

casNEO

INSTALLATION + CONFIGURATION + OPERATIONS GUIDE

Casambi-connected addressable tape-light controller
webserver web configuration and DMX Engineering
mobile app

Project:
Area / Unit:
Contact:



Figure 1. casNEO with corrected terminal legend. Supply-rating artwork remains pending.

PRODUCT ROLE casNEO accepts Casambi color, intensity and effect controls. Its webserver provides local setup and effect controls and works with the DMX Engineering iOS and Android app.

At a glance	Installation value
Controller power	4.7-24 VDC
Pixel output	One addressable DATA output; tape power is external
Supported tape	WS2812, SK6812 RGB, SK6812 RGBW and WS2811; up to 900 pixels in firmware
Configuration	Casambi + local web page + DMX Engineering mobile app
Field I/O	Two digital I/O terminals used for trigger-ring synchronization

REV C DRAFT - 10 OCTOBER 2026 - FIRMWARE 0.79 - NOT FOR FIELD ISSUE

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HOW TO USE THIS GUIDE Installers should complete Sections 1-4, then use the commissioning checklist in Section 9. Operators can begin with Sections 5-8.

Revision C changes

Updates firmware coverage from v0.74 to v0.79: Patriot country presets and five swatches, Patriot first on Create, Refresh Firmware List, faint Pixel Map visibility, fixture ID 44498, and the approved 4.7-24 VDC input range. Previous revisions remain retained.

Document basis

This guide covers firmware v0.79. Patriot and Firmware illustrations show the webserver preview. Unchanged screens retain earlier captures; displayed values are examples and may differ from your installation.

1 Product overview

casNEO controls individually addressable tape light through Casambi, the local webserver and the DMX Engineering app. Use Casambi for everyday lighting control and the webserver for tape setup, custom effects, Pixel Map and firmware updates.

TAPE POWER Use a separate, correctly rated supply for the pixel tape and connect its negative output to casNEO ground. The DATA terminal does not supply tape power.

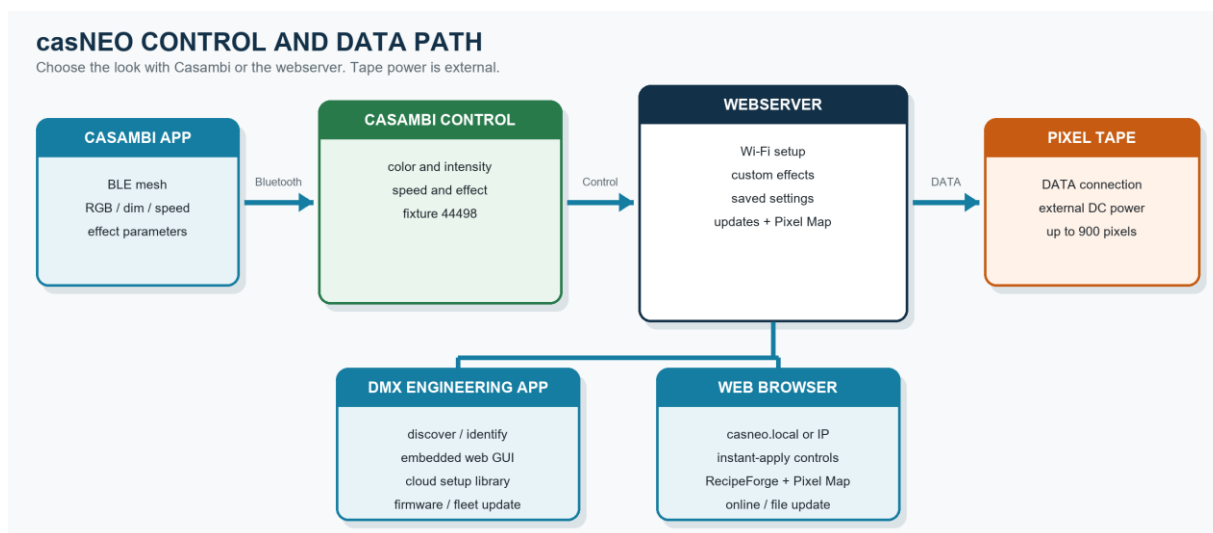


Figure 2. Control casNEO through Casambi, the webserver or the DMX Engineering app.

1.1 Commissioning settings

Setting	Commissioning information
Controller supply	4.7-24 VDC; verify polarity before connection.
Pixel capacity	1-900 pixels; set the actual installed count.
Tape types	WS2812, SK6812 RGB, SK6812 RGBW and WS2811.
Color order	RGB, GRB, BRG, BGR, RBG or GBR. A second order can be set after a split pixel.
Dimming	Set Gamma for the desired low-end dimming response.
Trigger ring	Link compatible controllers for a travelling animation; see Section 7.

2 Electrical installation and terminal mapping

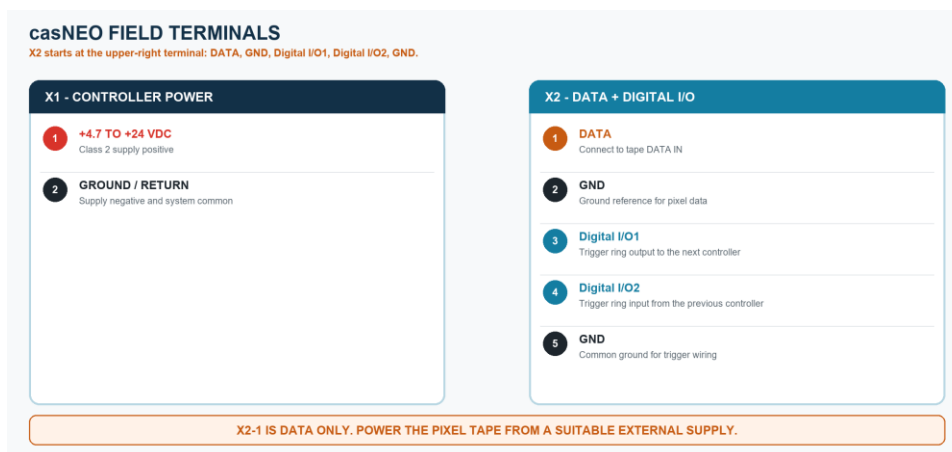


Figure 3. Field terminals and their installation functions.

2.1 Terminal schedule

Terminal	Signal	Field function
X1-1	+4.7 to +24 VDC	Controller supply positive.
X1-2	Ground / return	Controller supply negative and system reference.
X2-1	DATA	Connect to the tape DATA IN terminal.
X2-2	GND	Ground reference adjacent to DATA.
X2-3	Digital I/O1	Trigger ring output to the next controller.
X2-4	Digital I/O2	Trigger ring input from the previous controller.
X2-5	GND	Ground/common for X2-3 and X2-4 field circuits.

2.2 Typical tape-light wiring

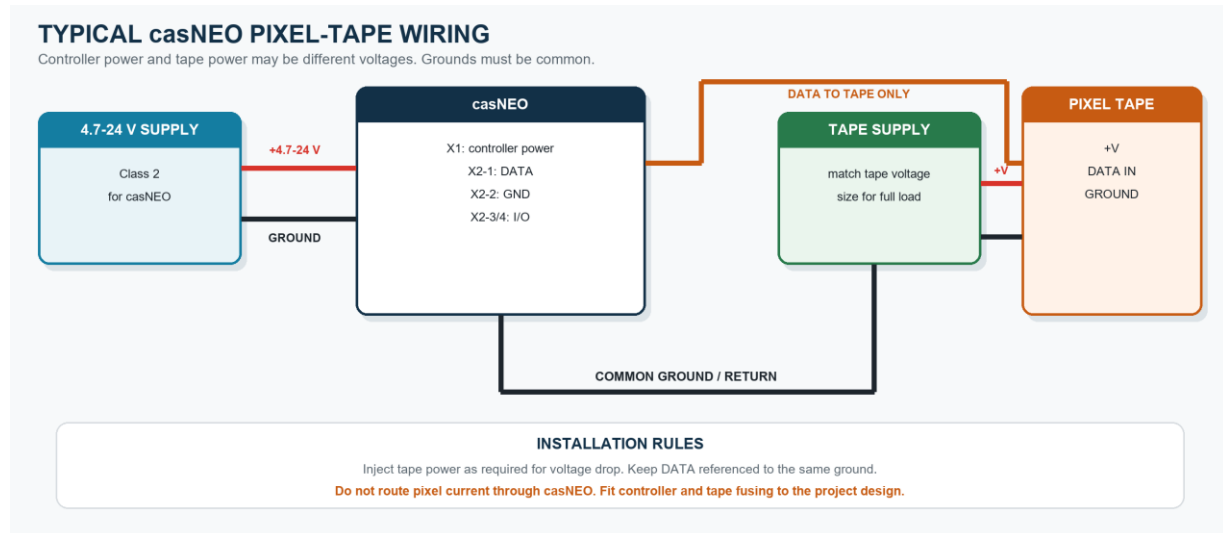


Figure 4. Typical controller, tape supply and addressable tape connection.

1. **De-energize both supplies.** Confirm the controller supply voltage, tape voltage, polarity and available current before landing conductors.
2. **Wire X1.** Connect the 4.7-24 VDC Class 2 controller supply to X1-1 positive and X1-2 ground/return.
3. **Wire the tape supply.** Connect its positive directly to tape +V and its negative directly to tape ground. Size wire, fusing and injection points for the calculated maximum load.
4. **Bond the grounds.** Connect tape-supply negative to casNEO ground/return so the DATA signal has the correct reference.
5. **Connect DATA.** Connect X2-1 to the tape's DATA IN end. Keep the data lead short and route it away from noisy power conductors.
6. **Inspect, energize and limit brightness.** Verify direction arrows on the tape, then start with a conservative brightness limit while confirming pixel count, type and color order.

DO NOT BACK-FEED Never connect tape +V to X2-1. X2-1 is DATA only. Do not connect external voltage to X2-3 or X2-4 when they are used as dry-contact points.

3 Casambi commissioning and control ownership

Casambi and the webserver control the same lighting settings. Configure the tape type, pixel count and color order through the webserver before testing Casambi control.

3.1 Pairing sequence

1. **Complete wiring and power-up.** Keep the phone within Bluetooth range and confirm the unit appears in Casambi More > Nearby devices.
2. **Select the released casNEO profile.** Load Casambi fixture ID 44498 before pairing. Confirm this fixture in the commissioning record; webserver firmware updates do not load the Casambi fixture. Test the controls listed below.
3. **Add to the correct network.** Select Add to a network, choose the project network and apply the project naming convention.
4. **Test live controls.** Operate dim, RGB, speed, effect and palette. Confirm the web page follows changes within the expected polling interval.
5. **Set tape hardware on the web page.** Enter pixel count, tape type, color order, optional split and gamma from the browser or the app's embedded web GUI.
6. **Record the commissioned state.** Save a full setup to the DMX Engineering Cloud or record the CS1 setup code, then complete Section 9 acceptance testing.

3.2 Casambi controls

Control	Use
Color and dimming	Set the color and intensity, then confirm the tape responds.
Speed	Adjust the animation rate.
Effect	Choose an effect; 0 is Static Color and 128 is Patriot Banner.
Palette	Choose a palette for effects that use one.
Pixel count	Set this in the webserver under Setup, not in Casambi.

Use the webserver to configure the installed tape before testing Casambi controls. An incorrect pixel count can leave pixels unlit or cause a trigger-ring pass to end at the wrong point.

4 Wi-Fi access and first-time web connection

At boot, casNEO tries saved Wi-Fi credentials for approximately 12 seconds. If no credentials are stored, connection fails, or recovery is requested, it starts its own access point. The AP and station modes serve the same configuration page.

Item	Value / behavior
Access-point SSID	casNeo-<device suffix>
Access-point password	casneo123
Access-point address	http://192.168.4.1
Network hostname	http://casneo.local when mDNS is available
Station address	DHCP address shown on the web page and in the mobile app
Recovery	Use System > WiFi > Forget Network while the page is reachable, then reconnect to the device AP. Contact support if the page cannot be reached.

4.0 Network planning

- Provide a 2.4 GHz SSID; the webserver commissioning path does not use a 5 GHz-only network.
- Reserve the DHCP address or record the unit's friendly name, MAC address and current IP in the closeout table.
- Permit local client-to-client traffic and mDNS/multicast when automatic discovery is required; guest-network isolation commonly blocks the app.
- Treat the device page as a local commissioning interface. Use a trusted installation LAN and keep the documented AP credentials under project control.
- Do not use the IN-to-OUT jumper hint still visible in v0.74. Contact support if normal reconnection fails.

4.1 Join the site network

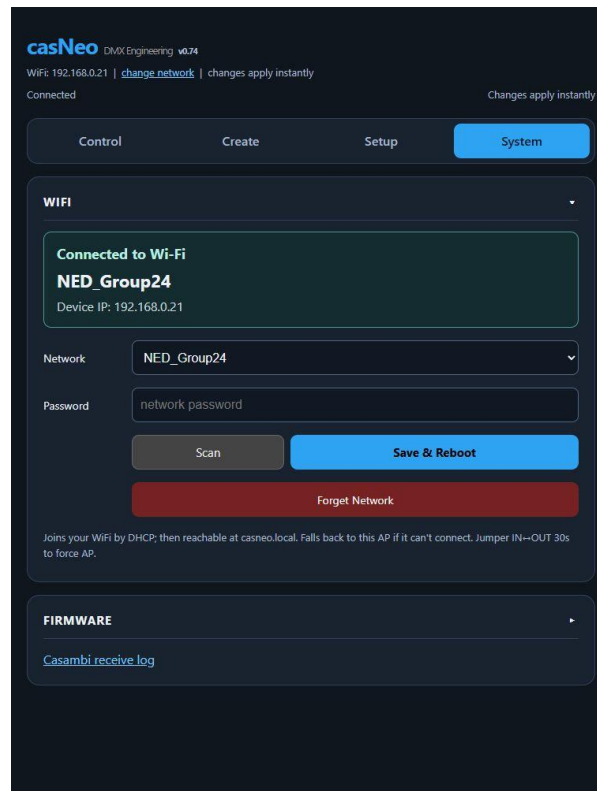


Figure 5. Live connected status and selected SSID. The jumper hint at the bottom is not an approved recovery procedure.

1. **Connect to the casNEO AP.** On the phone or laptop, join the casNeo-<suffix> network with the documented AP password.
2. **Open the web page.** Browse to 192.168.4.1. If the operating system reports no Internet, remain connected because the device is the local destination.
3. **Open System, expand WiFi and scan.** Select the intended 2.4 GHz network. The list shows received level and whether the network is secured.
4. **Enter the password and save.** Tap Save & Reboot. Move the phone back to the selected site Wi-Fi, then open casneo.local or the DHCP address.
5. **Verify the connection.** Confirm the large Connected to Wi-Fi status, site SSID in the Network box and Device IP. Record the IP and friendly name, then confirm access after a power cycle.

4.2 Android and iOS connection checks

When connected directly to casNEO, a no-Internet warning is expected. Choose to stay connected. Open the explicit HTTP address <http://192.168.4.1>; use the displayed DHCP address after joining a site network. The device AP and the site network use different addresses.

On Android, the phone may keep Internet traffic on cellular while attached to the device AP. Use a DMX Engineering build containing the Wi-Fi routing fix. If Chrome still times out, temporarily disable mobile data while commissioning and retry the explicit device address. Restore mobile data afterwards. On a site LAN, check client isolation and add the unit by IP if discovery fails. iOS and Android should both be checked before handover.

Cloud unreachable refers to the browser reaching the firmware catalog, not to the local device connection. AP-only access can still control lights and install a previously downloaded file. For cloud operations, use an Internet-connected site network or the app updater with an available Internet route.

5 Web interface: everyday operation

Most controls apply immediately. Control contains effect selection and favorites; Create opens with Patriot expanded above Build Your Own; Setup contains Tape Settings and Trigger Ring; System contains WiFi and Firmware. Brightness, speed and the current effect appear on Control and Create. Switching tabs or expanding a panel leaves playback unchanged, including the first visit to Create. Deliberate effect selections and recipe edits change playback. An open page follows live Casambi changes.

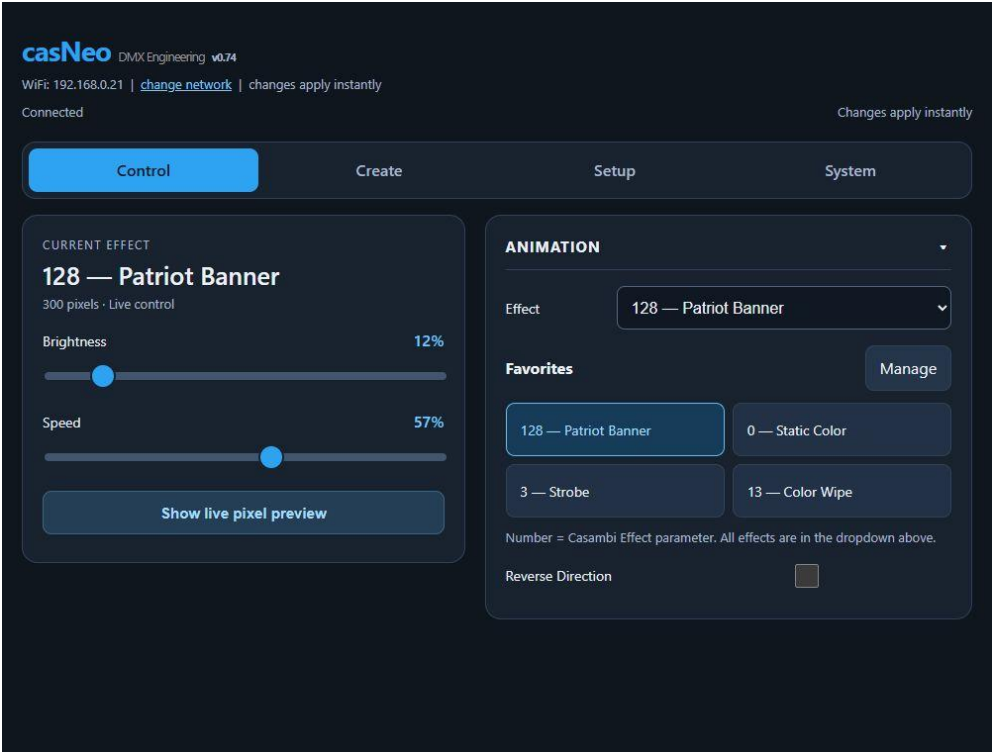


Figure 6. Everyday brightness, speed, effect, color and reverse-direction controls.

Control	What it does
Brightness	Displayed as 0-100%. Sets the master output limit and follows Casambi dimming.
Speed	0-255 animation rate. Some static effects intentionally ignore speed.
Effect	Open the categorized Effect dropdown and scroll to any available effect. There is no separate full-effect-list page. The numeric ID matches the Casambi Effect parameter.
Color	Displayed only for effects that use a user-selected color. Opens the shared HSV/RGB picker.
Palette	Displayed only for palette-driven effects; palette 15 opens a custom 2-4 color editor.
Reverse Direction	Reverses travel for effects that support direction; it does not redefine anchored color order.

5.1 Control ownership and safe editing

- A web edit temporarily wins over the Casambi radio's stale re-assertion so the deliberate change can stick.
- A genuine later Casambi change is accepted after the protection window.
- Pixel count is the exception: the web owns it and the Casambi app cannot change it.
- Keep the unit powered for several seconds after the final edit so settings can be saved.
- Use Pixel Map to preview and diagnose output without connecting physical tape.

5.2 Quick favorites

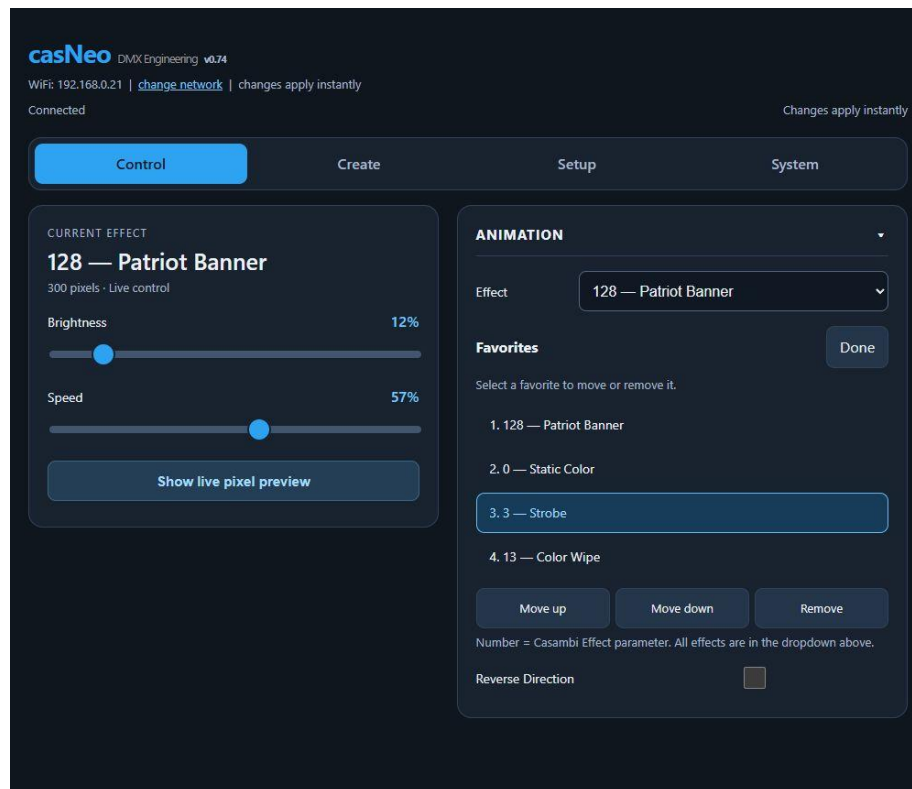


Figure 6a. Select one favorite to expose its Move up, Move down and Remove actions.

1. **Add an effect.** Choose it in the Effect dropdown, then select Add current effect. The button is hidden when that effect is already a favorite. Up to eight favorites can be stored.
2. **Arrange the list.** Select Manage, then select a numbered favorite. Use Move up or Move down to change its position, or Remove to remove that shortcut. Removing a favorite does not delete the effect or recipe.
3. **Return to playback.** Select Done. The quick buttons again select effects immediately. Favorites are stored on this controller and shared by browsers using it; manage them separately on another controller.

6 Effects, RecipeForge, Patriot and tape setup

6.1 Built-in effect catalogue

The built-in ID range is 0-127, with gaps; only listed effects are available. Patriot uses ID 128, and user recipes occupy slots 129-200. The catalogue is grouped into motion, physics, nature, party, ambient, Patriot and other firmware-defined categories. Always record the numeric ID because names may improve while the Casambi parameter must remain stable.

STATIC COLOR Effect 0 uses the live Casambi RGB value as a static color. Select it when standard Casambi color and intensity behavior is preferred over an autonomous animation.

Catalogue group	Commissioning note
Static / Widget	Fixed Casambi-controlled RGB and other non-travelling looks; speed may be ignored.
Motion	Chases, wipes, scanners, waves and comets whose direction and speed are meaningful.
Physics / Nature	Procedural fire, sparkle, weather and organic movement; tune brightness and current on the installed tape.
Party / Ambient	Decorative and palette-driven loops intended for continuous operation.
Patriot	Effect 128; uses the separately configured one-to-five repeating color bands.
My Effects	RecipeForge slots 129-200. Save the slot name and CN1 or cloud record with the project.

6.2 Build Your Own - RecipeForge

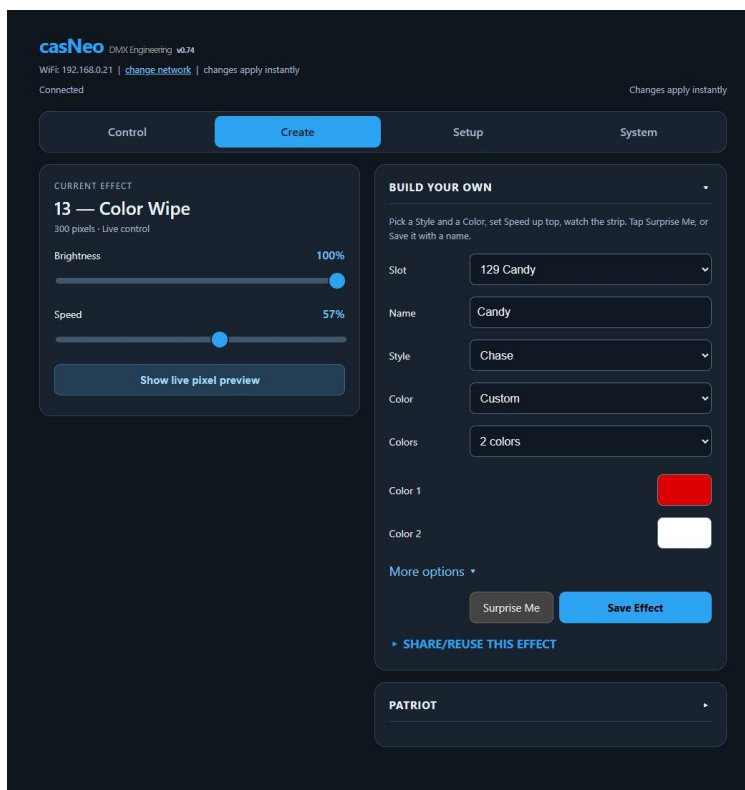


Figure 7. Build Your Own editor (v0.74 capture); now below Patriot in v0.79. Opening this panel does not start the displayed recipe; editing it does.

Recipe control	Effect on the saved recipe
Slot / Name	Select a saved slot or the next free slot. Slots 129-200 are available; names are limited to six characters in the embedded recipe structure.
Style	Solid, Chase, Wipe, Scanner, Twinkle, Wave, Comet or Fire.
Color	My Color, a palette Theme, or a 2-4 stop Custom gradient.
Trail / How busy / Count / Repeat	Shape persistence, density, number of moving heads and repeated segments.
Sparkle / Mirror / Flash	Add sparkle, mirror the base pattern or apply an intentional flash rate.
Overlay	Off, Sparkle, Comet, Scanner or Pulse as a second composited layer.
Blend	Add, Screen, Brightest, Replace or Mask.
Surprise Me / Save Effect	Randomize a usable recipe or write the edited recipe to the selected slot.
Share / Reuse	CN1 code is a manual fallback; the mobile app and cloud library are the normal reuse path.

RecipeForge commissioning workflow

1. **Choose a slot and short name.** Use an existing project slot or the next free slot; record the numeric effect ID.
2. **Build the base look.** Select style and color source, then tune speed with the live tape or Pixel Map visible.
3. **Shape the motion.** Adjust trail, density, count, repeat, sparkle, mirror and flash only as required.
4. **Add and blend an overlay.** Confirm the overlay remains acceptable at minimum and maximum project brightness.
5. **Save, test and back up.** Recall the saved slot from the Effect dropdown, then store its CN1 recipe or cloud object. Casambi recipe recall requires a fixture profile that supports IDs above 128; verify that profile before relying on recall from Casambi.

6.3 Patriot color-band banner

The screenshot shows a dark-themed control interface titled 'PATRIOT'. Below the title is a dropdown menu set to 'Ireland'. A text box explains: 'Colour-band banner: flags, school or club colours. Select 128 — Patriot Banner in Animation to play it. Speed 0 = static, speed > 0 scrolls.' Below this is a 'Country colors' dropdown menu. A text box states: 'Flag-inspired bands, up to five main colors. Colors and band lengths remain editable. Black is an unlit band.' Below this is a 'Bands' dropdown menu set to '3'. There are five rows for 'Band 1' through 'Band 5'. Each row has a color swatch, a length input set to '5', and a unit 'px'. Bands 1, 2, and 3 are active with green, white, and orange swatches respectively. Bands 4 and 5 are inactive, marked with a diagonal line pattern and the text 'Not used'.

Band	Color	Length (px)	Status
Band 1	Green	5	Active
Band 2	White	5	Active
Band 3	Orange	5	Active
Band 4	Diagonal lines	5	Not used
Band 5	Diagonal lines	5	Not used

Figure 8. Create opens with Patriot first. The selected country fills the active color swatches; unused bands are marked. Firmware HTML preview.

Patriot builds a repeating one-to-five-band banner for flags, school colors or club colors. Choose effect 128 to display it. Speed 0 produces a static banner; a nonzero speed scrolls the bands along the tape. Band length is entered in pixels, so verify the installed pixel count first.

Choose Country colors to load a flag-inspired palette from the offline list of 201 presets. Up to five main colors are used, not full flag geometry. All five swatches remain visible; inactive ones say Not used. Black is an unlit band. South Africa uses five main colors and omits its black field.

A country selection updates band count and colors together, while preserving band lengths, speed, brightness and the running effect. To see it on the tape, select 128 - Patriot Banner in Control. Edit any active swatch to make your own palette; increase Bands to use more colors. Opening Create does not change playback. The RGB bands are saved on the controller; countries sharing identical colors may show the first matching name after reload.

6.4 Tape Settings

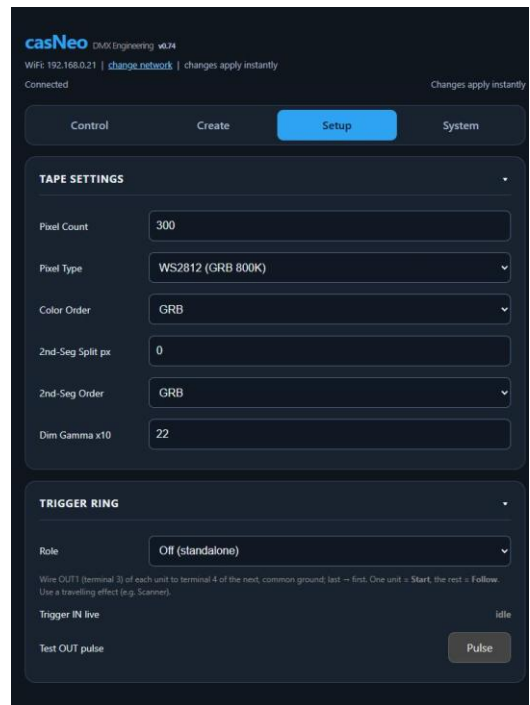


Figure 9. Pixel count, protocol, color order, mixed-reel split, gamma and ring role.

Setting	Commissioning rule
Pixel Count	1-900. Set to the number of controlled pixels, not the number of RGB channels.
Pixel Type	Select the electrical protocol used by the installed tape.
Color Order	Choose the order that makes red, green and blue display correctly.
2nd-Seg Split px	0 disables split mode. Otherwise, pixels at and above this index use the second color order.
2nd-Seg Order	Corrects mixed-reel chains without changing the effect's logical colors.
Dim Gamma x10	9 is linear; 22 is gamma 2.2; higher values reduce the low end more aggressively.

MIXED REEL EXAMPLE For a first reel that is GRB and later reels that are BRG, set Color Order to GRB, 2nd-Seg Split px to the first pixel of reel 2, and 2nd-Seg Order to BRG.

Tape setup test sequence

1. **Count and identify the tape.** Record protocol, voltage, pixel count and the DATA IN end before applying power.
2. **Verify primary color order.** Display solid red, green and blue; select the order that makes all three correct.
3. **Check every reel transition.** If colors change at one index, enter that first incorrect pixel as the split and set the second order.
4. **Check dimming and current.** Review low-end gamma, full-white current, voltage drop and required power injection.
5. **Record and back up.** Write the final settings in Section 10 and save a CS1 setup or cloud Setup object.

7 Trigger ring and Pixel Map

7.1 Trigger ring for long installations

A trigger ring lets multiple casNEO controllers behave like successive segments of one travelling animation. Each controller drives its own tape section from a local supply, reducing long-run voltage-drop problems. A single baton pulse circulates from one controller to the next.

Role	Behavior
Off	Standalone free-run. Ignore the ring terminals.
Start	Kicks the ring once at boot, then waits like a Follow unit for the loop-back pulse. A learned watchdog restarts a broken ring.
Follow	Waits dark for the upstream pulse, performs one complete pass, then pulses the next controller.

1. **Set every unit to Off while wiring.** This prevents live firmware from fighting continuity or polarity checks.
2. **Wire the ring.** Connect X2-3 OUT1 of each unit to X2-4 IN2 of the next, connect X2-5 ground between units, and connect the last unit back to the first.
3. **Assign roles.** Set exactly one unit to Start and every other unit to Follow.
4. **Bench-test the pulse.** Use Trigger IN live and Test OUT pulse to verify every link before selecting a travelling effect.
5. **Measure a full cycle.** Allow the Start unit to learn the actual round-trip time. Large or slow rings require more than one unit's pass duration before the pulse returns.

I/O CONFLICT Use X2-3 as the trigger output and X2-4 as the trigger input. Do not connect unrelated switches or loads to these terminals.

7.2 Pixel Map

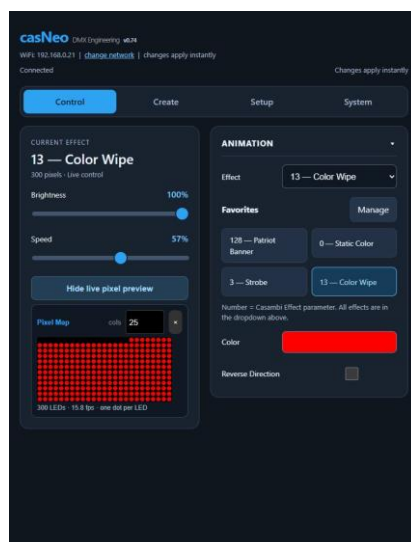


Figure 10. Live software mirror of the rendered pixel frame.

Pixel Map displays one dot per configured LED in a serpentine grid. The preview targets 20 frames per second; the status line reports the measured rate, which depends on the phone and connection. The first LED has no white highlight. From v0.75, faint nonzero output is lifted for screen visibility while true zero stays black. This preview compensation does not change tape brightness; the screen is not a calibrated brightness measurement. Sampling may skip intermediate animation frames; it does not slow the physical tape. Preview polling pauses when the page is hidden. The column count changes only the screen layout; it does not change tape addressing. Use the map to preview effects and compare the displayed pattern with the physical tape.

Observation	Interpretation / action
Map looks correct; tape is dark	Check tape power, common ground, DATA direction and X2-1 continuity.
Map and tape show wrong colors	Use solid red, green and blue tests on the physical tape to check Color Order and the second-segment split. The preview cannot verify physical tape byte order or wiring.
Map ends early	Correct Pixel Count. Also check that the Casambi profile has not been assumed to own strip length.
Ring handoff is early	Check firmware version, pixel count and trigger diagnostics. A pass should finish at the configured pixel count.
Columns box	Set a convenient visualization width; this does not reconfigure the physical tape.

Pixel Map diagnostic sequence

- First verify the expected effect, pixel count and brightness in the map with the physical tape disconnected if necessary.
- If the map is correct, work downstream: X2-1 continuity, common ground, tape direction, tape supply and the first pixel.
- If the map is wrong, work upstream: effect selection, Casambi state, RecipeForge settings, color order, split and firmware version.
- For a trigger ring, compare the visible end of the rendered pass with the OUT pulse and the configured pixel count.

8 DMX Engineering mobile app

The DMX Engineering app is available for Android and iOS. Local device management does not require an account. A free account is optional for the private cloud library used to save and restore effects, looks and complete setups across phones and controllers.

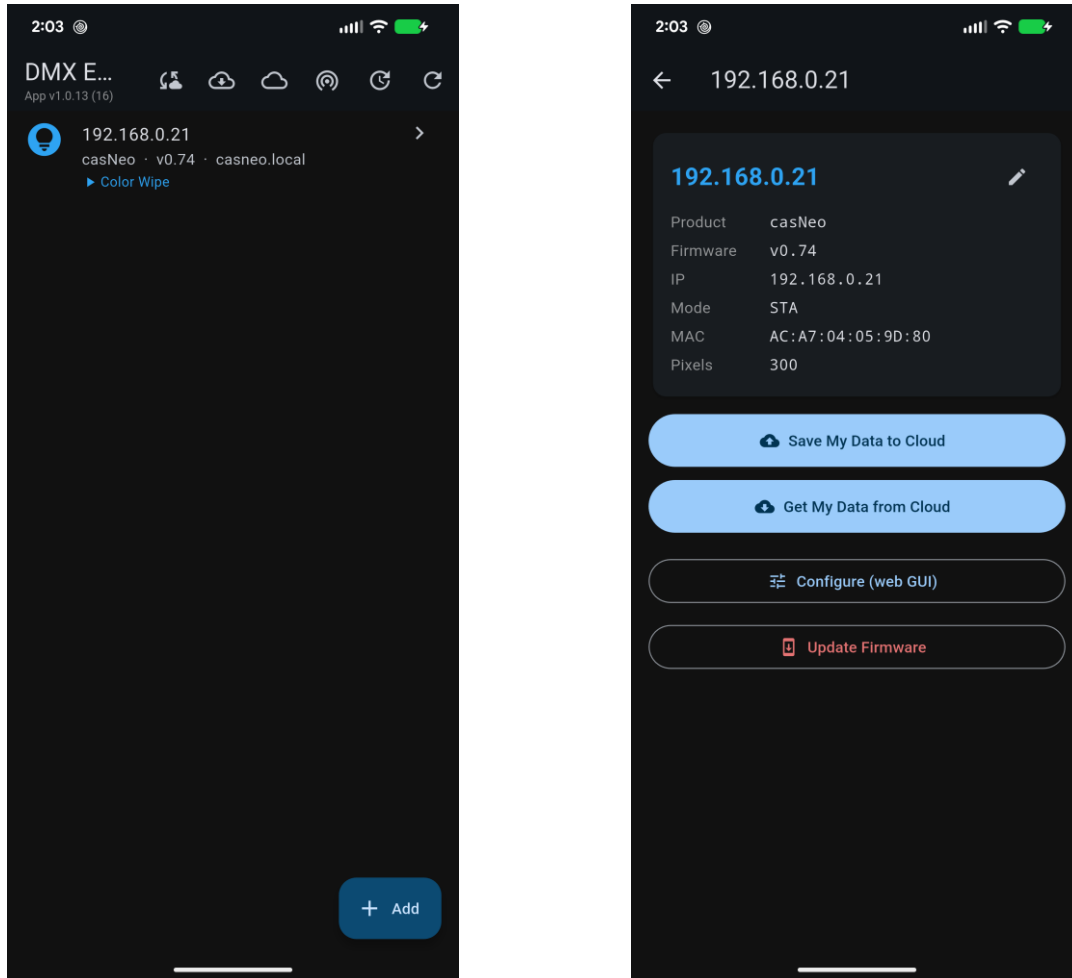


Figure 11. Device discovery/list view and the selected-unit identity/actions view.

8.1 Discover and identify a controller

1. **Connect the phone to the same Wi-Fi.** For local-network control, the phone and casNEO must be able to reach each other. The app also works while connected directly to the device AP.
2. **Scan.** Scan for casNEO devices on the local network.
3. **Add by IP if needed.** Use the + action and enter the DHCP address or casneo.local when discovery is blocked by the network.
4. **Name the unit.** Use the edit action on the device card. The friendly name is stored in the hardware and is not overwritten by a cloned setup.
5. **Open Configure (web GUI).** The app embeds the controller's own web page, so the controls and firmware remain the single source of truth.

8.2 Save and restore

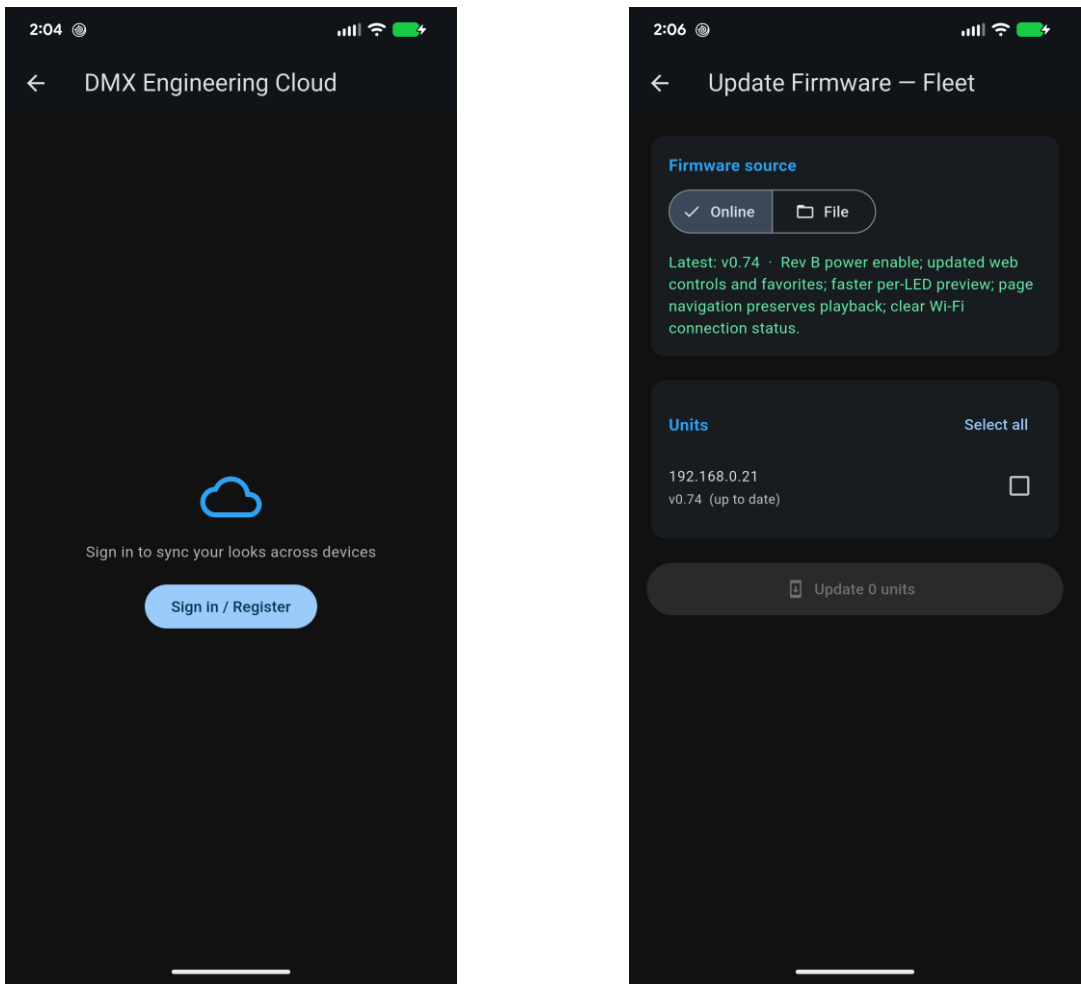


Figure 12. Retained mobile-app screenshots from September 2026. The shown v0.74 is historical; refresh the release list for current firmware. No account is needed for local control.

Object / action	Scope
Recipe	CN1 code for one RecipeForge effect slot. Portable to another compatible controller.
Look	CL1 code containing the live visual state: effect, color, speed, brightness, palette and Patriot values. Excludes hardware setup.
Setup	CS1 code containing the full cloneable visual configuration plus pixel count/type/order, split, gamma and chain role. Excludes friendly name and Wi-Fi.
Save My Data to Cloud	Captures controller data under the signed-in user's private library.
Get My Data from Cloud	Selects a saved object and applies it to the target unit.
Fleet update	Filters online units by product, downloads one product-scoped image, updates selected units sequentially and verifies reboot/version.

CHOOSE THE RIGHT OBJECT Use a Look to copy appearance without changing tape hardware. Use a full Setup only when the target's pixel type, count, order, split, gamma and chain role should also become identical.

9 Firmware update, acceptance and troubleshooting

9.1 Web firmware update

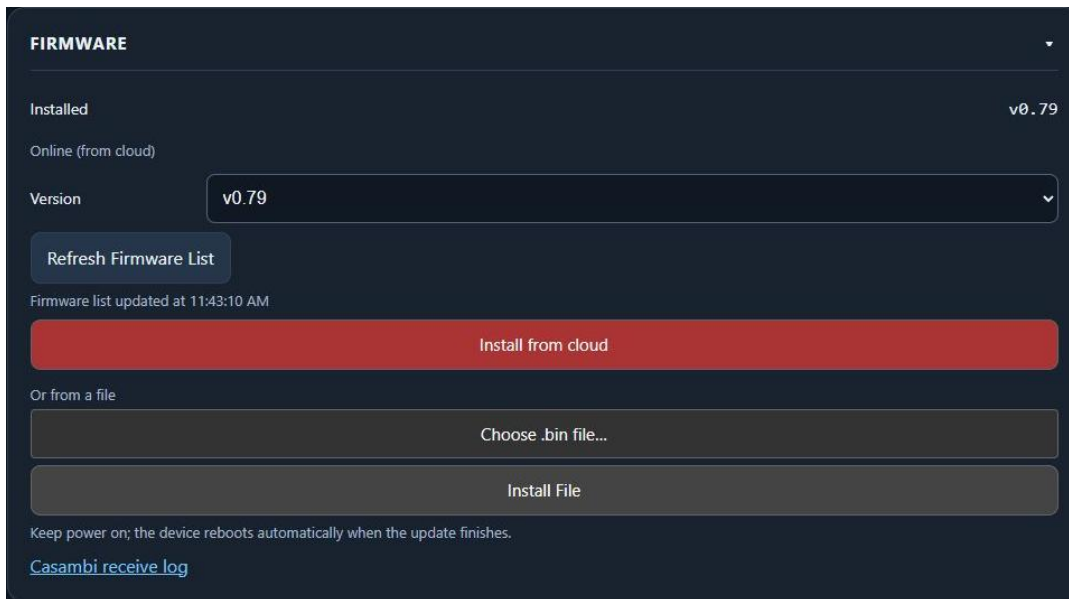


Figure 13. Refresh Firmware List checks for current releases and displays the result. Firmware HTML preview; installed version and available releases vary by unit.

Update the webserver through System > Firmware. Choose an online release or an approved casNEO .bin file. File installation also works while connected directly to the device access point. Keep power and the network connection stable until installation finishes.

1. **Record the current version and setup.** Save a CS1 setup or cloud backup and note the installed version.
2. **Use stable power and network.** Do not begin an update while supplies, Wi-Fi or the phone/laptop connection are intermittent.
3. **Select Online or File.** Online requires Internet access from the browser. Select Refresh Firmware List, wait for the updated timestamp, choose the approved Version, then select Install from cloud. This refresh bypasses cached lists. File works offline on the device AP.
4. **Start installation and wait.** Do not remove power. A completed upload causes the device to reboot and may close the browser connection.
5. **Reconnect and verify.** Open the device page, confirm the expected version, and test Casambi, web settings, pixel output, trigger ring and saved configuration.

If older firmware has no Refresh Firmware List button, download the approved casNEO .bin while connected to the Internet. In this same device page, select Choose .bin file, select the download, then Install File. No USB cable or mobile app is needed. After reboot, reload the page and check Installed. If a refresh fails, the page reports Cloud unreachable and disables cloud installation until a successful refresh.

9.2 Commissioning acceptance checklist

Check	Acceptance requirement
Power	X1 polarity and 4.7-24 VDC are correct; controller remains stable.
Tape supply	Voltage, current capacity, fusing, injection and common ground match the project design.
DATA	X2-1 reaches tape DATA IN; tape direction is correct.
Tape setup	Pixel count, type, color order, split and gamma are recorded.
Casambi	Correct network/profile; RGB, dim, speed, effect and palette operate.
Web	AP and site-LAN access work on both phones. Connected SSID/IP are clear; Control/Create navigation leaves the current animation unchanged.
Effects	Test effects, recipe recall and favorites. In Patriot, select a country, check its swatches, edit a color, and verify persistence after reboot.
Pixel Map	One dot per LED; record fps on Android and iOS. Verify faint output stays visible and zero is black. Reload after an upgrade.
Trigger ring	If used, one Start and all remaining Follow; every pulse link and full cycle work.
Mobile app	Unit is discovered, identified, configured and backed up.
Firmware	Released version is installed and reported after reboot.
Record	Closeout table and saved setup are complete.

9.3 Troubleshooting

Symptom	Likely cause	Corrective action
No web page	Phone on wrong network; STA join failed; wrong IP	Join the casNEO AP and open http://192.168.4.1 . For a joined unit use its LAN IP. If inaccessible, check power/network and contact service; do not rely on jumper recovery.
App cannot find unit	mDNS blocked; phone isolation; stale address	Add by IP, open the webserver in a browser, and confirm both devices share a reachable LAN.
Tape dark; Pixel Map active	No tape power; no common ground; wrong DATA end	Measure tape supply, bond grounds, verify arrows and X2-1 continuity.
Wrong colors	Incorrect order or mixed reels	Test red/green/blue, set primary order, then configure split and second order if needed.
Only part of tape responds	Pixel count low; power drop; data fault	Correct count, measure voltage at injection points, inspect the transition pixel and connectors.
Flicker/reset	Undersized supply, wiring drop, noise or ground bounce	Measure under worst-case load, improve injection/grounding, reduce brightness and separate data from noisy conductors.
Web edit snaps back	Older firmware or active Casambi state conflict	Update firmware, wait for the protection window, then confirm the current app/web ownership rules.
Ring stalls	Broken OUT-to-IN link or wrong role	Use Trigger IN live and Test OUT pulse to check every link; confirm exactly one Start unit.
Ring hands off early	Wrong pixel count	Set pixel count from the web and confirm pass diagnostics reach N/N.
Old firmware list	Cached page/list or no browser Internet route	Select Refresh Firmware List. On older firmware use a downloaded approved .bin through Choose .bin file and Install File.
OTA rejected	Wrong product image or corrupt file	Use a released casNEO .bin; retry with stable power and the expected product manifest.

9.4 Isolation order

1. **Establish stable power.** Measure controller and tape supplies under the failing condition; correct polarity, drop, fusing and common ground first.
2. **Separate generation from wiring.** Use Pixel Map to decide whether the wrong frame is being generated or a correct frame is failing after X2-1.
3. **Reduce to a known state.** Select Effect 0, a low brightness and a short confirmed pixel count, then test solid red, green and blue.
4. **Check communications independently.** Open the webserver by IP, then test mDNS/app discovery and Casambi control as separate paths.
5. **Capture evidence before changing more.** Record version, settings, observed voltages, Pixel Map result and trigger diagnostics for support.

10 Closeout and support

10.1 Project record

Field	Project record
Project / area	
casNEO friendly name	
MAC / IP / mDNS	
Casambi network / profile	
Webserver firmware / app version	
Wi-Fi SSID and access method	
Tape manufacturer / type	
Tape voltage / supply / fuse	
Pixel count / color order	
2nd split / order / gamma	
Effect / recipe / Patriot	
Trigger role / ring position	
Cloud or CS1 backup reference	
Commissioned by / date	

10.2 Replacement

Before removing a failed unit, record its friendly name, network/profile, hardware settings, current firmware and cloud/CS1 backup. Install the replacement with power off, restore a full setup only if the tape hardware is identical, then restore the unit-specific name and Wi-Fi separately. Pair or replace the Casambi device according to the project authority's procedure and repeat the entire acceptance checklist.

10.3 Technical support

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