

# 51LPC Evaluation Kit

## LINK-51

The Philips LINK-51 evaluation kit comes with emWare's EMIT® 3.0 Evaluation networking software for the 51LPC family. emWare's Embedded Micro Internetworking Technology™ (EMIT) software is the only distributed device networking software based on standard Internet technologies that network 8- and 16-bit embedded devices over the Internet or any network. Applications of EMIT technology include utility metering, vending, healthcare, transportation, factory automation, security systems, environmental control, office equipment, and home automation. The LINK-51 provides a complete development environment for embedding network connectivity into electronic devices, which includes:

- 51LPC microcontroller
- EMIT 3.0 evaluation software
- 51LPC-based evaluation board
- Electronic documentation on disk

EMIT software allows access to the on-board 51LPC via your favorite web browser, as well as connections to several emMicro-enabled devices via a local RS232 network. By taking advantage of the special EMIT 3.0 upgrade offer included, you will be able to move to the EMIT SDK standard.

### Software Highlights

The LINK-51 provides a complete development environment for creating EMIT-enabled networked devices with the emMicro device object server, leveraging the emGateway for network communications, and developing a graphical user interface for managing and controlling the device.

- The EMIT embedded device object server, emMicro, is provided in both C and assembly source code versions for the 8051.
- emMicro requires as little as 1Kbyte of ROM on a device (8051 assembly version).
- EMIT's distributed device object server architecture shifts significant resource requirements from the device to emGateway while still providing a rich, graphical interpretation of device controls.
- The LINK-51 includes assembly sample applications integrated with emMicro.
- emGateway provides a link between lightweight device networks and user interfaces like a web browser, PDA or phone.
- The EMIT Access Library facilitates the development of client-side interfaces.
- The EMIT Access Library supports popular programming languages such as C, C++, Java™, ActiveX®, Visual Basic®, etc.
- emGateway runs on Windows®95/98, NT, or WinCE.
- emMicro's versatile communications protocol supports modem, RS232, RS485, IR and RF (sold separately).
- When upgraded to EMIT SDK 3.0 Standard, developers have remote connectivity.
- EMIT's predefined library of JavaBeans compliant emObjects (trial version) enables quick and easy development of robust graphical user interfaces via Visual Café.
- The EMIT SDK includes several powerful low-level debugging tools.
- EMIT software is scalable and modular, enabling developers to choose which components will reside on the device, the emGateway, and the client-side server.



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## LINK-51 Features

### Device Application Tools

- emMicro™ device object server
- Assembly source code - 8051
- "C" source code - 8051
- emPackage data table creation utility
- emMonitor and emUtilities device debugging tools
- emGateway™ device network connectivity software
  - Five device connections per emGateway host
  - 20 simultaneous client connections per emGateway host (local connection only)

### User Interface Tools

- emObjects™ JavaBeans™ compliant interface objects (trial version)
- EMIT Access Library client application toolkit
- "C" simulators of EMIT-enabled devices
- Web browser graphical user interface

### Third-Party Development Tools

- Symantec Visual Café™ 3.0 interface design program (30-day evaluation)
- 8051 Shareware Assembler

### Pre-Loaded Demo Applications

The applications pre-loaded on the 51LPC chip can be controlled in standalone mode or remote mode from a pre-built browser interface. The applications do the following:

- Control the brightness of 2 LEDs using a rotary pot (potentiometer)
- Switch between seven operating modes, including an HVAC demo, a sound demo, a watchdog demo and brownout demo
- Acquire data from the rotary
- Play back the data

### Electronic Documentation

The EMIT SDK documentation provides:

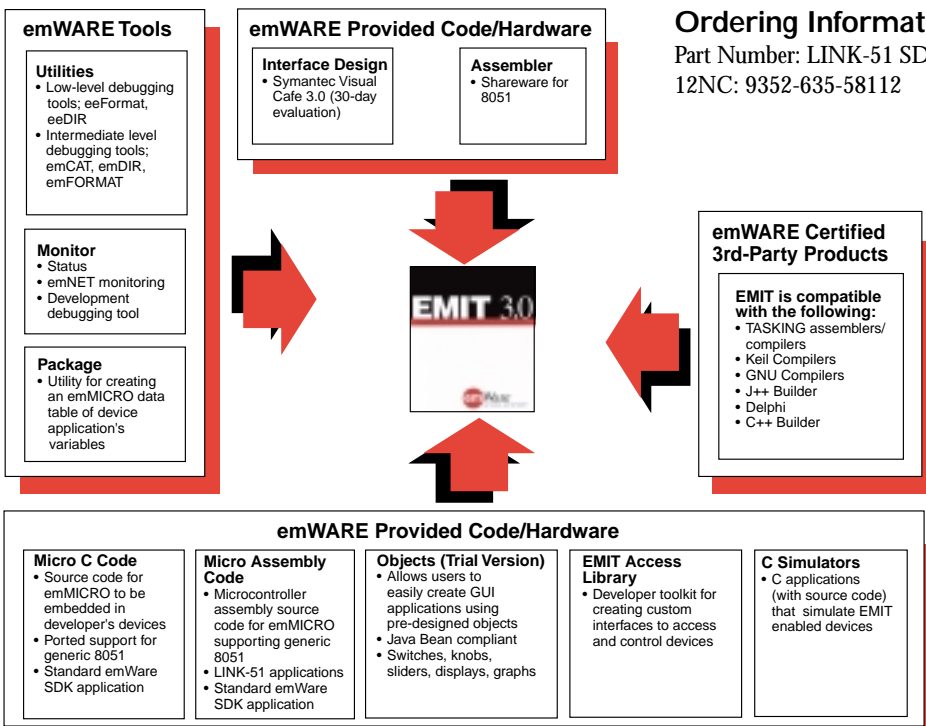
1. A complete description of the EMIT architecture.
2. Step-by-step tutorials on how to use the reference board and easily create user interfaces.
3. Start-to-finish development process guidelines.
4. Development procedures for the different user interface options.
5. Programming instructions and examples on integrating emMicro with your device.
6. Reference details on EMIT components and utilities.

### Hardware Reference Design

- LINK-51 evaluation board for the 51LPC family
- RS232 support
- Expansion interface bus—for other hardware products—prototype board, HVAC

### System Requirements for emGateway & emObjects

- 486 or faster CPU
- Windows 95/98 or Windows NT version 4
- At least 32MB of internal memory
- Netscape v4.05 with the JDK patch or Internet Explorer v4.0
- TCP/IP installed
- Available serial port
- CD-ROM drive
- Nine-pin D-type male (a 25-pin D-type female adapter will also be needed if the available serial port is 25-pin D-type male)
- Sufficient hard disk space for the following components:
  - 40MB for the EMIT development files
  - 80MB for Visual Café
  - 40MB of free hard disk space available to virtual memory to allow the EMIT user interface to load properly within your Web Browser.



### Ordering Information

Part Number: LINK-51 SD  
12NC: 9352-635-58112

For more information, contact your Philips Semiconductors distributor or [www.semiconductors.philips.com](http://www.semiconductors.philips.com)

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