

Separate Sheet

Product Specifications of the RZ/G1E and RZ/G1M MPUs

Series name	RZ/G	
Group name (Part number)	RZ/G1E (R8A77450HA01BG)	RZ/G1M (R8A77430HA01BG)
Power supply voltage	3.3/1.8 V (IO) 、 1.5 V (DDR3)、 1.03 V (Core)	3.3/1.8 V (IO) 、 1.35 V (DDR3L)、 1.03 V (Core)
CPU core	ARM® Cortex®-A7, dual-core	ARM® Cortex®-A15, dual-core
Max. operating frequency	1.0 GHz	1.5 GHz
Processing performance	3800 DMIPS	10500 DMIPS
Cache memory	<ul style="list-style-type: none"> • L1 instruction cache: 32 KB • L1 data cache: 32 KB • L2 cache: 512 MB 	<ul style="list-style-type: none"> • L1 instruction cache: 32 KB • L1 data cache: 32 KB • L2 cache: 1 MB
External memory	<ul style="list-style-type: none"> • Ability to connect DDR3-SDRAM via DDR dedicated bus • Max. operating frequency: 533MHz • Data bus width: 32 bits 	<ul style="list-style-type: none"> • Ability to connect DDR3L-SDRAM via DDR dedicated bus • Max. operating frequency: 800MHz • Data bus width: 32 bits × 2 channels
External expansion	<ul style="list-style-type: none"> • Ability to connect flash ROM or SRAM directly • Data bus width: 8/16 bits 	<ul style="list-style-type: none"> • Ability to connect flash ROM or SRAM directly • Data bus width: 8/16 bits • PCI Express 2.0 (1 lane)
3D graphics	PowerVR™SGX540	PowerVR™SGX544MP2
Video functions	<ul style="list-style-type: none"> • Video display interface × 2 channels(RGB888) • Video input interface × 2 channels • Video codec module: VCP3 • IP converter module • Video image processing functions (color conversion, image enlargement/reduction, filtering) 	<ul style="list-style-type: none"> • Video display interface × 2 channels (1 channel: LVDS, 1 channel: RGB888) • Video input interface × 3 channels • Video codec module: VCP3 • IP converter module • Video image processing functions (color conversion, image enlargement/reduction, filtering)
Audio functions	• Sampling rate converter × 6 channels	• Sampling rate converter × 10 channels

	<ul style="list-style-type: none"> • Serial sound interface × 10 channels 	<ul style="list-style-type: none"> • Serial sound interface × 10 channels
Storage interfaces	<ul style="list-style-type: none"> • USB 2.0 host interface × 2 ports (wPHY) • SD host interface × 3 channels (SDXC and UHS-I support) • Multimedia card interface × 1 channel 	<ul style="list-style-type: none"> • USB 3.0 host interface × 1 port (wPHY) • USB 2.0 host interface × 2 ports (wPHY) • SD host interface × 3 channels (SDXC and UHS-I support) • Multimedia card interface × 1 channel • Serial ATA interface × 2 channels
Other peripheral functions	<ul style="list-style-type: none"> • 32-bit timer × 12 channels • PWM timer × 7 channels • I2C bus interface × 8 channels • Serial communication interface (SCIF) × 15 channels • Quad serial peripheral interface (QSPI) × 1 channel (boot support) • Clock-synchronous serial interface (MSIOF) × 3 channels (SPI/IIS support) • Ethernet controller with AVB support (support for IEEE 802.1BA, IEEE 802.1AS, IEEE 802.1Qav, and IEEE 1722, GMII/MII interface, PHY device connection support) • Ethernet controller (IEEE 802.3u-compliant MAC on-chip, RMII interface, ability to connect to PHY device) • Controller area network (CAN) interface × 2 channels • Interrupt controller (INTC) • Clock generator (CPG): on-chip PLL • On-chip debug function 	<ul style="list-style-type: none"> • 32-bit timer × 12 channels • PWM timer × 7 channels • I2C bus interface × 9 channels • Serial communication interface (SCIF) × 15 channels • Quad serial peripheral interface (QSPI) × 1 channel (boot support) • Clock-synchronous serial interface (MSIOF) × 3 channels (SPI/IIS support) • Ethernet controller with AVB support (support for IEEE 802.1BA, IEEE 802.1AS, IEEE 802.1Qav, and IEEE 1722, GMII/MII interface, PHY device connection support) • Ethernet controller (IEEE 802.3u-compliant MAC on-chip, RMII interface, ability to connect to PHY device) • Controller area network (CAN) interface × 2 channels • Interrupt controller (INTC) • Clock generator (CPG): on-chip PLL • On-chip debug function
Package	501-pin FCBGA (21 mm x 21 mm)	831-pin FCBGA (27 mm × 27 mm)

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