Super Talent Oscilloscope Spectrum Analyzer User's Manual v1.0

User's Manual

Package contains

- 1. USB Oscilloscope *1
- 2. Micro-B to USB-A cable *1
- 3. Test Probe (Red & Black) *2
- 4. User Manual *1



How to connect Oscilloscope to PC :

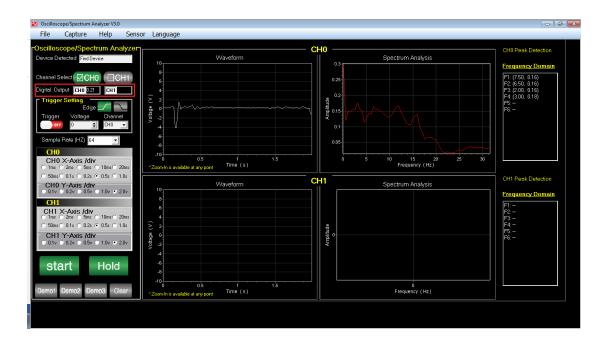


Insert Micro-B connector to Oscilloscope

Insert USB-A connector to PC

Application Program (AP)

on your computer screen



1. How to run the application program:

Right click the icon to run the program as Administrator.



2.Settings

a. Device Detect

When the device's power is turned on, the status will be changed from No

device found to Device detected

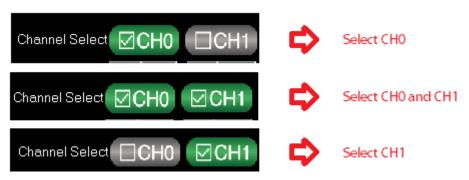


b. Channel Select

Click to select single channel (CH0 or CH1) or dual channel (CH0 and

CH1). Program will show selected channel's data value when starting

acquisition.



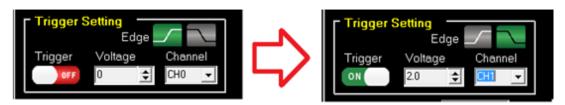
c. Trigger Settings

Trigger: Click to switch trigger on/off status.

Voltage: Set trigger voltage.

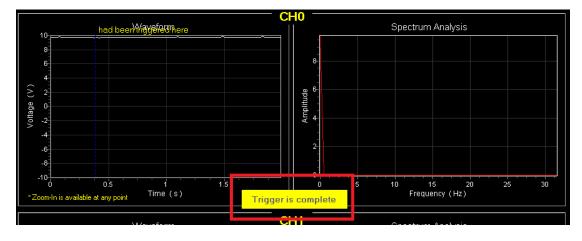
Channel: Select trigger channel.

Edge: Select trigger edge, click to switch rising/falling edge.



When the voltage is triggered, program will automatically mark the

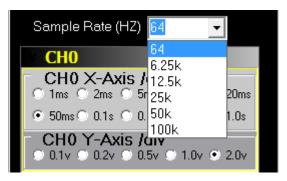
trigger location in Waveform chart.



d. Sample Rate

The selectable rates are 64, 6.25k, 12.5k, 25k, 50k and 100k. The default

value is 64Hz.

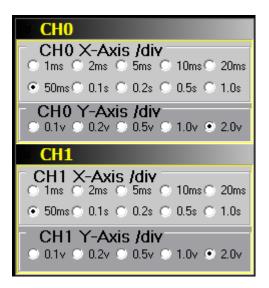


e. X-Axis /div Options And Y-Axis /div Options

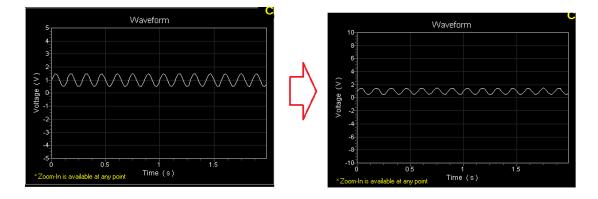
X-Axis/div: 1ms~1.0s, ten time-division options.

Y-Axis/div: 0.1V~2.0V, five voltage-division options.

You can set different division for CH0 and CH1 to display Waveform.



Example: CH0 X-Axis /div 0.5s; Y-Axis /div: 1.0v→2.0v



For better displaying the Waveform, we suggest to adjust a proper time-

division for different sample rate.

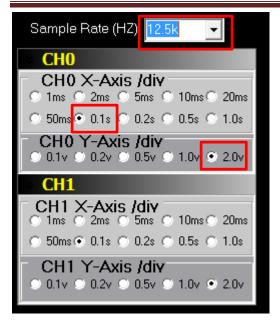
Example: For Sample rate: 12.5k, X-Axis /div sets 0.1s time-division; For

Sample rate: 100k, X-Axis /div sets 10ms time-division.

SUPER * TALENT THE BEST MEMORY

Oscilloscope Spectrum Analyzer

User's Manual



f. Start/Hold

After completing the settings, click **Start** to collect data.

Click Hold to stop data acquisition and keep it still.



g. Demo/Clear

Demo: three demos display three different fixed waveforms and

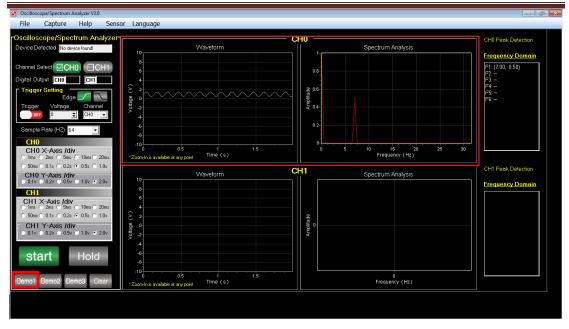
frequency spectrum, which has nothing to do with the acquisition signal.

Clear: Clear all charts' data.

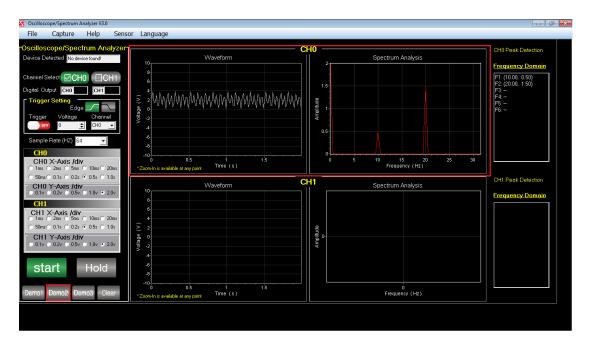


Example: Demo1 shows one Sine wave and one frequency.

SUPER * TALENT THE BEST MEMORY Oscilloscope Spectrum Analyzer User's Manual



Example: Demo2 shows two Sine wave and two frequencies.



Example: Demo3 shows three Sine wave and three frequencies.

| File Capture Help Sensor Language Oscilloscope/Spectrum Analyzer CHU CHU Peak Detection CHU | SUPER * TALENT THE BEST MEMORY Oscilloscope Spectrum Analyzer User's Manual | | | | | |
|--|---|--|--|--|--|--|
| Chilloscop/Spectrum Analyzer Device Detected No device foord Channel Select (CH0 CH1 Digital Output (BD) Edge Channel Sample Rate (H2) S4 CH0 Y-Axis /div OBY - Oxis (Div CH1 Y-Axis /div CH0 Y-Axis /div Start Hold Parel Darent Channel Channel Select (CH0 CH1 CH1 Y-Axis /div CH0 Y-Axis /div CH1 Pack Detector Fequency Domain CH1 Pack Detector Feq | S Oscilloscope/Spectrum Analyzer V3.0 | | | | | |
| Device Detected No device found Channel Select CH CHI Trigger Solting Channel Select CHI Trigger Solting Channel Select CHI Trigger Solting CHO CHO CHO Smart Hold Start Hold Device Device Devic | File Capture Help Sens | or Language | | | | |
| Channel Guptur Channel Cuptur Channel | Oscilloscope/Spectrum Analyzer Device Detected No device found | 10 Waveform Spectrum Analysis | Frequency Domain | | | |
| CH1 Some 0 10 0 20 0 5 0 10 0 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Digital Output CH0 CH1 Tigger Sotting Edge Channel Tigger Voltage Channel Tigger Sotting CH0 Sources | (v) setters (v) | F2: (10.00, 1.50) F3: (15.00, 2.00) | | | |
| CH1 CH1 <td>CH0 X-Axis /div 1ms 2ms 5ms 10ms 20ms 50ms 0.1s 0.2s 0.5s 1.0s CH0 Y-Axis /div</td> <td>0 0 1 0 5 10 15 20 25 30 *Zoominia availade at any point Time (\$) Frequency (Hz) Frequency (Hz) Vaveform CH1 Spectrum Analysis</td> <td></td> | CH0 X-Axis /div 1ms 2ms 5ms 10ms 20ms 50ms 0.1s 0.2s 0.5s 1.0s CH0 Y-Axis /div | 0 0 1 0 5 10 15 20 25 30 *Zoominia availade at any point Time (\$) Frequency (Hz) Frequency (Hz) Vaveform CH1 Spectrum Analysis | | | | |
| | CH1 X-Axis /div Cmms 2mms 5mms 10mms 20mms S5mms 0.15 0.24 0.55 1.0s CH1 Y-Axis /div 0.1v 0.2v 0.5v 1.0v 0.1v 0.2v 0.5v 1.0v 2.0v | x volitage (x) x x x <t< td=""><td>rrquency Domain</td></t<> | rrquency Domain | | | |
| | Demo1 Demo2 Demo3 Clear | 0 0.5 1 1.5 0 | | | | |

3. Display

a. Digital Output

This Function shows the newest Digital Output voltage.

| Cocilloscope/Spectrum Analyzer V3.0 | | | |
|--|--|--------------------------------------|--|
| File Capture Help Sensor | Language | | |
| Oscilloscope/Spectrum Analyzer | | H0 | CHI Pesk Detection |
| Device Detected Itela and | Waveform | Spectrum Analysis | |
| | | 0.4 | Frequency Domain |
| Charvel Select CH0 CH1 | 6 | 0.06 | P1:- P2- |
| Digital Output CHB 0.43 CHI | 4 | 63 | <u>p</u> - |
| Trigger Setting | 8 0 | 8 026 10 02 | F1 - F2 - F3 - F4 - F5 - F8 - |
| Trigger Voltage Channel | | | P& - |
| 0 1 00 - | 4 | © 015 | |
| Sample Rote (H2) 64 + | 4 | 0.05 | |
| 010 | 4 | | |
| CH0 X-Axis /div | 0 05 1 15 200m/h is available at any point Time (s) | 0 5 10 15 20 25 30 Frequency (Hz) | |
| C 50m C 01s (* 0.5s C 1.0s | Connect summer a statue | | |
| CH0 Y-Axis Miv | * Fight Country | H1 Spectrum Analysis | OH1 Peak Detection |
| 01v 02v 05v 10v 20v | 10 | | Frequency Domain |
| CHI CHI | 6 | | P1 - P2 - P3 - P4 - P5 - P6 - |
| CH1 X-Axis /div C 1ee C 2ee C 5ee C 10ee C 20ee | 4 | | F2 - |
| | | 5 | F4 |
| CH1 Y-Axis /div 01v 02v 05v 10v 20v | 5 C | Ampilitude 0 | Pé - |
| 101V 02V 03V 11W 20V | | * | |
| otort Uold | 8 | | |
| start Hold | | | |
| | .10 | | |
| Demo1 Demo2 Demo3 Clear | "Zoon-In is available at any point Time (s.) | Frequency (Hz) | |
| | | | |
| | | | |

Example:

Digital Output CH0 9.73 CH1

b. Waveform and Spectrum Analysis

Waveform: This function shows the trend of Voltage (v) over Time (s).

Spectrum Analysis: This function shows the trend of Amplitude over

Frequency (Hz).

Example:

| Scilloscope/Spectrum Analyzer V3.0 | | | |
|---|--|--------------------------------------|--|
| File Capture Help Sense | or Language | | |
| Oscilloscope/Spectrum Analyzer | | СНО | CH0 Peak Detection |
| Device Detected Find Device | Waveform 10. | Spectrum Analysis | Frequency Domain |
| Channel Select CH0 CH1 | 6 | 0.35 | F1:- |
| Digital Output CH0 0.43 CH1 | ~ ⁴ | 0.3 | F2:- F3:- F4:- |
| Trigger Setting Edge Channel | (V) ageanov 2 0 0 4 - | 0.25 0.25 0.15 0.15 | гч. – F5. – F6: – |
| Sample Rate (HZ) 64 | -6 -8 -10 | | |
| CH0 X-Axis /div 0 1ms 0 2ms 0 5ms 0 10ms 0 20ms | 0 0.5 1 1.5 *Zoom-In is available at any point Time (s) | 0 5 10 15 20 25 30 Frequency (Hz) | |
| C 50ms C 0.1s ● 0.5s C 1.0s CH0 Y-Axis /div C 0.1v C 0.2v C 0.5v C 1.0v ● 2.0v | 10 | CH1 Spectrum Analysis | CH1 Peak Detection Frequency Domain |
| CH1 CH1 X-Axis /div C 1ms C 2ms C 5ms C 10ms C 20ms C 50ms C 0.1s C 0.2s C 0.5s C 1.0s | 8 6 4 4 (5) 2 | 8 | F1:- F2:- F3:- F4:- F5:- F6:- |
| CH1 Y-Axis /div 0 01v 0 02v 0 05v 0 1.0v • 2.0v | V018ge(V) | Arrahlude 0 | 1951 - F61 - |
| start Hold | -6 -8 -10 | | |
| Demo1 Demo2 Demo3 Clear | 0 0.5 1 1.5 *Zoom-In is available at any point Time (s) | 0 Frequency (Hz) | |
| | | | |

You can Zoom-In or Restore chart to observe all charts in detail or in

general.

Left-click and drag the mouse in the chart from upper left to lower right

to zoom-in to observe in detail and from **upper right to lower left** to

restore the chart.

Example:

<section-header>



Restore

c. Peak Detection

Frequency Domain: shows high peak **Amplitude** in Right **Spectrum**

Analysis chart in X-Axis and Y-Axis.

m Analyzer V3.0 Sensor Language Help Wavefi Spectrum Analysis 0.35 0.3 ap 0.25 0.2 € 0.15 0.1 0.05 15 2 Frequency (Hz) CH0 X-Axis /div CH1 Waveform CH0 Y-Axis /div CH1 CH1 X-Axis /div CH1 Y-Axis /div start Hold 0.5 at any point 0 Frequency (Hz) 1 Time (s)

Example:

4. Start the Voltage Analysis

a. After running the program as Administrator, finish all the parameter

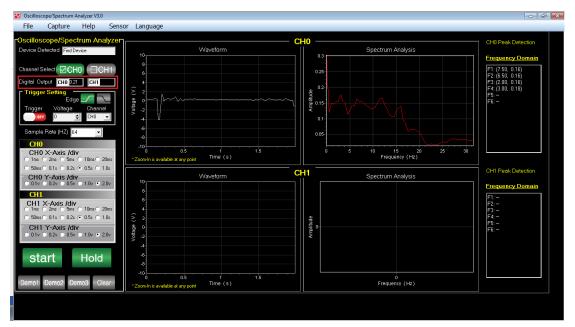
settings. The most important part is to make sure that the detected

device has been inserted and turned on power.

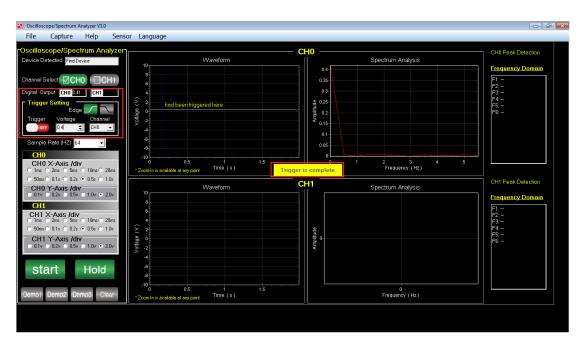
b. Then click Start to run the acquisition, this program will keep running

until clicking Hold or meeting the Trigger.

Example:



Or

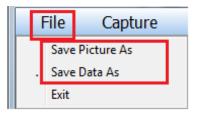


5.Menu Bar

a.File

You can select to reserve these data as picture or text by clicking File on

Menu bar.



Click Save Picture As/ Save Data As, then enter file name and select the

path, then save as picture/text.

| Save Picture A | S | | × |
|----------------|---|------------------|-------------|
| Save in: | Documents 🗨 | ← 🗈 💣 📰 ▾ | |
| œ | Name | Date modified | Туре |
| Recent Places | 🐌 Adobe Scripts | 2022/9/8 9:46 | File folder |
| Necenii Haces | AdobeGCData | 2023/2/28 14:36 | File folder |
| | afterSentDocuments | 2022/4/16 1:24 | File folder |
| Desktop | afterSentDocuments | 2022/4/16 1:24 | File folder |
| Æa | Custom Office Templates | 2022/4/30 14:25 | File folder |
| 6 3 | 🐌 Edraw | 2021/12/16 16:12 | File folder |
| Libraries | 🐌 Edrawsoft | 2021/12/15 13:10 | File folder |
| | FormatFactory | 2022/9/1 13:27 | File folder |
| | 퉬 Outlook Files | 2022/4/22 9:34 | File folder |
| Computer | Shared Virtual Machines | 2019/10/25 4:50 | File folder |
| | \mu smi | 2019/10/30 0:52 | File folder |
| Network | | | |
| | ٠ III | | • |
| | | | |
| | File name: | · | Save |
| | Save as type: Portable Network Graphics (*.png) | • | Cancel |
| | | | /// |

b.Capture

If you want to Edit Capture or Save Capture, you can just click Capture

on Menu Bar.

User's Manual

Capture Help Edit Capture Save Capture

Edit Capture: make capture clearer to read.

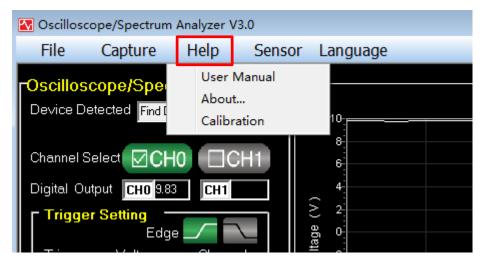
| Screen Capture | |
|---|-----------------------------------|
| File Edit | |
| | blor |
| Oscilloscope/Spectrum Analyzer | |
| Device Detected Find Device | Wavef |
| | 8 |
| Channel Select CH0 CH1 | 6 |
| Digital Output CH0 CH1 | 4 |
| Trigger Setting | 2 had been triggered her |
| Edge <u>/</u> Trigger Voltage Channel | had been triggered her |
| | □ -2 > -2 -4 |
| | -4 |
| Sample Bate (HZ) 64 | |
| Click Line, | Rectangle and Ellipse. |
| | |
| Click 🐓 to Erase the editions. | |
| | |
| | |
| Click Size to set the Size of drawing | g lines, rectangles and ellipses. |
| | |
| Click <u>Color</u> to select a Color of lines, | rectangles, ellipses and text. |
| Click | adjust Font Size. |
| Click to Undo or Redo the | e edition. |

Save Capture:

Please refer to Save Picture as.

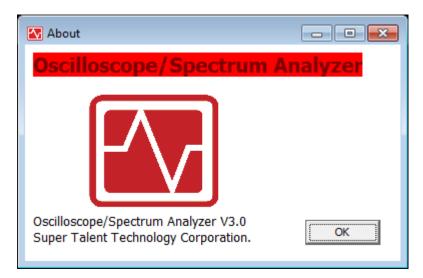
c. Help

You can click **Help** on **Menu Bar** to get more help.



User Manual: Click it to get instruction for this program.

About: Click to pop up below window.



Calibration: This is a function to adjust the imprecise Digital Output.

User's Manual

| Calibration | - • × |
|----------------------------------|-------|
| CH0 Input Voltage Output Voltage | Set |

*Input Voltage: the true voltage that provided.

*Output Voltage: the imprecise digital voltage that program displays in

Digital Output.

We need to adjust the Output Voltage value, and click Set, then

Calibration Complete window pops up, click OK.

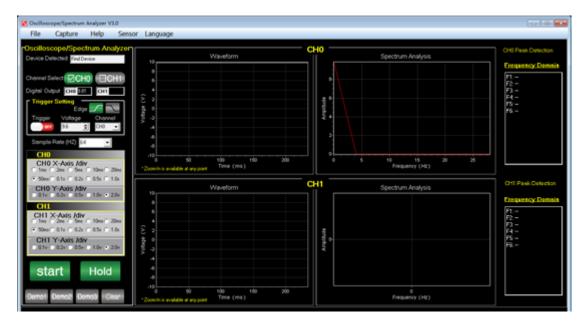
Example:

Without calibration

The stable **OV** input voltage shows as **-0.19V**.



The stable **10V** input voltage shows as **9.81V**.



Set calibration as below capture:

Click Help, select Calibration, and set Output Voltage.

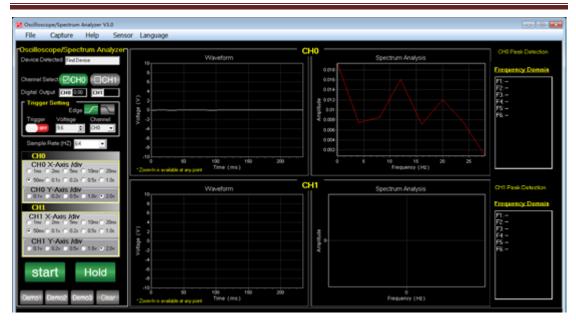
0v→-0.19v; 10v→9.81v.

Then click Set and OK.

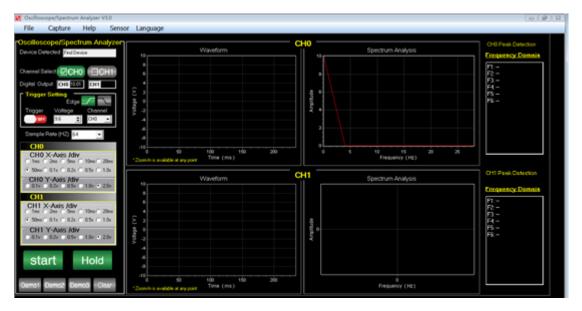
| 점 Calibratio | on | | |
|--------------|---------------|-------------------|-------|
| CH0- | Input Voltage | Output Voltage | |
| | 10 | 9.81 | Set |
| CH1- | Input Voltage | Output Voltage | |
| | | | |
| | | | |
| 🛃 Calibratio | on | | |
| СН0- | Input Voltage | Output Veltage | |
| | | Output voitage | |
| | 0 | Output Voltage | |
| | | -0.19 9.81 DAQ | |
| -CH1- | 0 | -0.19 | lete! |

With calibration

The stable **OV** input voltage shows as **-0.00V**.



The stable **10V** input voltage shows as **10.01V**.



d.Sensor



Distance Sensor: open distance sensor to measure the distance between

object and the sensor. Click Start to run this sensor. If it shows out of

| | W | ′aveform | | | |
|--|-----------------------|----------|-------|-----|----|
| 36, | | | | | |
| 35 | | | | | |
| - | | | | | |
| 34 | | | | | |
| 33- | | | | | |
| Ê 32 | | | | | |
| Ē 31 | | | | | |
| (mm) 32 31 29 29 28 | | | | | |
| | | | | | |
| 29- 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 - 121 | | | | | |
| ä 28- | | | | | |
| 27- | | | | | |
| 26 | | | | | |
| 25 | | | | | |
| - | | | | | |
| 24-1 | | ó | | | |
| × 7 | | Time (s |) | | |
| "Zoom-In is a | vailable at any point | | | | |
| | | | | | |
| | | F | 2 | | 1 |
| Distance(mm): | out of range | | Start | Sto | op |

range, it means that the distance is more far than your sensor's limit.

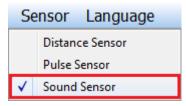
Pulse Sensor: open pulse sensor to measure heart rate. After you

connect the heart beats sensor, it will show the **Frequency** (bpm).

User's Manual



Sound Sensor: open sound sensor to capture sound on Waveform chart.



e.Language

For different display language system, this program can automatically

change its Language.

Or you can click Language, select Chinese or English, and then display

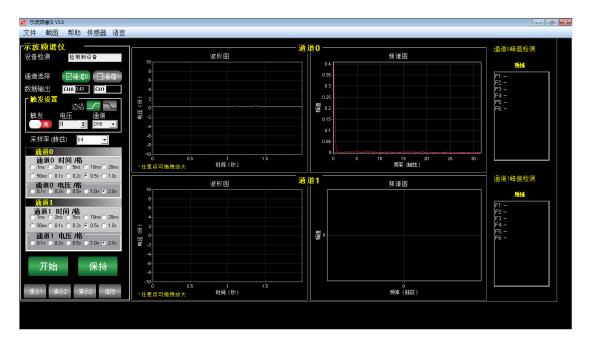
language changed.

| ensor | Language | | | |
|-------|----------|---------|--|--|
| | | Chinese | | |
| | | English | | |

Example: English.

| Oscilloscope/Spectrum Analyzer V3.0 | | | |
|---|---|---|--------------------|
| File Help Sense | or Language | | |
| Oscilloscope/Spectrum Analyzer | (| H0 | CH0 Peak Detection |
| Device Detected Find Device | Waveform | Spectrum Analysis | |
| | 10 8 | | Frequency Domain |
| Channel Select CH0 | 6 | | |
| Digital Output CH0 CH1 | 4 | | |
| Trigger Setting Edge | | the second se | |
| Trigger Voltage Channel | No of table (V) | A mg/ude | |
| OFF 0 🜩 CHO 🗸 | > _4 | | |
| Sample Rate (HZ) 64 🗸 | -6 | | |
| CH0 | -8 | | |
| CH0 X-Axis /div | -10 0 0.5 1 1.5 | 0 Frequency (Hz) | |
| C 1ms C 2ms C 5ms C 10ms C 20ms C 50ms C 0.1s C 0.2s € 0.5s C 1.0s | 2.000 mm is available at any point | | |
| CH0 Y-Axis /div | VV3VEIUTTI | H1 Spectrum Analysis | CH1 Peak Detection |
| © 0.1v © 0.2v © 0.5v © 1.0v © 2.0v | 10. s | | Frequency Domain |
| CH1 | 6 | | |
| CH1 X-Axis /div C1ms C 2ms C 5ms C 10ms C 20ms | 4 | | |
| C 50ms C 0.1s C 0.2s € 0.5s C 1.0s | | the second se | |
| CH1 Y-Axis /div ○ 0.1v ○ 0.2v ○ 0.5v ○ 1.0v ○ 2.0v | No of table (V) | Amplitude | |
| | -4 | | |
| start Hold | .6 | | |
| otor t | -10 | | |
| Demo1 Demo2 Demo3 Clear | | 0 Frequency (Hz) | |
| Donice Donice - Cicui | *Zoom-In is available at any point Time (s) | | |
| | | | |
| | | | |

Example: Chinese.



User's Manual

FOR MORE INFORMATION

For Technical Support:

If additional support is needed, please visit the Super Talent Web site at www.supertalent.com for spec.

For More Information or Further Technical Support Please Contact:

Super Talent Technology 2077 North Capitol Avenue San Jose, CA 95132 USA Tel: +1 (408) 934-2560 Support: Support@supertalent.com Sales: Sales@supertalent.com OEM Sales: OEMSales@supertalent.com