PC Based Oscilloscope Introduction

PC Based oscilloscope uses an USB interface to connect with the computer. The computer wave display and operation are all completed via computer. The below picture is Peregrine Technology's PC Based Oscilloscope connected with a notebook computer.

Advantages of a PC Based Oscilloscope

Compared with stand-alone oscilloscope, PC Based oscilloscopes have the following advantages:
1. Small size, easy to carry.
2. PC interface, user-friendly and convenient to edit or transmit the waveform.
3. Large PC screen so the waveforms can be seen more clearly.
4. Will not be interfered by municipal power abnormality. When interference from the municipal power is severe or there is a power shortage, the notebook pc (no external power supply) can be used to operate the PC Based oscilloscope. Because the notebook pc can supply power on its own from the batteries it will be isolated from the affects of municipal power abnormality.
5. The hardware itself does not require a screen or storage interface modules, which significantly lowers costs and reduce prices.
6. Low power consumption. The total power consumption does not exceed the maximum USB power supply capacity (2.5W). This is only one tenth of a desktop oscilloscope, and in line with the energy saving and carbon reduction trend.

Limitations of a PC Based Oscilloscope

PC Based oscilloscope only requires USB power for operation and is very convenient. However, because USB power supply is limited (5V/500 mA), the sampling rate of a PC Based oscilloscope cannot be raise without limit. Currently the highest real-time sampling rate of a USB power supplied PC Based oscilloscope, domestically or internationally, is: when using single channel, 200MS/s, when using dual Channel, 100MS/s. Although a double-headed USB cable or an external power supply can be used to improve the power supply, you will lose the convenient portability features of a PC Based oscilloscope.

The features of a Peregrine Technology PC Based Oscilloscope

Feature 1 - High Sampling Rate

Using unique soft and tough hardware design technology Peregrine has broke the sampling rate limitations of PC Based oscilloscope. The maximum real-time sampling rate of the DSO2400 is: Single channel use, 400MS/s, dual channel use, 400MS/s, which is twice that of other PC Based oscilloscope. The following table is a comparison of the DSO2400 PC Based oscilloscope sampling rate with other PC Based oscilloscopes.

Specification item	DSO2400	Other products
Single Channel sampling rate	400MS/s	200MS/s
Dual Channel sampling rate	200MS/s	100MS/s

In addition, in order to meet the demands of users that require higher sampling rates with more measurement channels, Peregrine Technology have also begun to design oscilloscope products with a sampling rate of 1GS/s with 4 Channels (requires an external power supply or dual USB cable), which will be coming out shortly.

Feature 2 – User Friendly Interface

Many PC Based oscilloscope software interfaces use traditional window design because it is the easiest to design. However, this kind of design does not comply with the oscilloscope use habit and will cause difficulties and inconvenience in operations for the user.

Peregrine Technology's oscilloscope interface and exterior design is similar to actual oscilloscope, as shown below. The interface is extremely user-friendly so the users almost do not need to read the manual to operate all the functions.
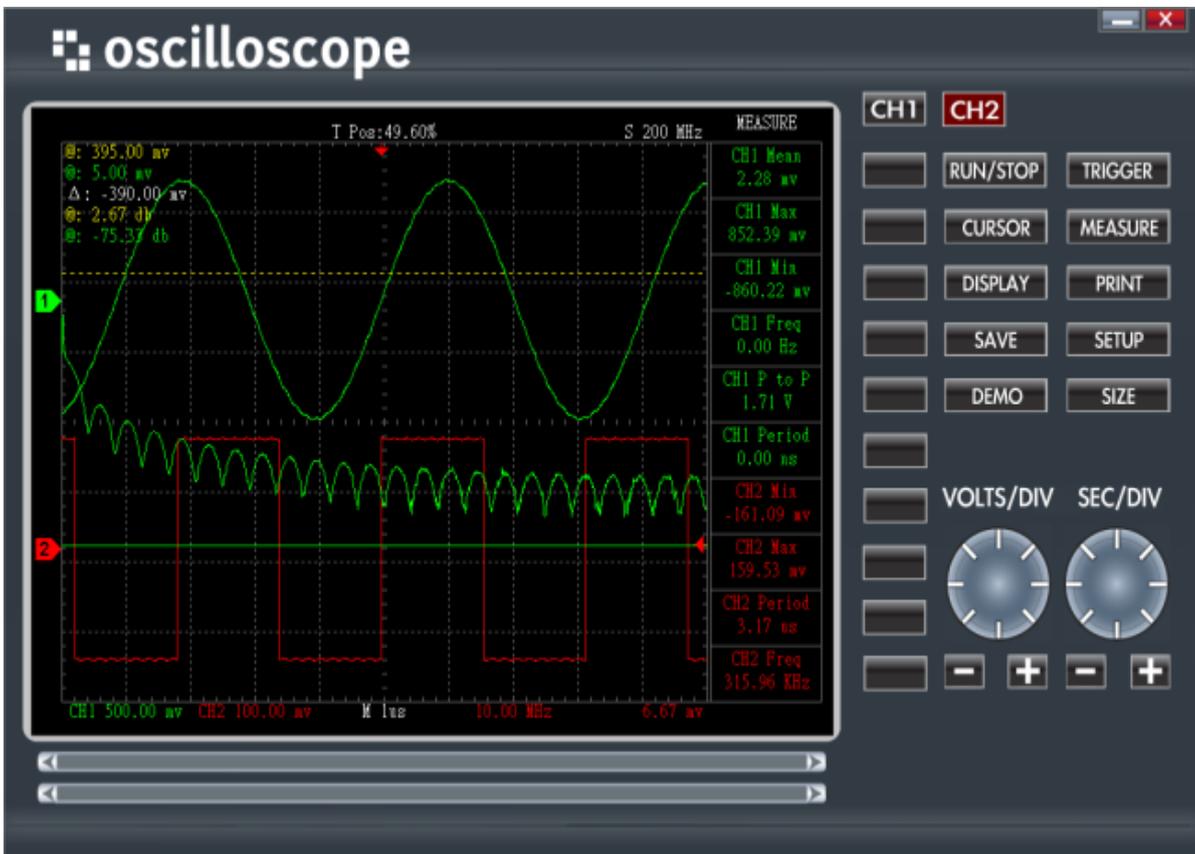
Feature 3 - Stylish Minimalist Appearance, Slim and Light

DSO2400 Series oscilloscope shell is made of black aluminum. The surface has been brush treated and the exterior is very trendy, with great texture. The size is small and light, and is convenient to carry.


The front and rear panel use laser engraving. This is not only aesthetic but will not have paint peeling problems in the future.

Features 4 - Wave Output for Matlab Matrix Data

Matlab ® is a set of powerful mathematical calculation software developed by the Math Works, Inc.

Currently Matlab is widely used both in academia and the engineering field for mathematic calculations, therefore, we have added the Matlab matrix format function to our oscilloscope software that can save (*. M) files. Select "Matlab" in the SAVE menu, as shown below.
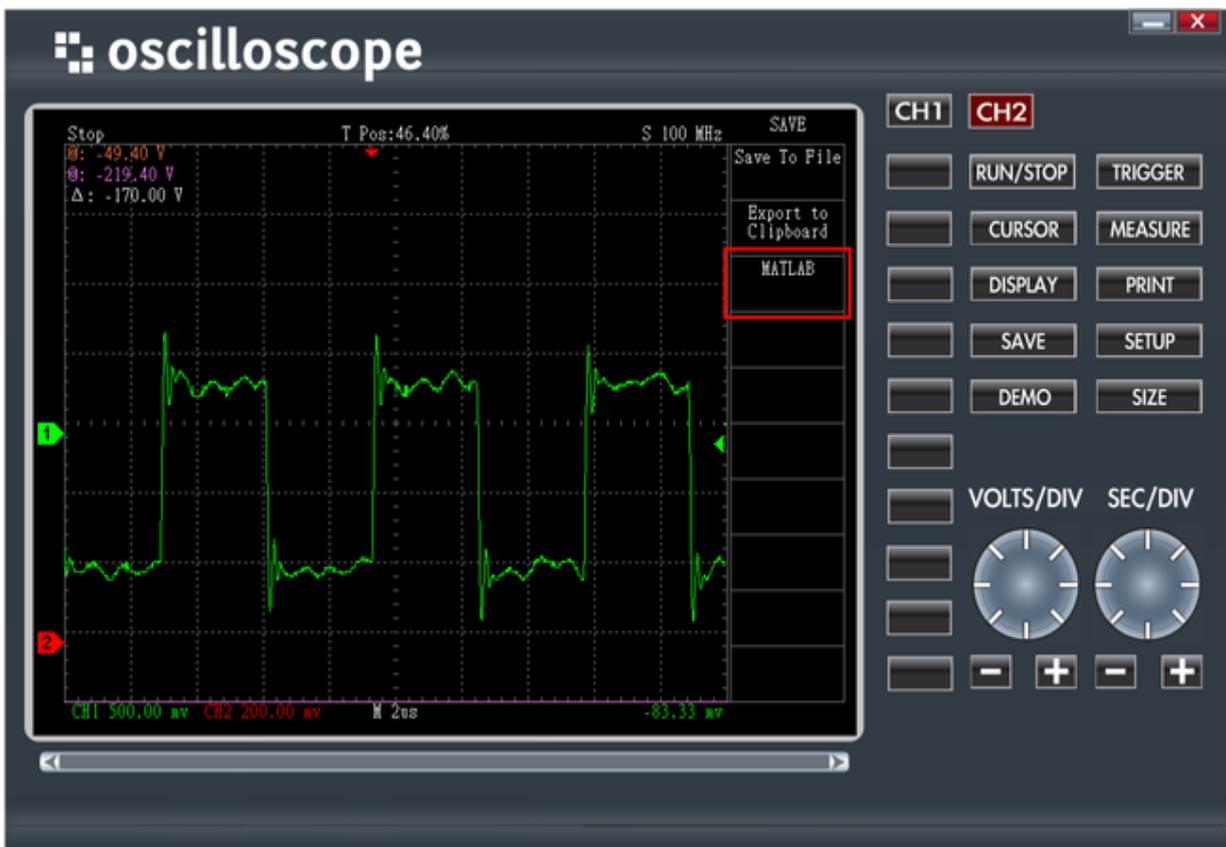
After selecting Matlab, the user can select the file name to be saved. The saved file will be in Matlab's matrix format, with one matrix for each Channel. The below figure is Matlab's file view situation.
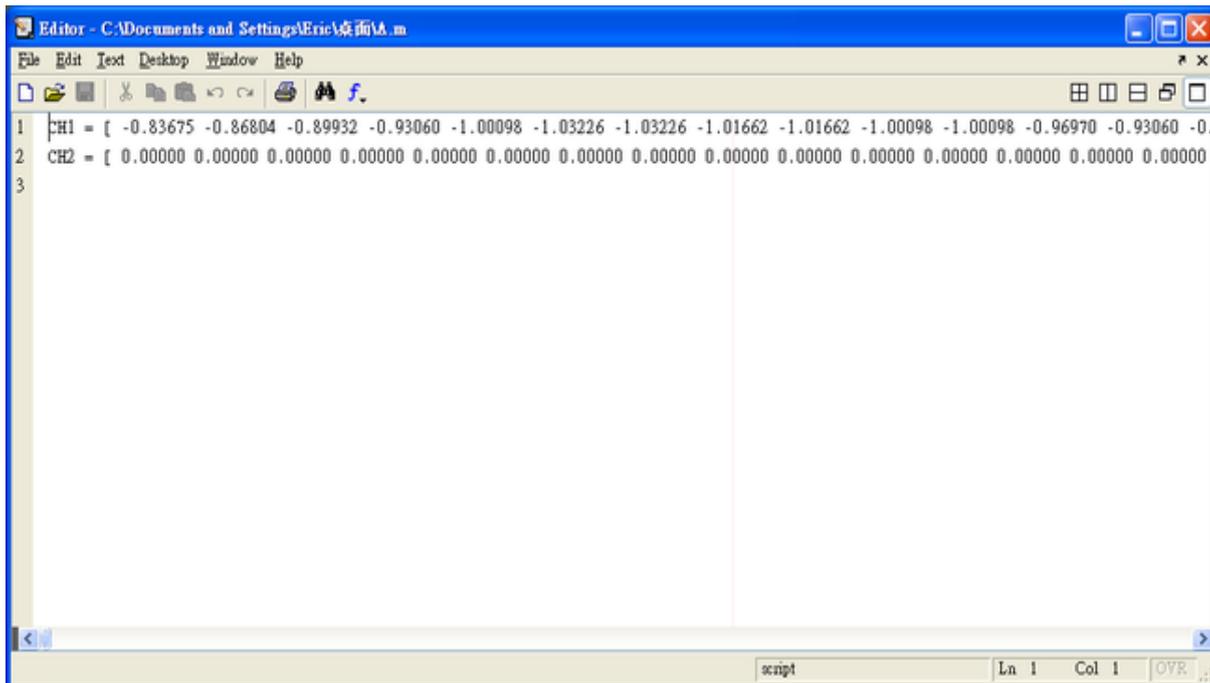
The user can calculate and process the wave matrix data according to their own needs. The below figure is using the Matlab's "plot ()" function to form a graph of the wave-matrix.

In addition to Matlab, users can also use other software design programs to read M files for signal analysis processing.
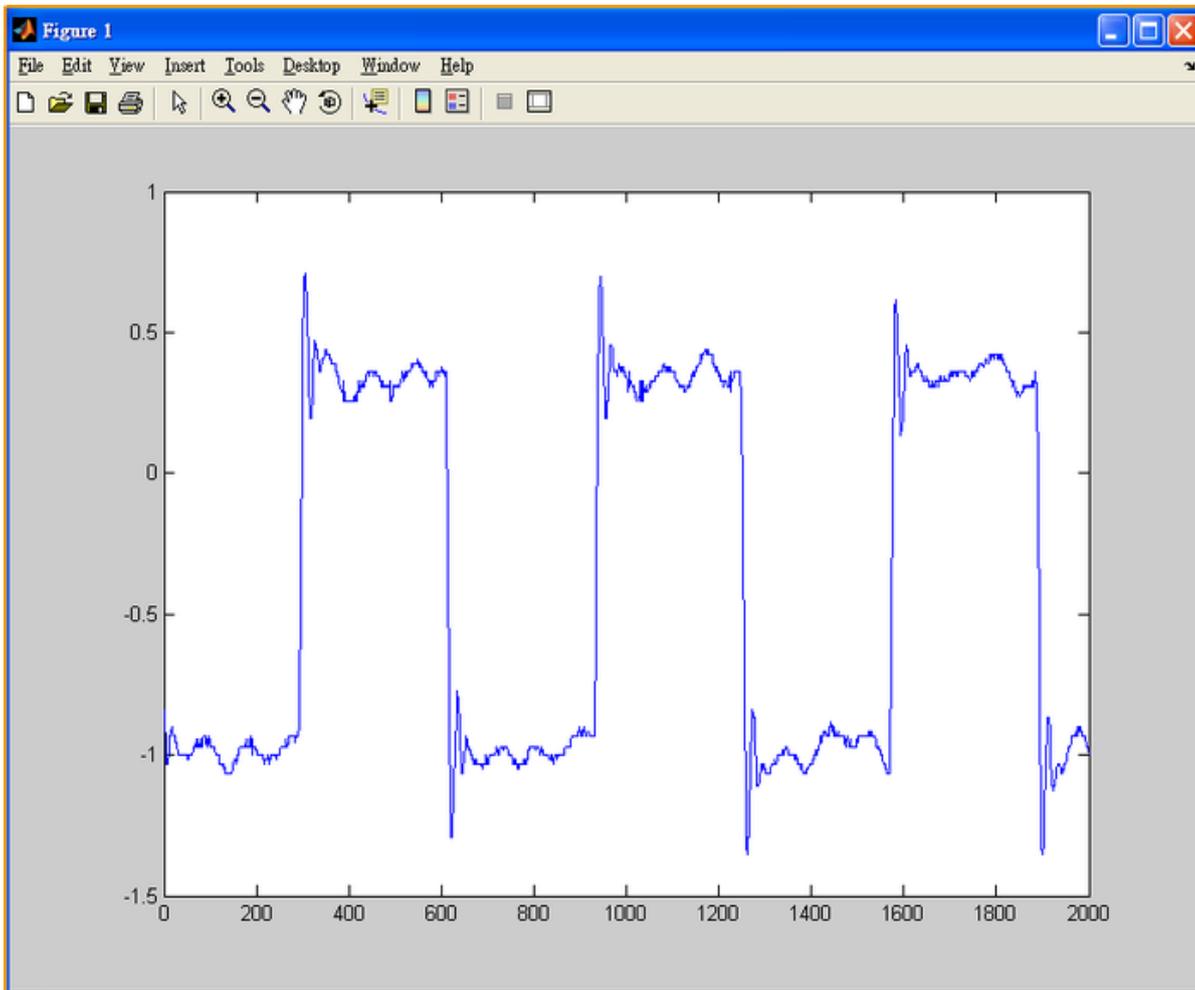
We will continue to development interfaces that is compatible with other software (such as LabVIEW, etc.), to increase the use of PC Based oscilloscope

Specification

Model	DSO-U2400	DSO-U2200
Use One Channel Sampling Rate	400MS/s	200MS/s
Use Two Channel Sampling Rate	200MS/s	100MS/s
Bandwidth	200MHz	200MHz
Channel	2	
Input Impedance	1MΩ±1% // 20pF±5%	
Max. Input Voltage	40Vpk (DC + AC peak)	
Input Coupling	AC, DC	
Vertical Resolution	8 bits / channel	
Vertical Sensitivity	2mV/DIV to 10V/DIV (as 2-5-10 step)	
Vertical Range	8 divisions	
Offset Level	±4 divisions	
Offset Increments	0.1 division	

DC Accuracy	±3%
Time Base Range	200 ms ~ 5 ns
Time Accuracy	25 ppm
Time Display Range	10 Divisions
Trigger Type	Rising, Falling, Delay-Trigger
Trigger Mode	Auto, Normal, Single
Trigger Source	CH1, CH2, Ext-Trig
Trigger Level	±4 divisions
Trigger Increments	0.1 division
Measurement	Vpp, Vmax, Vmin, Vmean, Period, Frequency
Cursor	Time difference, Voltage difference, FFT Frequency, FFT dbv
Calibration Output	3.3V, 1kHz
Accessories	100MHz probe (1x/10x) x2, Installation CD, USB2.0 cable

Accessories

DSO2400 Series oscilloscope accessories include: External box, oscilloscopes body, discs, probe x 2, USB 2.0 cable.

The product has passed CE & FCC certification. Download certificates: CE FC

Test Report

C E

(Declaration of Conformity)

for

Electromagnetic Compatibility

of

Product : **USB Oscilloscope**

Trade Name : N/A

Model Number : DSO-U2400; DSO-U2200; DSO-U2100

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The test results in the report only to the tested sample.

Test Report

FCC Part 15 Subpart B

for

Electromagnetic Interference

of

Product: **USB Oscilloscope**

Trade Name: N/A

Model Number: DSO-U2400; DSO-U2200; DSO-U2100

Prepared for

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