

# STEMlab



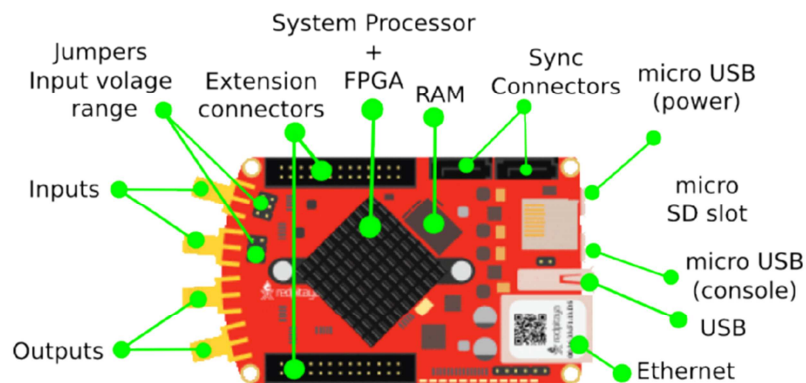
**STEMlab 125-14**




**STEMlab 125-10**

## STEMLab 125-14 (originally Red Pitaya v1.1) vs. STEMLab 125-10

STEMLab is available in two versions and both offer the same functions and features. With the difference in technical specification of high-frequency inputs and outputs, RAM capacity some other differences (you can find more info in the comparison table below). They are addressed to target different groups and / or needs. Where STEMLab 14 has 14bit input / output channels for highly accurate measurement results in professional environment, STEMLab 10 has 10bit input / output channels and is perfect for universities, students and makers.

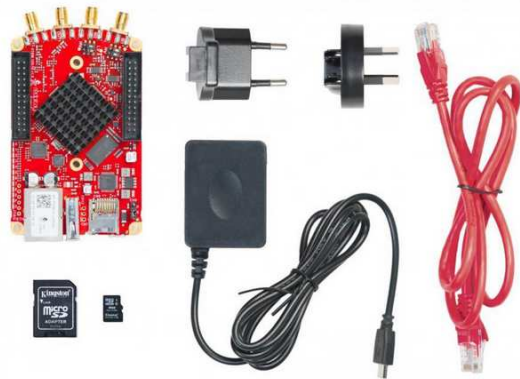


	<b>STEMLAB 125-10</b>	<b>STEMLAB 125-14</b>	
			
Basic	Processor	DUAL CORE ARM CORTEX A9	DUAL CORE ARM CORTEX A9
	FPGA	Xilinx Zynq 7010 SOC	Xilinx Zynq 7010 SOC
	RAM	256MB (2Gb)	512MB (4Gb)
	System memory	Micro SD up to 32GB	Micro SD up to 32GB
	Console connection	USB to serial converter required	micro USB
	Power connector	Micro USB	Micro USB
	Power consumption	5V, 1,5A max	5V, 2A max
Connectivity	Ethernet	1Gbit	1Gbit
	USB	USB 2.0	USB 2.0
	WIFI	requires WIFI dongle	requires WIFI dongle
	Synchronisation	-	Daisy chain connector (up to 500 Mbps)
RF inputs	RF input channels	2	2
	Sample rate	125 MS/s	125 MS/s
	ADC resolution	10 bit	14 bit
	Input impedance	1M $\Omega$ /10pF	1M $\Omega$ /10pF

RF inputs	Full scale voltage range	+20 V	+20V
	Absolute max. Input voltage range	30V	30V
	Input ESD protection	Yes	Yes
	Overload protection	Protection diodes	Protection diodes
RF outputs	RF output channels	2	2
	Sample rate	125 MS/s	125 MS/s
	DAC resolution	10 bit	14 bit
	Load impedance	50 Ohm	50 Ohm
	Voltage range	+1V	+1V
	Output slew rate	200V/us	200V/us
	Short circuit protection	YES	YES
	Connector type	SMA	SMA
Extension connector	Digital IOs	16	16
	Analog inputs	4	4
	Analog inputs voltage range	0-3,5V	0-3,5V
	Sample rate	100kS/s	100kS/s
	Resolution	12bit	12bit
	Analog outputs	4	4

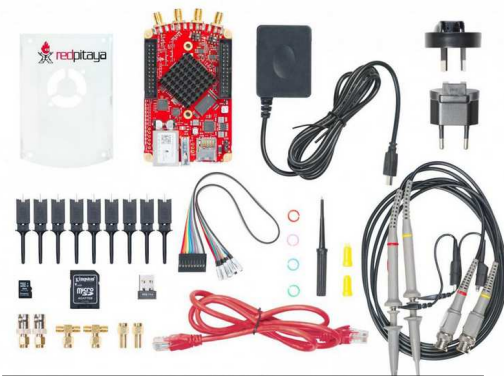
Analog outputs voltage range	0-1,8V	0-1,8V
Sample rate	100kS/s	100kS/s
Resolution	12bit	12bit
Communication interfaces	I2C, SPI, UART	I2C, SPI, UART
Available voltages	+5V,+3,3V,-4V	+5V,+3,3V,-4V

**STEMlab 125-10 is available in different kits:**



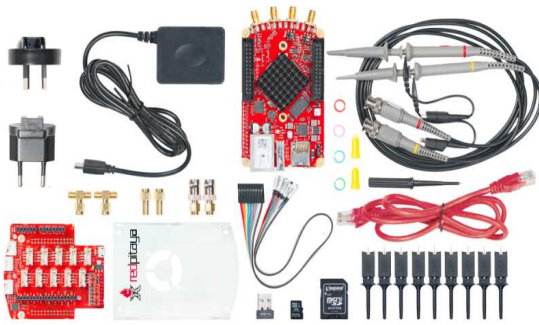
**STEM 125-10 Starter Kit**

STEMlab 125-10 Starter Kit includes:	Quantity
STEMlab 125-10 board	1
2A, 5V, Interchangeable power Supply	1
4GB, class 10 SD card	1
1m ETH cable	1



**STEM 125-10 Diagnostic Kit**

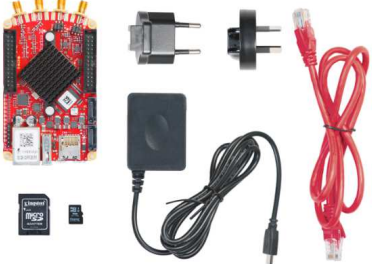
STEMlab 125-10 Diagnostic Kit includes:	Quantity
STEMlab 125-10 board	1
2A, 5V, Interchangeable power Supply	1
4GB, class 10 SD card	1
1m ETH cable	1
Logic Analyzer Basic License Key	1
Logic Analyzer probes	1
Oscilloscope probes	2
SMA to BNC adapters	2
T part	2
50Ohm termination	2
WI-FI USB module	1
Acrylic case for STEMlab board	1



**STEM 125-10 EDU Kit**

<b>STEMlab 125-10 EDU Kit includes:</b>	<b>Quantity</b>
STEMlab 125-10 board	1
2A, 5V, Interchangeable power Supply	1
4GB, class 10 SD card	1
1m ETH cable	1
Logic Analyzer Basic License Key	1
Logic Analyzer probes	1
Oscilloscope probes	2
SMA to BNC adapters	2
T part	2
500hm termination	2
WI-FI USB module	1
Acrylic case for STEMlab board	1
Sensor Extension Module	1

**STEMlab 125-14 is available in different kits:**



**STEM 125-14 Starter Kit**

<b>STEMlab 125-14 Starter Kit includes:</b>	<b>Quantity</b>
STEMlab 125-14 board	1
2A, 5V, Interchangeable power Supply	1
4GB, class 10 SD card	1
1m ETH cable	1



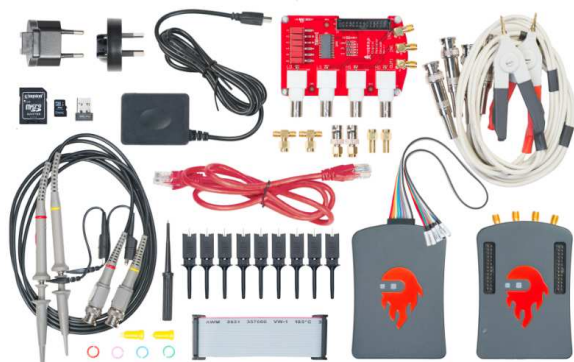
**STEM 125-14 Diagnostic Kit**

<b>STEMlab 125-14 Diagnostic Kit includes:</b>	<b>Quantity</b>
STEMlab 125-14 board	1
2A, 5V, Interchangeable power Supply	1
4GB, class 10 SD card	1
1m ETH cable	1
Logic Analyzer PRO License Key	1
Logic Analyzer HW in ALU case	1
Oscilloscope probes	2
SMA to BNC adapters	2
T part	2
500hm termination	2
WI-FI USB module	1
ALU case for STEMlab board	1



**STEM 125-14 Cal Diagnostic Kit**

<b>STEMlab 125-14 Cal. Diagnostic Kit includes:</b>	<b>Quantity</b>
STEMlab 125-14 board- calibrated	1
2A, 5V, Interchangeable power Supply	1
4GB, class 10 SD card	1
1m ETH cable	1
Logic Analyzer PRO License Key	1
Logic Analyzer HW in ALU case	1
Oscilloscope probes	2
SMA to BNC adapters	2
T part	2
500ohm termination	2
WI-FI USB module	1
ALU case for STEMLab board	1



**STEM 125-14 Ultimate Kit**

<b>STEMlab 125-14 Ultimate Kit includes:</b>	<b>Quantity</b>
STEMlab 125-14 board- calibrated	1
2A, 5V, Interchangeable power Supply	1
4GB, class 10 SD card	1
1m ETH cable	1
Logic Analyzer PRO License Key	1
Logic Analyzer HW in ALU case	1
Oscilloscope probes	2
SMA to BNC adapters	2
T part	2
500ohm termination	2
WI-FI USB module	1
ALU case for STEMLab board	1
LCR meter extension module and access.	1