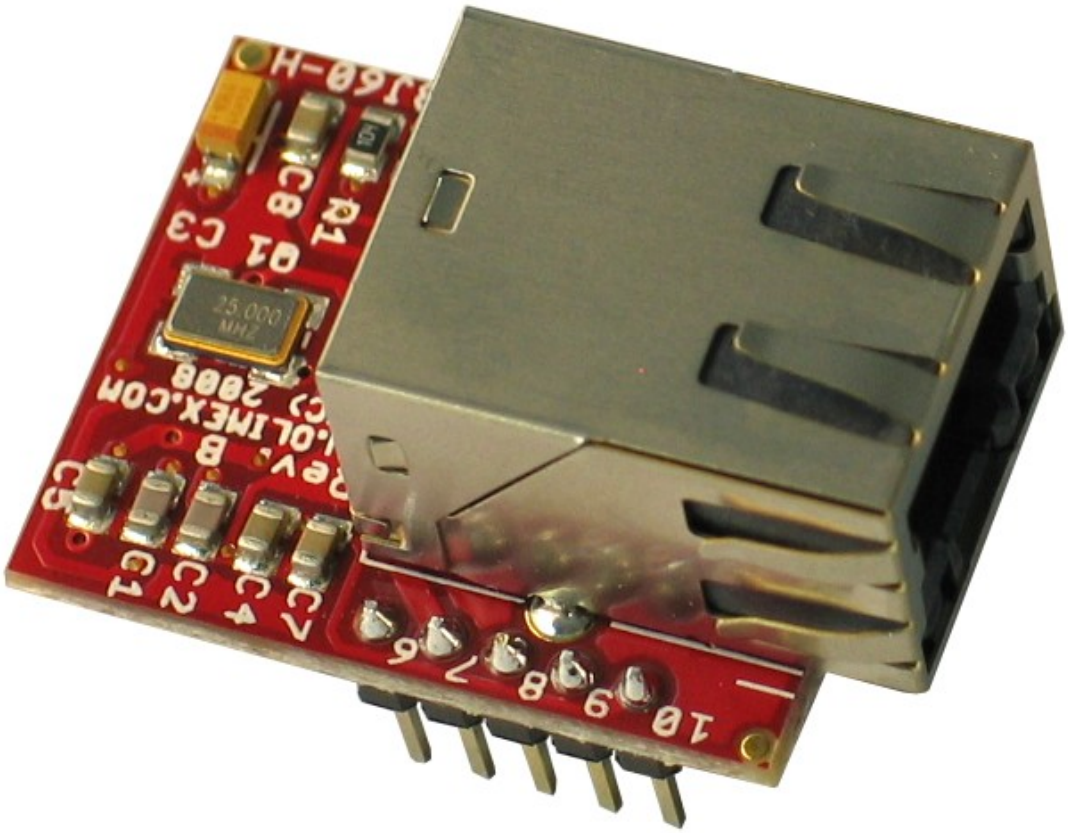


ENC28J60-H development board

Users Manual

All boards produced by Olimex are ROHS compliant

Rev. A, September 2011

Copyright(c) 2011, OLIMEX Ltd, All rights reserved

INTRODUCTION

ENC28J60-H is world's smallest Ethernet controller development board with it's size of only 30x24 mm. It provides easy connection to any microcontroller with only few ports via SPI which makes it perfect for adding Ethernet connectivity to embedded applications.

BOARD FEATURES

- ENC28J60 10 Mbit Ethernet controller
- on-board RJ45 connector with build in Ethernet transformer and two status LEDs
- easy interface to any microcontroller via SPI
- compact size in DIL 10 pin format, the distance between pin rows is 0.8"
- PCB: FR-4, 1.5 mm (0,062"), soldermask, white silkscreen component print
- Dimensions: 30x24 mm (1.18x0.95")

ELECTROSTATIC WARNING

The ENC28J60-H board is shipped in protective anti-static packaging. The board must not be subject to high electrostatic potentials. General practice for working with static sensitive devices should be applied when working with this board.

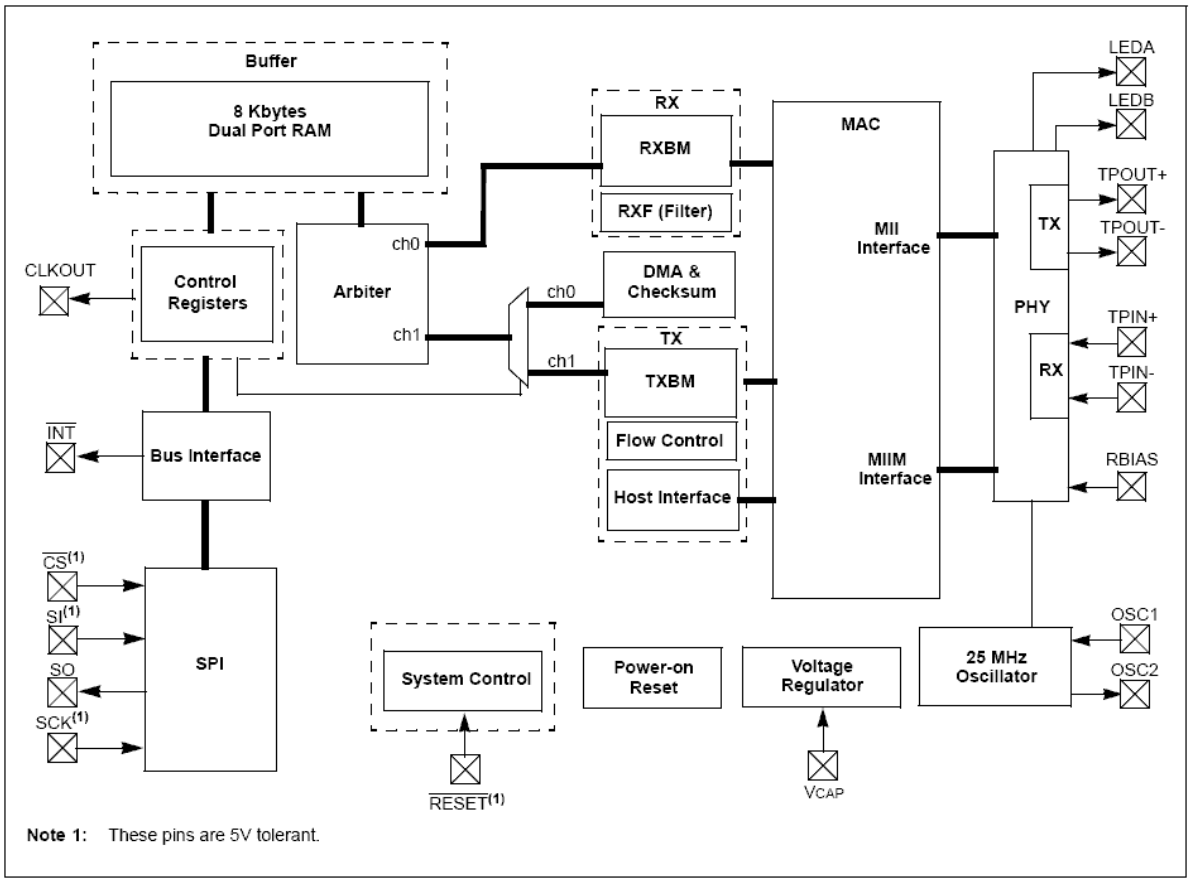
Ethernet Controller Features

ENC28J60-H board use ENC28J60 stand-alone ethernet controller with these features:

- IEEE 802.3. Compatible Ethernet Controller
- Fully Compatible with 10/100/1000Base-T Networks
- Integrated MAC and 10Base-T PHY
- Supports One 10Base-T Port with Automatic Polarity Detection and Correction
- Supports Full and Half-Duplex modes
- Programmable Automatic Retransmit on Collision
- Programmable Padding and CRC Generation
- Programmable Automatic Rejection of Erroneous Packets
- SPI Interface with Clock Speeds Up to 20 MHz

BLOCK DIAGRAM

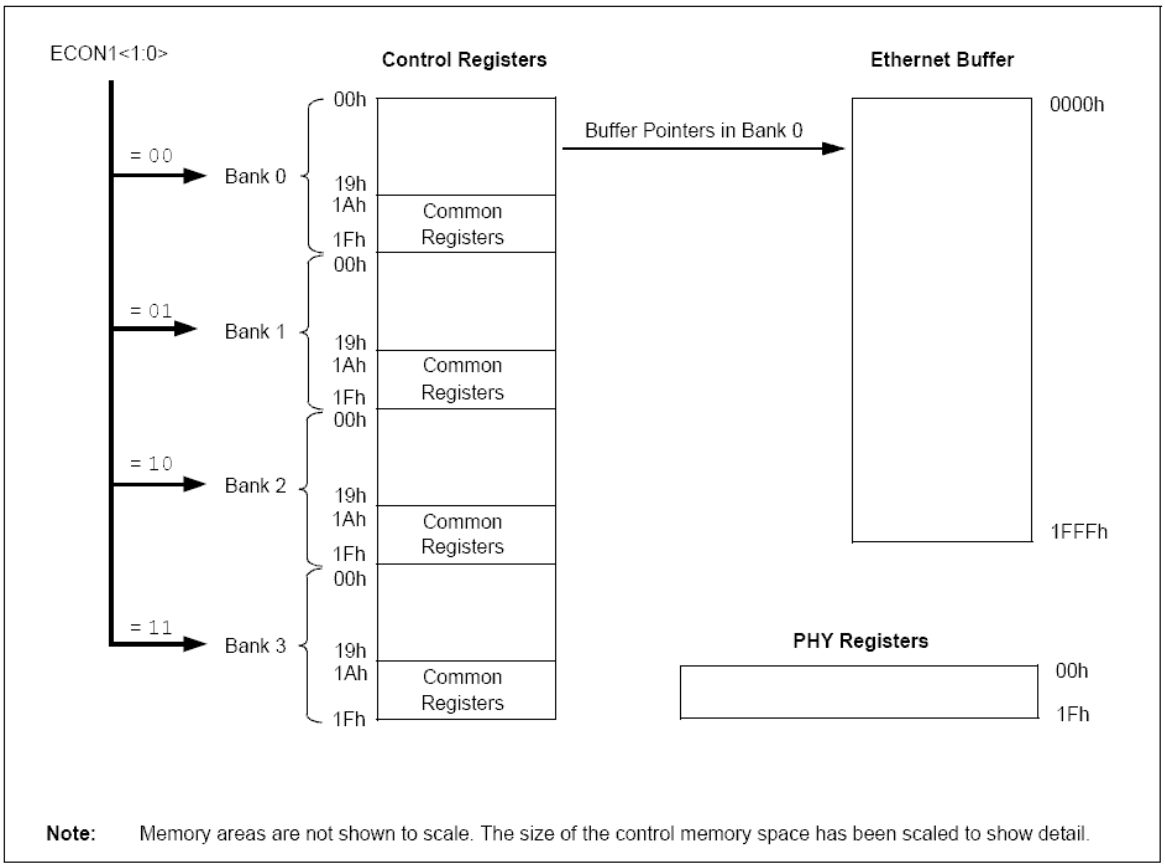
ENC28J60 BLOCK DIAGRAM



Note 1: These pins are 5V tolerant.

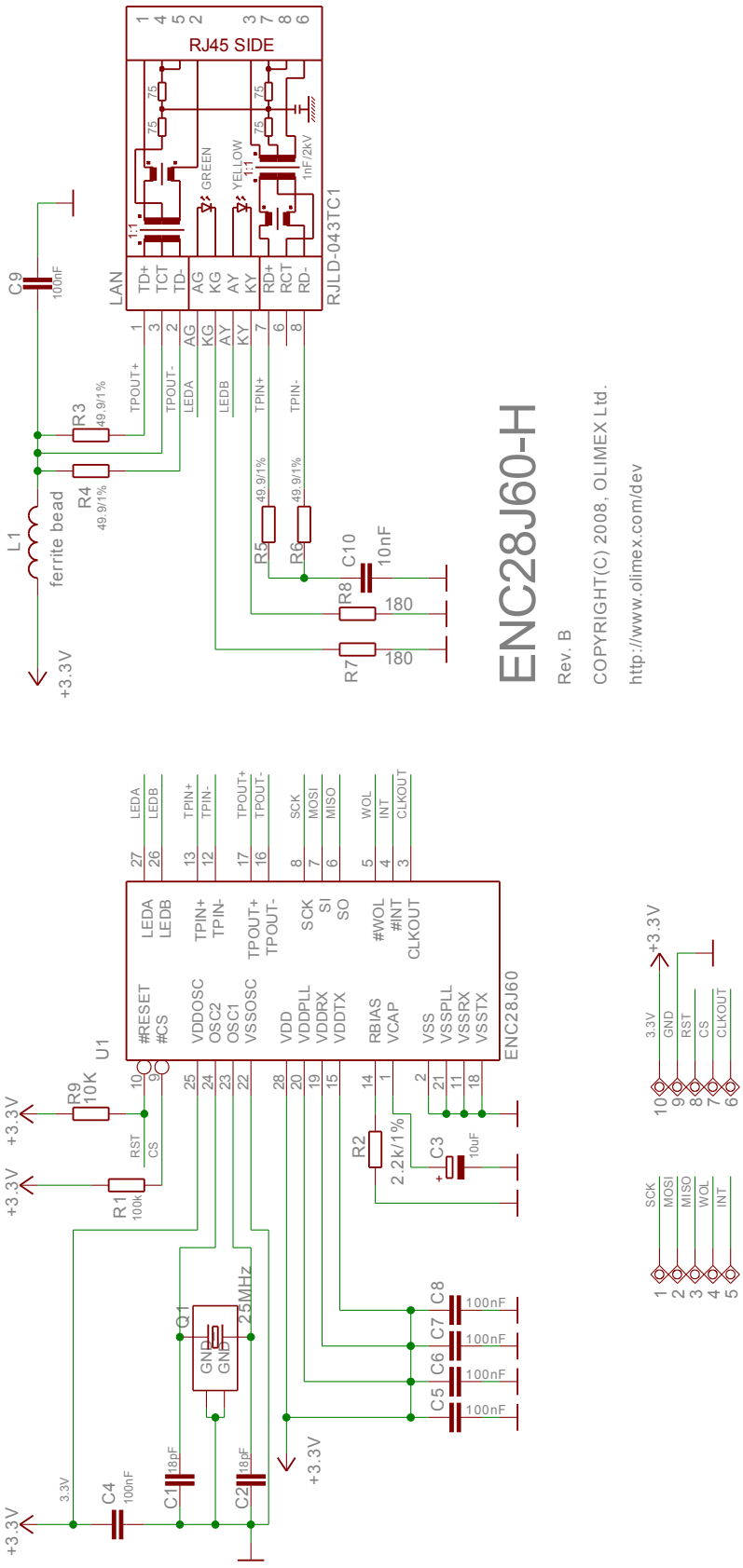
MEMORY MAP

ENC28J60 MEMORY ORGANIZATION



Note: Memory areas are not shown to scale. The size of the control memory space has been scaled to show detail.

SCHEMATIC


RJ45 SIDE
RJLD-043TC1
LAN
ENC28J60-H
Rev. B
COPYRIGHT(C) 2008, OLIMEX Ltd.
http://www.olimex.com/dev
ENC28J60
U1
Q1
25MHz
+3.3V
GND

POWER SUPPLY CIRCUIT

ENC28J60-H is typically power supplied by EXT pin 10 and pin 9.

RESET CIRCUIT

ENC28J60-H reset circuit includes EXT connector pin 8, U1 pin 10 and R9 (10k).

CLOCK CIRCUIT

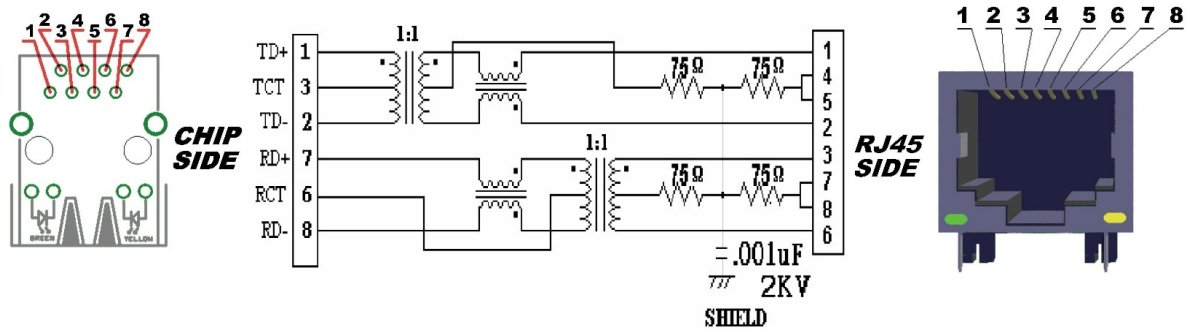
Quartz crystal 25 MHz is connected to **ENC28J60** pin 23 (OSC1) and pin24 (OSC2).

JUMPER DESCRIPTION

There are no jumpers on this board.

CONNECTOR DESCRIPTIONS

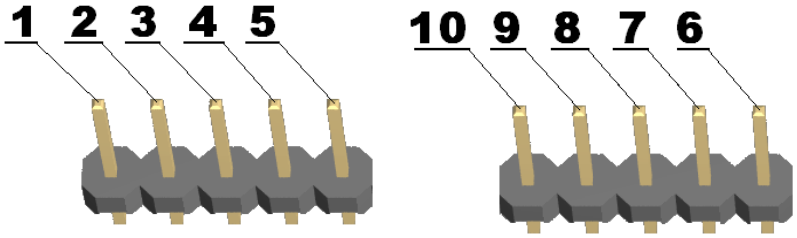
LAN



Pin #	Signal Name Chip Side	Pin #	Signal Name Chip Side
1	TX+	5	Not Connected (NC)
2	TX-	6	VDD
3	VDD	7	RX+
4	Not Connected (NC)	8	RX-

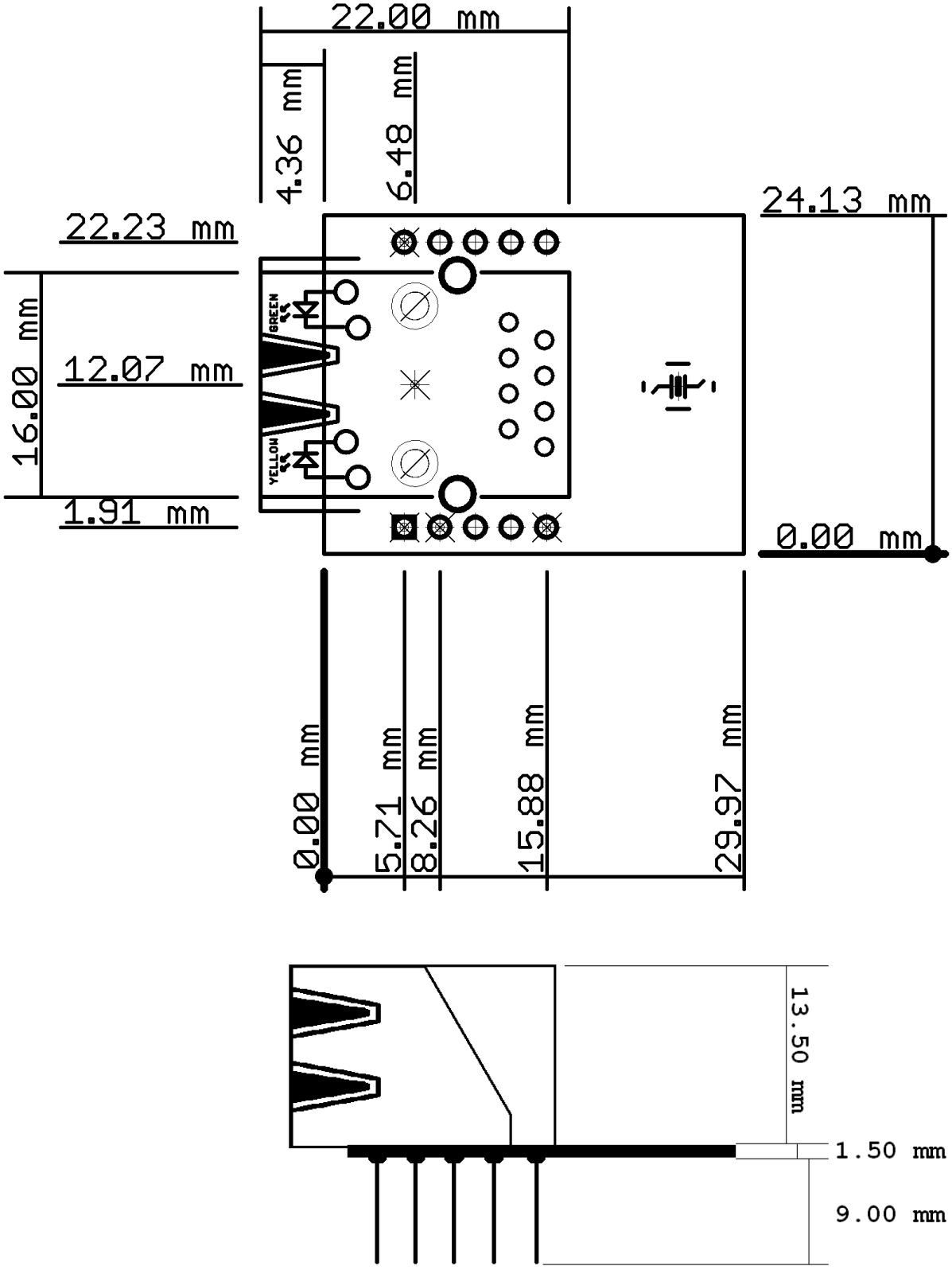
LED	Color	Usage
Right	Green	Link status
Left	Yellow	Activity status

EXT



Pin#	Signal Name	Pin#	Signal Name
1	SCK	6	CLKOUT
2	MOSI	7	CS
3	MISO	8	RST
4	WOL	9	GND
5	INT	10	3.3V

MECHANICAL DIMENSIONS



AVAILABLE DEMO SOFTWARE

– Microchip's TCP-IP stack full featured TCP-IP stack, very easy to configure and use with PIC microcontrollers.
– AVR fans now have also demo code for driving ENC28J60 with Bascom thanks to Ben Zijlstra from Netherlands
– Our development boards PIC-WEB and PIC-MINI-WEB use ENC28J60
– uIP1.0 demo code with LPC-P2106 and ENC28J60-H for CrossWorks written by Iain Derrington

ORDER CODE

ENC28J60-H – completely assembled and tested, includes ENC28J60 Ethernet controller

How to order?
You can order to us directly or by any of our distributors.
Check our web www.olimex.com/dev for more info.

Revision history:

Board's revision:	Rev. B - create November 2008
Manual's revision:	Rev. A – added more detailed mechanical dimensions

Disclaimer:

© 2011 Olimex Ltd. All rights reserved. Olimex®, logo and combinations thereof, are registered trademarks of Olimex Ltd. Other terms and product names may be trademarks of others.

The information in this document is provided in connection with Olimex products. No license, express or implied or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Olimex products.

Neither the whole nor any part of the information contained in or the product described in this document may be adapted or reproduced in any material from except with the prior written permission of the copyright holder.

The product described in this document is subject to continuous development and improvements. All particulars of the product and its use contained in this document are given by OLIMEX in good faith. However all warranties implied or expressed including but not limited to implied warranties of merchantability or fitness for purpose are excluded.

This document is intended only to assist the reader in the use of the product. OLIMEX Ltd. shall not be liable for any loss or damage arising from the use of any information in this document or any error or omission in such information or any incorrect use of the product.

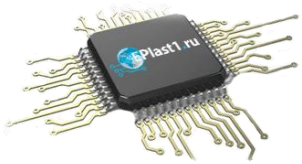
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.