

# FemtoClock™ 3 (RC323XX & RC223XX)

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



[renesas.com/clocklivebench](https://renesas.com/clocklivebench)



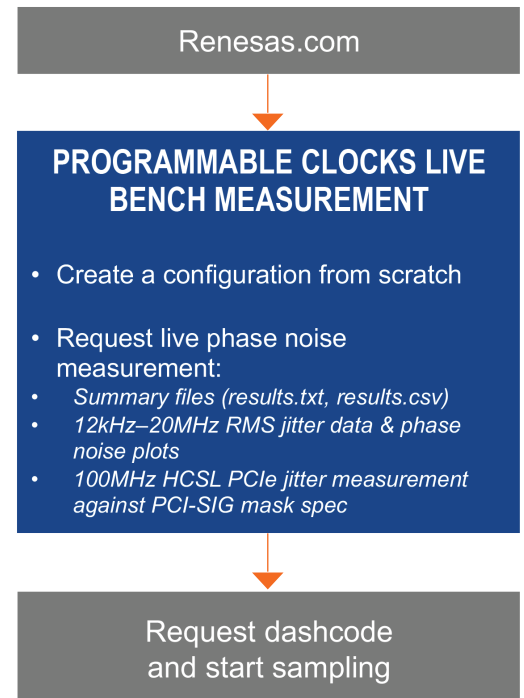
# SYSTEM OVERVIEW

## SYSTEM PURPOSE

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

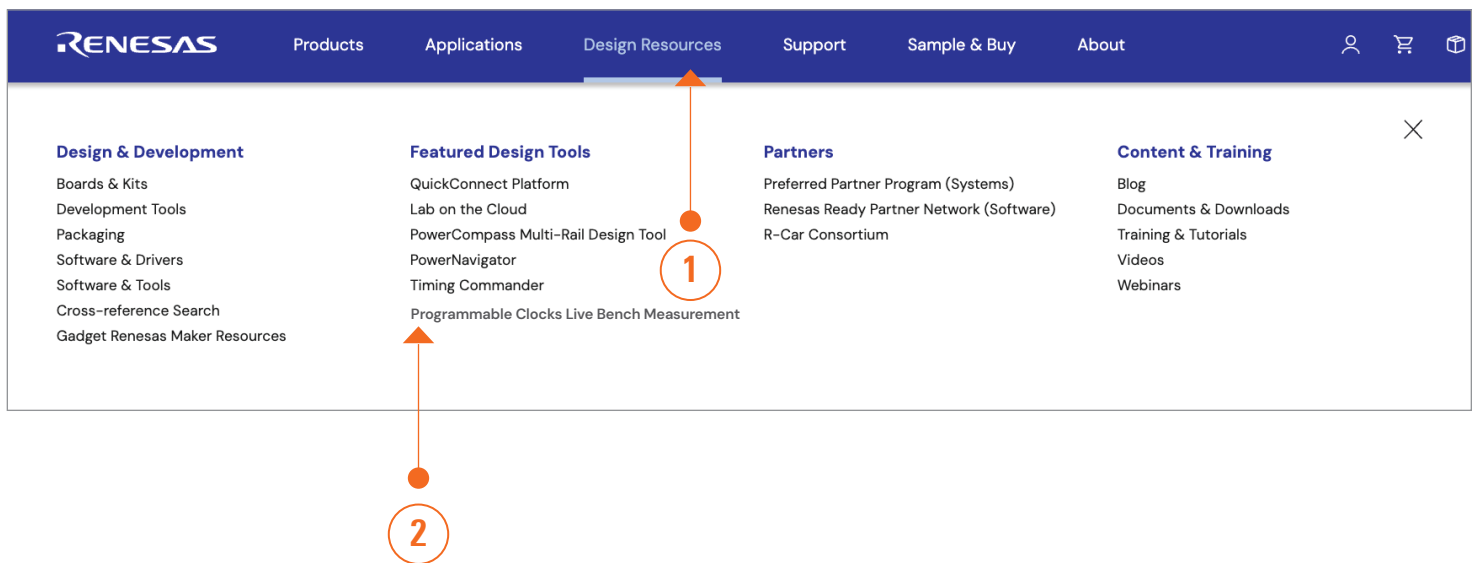
## SYSTEM BENEFIT

- 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



## SELECTING THE FAMILY AND VARIANT

### 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 \***

1 ☒ FemtoClock3 Select Product Family - FemtoClock 3

☐ VersaClock7

☐ ProXO

☐ FemtoClock3-Wireless

**Select Product \***

2 ☒ RC32312A Select FemtoClock 3 Variants

☐ RC22312A

3  Click "Submit" once finished

## CREATE OR LOAD A CONFIGURATION

Option 1: Importing an existing RBS file\*

CONFIGURATION OTP RESULT

INPUTS DPLL OUTPUTS

Frequency 54MHz

Load Capacitance (pF) 8

DPLL

Operation Mode Synthesizer

Reference Clocks

REF0 CLKIN0

REF1 CLKIN1

REF2 CLKIN2

REF3 CLKIN3

Input Clocks

CLKIN0 None

nCLKIN0 None

1

Select "Import RBS" and upload your .rbs file

2  Click "Submit"

Progress log

- driver instance is created

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

1

Enter requirements

2

Enter input, enable SSC (PCIe), enter output frequencies

3

Request dashcode

4

View status of test

CONFIGURATION

OTP

RESULT

INPUTS

DPLL

OUTPUTS

Frequency

54MHz

Load Capacitance (pF)

8

DPLL

Operation Mode

Synthesizer

Reference Clocks

REF0

CLKIN0

REF1

CLKIN1

REF2

CLKIN2

REF3

CLKIN3

Input Clocks

CLKIN0

None

nCLKIN0

None

INFO

SUPPORT

default

IMPORT RBS

SUBMIT

Progress log

• driver instance is created

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

CONFIGURATION		OTP		RESULT	
Sr.No	Product	RBS Files	Results	Generate Dashcode	Action
1	RC21008B	adam_2024setp16_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

CONFIGURATION OTP **RESULT**

After confirming the result looks good,  
Click "GENERATE" to get unique dashcode

1 / 30

Sr.No	Family	Product	RBS Files	Results	Generate Dashcode	Action
1	FemtoClock3	RC32312A	RC32312A.rbs	Download	<b>GENERATE</b>	

Click "CONTINUE"

2

You will be redirected to Renesas custom Part Configuration Utility for this product

**CONTINUE** CLOSE

## RC323 Custom Part Configuration Utility

Use this form to upload your configuration file

rbs file \*

RC32312A.rbs (265.16 KB)

Remove

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

Select a **RC32308A** or **RC32312A** configuration file (.rbs) from your computer.

Supplied Addendum

RC32312A\_datasheet\_addendum.pdf (259.14 KB)

Remove

OPTIONAL: Select a **RC32308A** or **RC32312A** addendum file (.pdf) from your computer.

# GENERATE DASHCODE

Customer Name

Kiki

Company

Renesas

Project Name

Testing

Application

Sample

Sample Schedule

Sample

Enter project informations

Comments / Special Requests

Click "Upload" to generate unique das hcode

Upload

Clear and start over

## RC323 Custom Part Configuration Utility

Success! Your custom part number **RC32312A036GN1#BBO** and documentation has been created. The information below has been emailed to you. Click the link below to request samples.

Custom part number **RC32312A036GN1#BBO** ← Dashcode created.

Request Samples



## 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  
 → Product Family "FemtoClock 3 (RC323xx, RC223xx)"

The screenshot displays the TPD Help Desk interface. At the top, a dark blue header contains the text "Welcome to the TPD Help Desk" and a search bar. Below this, a light blue section titled "Contact Us" provides direct contact information and a link to the JIRA portal. The "Featured portals" section highlights two options: "Renesas Timing Support" (marked with a red circle and number 1) and "TPD Supply Escalation". The "Renesas Timing Support" card includes a description and a link to the JIRA portal. Below the featured portals, a "Direct Contact Info" section provides a link to the contact page. The bottom section, "What can we help you with?", features a "TPD Support" button (marked with a red circle and number 2) and a light blue background image of a circuit board.

**Welcome to the TPD Help Desk**

Q Search for information

**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.  
 For your request, please use the Sales Portal.

**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**

## GETTING HELP WITH SYSTEM

Use a "Request Category" of "Software Issues" to route to the correct Application Engineer for Lab on the Cloud 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 X Software Issues (RicBox/Timing Commander/Lab on the Cloud) X

Product Family \*

VersaClock 7 (aka VC7) - RC21, RC31

Customer Name \*

Kiki

**- "Technical Question" to route to the correct Application Engineer for bench testing of the RBS**  
**- "Software Issues" to route to the correct Application Engineer for Lab on the Cloud support**

Due date \*

30May/25

Subject line (Customer | Part | Subject) \*

Description \*

Normal text B I ... A ...

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>")

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

Hide details

BACKLOG

Notifications on

ToDo

Schedule the Work

Request type

TPD Support

Shared with

Wing Ki Hui

Creator

Share

## OTHER USEFUL INFORMATION

FemtoClock 3 Product Pages: RC323 and RC223

RICBox Builder Tool: Renesas IC Toolbox (RICBox)

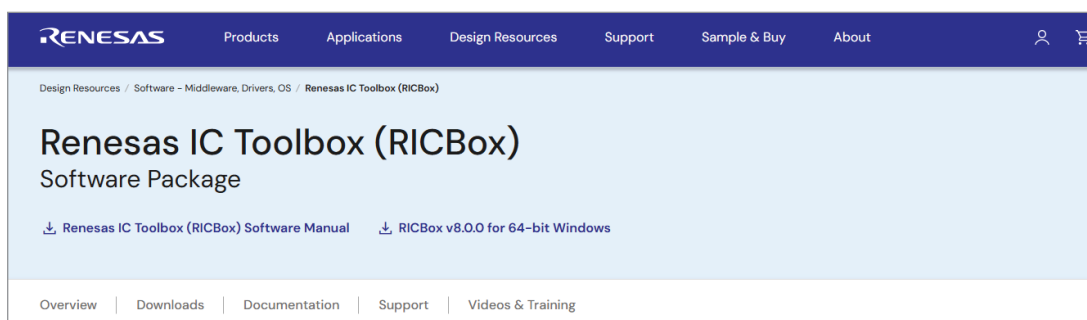


# APPENDIX

## 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



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

6024 Silver Creek Valley Rd, San Jose, CA 95138 | Phone: 1-888-468-3774

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Document No.: R11QS0069EU0000