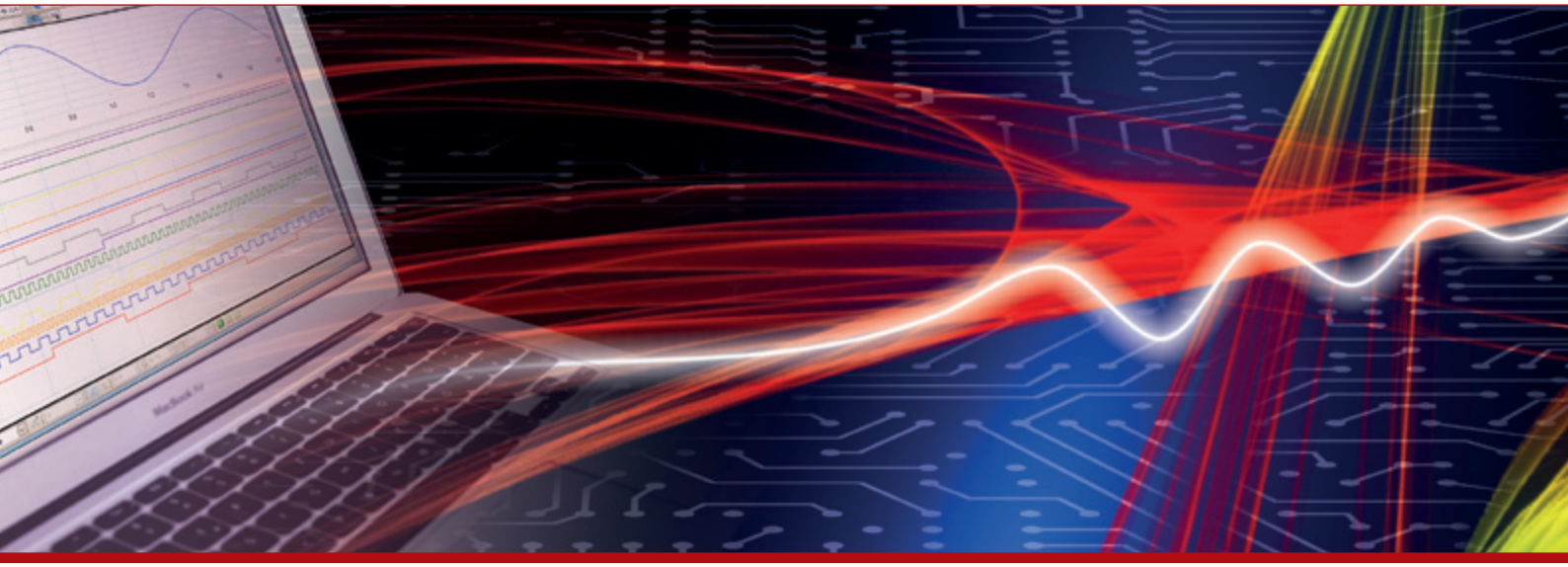
Product Datasheet - Technical Specifications



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Your contact

Technical and commercial sales, price information, quotations, demo/test equipment, consulting:

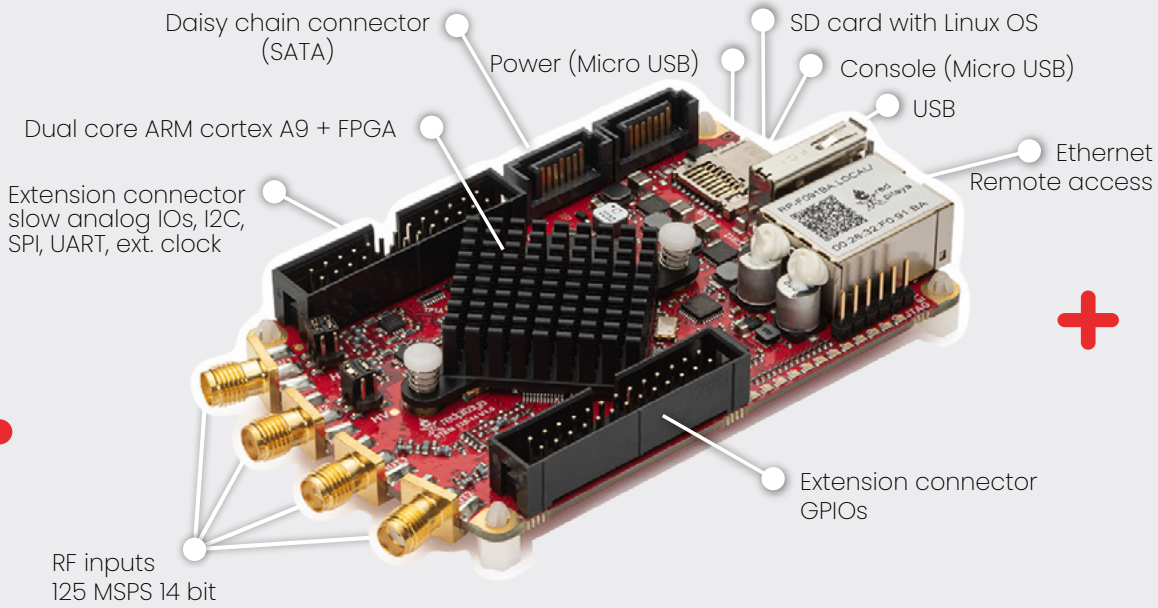
Tel.: **+49 - (0)81 41 - 52 71-0**

E-Mail: **sales@meilhaus.com**

Meilhaus Electronic GmbH
Am Sonnenlicht 2
82239 Alling/Germany
Tel. **+49 - (0)81 41 - 52 71-0** E-Mail **sales@meilhaus.com**

www.meilhaus.com

STEM^{lab} 125-14 4-Input



STEMlab 125-14 4 Inputs digitizer board, derived from the STEMlab 125-14 unit, features 4 input channels for enhanced performance, replacing the previous 2 inputs and 2 output channels. It also includes the Xilinx Zynq 7020 SoC.

Product description

STEMlab 125-14 4-Input RF signal acquisition platform mirrors the general hardware features of STEMlab 125-14 with notable improvements:

- 4 analog input channels at 125Msps & 14 bits (versus 2 inputs and 2 outputs)
- Enhanced RF input performance (reduced crosstalk, noise, and distortions)
- Incorporates Zynq 7020 for increased processing capabilities and additional digital IO pins
- Allows seamless switching between internal and external clocks via a jumper or control signal on the extension connector
- Optional feature for locking internal ADC clock to an external reference clock through the extension connector (available upon customer request).

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Applications

- Automotive Equipment
- Multi-channel Data Acquisition
- Base-Station IF Receivers
- Software Defined Radios
- Diversity Receivers
- Medical Imaging
- Communications
- Non-destructive Testing
- Test Equipment
- Cellular Base Stations

Key features

- Four inputs at 125 MSPS 14-bit
- Internal/external clock selector available
- Performance improvements (less noise & crosstalk)
- Xilinx Zynq 7020 SoC

Technical Specifications

BASIC	
Processor	DUAL CORE ARM CORTEX A9
FPGA	FPGA Xilinx Zynq 7020 SOC
RAM	512 MB (4 Gb)
System memory	Micro SD up to 32 GB
Console connection	Micro USB
Power connector	Micro USB
Power consumption	5 V, 2 A max

CONNECTIVITY	
Ethernet	1 Gbit
USB	USB 2.0
WIFI	requires WIFI dongle
Synchronisation	Daisy chain connector (up to 500 Mbps)

RF INPUTS	
RF input channels	4
Sample rate	125 MS/s
ADC resolution	14 bit
Input impedance	1 MOhm / 10 pF
Full scale voltage range	±1 V (LV) and ±20 V (HV)
Input coupling	DC
Absolute max. input voltage range	30 V
Input ESD protection	Yes
Overload protection	Protection diodes
Bandwidth	DC - 60 MHz

RF OUTPUTS	
RF output channels	N/A
Sample rate	N/A
DAC resolution	N/A
Load impedance	N/A
Voltage range	N/A
Short circuit protection	N/A
Connector type	N/A
Output slew rate	N/A
Bandwidth	N/A

EXTENSION CONNECTOR	
Digital IOs	20
Analog inputs	4
Analog inputs voltage range	0-3,5 V
Sample rate	100 kS/s
Resolution	12 bit
Analog outputs	4
Analog outputs voltage range	0-1,8 V
Communication interfaces	I2C, SPI, UART
Available voltages	+5 V, +3,3 V, -4 V
External ADC clock	Yes

SYNCHRONIZATION	
Trigger input	Through extension connector
Daisy chain connection	Over SATA connection (up to 500 Mbps)
Ref. clock input	N/A