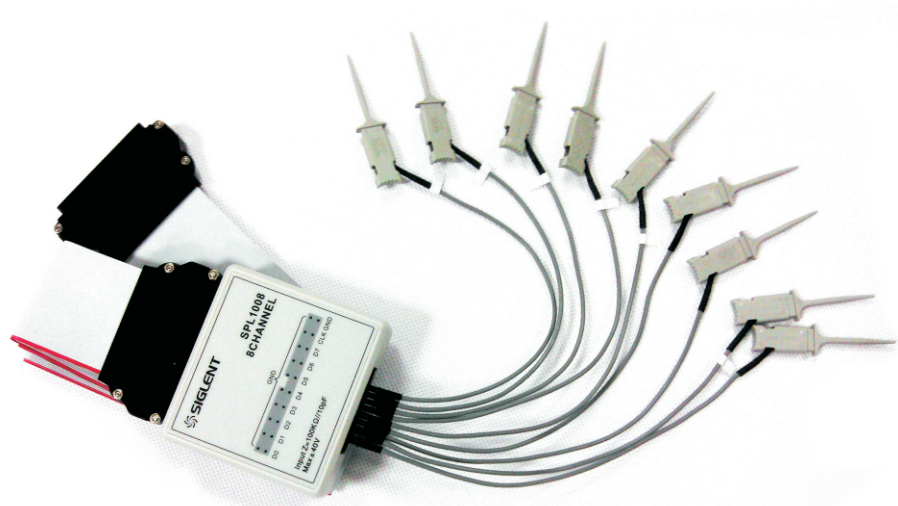# Logic analyzer probe SPL1008 parameter

Feature

- Input Capacitance：10pF
- Input Resistance: 100KΩ
- Supports common standards level
- Flexible flying lead and clip

Application

- General purpose hardware test
- Bus debugging，eg:I2C、SPI、UART
- AD converter debugging

Parameter	Value
Number of input	8
Number of external clock input	1
Input capacitance	10PF
DC impedance*	100KΩ
Input dynamic range	−5V to +5V
Maximum nondestructive input voltage	± 40V
Threshold range	−3V to +3V
Default threshold	TTL（1.5V）、COMS（1.65V）、LVCOMS3.3V (1.65V)、LVCOS2.5V (1.25V)
Threshold accuracy（no lead）*	± 400mV
Minimum voltage swing	800mV
Input level limiting	TTL（0V≤V_L≤0.8V;2.4V≤V_H≤5V)
	CMOS（0V≤V_L≤1.5V;3.5V≤V_H≤5V)
	LVCOMS3.3V（0V≤V_L≤0.7V;2V≤V_H≤3.3V)
	LVCOS2.5V（0V≤V_L≤0.7V;1.7V≤V_H≤2.5V)
Plus Width Resolution（single channel）	TTL:15ns
	CMOS:15ns
	LVCOMS3.3V:15ns
Minimum input slew rate*	75mV/us
Maximum data rate（single channel）	120Mbps
Timing sampling rate	500MHz
Status sampling rate	60MHz
Cable length	80CM ± 2CM
Test way	Flying lead

- When the logic probe is connected into the oscilloscope，the impedance is refer to DC resistor 100KΩ.However, as increasing frequency, the input impedance will become low. Input impedance will be 270Ω at 60MHz. Be sure to confirm the driving capability of the system at this time, if the system can't affort the output current, oscilloscope may be get a incorrect result.

- Threshold accuracy is associated with flying lead. In conductor, the speed of electromagnectic wave is more less than C (C≈3×10^8m/s),it means the wavelength λ in conductor and flying leap length are an order of magnitude ,so that it is easy to occur standing wave in connector and the threshold accuracy will be bad. The more flying lead are connected into probe the worse threshold accuracy will be changed ,especially in high frequency, since the ground lead has changed into a inductor. To improve the threshold accuracy ,more short ground lead connected into the system is necessary.

- Because of the logic probe existing hysteresis windows, logic probe can't capture a right result when the input single swing lower than minimum slew rate. 75mV/s means that If input single is a sine waveform, this waveform frequency must be greater than 4KHz and Vpp must be greater than 3V .The SR(slew rate) is defined by following equation : SR=$2\pi fV_{pp}$