ISDS205 **User Guide**

InstruStar Electronic Technology

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contents

PC SYSTEM REQUIREMENTS

- Windows XP，Win7，Win8，Win10
- Pentium or higer processor
- USB2.0 High speed port.
- 512MB RAM
- 1GB hard disk space

1.Introduction

ISDS205 dual-channel digital oscilloscope, with "low-cost, high-performance" as the design goals. well-designed bandwidth of 16M, 48M sampling rate, 2 channels, alternating support X-T and XY alternating pattern of two-channel virtual oscilloscope, spectrum analyzer, data recorder.

205C and 205X support logic analyzer. Logic analyzer support our Logic software and Saleae Logic 2 kinds of software, Saleae Logic supports SPI, IIC, UART, etc. 17 kinds protocol analysis.

205B and 205X support DDS function. DDS support 5 kinds of waveform output,

	Oscilloscope	Spectrum Analyzer	Data Recorder	Logic Analyzer	DDS
ISDS205A	√	√	√		
ISDS205B	√	√	√		√
ISDS205C	√	√	√	√	
ISDS205X	√	√	√	√	√

Sine wave can output up to 20M.

2.Feature Description

Digital Oscilloscope	
Channels	2
Impedance	1MΩ 25pF
Coupling	AC/DC
Vertical Resolution	8Bit
Gain Range	-5V ~ 5V（probe X1） -50V ~ 50V（probe X10）
Vertical Accuracy	±3%
Time Base Range	10ns/div-100ms/div
Input Protection	Diode，50Vpk
Auto Set	Yes(10Hz to 10MHz)
Trigger Mode	Auto、Normal and Signal
Trigger Type	No、Rising edge、Falling edge、 Rising edge or Falling edge
Trigger Level	Yes
Trigger Source	CH1, CH2
Buffer Size	1MB/CH
Bandwidth	16MHz(Max 20M)
Max Sample	48MS/s

Vertical Mode	CH1, CH2, ADD, SUB, MUL
Display Mode	X、Y-T 和 X-Y
Measurements	Yes
Wave Save	Osc(Private)、Excel and Bmp

Spectrum Analyzers	
Channels	2
Bandwidth	16MHz
Algorithm	FFT(18 windows)、correlation
FFT Points	8-1048576/CHN
FFT Measure	Harmonic(1-7)、SNR、SINAD、ENOB、THD、SFDR
Filter Process	FIR filter supports arbitrary range of frequency sampling method , and Rectangle, bartlett, triangular, cosine, hanning, bartlett_hanning, hamming, blackman, blackman_Harris, tukey, Nuttall, FlatTop, Bohman, Parzen, Lanczos, kaiser, gaussand dolph_chebyshev, window method design. IIR filter support "Butterworth", "Chebyshev I", "Chebyshev II", "Elliptic" type of filter design

Note: The oscilloscope factory calibration, if you are not satisfied with the measurements, can manual calibration, the specific reference oscilloscope instructions.

Data Recorder	
Channel	2
Impedance	1MΩ 25pF
Coupling	AC/DC
Vertical Resolution	8Bit
Gain Range	-5V ~ 5V（probe X1） -50V ~ 50V（probe X10）
Sample	1 channel : 1K~24M Hz 2 channel : 1K~16M Hz
Save File	The maximum 4G, recording time associated with the sampling rate

Note: The specific speed recorder with computer processing speed, and if use high sampling rate, the situation may break.

Logic Analyzer(205C/205X)	
Channel	16
Sample	8 channel: 250K~24M Hz

	16 channel: 250K~16M Hz
Sample Points	1M-2GB

Saleae Logic Logic Analyzer (205C/205X)	
Channel	8
Sample	25K~24M Hz
Protocol Analyzer	Atmel SWI、BiSS C、SPI、I2C、CAN、UART、I2S/PCM、DMX-512、JTAG、LIN、Manchester、1-WIRE、UNI/O、Simple Parallel、MDIO、USB1.1、PS/2 Keyboard/Mouse
Sample Points	1MB~10TB

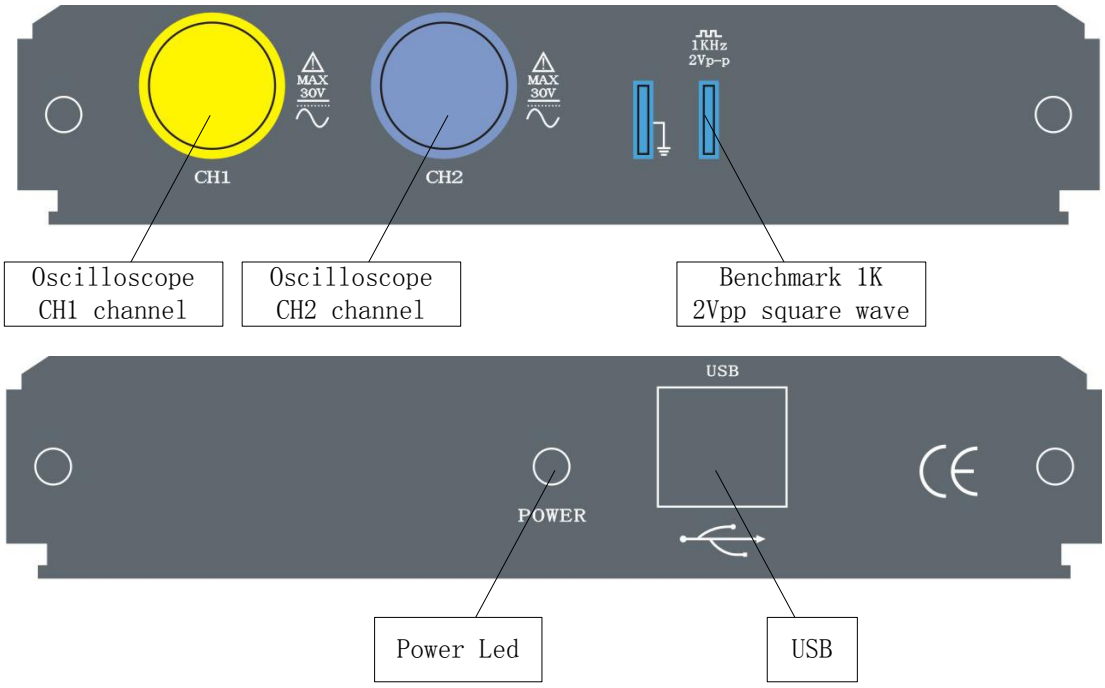
DDS(205B/205X)	
Wave	Sine, Square(Duty circle variable),Triangle,Up Sawtooth,Down Sawtooth
Amplitude	≥9Vp-p(no load)
Impedance	200Ω±10%
Offset	±2.5V
Frequency Range	1Hz ~ 20MHz(Sine), 1Hz ~ 2MHz(Others)
Frequency Resolution	1Hz
Frequency Steadiness	$\pm 1 \times 10^{-3}$
Frequency Precision	$\pm 5 \times 10^{-3}$
Triangular Wave Linearity	≥98%　(1Hz~10kHz)
Sine Wave Distortion	≤0.8%　(1kHz)
Square Wave Rising/Falling Time	≤100ns
Square Wave Duty Circle	1%~99%
Sweep	
Sweep Range	Fs 到 Fe
Sweep Time Range	0.1 ~10 s
Amplitude	0.5Vp-p ~ 10Vp-p

3.Software Installation

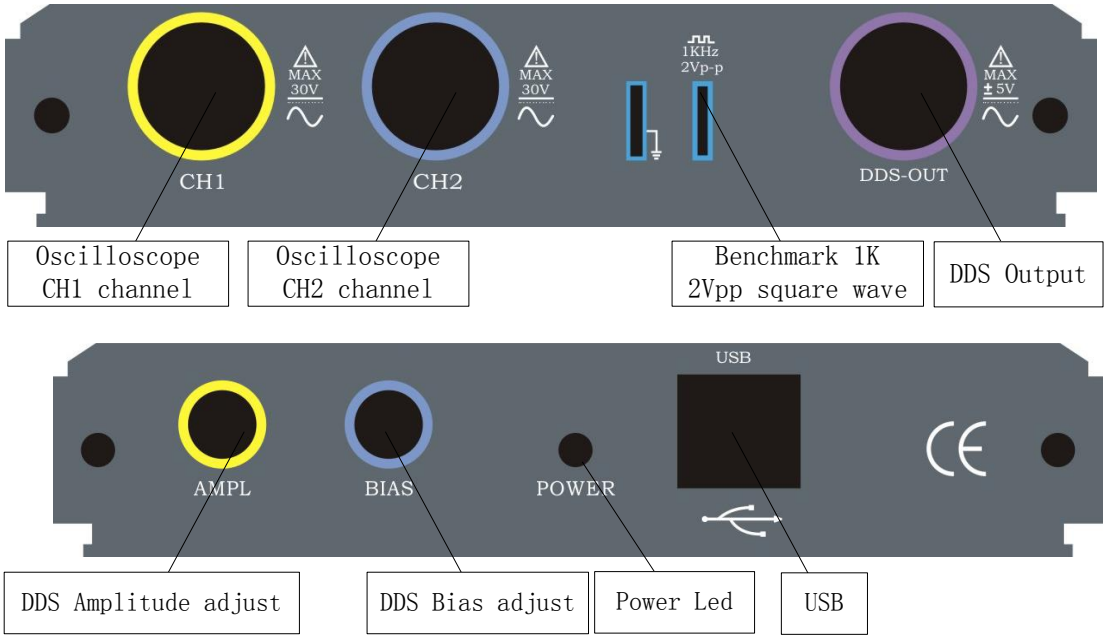
Please refer to the "Software and Driver Installation.pdf".

4.Interface

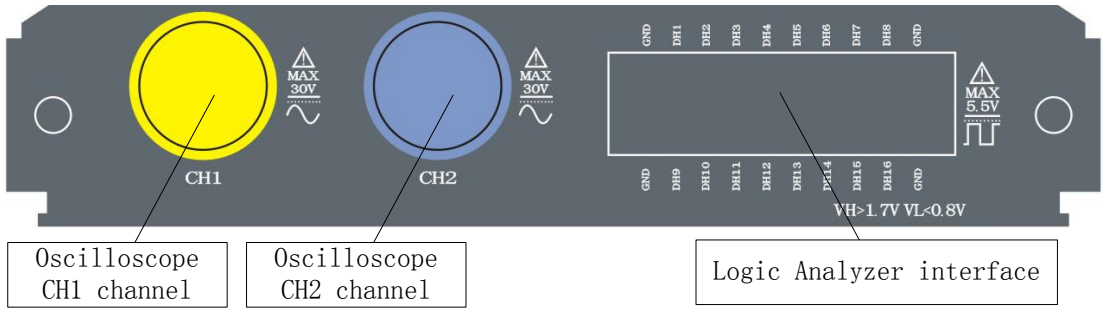
4.1 ISDS205A

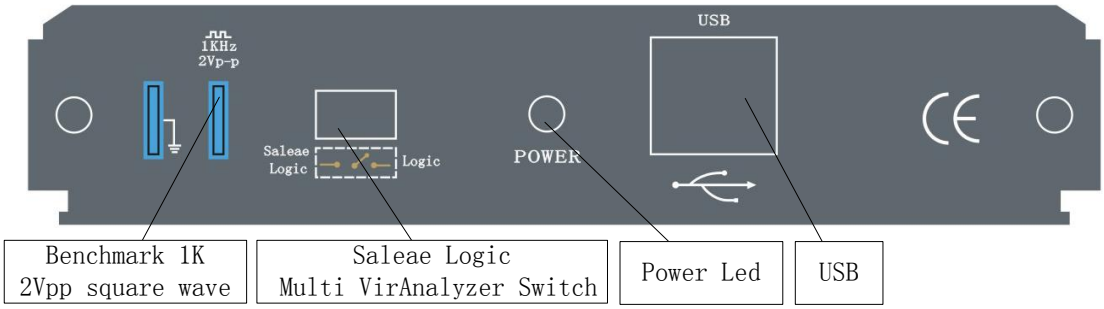


4.2 ISDS205B

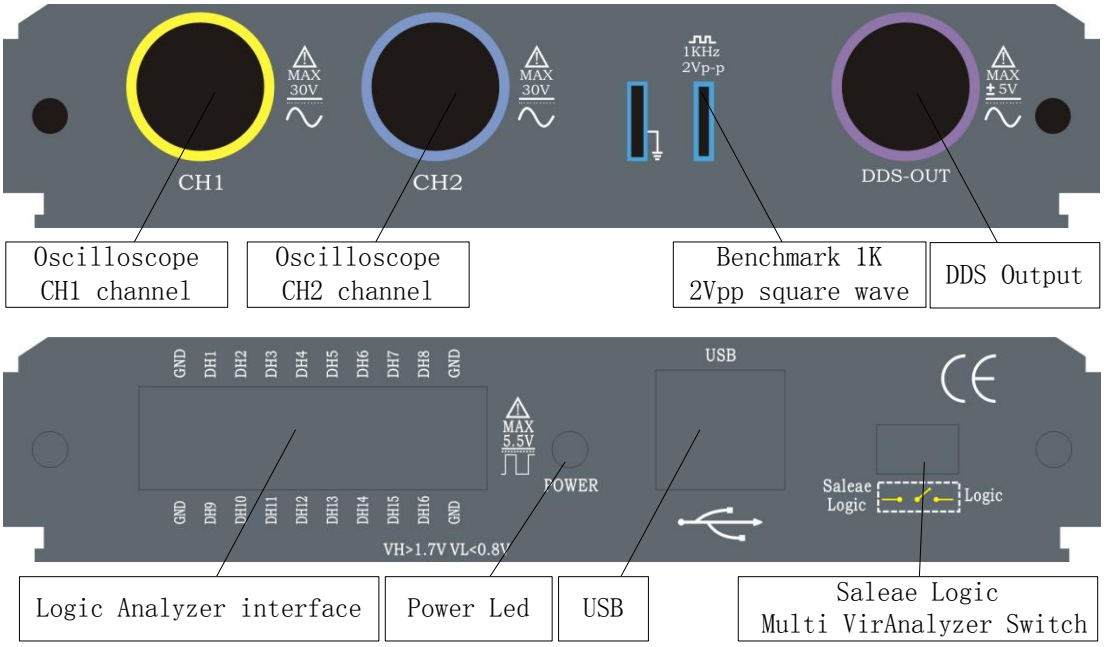


4.3 ISDS205C





4.4 ISDS205X



5.Oscilloscope / Spectrum analyzer/DDS

Please refer to the "Multi VirAnalyzer User Guide.pdf", "Digital storage oscilloscope (Professional Version).pdf" and "Digital storage oscilloscope (Simplified Version).pdf".

6.Data Recorder

Please refer to the "Data Recorder.pdf".

7.Logic Analyzer

After the success of USB devices, data recoder, equipment selection drop-downcombo box will appear ISDS205C/X(1.0) (N) option, choose a good future, the interface in Figure 7.1.

7.1 Basic control

7.1.1 Channel Control

Start or Stop Capture.

7.1.2 Channel Num

Set the num of the channels to be collected.

7.1.3 Sample Length

Set the length of the data to be collected.

7.1.4 Sample

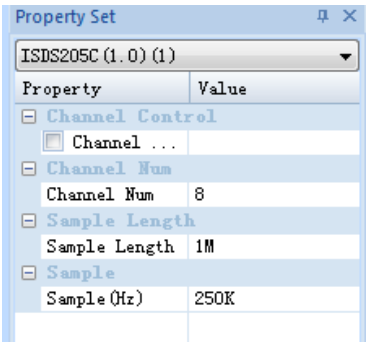


Figure 7.1 properties

Select the speed of data collection.

7.2 Record

Click the lower right corner "data record", the interface appears in Figure 6.2. Can display the recorded file. Double click the corresponding file, you can load, view the collected data.

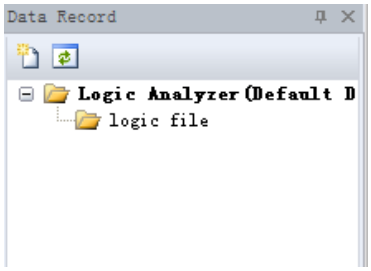


Figure 7.2 data record

8.Saleae Logic Logic Analyzer

The device to support Saleae Logic software, the development of the hardware above appropriated Saleae Logic position. Plugged into the USB, the software automatically recognizes and displays the Connected. Interface shown in Figure 8.1

More information, please view Saleae Logic software instructions, is located in "\Saleae Logic\Logic Guide.pdf"

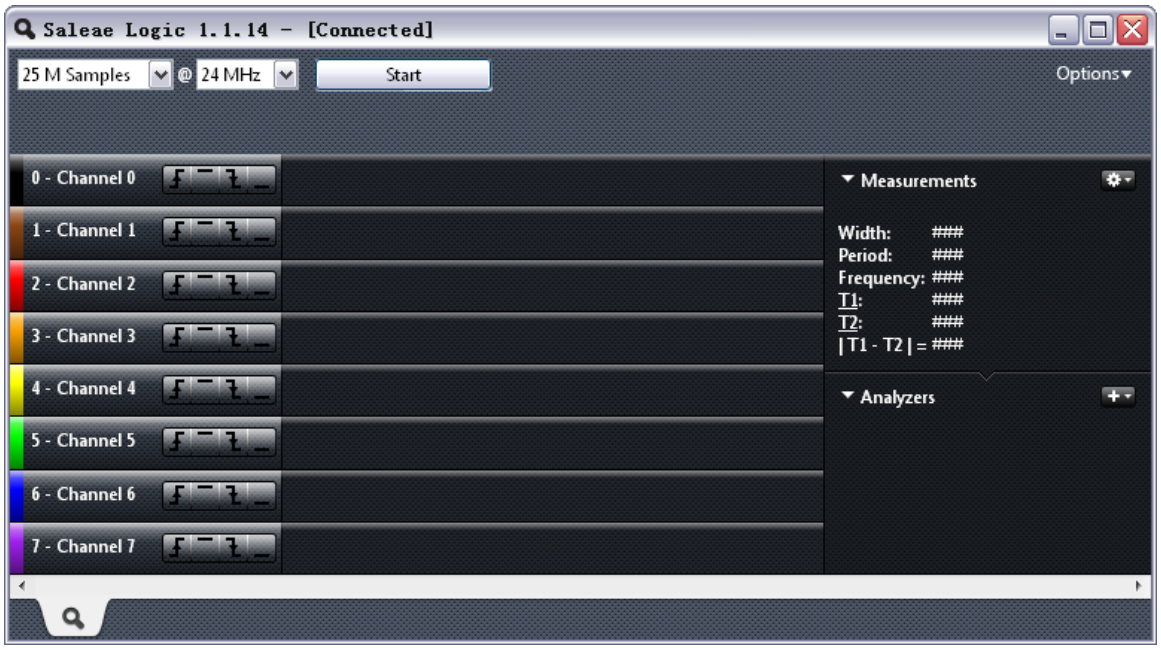


Figure 8.1 Saleae Logic interface