ARRIS

BDA
Broadband Telecommunications Drop Amplifier

Installation Instructions

485855-001 Revision B

BDA Installation Instructions

Document Number: 485855-001 Revision B

Trademarks

Revision History

Revision	Date	Reason for Change
A	09/2003	Initial release.
B	5/2014	Rebranded. Added Cautionary Note to beginning of Installation section. Updated template styles (fonts, color scheme, etc.) to conform with new corporate style guidelines.

The Broadband Telecommunications Drop Amplifier (BDA) is a two-way, 1 GHz amplifier designed for customer premise amplification to compensate for long drops and excessive splitting losses.

Single output (BDA-*1), two output (BDA-*2), and four output (BDA-*4) versions enable internal or external splitting.

Additional features include:

- Gallium Arsenide technology for improved distortion and noise performance
- Built-in diplex filters for two way operation
- Local or remote powering by a UL approved, current limited, 120 volt or 220 volt, ac to dc power supply
- Gain is consistent with typical house drop requirements
- A weather seal and protective coating for indoor or outdoor applications
- –6 kV surge resistance

Figure 1 illustrates the BDA-S1 drop amplifier.

Figure 1

BDA-S1 drop amplifier

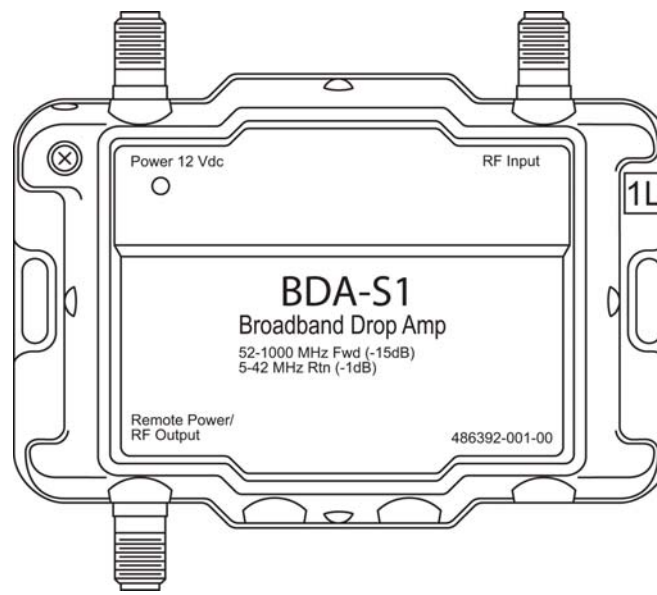
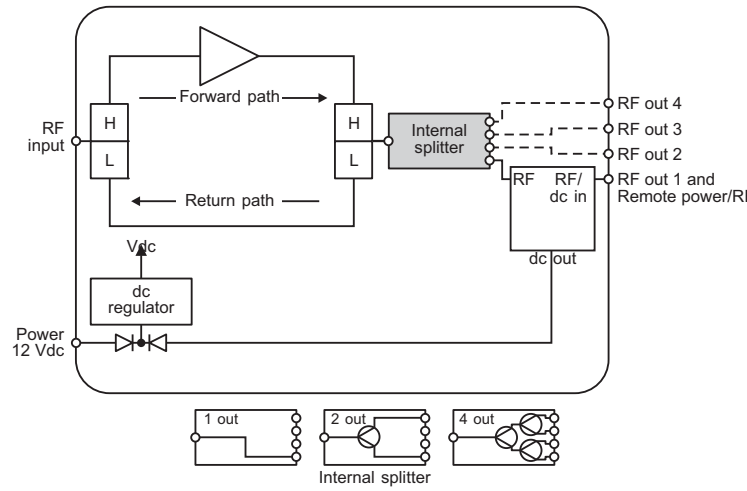


Figure 2 illustrates a functional block diagram of the BDA-** drop amplifier.

Figure 2

Block diagram



Document Conventions

Before you begin using the BDA-**, familiarize yourself with the stylistic conventions used in these installation instructions:

SMALL CAPS	Denotes silk screening on the equipment, typically representing input/output (I/O) and power supply connections
* (asterisk)	Indicates that more than one version of the same model number exists and the information applies to all models; when the information applies to a specific model, the complete model number is given

Before You Begin

Unpack the unit carefully and verify that you have received:

BDA-**	1 GHz drop amplifier
BDPS*	Power supply. Included with models BDA-**/PS
Optional Accessory: BDP 100/PI	1 GHz indoor power inserter for remote powering of the amplifier

CAUTION *ARRIS amplifiers are designed for an operating environment of -40°C to +60°C. The Mil Spec Hdbk 217 states that a 9°C increase in device operating environments will reduce the product's reliability (and projected lifetime) by 50%. Therefore, you should take proper care to maximize airflow around the BDA100 and to minimize ambient temperatures, especially if you will be installing the BDA100 in an enclosed environment (e.g. pedestal, cabinet, etc.).*

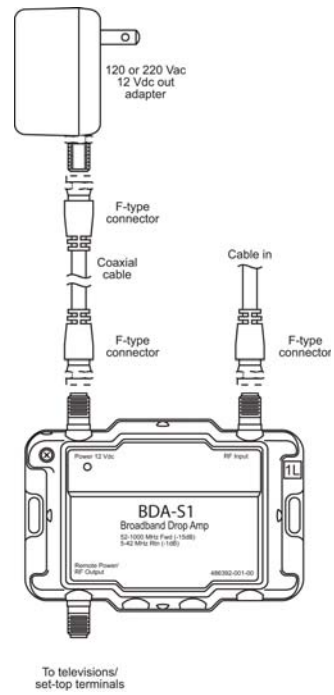
To install a BDA-** drop amplifier using local power:

1. Remove and discard the port thread protectors.
2. Connect the amplifier RF output ports (RF OUTPUT 1, 2, 3, 4) to your television or set-top terminals using coaxial cable terminated with F-type connectors.
3. Terminate all unused ports with 75 ohms for optimum RF performance.
4. Connect the coaxial cable in source to the RF INPUT port of the amplifier.
5. Connect one end of the coaxial cable to the ac adapter and the other end to the POWER 12 VDC connector on the amplifier.
6. Plug the ac adapter into the wall outlet. The LED on the BDA should be lit to indicate that the unit is receiving 12 Vdc.

Figure 3 illustrates a local power installation.

Figure 3

Local power installation



You can locate the BDA-** remotely in the basement or attic and power it from an ac outlet near the television. For best signal quality, install the BDA-** as close to the cable entrance as possible. Use the power inserter to send power to the amplifier through the coaxial cable attached to REMOTE POWER/RF port 1 on the amplifier.

To install a BDA-** drop amplifier using remote power:

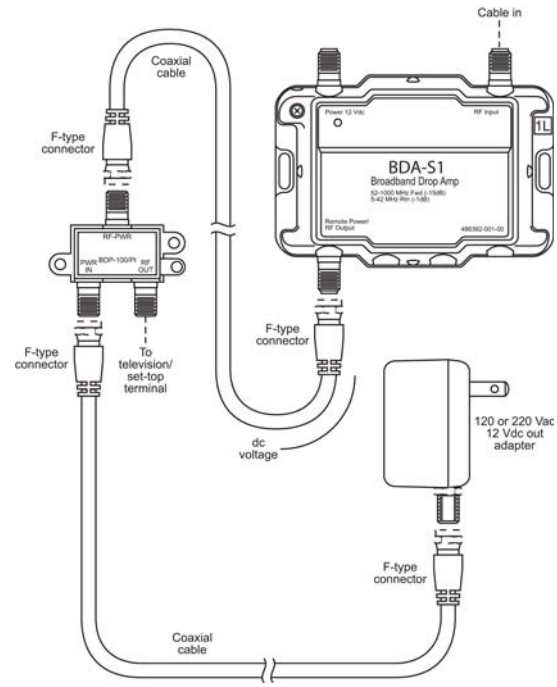
1. Connect a coaxial cable from the REMOTE POWER/RF OUTPUT port of the amplifier to the RF PWR port of the BDP 100/PI power inserter.
2. Connect the RF OUT port of the power inserter to your television or set-top terminal using a coaxial cable.
3. If you have a two or four output amplifier, connect the additional televisions or set-top terminals to the remaining output ports on the amplifier using coaxial cable.
4. Terminate all unused ports with 75 ohms for optimum RF performance.
5. Connect the coaxial cable in source to the RF INPUT port of the amplifier.
6. Connect a coaxial cable from the ac adapter to the PWR IN port of the power inserter.
7. Plug the ac adapter into the wall outlet.

The POWER 12 VDC port on the amplifier remains non-terminated.

Figure 4 illustrates a remote power installation.

Figure 4

Remote power installation



Specifications

The following specifications apply to the BDA-S* drop amplifier:

Table 1 BDA-S* specifications

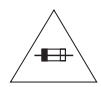
Forward Path	Value
Passband (MHz)	52 through 1000
Gain (dB)	
BDA-S1	14.0 minimum, 15.0 nominal
BDA-S2	10.2 minimum, 11.0 nominal
BDA-S4	6.4 minimum, 7.0 nominal
Input return loss (dB)	18.0 minimum, 23.0 nominal
Output return loss (dB)	18.0 minimum, 23.0 nominal
Flatness (dB)	±0.8 maximum
Noise figure (dB)	2.5 dB nominal, 3.0 maximum

Table 1 BDA-S* specifications (cont'd)

Return Path	Value
Passband (MHz)	5 through 42
Insertion loss (dB)	
BDA-S1	–1.6 maximum, –1.0 nominal
BDA-S2	–4.8 maximum, –4.4 nominal
BDA-S4	–8.5 maximum, –8.0 nominal
Input return loss (dB)	18.0 minimum, 25.0 nominal
Output return loss (dB)	18.0 minimum, 25.0 nominal
General	
ac power supply input voltage	120 or 220 VAC nominal (depending on model)
dc amplifier input voltage	12 Vdc nominal
Power consumption	3 watts
Operating temperature	–40°F through +140°F (–40°C through +60°C)
Housing dimensions	4.0 × 4.9 × 1.1 inches (102 × 124 × 28 mm)
Weight	1.1 lb. (0.5 kg.)

CAUTION *These servicing instructions are for use by qualified personnel only. To reduce the risk of electrical shock, do not perform any servicing other than that contained in the Installation and Troubleshooting Instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.*

Special Symbols That Might Appear on the Equipment

	This symbol indicates that dangerous voltage levels are present within the equipment. These voltages are not insulated and may be of sufficient strength to cause serious bodily injury when touched. The symbol may also appear on schematics.
	The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important installation, servicing, and operating instructions in the documents accompanying the equipment.
	For continued protection against fire, replace all fuses only with fuses having the same electrical ratings marked at the location of the fuse.

CAUTION *This equipment operates over the marked Voltage and Frequency range without requiring manual setting of any selector switches.*

FCC Compliance

This device complies with Part 15 of the FCC rules, Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a B 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 residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Compliance

This Class B digital apparatus complies with Canadian IECS-003.

Cet appareil numérique de la classe B est conforme å la norme NMB-003 du Canada.

FCC Declaration of Conformity

According to 47 CFR, Parts 2 and 15 for Class B Personal Computers and Peripherals; and/or CPU Boards and Power Supplies used with Class B Personal Computers, ARRIS Enterprises, 3871 Lakefield Drive, Suwanee, GA 30024, U.S.A. declares under sole responsibility that the product identifies with 47 CFR Part 2 and 15 of the FCC Rules as a Class B digital device. Each product marketed is identical to the representative unit tested and founded to be compliant with the standards. Records maintained continue to reflect the equipment being produced can be expected to be within the variation accepted, due to quantity production and testing on a statistical basis as required by 47 CFR 2.909. Operation is subject to the following

condition: This device must accept any interference received, including interference that may cause undesired operation. The above named party is responsible for ensuring that the equipment complies with the standards of 47 CFR, Paragraphs 15.107 to 15.109

CE Compliance

We ARRIS Enterprises, Inc.

3871 Lakefield Drive

Suwanee, GA 30024, U.S.A.

declare under our sole responsibility that the

Broadband Drop Amp Model BDA-***

to which this declaration relates is in conformity with one or more of the following standards:

EMC Standards

EN55013	EN55020	EN50083	CISPR-13 CISPR-20

Safety Standards

EN60950-1	IEC60950-1

following the provisions of the Directive(s) of the Council of the European Union:

EMC Directive 2004/108/EC	Low Voltage Directive 2006/95/EC	WEEE Directive 2012/19/EC	RoHS Directive 2011/65/EU

To contact Technical Support

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For additional technical support contact information, visit http://www.arris.com/about_us/contact_us/tech_support/index.asp.

About this document

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