RAYN Release Notes

RAYN Vision System Camera Firmware

Product Line:	RAYN Vision System
Description:	Camera Firmware Version 1.2.2
Effective Date:	2025-Aug-20

About This Release

This release of RAYN Vision System Camera Firmware v1.2.2 introduces updated spectral power distribution (SPD) values for the camera LEDs.

Wavelength Data

Color	Half-max short wavelength (nm)	Mean peak wavelength (nm)	Half-max long wavelength (nm)	Half-max range (nm
Blue	463	475	488	25
Cyan	484	497*	513	29
Green	510	526	545	35
Amber	594	603	609	15
Red	629	640	647	18
Deep_Red	651	665	672	21*
Far_Red	717	740	752	35
NIR_855	835*	855*	867*	32*
NIR_950	920*	949	972*	32*

*denotes value change

The RAYN Vision System (RVS) Camera is a compact research tool for observing and recording across multiple light wavebands, and includes a variety of connectivity options for remote and automated image capture, processing, and analysis.

For any questions relating to the contents of this release or the behavior of this firmware, please contact RAYN Growing Systems via the information provided at the bottom of this page.

Compatibility

This firmware is compatible with the RAYN Vision System Camera.

RAYN GROWING SYSTEMS an ETC Company

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RAYN Release Notes

RAYN Vision System Camera v1.2.2

Issues Corrected in v1.2.2

RAYNCAMEMB-161	Update the wavebands for the LEDs

Issues Remaining in v1.2.2

RAYNCAMEMB-158	API polls only lists up to 500 files
RAYNCAMEMB-148	Different timestamp in image filename and the actual capture time
RAYNCAMEMB-145	Image download filter has an hour offset depending on the daylight savings time setting
RAYNCAMEMB-115	Certificates for encrypted communication (https)
RAYNCAMEMB-101	Camera restarts on a specific Linux machine
RAYNCAMEMB-100	Summer/winter time has to be switched manually in the camera interface
RAYNCAMEMB-62	Addition of further wireless network standards

Availability

The RAYN Vision System Camera ships with current firmware installed. As needed, you may obtain firmware releases from your RAYN Growing Systems provider.

Resources

For more information about the RVS Camera, see the *RAYN Vision System Camera User Manual*.

The *RAYN Vision System Analytics Software User Manual* and *RAYN Vision System Analytics Software Release Notes* are also available for the RVS Analytics software, an open-source Windows® application for the processing and analysis of multispectral image cubes created from the RVS Camera.

User documentation and technical support are available via our website, rayn.ag, or by contacting your RAYN Growing Systems provider.

RVS Analytics is open-source software. Visit our Github page, github.com/rayngrowingsystems/rvs_analytics, to download the latest code and submit feature requests to the repository.

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Release History

v1.2.0

Effective 2025-02-01

We continue to make general improvements throughout the software including the following notable changes:

- Multispectral image downloads now available through the web interface
- Information is now added to the image file meta data if the image contains reflections or intensity
- View the latest RGB/Grayscale image
- Bug fixes

v1.1.0

Effective 2024-10-01

- Initial firmware release

Installation Instructions

RVS Camera firmware can be installed from a compatible computer connected by Wi-Fi to the camera's web interface. Follow the instructions below to update the firmware.

Connect to the RVS Camera

The RVS Camera **Web Interface** must be accessed for initial setup.

1. Connect the camera to mains power using the included 24 V power supply. LEDs illuminate as the camera powers up.
2. On initial power up, the camera will activate in **Access Point** mode, appearing as an available wireless network. Using a computer running Windows® 10 or later, connect to the wireless network with the following credentials:
   - **Name** - RaynCamera-######, where the six characters are the camera's unique hexadecimal ID.
     - For example, **RaynCamera-CD2AB8**. Each camera's ID is unique.
   - **Password** - Password
3. Open a web browser and enter the default IP address, **10.1.2.1**, in the URL field to access the web interface and begin initial **Setup**. You will be required to change the **Access Point** password.
4. To put the camera in **Wi-Fi** mode, enter the credentials for an existing network on the **Setup > Wi-Fi** tab, then reboot the camera via **Setup > Factory**, or by cycling power.
5. Once the camera is in **Wi-Fi** mode connected to an existing network, you may access the camera's web interface by navigating to either of the following addresses:
   - Your camera's name, including the hexadecimal ID. This option is not compatible with HTTPS, and may not be compatible with all routers or web browsers.
     - For example, http://RaynCamera-CD2AB8/. Each camera's ID is unique.
   - Your camera's IP address. This option is not compatible with HTTPS.
     - For example, http://192.168.4.119/. Each camera's IP address is unique.

Additional cameras may be connected by repeating the steps above.

Update Firmware

1. If the firmware file has been provided in a zipped archive, unzip the file.
2. Navigate to the **Setup** screen of the Camera configuration web interface.
3. Navigate to the **Firmware** tab of **Setup**. This tab displays the currently installed firmware version and the firmware's build date and time. The **Firmware update**button allows you to update the camera firmware to a newer version, if available.
4. Press the **Firmware update** button and locate the unzipped firmware .img file. The camera will reboot during the update process, and connection to the web interface may be interrupted.
5. When the update has completed, reconnect to your camera as described above, reopen the web interface, and navigate to either the **Status** or **Setup > Firmware** screen. Confirm that the installed firmware version is correct.