



INSTRUCTION MANUAL

HDA Series

Headend Distribution Amplifier Series

| Model | Stock No. | Description |
|---------------|------------------|-------------------------------------|
| HDA-4-860-24 | 6240-04 | HDA 4 Port, 47-860 MHz, 24 dB Gain |
| HDA-8-860-20 | 6240-08 | HDA 8 Port, 47-860 MHz, 20 dB Gain |
| HDA-12-860-18 | 6240-12 | HDA 12 Port, 47-860 MHz, 18 dB Gain |
| HDA-16-860-16 | 6240-16 | HDA 16 Port, 47-860 MHz, 16 dB Gain |

651210300B

The lightning flash with arrow-head symbol within an equilateral triangle 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 persons.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

**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.

Description

The HDA Series of 19" rack mount headend distribution amplifiers are completely self-contained broadband devices, specifically designed for the distribution of digital and analog CATV signals in the frequency range from 47 to 860 MHz. The HDA is unique in that it integrates the functions of a passive combiner and a distribution amplifier into a single high performance unit.

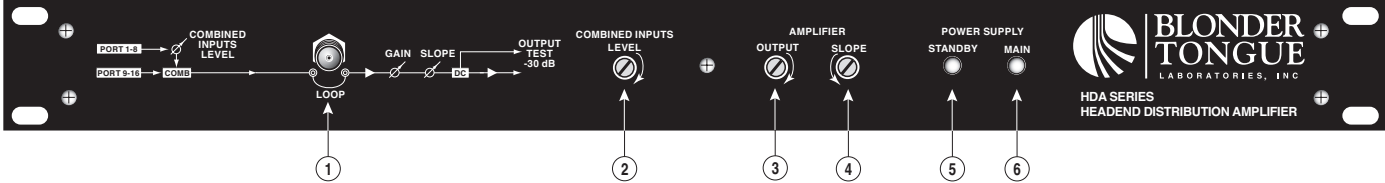
State of the art hybrid power doubling amplifier modules enable the unit to operate at high output levels while maintaining low distortion characteristics. Four combiner configurations of 16, 12, 8 and 4 ports are available. A -30 dB low-level backmatched test port is externally accessible enabling easy in-service testing and adjustment. The chassis design affords excellent heat dissipation allowing operation at high ambient temperatures without sacrificing reliability. Plus, the HDA has a built-in standby power supply with automatic switching capabilities.

Features

- Fully integrated combiner and distribution amplifier
- Front panel accessible gain and slope controls for easy adjustments
- Combiner attenuator for adjustment control of digital and analog channel ratios
- State of the art hybrid IC circuitry for high output with low distortion
- Exceptional temperature stability range
- Aluminum chassis for superior heat dissipation

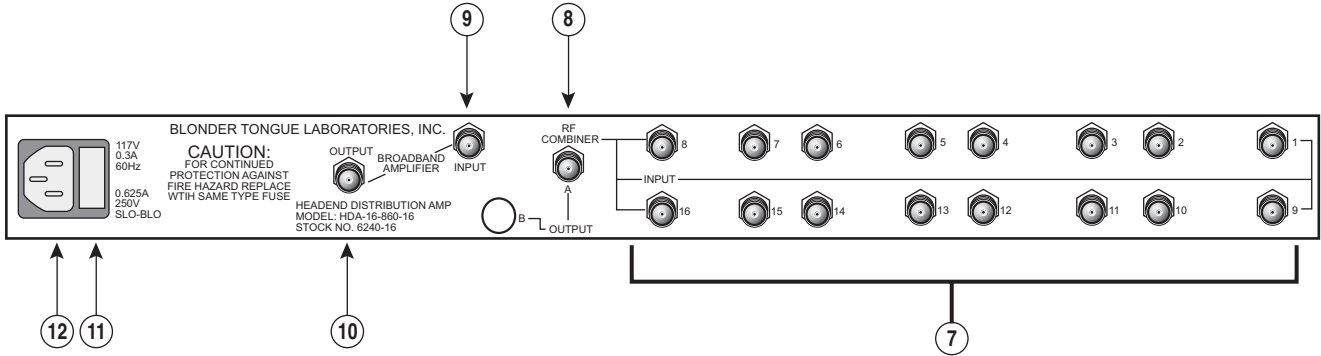
The Unit

Front Panel (HDA-16-860-16)



1. -30 dB Output Test Port
2. Combined Input Level Adjustment
3. Amplifier Output Adjustment
4. Amplifier Slope Adjustment
5. Standby Power Supply Indicator
6. Main Power Supply Indicator

Rear Panel (HDA-16-860-16)



7. Combiner Inputs
8. Combiner Output
9. Amplifier Input (Loop from #8)
10. HDA Amplified Output
11. Fuse
12. Power

Specifications*

Combiner and Amplifier

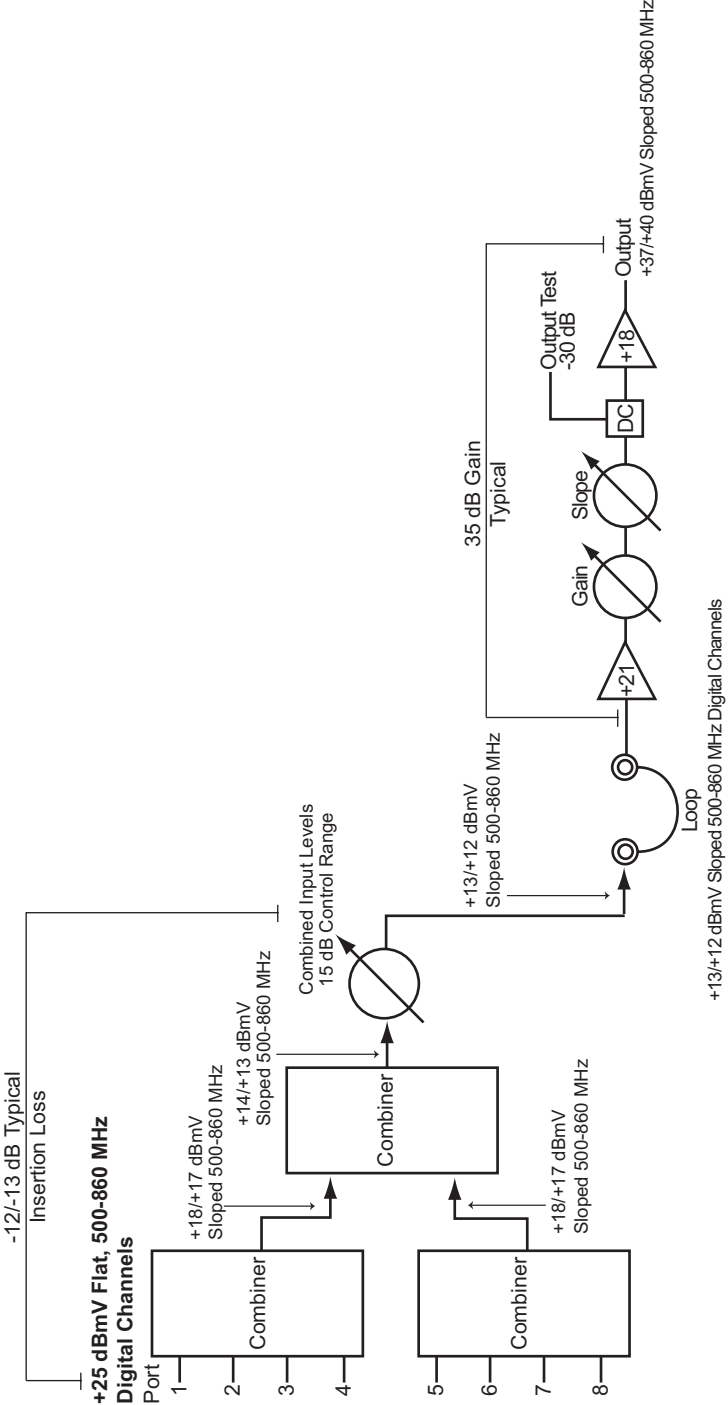
| Model Stock No. | HDA-16-860-16 6240-16 | HDA-12-860-18 6240-12 | HDA-8-860-20 6240-08 | HDA-4-860-24 6240-04 |
|--------------------------------|--------------------------|--------------------------|-------------------------|-------------------------|
| Frequency Range: | 47-860 dB | 47-860 dB | 47-860 dB | 47-860 dB |
| Gain: | 17 dB | 19 dB | 22 dB | 25 dB |
| Flatness: | ±1.0 dB | ±1.0 dB | ±1.0 dB | ±1.0 dB |
| Gain Control Range: | 15 dB | 15 dB | 15 dB | 15 dB |
| Slope Control Range: | 10 dB | 10 dB | 10 dB | 10 dB |
| Input Return Loss: | 14 dB | 14 dB | 14 dB | 14 dB |
| Output Return Loss: | 14 dB | 14 dB | 14 dB | 14 dB |
| Noise Figure | 7.0 dB | 7.0 dB | 7.0 dB | 7.0 dB |
| No. of channels (Loading): | 78 | 78 | 78 | 78 |
| Output Level: | 40/46 dBmV | 38/44 dBmV | 38/44 dBmV | 38/44 dBmV |
| Composite Triple Beat (CTB): | -68 dB | -68 dB | -68 dB | -68 dB |
| Crossmodulation (XMOD): | -69 dB | -69 dB | -69 dB | -69 dB |
| Composite 2nd Order (CSO): | -65 dB | -65 dB | -65 dB | -65 dB |
| Hum Modulation: | -65 dB | -65 dB | -65 dB | -65 dB |
| Input/Output Test Point Level: | -30 dB | -30 dB | -30 dB | -30 dB |
| Operating Temperature Range: | 0 to +50 °C | 0 to +50 °C | 0 to +50 °C | 0 to +50 °C |
| Number of Hybrids: | 2 | 2 | 2 | 2 |
| Type of Hybrids: | Power Doubling | Power Doubling | Power Doubling | Power Doubling |
| Power Requirements: | 105-130 VAC | 105-130 VAC | 105-130 VAC | 105-130 VAC |
| Power Consumption: | 23.5 W | 23.5 W | 23.5 W | 23.5 W |
| Dimensions: | 19" W x 1¾" H x 10¾" D | | | |
| Shipping Weight: | 8 lbs. | | | |
| RF Connectors | "F" Type | | | |

Combiner Only

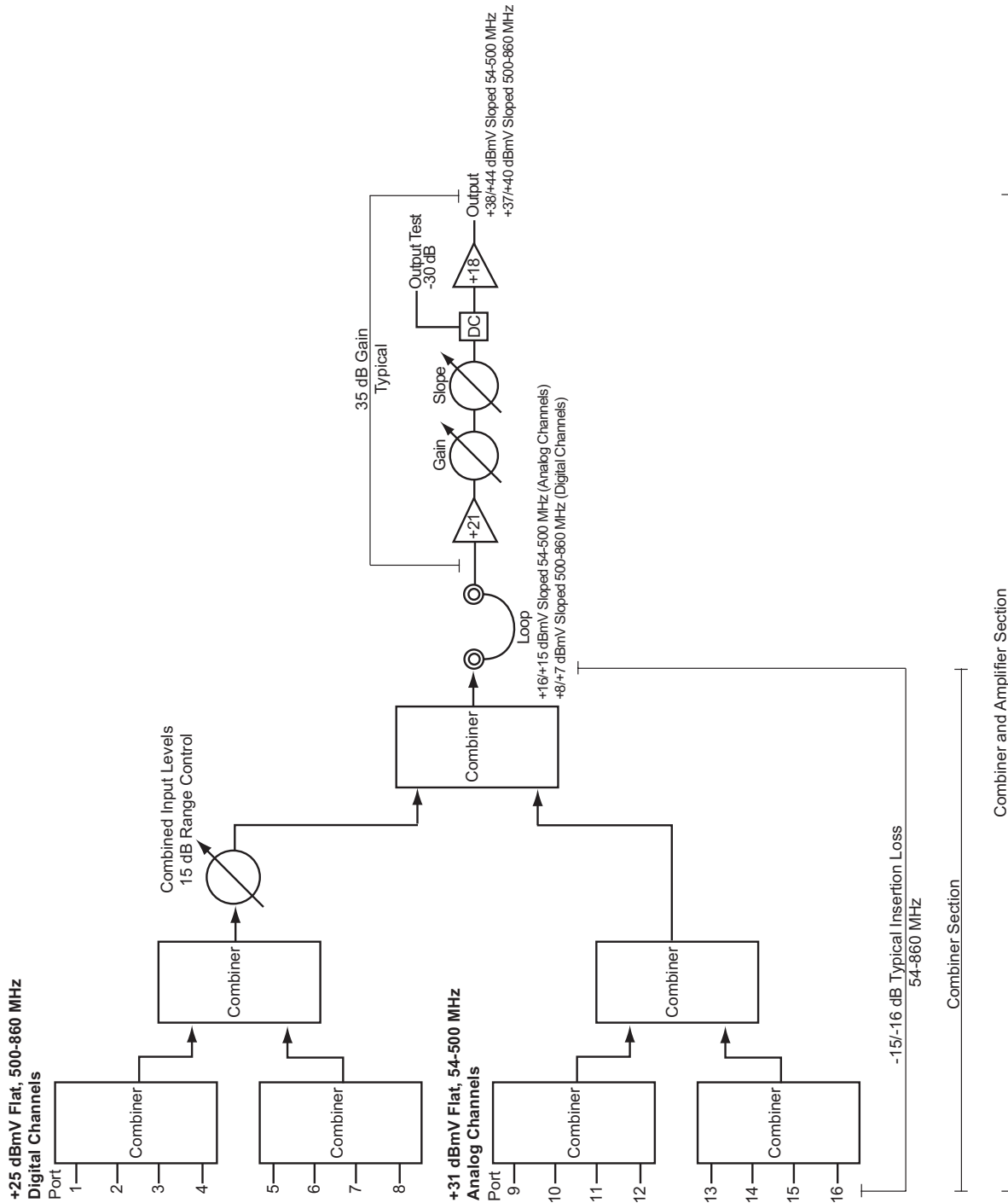
| | | | | |
|--|-------|------------|---------|------|
| Insertion Loss: | | | | |
| 54-500 MHz: | 14 dB | 13 dB | 11.5 dB | 7 dB |
| 500-860 MHz: | 15 dB | 14 dB | 12.5 dB | 8 dB |
| Output Tilt 54-860 MHz: | | -2.0 dB | | |
| Output Flatness 54-860 MHz: | | +/- 0.5 dB | | |
| Isolation between any combination of Input Ports (1-4) or (5-8) or (9-12) or (13-16): | 30 dB | | | |
| Isolation between any combination of Input Ports (1-4) and (5-8) or (9-12) and (13-16): | 45 dB | | | |
| Input Return Loss: | 14 dB | | | |
| Output Return Loss: | 14 dB | | | |
| Combined Inputs Control Range: | 15 dB | | | |

* All specifications listed are typical.

Typical Operational Block Diagram
 Combiner and Amplifier (6240-8)



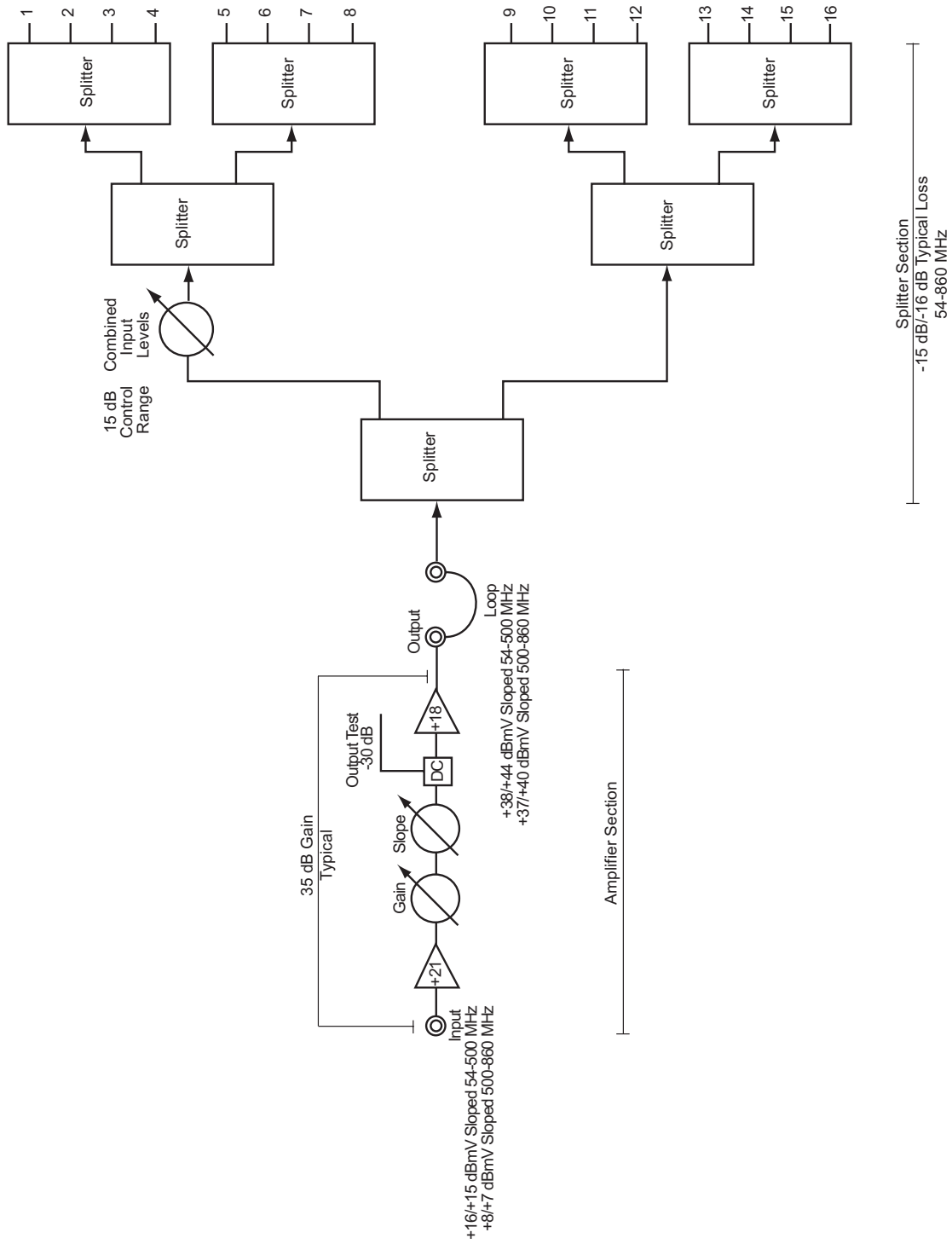
Typical Operational Block Diagram
Combiner and Amplifier (6240-16)



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 for further information.

Alternate Operational Block Diagram
 Amplifier and Splitter (6240-16)



Limited Warranty

Blonder Tongue Laboratories, Inc. (BT) will at its sole option, either repair or replace (with a new or factory reconditioned product, as BT may determine) any product manufactured by BT which proves to be defective in materials or workmanship or fails to meet the specifications which 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 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), with respect to iCentral™ (hardware and software) and all other software products (including embedded software) licensed from BT, (ii) for a period of one (1) year from the date of original purchase, with respect to all MegaPort, IPTV products and fiber optics receivers, transmitters, couplers and integrated receivers/distribution amplifiers (including TRAILBLAZER™, RETRO-LINX™ and TWIN STAR™ products) as well as for VideoCipher® & DigiCipher® satellite receivers, and (iii) for a period of three (3) years from the date of original purchase, with respect to all other BT products. Notwithstanding the foregoing, in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third party vendors and contained in BT products and on certain private-label products manufactured by third parties for resale by BT are of shorter duration or otherwise more limited than the standard BT limited warranty. In such cases, BT's warranty with respect to such third party proprietary sub-assembly modules and private-label products will be limited to the duration and other terms of such third party vendor's warranty. In addition, certain products, that are not manufactured but are resold by BT, carry the original OEM warranty for that product. The limited warranty set forth in this paragraph does not apply to any product sold by BT, which at the time of sale constituted a Closeout Product.

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

To obtain service under this warranty, the defective product, together with a copy of the sales receipt or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to: Blonder Tongue Laboratories, Inc., One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover 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) lack of reasonable care or (vi) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

OTHER THAN THE WARRANTIES SET FORTH ABOVE, BT MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, AS TO THE CONDITION, DESCRIPTION, FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY OR AS TO ANY OTHER MATTER, AND SUCH WARRANTIES SUPERSEDE ANY ORAL OR WRITTEN WARRANTIES OR REPRESENTATIONS MADE OR IMPLIED BY BT OR BY ANY OF BT'S EMPLOYEES OR REPRESENTATIVES, OR IN ANY OF BT'S BROCHURES, MANUALS, CATALOGS, LITERATURE OR OTHER MATERIALS. IN ALL CASES, BUYER'S SOLE AND EXCLUSIVE REMEDY AND BT'S SOLE OBLIGATION FOR ANY BREACH OF THE WARRANTIES CONTAINED HEREIN SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT F.O.B. SHIPPING POINT, AS BT IN ITS SOLE DISCRETION SHALL DETERMINE. BT SHALL IN NO EVENT AND UNDER NO CIRCUMSTANCES BE LIABLE OR RESPONSIBLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, PUNITIVE, DIRECT OR SPECIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT LIABILITY OR OTHERWISE OR ANY OTHER LEGAL THEORY ARISING DIRECTLY OR INDIRECTLY FROM THE SALE, USE, INSTALLATION OR FAILURE OF ANY PRODUCT ACQUIRED BY BUYER FROM BT.

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