



## INSTRUCTION MANUAL



# BIDA Series

## Broadband Indoor Distribution Amplifiers - Active Return Path

Model	Stock No.	Model	Stock No.	Model	Stock No.
BIDA 55A-30P	5800P53	BIDA 55A-30	5800-53	BIDA 55A-43	5800-54
BIDA 55A-43P	5800P54	BIDA 75A-30	5800-73	BIDA 55A-50	5800-55
BIDA 75A-30P	5800P73	BIDA 86A-30	5800-83	BIDA 75A-43	5800-74
BIDA 75A-43P	5800P74	BIDA 86A-43	5800-84	BIDA 100A-30	5800-13
BIDA 86A-30P	5800P83	BIDA 86A-43P	5800P84		

### Description

The Blonder Tongue BIDA-ARP 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. Fourteen models are available; #5800-13 with a 49 to 1000 MHz bandpass, #5800-84, -83, P83 and P84 with a 49 to 860 MHz bandpass, #5800-73, -74, P73, and P74 with a 49 to 750 MHz bandpass and #5800-53, -54, -55, P53, and P54 with a 49 to 550 MHz bandpass. The basic amplifier is configured for two-way operation with a passive sub-channel return path for 5 to 36 MHz bandpass.

The #5800-55 has a gain of 48 dB minimum. The #5800-54, -74, 84, P54, P74, and P84 have a flat operating gain of 43 dB minimum. The #5800-53, -73, -83, -13, P53, P73 and P83 have a gain of 30 dB minimum. (See Specifications for typical values of each model.) All models have a return gain of about 20 dB when in the active mode. Lower operating gains can be achieved by adjusting the variable attenuator. 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 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-ARP can be reconfigured by using plug-in fixed attenuators (forward and return) and cable slope equalizers (forward) to meet particular requirements.

Push-pull, hybrid IC modules enable the BIDA-ARP 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

- Provides Two-Way Capability with an Active or Passive Return Path Set by Field-Changeable Jumpers.
- Hybrid IC Circuitry for High Output with Low Distortion.
- Front Panel Gain and Slope Controls for Easy Adjustments.
- Sockets for Hybrid IC to Make a Hybrid IC Change in the Field.
- Forward Path Input-Side Plug-In Fixed Attenuator and Cable Equalizer for Optimum Performance.
- Return Path Output-Side Fixed Attenuator for Optimum Performance.
- Externally Accessible Test Points Permit In-Service Testing.
- Exceeds FCC Specs for Both Conducted and Radiated Interference at Full Output Level.
- External "UL Listed" Power Transformer.

## 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

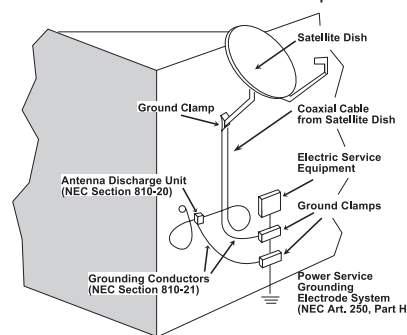


**YOU SHOULD ALWAYS FOLLOW THESE INSTRUCTIONS TO HELP ENSURE  
AGAINST INJURY TO YOURSELF AND DAMAGE TO YOUR EQUIPMENT.**

- Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature.
- Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).
- 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.

## Safety Instructions - continued

- 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.
- 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:



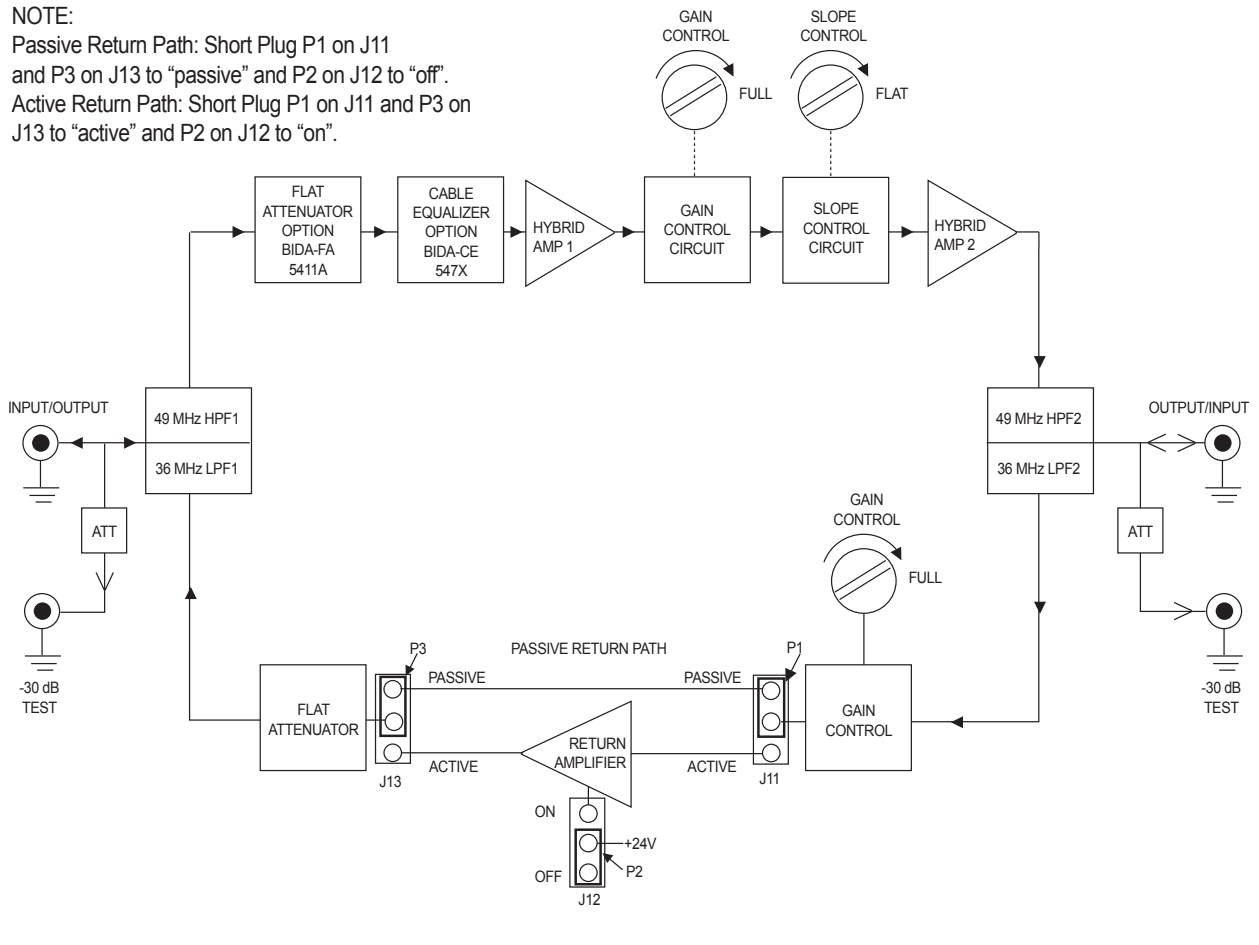
- We strongly recommend using an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the unit is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between the unit and the 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.

**NOTE:**

Passive Return Path: Short Plug P1 on J11 and P3 on J13 to "passive" and P2 on J12 to "off".  
 Active Return Path: Short Plug P1 on J11 and P3 on J13 to "active" and P2 on J12 to "on".



**Figure 1**

# SPECIFICATIONS

Model: BIDA-ARP Stock No:	55A-30 5800-53	55A-43 5800-54	55A-50 5800-55	55A-30P 5800P53	55A-43P 5800P54	75A-30 5800-73	75A-43 5800-74	75A-30P 5800P73	75A-43P 5800P74	86A-30 5800-83	86A-30P 5800P83	86A-43 5800-84	86A-43P 5800P84	100A-30 5800-13	Integrated Active Return Path
Frequency Range dB	32	44	50	32	44	32	44	32	44	49-860	49-860	49-860	49-860	49-1000	5-36
Gain(dB)	±0.50			±0.50			±0.70			±0.75			±0.75		
Flatness(dB)	±0.75			±0.50			±0.70			±0.75			±0.75		
GainControl Range (dB)	10			10			10			10			10		
Slope Control Range (dB)	8			8			8			8			8		
Input Return Loss (dB)	16			16			16			16			16		
Output Return Loss (dB)	16			16			16			16			16		
Noise Figure (dB)	7.0			7.0			8.5			8.5			8.5		
No. of Channels (for CSO,CTB,&XMD)	77			77			110			129			129		
Output Level (dBmV)	36/44			36/44			36/44			36/44			36/44		
Composite Triple Beat (dB)(CTB)	-64	-63	-63	-71	-68	-60	-56	-64	-64	-54	-62	-56	-60	-59	-60
Crossmodulation (dB)(XMOD)	-67	-66	-60	-74	-69	-62	-60	-68	-68	-54	-62	-60	-65	-60	-60
2nd Order Composite(dB)(CSO)	-61	-60	-65	-65	-58	-56	-59	-61	-61	-57	-61	-59	-59	-59	-60
Impedance(ohms)	75														
Hum Modulation (dB)	-70														
Input/Output Test Port Level(dB)	-30, ±2														
Input/Output Test Port Return Loss (dB)	20														
Operating Temperature Range	-20 ° to +60 °C														
Power Requirements	Wall Power Transformer 105-130 VAC, 60 Hz 0.38 AMP MAX														
Size(LxWxH)	10-1/2" x 7-1/4" x 3-1/4" (26.4 cm x 18.42 cm x 8.26 cm)														
Shipping Weight	6 lbs. (2.7 kg)														
Plug-In Accessories															
1) Flat Attenuator (1-20 dB in 1 dB Steps)	#5411A-(* )														
2) Cable Equalizer (3,6,9,12,15,18 dB)	#5475-(* )			#5477-(* )			#5478-(* )			#5479-(* )					

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

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

**BIDA-CE Cable Equalizer**

Stock No. 5475 (for BIDA 550 MHz) = BIDA CE-5-(\*)

Stock No. 5477 (for BIDA 750 MHz) = BIDA CE-7-(\*)

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.

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

**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.

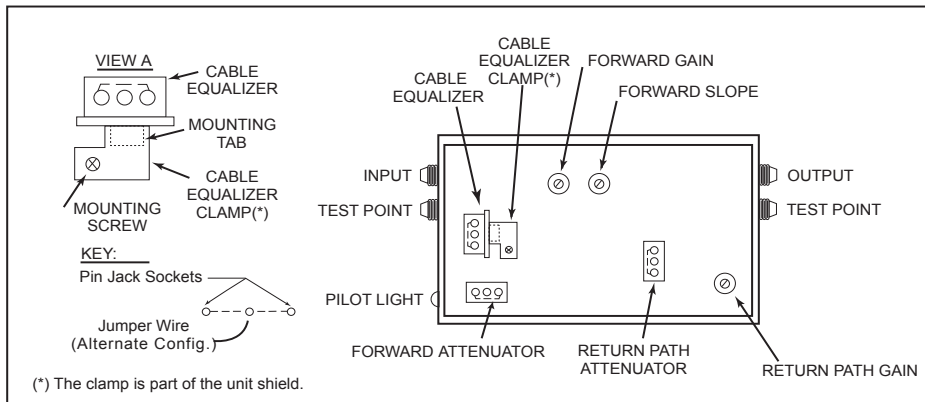
Note: The unit is shipped with 18 gauge jumpers which are not re-installable. Do not remove jumpers except when installing optional equipment modules.

**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.

**Accessories Installed**

Forward Attenuator	_____dB
Forward Equalizer	_____dB
Return Path Attenuator	_____dB



**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.

**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.**

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 BT, the customer shall ship such allegedly non-conforming or defective goods, freight prepaid to BT for examination by BT's inspection department and verification of the defect. BT, at its option, will either repair, replace or issue a credit for products determined to be defective. BT'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 BT 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 BT. Under no circumstances are products to be returned to BT without BT's prior written authorization. BT reserves the right to scrap any unauthorized returns on a no-credit basis. Any actions for breach of a contract of sale between BT and a customer must be commenced by the customer within thirteen (13) months after the cause of action has accrued. A copy of BT's standard terms and conditions of sale, including the limited warranty, is available from BT upon request. Copies of the limited warranties covering third-party proprietary sub-assembly modules and private-label products manufactured by third-parties are also available from BT on request. DigiCipher ® is a registered trademark of Motorola Corp. (Rev 0509)



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