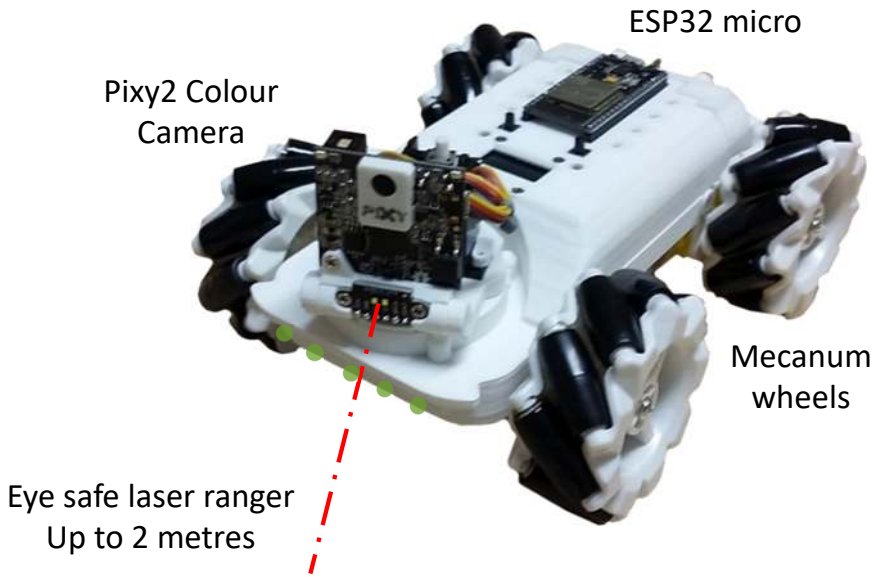
PixyBot2 – Button, Display & Wi-Fi Functions



Tech:

- ESP32 microcontroller, 2-core @80MHz
- 128x63 OLED display + push buttons
- 4 x Wheel motors + 2 x Camera servo motors
- 4 x Mecanum wheels
- VL53L1X TOF laser range finder
- 2.4GHz wireless control
- 2 x 3.7v 3000mAh batteries
- 3-D printed construction

Features:

- Safe start, with LED blink indicators
- 14 directional drive modes
- 5 levels of power control
- OLED display & desktop 'Mirror' app
- Select multiple modes & monitor parameters
- Coloured object recognition & tracking
- Laser ranging interactivity
- Autonomous drive mode
- LED animations to match behaviour

Enhancements:

- TBD.

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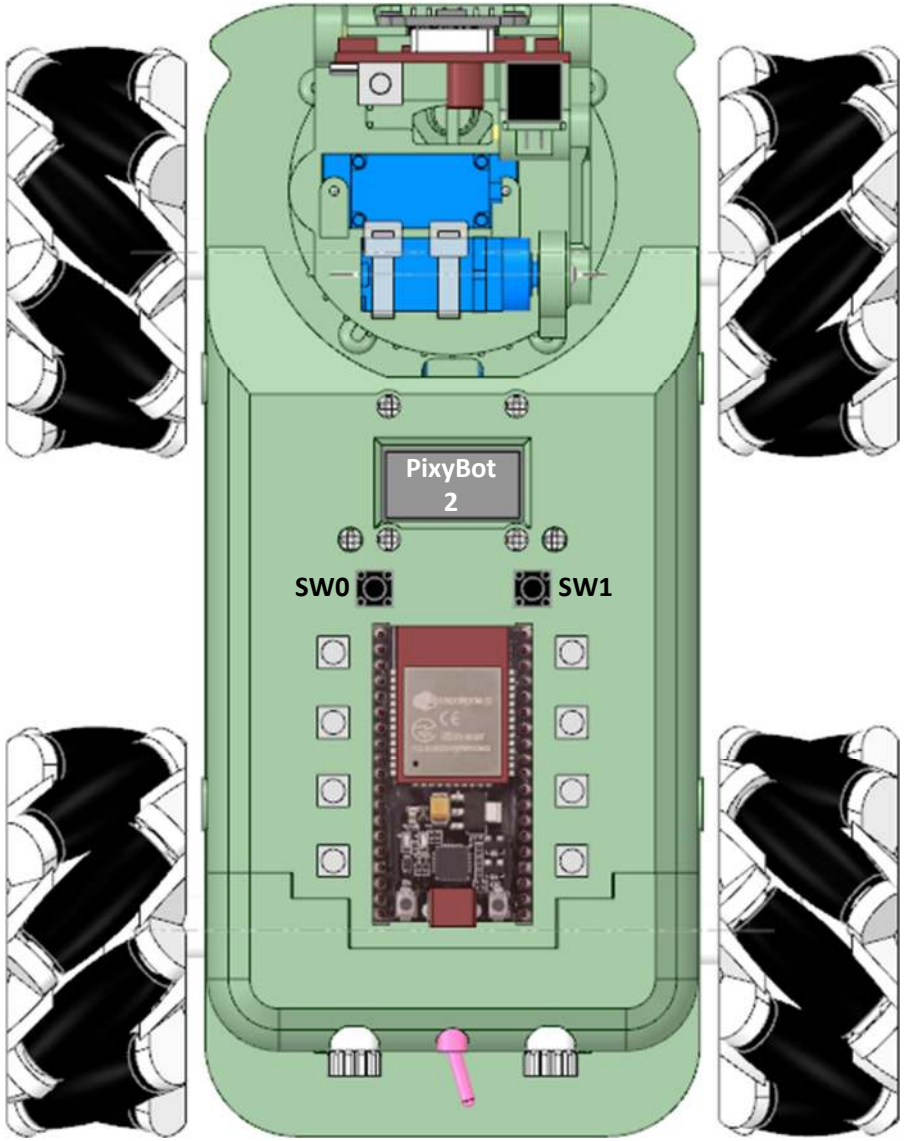
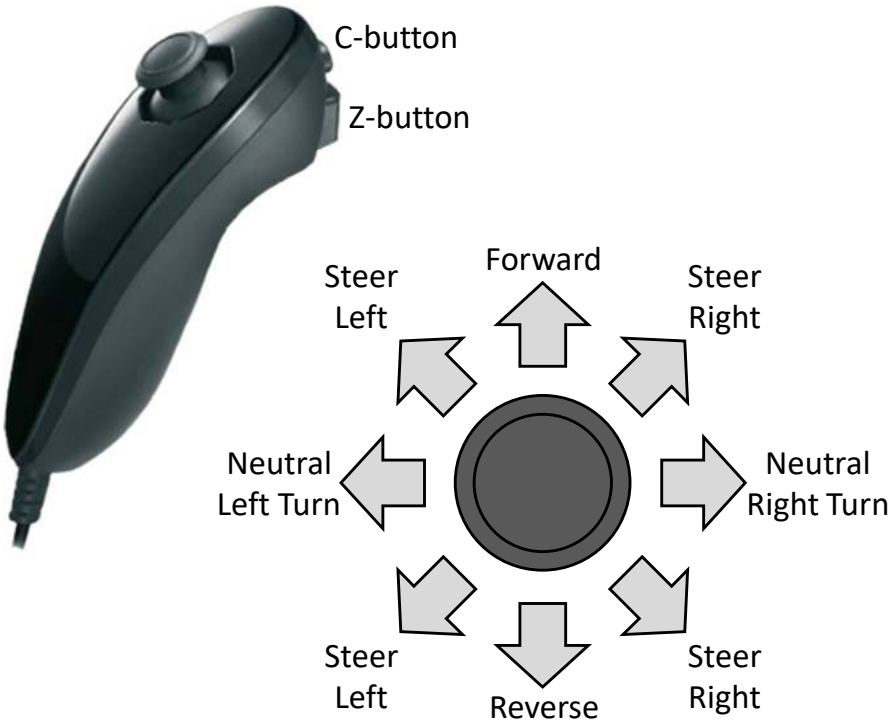
PixyBot2– Display and Demo Functions

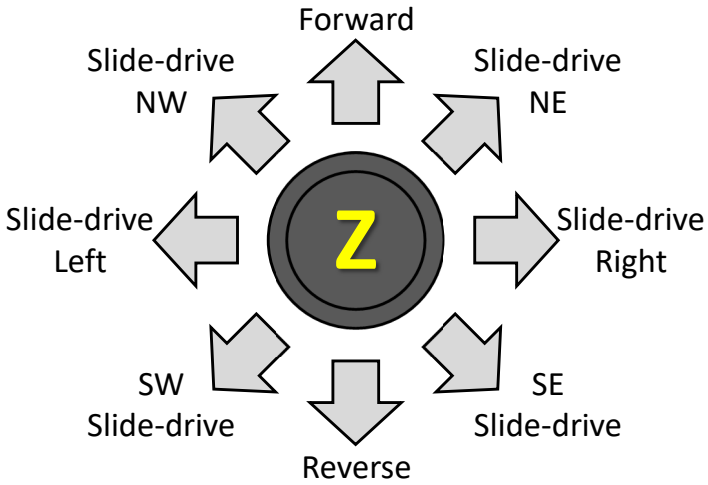


The contents of the display is determined by the display mode of the PixyBot2 and variables within the code. From boot PixyBot2 starts in sleep mode.

Button	Conditions and responses
SW0+	A long press will take the display into mode select, where SW0 cycles through the primary modes, and SW1 is used to select the mode of interest • SLEEP – do nothing mode • DRIVE – demonstrate wheel movements • LTOF – laser range finder demos • Pixy2 – camera demos • Settings – adjustable values, like camera sensitivity
SW0	A short press on SW0 will cycle the display through different modes, depending on the primary mode that PixyBot2 is in. For example in DRIVE mode you can look at PWMs, slot counts, rpms, etc
SW1	A short press on SW1 is used to select the primary mode (eg. LTOF), or it is counted to determine which sub-mode the user wants to select.
SW1+	A long press on SW1 is used to select special functions, depending on the current primary mode. For example in Pixy2 mode, a long press on SW1 will toggle the white LEDs ON/OFF.

PixyBot2– Wii Nunchuk Wi-Fi Demo Functions





In order to be able to use these functions you need to have built a Wii Transceiver project:

Button	Conditions and responses
C	Held initially for > 1 second to make the robot switch into Wi-Fi mode.
C + Z	Both held for > 2 seconds will return the robot to an 'inactive' sleep mode state.
C	Each short press will increase the responsiveness of the PixyBot2 from Gear: 1 – 5 (max)
Z	Each short press will decrease the responsiveness of the PixyBot2 from Gear: 5 – 1 (min)
Z+	A long press on the 'Z' button will toggle the PixyBot2 in and out of slide drive mode, which changes the function of the joystick as seen on the left.

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