Quick Start Guide

RYZ014A Pmod LTE Connectivity with RSK-RX65N-2MB
Quick Start Guide

Cellular IoT Modules
RYZ014A Pmod Module

Renesas Electronics
www.renesas.com

Rev. 1.10 Oct. 2022

Notice

1. Descriptions of circuits, software and other related information in this document are provided only to illustrate the operation of semiconductor products and application examples. You are fully responsible for the incorporation or any other use of the circuits, software, and information in the design of your product or system. Renesas Electronics disclaims any and all liability for any losses and damages incurred by you or third parties arising from the use of these circuits, software, or information.
2. Renesas Electronics hereby expressly disclaims any warranties against and liability for infringement or any other claims involving patents, copyrights, or other intellectual property rights of third parties, by or arising from the use of Renesas Electronics products or technical information described in this document, including but not limited to, the product data, drawings, charts, programs, algorithms, and application examples.
3. No license, express, implied or otherwise, is granted hereby under any patents, copyrights or other intellectual property rights of Renesas Electronics or others.
4. You shall be responsible for determining what licenses are required from any third parties, and obtaining such licenses for the lawful import, export, manufacture, sales, utilization, distribution or other disposal of any products incorporating Renesas Electronics products, if required.
5. You shall not alter, modify, copy, or reverse engineer any Renesas Electronics product, whether in whole or in part. Renesas Electronics disclaims any and all liability for any losses or damages incurred by you or third parties arising from such alteration, modification, copying or reverse engineering.
6. Renesas Electronics products are classified according to the following two quality grades: “Standard” and “High Quality”. The intended applications for each Renesas Electronics product depends on the product’s quality grade, as indicated below.
   "Standard": Computers; office equipment; communications equipment; test and measurement equipment; audio and visual equipment; home electronic appliances; machine tools; personal electronic equipment; industrial robots; etc.
   "High Quality": Transportation equipment (automobiles, trains, ships, etc.); traffic control (traffic lights); large-scale communication equipment; key financial terminal systems; safety control equipment; etc.

   Unless expressly designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not intended or authorized for use in products or systems that may pose a direct threat to human life or bodily injury (artificial life support devices or systems; surgical implantations; etc.), or may cause serious property damage (space system; undersea repeaters; nuclear power control systems; aircraft control systems; key plant systems; military equipment; etc.). Renesas Electronics disclaims any and all liability for any damages or losses incurred by you or any third parties arising from the use of any Renesas Electronics product that is inconsistent with any Renesas Electronics data sheet, user’s manual or other Renesas Electronics document.
7. No semiconductor product is absolutely secure. Notwithstanding any security measures or features that may be implemented in Renesas Electronics hardware or software products, Renesas Electronics shall have absolutely no liability arising out of any vulnerability or security breach, including but not limited to any unauthorized access to or use of a Renesas Electronics product or a system that uses a Renesas Electronics product. RENESAS ELECTRONICS DOES NOT WARRANT OR GUARANTEE THAT RENESAS ELECTRONICS PRODUCTS, OR ANY SYSTEMS CREATED USING RENESAS ELECTRONICS PRODUCTS WILL BE INVULNERABLE OR FREE FROM CORRUPTION, ATTACK, VIRUSES, INTERFERENCE, HACKING, DATA LOSS OR THEFT, OR OTHER SECURITY INTRUSION (“Vulnerability Issues”). RENESAS ELECTRONICS DISCLAIMS ANY AND ALL RESPONSIBILITY OR LIABILITY ARISING FROM OR RELATED TO ANY VULNERABILITY ISSUES. FURTHERMORE, TO THE EXTENT PERMITTED BY APPLICABLE LAW, RENESAS ELECTRONICS DISCLAIMS ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THIS DOCUMENT AND ANY RELATED OR ACCOMPANYING SOFTWARE OR HARDWARE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE.
8. When using Renesas Electronics products, refer to the latest product information (data sheets, user’s manuals, application notes, “General Notes for Handling and Using Semiconductor Devices” in the reliability handbook, etc.), and ensure that usage conditions are within the ranges specified by Renesas Electronics with respect to maximum ratings, operating power supply voltage range, heat dissipation characteristics, installation, etc. Renesas Electronics disclaims any and all liability for any malfunctions, failure or accident arising out of the use of Renesas Electronics products outside of such specified ranges.
9. Although Renesas Electronics endeavors to improve the quality and reliability of Renesas Electronics products, semiconductor products have specific characteristics, such as the occurrence of failure at a certain rate and malfunctions under certain use conditions. Unless designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not subject to radiation resistance design. You are responsible for implementing safety measures to guard against the possibility of bodily injury, injury or damage caused by fire, and/or danger to the public in the event of a failure or malfunction of Renesas Electronics products, such as safety design for hardware and software, including but not limited to redundancy, fire control and malfunction prevention, appropriate treatment for aging degradation or any other appropriate measures. Because the evaluation of microcomputer software alone is very difficult and impractical, you are responsible for evaluating the safety of the final products or systems manufactured by you.
10. Please contact a Renesas Electronics sales office for details as to environmental matters such as the environmental compatibility of each Renesas Electronics product. You are responsible for carefully and sufficiently investigating applicable laws and regulations that regulate the inclusion or use of controlled substances, including without limitation, the EU RoHS Directive, and using Renesas Electronics products in compliance with all these applicable laws and regulations. Renesas Electronics disclaims any and all liability for damages or losses occurring as a result of your noncompliance with applicable laws and regulations.
11. Renesas Electronics products and technologies shall not be used for or incorporated into any products or systems whose manufacture, use, or sale is prohibited under any applicable domestic or foreign laws or regulations. You shall comply with any applicable export control laws and regulations promulgated and administered by the governments of any countries asserting jurisdiction over the parties or transactions.
12. It is the responsibility of the buyer or distributor of Renesas Electronics products, or any other party who distributes, disposes of, or otherwise sells or transfers the product to a third party, to notify such third party in advance of the contents and conditions set forth in this document.
13. This document shall not be reprinted, reproduced or duplicated in any form, in whole or in part, without prior written consent of Renesas Electronics.
14. Please contact a Renesas Electronics sales office if you have any questions regarding the information contained in this document or Renesas Electronics products.

(Note1) “Renesas Electronics” as used in this document means Renesas Electronics Corporation and also includes its directly or indirectly controlled subsidiaries.

(Note2) “Renesas Electronics product(s)” means any product developed or manufactured by or for Renesas Electronics.

(Rev.5.0-1 October 2020)

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/.

General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

1. Precaution against Electrostatic Discharge (ESD)

   A strong electrical field, when exposed to a CMOS device, can cause destruction of the gate oxide and ultimately degrade the device operation. Steps must be taken to stop the generation of static electricity as much as possible, and quickly dissipate it when it occurs. Environmental control must be adequate. When it is dry, a humidifier should be used. This is recommended to avoid using insulators that can easily build up static electricity. Semiconductor devices must be stored and transported in an anti-static container, static shielding bag or conductive material. All test and measurement tools including work benches and floors must be grounded. The operator must also be grounded using a wrist strap. Semiconductor devices must not be touched with bare hands. Similar precautions must be taken for printed circuit boards with mounted semiconductor devices.
2. Processing at power-on

   The state of the product is undefined at the time when power is supplied. The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the time when power is supplied. In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the time when power is supplied until the reset process is completed. In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the time when power is supplied until the power reaches the level at which resetting is specified.
3. Input of signal during power-off state

   Do not input signals or an I/O pull-up power supply while the device is powered off. The current injection that results from input of such a signal or I/O pull-up power supply may cause malfunction and the abnormal current that passes in the device at this time may cause degradation of internal elements. Follow the guideline for input signal during power-off state as described in your product documentation.
4. Handling of unused pins

   Handle unused pins in accordance with the directions given under handling of unused pins in the manual. The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of the LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible.
5. Clock signals

   After applying a reset, only release the reset line after the operating clock signal becomes stable. When switching the clock signal during program execution, wait until the target clock signal is stabilized. When the clock signal is generated with an external resonator or from an external oscillator during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Additionally, when switching to a clock signal produced with an external resonator or by an external oscillator while program execution is in progress, wait until the target clock signal is stable.
6. Voltage application waveform at input pin

   Waveform distortion due to input noise or a reflected wave may cause malfunction. If the input of the CMOS device stays in the area between V_{IL} (Max.) and V_{IH} (Min.) due to noise, for example, the device may malfunction. Take care to prevent chattering noise from entering the device when the input level is fixed, and also in the transition period when the input level passes through the area between V_{IL} (Max.) and V_{IH} (Min.).
7. Prohibition of access to reserved addresses

   Access to reserved addresses is prohibited. The reserved addresses are provided for possible future expansion of functions. Do not access these addresses as the correct operation of the LSI is not guaranteed.
8. Differences between products

   Before changing from one product to another, for example to a product with a different part number, confirm that the change will not lead to problems. The characteristics of a microprocessing unit or microcontroller unit products in the same group but having a different part number might differ in terms of internal memory capacity, layout pattern, and other factors, which can affect the ranges of electrical characteristics, such as characteristic values, operating margins, immunity to noise, and amount of radiated noise. When changing to a product with a different part number, implement a system-evaluation test for the given product.

Renesas RSK-RX65N-2MB Disclaimer

By using this RSK-RX65N-2MB, the User accepts the following terms, which are in addition to, and control in the event of disagreement, with Renesas' General Terms and Conditions available at https://www.renesas.com/en-us/legal/disclaimer.html.

The RSK-RX65N-2MB is not guaranteed to be error free, and the entire risk as to the results and performance of the RSK-RX65N-2MB is assumed by the User. The RSK-RX65N-2MB is provided by Renesas on an "as is" basis without warranty of any kind whether express or implied, including but not limited to the implied warranties of good workmanship, fitness for a particular purpose, title, merchantability, and non-infringement of intellectual property rights. Renesas expressly disclaims any implied warranty.

Renesas does not consider the RSK-RX65N-2MB to be a finished product and therefore the RSK-RX65N-2MB may not comply with some requirements applicable to finished products, including, but not limited to recycling, restricted substances and electromagnetic compatibility regulations. Refer to Certifications section, for information about certifications and compliance information for the RSK-RX65N-2MB. It is the kit User's responsibility to make sure the kit meets any local requirements applicable to their region.

Renesas or its affiliates shall in no event be liable for any loss of profit, loss of data, loss of contract, loss of business, damage to reputation or goodwill, any economic loss, any reprogramming or recall costs (whether the foregoing losses are direct or indirect) nor shall Renesas or its affiliates be liable for any other direct or indirect special, incidental or consequential damages arising out of or in relation to the use of this RSK-RX65N-2MB, even if Renesas or its affiliates have been advised of the possibility of such damages.

Renesas has used reasonable care in preparing the information included in this document, but Renesas does not warrant that such information is error free nor does Renesas guarantee an exact match for every application or parameter to part numbers designated by other vendors listed herein. The information provided in this document is intended solely to enable the use of Renesas products. No express or implied license to any intellectual property right is granted by this document or in connection with the sale of Renesas products. Renesas reserves the right to make changes to specifications and product descriptions at any time without notice. Renesas assumes no liability for any damages incurred by you resulting from errors in or omissions from the information included herein. Renesas cannot verify, and assumes no liability for, the accuracy of information available on another company's website.

Precautions

This Kit is only intended for use in a laboratory environment under ambient temperature and humidity conditions. A safe separation distance should be used between this and any sensitive equipment. Its use outside the laboratory, classroom, study area, or similar such area invalidates conformity with the protection requirements of the Electromagnetic Compatibility Directive and could lead to prosecution.

The product generates, uses, and can radiate radio frequency energy and may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off or on, you are encouraged to try to correct the interference by one or more of the following measures:

• Ensure attached cables do not lie across the equipment.

• Reorient the receiving antenna.

• Increase the distance between the equipment and the receiver.

• Connect the equipment into an outlet on a circuit different from that which the receiver is connected.

• Power down the equipment when not in use.

• Consult the dealer or an experienced radio/TV technician for help.

Note: It is recommended that wherever possible shielded interface cables are used.

The product is potentially susceptible to certain EMC phenomena. To mitigate against them it is recommended that the following measures be undertaken:

• The user is advised that mobile phones should not be used within 10 m of the product when in use.

• The user is advised to take ESD precautions when handling the equipment.

The Evaluation Kit does not represent an ideal reference design for an end product and does not fulfill the regulatory standards for an end product.

Cellular IoT Modules

RYZ014A Pmod with RSK-RX65N-2MB

Contents

Figures

1. Introduction

This Quick Start Guide (QSG) provides:

- An overview of the RYZ014A_PMOD example project for the RSK-RX65N-2MB board.
- Instructions for running the RYZ014A_PMOD example project on the RSK-RX65N-2MB board.
- Instructions for flashing the RYZ014A_PMOD example project code using Renesas Flash Programmer.

1.1 Assumptions and Advisory Notes

1. Tool experience: It is assumed that the user has prior experience working terminal emulation programs such as TeraTerm.
2. Subject knowledge: It is assumed that the user has basic knowledge about microcontrollers, embedded systems, LTE communication and AT commands.
3. The screen shots provided throughout this document are for reference. The actual screen content may differ depending on the version of software and development tools used.

2. Kit Contents

The following components are included in the kit:

1. RYZ014A_PMOD module with antenna
2. RSK-RX65N-2MB board (Not part of the kit)
3. E2 Lite Debugger
4. Power supply
5. 2x USB device cable (type-A male to mini-B male)
6. MicroAI SIM card

3. RSK-RX65N-2MB Kit Setup

First, disconnect the USB power to the board. The RYZ014A_PMOD board should be connected to PMOD1 with the antenna attached (Figure 1). The included SIM card can be inserted in the card slot on the underside of the RYZ014A_PMOD board. You may now reconnect the USB power cable.

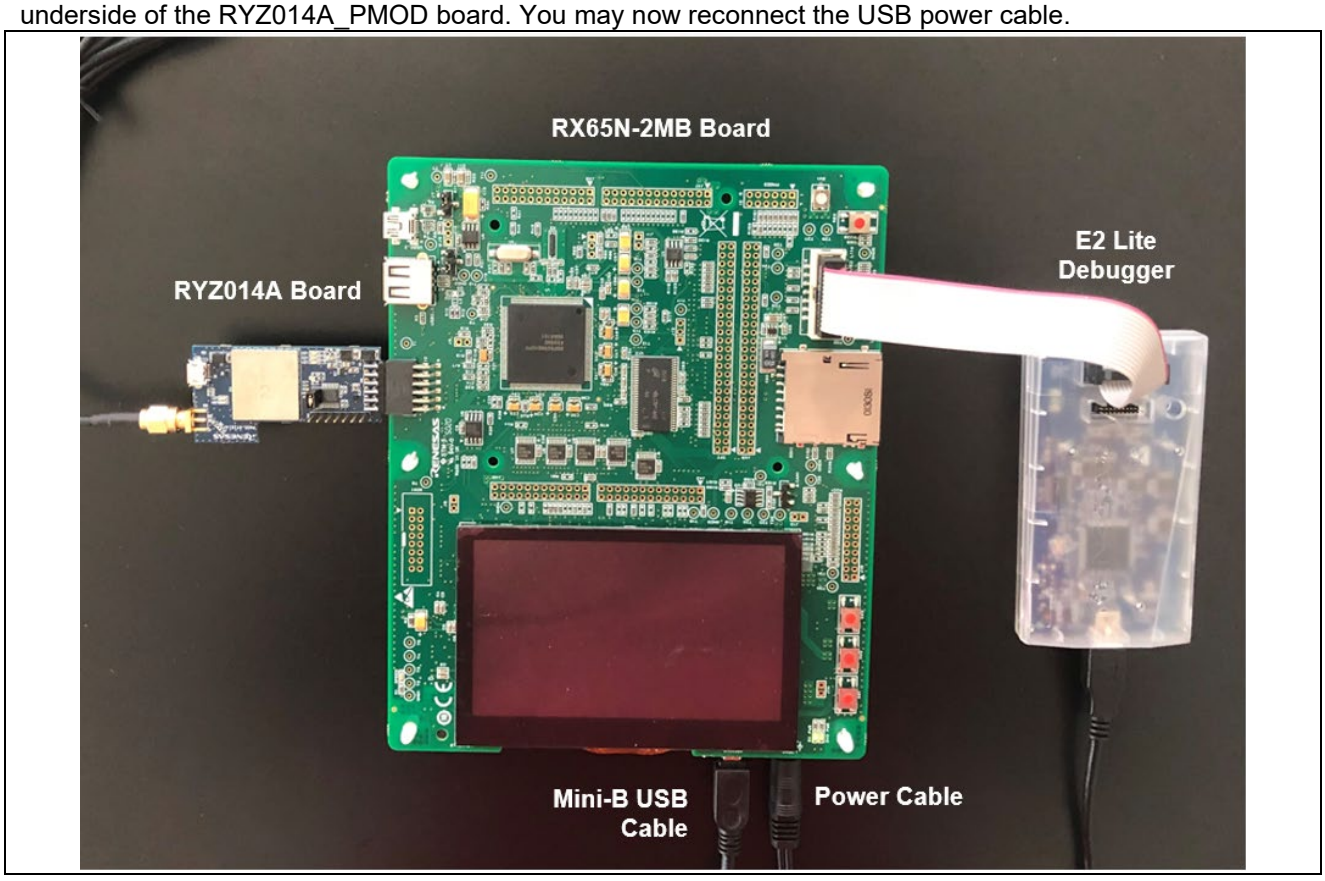

Figure 1. RSK-RX65N-2MB Setup with RYZ014A_PMOD Board Connected

4. Overview of the RYZ014A_PMOD Example Project

The RYZ014A_PMOD example project allows the user to activate, enable and test the RYZ014A_PMOD board and SIM card connectivity through a terminal menu.

When the RSK-RX65N-2MB board is running the RYZ014A_PMOD example project and is connected to a host PC via the serial port, the kit and RYZ014A_PMOD information can be viewed, and the included SIM card activation can be validated.

5. Running the RYZ014A_PMOD Example Project

This section lists the requirements and instructions to power up the RSK-RX65N-2MB board, flash the RSK-RX65N-2MB board and run the RYZ014A_PMOD example project.

Hardware Requirements

- RSK-RX65N-2MB board
- 1 Mini-B USB device cable
- A PC with at least one USB port
- RYZ014A_PMOD board

Software Requirements

- Windows® 10 operating system
- TeraTerm (or similar) terminal console application
- Renesas Flash Programmer V3.08.01 or later
- RYZ014A_PMOD example project .hex file

5.1 Flashing the Example Program on the RSK-RX65N-2MB Board

1. Connect the Mini-B connector of the USB device cable to the USB mini-B port (**G1CUSB0**) of the RSK-RX65N-2MB board. Next, connect the USB-A end of the device cable to the host PC.
2. Connect the E2 Ribbon cable between the E2 Lite Debugger and the RSK-RX65N-2MB board. Connect the Mini-B end of the second USB device cable to the E2 Lite Debugger and the Type-A end to the host PC.
3. Connect the power cable from the AC adapter to the power jack on the RSK-RX65N-2MB board (**PWR**).
4. Open Renesas Flash Programmer and create a new project by using the **File** menu and selecting **New Project**.
5. In the Create a New Project window, Select the **RX65x** from the Microcontroller drop-down. Next, enter a desired project name and select **E2 emulator Lite** for the communication tool. Click Connect.

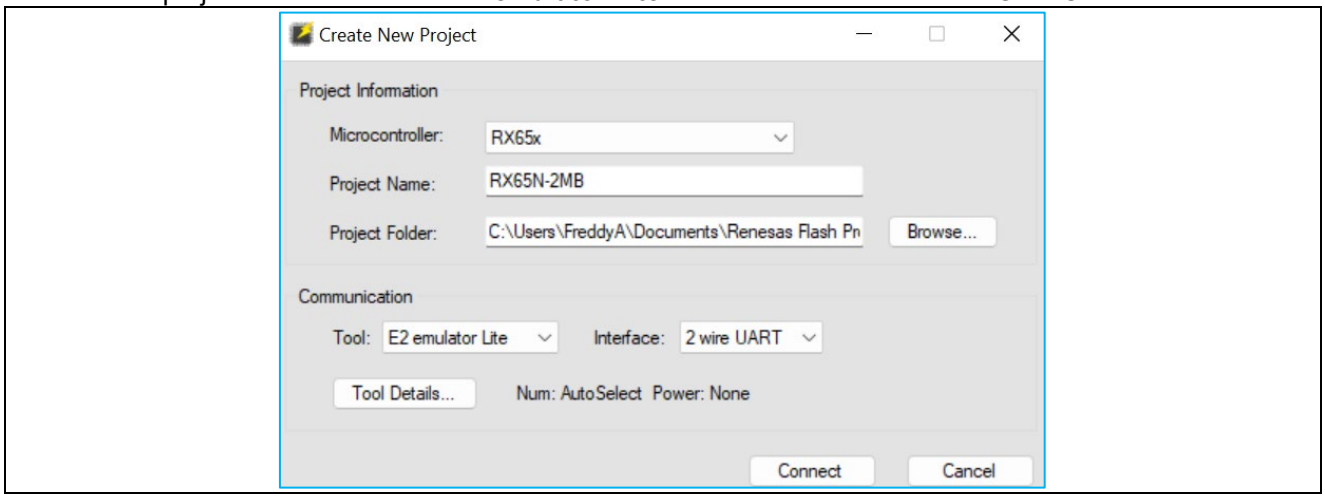

Figure 2. Creating a New Project on Renesas Flash Programmer

6. An authentication window should appear. Enable Auto Authentication and click OK.
7. Verify the message **Operation Complete** is printed in the main window. Under Program File, click Browse to choose to the program file that will be flashed onto the board (Figure 3). Using the file explorer window, navigate to the example project's **ryz014a_rx65n_2mb.hex** file and click Open.

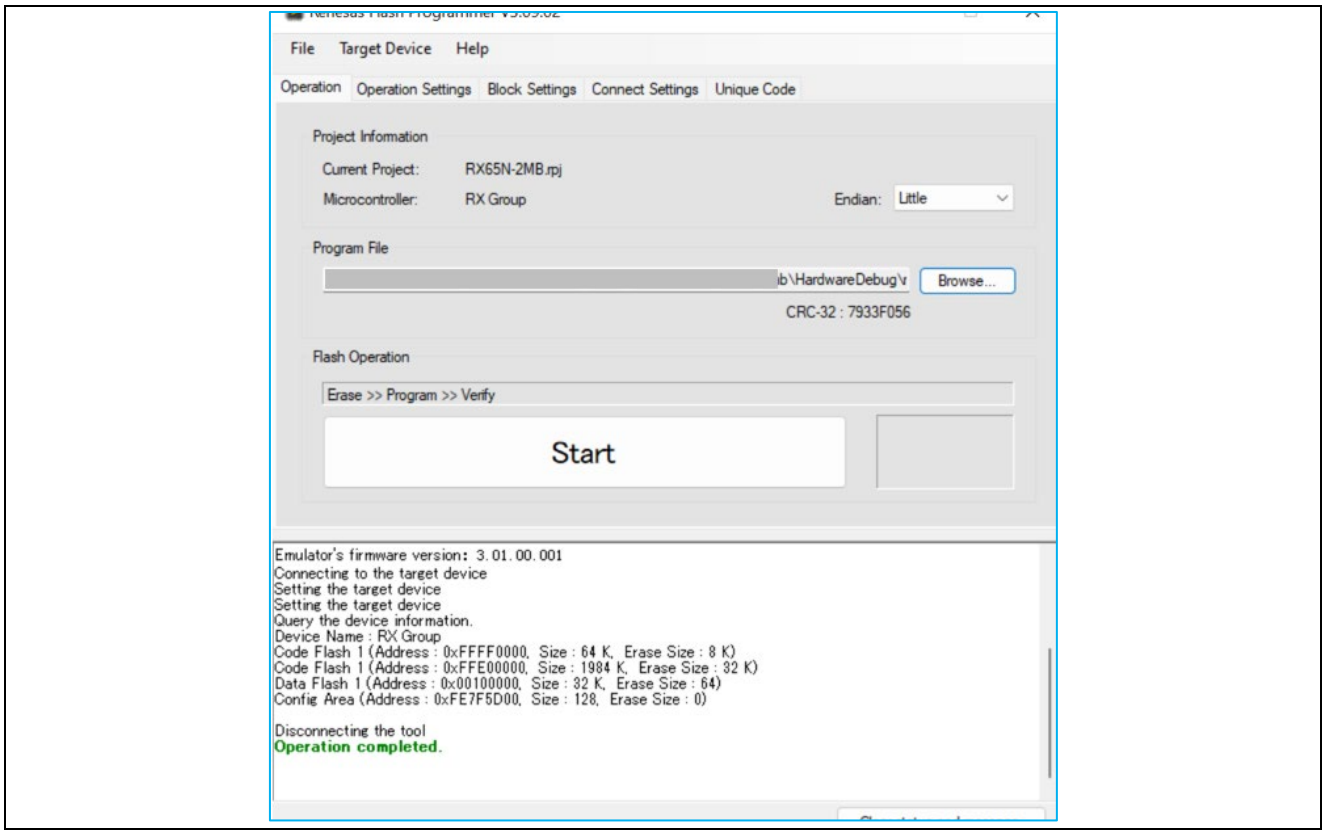

Figure 3. The Main Window of Renesas Flash Programmer After Creating a New Project

8. Click **Start** to begin flashing the example project code onto the board. Once completed, the message **Operation Complete** should be printed and the status **OK** should be displayed next to the start button.
9. Disconnect the power cable from the RSK-RX65N-2MB board.
10. Disconnect the E2 Emulator Lite ribbon cable from the E2Lite port of the RSK-RX65N-2MB board.

5.2 Connecting and Powering Up the RSK-RX65N-2MB Board

1. Connect the RYZ014A_PMOD board to PMOD1 connector labeled on the board.
2. Connect the Mini-B connector end of the USB device cable to the USB Mini-B port (**G1CUSB0**) of the RSK-RX65N-2MB board.
3. Connect the type-A USB end of the cable to the USB port of the host PC.
4. Connect the power cable to the RSK-RX65N-2MB power jack (**PWR**). 5V_PWR and 3V3_PWR LEDs should be turned on.

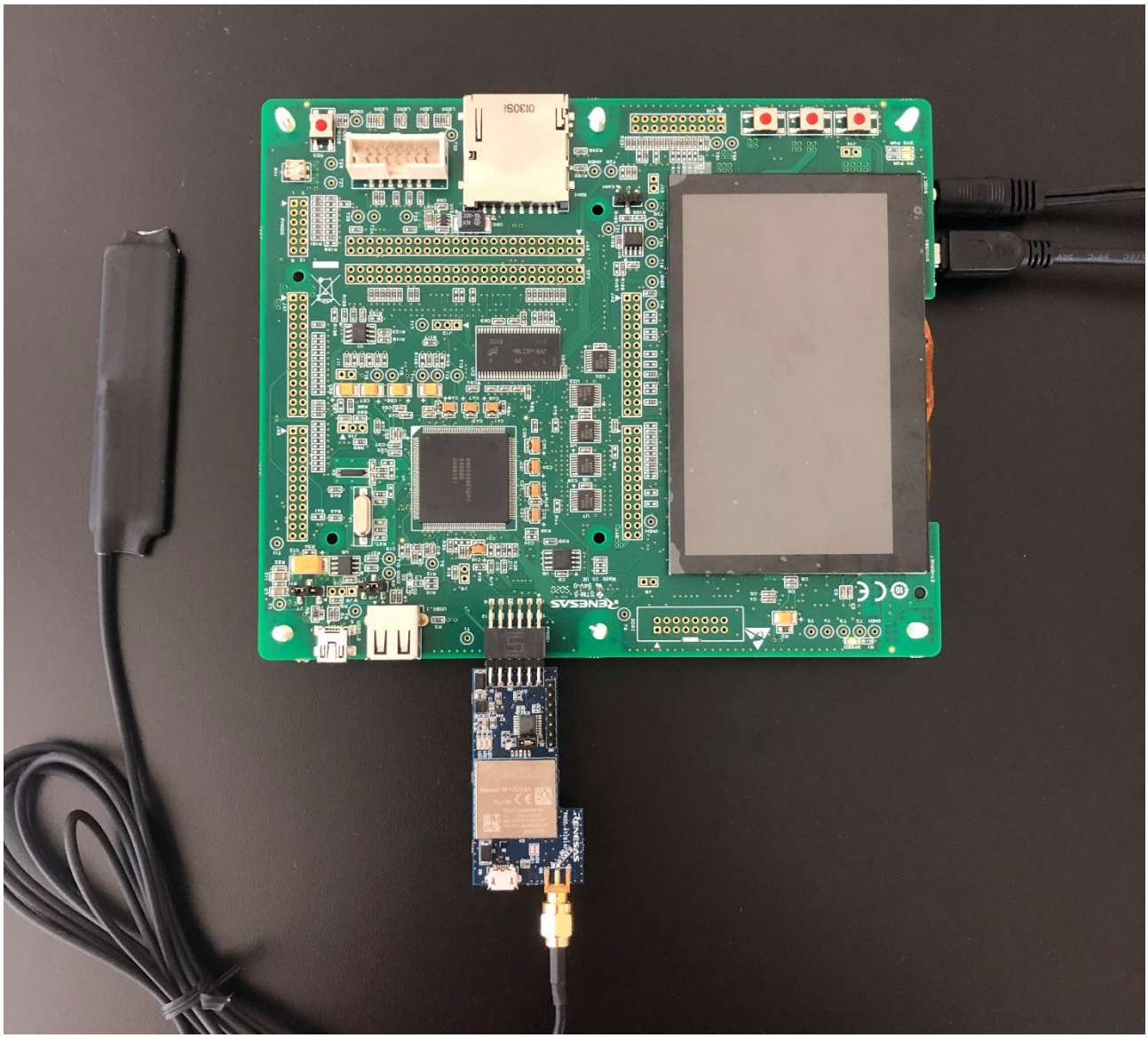

Figure 4. Connections for the RSK-RX65N-2MB Board After Flashing

5.3 Running the RYZ014A_PMOD Example Project

To run the RYZ014A_PMOD example project, use the following instructions:

1. On the host PC, open Windows Device Manager. Expand **Ports (COM & LPT)**, locate **USB Serial Device (COMxx)** and note down the COM port number for reference in the next step.

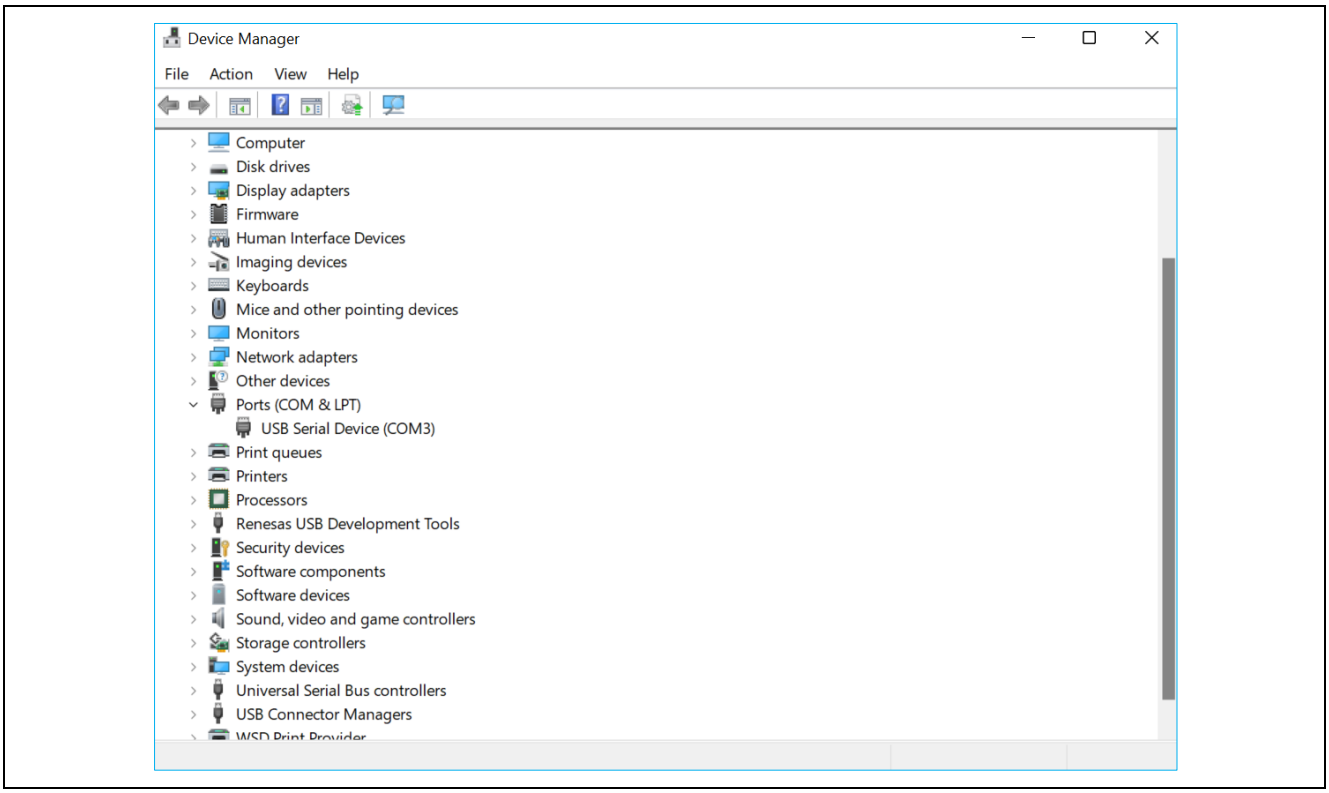

Figure 5. USB Serial Device in Windows Device Manager

2. Open Tera Term, select **Serial** and **COMxx: USB Serial Device (COMxx)** and click **OK**.

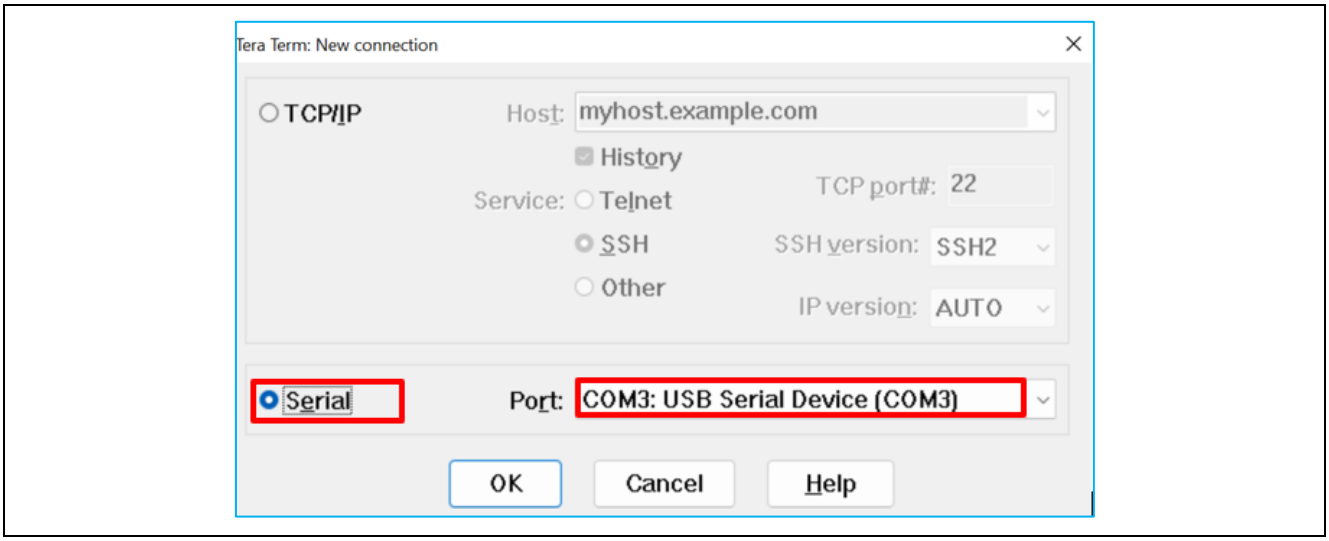

Figure 6. Selecting the Serial Port on Tera Term

3. Using the **Setup** menu pull-down, select **Serial port…** and ensure that the speed is set to 115200, as shown below.

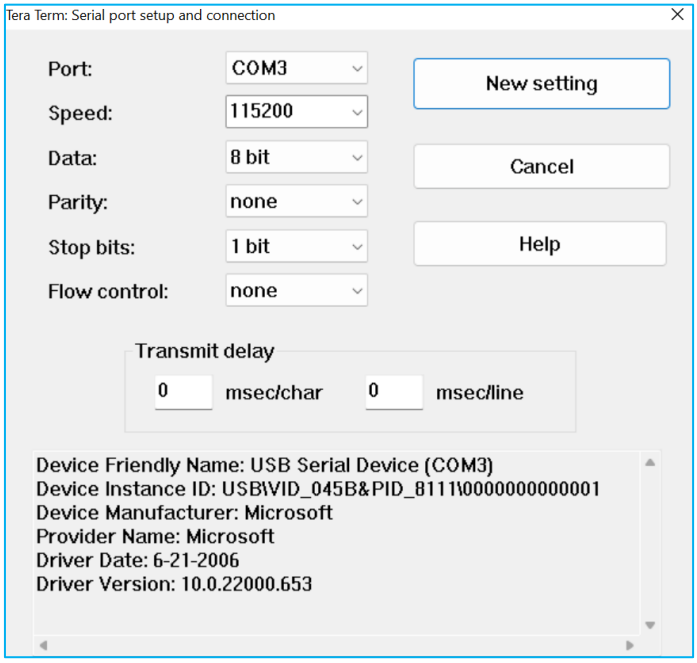

Figure 7. Selecting 115200 on the Speed Pulldown

4. Complete the connection. The 'welcome and main menu' screen will be displayed.

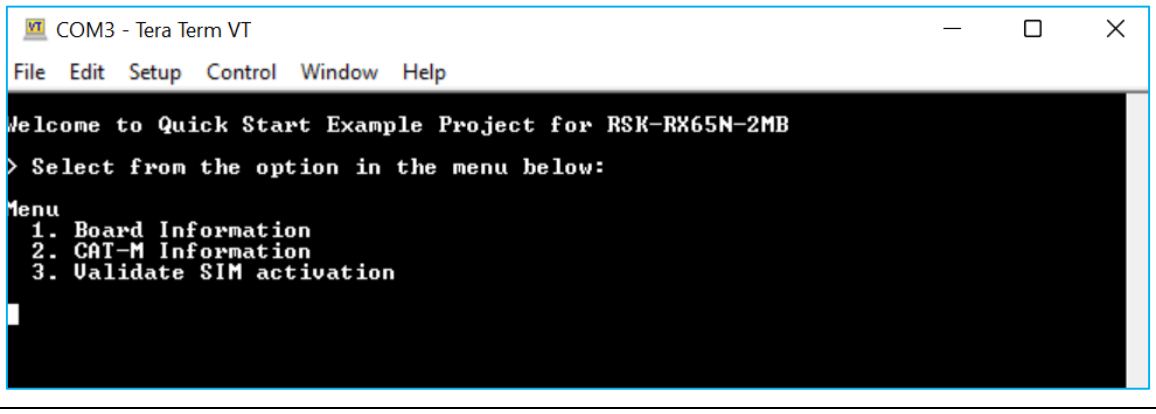

Figure 8. Welcome and Main Menu

5. Press **1** to display the **Kit Information** including the kit name, and part number.

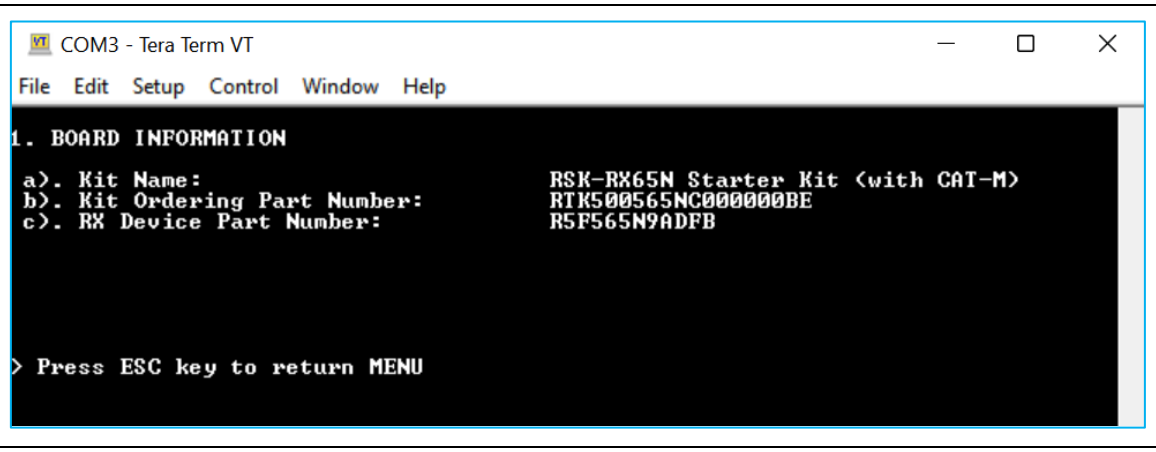

Figure 9. Kit Information

6. Press **ESC** to return to the 'welcome and main menu' screen.
7. Press **2** to display **CAT-M Information**. This menu will communicate with the RYZ014A_PMOD module to obtain the IMEI and ICCID values needed for activating the SIM card. Upon success, the IMEI and ICCID values will be displayed on the terminal screen. The program will continue to attempt to communicate with the RYZ014A_PMOD board until it has successfully connected or timed out. After obtaining the IMEI and ICCID values, go to MicroAI Launchpad to activate the SIM card (see section **Activating the SIM card on Launchpad**)
8.

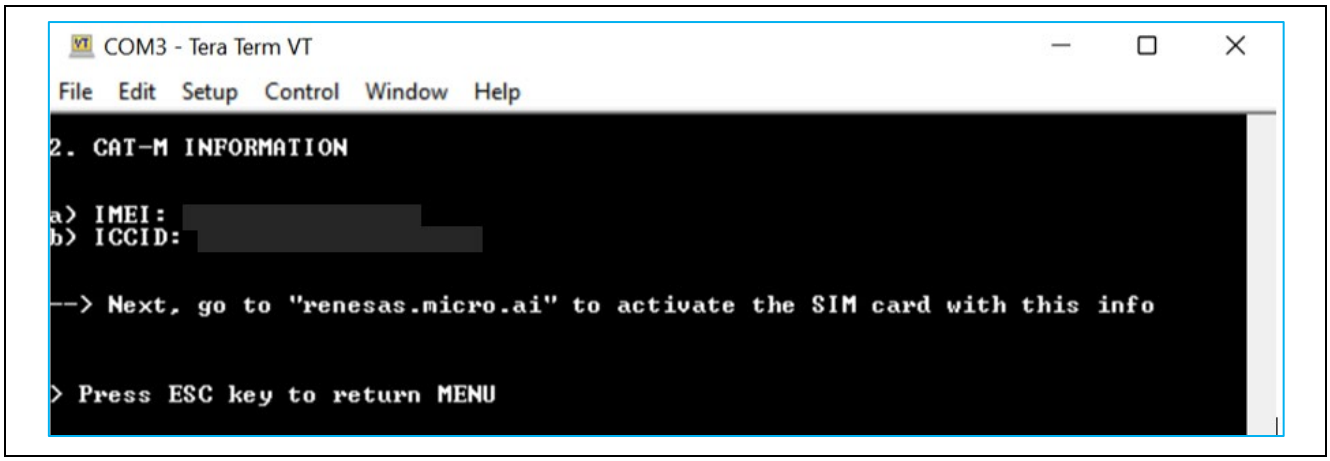

Figure 10. RYZ014A_PMOD Information

9. Press **ESC** to return to the 'welcome and main menu' screen.
10. Press **3** to enter the **Validate SIM Activation** screen. The program will attempt to ping the Quad9 server for a response to determine whether the SIM card has been activated. Upon success, the text "** SIM card active! **" will be displayed on the terminal screen.

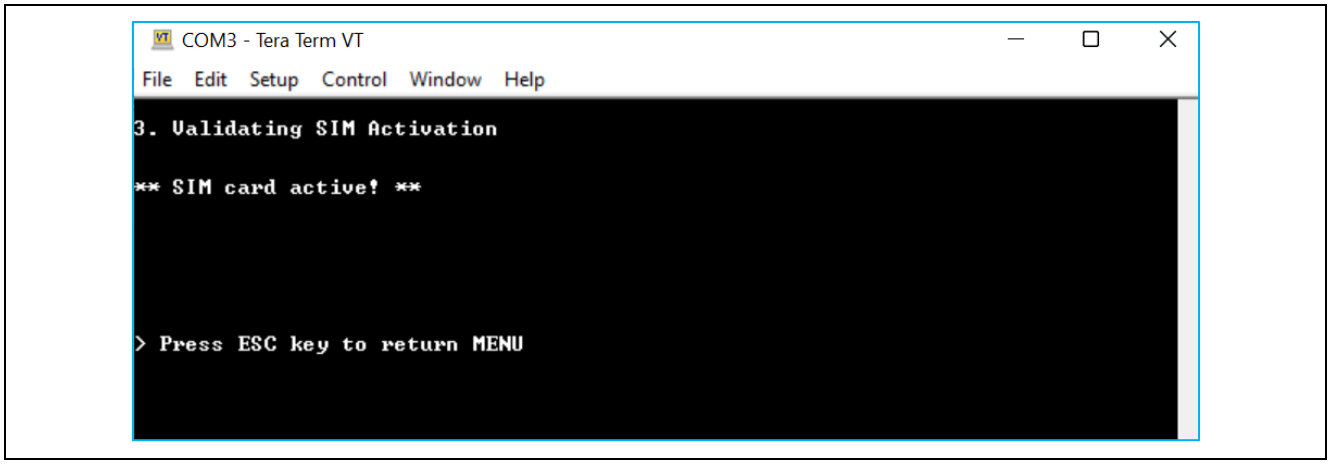

Figure 11. Validating SIM Activation

11. Press **ESC** to return to the 'welcome and main menu' screen.

6. Activating the SIM Card on Launchpad

To register the RSK-RX65N-2MB kit and activate the included SIM card, please visit the MicroAI Launchpad platform at https://launchpad.micro.ai/auth/login and use the following steps:

1. Create a Launchpad account by registering on the sign-up page and verifying the account through the verification email sent after registration.
2. Login to the new Launchpad account and click on the **Create Device Profile** tile. Make sure **Renesas RSK-RX65N** is selected for the Device Type and **CAT-M (RYZ014A-PMOD)** for the Connectivity Type. Fill other fields as desired then click Next.

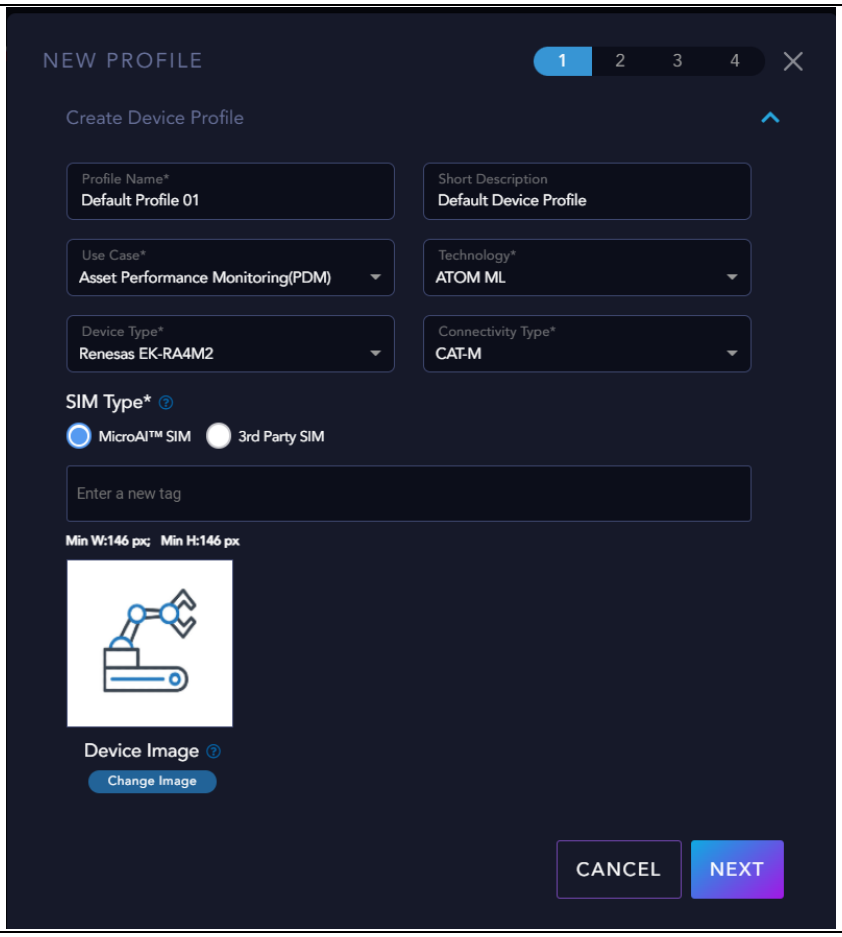

Figure 12. Creating a Device Profile on Launchpad

3. On Data Schema, click Next.
4. On Select a Plan, apply any valid promo codes if applicable and click Next.
   a. The RYZ014A_PMOD kit comes with a prepaid SIM Card which is free to user for 30 days from activation and 50MB of data.
5. Provide a Payment Method and accept the terms and conditions. Click Finish.
6. Next, a link is provided to download the latest firmware.
7. Navigate back to the home screen (click on “Launchpad” at the top of the left panel) and click the Add Device button on the right to begin registering the RSK-RX65N kit and SIM card.
8. Select the device profile created from the **Device Profile** drop-down. Enter a **Device Name**. For the **Device ID**, enter the **IMEI** value obtained as seen in Figure 10. RYZ014A_PMOD Information . Fill other fields as needed.

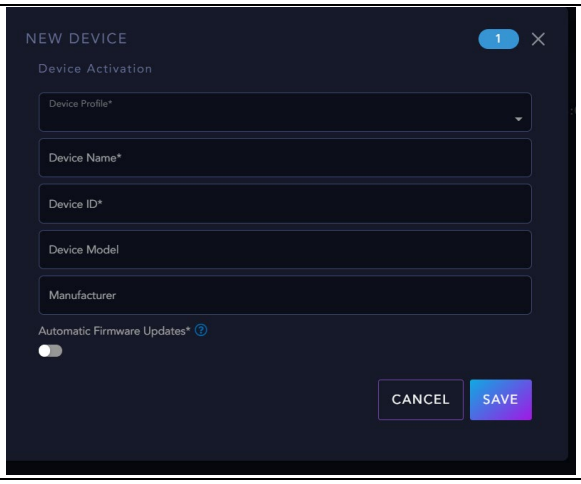

Figure 13. Adding a new device on MicroAI Launchpad

9. Click Next and click **Add New SIM**.

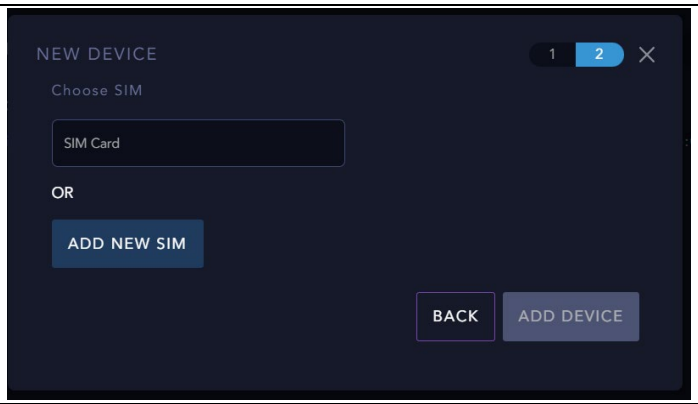

Figure 14. Activating the SIM card on Launchpad

10. Enter the **ICCID (or EID)** value for the **SIM EID** field, select the **Region/Country** and click Save SIM. Note: the **ICCID** value is found in Figure 10. RYZ014A_PMOD Information. Alternately, the EID is supplied with the SIM card documentation.

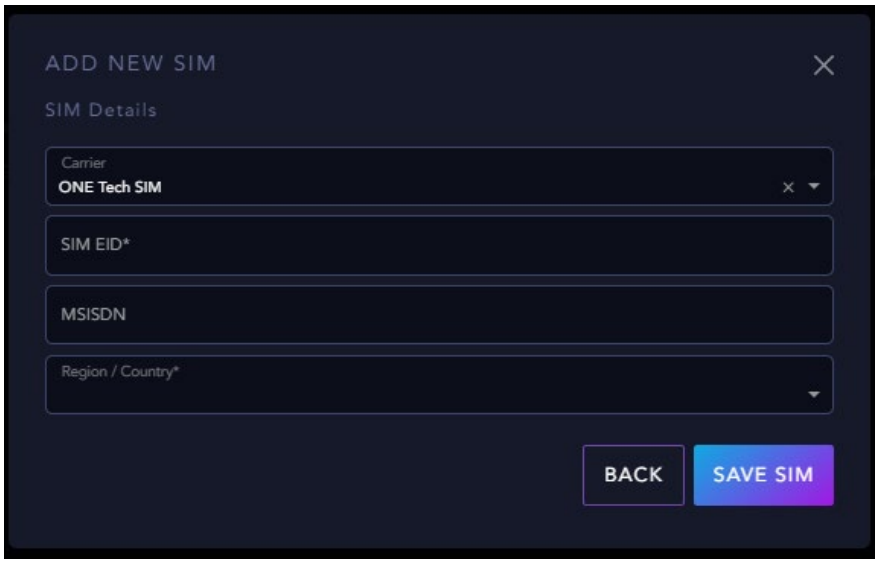

Figure 15. Adding a new SIM card on MicroAI Launchpad

11. Finish the device registration. The **RSK-RX65N-2MB** board and SIM card should be activated on the Launchpad platform and can be validated on the Tera Term terminal as shown in Figure 11.

7. Troubleshooting

This section includes a common set of issues and how to resolve them.

7.1 Hardware Setup

A first step for any general issue is always to verify the proper connections are made. Refer to **Figure 1**.

- Power cable is plugged into the power jack of the RSK-RX65N-2MB board.
- RYZ014A_PMOD antenna cable plugged into PMOD RYZ014A_PMOD board.
- RYZ014A_PMOD board is connected to PMOD1 port of the RX65N-2MB board.
- Mini-B USB device cable is connected to the serial port (**G1CUSB0**) of the RSK-RX65N-2MB board, and the Type-A end of the device cable is connected to the host PC.
- E2 Lite Debugger is disconnected when trying to run the code. Refer to **Figure 4**.

- Check to see that the SIM card is fully inserted in SIM slot (on the underside of PMOD RYZ014A_PMOD module)

7.2 Illegible/No Terminal Output (Tera Term)

This could be caused by the setup of the terminal connection and/or having the E2 Lite Debugger connected after flashing the example code. To fix this, use the following instructions:

- Open TeraTerm and on the file menu, go to **Setup > Serial port…** Please make sure the following settings in the setup of the serial connection are set up as such:
    - Speed: 115200
    - Data: 8 bit
    - Parity: None
    - Stop bits: 1 bit
    - Flow Control: None
- Make sure the E2 Lite Debugger ribbon cable is disconnected from the board if the hex file has been flashed onto the board already. Otherwise, follow the same steps in section **Flashing the Example Program on the RSK-RX65N-2MB Board.**

7.3 SIM Card Activation problem

- If the SIM activation fails, verify that the IMEI and ICCID numbers are correctly entered when registering the device on Launchpad
- SIM cards cannot be activated more than once. If a SIM card has been activated, the SIM card activation will fail when trying to add a new SIM (see Figure 14). To verify whether the SIM card has already been activated, please contact MicroAI support through https://renesas.micro.ai by logging into your account and clicking on Contact Support in the dropdown menu or at the bottom of the home page.

7.4 Unable to Read RYZ014A Board Information

If there is a failure to read the RYZ014A_PMOD board/SIM information (IMEI and ICCID), check to confirm the included SIM card is fully inserted in the SIM card slot on the underside of the RYZ014A_PMOD board.

8. Next Steps

1. RYZ014A PMOD Module landing page
   https://www.renesas.com/us/en/products/interface-connectivity/wireless-communications/cellular-iot-modules/rtkyz014a0b00000be-pmod-expansion-board-ryz014a#document
2. RYZ014A Module Landing Page
   https://www.renesas.com/us/en/products/interface-connectivity/wireless-communications/cellular-iot-modules/ryz014a-lte-cat-m1-cellular-iot-module
3. RSK-RX65N-2MB landing page
   https://www.renesas.com/us/en/products/microcontrollers-microprocessors/rx-32-bit-performance-efficiency-mcus/rx65n-2mb-starter-kit-plus-renesas-starter-kit-rx65n-2mb

9. Website and Support

Visit the following URLs to learn about the kit and the RX family of microcontrollers, download tools and documentation, and get support.

RYZ014A_PMOD Resources	renesas.com/ryz014a-pmod
RSK-RX65N-2MB Resources	renesas.com/rx/rsk-rx65n-2mb
RX Product Information	renesas.com/rx
RX Product Support Forum	renesasrulz.com/mcu-mpu/rx
Renesas Support	renesas.com/support

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	May.15.22	—	Initial release
1.10	Oct. 12.22	13-15	Changed instructions for Launchpad

RYZ014A Pmod with RSK-RX65N-2MB – Quick Start Guide

Publication Date: Oct.12.22

Published by: Renesas Electronics Corporation

RYZ014A Pmod with RX65N-2MB – Quick Start Guide

Renesas Electronics Corporation

R20QS0041EU0110