

# LINKTROPY<sup>®</sup> 4500

## HARDWARE GUIDE



Linktropy® 4500 Hardware Guide

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# 1 | OVERVIEW

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This *Linktropy 4500 Hardware Guide* describes the physical hardware of the Linktropy 4500 WAN Emulator. The companion *User's Guide* describes the installation, configuration, and operation of the Linktropy WAN emulation functionality. A separate *Quick Start Guide* provides a walk-through for first time configuration.



The Linktropy 4500 contains no user serviceable parts. Opening the chassis voids the warranty. If you believe your unit is not functioning properly, see Section 6 for information on obtaining support.

This guide is for the Linktropy 4500 hardware revision –N2.

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## 2 | INCLUDED ITEMS

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The Linktropy 4500 shipping carton contains the following items:

- ▶ Linktropy 4500 hardware unit
- ▶ Rack mount brackets (2) and screws (8)
- ▶ Documentation CD
- ▶ Linktropy Quick Start Guide
- ▶ AC power cord (U.S.)
- ▶ RJ-45 to DB-9 serial cable

## 3 | FRONT AND REAR PANELS

### Front Panel



The front panel of the Linktropy 4500 contains:

**Power LED:** Lit green when the unit is powered on. Unlit when power is off

**CONSOLE:** Console interface using RS-232 with an RJ-45 connector. See Section 5 for a pin-out of the console interface.

**MGMT:** 10/100/1000baseT Gigabit Ethernet interface with a standard RJ-45 connector for browser-based management of the unit over the network.

**AUX:** 10/100/1000baseT Gigabit Ethernet interface with a standard RJ-45 connector for auxiliary functionality.

**LAN A:** 10/100/1000baseT Gigabit Ethernet interface with a standard RJ-45 connector. Connects to the network segment functioning as LAN A in network emulations.

**LAN B:** 10/100/1000baseT Gigabit Ethernet interface with a standard RJ-45 connector. Connects to the network segment functioning as LAN B in network emulations.

Emulation interfaces support jumbo frames up to 9 KB.

## Rear Panel



The rear panel of the Linktropy 4500 contains:

**Power input:** Standard IEC C14 socket for power input. U.S. and Canadian customers should use the supplied power cord to connect the Linktropy 4500 to a power outlet. International customers may need to substitute a local power cord with a standard IEC C13 plug. The Linktropy 4500 handles AC power input from 90 to 264V.

**Power switch:** The power switch is marked with 0 for OFF and 1 for the ON position.

**Fan outlet:** Hot air is vented through the fan outlet.



Please ensure the space around the fan outlet on the back panel and the air intakes on the side panels remains unblocked to provide adequate airflow and prevent overheating..

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## 4 | CAPACITY LIMITATIONS

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The Linktropy 4500 can forward up to 155 Mbps of packets in each direction, 310 Mbps aggregate, at a maximum aggregate rate of 250,000 packets per second. These limits apply regardless of whether emulation is enabled or disabled. These limits are reduced if the unit is in routing mode, or if learning bridge functionality is enabled.

The maximum emulation bandwidth may be limited below the hardware capacity of 155 Mbps in each direction by the device's license key. See the *Linktropy User's Guide* for more details on the license key.

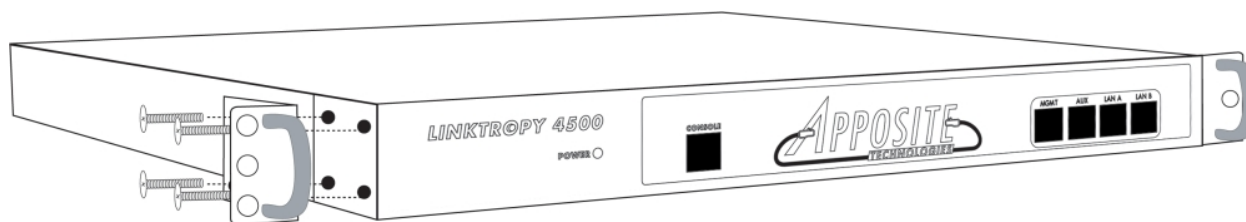


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## 5 | RACK MOUNTING

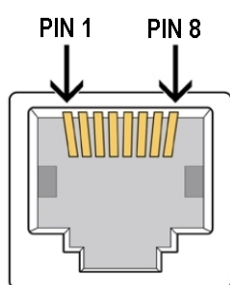
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The Linktropy 4500 comes with a pair of brackets for mounting the device into a standard 19" rack. Attach the brackets to both sides of the unit using four of the supplied screws with each bracket as shown in the diagram below.



## 6 | CONSOLE INTERFACE

Console access to the Linktropy 4500 is through the RJ-45 interface on the front panel labeled “CONSOLE.” An RJ-45 to DB-9 cable is included with the unit to connect the device to a standard PC serial port. The pin-out for the RJ-45 interface is shown below:



Pin	Definition	Pin	Definition
1	CTS/RTS	2	DTR
3	TxD	4	GND
5	GND	6	RxD
7	DSR	8	CTS/RTS

To connect to the console, use a terminal or a computer running terminal emulator software such as HyperTerminal or PuTTY, and set the following parameters:

- 9600 baud
- 8 data bits
- No parity
- 1 stop bit
- Disable flow control

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## 7 | APPOSITE SUPPORT

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The Linktropy 4500 comes with a one year hardware warranty and one year of support and maintenance. Extended maintenance packages are available from Apposite or your local Linktropy reseller.

If you believe your unit is not functioning properly and is under warranty, please upgrade to the latest firmware release. If the problem persists, please contact Apposite Support at:

support@apposite-tech.com  
1.310.477.9955 ext. 2

When contacting Apposite Support, please include the following information:

- ▶ Linktropy model
- ▶ Serial number
- ▶ Your e-mail address and phone number
- ▶ Installed firmware version
- ▶ A detailed description of the problem



Do not attempt to fix any hardware problem yourself. The Linktropy 4500 contains no user serviceable parts. Opening the chassis voids the warranty.

# APPENDIX A

## Specifications

Capacity			
Max. Emulation Rate		Up to 155 Mbps full duplex	
Max. Packet Rate		250,000 packets per second	
Interfaces			
Network		2 x 10/100/1000baseT Copper Gigabit Ethernet	
Management		1 x 10/100/1000baseT Copper Gigabit Ethernet	
Console		1 x RS-232	
Environmental and Physical			
AC Input Voltage		Auto ranging 90 VAC to 264 VAC	
AC Input Frequency		47 to 63 Hz	
AC Input Current		4.0 A Max. 0.4 A Typical	
Power Draw		200 Watts Max. 55 Watts Typical	
Dimensions		16.75" W x 14.4" D x 1.75" H (1 RU) 42.5 cm W x 36.5 cm D x 4.35 cm H (1 RU)	
Weight	Product	12 lbs. (5 kg)	
	Shipping	17 lbs. (8 kg)	
Temperature	Operating	32° to 104°F	(0° to 40°C)
	Storage	-4° to 176°F	(-20° to 80°C)
Humidity	Operating	10% to 90% (non-condensing)	
	Storage	10% to 90% (non-condensing)	
Certifications		FCC, CE Mark	
Warranty and Support			
Hardware warranty		1 year	
Support and Maintenance		1 year, including all firmware upgrade	

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# APPENDIX B

## *Regulatory*

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### Federal Communications Commission Notice

This equipment has been tested and verified to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial 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. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be required to take whatever measures may be required to correct the interference at their own expense.

### Canadian Notice / Avis Canadien

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

### CE Certification

The product described in this manual complies with all applicable European Union (CE) directives, including EU Directive 2002/95/EC Restriction of Hazardous Substances (RoHS).

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# APPENDIX C

## *Linktropy End User License Agreement*

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The Apposite Technologies, Inc. (“Apposite”) Linktropy product includes the Linktropy hardware (“Hardware”), software embedded in the Hardware (“Software”), including any upgrades, modified versions, updates, additions and copies of the Software, and related explanatory materials (“Documentation”). Collectively, the Hardware, Software, and Documentation are the “Product.”

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Apposite warrants that for a period of one (1) year from the date of shipment of the Hardware to you (“Warranty Period”), the Hardware will be free of any defects in materials and workmanship under normal use and the Software will perform substantially in accordance with the Documentation. This limited warranty extends only to the original user of

the Product. This limited warranty is void if failure of the Hardware or Software to conform to the warranty has resulted from improper installation, testing, misuse, neglect, accident, fire or other hazard, or any breach of this Agreement.

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