Pico Technology
USB oscilloscopes

Pico Technology

- Pico Technology was established in 1991 and became a leader in the field of PC oscilloscopes and data loggers
- PicoScope oscilloscopes are “faceless” compact instruments which need to be connected to a PC which runs the control software
  - very small and light; ideal for embedded industrial applications
  - easy to transport (a “backpack oscilloscope”)
  - can be powered from a laptop and used without a electrical grid connection
  - can be controled with supplied PicoScope application ...
  - ... or with custom programs developed using a PicoSDK
  - some models offer relatively fast continuous streaming for long term measurements

Real time oscilloscopes

- five series of real time oscilloscopes
  - from the very cheap 2000 series (10 MHz – 100 MHz) up to mid-range 6000E series (3 GHz max)
  - new 3000E series – 100 / 200 / 350 / 500 MHz, USB-C powered; flexible resolution

Real time PicoScope oscilloscopes

price

performace

2000 Series

10 to 100 MHz
2/4 channels
opt. 16 digital
AWG

3000D Series

50 to 200 MHz
2/4 channels
opt. 16 digital
AWG

5000 Series

60 to 200 MHz
2/4 channels
opt. 16 digital
AWG
flexible resolution

3000E Series

100 to 500 MHz
4 channels
opt. 16 digital
AWG
flexible resolution
1 MΩ / 50 Ω imp.
5 GSa/s
USB-C powered

6000E Series

300 MHz to **3 GHz**
4/**8** channels
opt. 16 digital
AWG
flexible resolution
1 MΩ / 50 Ω imp.
10 GSa/s

PicoScope – ET oscilloscopes

- two series of equivalent time sampling oscilloscopes
  - 9300 series – up to 30 GHz electrical and 9,5 GHz optical
    - sequential sampling, 16-bit ADC, direct or prescaled **external** trigger, clock recovery
  - 9400(A) series – 5 / 6 / 16 / 25 / 33 GHz bandwidth
    - SXRTO (“sampler-extended real-time oscilloscope”)
    - effectively a combination of a slower RT and ET oscilloscope
    - 500 MSa/s real-time sample rate, 12-bit ADC; random sampling
    - 2.5 GHz internal trigger (up to 6 GHz with /4 divider); 11.3 Gb/s clock recovery

SXRTO - comparison

	Real-time scope	SXRTO (Sampler-extended real-time oscilloscope)			Sampling scope
Model	PicoScope 6426E	PicoScope 9404A-06	PicoScope 9404A-16	PicoScope 9404A-25 9404A-33	PicoScope 9341-25
Analog bandwidth	1 GHz	6 GHz	16 GHz	25 GHz/ 33 GHz	25 GHz
Real-time sampling?	5 GS/s	500 MS/s			1 MS/s
Sequential equivalent-time sampling?	No	No			15 TS/s
Random sampling?	NA	1 TS/s	2.5 TS/s	5 TS/s	250 MS/s
Trigger on input channel?	Yes	Yes			Up to 100 MHz bandwidth – requires external trigger or internal clock recovery option
Pre-trigger capture?	Yes	Yes			No
Vertical resolution	10 bits	12 bits			16 bits

Pico Technology

- wide selection of inexpensive probes and other accessories:

Accelerometers

Active differential - high speed

Active differential - high voltage

Active single ended probes

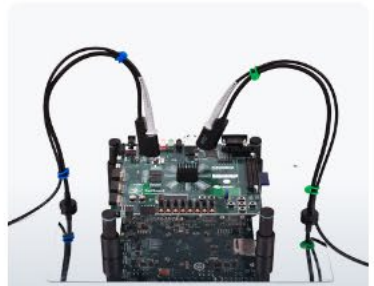
Current probes

Logic (MSO) probes

Low-Z passive probes (1.5 to 9 GHz)

Passive oscilloscope probes

Probe accessories



Probe positioning

Pico Technology

- “PicoLog” dataloggers:
  - PicoLog 1000 series – 16 voltage inputs, 4 DO; 12 bit; 1 MSa/s (shared)
  - ADC-20/24 – high resolution (20/24 bit) slower voltage data loggers
  - TC-8 – 8-channel thermocouple data logger; can be used also for voltage logging
  - PT-104 – 4-channel PT100 temperature logger

PicoScope – software

- all the real time PicoScope oscilloscopes use the same PC software
  - currently PicoScope 7.1.50
- all the functions of the software are included for free
  - **40 serial bus decoders**
  - advanced mathematical functions
  - ...
- PicoScope software receives regular free-of-charge updates adding new features and increasing performance
- available for Windows, macOS and Linux operating systems