

The PCB layout is designed for an MSP430F5738IRGER microcontroller. The components and their connections are as follows:

- U2: MSP430F5738IRGER**
  - AVCC (24) to +3V3 via C1 (10uF).
  - DVCC (20) to +3V3 via C2 (0.1uF).
  - RST (12) to +5V via R2 (47k).
  - TEST (11) to GND via C4 (1.1nF).
  - P1.0 (6) to LOG\_SWITCH\_1 (16).
  - P1.1 (17) to SDA (17).
  - P1.2 (13) to SCL (13).
  - P1.3 (14) to TXRX1\_A (14).
  - P1.4 (15) to TXRX2\_A (15).
  - PJ.0 (7) to GND.
  - PJ.1 (8) to GND.
  - PJ.2 (9) to GND.
  - VCORE (18) to GND via C3 (470pF).
  - PJ.3 (10) to GND.
  - PJ.4 (21) to GND via C7 (2pF).
  - PJ.5 (22) to GND via C8 (2pF).
  - DVSS (19) to GND.
  - AVSS (23) to GND.
- U3: HC-SR04**
  - VCC (1) to +5V.
  - TRIG\_B (2) to GND.
  - ECHO\_B (3) to GND.
  - GND (4) to GND.
- U4: TMF8805-1B**
  - VDDC (1) to +3V3.
  - GNDV (2) to GND.
  - GPIO0 (3) to GND.
  - GPIO1 (4) to GND.
  - INT (5) to GND.
  - SCL (6) to SCL.
  - GND (7) to GND.
  - VDD (8) to +3V3.
  - VDDV (9) to +3V3.
  - GNDV (10) to GND.
  - EN (11) to +3V3.
  - GND (12) to GND.
- U5: NXB0104GU12X**
  - VCC(A) (1) to +3V3.
  - A1 (2) to CAN\_SN\_A.
  - A2 (3) to CAN\_OFF\_A.
  - A3 (4) to GND.
  - A4 (5) to GND.
  - GND (6) to GND.
  - B4 (7) to +5V.
  - B3 (8) to GND.
  - B2 (9) to CAN\_OFF\_B.
  - B1 (10) to CAN\_SN\_B.
  - VCC(B) (11) to +5V.
  - OE (12) to GND via R5 (4.7k).
- U6: NXB0104GU12X**
  - VCC(A) (1) to +3V3.
  - A1 (2) to TRIG\_A.
  - A2 (3) to ECHO\_A.
  - A3 (4) to TXRX1\_A.
  - A4 (5) to TXRX2\_A.
  - GND (6) to GND.
  - B4 (7) to +5V.
  - B3 (8) to TXRX2\_B.
  - B2 (9) to TXRX1\_B.
  - B1 (10) to ECHO\_B.
  - VCC(B) (11) to +5V.
  - OE (12) to GND via R8 (4.7k).
- U1: TJA1441DTK/0Z**
  - VCC (3) to +5V.
  - RXD (4) to TXRX2\_B via C5 (1uF).
  - CANH (7) to CANH.
  - CANL (6) to CANL.
  - OFF (8) to CAN\_OFF\_B.
  - GND (2) to GND.
- Other Components:**
  - J1: 691214310002** (CANH, CANL).
  - J2: S3B-PH-K-S(LF)(SN)** (+5V, +3V3).
  - SV1: RST, TEST** (+3V3).
  - R3, R4: 10k** (SCL, SDA).