A.IR Shield Nano for AnalysIR, IRremote & IRLib

Features

A.IR, the Advanced Infrared shield includes:

- Configuration Options as:
  o x1, x2+ IR Power
  o AnalysIR, IRremote, IRLib device support with IR Tx & Rx
  o Dual IR emitters with constant current drive
- Noise suppression Rx circuit
- Visual IR signal indicators.
- 5V DC supply, via USB
- High quality IR Receiver
- High quality IR Learner
- Typical Range: <45m(rx)
- Plugs directly into 'Nano'
- Bonus Features:
  o Programmable IR power.
  o Now comes with 'Nano' clone
  o Small prototyping area
- Wide 20kHz to 60kHz carrier frequency Rx bandwidth
- 30-50kHz, 455kHz carrier frequency Tx range
- PCB Size: 43x19x17mm*(LxWxH)*

Applications

A.IR - the Advanced Infrared transceiver module can be used in the following:

- Use with AnalysIR, IRremote & IRLib
- Powerful IR emitters for extended range and quality
- High quality receiver module for IR remote control
- Prototyping area for extending your projects
- Testing & monitoring
- Integration into 3rd party IR & non-IR projects
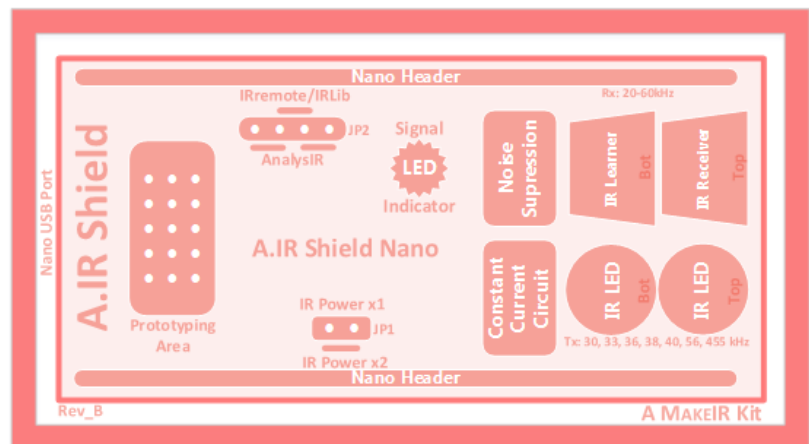
A.IR Shield Nano Overview

The A.IR Shield Nano (A.IR) is a new high-spec shield which operates seamlessly with AnalysIR, IRremote and IRLib – supporting IR send and receive. Carrier frequency measurement and reporting is supported by AnalysIR & IRLib. By default, A.IR is supplied with an Arduino 'Nano' compatible clone with the AnalysIR firmware loaded. Users can also load any IRremote or IRLib sketch onto A.IR using the standard Arduino IDE. When not playing with their IR projects users can load any Arduino sketch onto the supplied 'Nano'. The A.IR shield also provides a small prototyping area for further extension of its capabilities. (e.g. Bluetooth/BLE, Wi-Fi, RF, EEPROM, SD storage for logging etc.)

A.IR allows makers, hobbyists and professionals record and send a large range of IR signals using quality Vishay IR components and excellent design features. A.IR provides excellent reception range and signal quality for both 3V3 and 5V systems. It can be powered directly from the 'Nano' microcontroller, USB ports, or via batteries or stand-alone power supplies connected to the PCB headers.

What is the A.IR Shield

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

- The A.IR shield with integrated high quality IR receivers, which can provide a range of functionality from IR decoding, remote control or measurement of IR carrier frequency.
- An Arduino 'Nano' compatible clone, into which the shield plugs.
- Dual high-power IR emitters backed up by a power selection header – providing an effective selection of x1, x2+ IR power levels. (Total IR current of circa 100mA, 200mA with single IR emitter or 200mA, 400mA with Dual IR emitter).

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

A.IR uses the best design and qualityIR components for 'state of the art' Infrared remote control.

Now with 'Nano'

What's Included

Each A.IR shield is configured with high quality IR components to ensure the best performance. You can opt to have the receivers, emitters and headers soldered or not *(subject to availability).* They come pre-soldered by default.
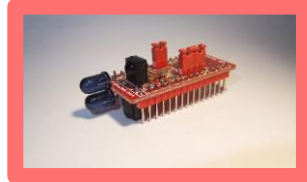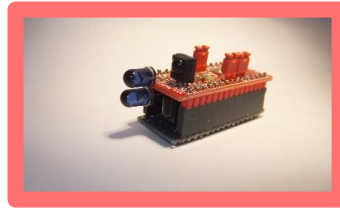
A.IR now comes complete with a Nano compatible (manufactured by a 3rd party) and is pre-loaded with firmware for operation with AnalysIR, which provides the best performance. Users can easily load any other Arduino compatible sketch onto the Nano, including IRremote & IRLib sketches.

Firmware Options

Users have a selection of firmware options with the A.IR shield:

- **AnalysIR** – this firmware is loaded by default and supports IR Tx & Rx with AnalysIR
- **IRremote** – designed also to work with IRremote (Tx+Rx) by adjusting the jumper pins on JP2.
- **IRLib** – designed to work with IRlib (Tx+Rx) by adjusting the jumper pins on JP2
- **Arduino** – users can also load any custom Arduino sketch for their own IR remote control project by leveraging the high quality IR component on-board the shield.

The AnalysIR firmware comese preloaded and the source code is provided with each module. Users are free to re-use/extend this firmware on any project which uses an official A.IR shield. For other uses please contact support.

Licensing Model & Purchase

The A.IR shield, is supplied under a single licence which covers both non-commercial and commercial use of supplied hardware & software when used with an official 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 3rd 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 Arduino entity, IRremote or IRLib.

Service and Support

Support is provided for the A.IR Shield Nano 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 is part of the MakeIR series which comprises a range of innovative infrared remote control modules and kits for makers, hobbyists and professionals. *(Available now – visit www.AnalysIR.com for details)*

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Minimum Requirements

- An A.IR shield
- The included Nano
- A PC or equivalent with USB connection.
- Power Supply, usually via USB on Nano. (5v)
- Arduino IDE 1.6.5 or greater

Quality IR Components

A.IR uses the highest quality infrared components available.

Carrier Frequencies

A.IR supports all of the common IR receiver carrier frequencies: 30kHz, 33kHz, 36kHz, 38kHz, 40kHz, 56kHz at the Infrared 940nm wavelength. 455kHz is supported for Tx only.

IR formats

A.IR works with all common modulated remote control signals and formats, including long Air Conditioner signals with up to 700 marks and spaces, 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
- 1 x Nano compatible
- 2 x IR emitter
- Getting started instructions.
- A.IR firmware source sketch for AnalysIR.
- IRremote, IRLib are available for download via GitHub.
- Online Support.

About AnalysIR

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