

VANTAGE[®] Ultra

Quick Start Guide

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IMPORTANT:

Before operating or maintaining this unit, please read this manual carefully paying extra attention to the safety warnings and precautions.

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Getting Started

To begin operating your Vantage Ultra diagnostic tool:

1. Install the battery pack (provided) into the Vantage Ultra.
2. Connect the AC/DC power supply to the Vantage Ultra unit to charge the battery pack.
3. Power on the diagnostic tool.

Battery Pack Installation

Use the following procedure to install the battery pack.



To install the battery pack:

1. Loosen the two captive screws that secure the battery cover to the back of the unit.

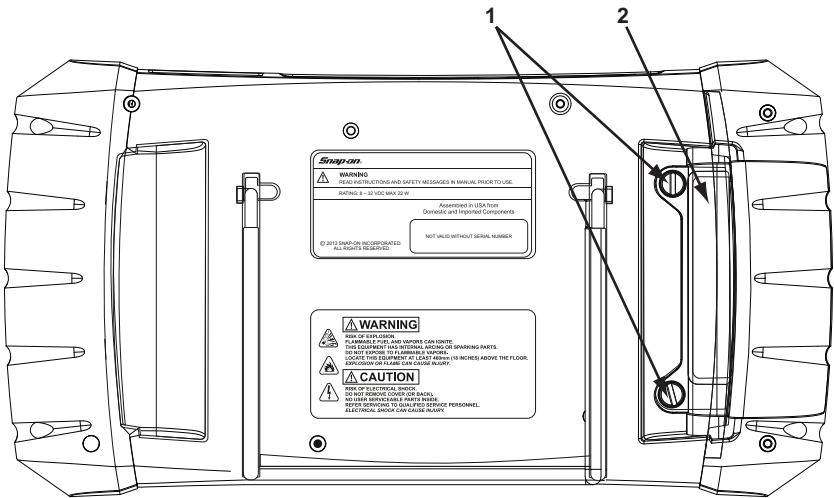


Figure 1-1 Battery pack

- 1— Captive Screws
- 2— Battery Cover

2. Pull up on the inner edge of the battery compartment cover to release it, pivot the cover into an upright position, then lift the battery cover off of the housing.
3. Align the tabs on the battery compartment with the slots on the battery, then fit the battery into the housing.
4. Slide the battery up to engage the electrical contacts, the battery snaps into place as it seats.
5. Align the hinges on the battery cover with the tabs on the outer edge of the housing, then pivot the cover down into position on the housing.
6. Snug up the captive screws to hold the cover in place.
Do not overtighten the screws!

Power Supply Connection

Use the following procedure to connect the power supply.



To connect the AC/DC power supply:

1. Insert the power cord of the AC/DC power supply into a service outlet.
2. Fit the power supply cable jack into the DC port (marked 10-30V) on the top of the Vantage Ultra unit.

An LED alongside the DC port illuminates to indicate power is being supplied and the battery is charging.

Powering on the Vantage Ultra

The Vantage Ultra automatically powers on and opens to the Home screen when ever it is connected to a power source. Use the power button on the front of the unit to power off, and to power on the unit from the internal battery pack.



Figure 1-2 Power button

Controls and Connections

Controls

The external controls on the Vantage Ultra are simplified since most operations are controlled through the touch screen. Touch screen navigation is menu driven, which allows you to quickly locate the needed test, procedure, or data through a series of choices and questions.

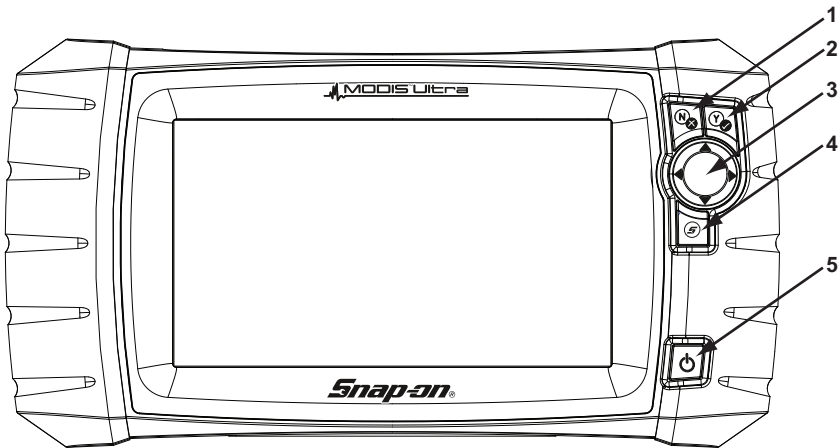


Figure 2-1 Controls

- 1— N/x Key**—exits a menu or program, returns to the previous screen, or answers no to a question on the screen.
- 2— Y/✓ Key**—selects a menu or program, advances to the next screen, or answers yes to a question on the screen.
- 3— Directional Key**—moves the highlight on the display screen up (▲), down (▼), left (◀), and right (▶), as indicated by the arrows.
- 4— Shortcut Key**—can be programmed to provide a simple way of performing a variety of routine tasks.
- 5— Power Key**—switches the unit on and off.

2.1 Connections

Ports for connecting the Vantage Ultra to a component, personal computer, or power source are all located on the top of the unit.

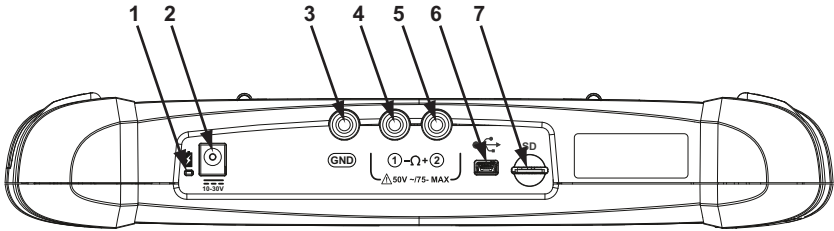


Figure 2-2 Connections

- 1— Power Indicator**—a red light emitting diode (LED) that illuminates when power is being supplied to the unit.
- 2— DC Power Supply Input Port**—use for connecting the AC/DC power supply.
- 3— Ground Port**—use for connecting the ground side of the Channel 1 test lead.
- 4— Channel 1 Port**—use for connecting the Channel 1 test lead when performing tests.
- 5— Channel 2 Port**—use for connecting the Channel 2 test lead when performing tests.
- 6— Mini USB Client Port**—use to connect the diagnostic tool to a personal computer for transferring saved files.
- 7— Micro secure digital (uSD) Card Port**—holds the uSD card that contains the operating system programming.





IMPORTANT:

The uSD card must be installed for the tool to operate. Do not remove the uSD card while the unit is powered on.

Navigation

The Home Screen

The main body of the Home screen has four selectable buttons, one for each module, or primary tool function.

Name	Button	Description
Guided Component Test		Opens a diagnostic database of specific tests for the identified vehicle that includes procedures, connector pinouts, and tips, along with a meter configured to perform the test.
Scope Multimeter		Configures your diagnostic tool to perform as either a two channel lab scope, graphing multimeter, or digital multimeter.
Previous Vehicles & Data		Opens a menu to quickly connect to a recently tested vehicle, or to access saved data files.
Tools		Opens a menu for adjusting tool settings, to accessing system information, and performing other special operations.

Tap a Home screen button to begin testing, or use the keypad and **Y/✓** key to activate a module. A yellow border around the button indicates it is highlighted, or in focus. A “please wait” message may display briefly, then clear once the module is loaded and ready for use.

IMPORTANT:

This Quick Start Guide covers basic tool functions only. Complete operating instructions and detailed information about the tool is in the *Vantage Ultra User Manual*, which is on the Documentation CD provided with your kit. The *Vantage Ultra User Manual* is also available on our website at: <http://diagnostics.snapon.com>.

Screen Layout

Meter screens can display two circuit traces, or waveforms, simultaneously in the Main Body of the screen. Adjustments to the display are made through the Toolbar near the top of the touch screen, and adjustments to the waveform are made through the Trace Details at the base of the screen:

1— Toolbar

2— Main body

3— Trace details/Information Panel

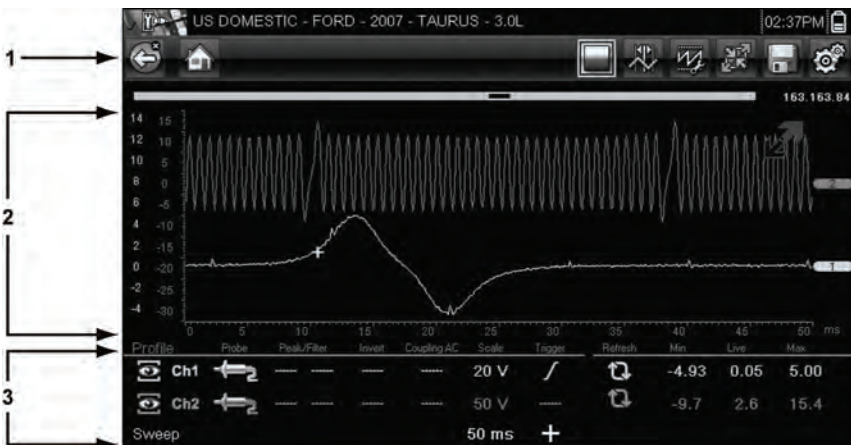


Figure 3-1 Sample Guided Component Tests screen

Main Body










In Guided Component Tests, Lab Scope, or Graphing Multimeter mode, each circuit trace is displayed as voltage over time on a standard oscilloscope screen. Voltage level is recorded on the vertical, or “y”, axis and time is presented on the horizontal, or “x”, axis of the screen. Values are shown for each graduation on the scales.

Digital Multimeter mode limits testing to a single channel only, results are presented as a digital value.

Toolbar

Selectable buttons on a toolbar, located near the top of the touch screen, direct tool operations.

Table 3-1 *Toolbar button operation.*

Button	Icon	Function
Back		Returns to the previously viewed screen. This button is always at the left-hand edge of the toolbar.
Home		Returns to the Home screen. This button is always alongside the Back button on the left of the toolbar.
Stop		Stops the collection of data, which allows you to more closely examine the trace and to review the data.
Record		Indicates that data collection is paused and the screen is not being updated. Selecting resumes data collection.
Cursors		Turns the cursors, two vertical rules that can be repositioned on the screen to measure intervals, on and off.
Trace Details		Opens and closes the profile field at the bottom of the screen, which allows you to adjust certain attributes of the trace.
Expand/ Collapse		Available only for Guided Component Tests, expands the meter to fill the entire screen, or collapses the meter to show the Trace Details at the bottom of the screen.
Save		Saves a recording of the data being displayed on the screen along with the data that is being held in the memory buffer.
Tools		Opens the tools menu, which allows you to adjust certain basic tool settings.

Additional buttons appear on the toolbar when special operations are available.

Trace Details

The Trace Details section displayed at the base of the screen is used to adjust settings for capturing and displaying the trace. Adjustments are made either by touching the item to be changed on the screen, or by using the control keys. A dash (–) indicates that function is not selected, and an icon indicates an active function.

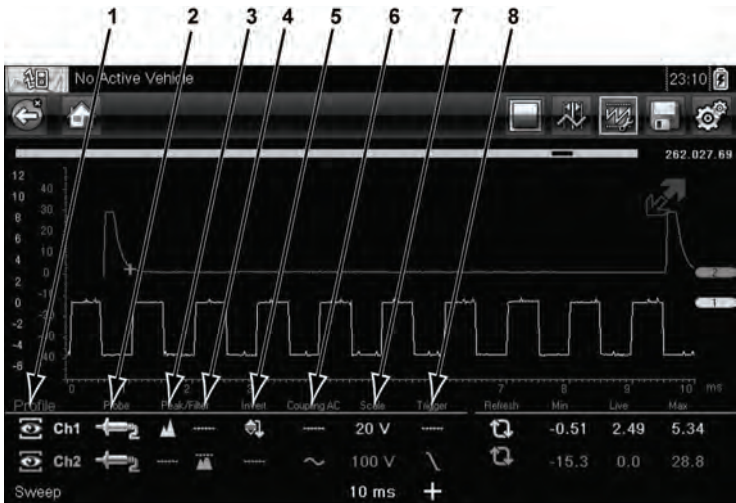


Figure 3-2 Sample Scope Multimeter Trace Details adjustments

- 1— **Profile**, switches the trace on and off.
- 2— **Probe**, use to select the type of test probe being used.
- 3— **Peak**, maximizes the signal sampling rate for capturing fast events, such as spikes and glitches.
- 4— **Filter**, removes noise or interference from the trace.
- 5— **Invert**, switches the polarity of the displayed signal.
- 6— **Coupling AC**, blocks the DC portion of an input signal in order to amplify the AC portion.
- 7— **Scale**, use to adjust the trace scale, which is the total value displayed on the vertical axis of the display.
- 8— **Trigger**, switches triggering on or off, and sets the trigger to either the rising or falling slope of the trace




Guided Component Tests

Guided Component Test Basics

Guided Component Test procedures, tips, and meter settings reduce set-up and diagnostic testing time. Guided Component Test data is vehicle specific, so you begin by identifying the test vehicle. The identification sequence is menu driven, simply follow the screen prompts to make a series of choices.

Top Level Menu Items

Top Level Menu Items, which are only available from the System Select menu, offer valuable supplemental data. Top Level Menu Items are accessed through buttons on the toolbar. Selecting a button opens an additional menu of supplemental information designed to help you get the most out of the Guided Component Tests module:

Button	Icon	Function
Power User Tests		Use to quickly access a pre-configured meter to perform a specific test. A wide variety of component tests and meter configurations are available.
How To Guide		Opens a list of built-in training sessions and other information on how to perform tests and get the most out of the Guided Component Test module.
Features and Benefits		Provides tips for maximizing your Guided Component Test module experience and lists and explains the various accessories available.

Testing a Component

Selecting a component to test gives you two options:

- **COMPONENT INFORMATION**—provides information on the selected component and connector pin details
- **TESTS**—opens a menu of pre-configured meters for performing a specific test.

Component Information

Component Information screens are divided into up to four sections to help quickly guide you to the correct information:

- **Operation**—provides a description of normal operation.
- **Tech note**—provides component related tips and information on factory updates and recalls.
- **Connector**—shows the connector and pin identification.
- **Location**—identifies the component location and the best place for testing it.

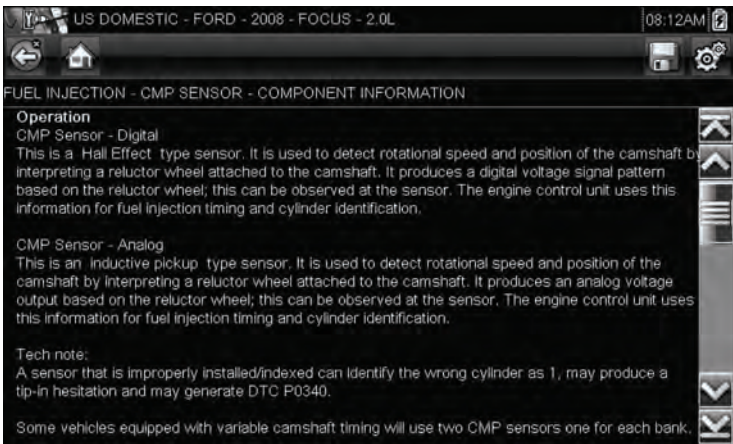


Figure 4-1 Sample component information screen

A vertical scroll bar appears along the right-hand edge of the screen when there is additional data. Tap the arrow buttons, or use the directional keys to scroll and view additional data.

Tests

The Tests section guides you through the process of performing tests on a specific component. Selecting a component test gives you access to specifications, tips on how and where to connect the test meter leads, and configures the meter to perform the specific test.

Selecting a Guided Component Test opens a screen with a pre-configured meter in the main body and the information panel visible at the bottom of the display.

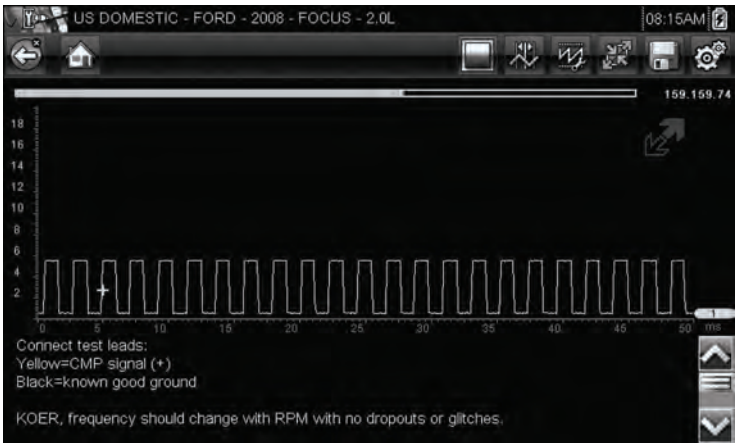


Figure 4-2 Sample Guided Component Tests screen

The Information Panel typically has the test name and connection information visible on the opening screen. A scroll indicator shows there is additional information below what is shown.

A tap of the Expand/Collapse button on the toolbar opens the Information Panel to full screen. A second tap goes to a full-screen meter, and a third tap returns to the split screen.



NOTE:

Select the **Trace Details** button on the Toolbar to access meter settings and make adjustments. See Meter Setup on page 15 for details.

Scope Multimeter

Scope and Multimeter Operation

Select Scope Multimeter from the Home page to open the main menu, then select from the menu options:

- Lab Scope
- Graphing Multimeter
- Digital Multimeter

Touch screen functionality within the main body of the screen is limited to the following:

- 1— **Trigger position**; touch and drag the trigger indicator (+) to reposition it.
- 2— **Expand/collapse icon**; each tap switches the meter between partial and full (shown) screen view.
- 3— **Baseline position**; drag the bar at the right-edge of the trace up or down to reposition the base line (0 value).

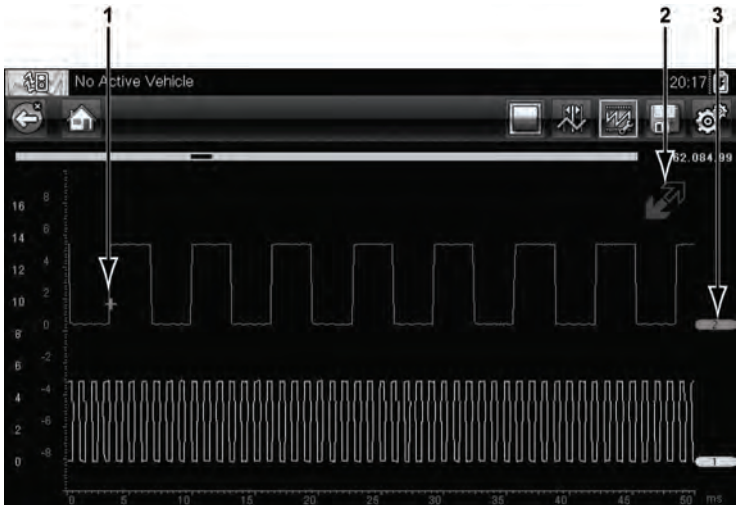









Figure 5-1 Sample 2-channel scope screen

Meter Setup







Selecting the Trace Details button on the toolbar opens the Profile section at the base of the screen, which allows you to adjust the meter for the specific signal being sampled.

Depending upon the item, profile options may be either switched on and off, selected from a menu, incrementally adjusted, or simply activated.

A tap on the icon area of the screen, or highlighting and selecting using the arrow (▲, ▼, ◀, ▶) and Y/✓ keys, switches the following functions on and off:

Setting	Icon	Description
Profile		Indicates the trace for the indicated channel is on and being displayed.
Peak		Indicates Peak Detect is turned on and the meter is operating in a high-speed sampling mode.
Filter		Indicates unwanted interference has been removed from the waveform displayed for the designated channel
Invert		Indicates the polarity of the displayed signal has been reversed.
Coupling AC		Indicates the DC portion of the signal is blocked and only the AC portion is being displayed.
Trigger		Indicates the waveform is anchored at a preset trigger point. This icon shows the trigger is on the falling edge.
Not Selected		Indicates the function is currently switched off.

Selecting any of the following items opens either a menu of options or a set of controls for repositioning the item on the screen, or, in the case of Refresh, performs an action:

Setting	Icon	Description
Baseline		Opens the baseline setting controls for precisely moving the zero (0) value up and down on the screen for the indicated channel.
Probe		Opens a list of the different probes available for sampling signals. The icon shown is for the Volts DC test lead.
Scale		Scale represents the entire height of the display area for that channel. Scale values can be different for each channel.
Sweep		Sweep is the amount of time represented by the width of the screen. The selected value applies to both channels.
Trigger Position		Opens trigger setting controls for precisely adjusting the trigger position.
Refresh		Simultaneously clears the digital minimum and maximum values for both channels and updates the screen.

To close a menu tap outside the menu window, select Close (last on the menu), or press the **N/X** key. To close Trigger and Baseline controls tap the scope window or press **N/X**.

With Cursors switched off, the numbers at the right-hand side of the Profile area indicate the minimum, current, and maximum values of the sampled signals.

With Cursors switched on, the numbers indicate the signal value measured at each cursor and the delta, or difference between the two, for each channel. The bottom line of figures display the Sweep (horizontal) position of each cursor, the delta value, and the frequency.