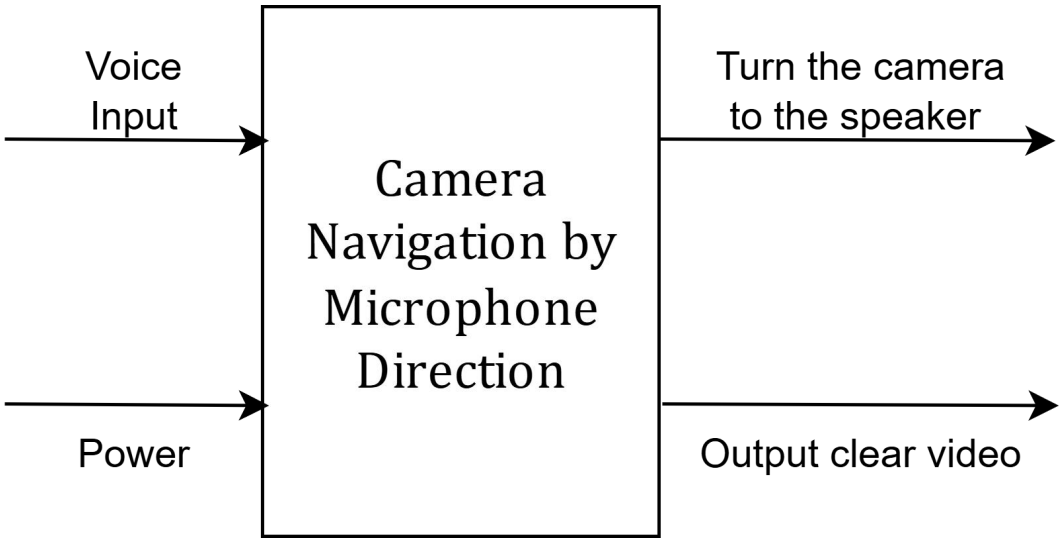
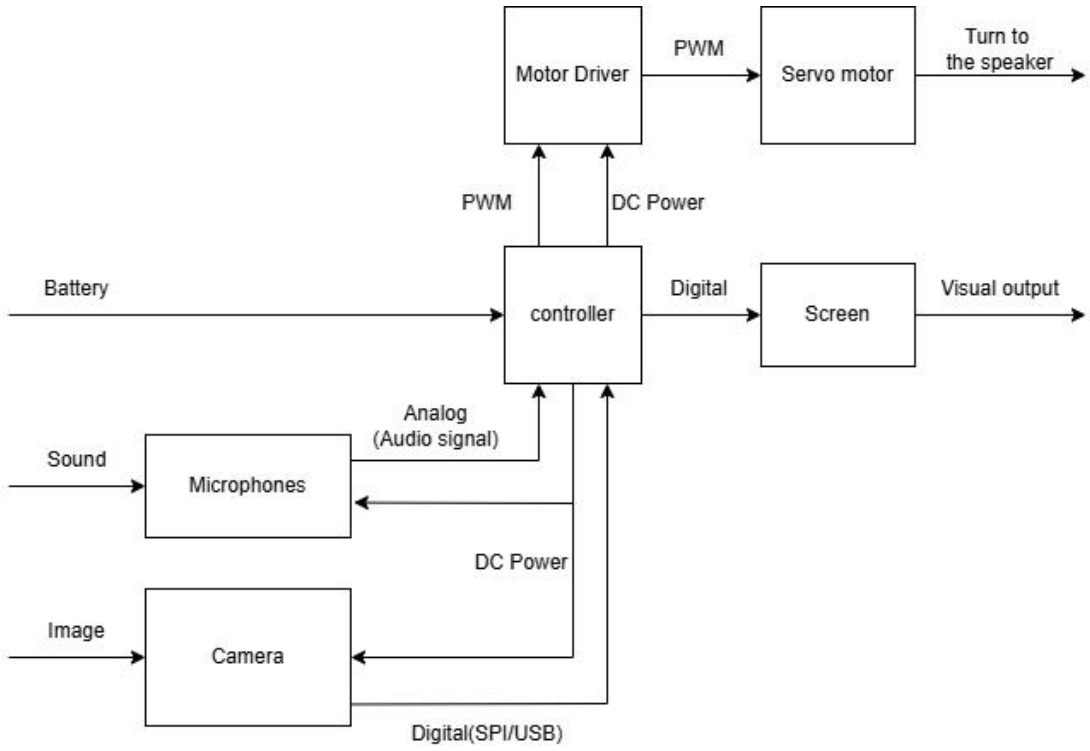
Camera Navigation by Microphone Direction: L0

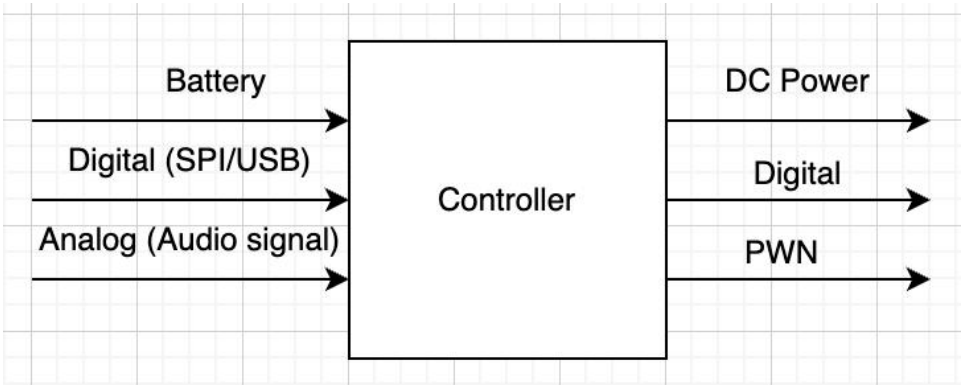


Module	stopwatch
Inputs	Voice input: By using multiple microphones for sound input, we can obtain the audio information of the sound and locate the source of the sound. Power: Input 5V direct current to supply power to the system.
outputs	Turn the camera to the speaker: The rudder will turn the camera towards the direction of the sound source when it is under the camera. Output clear video: The screen will display the video information captured by the camera, and the computer will also output the audio information.
Functionality	The entire device acquires the sound information through the microphone, locates the sound, and makes the servo rotate to turn the camera towards the sound source, ensuring that the camera can capture the speaker. And it is also possible to view the recorded videos on the computer.

Camera Navigation by Microphone Direction: L1

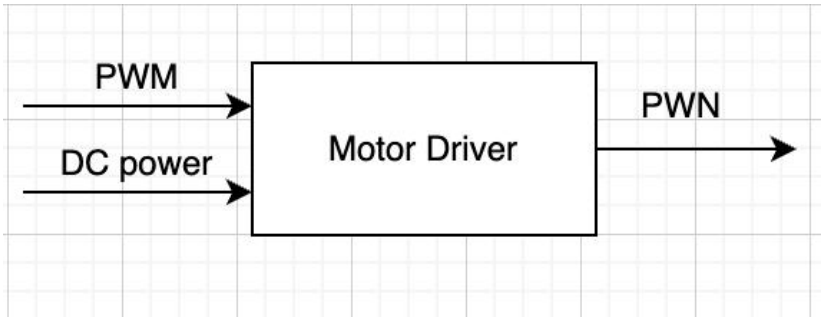


Controller: L1



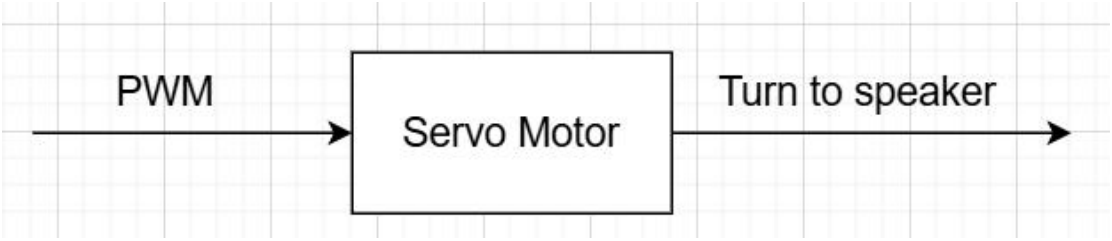
Module	Controller
Inputs	Battery: 5V PWM: +/- 3.3V AC Analog(Audio signal): Microphone audio data Digital(SPI/USP): Digital video data
outputs	DC Power: 3.3V Digital: Transmit digital signals to the screen and output video.
Functionality	Acts as the central processing unit. Receives audio and image signals, analyzes data, and outputs PWM for motor control and digital signals for display.

Motor driver: L1



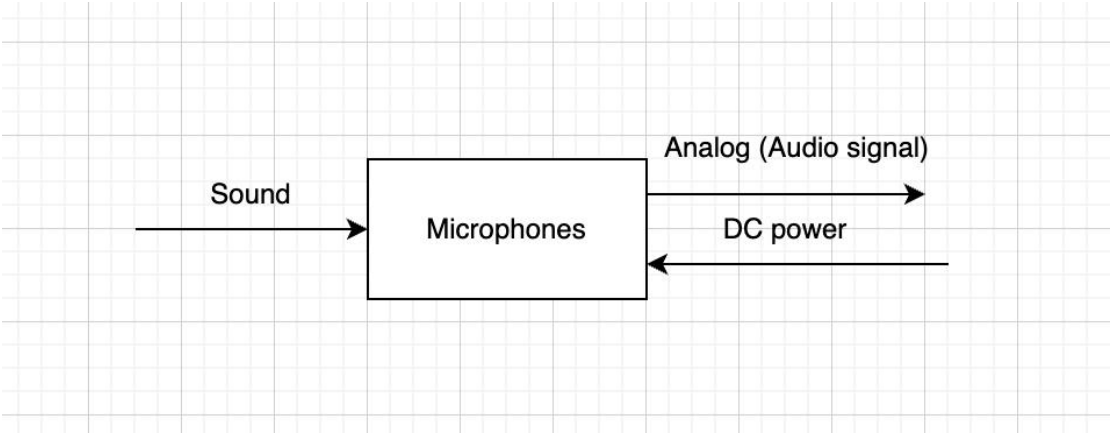
Module	Motor Driver
Inputs	DC power: 3.3V AC DC power: 3.3V
outputs	PWN: +/- 3.3V AC
Functionality	Amplifies the PWM control signal to drive the servo motor with sufficient current and voltage.

Servo Motor: L1



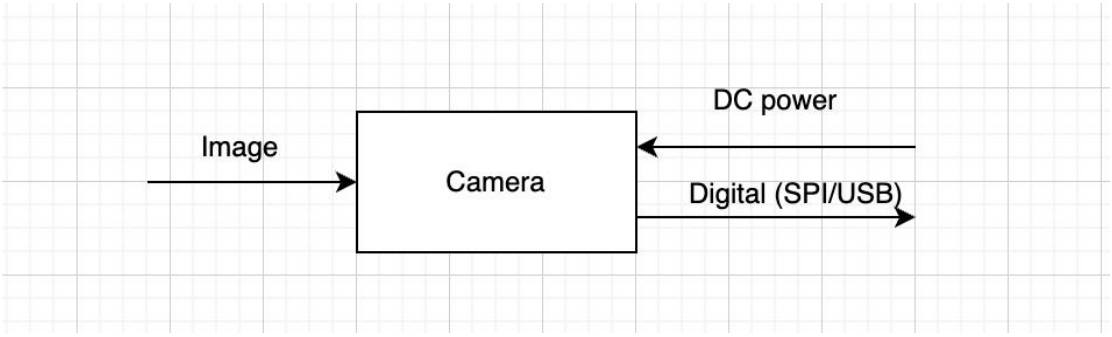
Module	Servo Motor
Inputs	PWM: +/- 3.3V AC
outputs	Turn to speaker: Control the camera's rotation direction
Functionality	Convert the pulse width modulation signal into the actual angular displacement so that the camera can be oriented.

Microphone: L1



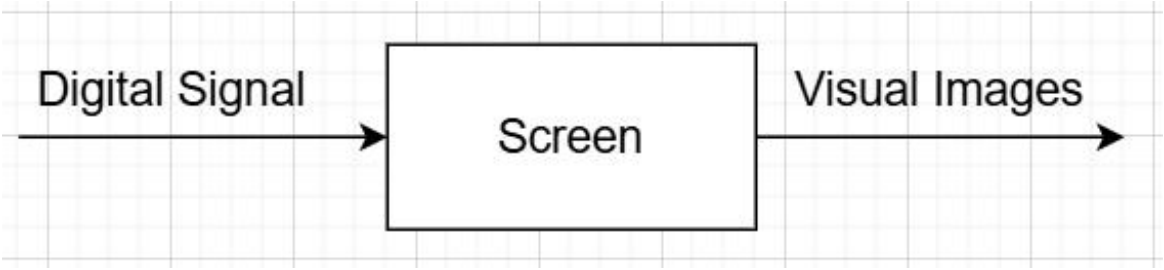
Module	Microphones
Inputs	Sound: Voice input DC Power: 3.3V
outputs	Analog(Audio signal): Microphone audio data
Functionality	Convert acoustic sound waves into analog electrical signals (audio). Provides audio input to the controller.

Camera: L1



Module	Camera
Inputs	Image: Image input camera DC Power: 3.3V
outputs	Digital(SPI/USP): Digital video data
Functionality	Captures visual images and converts them into digital data. Sends image data to the controller.

Screen: L1



Module	Screen
Inputs	Digital: Transmit digital signals to the screen and output video.
outputs	Visual output: Show the video to the user
Functionality	Displays processed data or visual information to the user.