



SOLUTIONS FOR ALL YOUR APPLICATIONS

Stock No.  
5900 Series  
USER MANUAL

## Broadband Indoor Distribution Amplifiers

# BIDA 5900 Series

### Active Return Path

| Model         | Stock No. | Description  |
|---------------|-----------|--|
| BIDA 86B-30   | 5900 83   | 30 dB, 54-860 MHz, Push-Pull, Active Return (5-42 MHz)       |
| BIDA 86B-30P  | 5900P83   | 30 dB, 54-860 MHz, Power-Doubling, Active Return (5-42 MHz)  |
| BIDA 86B-43   | 5900 84   | 44 dB, 54-860 MHz, Push-Pull, Active Return (5-42 MHz)       |
| BIDA 86B-43P  | 5900P84   | 44 dB, 54-860 MHz, Power-Doubling, Active Return (5-42 MHz)  |
| BIDA 100B-30P | 5900P13   | 30 dB, 54-1000 MHz, Power-Doubling, Active Return (5-42 MHz) |
| BIDA 100B-43P | 5900P14   | 43 dB, 54-1000 MHz, Power-Doubling, Active Return (5-42 MHz) |

| Status   | Date               | Document No. | Issue No. | Author |
|----------|--------------------|--------------|-----------|--------|
| ACTIVE   | January 3, 2018    | 651213600C   | 3         | KK     |
| OBSOLETE | April 22, 2010     | 651213600B   | 2         | KK     |
| OBSOLETE | September 16, 2004 | 651213600A   | 1         | KK     |

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## Section 1 — General & Safety Instructions



The STOP sign symbol is intended to alert you to the presence of REQUIRED operating and maintenance (servicing) instructions that if not followed, may result in product failure or destruction.



The YIELD sign symbol is intended to alert you to the presence of RECOMMENDED operating and maintenance (servicing) instructions.



The LIGHTNING flash symbol is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

**TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER FROM THIS UNIT.  
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE**

### NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV System Installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

## Safety Instructions

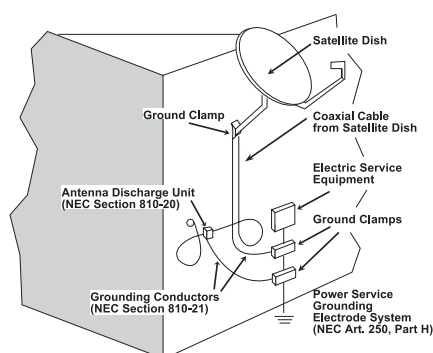


**YOU SHOULD ALWAYS FOLLOW THESE INSTRUCTIONS TO HELP ENSURE  
AGAINST INJURY TO YOURSELF AND DAMAGE TO YOUR EQUIPMENT.**

- Read all safety and operating instructions before you operate the unit.
- Retain all safety and operating instructions for future reference.
- Heed all warnings on the unit and in the safety and operating instructions.
- Follow all installation, operating, and use instructions.
- Unplug the unit from the AC power outlet before cleaning. Use only a damp cloth for cleaning the exterior of the unit.
- Do not use accessories or attachments not recommended by Blonder Tongue, as they may cause hazards, and will void the warranty.
- Do not operate the unit in high-humidity areas, or expose it to water or moisture.
- Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious personal injury and damage to the unit. Install the unit only in a mounting rack designed for 19" rack-mounted equipment.

## Safety Instructions - continued

- Do not block or cover slots and openings in the unit. These are provided for ventilation and protection from overheating. Never place the unit near or over a radiator or heat register. Do not place the unit in an enclosure such as a cabinet without proper ventilation. Do not mount equipment in the rack space directly above or below the unit.
- Operate the unit using only the type of power source indicated on the marking label. Unplug the unit power cord by gripping the plug, not the cord.
- The unit is equipped with a three-wire ground-type plug. This plug will fit only into a ground-type power outlet. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the ground-type plug.
- Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- Be sure that the outdoor components of the antenna system are grounded in accordance with local, federal, and National Electrical Code (NEC) requirements. Pay special attention to NEC Sections 810 and 820. See the example shown in the following diagram:



- We strongly recommend using an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the unit is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between the unit and the antenna. This will prevent damage caused by lightning or power line surges.
- Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing the antenna, take extreme care to avoid touching such power lines or circuits, as contact with them can be fatal.
- Do not overload wall outlets or extension cords, as this can result in a risk of fire or electrical shock.
- Never insert objects of any kind into the unit through openings, as the objects may touch dangerous voltage points or short out parts. This could cause fire or electrical shock.
- Do not attempt to service the unit yourself, as opening or removing covers may expose you to dangerous voltage and will void the warranty. Refer all servicing to authorized service personnel.
- Unplug the unit from the wall outlet and refer servicing to authorized service personnel whenever the following occurs:
  - The power supply cord or plug is damaged;
  - Liquid has been spilled, or objects have fallen into the unit;
  - The unit has been exposed to rain or water;
  - The unit has been dropped or the chassis has been damaged;
  - The unit exhibits a distinct change in performance.
- When replacement parts are required, ensure that the service technician uses replacement parts specified by Blonder Tongue. Unauthorized substitutions may damage the unit or cause electrical shock or fire, and will void the warranty.
- Upon completion of any service or repair to the unit, ask the service technician to perform safety checks to ensure that the unit is in proper operating condition.

### Returning Product for Repair (or Credit)

**A Return Material Authorization (RMA) Number is required on all products returned to Blonder Tongue, regardless if the product is being returned for repair or credit.** Before returning product, please contact the Blonder Tongue Service Department at 1-800-523-6049, Ext. 4256 or visit our website: [www.blondertongue.com](http://www.blondertongue.com) for further information.

## Section 2 — Product Summary

### 2.1 Product Application & Features

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#### Application:

The **BIDA 5900 Series** with Active Return Path is a completely self-contained broadband indoor distribution amplifier designed for CATV and SMATV signal distribution systems that use a cable drop as a signal source.

Push-pull and power-doubling hybrid amplifier technologies are available for the BIDA 5900 Series with RF bandwidths ranging from 54-860/1000 MHz with 30 or 43 dB gains.

All BIDA 5900 models have a return path bandwidth of 5-42 MHz and can be configured for either a passive (factory default) or integrated active return. When field configured to an active return, the BIDA 5900 Series have a full gain of 20 dB. All models can be attenuated over a range of 10 dB in the forward path and 18 dB in the return path. Gain and slope controls are located on the front panel for easy set-up and adjustment. Two -30 dB back-matched test points are provided to permit testing without interruption of service.

The aluminum chassis is designed to provide excellent heat dissipation thus allowing operation at high ambient temperatures with no degradation of performance or reliability.

#### Features:

- Provides Two-Way Capability with an Passive or Active Return Path Set by Field-Changeable Jumpers
- Easily Adjustable Front Panel Gain and Slope Controls
- Hybrid IC Circuitry for High Output with Low Distortion
- Optional Plug-in Fixed Equalizer and Attenuator Capability for Input Signal Conditioning
- Integrated Return Path Configurable for either Passive or Active Operation
- Push-pull and Power-doubling Hybrid Models Available
- Input and Output Test Ports
- Large Heat Sinks for Exceptional Heat Dissipation

## 2.2 Product Specifications

| <b>Model: BIDA-5900</b><br><b>Stock No:</b>          | 86B-30<br>5900 83                                    | 86B-30P<br>5900P83 | 86B-43<br>5900 84  | 86B-43P<br>5900P84 | 100B-30P<br>5900P13 | 100B-43P<br>5900P14 | Integrated<br>Active<br>Return Path |
|--|--|--------------------|--------------------|--------------------|---------------------|---------------------|-------------------------------------|
| <b>Frequency Range:</b>                              | 54-860 MHz   |                    |                    |                    | 54-1000 MHz         |                     | 5-42                                |
| <b>Gain:</b>   | 30 dB  |                    | 43 dB              |                    | 30 dB               | 43 dB               | 20 dB<br>(Passive -1.5 dB)          |
| <b>Flatness:</b>                                     | ±0.75 dB   |                    | ±0.75 dB           |                    | ±0.75 dB            |                     | ±0.5§                               |
| <b>Gain Control Range:</b>                           | 10 dB  |                    |                    |                    |                     |                     |                                     |
| <b>Slope Control Range:</b>                          | 8 dB   |                    |                    |                    |                     |                     |                                     |
| <b>Input Return Loss:</b>                            | 16 dB  |                    |                    |                    |                     |                     |                                     |
| <b>Output Return Loss:</b>                           | 16 dB  |                    |                    |                    |                     |                     |                                     |
| <b>Noise Figure:</b>                                 | 8.5 dB   |                    |                    |                    |                     |                     | 6.0                                 |
| <b>No. of Channels (for CSO, CTB, &amp; XMD):</b>    | 129  |                    |                    |                    | 150                 |                     | 3                                   |
| <b>Output Level:</b>                                 | 36/44 dBmV   |                    |                    |                    | 32/40 dBmV          |                     | 42                                  |
| <b>Composite Triple Beat (CTB):</b>                  | -54 dB   | -62 dB             | -56 dB             | -60 dB             | -70 dB              |                     | -60                                 |
| <b>Cross-modulation (XMOD):</b>                      | -54 dB   | -62 dB             | -60 dB             | -65 dB             | -66 dB              |                     | -60                                 |
| <b>2nd Order Composite (CSO):</b>                    | -57 dB   | -61 dB             | -59 dB             |                    | -69 dB              |                     | -60                                 |
| <b>Impedance:</b>                                    | 75 Ω   |                    |                    |                    |                     |                     |                                     |
| <b>Hum Modulation:</b>                               | 70 dB  |                    |                    |                    |                     |                     |                                     |
| <b>Input/Output Test Port Level:</b>                 | -30 dB; ±2 dB  |                    |                    |                    |                     |                     |                                     |
| <b>Input/Output Test Port Return Loss:</b>           | 20 dB  |                    |                    |                    |                     |                     |                                     |
| <b>Operating Temperature Range:</b>                  | -20 to +60 °C  |                    |                    |                    |                     |                     |                                     |
| <b>Power Requirements:</b>                           | Wall Power Transformer                               |                    | 105-130 VAC, 60 Hz |                    | 0.38 AMP Max        |                     |                                     |
| <b>Dimensions (LxWxH):</b>                           | 10.5" x 7.25" x 3.25" (26.4 cm x 18.42 cm x 8.26 cm) |                    |                    |                    |                     |                     |                                     |
| <b>Shipping Weight:</b>                              | 6 lbs (2.7kg)  |                    |                    |                    |                     |                     |                                     |
| <b>Plug-In Accessories:</b>                          |  |                    |                    |                    |                     |                     |                                     |
| <b>1) Flat Attenuator</b><br>(1-20 dB in 1 dB steps) | #5411A-(*)   |                    |                    |                    |                     |                     |                                     |
| <b>2) Cable Equalizer:</b><br>(3,6,9,12,15,18 dB)    | #5478-(*)  |                    |                    |                    | #5479-(*)           |                     |                                     |

(\* ) Specify dB § Reference to +1 dB tilt

**THERE ARE NO USER SERVICEABLE PARTS IN THIS UNIT.**

**THE FOLLOWING INFORMATION IN THIS MANUAL IS FOR QUALIFIED INSTALLATION PERSONNEL ONLY**

**Field Installable Optional Modules.**

Take care not to bend jack pins when plugging in modules - view orientation of pins through holes provided - pins are polarized to prevent wrong installation - see Location Diagram.

Leakage-current and/or resistance measurements should be made by service technician after repairs are completed to determine that exposed parts are acceptably insulated from the supply circuit.

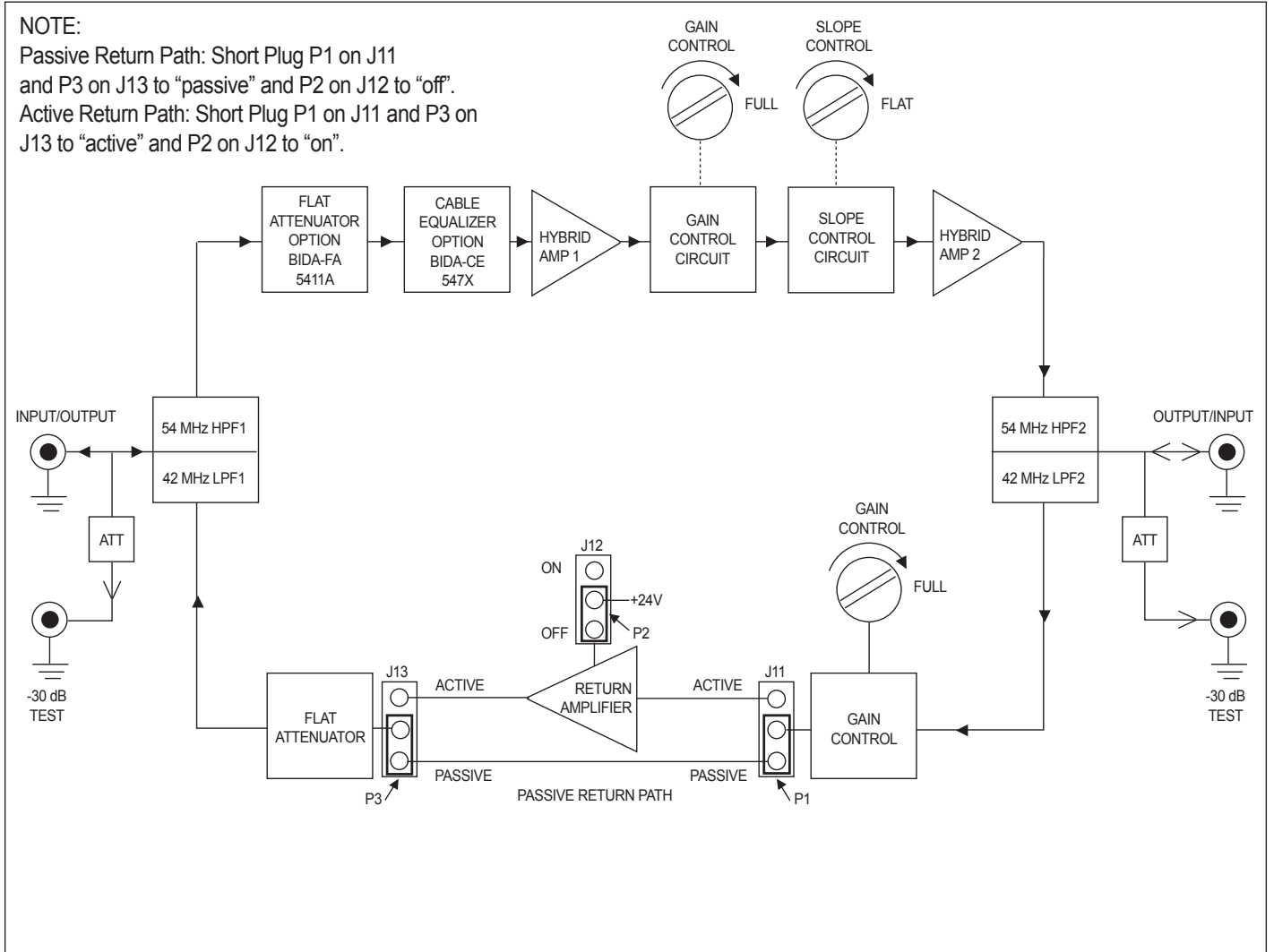


Figure 1 - Reverse Return Path

### BIDA-CE Cable Equalizer

Stock No. 5478 (for BIDA 860 MHz) = BIDA CE-8-(\*)

Stock No. 5479 (for BIDA 1000 MHz) = BIDA CE-9-(\*)

Plug-in cable equalizer for increasing forward slope in BIDA series amplifiers. The BIDA-CE provides attenuation that varies inversely with frequency to correct inherent tilt of coaxial cable used in distribution systems. A sheet metal cover is mounted over the circuitry to improve stability while preventing accidental detuning during shipping, handling, and installation. The BIDA-CE is available in fixed values of 3, 6, 9, 12, 15 and 18 dB. Before inserting, remove the factory installed "0 dB" jumper wire W2 (between J6 & J8). Loosen mounting screw and rotate Cable Equalizer clamp clockwise. After inserting Cable Equalizer, rotate Cable Equalizer clamp counter-clockwise so it lays atop the mounting tab. Tighten mounting screw to secure Cable Equalizer clamp position, (View A).

\* Specify dB value.

### BIDA-FA-(\* ) Flat Attenuator

Stock No. 5411A

Plug-in flat attenuator pad for reducing forward and/or return gain in BIDA series amplifiers. The BIDA-FA is available in fixed values of 1-20 dB in 1 dB steps. Before inserting, remove the factory installed "0 dB" jumper wire W1 (between J3 & J5) for forward and W3 (between J14 & J16) for return.

\* Specify dB value.

Note: The unit is shipped with 18 gauge jumpers which are not re-installable. Do not remove jumpers except when installing optional equipment modules.

#### Accessory Identification

For future reference, it is recommended that the type and value of the accessories installed in the BIDA be marked in the space provided on the front panel. The full sized reproduction may also be copied and used for that purpose.

Note: Refer to Fig.1 for reverse path information.

#### Accessories Installed

|                        |          |
|------------------------|----------|
| Forward Attenuator     | _____ dB |
| Forward Equalizer      | _____ dB |
| Return Path Attenuator | _____ dB |

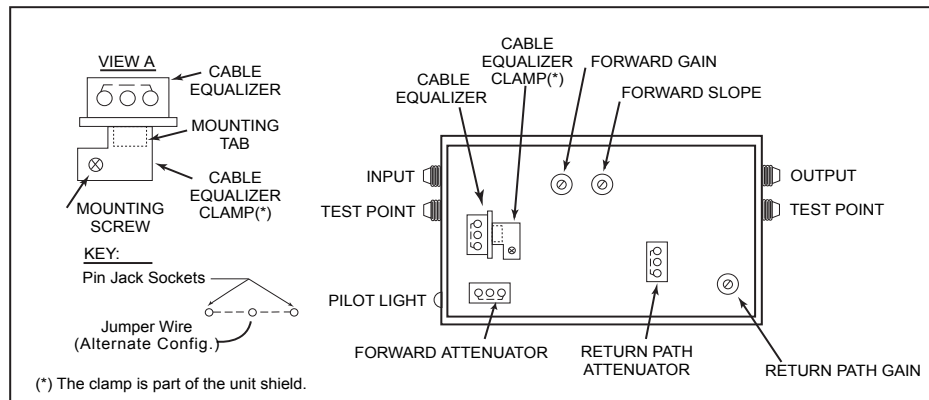


Figure 2 - Module and Control Location Diagram (Top View)

# Limited Warranty

Seller will at its sole option, either repair or replace (with a new or factory reconditioned product, as Seller may determine) any product manufactured or sold (or in the case of software, licensed) by Seller which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing: (i) for a period of three (3) years from the date of original purchase for all stock hardware products (other than those specifically referenced herein below having a shorter warranty period); (ii) for a period of one (1) year from the date of original purchase, with respect to all MegaPort™, IPTV products, test equipment and fiber optics receivers, transmitters, couplers and integrated receiver/distribution amplifiers; (iii) for a period of one (1) year from the date of original purchase (or such shorter period of time as may be set forth in the license agreement specific to the particular software being licensed from Seller) with respect to all software products licensed from Seller (other than Core Product Software) that is (a) developed for a specific function or application, (b) complimentary to and does not function without the Core Product Software, and (c) listed with a specific model number and stock number in Seller's Price List ("**Non-Core Software**"); (iv) for a period of ninety (90) days from the date of original purchase, with respect to non-serialized products and accessories, such as parts, sub-assemblies, splitters and all other products sold by Seller (other than Core Product Software and Refurbished/Closeout Products) not otherwise referred to in clauses (i) through (iii) above. The warranty period for computer programs in machine-readable form included in a hardware product, which are essential for the functionality thereof as specifically stated in the published product specifications ("**Core Product Software**") will be coincident with the warranty period of the applicable hardware product within which such Core Product Software is installed.

Software patches, bug fixes, updates or workarounds do not extend the original warranty period of any Core Product Software or Non-Core Software.

Notwithstanding anything herein to the contrary,

(i) Seller's sole obligation for software that when properly installed and used does not substantially conform to the published specifications in effect when the software is first shipped by Seller, is to use commercially reasonable efforts to correct any reproducible material non-conformity (as determined by Seller in its sole discretion) by providing the customer with: (a) telephone or e-mail access to report non-conformance so that Seller can verify reproducibility, (b) a software patch or bug fix, if available or a workaround to bypass the issue if available, and (c) where applicable, replacement or damaged or defective external media, such as CD-ROM disk, on which the software was originally delivered;

(ii) Seller does not warrant that the use of any software will be uninterrupted, error-free, free of security vulnerabilities or that the software will meet the customer's particular requirements; and the customer's sole and exclusive remedy for breach of this warranty is, at Seller's option, to receive (a) suitably modified software, or part thereof, or (b) comparable replacement software or part thereof;

(iii) Seller retains all right, title and interest in and to and ownership of all software (including all Core Product Software and Non-Core Software) including any and all enhancements, modifications and updates to the same; and

(iv) in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller's products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller, will be of shorter duration or otherwise more limited than the standard Seller limited warranty. In such cases, Seller's warranty with respect to such third-party proprietary sub-assembly modules, third-party software and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, certain products, that are not manufactured by Seller, but are resold by Seller, may carry the original OEM warranty for such products, if any. The limited warranty set forth above does not apply to any product sold by Seller, which at the time of sale constituted a Refurbished/Closeout Product, the limited warranty for which is provided in the following paragraph.

Seller will at its sole option, either repair or replace (with a new or factory-reconditioned product, as Seller may determine) any product sold by Seller which at the time of sale constituted a refurbished or closeout item ("**Refurbished/Closeout Product**"), which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment of that product or fails to meet such other specifications as may have been expressly agreed upon in writing between the parties, for a period of ninety (90) days from the date of original purchase. Notwithstanding the foregoing, in some cases the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller will be of shorter duration or otherwise more limited than Seller limited warranty for Refurbished/Closeout Products. In such cases, Seller's warranty for Refurbished/Closeout Products constituting such third party proprietary sub-assembly modules, third party software, and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, notwithstanding the foregoing, (i) certain Refurbished/Closeout Products that are not manufactured (but are resold) by Seller, may carry the original OEM warranty for such products, if any, which may be longer or shorter than Seller's limited warranty for Refurbished/Closeout Products. All sales of Refurbished/Closeout Products are final.

To obtain service under this warranty, the defective product, together with a copy of the sales receipt, serial number if applicable, or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to Seller at the following address: One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover failure of performance or damage resulting from (i) use or installation other than in strict accordance with manufacturer's written instructions, (ii) disassembly or repair by someone other than the manufacturer or a manufacturer-authorized repair center, (iii) misuse, misapplication or abuse, (iv) alteration, (v) exposure to unusual physical or electrical stress, abuse or accident or forces or exposure beyond normal use within specified operational or environmental parameters set forth in applicable product specifications, (vi) lack of reasonable care or (vii) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

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All claims for shortages, defects, and non-conforming goods must be made by the customer in writing within five (5) days of receipt of merchandise, which writing shall state with particularity all material facts concerning the claim then known to the customer. Upon any such claim, the customer shall hold the goods complained of intact and duly protected, for a period of up to sixty (60) days. Upon the request of Seller, the customer shall ship such allegedly non-conforming or defective goods, freight prepaid to Seller for examination by Seller's inspection department and verification of the defect. Seller, at its option, will either repair, replace or issue a credit for products determined to be defective. Seller's liability and responsibility for defective products is specifically limited to the defective item or to credit towards the original billing. All such replacements by Seller shall be made free of charge f.o.b. the delivery point called for in the original order. Products for which replacement has been made under the provisions of this clause shall become the property of Seller. Under no circumstances are products to be returned to Seller without Seller's prior written authorization. Seller reserves the right to scrap any unauthorized returns on a no-credit basis. Any actions for breach of a contract of sale between Seller and a customer must be commenced by the customer within thirteen (13) months after the cause of action has accrued. A copy of Seller's standard terms and conditions of sale, including the limited warranty, is available from Seller upon request. Copies of the limited warranties covering third-party proprietary sub-assembly modules and private-label products manufactured by third-parties may also be available from Seller on request. (Rev 0713)



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