



INSTRUCTION MANUAL



BIDA Series

Broadband Indoor Distribution Amplifiers

Model	Stock No.
BIDA 550-30	5400-53
BIDA 750-30	5400-73
BIDA 550-50	5400-55

Description

The Blonder Tongue BIDA is a completely self-contained broadband indoor distribution amplifier designed specifically for CATV and SMATV signal distribution systems which use a “cable drop” as a signal source. Three models are available; the #5400-73 with a 47 to 750 MHz bandpass and the #5400-53 and -55 with 47 to 550 MHz bandpass. The basic amplifier is configured for one-way operation. Optional field installable modules provide two-way capability with either a passive or active sub-channel return path.

The #5400-55 has a flat operating gain of approximately 50 dB. The #5400-53, and -73 have a gain of about 33 dB (see Specifications for typical values of each model). Lower operating gains can be achieved by adjusting the variable attenuator. All models can be attenuated over a range of 15 dB. Gain and slope controls are located on the front panel for easy set-up and adjustment. Two -30 dB backmatched test points are provided to permit testing without interruption of service.

In applications where input signals are too high or where greater cable equalization is necessary, the BIDA can be reconfigured by using plug-in attenuators and cable slope equalizers to meet particular requirements.

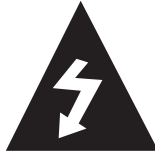
Push-pull, hybrid IC modules enable the BIDA to operate at high output levels while retaining low distortion characteristics.

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

- Hybrid IC Circuitry for High Output with Low Distortion.
- Exceptional Temperature Stability Range of -20° C to +60° C.
- Designed for Critical Applications Requiring High Gain.
- Front Panel Gain and Slope Controls for Easy Adjustments.
- Field Installable Options provide Two-Way Capability (Passive or Active).
- Externally Accessible Test Points Permit In-Service Testing.
- Aluminum Chassis Designed for Superior Heat Dissipation to Insure Component Reliability.
- Exceeds FCC Specs for Both Conducted and Radiated Interference @ Full Output Level.
- External Fuse for Ease of Replacement.
- LED Pilot Light.
- Line Transient Protection.

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.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



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

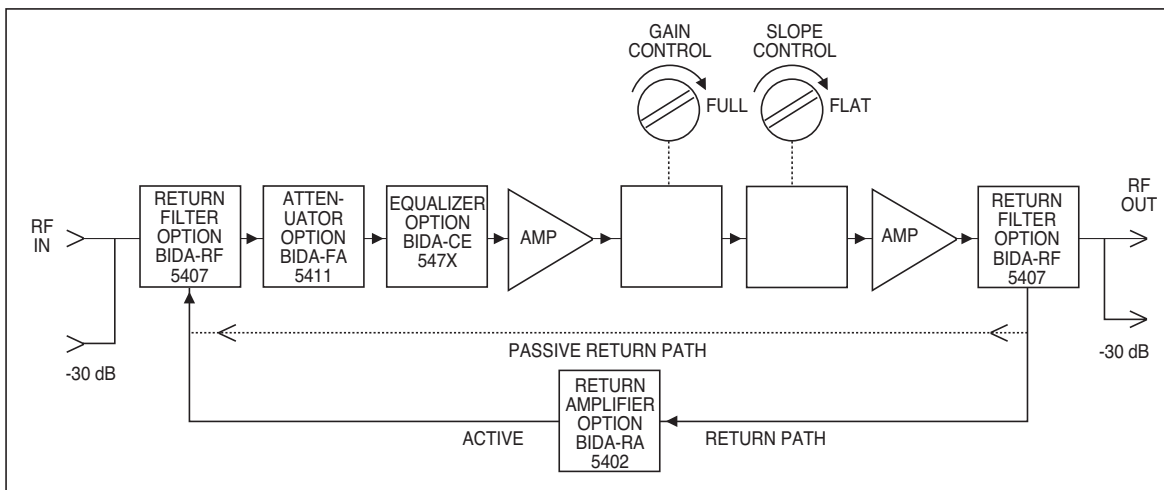
NOTE TO CATV SYSTEM INSTALLER

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.

For all pluggable equipment the socket-outlet shall be installed near the equipment and shall be easily accessible.

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.



Block Diagram

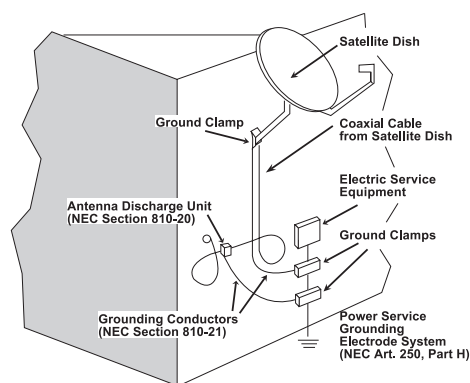
Safety Instructions

WARNING!



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 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 other equipment. 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 an 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.

Model: Stock No.	BIDA	550-30 ² 5400-53		550-50 ² 5400-55		750-30 ² 5400-73		Return Path ³	
		47-550		47-750		5-30		Passive	Active ⁵
Frequency Range (MHz)		33	49					5-30	5-30
Gain (dB)								-1.0	24
Flatness (dB) ⁴		±0.75						±0.5	±0.5
Gain Control Range (dB)		15						-	≥12
Slope Control Range (dB)		10						-	≥12
Input Return Loss (dB)		14						16	16
Output Return Loss (dB)		14						16	16
Noise Figure (dB)		7.0						-	6.0
No. of Channels (for CTB & XMD)		77						-	-
Output Level (dBmV)		+44						-	+42
Composite Triple Beat (dB) [CTB]		-58						-	-60 ⁶
Crossmodulation (dB) [XMOD]		-61						-	-60 ⁷
2nd Order Intermodulation (dB)		-70						-	-72 ⁸
Hum Modulation (dB)								-	-65
Input/Output Test Point Level (dB)									-
Input/Output Test Point Return Level (dB)									-
Fuse									N/A
Operating Temperature Range									-
Power Requirements									+24 VDC @ 60 mA
Size (L x W x H)									4-34" x 1-3/8" x 2-1/4"
Shipping Weight									3 oz
Plug-In Accessories									
1) Flat Attenuator (1 thru 20 dB)									
2) Cable Equalizer (3,6,9,12,15 or 18 dB)									
3) Return Filters (5-30 MHz)									
4) Return Amplifier (5-30 MHz)									

Notes:

1. Specification chart represents overall performance between the BIDA amplifier's input and output connectors with various optional field installed modules.
2. One-way configuration represents basic amplifier as sold with factory 0 dB Flat Attenuator and 0 dB Cable Equalizer.
3. Two-way configuration represents basic amplifier with field installed sub-channel passive or active (BIDA-RA, Stock No. 5402) return modules.
4. Measured at full gain with 0 dB slope.
5. Return amplifier distortion specifications are measured with $V_o = 42$ dBmV flat with three channel loading.

6. Single-Triple Beat.
7. $V_o = +48$ dBmV: Ch. 2 + Ch. 13
8. $V_o = +48$ dBmV: Ch. T-7 + T-8

(*) Specify dB

Note: Field service information is provided only for qualified commercial equipment installation personnel.
There are no user serviceable parts in the BIDA.

INFORMATION BELOW IS FOR QUALIFIED INSTALLATION PERSONNEL ONLY

THE BIDA AMPLIFIER CAN EASILY BE MOUNTED TO ANY FLAT SURFACE. FOUR PRE-DRILLED MOUNTING HOLES ARE PROVIDED. USE #10 SCREWS (NOT SUPPLIED).

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.

BIDA-RF Return Filter Set

Stock No. 54071

Plug-in return filter adds passive reverse path to BIDA series amplifiers. Each BIDA-RF Plug-in contains a high pass (47-750 MHz) and a low pass (5-30 MHz) filter element with a common (5-750 MHz) connecting point. A sheet metal cover is mounted over the circuitry to improve stability and prevent accidental detuning during shipping, handling, and installation. The filters separate sub-band (return) signals from VHF (forward) signals for processing within the amplifier. Two identical BIDA-RF units in the set make an amplifier bi-directional. A passive-return jumper wire is supplied to complete the sub-band path. The jumper wire is to be inserted between J 12 and J 16. (See location diagram). Before inserting filters, remove the two factory installed VHF (forward) bypass jumpers, W2 (between J1 & J2) and W5 (between J9 & J10) and remove any residual RTV sealant, used to hold jumpers in place, which remains on the board surface.

BIDA-RA Return Amplifier

Stock No. 5402

Plug-in return amplifier adds reverse path gain to BIDA series amplifiers. The BIDA-RA is a sub-band (5-30 MHz) amplifier with 24 dB gain. It contains a 12 dB variable slope control and a 12 dB variable gain control. A BIDA-RF return filter set (54071) is required to complete the system. The passive return jumper is discarded.

BIDA-FA-(*) Flat Attenuator

Stock No. 5411

Plug-in flat attenuator pad for reducing forward gain in BIDA series amplifiers. The BIDA-FA is available in fixed values of 1 thru 20 dB in increments of 1 dB. Before inserting, remove the factory installed "0 dB" jumper wire W3 (between J3 & J5) and remove any residual RTV sealant, used to hold jumpers in place, which remains on the board surface.

* Specify dB value.

BIDA-CE Cable Equalizer

Stock No. 5475 (for BIDA 550 MHz) = BIDA CE-5-(*)
Stock No. 5477 (for BIDA 750 MHz) = BIDA CE-7-(*)

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 or 18 dB. Before inserting, remove the factory installed "0dB" jumper wire W4 (between J6 & J8) and remove any residual RTV sealant, used to hold jumpers in place, which remains on the board surface.

* 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.

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 below may also be copied and used for that purpose.

Accessory Identification

Accessories Installed	
Flat Attenuator	_____dB
Cable Equalizer	_____dB
Return Filter	_____
Return Amplifier	_____

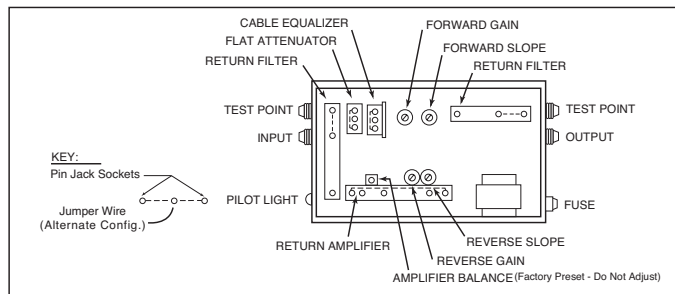


Figure 2. Module and Control Location Diagram (Top View)

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 receiver/distribution amplifiers (including TRAILBLAZER™, RETRO-LINX™ and TWIN STAR™ products) as well as for 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 such products. 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 Refurbished/Closeout Product.

(b) 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 item ("Refurbished/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 Refurbished/Closeout Products. In such cases, BT's warranty for Refurbished/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 Refurbished/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/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 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.

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