

EVB-LAN9500A-LC Evaluation Board User Manual



Copyright © 2012 SMSC or its subsidiaries. All rights reserved.

Circuit diagrams and other information relating to SMSC products are included as a means of illustrating typical applications. Consequently, complete information sufficient for construction purposes is not necessarily given. Although the information has been checked and is believed to be accurate, no responsibility is assumed for inaccuracies. SMSC reserves the right to make changes to specifications and product descriptions at any time without notice. Contact your local SMSC sales office to obtain the latest specifications before placing your product order. The provision of this information does not convey to the purchaser of the described semiconductor devices any licenses under any patent rights or other intellectual property rights of SMSC or others. All sales are expressly conditional on your agreement to the terms and conditions of the most recently dated version of SMSC's standard Terms of Sale Agreement dated before the date of your order (the "Terms of Sale Agreement"). The product may contain design defects or errors known as anomalies which may cause the product's functions to deviate from published specifications. Anomaly sheets are available upon request. SMSC products are not designed, intended, authorized or warranted for use in any life support or other application where product failure could cause or contribute to personal injury or severe property damage. Any and all such uses without prior written approval of an Officer of SMSC and further testing and/or modification will be fully at the risk of the customer. Copies of this document or other SMSC literature, as well as the Terms of Sale Agreement, may be obtained by visiting SMSC's website at <http://www.smSC.com>. SMSC is a registered trademark of Standard Microsystems Corporation ("SMSC"). Product names and company names are the trademarks of their respective holders.

The Microchip name and logo, and the Microchip logo are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SMSC DISCLAIMS AND EXCLUDES ANY AND ALL WARRANTIES, INCLUDING WITHOUT LIMITATION ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND AGAINST INFRINGEMENT AND THE LIKE, AND ANY AND ALL WARRANTIES ARISING FROM ANY COURSE OF DEALING OR USAGE OF TRADE. IN NO EVENT SHALL SMSC BE LIABLE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES; OR FOR LOST DATA, PROFITS, SAVINGS OR REVENUES OF ANY KIND; REGARDLESS OF THE FORM OF ACTION, WHETHER BASED ON CONTRACT; TORT; NEGLIGENCE OF SMSC OR OTHERS; STRICT LIABILITY; BREACH OF WARRANTY; OR OTHERWISE; WHETHER OR NOT ANY REMEDY OF BUYER IS HELD TO HAVE FAILED OF ITS ESSENTIAL PURPOSE, AND WHETHER OR NOT SMSC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

1 Introduction

The LAN9500A is a high performance, small form factor solution for USB to 10/100 Ethernet port bridging. With applications ranging from embedded systems, set-top boxes, and PVR's, to USB port replicators, USB to Ethernet adapters, PC docking stations, and test instrumentation, the LAN9500A is targeted as a high performance, low cost USB/Ethernet connectivity solution.

The LAN9500A contains an integrated 10/100 Ethernet PHY, USB PHY, Hi-Speed USB 2.0 device controller, 10/100 Ethernet MAC, TAP controller, EEPROM controller, and a FIFO controller with a total of 30 KB of internal packet buffering. The LAN9500A complies with the IEEE 802.3 (full/half-duplex 10BASE-T and 100BASE-TX) Ethernet protocol and USB 2.0 specification, enabling compatibility with industry standard Fast Ethernet and USB 2.0 applications.

The EVB-LAN9500A-LC is an Evaluation Board (EVB) that utilizes the LAN9500A to provide a fully functional, bus-powered USB to Ethernet interface. The EVB-LAN9500A-LC provides fully integrated Ethernet and USB ports via the onboard RJ45 and USB Type A connectors. The onboard 256x8 EEPROM is used to load the EVB-LAN9500A-LC's USB configuration parameters and MAC address.

LAN9500A software drivers are available for Windows XP, Windows Vista, Mac OS X, Linux, and Windows CE. Additional manufacturing and diagnostic tools are available for debugging and external EEPROM configuration. For complete details, refer to the "LAN9500A Software User Manual".

A simplified block diagram of the EVB-LAN9500A-LC can be seen in [Figure 1.1](#).

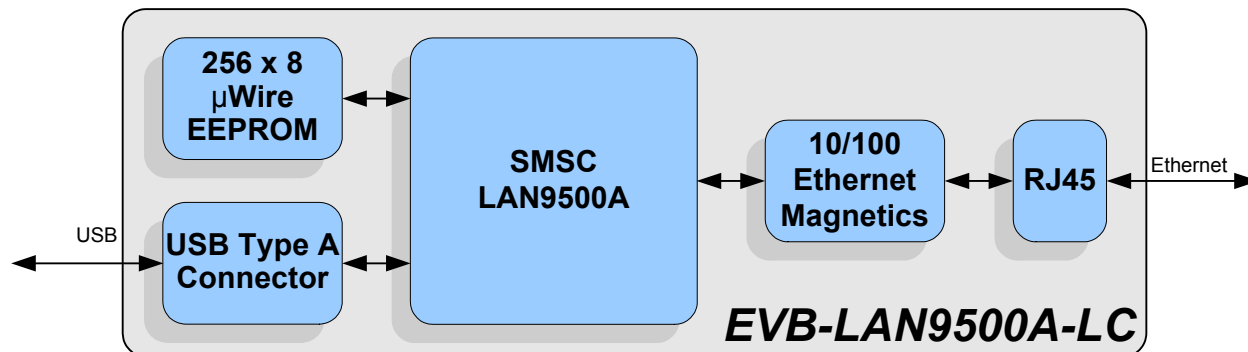


Figure 1.1 EVB-LAN9500A-LC Block Diagram

1.1 References

Concepts and material available in the following documents may be helpful when using the EVB-LAN9500A-LC.

Table 1.1 References

DOCUMENT	LOCATION
SMSC LAN9500A Datasheet	http://www.smsc.com/lan9500a
AN8-13 Suggested Magnetics	http://www.smsc.com/lan9500a
SMSC EVB-LAN9500A-LC Evaluation Board Schematic	http://www.smsc.com/lan9500a
SMSC LAN9500A Software User Manual	http://www.smsc.com/lan9500a

2 Board Details

This section includes the following EVB-LAN9500A-LC board details:

- Configuration
- Mechanicals

2.1 Configuration

The following sub-sections describe the various board features including LEDs, test points, and system connections. A top view of the EVB-LAN9500A-LC is shown in [Figure 2.1](#).

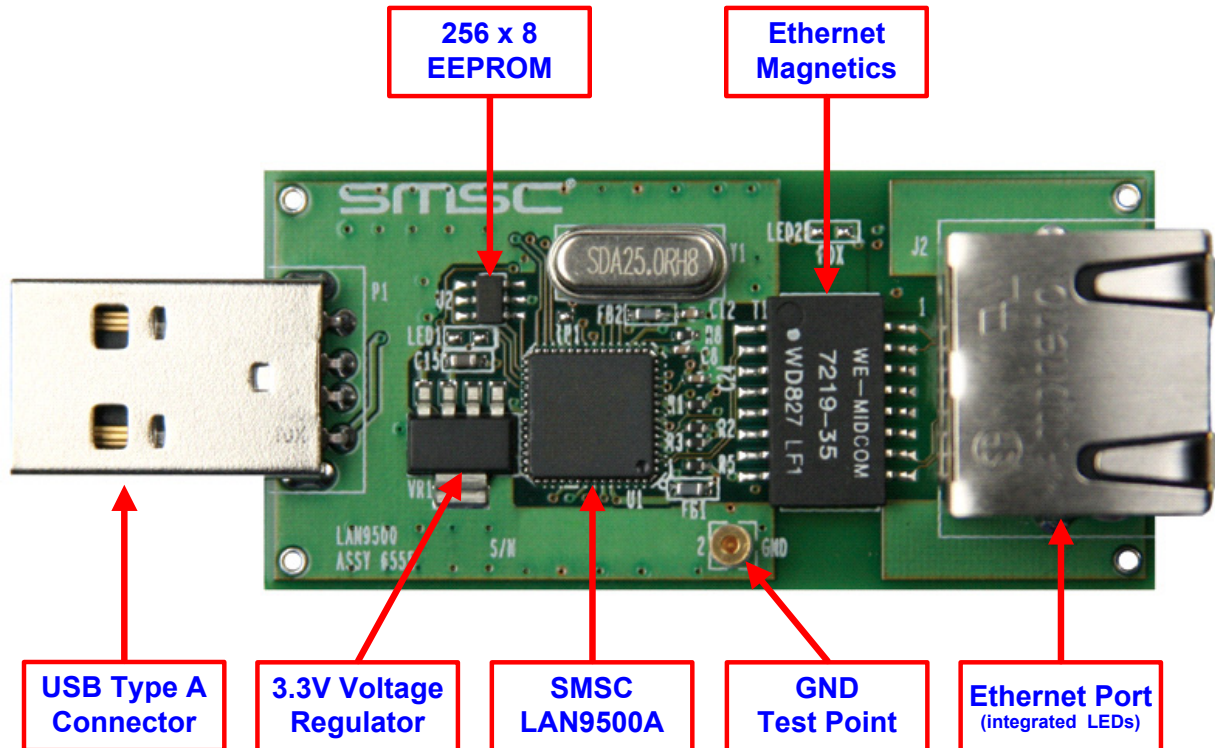


Figure 2.1 EVB-LAN9500A-LC Top View

2.1.1 LEDs

Table 2.1 LEDs

REFERENCE	COLOR	INDICATION
J2	Green	Ethernet Link/Activity Solid: Link established Blinking: Link activity OFF: No link
	Yellow	Ethernet Speed ON: 100BASE-TX OFF: 10BASE-T

2.1.2 Test Points

Table 2.2 Test Points

TEST POINT	DESCRIPTION	CONNECTION
TP2	Single Pin Gold Post GND Test Point	GND

2.1.3 System Connections

Table 2.3 System Connections

PLUG/HEADER	DESCRIPTION	PART
P1	USB Type-A Plug	Molex 48037-0001
J2	RJ45 with Integrated LEDs	Amphenol RJHSE-5381

2.2 Mechanicals

Figure 2.2 details the EVB-LAN9500A-LC mechanical dimensions.

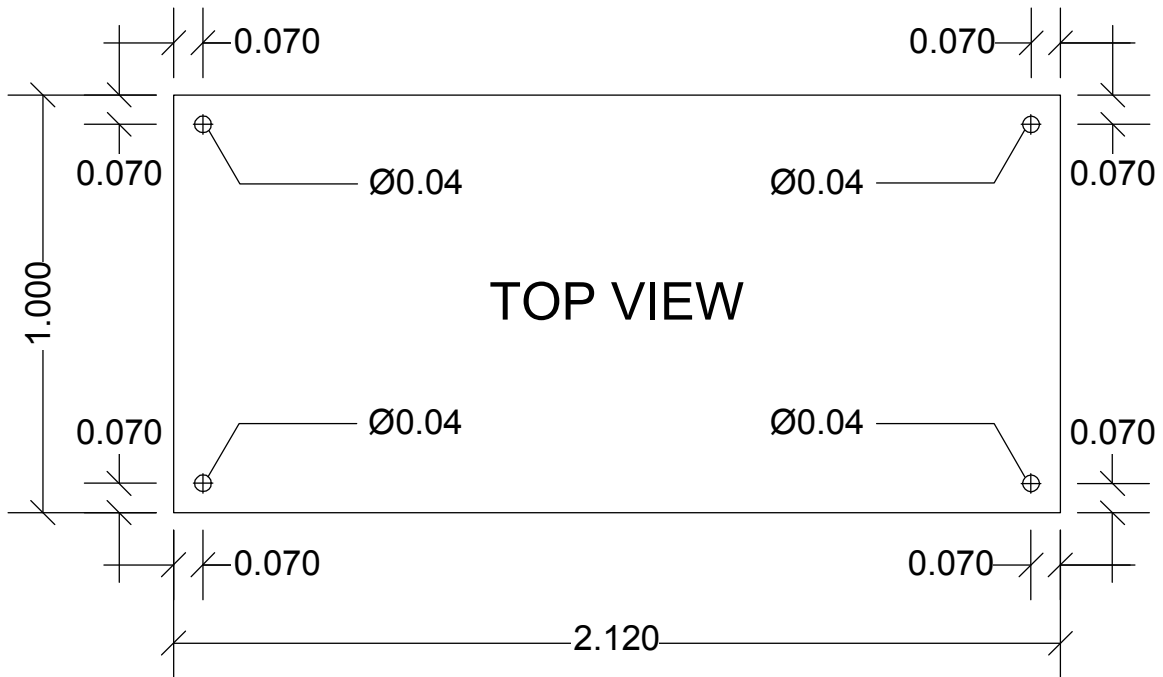


Figure 2.2 EVB-LAN9500A-LC Mechanicals

3 Revision History

Table 3.1 Revision History

REVISION LEVEL & DATE	SECTION/FIGURE/ENTRY	CORRECTION
Rev. 1.0 (12-04-12)		Document co-branded: Microchip logo added, modification to legal disclaimer.
Rev. 1.0 (02-02-10)		Initial Release

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Microchip:](#)

[EVB-LAN9500A-LC](#)