

VersaClock[®] 7 (RC210XX & RC310XX)

Programmable Clocks Live Bench Measurement Tool Step-by-Step Guide



renesas.com/clocklivebench



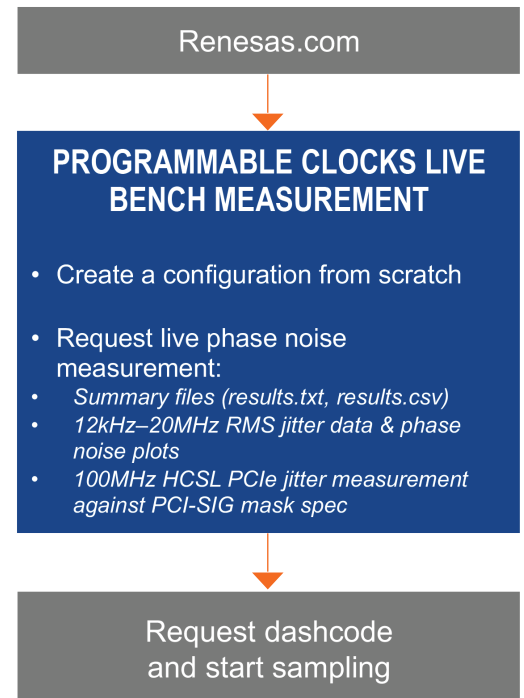
SYSTEM OVERVIEW

SYSTEM PURPOSE

- Instant access to automated jitter measurements for Renesas' flagship clock devices.
- Support PCIe Gen6/7 measurement against latest spec.

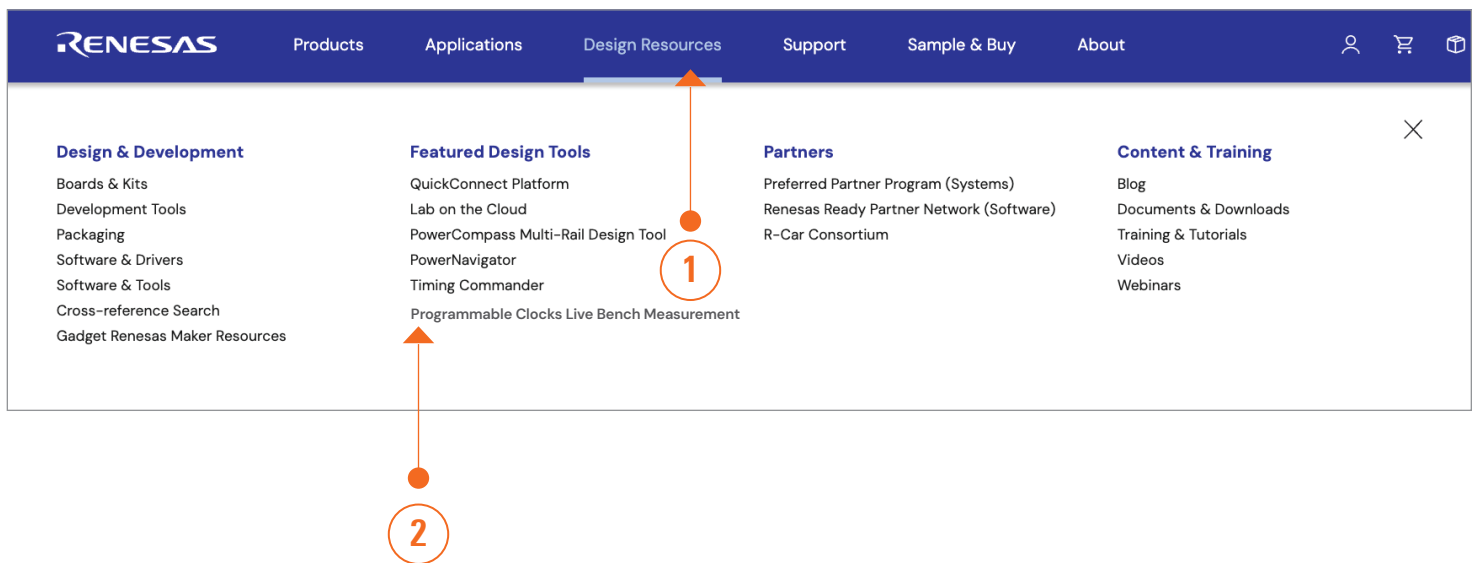
SYSTEM BENEFIT

- No EVB or lab equipment needed.
- Easy dashcode generation and sampling process.
- Most Renesas timing devices support multiple configurations, and once qualified, can be used across different platforms.



HOW TO FIND THE TOOL

Access Programmable Clocks Live Bench Measurement Tool from Website:
Design Resources → Programmable Clocks Live Bench Measurement



CREATE OR LOAD A CONFIGURATION

Clock & Timing Solution

Lab on the Cloud – Programmable Clocks LiveBench Measurement

This system will help you:

- Create a configuration from scratch or import an existing .rbs file from RICBox
- Request a live phase noise measurement
- Request the creation of a custom orderable part number (dash code)

The system supports the device families shown to the left. Once you select the family and product, use the library icon to get a list of links to more information.

[View quick user guide](#)

Select Family *

☐ FemtoClock3
☒ **VersaClock7**
☐ FemtoClock3-Wireless

Select Product *

☐ RC21005BQ
☐ RC21008B
☐ RC21008BQ
☐ RC21012BQ
☐ RC21012B
☐ RC31005BQ

SUBMIT

1 Select Product Family - VersaClock7

2 Select VC7 variants - All variants are supported

3 Click "Submit" once finished selection

CREATE OR LOAD A CONFIGURATION

Option 1: Importing an existing RBS file*

CONFIGURATION OTP RESULT

INPUTS SPREAD SPECTRUM OUTPUTS

Crystal

Operation Mode Synthesizer

Mode Xtal

Frequency 50MHz

Load Capacitance (pF) 8

Reference Clock

CLKIN0 None

CLKIN0b None

Input Mode CLKIN0 DISABLED

1 Select "Import RBS" and upload your rbs. file.

2 Click "Submit"

IMPORT RBS **SUBMIT**

Progress log

- driver instance is created
- file loaded successfully

0 Error(s)

0 Warning(s)

*RBS file is generated using Renesas RICBox GUI. For more details, please see Appendix.

CREATE OR LOAD A CONFIGURATION

Option 1: Importing an existing RBS file*

The screenshot shows a 'Submit RBS file' dialog box with a close button (X) in the top right corner. It contains a text input field for the file name, a 'Save and Upload' button, and a 'Save' button. Red annotations with numbers 3 and 4 point to the input field and the 'Save and Upload' button respectively. A green message 'This file name is available.' is displayed below the input field.

Submit RBS file

Enter the file name.*

RC31012B Kiki Testing

This file name is available.

Save and Upload Save

Note:

- **Save and Upload** - Generate RBS file and upload to server.
- **Save** - Only generate RBS file.

*RBS file is generated using Renesas RICBox GUI. For more details, please see Appendix.

CREATE OR LOAD A CONFIGURATION

Option 2: No RBS file. Create new configuration from scratch.

The screenshot shows the main configuration interface with a top navigation bar containing 'CONFIGURATION', 'OTP', and 'RESULT' tabs. The 'CONFIGURATION' tab is active. The interface is divided into sections for 'INPUTS', 'SPREAD SPECTRUM', and 'OUTPUTS'. The 'INPUTS' section contains fields for Crystal, Operation Mode, Mode, Frequency, Load Capacitance (pF), Reference Clock, CLKIN0, CLKIN0b, and Input Mode CLKIN0. The 'SPREAD SPECTRUM' section is currently selected. The 'OUTPUTS' section is empty. The bottom bar contains 'INFO', 'SUPPORT', 'config4', 'IMPORT RBS', and 'SUBMIT' buttons. Red annotations with numbers 1 through 5 point to various elements: 1 points to the 'CONFIGURATION' tab, 2 points to the 'INPUTS' section, 3 points to the 'Request dashcode' button, 4 points to the 'View status of test' button, and 5 points to the 'SUBMIT' button.

1 Enter requirements 3 Request dashcode

CONFIGURATION OTP RESULT 4 View status of test

INPUTS SPREAD SPECTRUM OUTPUTS 2 Enter input, enable SSC(PCIe), enter output frequencies

Crystal

Operation Mode Synthesizer

Mode Xtal

Frequency 50MHz

Load Capacitance (pF) 8

Reference Clock

CLKIN0 None

CLKIN0b None

Input Mode CLKIN0 DISABLED

5 Request a measurement

INFO SUPPORT config4 IMPORT RBS SUBMIT

Progress log

- driver instance is created
- file loaded successfully

Error(s) 0

Warning(s) 0

GET THE RESULTS

Results – Get the results (including the RBS file), phase noise text files, and phase noise graphs. Also include PCIe analysis if applicable.

Generate Dashcode – Redirect link to renesas.com to start the dashcode generation and sampling process.

RBS files – Save this .rbs file locally if you wish to generate dashcode later.

Click to download rbs. file Click to download results Count of stored results

7 / 20

Sr.No	Product	RBS Files	Results	Generate Dashcode	Action
1	RC21008B	adam_2024sep16_0646PM.rbs	Download	GENERATE	
2	RC31008BQ	adam_2024sept24_933am.rbs	Download	GENERATE	
3	RC21008B	adam_2024oct01_826pm.rbs	Download	GENERATE	
4	RC31012BQ	adam_2024oct02_1045am.rbs	Download	GENERATE	

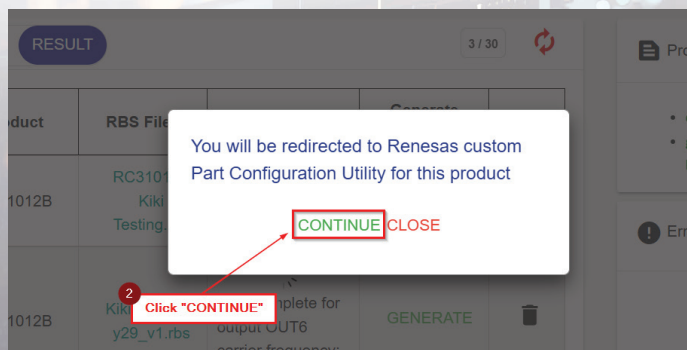
If the result looks good, click to generate dashcode.

GENERATE DASHCODE

1 After confirming the result looks good, click "GENERATE" to get unique dashcode.

3 / 30

Sr. No	Family	Product	RBS Files	Results	Generate Dashcode	Action
1	VersaClock 7	RC31012B	RC31012B Kiki Testing.rbs	Download	GENERATE	



GENERATE DASHCODE

RENESAS

ProductsApplicationsDesign ResourcesSupportSample & Buy

Products / Clocks & Timing / Jitter Attenuators with Frequency Translation / RC310 / Customize

RC310 Custom Part Configuration Utility

Use this form to upload your configuration file

The rbs. file and addendum will be automatically uploaded to the website.

rbs file *

RC31012B Kiki Testing.rbs (747.51 KB)

Remove

Select a RC31005BQ or RC31008B or RC31008BQ or RC31012B or RC31012BQ configuration file (rbs) from your computer.

Supplied Addendum

RC31012B_datasheet_addendum.pdf (256.42 KB)

Remove

OPTIONAL: Select a RC31005BQ or RC31008B or RC31008BQ or RC31012B or RC31012BQ addendum file (.pdf) from your computer.

RC310 Custom Part Configuration Utility

Customer Name

Kiki

Company

Renesas

Project Name

Testing

Application

Sample

Sample Schedule

Sample

Enter project informations

Comments / Special Requests

Click "Upload" to generate unique dashcode

Upload

Clear and start over

GENERATE DASHCODE

RC310 Custom Part Configuration Utility

Success! Your custom part number **RC31012B13EGNA#BBO** and documentation has been created. The information below has been emailed to you. Click the link below to request samples.

Custom part number: **RC31012B13EGNA#BBO**

[Request Samples](#)

Dashcode created.

NOTE

Storage Limit

- Max 20 test results per user
- Delete older results when full (check counter on results screen)

RBS File Matching

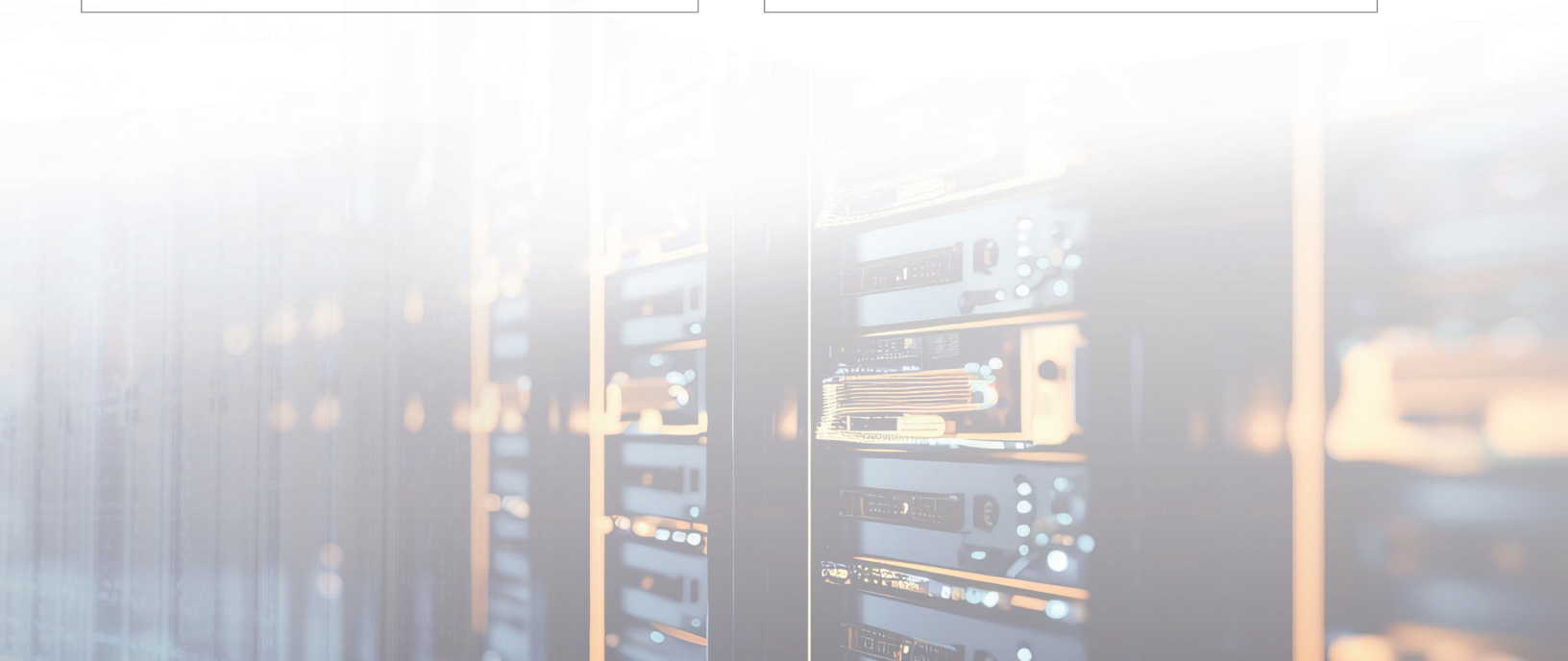
- Imported RBS must match the selected device

Test Queueing

- Requests run one at a time
- Multiple submissions will be queued

Support Scope

- System measures provided configurations only
- For optimization, an application engineer is still needed



GETTING HELP WITH SYSTEM

For manual jitter requests or system issues, please submit on JIRA at:

<https://clocking.atlassian.net/servicedesk/customer/portals> → Renesas Timing Support → TPD Support → Fill in form

Welcome to the TPD Help Desk

Contact Us

Direct person contact or feedback on particular product or services: [TPD PLM/Apps product owners](#).
For EVB please proceed to [link](#) for sample request or order through distribution.

Featured portals

1

Renesas Timing Support

Please submit Applications Engineering technical support requests here.

TPD Supply Escalation

We no longer support escalation from this portal.
Please contact please use the Feedback

Direct Contact Info

<https://renesasgroup.sharepoint.com/sites/IIBU-TPD/SitePages/Contacts.aspx>


TPD Help Desk / Renesas Timing Support

Renesas Timing Support

Please submit Applications Engineering technical support requests here.

What can we help you with?

2


 TPD Support

TPD Help Desk / Renesas Timing Support

Renesas Timing Support


Please submit Applications Engineering technical support requests here.

What can we help you with?

 TPD Support

Required fields are marked *



Raise this request on behalf of *

 Wing Ki Hui (wing-ki.hui@renesas.com)

Region *

Americas

Request Category *

Technical Question  Software Issues (RicBox/Timing Commander/Lab on the Cloud) 


Product Family *

VersaClock 7 (aka VC7) - RC21, RC31

Customer Name *











Kiki

Due date *

30May25 

Subject Line (Customer / Part / Subject) *

Description *

Normal text          

Need manual jitter support

Email CC (list separated by ";" or "<" you can paste Outlook email format such as "Jon Smith <jon.smith@companyX.com>")

Attachment

Drag and drop files, paste screenshots, or browse

We will receive your Jira ticket once you clicked "Send"

Send Cancel

TPD Help Desk / Renesas Timing Support

TECHSUPP-9334

Kiki

Wing Ki Hui raised this on Today 3:32 PM

Region

Americas

Request Category

Dash Code & Addendum Support

Product Family

VersaClock 7 (aka VC7) - RC21, RC31

Customer Name

Kiki

Customer Project

Sample

Due date

Tomorrow


Description


Need manual jitter support


Email CC (list separated by ";" or "<" you can paste Outlook email format such as "Jon Smith <jon.smith@companyX.com>")

Hide details


BACKLOG

 Notifications on


 ToDo


 Schedule the Work

Request type

 TPD Support

Shared with

 Wing Ki Hui

 Share

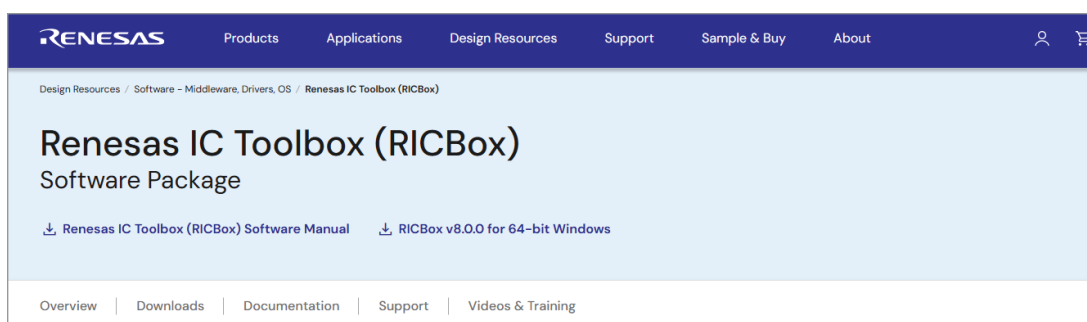
JIRA ticket created, our application engineer will start working on your request.

APPENDIX

WHAT IS RICBox?

Renesas IC Toolbox (RICBox) is a software platform that lets users:

- Configure Renesas devices via evaluation kits connected to a PC
- Build configuration profiles for devices with non-volatile memory
- Ensure correct startup behavior, especially for clock devices needing pre-set configurations
- Especially useful when you want your device to boot up with a specific setup automatically



OTHER USEFUL INFORMATION

FemtoClock 3 Product Pages: [RC323](#) and [RC223](#)

RICBox Builder Tool: [Renesas IC Toolbox \(RICBox\)](#)



Renesas Electronics America Inc. | [renesas.com](https://www.renesas.com)

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