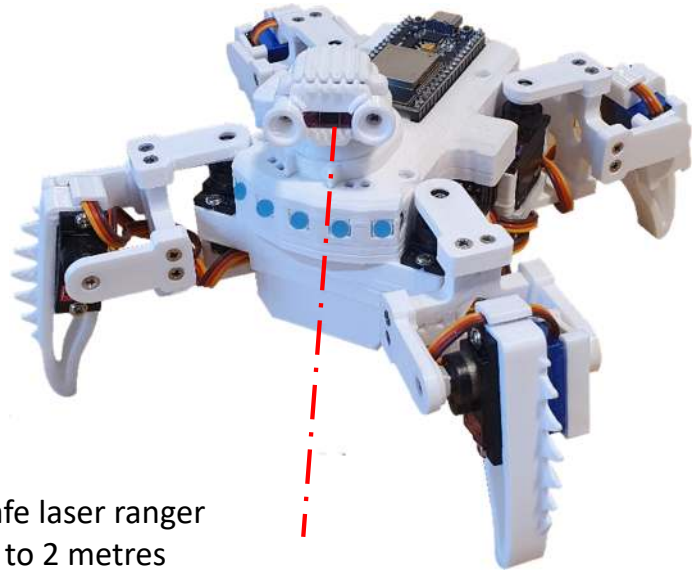
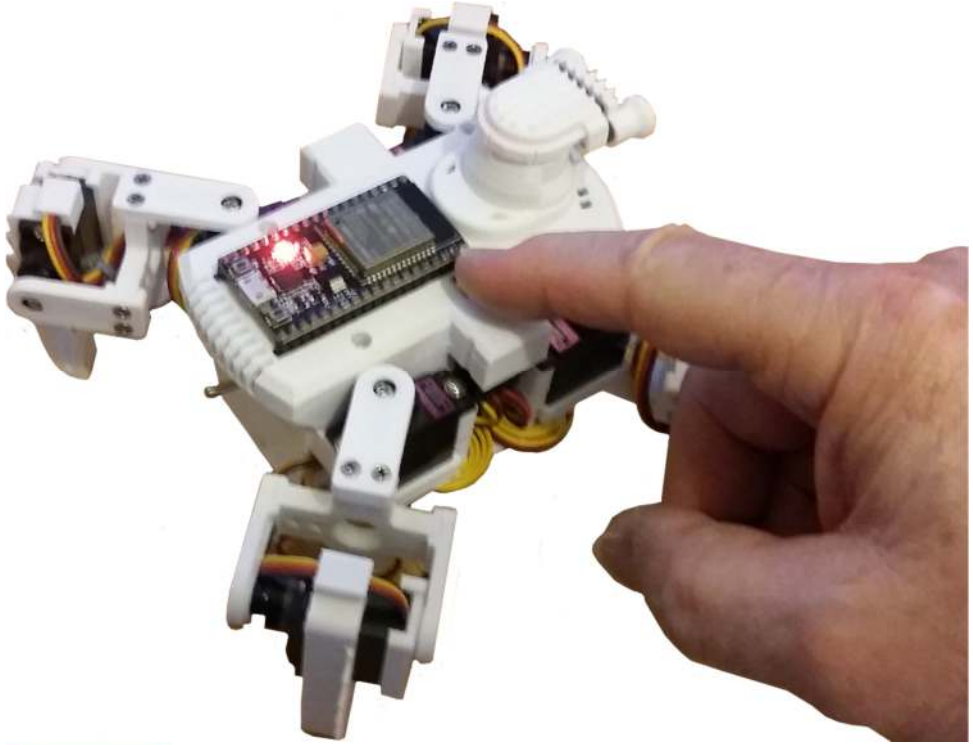
QuadAuto ESP32 MkII – Button Functions



Eye safe laser ranger
Up to 2 metres



Tech:

- ESP32 32-bit 2-core 240 MHz RISC microcontroller
- ESP-NOW 2.4GHz Wi-Fi control
- 9 x Servo motors, 1 head, 2 per leg
- VL53L0X TOF laser range finder, range 2m
- 5 x WS2812B RGB LEDs
- 2 x 3.7v 18650 Lithium 3000mAh batteries
- 3-D printed construction

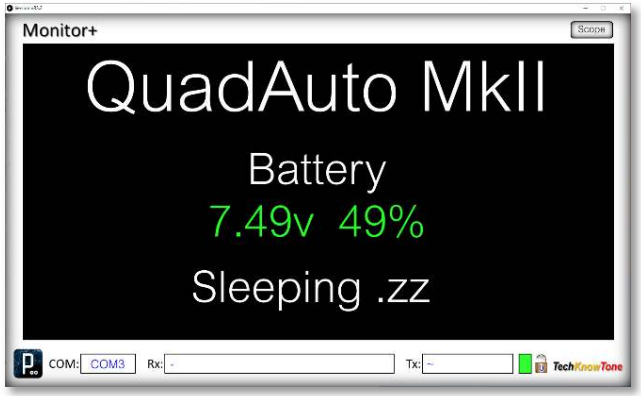
Button Features:

- Safe start, powered down, with LED power indicators.
- Short press - wakes up in fixed head mode.
- Long press - wakes up in moving head mode.
- 1 - LEDs display laser ranging (static & tracking).
- 2 - backs away from approaching objects
- - returns to start after 5 seconds to start point
- 3 - target tracking at a fixed distance
- 4 - autonomous scan & move behaviour (fixed head)
- 4 - autonomous move whilst scanning (moving head)
- - LEDs display laser range & track movements
- Long press to enter power down state.
- LEDs indicate battery health whilst at reast.
- Battery Low sensing with auto s/w cut-off.

Extras:

- LEDs are animated to match walking movements.

QuadAutoESP32 MkII – Nunchuk Functions



Nunchuk Features:

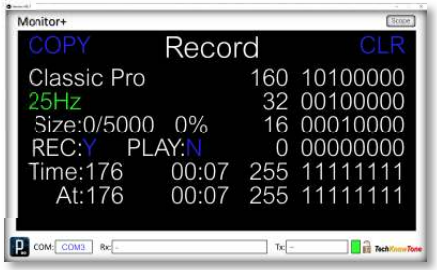
- Hold ‘C’ to initial Wi-Fi mode
- Hold ‘C + Z’ to end Wi-Fi mode & power down
- Walk using joystick ‘J’
  - Forwards & backwards + steering
  - Neutral turns left/right
- Holding in button ‘Z’ walks sideways + steering
- Hold in ‘Z’ + briefly press joystick forward, robot bows
- Hold in ‘Z’ + briefly press joystick backward, robot waves
- Briefly pressing ‘C’ increases speed 1 – 5
- Briefly pressing ‘Z’ decrease speed 5 – 1
- Smooth X/Y joystick control.

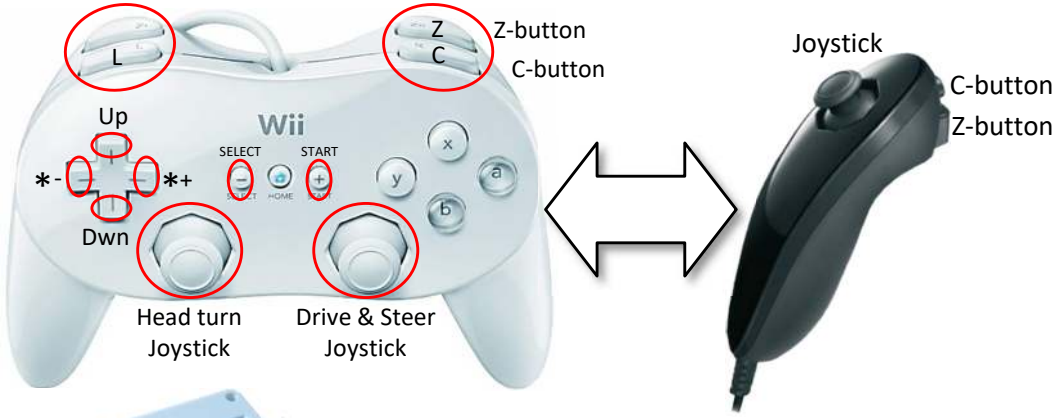
Extras:

- Battery health, RGB LED indication when idle.
- RGB LEDs are animated to match movement.
- Wi-Fi controller displays:
  - Battery health status
  - Wi-Fi link connection
  - Wii Nunchuk controller registers
  - Joystick values and offsets
- Works with Windows ‘Monitor+’ app OTA, to display information like battery voltage, laser range, modes, etc.
- ‘Scope’ traces of LTOF, servos, etc
- Wii Nunchuk I2C registers can be viewed.

Issue: 1.1 Released: 12/02/2026 TechKnowTone

QuadAutoESP32 MkII – Classic Pro Functions





Note that a Wii Classic Pro controller can be plugged into the Wi-Fi transceiver and used to control this robot too. The right-hand joystick and front buttons, act to replicate the Nunchuk control modes.

Classic Pro Replicates Nunchuk Features:

- Hold ‘C’ to initial Wi-Fi mode
- Hold ‘C + Z’ to end Wi-Fi mode & power down
- Walk using joystick ‘J’
  - Forwards & backwards + steering
  - Neutral turns left/right
- Holding in button ‘Z’ walks sideways + steering
- Hold in ‘Z’ + briefly press joystick forward, robot bows
- Hold in ‘Z’ + briefly press joystick backward, robot waves
- Briefly pressing ‘C’ increases speed 1 – 5
- Briefly pressing ‘Z’ decrease speed 5 – 1
- Note right Joystick demand is courser/less accurate.

Extras:

- Left joystick directs head angle.
- Hold **SELECT** + **C**/**Z** releases/sets max speed limiter.
- Record & Play:
  - **L** + **START** – begins controller recording.
  - **L** alone stops active recording.
  - **START** plays a recording. Stooped by **ANY**.
- Digital pad left/right - headlight dim/bright control.
- Digital pad top/bottom – raise/lowers leg lift height.

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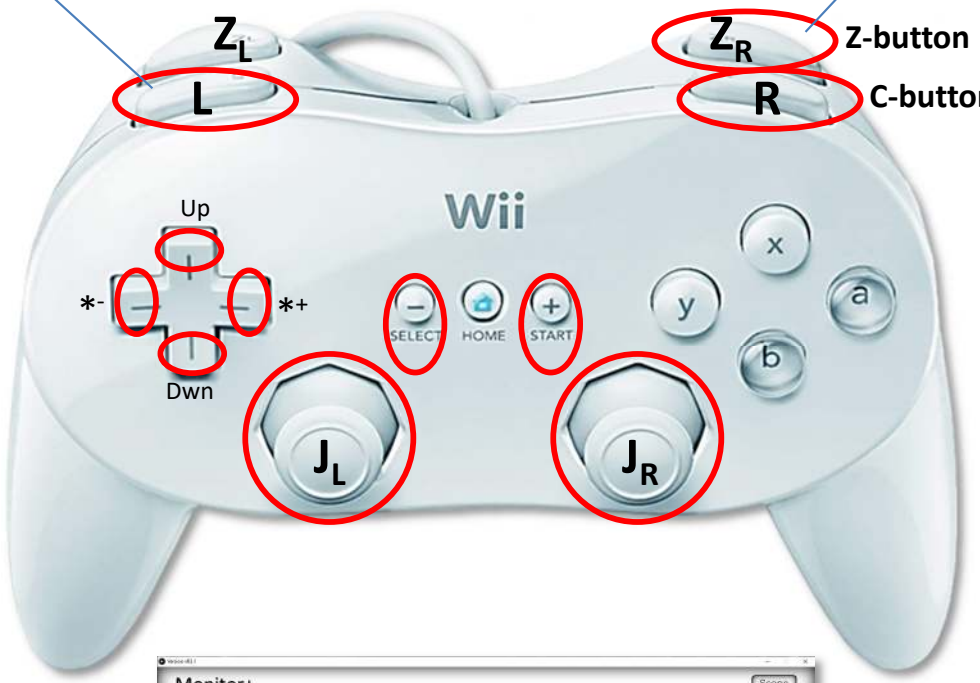
QuadAutoESP32 MKII– Wii Classic Pro Xtra Functions

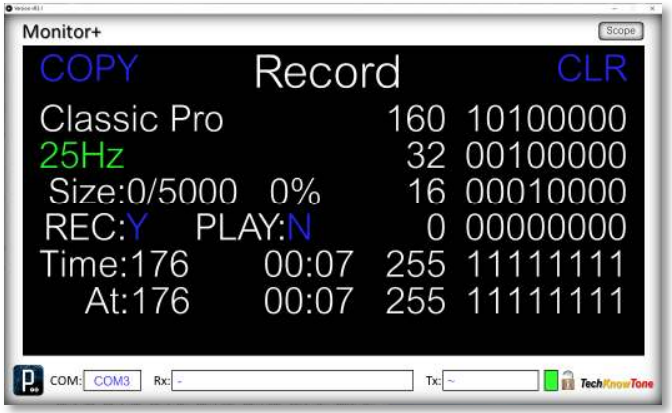
L	HELD, + **START** initiates RECORD mode.
L	pressed stops active RECORD mode.
START	Plays a recording.
ANY	Stops a playing recording.

R	HELD, connects WiFi
R+Z_R	HELD disconnects WiFi
When connected:	
R	Increases 'Gear' value
Z_R	Decreases 'Gear' value
Select + **R**	Gear Max mode
Select + **Z_R**	Gear Min mode



^	Leg lift
<	Headlight dim
>	Headlight up
V	Leg lower

X	Not defined
Y	Not defined
a	Not defined
b	Not defined



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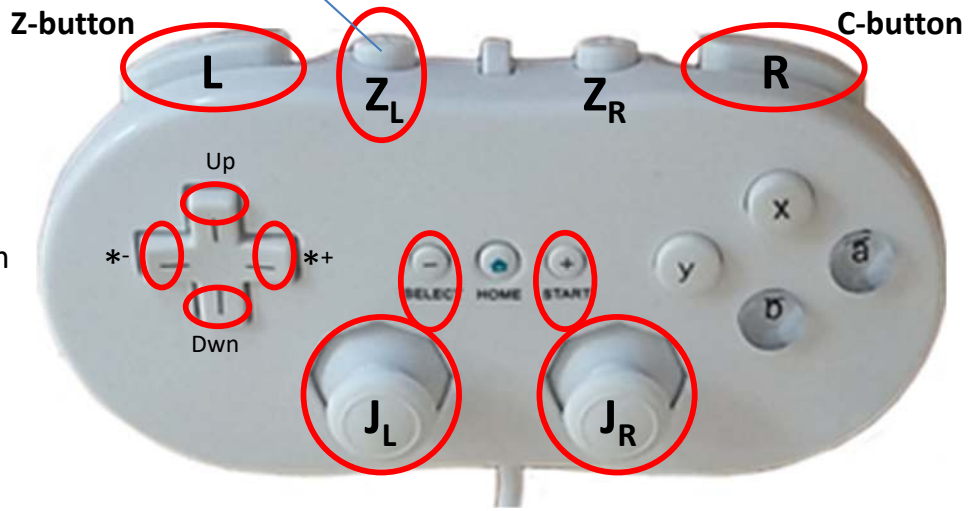
QuadAutoESP32 MkII – Wii Classic Xtra Functions

R HELD, connects WiFi
R+Z_R HELD disconnects WiFi
When connected:
R Increases 'Gear' value
Z_R Decreases 'Gear' value
Select + R Gear Max mode
Select + Z_R Gear Min mode

Z_L HELD, + **START** initiates RECORD mode.
Z_L pressed stops active RECORD mode.
START Plays a recording.
ANY Stops a playing recording.



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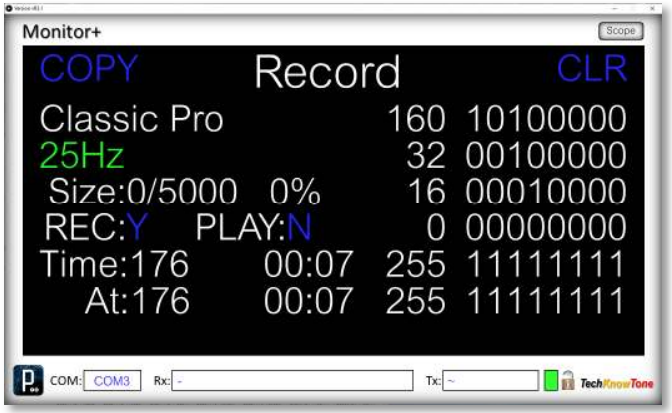

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