

# casTen

# USA & Canada

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



## Casambi Enabled Four Channel 0-10VDC Master



### Product Description

casTen is a Bluetooth controllable, Casambi enabled, four channel 0-10VDC master dimmer. It can drive up to 20Ma per channel to 0-10VDC analog enabled lighting devices and fixtures. The casTen is connected between a 12-24 VDC Class 2 power supply and provides a non-isolated, common ground to the input ground and all four outputs.

casTen can control up to four analog lighting channels making it an ideal partner for RGBW and tunable white (TW) applications. Profiles are available for standard Casambi color pickers and color tuning CCT controls.

casTen can be controlled with Casambi app which can be downloaded free of charge from Apple App Store and Google Play Store.

Different Casambi enabled products can be used from a simple one luminaire direct control to a complete and full featured light control system where up to 127 units from automatically an intelligent mesh network.

Compatible devices:

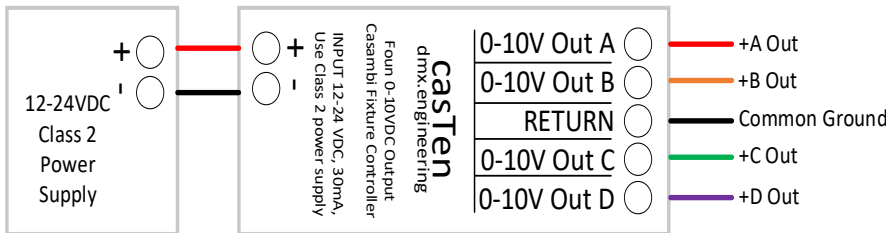


iPhone 4S or later  
iPad 3 or later  
iPod Touch 5th gen or later



Android 4.4 or later devices  
produced after 2013 with full  
BT 4.0 support

### Typical Connection Diagram



### Technical Data

#### Input

Voltage range: 12-24 VDC, Class 2  
No-load input current: 30 mA

#### 0-10VDC Outputs

Four identical channels  
Each has top and bottom trim for wire length compensation  
20mA sink and source per channel

#### Profiles

4-channel straight output  
Casambi CCT and color picker widgets

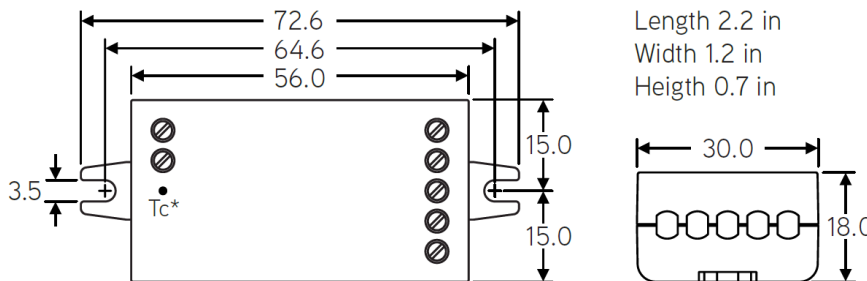
#### Radio transceiver

Operating frequencies: 2.401-2.483 Ghz  
Maximum output power: typ. +0 dBm, +/-3dBm

#### 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.

### 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)

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### Certifications

FCC ID: 2ALA3-CBM002A  
IC: 22496-CBM002A



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

### Connectors

Wire range, solid & stranded: 0.5 - 1.5 mm<sup>2</sup>  
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 12-24 VDC output voltage to the input connector of casTen. Make sure not to use a constant current LED driver and make sure that the cable polarity is correct.

The product has four 0-10VDC outputs, plus a common ground. Connect these dimming load wires accordingly. casTen can be configured having different types of outputs, such as 4 channel RGBW (color picker), or 4 individual channels. These configurations can be made by the end user from Casambi App using Profiles. As default, casTen is delivered with straight 4-channel Profile configuration. Top and Bottom Trim values for each channel allow for setting the bottom and top output values based on the Casambi 0-100% (0-255) values to work with fixtures that may not work well with 0V or 10V operation, both can be moved independently.

casTen 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.

casTen 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 casTens or between a casTen and a smart phone can vary depending on obstacles and surrounding material. In open air the range between two casTens 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 casTen 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

