

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:

MrWolf@EEVblog

Date:

Dec 18, 2016

Oscilloscope under test:

Rigol DS1000Z

Production year:

2016

Calibration date:

self-cal after firmware update

Hardware version:

0.1.4

Firmware version etc:

00.04.04.SP1

Vertical setting (V/div):

0.1V/div (0.8Vpp)

ok due to analog frontend attenuation

Channels in use:

1

Channel coupling:

AC

Comments:

1024x averaging used

Test waveform:

sine

Frequency:

120MHz

Risetime 10-90%:

~2.5ns presumed

~0.3*Period

Jitter:

150ps rms

Amplitude:

1VAC

Signal generator:

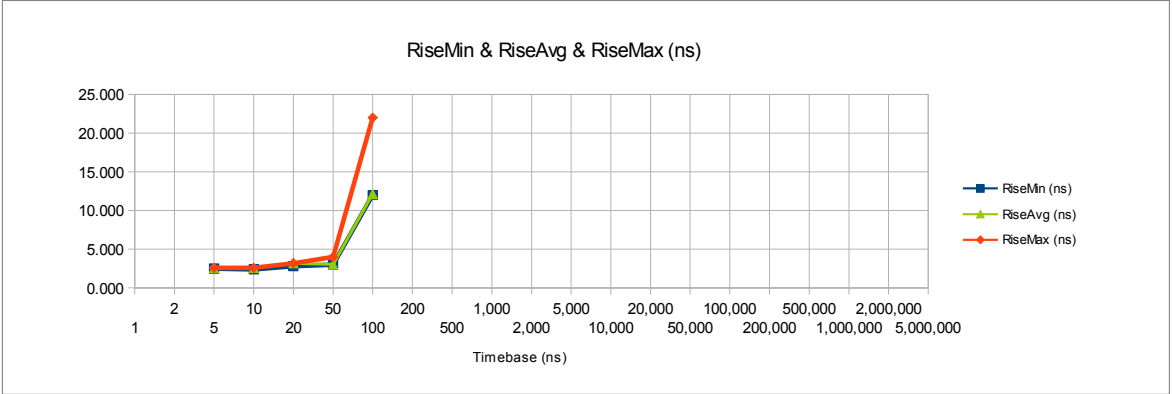
Siglent SDG2000X

Comments:

50ohm system

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	2,500	2,550	2,600	8,300	8,300	8,300
10	1,000	2,400	2,590	2,600	8,200	8,375	8,400
20	1,000	2,800	3,192	3,200	8,000	8,397	8,400
50	1,000	3,000	3,032	4,000	8,000	8,008	9,000
100	1,000	12,000	12,130	22,000	8,000	8,000	8,000
200	1,000						
500	1,000						
1,000	1,000						
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

