

casNEO

USA & Canada

DMX Engineering LLC
<http://dmx.engineering>



Casambi Enabled NeoPixel Master

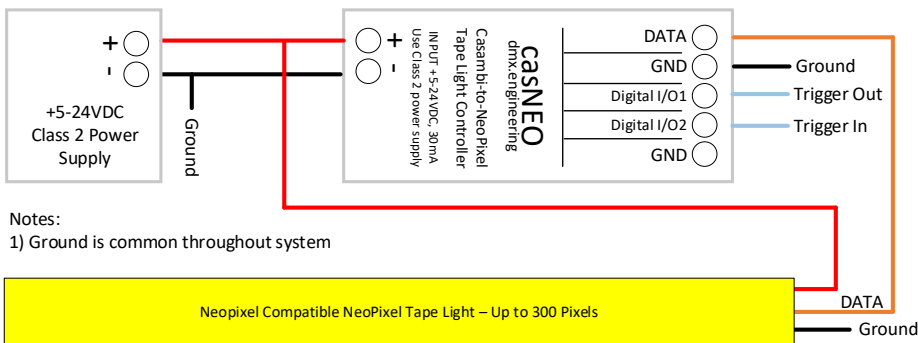
Product Description

casNEO is a Bluetooth controllable, Casambi enabled, universal NeoPixel tape light master dimmer/controller. It drives various Neopixel tape light lengths up to 900 pixels per casNEO, which is configurable with the Casambi mobile app. The casNEO is connected between a +5-24VDC Class 2 power supply and provides a single DATA output pin to drive the tape light.

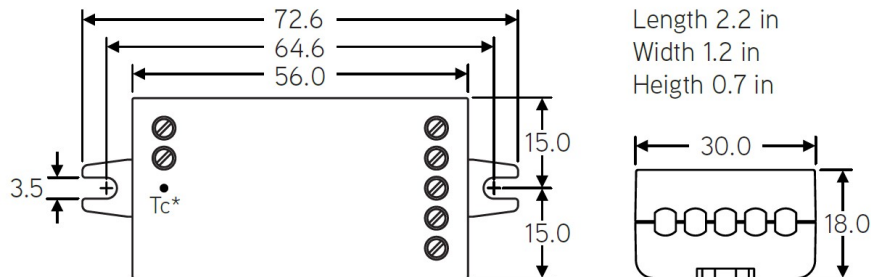
The casNEO is unique in that it hosts a web page to allow for operational configuration. One casNEO can control up to 900 pixels, but multiple casNEOs can be connected using the Trigger Out and Trigger In signals to obtain almost infinitely pixel length counts. In tandem, the Casambi mobile app custom controls allow for the casNEO to live in the Casambi color ecosystem, or to be programmed with different automated player modes, along with speed and intensity. Cycling colors, flash or change rates, etc. are all programmable with the Casambi app. The web interface allows for more complicated, detailed effects to be obtained where the Casambi app may leave off control features.

casNEO can be controlled with Casambi app which can be downloaded free of charge from Apple App Store and Google Play Store. The web server is connected via the casNEO in "AP" or Access Point mode, where it hosts a web page that can be opened on any web browser.

Typical Connection Diagram



Mechanical Data



Dimensions are in mm.

* Tc point is on bottom side

Dimensions: 2.2 x 1.2 x 0.7 inch

72.6 x 30.0 x 18.0 mm

Weight: 0.8 oz (23 g)

FCC ID: X8WBT40F
TELECC: 201-210217/01

Conforms to UL STD 916
Certified to CSA STD
C22.2#205



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Technical Data

Input

Voltage range: 5-24 VDC, Class 2

No-load input current: 30 mA

Neopixel Compatibility

Virtually all serial data LEDs called Neopixels are supported. The casNEO web page allows configuration of the tape light type, along with customization of the output player animations. Standard animations are controlled via the Casambi app Vendor Parameters.

Internal Web Server

The casNEO hosts a web page via an internal web server. Connecting to the server is just like connecting to a wireless network, find CasNEO_XXX, where the XXX is specific to your device, then open a browser and find "casneo.local." The web page guides you through the options and setup.

Trigger Digital Input/Output

These are used to serialize longer strings of animations over 900 pixels, which is the single casNEO output control limit. Extending the 300 limit requires an additional casNEO, and connecting the Trigger Out to the Trigger In of the next casNEO. Setup is handled in the web server.

Radio transceiver

Fanstel BT840 Radio Module
Operating frequencies: 2.401-2.483 GHz
Maximum output power: typ. +3.4 dBm
-103 dBm RX sensitivity in long-range mode

Operating conditions

Ambient temperature, ta: -13...+113°F (-25...+45°C)
Max. case temperature, tc: +167°F (+75°C)
Storage temperature: -13...+167°F (-25...+75°C)
Max. relative humidity: 0...80%, non-cond.

Connectors

Wire range, solid & stranded: 0.5 - 1.5 mm²
14 - 22 AWG, Wire strip length: .25" (6 - 7 mm)
Tightening force: 0.4 Nm / 2.6 Lb-in

Installation

Connect a Class 2 power supply with +5-24VDC output voltage to the input connector of casNEO. Make sure not to use a constant voltage power supply/driver and make sure that the cable polarity is correct. The product has one Neopixel DATA output, which can be connected to more than one tape light run. CasNEO can be configured to simply be controlled by the Casambi color picker features, or programmed to different types of automated player modes via Vendor Parameters or the embedded web server. As default, casNEO is delivered with RGBW configuration and will work immediately with Casambi controls.

casNEO utilizes the extended set of user selectable controls to generate pixelized patterns. Note that this takes the casNEO out of the Casambi network, except for intensity control, since the pixel patterns cannot be defined in the standard Casambi mobile app. User controls include speed of change, max intensity, RGB color set, number of pixels per color, and a large list of standard “player” type of patterns. The web server allows for enhanced animations, and future proofs the design since it is also wirelessly updatable. 300 Neopixels are supported per casNEO, more just add another casNEO, connect the Trigger Out to Trigger In, and you added 300 more.

casNEO should not be placed in a metal enclosure, such as metal junction boxes. Metal will attenuate radio signals which are crucial to the operation of the product. If the product will have to be installed into a junction box, make sure to use a plastic junction box. casNEO is an ETL Listed Open-Type device which means that it will have to be used together with a Class 2 power supply with maximum output power of 100 VA. The product can be installed outside of junction box. Make sure to comply with National Electric Code in installation and when selecting installation wires.

Range

The range between two casNEO's or between a casNEO and a smart phone can vary depending on obstacles and surrounding material. In open air the range between two casNEOs can be in excess of 200 ft, but if the unit is encapsulated into a metal structure, the range can be only few feet. Therefore, thorough testing is highly suggested.

Casambi uses mesh network technology so each casNEO acts also as a repeater. When testing the network, it is important to test that each unit can be controlled from any point of the network covered area.

Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Warning

Changes or modifications not expressly approved by DMX Engineering and Design LLC could void the user's authority to operate the equipment.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Radiation Exposure Statement for Canada

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

This equipment is exempt from the routine RF exposure evaluation requirements of RSS-102. This equipment should be installed and operated with a minimum distance of 20 cm between the antenna and the user or bystanders.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage;
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Ce matériel n'est pas sujet à l'évaluation habituelle d'exposition RF selon RSS102. Ce matériel devrait être installé et exploité en gardant une distance minimale de 20 cm entre l'antenne et l'utilisateur ou les spectateurs.

