

RIM-OOBM

RIM-OOBM Daughter board

User's Manual



1st Ed – 01 March, 2023

FCC Statement



THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

- (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.
- (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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To receive the latest version of the user's manual; please visit our Web site at:

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RIM-OOBM

Product Warranty

Avalue warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Avalue, or which have been subject to misuse, abuse, accident or improper installation. Avalue assumes no liability under the terms of this warranty as a consequence of such events. Because of Avalue's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If any of Avalue's products is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details. If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU type and speed, Avalue's products model name, hardware & BIOS revision number, other hardware and software used, etc.) Note anything abnormal and list any on-screen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information available.
3. If your product is diagnosed as defective, obtain an RMA (return material authorization) number from your dealer. This allows us to process your good return more quickly.
4. Carefully pack the defective product, a complete Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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1. Getting Started

1.1 Safety Precautions

Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x RIM-OOBM



If any of the above items is damaged or missing, contact your retailer.

1.3 Document Amendment History

Revision	Date	Comment
1 st	March 2023	Initial Release

1.4 Manual Objectives

This manual describes in detail the Avalue Technology RIM-OOBM Single Board.

We have tried to include as much information as possible but we have not duplicated information that is provided in the standard IBM Technical References, unless it proved to be necessary to aid in the understanding of this board.

We strongly recommend that you study this manual carefully before attempting to interface with RIM-OOBM series or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance.

If you have any suggestions or find any errors concerning this manual and want to inform us of these, please contact our Customer Service department with the relevant details.

1.5 System Specifications

Specifications		
MCU	Nuvoton NUC980DR63YC 64-pin LQFP Package	
SDRAM	Built-in 64MB DDR2 SDRAM Memory in LQFP package	
SRAM	Up to 16 KB on-chip SRAM	
Cache	Built-in 16 KB instruction cache and 16 KB data cache	
Onboard I/O		
LAN	10 / 100 Mbps RJ45 x 1	
Ethernet		
LAN	Giga Lan	
I/O Interface (SOM)		
JFP1	Power Button	4x 2p 2.0mm pitch wafer connector x 1
	Reset Button	
	UART	
JGPIO1	GPIO/I2C	4x 2p 2.0mm pitch wafer connector x 1
JVIN1	DC in	1x 2p 2.0mm pitch wafer connector x 1
JUSB1	USB OTG	Micro USB x 1
RECOV1	Factory Reset Button	Reset Button x 1
RST1	System Reset Button	Reset Button x 1
LED Indicator Light		LED1 MCU Activated (Green) LED2 Allxon Service Activated (Green)
Mechanical & Environmental Specification		
Power Requirement		5VDC / 1A stand by power
Power Mode		AT mode
Operating Temp.		-40°C to 85°C
Storage Temp.		-40°C to 85°C
Operating Humidity		40°C @ 95% Relative Humidity, Non-condensing
Size (L x W)		35mm x 55mm x 15.14mm (without bracket)
Weight		18g
Vibration Test		1.5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 30min/Axis, 3 Axis
Shock Test		10G, IEC 60068-2-27, Half Sine, 11ms, Z Axis

RIM-OOBM

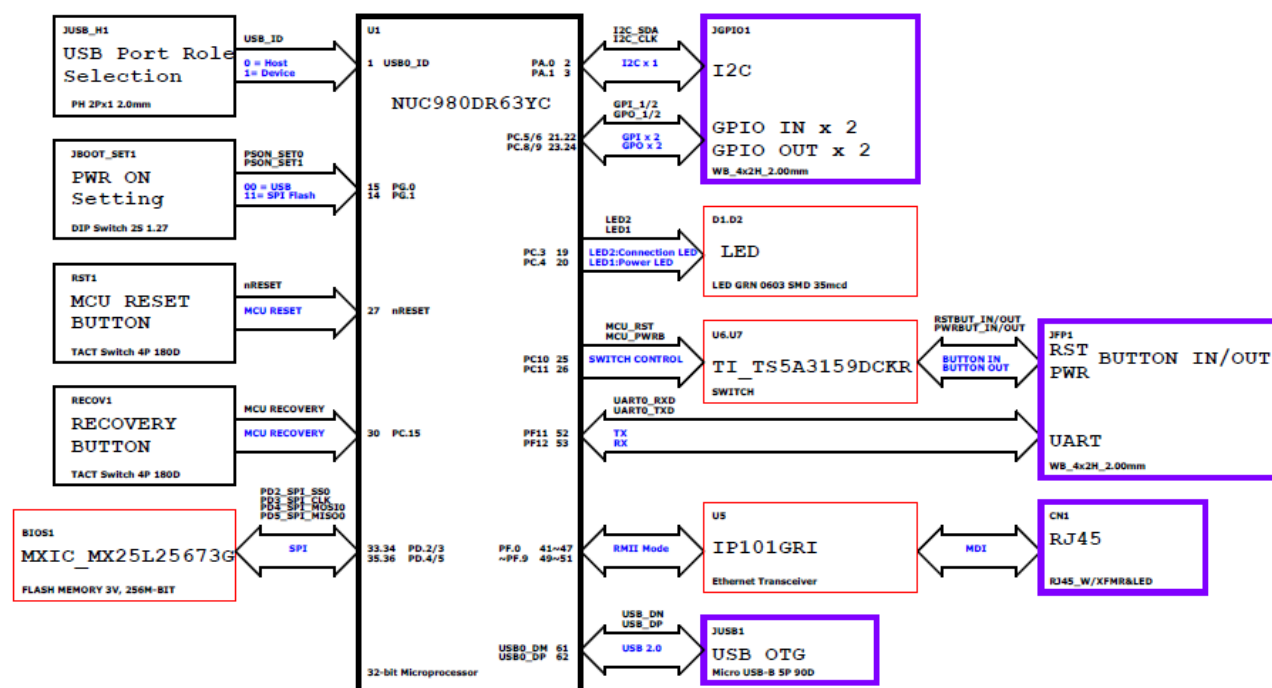
Drop Test	ISTA 2A, IEC-60068-2-32 Test : Ed, 1 Corner, 3 Edges, 6 Faces
OS Information	Support Linux OS



Note: Specifications are subject to change without notice.

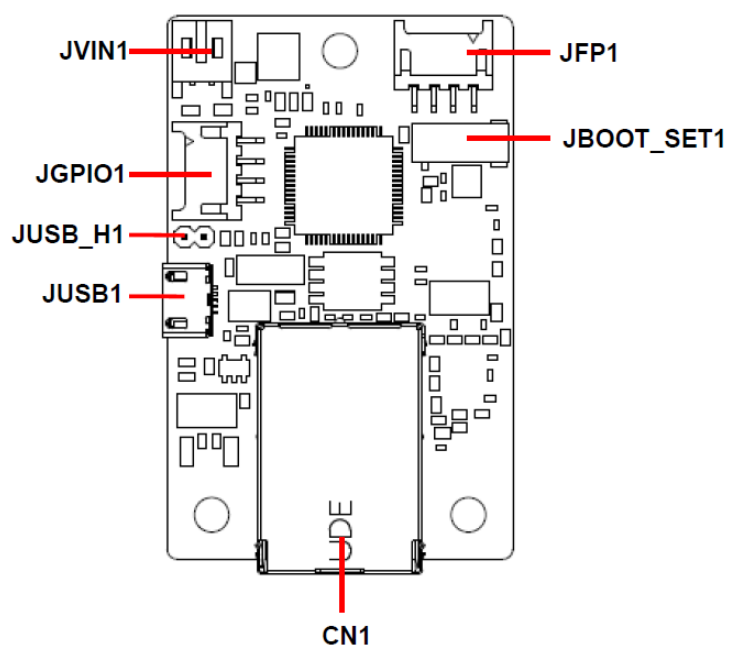
1.6 Architecture Overview – Block Diagram

The following block diagram shows the architecture and main components of RIM-OOBM.



2. Hardware Configuration

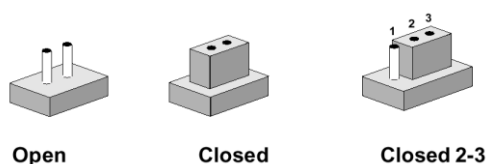
2.1 RSC-IMX8M Product Overview



2.2 RSC-IMX8M Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip. To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.



The jumper settings are schematically depicted in this manual as follows:



A pair of needle-nose pliers may be helpful when working with jumpers.

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

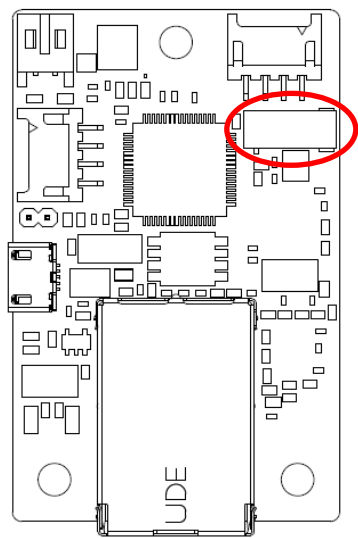
The following tables list the function of each of the board’s jumpers and connectors.

Connectors

Label	Function	Note
CN1	RJ45 connector	
JFP1	Miscellaneous setting connector	4 x 2 wafer, pitch 2.00 mm
JBOOT_SET1	Boot switch	
JVIN1	DC in connector	2 x 1 wafer, pitch 2.00 mm
JGPIO1	General purpose I/O connector	4 x 2 wafer, pitch 2.00 mm
JUSB_H1	USB ID	2 x 1 header, pitch 2.00mm
JUSB1	USB connector	

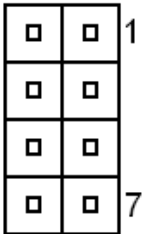
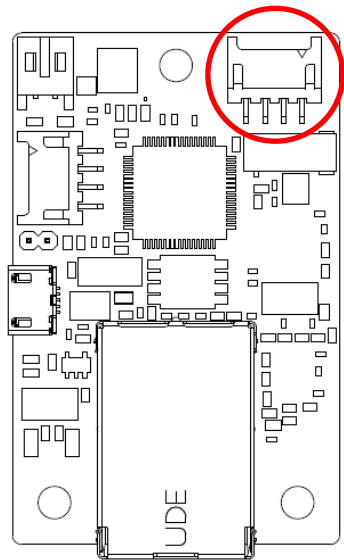
2.3 Setting Jumpers & Connectors

2.3.1 Boot switch (JBOOT_SET1)



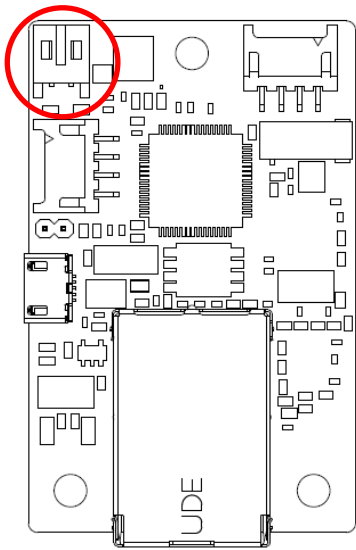
Signal	PIN	PIN	Signal
PSON_SET0	1	4	GND
PSON_SET1	2	3	GND

2.3.2 Miscellaneous setting connector (JFP1)



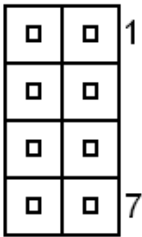
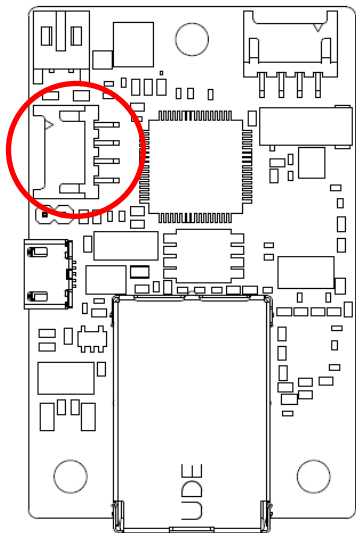
Signal	PIN	PIN	Signal
RSTBUT_IN	2	1	RSTBUT_OUT
PWRBUT_IN	4	3	PWRBUT_OUT
UART0_TXD	6	5	GND
UART0_RXD	8	7	GND

2.3.3 DC in connector (JVIN1)



Signal	PIN	PIN	Signal
GND	2	1	+V5A_VIN

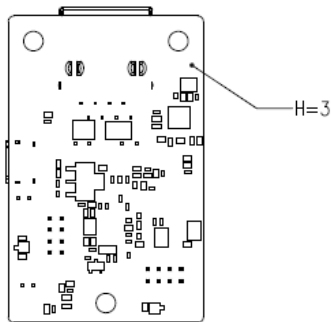
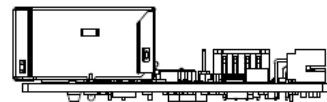
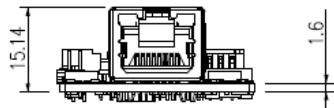
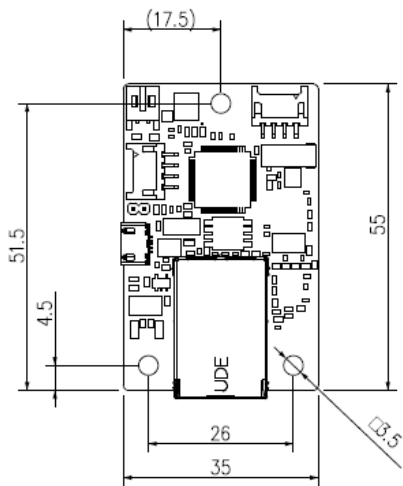
2.3.4 General purpose I/O connector (JGPIO1)



Signal	PIN	PIN	Signal
I2C_SDA	2	1	I2C_CLK
GPO_1	4	3	GPI_1
GPO_2	6	5	GPI_2
GND	8	7	GND

3. Mechanical Drawing

RIM-OOBM



Unit: mm

