

Introduction

The LogiCORE™ Tri-Mode Ethernet Media Access Controller (TEMAC) core supports half-duplex and full-duplex operation at 10 Megabits-per-second (Mbps), 100 Mbps, and 1 Gbps.

Features

- Designed to IEEE 802.3-2002 specification
- Reconciliation sublayer with GMII/MII or RGMII Interface
- Configurable half-duplex and full-duplex operation
- Configured and monitored through an optional independent microprocessor-neutral interface
- Configurable flow control through MAC Control pause frames; symmetrically or asymmetrically enabled
- Optional MDIO interface to managed objects in PHY layers (MII Management)
- Optional Address Filter with a selectable number of address table entries
- Optional clock enables to reduce clock resource usage
- Support of VLAN frames to specification IEEE 802.3-2002
- Configurable support of jumbo frames of any length
- Configurable inter-frame gap adjustment
- Configurable in-band FCS field passing on both transmit and receive paths
- Available under the terms of the [SignOnce IP Site License](#) agreement

LogiCORE Facts	
Core Specifics	
Supported Device Family	Virtex™-4, Virtex-II, Virtex-II Pro, Spartan™-3, Spartan-3E
Speed Grade	<ul style="list-style-type: none"> • Virtex-4 -10 • Virtex-II, Spartan-3, Spartan-3E¹ -4 • Virtex-II Pro -5
Performance	10 Mbps, 100 Mbps, 1 Gbps
Core Resources	
Slices	1019-1801 slices ²
LUTs	1273-2160
FFs	1030-1809
DCM	1 (Spartan-3, Spartan-3E, Virtex-4, or RGMII only)
BUFG	2-6
PPC	0
IOB-FF	79
Core Highlights	
Designed to IEEE 802.3-2002	Hardware Verified
Provided with Core	
Documentation	Product Specification User Guide Getting Started Guide
Design File Formats	NGC Netlist, HDL example Design, Demonstration test bench, scripts
Constraints File	User Constraints File (.ucf)
Example Design	Tri-Mode Ethernet MAC with GMII/MII or RGMII interface Demo test environment
Design Tool Requirements	
Supported HDL	VHDL and/or Verilog®
Synthesis	XST 8.1i
Xilinx Tools	ISE™ 8.1i
Simulation tools	Mentor ModelSim®, Cadence IUS ³
Support	
Provided by Xilinx @ www.xilinx.com/support	

1. Spartan-3E devices support only the GMII protocol.
2. Precise number of slices depends on user configuration.
3. Scripts provided for Mentor ModelSim and Cadence IUS only.

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