An Overview of the Renesas 32-bit MCU/MPU Product Families

Renesas, the world's leading MCU/MPU vendor, offers a range of 32-bit microcontroller (MCU) and microprocessor (MPU) products that provide excellent expandability, while allowing customers to make full use of existing resources. These products are designed to deliver the greatest possible benefits at the lowest cost for the widest range of applications.

Renesas RX Family

The RX family are built around Renesas' exclusive RXv1/RXv2 CPU core and combine excellent operation performance with superior power efficiency. The family consists of four product series:

- the flagship **RX700** series, with the fastest performance and most advanced functions
- the standard **RX600** series
- the **RX200** series, which delivers an optimal balance of power efficiency and high performance
- the entry-level **RX100** series, with extremely low power consumption

Key features include:
- Maximum operating frequency 32MHz to 240MHz
- High-speed and high-performance 3.08 to 4.35 CoreMark/MHz
- Built-in Flash Memory up to 4MB
- Built-in Safety function
- Ethernet, USB, CAN, Motor control timer , TFT

Renesas RZ Family

The RZ family is a new range of embedded processors that retains the ease-of-use of Renesas microprocessors (MPUs) while combining Renesas' proprietary technologies with the ARM® ecosystem, fusing control and information technology (IT) to provide the solutions necessary for the 'smart society' of the future. The family consists of three product series:

- the **RZ/A** series of high-speed, high-performance processors have large-capacity on-chip RAM that makes WXGA size display possible without external SDRAM, and support faster device control, digital audio signal processing, and more
- the **RZ/G** series RZ/G series of high functionality processors with video control capabilities
- the **RZ/T** series of high-end controllers that leverage tightly-coupled memory to achieve high speed and high responsivity, and also support multi-protocol industrial Ethernet communications.

Key features include:
- ARM® core based embedded processors
- WXGA size (1280 x 768) display possible without external SDRAM
  These high-end controllers leverage tightly-coupled memory to achieve high speed and high responsivity, and also support multi-protocol industrial Ethernet communications
- support OpenOS, 3D graphics and Full HD video codecs

Renesas Synergy Platform

Synergy is Renesas's newly released premium platform, designed to accelerate time to market, reduce total cost of ownership and remove many of the obstacles engineers face as they develop embedded products. The Synergy Platform achieves this by using an innovative approach that lets engineers start product development at the API level, giving them more time to develop innovative and differentiated features.

Applications

The following table indicates the range of applications that can be addressed with the Renesas RX, RZ and Synergy 32-bit platforms.

Whether for home, office, factory, healthcare, ICT or other application, Amatek Design can help select the most appropriate platform for your product.

Application >>			HMI		Communications					Motor Control (BDLC)*	DAC
			LCD	TFT	USB Host	USB OTG	USB Device	Ethernet	CAN		
Solution	RX	RX1xx			✔	✔	✔		✔	✔	✔
		RX2xx			✔		✔		✔	✔	✔
		RX6xx		✔	✔	✔	✔	✔	✔	✔	✔
		RX7xx		✔	✔		✔	✔	✔	✔	✔
	Cortex-A	RZ/A		✔	✔		✔	✔	✔		
		RZ/G		✔	✔		✔	✔	✔		
	Cortex-R	RZ/T			✔		✔	✔	✔	✔	
	Cortex-M0+	Synergy S1							✔		✔
	Cortex-M4	Synergy S3	✔				✔		✔		✔
		Synergy S5		✔	✔		✔	✔	✔		✔
		Synergy S7		✔	✔		✔	✔	✔		✔

Renesas 'IDH Program'

The Renesas **Independent Design House Partner Program** is part of the robust support ecosystem that has been created to help customers get the most out of their investment in Renesas products.

As a **Renesas IDH Partner**, Amatek Design has demonstrated specific expertise in leveraging the advantages available from Renesas technologies to help customers create more fully featured, more innovative, more energy efficient and smarter devices; with that expertise cutting across both electronics design and software engineering fields.