

Luminaire Controllers for Horticulture

Models: ELED1-RHL and ELED2-BCL

Configuration Guide

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Introduction

The luminaire controllers, models ELED1-RHL and ELED2-BCL, are wireless lighting controllers designed for horticultural spaces/areas. Both controllers operate seamlessly with the RAYN Photo Sensor (RPS) and RAYN Multi-Sensor (RMS) to deliver intensity and/or color temperature control for the Controlled-Environment Agricultural market. This guide describes the operation and configuration of both controllers.

Echoflex ELED products include preset functionality that allows spaces to be lit with lighting scenes. Presets can be activated from scene stations, wireless timeclocks, or gateways and include values for intensity and color temperature. The lockout feature allows timeclocks to schedule a controller's response to specific sensors or stations.

Both controllers can modulate light intensity and deliver a range of desired lighting effects based on manual switch action, ambient light levels, and timeclock or gateway commands for a single LED fixture or an entire zone. The bicolor controller can blend cool and warm LEDs to provide a desired correlated color temperature (CCT) output.

The controllers are suitable for any scale of horticultural application, from a living plant wall to a commercial-size growing operation. Factory defaults for the luminaire controllers are energy code compliant. To see compatible luminaires by RAYN Growing Systems, visit rayngrowingsystems.com.

Horticultural Luminaire Controller

The Horticultural Luminaire Controller, model ELED1-RHL, is a configurable and complete stand-alone lighting controller designed to perform intensity and common single-channel lighting control. The ELED1-RHL is ideal for horticultural applications that do not require CCT control.

Bicolor Luminaire Controller

The Bicolor Luminaire Controller, model ELED2-BCL, is designed for horticultural spaces/areas where intensity and blended CCT control are required.

The ELED2-BCL creates a range of desired lighting effects based on manual switch action, ambient light levels, and timeclock or gateway commands for a single LED fixture or an entire zone. It modulates light intensity and blends cool and warm LEDs to provide the desired CCT output. The controller is suitable for any scale of horticultural application, from a living plant wall to a commercial-size growing operation; one controller supports up to three Fotono luminaires, by RAYN Growing Systems (see rayngrowingsystems.com).

The ELED2-BCL has an integral relay and two robust 0–10 V outputs that allow it to control dimmable light and LED color temperature levels. Outputs are for connecting zones or fixtures to provide the intensity and CCT control. Output 1 is identified by the violet/red striped wire, and output 2 is identified by the violet/green striped wire.

Three linking channels are for assigning remote devices to affect the controller's operation. The first linking channel is for devices affecting intensity, the second is for devices affecting the CCT, and the third is for assigning Open Loop CCT set points. The channels are identified by LED colors that display when the controller is in link mode, see *Blink Indications on page 15*.



Note: Echoflex recommends using Garibaldi Pro software to manage wireless projects and configurable settings. Garibaldi Pro is available for download at

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Document Conventions

Echoflex's user documentation is designed for print or electronic use. Cross-references highlighted in this document are links to the referenced section of the guide.

This document uses the following conventions to draw your attention to important information.

Configuration parameters are emphasized in *italics*. Switch actions (ON/OFF) and dimmer events (lights ON/OFF) are emphasized in ALL CAPS. Buttons are emphasized in **[Bold Bracket]**.

All Echoflex documents are available for free download from our website: echoflexsolutions.com.

Please email comments about this manual to: TechComm@etcconnect.com.

Help from Technical Services

If you are having difficulties that are not addressed by this document, contact Echoflex support at **service@echoflexsolutions.com** or the main website at **echoflexsolutions.com**. If none of these resources are sufficient, contact Technical Services directly at the office identified below.

When calling for help, take these steps first:

- Prepare a detailed description of the problem
- Go near the equipment for troubleshooting
- Find your notification number if you have called in previously

Technical Services

3031 Pleasant View Road Middleton, WI 53562 800-775-4382 (USA, toll-free) +1-608 831-4116 service@echoflexsolutions.com

ELED2-BCL Control Features

Both of the controllers provide light intensity control for horticultural spaces. The ELED2-BCL also provides the following color and temperature control features:

Blended Effects

The ELED2-BCL controls light intensity and CCT. By connecting the low voltage outputs to a fixture's internal channels for cool and warm LEDs, it modulates both outputs to attain the desired light level. By driving each output separately, the controller also has control over how cool or warm the fixture output becomes.

Dim-to-Warm

Dim-to-Warm operates if at least one switch station is linked to the intensity channel and nothing is linked to the color temperature channel. The color temperature moves according to the change in light intensity. An increase in intensity also moves color temperature to cooler. A decrease in intensity moves color temperature to warmer. Dim-to-warm mode operates with daylight sensors, regular switches, and gateways linked to the intensity channel.

Explicit Color Control

With a switch station linked to the color temperature channel, Explicit Color Control provides manual control over a fixture's color temperature. By pressing the paddle on the station, you can set a color level and modulate output as required. Press and hold ON increases color temperature to cooler; Press and hold OFF decreases color temperature to warmer. A quick tap on the button bumps color temperature up or down incrementally. A gateway command can also be linked to the color temperature channel allowing other devices to control the fixture's color temperature.

Automated Color Tuning

Automated Color Tuning requires a color temperature sensor like the RAYN Photo Sensor (RPS) linked to the color temperature channel. The ELED2-BCL compares its CCT set point to the value from the space provided by the sensor and increases the fixture's color temperature to the set point.



Example: The CCT set point is 3500 K and the sensor reports a value of 3200 K. The controller will adjust the CCT output driving the fixture's output towards the desired set point.

Automated Color Tuning can also use a dynamic CCT set point input linked to a gateway command or outdoor color temperature sensor like the Echoflex Open Loop CCT Sensor (FLS-41) to set the desired color temperature within the space and track outdoor color temperature values.

ELED2-BCL Control Features 3

Characterized Color Tuning

Characterized Color Tuning modulates the color temperature channel based on the set point value. As in the Automated Tuning Operation, a gateway command or outdoor color temperature sensor can be linked to the CCT set point channel and the output will adjust to this value based on the fixture's defined specifications. This operation does require the fixture's characterized specifications for the 0–10 V channel be defined with the controller's configuration.



Example: A fixture is used that maps a range of 3200–6000 K across the 1–10 V range. These values are pre-commissioned with the controller at the factory. The color tunable output modulates based on the value provided by a linked photo sensor on the set point value.

Configuration Options

The controller is a stand-alone device that only requires remote linked devices to provide input on light level, color temperature (ELED2-BCL only), and switch operation. The controller performs the following common lighting controls:

- 0–10 V dimming of LED fixtures
- Wall Switch Station: ON/OFF, manual adjustment of dim level and timed switch
- Daylight Harvesting: open loop or closed loop
- Demand Response: sets a temporary hard limit to the maximum dimming output
- Scheduling via interfaces, timeclocks, or gateways
- Building Systems support with gateway commands
- Blended LED operations (ELED2-BCL only)

This document describes the controller's features and explains how to use and configure them with Simple Tap. Some features can only be configured using Garibaldi Pro software.



Note: For information about Garibaldi Pro software or pre-commissioning services that provide complete system solutions, contact Echoflex. Garibaldi Pro software is available for download from the Echoflex website at **echoflexsolutions.com**.

Simple Tap Instructions

Simple Tap is a manual method of changing individual settings one at a time. There are no tools required—simply use your finger to activate a sensor, standard switch, or station that is linked to the controller. The tap in Simple Tap means a quick press on a device's [Teach] or [Link]/[Tx] button, or a switch's ON/OFF.

If the sensor is linked to multiple controllers and you do not want to make changes to all, turn off the controllers' lights/loads to ignore the Simple Tap changes.

Radio Communications

The controller is equipped with a 902 MHz radio capable of transmitting and receiving wireless messages. The controller supports single-hop and dual-hop message repeating and controller status broadcast.

Repeater Function

The repeater function repeats received messages if:

- The message has not been repeated previously
- In the case of dual-hop repeating, the messages have been repeated previously only once

If single-hop or dual-hop repeating is needed, the repeater function can be enabled/disabled using Simple Tap instructions.

- 1. Press and hold the [Clear] button on the controller.
- 2. Tap the [Learn] button:
 - Once to **disable** repeating
 - Twice to enable single-hop repeating
 - Three times to **enable** dual-hop repeating
- 3. Release the [Clear] button. The Power and Learn LEDs blink the corresponding number of [Learn] button presses.

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Status Message

The controller can broadcast a message per EEP: A5-11-01 Status Feedback Message. A message broadcasts every 100 seconds. The status message can be enabled/disabled using Simple Tap instructions.

- 1. Press and hold the [Learn] button on the controller.
- 2. Tap the [Clear] button once to disable, or twice to enable.
- 3. Release the **[Learn]** button. The Power and Learn LEDs blink the corresponding number of **[Clear]** button presses.

Dimming Intensity

The controllers' dimming output provides linear, proportional dimming control of a dimming driver or ballast.

- Output maximum level the high level trim of the dimming output, set to 100% by default
- Output minimum level the low level trim of the dimming output, set to 10% by default

Garibaldi Pro software is required to configure the maximum and minimum levels and to disable dimming output for immediate control.

Blended LED Control

The ELED2-BCL controller provides linear, proportional control of a fixture's cool and warm LED output. The maximum and minimum CCT level of the fixture can be saved in the controller's configuration settings. The maximum and minimum levels of the output can be configured using Garibaldi Pro software.

Near-Cross Technology

The controller monitors the AC voltage waveform to prevent carbon build-up on contacts and ensure long relay life. The relay will open or close only when the waveform is close to zero.

Switch Operation

The controller operates with single, dual-paddle wall, wave, and hand-held Echoflex switches as well as button station transmitters including the Multi-Button Interface Switch Station (MBI). Garibaldi Pro software is required to configure all fade control settings.

- Press [ON] to fade the lights to the last manually set dimming level.
- Double-press [ON] to quickly fade the lights to the *output maximum level*.
- Press [OFF] to fade the lights to the *output minimum level* and then turn lights off.
- Double-press [OFF] to quickly fade and turn the lights off.

Echoflex switches can also be used as dimmers when dimming output is enabled.

- Press and hold [ON] to fade to the maximum dimming level.
- Press and hold [OFF] to fade to the minimum dimming level.

If a photo sensor is linked to the dimming channel it will have control priority over manually dimming the output towards the maximum output value.

Multi-Scene Station Buttons

The layout of buttons for the Multi-Scene Station (MSS) differs according to the MSS model. Buttons have the following effects when they are included in a model's layout and supported by the controller.

- [On] turns lights on and fades to the last manually set dimming level.
- [Off] fades lights to the minimum dimming level and then turns them off.
- [Cool Light] adjusts light temperature to cooler level.
- [Warm Light] adjusts light temperature to warmer level.
- [Up Arrow] fades lights to maximum dimming level.
- [Down Arrow] fades lights to minimum dimming level. Does not turn the lights off, even if the minimum dimming level is 0%.
- [Scene X] recalls a configured scene setting.

Color Tuning Functions (ELED2-BCL)

If no switch station or color temperature sensor is linked to the color temperature channel, the dimming switch will also modulate the fixture's color temperature output. See *Dim-to-Warm* on page 3.

Linking a switch to the color temperature channel will provide manual control over the fixture's color output. Pressing ON or OFF will fade the color temperature up or down. A quick press will bump the output value a small amount. See *Explicit Color Control on page 3*. When the color temperature output has been manually adjusted using a linked switch, this value will be recalled upon a ON event.

Timed Switches

The controller can be configured to make any linked wall switch station into a timed switch. Switching the lights ON starts the countdown timer for the configured period. One minute before the timer expires and the lights turn off, the lights blink once as a warning (flickwarn). Switching the lights ON at anytime resets the timer. Switching the lights OFF clears the timer. Garibaldi Pro software is required to configure the period for a timed switch.

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RAYN Growing Systems Compatibility

RAYN Growing Systems (rayngrowingsystems.com) provide researchers and growers with technologically advanced horticultural lighting solutions. RAYN product offerings are grounded in 45 years of advancements in lighting science, LED technology, and system-wide controls developed by our parent company, ETC.

Both controllers are ideally suited to work with RAYN sensors, and are compatible with sensors that support:

- EEP: D2-14-56 Light Intensity, CCT, and PPFD Sensor
- EEP: D2-14-5E Greenhouse Sensor

Linking a RAYN Photo Sensor (RPS) or RAYN Multi-Sensor (RMS) to the intensity channel provides reliable coverage and efficiency for controlled-environment agriculture (CEA) operations of any scale.



Note: While the controllers have many features that apply in a variety of different applications, for horticulture installations the default settings are typically suitable.

Daylight Harvesting Applications

When a photo sensor is linked to the dimming channel, the controller modulates light intensity from a dimming fixture based on the ambient light level in a space. When daylighting is active, a switch or gateway command cannot force the light level higher. However, they can be used to override the light OFF or to dim to a level below the daylighting control value.



Note: The controller supports only one linked photo sensor. If using a type of Multi-Sensor, Echoflex recommends that only one be linked to the controller.

Daylight harvesting does not affect the operation of wall switches when the light is ON. If the light is ON, a switch can override with an OFF or dim to below the daylighting control value.

If a system only has a rocker switch and photo sensor linked, the lights will go OFF when the light level rises above the OFF set point. This behavior can be temporarily overridden with the settings described in *Daylighting Control Override below*.

Daylighting Control Override

The daylighting features can be temporarily overridden by enabling the *daylighting manual* override parameter. This override is governed by a timer that, upon expiration, relinquishes control, allowing the daylighting functions to resume automatically, default five minutes.

If the override is enabled on the controller, a manually controlled switch can turn lights ON and manually set the dimming level.

Garibaldi Pro software is required to configure both the *daylighting manual override timer* and *daylighting manual override enable* parameters.

Closed Loop Control

In closed loop daylighting, the sensor indirectly monitors the controlled light output from the fixtures plus some of the natural light contribution.



Note: For closed loop control to function properly, the sensor must be installed in a location where it is significantly affected by light level changes. If that condition is not available, consider using **Open Loop Control on the next page**.

When the lights are on, closed loop daylighting tries to maintain a given set point level within the space. This level is specified in the *closed loop daylighting set point* parameter. The controller only adjusts the dimming output on received photo sensor messages and only when the light is ON. If the light is OFF, closed loop daylighting is ignored.



Note: This process is best performed when there is little or no natural light; either close the blinds or complete this step at night. A photo sensor and a switch must be linked to the controller.

To set the closed loop set point:

- 1. Turn the light ON.
- 2. Use a handheld photometer to measure the light on the task plane.
- 3. Use a linked switch to adjust the fixture's light level until it matches the target light level and give the sensor a moment to register the level.
- 4. Tap the **[Teach]** button on the mounted sensor three times to set the daylight harvesting parameters to closed loop function. The light level ramps up to full ON and then dims to OFF to acknowledge the change.
- 5. Move away from the sensor so your shadow does not affect the light level recording.

After the controller receives the next message from the photo sensor, the light responds again and then returns to normal operation. It may take up to 150 seconds to calculate and send the second message. During wait time, the current scene is locked so rocker switches and other manual controls can not change settings.

To maintain the set point, the dimming output level changes an incremental amount of the output's full range with every message received from the photo sensor. The default daylighting maximum change is 10%, which provides a slow adjustment that does not exceed the set point.



Note: Ensure the wireless photo sensor has an update rate that is appropriate to indoor closed loop lighting applications. The period between consecutive messages should not exceed 200 seconds.

The output dimming level does not change when the photo sensor level is within the *closed loop deadband* value of the *closed loop daylighting set point*.



Example: If the controller has a set point of 100.00 umol/m2 and deadband of 5% (default), then the deadband would be + or - 5.00 umol/m2. The controller would not change the existing light level if the sensor transmitted a measurement between 95.00 and 105.00 uMol/m2. This variable is used to prevent feedback loops in closed loop control.

Garibaldi Pro software is required to configure both the amount of change per message and the deadband value parameters.

Open Loop Control

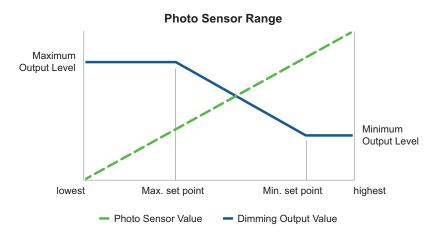
A sensor's default setting (open loop or closed loop) depends on what it is linked to and the daylighting operating mode setting on the controller: automatic, open loop, or closed loop. In open loop daylighting, the sensor monitors the natural light contribution. The sensor must be mounted so it is not affected by the controlled fixture's light output.

When the light level monitored by the photo sensor is below the *open loop maximum output set point*, dimming output is at the *maximum output level*. When the light level is above the *open loop minimum output set point*, dimming output is at the *minimum output level*.



Note: Maximum and minimum set points are calculated as percentages of the photo sensor's full scale range.

In the diagram below, the solid line (blue) indicates dimming output. It begins lowering as the natural light level increases, dashed line (green). When the monitored light level is between the set points it modulates dimming output proportionally.



The dimming output change rate is defined by the *open loop dimming rate* parameter which sets the time for dimming to go from lowest to highest or vice versa (default 65 seconds).

Sensor Ranges and Associated EEPs

To set the *open loop maximum output set point* and *minimum output set point* using Simple Tap, a photo sensor must be linked to the controller. Photo sensors are designed to operate within one of three lux ranges determined by the sensor's EEP setting: Low, Mid, and High.

The EEPs for general commercial and architectural applications are in the Low and Mid Range, while EEPs for horticulture are in the High Range where photo sensors evaluate the photosynethic photon flex density (PPFD) of the target area. PPFD is measured in micromols per second per metre (umol/s/m²). If you prefer to work with lux, Garibaldi Pro software is required to change the *daylighting units*.

High Range: greenhouse and industrial sensors

- D2-14-25 (0 to 1,000.00 umol range)
- D2-14-56 (Light Intensity, CCT and PPFD Sensor)
- D2-14-5E (Greenhouse Sensor)

To set the open loop set points:

- 1. Turn the light ON.
- 2. Tap the photo sensor **[Teach]** button the number of times indicated in the table below to set the open loop set points. The light responds by flashing a number of times to confirm the change. After five seconds it returns to normal operation.

Taps	Light Response	Controller Configuration
4 taps	Relay toggles 2x after eight seconds	0% and 20%
5 taps	Relay toggles 3x after eight seconds	10% and 40%
6 taps	Relay toggles 4x after eight seconds	20% and 60%
7 taps	Relay togglels 5x after eight seconds	30% and 80%
8 taps	Relay toggles 6x after eight seconds	40% and 100%

Controller Presets

Preset values are used to determine the dimming intensity and color temperature of different lighting scenes that are part of a designed solution made up of connected devices. A scene is a coordinated combination of controllers configured and grouped to light a space according to specific requirements. Groups, scenes, and event masking can be created in a Wireless TimeClock, and activated from a Wireless TimeClock or a scene station.

Echoflex controllers have 15 configurable presets (plus one reserved for OFF). Preset values can be configured and saved to a controller using Garibaldi Pro software. Presets 1 through 8 cover a graduated range of values from full ON (100%) to OFF (0%). Presets 9 through 15 are a repetition of the values 1–7 and provide the opportunity to create custom values. A default ramp time of two seconds is given for the lighting to reach the preset value.

User Interface



Note: Echoflex recommends using Garibaldi Pro software to manage wireless projects and configurable settings. Garibaldi Pro is available for download at **echoflexsolutions.com**.

Power LED and Learn LED

The Power LED (red) and Learn LED (green) indicate the controller's device count information via blink codes or the status for other activities.

Learn Button

See the relevant switch or sensor documentation for information on linking. Link mode times out after 60 seconds of inactivity.



Note: The manual linking process can be used both to link a device to a controller and to unlink a linked device from a controller.

Devices can be linked to a controller manually, using Garibaldi Pro, or during the Echoflex precommissioning process.

To link a device:

- 1. Press the [Learn] button to activate Link mode. The Learn LED turns ON and the Power LED blinks. Do one of the following:
 - To link a wall switch, press the switch paddle ON three times.
 - To link a sensor, press the sensor's [**Teach**] or [**Link**] button. Refer to the sensor's documentation for more information.

The Power LED remains lit for four seconds while it links the new device, and then resumes toggling. You can link up to 20 devices to the controller.

Remote Linking Solution

Use the following method to link the first switch if you cannot access the **[Learn]** button on a controller that has not been pre-commissioned and you do not have Garibaldi Pro software.

This method only works if there are no switches linked to the controller. You cannot link a scene station using this method.

- 1. Ensure you are within wireless range of the controller and have a wireless paddle switch or a button station.
 - a. If the controller has a linked sensor, you must press the [Teach] or [Link] button on the sensor and complete step 2 within 60 seconds.
- 2. Click the switch paddle ON three times, OFF three times, and ON three times quickly, for a total of nine consecutive clicks.

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Clear Button

Use the **[Clear]** button to reset the controller either to its pre-commissioned state or to its factory default state.

To reset to pre-commissioned state:

1. Press and hold the [Clear] button until the red Power and green Learn LEDs start blinking.

To reset to factory default state:

- 1. Press and hold the [Clear] button until the red Power and green Learn LEDs start blinking, and continue to hold for 15 seconds until the LEDs stay on solid.
- 2. Release the [Clear] button. The Power LED displays solid red to indicates factory default state.

LED Display

The LEDs are enabled by default. They can be disabled by adjusting the configuration parameter using Garibaldi Pro software. If disabled, the LEDs are only lit for the configured time when a controller button is pressed, when in Link mode, or if the remote management *Action* command is used to toggle the light.

Blink Indications

The following tables describe the LED codes that identify linked devices and the LED indications that describe linking activities.

Device Count Codes

The following codes provide a visible report of the supported devices that are linked to the controller. The Power LED repeats a code of blinks that represent the type and number of linked devices. Long blinks = type. Short blinks = count. If the controller does not have any linked devices, the Power LED remains on solid.



Note: The ELED1-RHL controller has a single channel. Therefore, only the Red: Linking Channel 1 table applies to this model.

Red: Linking Channel 1 (Intensity)

Device Type	Power LED	Learn LED
Switches	1 long blink followed by short blinks that count the switches	Off
Occupancy sensors	2 long blinks followed by short blinks that count the sensors	Off
Photo sensor (maximum of 1) or Multi-Sensors	3 long blinks followed by short blink that counts the sensor	Off
Gateways and TimeClocks	4 long blinks followed by short blinks that count the devices	Off
Demand response	5 long blinks followed by short blinks that count the devices	Off
Entry door sensors	6 long blinks followed by short blinks that count the sensors	Off
Window sensors	7 long blinks followed by short blinks that count the sensors	Off
Keycard switches	8 long blinks followed by short blinks that count the switches	Off

Green: Linking Channel 2 (Color Temperature)

Device Type	Power LED	Learn LED
Switches	1 long blink followed by short blinks that count the switches	Off
CCT sensor linked (maximum of 1)	2 long blinks followed by short blink that counts the sensor	Off
Central command	3 long blinks followed by short blinks that count the devices	Off

Blue: Linking Channel 3 (CCT Set Point)

Device Type	Power LED	Learn LED
CCT sensor linked (maximum of 1)	1 long blink followed by short blink that counts the sensor	Off
Central command	2 long blinks followed by short blinks that count the devices	Off

Blink Indications 15

Linking Activities

Activity	Power LED	Learn LED	Light Response
Link mode	Blinking	On solid	Cycles ON and OFF
Store link ID	On for 4 seconds, and then blinking	On solid	ON for 4 seconds, and then cycles
Clear link ID	Off for 4 seconds, and then blinking	On solid	OFF for 4 seconds, and then cycles

Compliance

For complete regulatory compliance information, see the horticultural controller datasheets at rayngrowingsystems.com.

FCC Compliance

Echoflex Luminaire Controllers for Horticulture (For any FCC matters): Echoflex Solutions, Inc. 3031 Pleasant View Road Middleton, WI 53562 +1 (608) 831-4116 echoflexsolutions.com

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.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. 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. Any modifications or changes to this product not expressly approved by Electronic Theatre Controls, Inc. could void the user's authority to operate the product. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense.

Contains FCC ID: SZV-STM300U

ISED Compliance

This device contains a license-exempt transmitter/receiver that complies with Innovation, Science, and Economic Development Canada's license-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.

Contains IC ID: RSS 210

Conformité ISDE

Cet appareil contient un émetteur/récepteur conforme aux CNR d'Innovation, Sciences et Développement économique Canada (ISDE) applicables aux appareils radio exempt de licence. Son fonctionnement est soumis aux deux conditions suivantes:

- 1. L'appareil ne doit pas produire d'interférences.
- 2. L'utilisateur de l'appareil doit accepter toute interférence, même si l'interférence est susceptible d'en compromettre le fonctionnement.

Contient ID IC: RSS 210

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