**ESP32 Precautions**

Pins not to Use:

1. SPI Flash Integrated pins:
   * GPIO 6 (SCK/CLK)
   * GPIO 7 (SDO/SDO)
   * GPIO 8 (SDUSDI)
   * GPIO 9 (SHD/SD2)
   * GPIO 10 (SWP/SD3)
   * GPIO 11 (CSC/CMD)
2. Strapping Pins:
   * GPIO 0 (must be LOW to enter boot mode)
   * GPIO 2 (must be floating or LOW during boot)
   * GPI0 4
   * GPIO 5 (must be HIGH during boot)
   * GPIO 12 (must be LOW during boot)
   * GPIO 15 (must be HIGH during boot)

These are used to put the ESP32 into bootloader or flashing mode.

1. Pins HIGH at Boot:
   * GPIO 3
   * GPIO 5
   * GPIO 6 to GPIO 11 (connected to the ESP32 integrated SPI flash memory - not
   * recommended to use).
   * GPIO 14
   * GPIO 15

Some GPIOs change their state to HIGH or output PWM signals at boot or reset. This means that if you have outputs connected to these GPIOs you may get unexpected results when the ESP32 resets or boots.

For more information regarding the pins of ESP32, visit the below website:

<https://randomnerdtutorials.com/esp32-pinout-reference-gpios/>