

Power

The power section includes a TPS7A05 voltage regulator and a MIC94090 level shifter.

TPS7A05: VIN+ is connected to pin 1, VIN- to pin 2, and GND to pin 3. The output VOUT (pin 5) is connected to a 3V3 output. A 1uF capacitor (C1) is connected between pins 1 and 2, and another 1uF capacitor (C2) is connected between pin 5 and GND. A 0.1uF capacitor (C3) is connected between VCC and GND.

MIC94090: VIN+ is connected to pin 4, 3V3_CTRL to pin 6, and GND to pin 2. The output VOUT (pin 1) is connected to the VOUT output.

Connectors

The connectors section shows the pin configurations for J0, J1, and ISP1.

J0: Pin 6 is VIN-, pin 5 is VIN+, pin 4 is SDA_HV, pin 3 is SCL_HV, pin 2 is TX_HV, and pin 1 is RX_HV.

J1: Pin 1 is GND, pin 2 is VOUT, pin 3 is TX+, pin 4 is TX-, pin 5 is RX-, and pin 6 is RX+.

ISP1: Pin 1 is MISO, pin 3 is SCL, pin 5 is /RESET, pin 2 is VCC, pin 4 is SDA, and pin 6 is GND.

Program/Widget connection: The diagram shows the connection between the microcontroller and the sensor/widget. The microcontroller pins are MOSI, MISO, RX, TX, and /RESET. The sensor/widget pins are SDA, RX, TX, and SCL. The sensor/widget is labeled "Northern Widget Logo".

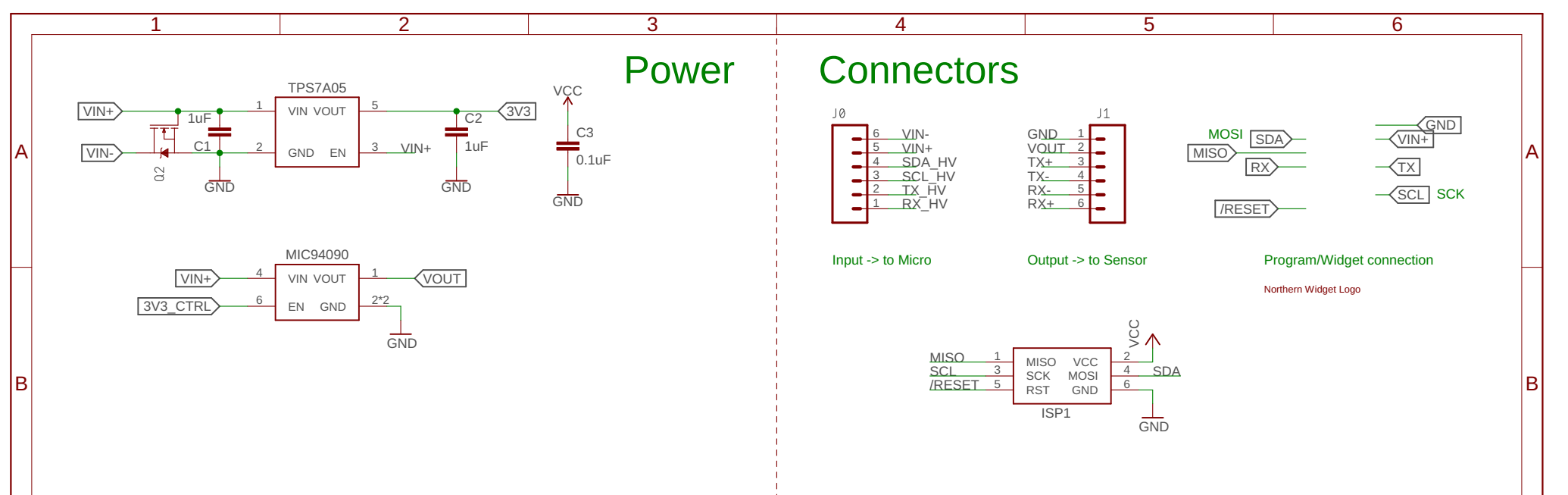
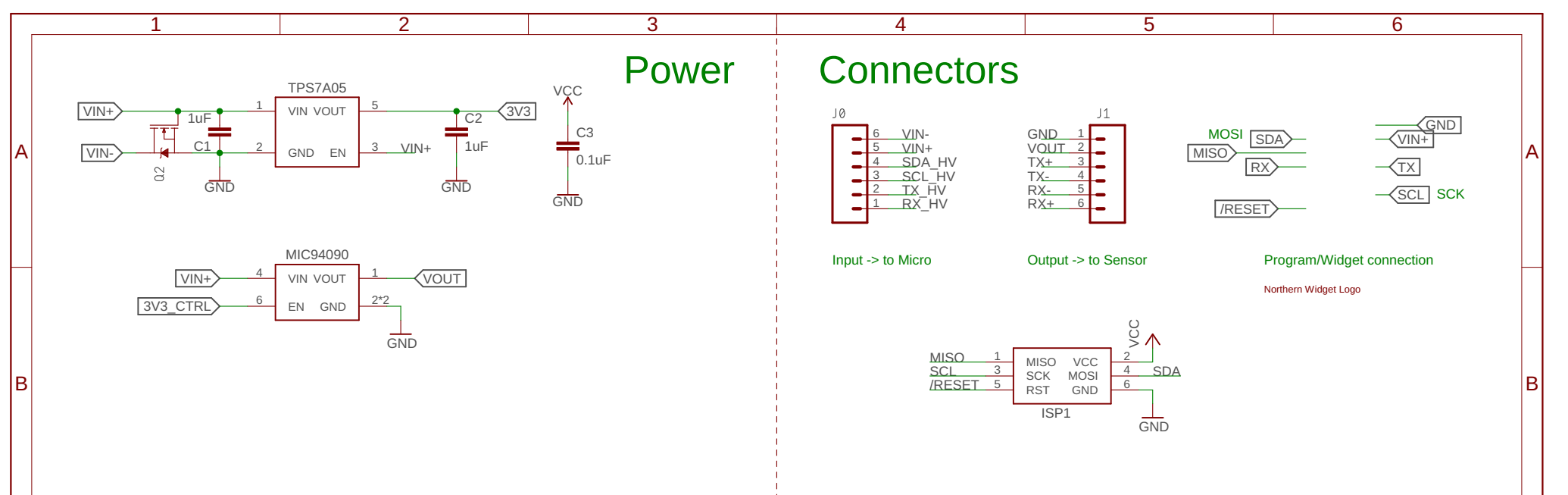
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Diagram illustrating the power and connector configurations for a microcontroller system, divided into two main sections: Power and Connectors.

Power

TPS7A05 Voltage Regulator:

- VIN:** Connected to VIN+ and VIN- (with a 0.2 resistor).
- EN:** Connected to VIN+.
- VOUT:** Connected to the 3V3 output.
- Capacitors:** 1uF capacitor (C1) on VIN, 1uF capacitor (C2) on VOUT, and 0.1uF capacitor (C3) on VCC.

MIC94090 Voltage Regulator:

- VIN:** Connected to VIN+.
- EN:** Connected to 3V3_CTRL.
- VOUT:** Connected to the VOUT output.

Connectors

J0 (Input -> to Micro):

- 6: VIN-
- 5: VIN+
- 4: SDA_HV
- 3: SCL_HV
- 2: TX_HV
- 1: RX_HV

J1 (Output -> to Sensor):

- 1: GND
- 2: VOUT
- 3: TX+
- 4: TX-
- 5: RX-
- 6: RX+

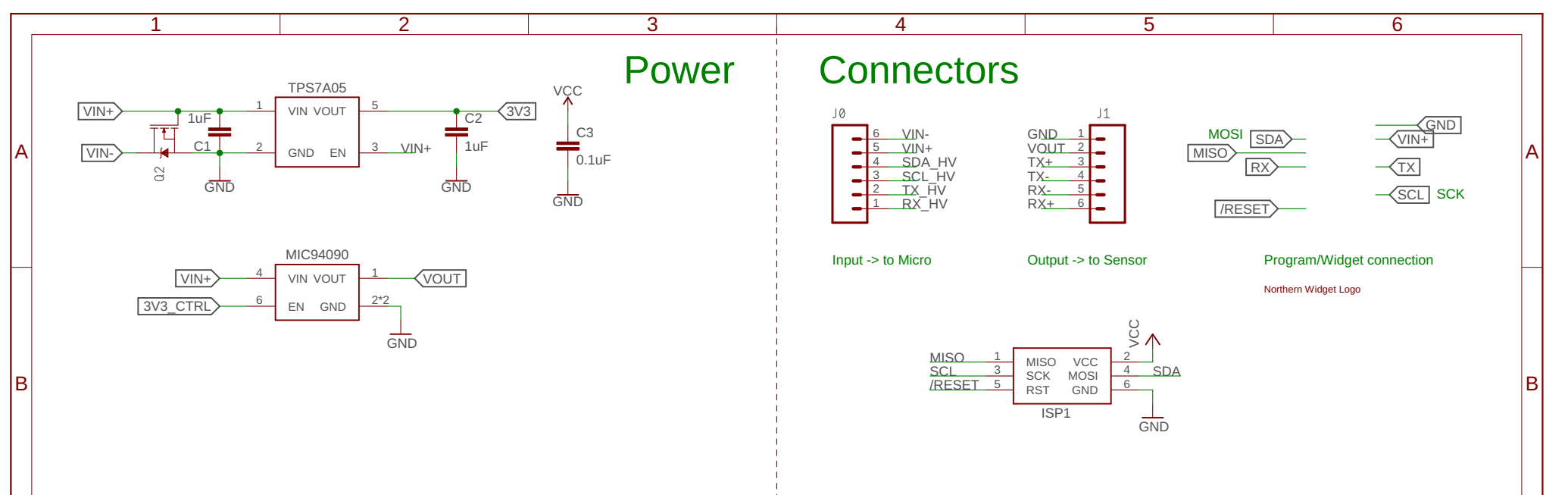
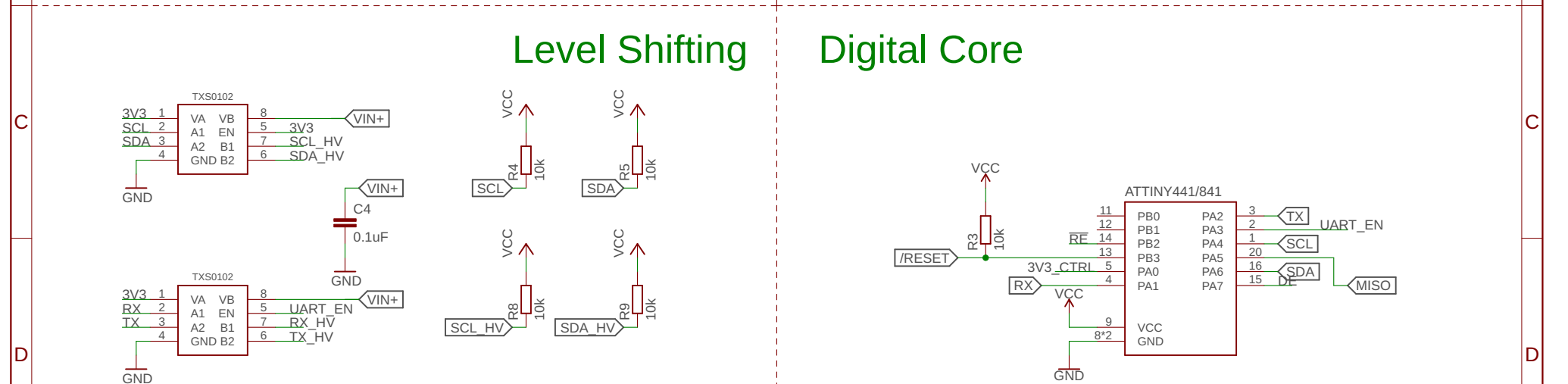
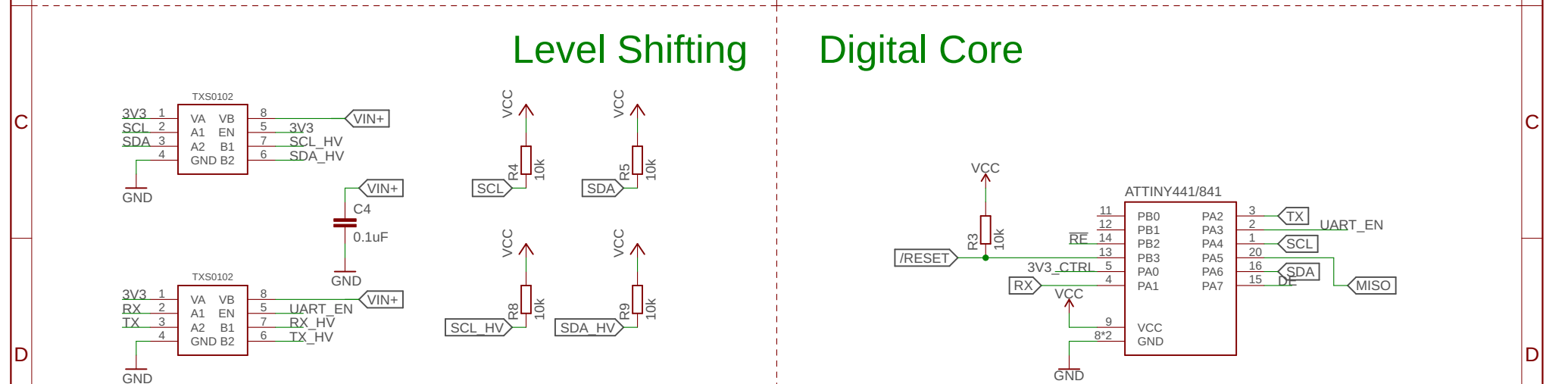
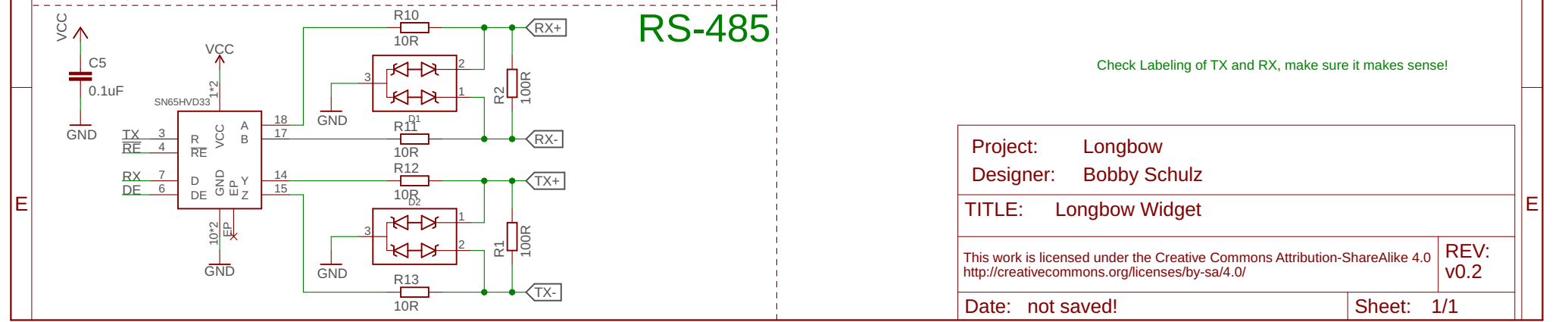
Program/Widget connection:

- MISO: SDA
- MISO: RX
- /RESET
- GND
- VIN+
- TX
- SCL: SCK

ISP1 (ISP Header):

- 1: MISO
- 3: SCL
- 5: /RESET
- 2: VCC
- 4: SDA
- 6: GND

Northern Widget Logo

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The diagram shows the internal circuitry of an RS-485 transceiver (SN65HVD33). It features two differential drivers (TX+/- and RX+/-) and two differential receivers (RX+/- and TX+/-). The drivers are connected to the TX and DE pins, while the receivers are connected to the RX and RE pins. The circuit includes several resistors (R1-R13) and a capacitor (C5) for timing and signal conditioning. A note indicates that the labeling of TX and RX must make sense.

Check Labeling of TX and RX, make sure it makes sense!

Project:	Longbow
Designer:	Bobby Schulz
TITLE:	Longbow Widget
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