



Product Advisory (PA)

Subject: FC3W Device Configuration Update on FemtoClock 3W

Publication Date: June 8, 2026

Effective Date: June 8, 2026

Revision Description:

Initial Release

Description of Change:

Femtoclock 3W devices with early configurations should be upgraded to a new configuration update. The early default configuration did not provide optimal settings for FC3W devices and introduced a sensitivity that could cause APLL unlock in certain conditions. The latest revision of the Renesas IC Toolbox ("RICBOX") software adds configuration limits to ensure the device is always programmed with optimal settings. The nature of the changes is an update to the charge pump settings together with the current injection into the loop filter to ensure the APLL achieves proper lock.

Impact

In certain situations, the PLL circuitry could experience a "false lock," potentially causing issues with the device's performance and stability. Original default configurations need to be updated to the new recommended configuration. A user may need to update their systems if using custom OTP programming or configure the device with either an EEPROM or register sequence. There are three *options* to identify if an update is required.

Option 1: Review the RBS configuration file

Check the RBS file header in a text editor to identify the personality (plugin) version used to generate the file in RICBOX. For example:

Personality: FemtoClock3 [6.9.0]

RBCoreVersion: 19.6.0

Part#: RC38312A1

Hardware: A1

If the personality is 6.9.0 or later, no action is needed. For personality earlier than 6.9.0 or if you open your RBS file in 6.9.0 or later and see warning 101, please contact Renesas Timing Technical Support for assistance. The full warning text as shown in RICBOX is "The APLL settings are not optimized. Please contact Technical Support (warning #101). [apll_loop_filter_bw_goal]".

Option 2: Analyze custom OTP programming

For devices with custom OTP programming (dash code devices), the Renesas Timing Technical Support team will review the files used to burn the devices in the factory and make any needed updates.

Option 3: Verify configuration by reading registers through the serial port

Read the following registers through the serial port and compare the values against the required conditions:

Offset and bits	Condition
0x80[6:4]	Value 0 is invalid
0x88[6:4]	Value should be 0
0x88[2:0]	Value should be 0
0xA8[3:0]	Value should be 8 or higher

Note: 0x80[6:4] indicates register offset 0x80 in bits 6,5 and 4. If any of the conditions are false, then the configuration requires an update.

Configuration Update

The RICBOX 6.9.0 or later will apply new APLL configuration settings to an updated RBS file. This new configuration will improve the frequency lock detection and current injections within the device required for optimal operation.

There are three methods to apply this configuration update:

1. Use the serial interface (I2C or SPI) to write the register setting during device initialization.
2. Update the EEPROM image used to program the device during initial power up
3. Update the custom device OTP programming (dash code) to automatically apply the workaround at every start.

Please contact Renesas Timing Technical Support for any required assistance.

Status

Renesas IC Toolbox has been updated to provide configuration settings for optimal performance and stability. To install or update the plugin/personality for Femtoclock3 installed in your locally installed version of RICBOX, use the Help->Updates menu in the application. The base RICBOX application can be downloaded from www.renesas.com/ricbox.

Affected Product List:

Appendix A

Reason for Change:

The new configuration update optimizes settings for better performance and stability.

Impact on Fit, Form, Function, Quality & Reliability:

This change will have no impact on the form, fit, function, quality, reliability and environmental compliance of the devices.

Qualification Status: Not applicable

Sample Availability Date: Not applicable

Device Material Declaration: Not applicable

Note :

Questions or requests pertaining to this change notice, including additional data or samples, must be sent to Renesas within 30 days of the publication date.

Appendix A: Affected Product List:

RC38108A100GBB#BC0	RC38112A106GBB#HC0	RC38208A104GBB#BC0	RC38312A10BGBB#BC0
RC38108A100GBB#HC0	RC38112A107GBB#BC0	RC38208A104GBB#HC0	RC38312A10BGBB#HC0
RC38108A101GBB#BC0	RC38112A107GBB#HC0	RC38208A200GBB#BC0	RC38312A10BGBB#KC0
RC38108A101GBB#HC0	RC38112A108GBB#BC0	RC38208A200GBB#HC0	RC38312A10CGBB#BC0
RC38108A102GBB#BC0	RC38112A108GBB#HC0	RC38208A204GBB#BC0	RC38312A10CGBB#KC0
RC38108A102GBB#HC0	RC38112A109GBB#BC0	RC38208A204GBB#HC0	RC38312A10DGBB#BC0
RC38108A104GBB#BC0	RC38112A109GBB#HC0	RC38312A100GBB#BC0	RC38312A10DGBB#KC0
RC38108A104GBB#HC0	RC38112A10AGBB#BC0	RC38312A100GBB#HC0	RC38312A10FGBB#BC0
RC38108A105GBB#BC0	RC38112A10AGBB#HC0	RC38312A100GBB#KC0	RC38312A10FGBB#KC0
RC38108A105GBB#HC0	RC38112A10BGBB#BC0	RC38312A101GBB#BC0	RC38312A10GGBB#BC0
RC38108A106GBB#BC0	RC38112A10BGBB#HC0	RC38312A101GBB#HC0	RC38312A10GGBB#KC0
RC38108A106GBB#HC0	RC38112A200GBB#BC0	RC38312A102GBB#BC0	RC38312A200GBB#BC0
RC38108A107GBB#BC0	RC38112A200GBB#HC0	RC38312A102GBB#HC0	RC38312A200GBB#HC0
RC38108A107GBB#HC0	RC38112A201GBB#BC0	RC38312A104GBB#BC0	RC38312A201GBB#BC0
RC38108A108GBB#BC0	RC38112A201GBB#HC0	RC38312A104GBB#HC0	RC38312A201GBB#HC0
RC38108A108GBB#HC0	RC38112A204GBB#BC0	RC38312A105GBB#BC0	RC38312A204GBB#BC0
RC38108A109GBB#BC0	RC38112A204GBB#HC0	RC38312A105GBB#HC0	RC38312A204GBB#HC0
RC38108A109GBB#HC0	RC38112A205GBB#BC0	RC38312A106GBB#BC0	RC38312A205GBB#BC0
RC38108A200GBB#BC0	RC38112A205GBB#HC0	RC38312A106GBB#HC0	RC38312A205GBB#HC0
RC38108A200GBB#HC0	RC38112A206GBB#BC0	RC38312A107GBB#BC0	RC38312A206GBB#BC0
RC38108A204GBB#BC0	RC38112A206GBB#HC0	RC38312A107GBB#HC0	RC38312A206GBB#HC0
RC38108A204GBB#HC0	RC38112A207GBB#BC0	RC38312A107GBB#KC0	RC38312A207GBB#BC0
RC38108A205GBB#BC0	RC38112A207GBB#HC0	RC38312A108GBB#BC0	RC38312A207GBB#HC0
RC38108A205GBB#HC0	RC38112A208GBB#BC0	RC38312A108GBB#HC0	RC38312A208GBB#BC0
RC38112A100GBB#BC0	RC38112A208GBB#HC0	RC38312A108GBB#KC0	RC38312A208GBB#HC0
RC38112A100GBB#HC0	RC38112A209GBB#BC0	RC38312A109GBB#BC0	RC38312A209GBB#BC0
RC38112A104GBB#BC0	RC38112A209GBB#HC0	RC38312A109GBB#HC0	RC38312A209GBB#HC0
RC38112A104GBB#HC0	RC38112A20AGBB#BC0	RC38312A109GBB#KC0	RC38312A300GBB#BC0
RC38112A105GBB#BC0	RC38112A20AGBB#HC0	RC38312A10AGBB#BC0	RC38312A300GBB#HC0
RC38112A105GBB#HC0	RC38208A100GBB#BC0	RC38312A10AGBB#HC0	
RC38112A106GBB#BC0	RC38208A100GBB#HC0	RC38312A10AGBB#KC0	

For additional information regarding this notice, please contact your Renesas sales representative.