



REDLINE™

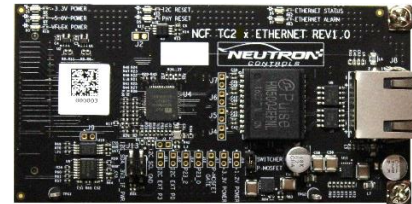
RAPID ENGINEERING DEVELOPMENT SYSTEMS

Modular Platforms Designed by Engineers for Engineers

RDL-ITFETH-001

ETHERNET 10BASE-T/100BASE-TX MODULE

WITH RJ-45 LINE CONNECTOR AND MII INTERFACE



Overview

Designed for rapid network connectivity prototyping this Ethernet 10BASE-T/100BASE-TX Module supplied with a complete software stack, allowing instant connection of AURIX™ CPU to a network node through MII (Media Independent Interface).

The Module is based on KSZ9031MNX PHY from Microchip, a completely integrated triple-speed (10BASE-T/100BASE-TX/1000BASE-T) Ethernet physical layer transceiver, for transmission and reception of data on standard CAT-5 unshielded twisted pair (UTP) cable. This module makes the transition to 1Gbps networking easy as it supports the GMII (Gigabit Media Independent Interface) interface as well.

The MDI (Media Dependent Interface), sometimes called “Line Interface” of the Module supports 1Gbps (1000BASE-T) interface natively and 10BASE-T/100BASE-TX as subset of it.

The Module generates all necessary clocks and auxiliary supplies needed to run it locally and provides 125MHz reference clock output.

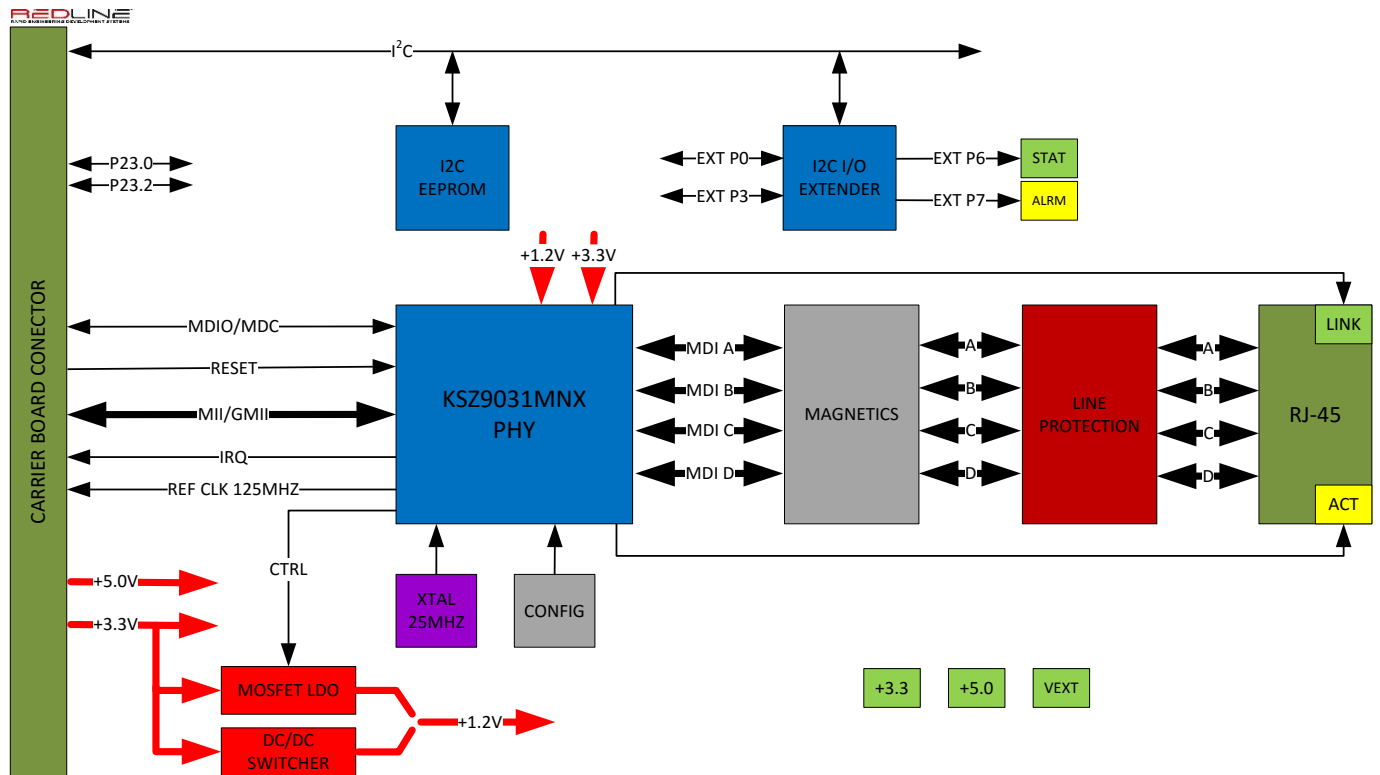
A convenient 2mm grid allows all MII and system interface signals to be easily probed on the Carrier board side.

Module software ports in and provides drivers for the LwIP stack, FreeRTOS and embedded MAC for all AURIX™ platforms supporting Ethernet.

Features

- Integrated triple-speed (10BASE-T/100BASE-TX/1000BASE-T) Ethernet physical layer for transmission and reception of data on standard CAT-5 unshielded twisted pair (UTP) cable
- MDC/MDIO Management Interface for PHY Register Configuration
- Interrupt (IRQ) driven or poll based PHY status update
- Auto-Negotiation to Automatically Select the Highest Link-Up Speed (10/100/1000 Mbps) and Duplex (Half/Full)
- Energy-Detect Power-Down Mode and Power-Saving Modes
- Rugged Line side circuit protection with automotive grade magnetics
- RJ-45 built-in “Link” and “Activity” LED as well as “Status” and “Alarm” LED under s/w control.
- 2 optional General-purpose Input/Output (GPIO) control signals
- On-board I²C EEPROM for system and user configuration storage
- Option of using MOSFET based LDO controlled by PHY or switching DC/DC regulator for local +1.2V supply
- System and alternative hardware reset control

Block Diagram



Compatibility

The Module has been designed to work with AURIX™ Base Carrier Development Platform

Part Number: **RDL-DEVCDP-00x**

Ordering information

Module Part Number: **RDL-ITFETH-001**

Supplier: Neutron Controls, 350 Palladium Drive, Suite 102 Ottawa, Ontario, Canada K2V 1A8

WWW.NEUTRONCONTROLS.COM

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