

## SENDIR Advanced Infrared Emitter Module

### Features

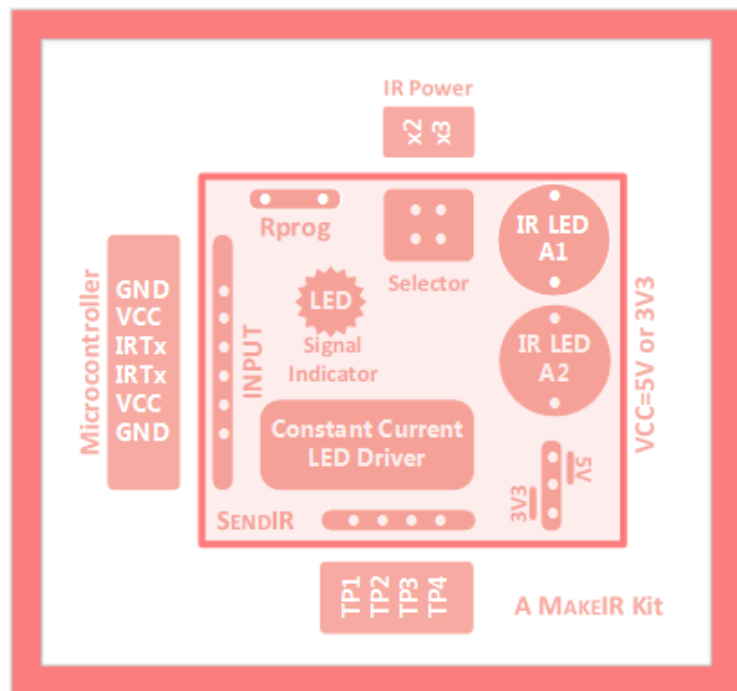
SENDIR, the Advanced Infrared emitter module includes:

- Constant current IR transmission design
- Selectable x1, x2, x3 Power for Emitter via jumpers
- Customisable range via programmable TH resistor
- 5V or 3V3 levels (VCC/IRTx)
- High quality dual IR emitters
- Range: 10-40m+(tx)
- Single or Dual IR emitter design (via Jumper)
- Visual LED indicator for transmitted signals
- Bonus Features:
  - 4 Test points provided for better understanding of circuit operation and troubleshooting
  - Use narrow & wide angle IR emitters for optimum far & near coverage
  - Emitter power selector
- 1Hz to 4MHz modulation frequency range
- PCB Mounting hole
- PCB Size: 25x25x11mm(LxWxH)

### Applications

SENDIR, the Advanced Infrared emitter device can be used in the following:

- Remote control
- Air Conditioner control
- Laser Tag
- Beacons / Jamming
- Time Lapse photography
- Photo Interrupter
- Light Barrier / Proximity
- Data Transmission



### SENDIR Overview

SENDIR is an advanced module for sending modulated Infrared signals using a microcontroller.

SENDIR allows makers, hobbyists and professionals to send infrared signals from their microcontroller projects using quality IR components and excellent design features. SENDIR is a drop in replacement for any IR emitter and provides excellent range and signal quality for both 3V3 and 5V systems. It can be powered directly from the microcontroller supply, batteries or via an independent DC power supply.

### What is SENDIR

SENDIR is made up of 3 components:

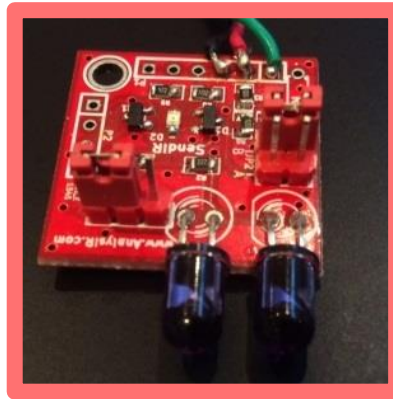
- The SENDIR board module.
- An associated Microcontroller unit such as an Arduino, Teensy, ESP8266/NodeMCU, MSP430, PIC, AVR, Raspberry Pi, FPGA Spark Core, ARM, Edison, PSoC or similar to generate the modulated infrared signal for transmission. *(Not Included.)*
- A power supply provided via the microcontroller supply or via an independent DC power source. *(Not Included.)*

SENDIR is an excellent companion device for any 5V or 3V3 project and can operate from 2V5 to 5V supplies. It can be configured with single or dual emitters for more demanding projects. Single emitter mode is recommended for 3V3 supply or below, unless dual aspect coverage is the primary requirement.

## What's Included

Each SendIR module is configured with single or dual emitters plus a set of header pins and power selection jumpers. You can opt to have the emitters and header pins soldered or not. Test points and spare positions are not populated.

IR range can be increased further by installing a programming resistor on the PCB. This is a feature of all of our constant current IR emitter designs in the MAKEIR Kit series.



A quick-start guide is provided after purchase which covers: input headers, power selector jumper settings, 5v/3V3 operating modes, programmable resistor for custom power levels and Test Points for better understanding of the circuit and trouble shooting.

## Customisation

SENDIR comes in dual emitter configurations as standard, with 1 x TSAL6100 & 1 x xTSAL6200. Customisation of the programmable resistor and IR emitter angles is available on request for a small additional fee.

## Licensing Model & Purchase

SENDIR, is supplied under a single licence which covers both non-commercial and commercial use. You can purchase your own SENDIR module via: <http://www.ANALYSIR.com/> and other outlets. The SENDIR design & hardware is also available for integration into 3<sup>rd</sup> party systems. Custom designs are possible with bulk orders.

## Service and Support

Support is provided for SENDIR 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

SENDIR is part of the MAKEIR series which comprises a range of innovative infrared remote control kits for makers, hobbyists and professionals.

(For launch in Q4 2014 - visit [www.ANALYSIR.com](http://www.ANALYSIR.com) for details)



## Additional Information

For more information visit <http://www.ANALYSIR.com/> or contact us directly using the contact information below.

## Minimum Requirements

- A microcontroller providing the modulated Infrared signal.
- Power Supply providing 5v or 3V3 (2V5 to 5V possible).
- Power can be supplied directly by the microcontroller supply or an independent source.

## Infrared Innovations

SENDIR features a number of attractive design elements:

- Selectable IR power jumpers are provided on board for x1, x2 and x3 power settings.
- A programmable TH resistor can be easily added to provide for custom power/range settings.
- The constant current circuit design delivers quality signals every time.
- IR Signal Conditioning
- Can be configured with single or dual IR emitters

## Modulation Frequencies

SENDIR supports all of the common IR modulation frequencies: 30kHz, 33kHz, 36kHz, 38kHz, 40kHz, 56kHz 455kHz and any other custom frequency at the Infrared 940nm wavelength.

## IR formats

SENDIR is compatible with all modulated remote control signals and formats.

## Dual emitters

The dual emitter option allows coverage in 2 directions, flood fill, increased range or use of IR LEDs with wide (near) and narrow (far) coverage. Using dual emitters can provide double the IR power for the same current (*approximation*).

## About ANALYSIR

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