

The schematic diagram illustrates the internal circuitry of the ESP8266EX module. Key components and connections include:

- Antenna and Matching Network:** A PCB Printed Antenna (ANT1) is connected to a matching network consisting of capacitors C12 (2.4pF) and C13 (3pF), and an inductor L2 (2.2nH). The antenna is grounded to GND.
- Power Supply and Decoupling:** The module is powered by VDD33. Decoupling capacitors C10 (1uF) and C9 (1uF) are connected to GND. A network of capacitors (C6, C5, C8) and an inductor (L1) is used for power regulation and decoupling.
- Resistors and Inductors:** Various resistors (R2, R3, R4, R1) and inductors (L1, L2) are used for impedance matching and signal conditioning. R2 is a 12kΩ ±1% resistor, R3 is a 10kΩ resistor, R4 is a 200Ω resistor, and R1 is a 200Ω resistor.
- Capacitors:** Capacitors C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, and C12 are used for decoupling and matching. C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, and C12 are all 15pF capacitors.
- Inductors:** Inductors L1 (4.3nH) and L2 (2.2nH) are used for impedance matching.
- Transistors and Diodes:** The ESP8266EX chip (U1) is the central component, with various pins connected to the external components. The chip includes a TOUT, CHIP_PU, RES12K, EXT_RSTB, XPD_DCDC, LNA, XTAL_OUT, and XTAL_IN.
- Grounding:** Multiple GND connections are shown throughout the circuit, ensuring proper grounding for the antenna, power supply, and signal lines.

The diagram shows the pin connections for two memory chips, U4 and U2, which are 256Kbit (32,512 words x 16 bits) SRAMs.

U4: Program Memory (MY25R3255FM2-x1)

- Pin 1:** PMCS to CS
- Pin 2:** PMCLK to SCLK
- Pin 3:** PMSI to SI/SI00
- Pin 4:** PMSQ to SO/SI01
- Pin 5:** PMWP to WP/SI02
- Pin 6:** PMHD to HOLD/SI03
- Pin 7:** GND
- Pin 8:** VDD3.3
- Pin 9:** GND

U2: Data Memory (AT25SF081-SSHD-X)

- Pin 1:** DMCS to CS
- Pin 2:** DMCLK to SCK
- Pin 3:** DMSI to SI/I00
- Pin 4:** DMSO to SO/I01
- Pin 5:** DMWP to WP/I02
- Pin 6:** DMHD to HOLD/I03
- Pin 7:** GND
- Pin 8:** VDD3.3
- Pin 9:** GND

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