Digital Storage Oscilloscope auto-measurements test

v1.1VERTICAL

Test conducted by: MrWolf@EEVBlog forum
Date: 12/23/2016

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
Horizontal setting (ns/div):	5 ns/div
Channels in use:	1; 3
Channel coupling:	DC
Comments:	1024x averaging used; 3ch switched on to force 250MSa/s & Sin(x)/x ON/OFF tested

Test waveform:	square wave, 50% duty
Frequency:	1MHz
Risetime:	<5ns
Jitter:	150ps rms
Amplitude:	varied
Signal generator:	Siglent SDG2000X
Comments:	Arb Mode = DDS

Test 1: 1000MSa/s; Sin(x)/x ON

vertical setting	*as reported by generator*	*as reported by DSO*	*90%/10%*	
mV/div	**mVpp**	**mVppAvg_1**	**RiseAvg_1 (ns)**	**Dev (ns)**
1	7.00	7.05	5.151	0.051
2	14.00	14.10	5.171	0.047
5	35.00	35.20	5.164	0.053
10	70.00	70.40	5.101	0.060
20	140.00	139.00	5.074	0.060
50	350.00	355.00	5.061	0.050
100	700.00	700.00	5.019	0.048
200	1,400.00	1,360.00	4.955	0.051
500	3,500.00	3,620.00	4.415	0.041
1,000	7,000.00	7,270.00	4.328	0.046

Test 2: 250MSa/s; Sin(x)/x ON

vertical setting	*as reported by generator*	*as reported by DSO*	*90%/10%*	
mV/div	**mVpp**	**mVppAvg_2**	**RiseAvg_2 (ns)**	**Dev (ns)**
1	7.00	7.11	5.127	0.045
2	14.00	14.30	5.152	0.050
5	35.00	35.60	5.137	0.057
10	70.00	71.30	5.117	0.034
20	140.00	142.00	5.098	0.010
50	350.00	360.00	5.086	0.035
100	700.00	713.00	4.993	0.045
200	1,400.00	1,430.00	4.985	0.060
500	3,500.00	3,700.00	4.508	0.025
1,000	7,000.00	7,470.00	4.474	0.047

Test 3: 250MSa/s; Sin(x)/x OFF

vertical setting	*as reported by generator*	*as reported by DSO*	*90%/10%*	
mV/div	**mVpp**	**mVppAvg_3**	**RiseAvg_3 (ns)**	**Dev (ns)**
1	7.00	7.01	6.503	0.050
2	14.00	14.10	6.545	0.060
5	35.00	35.10	6.517	0.053
10	70.00	70.70	6.455	0.067
20	140.00	140.00	6.417	0.066
50	350.00	354.00	6.385	0.049
100	700.00	704.00	6.374	0.062
200	1,400.00	1,410.00	6.383	0.066
500	3,500.00	3,570.00	5.915	0.066
1,000	7,000.00	7,120.00	5.852	0.520