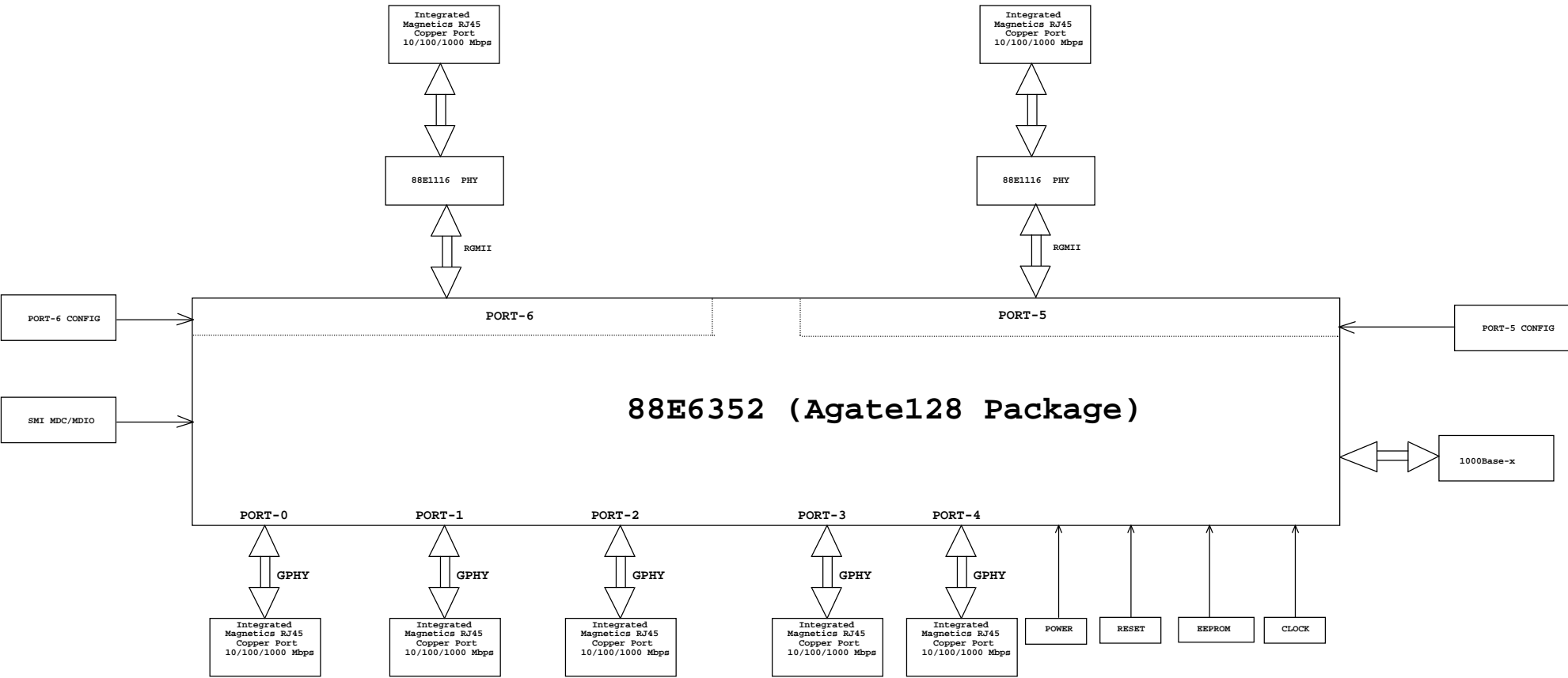


Designer : Amulya K Patra

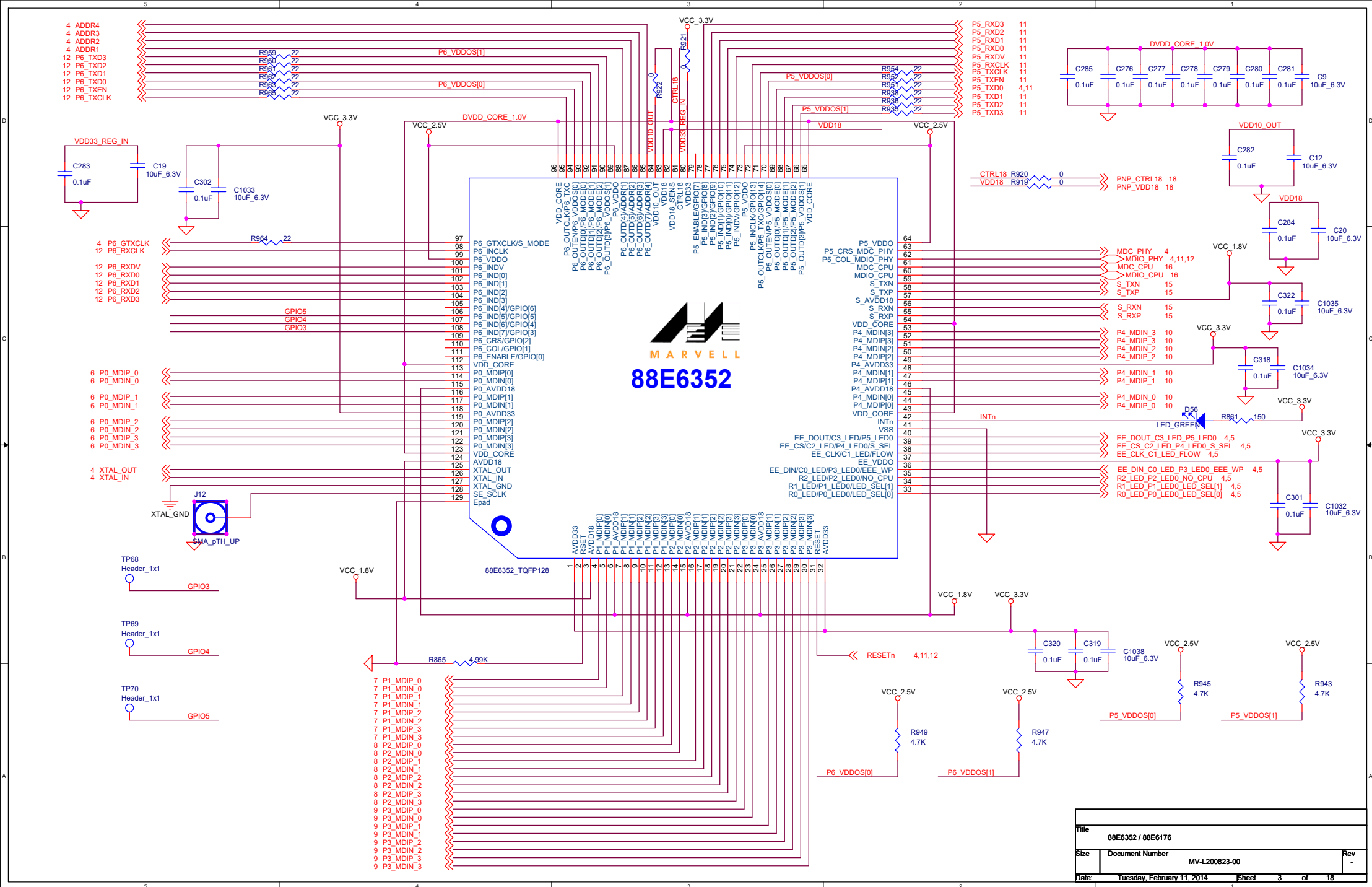
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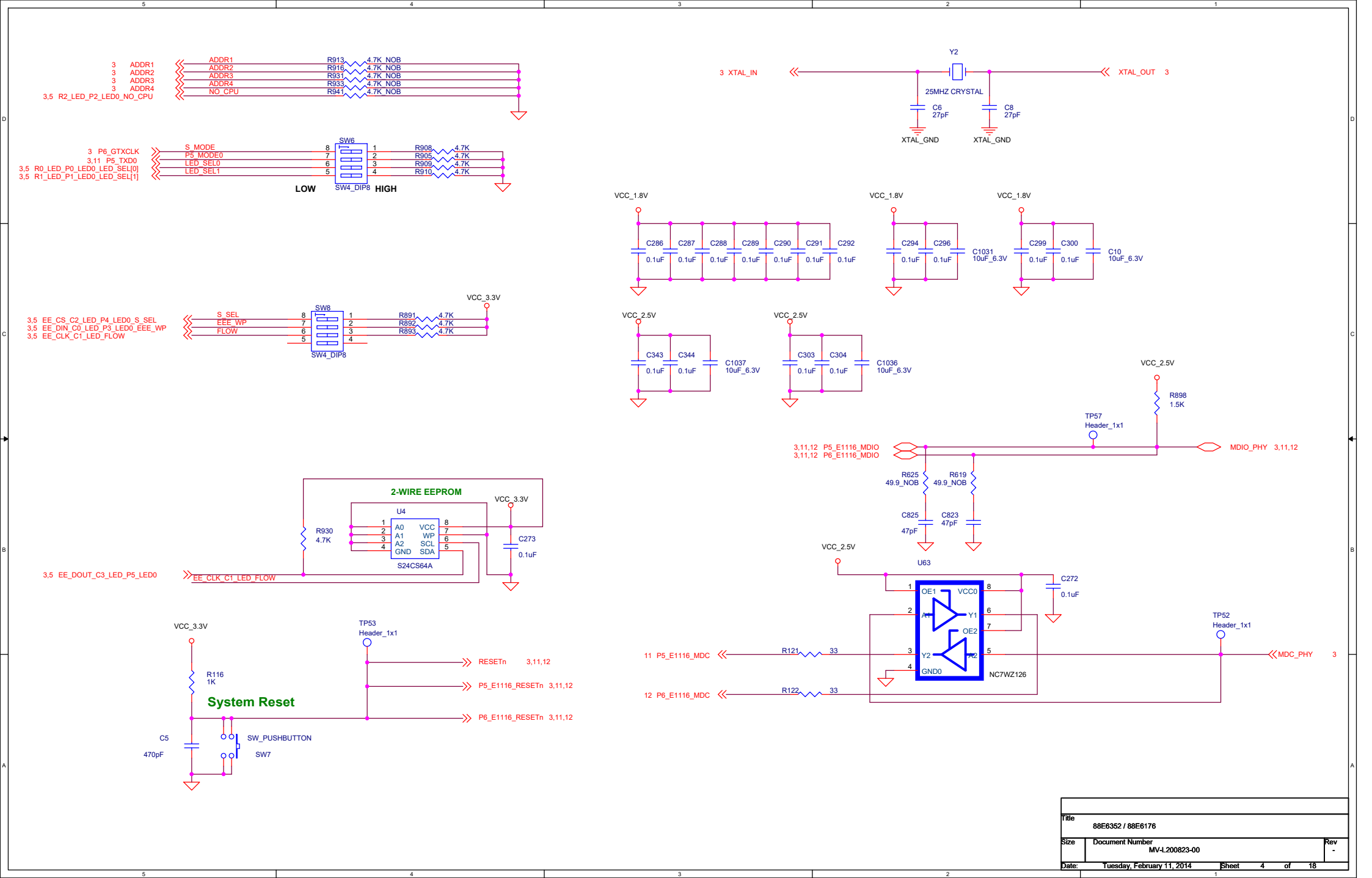
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2	Top level block diagram
3	88E6352 Chip Interface
4	88E6352 Configuration
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11	P5 RGMII I/F TO E1111
12	P6 GMII/RGMII I/F
13-14	P5-P6 MDI I/F TO E1111
15	1000Base-x
16-17	SMI I/F
18	POWER SUPPLY

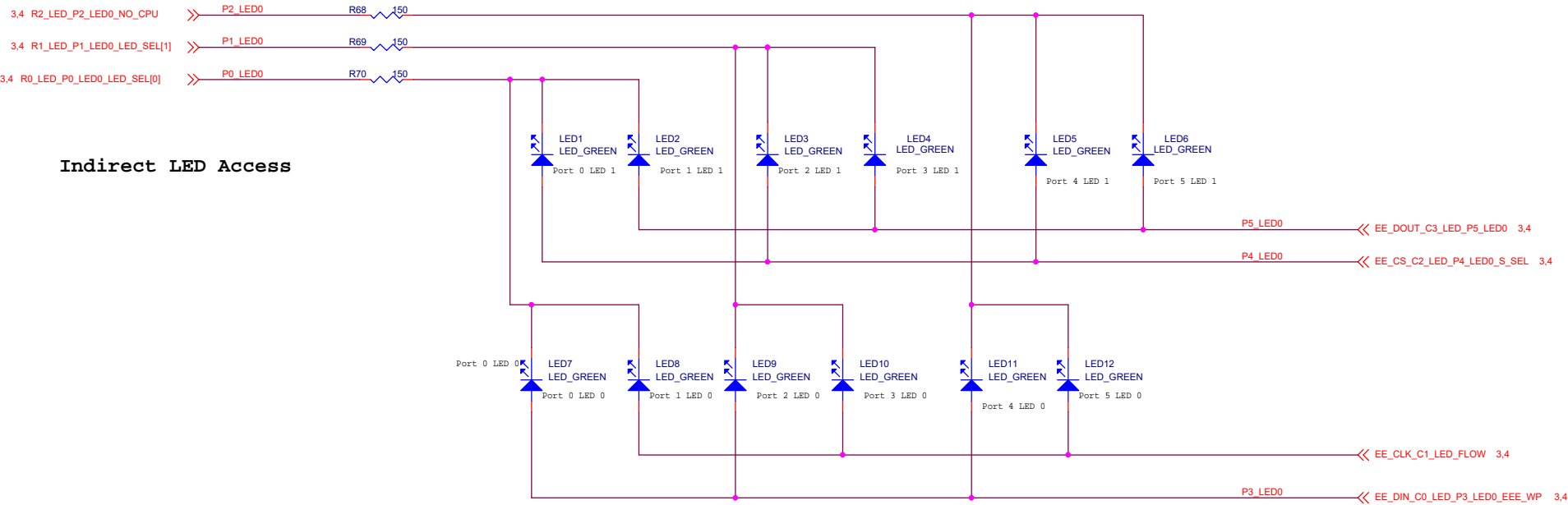
TOP LEVEL BLOCK DIAGRAM



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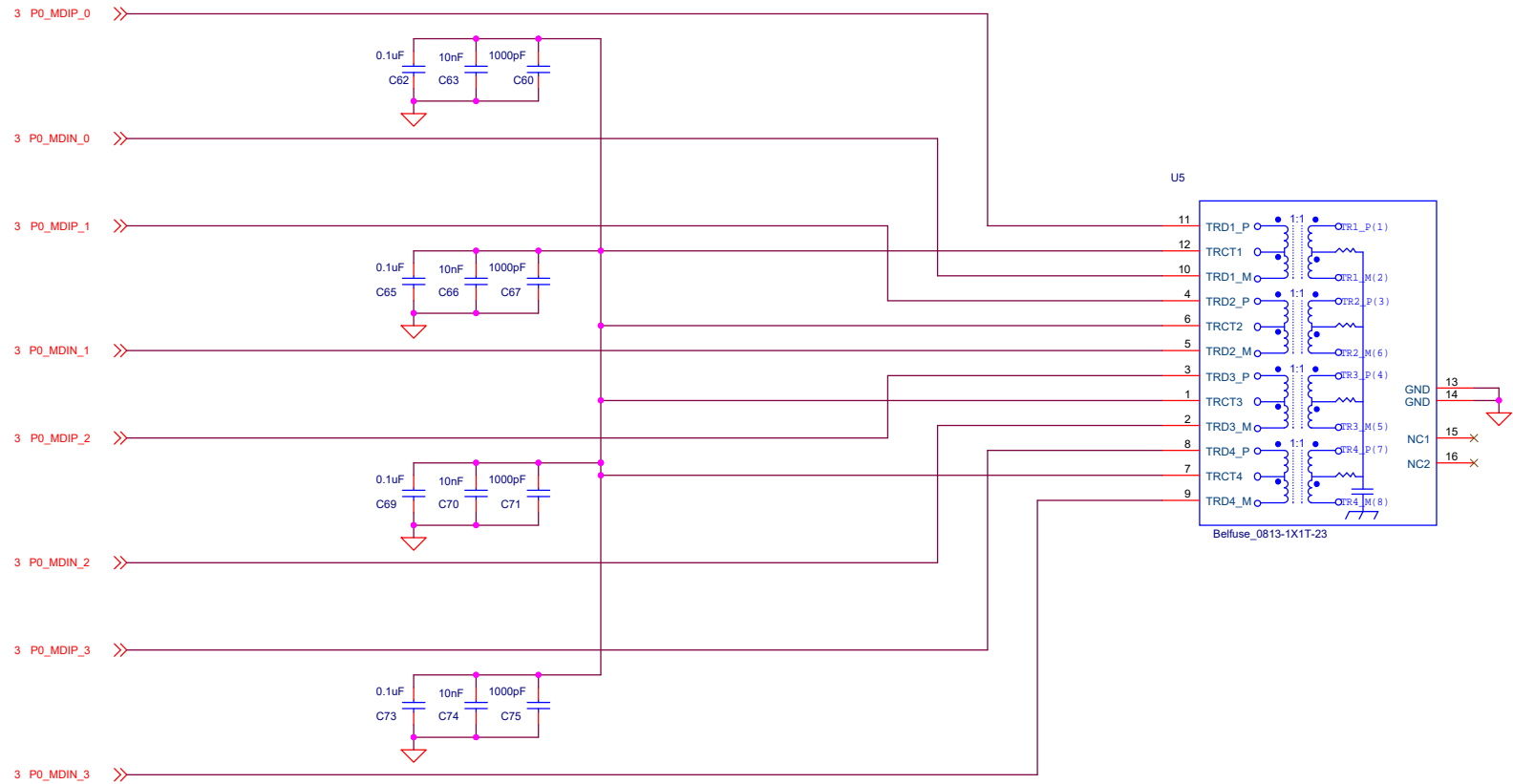






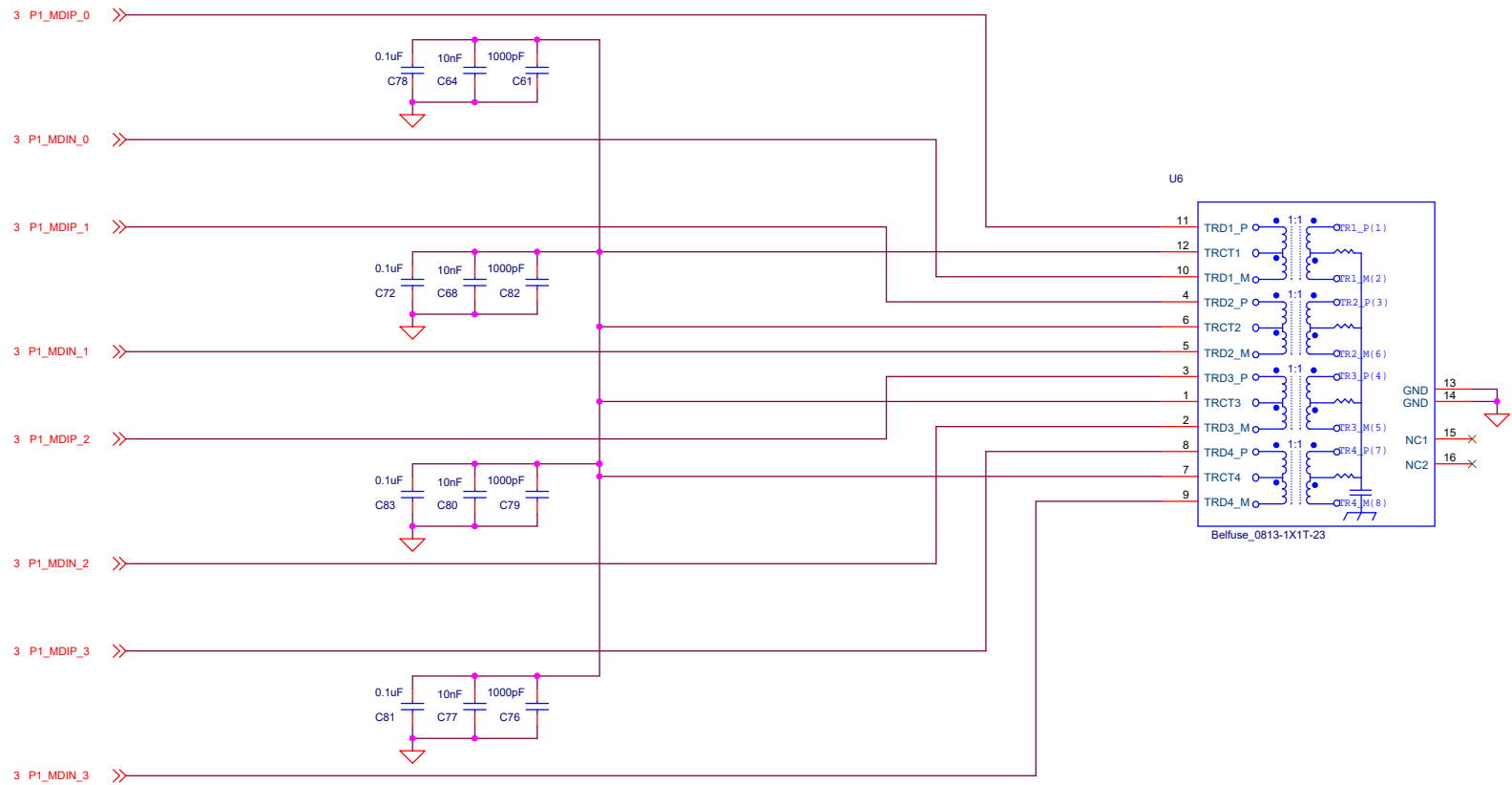
	C0_LED	C1_LED	C2_LED	C3_LED
R0_LED	Port 0 LED 0	Port 1 LED 0	Port 0 LED 1	Port 1 LED 1
R1_LED	Port 2 LED 0	Port 3 LED 0	Port 2 LED 1	Port 3 LED 1
R2_LED	Port 4 LED 0	Port 5 LED 0	Port 4 LED 1	Port 5 LED 1

PORT-0 MDI I/F



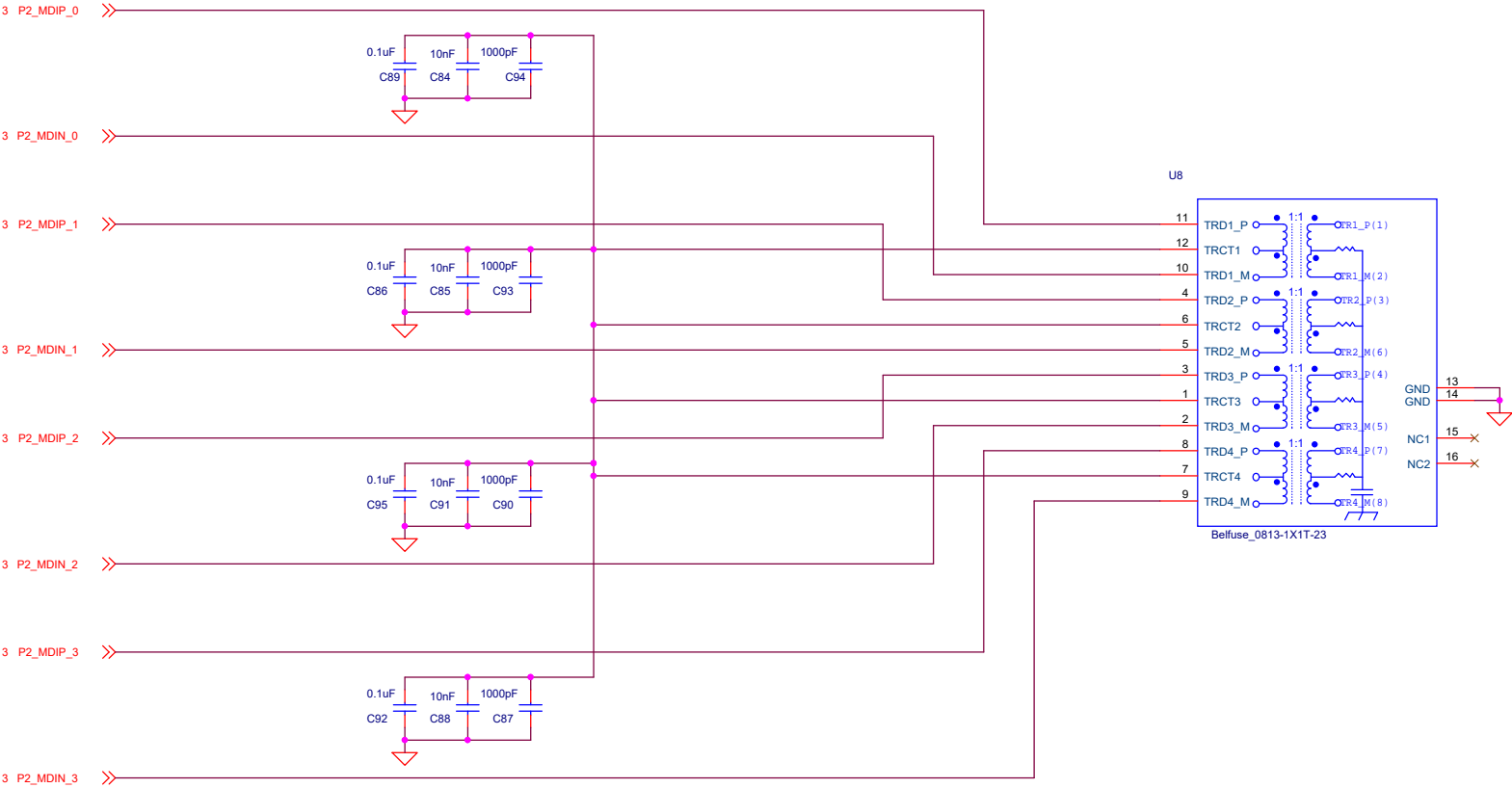
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PORT-1 MDI I/F



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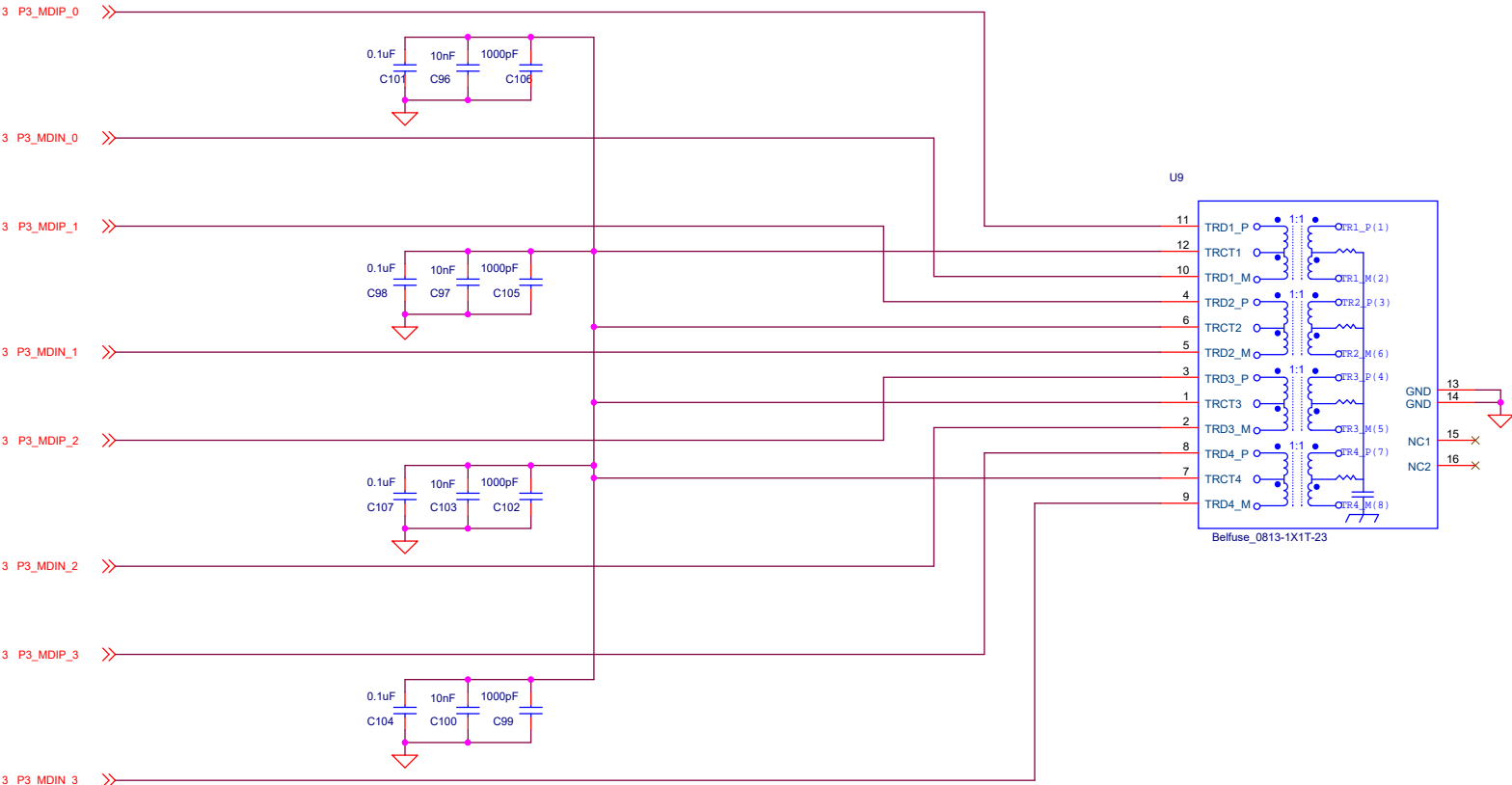
PORT-2 MDI I/F



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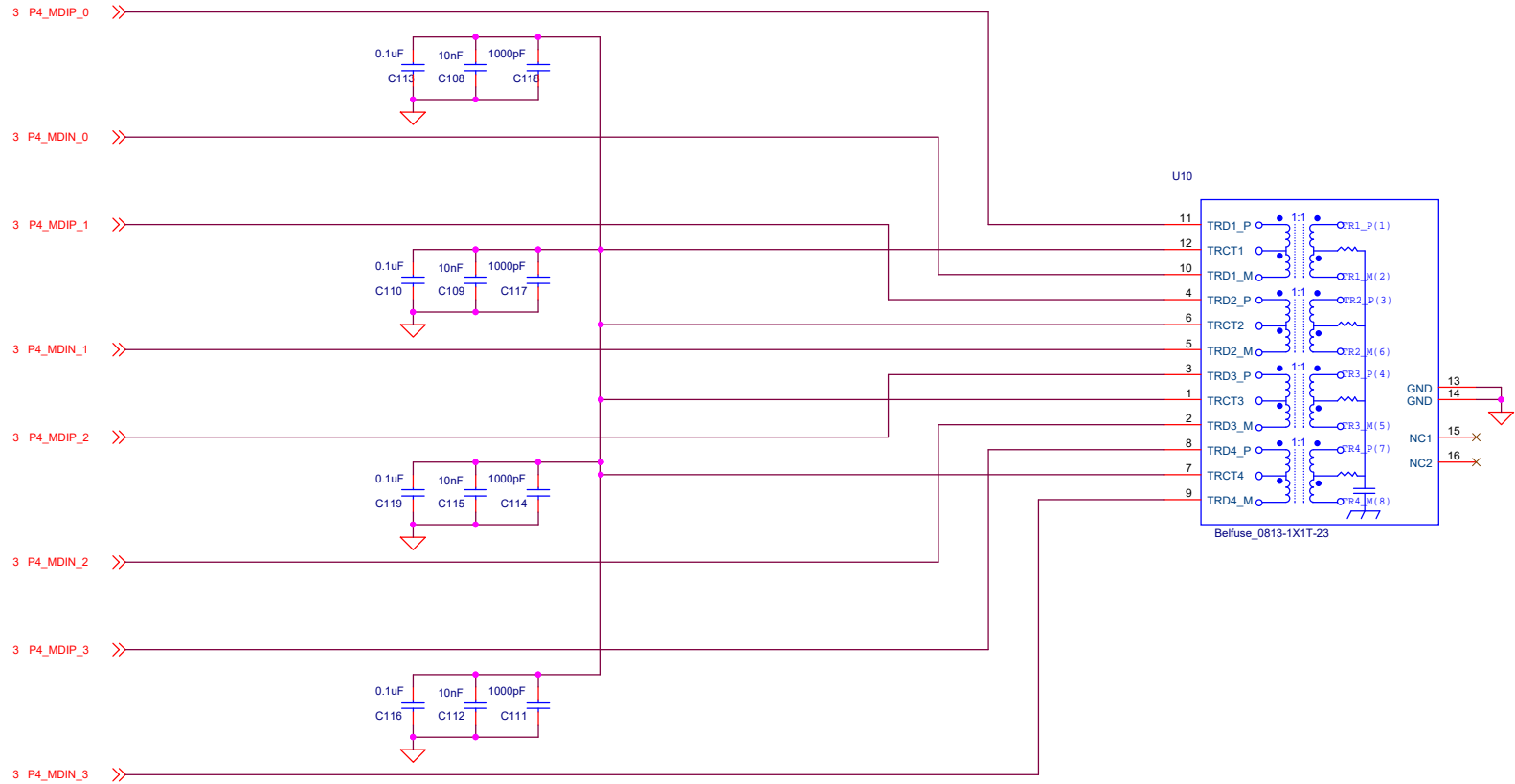


PORT-3 MDI I/F



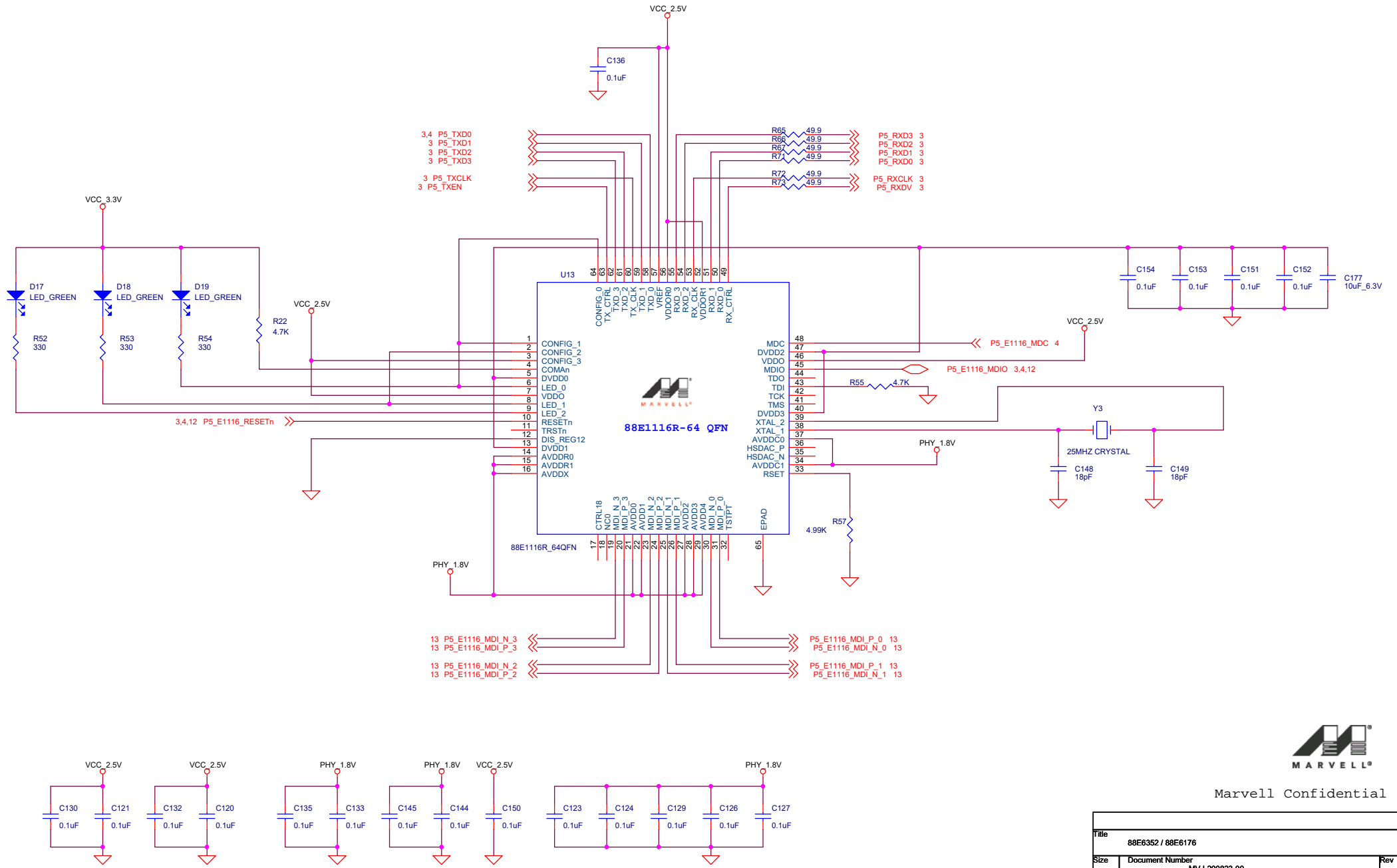
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PORT-4 MDI I/F



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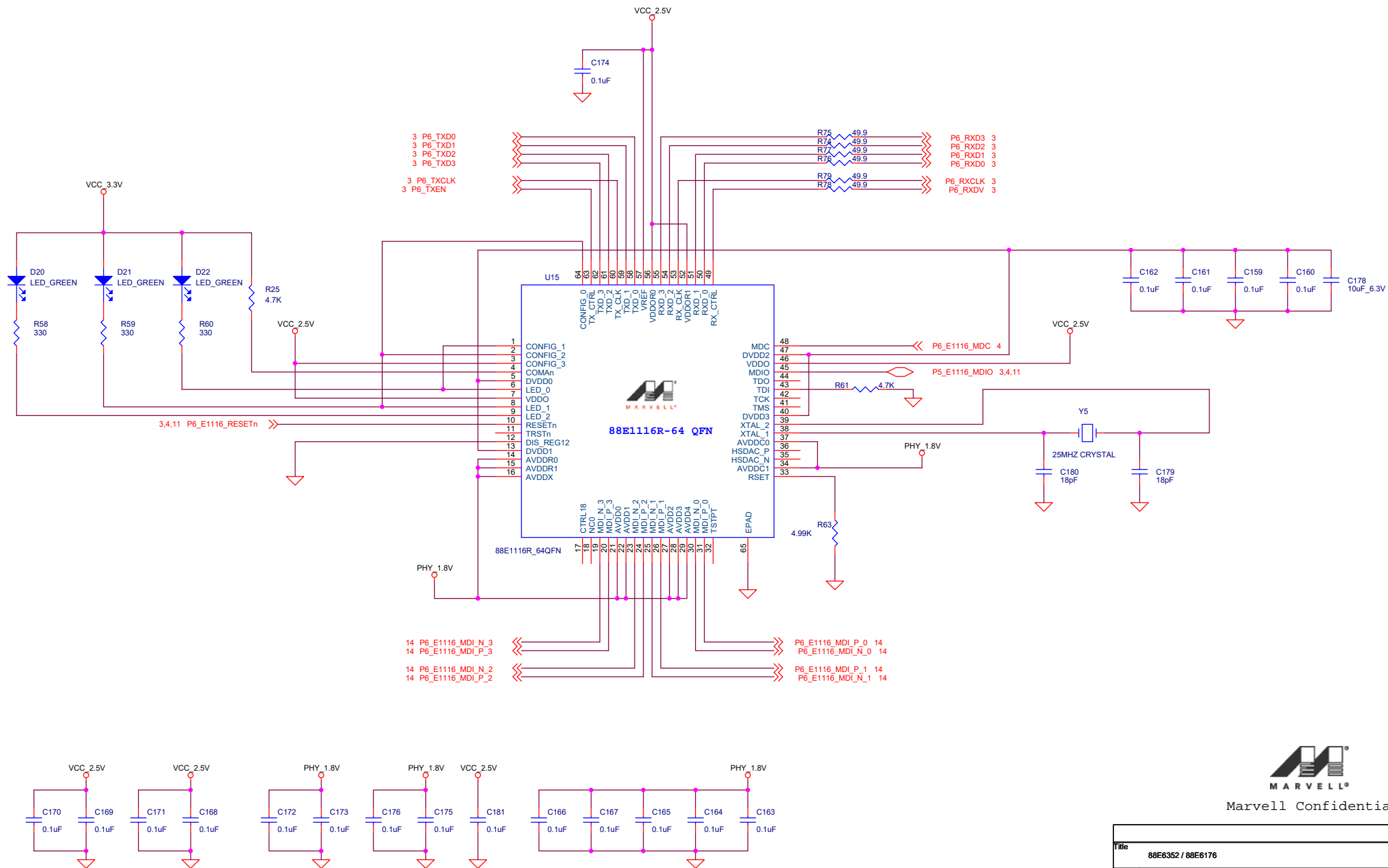
# P5 RGMIIINTERFACE WITH E1116



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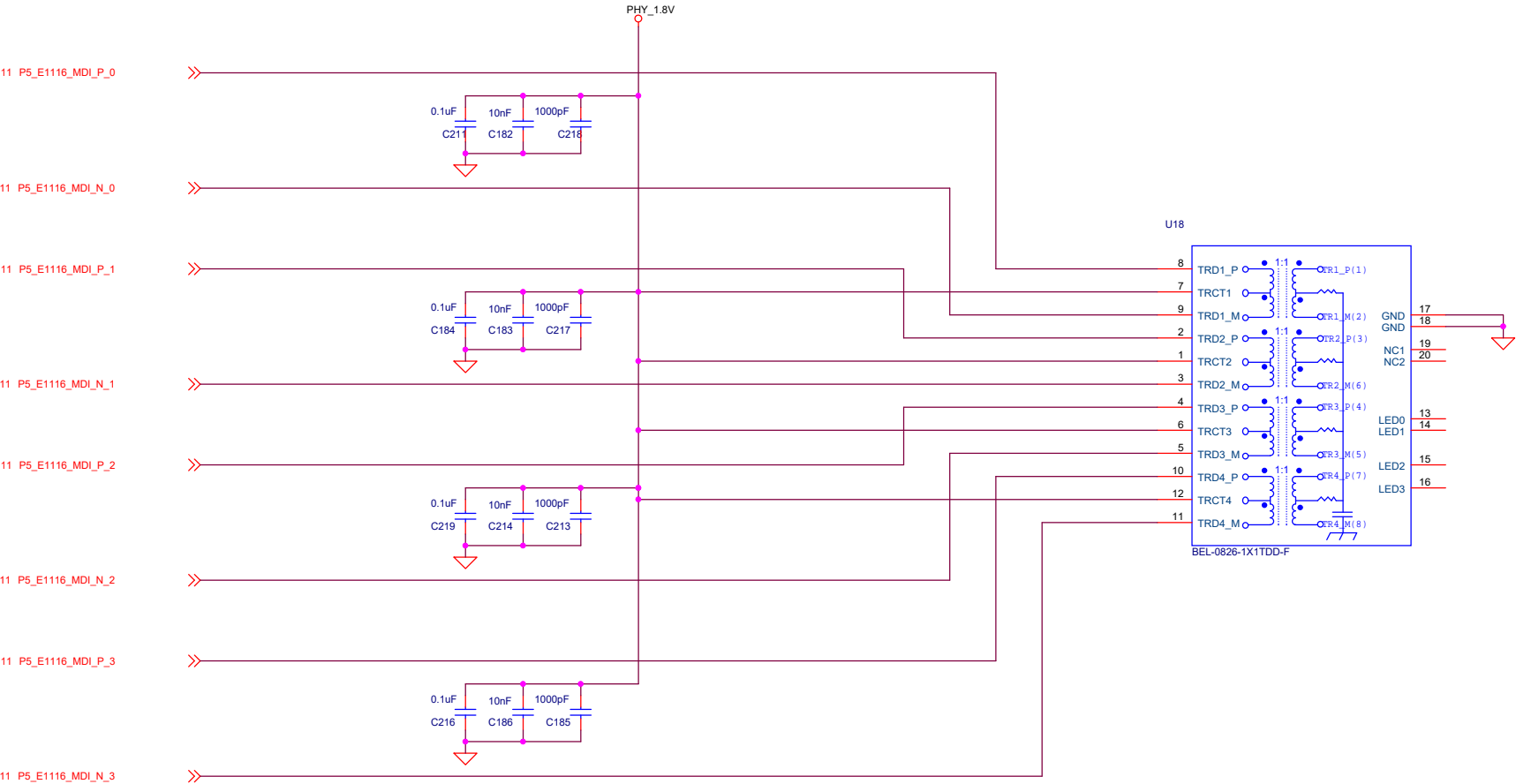
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## P6 RGMII/GMII INTERFACE WITH E1116



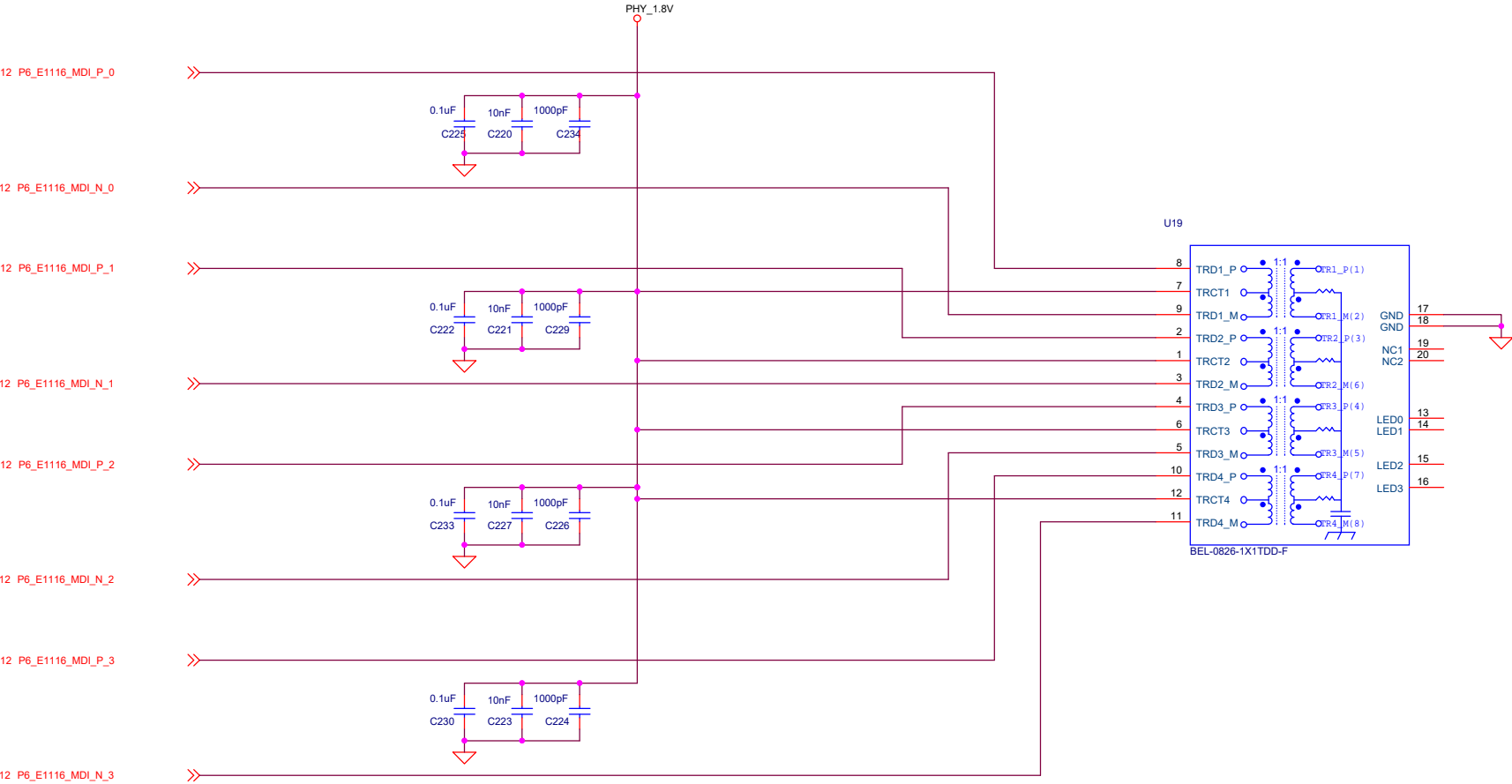
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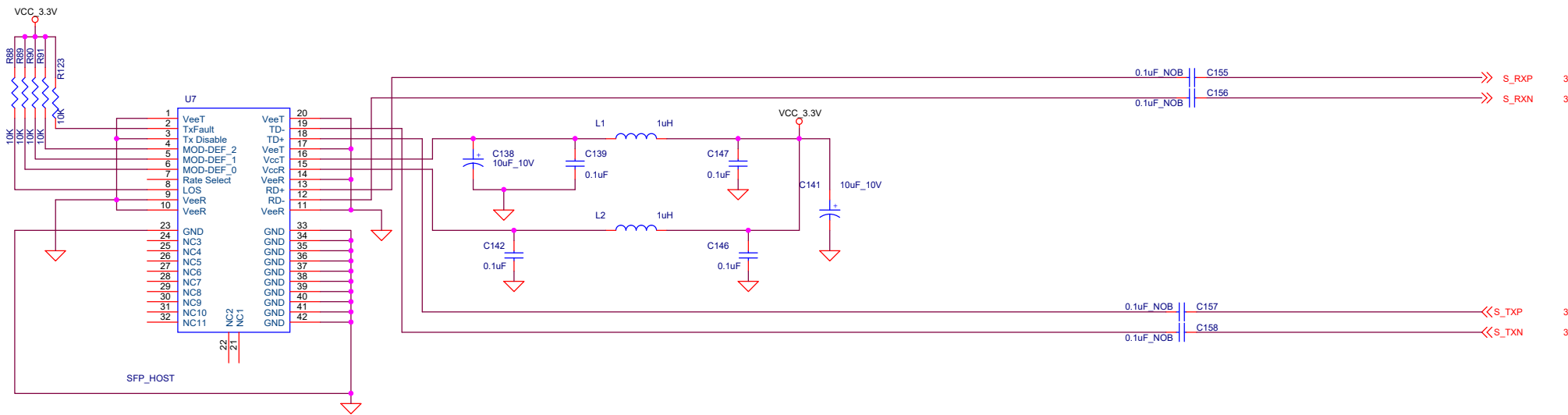
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P6 E1116 MDI I/F



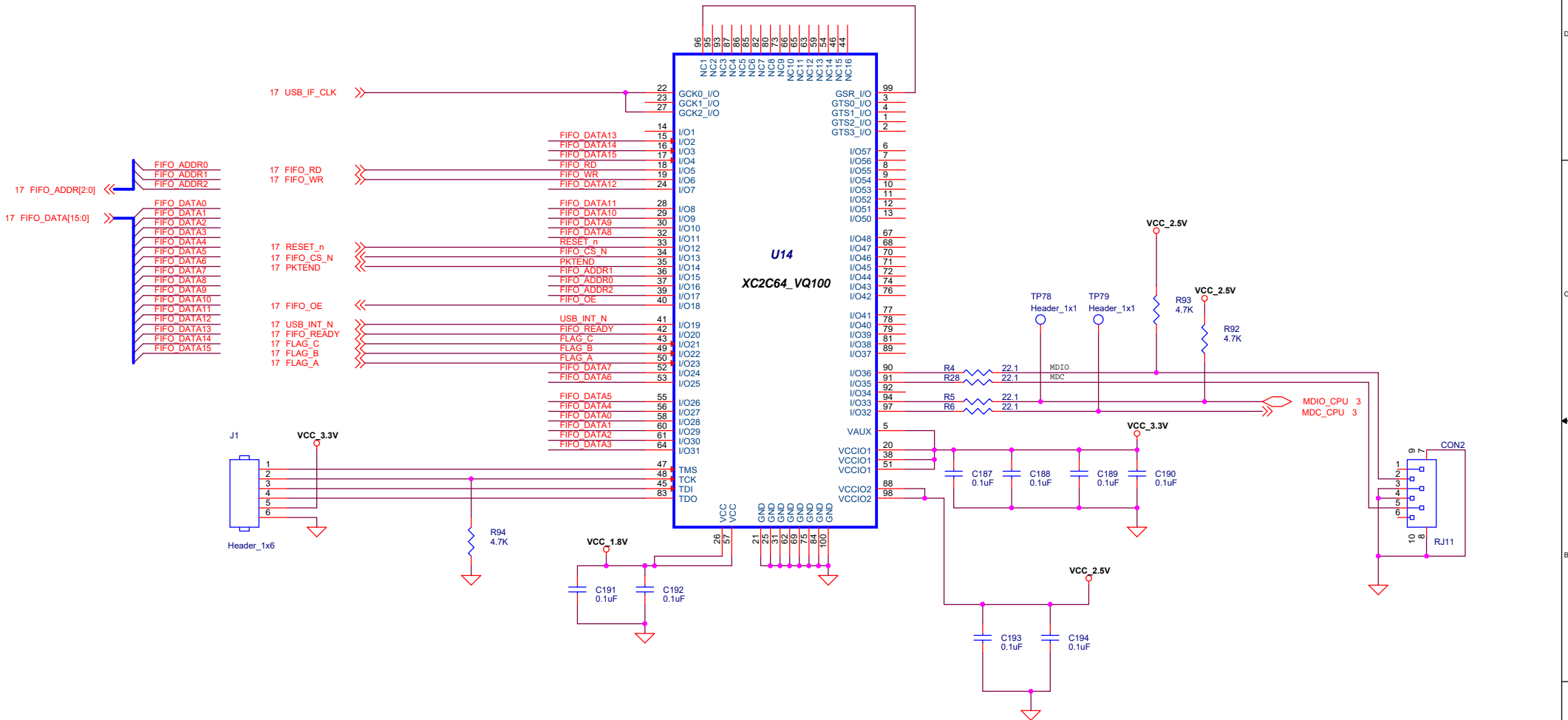
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## 1000BASE-X



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# SMI CPLD CONTROLLER



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**SMI USB CONTROLLER**

The schematic diagram illustrates the SMI USB Controller circuit. The central component is the USB controller (U103, CY7C68001-56PVC), which is connected to a USB-B connector (J2). The controller is powered by VCC\_3.3V and has various control signals like RESET\_n, WAKEUP, and SCL. It is connected to a 24MHz crystal (Y4) and a 10uF 6.3V capacitor (C208). The controller's FIFOs are connected to a 16-bit data bus (FIFO\_DATA[15:0]). The circuit also includes a 10uF 6.3V capacitor (C208) and a 10uF 6.3V capacitor (C209).

**Components and Connections:**

- USB-B Connector (J2):** Connected to VBUS, D+, D-, GND, and SHELL. It is connected to the USB controller (U103) via a 100Ω resistor (R96) and a 4.7K resistor (R100).
- Power Supply:** VCC\_3.3V is connected to the controller's VCC pin. A 10uF 6.3V capacitor (C208) is connected to the VCC pin. A 10uF 6.3V capacitor (C209) is connected to the VCC pin.
- Crystal (Y4):** A 24MHz crystal connected to the controller's XTALIN and XTALOUT pins. It is connected to VCC\_3.3V and GND via capacitors C195 and C196.
- Control Signals:**
  - RESET\_n:** Connected to the controller's RESET# pin (pin 49) via a 100K resistor (R117) and a 10uF 6.3V capacitor (C207).
  - WAKEUP:** Connected to the controller's WAKEUP pin (pin 51) via a 100K resistor (R117) and a 10uF 6.3V capacitor (C207).
  - SCL:** Connected to the controller's SCL pin (pin 22) via a 100K resistor (R117) and a 10uF 6.3V capacitor (C207).
- FIFOs:** The controller's FIFOs are connected to a 16-bit data bus (FIFO\_DATA[15:0]).

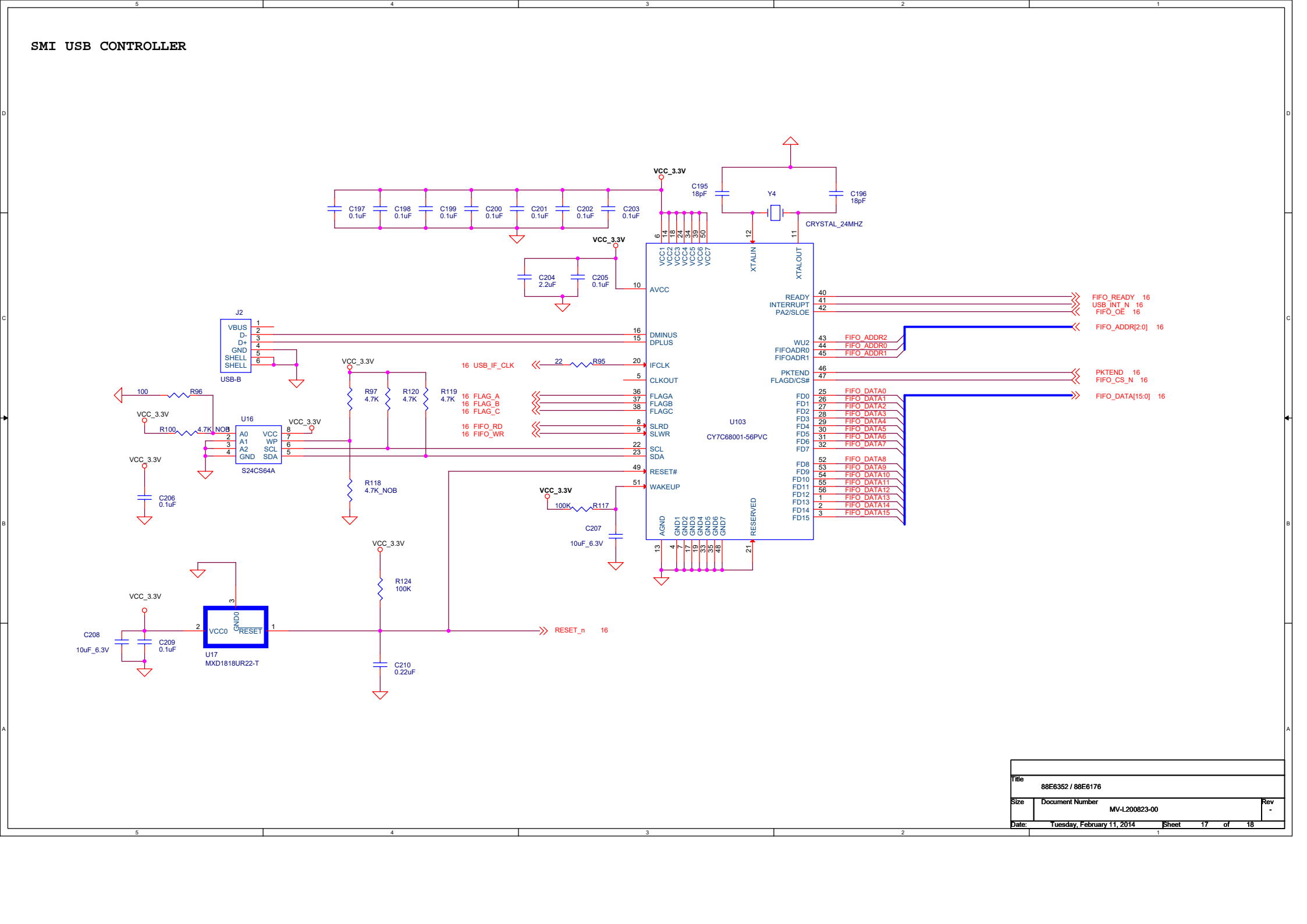
**Legend:**

- 16 USB\_IF\_CLK**
- 16 FLAG\_A**
- 16 FLAG\_B**
- 16 FLAG\_C**
- 16 FIFO\_RD**
- 16 FIFO\_WR**
- 16 FIFO\_ADDR2**
- 16 FIFO\_ADDR0**
- 16 FIFO\_ADDR1**
- 16 PKTEND**
- 16 FIFO\_CS\_N**
- 16 FIFO\_DATA[15:0]**

**Table:**

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**SMI USB CONTROLLER**

The schematic diagram illustrates the SMI USB Controller circuit. The central component is the USB controller (U103, CY7C68001-56PVC), which is connected to a USB-B connector (J2) and a crystal (Y4, CRYSTAL\_24MHZ). The controller's power supply is VCC\_3.3V, and its ground is connected to various pins. A reset circuit (U17, MXD1818UR22-T) is connected to the controller's RESET# pin. The controller's data pins are connected to a FIFO buffer (U16, S24CS64A). The circuit also includes various capacitors (C197-C203, C204-C205, C206, C207, C208, C209, C210) and resistors (R96, R97, R100, R117, R118, R120, R124).

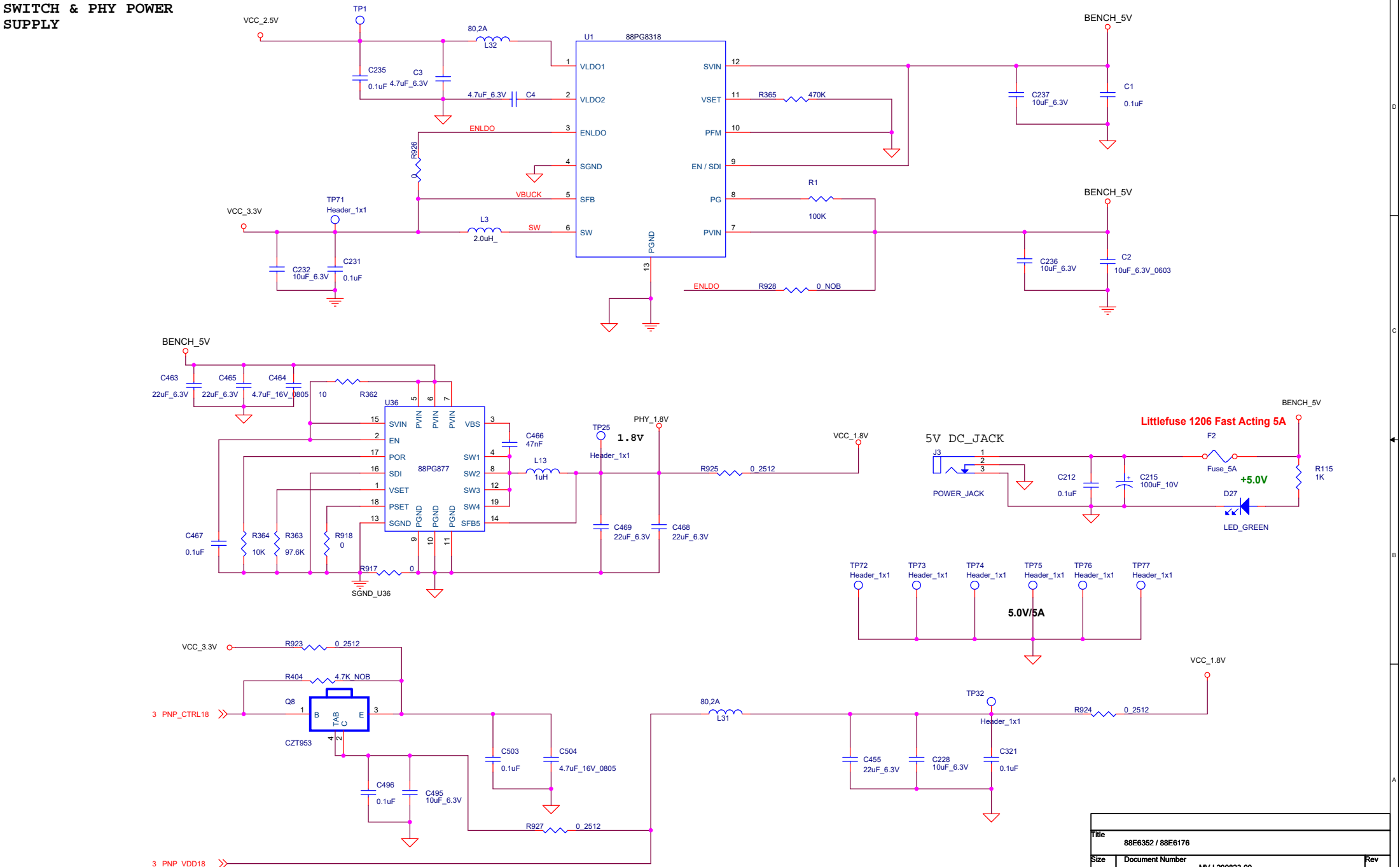
**Components and Connections:**

- USB-B Connector (J2):** Connected to VBUS, D+, D-, GND, and SHELL. VBUS is connected to VCC\_3.3V through a 100Ω resistor (R96). D+ and D- are connected to the controller's D+ and D- pins.
- Power Supply:** VCC\_3.3V is connected to the controller's VCC pin. Ground is connected to the controller's GND pin.
- Crystal (Y4):** CRYSTAL\_24MHZ is connected to the controller's XTALIN and XTALOUT pins.
- Reset Circuit (U17):** MXD1818UR22-T is connected to the controller's RESET# pin. The reset signal is generated by a 10μF\_6.3V capacitor (C208) and a 0.1μF capacitor (C209).
- FIFO Buffer (U16):** S24CS64A is connected to the controller's FIFO pins. The FIFO buffer is used to store data received from the USB-B connector.
- Capacitors:** C197-C203 are 0.1μF capacitors connected to VCC\_3.3V. C204 and C205 are 2.2μF and 0.1μF capacitors connected to VCC\_3.3V. C206 is a 0.1μF capacitor connected to VCC\_3.3V. C207 is a 10μF\_6.3V capacitor connected to VCC\_3.3V. C208 and C209 are 10μF\_6.3V and 0.1μF capacitors connected to VCC\_3.3V. C210 is a 0.22μF capacitor connected to VCC\_3.3V.
- Resistors:** R96 is a 100Ω resistor connected to VBUS. R97, R100, R117, R118, R120, and R124 are 4.7K, 4.7K, 100K, 4.7K, 4.7K, and 100K resistors connected to VCC\_3.3V.

**Legend:**

- 16 USB\_IF\_CLK**: Connected to the controller's IFCLK pin.
- 16 FLAG\_A, 16 FLAG\_B, 16 FLAG\_C**: Connected to the controller's FLAGA, FLAGB, and FLAGC pins.
- 16 FIFO\_RD, 16 FIFO\_WR**: Connected to the controller's SLRD and SLWR pins.
- 16 RESET\_n**: Connected to the controller's RESET# pin.
- 16 FIFO\_ADDR2, 16 FIFO\_ADDR0, 16 FIFO\_ADDR1**: Connected to the controller's FIFOADDR2, FIFOADDR0, and FIFOADDR1 pins.
- 16 PKTEND, 16 FIFO\_CS\_N**: Connected to the controller's PKTEND and FIFO\_CS# pins.
- 16 FIFO\_DATA0, 16 FIFO\_DATA1, 16 FIFO\_DATA2, 16 FIFO\_DATA3, 16 FIFO\_DATA4, 16 FIFO\_DATA5, 16 FIFO\_DATA6, 16 FIFO\_DATA7, 16 FIFO\_DATA8, 16 FIFO\_DATA9, 16 FIFO\_DATA10, 16 FIFO\_DATA11, 16 FIFO\_DATA12, 16 FIFO\_DATA13, 16 FIFO\_DATA14, 16 FIFO\_DATA15**: Connected to the controller's FIFO pins.

SWITCH & PHY POWER  
SUPPLY



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