

AurAir Programming Environment Configuration Guide

WARNING: Certain home improvement projects are inherently dangerous, and even the most benign tool can cause serious injury or death if not used properly. **ALWAYS READ AND FOLLOW INSTRUCTION MANUALS AND SAFETY WARNINGS.** You must be particularly careful when dealing with electricity – always use common sense.

Any advice, guidance or other information provided by this guide or within any of our publications cannot completely anticipate your situation. If you are at all unsure about completing any aspect of this or other home wiring projects, consult a qualified electrical contractor to perform the service(s) for you.

ALWAYS follow electrical code requirements specific to your area, and before undertaking any home electrical project, contact your local electrical authority and your insurance company to ensure that you comply with all policies, warranties, regulations and authorities concerning this work.

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AurAir Programming Environment Configuration Guide

1 Executive Summary

Getting started with AurAir programming takes a few basic steps. This guide explains ONLY how to configure your hardware and software so that you can flash your home-made firmware on the AurAir Base. The AurAir Programming Guide explains how to build the AurAir Base firmware and how to flash it on the AurAir.

Opening the AURAIR BASE will void your guarantee!

To flash the case has to be opened, **do not connect it to mains while open!** It can be powered from the USB-TTL adapter!

DO NOT operate the AurAir Base while connected to an external power source, the thermal and normal fuses protect the AurAir Base from short-circuits and high temperatures and are connected **ONLY** to the 230V/115V plug!



DANGER

THIS DEVICE OPERATES ON A HIGH VOLTAGE (230V/115V)!

DISCONNECT THE AURAIR BASE FROM THE 230V/115V MAINS/SOCKET BEFORE OPENING THE AURAIR BASE!

NEVER CONNECT THE AURAIR BASE TO 230V/115V WHILE OPEN!

AurAir Programming Environment Configuration Guide

2 Version History

| Date | Version | Comments |
|------------|---------|-----------------------------------|
| 19-07-2019 | 1.0 | Initial draft, Windows/ESP32 only |
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3 Content

| | | |
|---|--------------------------------------|---|
| 1 | Executive Summary | 2 |
| 2 | Version History | 3 |
| 3 | Content | 3 |
| 4 | Purpose..... | 4 |
| 5 | AurAir Programming Environment | 4 |
| | 5.1 Software Requirements | 4 |
| | 5.2 Hardware Requirements | 4 |
| | 5.3 Install the ESPTool | 4 |
| | 5.4 Connect the hardware..... | 5 |
| | 5.5 Troubleshooting | 6 |

AurAir Programming Environment Configuration Guide

4 Purpose

The Purpose of this document is to explain how to setup the programming environment, making it possible to flash the SOC (System-On-a-Chip) within the AurAir Base hardware.

5 AurAir Programming Environment

Introduction

ESP32 integrates Wi-Fi (2.4 GHz band) and Bluetooth 4.2 solutions on a single chip, along with dual high performance cores, Ultra Low Power co-processor and several peripherals. Powered by 40 nm technology, ESP32 provides a robust, highly integrated platform to meet the continuous demands for efficient power usage, compact design, security, high performance, and reliability.

5.1 Software Requirements

To program the AurAir you need the following software:

- PC loaded with Windows 7 or higher operating system
- Python 3.7 or higher
- The ESPTool to flash the firmware

5.2 Hardware Requirements

The following hardware is required to flash the firmware on a AurAir:

- The AurAir Base, models B1 or B2
- A USB/Serial TTL cable to connect it to the PC

5.3 Install the ESPTool

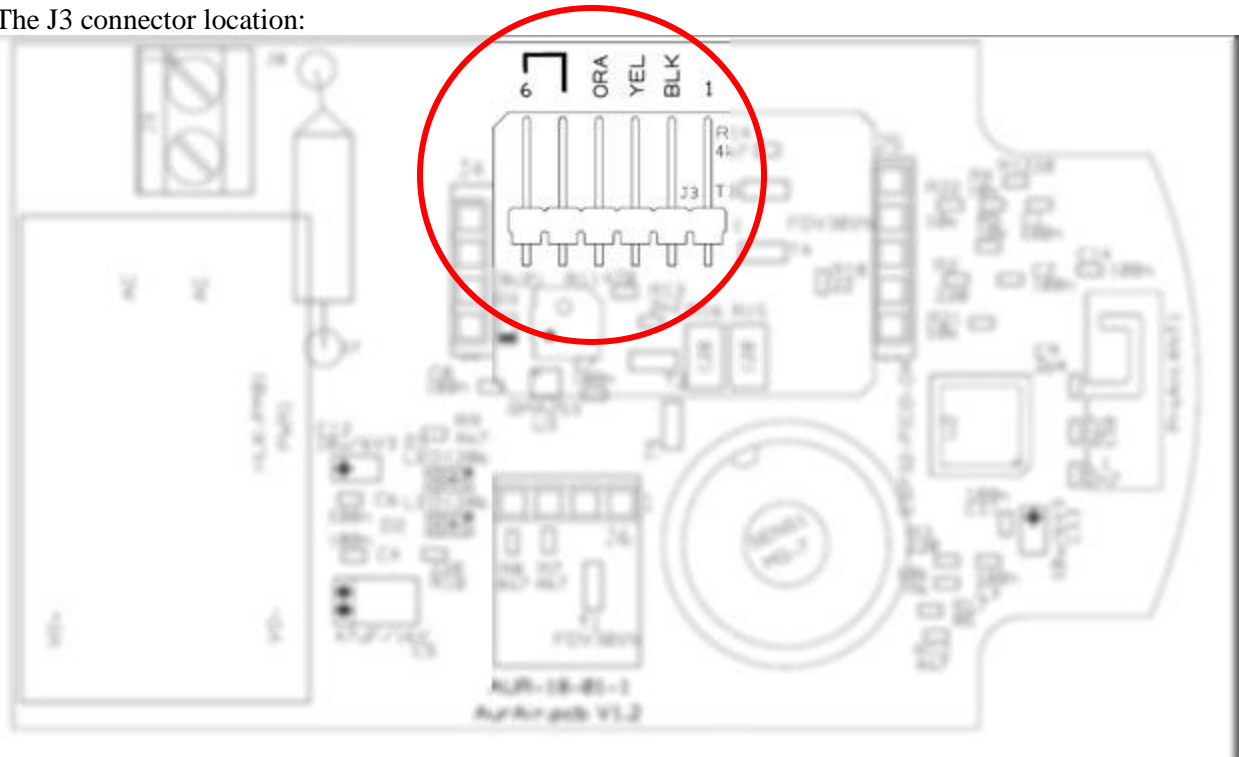
Download the esptool.exe utility from the AurAir website and make sure it's in your windows path!

AurAir Programming Environment Configuration Guide

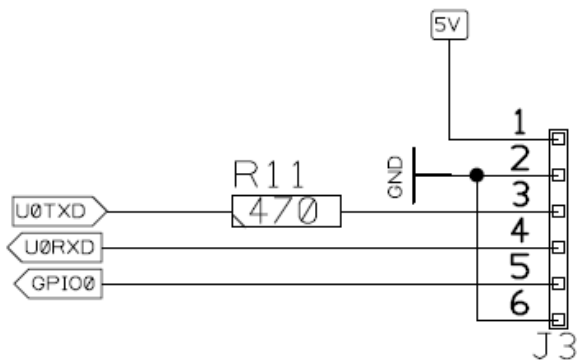
5.4 Connect the hardware

The AurAir Base has on the PCB a connector (J3) to program the SOC,.

The J3 connector location:



The connector has the following logical pins:



AurAir Programming Environment Configuration Guide

Use an USB to TTL Serial UART converter, like a FTDI FT232R, to connect a Windows PC to the AurAir connector.

The AurAir Connector Pin Layout is:

| PIN number | AurAir Connector Function | TTL Converter |
|------------|---------------------------|-----------------|
| 1 | 5V power | 5V power |
| 2 (BLK) | GND | GND |
| 3 (YEL) | TXD | RXD |
| 4 (ORA) | RXD | TXD |
| 5 | IO0 | |
| 6 | GND | |



When **erasing** or **flashing** the SOC, the pins **5** (IO0) and **6** (GND) should be connected to each other before applying power! During **normal** operation, these two pins should **NOT** be connected to each other.

5.5 Troubleshooting

- E-mail to support@aurair.eu with
 - Subject: AurAir Programming Environment Configuration Guide Question
 - Body: <Describe your software AND hardware setup> + <Description of your problem>