

Digital Storage Oscilloscope auto-measurements test, AC version

v1.1AC

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:
Date:

MrWolf@EEVblog

Dec 18, 2016

Oscilloscope under test:
Production year:
Calibration date:
Hardware version:
Firmware version etc:
Vertical setting (V/div):
Channels in use:
Channel coupling:

Rigol DS1000Z

2016

self-cal after firmware update

0.1.4

00.04.04.SP1

0.15V/div (1.2Vpp)

1

AC

fine V/div control used

1024x averaging used, [CLEAR] pressed after each horizontal setting change

Test waveform:
Frequency:
Risetime 10-90%:
Jitter:
Amplitude:
Signal generator:
Comments:

sine

12MHz

~25ns presumed

150ps rms

1VAC

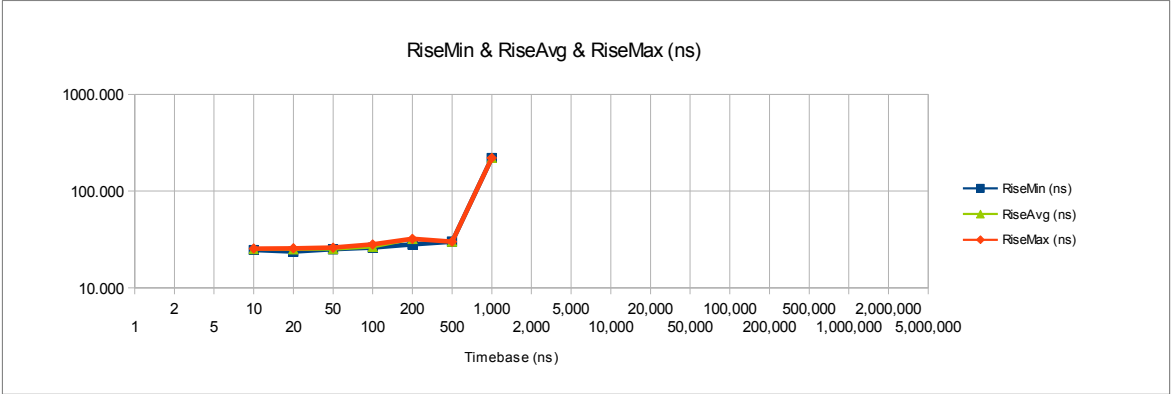
Siglent SDG2000X

50ohm system

~0.3*Period

horizontal setting	as reported by DSO	90%/10%	90%/10%	90%/10%			
Timebase (ns/div)	Sampling rate (MSa/s)	RiseMin (ns)	RiseAvg (ns)	RiseMax (ns)	PeriodMin (ns)	PeriodAvg (ns)	PeriodMax (ns)
1							
2							
5	1,000						
10	1,000	24.600	25.110	25.400	83.200	83.350	83.400
20	1,000	23.600	24.920	25.600	83.200	83.340	83.600
50	1,000	25.000	25.100	26.000	83.000	83.000	83.000
100	1,000	26.000	26.400	28.000	82.000	82.680	84.000
200	1,000	28.000	31.890	32.000	80.000	83.770	84.000
500	1,000	30.000	30.000	30.000	80.000	80.000	80.000
1,000	1,000	220.000	220.000	220.000	80.000	80.000	80.000
2,000	1,000						
5,000	1,000						
10,000	1,000						
20,000	1,000						
50,000	1,000						
100,000	1,000						
200,000	1,000						
500,000	1,000						
1,000,000	500						
2,000,000	250						
5,000,000	125						

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

