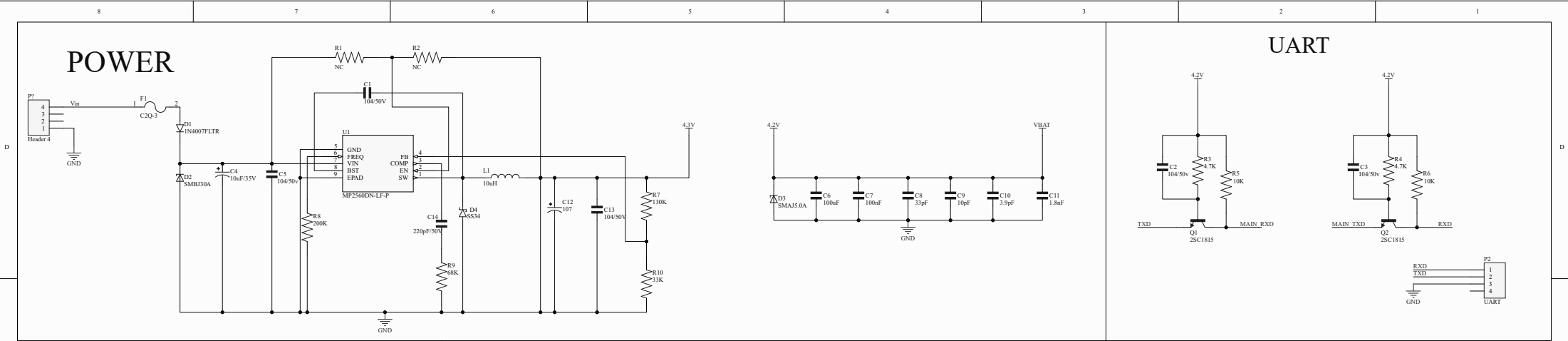


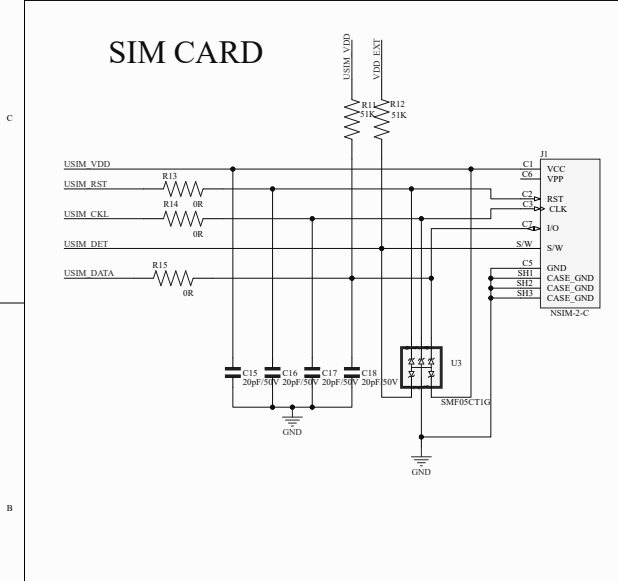
The image shows a PCB layout with three main functional blocks:

- POWER:** This block contains a voltage regulator circuit. It starts with a 4.2V input (VIN) connected to a fuse (F1) and a diode (D1). The input is then connected to the VIN pin of an MP2560 voltage regulator (U1). The regulator's output (VOUT) is connected to a 4.3V output. Various passive components like capacitors (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14), resistors (R1, R2, R3, R4, R5, R6, R7, R8, R9, R10), and an inductor (L1) are used for filtering and regulation.
- UART:** This block contains a UART interface circuit. It includes a 4.2V input connected to a 4.7K resistor (R3) and a 10K resistor (R5). The output of the 4.7K resistor is connected to the TXD pin of a 74VHC125 (Q1). The output of the 10K resistor is connected to the RXD pin of a 74VHC125 (Q2). The TXD and RXD pins are connected to the UART interface.
- Central Component Area:** This area contains a 4.2V input connected to a 4.7K resistor (R3) and a 10K resistor (R5). The output of the 4.7K resistor is connected to the TXD pin of a 74VHC125 (Q1). The output of the 10K resistor is connected to the RXD pin of a 74VHC125 (Q2). The TXD and RXD pins are connected to the UART interface.



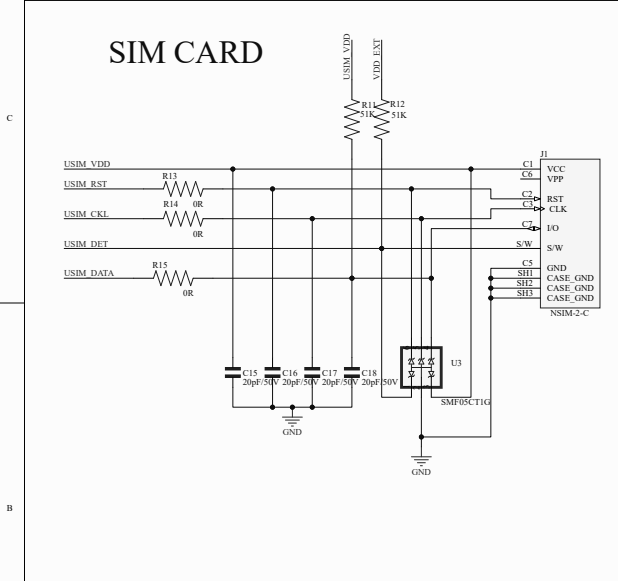
# SIM CARD

The diagram illustrates the electrical connections for a SIM card interface. A SIM900 module (U3) is connected to a SIM card (J1). The module's pins are connected to the card's pins: VCC to VCC, GND to GND, RST to RST, CLK to CLK, I/O to I/O, S/W to S/W, and CS to CS. The module's pins are also connected to external components: R13 (51K) to USIM\_VDD, R14 (51K) to USIM\_RST, R15 (51K) to USIM\_CKL, R16 (51K) to USIM\_DET, and R17 (51K) to USIM\_DATA. The module's pins are also connected to external components: C1 (100nF) to VCC, C2 (100nF) to RST, C3 (100nF) to CLK, C4 (100nF) to I/O, C5 (100nF) to S/W, C6 (100nF) to GND, C7 (100nF) to CASE\_GND, C8 (100nF) to CASE\_GND, and C9 (100nF) to CASE\_GND. The module's pins are also connected to external components: R1 (10K) to VCC, R2 (10K) to RST, R3 (10K) to CLK, R4 (10K) to I/O, R5 (10K) to S/W, R6 (10K) to GND, R7 (10K) to CASE\_GND, R8 (10K) to CASE\_GND, and R9 (10K) to CASE\_GND.



# SIM CARD

The diagram illustrates the electrical connections for a SIM card interface. A SIM900 module (U3) is connected to a SIM card (J1). The module's pins are connected to the card's pins: VCC to VCC, GND to GND, RST to RST, CLK to CLK, I/O to I/O, S/W to S/W, and CS to CS. The module's pins are also connected to external components: R13 (51K) to USIM\_VDD, R14 (51K) to USIM\_RST, R15 (51K) to USIM\_CKL, R16 (51K) to USIM\_DET, and R17 (51K) to USIM\_DATA. The module's pins are also connected to external components: C1 (100nF) to VCC, C2 (100nF) to RST, C3 (100nF) to CLK, C4 (100nF) to I/O, C5 (100nF) to S/W, C6 (100nF) to GND, C7 (100nF) to CASE\_GND, C8 (100nF) to CASE\_GND, and C9 (100nF) to CASE\_GND. The module's pins are also connected to external components: R1 (10K) to VCC, R2 (10K) to RST, R3 (10K) to CLK, R4 (10K) to I/O, R5 (10K) to S/W, R6 (10K) to GND, R7 (10K) to CASE\_GND, R8 (10K) to CASE\_GND, and R9 (10K) to CASE\_GND.



The schematic diagram is divided into three main sections:

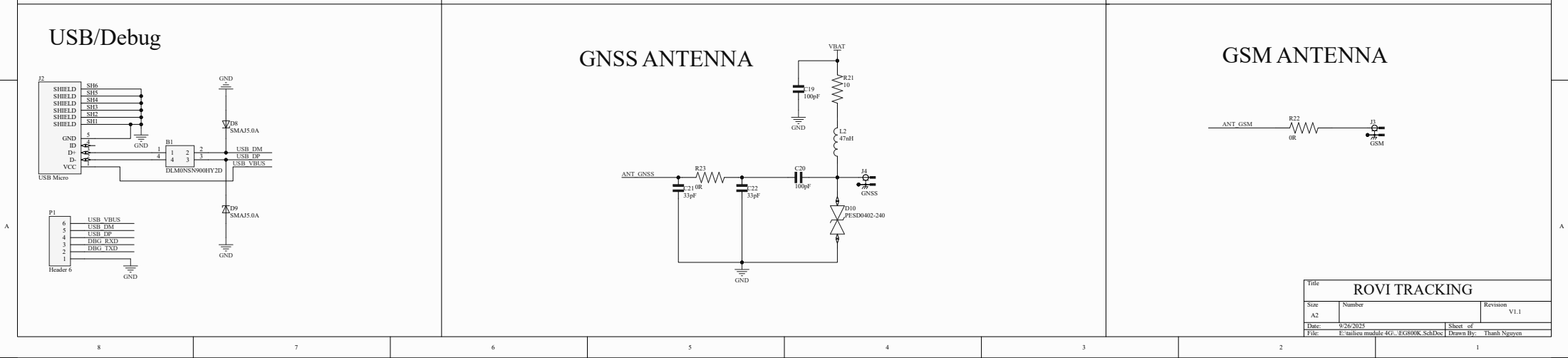
- USB/Debug:** Shows a USB Micro connector (P1) connected to a USB module (DLM05NS9000HY2D). The module's pins are connected to a USB connector (J1) and a debug connector (J2). The debug connector is connected to a USB module (DLM05NS9000HY2D) and a USB connector (J1).
- GNSS ANTENNA:** Shows a GNSS antenna (ANT\_GNSS) connected to a matching network consisting of a series resistor (R23, 33pF), a series capacitor (C20, 100pF), and a series inductor (L2, 47nH). The network is terminated by a GNSS connector (J1).
- GSM ANTENNA:** Shows a GSM antenna (ANT\_GSM) connected to a matching network consisting of a series resistor (R22, 0R) and a series capacitor (C20, 100pF). The network is terminated by a GSM connector (J1).

**Component List:**

- Resistors: R21 (10k), R22 (0R), R23 (33pF)
- Capacitors: C20 (100pF), C21 (33pF)
- Inductors: L2 (47nH)
- Diodes: D8 (SMAJ5.0A), D9 (SMAJ5.0A), D10 (PESD0402-240)
- Connectors: J1 (GSM), J2 (GNSS), J3 (USB DM), J4 (USB DP), J5 (USB VBUS)
- Modules: DLM05NS9000HY2D (USB module)

**Title Block:**

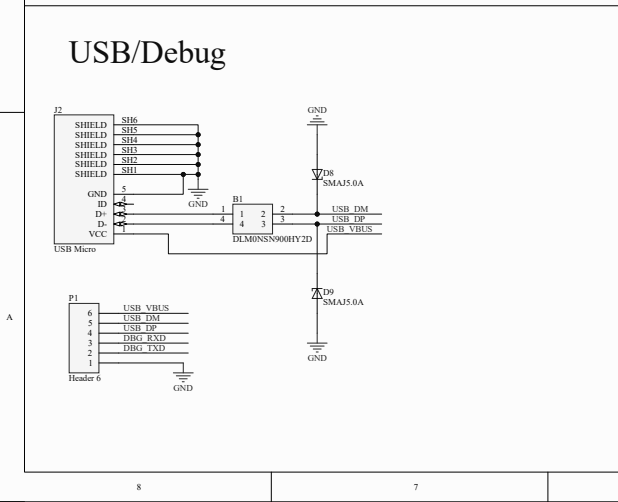
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# USB/Debug

The diagram illustrates the USB/Debug connection for the DLM08NSN9008HY2D module. It shows the following components and connections:

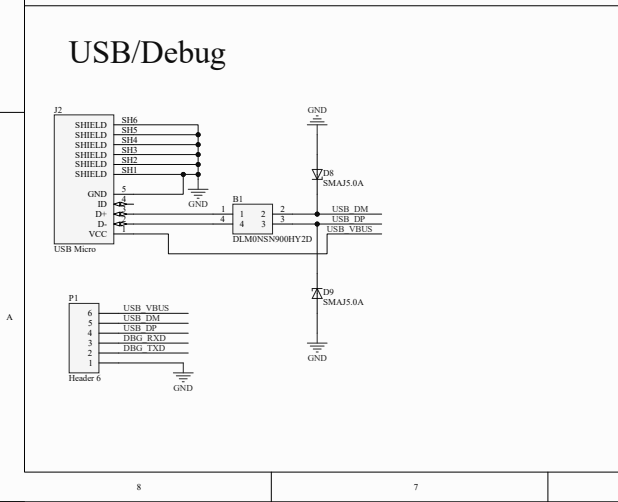
- USB Micro Connector (J2):**
  - SHIELD to SH6, SH5, SH4, SH3, SH2, SH1 (all connected to GND).
  - GND to GND.
  - ID to ID.
  - D+ to D+.
  - D- to D-.
  - VCC to VCC.
- USB Micro Module:**
  - Connected to the USB Micro Connector (J2).
  - Connected to the USB/Debug module (DLM08NSN9008HY2D).
- USB/Debug Module (DLM08NSN9008HY2D):**
  - Connected to the USB Micro module.
  - Connected to the USB connector (P1).
  - Connected to the USB connector (P2).
- USB Connector (P1):**
  - 6: USB VBUS
  - 5: USB DM
  - 4: USB DP
  - 3: DBG RXD
  - 2: DBG TXD
  - 1: GND
- USB Connector (P2):**
  - 1: USB VBUS
  - 2: USB DM
  - 3: USB DP
  - 4: GND
- USB/Debug Module (USB/Debug):**
  - Connected to the USB connector (P1).
  - Connected to the USB connector (P2).



# USB/Debug

The diagram illustrates the USB/Debug connection for the DLM08NSN9008HY2D module. It shows the following components and connections:

- USB Micro Connector (J2):**
  - SHIELD to SH6, SH5, SH4, SH3, SH2, SH1 (all connected to GND).
  - GND to GND.
  - ID to ID.
  - D+ to D+.
  - D- to D-.
  - VCC to VCC.
- USB Micro Module:**
  - Connected to the USB Micro Connector (J2).
  - Connected to the USB/Debug module (DLM08NSN9008HY2D).
- USB/Debug Module (DLM08NSN9008HY2D):**
  - Connected to the USB Micro module.
  - Connected to the USB connector (P1).
  - Connected to the USB connector (P2).
- USB Connector (P1):**
  - 6: USB VBUS
  - 5: USB DM
  - 4: USB DP
  - 3: DBG RXD
  - 2: DBG TXD
  - 1: GND
- USB Connector (P2):**
  - 1: USB VBUS
  - 2: USB DM
  - 3: USB DP
  - 4: GND
- USB/Debug Module (USB/Debug):**
  - Connected to the USB connector (P1).
  - Connected to the USB connector (P2).



The schematic diagram is divided into three main sections:

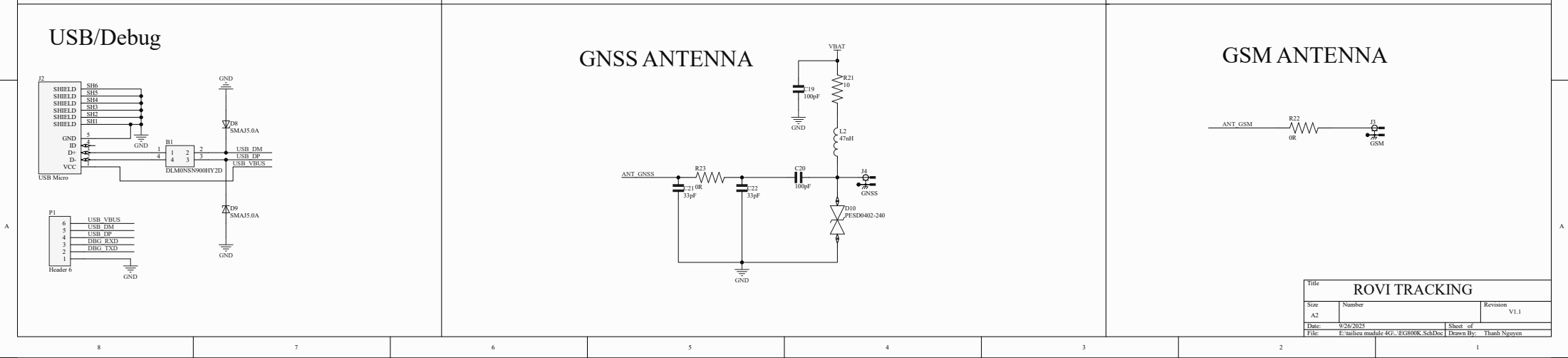
- USB/Debug:** Shows a USB Micro connector (P1) connected to a USB module (DLM05NS9000HY2D). The module's pins are connected to a USB connector (J1) and a debug connector (J2). The debug connector is connected to a USB module (DLM05NS9000HY2D) and a USB connector (J1).
- GNSS ANTENNA:** Shows a GNSS antenna (ANT\_GNSS) connected to a matching network consisting of a series resistor (R23, 33pF), a series capacitor (C20, 100pF), and a series inductor (L2, 47nH). The network is terminated by a GNSS connector (J1).
- GSM ANTENNA:** Shows a GSM antenna (ANT\_GSM) connected to a matching network consisting of a series resistor (R22, 0R) and a series capacitor (C20, 100pF). The network is terminated by a GSM connector (J1).

**Component List:**

- Resistors: R21 (10k), R22 (0R), R23 (33pF)
- Capacitors: C20 (100pF), C21 (33pF)
- Inductors: L2 (47nH)
- Diodes: D8 (SMAJ5.0A), D9 (SMAJ5.0A), D10 (PESD0402-240)
- Connectors: J1 (GSM), J2 (GNSS), J3 (USB DM), J4 (USB DP), J5 (USB VBUS)
- Modules: DLM05NS9000HY2D (USB module)

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The schematic diagram is divided into three main sections:

- USB/Debug:** Shows a USB Micro connector (P1) connected to a USB module (DLM05NS9000HY2D). The module's pins are connected to a USB connector (J1) and a debug connector (J2). The debug connector is connected to a USB module (DLM05NS9000HY2D) and a USB connector (J1).
- GNSS ANTENNA:** Shows a GNSS antenna (ANT\_GNSS) connected to a matching network consisting of a series resistor (R23, 33pF), a series capacitor (C20, 100pF), and a series inductor (L2, 47nH). The network is terminated by a GNSS connector (J1).
- GSM ANTENNA:** Shows a GSM antenna (ANT\_GSM) connected to a matching network consisting of a series resistor (R22, 0R) and a series capacitor (C20, 100pF). The network is terminated by a GSM connector (J1).

**Component List:**

- Resistors: R21 (10k), R22 (0R), R23 (33pF)
- Capacitors: C20 (100pF), C21 (33pF)
- Inductors: L2 (47nH)
- Diodes: D8 (SMAJ5.0A), D9 (SMAJ5.0A), D10 (PESD0402-240)
- Connectors: J1 (GSM), J2 (GNSS), J3 (USB DM), J4 (USB DP), J5 (USB VBUS)
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