Power Block:

USB PWR CONN1

12V DC power Adapter

12V DC power Adapter

USB 5V

DC12V IN

12V to 5V Buck

5V

3.3V LDO

ESP32-C3-WROOM-02

SF32-C3-WROOM-02

LED STRIP

System Block:

12 V DC Power Port

12 V to 5 V Buck Chip

5 V

USB Power Port

USB to UART Port

ESP32-C3-WROOM-02

Automatic Downlad

USB to UART Bridge Chip

UART

3.3V LDO

PDM_Tx

LP Filter

SPK PA NS4150

ADC

Transistor Amplifier

IO

IR Receiver

Boot/Reset

Keys x 2

Function

Keys x 6

System LED x 1

Speaker

Microphone
**DC 12V Input:**

![Diagram of DC 12V Input]

**USB-PWR**

![Diagram of USB Power]

**12V → 5V**

![Diagram of 12V to 5V conversion]

**5V → 3.3V**

![Diagram of 5V to 3.3V conversion]

**LED Power select Switch:**

![Diagram of LED Power select Switch]

**System Power Switch:**

![Diagram of System Power Switch]