

STEMlab 125-14 Low Noise Starter Kit



STEMlab 125-14 Low Noise is based on a [STEMlab 125-14](#) digitizer board that is populated with additional linear analog power for analog power supplies to reduce RF inputs and outputs noise and consequently increase ENOB.

The Red Pitaya STEMlab 125-14 Low Noise, is a versatile and powerful all-in-one measurement solution designed to meet your measurement and testing needs. This starter kit is perfect for electronics enthusiasts, hobbyists, and professionals alike.

STEMlab 125-14 Low Noise is a programable open-source digitizer, our most versatile and popular product, introduced to the market in 2013 when Red Pitaya was established. Since then it has been used in various contexts, from industry to research, and space applications.

The Red Pitaya STEMlab 125-14 Low Noise offers a wide range of functionalities, including an oscilloscope, spectrum analyzer, signal generator, and more. With its high-performance capabilities, you can accurately measure and analyze signals with ease.

This kit is equipped with user-friendly software, allowing you to control and visualize your measurements conveniently. Its compatibility with popular programming languages such as Python and MATLAB enables seamless integration into your existing workflow.

Whether you are working on educational projects, research, or professional applications, the Red Pitaya STEMlab 125-14 Low Noise provides a reliable and efficient solution for your measurement and testing requirements.

Key features:

- Small form-factor multi-instrument
- Dual-Core ARM Cortex-A9 MPCore Xilinx ZYNQ 7010 SoC (CPU & FPGA)
- FPGA and CPU integration for enhanced performance
- Fast sampling speed:125MSPS, for the two simultaneous inputs
- And the same fast generation speed for the two outputs
- Open-source design for customization and flexibility
- Ethernet connectivity and optional WiFi dongle
- Open-source software code available with application examples
- Works with Linux, Windows PC, Android, IOS, basically anything with a web browser
- Free web apps (oscilloscope & signal generator, spectrum, Bode and logic analyzer, SDR, VNA, PID)
- Can be controlled remotely using C, LabVIEW, MATLAB, Python, or Scilab
- Can be programmed to meet custom needs

What is in the box:

- Red Pitaya STEMLab 125-14-Low Noise digitizer board
- SD card (16GB, class 10)
- Ethernet cable (1m)
- Power supply (5V, 2A)

RAM-512MB (4Gb)

System memory-Micro SD up to 32GB

Ethernet-1 Gbit

USB-USB 2.0

WIFI-Using Wi-Fi dongle

Channels-2

Sample rate-125MS/s

DAC resolution-14 bit

Full scale voltage range- $\pm 1V$

Load impedance-50 Ω

Shortcut protection-Yes

Typical raising/falling time-2V / 10ns

Bandwidth-DC-60MHz

Channels	2
Sample rate	125MS/s
ADC resolution	14 bit
Full scale voltage range	$\pm 1V / \pm 20V$
Input Coupling	DC
Bandwidth	DC-60MHz
Input impedance	1M Ω

Digital IOs-16

Analog inputs-4channels 0-3.5V 12bit

Analog outputs-4 channels 0-1.8V
12bit

**Communication interfaces-I2C, SPI,
UART**

Available voltages-- 4V, + 3.3V, + 5V

Weight-0,5 kg

Dimensions-22 × 15 × 7,5 cm