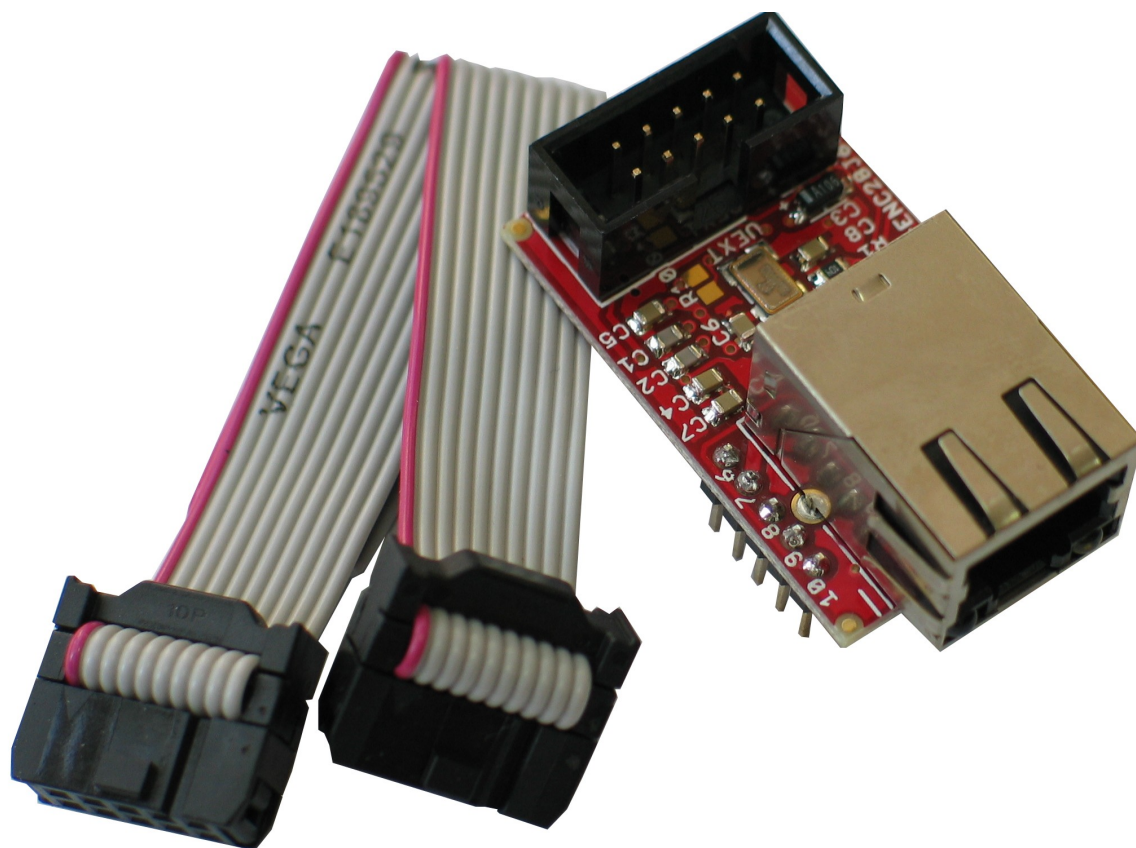




MOD-ENC28J60 development board

Users Manual



All boards produced by Olimex are ROHS compliant

Rev. Initial, November 2008

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INTRODUCTION

MOD-ENC28J60 is development board with UEXT connector and 10 Mbit ENC28J60 ethernet controller from Microchip Technology Inc.

BOARD FEATURES

- MOD-ENC28J60 is the easiest way to add 10 Mbit ethernet connectivity to any of our boards with UEXT connector
- ENC28J60 Ethernet controller with UEXT connector for easy connection to our other development boards with UEXT connector
- LAN connector with build in transformer
- two status LEDs on LAN connector
- SPI interface takes only few pins to add Ethernet interface to your microcontroller project
- UEXT 10 pin interface on 0.1" row pins header
- backward compatibility with ENC28J60-H with 2 x 5 pin header
- PCB: FR-4, 1.5 mm (0,062"), green soldermask, white silkscreen component print
- Dimensions: 40x24 mm (1.55 x 0.95")
- space between the pin rows: 20 mm (0.8")

ELECTROSTATIC WARNING

The MOD-ENC28J60 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.

BOARD USE REQUIREMENTS

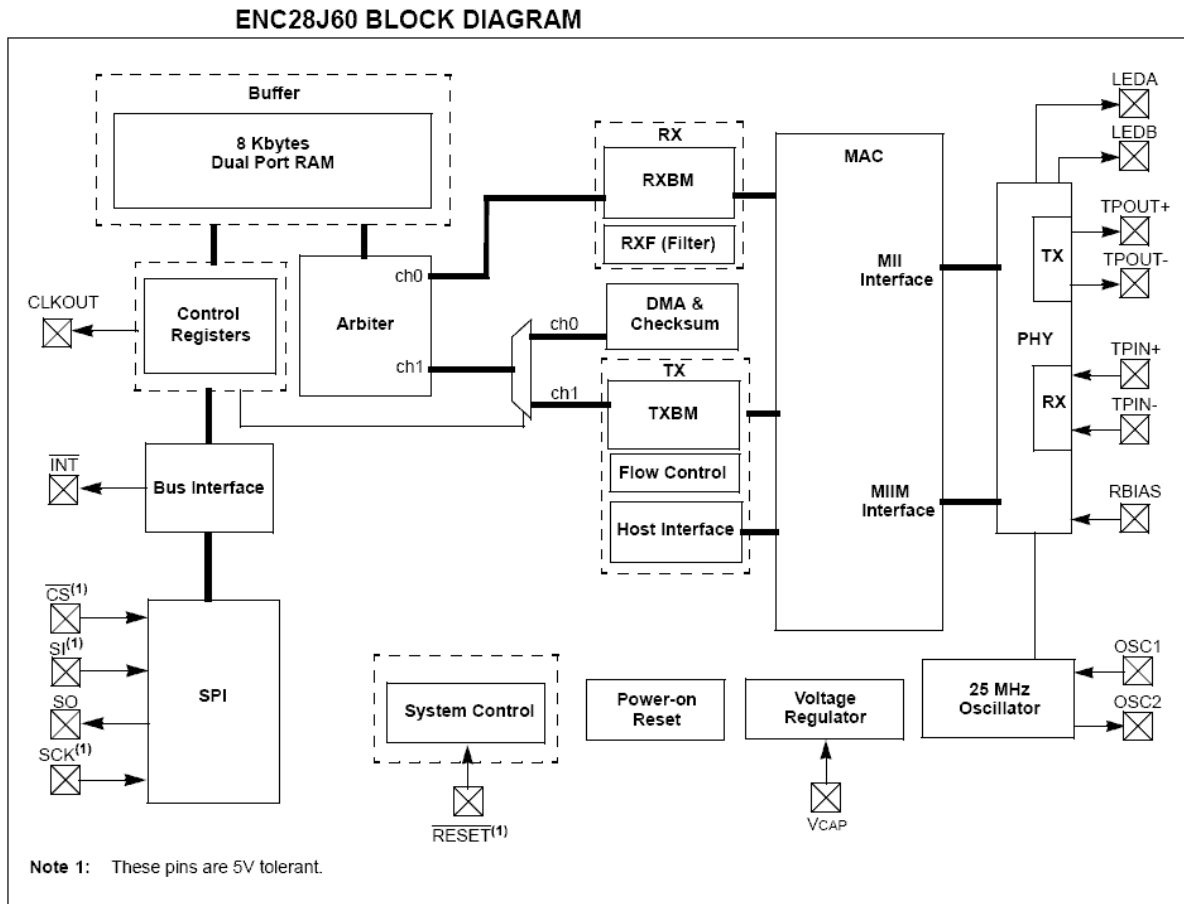
Hardware: Our development boards [PIC-WEB](#) and [PIC-MINI-WEB](#) use ENC28J60

Ethernet Controller Features

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

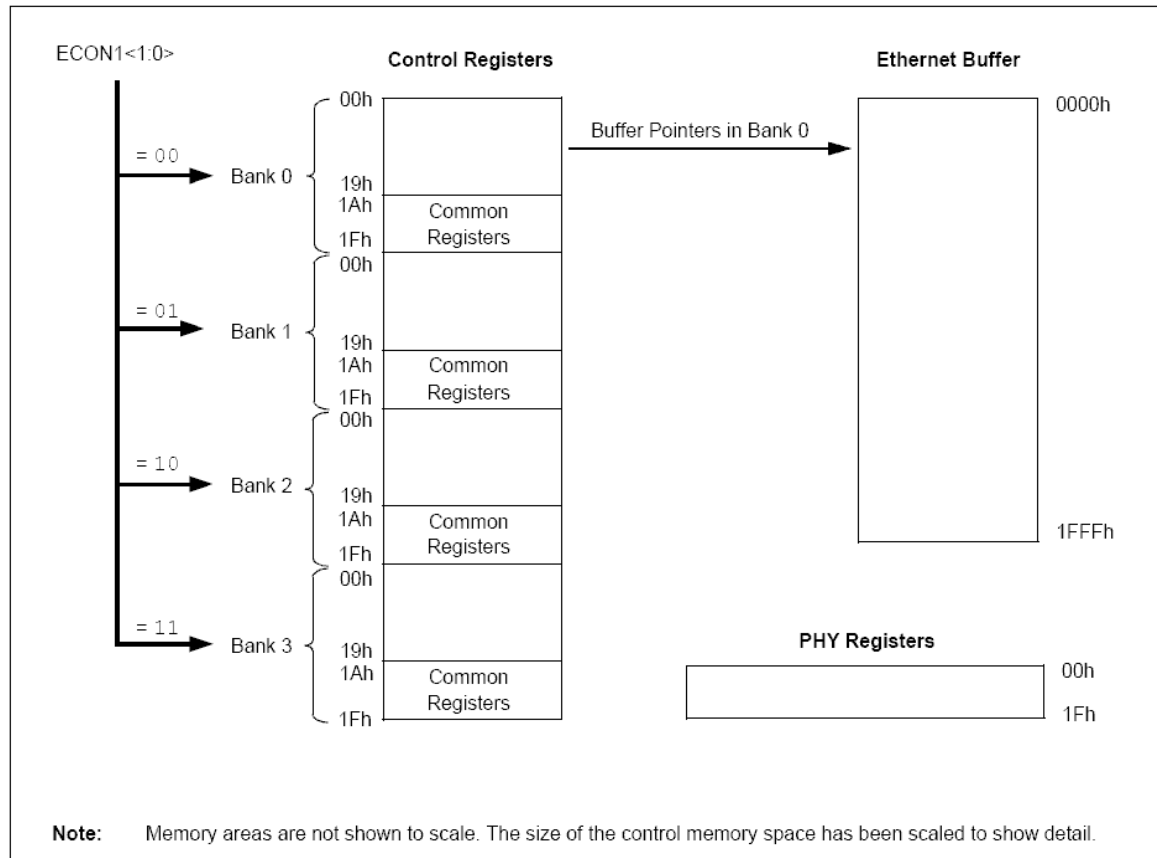
- IEEE 802.3. Compatible Ethernet Controller
- Fully Compatible with 10/100/1000Base-T Networks
- Integrated MAC and 10Base-T PHY
- Supports One 10Base-T Port with Automatic Polarity Detection and Correction
- Supports Full and Half-Duplex modes
- Programmable Automatic Retransmit on Collision
- Programmable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

BLOCK DIAGRAM

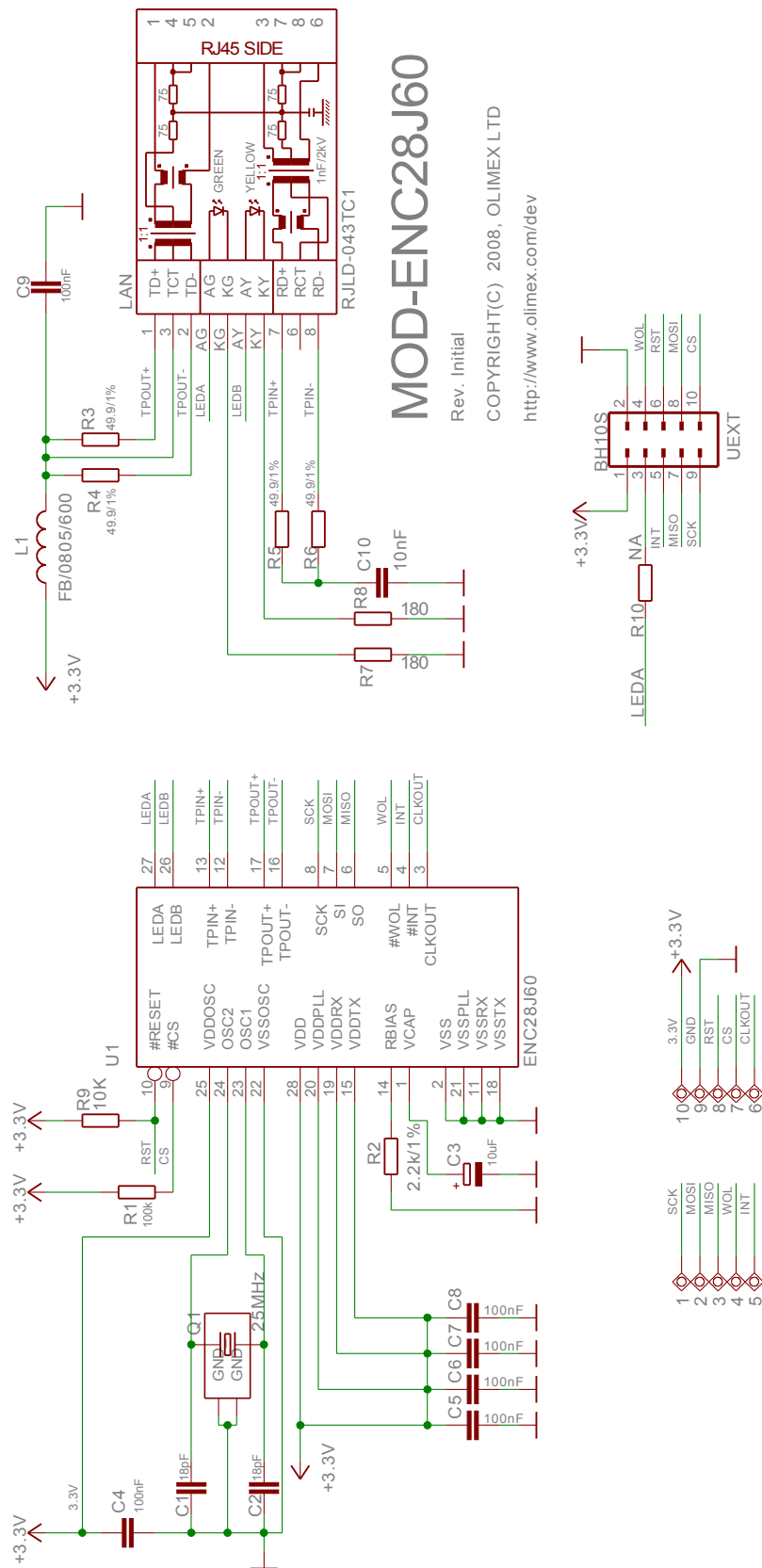


MEMORY MAP

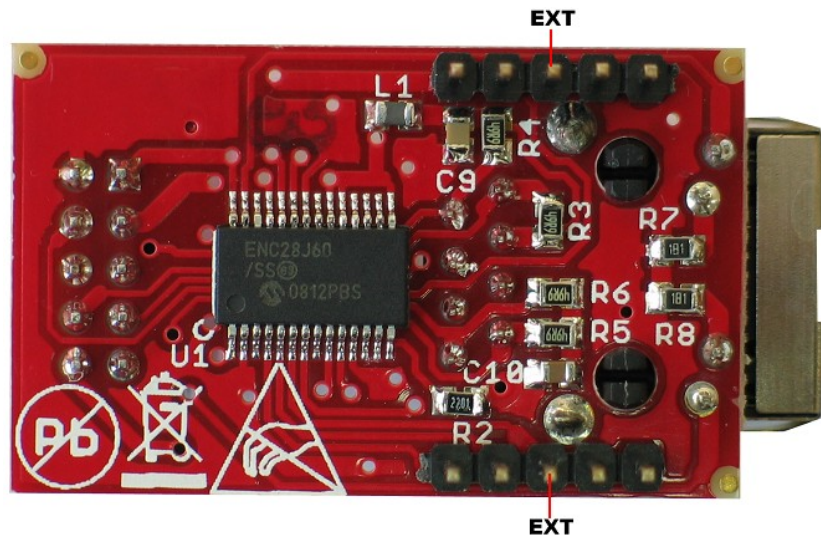
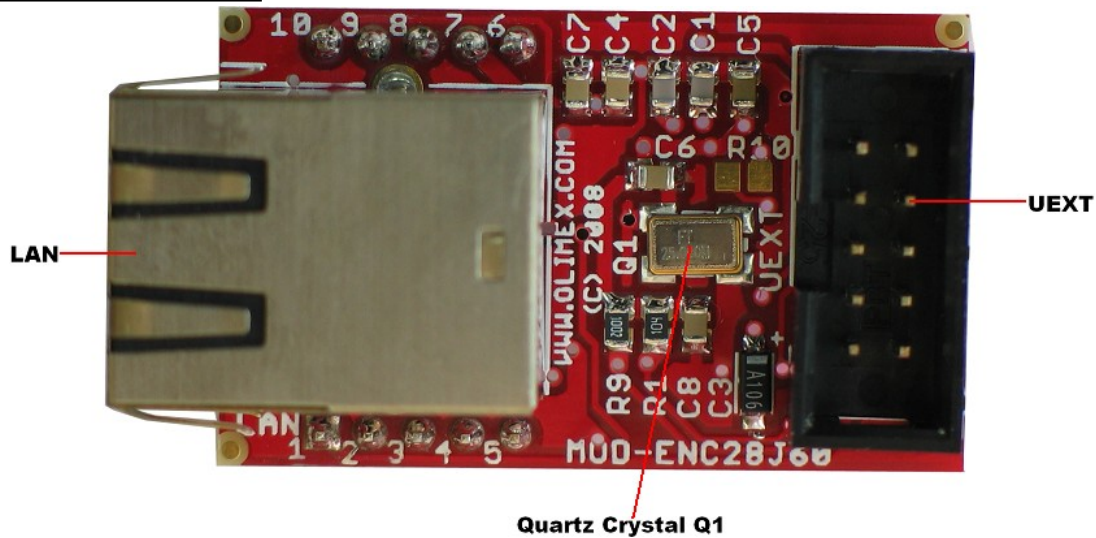
ENC28J60 MEMORY ORGANIZATION



SCHEMATIC



BOARD LAYOUT



POWER SUPPLY CIRCUIT

MOD-ENC28J60 is typically power supplied by UEXT pin 1 and pin 2 and by EXT pin 10 and pin 9.

RESET CIRCUIT

MOD-ENC28J60 reset circuit includes pin 6 of UEXT connector, pin 10 of U1 and R9 (10k).

CLOCK CIRCUIT

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

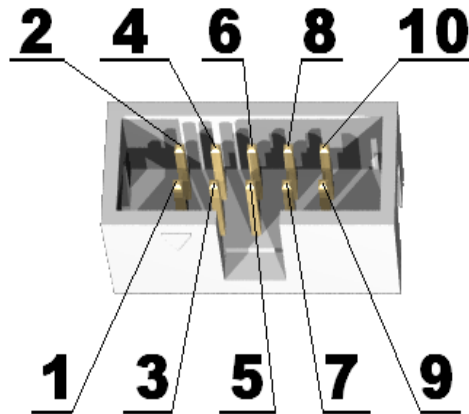
JUMPER DESCRIPTION

There are no jumpers on this board.

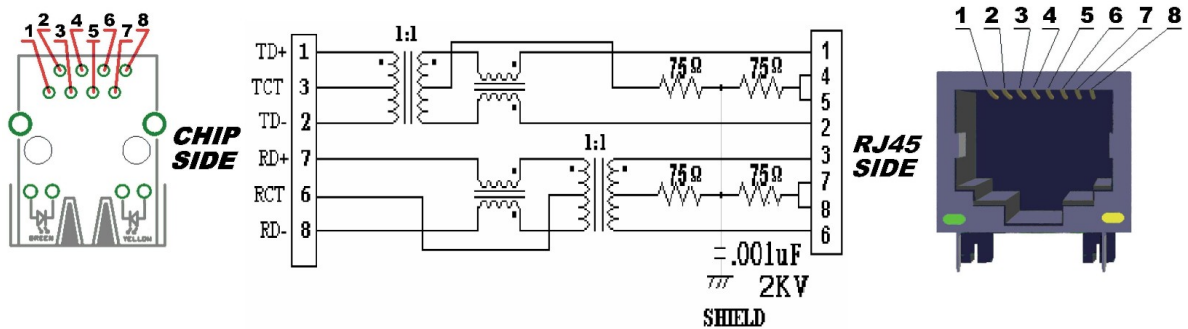
CONNECTOR DESCRIPTIONS

UEXT

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



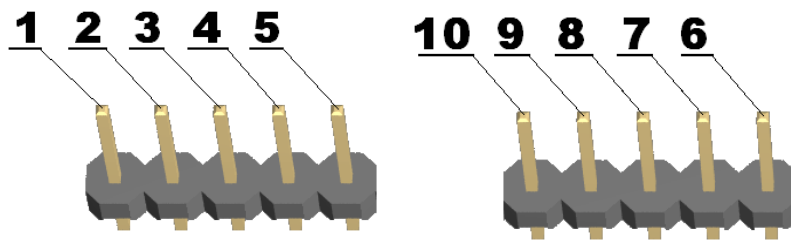
LAN



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-

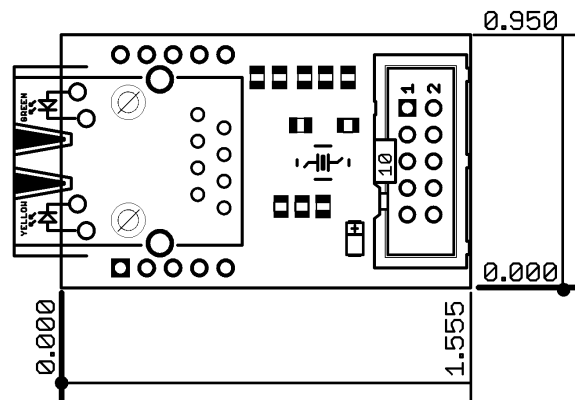
LED	Color	Usage
Right	Green	Link status
Left	Yellow	Activity status

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



All measures are in inches.

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
- [uIP1.0 demo code](#) with LPC-P2106 and ENC28J60-H for CrossWorks written by Iain Derrington

ORDER CODE

MOD-ENC28J60 – 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:

REV. Initial

- create November 2008

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