

Leonardo Rossoni - 23/04/2024

# DEV - RADIOASTRONOMY

Report number 1: New RF components

## News

I wanted to give you a quick update on the radio telescope development. I've just received some new RF components that I'll be installing over the next few days.

These comprehend:

- Various SMA cables and connectors
- Noolec SawBird+ H1 LNA
- RTL-SDR Blog V3 (should be here tomorrow)

Also, I started designing the Feed Antenna of the dish. Basically, a can-antenna designed to have a lower cut-off frequency of 1212MHz and an upper cut-off frequency of 1582MHz.

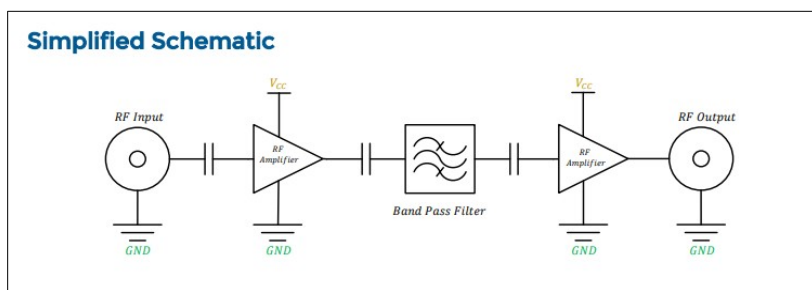
[\[link to the design tool\]](#)

## Noolec SawBird+ H1 LNA

Noolec SAWbird+ H1 is a SAW Filter & Ultra-Low Noise Amplifier (LNA) Module for Hydrogen Line (21cm) applications with a center frequency of 1420MHz.

Some key features of this LNA are:

- +40dB of RF gain at 1420MHz
- 0.8dB noise figure at 1420MHz
- +3.3V-5V single supply



If you don't know what an LNA is you should check out this [link](#).

I will upload a more detailed document in the "Insights" section of the repository where I'll talk about LNAs.

[\[link to this LNA datasheet\]](#)

### RTL-SDR Blog V3

The RTL-SDR Blog V3 is a key component in our project setup. It's essentially a software-defined radio (SDR) dongle built around the Realtek RTL2832U chipset.

Widely adopted by hobbyists and professionals, it serves a range of purposes, from radio monitoring to spectrum analysis and amateur radio activities.

Its affordability and compatibility with open-source software make it an ideal choice for my project's needs. I will post more insights on this device as the project evolves. My idea is to write my own code to read data from this dongle in order to enable more interesting data processing.

