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## Appendix A: Specifications

The following specifications apply to 10X probe attenuation when the following conditions are met:

- ◆ The oscilloscope must have been operating continuously for thirty minutes within the specified operating temperature
- ◆ The **Do Self Cal** operation, accessible through the **[User]** menu, must be performed if the operating temperature changes by or more than 5° C
- ◆ The oscilloscope must be within the factory calibration interval
- ◆ The oscilloscope should be calibrated once every year

All specifications are guaranteed except those noted “**typical**”.

### Oscilloscope Specifications

Input System		
Input Coupling	AC, DC, GND	
Input Impedance	1MΩ ± 2%    18pf ± 3pf	
Probe Attenuation	1X, 10X	
Meter Attenuator Factors	1X, 5X, 10X, 50X, 100X, 500X, 1000X	
BNC Maximal Input Voltages (refer to BNC crust)	Overvoltage Classes	Maximal Voltages
	CAT II	300Vrms
	CAT III	150Vrms
Probe	Overvoltage Classes	Maximal Voltages
	Standard Probe 10X	CAT II 400Vrms
	Optional Probe 10X	CAT III 600Vrms
Multimeter Floating Voltages	Overvoltage Classes	Maximal Voltages
	CAT II	600Vrms
	CAT III	300Vrms
Channel Common Mode Rejection	>100:1 50MHz	
Isolation Degree between Channels	>35dB	

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<b>Acquisition System</b>				
Sample Types		Real time, Equivalent time		
Memory Depth	Channel Mode	Sampling Rate	Common Storage	Deep Storage
	Single Channel	1GSa/s	40kpts	Don't support
	Single Channel	500MSa/s or below	20kpts	2Mpts
	Double Channels	500MSa/s or below	20kpts	1Mpts
Sample Mode		Sample, Peak Measure, Average		
Averages		4, 16, 32, 64, 128, 256		

<b>Vertical System</b>	
Vertical Sensitivity	2mV/div - 100V/div(1-2-5 order)
Channel Voltage Offset Range	2mV ~200mV : ±1.6V 206mV ~10V : ±40V 10.2V ~100V : ±400V
Vertical Resolution	8 bit
Channels	2
Bandwidth	100 MHz
Lower Frequency Limit (AC -3dB)	≤10Hz
DC Gain Accuracy	5mV/div-100V/div:±3% 2mV/div:±4%
DC Measurement Accuracy: All Gain settings≤200mv/div	±[3% x ( reading + offset ) +1% x  offset  +0.2div+2mv]
DC Measurement Accuracy: All Gain Settings > 200mv/div	±[3% x ( reading + offset ) +1% x  offset  +0.2div+100mv]
Rise Time (BNC value)	<1.7ns (200MHz) <2.3ns (150MHz) <3.5ns (100MHz) <5.8ns (60MHz)
Math Operation	+, -, *, /, FFT
FFT	Window Modes: Hanning, Hamming, Blackman, Rectangular
	Sampling points: 1024
Bandwidth Limiter	20MHz (-3dB)

<b>Horizontal System</b>
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Real Time Sampling Rate	Single channel below 50ns/div:1GSa/s; double channel: 500MSa/s
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Equivalent Sampling Rate	< 50GSa/S
Measure Display Modes	MAIN, WINDOW, WINDOW ZOOM, SCAN , X-Y
Time Base Accuracy	± 50ppm measured over 1ms interval
Horizontal Scan Range	2.5nS/div ~50S/div (200MHz) 2.5nS/div ~50S/div (150MHz) 2.5nS/div ~50S/div (100MHz) 5nS/div ~50S/div (60MHz) Scan: 100mS/div ~50S/div (1-2.5-5 order)

<b>Trigger System</b>	
Trigger Types	Edge, Pulse Width, Video, Slope, Alternative
Trigger Source	CH1, CH2
Trigger Modes	Auto, normal, Single
Trigger Coupling	AC, DC, LF reject, HF reject
Trigger Level Range	CH1, CH2: ±6 divisions from the center of the screen
Trigger Displacement	Pre-trigger: (Memory depth / (2*sampling)), Delay Trigger: 268.04 div
Holdoff Range	100ns ~1.5s
Edge Trigger	Edge type: Rising, Falling, Rising and Falling
Pulse Width Trigger	Trigger Modes: (>, <, =) Positive Pulse Width, (>, <, =) Negative Pulse Width
	Pulse Width Range: 20ns ~10s
Video Trigger	Support Signal Formats: PAL/SECAM, NTSC
	Trigger Conditions: odd field, even field, all lines, pointed line
Slope Trigger	(>, <, =) Positive slope, (>, <, =) Negative slope
	Time: 20ns~10s
Alternative Trigger	CH1 trigger types: Edge, Pulse, Video, Slope
	CH2 trigger type: Edge, Pulse, Video, Slope

<b>X-Y Mode</b>	
X-pole Input / Y-pole Input	Channel 1 (CH1) / Channel 2 (CH2)
Sampling Frequency	25KSa/s ~ 250MSa/s (1-2.5-5 order)

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<b>Cursor Measure</b>	
Auto Measure (32 types)	Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROVShoot, FOVShoot, RPREShoot, FPREShoot, Rise, Fall, Freq, Prd, +Wid, -Wid, +Dut, -Dut, BWid, Phas, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF
Cursor Measure	Manual mode, Track mode and Auto mode

<b>Control Panel Function</b>	
Auto Set	Auto adjusts the vertical and horizontal scale and triggers to fit current signal
Save/Recall	Support 2 groups of referenced Waveforms, 20 groups of setups, 10 groups of captured waveforms internal storage/recall functions and USB flash driver storage function.

<b>Hardware Frequency Counter</b>	
Reading resolution	1Hz
Range	DC coupling, 10Hz to maximal bandwidth
Signal Types	All trigger signals (except pulse width and video trigger)

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## Digital Multimeter Specifications

Environment Temperature: 73±9 F (23±5 C) Relative Humidity: < 75%

Max. Display	6000 counts
Measure Function	DC voltage, AC voltage, resistance, diode, continuity, capacitance, DC current, AC current
Max. Input Voltage	AC (virtual value): 750V (AC Frequency:20Hz~1kHz) DC:1000V
Max. Input Current	AC (virtual value): 10A (AC Frequency:20Hz~1kHz) DC:10A
Input Impedance	10M

DC Voltage		
Range	Resolution	Definition
60mV	10uV	±(1%+15digit)
600mV	100uV	±(1%+5digit)
6V	1mV	
60V	10mV	
600V	100mV	
1000V	1V	

AC Voltage		
Range	Resolution	Definition
60mV	10uV	±(1%+15digit)
600mV	100uV	±(1%+5digit)
6V	1mV	
60V	10mV	
600V	100mV	
750V	1V	

Resistance		
Range	Resolution	Definition
600Ω	0.1Ω	±(1%+5digit)
6K	1Ω	
60K	10Ω	
600K	100Ω	
6M	1KΩ	
60M	10KΩ	

Diode and Continuity Measure	
Name	Range
Diode	0~2V
Continuity	<50Ω alarm

Capacitance		
Range	Resolution	Definition
40nF	10pF	± (3%+10digit) measurements > 5nF
400nF	100pF	± (4%+5digit )
4uF	1nF	
40uF	10nF	
400uF	100nF	

DC Current		
Range	Resolution	Definition
60mA	10uA	±(1%+5digit)
600mA	100uA	
6 A	1mA	±(1.5%+5digit)
10A	10mA	

“A “range: measure period≤10 seconds, interval period≥15minutes.

AC Current		
Range	Resolution	Definition
60mA	10uA	±(1%+5digit)
600mA	100uA	
6 A	1mA	±(1.5%+5digit)
10A	10mA	

“A “range: measure period≤10 seconds, interval period≥15minutes.

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## **Recorder Specifications**

**Total: 7M original points    Single channel: 7M    Double channel: each 3.5M**

<b>Scope Trend Plot</b>	
Display Mode	full view and normal
Record Length	800K points, > 18 hours
Record Channel Num.	2
Cursor and Zoom	support
Record Manual	support

<b>Multimeter Trend Plot</b>	
Display Mode	full view and normal
Record Length	1.2 M points
Record Channel Number	1
Cursor and Zoom	Support
Record Manual	Support

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## Generic Specification

Display	
Display Mode	Color TFT 5.7 inches(145mm) diagonal Liquid Crystal Display
Resolution	TFT 5.7 inches :320 (horizontal) pixels * 234 (vertical )pixels
Display Color	24 bits
Display Contrast ( typical)	150:1
Backlight Intensity (typical)	300 nit
Waveform Display Range	TFT 5.7 inches 8 x 12 div
Wave Display Mode	Dots, Vectors
Persist	Off, 1 sec, 2 sec, 5 sec, Infinite
Menu Display	2 sec, 5 sec, 10 sec, 20 sec, Infinite
Screen Saver	Off, 1 min, 2 min, 5 min, 10 min, 15 min, 30 min, 1 hour, 2 hour, 5 hour
Skin	Classical, Modern, Traditional, Succinct
waveform Interpolation	Sin(x)/x, Linear
Color model	Normal , Invert
Language	Simplified Chinese, Traditional Chinese, English, Arabic, French, German, Russian, Spanish, Portuguese, Japanese, Korean, Italian

Power		
Adapter Supply Power	Input Voltage	100-240 V 50/60Hz
	Output Voltage	9V 4A
Battery Supply Power	5000mAh, 7.4VDC, persisting 5 hours	
Charging time	About 4 hours	

Environments	
Temperature	Work: 32~105 F (0~40 C)
	Storage: -4~160 F (-20 C~70 C)
Cooling	Natural Cool
Humidity	85%RH, 105 F (40 C)
Height	3000m

Mechanical		
Dimension	Length	259.5mm
	Width	163.2mm
	Height	53.3mm
Weight	1.5 kg	

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