Ethernet PICtail™ Daughter Board

Overview

The Ethernet PICtail™ Daughter Board is an Ethernet demonstration board for evaluating Microchip Technology's ENC28J60 stand-alone 10 Base-T Ethernet controller. It is an expansion board compatible with a number of PICDEM™ demonstration boards. A complete list of compatible PICDEM demonstration boards is available on Microchip's web site.

Getting Started

To get started, a compatible PICDEM demonstration board is required. In general, a board is compatible if it has a PICtail™ board interface expansion port, which is a 14x2 connector. Most PICDEM demonstration boards do not have the female header installed. Thus, a 14x2 female connector is included with this kit for the user to install onto the PICDEM demonstration board if necessary. When connecting the two boards together, pay close attention to the orientation of the connector and pin alignment. The AC/DC power adapter should be plugged into the PICtail board's power socket. Only one AC/DC power adapter is required because the Ethernet PICtail board is capable of supplying power to the PICDEM demonstration board.

Features

- ENC28J60 Ethernet Controller with 25 MHz oscillator and integrated magnetic RJ-45 connector (see device data sheet DS39662 for additional information)
- 256 Kbits SPI EEPROM (25LC256) for storing web pages and configurations
- Dedicated power supply
- PICtail™ Daughter Board connection interface

Board Configurations

As shipped from the factory, some of the jumper locations are bridged by circuit traces forming a default setup. To change this, the user will need to cut the traces and install pins and a block jumper. Afterward, the features can be enabled or disabled easily by installing or removing the jumper.

Jumper	Position	Function
J4	Pin 1-2 (Default)	Clock out path from ENC28J60 to PICDEM™ board is disabled
	Pin 2-3	Clock out path from ENC28J60 to PICDEM board is enabled
J5	Pin 1-2 (Default)	RC5 is connected to ENC28J60/25LC256's SI pin
	Pin 2-3	RC7 is connected to ENC28J60/25LC256's SI pin (1)
J6	Pin 1-2 (Default)	RC4 is connected to ENC28J60/25LC256's SO pin
	Pin 2-3	RB0 is connected to ENC28J60/25LC256's SO pin (1)
J7	Pin 1-2 (Default)	RC3 is connected to ENC28J60/25LC256's SCK pin
	Pin 2-3	RB1 is connected to ENC28J60/25LC256's SCK pin (1)
J8	Disabled (Default)	Reserved – Do Not Use
J9	Pin 1-2	3.3V power supply to PICDEM demonstration board
	Pin 2-3 (Default)	5V power supply to PICDEM demonstration board
	Not connected	No power supply to PICDEM demonstration board

Note 1: This option is available to support the PICDEM™ FS USB Demo Board.

Firmware

Firmware examples can be downloaded from **http://www.microchip.com/Ethernet**. Make sure to download the firmware version that has been designated for the particular PICDEM demonstration board that you have.

Signal Interface

Function	I/O	Pin	Description
$\overline{CS}$ for ENC28J60	I	RB3	SPI Chip Select for ENC28J60
$\overline{CS}$ for 25LC256	I	RB4	SPI Chip Select for 25LC256
SCK	I	RC3 or RB1	SPI Clock
SO	O	RC4 or RB0	SPI Data Out from ENC28J60/25LC256
SI	I	RC5 or RC7	SPI Data In to ENC28J60/25LC256
$\overline{RESET}$	I	RB5	Reset Signal
$\overline{INT}$	O	RB2	$\overline{INT}$ Interrupt Signal
CLKOUT	O	OSC1	Programmable Clock Output

Media Access Control (MAC) Address

For evaluation purposes, each Ethernet PICtail board comes with a board number which can be used to form a unique MAC address. This number can be found on the sticker label on the back of each board. To form a MAC address, replace the last 3 bytes of the following MAC address, 00-04-A3-XX-XX-XX, with the number from the sticker. The number on the sticker is in decimal format and conversion to a hex number is required. For example, if the sticker has the value of "12345", then the MAC address would be 00-04-A3-00-30-39.

Other Information

To obtain the most recent and complete documentation for this demonstration board, including:

- User's Guide - Board Description - Board Schematics
- Source Code - Application Examples - Links to Web Seminars

please refer to the web site: **http://www.microchip.com/Ethernet**

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