Renesas RA and RX Family of MCUs

Document Name

Introduction

AWS dashboard for Renesas CK-RA6M5 and CK-RX65N cloud kits is custom designed to visualize the data of all the sensors on the cloud kits. The dashboard connects to AWS IoT services through AWS IoT Core and enables users to utilize the cloud services to full potential.

To allow users to experience a hassle-free cloud connectivity, Renesas will credit every cloud kit with $10 USD AWS credits upon registration.

The dashboard can be accessed at https://www.renesas.cloud-ra-rx.com/.

The application projects can be downloaded from www.renesas.com/cloudsolutions/.

Target Device

CK-RA6M5, CK-RX65N

Contents

1. Cloud Kit Registration and Access to Dashboard.....1

2. Account Quarantine.....5

3. Next Steps.....5

1. Cloud Kit Registration and Access to Dashboard

1. Sign up at https://www.renesas.cloud-ra-rx.com/ with **an email that was not used previously for signing up for an AWS account.**

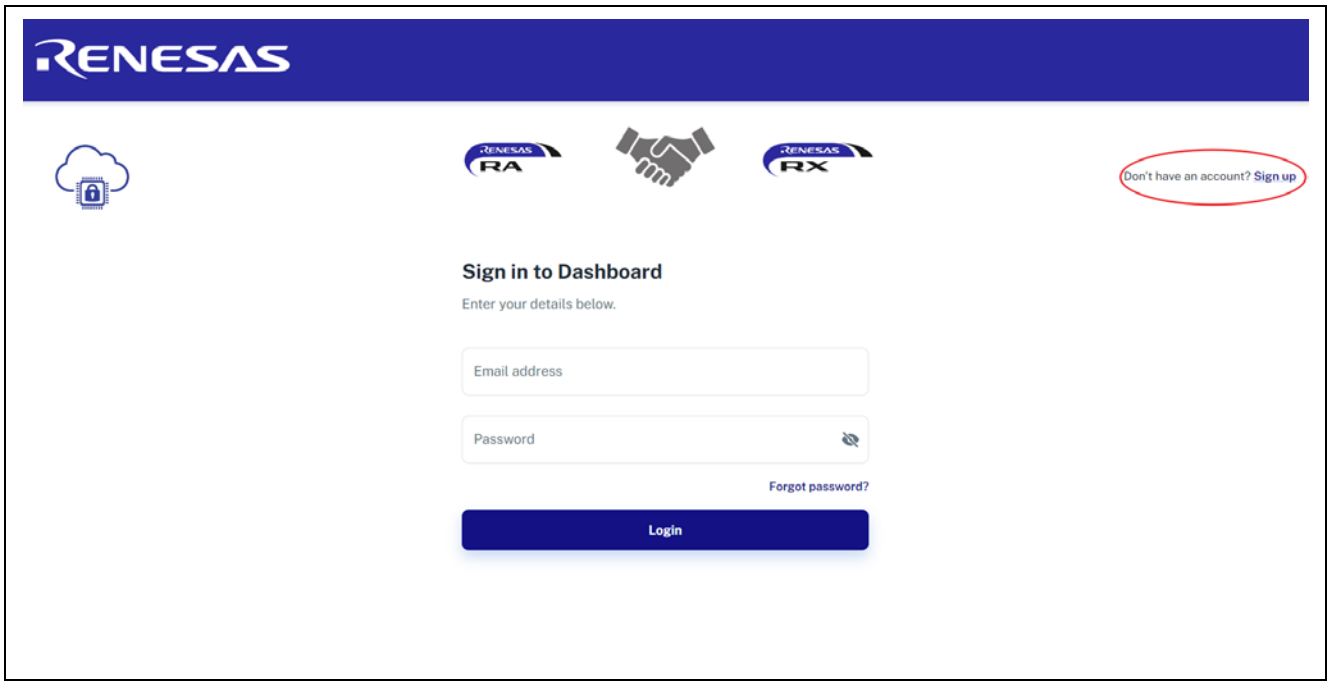


Figure 1. Dashboard Sign in

2. Enter your first name, last name, email address and password and press on the button **Register**. You are redirected to Confirm your email page.

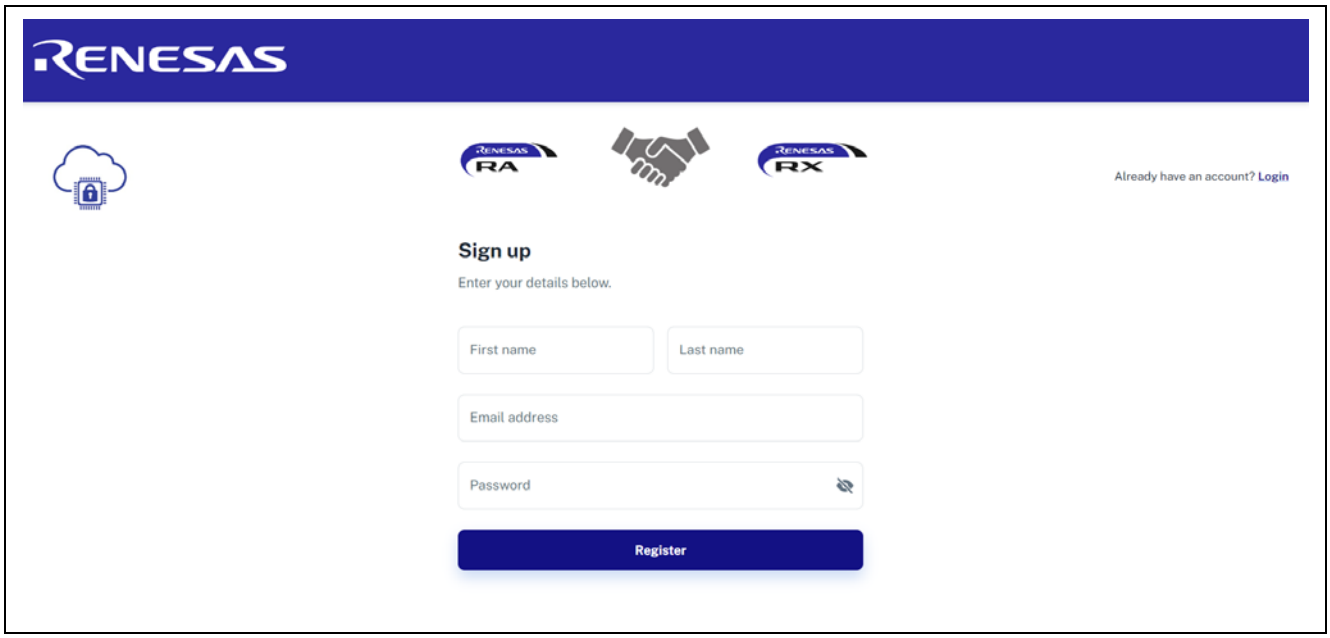


Figure 2. Account Registration

3. Verification code will be sent to your email. Enter the code and press on the **Send** button. You are redirected to Register Device page.

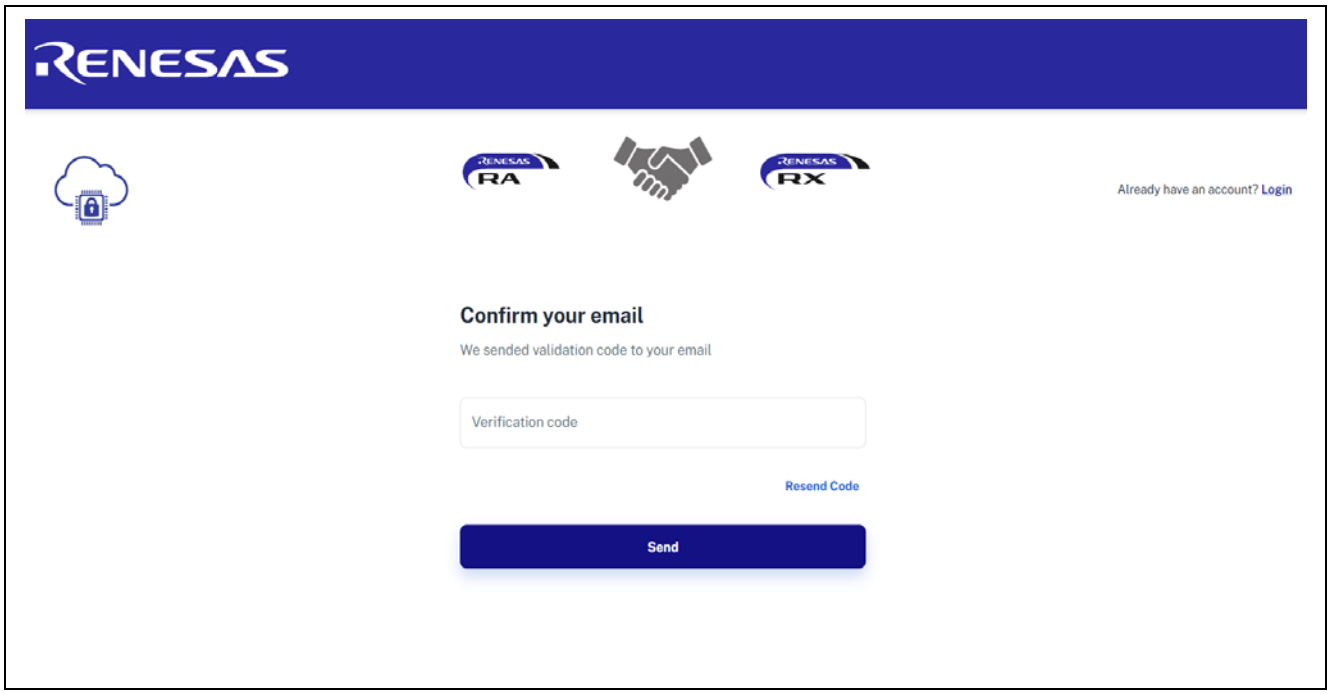


Figure 3. Email Verification

4. Enter the UUID of the kit to complete the registration process. UUID is the unique ID of your board. See 'AWS Application Projects' at renesas.com/cloudsolutions for steps to obtain the UUID of the kit.

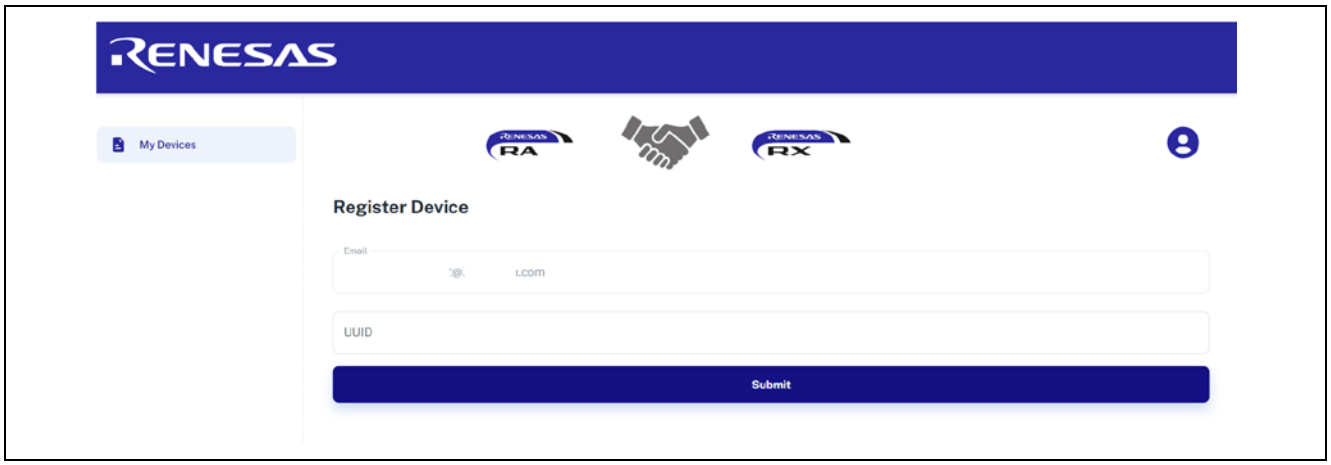


Figure 4. Registering the Device

5. The registration page indicates that the device registration is in progress.

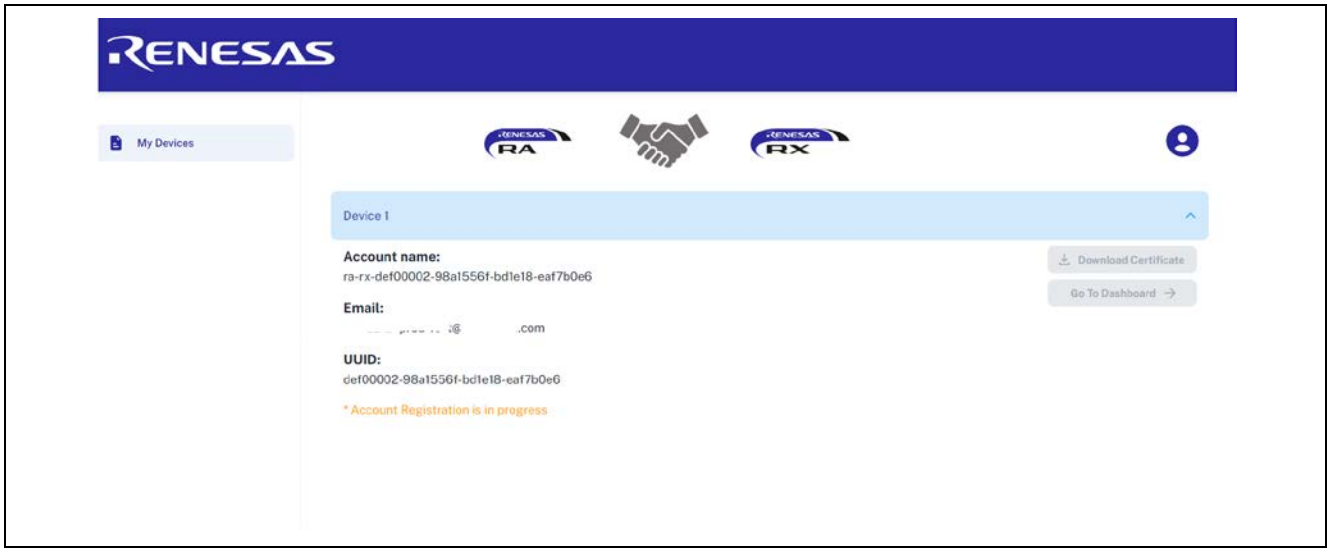


Figure 5. Device Registration in Progress

6. Wait for the 'Invitation to join AWS Single sign-on' email to activate the account. It could take up to 10 min to receive this email. Accept the invitation. **N**ote that this invitation will expire in 7 days. If your invitation expires, please contact Renesas support.
   On accepting the invitation, you will be redirected to the AWS Sign up page.
   If you choose to sign into your AWS account (the account indicated in the AWS invitation), enter your new password, and confirm to complete the Sign in process in AWS. You will be redirected to the **Single Sign-On** page.
   Proceed to check the status of Renesas dashboard at https://www.renesas.cloud-ra-rx.com/login .

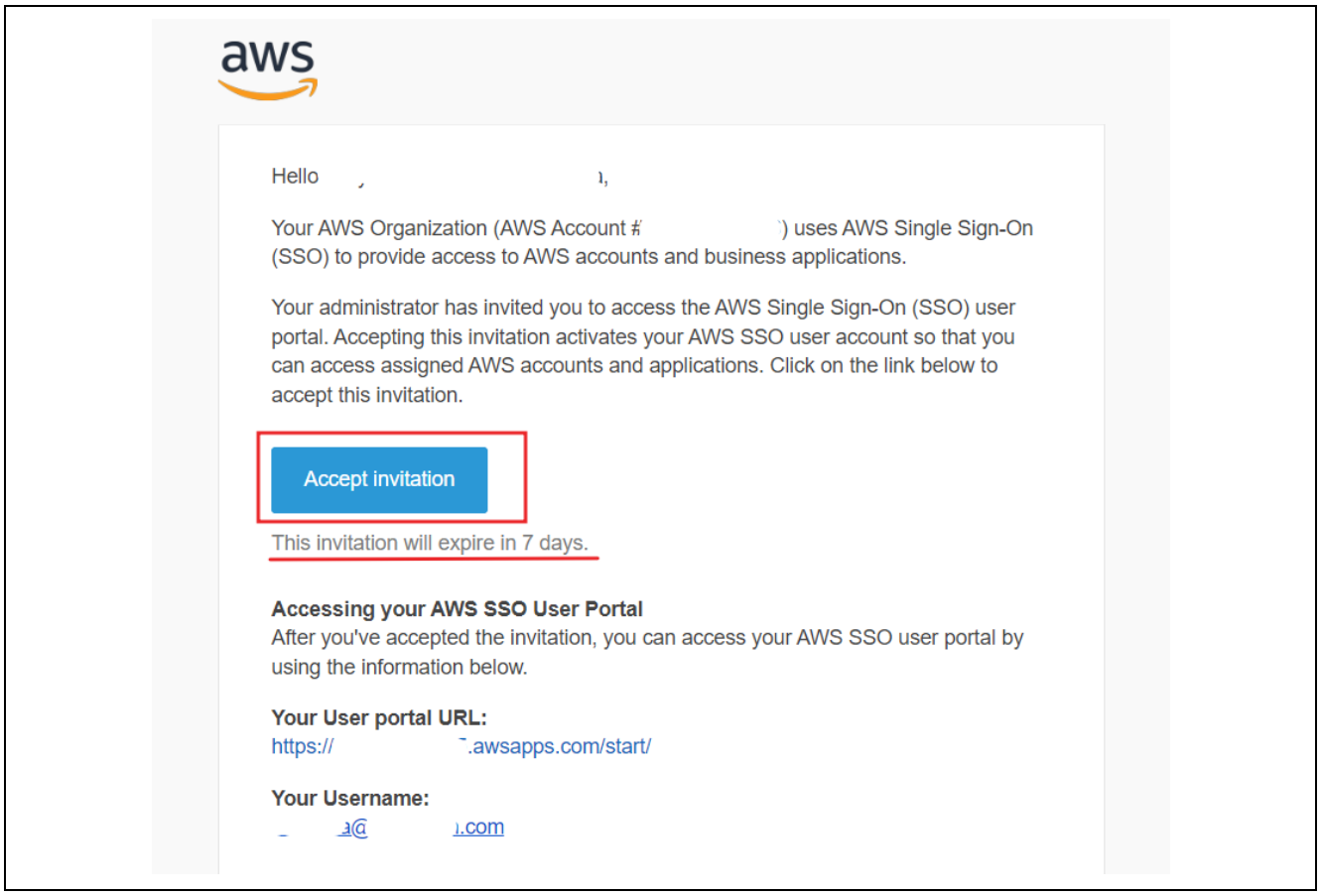


Figure 6. AWS Invitation

7. Wait for the **Download Certificate** and **Go To Dashboard** buttons to become available on the registration page. It may take up to **1 hour** for the device provisioning process to complete.
   Click **Download Certificate** button to download the credentials for connecting to the cloud.

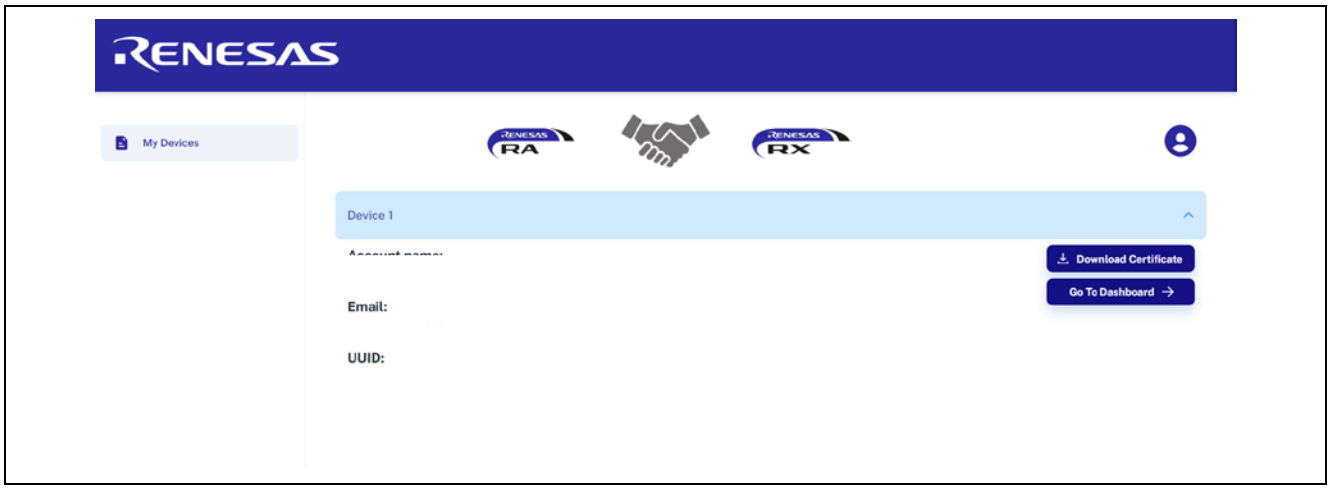


Figure 7. Device Active Status and Certificate Download

8. Click **go to** Dashboard button to access the dashboard. First time users will access the dashboard with credentials “admin” for both username and password. Then, users will be directed to change the password. Once completed, users can access the dashboard.



Figure 8. AWS Dashboard

2. Account Quarantine

The $10 AWS credits are valid for one year.

Upon exhaustion or expiration of the credits, the account will be converted to ‘Quarantine’ status.

To activate the account, users can login to the AWS account indicated in the ‘Invitation to join AWS Single sign-on’ email, as shown in the example below, to add their credit card details to activate the account.

3. Next Steps

Visit: www.renesas.com/cloudsolutions for more information and to further explore the cloud solutions

Website and Support

Visit the following vanity URLs to learn about key elements of the RA family, download components and related documentation, and get support.

CK-RA6M5 Kit Information	renesas.com/ra/ck-ra6m5
CK-RX65N Kit Information	renesas.com/rx/ck-rx65n
Renesas RA RX Cloud Solutions	renesas.com/cloudsolutions
RA Product Information	renesas.com/ra
RX Product Information	renesas.com/rx
RA Product Support Forum	renesas.com/ra/forum
RX Product Support Forum	renesas.com/rx/forum
Renesas Support	renesas.com/support

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Jun.14.22	—	Initial release
1.01	Jul.11.22	—	Minor update

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.

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