VIII. Technical Specifications

i. Set the probe compensation at x10 for physical probe;
ii. Under suitable operation temperature, work the device for 30+ minutes without interval;
iii. Provided the environment temperature gets 5 degrees more, or less, to self-calibrate the device through Utility menu, via “Self Cal” option (please refer to Self Cal).

The following technical specifications been measured on the basis of above-mentioned operations,

Oscilloscope Part -

<table>
<tr><td colspan="2" rowspan="9">Bandwidth</td><td>VDS6074</td><td colspan="3">70MHz</td></tr>
<tr><td>VDS6104</td><td colspan="3">100MHz</td></tr>
<tr><td rowspan="3">VDS6074A</td><td>8-bit mode</td><td colspan="2">70 MHz</td></tr>
<tr><td>12-bit mode</td><td colspan="2">70 MHz</td></tr>
<tr><td>14-bit mode</td><td colspan="2">20 MHz</td></tr>
<tr><td rowspan="3">VDS6104A</td><td>8-bit mode</td><td colspan="2">100 MHz</td></tr>
<tr><td>12-bit mode</td><td colspan="2">100 MHz</td></tr>
<tr><td>14-bit mode</td><td colspan="2">20 MHz</td></tr>
<tr><td colspan="2" rowspan="2">Vertical Resolution (A/D)</td><td>VDS6104</td><td colspan="3">8 bits</td></tr>
<tr><td>VDS6104A</td><td colspan="3">8 bits / 12 bits / 14 bits</td></tr>
<tr><td colspan="2">Channel Q'nty</td><td colspan="4">4</td></tr>
<tr><td rowspan="13">Acquisition</td><td>Mode</td><td colspan="4">sample, peak detect, average</td></tr>
<tr><td rowspan="12">Sampling Rate</td><td rowspan="3">VDS6074
VDS6104</td><td>4-CH working</td><td colspan="2">250 MSa/s</td></tr>
<tr><td>2-CH working</td><td colspan="2">500 MSa/s</td></tr>
<tr><td>1-CH working</td><td colspan="2">1 GSa/s</td></tr>
<tr><td rowspan="9">VDS6074A
VDS6104A</td><td rowspan="3">4-CH working</td><td>8-bit mode</td><td>250 MSa/s</td></tr>
<tr><td>12-bit mode</td><td>125 MSa/s</td></tr>
<tr><td>14-bit mode</td><td>125 MSa/s</td></tr>
<tr><td rowspan="3">2-CH working</td><td>8-bit mode</td><td>500 MSa/s</td></tr>
<tr><td>12-bit mode</td><td>250 MSa/s</td></tr>
<tr><td>14-bit mode</td><td>125 MSa/s</td></tr>
<tr><td rowspan="3">1-CH working</td><td>8-bit mode</td><td>1 GSa/s</td></tr>
<tr><td>12-bit mode</td><td>500 MSa/s</td></tr>
<tr><td>14-bit mode</td><td>125 MSa/s</td></tr>
<tr><td rowspan="5">Input</td><td>Input Coupling</td><td colspan="4">DC, AC, ground</td></tr>
<tr><td>Input Impedance</td><td colspan="4">1 MΩ ± 2%, in parallel with 15 pF ± 5 pF</td></tr>
<tr><td>Supported Probe</td><td colspan="4">x1, x10, x100, x1000</td></tr>
<tr><td>Max Input Voltage</td><td colspan="4">40V (DC + AC Peak)</td></tr>
<tr><td>Bandwidth Limit</td><td colspan="4">20MHz, or fullband</td></tr>
</table>

	Channel Isolation	100 : 1 @ 50Hz; 40 : 1 @ 10MHz
	Time Delay Between Channel (typical)	150 ps

Horizontal System	Sampling Rate	VDS6074 VDS6104	4-CH working	0.5 Sa/s - 250 MSa/s	
			2-CH working	0.5 Sa/s - 500 MSa/s	
			1-CH working	0.5 Sa/s - 1 GSa/s	
		VDS6074A VDS6104A	4-CH working	8-bit mode	0.5 Sa/s - 250 MSa/s
				12-bit mode	0.5 Sa/s - 125 MSa/s
				14-bit mode	0.5 Sa/s - 125 MSa/s
			2-CH working	8-bit mode	0.5 Sa/s - 500 MSa/s
				12-bit mode	0.5 Sa/s - 250 MSa/s
				14-bit mode	0.5 Sa/s - 125 MSa/s
			1-CH working	8-bit mode	0.5 Sa/s - 1 GSa/s
				12-bit mode	0.5 Sa/s - 500 MSa/s
				14-bit mode	0.5 Sa/s - 125 MSa/s
	Interpolation	sin (x)/x			
	Record Length	10M			
	Scanning Speed (s/div)	1 ns/div - 100 s/div, step by 1 - 2 - 5			
	Sampling Rate / Relay Time Accuracy	±25ppm (typical, Ta = +25℃)			
	Interval (△T) Accuracy (DC - 100MHz)	Single: ±(1 interval time + 25ppm x reading + 0.6ns); Average>16: ±(1 interval time + 25ppm x reading + 0.4ns)			
Vertical System	Sensitivity	2 mV/div - 5 V/div			
	Displacement	± 2 V (2 mV/div - 50 mV/div) ± 20 V (100 mV/div - 500 mV/div) ± 40 V (1 V/div - 5 V/div)			
	Analog Bandwidth	100 MHz			
	Low Frequency (AC coupling, -3dB)	≥10 Hz (at BNC)			
	Rise Time (at BNC, typical)	≤ 3.5 ns			
	DC Accuracy	VDS6074 VDS6104	±3% when ≥ 2mV		
		VDS6074A VDS6104A	±2% when ≥ 2mV		

	DC Accuracy (average)	the voltage difference of any 2 points from the captured signal, after taking the average from ≥16 captured signals (△V): ±(2% rdg + 0.05 div)
	waveform inverted ON / OFF	

Measurement	Cursor Measurement	△V / △T / (△V and △T) between Cursor 1 and Cursor 2, auto cursor	
	Automatic Measurement	Vpp, Vmax, Vmin, Vtop, Vbase, Vamp, Vavg, Vrms, Overshoot, Preshoot, Frequency, Period, Rise Time, Fall Time, Delay A→B⇓, Delay A→B⇑, +Width, -Width, +Duty, -Duty	
	Lissajous Figure	Bandwidth	full bandwidth
		Phase Difference	±3 degrees
Communication Interface	USB device (type-C), USB host (Wi-Fi extension supported), LAN		
	Wi-Fi module available in option		
Frequency Counter	supported		

Trigger

Trigger Level Range	Internal	±5 divisions from the screen center
Trigger Level Accuracy (typical) (working for signal with rise time / fall time ≥ 20ns)	Internal	±0.3 division
Trigger Displacement	changing according to different record length and time base	
Trigger Hold-off Range	100ns - 10s	
Edge Trigger	Slope	rising, falling
Pulse Trigger	Trigger Condition	positive pulse: >, <, = negative pulse: >, <, =
	Pulse Width Range	30ns - 10s
Video Trigger	Modulation	supported standard: NTSC, PAL and SECAM broadcast systems
	Line Number Range	NTSC: 1 - 525; PAL / SECAM: 1 - 625
Slope Trigger	Trigger Condition	positive pulse: >, <, = negative pulse: >, <, =
	Time Setting	30ns - 10s

General Part -

Communication Interface	USB Device / USB Host (hi-speed USB 2.0), LAN (10/100Mbits)
Programming Language	SCPI
Compatibility	USBTMC, LXI, SOCKET

Power

Power Source	5V - 15V DC / 1.2A
Power Consumption	≤ 8W

Environment

Temperature	working temperature: 0 ℃ - (+40 ℃) storage temperature: (-20 ℃) - (+60 ℃)
Relative Humidity	≤ 90%
Height	operating: 3,000 m non-operating: 15,000 m
Cooling Method	air convection (cross-ventilation)

Mechanical

Device Dimension	w/h/d 190 x 120 x 18 mm
Weight	0.38 kg

Device Calibration Time Interval

After the device been operated for every 12 natural months (calculated from the first operation day), better to calibrate it one time.

IX. Appendix