



## **IONPS-A AC Power Module**



**User Manual  
33423.A**

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## Cautions and Warnings

### Definitions

Cautions indicate potential damage to equipment.

Warnings indicate a potential hazard or injury to people.

### Cautions and warnings in this manual

Cautions and warnings are explained here and placed throughout this manual where appropriate.

- ⚠ **CAUTION:** While installing or servicing the Power Module, wear a grounding device and observe all electrostatic discharge precautions. Failure to observe this caution could result in damage or failure of the Power Module.
- ⚠ **WARNING:** Do not connect the Power Module to an external power source before installing it into the chassis. Failure to observe this warning could result in an electrical shock, even death.
- ⚠ **WARNING:** A readily accessible, suitable National Electrical Code (NEC) or local electrical code approved disconnect device and branch-circuit protector must be part of the building's installed wiring to accommodate permanently connected equipment. Failure to observe this warning could result in an electric shock, even death.
- ⚠ **WARNING:** Turn the Power Module and external power source OFF and ensure that the Power Module is disconnected from the external power source before performing any maintenance. Failure to observe this warning could result in an electrical shock, even death.

# Description

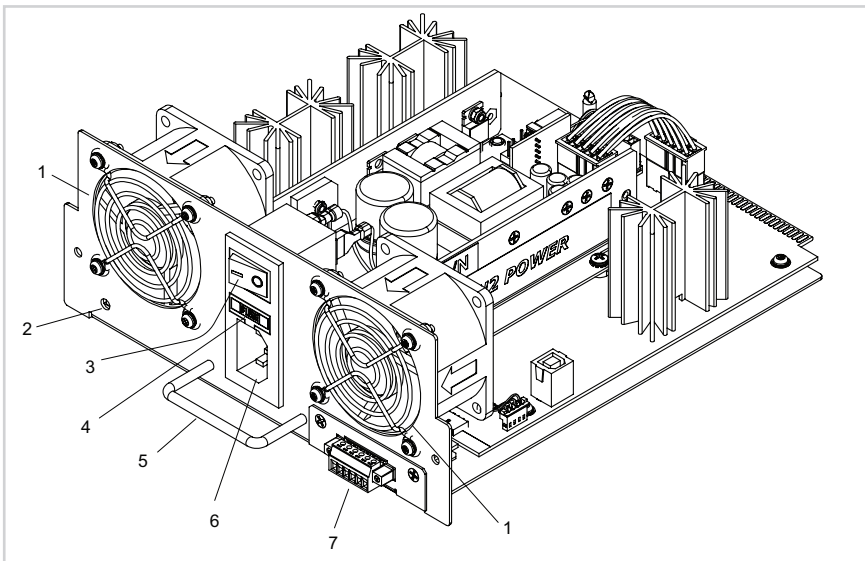
Transition Networks' IONPS-A, AC Power Module can deliver power or provide optional, redundant AC power to an ION219-A chassis. See the ION219-A chassis manual #33421. You can download the manual @ [www.transition.com](http://www.transition.com), then click on Product/Product Finder.

### Power Module component identification

See Figure 1:

- 1 Fans (*two fans exhaust warm air from the IONPS-A, AC Power Module*)
- 2 Power LED (*ON green when powered up*)
- 3 ON/OFF switch, when in the ON position power is supplied to the ION chassis
- 4 Fuse (*inline AC*)
- 5 Handle
- 6 AC Power Receptacle for an AC power plug
- 7 Dry Contact Relay (*optional*)

**Note:** The IONPS-A, AC Power Module has instant failover capability.



**Figure 1: Power Module Components**

# Description — continued

### Notices

- The IONPS-A, AC Power Module must be installed by qualified technical personnel only. Transition networks assumes no responsibility for the improper installation, set up, or use of the IONPS-A, AC Power Module.
- The information in this user's guide is subject to change. For the most up-to-date information, see the user's guide on-line to download the current version of the manual at [www.transition.com](http://www.transition.com) under Products.

# Installation

### IMPORTANT

- All installation and service must be performed by qualified personnel only.
- Read, understand, and follow all CAUTION and WARNING notices, instructions marked on the product, including in this manual.

The IONPS-A, AC Power Module can replace an existing IONPS-A, AC Power Module or it can be installed as the redundant Power Module in an AC powered ION219-A chassis.

**⚠ CAUTION:** While installing or servicing the Power Module, wear a grounding device and observe all electrostatic discharge precautions. Failure to observe this caution could result in damage or failure of the Power Module.

### Power module redundancy

The IONPS-A, AC Power Module includes Instant Fail-Over (IFO) circuitry that provides the capability for the primary Power Module to power the chassis backplane while the auxiliary Power Module is in 'hot' standby mode. If the IFO circuitry detects the loss of primary power, the auxiliary Power Module instantly provides power to the chassis backplane. When primary power is restored, the IFO circuitry places the auxiliary Power Module in 'hot' standby mode. The chassis primary Power Module is located in the left slot of the chassis as viewed from the rear. The chassis auxiliary Power Module is located in the right slot of the chassis as viewed from the rear. A single Power Module placed in either location can power the chassis backplane.

**Note:** The IONPS-A, AC Power Modules DO NOT load share.

## Installation — Continued

### Installing an optional Power Module into the ION chassis

**⚠ WARNING:** Do not connect the Power Module to an external power source before installing it into the chassis. Failure to observe this warning could result in an electrical shock.

**Note:** The Power Module is hot swappable (*i.e., swapped while the chassis is in operation*) provided the ON/OFF switch of the Power Module is in the OFF position, and it has been disconnected from its external power source.

To install the Power Module in the ION chassis, do the following:

**Note:** The procedure is the same for installing the Power Module into either slot.

1. Push the Power Module ON/OFF switch to the OFF position. See Figure 2.

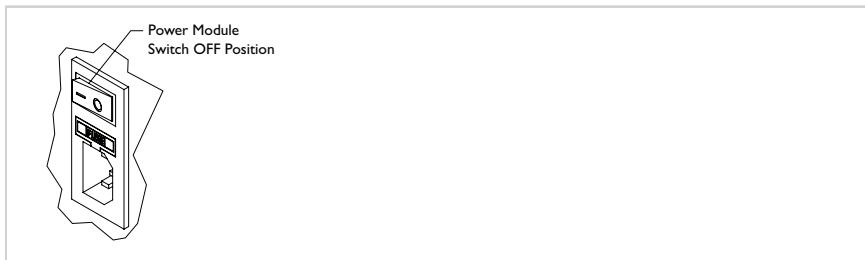


Figure 2: Power ON/OFF Switch

## Installation — Continued

### Installing an optional Power Module into the ION chassis — continued

2. If necessary, remove the grounding hardware from the chassis before installing or removing the Power Module. See Figure 3.

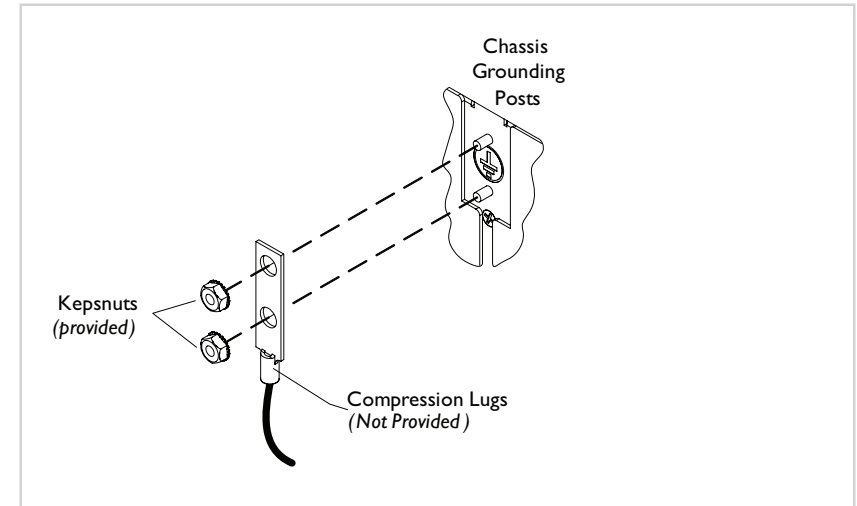


Figure 3: Chassis Grounding Hardware

3. Remove the slot cover from the right chassis slot and keep the two screws. See Figure 4.

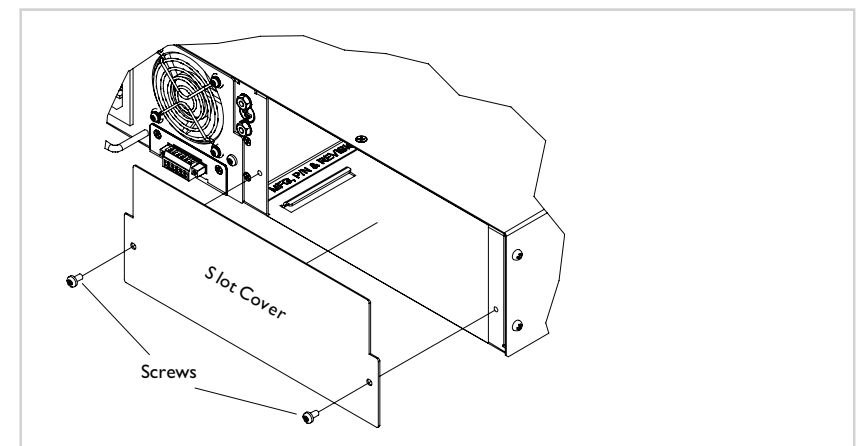
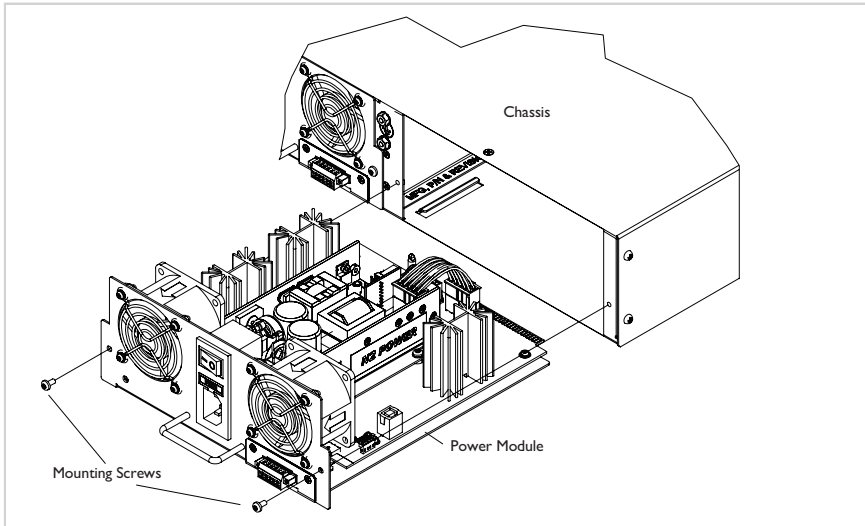


Figure 4: Chassis Slot Cover

## Installation — Continued

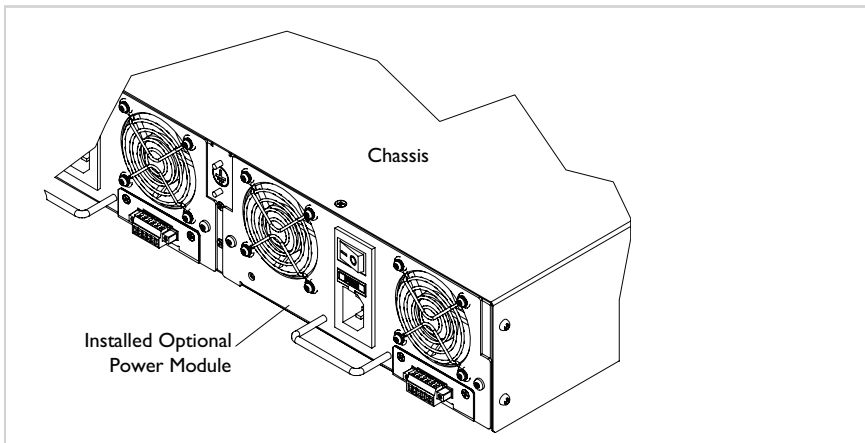
### Installing an optional Power Module into the ION chassis — continued

- Position the Power Module at the chassis slot, as shown in Figure 5.



**Figure 5: Power Module Installation**

- Slide the Power Module completely into the chassis. See Figure 6.



**Figure 6: Power Module Installation**

**Note:** Once the optional Power Module is seated to the backplane of the chassis, the fans will become operational.

## Installation — Continued

### Installing an optional Power Module into the ION chassis — continued

- Insert the two screws to mount the Power Module to the chassis.

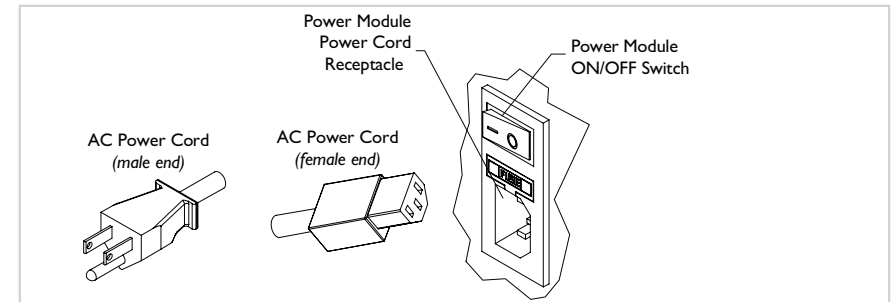
### Connecting the Power Module to external power

To connect external power to the IONPS-A, AC Power Module, do the following:

- Locate the power cord for the Power Module.
- Make sure that the Power Module ON/OFF switch is in the OFF position. See Figure 7.
- Plug the female end of the AC power cord into the AC power receptacle on the Power Module. See Figure 7.
- Plug the male end of the AC power cord into the AC power source.
- Turn the power ON/OFF switch to the ON position. See Figure 7.

**Note:** Once the power ON/OFF switch is in the ON position, the power ON LED will lite. This means that the optional Power Module is ready to power the chassis if the primary Power Module fails.

**Important:** There is NO power sharing between the two Power Modules.



**Figure 7: AC Power Cord Ends**

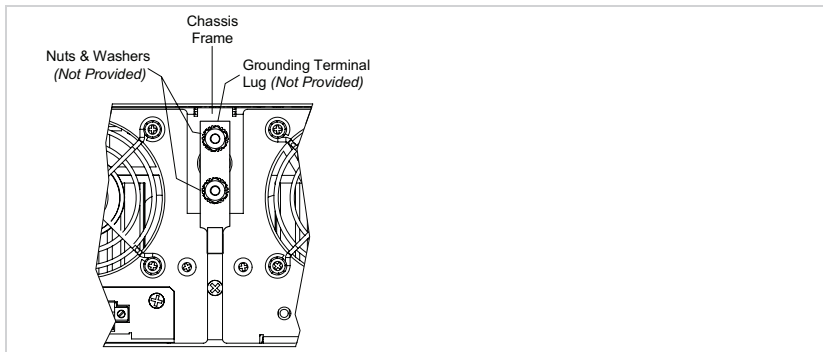
## Maintenance

### Replacing the Power Module

**⚠ WARNING:** Do not connect the Power Module to the external power source before installing it into the chassis. Failure to observe this caution could result in equipment damage and/or personal injury or death.

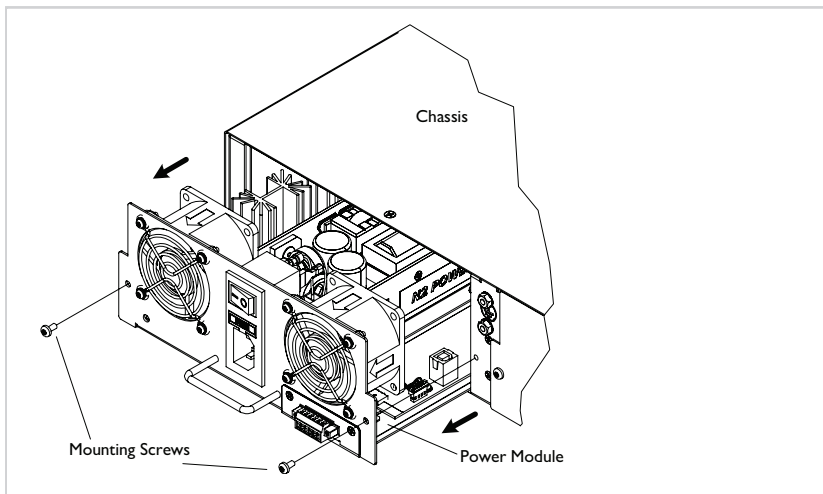
To replace the Power Module, do the following:

1. Turn the power ON/OFF switch to the OFF position.
2. Disconnect the AC power cord from the power source.
3. In necessary, remove the chassis grounding assembly. See Figure 8.



**Figure 8: Chassis Grounding Hardware**

4. Remove the two screws securing the Power Module to the chassis.
5. Carefully pull the Power Module from the chassis. See Figure 9.

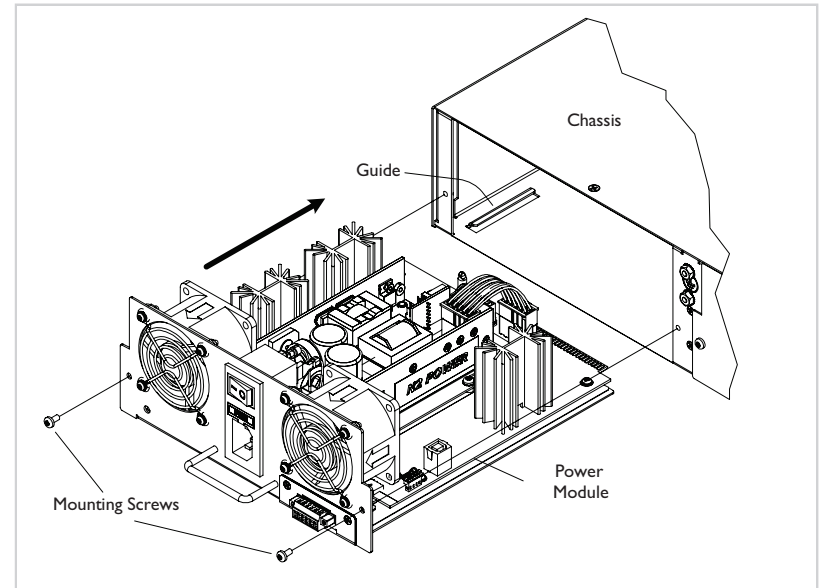


**Figure 9: Removing Power Module**

## Maintenance — Continued

### Installing the Power Module — continued

6. Locate the new Power Module.
7. Push the power ON/OFF switch to the OFF position.
8. Position the Power Module at the chassis slot, as shown in Figure 10.



**Figure 10: Power ON/OFF Switch**

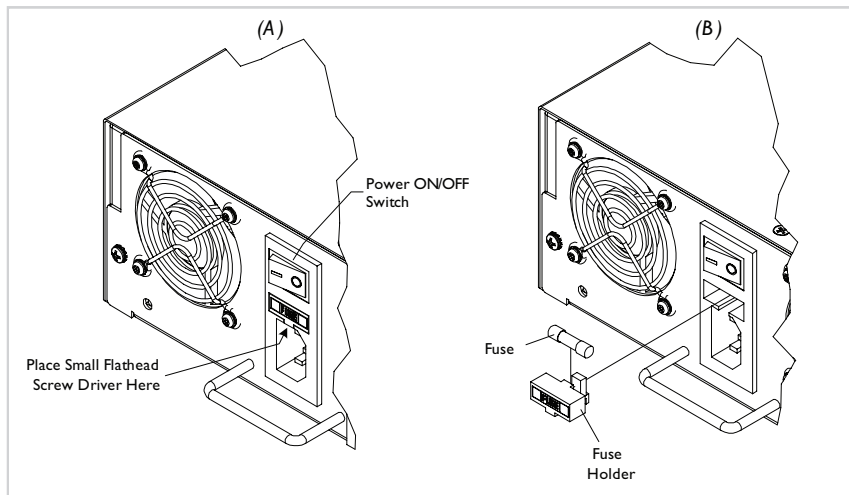
9. Slide the Power Module complete into the slot.
11. Insert the two screws to secure the Power Module to the chassis.
12. Plug the AC power cord into the AC receptacle on the Power Module.
13. Plug the other end of the cord into an external AC power source.
14. Push the power ON/OFF switch to the ON position. The power ON LED should be lit and the fans will be operational.

**Maintenance — Continued****Replacing the fuse**

CAUTION: Ensure that the IONPS-A, AC Power Module has been disconnected from the external power source and the ON/OFF switch is at "0." Failure to observe this caution could result in damage or failure of the Power Module.

To replace the fuse in the IONPS-A, AC Power Module:

1. Ensure the ON/OFF switch on the Power Module is in the OFF position.
2. Disconnect the AC power cord from the external power source.
3. Insert a small flat blade screwdriver into the groove on the front, inside edge of the fuse holder, as shown in Figure 11A.
4. Carefully pull the fuse holder from the Power Module. See Figure 11B.



**Figures 11 A & B: Replacing Fuse**

4. Remove the fuse from the fuse holder.
5. The replacement fuse MUST BE the same amperage and voltage rating.
6. Insert the fuse into the holder.
7. Slide the fuse holder fully into the Power Module.
8. Connect the power cord to Power Module and to the external power.
9. Push the power ON/OFF switch to the ON position.

**Technical Specification**

For use with Transition Networks Model IONPS-A, AC Power Module.

Dimensions: 8.3" x 8.4" x 2.7" (211 mm x 211 mm x 69 mm)

Weight: 4 lb. (6.35 kg) approximately

Power Input: 100-240 V, 47/63Hz, 2.35 – 1.1 Amp  
(typical with a fully-loaded chassis)

Voltage Tolerance:  $\pm 10\%$

Low-Line Input Current: 3.5A max.

Inrush Current: 13A max. (peak starting current) @ high line

Transient Recovery Time: 1ms max.

Power Output: 12VDC at 16.67 Amp max.

Power Factor: >0.6 – 0.95, 10 to 100% load respectively

Fuse: 6.3 Amp/250 Volts

MTBF: Greater than 25,000 hours (MIL-HDBK-217F)  
Greater than 68,750 hours (Bellcore7 V5.0)

Environment: Operating temperature: 0 to 50°C (32 to 122°F)  
Storage temperature: -25 to 70°C (-13 to 158°F)  
Humidity: 5 to 90%, non condensing

Warranty: Lifetime

## Troubleshooting

If the Power Module fails, isolate and correct the failure by determining the answers to the following questions and then taking the indicated action:

1. Is the Power LED on the IONPS-A, AC Power Module illuminated?  
NO
  - Is the Power Module inserted properly into the chassis?
  - Is the Power Module properly connected to the external power source?
  - Does the external power source provide power?
  - Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.YES
  - Proceed to step 2.
2. Is the fuse on the IONPS-A, AC Power Module intact?  
NO
  - CAUTION: See the “Replace the Fuse” section for the proper method for replacing the fuse to the Power Module.
  - Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.YES
  - Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.

## Contact Us

### Technical Support

Technical support is available 24 hours a day.

US and Canada: 1-800-260-1312

International: 00-1-952-941-7600

### Transition Now

Chat live via the Web with Transition Networks Technical Support.

Log onto [www.transition.com](http://www.transition.com) and click the Transition Now link.

### Web-Based Seminars

Transition Networks provides seminars via live web-based training.

Log onto [www.transition.com](http://www.transition.com) and click the Learning Center link.

### E-Mail



Ask a question anytime by sending an e-mail to our technical support staff.

[techsupport@transition.com](mailto:techsupport@transition.com)

### Address

Transition Networks, 10900 Red Circle Drive, Minnetonka, MN 55343, U.S.A.

telephone: 952-941-7600; toll free: 800-526-9267; fax: 952-941-2322

	<b>Declaration of Conformity</b>
Name of Mfg:	Transition Networks 10900 Red Circle Drive, Minnetonka, MN 55343 U.S.A.
Model:	IONPS-A, AC Power Module 120/240 VAC
Purpose: To declare that the IONPS-A, AC Power Module to which this declaration refers is in compliance with the following directive(s) and standard(s): EMC Directive 2004/108/EC; EN 55022:2006+A1:2007 Class A; EN55024:1998+A1:2001+A2:2003; EN6100-2-3; EN6100-3-3; CFR Title 47 Part 15 Subpart B Class A. Low Voltage Directive: 2006/95/EC; EN60950-1:2006; CFR Title 21 Section 1040.10 Class I.	
I, the undersigned, hereby declare that the model number(s) listed in this declaration of conformity is in compliance with the Directive(s) and Standard(s) herein.	
 Stephen Anderson, Vice-President of Engineering	January, 2010 Date



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# Compliance Information

## **FCC Regulations**

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 instruction manual, may cause harmful interference to radio communications. 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 the user's own expense.

## **Canadian Regulations**

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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