

# FemtoClock™ 3 (RC323XX & RC223XX)

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



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



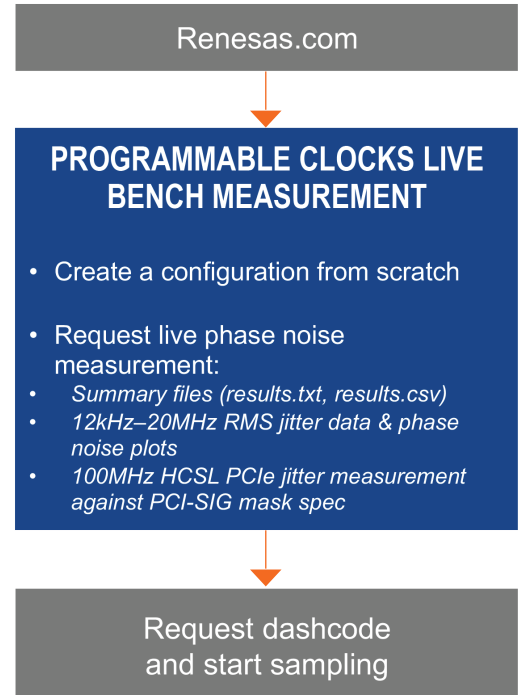
# SYSTEM OVERVIEW

## SYSTEM PURPOSE

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

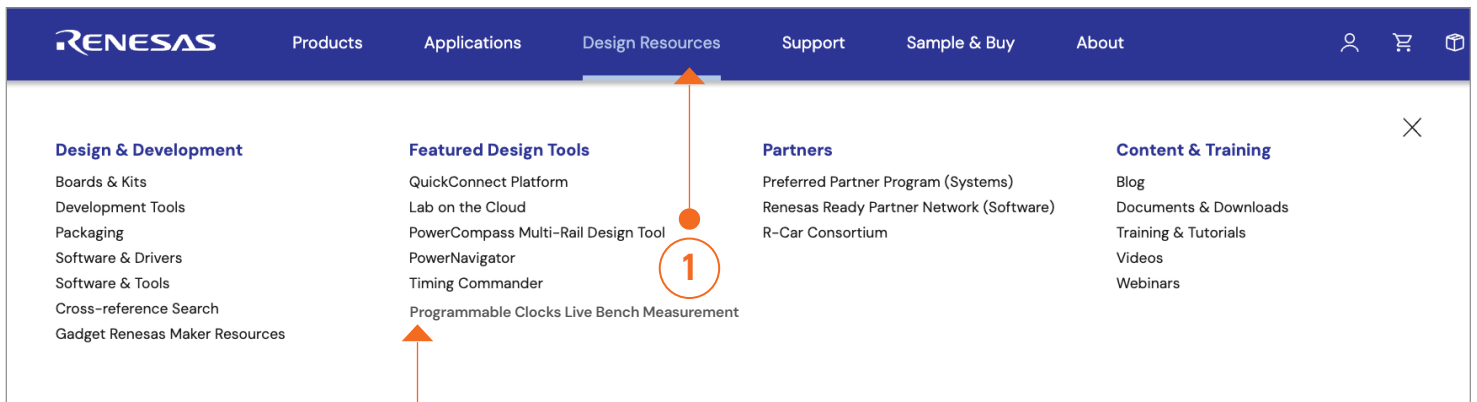
## SYSTEM BENEFIT

- 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**

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**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

Progress log

- driver instance is created

0 Error(s)

0 Warning(s)

2 Click "Submit"

\*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

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)

Buttons: 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: 7 / 20

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

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

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

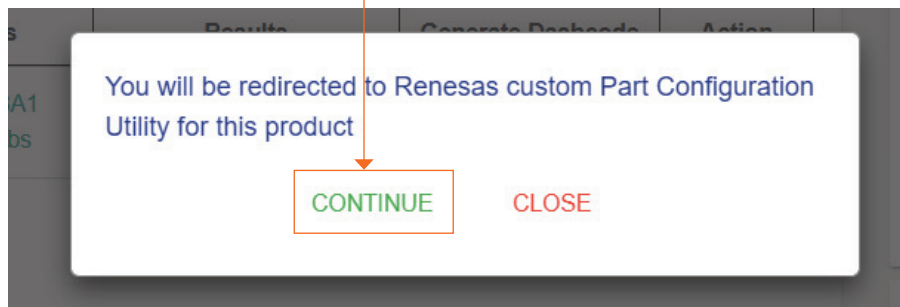
1

1 / 30



Click "CONTINUE"

2



## 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	<input type="text" value="Kiki"/>
Company	<input type="text" value="Renesas"/>
Project Name	<input type="text" value="Testing"/>
Application	<input type="text" value="Sample"/>
Sample Schedule	<input type="text" value="Sample"/>

Comments / Special Requests

## 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.



## 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, there is a search bar with the text "Search for information". Below this is a "Contact Us" section with a link to "TPD PLM/Apps product owners" and a note for EVB users. The "Featured portals" section contains two cards: "Renesas Timing Support" (highlighted with a red box and a '1' in a red circle) and "TPD Supply Escalation". Below the featured portals is a "Direct Contact Info" section with a link to the contact page. The main content area shows the breadcrumb "TPD Help Desk / Renesas Timing Support", the heading "Renesas Timing Support", and the instruction "Please submit Applications Engineering technical support requests here." Under the heading "What can we help you with?", there is a search bar with a lightbulb icon and the text "TPD Support" (highlighted with a red box and a '2' in a red circle).

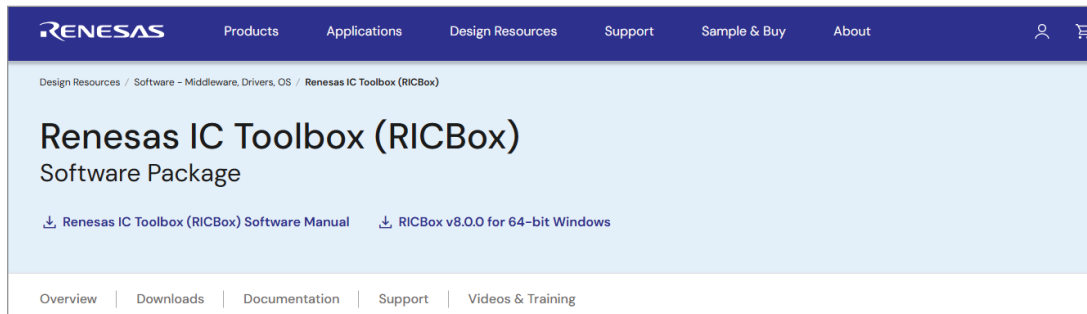


# APPENDIX

## 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



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