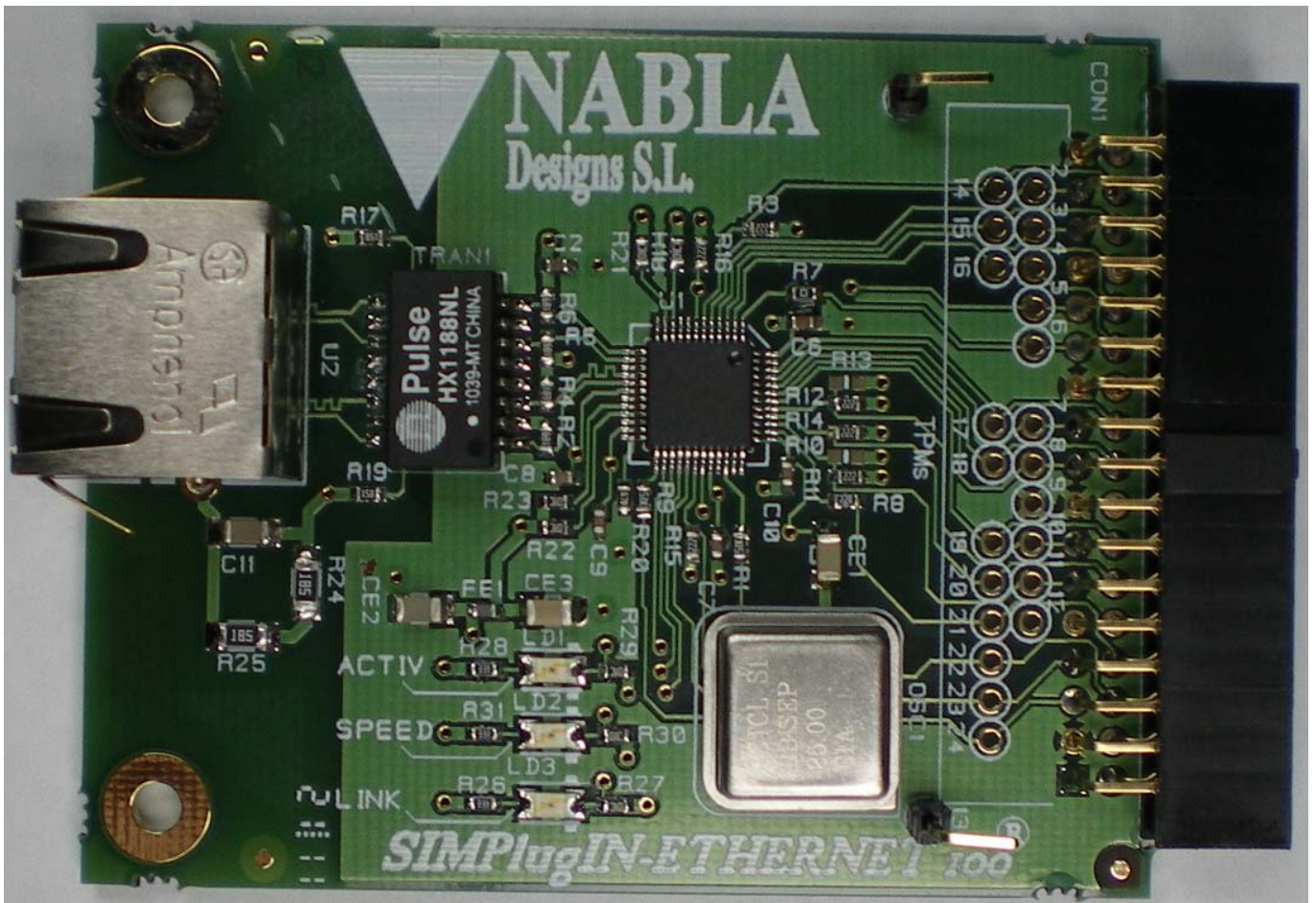


SIMPlugIN-ETHERNET-100 User Manual

... a SIMPlugIN board® family member

Revision: see file name on page header
Date: August 26th 2011



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0) Introduction and references

This manual describes how to operate SIMPlugIN-ETHERNET-100 board.

SIMPlugIN family boards are intended for engineers (engineering students too) that want to enjoy an easy to use and easy to expand FPGA development system.

SIMPlugIN-ETHERNET-100 is an add-on board that provides one ETHERNET 100 Mbit, RJ45 port to the main board by means of a National DP83848C PHY chip.

0.1) References

Note: from time to time companies modify their web pages. So, some of the detailed web link may be obsolete when you read the present document.

- SIMPlugIN- 6XL45 user manual and schematics
- In www.national.com , DP83848CVV/NOPB datasheet.

1) General description

All controlling signals of DP83848C PHY chip are controlled by FPGA pins

All this signals have test point.

Notice that the chip has its own 25 MHz oscillator clock. A copy of this clock is sent to the FPGA.

Three led's are provided for activity, link and speed.

NOTICE that R3, R10, R11, R12, R13, R14, R15 and R16 determine the default configuration of the chip (including its MII address). See more details in DP83848C datasheet.

Power supply note: the chip will only work with 3.3 volt. So it is necessary to configure the main board so as to receive in VCCO pins a power supply of 3.3 volts.

2) Connectors

RJ45 Ethernet connector

1	TX+
2	TX-
3	RX+
4	
5	
6	RX-
7	
8	

Note: pins 9 and 10 are really metal studs that connect to the connector metal shielding.

Add-on connector

1	
2	
3	GND
4	VCC33
5	ETHER-CLK
6	PHY_MDIO
7	RESET#
8	PHY_RX_CLK
9	GND
10	VCC33
11	PHY_RX_DV
12	PHY_CRS
13	PHY_RX_ER
14	PHY_COL
15	GND
16	VCC33
17	PHY_RXD0
18	PHY_RXD1
19	PHY_RXD2
20	PHY_RXD3
21	GND
22	VCC33
23	PHY_TXCLK
24	PHY_MDC
25	PHY_MDINTR
26	PHY_TX_EN
27	GND
28	VCC33
29	PHY_TXD0
30	PHY_TXD1
31	PHY_TXD2
32	PHY_TXD3
33	GND
34	VCC33

3) Configuration jumpers

There are no configuration jumpers

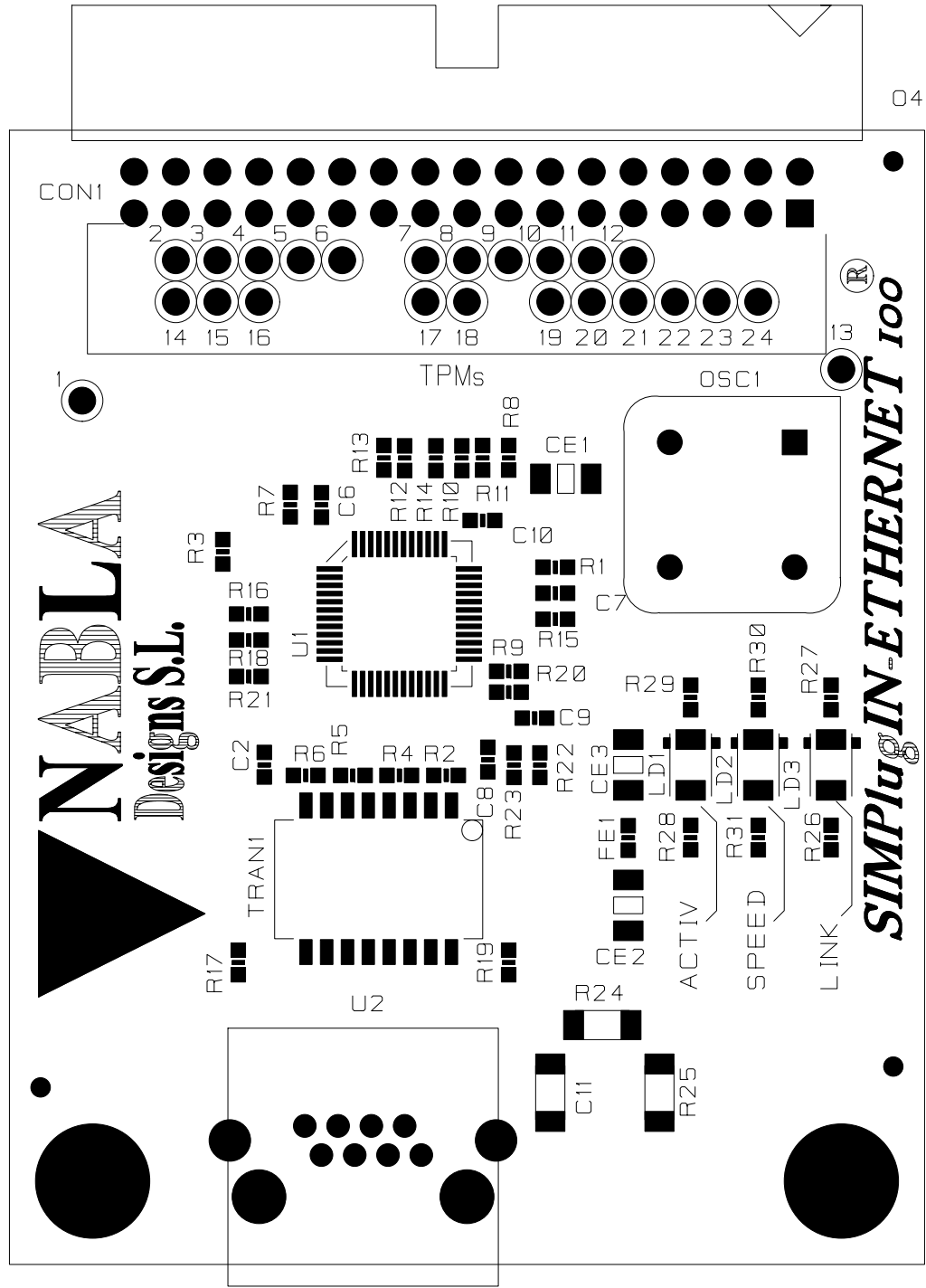
4) Test points

TPM1	GND
TPM2	PHY_TXD2
TPM3	PHY_TXD0
TPM4	PHY_MDC
TPM5	PHY_MDINTR
TPM6	PHY_TXCLK
TPM7	PHY_RXD2
TPM8	PHY_RXD0
TPM9	GND
TPM10	PHY_RX_ER
TPM11	PHY_RX_DV
TPM12	GND
TPM13	GND
TPM14	PHY_TXD3
TPM15	PHY_TXD1
TPM16	PHY_TX_EN
TPM17	PHY_RXD3
TPM18	PHY_RXD1
TPM19	PHY_COL
TPM20	PHY_CRS
TPM21	PHY_RX_CLK
TPM22	PHY_MDIO
TPM23	RESET#
TPM24	ETHER-CLK

TPM13
TPM1
TPM14
TPM15
TPM16
TPM17
TPM18
TPM19
TPM20
TPM21
TPM22
TPM23
TPM24

YNABLB

03
01



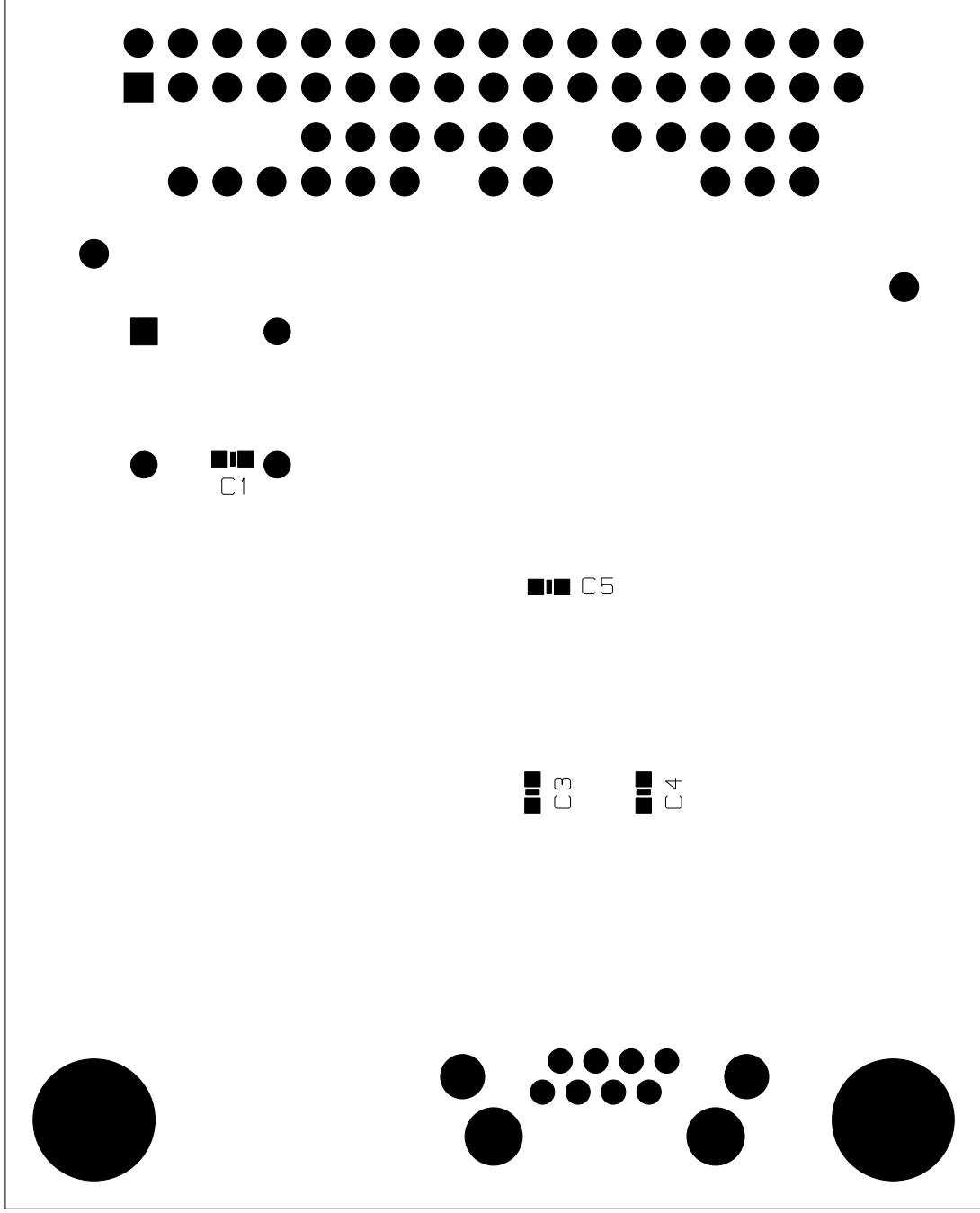
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SIMPLUG-IN-ETHERNET 100

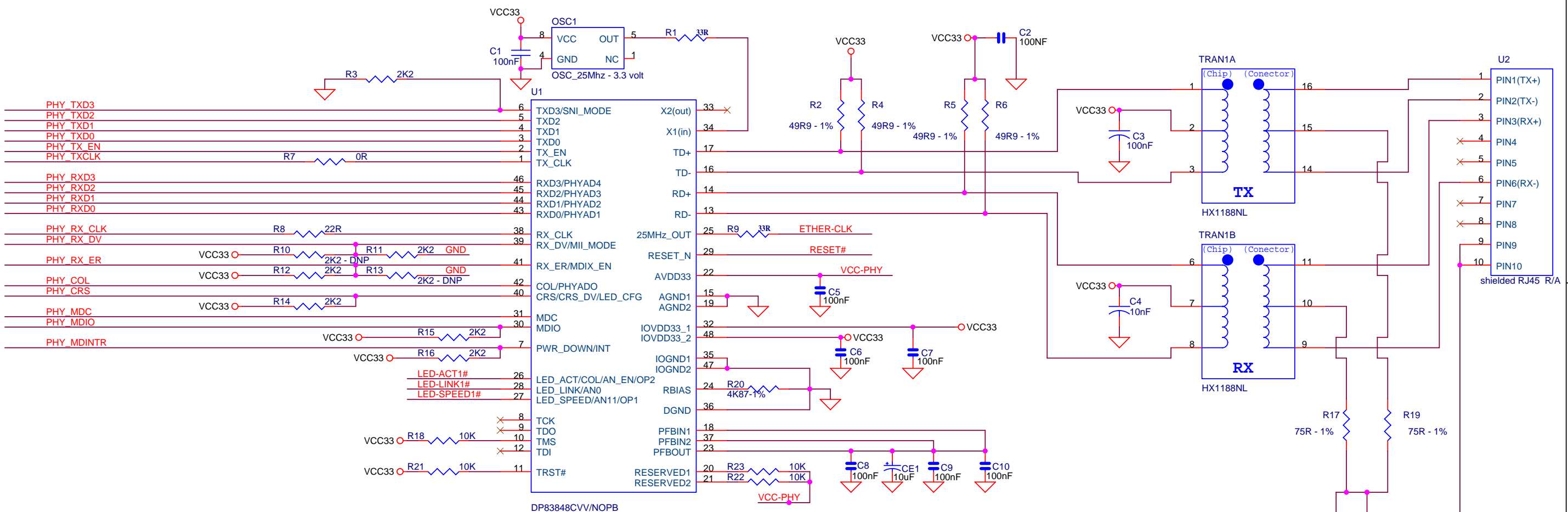
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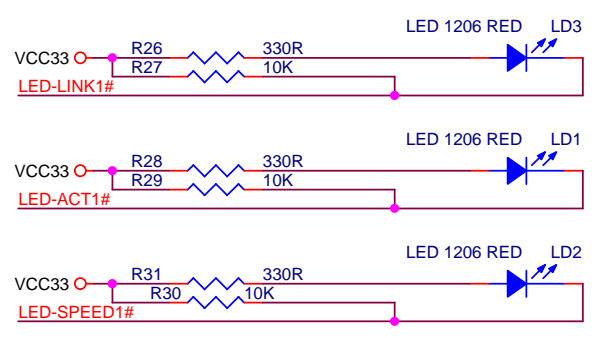
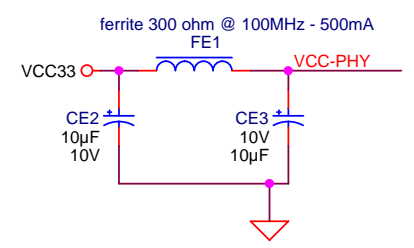
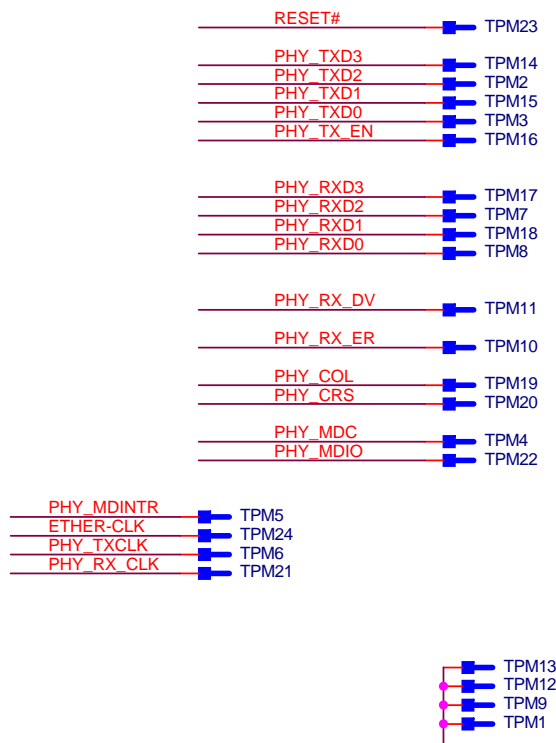
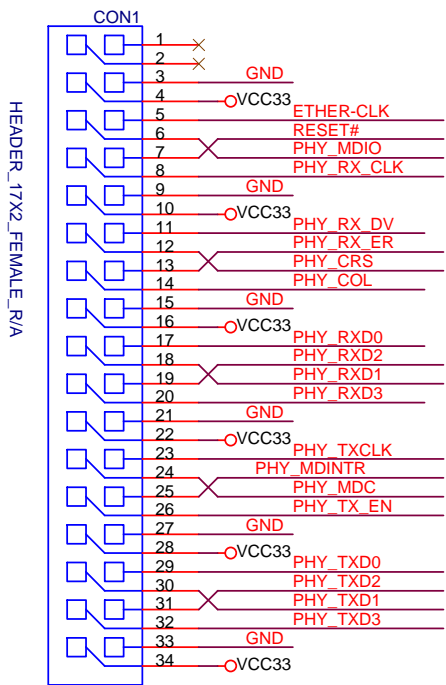


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Note:
pull-up, pull-down default -> PHYADDRESS = 00001

WARNING:
this board works ONLY with 3.3 volt power supply



		© Nabla Designs s.l.	
		Project: SIMPlugIN Board: SIMPlugIN-ETHER100 Board description Add-on board with ethernet PHY 10/100 Mbit	
Size: A3	Page description:	Rev 1.0p	
Last modified date: Friday, August 26, 2011		Page 1 of 1	

Revised: Friday, April 29, 2011				
Item	qty	Reference	Part	PCB Footprint
1	3	CE1,CE2,CE3	10uF-6.3V	1206
2	1	CON1	HEADER_17X2_FEMALE_ R/A	
3	9	C1,C2,C3,C5,C6,C7,C8,C9, C10	100nF	0603
4	1	C4	10nF	0603
5	1	C11	100pF/1KVolt	1206 high voltage
6	1	FE1	ferrite 300 ohm @ 100MHz - 500mA	0603
7	3	LD1,LD2,LD3	LED 1206 RED	1206
8	1	OSC1	OSC_25Mhz - 3.3 volt	OSC8
9	2	R1,R9	33R	0603
10	4	R2,R4,R5,R6	49R9 - 1%	0603
11	6	R3,R11,R12,R14,R15,R16	2K2	0603
12	1	R7	0R	0603
13	1	R8	22R	0603
14	2	R13,R10	2K2 - DNP	0603
15	2	R19,R17	75R - 1%	0603
16	7	R18,R21,R22,R23,R27,R29, R30	10K	0603
17	1	R20	4K87-1%	0603
18	2	R24,R25	1M8 - 400 volt	1206 high voltage
19	3	R26,R28,R31	330R	0603
20	24	TPM1,TPM2,TPM3,TPM4,TPM5, TPM6,TPM7,TPM8,TPM9, TPM10,TPM11,TPM12,TPM13, TPM14,TPM15,TPM16,TPM17, TPM18,TPM19,TPM20,TPM21, TPM22,TPM23,TPM24	DNP header 1x1	header 1x1
21	1	TRAN1	HX1188NL	HX1188
22	1	U1	DP83848CVV/NOPB	PQFP48
23	1	U2	shielded RJ45 R/A	CTEL8_ESP