QUICK START GUIDE (REV. 4)
WAVE2 OSCILLOSCOPE

Basic Operations

CONTROL

Multi-function buttons F1 through F4

Adjustment (Adj.) Dial

CH1 (Y) signal input

Test signal terminal

CH2 (X) signal input

Auxiliary port

ON   OFF

Battery Switch

Power supply input (USB)

POWER ON / OFF

To Power ON   Press the Adjustment Dial.

To Power OFF   Press and Hold the Adj. Dial for 2 seconds, or press the Adj. Dial to bring up Menu and select "PWR OFF".

BATTERY SWITCH

When battery is installed, set the battery switch to ON position. Toggle between OFF and ON positions to hard-reset the WAVE2 when battery powered.

PCB REVISION   109-15800-00J OR LATER
FIRMWARE VERSION   113-15801-091 OR LATER

AUXILIARY PORT PINOUT

Function generator signal B (output)
Serial port signal RX1 (input)
GND
GND
+3.3V (power)

2   14
1   13

VRAW
Serial port signal TX1 (output)
Function generator signal A (output)
Trigout (output)
BOOT 0
BOOT 1
External trigger signal (input) (0 - 10V level range)

*Trigout is a 3.3V negative going pulses that marks the moment of trigger. The low level width varies depending on timebase setting.

WHAT'S INCLUDED
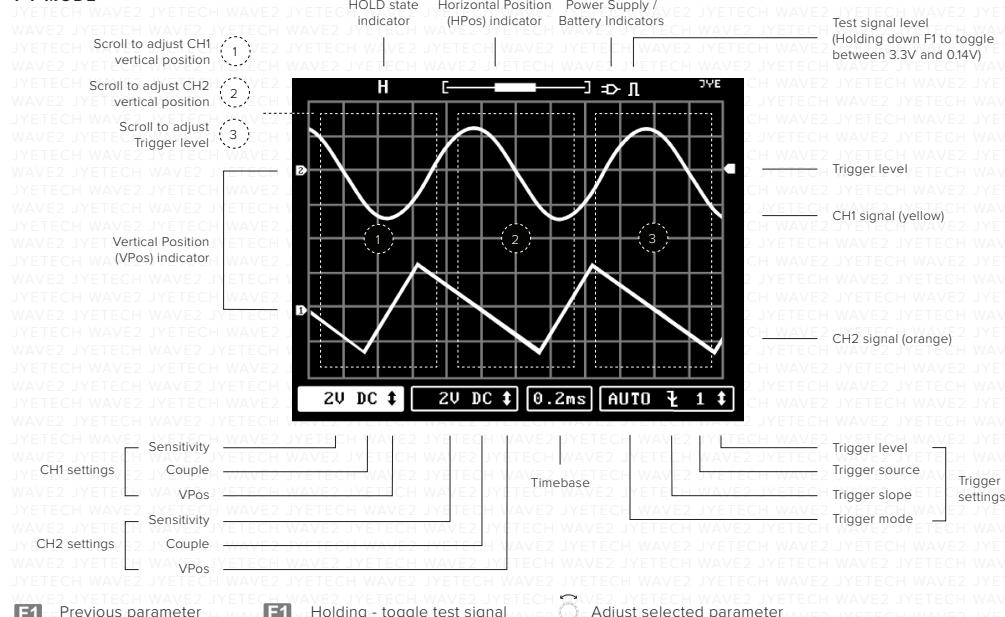
1   WAVE2 Dual Channel Oscilloscope
2   BNC Probes (x2)
3   USB Power Cable
4   Quick Start Guide
5   Assembly Guide *(included with 15801K only)*

MAIN MENU

Menu

ClrOffset	Sig. Gen	Y-T
Measure	Auto Off	Y-X
Send Data	STB: Roll	
Default	Pers. ON	
WF Memory		Info

| ESC | REBOOT | PWR OFF |

Press the Adj. Dial at any time to enter the main menu.

ClrOffset	Align Vertical Position (VPos) indicators to 0V	F1 Previous
Measure	Enter measurement selection menu	F2 Next
Send Data*	Send captured data via serial port	F3 Exit
Default	Restore factory default settings	F4 Select
WF Memory	Enter waveform save/recall menu	
Sig. Gen	Enter Signal Generator mode	
Auto Off	Enter Auto Power-Off menu	
Y-T / Y-X	Enter Y-T / Y-X plotting mode	Prev/Next
Info	Display WAVE2 firmware details	
STB	Toggle Slow Time Base (50ms/div or slower) mode between ROLL / SCAN	Select
Pers.	Toggle trace persistence ON / OFF	
ESC	Exit Menu	
REBOOT	Reboot	
PWR OFF	Power off	

*COM Port Settings: Data Bits: 8, Parity: None, Stop Bits: 1, Baud Rate: 115200 bps

MEASUREMENTS

Measurements

Ch1

| Vmax | Vmin | Vavr | Vpp | Vrms |
| Freq | Cycl | Duty | | 10x |

Ch2

| Vmax | Vmin | Vavr | Vpp | Vrms |
| Freq | Cycl | Duty | | 10x |

| ESC |

Select the waveform parameters to be displayed on screen.

Vmax	Maximum voltage of signal	F1 Previous
Vmin	Minimum voltage of signal	F2 Next
Vavr	Average voltage of signal	F3 Exit
Vpp	Peak-to-Peak voltage of signal	F4 Select
Vrms	Root-Mean-Squared (RMS) voltage of signal	
Freq	Most prominent Frequency of signal	
Cycl	Most prominent Wavelength of signal	
Duty	Most prominent Duty Cycle of signal	Prev/Next
10x	Select to auto-correct signal when 10x probe is used	Select
ESC	Return to main menu	

WAVEFORM MEMORY

Save/Recall waveform

| Mem 1 |
| Mem 2 |
| Mem 3 |
| Mem 4 |

| ESC | Save | Load |

Select the memory for waveform to be saved or loaded.

Mem 1 - 4	Memory blocks 1 through 4	F1 Previous
ESC	Return to main menu	F2 Next
Save	Save the last displayed waveform to selected memory and return to the state before entering main menu	F3 Exit
		F4 Select
Load	Load waveform from selected memory. The loaded waveform is displayed in HOLD state	Prev/Next
		Select

AUTO POWER-OFF TIME *(only enabled when the WAVE2 is running on battery and not connected to external power)*

Auto Power-off Time

005 min

| 5min | 15min | 30min | 45min |
| 1 hr | 2 hrs | User | Never |

| ESC | OK |

Select the Auto Power-Off time when the oscilloscope will turn off during periods of inactivity.

User	Customize auto power-off time	F1 Previous
Never	Disable auto power-off	F2 Next
ESC	Return to main menu without saving	F3 Exit
OK	Confirm and exit	F4 Select
		Prev/Next, Adjust time (User mode)
		Select

Plotting Modes

Y-T MODE

HOLD state indicator
Horizontal Position (HPos) indicator
Power Supply / Battery Indicators

Scroll to adjust CH1 vertical position — 1
Scroll to adjust CH2 vertical position — 2
Scroll to adjust Trigger level — 3

Test signal level (Holding down F1 to toggle between 3.3V and 0.14V)

Vertical Position (VPos) indicator

Trigger level
CH1 signal (yellow)
CH2 signal (orange)

CH1 settings — Sensitivity / Couple / VPos
CH2 settings — Sensitivity / Couple / VPos

Timebase

Trigger level
Trigger source
Trigger slope
Trigger mode

Trigger settings

F1 Previous parameter
F2 Next parameter
F3 Next sub-menu parameter
F4 Hold/release functionality

F1 Holding - toggle test signal amplitude between 0.14V/3.3V
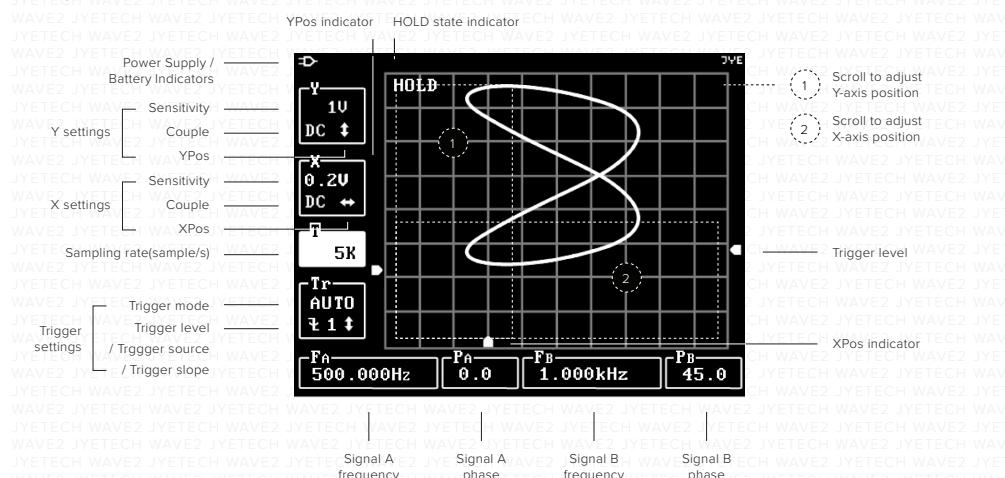**F2** Holding - center horizontal position
F3 Holding - center trigger level
F4 Holding - erase traces

Adjust selected parameter
Main menu

To adjust the Horizontal Position (HPos), either highlight the HPos Indicator and use the Adj. Dial to change the Horizontal Position, or scroll horizontally on the screen until desired position.

Y-X MODE

YPos indicator
HOLD state indicator

Power Supply / Battery Indicators

Y settings — Sensitivity / Couple / YPos
X settings — Sensitivity / Couple / XPos

Sampling rate(sample/s)

Trigger settings — Trigger mode / Trigger level / Trgger source / Trigger slope

Scroll to adjust Y-axis position — 1
Scroll to adjust X-axis position — 2

Trigger level

XPos indicator

Signal A frequency
Signal A phase
Signal B frequency
Signal B phase

F1 Previous parameter
F2 Next parameter
F3 Next sub-menu parameter
F4 Hold/release functionality

Adjust selected parameter
Main menu

To adjust the Trigger levels when trigger sources are CH2 (X) or CH1 (Y), scroll to adjust the X-axis or Y-axis positions, respectively.

Signal Generator Mode

The top Signal Plotting section controls are the same as those in Y-T Mode

Plotting Area / Parameters

Signal Parameters

SIGNAL PARAMETERS

Freq	Frequency/cycle
Vpk	Amplitude (peak value)
Ofs	Offset
Duty	Waveform Duty Cycle
Phase	Phase in Degrees
WF	Choose Waveform
	- Sine
	- Square
	- Sawtooth
	- Stair
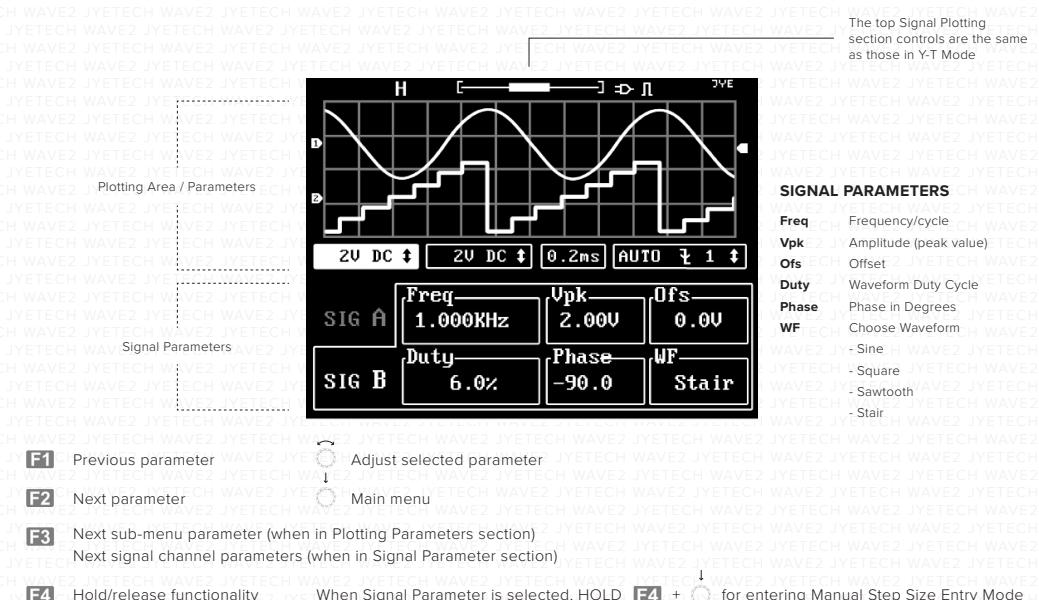
F1 Previous parameter
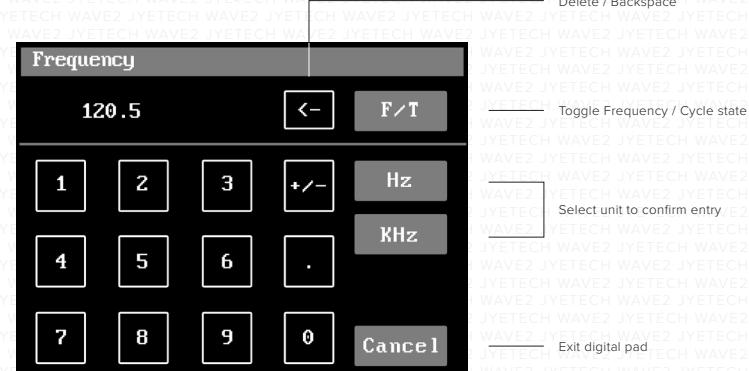**F2** Next parameter
F3 Next sub-menu parameter (when in Plotting Parameters section)
Next signal channel parameters (when in Signal Parameter section)
F4 Hold/release functionality

Adjust selected parameter
Main menu

When Signal Parameter is selected, HOLD **F4** + for entering Manual Step Size Entry Mode

MANUAL ENTRY OPERATIONS (Example shown is for Frequency)

Value entered

Values can also be entered via the buttons without using the touch screen.

Delete / Backspace
Toggle Frequency / Cycle state
Select unit to confirm entry
Exit digital pad

Touch Screen Calibration

1. Press the Dial to power up the unit, followed by "F3" when the WAVE2 splash screen appears.

2. During the calibration process, three white crosses will be displayed sequentially. Touch the center of each cross 8 times to calibrate the screen.

3. Once the calibration process is complete, a green cross will appear on the screen and it will follow any subsequent touches on the screen to test the calibration results.

4. Press the Dial to exit the calibration state and reboot the WAVE2 oscilloscope.

Uart-USB Converter

The PCB 109-15800-00M has built-in Uart-USB converter (CH340N). The driver for this converter is available on the Support > Drivers and Tools page on jyetech.com.