

Galatea Dual Port 100BASE-T Ethernet Expansion Module User Guide

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Introduction

The Galatea 100BASE-T Ethernet Expansion Module features LAN8710A, a low-power 10BASE-T/100BASE-TX physical layer (PHY) transceiver. LAN8710A supports communication with Ethernet MAC layer via standard MII (IEEE 802.3u) interface. LAN8710A full-duplex 10-BASE-T/100BASE-TX transceiver and supports 10Mbps (10BASE-T) and 100Mbps (100BASE-TX) operation. LAN8710A implements auto-negotiation to automatically determine the best possible speed and mode of operation. HP Auto-MDIX support allows the use of direct connect or cross-over LAN cables. This Expansion Module also has Microchip 24AA02E48 2Kbit EEPROM with built in unique MAC address. This MAC address can be read from the EEPROM and used for the Ethernet interface.

Applications

- Product Prototype Development
- Network appliance development
- Embedded Telecom Applications
- Digital Media Adapters /Servers
- Development and testing of custom Projects

Board features

- 2 High-Performance 10/100 Ethernet Transceiver
- Single-Chip Ethernet Physical Layer Transceiver (PHY)
- 2 Kbit Electrically Erasable PROM (24AA02E48) with MAC Address
- Dimension: 56.61mm x 83.82mm

How to use the module

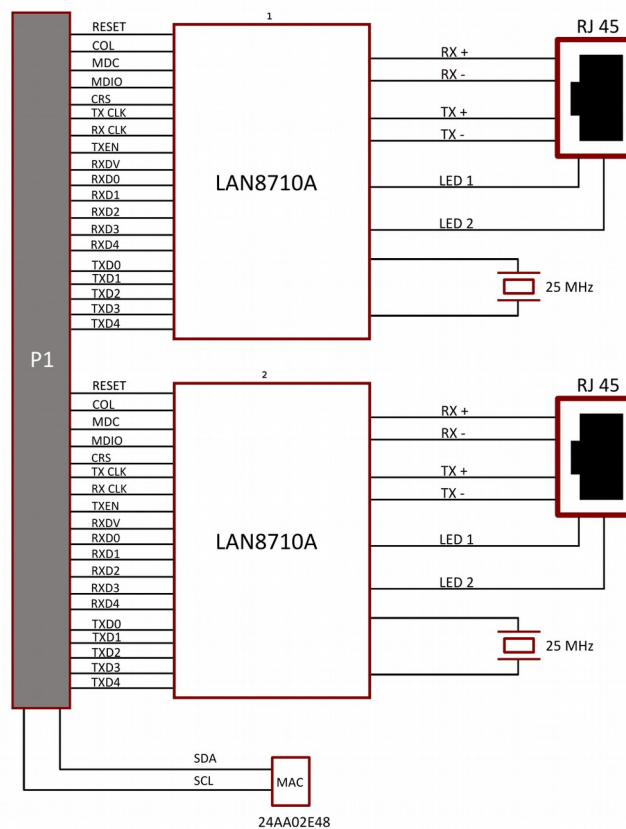
The following section describes how to use this module.

Components/Tools required

Along with the module, you may need the items in the list below for easy and fast installation.

1. Numato Galatea FPGA board.

Connection Diagram



This diagram should be used as a reference only. For detailed information, see the schematics at the end of this document. Details of individual connectors are as below.

Connection Details

Header P1

SL No.	Pin Details	Header Pin No.	Trace Length (mm)
1	TXCLK_1	28	36.805
2	RXCLK_1	29	36.788
3	RXD0_1	35	36.788
4	RXD1_1	34	36.83
5	RXD2_1	32	36.747
6	RXD3_1	31	36.727
7	RXD4_1	37	36.816
8	TXD0_1	47	36.781
9	TXD1_1	49	36.720
10	TXD2_1	50	36.749
11	TXD3_1	52	36.738
12	TXD4_1	46	36.792
13	CRS_1	40	-
14	COL_1	41	-
15	MDIO_1	43	-
16	MDC_1	44	-
17	RESET_1	53	-
18	TXEN_1	55	-
19	RXDV_1	56	-
20	RXCLK_2	83	36.157
21	TXCLK_2	84	35.974
22	RXD0_2	98	36.109
23	RXD1_2	99	36.107
24	RXD2_2	101	36.094
25	RXD3_2	102	36.118
26	RXD4_2	96	36.103

27	TXD0_2	90	36.114
28	TXD1_2	89	36.171
29	TXD2_2	87	36.129
30	TXD3_2	86	36.138
31	TXD4_2	92	35.958
32	CRS_2	95	-
33	COL_2	93	-
34	MDIO_2	81	-
35	MDC_2	80	-
36	RESET_2	78	-
37	TXEN_2	77	-
38	RXDV_2	74	-

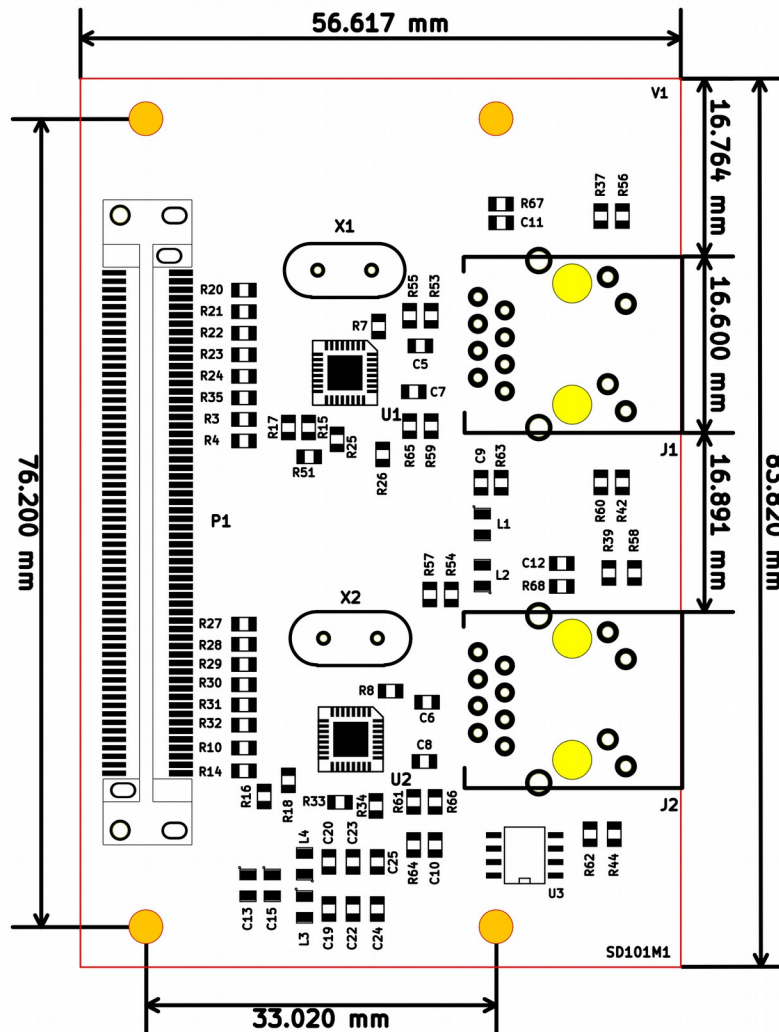
For more information, refer the schematics at the end of this document.

Technical Specifications

Parameter *	Value	Unit
Basic Specifications		
Power supply voltage	3.3	V
Current drawn by the circuit	70	mA
LAN8710A		
Supply Voltage (VDDIO, VDD1A, VDD2A)	3.3	V
Current Consumption (100BASE-T/W TRAFFIC)	54	mA

* All parameters considered nominal. Numato Systems Pvt Ltd reserve the right to modify products without notice.

Physical Dimensions



L x W x H : 83.820 mm x 56.617 mm x 14 mm
 Mechanical Hole Diameter- 3.25 mm

Schematics

See next page.

