# Low-cost vector network analyzer – VNA for measuring the antenna of IoT devices

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## What ?

We introduce a device to analyzes qualities of the antenna in IoT devices, in which we have:

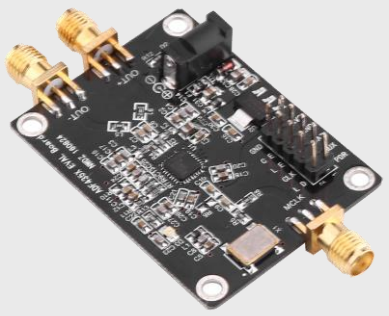
- Low cost (Under 100$)
- Small size & easy to use
- Work in most popular frequencies, such as **433MHz**, **868MHz**, **2.4GHz**,…

## Why ?

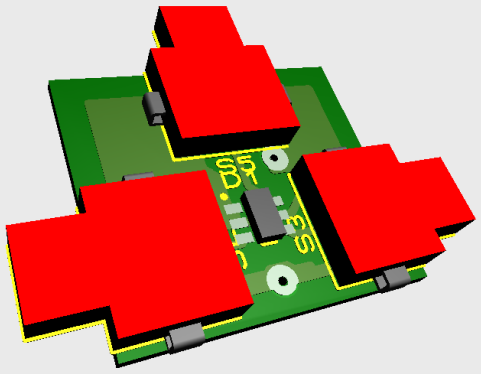
- Nowadays, the IoT field is developing significantly, so the quality requirements of IoT devices is not only about the stable operation of itself but also a good ability in communicating with other IoT devices. Therefore, the demand of analyzing qualitiy of the antenna is more necessary.
- However, the solutions, as well as devices that analyze the quality of the antenna, are still **not popular** and **very expensive**.

## Description

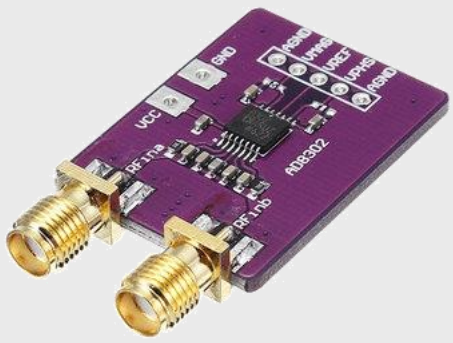
Generating a wave → Coupling a reverse wave → Compare to get the result



*ADF4350 module*

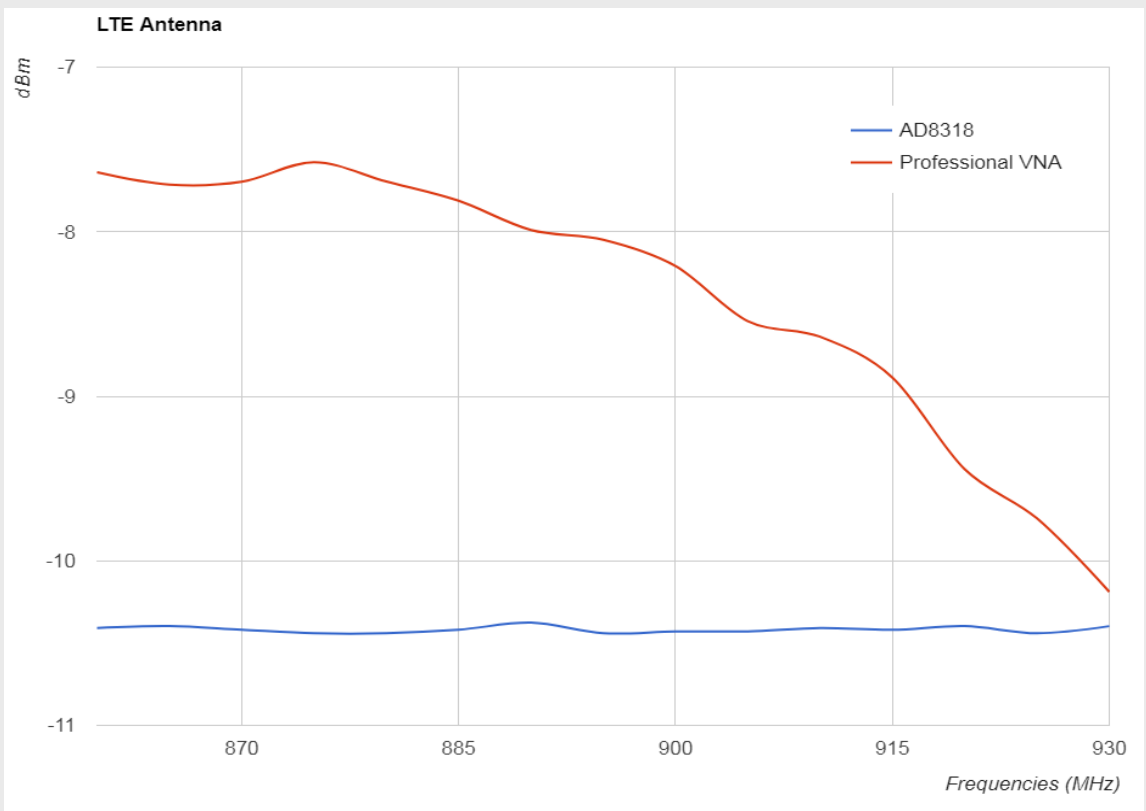


*3D model or Coupler module*




*AD8302 module*

## Result


## Conclusion

Although the device does not meet the accuracy specified, it still meets the following set of criteria:

- Evaluate whether the antenna operates at frequencies between 860 MHz and 930 MHz (LoRa frequency)
- Low cost (< 100 USD)