

[illegible]

KL52-308V-2.54-02P-45

Power select  
Pull V\_SEL high for M66 modem (4V output)  
Pull V\_SEL low for BC66-NA modem (3.3V output)

VCC: 3.3V or 4V

External sensors regulator

The schematic diagram illustrates the hardware connections between the ESP32 and the STM32F407VGT6. The connections are categorized into four main sections:

- MCU UART:** The ESP32's RX (pin 1) and TX (pin 2) are connected to the STM32F407VGT6's MCU\_RX0 (pin 25) and MCU\_TX0 (pin 26) respectively. The RX line has a 10kΩ pull-up resistor (R25) to GND and a 0.1μF capacitor (C1) to +BATT. The TX line has a 10kΩ pull-up resistor (R26) to +BATT.
- Modem main UART:** The ESP32's RX (pin 1), TX (pin 2), and +V (pin 3) are connected to the STM32F407VGT6's EXT\_RXD (pin 10), EXT\_TXD (pin 11), and +BATT (pin 12) respectively. The RX line has a 10kΩ pull-up resistor (R7) to GND and a 0.1μF capacitor (C2) to +BATT. The TX line has a 10kΩ pull-up resistor (R8) to +BATT.
- MCU SWD:** The ESP32's SWCLK (pin 4), SWDIO (pin 5), and RESET (pin 6) are connected to the STM32F407VGT6's MCU\_SWCLK (pin 27), MCU\_SWDIO (pin 28), and MCU\_RESET (pin 29) respectively. The SWCLK line has a 10kΩ pull-up resistor (R9) to GND and a 0.1μF capacitor (C6) to +BATT. The SWDIO line has a 10kΩ pull-up resistor (R10) to +BATT. The RESET line has a 10kΩ pull-up resistor (R11) to +BATT.
- Modem debug UART:** The ESP32's RX (pin 1), TX (pin 2), and +V (pin 3) are connected to the STM32F407VGT6's EXT\_RXD\_DBG (pin 13), EXT\_TXD\_DBG (pin 14), and +BATT (pin 15) respectively. The RX line has a 10kΩ pull-up resistor (R27) to GND and a 0.1μF capacitor (C25) to +BATT. The TX line has a 10kΩ pull-up resistor (R28) to +BATT.

The STM32F407VGT6 is shown with its pins labeled: MCU\_RX0, MCU\_TX0, EXT\_RXD, EXT\_TXD, MCU\_SWCLK, MCU\_SWDIO, MCU\_RESET, MCU\_EM4WU4, and MCU\_EM4WU5. The ESP32 pins are labeled: RX, TX, +V, SWCLK, SWDIO, and RESET.

The diagram shows the AT25FS321B-SSHB-T memory chip (U4) connected to a microcontroller (MCU) and a BC847C1W15 transistor (Q7). The chip is connected to the MCU via I2C (S1/I/O0, SCK, CS, WP/I/O2, HOLD/I/O3) and to the transistor via a 470R resistor (FLASH power on/off). The transistor is connected to the +3V3 supply via a 403419 resistor and to the GND via a 470R resistor. A 0.1uF capacitor (C51) is connected between the VCC and GND pins of the chip.

The schematic diagram illustrates the internal components and connections of the BC66 module. Key components include:

- SIM card slot:** Connected to SIM\_VDD, SIM\_RST, SIM\_CLK, and SIM\_DATA pins.
- SIM8051-6-0-14-J6 module:** A central module with pins for VCC, RST, CLK, GND, VPP, Y/O, and SH. It is connected to the SIM card slot and the BC66 power translator.
- BC66 power on/off:** A switch controlled by BC66\_ON-OFF, connected to VCC and GND.
- BC66 reset:** A switch controlled by BC66\_RESET, connected to VCC and GND.
- BC66 PWR key:** A switch controlled by BC66\_PWR, connected to VCC and GND.
- BC66 NADA-04-STD module:** A module with pins for RI, RXD, TXD, RXD\_AUX, TXD\_AUX, RXD\_DBG, TXD\_DBG, PWRKEY, PSM\_INT, RESET, and NETLIGHT. It is connected to the SIM8051 module and the BC66 power translator.
- BC66 power translator:** A module that converts +BATT +1V8 to +3V3. It includes pins for VCC19, VCC4, and GND.
- BC66 LED:** A red LED connected to the BC66\_LED pin and GND.

The diagram shows the internal wiring and connections between these components and the module's pins, including various resistors, capacitors, and integrated circuits.