Link-iT™ System

USER'S MANUAL

Revision A
12/10/2003
Part Number 01090-00059

For Orders and Support:
1-800-866-3716

HEI INC
www.heii.com

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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1 OVERVIEW

This User's Manual provides guidance on use and routine maintenance of the *Link-iT*™ System. End-Users should read and understand this manual completely before using any components of the *Link-iT*™ System. This manual does not cover configuration, installation of software, repair, or use of the *Link-iT*™ modules in a system application. For installation and compatibility issues, please contact your site administrator.

Audience: The primary audience for the *Link-iT*™ System User's Manual is the clinical care provider. A secondary audience includes technical service and management personnel.

2 SAFETY INSTRUCTIONS

2.1 SYMBOLS

 Caution, refer to the User's Manual

 Caution, Dangerous voltage

2.2 PRECAUTIONS

If any electrical component is suspect of or found to be defective or inoperable, discontinue use of the *Link-iT*™ System.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This

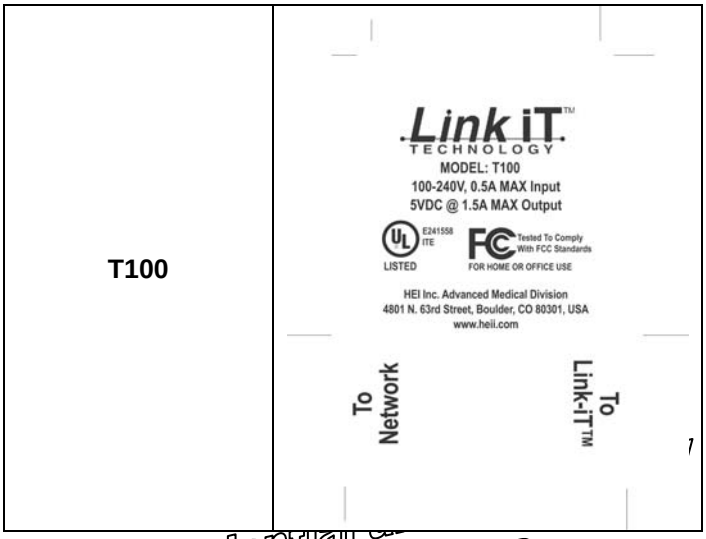
equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment 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 or more of the following measures:

- Reorient or relocate the *Link-iT*™ System components.
- Increase the separation between the equipment and *Link-iT*™ System components.
- Connect the equipment into an outlet on a circuit different from that to which the *Link-iT*™ System is connected.
- Consult the dealer or an experienced technician for help.

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

2.3 PRODUCT LABELING & IDENTIFICATION

Product Model	Device and Agency Labels
L100	
L100-W	
L100-W-B	



3 SYSTEM DESCRIPTION

The *Link-iT*™ System is a compact intelligent system intended to bring processing power and interface capability to a variety of needs in the medical device arena, particularly in the area of connecting medical devices and information systems. The system includes *Link-iT*™ modules and power supplies. The modules connect to standard interfaces, including RS-232, IrDA, USB, Ethernet (10BaseT and 100BaseT), and 802.11b (WiFi) wireless networking. The *Link-iT*™ power supply provides direct power and battery charging capability.

The following items are external components supported by the *Link-iT*™ System:

- Medical devices and their specific serial protocols
- Information systems and their specific interface requirements (e.g. XML or HL7)

Specific aspects of the interface are dictated by the external device and may require customization. Before connecting to any device, consult the operator/user's manual provided by the device manufacturer. Contact your site administrator with questions regarding your system environment.

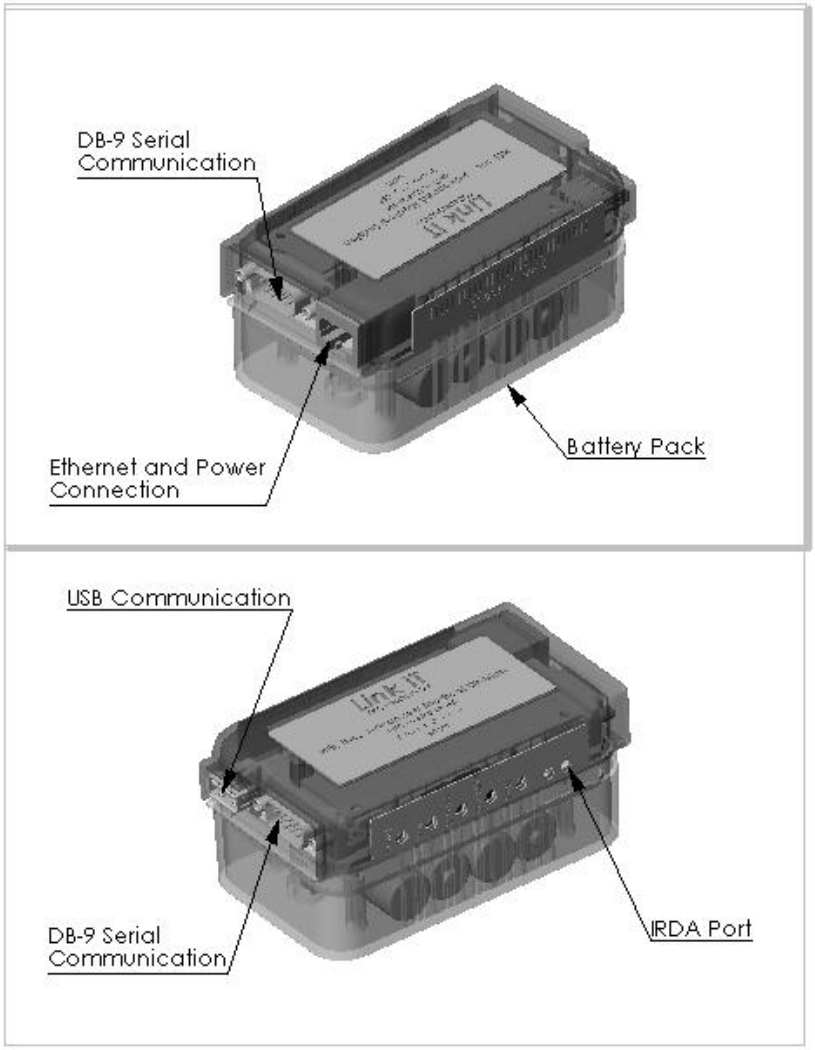
3.1 PRODUCT CONFIGURATIONS AND DESCRIPTIONS

Product Configuration	Description
L100	*Link-iT*™ module
T100	*Link-iT*™ power supply*
L100-T	*Link-iT*™ module and *Link-iT*™ power supply
L100-W-T	*Link-iT*™ module with WiFi and *Link-iT*™ power supply
L100-W-B-T	*Link-iT*™ module with WiFi, built-in battery pack and *Link-iT*™ power supply

*Includes 1 standard RJ-45 cable (6 ft)

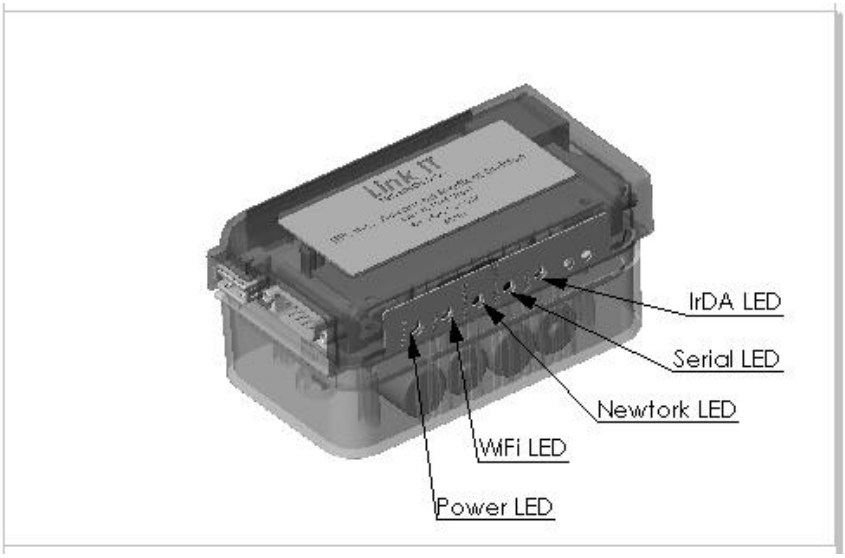
3.2 FEATURES OF THE LINK-IT MODULE

3.2.1 Communication Ports



Interfaces supported by the *Link-iT*™ module include two DB-9 connectors standard for serial interfaces, USB that conforms to the USB 2.0 specification, an IrDA port for infrared communication, and a RJ-45 connector standard for a wired network interface. The RJ-45 connector also supplies DC power to the *Link-iT*™ module. A single RJ-45 cable is supplied with the *Link-iT*™ power supply.

3.2.2 *Link-iT*™ Module LED Indicators



LEDs on the *Link-iT*™ module indicate function or activity for specific aspects of the system.

Power LED - illuminates when the *Link-iT*™ module has DC power supplied or flashes/blinks when the *Link-iT*™ module has battery power supplied.

WiFi LED – illuminates when the *Link-iT*™ module has active wireless communication.

Network LED – illuminates when the *Link-iT*™ module has active network communication.

Serial LED – illuminates when there is active serial communication or USB communication between the *Link-iT*™ module and an external device/component.

IrDA LED – illuminates when there is active infrared communication between the *Link-iT*™ module and an external system.

4 INSTALLATION

The *Link-iT*™ module is configurable with various interfaces based on the product model type.

NOTE: Interface connections should be made prior to powering on the *Link-iT*™ module.

4.1 CONNECTING WITH RS-232

To interface via RS-232, use a serial cable to connect either DB-9 Serial Communication port of the *Link-iT*™ module to the serial connector on the external device (e.g. medical instrumentation). When the *Link-iT*™ module is powered and has active serial communication, the Serial LED will illuminate. Custom cabling may be required for external device connectivity, consult your site administrator.

4.2 CONNECTING WITH USB

A USB port is available to support additional device interfaces or to support enhanced system capability. To interface via USB, connect the USB Communication port of the *Link-iT*™ module to

the external device (e.g. external hard drive, printer). When the *Link-iT*™ module is powered and has active USB communication, the Serial LED will illuminate.

4.3 CONNECTING WITH A WIRED NETWORK

A typical interface via Ethernet will use a standard RJ-45 cable to connect the Ethernet and Power Connection of the *Link-iT*™ module to the "To Link-iT™" port of the *Link-iT*™ power supply (T100). A second RJ-45 cable should connect the "To Network" port of the *Link-iT*™ power supply (T100) to the hospital network jack or hub. The Network LED on the *Link-iT*™ module will illuminate when powered and there is active network communication.

4.4 CONNECTING WITH A WIRELESS NETWORK

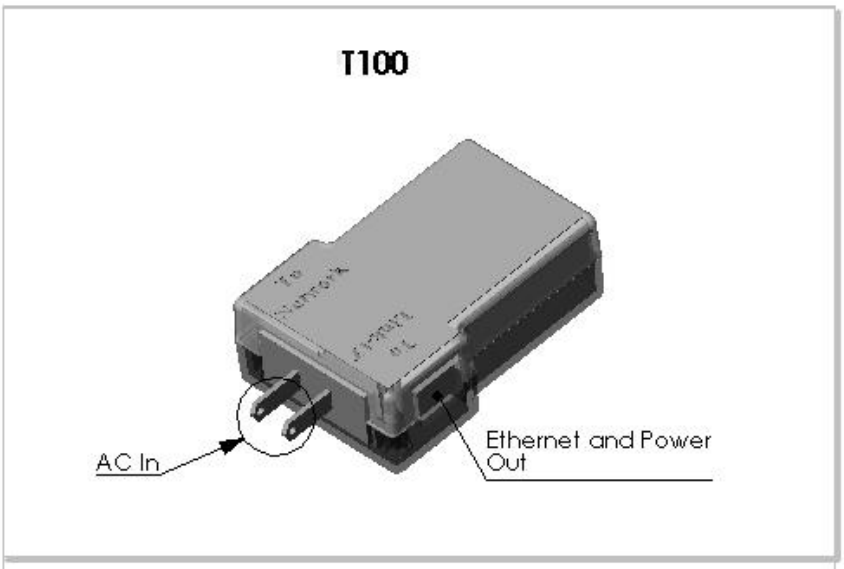
Wireless communication is available for *Link-iT*™ modules with "W" in the model number. When a *Link-iT*™ module configured for 802.11B connectivity has active wireless communication, the WiFi LED will illuminate.

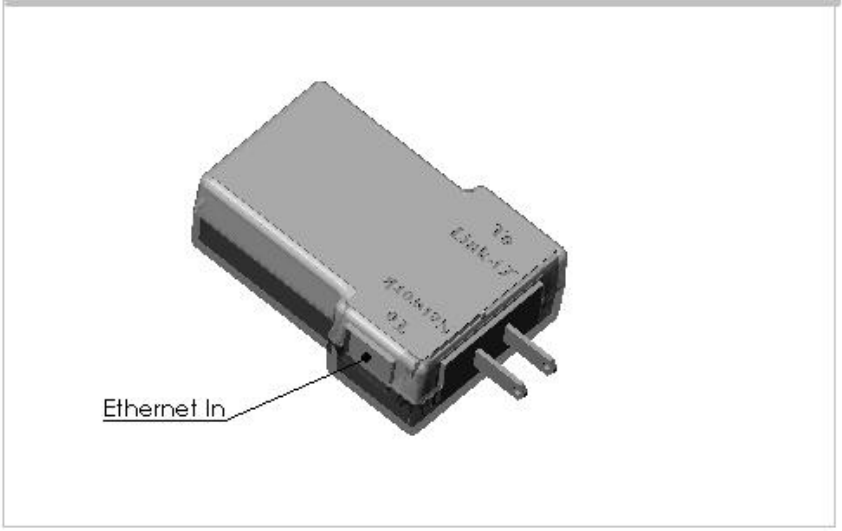
At this time, simultaneous operation of Ethernet and 802.11B on a single *Link-iT*™ module is not supported.

4.5 CONNECTING WITH IRDA

An IrDA (infrared) interface is provided with the *Link-iT*™ module for integration with a PDA or similar systems. The IrDA LED will illuminate when there is infrared communication between a *Link-iT*™ module and an external infrared system.

4.6 CONNECTING TO POWER





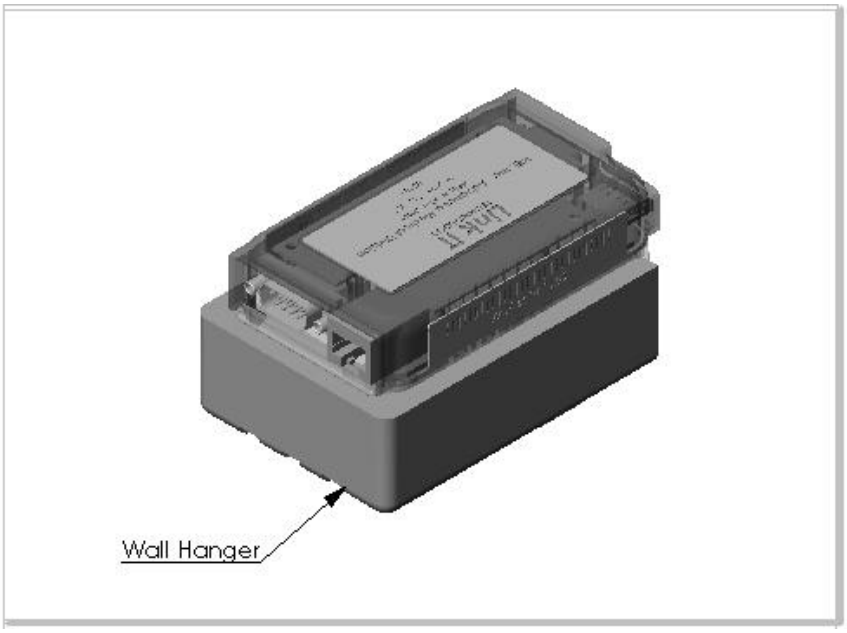
To power a *Link-iT*™ module and/or charge a battery pack:

1) Connect the Ethernet and Power Connection of the *Link-iT*™ module to the "To Link-iT™" port of the *Link-iT*™ power supply (T100) using a standard RJ-45 cable.
2) Plug the T100 directly into a power outlet.
3) Check to see that the Power LED on the *Link-iT*™ module illuminates indicating DC Power is applied.

If the *Link-iT*™ module has a battery pack that is charged, the main power supply may be disconnected and the *Link-iT*™ module used in an ambulatory function for up to 4 hours. The Power LED on the *Link-iT*™ module will flash as an indication of battery power.

The absence of an illuminated Power LED indicates there is no power to the *Link-iT*™ module.

4.7 USE OF LINK-IT MOUNTING BRACKET



The *Link-iT*™ module can be mounted to various surfaces using a *Link-iT*™ mounting bracket. Slide the *Link-iT*™ module onto the guides of the bracket.

Note: Brackets are available in various configurations for *Link-iT*™ modules, both with battery pack and without battery pack. Contact your site administrator before attaching mounting brackets to fixtures or equipment.

5 MAINTENANCE AND SUPPORT

5.1 INITIAL SYSTEM CONFIGURATION

The *Link-iT*™ System should be configured only by trained technical personnel. Contact your site administrator if this is necessary.

5.2 SOFTWARE UPDATES

Software for the *Link-iT*™ module should be updated only by trained technical personnel. Contact your site administrator if this is necessary.

5.3 CLEANING

CAUTION: Disconnect and unplug the *Link-iT*™ System components prior to cleaning.

CAUTION: Do not immerse the *Link-iT*™ System components in water or other fluids.

CAUTION: Do not use harsh chemicals or apply cleaning agents directly on the *Link-iT*™ System components.

The *Link-iT*™ System components should be cleaned by using a cloth dampened with rubbing alcohol or all purpose cleaner and wiping the exterior surfaces. Be careful not to saturate the *Link-iT*™ System components, as excessive liquid will damage the electronics.

5.4 TROUBLESHOOTING

Symptom	Problem	Action
No Power LED	No power to *Link-iT*™ module	Check RJ-45 cable connection. Check T100 is plugged in. Check for charged batteries. Contact site administrator.
No Serial LED	No serial communication No USB Communication	Check serial cable connection. Check USB connection. Contact site administrator.
No WiFi LED	No wireless communication	Check model of *Link-iT*™ module to verify wireless capability. Contact site administrator.
No Network LED	No Network communication	Check RJ-45 cable connections. Contact site administrator.
No IrDA LED	No infrared communication	Contact site administrator.

6 SPECIFICATIONS

Dimensions

Link-iT™ module without battery pack:

Width 60 mm (max)
Depth 105 mm (max)
Height 29 mm (max)

Link-iT™ module with battery pack:

Width 60 mm (max)
Depth 105 mm (max)
Height 47.5 mm (max)

Wall Transformer (Triple)

Width 60 mm (max)
Depth 105 mm (max)
Height 30 mm (max)

Operational

Temperature:	+0°C to +40°C
Humidity:	5% to 95% relative humidity non-condensing

Storage Conditions

Temperature:	-20°C to +45°C
Humidity:	5% to 95% relative humidity non-condensing

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