarding, a lifetime blockchain pedigree for every microcontroller, in-field ownership management functions, and secure firmware updates that are simple, cost-effective, and fast. We are proud to be a Renesas partner and congratulate them on the launch of the new RA Family. We look forward to continuing our collaborative work focused on delivering innovating IoT security solutions to their global customer base."

- Louis Parks, CEO at Veridify Security



wolfSSL lightweight TLS/Crypto Library provides secure communication for Applications, Devices, IoT, and the Cloud.

"IoT Security can be difficult to implement, let alone understand, which is why wolfSSL is thrilled to expand our rich partnership with Renesas and provide stronger embedded security with the RA Ready solution. This out of the box solution enables fast time to market, provides superior IoT Security and support for the vast Arm ecosystem, and efficiently handles modern TLS/Crypto stacks (TLS 1.3 Support) with industry standard support such as MISRA C, FIPS, DO-178. We are pleased to bring our best of breed TLS/Crypto Libraries to the RA MCU families via the RA Ready Program."

- Larry Stefonic, wolfSSL Founder & CEO

CONNECTIVITY & CLOUD



AltoBeam is a fabless semiconductor design company focuses on the development of ICs for digital wireless communications.

"We are pleased to partner with Renesas to integrate AltoBeam's ATBM6031 Wi-Fi chip driver into the RA Family of 32-bit MCUs. We are committed to working with Renesas to provide IoT total solutions that offer a low investment cost and short development cycle."

— Li Nan, Marketing Director of AltoBeam



Clarinox licenses Bluetooth, Bluetooth Low Energy and Wi-Fi protocol stacks.

"Clarinox is pleased to partner with Renesas to meet the increasing demand for complex connectivity in embedded designs. Combining the Renesas RA MCUs performance, rich I/O support and enhanced security features with the Clarinox BT/BLE/Wi-Fi protocol stacks and ClariFi debugger enables faster and more secure wireless development. In addition, Clarinox's support for many RTOS/OS and wireless chipsets provides excellent flexibility for developers, giving them an out of box experience with their choice of RTOS and wireless hardware. The reduction in development time facilitates faster time to market for Renesas customers."

—Trish Messiter, CEO of Clarinox



RELOC provides a full spectrum of engineering services to build a connected world.

"The design of secure and robust IoT products call for versatile MCU devices and production-ready software platforms that support wireless connectivity. The Renesas RA Family of Arm Cortex-M microcontrollers leverages the FreeRTOS and middleware stacks to meet the performance and flexibility needs of IoT embedded applications. RELOC is pleased to enrich the Renesas RA offering, adding wireless connectivity to its solid technology foundation. By integrating our Wi-Fi software solutions with Renesas Flexible Software Package, we provide customers with a complete device-to-cloud reference design that significantly reduces time-to-market."

— Andrea Ricci, CEO of RELOC srl



Silex supplies highly reliable and secure wireless connectivity.

"We are thrilled that our Wi-Fi IoT module has been selected by Renesas as the trusted connectivity solution for the RA Family. Renesas has integrated the Silex SX-ULPGN-2000 driver into the RA platform to enable Wi-Fi connectivity out of the box. We are committed to working closely with Renesas by providing our secure and robust IoT connectivity and premium customer support experience to our mutual global customers moving forward."

— Keith Sugawara, CEO and President of Silex Technology America.

ARTIFICIAL INTELLIGENCE (AI)



Qeexo provides an intuitive UI allowing users to collect, clean, and visualize data, and build machine learning models.

"Our Qeexo AutoML platform can automatically build 'TinyML' solutions—which is the lightweight machine learning that makes devices smarter—for a myriad of use cases including predictive maintenance and gesture/motion recognition. With high performance and low power, Renesas' RA MCUs and the RA Ready Sensor Module is a great platform for running optimized machine learning models built with Qeexo AutoML."

— Sang Won Lee, CEO of Qeexo

HUMAN MACHINE INTERFACE (HMI)



AMI addresses intelligent man machine interfaces for natural communication between humans and machines.

"By combining Renesas RA microcontrollers with our AmiVoice, I foresee an increase in demand for offline voice recognition. Also, I believe voice communication will expand into areas not previously possible. Our solution realizes high recognition accuracy using RA MCUs, which allow us to easily program various voice commands into the MCU's large memory."

— Takao Kobayashi of AMI



AIFA Technology combines edge voice recognition and IrDA remote controller function into one.

"We are very glad to work with Renesas. Renesas provide a turn kit voice recognition solution, RA4M2, and cover over 40+ kind of languages support and offline voice recognition which very suitable for our remote controller market and provide more better user experience"

— Alex Lin, Manager of R&D of AIFA Technology.



Cyberon Corporation provides Speech Recognition and Text-to-Speech technologies.

"We are thrilled to work with Renesas and their new RA MCU Family. Combining Renesas RA MCUs and Cyberon's speech solution allows us to explore more markets and provide users a convenient, natural, and reliable user experience. Cyberon's speech recognition SDK is widely adopted on a range of applications. The SDK provides local speech recognition without a network connection and its low resource requirements makes it ideal for simple devices."

— Alex Liou, Vice President of Cyberon Corporation



DSP Concepts audio platform powers agile audio development tools.

"TalkTo is an incredibly flexible audio front-end that eliminates noise in loud surroundings for high performance voice control. We're excited to bring TalkTo to Renesas' RA Microcontrollers. Our partnership allows us to further proliferate near- to mid-field Voice UI in a variety of IoT devices, such as smart appliances, smart security systems, and more."

— Chin Beckmann, CEO of DSP Concepts



GUI Solutions by TARA Systems

Embedded Wizard creates Graphical User Interfaces for embedded systems.

"We are pleased to partner with Renesas and are convinced that our customers can only benefit from the synergy effects that result from this partnership. Renesas' MCU family and Embedded Wizard are the perfect combination when it comes to HMI performance. The graphical, versatile capabilities of Embedded Wizard, coupled with the power and performance of Renesas fundamentals, together are an unbeatable team when it comes to reliability and ease of use."

– Manuel Melic, Product Manager of Tara Systems



Pachira provides complete AI technical consulting and intelligent voice solution services.

"Pachira is honored to partner with Renesas to combine our speech technology with the RA Family of MCUs. Our differentiated technology provides customers with a reliable, efficient, and powerful Artificial Intelligence of Things total solution. Together with Renesas, we are delivering user friendly HMI interfaces for smart home appliances, vehicles, speakers, and more."

– Jerry L., Sales Director of Pachira



Qt® delivers an independent graphics toolkit and application framework for building GUI applications.

"The Renesas RA Family with strong embedded security and ultra-low power operation complements Qt's libraries and tools for creating HMI for IoT endpoints such as consumer appliances, industrial equipment, building automation. We are happy to be part of the RA Ecosystem family"

– Aurindam Jana, Head of MCU Software Tools



Sensory Inc. creates a safer and superior UX through vision and voice technologies.

"Sensory continues to advance its state-of-the-art on-device AI, and we are proud to showcase our TrulyHandsFree wake word and command technology in a partner solution set with DSP Concepts' TalkTo on the Renesas RA series MCUs."

– Todd Mozer, President and CEO of Sensory

TES Electronic Solutions GmbH offers a full spectrum of embedded hard and software IP design services.

"Renesas and TES Electronic Solutions have been close partners for many years. We are proud to empower the RA MCU family with our D/AVE 2D graphics accelerator hardware IP, and now our GULIANI software is ready to get the most out of it. GULIANI gets your stylish and intuitive GUI out the door fast, first-time right and with the business model that suits your needs. Our engineers can also design your GUI for you, often a particularly cost-effective way forward."

— Joachim Huepper, Design Center Manager at TES Electronic Solutions



Techno Mathematical Co. develops application systems, single function LSIs and standard-compliant sound/graphic processing solutions.

"Our ZoomVoice software can emphasize the sound from the target direction and suppress ambient noise. By combining Renesas' new RA Series microcontrollers with ZoomVoice, we see significant improvement in voice recognition accuracy. The RA MCUs' use of high-speed memory and peripherals plays a key role improving ZoomVoice performance."

— Nobuki Kajino, Sales Director at TMC

SENSING & CONTROL



BFG Engineering development house focuses on hardware & software design targeted at advanced control for industrial drives.

"BFG is pleased to be an RA Family member and ecosystem partner delivering professional motor control solutions and creating value for the embedded MCU market. We have maintained a successful long-term partnership with Renesas as one of its Platinum Partners, building system solutions to meet the needs and demands of a wide variety of customers. We are now delivering hardware and software algorithms for RA MCUs that are based on the Flexible Software Package (FSP). BFG's ready to use RA solutions are available today to quick start project R&D, boost ROI, and accelerate time-to-production."

Desk Top Lab

DeskTopLab development support company provides technology for hardware and software related to motor control.

"At our company, we do not only provide software, but also provide consulting that includes education on actual motor control. In addition to simple motor control, we are increasingly providing know-how and solutions for troubleshooting."

— Mitsunao Sakamoto, CEO of the Desk Top Laboratories Inc.

APPLICATION SPECIFIC/EMERGING



create. software.



CS-Lab creates industrial and building automation development and programming applications.

"The BACnet Stack RA offers users an all-round carefree experience to develop BACnet-standard-compliant applications. Implementations for a wide range of operating systems are available, from older Windows systems to various Linux variants. Many details are processed automatically so that users no longer have to worry about them. The time saved in the development process may be in this case several months. With the BACnet Stack, CS-Lab is continuing the proven functionality and reliability of the MBS software."

– Christian Klinger, CEO of the CS-Lab GmbH



eProsimas provides micro-ROS frameworks and specializes in middleware solutions targeting robotic, IoT and automotive sectors.

"The collaboration of eProsimas and Renesas will facilitate the expansion of new robotic applications based on embedded devices. micro-ROS bridges the gap between microcontrollers and ROS 2, and the official support of the high-performance RA Family enables customers for cost-effective development in the areas of Industry 4.0 and Industrial IoT."

– Jaime Martin Losa, CEO of the eProsimas



GT&T, provides turnkey solutions for public transit, telematics, waste collection and event management.

"GTT is delighted to offer the Fleet Tracker blueprint based on the Renesas RA Family. The Renesas RA MCUs along with accompanying support from various Renesas technologies and a broad distributor network enabled the speedy time-to-market development of the Fleet Tracker solution. Renesas' MCU leadership and technology expertise allows customers to develop a customized end-to-end product with minimal investment and risk. GTT is ready to assist customers in meeting their specific needs and realize their product roadmap."

– Lee Boon Peng, CTO of GTT Engineering



Terranova supports Energy & Utilities companies with digitization, growth, business, and market position consolidation.

"By combining the power of a 32-bit Renesas RA microcontrollers and RL78/I1C metrology microcontrollers with our DLMS/COSEM stack, the whole development process of a single-phase and three-phase electricity meters has been significantly shortened, leading to a significantly much reduced time-to-market and to a more robust outcome. Prompt adaptation to standards and customization to regional requirements are continuously addressed, thanks to a dedicated design team, specialized in the development of communication protocols."

– Lucio Machetti, R&D Manager of Terranova

TOOLS & USER EXPERIENCE



CapExt simulation software allows engineers to make better PCBs.

"The partnership between CapExt and Renesas ensures that Renesas customers can achieve the best possible HMI performance. I'm convinced that the touch controller in the RA Series of MCUs combined with our software for touch simulations will save countless engineer-hours, while also guaranteeing the best field performance possible. With our easy to use capacitance and resistance simulator, Renesas customers can test several virtual prototypes from their own Gerber files in just a few minutes. This saves potential months of prototyping by easily optimizing the layout for noise immunity and water resistance."

— Torbjørn Viksand of CapExt AS

For more information, visit renesas.com/renesas-ready

renesas.com

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu, Koto-ku, Tokyo 135-0061, Japan
www.renesas.com

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.

Contact information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit:
www.renesas.com/contact/

© 2022 Renesas Electronics Corporation. All rights reserved.