

## Connecting a LAN8720 to a ESP32

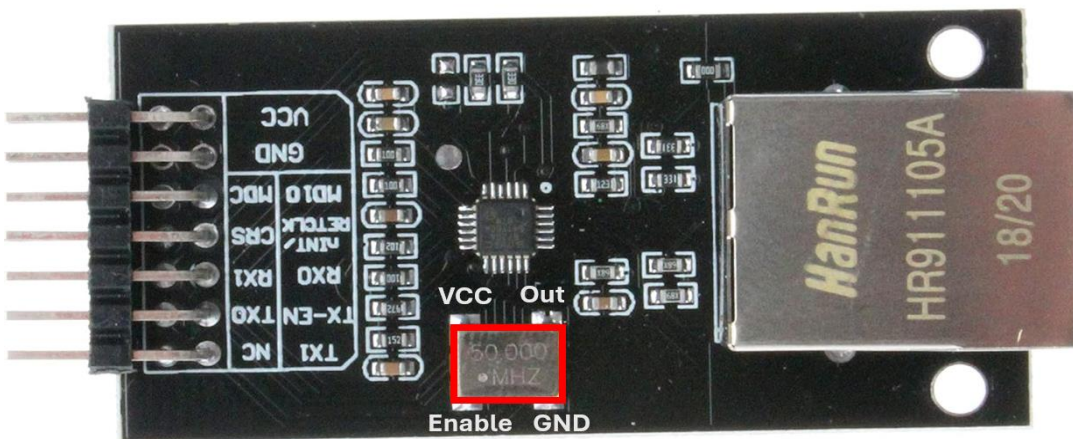
I've been trying to connect a LAN8720 ethernet board to a ESP32 dev board and everywhere I look, I just can't seem to get all the info to get it to work first shot!

There's the physical plugging of them together, using the onboard 50 MHz oscillator or using the ESP32 to generate the 50 MHz clock, using the GPIO 0 or another, and I've tried almost all of them including using a transistor to isolate the clock out of the LAN8720 board connecting to GPIO0 of the ESP32 and using another GPIO with a delay to activate the transistor so that the ESP32 will boot up normally at every boot or reboot.

Here's what I found to be the simplest solution that I managed to make work and it works every time I boot or reboot the ESP32.

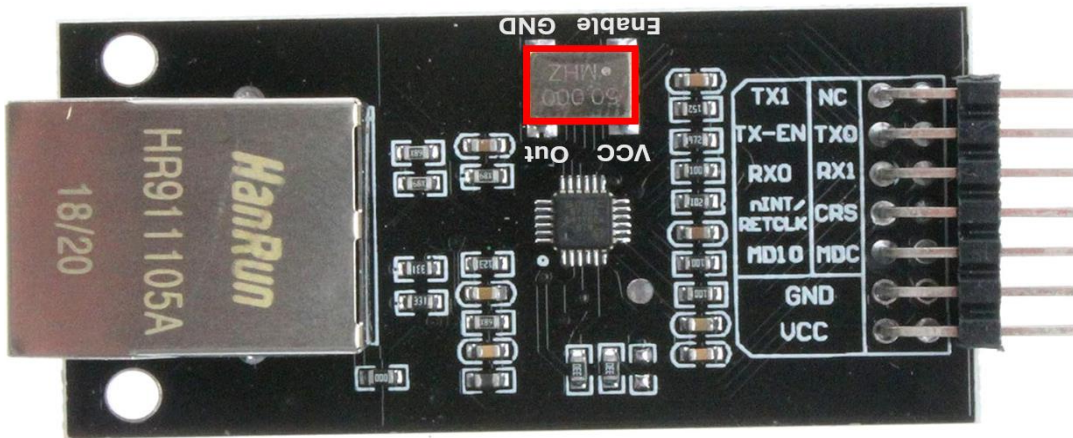
I hope this will help someone else!

- On the LAN8720 ethernet board, find the the onboard oscillator and place a jumper between the Enable pin and the GND pin.



- Connect these pins of the LAN8720 to the GPIO of the ESP32

Lan8720	ESP32
Int/retclk	Gpio 17
MDIO	Gpio 18
TxD0	Gpio 19
TxEN	Gpio 21
TxD1	Gpio 22
MDC	Gpio 23
RxD0	Gpio 25
RxD1	Gpio 26
CRS	Gpio 27
VCC	3.3v
GND	GND



Using these values in my code is how I got it to work:

```
<ETH.h>
ETH_TYPE ETH_PHY_LAN8720
ETH_ADDR 1
ETH_POWER_PIN -1
ETH_CLK_MODE ETH_CLOCK_GPIO17_OUT
ETH_MDC_PIN 23
ETH_MDIO_PIN 18
```

NB: I've also managed to get this to work on a ethernet relay and network board from DTWONDER that uses a JL1101 ethernet chip and in the INO file, you have both codes