

### A.IR Shield ESP8266/ESP32 Tx for AnalysIR

#### Features

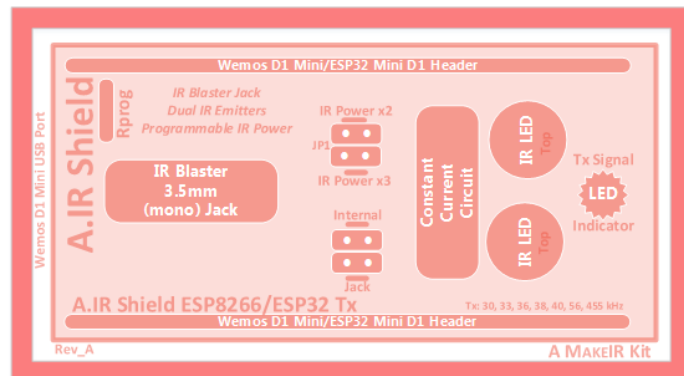
A.IR, the Advanced Infrared shield for ESP8266/ESP32 Tx includes:

- Configuration Options as:
  - x1, x2, x3+ IR Power
  - AnalysIR emitter device support with IR Tx only
  - Dual Vishay IR emitters
  - IR 3.5mm Tx jack
- Visual IR Tx signal indicator.
- TX selector jumpers
- IR Blaster support via jack
- 'Wemos' D1 Mini footprint
- ESP32 D1 Mini footprint
- Bonus Features:
  - Programmable IR power.
  - Hardware PWM carrier
- 20-60kHz & 455kHz carrier frequency Tx range
- Works via WiFi or Serial USB
- PCB Size: 26x25x15mm(LxWxH)
- Hide inside cabinet/IR blaster

#### Applications

A.IR - the Advanced Infrared transmitter module for ESP8266/ESP32 can be used in the following:

- Use with AnalysIR for Tx
- Powerful IR emitters for extended range and quality
- Lower power emitters via 3.5mm Jack & blaster cable.
- Testing & monitoring
- Integration into 3<sup>rd</sup> party IR & non-IR projects
- Your own custom IR sketches by customising the supplied firmware.
- IRremote Sending Supported.



#### A.IR Shield ESP8266/ESP32 Tx Overview

A.IR is a high-spec shield which operates seamlessly with AnalysIR, IRremote or your own custom sketches – supporting IR send only. By default, A.IR is supplied with headers soldered and the AnalysIR firmware, for both ESP8266 & ESP32, is available for download after purchase. Users can load any custom sketch onto A.IR using the standard Arduino IDE by reusing the supplied firmware. The A.IR shield works over the serial USB interface or WiFi.

A.IR allows makers, hobbyists and professionals send a large range of IR signals using quality Vishay IR components and excellent design features. A.IR provides excellent Tx range and signal quality. It is powered directly from the Wemos D1 Mini or ESP32 Mini D1 and makes use of the available on-board supplies. If you required both Rx & Tx support, consider the alternate (TRx) version from our online shop.

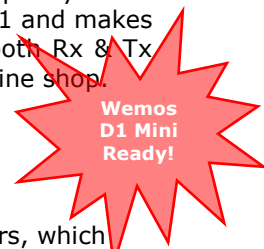
#### What is the A.IR Shield ESP8266/ESP32 Tx

A.IR is made up of the following key components:

- The A.IR shield with integrated high quality IR receivers, which can be used as a traditional high powered emitter or hidden away in a cabinet with IR blaster cables connected to the on-board 3.5mm jack. The 2 emitter circuits can be individually enabled or disabled via jumpers.
- A Wemos D1 Mini, ESP32 Mini D1 or pin-compatible clone, into which the shield plugs and which makes use of the Arduino IDE. *(not included)*
- Dual high-power IR emitters backed up by a power selection header – providing an effective selection of x1, x2, x3+ IR power levels. (IR current of 104mA, 184mA, 221mA with single IR emitter or 208mA, 368mA, 442mA equivalent with Dual IR emitters). This does not describe the blasters which should be placed next to the receiver port of the target devices.

A.IR is an excellent companion device for any project and is specifically designed to work as a plug and play solution with AnalysIR. It will also operate with most other IR projects.

A.IR uses the best design and IR components for modern Infrared remote control ensuring optimum performance in all environments.



## What's Included

Each A.IR shield is configured with high quality IR components, from Vishay, to ensure the best quality & performance.

You can opt to have the emitters and headers soldered or not (*subject to availability*). They come pre-soldered by default. A.IR now comes with firmware, ESP8266 & ESP32, for operation with AnalysIR, which provides the best performance. Users can easily load any other compatible sketch onto the ESP8266/ESP32. *Note: Wemos D1 Mini, ESP32 or IR Blaster cable not included.*



A getting started guide is also provided, with every order.

The A.IR Shield ESP8266/ESP32 Tx is also pin compatible with the ESP32 Mini D1. Firmware & AnalysIR support for both the ESP8266 and ESP32 is available now & provided with each purchase.

## Develop your own Custom Applications

Although the shield was originally conceived for use with AnalysIR you can create many interesting projects using the shield by extending the supplied firmware. For example:

- Networked remote - controlled from your Phone.
- Control devices remotely over the Internet.
- Position the module in the open or inside cabinets, making use of the IR blaster jack to run extended emitter cables.
- Control AIR Conditioners in homes and workplaces.
- Integrate with basic and advanced home entertainment systems, including Alexa type devices.

In order to get the maximum benefit from the shield we recommend picking up a copy of AnalysIR, which will save many hours in trying to understand & troubleshoot your IR signals.

## Licensing Model & Purchase

The A.IR shield ESP8266/ESP32 Tx, is supplied under a single licence which covers both non-commercial and commercial use of supplied hardware & software with an original A.IR shield. You can purchase your own A.IR module via: <http://www.ANALYSIR.com/> and other outlets. The A.IR shield design & hardware is also available for integration into 3<sup>rd</sup> party systems or bundling with kits. Custom designs are possible with bulk orders.

Any trade-marks referenced in this document are the property of their respective owners. *In particular, there is no commercial relationship or endorsements between AnalysIR and Vishay, any Wemos entity, Amazon or IRremote.*

## Service and Support

Support is provided for the A.IR shield via email or our on-line [IRforum](#). Contact details for support are provided at time of purchase. Support is available only using your registered email address.

## A MAKEIR Kit

A.IR Shield ESP8266/ESP32 Tx is part of the MAKEIR series which comprises a range of innovative infrared remote control modules for makers, hobbyists & professionals.

(Available now – visit [www.ANALYSIR.com](http://www.ANALYSIR.com) for more details)



## Minimum Requirements

- An A.IR Shield ESP8266/ESP32 Tx
- A Wemos/ESP32 D1 Mini with headers or clone (*not included*)
- A PC or equivalent with USB and/or WiFi/LAN connection.
- A WiFi network
- Power Supply, usually via USB. (5v)
- Arduino IDE1.8.1 or later

## Quality IR Components

A.IR uses the highest quality infrared components available from Vishay.

## Carrier Frequencies

A.IR supports all of the common IR carrier frequencies: 30kHz, 33kHz, 36kHz, 38kHz, 40kHz, 56kHz at the Infrared 940nm wavelength (i.e. 20-60kHz). In addition, the emitter can transmit at 455kHz.

## IR formats

A.IR works with all common modulated remote control signals and formats, including very long Air Conditioner signals, which covers the vast majority of systems in the market. It performs very well with difficult signals.

## What is Included

- 1 x A.IR Shield ESP8266/ESP32 Tx
- 2 x IR on-board emitters
- 3.5mm IR Blaster Jack (IR Blaster cable not included)
- Getting started instructions.
- A.IR ESP8266/ESP32 Tx firmware sketch for AnalysIR.
- Example firmware for sending.
- IRremote library supported
- Online Support.

## About ANALYSIR

ANALYSIR is committed to providing leading edge Infrared solutions & technology to our Maker, Hobbyist, EDU and Professional users globally.