

iWave's RZ/G1C SBC is based on Renesas power efficient Dual/Solo core ARM Cortex A7 CPU cores operating @1GHz speed. This board can be used for quick prototyping of various applications targeted by the RZ/G1C processor. With the 85mm x 56mm size, the kit is highly packed with all the necessary on-board connectors to validate the RZ/G1C CPU features.

**APPLICATIONS:** HMI & Access Control, Industrial Control, Healthcare devices, Point of sale, IoT, Home & Office automation and White goods & appliances.

## iW-RainboW-G23S HIGHLIGHTS

- Dual Core ARM Cortex-A7 @ 1GHz
- Hardware HD encode & decode
- Built in PowerVR SGX531 3D Graphics core
- High performance cost effective solution
- Ultra-compact form size 85mm x 56mm

## SPECIFICATIONS

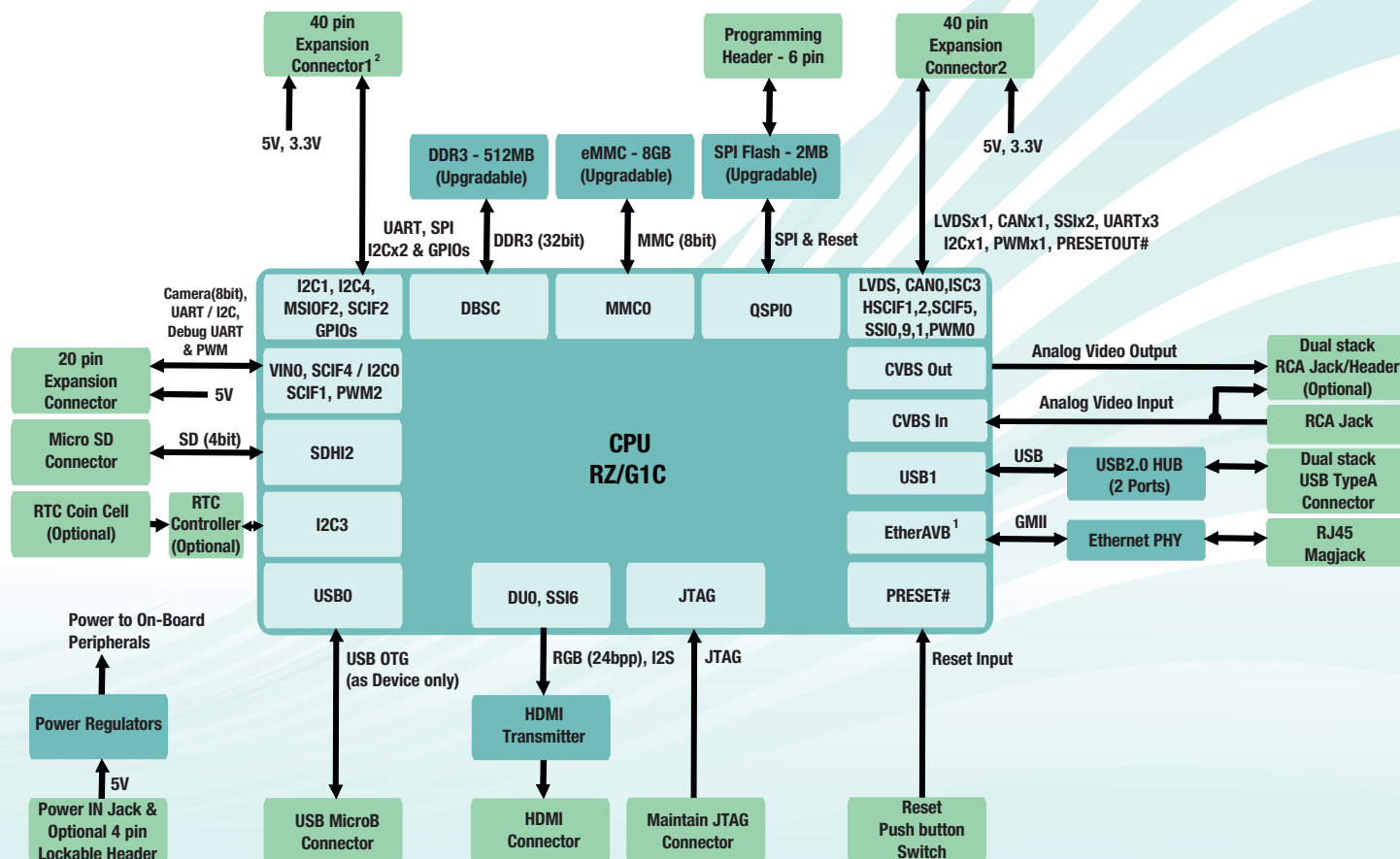
<b>CPU:</b>	<b>Expansion Connector1 (40 Pin) Interfaces:<sup>3</sup></b>
Renesas RZ/G1C Dual/Solo ARM Cortex™-A7 MPCore™ cores @ 1GHz	Data UART (without CTS & RTS) x 1
<b>Memory:</b>	SPI x1
DDR3 SDRAM – 512 MB (Expandable Up to 2GB)	I2C x 2
SPI Flash - 2MB (Expandable)	GPIOs (17nos)
eMMC Flash - 8GB (Expandable)	<b>Expansion Connector2 (40 Pin) Interfaces:</b>
Micro SD Connector	LVDS x 1
<b>Communication Features:</b>	CAN x 1
100/1000Mbps Ethernet through RJ45 MagJack <sup>1</sup>	I2S Audio Interface (SSI) x 2
USB2.0 Host x 2 Ports through Dual Stack TypeA Connector	DATA UART (with CTS & RTS) x 2
USB2.0 OTG as Device x 1 Port through MicroB Connector	DATA UART (without CTS & RTS) x 1
<b>Video Features:</b>	I2C x 1
HDMI x 1 Port through HDMI connector	PWM x 1
CVBS Video Input through RCA Jack <sup>2</sup>	<b>Expansion Connector3 (20 Pin) Interfaces:</b>
CVBS Video Output through RCA Jack/Header (Optional) <sup>2</sup>	Debug UART
<b>Other Features:</b>	Data UART (without CTS & RTS)/I2C x 1
JTAG Header	Parallel Camera (VINO – 8bit) x 1 Port <sup>1</sup>
SPI Flash Programming Header	PWM x 1
Reset Switch	<b>OS Support:</b> Linux 3.10.31
RTC Controller with Coin cell Battery (Optional)	<b>Power Input Jack:</b> 5V,2.5A
	Power Input Lockable Header (Optional)
	<b>Form Factor:</b>
	85mm x 56mm

*Note 1: In RZ/G1C CPU, EtherAVB collision detection signal and VINO clock signal is multiplexed in same pin and so EtherAVB collision detection is not supported by default.*

*Note 2: RZ/G1C CPU supports one CVBS Video IN and one CVBS Video Out port. By default CVBS Video IN port is supported on RZ/G1C SBC. To support CVBS Video Out port, contact iWave.*

*Note 3: Expansion connector1 pinout is compatible with Raspberry Pi connector pinout.*

**RZ/G1C SBC - BLOCK DIAGRAM**



Note1: Since EtherAVB collision detection signal is multiplexed with VINO clock signal in CPU, EtherAVB collision detection feature is not supported by default.

Note2: 40 Pin Expansion Connector1 pinout is compatible with RaspberryPi Connector.

**OS SUPPORT**

Linux 3.10.31

**DELIVERABLES**

RZ/G1C SBC  
Board Support Package  
User Manual

**OPTIONAL KITS/Modules**

Camera Module  
Power Adapter

**CUSTOM DEVELOPMENT**

BSP Development/OS Porting  
Custom SOM/Carrier Development  
Custom Application/GUI Development  
Design Review and Support

iWave Systems Technologies, established in 1999, focuses on Product Engineering Services involving Embedded Hardware, Software & FPGA. The company designs and develops cutting edge products and solutions. iWave has been an innovator in the development of highly integrated, high performance, low power and low cost System On Modules and Development Platforms. iWave's expertise has brought out multiple SOMs based on ARM NXP, Renesas, Qualcomm, Altera, Intel, Marvell and TI Processors.

iWave System has won the confidence of its customers over the years by being a reliable partner in developing innovative products. Our engineers combine outstanding System design experience to deliver Quality Solutions. iWave specializes across Industrial, Automotive and Medical domains. We support our customers by being time efficient, which in turn helps our customers accelerate time to market their products. iWave is a Windows embedded Silver partner and a winner of the Partner Excellence Award.

**Ordering the RZ/G1C SBC**

The device can be ordered online from the iWave Website

<http://www.iwavesystems.com/webforms>

Or from our Local Partners in your region

<http://www.iwavesystems.com/about-us/business-partner.html>

\*Optional items not included in the standard deliverables.

Note: iWave reserves the right to change these specifications without notice as part of iWave's continuous effort to meet the best in breed specification. The registered trademarks are proprietary of their respective owners.

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