Serial Data Analyzers Specifications

Association/with © 50 (2) (2) (0) 6 (3) (2) 5 (3) (2) 1 (3) (2) March (1) 75 ps 75 ps 90 ps 115 ps March (2) 75 ps 75 ps 90 ps 115 ps March (2) 25 Mill (2) (2) (2) (2) 25 Mill (2) (2) (2) 25 Mill (2) (2) (2) March (2) 25 Mill (2) (2) (2) (2) (2) (2) 25 Mill (2) (2) (2) (2) 25 Mill (2) (2) (2) March (2) 25 Mill (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	Vertical System	SDA 6020	SDA 6000	SDA 5000	SDA 3000
Bits Time (Spicial) 75 ps 76 ps 90 ps 150 ps Bits Time (Spicial) 25 MH2200 MH21 G42 GH24 GH2 4 4 4 Brandwith Unitions 20 MH2200 MH21 G42 GH24 GH2 25 MH2200 MH21 G42 GH24 GH2 25 MH2200 MH21 G42 Bits Time (Spicial) 20 G12 GH2 40 at 3 GH220 MH21 G42 GH24 GH2 25 MH2200 MH21 G42 Diarred Gharming Bits Bits Qit 2 OH1 at 2 GH2 # 401 at 3 GH2 # 20 at 4 GH2 25 MH2200 MH21 G42 MH21 G42 Stratuly 2 2 Mi - 1 With Unit with rest in cost insolution (B13) 25 Min - 1 With Unit with erit in cost insolution (B13) Stratuly 2 2 Mi - 1 With Unit with erit in cost insolution (B13) 25 Min - 1 With Unit with erit in cost insolution (B13) Stratuly 2 1 SK of Ull state - 1 SK of Othet wate + 2 mW) Horizontal System TimeDivelon Brain 1 Mindeau Charmel an external clock may be applied at the availary input TimeDivelon Brain TimeDivelon Brain 4 Independent zrom and A mathy-zrom traces shalled with XMAP MM44 A A A A A A A A A A A A A A A A A A					
Input Channols 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 7 <th7< th=""> <th7< th=""> 7 <th7< th=""> <t< td=""><td></td><td></td><td></td><td>· · · · ·</td><td></td></t<></th7<></th7<></th7<>				· · · · ·	
Bandwith Limites 25 MHz/2200 MHz / Grez Grez Grez Grez 25 MHz/2200 MHz / Grez Group Input Impediate 50 G + 200% MHz/2200 MHz / Grez Grez Grez Grez Grez Grez Grez Grez					
Input Importance 502 - 20% Input Coupling DC (AND Maxmum Input Watage -44 (besk Channel Channel Isolation > 1011 at 0 (4br - x011 at 1 0 (br - x011 at 1 0	· · · · · · · · · · · · · · · · · · ·		•		
Input Coupling DC. CMD Washnum Riput Wittigs = 44 typek Channel-Channel Isolaton = 1001 at 2 GHz = 401 at 3 GHz = 201 at 4 GHz Vertical Resolutor 0 bits put 11 bits with enhanced resolution (BLS) DC Gan Accuracy = 175 kof full Scale DC Gan Accuracy = 175 kof full Scale DC Gan Accuracy = 175 kof full Scale Mort Scalar 9 SM - 120 MWCk. 750 mW 195 mV - 124 WWCh Offset Range 2 mV - 120 MWCk. 750 mW 195 mV - 124 WWCh Mort Scalar 9 SM - 120 MWCk. 750 mW 195 mV - 124 WWCh Mort Scalar 4 Independent Jacate + 15% of offset value + 2 mW) Mort Scalar 4 Independent Jacate + 15% of offset value + 2 mW) Mort Scalar 4 Independent Jacate + 15% of offset value + 2 mW) Mort Scalar 4 Independent Jacate + 15% of offset value + 2 mW) Mort Scalar = 100 MW 200 GHZ + 10 koncol MkH package) Clock Accuracy = 4 Independent Jacate + 15% of offset value + 2 mW) Mort Scalar = 25 ps (Typical) Time The Accuracy = 25 ps (Typical) Time The Accuracy = 25 ps (Typical) Charer Markey Belater No = 10000 Accoracy </td <td></td> <td></td> <td></td> <td></td> <td></td>					
Meanum Imput Wettage +4 Vprok DemonsChemen (National National Natetainal National National National Natetainal Natio					
Channel-Channel Isolation shits up to 11 bits with entimated resolution (BES) Sensibility 2 mV – 11 Walk high variables DC Gain Accuracy 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Check Range 2 mV – 194 mV(6w, +750 mV 196 mV – 1 Walk, +4 W Math & Zoom Traces 4 independent zoom and 4 math zoom traces available with XMAP (Wester Analysis package) or XMAFI (Advanced Math package) Check Accuracy 4 ppm = 10 of Walk 20 of Valk PM 14 Math package) Check Accuracy 4 ppm = 10 of Walk 20 mV + 10 Walk PM 14 Math package) Check Accuracy 4 a 15 ms External Timebase Reference 10 Of Walk 20 mV meeta applied at the rear input External Timebase Reference 10 Of Walk 20 mV meeta applied at the rear input External Tock 30 MHz – 2 GHz 50 Q impedance applied at the auxiliary input Acquisition System Single-Srot Sample Reference 10 Of Walk 20 mV meeta availary input Acquisition Forker V 4 Of (2 Ch / 4 Of) Duration #20 GS/s Segment Sequence Mode) Standard Mathary Che 4 Of (2 Ch / 4 Of) Duration #20 GS/s Segments Bequence Mode) Standard Mathary 4 M 16 M/ 4 MM 04 mrs 1000 Segments Mu - Memory Option 3 2M 32M 32M 71 HaM 11 mrs 102000 Segments Mu - Memory Option 3 2M 32M 32M 71 HaM 11 mrs 102000 Segments Mu - Memory Option 3 2M 32M 32M 71 HaM 11 mrs 102000 Segments Mu - Memory Option 3 2M 32M 32					
Vertical Resolution 8 bits up to 11 bits with enthmodel resolution (BBS) Sortshity 2 mV – 1 Wich will vareable DC Gain Accuracy +15% of Full Scale Offset Range 2 mV – 194 mil/dow 250 mV 195 mV – 1 Wich will vareable DE Gain Accuracy +15% of Full Scale Timebases Internal timebase common to 4 input channels an external clock may be applied at the auxiliary input Timebases Internal timebase common to 4 input channels an external clock may be applied at the auxiliary input Timebases Internal timebase common to 4 input channels an external clock may be applied at the auxiliary input Timebases A independent zoom and 4 math/zoom taxes startad 6 math/zoom taxes available with XMAP (Mater Acutacy < 0.06 x 94 (1 ppm * Reading) (rms)		> 10	1	at 4 GHz	
Sensitivity 2 mV - 1 Valvir fully variable DC Gain Accuracy 1 5% of full scale Othest Range 2 mV - 1 94 mV/dix + 750 mV 195 mV - 1 V/dix + 4 V Offset Accuracy ± (1 5% of full scale + 1 5% of other value + 2 mV) Horizontal System Timebase common to 4 iput channels an extendi clock may be applied at the auxiliary input. Timebasis Internal timebase common to 4 iput channels an extendi clock may be applied at the auxiliary input. Timebasis 4 independent zoon and 4 math/zoom traces slandsed 8 math/zoom traces available with XMAP Math & Zoom Tiaces 4 independent zoon and 4 math/zoom traces slandsed 9. Clock Accuracy = 1 pom # 0 - 40 digness C Time internal Accuracy = 1 pom # 0 - 40 digness C Time internal Accuracy = 1 pom # 0 - 40 digness C Time internal Accuracy = 1 pom # 0 - 40 digness C Time internal Accuracy = 1 pom # 0 - 40 digness C Time internal Accuracy = 1 pom # 0 - 40 digness C Time internal Accuracy = 1 pom # 0 - 40 digness C Time internal Accuracy = 1 pom # 0 - 40 digness C Time internal Accuracy = 1 pom # 0 - 40 digness C Time internal Accuracy = 1 pom # 0 - 40 digness C Time internal Timebase Reference					
DC Gain Accuracy 1.15% of Full Scale Differ Range 2.mm / 194 m/Vidin ± 250 m/Vidin ± 250 m/Vidin ± 410 m/Vidin ± 4100 m/Vidin ± 410 m/Vidin ± 4100 m/Vidin ±			1		
Offset Range 2 mV - 194 mV/div. ±350 mV 195 mV - 1V.div.±4V Offset Accuracy ± 15% of full scale + 15% of offset value + 2 mV) Horizontal System Internal timebase common to 4 lippat channels an external clock may be applied at the aualiary input Timebases Internal timebase common to 4 mpt channels an external clock may be applied by the aualiary input Math & Zoom Traces 4 independent zoom and 4 math/zoom traces standard 6 math/zoom traces aualiae with NAMP Ock Accuracy ≤ 1 ppm 60 + 40 degrees C Direct Accuracy ≤ 10 pm 60 + 40 degrees C Direct Accuracy ≤ 0 bit / 54 (1 ppm 7 Reading) (trim) Simple Rate Roles Deals (trime Accuracy + 10 pm 5 (1 bit instraid Jitler Nokee Floor 1 ps trims (tripical) Tingger Alterspotor Jitter > 25 ps (Typical) Channel Deskow Range + 45 rs External Clock 30 MHz - 50 Lip Soft The auditary input Acquisition System 30 GS/s for repetitive signals 20 ps/div - 1 ps/div Single-Shot Sample Rate/Oh 20 GS/s 10 GS/s 2 Channel Max 20 GS/s 10 GS/s Radiom Interfeaved Sampling (RIS) 200 GS/s for repetitive signals 20 ps/div - 1 ps/div Maximum Acquisition Prints/Ch 4 Ch (2 L) / (4 Ch)					
L(15% of full scale + 15% of offset value + 2 mV) Horizontal System TimeDass Internal timebase common to 4 Input channels an external clock may be applied at the auxiliary input TimeDass Internal timebase common to 4 Input channels an external clock may be applied at the auxiliary input TimeDass 4 Independent zoom and 4 mat/toom traces analtable with XMAP Malh & Zoom Traces 4 Independent zoom and 4 mat/toom traces analtable with XMAP (Master Analysis package) or XMATH (Achanced Math package) Clock Accuracy Clock Accuracy ≤ 10 GM toom Traces Simple Rate & Delay Time Accuracy ≤ 0.06 / SR + (1 ppm) * 106 internal Titler Notes Floor 1 psm * 105 internal Titler Notes Floor 1 psms (1 ppina) Trager & Interpolator Title ≤ 2.5 ps (Typica) Channel Deskew Range ≤ 4.5 ns External Timobase Reference 100 MHz 50 Q Impedance applied at the rear input External Timobase Reference 100 GS/s 10 GS/s 2 Channel Max 20 GS/s 10 GS/s ≤ 0 (s 2 Channel Max 20 GS/s s of µs ≤ 0 µs ≤ 0 µs Mainum Titigger Rate 100000 waveform/second (in sequence Mode) µs 10 GS/s gements 10 µs/s/s </td <td></td> <td>2 mV -</td> <td></td> <td>1 V/div·+4 V</td> <td></td>		2 mV -		1 V/div·+4 V	
Horizontal System Timedass Internal timebase common to 4 input channels an external clock may be applied at the auxiliary input Time/Division Range 20 ps/dw - 10 s/dw Math & Zoom Traces 4 independent zoom and 4 math/zoom traces shallable with X0MP (Mastar Analysis ps/kadag) of XMAHI (Advanced Mathy packag) Cost Accuracy Sample Rate & Delay Time Accuracy ± 10pm e 0-40 diggress C Time Internal Accuracy ± 10pm e 10 interval Jitter Noise Roor 1 ps rms (Typical) Tigger & Niterpolator Jitter ± 25 ps (Typical) Channel Max 30 MHz - 2 GHz 50 20 impedance applied at the rear input External Clock 30 MHz - 2 GHz 50 20 impedance applied at the auxiliary input Acquisition System Single-Shot System Single-Shot Sample Rate/Ch 20 GS/s 2 Channel Max 20 GS/s Random Interfaxed Sampling (RS) 200 GS/s for repetitive signals 20 ps/dlv - 1 ps/dlv Matimum Acquisition Philips/Ch 4 Ch 2 (2 Ch / 4 Ch) Duration # 20 CS/s 4 (ps Single-Shot Sample Rate (Maximum Acquisition Philips/Ch 4 Ch 2 (p S 4 (ps 4 (ps Single-Shot Sample Rate (Maximum Acquisition					
Timebases Internal timebase common to 4 input dramels an external dock may be applied at the auxiliary input Time/Division Range 20 ps/div 00 s/div Math & Zoom Traces 4 independent zoom and 4 math/zoom traces sandard 6 math/zoom traces available with XMAP (Mater Analysis package) or XMATH (Advanced Wath package) 0 (Advanced Wath package) Otck Accuracy = 1 ppm = 0-AD degrees C	5	±(1.0	70 OF Full Socie (F. 1.576 of Onset value	5 T Z IIIV/	
Time/Division Range 20 ps/div – 10 s/div Math & Zoom Traces 4 independent zoom and 4 math/zoom traces available with XMAP (Master Analysis package) or XMATH (Advanced Math package) Clock Accuracy <1 ppm # 0-40 degrees C		ternal timehase common to 4	input channels an external clock m	oav he annlied at the auxilia	arv innut
Math & Zoom Traces 4 independent zoom and 4 math/zoom traces standard 8 math/zoom traces available with XMAP (Master Analysis package) or XMATH (Advanced Math package) Clock Accuracy ≤ 1 gmm @ 0–40 degrees C Time Internal Accuracy ≤ 0.06 / SR + (1 pmm * fheating) (rms) Sample Rate & Delay lime Accuracy 1 ppm * 0–40 degrees C Time Internal Accuracy 1 ppm * 0–10 degrees C Time Orannel Deskew Range 1 ppm * 10s interval Lifter Noise Floor 1 ps rms (1/ppical) Trigger & Interpolator Lifter ≤ 25 ps (1/ppical) Channel Orannel Deskew Range +4 5 ns External Timebase Reference 100 MHz 50 Q impedance applied at the rear input External Clock 30 MHz – 2 GHz 50 Q impedance applied at the auxiliary input Acquisition System 30 GS/s for repetitive signals: 20 ps/dw – 1 µs/dw Maximum Anguer Rate 20 GS/s Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals: 20 ps/dw – 1 µs/dw Maximum Anguer Rate 1000 Segments L - Memory Option 16M L - Memory Option 16M L - Memory Option 32M X - Memory Option 32M X - Memory Option 44M Mult			· · · · · · · · · · · · · · · · · · ·		ll y ll iput
(Master Analysis package) or XMAH (Advanced Math package) Clock Accuracy ≤ 10 pm #0 =00 degrees C Time internal Accuracy ≤ 006 / SR + (1 ppm * Redrig) (ms) Sample Rate & Delay Time Accuracy ± 1ppm = 10s interval Lifter Noise Pool 1 psm ms (1ppical) Tidger & Interpolator Litter ≤ 25 ps (Typical) Channel-Channel Deskew Range ±45 ns External Timebase Reference 100 MHz 50 Q impedance applied at the rear input External Clock 30 MHz - 2 GHz 50 Q impedance applied at the auxiliary input Acquisition System Single-Shot Sample Rate/Ch 20 GS/s Single-Shot Sample Rate/Ch 20 GS/s 10 GS/s 2 Channel Max 20 GS/s 20 medance.applied at the auxiliary input Maximum Trigger Rate 150000 waveforms/second (fn Sequence Mode, up to 4 hannels) Intersegment Time < 6 µs		4 independent zoom and 4 r		/zoom traces available with	
Clock Accuracy ≤ 1 ppm # 0-40 degress C Time Internal Accuracy ≤ 06/5 SR + (1 ppm * 1 Reading) (rms) Sample Rate & Delay Time Accuracy +1 ppm * 10s Interval Jitter Noise Floor 1 ps rms (Typical) Tigger & Interpolator Jitter ≤ 25 ps (Typical) Tigger & Interpolator Jitter ≤ 25 ps (Typical) Channel-Obstew Range					I AIVIAr
Time Internal Accuracy ≤ 0.06 / SR + (1 ppm * Reading) (rms) Sample Rate & Delay Time Accuracy +1ppm ≤ 10s Interval Litter Noise Floor 1 psr rms (1ypical) Tridger & Interpolator Iliter ≤ 2 ps (1ypical) Channel-Channel Deskew Range ±45 ns External Timebase Reference 100 MHz 50 Ω Impedance: applied at the rear input External Clock 30 MHz - 2 GHz 50 Ω Impedance: applied at the auxiliary input Acquisition System Single-Shot Sample Rate/Ch 20 GS/s 2 Channel Max 20 GS/s 10 GS/s 2 Channel Max 20 GS/s 5 ps 3 Raded Memory 8 M 4 M / 4 M 0 4 nneks) Intersegment Time ≤ 0 ps 5 ps 5 ps 4 L - Memory Option 16 M 6 M / 4 M 0 A ms	Clock Accuracy				
Sample Rate & Delay Time Accuracy ±1ppm ≤ 10s interval Itter Noise Floor 1 ps rms (Typical) Trigger & Interpolator Jitter ≤ 2 ps (Typical) Channel-Channel Deskew Range ±45 ns External Timebase Reference 100 MHz 50 Q impedance applied at the rear input External Clock 30 MHz - 2 GHz 50 Q impedance applied at the auxiliary input Acquisition System 30 GS/s Single-Shot Sample Rate/Ch 20 GS/s 2 Channel Max 20 GS/s Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals 20 ps/div – 1 µs/div Maximum Tingger Rate 150:000 waveforms/second (in Sequence Mode, up to 4 channels) Intersegment Time ≤ 6 µs ≤ 6 µs Maximum Acquisition Points/Ch 4 Ch (2 Ch) / (4 Ch) Duration #20 GS/s Segments Sequence Mode) Standard Memory 8M 8M / 4M 0.4 ms 1,0000 Segments VL - Memory Option 10M 16M/ 16M/ 18M 10 ms 1,0000 Segments XL - Memory Option 10M 16M/ 10M/ 16 ms 10,0000 Segments XL - Memory Option N/A 100M / 50M 5.0 ms 2,0000 Segments XL - Memory Option				 rms)	
Jitter Noise Floor 1 ps rms (Typica) Trigger & Interpolator Jitter $< 25 ps$ (Typica) Channel Channel Deskew Range $+45 ns$ External Timebase Reference 100 MHz 50 Q Impedance applied at the rear input External Clock 30 MHz – 2 GHz 50 Q Impedance applied at the auxiliary input Acquisition System Single-Shot Sample Rate/Ch 20 GS/s 2 Channel Max 20 GS/s 10 GS/s 2 Channel Max 20 GS/s 10 GS/s 2 Channel Max 20 GS/s 5 (JS Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals 20 ps/div - 1 µs/div Maximum Trigger Rate 150.000 waveforms/second (In Sequence Mode, up to 4 channels) Intersegment Time s 6 µs s 6 µs s 6 µs Isresegment Time s 6 µs s 6 µs s 6 µs s 6 µs L – Memory Option 16M 16M / 8M 08 ms 5.000 Segments VL – Memory Option 32M 32M / 16M 1 6 ms 10.000 Segments XXL – Memory Option 4MA 48M / 24M 2 4 ms 20.000 Segments XXL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments	2				
Trigger & Interpolator Jitter ≤ 25 ps (Typical) Channel Deskew Range ±45 ns External Timebase Reference 100 MHz 50 Ω Impedance applied at the rear input External Timebase Reference 100 MHz 50 Ω Impedance applied at the auxiliary input Acquisition System 30 MHz - 2 GHz 50 Ω Impedance applied at the auxiliary input Single-Shot Sample Rate/Ch 20 GS/s 2 Channel Max 20 GS/s Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals: 20 ps/div - 1 µs/div Maximum Acquisition Points/Ch 4 Ch / (2 Ch) / (4 Ch) Maximum Acquisition Points/Ch 4 Ch / (2 Ch) / (4 Ch) Maximum Acquisition Points/Ch 4 Ch / (2 Ch) / (4 Ch) L - Memory Option 32M XL - Memory Option 32M					
Channel Channel Deskew Range 4.45 ns External Timebase Reference 100 MHz 50 Q Impedance: applied at the rear input External Clock 30 MHz – 2 GHz 50 Q Impedance: applied at the auxiliary input Acquisition System Single-Shot Sample Rate/Ch 20 GS/s 10 GS/s 2 Channel Max 20 GS/s 2 Channel Max 2					
External Timebase Reference 100 MHz : 50 Q impedance applied at the rear input External Clock 30 MHz - 2 GHz : 50 Q impedance applied at the auxiliary input Acquisition System Single-Shot Sample Rate/Ch 20 GS/s 2 Channel Max 20 GS/s 10 GS/s Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals 20 ps/div – 1 µs/div Maximum Trigger Rate 150000 waveforms/second (in Sequence Mode, up to 4 channels) Intersegment Time ≤ 6 µs ≤ 6 µs Maximum Acquisition Points/Ch 4 Ch (2 Ch) / (4 Ch) Duration @ 20 GS/s Segments (Sequence Mode) Standard Memory BM 8M / 4M 0.4 ms 1.000 Segments VL – Memory Option 16M 16MV / 8M 0.8 ms 5.000 Segments VL – Memory Option 48M 48M / 24M 2.4 ms 20000 Segments XL – Memory Option N/A 1000M / 50M 5.0 ms 25.000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments Acquisition Processing Envelope, floor, roof for up to 1 million sweeps Enhanced Resol					
External Clock 30 MHz – 2 GHz 50 Ω impedance applied at the auxiliary input Acquisition System Single-Shot Sample Rate/Ch 20 GS/s 2 Channel Max 20 GS/s 2 Channel Max 20 GS/s Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals 20 ps/div – 1 µs/div Maximum Tigger Rate 150000 waveforms/second (in Sequence Mode, up to 4 channels) Intersegment Time ≤ 6 µs ≤ 6 µs Standard Memory 8M 8M / 4M 0.4 ms 1000 Segments L – Memory Option 16M 16M / 8M 0.8 ms 5.000 Segments VL – Memory Option 32M 32M / 14M 0.4 ms 10000 Segments XL – Memory Option 48M / 48M / 24M 2.4 ms 20.000 Segments XkL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XkL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XkL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XkL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XkL – Memory Option N/A 100M / 50M 5.0	<u>0</u>			e rear innut	
Acquisition System Single-Shot Sample Rate/Ch 20 GS/s 2 Channel Max 20 GS/s 2 Channel Max 20 GS/s Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals: 20 ps/div – 1 µs/div Maximum Trigger Rate 150000 waveforms/second (in Sequence Mode, up to 4 channels) Intersegment Time ≤ 6 µs ≤ 6 µs Maximum Acquisition Points/Ch 4 Ch (2 Ch) / (4 Ch) Duration @ 20 GS/s Standard Memory 8M 8M / 4M 0.4 ms 10000 Segments L – Memory Option 16M 16M / 8M 0.8 ms 5.0000 Segments XL – Memory Option 16M 16M / 16M / 16 ms 100000 Segments XL – Memory Option 32M / 16M 1.6 ms 100000 Segments XL – Memory Option 148M 48M / 24M 2.4 ms 20.000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments Acequisition Processing Envelope,floor,roof for up to 1 million sweeps Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Externa) Envelope,floor,roof for up to 1 million sweeps Sources Any input channel, External					
Single-Shot Sample Rate/Ch 20 GS/s 10 GS/s 2 Channel Max 20 GS/s Random Interfeaved Sampling (RIS) 200 GS/s for repetitive signals: 20 ps/div – 1 µs/div Maximum Trigger Rate 150,000 waveforms/second (in Sequence Mode, up to 4 channels) Intersegment Time ≤ 6 µs ≤ 6 µs ≤ 6 µs ≤ 6 µs Maximum Acquisition Points/Ch 4 Ch (2 Ch) / (4 Ch) Duration @ 20 GS/s Segments (Sequence Mode) Standard Memory 8M 8M / 4M 0.4 ms 1.000 Segments L – Memory Option 16M 16M / 8M 0.8 ms 5.000 Segments VL – Memory Option 32M 32M / 16M 1.6 ms 10.000 Segments XL – Memory Option 48M 48M / 24M 24 ms 20.000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments Actaging Summed Averaging to 1 million sweeps Continuous Averaging to 1 million sweeps Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Coupling Mode <td></td> <td></td> <td></td> <td></td> <td></td>					
2 Channel Max 20 GS/s Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals: 20 ps/div – 1 µs/div Maximum Trigger Rate 150,000 waveforms/second (in Sequence Mode, up to 4 channels) Intersegment Time $\leq 6 \mu s$ $\leq 6 \mu s$ $\leq 6 \mu s$ Maximum Acquisition Points/Ch 4 Ch (2 Ch) / (4 Ch) Duration @ 20 GS/s Segments (Sequence Mode) Standard Memory 8M 8M / 4M 0.4 ms 1,000 Segments L – Memory Option 16M 16M / 8M 0.8 ms 5,000 Segments XL – Memory Option 32M 32M / 16M 1.6 ms 10,000 Segments XL – Memory Option 32M 32M / 16M 1.6 ms 10,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments TriggerIng <td></td> <td>20.05/5</td> <td></td> <td>10 65/5</td> <td></td>		20.05/5		10 65/5	
Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals: 20 ps/div – 1 µs/div Maximum Trigger Rate 150,000 waveforms/second (in Sequence Mode, up to 4 channels) Intersegment Time ≤ 6 µs ≤ 6 µs ≤ 6 µs ≤ 6 µs Maximum Acquisition Points/Ch 4 Ch (2 Ch) / (4 Ch) Duration @ 20 GS/s Segments (Sequence Mode) Standard Memory 8M 8M / 4M 0.4 ms 1.000 Segments L – Memory Option 16M 16M / 8M 0.8 ms 5.000 Segments XL – Memory Option 32M 32M / 16M 1.6 ms 10.000 Segments XL – Memory Option 48M 48M / 24M 2.4 ms 20.000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments Modes Summed Averaging to 1 million sweeps Envelope, flo	Зпун-эног затристательт	20 00/3		10-00/3	
Random Interleaved Sampling (RIS) 200 GS/s for repetitive signals: 20 ps/div – 1 µs/div Maximum Trigger Rate 150,000 waveforms/second (in Sequence Mode, up to 4 channels) Intersegment Time ≤ 6 µs ≤ 6 µs ≤ 6 µs Maximum Acquisition Points/Ch 4 Ch (2 Ch) / (4 Ch) Duration @ 20 GS/s Segments (Sequence Mode) Standard Memory 8M 8M / 4M 0.4 ms 1.000 Segments L – Memory Option 16M 16M / 8M 0.8 ms 5.000 Segments XL – Memory Option 32M 32M / 16M 1.6 ms 10,000 Segments XL – Memory Option 48M 48M / 24M 2.4 ms 20,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments Modes Normal, Auto, Single, and Stop Sources Any input channel,	2 Channel Max		20 GS/S		
Maximum Trigger Rate 150.000 waveforms/second (in Sequence Mode, up to 4 channels) Intersegment Time ≤ 6 µs ≤ 6 µs ≤ 6 µs Maximum Acquisition Points/Ch 4 Ch (2 Ch) / (4 Ch) Duration @ 20 GS/s Segments (Sequence Mode) Standard Memory 8M 8W / 4M 0.4 ms 1.000 Segments L - Memory Option 16M 16M / 8M 0.8 ms 5.000 Segments VL - Memory Option 32M 32M / 16M 1.6 ms 10000 Segments XL - Memory Option 48M 48M / 24 M 2.4 ms 20.000 Segments XXL - Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XXL - Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XXL - Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XXL - Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments XXL - Memory Option N/A 100M / 50M 5.0 ms 25.000 Segments Modes From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Enhanced Resolution (ERES)		200 (= 1 us/div	
Intersegment Time $\leq 6 \ \mu s$ Maximum Acquisition Points/Ch4 Ch(2 Ch) / (4 Ch)Duration @ 20 GS/sSegments (Sequence Mode)Standard Memory8M8M / 4M0.4 ms1,000 SegmentsL - Memory Option16M16M / 8M0.8 ms5,000 SegmentsVL - Memory Option32M32M / 76M1.6 ms10,000 SegmentsXL - Memory Option48M48M / 24M2.4 ms20,000 SegmentsXL - Memory OptionN/A100M / 50M5.0 ms25,000 SegmentsXL - Memory OptionN/A100M / 50M5.0 ms25,000 SegmentsAcquisition ProcessingAveragingSummed Averaging to 1 million sweeps: Continuous Averaging to 1 million sweepsEnhanced ResolutionEnhanced Resolution (ERES)From 8.5 to 11 bits vertical resolutionEnvelope (Extrema)Envelope, floor, roof for up to 1 million sweepsModesNormal, Auto, Single, and StopSourcesAny input channel, External, Ext X10, Ext/10, or line: slope and level unique to each source (except line trigger)Coupling ModeDCPre-trigger Delay0 – 100% of horizontal time scale Post-trigger DelayHold-off by Time or EventsUp to 20 s or from 1 to 99 999 999 eventsInternal Trigger Frequency5 GHz w/Edge Trigger, 50 MHz w/SMART Trigger)External Trigger Input Range4.5 dW / Koux X10 (±04 V). Aux X10 (±04 V).					
Maximum Acquisition Points/Ch 4 Ch (2 Ch) / (4 Ch) Duration @ 20 GS/s Segments (Sequence Mode) Standard Memory 8M 8M / 4M 0.4 ms 1,000 Segments L – Memory Option 16M 16M / 8M 0.8 ms 5,000 Segments VL – Memory Option 32M 32M / 16M 1.6 ms 10,000 Segments XL – Memory Option 48M 48M / 24M 2.4 ms 20,000 Segments XL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XXL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XXL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments XXL – Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments Averaging Summed Averaging to 1 million sweeps: Continuous Averaging to 1 million sweeps Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, root for up to 1 million sweeps Envelope, floor, root for up to 1 million sweeps Coupling Mode Coupling Mode DC DC Pre-trigger Delay 0 – 1000 divisions Pre-trigger Delay 0 – 10,000 division			· · · ·		< 6 US
Standard Memory 8M 8M / 4M 0.4 ms 1.000 Segments L - Memory Option 16M 16M / 8M 0.8 ms 5.000 Segments VL - Memory Option 32M 32M / 16M 1.6 ms 10,000 Segments XL - Memory Option 48M 48M / 24M 2.4 ms 20,000 Segments XL - Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments Acquisition Processing Averaging to 1 million sweeps: Continuous Averaging to 1 million sweeps 25,000 Segments Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line: slope and level unique to each source (except line trigger) Coupling Mode DC Pe-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 100% of from center Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max T					
L - Memory Option 16M 16M / 8M 0.8 ms 5.000 Segments VL - Memory Option 32M 32M / 16M 1.6 ms 10,000 Segments XL - Memory Option 48M 48M / 24M 24 ms 20,000 Segments XXL - Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments Acquisition Processing Averaging Summed Averaging to 1 million sweeps: Continuous Averaging to 1 million sweeps Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line: slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0					
VL - Memory Option 32M 32M / 16M 1.6 ms 10.000 Segments XL - Memory Option 48M 48M / 24M 2.4 ms 20,000 Segments XXL - Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments Acquisition Processing Averaging Summed Averaging to 1 million sweeps: Continuous Averaging to 1 million sweeps Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line: slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.4 V); Aux X10 (±0.4 V)					
XL - Memory Option 48M 48M / 24M 2.4 ms 20,000 Segments XXL - Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments Acquisition Processing Averaging Summed Averaging to 1 million sweeps: Continuous Averaging to 1 million sweeps Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Triggering System Modes Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line: slope and level unique to each source (except line trigger) Coupling Mode DC Pet-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 100% of from 1 to 99 999 999 events Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.4 V); Aux X10 (±4 V)					
XXL - Memory Option N/A 100M / 50M 5.0 ms 25,000 Segments Acquisition Processing Averaging Summed Averaging to 1 million sweeps: Continuous Averaging to 1 million sweeps Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Triggering System Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line: slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 1000% of norizontal time scale Post-trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger, 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range					
Acquisition Processing Averaging Summed Averaging to 1 million sweeps: Continuous Averaging to 1 million sweeps Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Triggering System Modes Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line: slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Frequency 5 GHz w/Edge Trigger, 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.4 V); Aux / 10 (±4 V)					
Averaging Summed Averaging to 1 million sweeps: Continuous Averaging to 1 million sweeps Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Triggering System Modes Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line; slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger; 750 MHz w/SMART Trigger) External Trigger Input Range	· · ·			5.0 1115	20,000 009110113
Enhanced Resolution (ERES) From 8.5 to 11 bits vertical resolution Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Triggering System Modes Modes Normal, Auto, Single, and Stop Sources Any input channel, Ext X10, Ext/10, or line; slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux / 10 (±4 V)					
Envelope (Extrema) Envelope, floor, roof for up to 1 million sweeps Triggering System Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line; slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Irequency 5 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux X 10 (±4 V)					
Triggering System Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line: slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger; 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux / 10 (±4 V)					
Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line; slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger; 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux X10 (±0.4 V)	Envelope (Extrema)	Env	velope, floor, roof for up to 1 million	sweeps	
Modes Normal, Auto, Single, and Stop Sources Any input channel, External, Ext X10, Ext/10, or line; slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger; 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux X10 (±0.4 V)	Triggering System				
Sources Any input channel, External, Ext X10, Ext/10, or line; slope and level unique to each source (except line trigger) Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux X10 (±4 V)			Normal, Auto, Single, and Stop)	
Coupling Mode DC Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux / 10 (±4 V)	Sources	Any input channel, External, Ext X10, Ext/10, or line; slope and level unique to each source			
Pre-trigger Delay 0 – 100% of horizontal time scale Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux / 10 (±4 V)	Coupling Mode		DC		
Post-trigger Delay 0 – 10,000 divisions Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux X10 (±4 V)				le	
Hold-off by Time or Events Up to 20 s or from 1 to 99 999 999 events Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux X 10 (±4 V)					
Internal Trigger Range ±5 div from center Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux / 10 (±4 V)		l		events	
Max Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger (8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux / 10 (±4 V)					
(8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger) External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux / 10 (±4 V)		Trigger Frequency 5 GHz w/Edge Trigger; 750 MHz w/SMART Trigger			
External Trigger Input Range Aux (±0.4 V); Aux X10 (±0.04 V); Aux / 10 (±4 V)		(8300A = 3 GHz w/Edge Trigger, 750 MHz w/SMART Trigger)			
		Aux	x (±0.4 V); Aux X10 (±0.04 V); Aux / 1	10 (±4 V)	

Serial Data Analyzers Specifications (continued)

Triggers when signal meets slope and level condition.
Triggers on any input source only if a defined state or edge occurred on another input source. Delay between sources is selectable by time or events.
Triggers if signal drops out for longer than selected time between 2 ns and 20 s.
Logic combination (AND, NAND, OR, NOR) of 5 inputs (4 channels and external trigger input) Each source can be high, low, or don't care. The High and Low level can be selected independently. Triggers at start or end of the pattern.
clusion Technology
Triggers on positive or negative glitches with widths selectable from 600 ps to 20 s or on intermittent faults.
Triggers on positive or negative pulse widths selectable from 600 ps to 20 s or on intermittent faults.
Triggers on intervals selectable between 2 ns and 20 s.
Automatically sets timebase, trigger, and sensitivity to display a wide range of repetitive signals.
Automatically sets the vertical sensitivity and offset for the selected channels to display a waveform with maximum dynamic range
A variety of optional passive and active probes is available.
Automatically detects and supports a variety of compatible probes; Supports ProLink-SMA and
ProLink-BNC input adapters
Automatically or manually selected depending on probe used
Color 10.4" flat-panel TFT-LCD with high resolution touch screen
SVGA; 800 x 600 pixels
Dates, hours, minutes, seconds displayed with waveform. SNTP support to synchronize to precision internet clocks
Display a maximum of 8 traces. Simultaneously display channel, zoom, memory, and math traces.
Auto, Single, Dual, Quad, Octal, XY, Single + XY, Dual + XY
Sample dots joined or dots only
У
Variable saturation levels; stores each trace's persistence data in memory
Select analog, color, or three-dimensional.
Activate persistence on all or any combination of traces.
Select from 500 ms to infinity.
All accumulated, or all accumulated with last trace highlighted
Display up to 4 Zoom and 4 Math/Zoom traces; 8 Math/Zoom traces available with
XMAP (Master Analysis package) or XMATH (Advanced Math package).
Intel Pentium 4 @ 2.53 GHz or better with MS Windows 2000
Up to 2 GBytes
M1, M2, M3, M4 Internal Waveform Memory (Store full-length waveforms with 16 bits/data point)
Or store to any number of files limited only by data storage media.

Specifications are subject to change.

Serial Data Analyzers Specifications (continued)

nterface			
Remote Control	Via Windows Automation, or via LeCroy	Pamote Command Set	
GPIB Port (Optional)	Supports IEEE – 488.2		
Ethernet Port	10/100Base-T Ethernet interface		
	IU/ IUUBase- I Ethernet Interface Internal, DOS-format, 3.5" high-density		
Floppy Drive		· · · ·	
USB Ports External Manitar Dart Standard	4 USB ports support Windows compatib	ole devices	
External Monitor Port Standard	15-pin D-Type SVGA-compatible		
Parallel Port	1 standard		
Auxiliary Output			
Signal Types	Select from calibrator or control signals o		
Calibrator Signal	5 Hz – 5 MHz square wave or DC Level; C or TTL Volts (Selectable)	5 Hz – 5 MHz square wave or DC Level; 0.0 to 0.5 V into 50 Ω (0–1 V into 1 M Ω), or TTL Volts (Selectable)	
Control Signals	Trigger enabled, trigger out, pass/fail stat	tus	
Auxiliary Input			
Signal Types	Select from External Trigger or External C	Clock input on front panel.	
General			
Auto Calibration	Ensures specified DC and timing accuracy is maintained for 1 year minimum.		
Power Requirements	100–120 VAC at 50/60/400 Hz; 200–240 VAC at 50/60 Hz; Automatic AC Voltage selection. Power consumption: < 800 VA		
Environmental			
Temperature (Operating)	+5 °C to +40 °C including floppy disk ar	nd CD-ROM drives	
Temperature (Non-Operating)	-20 °C to +60 °C		
Humidity (Operating)	5% to 80% relative humidity (non-condensing) up to +30 °C. Upper limit derates to 25% relative humidity (non-condensing) at +40 °C.		
Humidity (Non-Operating)	5% to 95% relative humidity (non-conde		
Altitude (Operating)	up to 10,000 ft (3048 m) at or below +25		
Altitude (Operating)	Up to 40,000 ft (12,192 m)		
Random Vibration (Operating)	0.31 grms 5 Hz to 500 Hz, 15 minutes in	a cach of three orthogonal aves	
Random Vibration (Non-Operating)			
Functional Shock	2.4 grms 5 Hz to 500 Hz, 15 minutes in each of three orthogonal axes 20 g peak, half sine, 11 ms pulse, 3 shocks (positive and negative) in each of three orthogonal axes, 18 shocks total		
	20 у реак, нашынс, тттты разс, а этоок	גער איז	
Physical Dimensions	0/4		
Dimensions (HWD)	264 mm x 397 mm x 491 mm; 10.4" x 15		
	6020	6000, 5000, 3000	
Weight	23 Kg; 49 lbs.	18 kg; 39 lbs.	
Shipping Weight	29 Kg; 63 lbs.	24 kg;53 lbs.	
Certifications			
	CE Approved, UL and cUL listed;		
	Conforms to EN 61326-1; EN 61010-1; UL 3111-1; and CSA C22.2 No. 1010.1		
Warranty and Service			
	2-year warranty; calibration recommended	Jed annually.	
	Ontional service programs include exter	anded warranty upgrades and calibration services	

Optional service programs include extended warranty, upgrades, and calibration services.

SDA 6020/6000/5000/3000 Serial Data Analyzers Specifications (continued)

Optical Reference Receiver (with OE425/OE455)	SDA 3000	SDA 5000 / SDA 6000 / SDA 6020
4th order Bessel-Thompson filter response at the following data rates:		
SONET/SDH	OC-1/STM0 (51.84 Mb/s)	OC-1/STM0 (51.84 Mb/s) OC-3/STM1 (155.52 Mb/s)
	OC-3/STM1 (155.52 Mb/s)	OC-12/STM4 (622.08 Mb/s)
	OC-12/STM4 (622.08 Mb/s)	OC-48/STM16 (2488.3 Mb/s)
Fibrechannel	FC133 (132.7 Mb/s)	FC133 (132.7 Mb/s)
	FC266 (265.6 Mb/s)	FC266 (265.6 Mb/s)
	FC531 (531.2 Mb/s)	FC531 (531.2 Mb/s)
	FC1063 (1063.5 Mb/s)	FC1063 (1063.5 Mb/s)
		FC2125 (2127 Mb/s)
Gigabit Ethernet	1.25 Gb/s	1.25 Gb/s
nfiniBand		2.25 Gb/s (2127 Mb/s)
Jser Defined	Any rate up to 2 Gb/s	Any rate up to 3.5 Gb/s
Clock Recover System		
Channel	Software-based clock recovery using	Software-based clock recovery using golden PLL for
	golden PLL for data rates up to 2.5 Gb/s	data rates up to 3.5 Gb/s
PLL Bandwidth	Single pole w/ adjustable cut-off frequency	Single pole w/ adjustable cut-off frequency
litter		Same as time base: 1 ps RMS typical
Communications Mask Testing		
SONET/SDH	OC-1/STM0	OC-1/STM0
	OC-3/STM1	OC-3/STM1
	OC-12/STM4	OC-12/STM4
		OC-48/STM16
Ethernet IEEE Std 802.3 and	1000 Base-SX Short Wave Optical	1000 Base-SX Short Wave Optical
ANSI X3.263-1995	1000 Base-LX Long Wave Optical	1000 Base-LX Long Wave Optical
Fibre Channel Electrical	FC133E, FC266E, FC531E, FC1063E	FC133E, FC266E, FC531E, FC1063E, FC2125
(ANSI X3.303-1997)		
IEEE 1394b (draft)	S400 Optical	S400 Optical
	S400b T1	S400b T1
	S400b T2	S400b T2
	S800 Optical	S800 Optical
	S800b T1	S800b T1
	S800b T2	S800b T2
		S1600 Optical
		S1600b T1
		S1600b T2
Serial Data ATA (draft)	G1, G1 Rx, G1 Tx	G1, G1 Rx, G1 Tx
	G2, G2 Rx, G2 Tx	G2, G2 Rx, G2 Tx
DVI (rev.1.0)	Transmit normalized, Receiver Low/high	
nfiniBand (draft)		2.5 Gb/s Optical
		2.5 Gb/s Electrical
PCI-Express		TX transition
		TX de-emphasized
		RX
XAUI		TX near end
		TX far end
litter Testing		
Data Measurements	Period, Frequency, TIE, N-Cycle	
Clock Measurements	Frequency, Period, Half Period, Cycle-Cycle, N-Cycle, Positive Cy-Cy Duty, Negative Cy-Cy Duty, Clock TIE	
Analysis	Tj, Rj, Dj, DCD, DDj, Pj	
Bit Error Rate		
Data Rate	< = 2 Gb/s	< = 3.5 Gb/s
Maximum capture buffer size (bits)	20 Gs/s at 1.25 Gb/s data rate (16 samples/bit)	20 Gs/s at 2.5 Gb/s data rate (8 samples/bit)
Capture size in bits: Std.	500k	1M
L (16M)	1M	2M
VL (32M)	2M	4M
XL (50M)	3M	6M
XXL (100M)	6.25M	12.5M (except 6020 unit)

Serial Data Analyzers Specifications (continued)

Standard

Math Tools

Display up to four math function traces (F1 – F4). The easy to use graphical interface simplifies setup of up to two operations on each function trace, and function traces can be chained together to perform math-on-math.

absolute value average (summed) average (continuous) derivative deskew (resample) difference (-) enhanced resolution (to 11 bits vertical) envelope exp (base e) exp (base 10) fft (power spectrum, magnitude, phase, up to 25 kpts) floor histogram of 1000 events integral

invert (negate) log (base e) log (base 10) product (x) ratio (/) reciprocal rescale (with units) roof (sinx)/x square square root sum(+)trend (datalog) of 1000 events zoom (identity)

Pass/Fail Testing

Simultaneously test multiple parameters against selectable parameter limits or pre-defined masks. Pass or fail conditions can initiate actions including document to local or networked files, email the image of the failure, save waveforms, send a pulse out at the front panel auxiliary BNC output, or (with the GPIB option) send a GPIB SRQ.

Advanced Math Package (XMATH)

This package provides a comprehensive set of signal WaveShape Analysis Tools providing insight into the wave shapes of complex signals. Additional capability provided by XMATH includes:

• Intuitive, Graphical Math Setup (Processing Web) with unlimited chaining of functions

- 8 math traces total (4 additional)
- · Parameter math add, subtract, multiply, or divide two different parameters
- · Histograms expanded with 19 histogram parameters and up to
- 2 billion events
- Trend (datalog) of up to 1 million events
- Track graphs of any measurement parameter
- FFT capability added to include: power averaging, power density, real and imaginary components, frequency domain parameters, and FFT on up to 25 Mpts.
- · Narrow band power measurements
- Auto-correlation function
- Sparse function
- Cubic and Quadratic Interpolation function

Jitter and Timing Analysis Package (JTA2)

This package provides jitter timing and analysis using time, frequency, and statistical views for common timing parameters, and also includes other useful tools. JTA2 includes:

· Jitter and timing parameters, with "Track" graphs of

- Cycle-Cycle Jitter	- Time Interval Error
- N-Cycle	- Setup
 N-Cycle with start selection 	- Hold
- Frequency	- Skew
- Period	 Duty Cycle
- Half Period	- Duty Cycle Error
- Width	

Edge@lv parameter (counts edges)

· Histograms expanded with 19 histogram parameters and up to 2 billion events

Trend (datalog) of up to 1 million events

Track graphs of all parameters

Persistence histogram, persistence trace (mean, range, sigma)

Measure Tools

Displays any 8 parameters together with statistics, including their average, high, low, and standard deviations Histicons provide a fast, dynamic view of parameters and wave shape characteristics.

amplitude	maximum
area	mean
base	median
cycles	minimum
delay	number of
∆ delay	+overshoo
duty cycle	-overshoo
duration	peak-to-pe
falltime (90–10%, 80–20%,	period
@ level)	phase
frequency	risetime (1
first	@
last	rms
level @ x	std. deviati

of points ot ot eak 10-90%, 20-80%, elevel) std. deviation

top width median phase time @ minimum (min.) time @ maximum (max.) Δ time @ level Δ time @ level from trigger x @ max x @ min

Optional

Advanced Serial Data Analysis (ASDA)

This package includes advanced serial data analysis tools which enable the SDA to perform detailed analysis of ter, eye patterns and bit errors. The package includes

 Mask violation locator N-Cycle vs. N jitter plot Bit error analysis with error map

 ISI plot Filtered jitter analysis

LeCroy M1 Timing Tools

Your SDA acquires data, and calculates, displays, and analyzes jitter in clock and serial data. A wide variety of m urement tools are available including differential crossing point measurements. Jitter viewing tools include lin graph, histogram, jitter spectrum, text, and eye diagram. Available in an advanced or basic version.

LeCroy M1 Timing Tool (Advanced, 1 scope)	LeCROY M1 / ADV-1
LeCroy M1 Timing Tool (Advanced, 4 scopes)	LeCROY M1 / ADV-4
LeCroy M1 Timing Tool (Basic)	LeCROY M1 / BASIC

Advanced Customization Package (XDEV)

This package provides a set of tools to modify the scope and customize it to meet your unique needs. Addition capability provided by XDEV includes

- · Creation of your own measurement parameter or math function, using third party software packages, and di play of the result in the scope. Supported third party software packages include:
- VBScript MATLAB Excel Mathcad
- · CustomDSO create your own user interface in a scope dialog box.

· Adding macro of keys to run VBScript files

Support of plug-ins

Disk Drive Measurements Package (DDM2)

This package provides disk drive parameter measurements and related mathematical functions for performing disk drive WaveShape Analysis

pulse width 50-

pulse width 50+ resolution

track average amplitude track average amplitude-

track average amplitude+

auto-correlation s/n non-linear transition shift

Disk Drive Parameters are as follows

amplitude assymetry local base local baseline separation local maximum local minimum local number	local time at minimum local time at maximum local time peak-trough local time over threshold local time trough-peak local time under threshold
local peak-peak	narrow band phase
local time between events	narrow band power
local time between peaks	overwrite
local time between troughs	pulse width 50

Correlation function

Trend (datalog) of up to 1 million events

· Histograms expanded with 18 histogram parameters and up to 2 billion events