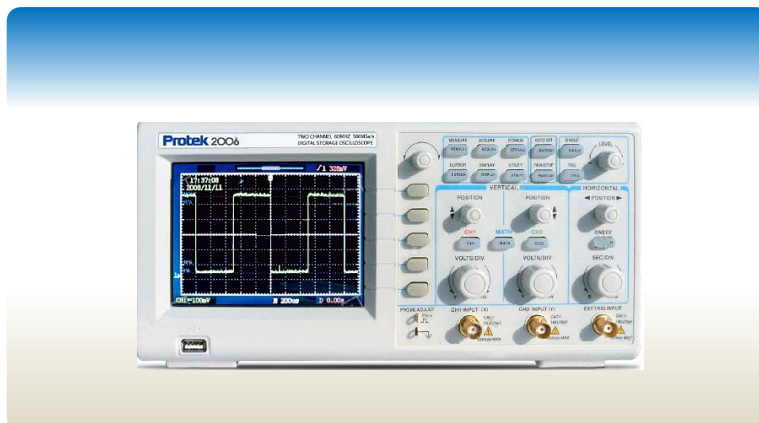


STORAGE OSCILLOSCOPES
DIGITAL STORAGE OSCILLOSCOPE Protek 2000 SERIES

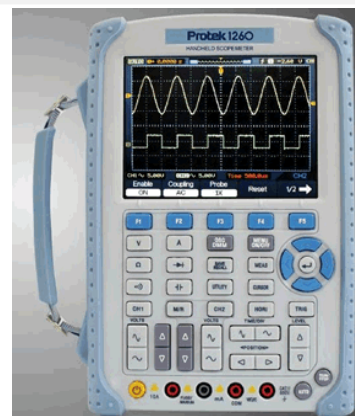
- 200 / 100 / 60 MHz Bandwidth with 2 Channels
- 500 Msa / s and 1Gsa / s Real – Time Sampling Rate,
- 50 Gsa / s Equivalent - Time Sampling Rate
- Large 5.7 inch TFT Color Display
- Three Math Functions Including “+”, “-” and “FFT”
- Multi-Languages Support
- USB (Host & Device), RS 232 & RJ45 Interface
- Battery Power Operation (Optional)



MODEL	Protek 2006	Protek 2010	Protek 2110	Protek 2020	Protek 2120
Channels	2	2	2	2	2
Bandwidth	60MHz	100MHz	100MHz	200MHz	200MHz
Rise Time	5.8ns Approx	3.5ns Approx	3.5ns Approx	1.8ns Approx	1.8ns Approx
Input Impedance	Resistance : 1M ± 2% , Capacitance : (20 ± 5) pf				
Polarity	Normal & Invert				
Maximum Input	400V (DC + AC Peak)				
Waveform Signal Process	Ch1 ± CH2, CH1 x CH2, CH1/CH2, FFT				
Bandwidth Limit	20MHz / -3dB			40MHz / -3dB	
Source	CH1, CH2, EXT, City Electricity				
Mode	Edge, Pulse, Video, Slope Trigger				
Sensitivity	Max, 1div (Frequency upper Limit to 40MHz), Max, 2 div, TV-V, TV-H Video Trigger				
Ext. Trigger Input Impedance	Resistance : 1Mohm ±2%; Capacitance: (20 ± 5) pF				
Ext. Trigger Sensitivity	Max. 100m v p-p (Frequency upper limit to 40 MHz) 200mVp-p, TV-V, TV-H Video Trigger				
Max. input Voltage	400V (DC+AC Peak)				
Low Frequency Inhibition	Frequency < 100KHz will be inhibited				
High Frequency Inhibition	Frequency > 100KHz will be inhibited				
Sampling	Real-time Max, Sampling Rate : 0 Series is 500MSa / s, 1 Series is 1GSa / s Equivalent Max, Sampling Rate is 50GSa / s for all items				
Range (1.2.5 increments)	50s/div ~ 10ns/div	50s/div ~ 5ns / div		50s/div ~ 1ns / div	
Mode	Main Sweep, Main Sweep + Delay Expansion Sweep, X-Y				
X-Axis Input	Channel 1				
Y-Axis Input	Channel 2				
Phase Shift	Max 3 degree @ 5MHz				
Voltage Measurement	Vpp, Vamp, Vrms, Vhi, Vio, Vmax, Vmin, Pre-shoot, Overshoot				
Time Measurement	Frequency, Rise time, Fall time, Positive Width, Negative Width, Duty Cycle				
Delay Measurement	Delay 1->2  Delay 1- > 2 				
Cursor Measurement	Voltage difference between Cursors Δ V, Time difference between Cursors Δ T Frequency difference between Cursors 1 Δ T				
TFT LCD Type	5.7 Inch				
Display Resolution	240 (Vertical) x 320 (Horizontal) Dots				
RS 232 Interface	DB-9 Pin RS 232 Interface				
USB	USB Host / Device 2.0 Full Speed Supported				
Line Voltage Range	AC 100V – 240V ± 10%, 45Hz – 440Hz, Auto Selection				
Battery Power (Option)	Li-ion Battery Pack				
Dimension	300 x 150 x 130 (mm)				
Weight	2.5 kgs.				

PROTEK HANDHELD SCOPE METER SERIES

- 600/500/200 MHz Bandwidth with 2 Channels
- 2Gsa/s, 1Gsa/s, 500Msa/s, 250 Msa/s and 150Msa/s Real – Time Sampling Rate,
- 50Gsa/s Equivalent-Time Sampling Rate
- 6,600-Count DMM resolution with AC/DC at 600V, 10A
- Large 5.7 inch TFT Color Display
- Multi-Languages Support
- USB Host / Device 2.0 full-speed interface connectivity
- Battery Power Operation (Installed)



SPECIFICATIONS	Protek 1006	Protek 1020	Protek 1050	Protek 1160	Protek 1260
Vertical					
Channels	2	2	2	2	2
Bandwidth	60MHz	200MHz	500MHz	600MHz	600MHz
Rise Time	5.8 ns	1.7 ns		0.58ns	
Input Impedance	Resistance : 1 MΩ ; Capacitance : 15 pF				
Input Sensitivity	10 mV /div to 5V /div				
Input Coupling	AC, DC with Ground Level Indicator				
Vertical Resolution	8 bits				
Memory Depth	32K at Single Channel, 16K at Dual Channel				
Maximum Input	300V (DC + AC Peak)				
Horizontal					
Sampling	150MSa/s	250MSa/s	500mSa/s	1GSa/s	2GSa/s
	Equivalent Max. Sampling Rate is 50GSa /S for all items				
Time Base Range	5ns/div ~ 1000s/div	2ns/div ~1000s/div		1ns/div ~ 1000s/div	
Time Base Precision	± 50ppm				
Trigger					
Source	CH1, CH2				
Mode	Edge, Pulse Width, Alternative		Edge, Video, Pulse Width, Alternative		
X-Y mode					
X-Axis Input	Channel 1				
Y-Axis Input	Channel 2				
Phrase Shift	Max. 3 degree				
Cursors and Measurement					
Voltage measurement	Vpp, Vamp, Vmax, Vmin, Vtop, Vmid, Vbase, Vavg, Vrms,Vcrms,Preshoot, Overshoot				
Time Measurement	Frequency, Rise Time, Fall Time, Positive Width, Negative Width, Duty Cycle				
Delay Measurement	Delay 1 -> 2  Delay 1 -> 2 				
Cursors Measurement	Manual, Track, Auto Measure Modes				
Waveform Signal Process	CH1 ± CH2, CH1 x CH2, CH1 / CH2, FFT, Invert				
Storage	15 Waveforms and Setups				
Meter mode					
Maximum Resolution	6,600 Counts				
DMM Testing Modes	Voltage, Current, Resistance, Capacitance, Diode & Continuity				
Maximum Input Voltage	AC : 600V, DC : 600V				
Maximum Input Current	AC : 10A, DC : 10A				
Input Impedance	10 MΩ				
Display					
TFT LCD Type	5.7 Inch with LED Backlight Display				
Display Resolution	240 (Vertical) x 320 (Horizontal) Dots				
Interface					
USB	USB Host/Device 2.0 Full Speed Supported				
Optional	Rs 232, LAN				
Power source					
Line Voltage Range	AC 100V ~240V, 50Hz ~ 60 Hz, DC Input: 8.5 VDC, 1500mA				
Battery Power (Installed)	6 Hours				
Physical Parameters					
Dimension	245 x 163 x 52 (mm)				
Weight	1.2 Kgs.				
Others					
GND Reference	Oscilloscope and Multimeter Independence				

VIRTUAL STORAGE OSCILLOSCOPE DSO SERIES (PC Based DSO)


MODEL		DSO-2090	DSO-2150	DSO-2250	DSO-2500	DSO-5200	DSO-5200A
Max Sample Rate	Real-time Sampling	100MS/s	150MS/s	250MS/s	500MS/s	100MS/s using 1 Channel 50MS/s using 2 Channels	100MS/s
	Equivalent Sampling					5GS/s	25GS/s
Bandwidth		40MHz (-3dB)	60MHz (+3dB)	100MHz (-3dB)	200MHz (-3dB)	200MHz (-3dB)	200MHz (-3dB)
Single Shot bandwidth		40MHz	60MHz	100MHz	200MHz	50MHz	100MHz
Butter Size		32K Samples			10K to 512 K Samples		
Channels		2 Channel					
		10mV to 5V/div @ x1 probe				10mV to 10V/div @ x1 probe	
		100mV to 50V/div @ x10 probe				100mV to 100V/div @ x 10probe	
Voltage Range		1V to 500V/div @ x 100 probe				1V to 1000V @ x 100 probe	
		10V to 5000V/div @ x 1000 probe				10V to 10000/div @ x 1000 probe	
Accuracy		± 3 %					
Time base Range		4ns / div to 1h / div (1 – 2 – 4 sequences)				2ns / div to 1h / div (1 – 2 – 4 sequences)	
Offset Level		± 4 division					
Coupling		AC / DC / GND					
Impedance		1m Ohm					
Input Protection		35V pk (DC + peak AC, without external attenuation)					
Roll mode		1 s / div to 1h / div					
Range		10 divisions					
Pre/post Trigger		0 % to 100 %					
Trigger Type		Edge Trigger: Rising Edge : falling edge					
Trigger Mode		Auto Normal & Single					
Autoset		Yes					
Settability		0.03 div increments					
Trigger Level		± 4 division					
Measurements		Vp-p, Vmax, Vmin, Vmean, Vrms, Vhigh, Vlow, positive overshoot, negative overshoot, cycle mean, cycle rms, period, frequency, positive pulse width, negative pulse width, rise time (10% to 90%), positivity duty Cycle. negative duty cycle					
Cursor		Time / frequency difference, Voltage difference					
Math		Addition, Subtraction, Multiplication and Division					
FFT		Rectangular, Hanning , Hamming, Blackman Window					
Interface		Universal Serial Bus (USB)					
Power		No External Power sources required					
		Bus Power From USB 1.7 W					
calibration single output		2V, 1KHz, Square Wave					
Trace display		Point / Line					
Vertical Position Variable		Yes					
Grid		On/Off					
		Image Save : BMG, JPG					
		Data Save: DSO					
File Management		OLE (Object Linking and Embedding) automation : Data generation for Microsoft Excel					
		Setting Save / load					
Print		Print in color / Mono					

PC Based Arbitrary Waveform Generator/ Counter (DDS-3005)

Frequency Range	0.1 Hz (DC) to 5 MHz
Frequency Resolution	0.01 Hz
DAC Clock	0 to 50 MHz continuously adjustable in 0.2 Hz step
Channels	1 CH waveform output
Waveform Depth	256KSa
Vertical Resolution	14 Bits
Frequency Stability	< 30 ppm
Frequency Amplitude	0 to $\pm 10V$
Output Impedance	100 Ω
Output Current	50mA Vpeak = 100 mA
Low Pass Filter	5 MHz, 1 MHz, 100 KHz, 10 KHz, 1 KHz, Programmable
DC Accuracy	$\pm 0.1\%$ (FS)
AC Accuracy	$\pm 0.2\%$
Harmonic Distortion	-65 dBc (1KHz), -53 dBc (100KHz)
Range	DC to 25 MHz
Input Amplitude	200 mVpp to $\pm 25Vpp$
Coupling Mode	AC, DC Programmable
Accuracy	1 Hz
Input Impedance	> 500K
Range	25 MHz to 2.7 GHz
Input Power	20 dbm
Coupling Mode	AC
Accuracy	256Hz
Input Impedance	50 Ω
Digits	8 Bits + Sync. 1 Bit + Ext. Trigger 1 Bit
Level	3 / 5V TTL / CMOS

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