

PERTINENT INFORMATION

Vampire Bot - Servo-Driven Flapping-Wing Bat (Arduino Nano)

Sn. no.	Components Used		Objectives	Video Link
	Electronic Components Used	Mechanical Components Used		
1	Arduino Nano (main controller)	Body / chassis (board mounted inside the body frame)	Acts as the main controller of the bot. It runs the program and sends control signals to Servo 1, Servo 2 and the speaker in the programmed order.	youtu.be/wYYg4RYRF44
2	Servo motor 1	Left wing shoulder joint (servo bracket and horn)	Mounted on the left side of the body. It rotates the left wing through a set angle to give the up-down flapping motion.	youtu.be/GzJtmWiptxY
3	Servo motor 2	Right wing shoulder joint (servo bracket and horn)	Mounted on the right side of the body. It moves the right wing in step with the left wing so both wings flap together.	youtu.be/GzJtmWiptxY
4	-	Left wing (arm spars with membrane)	Light bat-shaped wing fixed to the Servo 1 horn. It converts the servo rotation into a visible wing movement.	youtu.be/FbrM9w-XNdq
5	-	Right wing (arm spars with membrane)	Light bat-shaped wing fixed to the Servo 2 horn. It mirrors the left wing during flapping.	youtu.be/6yPXqVkwNds
6	-	Wing-tip hinge joints (both wings)	Pivot points at the wing arms that let the wing spars open and fold smoothly while the servos turn.	youtu.be/eLzaqi-PQmk
7	Speaker (voice / sound output)	Speaker mount at the neck / head front	Gives the audio response of the bot, such as a whisper or sound effect, played when the Arduino Nano triggers it.	youtu.be/n8q8Kj7uRY4
8	Sensor module (small board beside the Arduino)	Sensor mounting slot inside the body	Sends the input signal to the Arduino Nano so the wing movement and sound can start on a trigger.	-
9	Battery / power pack	Battery bay at the rear of the body	Supplies power to the Arduino Nano, both servo motors and the speaker so the bot runs without a mains cable.	youtu.be/SkLFJmV0p94
10	Connecting wires	Wire routing channels inside the body	Connect the battery, controller, servos, sensor and speaker, and keep the wiring neat away from the moving wing joints.	youtu.be/BIRS34UnsCo
11	-	Head (3D-printed bat face with ears)	Gives the bot its vampire-bat look and carries the speaker at the front.	-
12	-	Base (stand)	Holds the body upright and steady, so the bot does not tip over while the wings flap.	-
Working sequence: Power ON (battery) → sensor input reaches the Arduino Nano → Arduino Nano runs the program → control signals go to Servo 1 and Servo 2 → servo horns turn the left and right wing joints → wings flap together → speaker plays the programmed sound.				