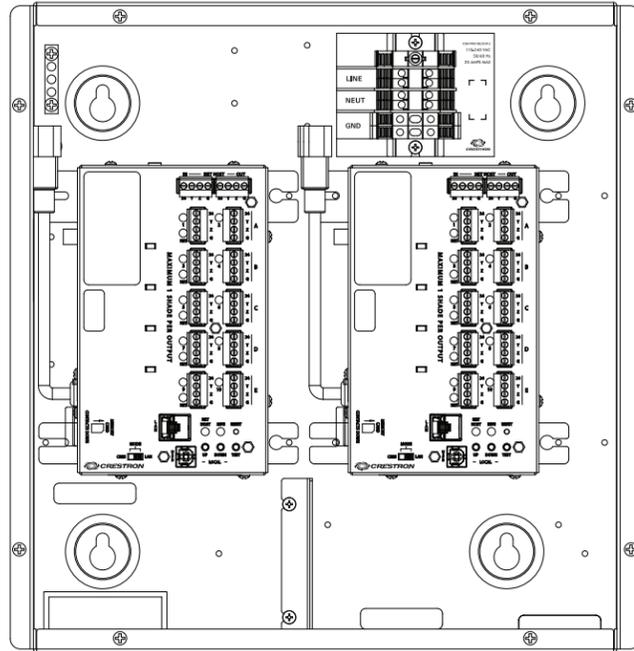
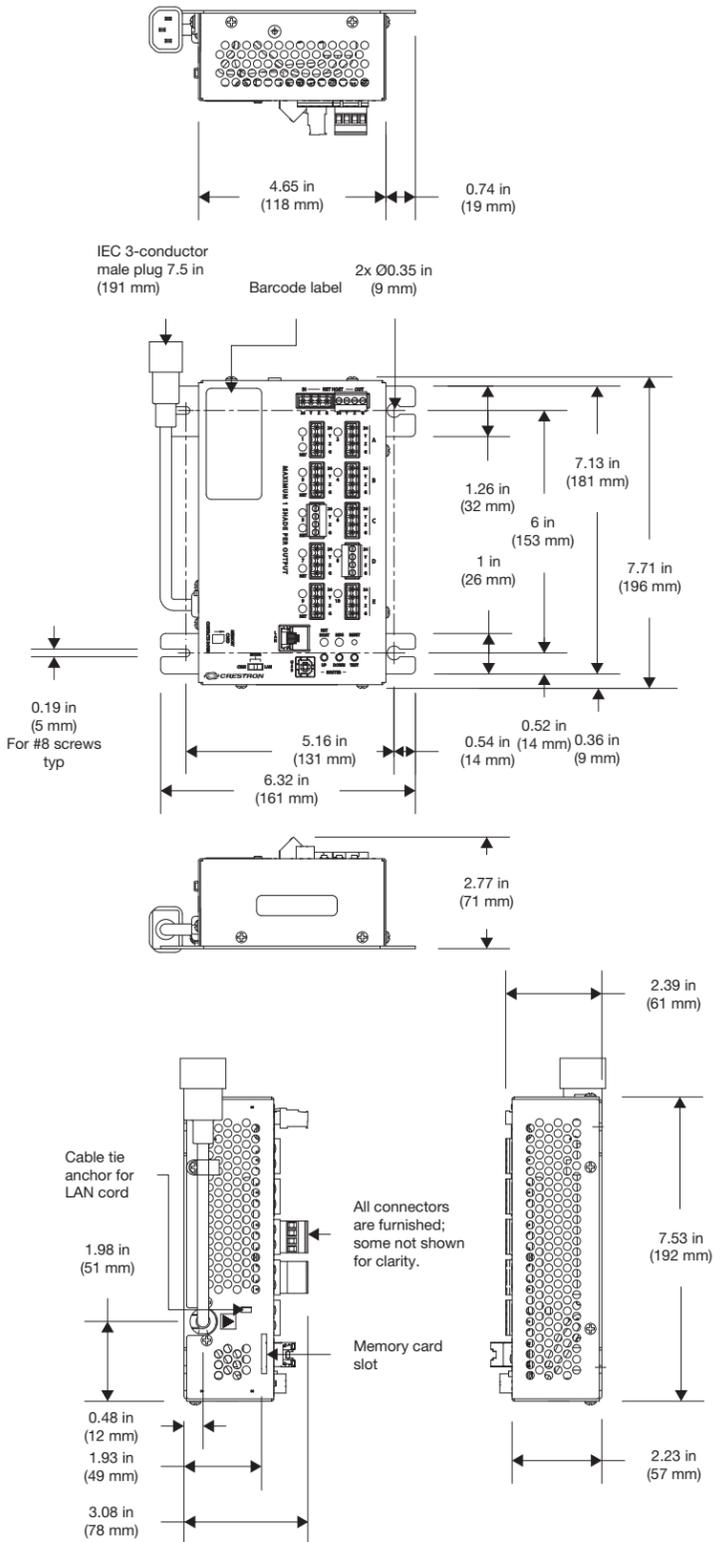




Description

The CSA-PWS10S-HUB-ENET powers up to 10 Crestron® shade motors and features an Ethernet to Cresnet bridge and a built-in, 5-segment Cresnet hub. A local control interface with LED feedback indicators allows roller shade or drapery systems to be tested without a control system connection. The CSA-PWS10S-HUB-ENET is convection cooled for silent operation and can be surface mounted.



Additional Resources

Visit the product page on the Crestron website (www.crestron.com) for additional information and the latest firmware updates. Use a QR reader application on your mobile device to scan the QR image.



Specifications

| SPECIFICATION | DETAILS |
|-----------------------------|---|
| Output | |
| Voltage | 24 Vdc |
| Power | 60 W Output LPS; 250 W Total continuous load; 525 W, 2 min. on, 10 min. off, discontinuous shade load |
| Ripple Noise | < 1% |
| Power Requirements | 110–240 Vac, 50/60 Hz; 5.5 A max @ 110 Vac; 2.6 A max @ 240 Vac |
| Input Cord | IEC 60320-1 C14 Male, 7.5 in (191 mm) cord |
| Connections | |
| NET HOST IN, OUT | (2) 4-pin 5 mm detachable terminal blocks; Cresnet slave ports, paralleled; Connect to Cresnet control network in Cresnet mode, power not supplied to these connections; Cresnet power and data pass-through; Used to daisy-chain to additional CSA-PWS10S-HUB-ENET modules when in Ethernet mode |
| A-E, 1-10 | (10) 4-pin 5 mm detachable terminal blocks comprising (2) Cresnet ports per each of the (5) hub segments |
| LAN | (1) 8-pin RJ-45, female; 10Base-T/100Base-TX Ethernet port |
| USB | (1) USB Type B female, USB computer console port |
| Line Power | (1) Attached input power cable (~10 in long, 254 mm) with inline IEC 60320 C14 main power inlet; Connects to AC power source using grounded 3-prong IEC cord (included) |
| Electronic Current Limiting | Output current is limited to 3.5 A. At a set temperature limit, the device disconnects and auto retries on fault conditions. |
| Fuse | Nonreplaceable BEL fuse 0685T4000-01 (1206, 63 Vdc, 4 A, time lag, surface mount) provided for each 60 W segment |
| Environmental | |
| Temperature | 32° to 104 °F (0° to 40 °C) |
| Humidity | 10% to 90% RH (noncondensing) |

Installation

WARNING: To avoid fire, shock, or death, turn off the power at the circuit breaker or fuse and test that the power is off before wiring!

CAUTION: All power feeds must be protected by single-pole-listed circuit breaker or branch-rated fuse no greater than 20 A.

NOTES: Observe the following points:

- Install and use this product in accordance with appropriate electrical codes and regulations.
- A licensed electrician should install this product.
- Use copper conductors only—rated 75 °C or better.

NOTE: Adequate clearance must be provided for servicing.

NOTE: This device is for indoor use only.

The CSA-PWS10S-HUB-ENET must be mounted vertically, either on a flat and vertical surface or in a CAEN enclosure, with the solid surface facing down.

Mounted to Flat Surface

The power supply must be mounted securely to building wall studs or at least 1/4 in (7 mm) plywood using four #8 pan head wood screws. Use the screw holes indicated in the second illustration in the “Description” section to secure the power supply to the mounting surface.

Mounted to CAEN Enclosure

The power supply can be mounted in any properly grounded CAEN enclosure using the provided screws. Use the screw holes indicated in the second illustration in the “Description” section to secure the power supply to the mounting surface.

Class 1 and Class 2 field wires must be kept separate.

NOTE: The installer must provide disconnect means within the enclosure.

NOTE: The CSA-PWS10S-HUB-ENET power cable is considered to be a disconnect means. For this reason, the total length of power cable from the CSA-PWS10S-HUB-ENET to the outlet cannot exceed 14 ft (4.5 m).

NOTE: The CSA-PWS-TBLOCK-2 and CSA-PWS-TBLOCK-3 (both not included) provide a disconnect means within the CAEN enclosure. For installation details, refer to the CSA-PWS-TBLOCK-2/CSA-PWS-TBLOCK-3 Installation Guide (Doc. 7988) at www.crestron.com/manuals.

Make Connections

Once the unit is properly secured to the mounting surface, the unit must be properly wired. Refer to the guidelines below for each connection.

Shade Connections

The power supply connections 1–10 have LEDs that indicate the status of the feed. The power LED remains solid when the circuit is functioning properly. It extinguishes when there is no power present (i.e., overcurrent trip, no power to device). It blinks slowly when the power draw exceeds 25 W and rapidly when the power draw exceeds 52.5 W.

Maximum Wire Runs

The cable length between the CSA-PWS10S-HUB-ENET and shade motor is limited by voltage drop along the cable. Observe the following limits for reliable performance.

NOTE: Wiring must be home run from the power supply to each shade motor.

The maximum total length of Cresnet cable run on each hub segment is 3,000 ft (~915 m). Observe the following maximum lengths for Cresnet cable between the power supply and shade:

- Cresnet-P (Plenum Rated, 2x #18 Power, 2x #22 Twisted Data) 130 ft (~40 m)
- Cresnet-NP (2x #18 Power, 2x #22 Twisted Data) 130 ft (~40 m)
- Cresnet-HP-NP (2x #12 Power, 2x #22 Twisted Data) 500 ft (~153 m)

LAN Port

Plug the Ethernet cable into the LAN port. Refer to the “Designate as Ethernet Master or Cresnet Slave” section for details about when to use the LAN port.

NET HOST Port

If the CSA-PWS10S-HUB-ENET is controlled over Cresnet, plug the Cresnet cable into the NET HOST - IN port. Refer to the “Designate as Ethernet Master or Cresnet Slave” section for details.

Use Cresnet cable to connect the NET HOST - OUT port on the CSA-PWS10S-HUB-ENET to the NET HOST - IN port of a daisy-chained slave CSA-PWS10S-HUB-ENET device. Refer to the “Designate as Ethernet Master or Cresnet Slave” section for details.

Power Cord

Attach the included power cord to the IEC male cord attached to the CSA-PWS10S-HUB-ENET. Connect the other end of the included power cord to a properly grounded electrical outlet.

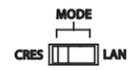
MEMORY CARD Slot

The MEMORY CARD slot is reserved for future use only.

Designate as Ethernet Master or Cresnet Slave

The device can operate in Ethernet Master or Cresnet Slave mode. *MODE set to Cresnet*

• Slide the MODE switch all the way to LAN to designate it as master. When operating in Master mode, the device receives shade control via the LAN port.



• Slide the MODE switch all the way to CRES to designate it as a slave. When operating in Slave mode, the device receives shade control via the NET HOST - IN port.



NOTE: The device reboots when the operating mode is changed.

In Master mode, the NET HOST LED lights if a Cresnet slave device connected to the NET HOST port responds to a poll. If no poll occurs for 6 seconds, the NET HOST LED turns off. The LED turns off if Ethernet communication with the control system is interrupted.

In Master mode, the branch Net LEDs are turned off if Ethernet communication with the control system is interrupted for more than 6 seconds.

Wiring Configurations

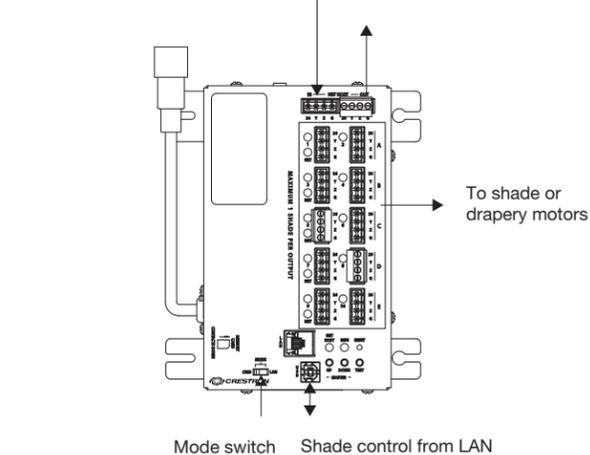
The illustrations that follow show the various wiring configurations available.

A CSA-PWS10S-HUB-ENET functions as a master device only when it is set to Ethernet. Another hub can be connected to the master hub only if that hub is set to Cresnet, thereby becoming the slave unit. Additional daisy-chained hubs must also all be set to Cresnet.

Two daisy-chained CSA-PWS10S-HUB-ENET modules per Ethernet connection with up to 20 connected motors is the recommended topology for best performance. At its maximum capabilities, one CSA-PWS10S-HUB-ENET set to Ethernet can support up to six daisy-chained CSA-PWS10S-HUB-ENETs set to Cresnet, controlling up to 70 shade or drapery motors in total.

Wiring Overview

Shade control from control system

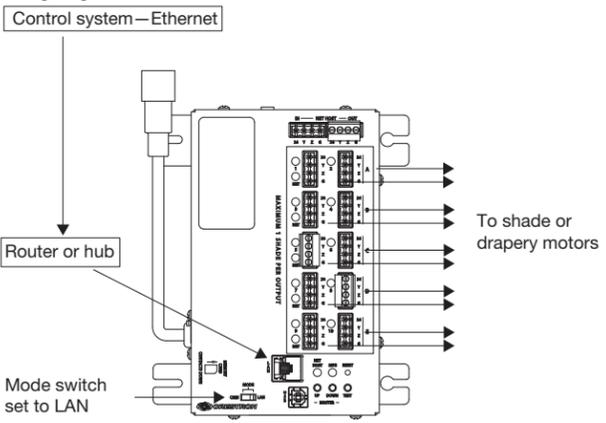


CAUTION: Double pole/neutral fusing is implemented.

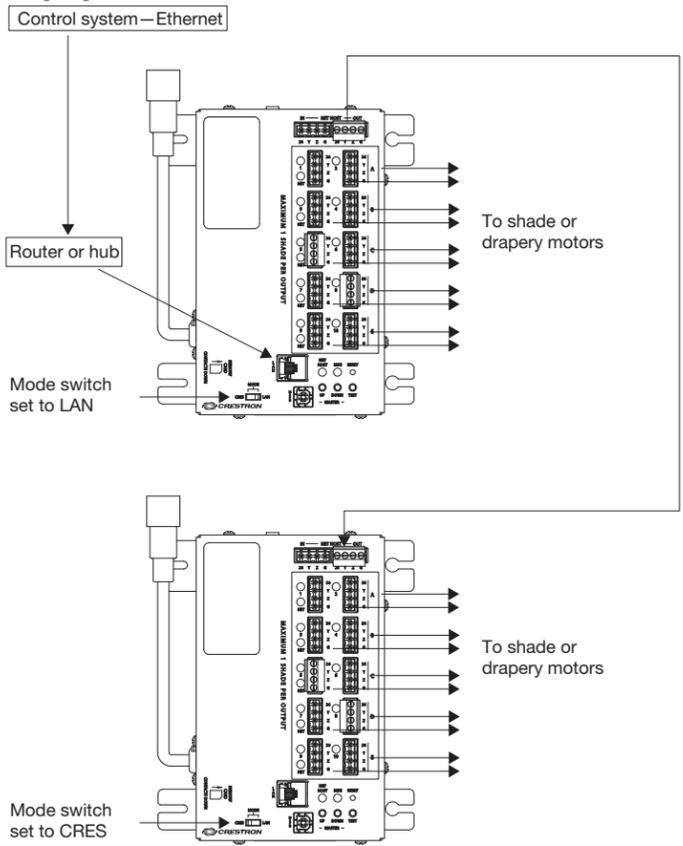
NOTE: When additional Cresnet slave power supplies are added, the latency of the system may increase.

NOTE: Low-voltage wiring is intended for intrabuilding wiring only.

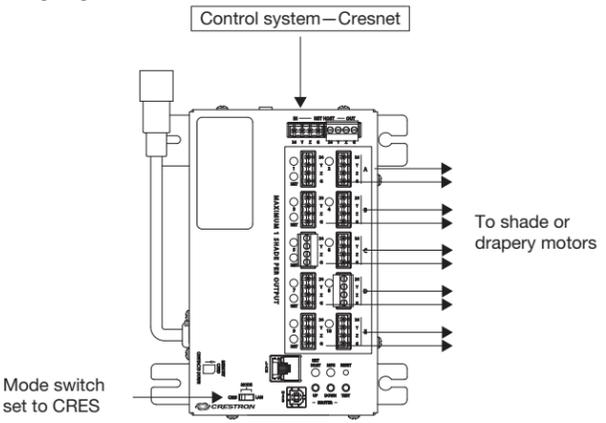
Wiring Diagram - Master Control from Ethernet



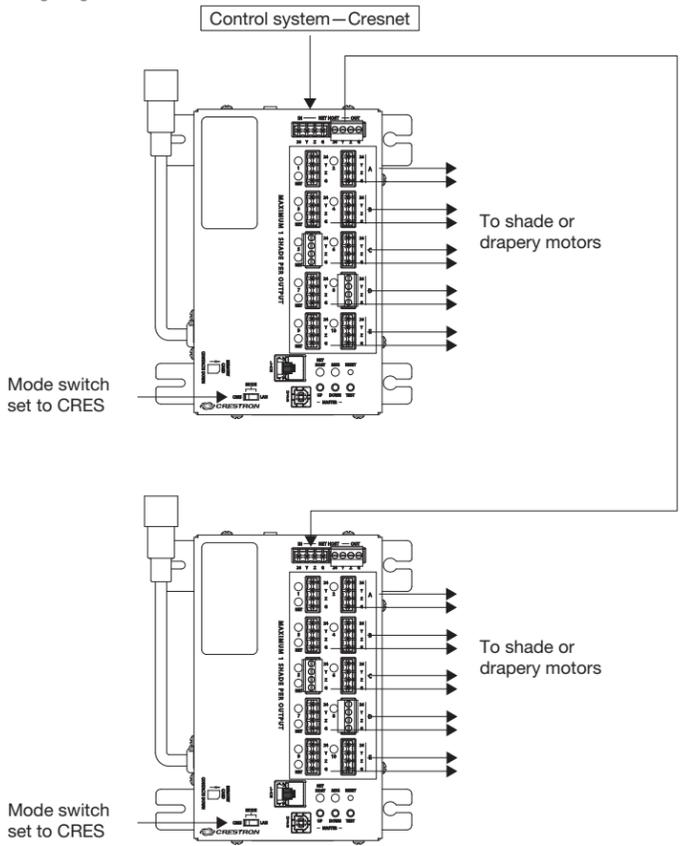
Wiring Diagram - Master Control from Ethernet with Cresnet Slave



Wiring Diagram - Master Control from Cresnet



Wiring Diagram - Master Control from Cresnet with Cresnet Slave



Operation

Once the power supply is mounted, wired, and powered up, a diagnostic test of the device and wiring should be performed. During the diagnostic test, the power supply identifies connected shades and tests the wiring of the connected shades.

NOTE: Before using the CSA-PWS10S-HUB-ENET, ensure the device is using the latest firmware. Check for the latest firmware for the CSA-PWS10S-HUB-ENET at www.crestron.com/firmware. Load the firmware onto the device using Crestron Toolbox™ software.

NOTE: After the device enters Test mode, the bridge disconnects Cresnet communication on both Ethernet and Crtesnet. The bridge also notifies the control system that devices are going offline. During Test mode, Cresnet devices are not polled. Upon exiting Test mode, the bridge notifies the control system that devices are going online.

NOTE: During electrical analysis, the bridge discovers the TSID of all devices attached to the bridge in order to detect the half-broken wire condition.

Hold down the TEST button for 2 seconds to enter Test mode. The MSG LED blinks to indicate that the power supply is in Test mode.

During Test mode, the LED for the associated connection blinks to indicate the status of the connected shade. The LED blinks in a #-# format. The first # indicates the number of consecutive LED blinks, the dash represents a short pause, and the second # indicates the second number of consecutive LED blinks. The pattern repeats until the error is cleared or the TEST button is pressed. The LED also fast blinks, slow blinks, turns solid on, and turns off. Refer to the following table for error definitions.

LED Blink Patterns for Test Mode

| BLINK PATTERN | ERROR |
|---------------|---------------------|
| 1-1 | Broken Wire Y |
| 1-2 | Short to 24 V Y |
| 1-3 | Short to GND Y |
| 2-1 | Broken Wire Z |
| 2-2 | Short to 24 V Z |
| 2-3 | Short to GND Z |
| 3-1 | Short Y to Z |
| 3-2 | Inverted Y and Z |
| 3-3 | Unbalanced Y and Z |
| Solid | No Error |
| Off | No Devices Detected |

NOTE: A short to 24 V may be reported as a short to GND on long cable runs.

NOTE: A false short Y to Z may be reported if a termination resistor is implemented on Cresnet. Cresnet does not require termination resistors.

NOTE: Not all broken wire conditions can be detected. A broken wire can be detected only in situations where there is intermittent communication.

The MSG LED also blinks to indicate an error situation on the device. The LED blinks using the same manner described previously. Refer to the following table for error definitions.

LED Blink Patterns for MSG LED

| BLINK PATTERN | ERROR |
|----------------|--|
| 1-1 | Com Issue Master - signaled when the master branch is held low for more than 10 character times. When the unit is in slave mode, this signal can also indicate no Cresnet traffic detected. |
| 1-2 | Com Issue Branch - signaled when any non-master branch is held low for more than 10 character times. |
| 1-3 | Com Issue Master and Branch - signaled when the master branch and any nonmaster branch are held low for more than 10 character times. |
| 2-2 | Channel Overload - signaled when any single channel experiences an overload condition. |
| 2-3 | Power Out Power Supply - signaled when there is no ac power present or the internal ac power supply has malfunctioned. (This will report only if 24 V is present on Cresnet on master branch.) |
| 3-1 | Overload Power Supply - signaled when the total power consumed by the loads is over 250 W for 2 minutes or exceeds 525 W for any amount of time. |
| 3-2 | Overload Temperature - device is near thermal limits. |
| Off | Normal - signaled when hub is operating normally. |
| 1/2 On 1/2 Off | Test/Up/Down Mode/FW Upgrade - signaled when the hub is in Test/Up/Down mode or when the device is upgrading firmware. |
| 1/4 On 1/4 Off | TSID Identify - signaled when the hub is in TSID identify mode. |

The PWR LED also blinks to indicate an error situation on the device. The LED blinks using the same manner described previously. Refer to the following table for error definitions.

LED Blink Patterns for PWR LED

| BLINK PATTERN | ERROR |
|----------------|--|
| Solid | Normal |
| Off | No power present (over current or no ac power) |
| 1/2 On 1/2 Off | Exceed 25 W |
| 1/4 On 1/4 Off | Exceed 52.5 W |

Firmware Upgrade

NOTE: Before using the CSA-PWS10S-HUB-ENET, ensure the device is using the latest firmware. Check for the latest firmware for the CSA-PWS10S-HUB-ENET at www.crestron.com/firmware. Load the firmware onto the device using Crestron Toolbox software.

Firmware is upgradable over Cresnet, USB, and Ethernet. The red MSG LED blinks slowly while the CSA-PWS10S-HUB-ENET upgrades.

Restore and Reset

Press RESET to restore the device settings to the factory default. The TSID and MAC address remain unchanged.

Regulatory Compliance
 This product is Listed to applicable UL® Standards and requirements by Underwriters Laboratories Inc.

Conformité Reglementaire
 Ce produit est homologué selon les normes et les exigences UL applicables par Underwriters Laboratories Inc.

As of the date of manufacture, the CSA-PWS10S-HUB-ENET has been tested and found to comply with specifications for CE marking.

Federal Communications Commission (FCC) Compliance Statement
 This device complies with part 15 of the FCC Rules. Operation is subject to the following 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.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 or more 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.

Industry Canada (IC) Compliance Statement
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