

Digital Storage Oscilloscope auto-measurements test

Determines if scope makes auto-measurements based on main sample memory or secondary buffer.

Buffer size and auto-measurements accuracy across timebases can be deduced from test data. Test idea by MrWolf@EEVblog forum.

Equipment must be warmed up (30 min). Stats must be reset when changing ranges. Averaging (if applied) must not affect Min/Max.

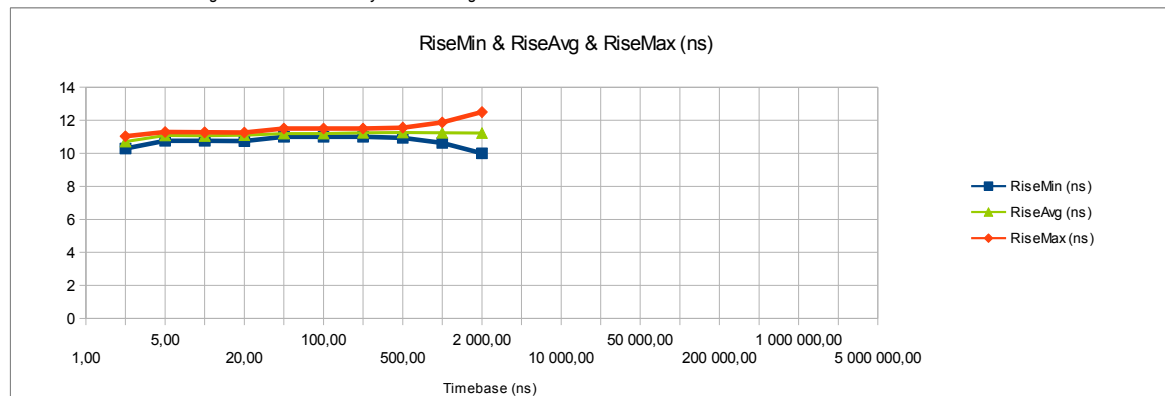
Test conducted by: MrWolf@EEVblog forum
Date: Dec 14, 2016

Oscilloscope under test: Picoscope 2205 MSO
Production year: 2013
Calibration date: Apr 3, 2013
Hardware version: 1
Firmware version etc: 1.3.3.0 / 0.2.39.0
Range tested: 0.1V/div (2Vpp)
Channels in use: 1 on some scopes switching on multiple channels can affect sampling rates
CH coupling: AC
Comments: 128x averaging used

Test waveform: square wave, 50% duty
Frequency: 32768Hz
Risetime: <= 10ns
Jitter: <= 1ns
Amplitude: 1Vpp signal amplitude should be at least 50% of the range tested
Signal generator: Siglent SDG2000X
Comments: 50ohm system

Timebase (ns)	Memory MS/s	90%/10%			PeriodMin (us)	PeriodAvg (us)	PeriodMax (us)
		RiseMin (ns)	RiseAvg (ns)	RiseMax (ns)			
1,00							
2,00	4 000,00	10,29	10,71	11,04			
5,00	4 000,00	10,77	11,08	11,29			
10,00	4 000,00	10,76	11,06	11,27			
20,00	4 000,00	10,75	11,10	11,26			
50,00	4 000,00	11,00	11,20	11,50			
100,00	4 000,00	11,00	11,20	11,50			
200,00	4 000,00	11,00	11,25	11,50			
500,00	3 200,00	10,94	11,26	11,56			
1 000,00	1 600,00	10,63	11,25	11,88			
2 000,00	800,00	10,00	11,23	12,50			
5 000,00	200,00				30,52	30,52	30,52
10 000,00	200,00				30,52	30,52	30,52
20 000,00	200,00				30,52	30,52	30,52
50 000,00	50,00				30,52	30,52	30,52
100 000,00	33,33				30,52	30,52	30,52
200 000,00	20,00				30,52	30,52	30,52
500 000,00	9,09				30,52	30,52	30,52
1 000 000,00	4,76				30,52	30,52	30,52
2 000 000,00	2,44				30,52	30,52	30,52
5 000 000,00	0,98				30,52	30,52	30,52

Switch chart vertical axis to log scale if values differ by orders of magnitude



Switch chart vertical axis to log scale if values differ by orders of magnitude

