

README: GRV-EPIC-PR1 Firmware 1.3.2

May 15, 2019.

This Readme provides information about changes to firmware and software for the *groov* EPIC processor, part number GRV-EPIC-PR1, and all of its components:

- *groov* EPIC
- PAC Control Engine
- *groov* Manage
- *groov* View
- Node-RED
- Ignition Edge
- CODESYS Runtime Engine

Some fixes or enhancements may require that you install a corresponding module firmware update. If a fix or enhancement falls into this situation, it will be listed next to the description of the specific fix or enhancement.

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For information on PAC Project Software Suite updates, see the [PAC Project Readme](#).

Installing a GRV-EPIC-PR1 Firmware Update

For instructions on installing a firmware update, refer to "Updating Firmware on a *groov* EPIC Unit" in the [groov EPIC User's Guide, form 2267](#).

Questions

If you have questions, see [How to Get Help](#). To learn where you can find version numbers for the firmware and software components, see [Finding version numbers](#).

Each Fixed Bug is identified by its bug tracking number. If a number listed here has KB as the prefix, click the link to see a KnowledgeBase article with more information.

GRV-EPIC-PR1 Firmware 1.3.2

May 15, 2019.

groov EPIC 1.3.2

Enhancements

Support for the GRV-ITR-12 module has been added.

Bug fixes

- [KB88231](#) - Firewall rules disappear/page is empty
- [KB88232](#) - Inverted scaling of *groov* analog input not working correctly
- [KB88241](#) - *groov* Manage Module page does not show quality error for *groov* analog outputs

PAC Control Engine 10.0h

Bug fixes

- [KB88174](#) - Float values that are NaN incorrectly evaluated as true
- [KB88211](#) - Open Outgoing Communication returns -87 error
- [KB88227](#) - Get I/O Channel Quality instruction always returns Good
- [KB88237](#) - PAC Control Engine on GRV-EPIC-PR1 occasionally fails to start
- [KB88254](#) - Can't change PID loop parameters

groov Manage 1.3.2

Bug fixes

- [KB88224](#) - Access Denied error when logging in with groov EPIC Shell password that starts with @ symbol

groov View 4.1c

You can find a list of enhancements and bug fixes in the [groov View Readme Notes](#).

Node-RED 0.19.5

No enhancements or bug fixes.

Ignition Edge

No enhancements or bug fixes.

CODESYS

Bug fixes

- [KB88122](#) - CODESYS error during download: 1 unresolved reference
- [KB88123](#) - BACNET Server doesn't appear in Add Device dialog in CODESYS

Component Versions in GRV-EPIC-PR1 Firmware Releases

Component Versions in GRV-EPIC-PR1 Firmware 1.3

GRV-EPIC-PR1 Firmware 1.3.1

- *groov* EPIC 1.3.1
- PAC Control Engine R10.0g
- *groov* Manage 1.3.1
- *groov* View 4.1b
- Node-RED 0.19.5
- Ignition Edge
- CODESYS Runtime Engine

GRV-EPIC-PR1 Firmware 1.3.0

- *groov* EPIC 1.3.0
- PAC Control Engine R10.0e
- *groov* Manage 1.3.0
- *groov* View 4.1a
- Node-RED 0.19.5
- Ignition Edge
- CODESYS Runtime Engine

Component Versions in GRV-EPIC-PR1 Firmware 1.2

GRV-EPIC-PR1 Firmware 1.2.2

- *groov* EPIC 1.2.2
- PAC Control Engine
- *groov* Manage 1.2.2
- *groov* View R4.0d
- Node-RED 0.18.7
- Ignition Edge

GRV-EPIC-PR1 Firmware 1.2.1

- *groov* EPIC 1.2.1
- PAC Control Engine
- *groov* Manage 1.2.1
- *groov* View R4.0d
- Node-RED 0.18.7
- Ignition Edge

GRV-EPIC-PR1 Firmware 1.2.0

- *groov* EPIC 1.2.0
- PAC Control Engine
- *groov* Manage 1.2.0
- *groov* View R4.0d
- Node-RED 0.18.7
- Ignition Edge

Component Versions in GRV-EPIC-PR1 Firmware 1.1

GRV-EPIC-PR1 Firmware 1.1.0-b47

- *groov* EPIC 1.1.0-b47
- PAC Control Engine
- *groov* Manage 1.1.0
- *groov* View R4.0c
- Node-RED 0.18.7
- Ignition Edge

Component Versions in GRV-EPIC-PR1 Firmware 1.0

GRV-EPIC-PR1 Firmware 1.0.1-b110

- *groov* EPIC 1.0.1-b110
- PAC Control Engine R10.0a
- *groov* Manage 1.0.1
- *groov* View R4.0b
- Node-RED 0.18.4
- Ignition Edge

GRV-EPIC-PR1 Firmware 1.0.0-b71

- *groov* EPIC 1.0.0-b71
- PAC Control Engine R10.0a
- *groov* Manage 1.0.0
- *groov* View R4.0a
- Node-RED 0.18.4
- Ignition Edge

GRV-EPIC-PR1 Firmware 1.3.1

April 16, 2019. Updated: May 15, 2019.

groov EPIC 1.3.1

Bug fixes

- [KB87885](#) - Get Analog Totalizer Value Returns -1.#QNAN in PAC Control
- [KB87930](#) - GRV-EPIC-PR1 Touchscreen Keyboard Is Missing Parenthesis Characters '(' & ')'
- [KB87941](#) - Can't type a capital 'z' through GRV-EPIC-PR1 touchscreen
- [KB87971](#) - Strategy Information Not Displayed on Control Engine Page
- [KB88018](#) - groov Digital Output On-pulse or Off-pulse Performs Inconsistently
- [KB88073](#) - Port Forwarding to TCP Port 443 on GRV-EPIC-PR1 Doesn't Work
- [KB88083](#) - "Is I/O Unit Ready?" command always shows groov I/O as ready
- [KB88087](#) - Message Queue Fills With Same 5 Messages Repeatedly
- [KB88091](#) - Incorrect Values Returned When Reading Digital Input Feature Data from Packed Data Area of Memory Map
- [KB88128](#) - Digital feature value readings may be inaccurate
- [KB88144](#) - GRV-EPIC-PR1 may not be able to access itself by hostname

PAC Control Engine 10.0g

This release of *groov* EPIC firmware includes firmware updates from the following, previously-released PAC firmware: 10.0f. A description of the fixes and enhancements delivered in that release of PAC firmware can be found in the [SNAP PAC Controllers and Brains Firmware Readme](#).

The following PAC Control Engine fixes and enhancements are also part of this *groov* EPIC firmware release:

Bug fixes

- [KB87872](#) - In PAC Control, configuring *groov* EPIC as an I/O unit with both IP addresses configured may cause strategy download to fail
- [KB87882](#) - Downloading a strategy with 50 or more PIDs fails with a -62 (stack full) error
- [KB87987](#) - IVAL may not update if PAC Control strategy was not run
- [KB88036](#) - Changing the clock may result in interruption of established sessions
- [KB88054](#) - For some EPIC channel features, configuration fails with "Point Mismatch" errors
- [KB88071](#) - PAC Control Message Queue is filled with -8612 (Old Response to New Command) errors
- [KB88088](#) - Error Reading Persistent Float Tables via REST API on GRV-EPIC-PR1
- [KB88104](#) - Setting *groov* Digital TPO to Zero Percent Doesn't Stop Pulsing
- [KB88176](#) - Control engine resets when downloading online changes
- [KB88226](#) - Control engine keeps trying to access a *groov* I/O unit that is offline
- [KB87970](#) - Can't connect to control engine on GRV-EPIC-PR1 after disabling and re-enabling control engine in *groov* Manage

groov Manage 1.3.1

Bug fixes

- [KB88001](#) - *groov* Manage does not list CODESYS applications without symbol configuration
- [KB88031](#) - Module Hardware Revision Date Code Off by One Month

groov View 4.1b

You can find a list of enhancements and bug fixes in the [groov View Readme Notes](#).

Node-RED

No enhancements or bug fixes.

Ignition Edge

No enhancements or bug fixes.

CODESYS

No enhancements or bug fixes.

GRV-EPIC-PR1 Firmware 1.3.0

February 13, 2019. Updated: May 15, 2019.

groov EPIC 1.3.0

Enhancements

The CODESYS Runtime Engine has been added. For information on how to use it, see the [groov EPIC User's Guide, form 2267](#). In addition, a new section for the CODESYS Runtime Engine has been added to the readme.

Licensing options have changed. You no longer need to purchase Plus or Enterprise licenses. The available licenses are:

- GROOV-LIC-EDGE, for full access to Ignition Edge software.
- GROOV-LIC-CRE, for full access to the CODESYS Runtime Engine.
- GROOV-LIC-SHELL, for access through secure shell to the Linux operating system.

Support for the following modules has been added:

- GRV-IICTD-12
- GRV-ITR-12
- GRV-IMAI-8
- GRV-IDCIFQ-12
- GRV-OVMAILP-8

Known Issues

[KB88068](#) - When you are updating module firmware for an individual analog input modules, all of the analog input modules on the chassis will go offline. We recommend you schedule your module firmware update to minimize the impact on your processes.

Bug Fixes

- [KB87781](#) - External HDMI touchscreen monitor may not work properly after rebooting the GRV-EPIC-PR1
- [KB87719](#) - Time difference between GRV-EPIC-PR1 and Control Engine

PAC Control Engine 10.0e

NOTE: This release was delivered only on GRV-EPIC-PR1 firmware.

Bug Fixes

- [KB87957](#) - GRV-EPIC-PR1 I/O unit may go offline
- [KB87887](#) - Cannot Enable Communication to EPIC I/O Unit in PAC Control Strategy
- [KB87905](#) - Cannot Read Directory Listing via FTP Using PAC Control Strategy Logic on EPIC Processor

groov Manage 1.3.0

Enhancements

You can now start and stop a strategy that has been downloaded to your groov EPIC processor. From the groov Manage Home page, click or tap Controller > PAC Controller. In the Strategy box, you can start or stop a strategy and see how many charts are running.

Bug Fixes

- [KB87793](#) - Attempting to upload 20 MB or larger files to GRV-EPIC-PR1 will fail without error
- [KB87815](#) - Uploading an SSL certificate without the private key file fails without error
- [KB87883](#) - Using groov Manage to Reset I/O to Defaults on GRV-EPIC-PR1 I/O Unit does not clear PID Loops
- [KB87974](#) - groov module LED stay violet when module firmware update fails

groov View 4.1a

Enhancements and fixes are listed in the [groov View readme](#).

Node-RED 0.19.5

Enhancement

Node-RED has been upgraded to version 0.19.5.

Bug Fixes

- [KB87993](#) - Wires get duplicated when installing missing node types

Ignition Edge

No enhancements or bug fixes.

CODESYS Runtime Engine

Initial release.

GRV-EPIC-PR1 Firmware 1.2.2

December 11, 2018. Updated February 4, 2019.

PAC Control engine

Bug Fixes

- [KB87915](#) - Control engine stops working

- [KB87920](#) - Store Strategy to Flash sometimes fails
- [KB87935](#) - Uploading a file or system update may fail
- [KB87640](#) - Store strategy to flash may store strategy to wrong location

GRV-EPIC-PR1 Firmware 1.2.1

October 10, 2018

groov View R4.0d

The bug fixes and enhancements for this release are documented in the [groov View readme](#).

GRV-EPIC-PR1 Firmware 1.2.0

October 8, 2018

groov EPIC 1.2.0

Enhancements

- OptoSupport Remote Support Service
You can now provide secure access for Opto 22 Support to remotely access your GRV-EPIC-PR1 to help diagnose and troubleshoot problems.
- Support for new *groov* serial module (GRV-CSERI-4)
Opto 22 has just released the first serial module for the *groov* system and this firmware update adds support for this module.
- First App Loaded
You can now indicate whether *groov* View or *groov* Manage should be the first app to run when you start GRV-EPIC-PR1.
- Save network configuration through a firmware update
You can now choose to have your network configurations remain intact when you install a firmware update to your *groov* EPIC processor. This is an optional feature.
- Only items with data are saved in a backup file
When you select an item to save in a backup file, but that item does not contain any customizations or only the defaults, it's not saved in your backup file.
- You can now disable or enable navigation to a module page when you touch a module.
- *groov* Manage displays a module as flashing gray if the quality of the module is not known.
- If wireless connectivity is enabled, the *groov* EPIC processor now displays the strength of the wireless connection.

Bug Fixes

- [KB87489](#) - GRV-EPIC-PR1 Display asks for new admin account when one already exists
- [KB87590](#) - Files not accessible between groov Manage, Node-RED, and a PAC Control strategy
- [KB87565](#) - Modules disappear or appear incorrectly after hotswapping another module
- [KB87633](#) - Error when backing up: size limit reached
- [KB87643](#) - Sending a file via FTP may cause PR1's controller to stop responding
- [KB87647](#) - Errors in queue and I/O unit won't start
- [KB87674](#) - The module LED remains blue even though module is offline
- [KB87680](#) - NaN values from a PR1 are incorrectly displayed as 0.0
- [KB87682](#) - All groov I/O module LEDs turn red and OptoMMP server is unresponsive
- [KB87684](#) - Data in Stream-Read Only area of the memory map is in reverse order
- [KB87693](#) - Channel in analog input module reports incorrect reading
- [KB87718](#) - Simple modules disappear from Modules page after swapping a simple output module

PAC Control engine

Bug Fixes

- [KB87669](#) - Clamping a persistent variable or table element may disable the PR1 control engine
- [KB87678](#) - Control engine slows down or I/O goes offline

groov Manage 1.2.0

Bug Fixes

- [KB87613](#) - Can't perform a system update after interrupting the previous system update
- [KB87566](#) - Error message appears after system reboot following restore from backup
- [KB87580](#) - Firewall rules are incorrect if multiple browser tabs are open

groov View R4.0d

The bug fixes and enhancements for this release are documented in the [groov View readme](#).

Sparkplug

Bug Fixes

- [KB87676](#) - Control programs that use Sparkplug with MQTT stop working

Ignition Edge

Enhancements

Ignition Edge has been upgraded to version 7.9.9. This version removes the 500 tag limit; now supports an unlimited number of Ignition tags.

Bug Fixes

- [KB87659](#) - Attempts to enable Ignition Edge may fail

Additional updates

- Updates were made to maintain security at the most recent levels.

GRV-EPIC-PR1 Firmware 1.1.0-b47

August 2, 2018.

groov EPIC 1.1.0-b47

Enhancements

- WiFi support has been added.
- Access to groov I/O through groov Manage REST API has been added.
- The following pages in groov Manage have been changed to organize the information in a more helpful layout and to include controls for new or updated functions (for example, the addition of WiFi support):
 - Firewall (Home > System > Firewall)
 - Network (Home > System > Network)
 - Backup (Home > Maintenance > Backup)
 - Restore (Home > Maintenance > Restore)
 - Sparkplug Configuration (Home > Sparkplug > Configuration)
 - Info and Help (only if viewed through computer or mobile device)

Bug Fixes

- [KB87406](#) - Touching a groov module does not turn on the touchscreen
- [KB87435](#) - groov I/O module loses custom configuration
- [KB87499](#) - groov digital output modules with TPO settings do not accept changes
 - This fix requires that you also install a module firmware update. See the [groov I/O Module Firmware readme](#).
- [KB87514](#) - groov EPIC PR1 host port may stop responding, causing PAC Control to freeze
- [KB87518](#) - groov digital input module may return a zero
- [KB87544](#) - GRV-EPIC-PR1 locks up at high temperature
- [KB87606](#) - Opto 22 application logs use up excessive disk space

PAC Control engine

Bug Fixes

- [KB87620](#) - PAC Control: PID "Set" instructions write corrupted data

groov Manage 1.1.0

Bug Fixes

- [KB87390](#) - groov Manage does not show current strategy running on Control Engine
- [KB87433](#) - groov Manage: text on Download Backup button disappears
- [KB87453](#) - Slow firewall port validation with large port range
- [KB87495](#) - In Generic MMP page, a String value causes an invalid value message
- [KB87502](#) - Status shows no progress when you drop something other than a file into the upload area
- [KB87503](#) - System Status Page shows error message when multiple browser tabs or windows try to access it
- [KB87541](#) - groov Manage may not display MAC address on Network page
- [KB87570](#) - Manual DNS entries are lost after a reboot

groov View R4.0c

The bug fixes and enhancements for this release are documented in the [groov View readme](#).

Sparkplug

Bug Fixes

- [KB87536](#) - Erratic responsiveness
- [KB87546](#) - Sparkplug doesn't reconnect to MQTT broker
- [KB87548](#) - Tags are valid but values don't change

Node-RED 0.18.7

Enhancements

Node-RED has been upgraded to version 0.18.7.

Bug Fixes

- [KB87507](#) - Can't access USB-to-serial converter from Node-RED

Additional updates

- Updates were made to maintain security at the most recent levels.

GRV-EPIC-PR1 Firmware 1.0.1-b110

June 14, 2018

groov EPIC 1.0.1-b110

Bug Fixes

- [KB85353](#) - Cannot communicate to GRV-EPIC-PR1 through Modbus/TCP
- [KB87424](#) - No warning generated in error queue if strategy I/O configuration does not match physical I/O
- 86674, 87326, 87421, 87423, 87432

PAC Control engine R10.0a

Bug Fixes

- [KB87494](#) - GRV-EPIC-PR1 host task locks up when examining errors on certain channel types
- [KB87630](#) - PAC Control: PID "Set" instructions write corrupted data

groov Manage 1.0.1

Bug Fixes

- [KB87450](#) - Changing PR1 Ethernet from DHCP to Manual does not take effect until user restarts the unit
- [KB87442](#) - Accounts page shows "null" for first user's email
- 87434

groov View R4.0b

The bug fixes and enhancements for this release are documented in the [groov View readme](#).

GRV-EPIC-PR1 Firmware 1.0.0-b71

May 18, 2018

Initial Release. These are the version numbers for the firmware and software components in this initial release:

- PAC Control Engine R10.0a
- groov EPIC 1.0.0-b71
- groov Manage 1.0.0
- groov View R4.0a

- Node-RED 0.18.4

How to Get Help

If you have any questions about the *groov* EPIC processor, you can call, fax, or e-mail Opto 22 Product Support. Hours are Monday through Friday, 7 a.m. to 5 p.m. Pacific Time.

Phone: 800-TEK-OPTO (800-835-6786) or 951-695-3080

Fax: 951-695-3017

Email: support@opto22.com

Opto 22 website: www.opto22.com

When calling for technical support, be prepared to provide the following information about your system to the Product Support engineer:

- Version information for *groov* EPIC, PAC Control Engine, *groov* View, *groov* Manage, and, if applicable, Node-RED and Ignition Edge
- A description of your system equipment:
 - Computer CPU type, speed, memory, and operating system
 - Controller model and firmware version
 - Module types and their firmware versions
- A description of your Setup and Configuration: how it is connected, the purpose of each device, external connections, and networks
- Specific error messages or other diagnostic indications

Finding Version Numbers

You can find the version numbers for the *groov* EPIC firmware and software components in the following locations:

groov EPIC Firmware

Log into your GRV-EPIC-PR1 as a user with administrator authority. From the Home screen, click or tap on Info and Help, then click or tap on About. The version number is listed under "System Version".

PAC Control Engine

In PAC Control, make sure you have a strategy with your GRV-EPIC-PR1 as the control engine. While the strategy is running, click on Control Engine > Inspect.

groov Manage

Log into your GRV-EPIC-PR1 as a user with administrator authority. From the Home screen, click or tap on Info and Help, then click or tap on About. You might have to scroll down the screen to see the version information.

groov View

Log into your GRV-EPIC-PR1 as a user with administrator authority. From the Home screen, click or tap on *groov View*. While *groov View* is loading, you'll see the version number in the middle of the screen. If you miss it, you can also click or tap on the cog (upper right corner) and select About *groov View*.

Node-RED

Log into your GRV-EPIC-PR1 as a user with administrator authority. From the Home screen, click or tap on Node-RED. You might have to scroll down the screen to see the Node-RED version information.