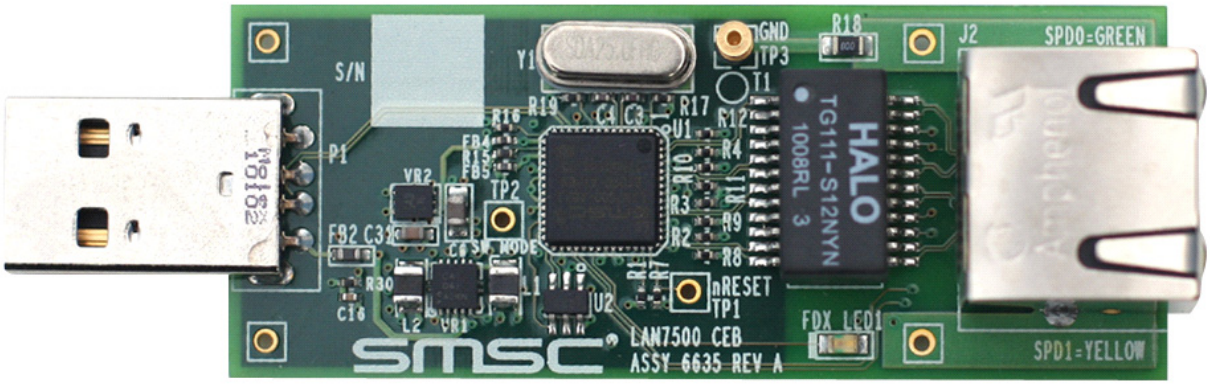
EVB-LAN7500-LC Evaluation Board User Manual



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1 Introduction

The LAN7500 is a high performance Hi-Speed USB 2.0 to 10/100/1000 Ethernet controller. With applications ranging from embedded systems, set-top boxes, and PVR's, to USB port replicators, USB to Ethernet dongles and test instrumentation, the device is a high performance and cost competitive USB to Ethernet connectivity solution.

The LAN7500 contains an integrated 10/100/1000 Ethernet MAC and PHY, Filtering Engine, USB PHY, Hi-Speed USB 2.0 device controller, TAP controller, EEPROM controller, and a FIFO controller with a total of 32 KB of internal packet buffering.

The internal USB 2.0 device controller and USB PHY are compliant with the USB 2.0 Hi-Speed standard. The device implements Control, Interrupt, Bulk-in, and Bulk-out USB Endpoints.

The Ethernet controller supports auto-negotiation, auto-polarity correction, HP Auto-MDIX, and is compliant with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab standards. ARP and NS offload is also supported.

The EVB-LAN7500-LC is an Evaluation Board (EVB) that utilizes the LAN7500 to provide a fully functional, bus-powered USB to Ethernet interface. The EVB-LAN7500-LC provides a fully integrated Ethernet port and USB port via the onboard RJ45 and USB Type A connectors. The onboard 4K EEPROM is used to load the EVB-LAN7500-LC's USB configuration parameters and MAC address.

LAN7500 software drivers are available for Windows XP, Windows Vista, Mac OSX, Linux, and Win CE. Additional manufacturing and diagnostic tools are available for debugging and external EEPROM configuration.

A simplified block diagram of the EVB-LAN7500-LC can be seen in Figure 1.1.

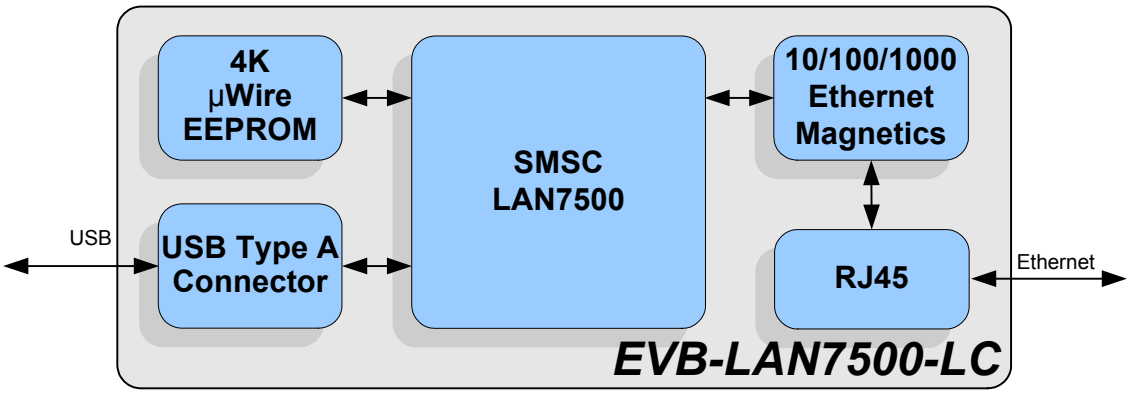

Figure 1.1 EVB-LAN7500-LC Block Diagram

1.1 References

Concepts and material available in the following documents may be helpful when using the EVB-LAN7500-LC.

Table 1.1 References

DOCUMENT	LOCATION
SMSC LAN7500 Datasheet	http://www.smsc.com/lan7500
AN8-13 Suggested Magnetics	http://www.smsc.com/lan7500
SMSC EVB-LAN7500-LC Evaluation Board Schematic	http://www.smsc.com/lan7500

2 Board Details

The following sections describe the various board features. A top view of the EVB-LAN7500-LC is shown in Figure 2.1.

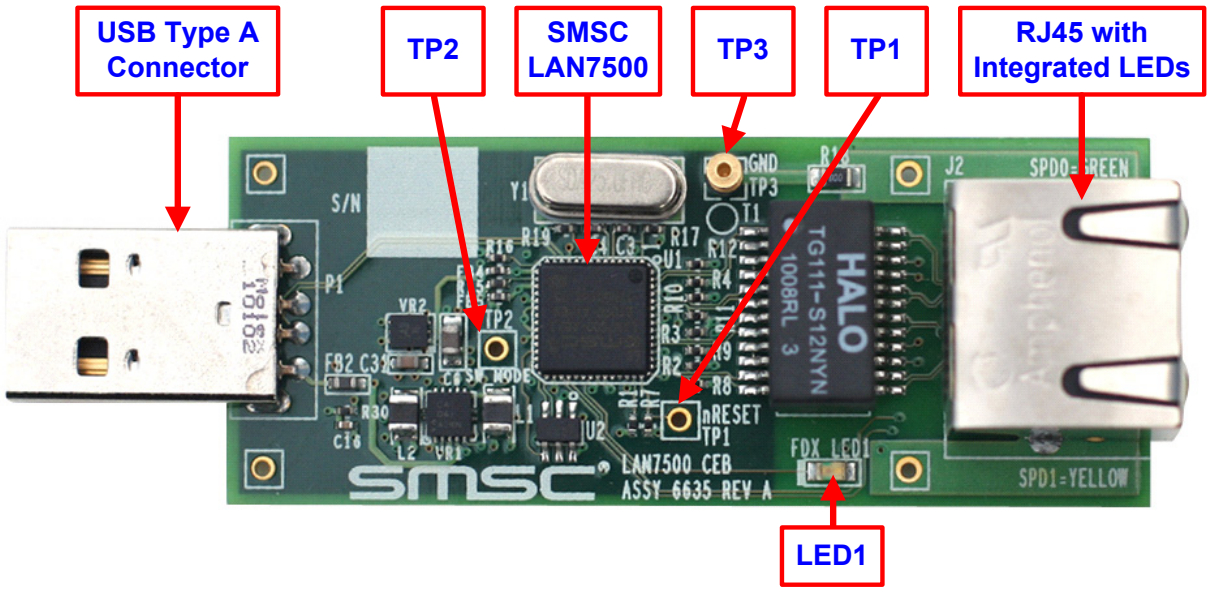

Figure 2.1 EVB-LAN7500-LC Top View

2.1 LEDs

Table 2.1 LEDs

REFERENCE	INDICATION
LED1	Ethernet Full Duplex
SPD1	Speed 1 When combined with Speed 0, this signal indicates the current Ethernet link speed. Refer to the SPD0 (Speed 0) description for additional information. **Note:** This LED is yellow and located inside the RJ45 conector.
SPD0	Speed 0 When combined with Speed 1, this signal indicates the current Ethernet link speed. The speed is indicated as shown below: **SPEED (Mbps) / SPEED 0 (SPD0) / SPEED 1 (SPD1)** No Link / Off / Off 10 / On / Off 100 / Off / On 1000 / On / On **Note:** This LED is green and located inside the RJ45 conector.

2.2 Test Points

Table 2.2 Test Points

TEST POINT	DESCRIPTION	CONNECTION
TP1	Unpopulated nRESET testpoint	nRESET
TP2	Unpopulated SW_MODE testpoint	SW_MODE
TP3	Single pin populated gold post GND testpoint	GND

2.3 System Connections

Table 2.3 System Connections

CONNECTOR	DESCRIPTION	PART
P1	USB Type-A Plug	Molex 48037-0001
J2	RJ45	Amphenol RJHSE-5381

2.4 Mechanicals

Figure 2.2 details the EVB-LAN7500-LC mechanical dimensions.

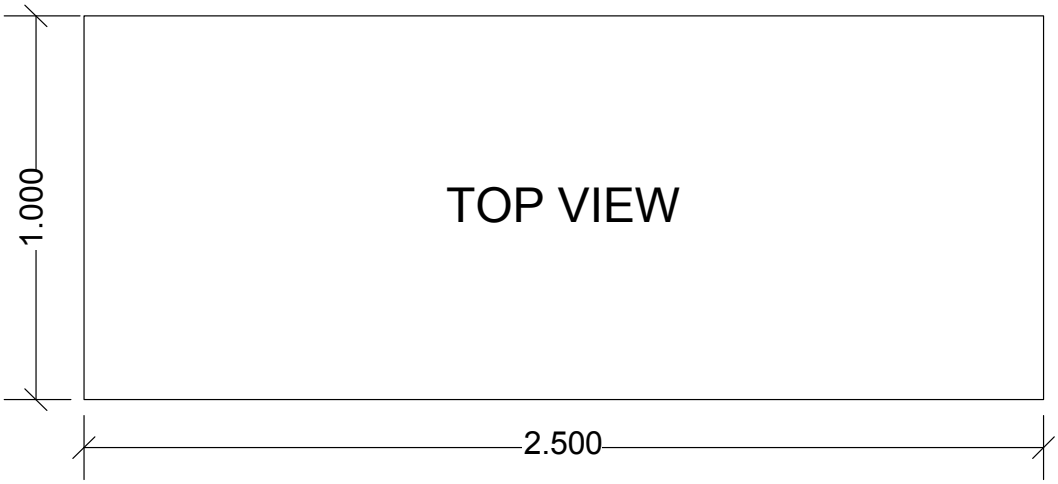

Figure 2.2 EVB-LAN7500-LC Mechanicals

3 User Manual Revision History

Table 3.1 Customer Revision History

REVISION LEVEL & DATE	SECTION/FIGURE/ENTRY	CORRECTION
Rev. 1.0 (11-03-10)	Initial release.	