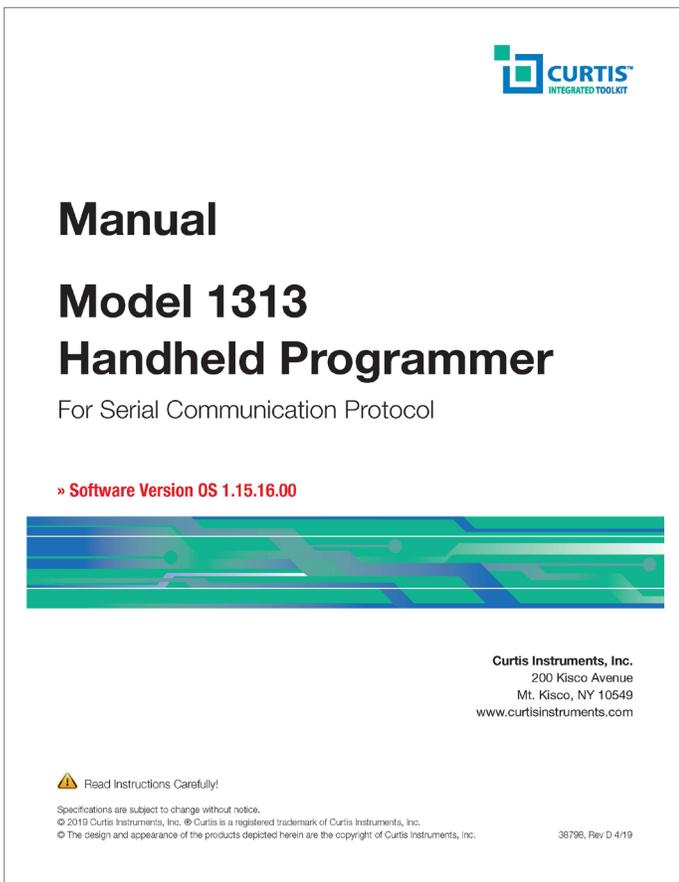
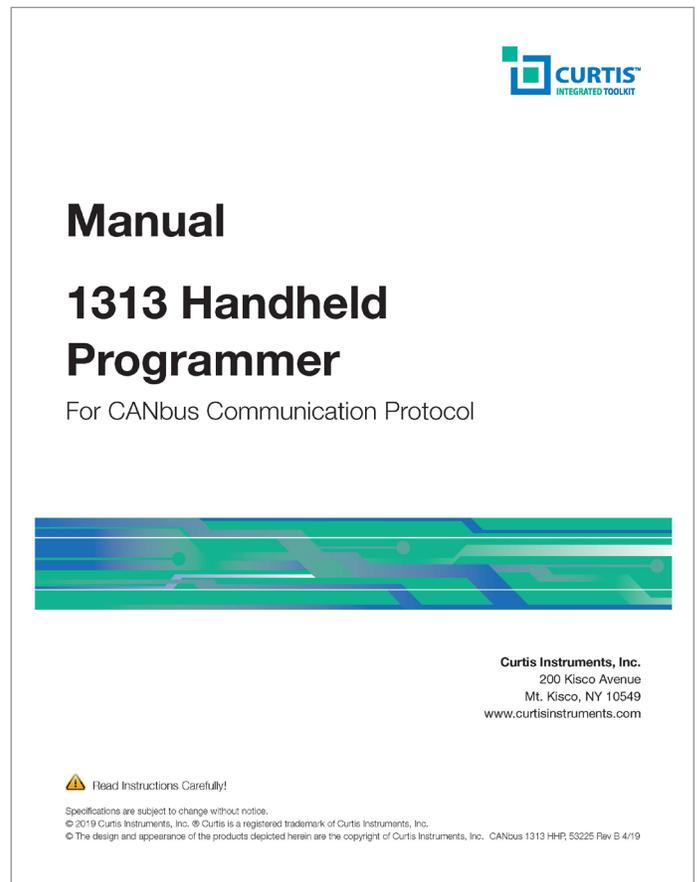




This document contains BOTH the:



which begins on the next page



which begins on page 63

Manual

Model 1313

Handheld Programmer

For Serial Communication Protocol

» **Software Version OS 1.15.16.00**



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Mt. Kisco, NY 10549
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 Read Instructions Carefully!

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1 – OVERVIEW

INTRODUCTION

The Curtis 1313 Handheld Programmer (1313 HHP) performs programming and troubleshooting tasks for Curtis programmable motor controllers, gauges, and control systems. The 1313 HHP connects to Curtis devices in one of two ways- specific to the device: Either directly via the device's RS232 serial port, or through a Controller Area Network (CAN) connection which can have multiple devices on the CANbus. Cables specific to the connection are supplied with the 1313 HHP.

Model 1313 Handheld programmer.



This manual covers the operation for the Serial-connected programmable controllers. Gauges and control systems (devices) operate in a similar fashion.

HOW TO USE THIS MANUAL

This manual describes how to use the 1313 HHP to accomplish these tasks:

- Access and change parameter settings.
- Use it as a diagnostic tool.
- Save, transfer, and clone parameter settings between devices and 1313 HHPs.
- Update device firmware/software and 1313 HHP software.

The first 2 chapters describe the 1313 HHP basic operation, followed by the Main Screen applications. The subsequent chapters explain how to use a specific application (app). Appendix A summarizes the files associated with the 1313 HHP. Appendix B lists the 1313 HHP models and their specifications.

New users will want to read this manual to train themselves on the 1313 HHP. Users familiar with the previous serial-based 1313 HHP will find no differences when using the serial connection applications. When using battery mode, the user must now select Serial or CANopen modes. Always use the 1313 HHP in conjunction with the controller manual. The controller manuals contain the information about the parameters, monitor variables, faults, diagnostics, initial set-up, and motor control tuning.

For an additional overview of the 1313 HHP, consult the datasheet, Curtis document number 50194, available on the Curtis website: www.curtisinstruments.com

See: *Products/Programming/1313 Handheld Programmer*

Direct Link: <https://curtis Instruments.com/products/programming/>

Available on the Curtis website is the **1313 Handheld Programmer Operation** video tutorial.

See: *Home/Videos/Tutorial:1313 Handheld Programmer*

Direct link: <https://curtis Instruments.com/?v=handheld>

NOTICE

For technical support or applications not covered in this manual, contact the vehicle manufacturer. OEMs should contact the Curtis distributor where the 1313 HHP and devices were obtained, or the regional Curtis sales-support office.

WARNING

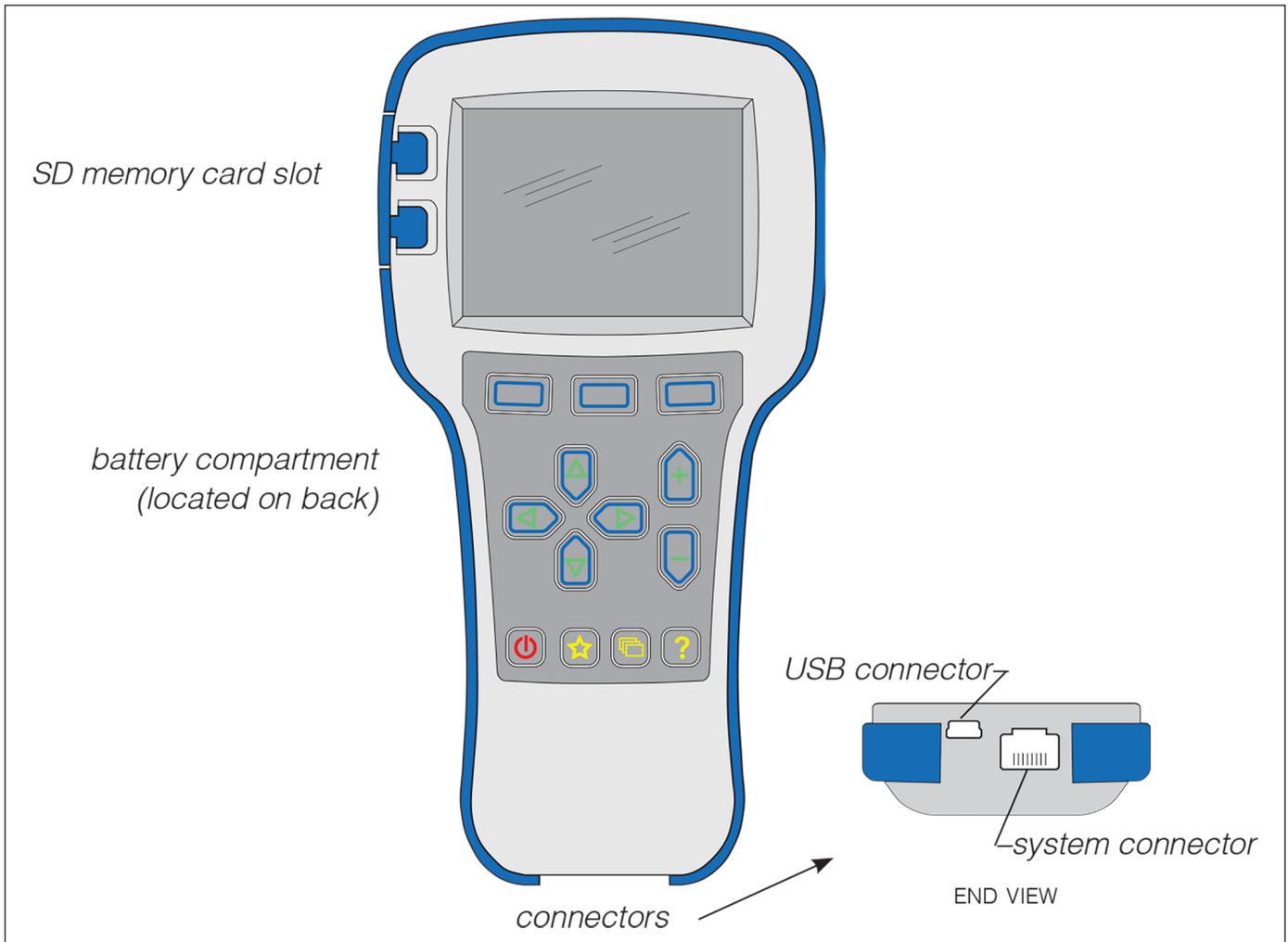
WARNING! The control system can affect speed, acceleration, deceleration, dynamic stability, and braking. If the control system is programmed incorrectly or outside the safe limits as determined by the vehicle manufacturer, it can create a dangerous situation. Only the vehicle manufacturer or an authorized service agent or dealer should program the control system.

2 – 1313 HHP OPERATION

This chapter describes how to use the 1313 HHP for serial-based communication controllers.

CONNECTIONS

The 1313 HHP has two connectors, one for communicating with the motor controller and one for interfacing with a PC. The 1313 HHP also has a battery compartment and a memory card slot.



System Connector

Use this connector with the supplied cables to connect the programmer to the motor controller. Use the cable with the 4-pin Molex connector for connection to serial-port programmable controllers.* Note: the cable with the DB9 connector is for the the CAN-port programmable devices (For CAN-based connections, use that manual: Curtis Document # 53225).

USB Connector

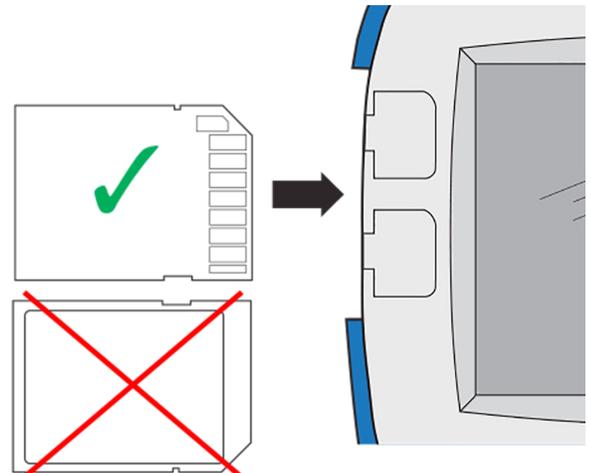
Use this connector with the supplied USB cable to connect the 1313 HHP to a PC. Windows Explorer will display the 1313 HHP as a removable drive. If an SD card is inserted in the 1313 HHP, Windows Explorer will display the 1313 HHP's "Internal" memory location and the "SD-Card" location as 2 independent removable drives. Files can be transferred to/from the 1313 HHP Internal memory, the SD card, or the PC using any of the standard tools available in Windows Explorer (Copy, Cut, Paste, Drag & Drop).

BATTERIES

A compartment on the back holds two AA sized batteries. The batteries keep the real-time clock running and are used to power the 1313 HHP when working offline. Although the batteries can be used to power the 1313 while connected to a controller, operations such as data logging may quickly deplete the batteries. Battery life will be extended by powering the 1313 HHP from the connected controller or device.

SD CARD

SD cards provide up to an additional 64 MB of memory. SD cards can be used for transferring files between the 1313 HHP and either a PC or another 1313 HHP. The SD card must be inserted face down (opposite of a PC insertion).



* See the controller/device manual for the mating 4-pin Molex wiring: Pin-1 = Rx, Pin-2 = Gnd, Pin-3 = Tx, Pin-4 = +12V.

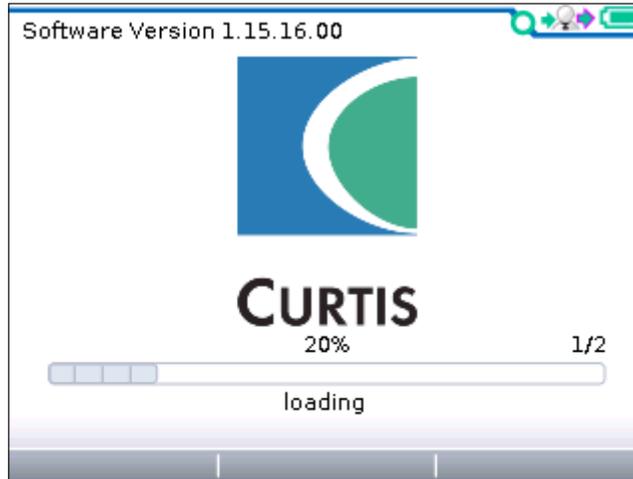
Vehicle/system mating connector: Molex Mini-Fit Jr. dual-row, 4 circuits, vehicle harness plug (p/n 39-01-2046). Male pin terminal (p/n 39-00-0041)

Note: Some controllers/device are specifically fitted with the mating serial bus connector. No additional wiring or hardware is needed to connect the 1313 HHP.

POWER-ON THE 1313 HHP

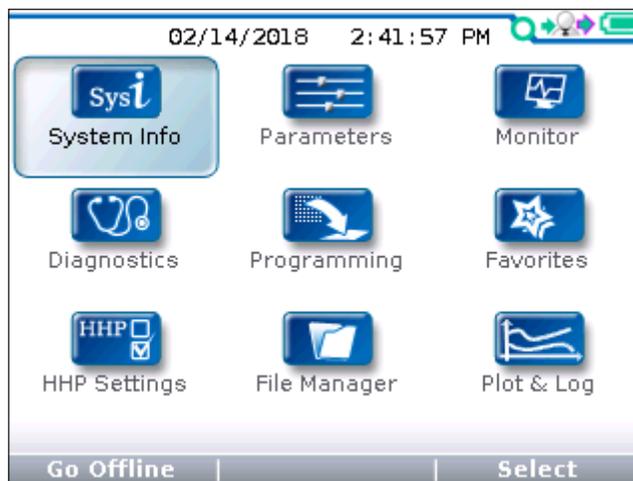
Connect the 1313 HHP into the control system by plugging it into the controller’s serial port.

If the controller is on, the 1313 HHP will automatically power-up. The “loading” screen will be displayed while information is obtained from the controller.



Once the 1313 HHP has uploaded the information from the controller, it displays the Main Screen.

If a controller hasn’t connected to the 1313 HHP before, the connection-screen displays a series of 2 successive progress bars (loading) that are identified as $\frac{1}{2}$ and $\frac{2}{2}$. The progress percentage is shown above the bar. The 1313 HHP saves the information from each controller in a cache file, resulting in multiple saved cache files as different controllers are connected. If the cache file is deleted (see “Delete Cache File” in the HHP Settings app), the 2 steps will repeat the next time the connection is made to the same controller. If the controller’s cache file is available, the next connection to the device will progress quickly because only the latest parameter settings are obtained from the controller. Connection times are faster when a cache file is available.



When the 1313 HHP is initially powered from the controller’s serial-bus 12V and Ground connections. If the power is lost while connected, the 1313 HHP will shut off even if it has batteries installed.

When the 1313 HHP has the batteries installed and is connected to a controller without the 12V power (just the Rx/Tx/Gnd connected), pressing the power key will enable the option to either “Go Online” or “Go Offline”. If the 12V power is restored, cycling the connection will offer the option to either remain on battery power on not.

When transitioning from the Offline (battery powered) mode (see Chapter 15), the main screen will display “Waiting for System” when there is a delay or loss of the serial communication channels.

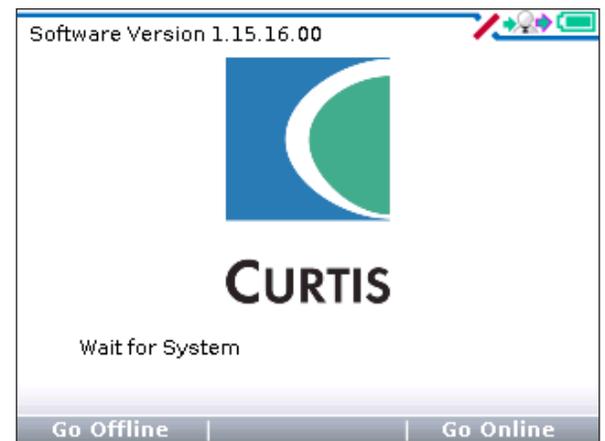
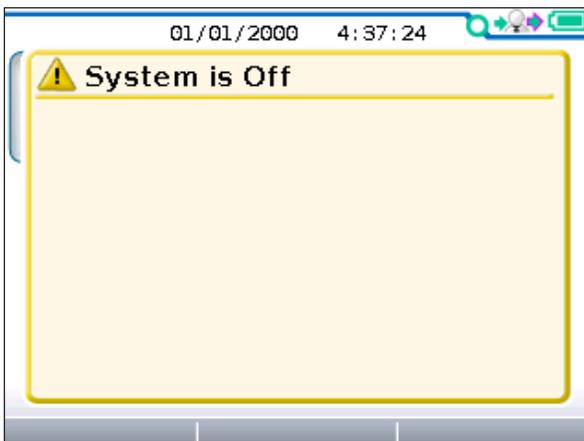
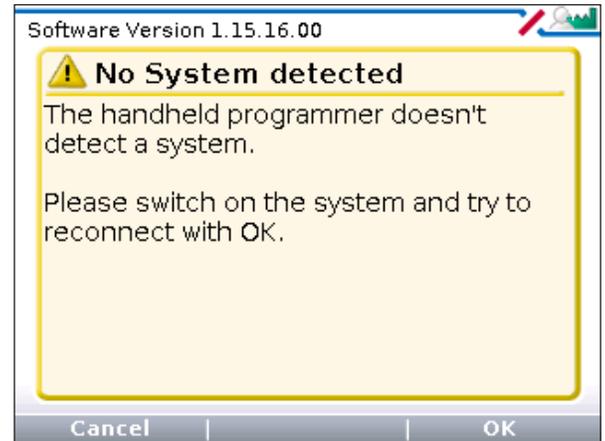
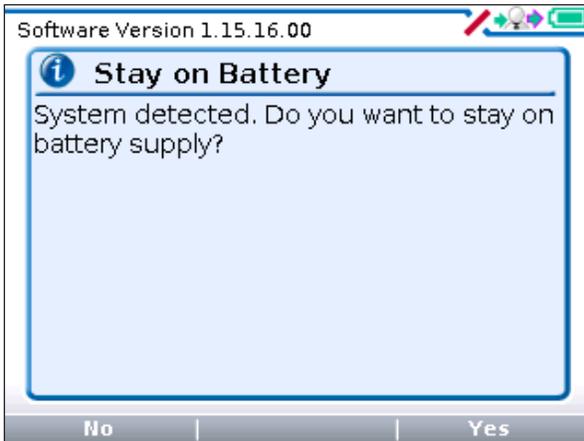
If the Tx or Rx connections are disrupted, one of 2 messages are displayed. Check the system wiring connections when any of these messages are displayed or persist.

“No System detected”

“System is Off”

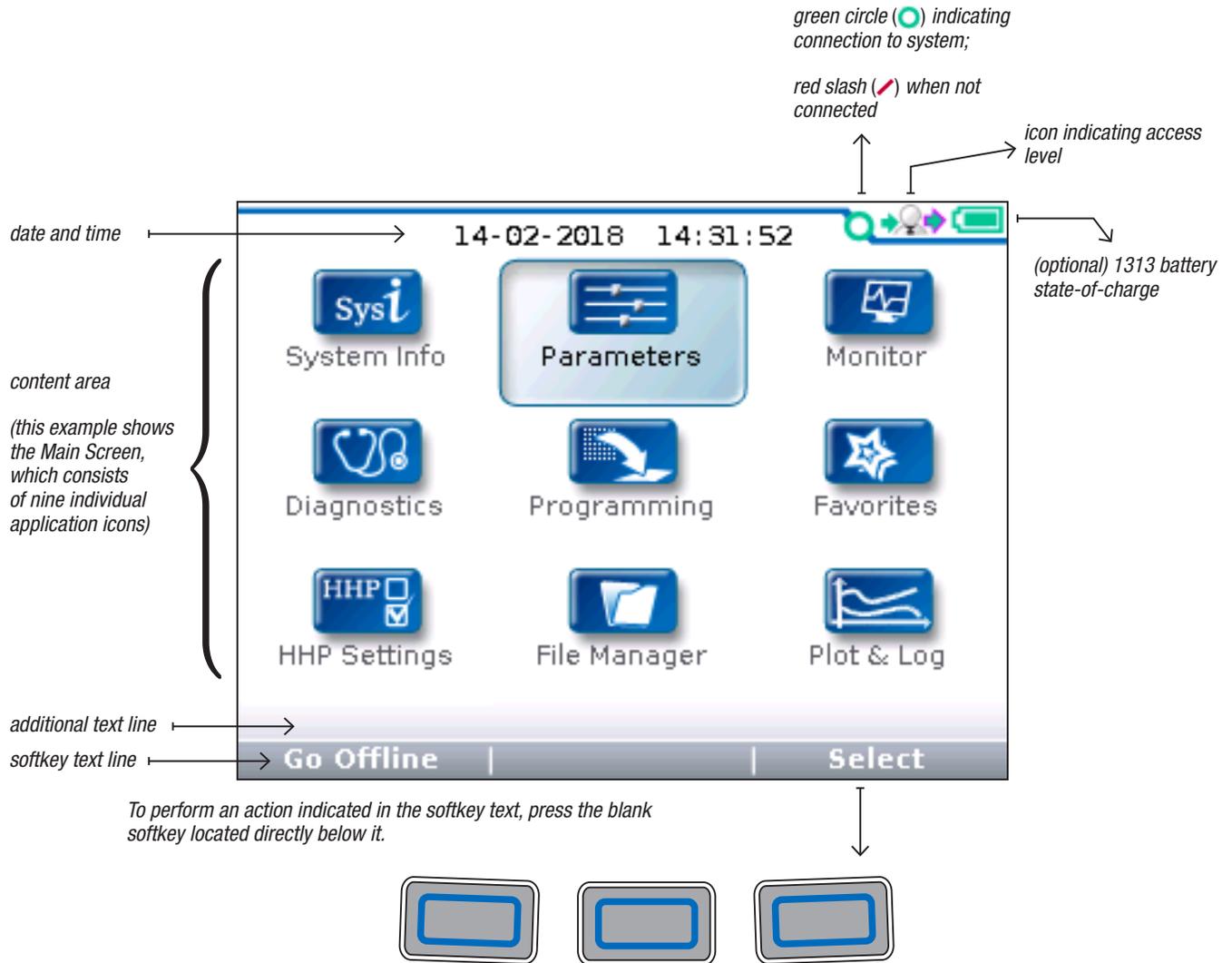
If the serial-bus Rx and Tx lines are crossed, the 1313 HHP will power-up in the offline mode, only.

For controllers/devices using the AMPSEAL connectors (individually wired serial bus), consult the controller/device manual for the proper wiring of the mating 1313 HHP 4-pin Molex connector.



DISPLAY FORMAT

The high-resolution clarity of the LCD screen allows a wealth of information to be displayed at once. The example below shows the information available in the Main Screen.



In this above example, pressing the “Select” softkey will open the highlighted Parameter app. The “Select” softkey opens whichever app is highlighted. Pressing the “Offline” softkey switches the 1313 HHP to Offline mode. In Offline Mode, the 1313 HHP cannot communicate with the controller. The 1313 HHP can perform operations that do not require communication with the controller. See [Chapter 15](#).

ACCESS LEVEL

The 1313 HHP is available in four access levels: OEM, Dealer, Service, and User. Each 1313 HHP model has access to levels below it, but not above it. Using the HHP Settings app, the access levels can be lowered, which is useful to view apps and menus as they would appear to the lower-access 1313 HHP models.



OEM



Dealer



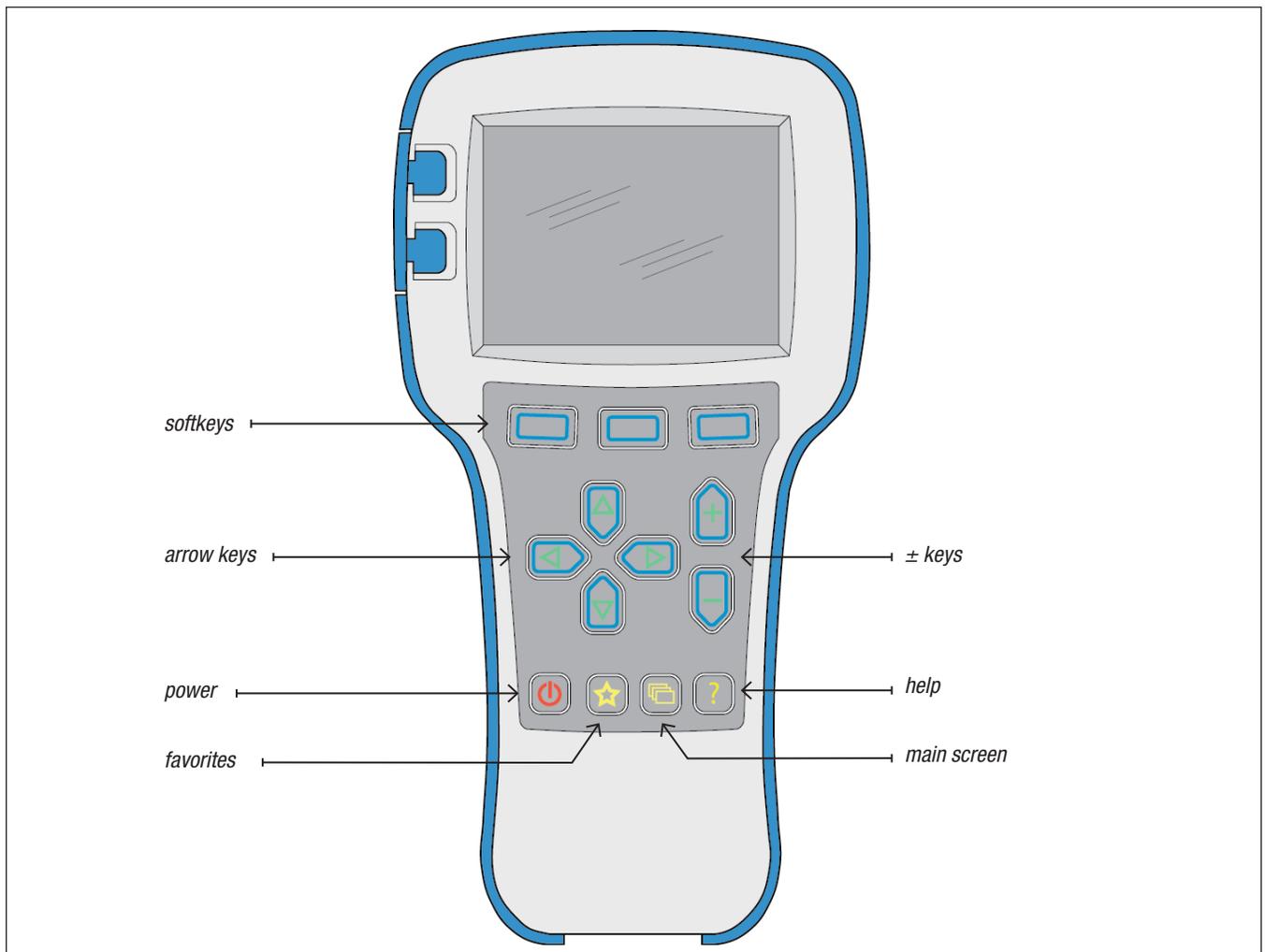
Service



User

KEY FUNCTIONS

The pushbutton keys on the 1313 HHP's keypad allow rapid navigation through the apps.

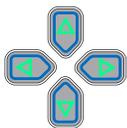


Softkeys



These three keys are blank, because their function is context-specific. At any given time, their function is shown directly above them on the LCD screen. The symbol “»” indicates more options; pressing the softkey under the “»” will scroll to another set of options.

Arrow Keys



Use these four keys to scroll up-and-down and right-and-left within the display screen. In the main screen, use the arrow keys to highlight one of the apps; then open the highlighted app using the “Select” softkey.

Within apps, the left-arrow key (◀) is used to navigate back to the previous screen, up to the apps opening screen. If the “Exit menus with left arrow” is set to “Yes” in the HHP Settings options, pressing this key will exit the app, displaying the main screen.

Within apps, the right-arrow key (▶) is used to navigate forwards—that is, to go to the next screen, the next function, or to open a parameter’s detail screen.



± Keys



Use these keys to increase or decrease the value of parameters. These keys are also used as “+ = Yes” and “- = No” keys. The keys are also used to scroll through optional settings such as access levels or languages.

Power



The Power key turns the 1313 HHP on or off.

If the controller’s serial connection is powered, the 1313 HHP will turn on automatically when connected.

Turn off the 1313 HHP by pressing and holding the Power key for 2 seconds. A pop-up message will ask you to confirm. The softkey text will offer the choices “Yes” and “No.”

Unplugging the 1313 HHP will turn it off even if the batteries are installed.

If the 1313 HHP has been turned off, or if it has timed out and shut off, pressing the Power key will turn it on again.

Note: when the 1313 HHP is connected to a PC using the USB cable, the 1313 is powered by the PC. Pressing the power key will have no effect. The 1313 HHP displays “USB Mode Active” and appears as a removable drive to the PC.

Favorites



This key is an alternate way to bring up the Favorites app. Access Favorites by either selecting the Favorites icon on the Main Screen, or by using this Favorites key. [See Chapter 9](#), Favorites, for more information about using the Favorites app.

Screenshots



Momentarily press the Power Key and then momentarily press the Favorites key to save the present image of the LCD display. These are called screenshots. [See Chapter 14](#) for further details about screenshots.

Main Screen



Pressing this key will return the 1313 HHP to the Main Screen from any location. When the main screen is displayed, use this key to cycle through the individual apps. Use either this key or the arrow keys to navigate within the main screen.

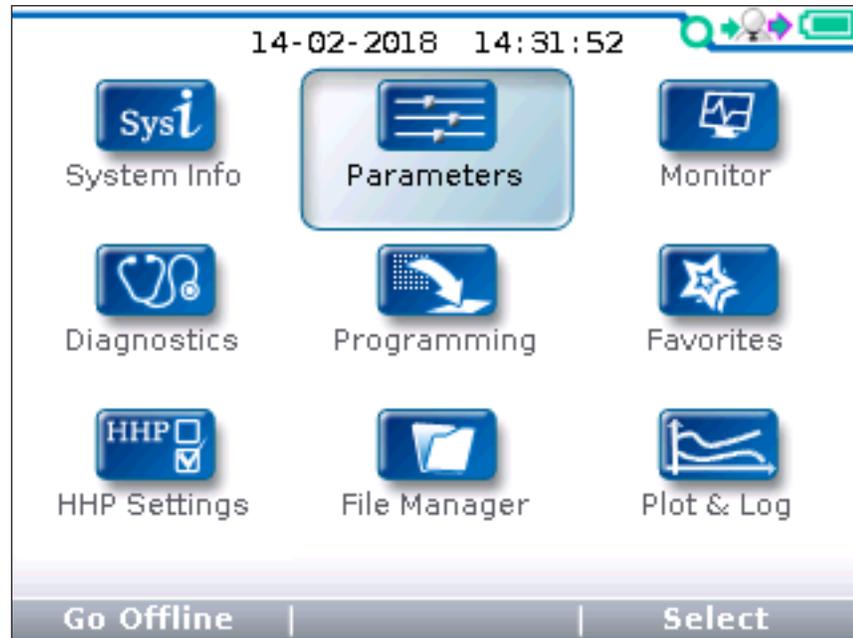
Help



This key is used to display context-specific Help text.

3 – MAIN SCREEN AND APPS ORGANIZATION

The Main Screen contains 9 apps that are each identified by a specific icon.

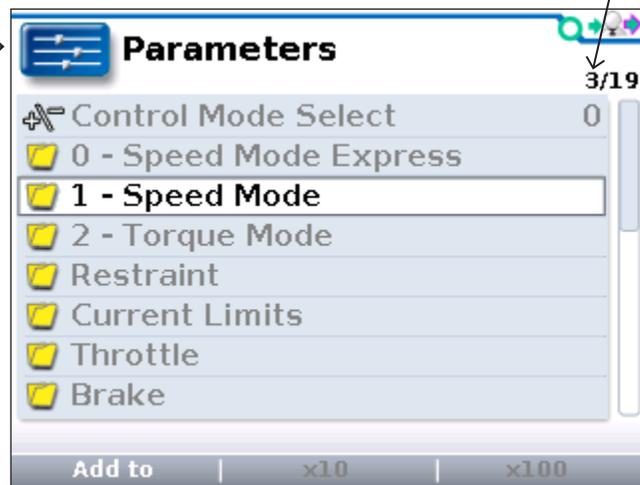


Some apps may contain just one level of information, but most contain multiple levels. Items marked with a folder open as new submenus. Items marked with a grid open into tables. Items marked with a dialogue balloon open into a set of instructions for performing a procedure, such as calibration. At any point, use the left-arrow key (◀) to navigate back to the previous screen. (It is possible to limit this left-arrow key function using the “Exit menus with left arrow” item in the HHP Settings menu; see [Chapter 10](#).)

APP STRUCTURE

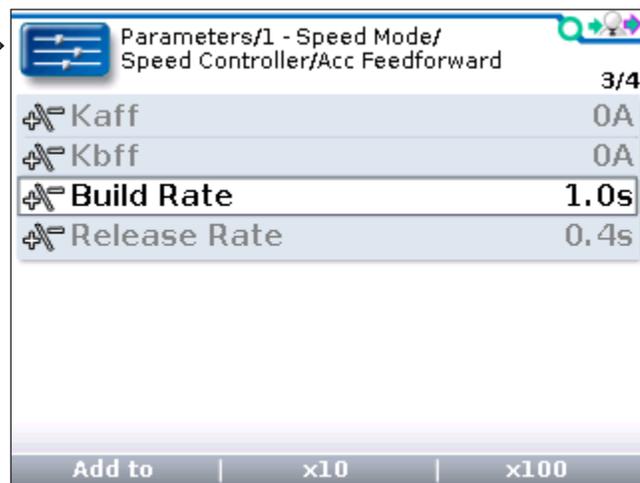
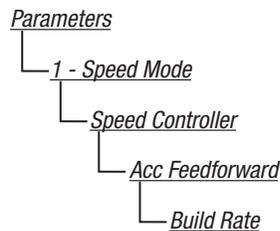
When any of the app’s top-level menus are selected (**Select**) the name of the app is displayed adjacent to its icon. When navigating through a hierarchical menu, the text at the top of the screen expands to show the path taken. Likewise, the item’s relative position on the screen or in a menu is shown in the window. The top, or first item will indicate “1 of X” while the bottom, or last item will indicate “X of X” on the screen. This is helpful when the quantity of items in the menu/sub-menu exceeds the display’s 8 lines.

This is the root level of the Parameters app, as indicated by the bold text heading.



Highlighted item is the 3rd of 19 items within the menu

These lines of text show the path to the selected item within the Parameters app.



Note that when the Speed Mode folder is highlighted, the “x10” and “x100” softkeys are grayed out (indicating they do not apply)—but when Build Rate is highlighted, these softkeys are available.

If exiting an app using the main screen key (⏏) and later returning to the same app, the app will open to a location that depends on the “Remember Last View” setting in the HHP Settings app. If the setting is “Off”, the app opens at the top-level. If the setting is “On”, the app opens to the most recently used location.

In the above illustrated example, if “Remember Last View” is set to “On,” the next time the Parameters app is selected it will open at the highlighted *Build Rate* parameter.

Note: If the 1313 HHP is turned off (e.g., the controller is key-cycled) the “last-place-memory” is lost. Each power-on session begins the Remember Last View anew, even if the setting is “On”.

TYPES OF APP ITEMS

Each item in the applications is represented by one of the following icons.

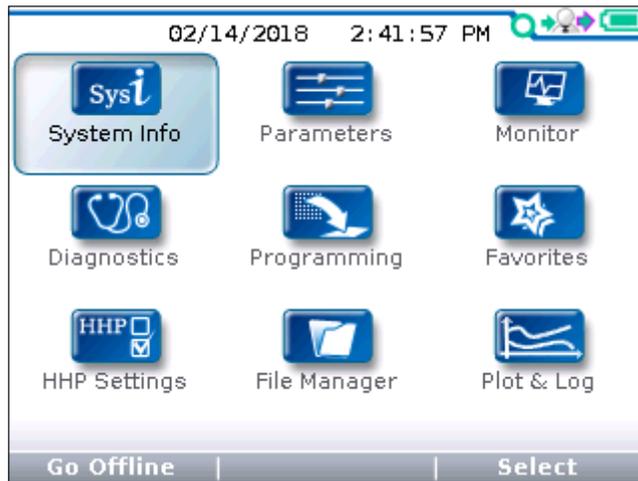
-  These are read-only items, providing detailed information. This symbol also appears on pop-up screens.
-  Folders indicate menus or submenus. Pressing select or the right-arrow key opens the folder. Use the left-arrow key to navigate back out of nested menus.
-  These are settings adjust with the “+” and “-” keys. Press the “+” and “-” keys to cycle through the options. Options can be numerical values, yes/no choices, or multiple choices.
-  These items perform a procedure as indicated by the item’s name. Pressing the “right-arrow” key will either complete the procedure, or open a dialogue box to step through the procedure, such as autocalibrating a throttle.
-  These items open up into tables. A text line located below the table (just above the softkey text line) shows the name of the cell and its present value. Use the arrow keys to select cells, and the “+” and “-” keys to increase/decrease the values.
-  These are read-only Monitor values.
-  This symbol indicates a file the programmer cannot recognize; it is also used for .hps (programmer settings) files.
-  These are system faults.
-  These are .cpf (parameter settings) files.
-  These are read-only parameters. Useful when cloning controllers to verify these settings.

THE NINE APPS

The following 9 applications (apps) are available for programmable controllers. Each application will be fully described in the subsequent chapters.

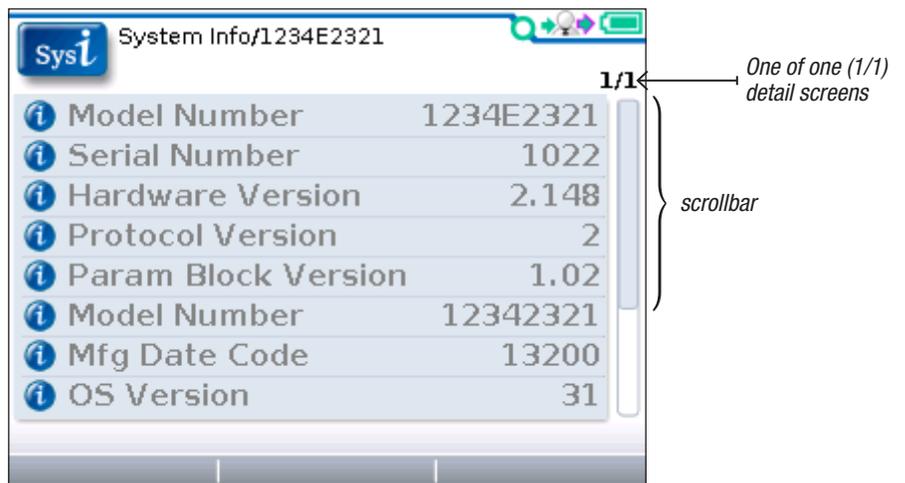
System Info	 <i>System Info</i>	Chapter 4
Parameters	 <i>Parameters</i>	Chapter 5
Monitor	 <i>Monitor</i>	Chapter 6
Diagnostics	 <i>Diagnostics</i>	Chapter 7
Programming	 <i>Programming</i>	Chapter 8
Favorites	 <i>Favorites</i>	Chapter 9
HHP Settings	 <i>HHP Settings</i>	Chapter 10
File Manager	 <i>File Manager</i>	Chapter 11
Plot & Log	 <i>Plot & Log</i>	Chapter 12

4 – SYSTEM INFO

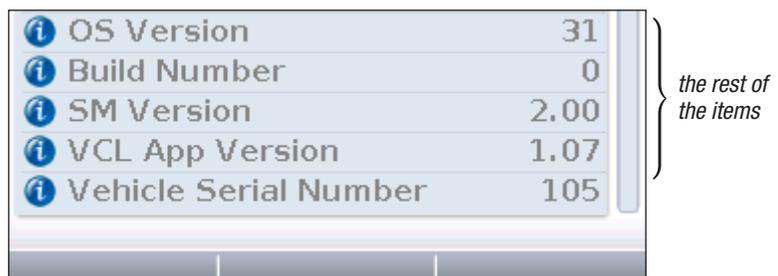


After the 1313 HHP powers up and loads the controller information, the Main Screen is displayed with the System Info app highlighted. The System Info app is where the controller-specific information is viewed. Press the “Select” softkey to view information such as the controller model number, serial number, manufacture date, and its software/firmware/hardware versions.

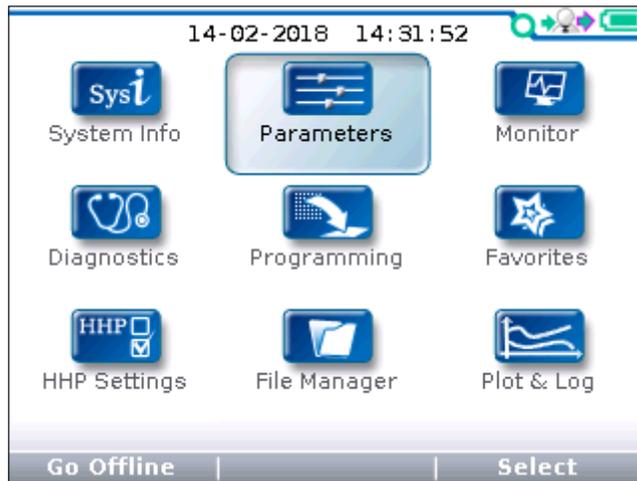
To return to the main screen, press either the Main Screen key (⏪) or the “left-arrow” key (⬅).



The sliding bar at the right of the screen indicates there are more items than those shown. Use the down-arrow key (⏴) to scroll down to see the rest of the list.



5 – PARAMETERS



The Parameters app is where parameters are accessed. This chapter covers all the items that can be accessed with Parameters. It is recommended that the controller manual be consulted for explanations of the read/write and read only variables viewable within Parameters. The parameters shown depend on the controller model, operating system (OS), application software, and on the access level of the 1313 HHP. *Not all controllers will have the same parameter menus pictured here, and some controllers may not operate as describe in this chapter.*

In the main screen, highlight the Parameters icon and press the “Select” softkey to open the app. Use the arrow keys and the softkeys to navigate within Parameters. Use the “+/-” keys to adjust parameter values. [See chapter 2](#) for additional information regarding navigation and adjustments.

(⚙️) The “+/-” icon indicates an adjustable parameter.

(🔒) The locked icon indicates parameters that cannot be adjusted at the present 1313 HHP access level.

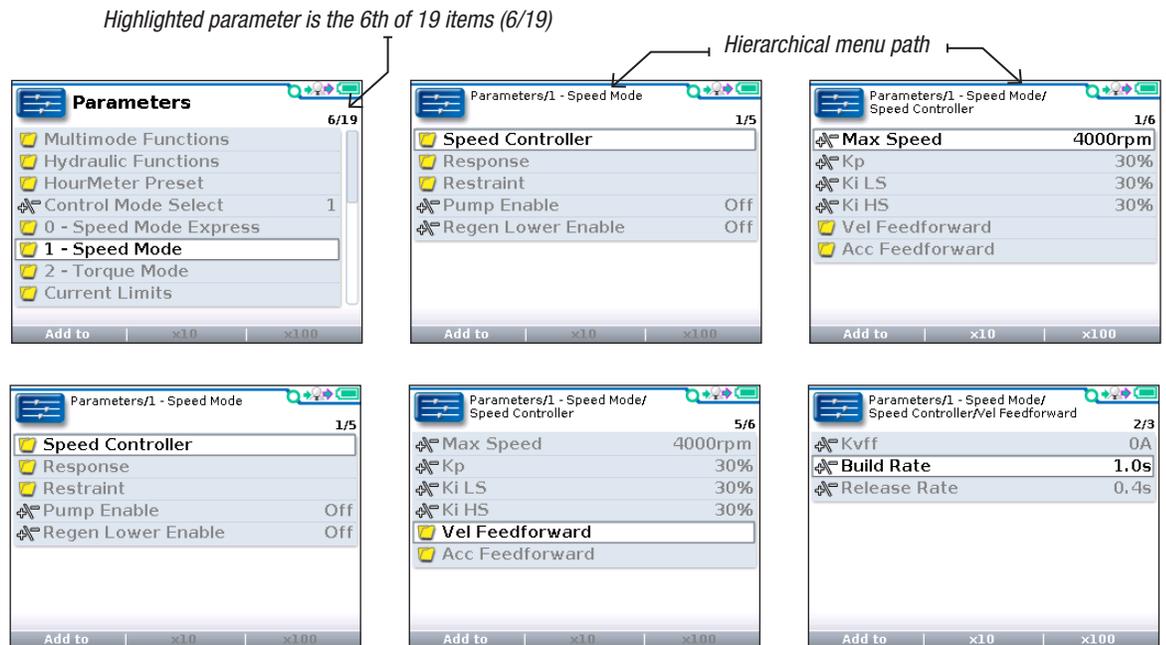
PARAMETER STRUCTURE

When any of the app’s top-level folders are selected (▶) the name of the folder is displayed adjacent to the Parameter name in the top window screen. When navigating through a hierarchical menu, the text at the top of the screen expands to show the path taken. Likewise, the item’s relative position on the screen or in a menu is shown in the window. The top, or first item will indicate “1 of X” while the bottom, or last item will indicate “X of X” on the screen. This is helpful when the quantity of items

in the menu/sub-menu exceeds the display's 8 lines. Illustrated below are two examples showing the path and position of highlighted items in the 1-Speed Mode menu of an E-series controller.

(1) parameter *Max Speed*

(2) parameter *Build Rate*



If exiting an app using the main screen key (⏏) and later returning to the same app, the app will open to a location that depends on the “Remember Last View” setting in the HHP Settings app. If the “Remember Last View” setting is “Off”, the app opens at the top-level. If the setting is “On”, the app opens to the most recently used location.

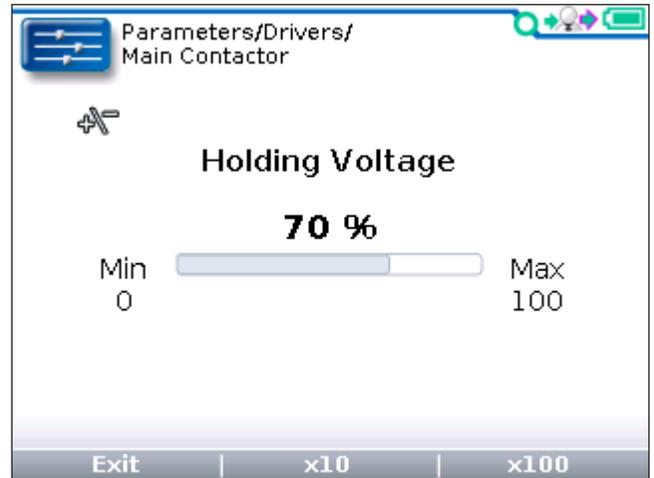
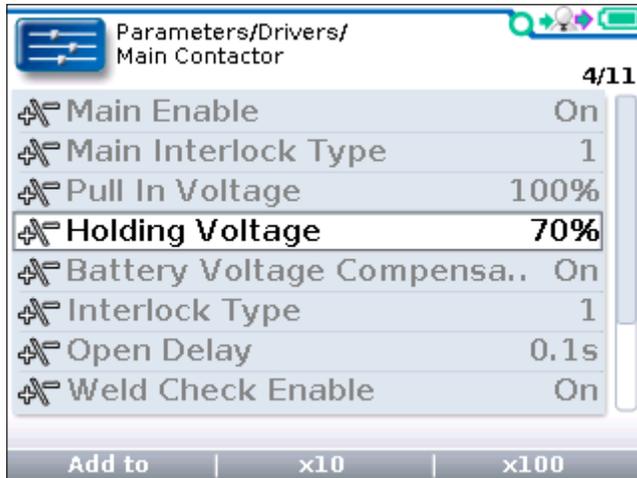
Note: If the 1313 HHP is turned off (e.g., the controller is key-cycled) the “last-place-memory” is lost. Each power-on session begins the Remember Last View anew, even if the setting is “On”.

ADJUSTING/EDITING PARAMETERS

Within Parameters, use the down (▼) or up (▲) arrows to navigate between parameters or sub-menus. If the menu contains more than the 8 items shown on the screen, a scrollbar appears at the right edge of the screen. When a scrollbar is present, the lines wrap around so that navigating up from the top line/item navigates the screen to the last line/item on the list and vice versa.

Use the +/- keys (⊕/⊖) to change the parameter's value. Changes are immediate, subject to the device's restrictions (e.g., parameter change fault and requires idle state).

When a parameter is highlighted, pressing the right-arrow key (▶) will open to a detail screen, where the present setting is shown in relation to the available range. The preceding comments regarding parameter adjustments also apply to the detail screen.



SOFTKEYS AVAILABLE IN PARAMETERS APP



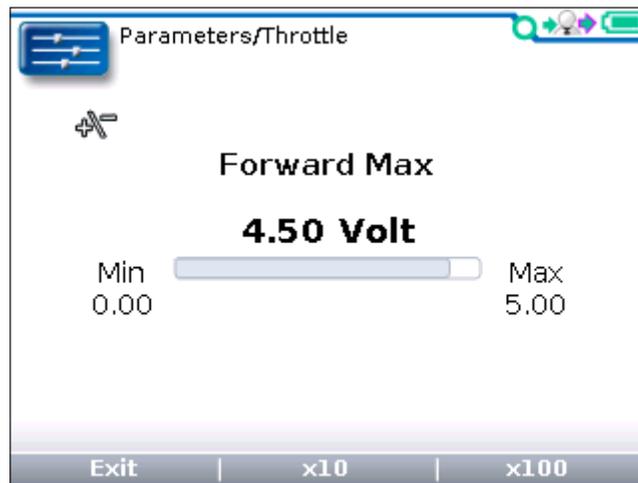
Menu and sub-menu folders are only to the Favorites app



Parameters



Add to Select Add Finish	The “ <u>Add to</u> ” softkey is available for menus folders, sub-menus folders, and parameters. This opens a selection screen for choosing to “ <u>Add</u> ” the item to Favorites, Plot, or Log. Highlight the location, then press “ <u>Select</u> ”. The “ <u>Finish</u> ” softkey completes the process and returns the screen to the original screen. Only <i>parameters</i> can be added to Plot and Log.
Cancel	Use the “ <u>Cancel</u> ” softkey to abort the “Add to” process.
Delete	Use the “ <u>Delete</u> ” softkey to remove items added to Favorites, Plot, or Log. See Chapter 9 , Favorites, and Chapter 12 , Plot & Log, for deleting, arranging, renaming, or creating new folders for items added to these locations.



x10 x100	The “ <u>x10</u> ” or “ <u>x100</u> ” softkey, when pressed together with the “+” or “-” key (\oplus \ominus), permits rapid value changes in increments of ten or a hundred times the parameter’s step-size.
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For example, the **Forward Max** parameter shown above has a range of 0.00 to 5.00 volts, in 0.01 increments. Using the “x10” softkey, the setting changes from 4.50 to 4.40 in one step instead of ten, or with the “x100” softkey, change the setting from 4.50 to 3.50 in one step instead of a hundred steps. Parameters with narrow ranges (for example a parameter that can be set to 0 through 100), the “x” softkeys allow moving to the extreme high or low end of the range in one step.

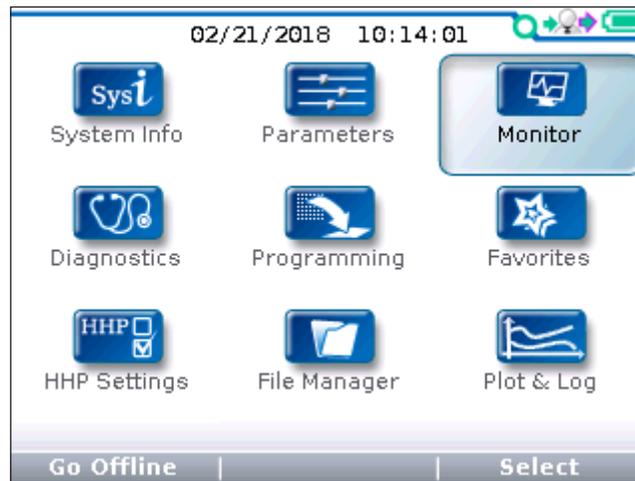
Exit	Use the “ <u>Exit</u> ” softkey to return to the previous screen, whether a parameter setting was changed or not. Any changes are automatically saved when exiting, including any of the <i>same</i> parameter added to Favorites, Plot, or Log (i.e., a global change).
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OK Cancel	The “ <u>OK</u> ” and “ <u>Cancel</u> ” options appear on the screen guidance through procedures such as calibrating a throttle, or whenever changing a value will put the system into idle mode.
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Be aware that as parameter settings are changed, the new value immediately replaces the earlier value. When parameter adjustments are made, they cannot be reversed—there is no “back” key. Therefore, it is recommended to track changes (e.g., write them down). See “Save .cpf File” in [Chapter 8](#), Programming.

6 – MONITOR



In the main screen, highlight the Monitor icon and press the “Select” softkey to open the app. Use the arrow keys and the softkeys to navigate within Monitor. The Monitor menu provides real-time data of the monitor variables. It is recommended that the controller manual be consulted for explanations of the monitor variables.

The Monitor app is useful during vehicle or system setup, testing, and diagnostic troubleshooting. Monitor variables can be placed in the Favorites, Plot, and Log applications using the “Add to” softkey (see below).

As in the Parameters app, highlighting a monitor variable and pressing the right-arrow key (▶) will open an expanded screen. The expanded screen is typically a bar graph indicating where the present value of that variable lies within its range.

The Monitor’s screen follows the 1313 HHP structure of displaying the hierarchical menu path of a highlighted item. It also indicates the highlighted-item’s position within its menu using the “x of x” format. Refer to the Parameters app, [Chapter 5](#), for illustrations of these common 1313 HHP features.

Return to the main screen at any time by pressing the main screen key (⏪). If exiting Monitor using the main screen key (⏪) and later returning to the Monitor app, Monitor will open to the location that depends on the “Remember Last View” setting in the HHP Settings app. If the “Remember Last View” setting is “Off”, the app opens at the top-level. If the setting is “On”, the app opens to the most recently used location. If using the left-arrow key (◀) to back-out-of-the-app, it will return to the last highlighted top-level menu based upon the “Remember Last View” setting.

Note: If the 1313 HHP is turned off (e.g., the controller is key-cycled) the “last-place-memory” is lost. Each power-on session begins the Remember Last View anew, even if the setting is “On”.

SOFTKEYS AVAILABLE IN MONITOR

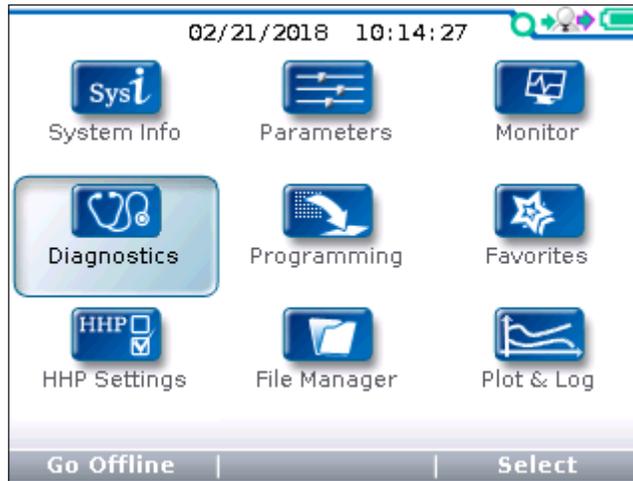
Add to

“Add to” is available for each monitored variable. This opens a selection screen for choosing to add the variable to Favorites, Plot, or Log.

Exit

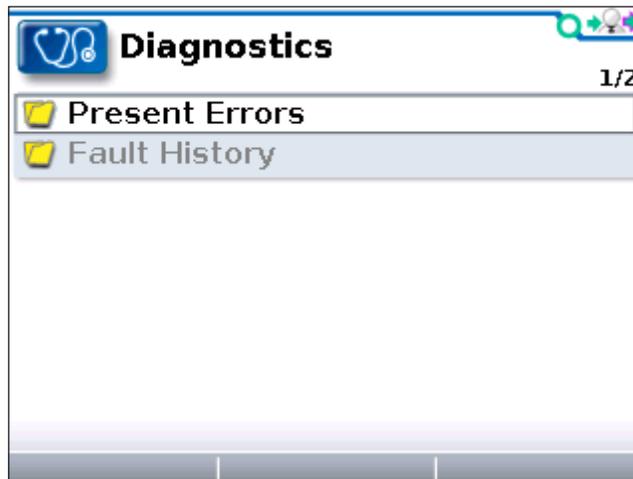
The “Exit” option appears on expanded item screens. This option is also available when a Help screen is displayed. Alternatively, use the left-arrow key (◀) to exit these screens.

7 – DIAGNOSTICS



In the main screen, highlight the Diagnostics icon and press the “Select” softkey to open the Diagnostics app. Return to the Main screen at any time by pressing the Main screen key (⏏). The Diagnostic app responds the same to the “Remember Last View” setting in the HHP Settings app as the Parameters and Monitor apps. If a particular fault or folder is highlighted when the Diagnostic app is exited, it will be highlighted when re-entered if the “Remember Last View” is “On”. Similarly, if the power is cycled (keyswitch cycled), the last viewed item memory is lost.

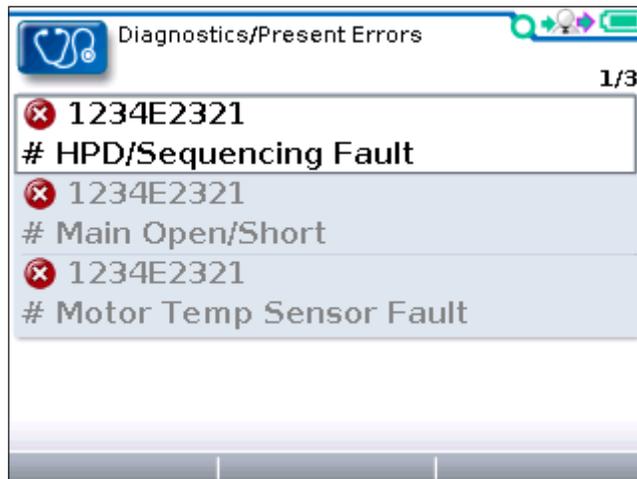
The Diagnostics app contains two folders: Present Errors and Fault History.



Note: Sometimes the fault circuits catch a temporary event that is not a true fault in the system; it is always a good idea to turn the control system off and back on again to see whether the fault clears by itself.

PRESENT ERRORS FOLDER

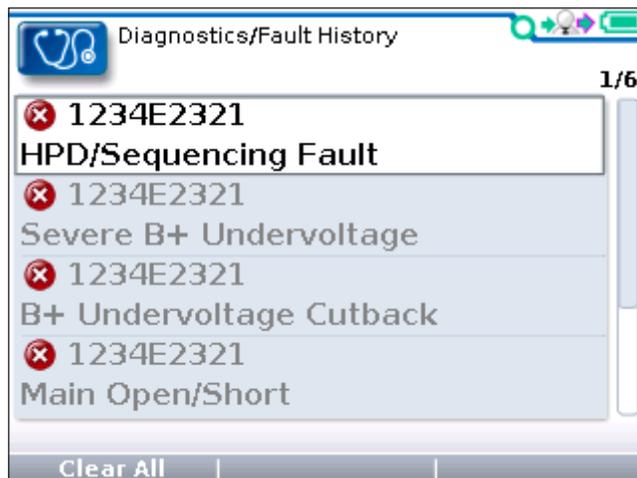
All existing faults are listed here, in chronological order. An item in this folder can only be removed by remedying the fault. As long as the fault exists, it will be included in the Present Errors folder. The “1/3” in the upper right corner of the screen indicates that the HPD/Sequencing Fault is the first of three present faults. The model number of the (faulted) connected controller is the first line of listed faults.

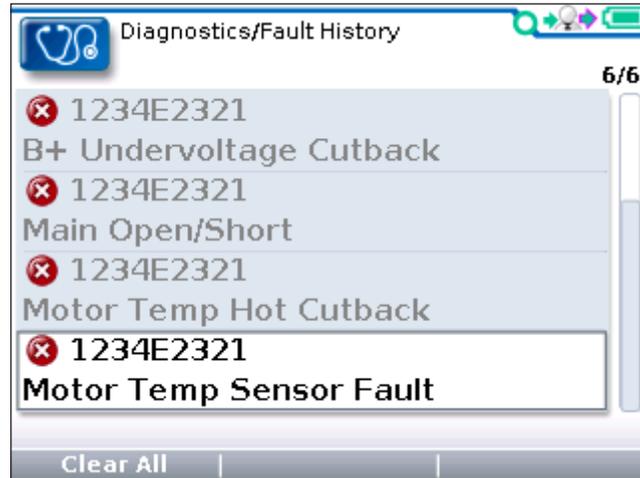


FAULT HISTORY FOLDER

This folder lists all the faults encountered since the Fault History was last cleared. Use the down (▼) or up (▲) arrows to navigate between faults. If the menu contains more than 4 faults shown on the screen, a scrollbar appears at the right edge of the screen. When a scrollbar is present, the lines wrap around so that navigating up from the top line/fault navigates the screen to the last line/fault on the list and vice versa. The highlighted fault will be indicated by its position out of the total. The most recent fault will be “1 of x” and the oldest fault will be “x of x”, where “x” is the total of faults.

Clearing the contents of this folder to allow a fresh Fault History to be started.



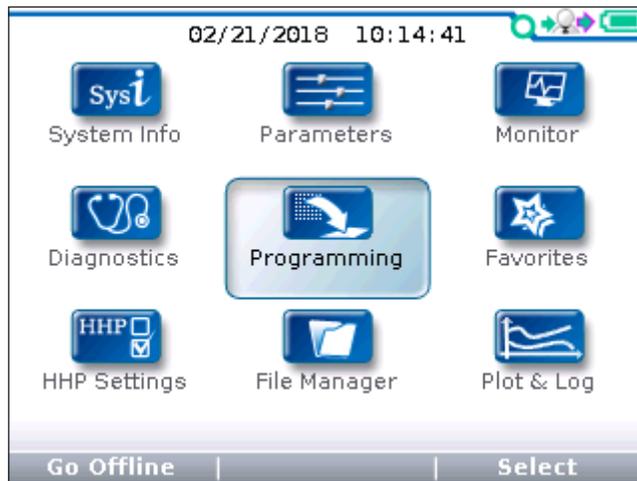


SOFTKEY AVAILABLE IN DIAGNOSTICS



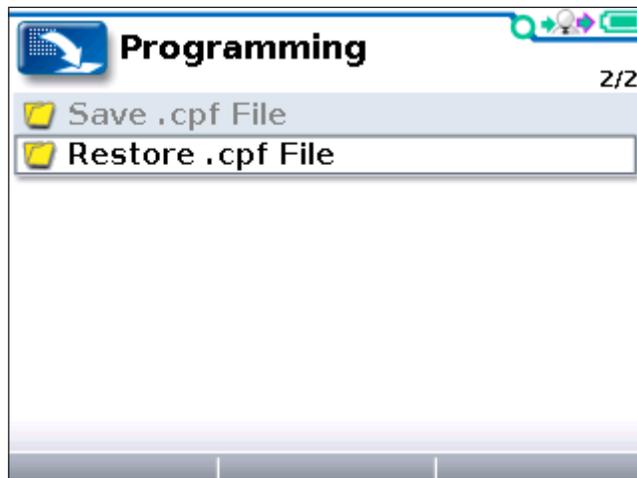
“Clear All” is used to empty the Fault History folder. This softkey appears only when the Fault History folder (or one of the faults within that folder) is highlighted. Individual or selective faults cannot be cleared.

8 – PROGRAMMING



Use the Programming app to obtain and save the parameter values, or restore (download) parameter values to the controller. The parameter settings are saved in a dedicated Curtis Program File (.cpf) format. A .cpf file can also be opened and viewed using the 1313 HHP offline mode (see [Chapter 15](#)). In the main screen, highlight the Programming icon and press the “Select” softkey to open the app. Return to the main screen at any time by pressing the main screen key (⏏).

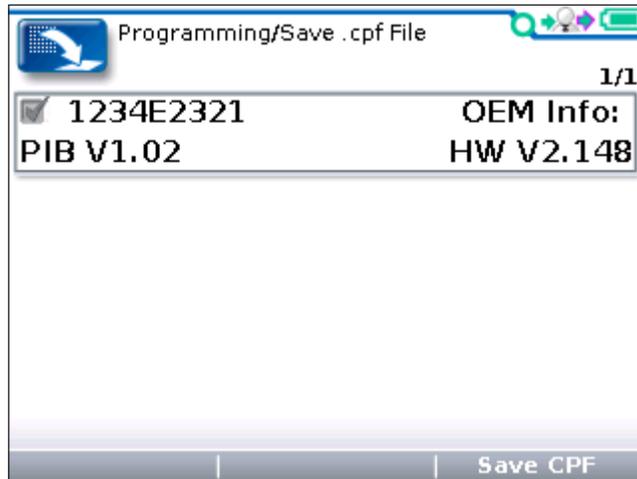
The Programming root menu contains the “Save .cpf File” and the 'Restore .cpf File options.



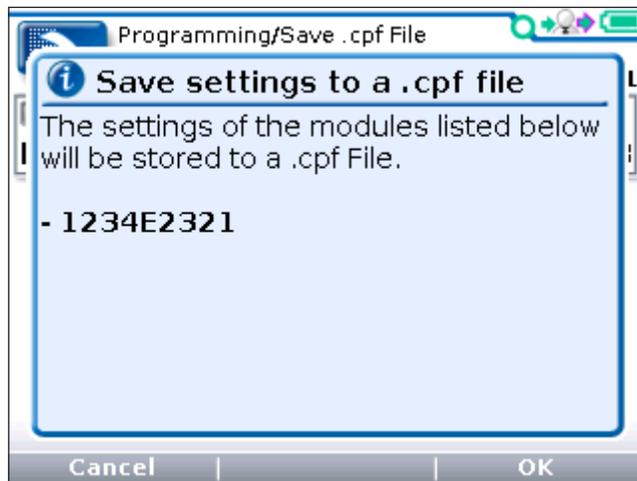
There are no softkeys on this screen. To choose whether to Save or Restore a .cpf file, highlight the option and press the right-arrow key (→).

“SAVE .CPF FILE”

The controller parameters and their values can be obtained and saved using the “Save .cpf File” option. The process saves all the parameters, even those not accessible at the user’s particular 1313 HHP access level. Whenever parameter values are changed using the Parameters app, each new value overwrites its previous value, so saving a .cpf file will always capture the latest parameter values.



Pressing the “save CPF” softkey will confirm the controller-model from which the data will be saved. In some applications, several modules (controllers) can be listed. In these cases, highlight the desired module.



After pressing “OK” to proceed in saving a .cpf file, the 1313 HHP will open a screen to select the location to save the file. Select either the Internal or SD-Card. Based upon the “Remember Last View” setting (see [Chapter 10](#), HHP Settings app) or if a .cpf file was previously saved, the next screen will vary.

- If the *Remember Last View* is “Off” the option to save the .cpf file in the Internal or SD-Card locations will be shown.
- If the *Remember Last View* is “On” the option opens to either the previously saved .cpf file location, or the Internal memory “Programs” folder.

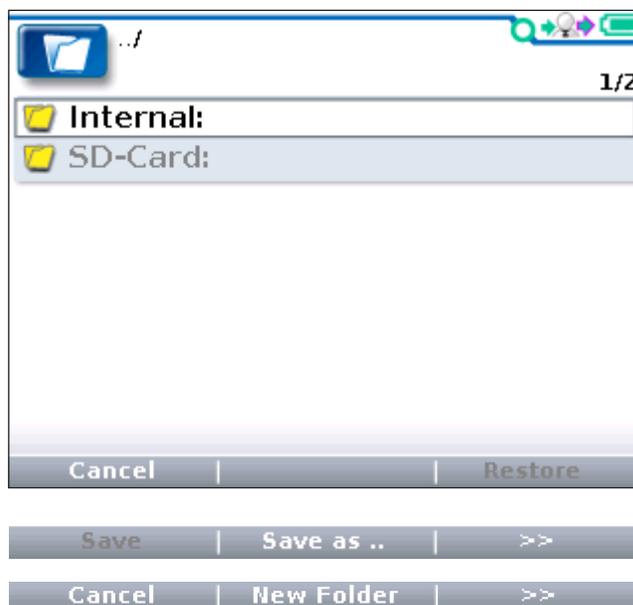
The option to choose a particular location is always available by using the 1313 HHP Up/Down/Right/Left Arrow (navigation) keys.

NAMING .CPF FILES

Save .cpf files with either a user-created filename or with the automatically-created filenames that use the “Date/Time” format (See “Text for save as” item in the HHP Settings app, [Chapter 10](#)). The Date/Time format allows rapid saves and is recommended when saving parameter changes during an initial setup of a controller or vehicle/system.

The .cpf file naming softkeys are illustrated, below.

The File Manager app can transfer (move) files between any location in the Internal memory or the SD-Card, but only one file can be moved at a time (See [Chapter 11](#), File Manager.) The transfer of multiple files at once is facilitated by connecting the 1313 HHP to a PC using the USB cable as described in [Chapter 2](#) (1313 HHP OPERATION, USB Connector,) and then using any of the standard tools available in Windows Explorer (Copy, Cut, Paste, Drag & Drop). For information on creating names, see [Chapter 13](#): Using the Keyboard.



“Save as ..” The “Save as ..” softkey saves the .cpf file to the current location using the name from the pop-up keyboard (see [Chapter 13](#), Using the Keyboard). The default name is based upon the ‘Text for “save as”’ setting in the HHP Settings app.

“>>” Pressing the “>>” softkey opens to the “New Folder” softkey options.

“Cancel” The “Cancel” softkey backs-out to the initial “Save CPF” screen.

“New Folder” Choosing the “New Folder” softkey opens the pop-up keyboard. The default new folder name is ‘Folder’.

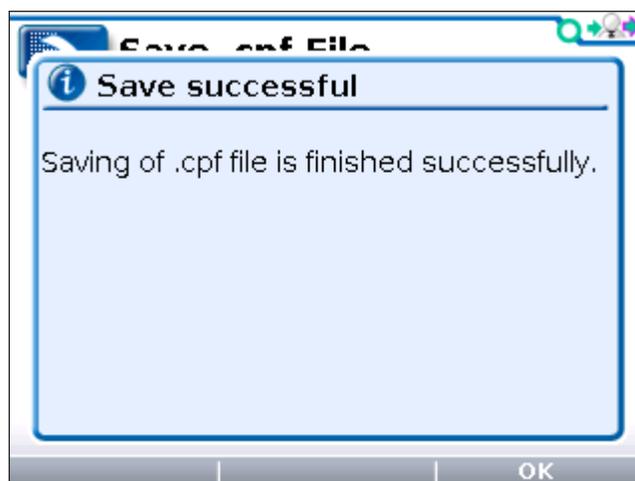
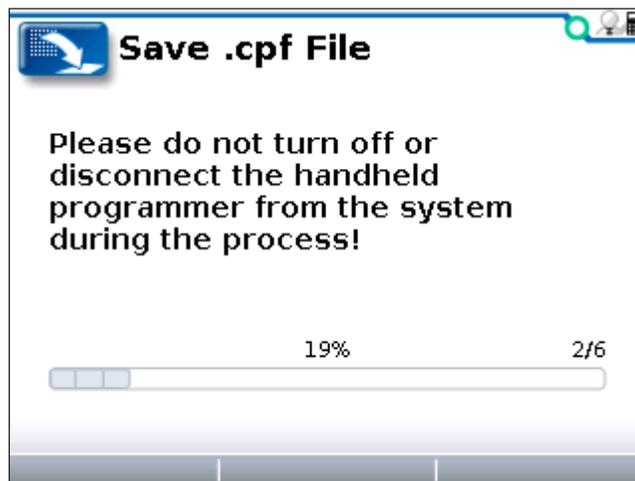
“>>” The “>>” softkey returns to the “Save as ..” softkey option.



- “Save” Highlighting an existing .cpf file opens these options. Selecting the “Save” softkey will overwrite the existing file. A pop-up window warning of this opens. Select its “OK” to overwrite the existing file. Note, the data in an overwritten file will be lost. Select the “cancel” softkey to stop and return to the previous save as options.
- “Save as ..” The “Save as ..” softkey opens the keyboard with the present ‘Text for “save as”’ HHP Settings default.
- “>>” The “>>” softkey will open to the above illustrated New Folder softkey selections. Proceed as described, above.

After completing the .cpf file location and naming selections, select the respective “OK” softkey to begin the saving process. The 1313 HHP screen will show the progression. In this example below, the “2/6” above the right end of the progress-bar means this is the second of six bars. The number of bars will vary based upon the controller (module) and its operating system.

When the process is complete, press the “OK” softkey to return to the 1313 HHP main screen.



“RESTORE .CPF FILE”

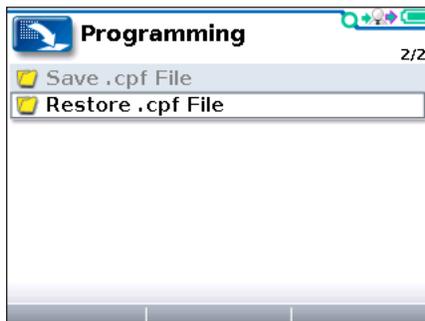
Use the “Restore .cpf File” option to restore the parameter values in a controller with those in a .cpf file. The restore process is similar to saving a .cpf file, yet instead of *saving* the parameter values from a source controller, the parameter values are *written* to a target controller. This restoration process *replaces* the target controller’s parameter values with those in the .cpf file.

For the process to be successful, the target controller must match the model name and the OS (operating system) parameter block version of the .cpf file’s source controller (i.e., they must *compatible*). Therefore, whether using the “Restore .cpf File” function to restore a controller to previous parameter settings or to transfer parameter settings from one controller to controllers in other systems or vehicles, follow the screen prompts to ensure compatibility.

From the Programming app main screen, highlight the “Restore .cpf File” option, then press the right-arrow key (▶) to open the restore function. In the next screen, the connected target-controller model name and parameter block version are listed. A compatible .cpf file will match these of the target controller.

Press the “Restore CPF” softkey to proceed to the next step. The target controller (“module”) being restored will be listed. Press the “OK” softkey to open the .cpf file selection screens. The .cpf file can be located on the 1313 HHP Internal memory or the SD-Card.

The following 3 screenshots illustrate these initial steps.



Highlight the Restore cpf File function, press ▶



Check compatibility of connected controller



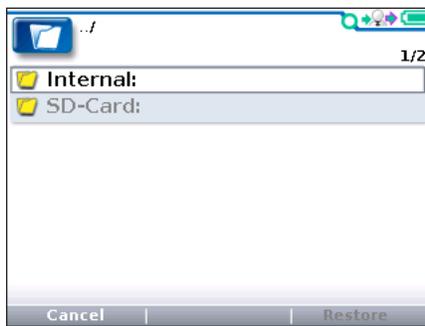
Confirm controller (module) being restored

The 1313 HHP will show the Internal and SD-Card as the possible locations of the restore .cpf file. Use the Up/Down/Right/Left navigation keys to locate and highlight the .cpf file to utilize. When the .cpf file is highlighted, press the “Restore” softkey. A pop-up screen will ask whether to enable Advanced Cloning (“Yes”/“No”). Note, this screen does not appear on User-level and Service-level 1313 HHPs. The following 3 screenshots illustrate these steps.

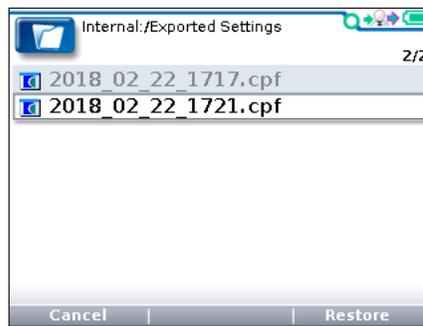
Advanced cloning overwrites all parameters, including those at a higher user access-level. Advanced cloning creates a true clone, copying even those parameters that cannot be seen at the User/Service/Dealer/OEM levels. Advanced cloning is advisable under the direction of the OEM, Curtis distributor or support engineer because not all changes can be tracked (viewed) by lower-level users.

Advanced cloning is available on the Curtis 1229 and the AC controllers (non-E and E/SE series).

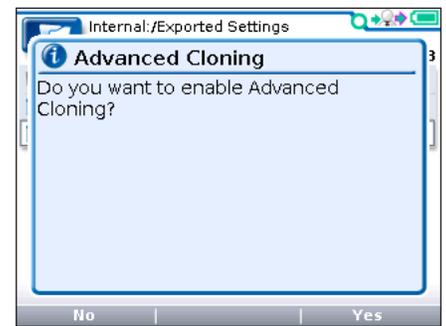
For questions restoring with advanced cloning on other controllers, please contact the OEM, Curtis distributor or the regional Curtis sales-support office.



Select the location of the cpf file, Internal or SD-Card



Highlight the .cpf file, then press “Restore” softkey

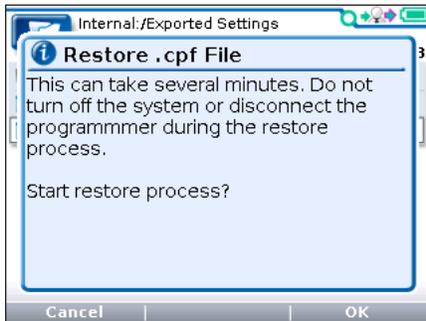


Advanced Cloning?, select either the “Yes” or “No” softkeys

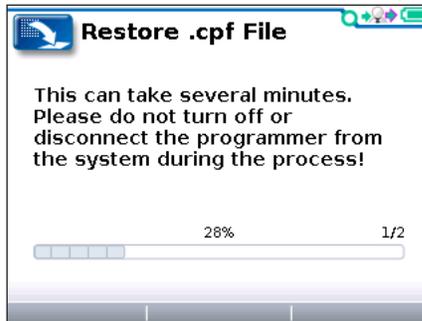
The restore process can take several minutes, during which time the controller must remain powered. The 1313 HHP receives its power from the serial connection and must remain connected to and powered by the controller during the update. After the parameter values have been successfully written to the target controller, the 1313 HHP pop-up message ‘Restore done’ will appear. Press the “OK” softkey, then key-cycle the controller (system/vehicle) to complete the restoration process.

If an error occurs, such as the saved .cpf file is incompatible with the controller being “restored”, a pop-up warning will appear. Most errors are due to incompatible target controllers. Compatible controllers must match in model name, parameter block version, and OS release. Curtis VCL programs that add parameters and menus will not restore their .cpf data to target controllers that match only in model and OS version. The target controller must have any revised OS built with the same VCL program that changes the parameter block. The following screenshots illustrate these final steps and situations.

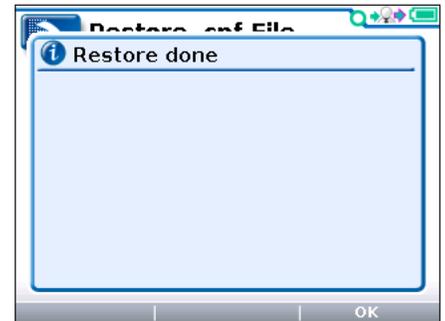
Contact the OEM, Curtis distributor or support engineer for help in resolving non-restored controllers.



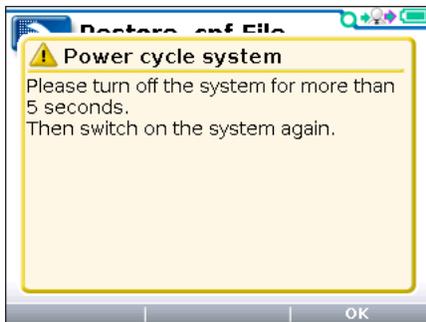
Start the Restore process



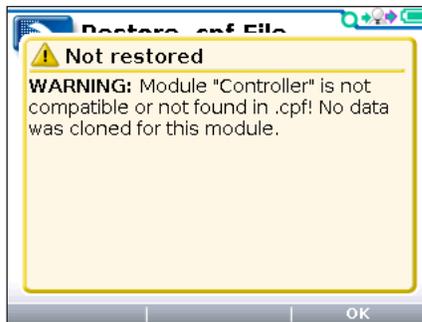
Progress bar during the restore process



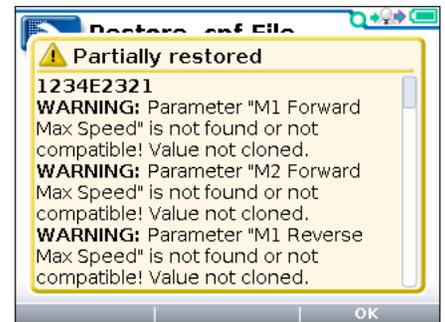
The .cpf parameter values are written to the controller



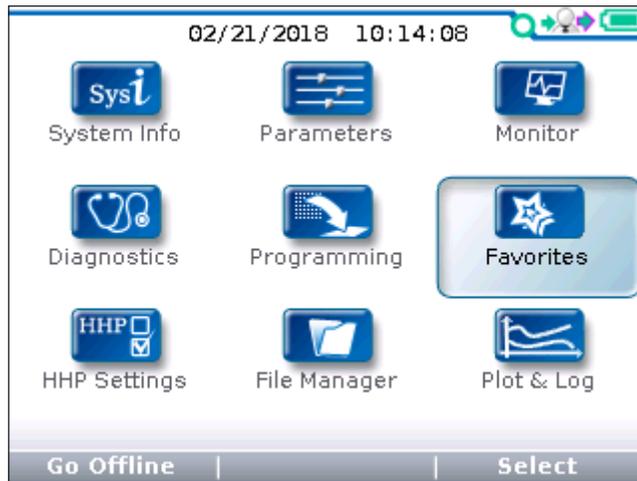
Complete the restore by cycling KSI



The target controller (module) must be the same model, parameters, and OS (operating system) to restore



9 – FAVORITES



In the main screen, highlight the Favorites icon and press the “Select” softkey to enter the app. Alternatively, the Favorites key (★) opens the app directly. Return to the main screen at any time by pressing the main screen key (☰).

Use Favorites to build custom sets of parameters and monitor variables that can be easily accessed without needing to navigate through multiple Parameters and Monitor menus.

- Add to Favorites the frequently adjusted parameters and regularly checked monitor variables.
- Parameter adjustments made within the Favorites app function the same as if the change was made in the parent Parameter app.

Individual parameters or monitor variables can be added to the Favorites app. An entire Parameter or Monitor menu (including any sub-menus) can be added at once. Any sub-menu (by itself) can also be added.

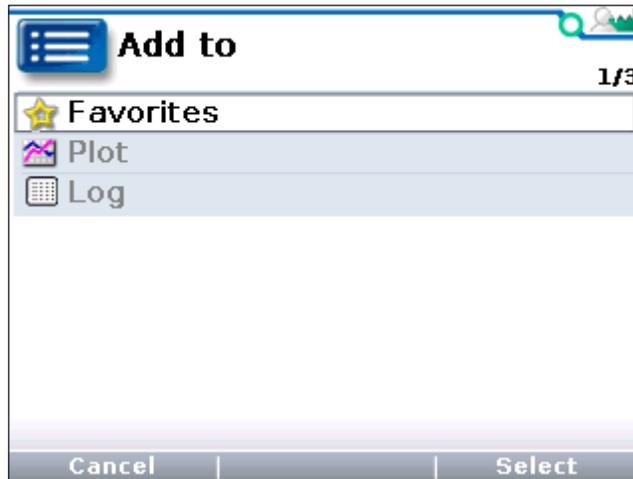
- Hint: Instead of individually adding many items to Favorites, it is often easier to add an entire Parameter or Monitor menu or sub-menu and then remove (delete) a few unwanted items.

Parameters and monitor variables added to Favorites can be renamed. A new “folder” with a custom name can also be created in Favorites and then parameters or monitor variables can be added to this folder.

- Use these features to easily navigate to a folder named for a task (such as “throttle setup”). All of the parameters and monitor variables (feedback items) needed for the task can be added to such a “task” folder.
- Create folders for specific vehicles, applications, or customers.
- Within Favorites, rename parameters and monitor variables as needed for an application.
 - Renaming does not change the parameter name in the Parameters app.
 - Renaming does not change the monitor variable name in the Monitor app.

USING “ADD TO” IN PARAMETERS AND MONITOR

To add an item to Favorites, from within the Parameters and Monitor app’s menus, highlight the parameter or monitor variable and select the “Add to” softkey. The “Add to” screen will open and list the available destinations. If the item is a parameter or monitor variable, the destinations are Favorites, Plot, or Log. If the item is a menu, the only destination is Favorites.



The “Add to” location options within the Parameters & Monitor apps

To add the item to Favorites, highlight Favorites and press the “Select” softkey. This opens the Favorites menu and a new series of softkeys as illustrated below.



The “Add” softkey adds the new item to the Favorites main window. The “Cancel” stops the operation and returns the screen back to the highlight item in Parameters or Monitor. Use the “»” softkey to scroll to the other softkey options.

The “New Folder” softkey will create a folder where the parameter or monitor variable can be added. The “Rename” operates on existing items within Favorites, for example renaming an existing folder.

The “Delete” will delete existing items (folders or individual parameters and monitor variables) within Favorites.

If the item being added to Favorites needs to be placed in a user-created folder, do not press the “Add” softkey yet. Instead, press the “»” softkey to access the “New Folder” softkey in the next screen. Then press the “New Folder” softkey to open the keyboard ([Chapter 13](#)). The default name (“Folder”) can be accepted by pressing the “OK” softkey, or the name can be edited using the keyboard and then accepted with the “OK” softkey. When the newly created folder appears in the Favorites window, “open” the folder by pressing the right-arrow key (▶) and then press the “Add” softkey to place the item in the folder.

When the “Add” softkey is selected, a new series of softkeys becomes available.



Whether saving to a New Folder or directly to the Favorites main screen, complete the *Add to* operation by pressing the “Finish” softkey. The screen will return to the app location (Parameters or Monitor) where the “Add to” softkey was last pressed.

The other softkeys are functions applicable to working with items within the Favorites app.

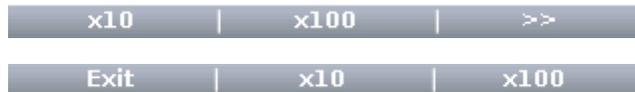
USING SOFTKEYS WITHIN FAVORITES

When the Favorites app is open, use the Up and Down arrow keys to navigate to parameters, monitor variables, or folders on the screen. Then use the “»” softkey to scroll through the available Favorites app softkeys.

Adjust Parameters

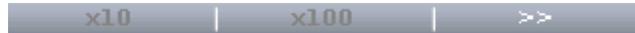
Use the +/- keys to edit a highlighted parameter. Or use the right-arrow key (▶) to open the parameter’s expanded view (bar graph) to edit its value. Note: Parameter adjustments made within Favorites are the same as if the change was made in the parent Parameters app. This also applies to renamed parameters (see above).

The “×10” or “×100” softkey, pressed together with the “+” or “-” key, allows rapid changes to parameter values (useful when the parameter value has a large).



Monitor Variable

View monitor variables the same as in the Monitor app.



Arranging items on the Favorites list(s)

The “Move Down” and “Move Up” softkeys are used to change the sequence of items listed in Favorites.



Use the “Rename” softkey to change the name of an item in Favorites. The keyboard will open to enable editing ([Chapter 13](#)). The renaming of parameters and monitor variables is allowed within Favorites. Renamed items do not change in their respective Parameters and Monitor apps names, however. Folders created in Favorites can also be renamed.

To delete an item, use the “Delete softkey.



Use the “Add to” softkey to add parameters or monitor variables (already) in Favorites directly into the Plot or Log apps.



The “Import Fav.” softkey is used to import a *folder* into Favorites from a previously saved .hfc file ([see Appendix A](#)).



Importing

1. Open Favorites. Navigate to the location where the *folder* will be imported. Choose either the main screen in Favorites or an *opened* Favorites Folder (press  to open a folder). Select the “Import Fav.” softkey.
2. When the 1313 HHP asks, “Please select the favorite file you would like to import to the current directory.” select the “OK” softkey.
3. Navigate to a location on the Internal or SD-Card, highlighting the .hfc file to be imported.
4. Select the “Import Fav.” softkey.
5. Favorites will now contain the imported .hfc folder in the location indicated in step 1 (above).

To create a new folder within Favorites for the imported file, use the “New Folder” softkey. To create a sub-folder, first open an existing folder using the right-arrow key () , and then select the “New Folder” softkey.



The “Export Fav.” softkey is used to save any *folder* in Favorites as an .hfc file. It is only available when a folder is highlighted (not individual parameters or monitor variables). See the “Import Fav.” process and softkey described above. These 2 softkeys provide a convenient method to easily restore Favorites to a previously used group of items or to transfer Favorites from one 1313 HHP to another 1313 HHP.

- Hint: OEMs can use this technique to provide ready-made Favorites collections to dealers and technicians.



Exporting

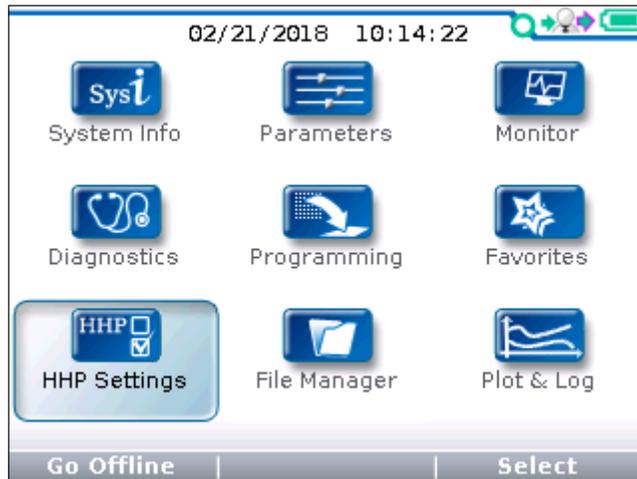
1. In Favorites, all of the items to be saved must be in 1 folder. This folder can contain any number of parameters, monitor variables or folders (i.e., sub folders).
2. Highlight the folder to be saved and select “Export Fav.”
3. When the 1313 HHP asks, “Do you want to export the selected Favorite folder to a .hfc file?” select the “OK” softkey.
4. The 1313 HHP shows that the file can be saved to either the Internal memory or the SD-Card. Highlight the desired location and press the right-arrow key () to open.

If saving the exported .hfc file to a folder, navigate to the folder and open it. Press the “Save as” softkey and then follow/scroll the keyboard softkeys to either “OK” the .hfc file name, or edit the default name (which is the folder name).

To save the exported .hfc file in a new folder, press the “»” softkey, and then select the “New Folder” softkey. Follow the keyboard softkeys to name the new folder. Then follow the keyboard softkeys to either “OK” the .hfc file name, or edit the default name (which is the folder name).

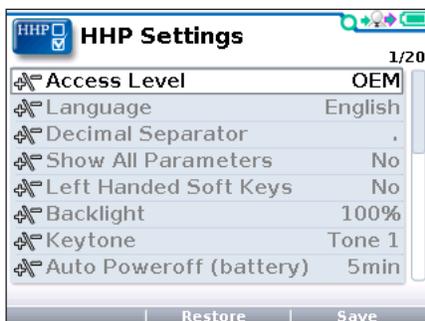
If saving an exported .hfc file that already exists in the selected location, a screen prompt will ask whether or not to overwrite the existing file. Pressing “OK” overwrites the existing file. Otherwise press “Cancel” to open the keyboard editor to change the file name before saving.

10 – HHP SETTINGS



The **HHP Settings** app allows adjustment to the appearance of the screen displays and the 1313 HHP's functionality. Highlight the "HHP Settings" icon and press the "Select" softkey to enter the app. The app is accessible when working offline. Return to the main screen at any time by pressing the main screen key (⏏).

A slider on the right-hand side of the "HHP Settings" screen indicates there are more items in this menu than can fit on the 8-line screen. When the last (8th) item on a page is reached, continue pressing the down-arrow key (▼) to view the remaining items. When the top item in the menu is highlighted, pressing the up-arrow (▲) will wrap to the last item. When the last (bottom) item in the menu is highlighted, pressing the down-arrow key (▼) will wrap to the first item. The upper-right corner of the display indicates the highlighted item's location relative to the total number of items in the menu (e.g., 1/20 through 20/20).



ACCESS LEVEL

The Access Level of the 1313 HHP can be set to its own level or to any lower level. The order (high-to-low) is OEM, Dealer, Service, and User.

Setting the Access Level to a lower level restricts the parameters and monitor variables that can be viewed. Lower level access allows service and diagnostics without the ability to alter OEM settings that affect vehicle response.

LANGUAGE

Select English, Deutsch, Français, Italiano, or Español for the screen text.

DECIMAL SEPARATOR

Decimal points can be represented by a period or comma. For example, 10.00 Volts or 10,00 Volts.

SHOW ALL PARAMETERS

Typically not used. If not used in the application, a pop-up message will say:

“This parameter setting has no influence in the current system. Therefore it is always set to “NO”.

LEFT HANDED SOFT KEYS

Selecting “Yes” for Left Handed Soft Keys reverses the position of items in the softkey text line to make the keys more convenient for left-handed people.

BACKLIGHT

Sets the brightness of the 1313 HHP’s LCD display from 100% to 20% in 5% increments.

KEYTONE

Choose the sound that will accompany each key press or turn off keytone for silent 1313 HHP operation.

AUTO POWEROFF (BATTERY)

If the 1313 HHP is being powered by its own batteries instead of a device, the 1313 HHP will automatically power off if no buttons are pressed for a period of time that can be adjusted with the “Auto Poweroff (battery)” setting. The available settings are 5, 10, 20, 30, and 60 minutes. Use lower values to conserve the batteries.

AUTO POWEROFF (EXT)

If the 1313 HHP is being powered by a device, the 1313 HHP will automatically power off if no buttons are pressed for a period of time that can be adjusted with the “Auto Poweroff (ext.)” setting. The available settings are 15, 30, 60, 120 minutes, and never.

EXIT MENUS WITH LEFT ARROW

The left-arrow key () is used to navigate backwards within menus.

When set to Yes, use the left-arrow key to leave the presently displayed screen and return to the next higher (i.e., previous) screen. Using the left-arrow key will ultimately return to the Main Screen.

When set to No, the left-arrow key can return to the next higher screen but cannot return from the top level of an App to the Main Screen. The Main Screen can be accessed using the Return softkey or the Main Screen Button()

ENABLE SCREENSHOT

The Yes/No setting of this item determines whether the 1313 HHP will allow screenshots to be taken. See [Chapter 14](#) for a description of this function.

When set to “Yes”, take a screenshot by pressing the Power key (⏻) followed by the Favorites key (★).

When set to “No”, attempting to take a screenshot will result in the Power Key being ignored and the Favorites app being opened.

LOG & PLOT CYCLE TIME

Sets the sample rate for the Log and Plot functions. The setting is adjustable from 50ms up to 1 minute in defined steps. The identical setting is also available in the Plot & Log App. Adjustments to either setting will change both settings.

SHOW ONLY EMPTY BATTERY

A battery icon showing the state-of-charge of the 1313 HHP’s battery can be displayed in the upper right corner of the screen.

If set to “No”, the battery icon is always displayed.

If set to “Yes”, the battery icon is only displayed if the AA batteries are depleted.

TEXT FOR “SAVE AS”

When creating a new .cpf file (see Programming app, [Chapter 8](#)) or a new Log .xls file (see Plot & Log app, [Chapter 12](#)), the name of the file can be created manually or automatically.

If the setting is “No text”, the field at the top of the keyboard screen is blank and the user can type a filename.

If the setting is “Date/Time”, the field at the top of the keyboard screen is automatically filled with the date and time using the format YYYY_MM_DD_HHMM.

- Hint: The “Date/Time” setting is recommended when saving multiple files in quick succession. The automatically created filenames can then be renamed later if necessary.

KEYBOARD HELP TEXT

When set to On, a keyboard help pop-up will appear every time that the keyboard screen is entered.

When set to Off, no pop-up appears when the keyboard screen is entered.

REMEMBER LAST SCREEN

When set to On, selecting an app from the main screen will result in the 1313 HHP returning to the last screen that was used in this app. If an app is exited by selecting the Main Screen key, the next selection of this app from the Main Screen will return to the most recently used location in this app.

When set to Off, selecting an app from the main screen will always result in the app opening at the root (top) screen.

DELETE CACHE FILE

Delete Cache File and Delete Favorites are the items in HHP Settings that result in an action instead of a setting change. [Chapter 2](#) (Operation) discussed how cache files are acquired and are used to reduce connection times during subsequent connections. These cache files can be deleted by highlighting “Delete Cache File” and then pressing the right-arrow key (▶).

This action deletes all cache files, not just the cache file of the presently connected controller. Cache files can also be deleted in the offline (battery) mode (e.g., when no controller is connected). If problems are encountered when connecting, delete the cache files and then re-connect to the controller.

DELETE FAVORITES

Delete Favorites and Delete Cache File are items in HHP Settings that result in an action instead of a setting change. Delete all items in Favorites (including folders) by highlighting “Delete Favorites” and then pressing the right-arrow key (▶).

DATE & TIME

This folder contains the following eight items.

Show Date/Time in header. When set to On, the date and time are displayed at the top of the main screen. The date and time will only be accurate if batteries are installed and the user sets the date and time as described below. The date and time will be used for the timestamps of any files that are saved. If “Text for save as” is set to “Date/Time” (see above), the date and time will be used to automatically name files.

If no batteries are installed, it is recommended that the setting be changed to OFF so that the 1313 will not be displaying an incorrect date and time. Any files that are saved will have an incorrect timestamp.

12h/24h. Select the format used to display the time.

Date Format. Several options are available. The year can appear first or last. The month can appear before or after the day.

Year, Month, Day, Hour, and Minute allow setting the date and the time for the local time zone. After adjusting these settings, selecting the Main Screen Button will result in the Main Screen showing the selected Date and Time with seconds starting from 00.

The “Date/Time” setting is recommended when saving multiple files in quick succession. The automatically created filenames can then be renamed if necessary, preserving the chronological order

ABOUT

This folder contains 1313 HHP information such as model, software versions, hardware versions, Serial Number, Manufacturing Date, etc.

SOFTKEYS AVAILABLE IN HHP SETTINGS



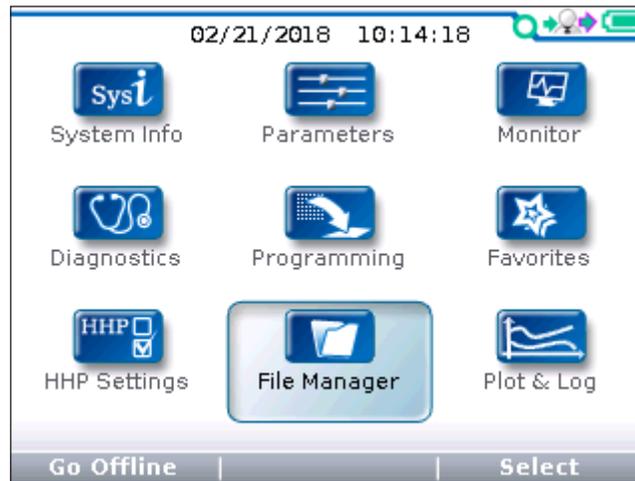
The “Save” softkey saves the settings in “HHP Settings” to an *HHP1313_Settings.hps* (**h**andheld **p**rogrammer **s**ettings) file in the internal memory. If there is an SD card in the 1313 HHP, the .hps file will be saved to the SD-Card **and** the Internal memory. Saving an .hps file will result in the previously saved .hps file(s) being overwritten.

After saving the settings to an .hps file, this file is available to restore the settings on the same 1313 or on a different 1313. To restore the settings on the same 1313 HHP, press the “Restore” softkey. The screen will display a message indicating the HHP Settings have been successfully restored and displays the .hps file location (path). If a SD-Card is present, the location will be from the SD-Card. Barring a SD-Card, the *HHP1313_Settings.hps* will be restored from the internal memory.

If not using a SD-Card to transfer the .hps settings file to another 1313 HHP, transfer the settings from one 1313 HHP to a second 1313 HHP by copying the .hps file from the first 1313 HHP to a PC and then pasting this file in the second 1313 HHP. Use the supplied USB cable to connect the 1313 HHPs to a PC ([see Chapter 2](#)). The “Restore” softkey on the second 1313 HHP can then be used to restore all of the settings to the values from the first 1313 HHP.

After making adjustments to settings in HHP Settings, it is not necessary to select the “Save” softkey. The new settings will remain in effect unless the “Restore” softkey is selected.

11 – FILE MANAGER



In the main screen, highlight the File Manager icon and press the “Select” softkey to enter the app. Return to the main screen at any time by pressing the main screen key (⏏).

The File Manager softkeys are used to manage Internal and SD-Card files. The softkey navigation includes a “»” softkey that is used to access the additional options. Use the “left-arrow” (⏪) softkey to go back one screen.

Use File Manager to:

- Create new folders.
- Delete files and folders.
- Rename files and folders.

Use File Manager to rearrange files and folders:

- Copy and paste files and folders.
- Move files and folders.

To view long file names that extend past the File Manager screen width, press the right-arrow key (⏩). This opens a window that will display the file’s path and its full name. The window will also list the item’s byte size and date last modified. Folders with long names will not open to show the full name, unless the folder contains at least 1 file. By highlighting a file, then expanding it, the folder name will be fully displayed as part of the file’s path as noted above.

SOFTKEYS AVAILABLE IN FILE MANAGER



Copy: Copies the highlighted item. After pressing the Copy softkey, the softkey options become “Paste” or “Cancel.” Cancel will stop the copy operation (i.e., clears the item from the 1313 “clipboard”).

Paste: Pastes the copied item into the highlighted location (see navigation between folders*).

Move: Moves the highlighted item (file or folder) to another folder. After pressing the Move softkey, the softkey options become “Insert” or “Cancel.” Cancel will stop the move operation (i.e., clears the item from the 1313 “clipboard”).

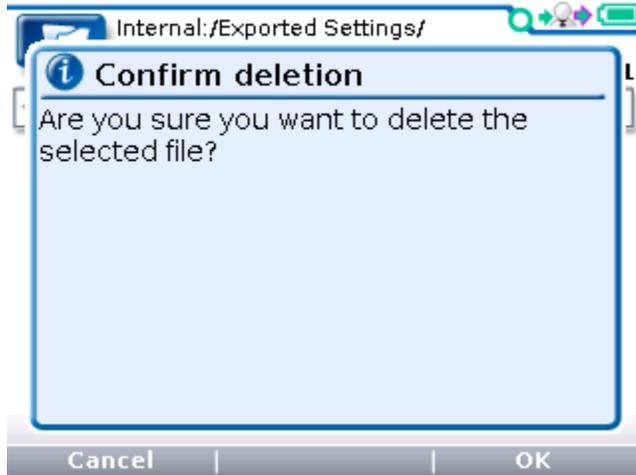
Insert: Insert the item to move it to the new location.



Rename: Opens the keyboard editor to rename the highlighted item.

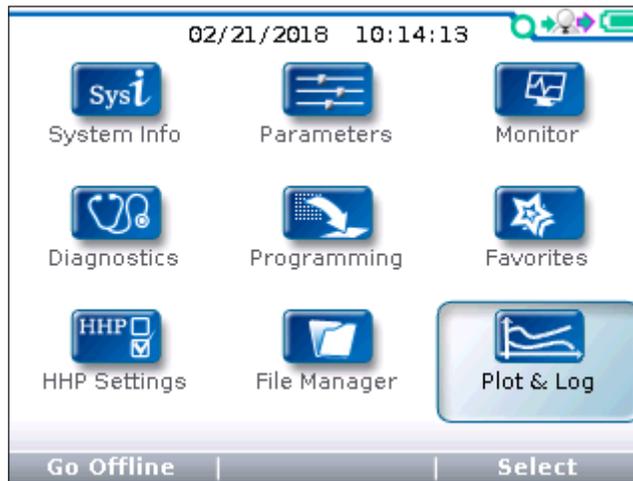
New Folder: Opens the pop-up keyboard editor to create a new Folder within the highlighted folder or menu.

Delete: Deletes the highlighted item. A pop-up message will ask before deleting.



* To navigate between folders, use the left arrow key (◀) to return to the folder list(s), then use the up/down arrow keys to highlight the target folder. Open the target folder using the right-arrow (▶).

12 – PLOT & LOG



In the main screen, highlight the Plot & Log icon and press the “Select” softkey to open the app. The Plot & Log app has a Plot utility and a Log utility. The Plot utility plots the values of selected variables over time. The plot can be saved using the screenshot process. The Log utility creates a log of the values of selected variables over time. The log can then be viewed in a spreadsheet program on a PC. Return to the main screen at any time by pressing the main screen key (⏪).

Plot and Log variables

Items to be plotted must be added to the Plot Variable List. Items to be logged must be added to the Log Variable List. The 2 lists are independent. Add items from the Parameter and Monitor app’s menus by highlighting an item and pressing the “Add to” softkey. In the next screen, highlight the Plot or Log icon and then press the “Select” softkey to view the existing list. To add the item to the list, press the “Add” softkey followed by the “Finish” softkey. The limit is 5 items in the Plot Variable List and 8 items in the Log Variable List. To remove an item from a list, select the item and press the “Delete” softkey.

The Log & Plot Cycle Time parameter shown in the HHP Settings app (item 12 of 20) menu is adjustable. Use the Plus/Minus keys to change the value. Decreasing the time results in more frequent samples and vice versa.

PLOT

In the Plot Variables List, a colored circle beside each item shows the color that will be used for that item in the plot. The colors are in a fixed order; Red/Blue/Green/Cyan/Magenta. If items are to use a specific color, use the “Move Down” and “Move Up” softkeys to achieve the desired combination. Items can also be renamed and deleted from the list. Return to the Plot & Log app by using the left-arrow key (⏪).

To create a Plot of the items, highlight “Plot” and then press the right-arrow key (⏩) to open the plotting program. Press “Start” to begin the plot routine, and “Stop” to end the plotting. Plot images are saved by using the “screenshot” process. Screenshots (.bmp format) can only be saved to the SD-Card (see [Chapter 14](#)). The saved screenshot file cannot be opened with the 1313 HHP and must be viewed using a PC by navigating to the saved file as described in [Chapter 2](#) (See the “USB Connector” and the “SD card” sections).

The Plotted items will wrap the 1313 HHP screen when the right-edge is reached and resume on the left-edge. The plot data is only of the 1313 HHP screen, as captured by the screenshot function.

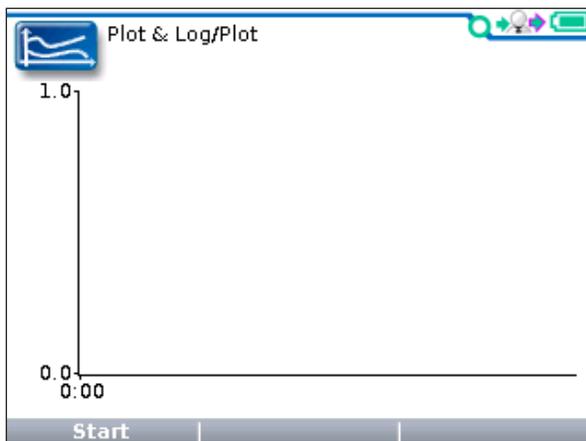
Within the Plot Variable List, parameters can be selected and their value changed following the same process as described in the Parameter app (Chapter 5). Highlight the parameter and press right-arrow key (▶) to open the detail screen. Adjust the parameter and then use the left-arrow key (◀) to return to the Plot Variable List. Changes take place immediately and are carried over into the Parameter and any other locations that the parameter is displayed.



The Plot Variable List _ the softkeys to rearrange items order



The Plot Variable List _ Rename and Delete items softkeys



Press the “Start” softkey to begin the plot trace



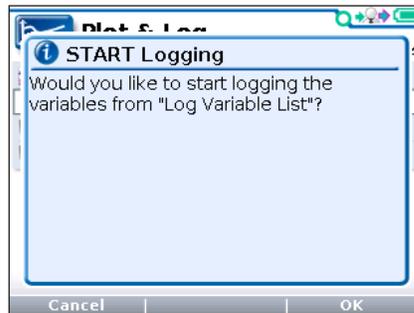
Press the “Stop” softkey to end the plot trace

LOG

To begin the log program, highlight “Log” and then press the right-arrow key (▶). In the “Start Logging” window, press the “OK” softkey. A log of the items in the Log Variable List can be saved to the SD card as an .xls spreadsheet file. Use the “Save as” softkey to create an xls file with a new name or use the “Save” softkey to overwrite an earlier xls file. After using either technique, select the “OK” softkey to begin logging. The Plot & Log menu will now have a flashing red dot (●) next to Log indicating that logging is in progress. To stop logging, press the right-arrow key (▶), and then in the “Stop Logging” pop-up screen, press the “OK” softkey. The “Data Log” pop up shows the name and path of the xls file saved to the SD-Card location. See images, below.



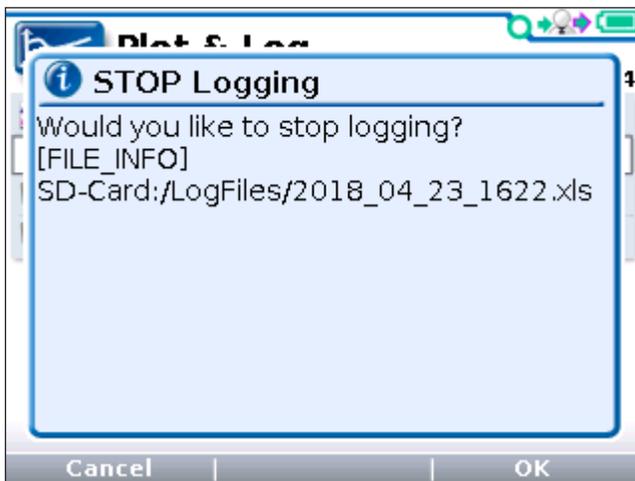
Highlight the Log icon, then press the ▶ key



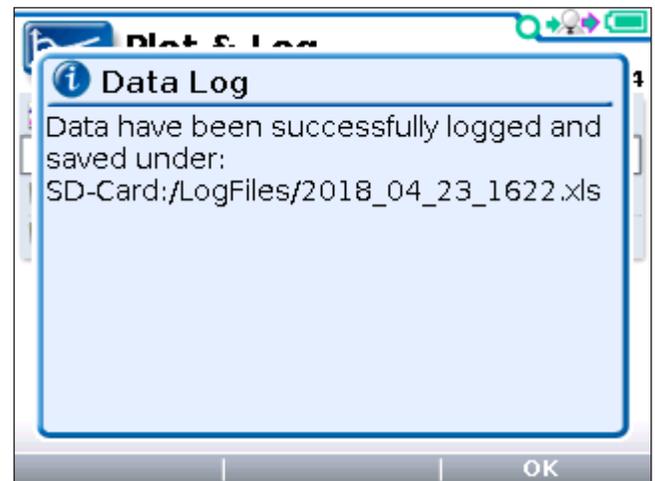
Press “OK” to begin logging



Flashing red-dot indicates logging is in progress



To stop logging, press the ▶ key, then press “OK” to stop logging



The saved log data pop-up lists the file name and its path.

Within the Log Variable List, parameters can be selected and their value changed following the same process as described in the Parameter app (Chapter 5). Highlight the parameter and press right-arrow key (▶) to open the detail screen. Adjust the parameter and then use the left-arrow key (◀) to return to the Plot Variable List. Changes take place immediately and are carried over into the Parameter and any other locations that the parameter is displayed.

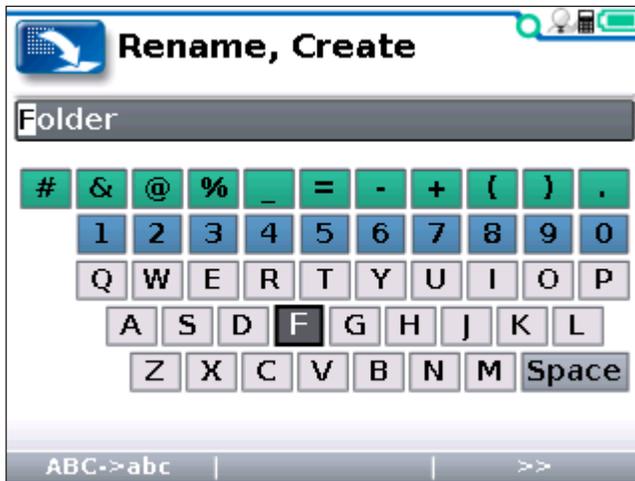
PLOT & LOG NOTES:

- 1) Due to the limitations of the 1313 HHP screen size, plotting works best if the items being plotted have similar value ranges. The plotted items will continually scroll across the screen resulting in the maximum *viewable duration* as the 1313 screen width as determined by the sample rate set by the *Log & Plot Cycle Time* parameter in the HHP Settings app.
- 2) If a plot is needed for variables with values that do not have similar ranges, it is recommended to use the log program rather than the plot program. To view and examine the data, open the log's xls file in Excel and then use the Excel plotting feature to select a suitable vertical scale (or multiple vertical scales).
- 3) The renaming of items only applies to the items listed in their respective Plot or Log Variable List. It does not change the item's name in the parent Parameter or Monitor apps. Nor does it change the name of shared (common) variables in the Plot or Log Variable List.

13 – USING THE KEYBOARD

The Favorites, File Manager, Plot & Log, and Programming apps have the ability to rename items or create new folders. Files and folders can be explicitly named. These activities use the 1313 HHP pop-up keyboard.

When creating new folders, the default name “Folder” can be renamed (edited) using the pop-up Keyboard function. In addition, Log (.xls) and clone data file (.cdf) files can be named or renamed. Whenever the “New Folder” or “Rename” softkeys are pressed, the keyboard screen appears:



Creating a new Folder, the default is “Folder”



Renaming an existing file, date and time example

When a new folder is created, an existing file or folder renamed, or a new file is being saved using the “Date/Time” feature, the screen will initially display the name with the first character highlighted. The corresponding character on the keyboard will also be highlighted. Use the four arrow keys (up, down, right, and left) to move around the keyboard. Notice how the character in the name is replaced by whichever character on the keyboard is highlighted. When the desired letter or symbol is highlighted, use the “+” key to capture it and move on to the next letter.

In the text line, use the “+” key (⊕) to move the highlight one space to the right, and the “-” key (⊖) to move the highlight one space to the left. The “-” key works as the delete key on existing text.

If saving a filename using “No text” instead of “Date/Time”, the keyboard screen will initially appear with a blank text line. The filename is created as described above.

The following softkeys are available when the keyboard is displayed.



“**ABC→abc**” (“abc → ABC”) is a toggle for selecting between uppercase or lowercase letters. Each press of this softkey will alternate between “ABC → abc” and “abc → ABC”. The letters on the keyboard display will correspondingly change between uppercase and lowercase letters.

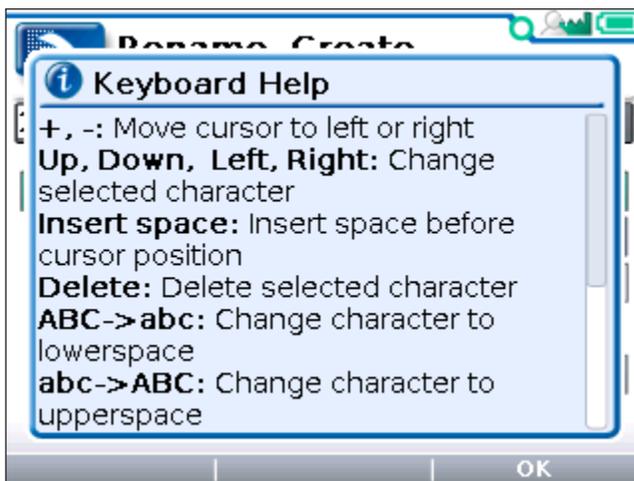
“**Delete**” deletes the highlighted letter.

“**Insert space**” inserts a blank space to the left of the highlighted letter.

“**Cancel**” aborts the renaming process.

Press “**OK**” when the new name is completed.

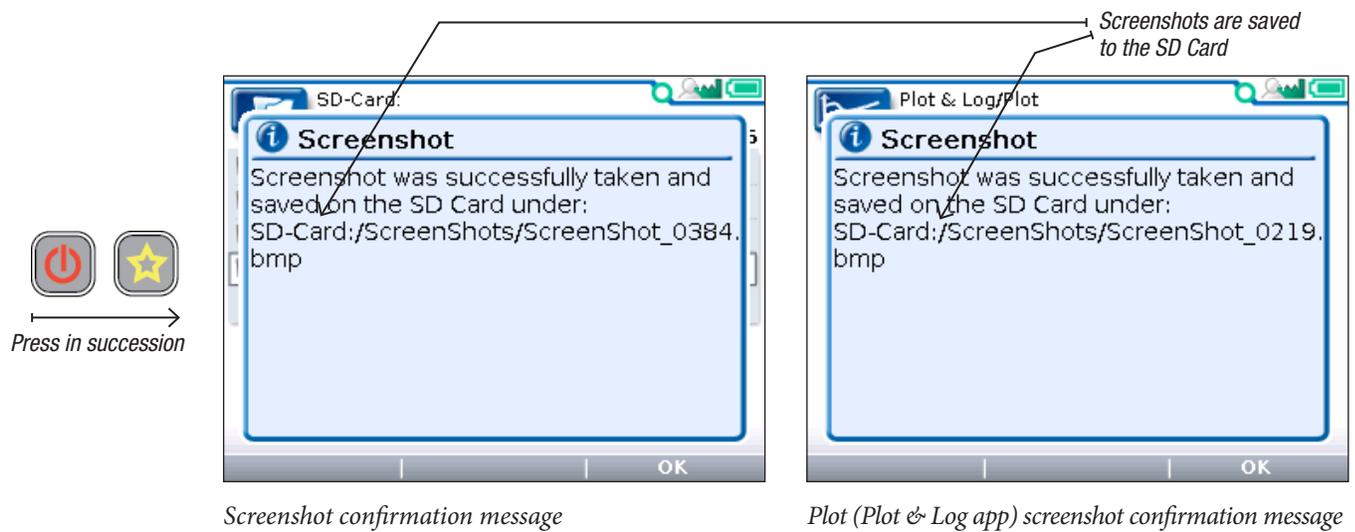
If the “Keyboard help text” option in HHP Settings is On, the following keyboard help message will precede the keyboard screen. Use the Up and Down Arrow Keys to scroll through the keyboard help. Select the “OK” softkey to close the keyboard help and advance to the keyboard screen.



14 – TAKING SCREENSHOTS

The 1313 HHP can capture an image of the display screen and save it to the SD memory card as a bit map file (.bmp). These “Screenshots” are numbered sequentially, from 0001 to 9999. The captured image cannot be viewed using the 1313 HHP. The .bmp file must be transferred from the SD card to a PC and then opened from the PC. Each screenshot file is typically about 153 KB and the image is 320 x 240 pixels. Note that the Plot function’s image is also saved as a screenshot in the same directory as a normal screenshot.

Screenshots are taken by pressing and releasing the Power key (⏻) and then immediately pressing and releasing the Favorites key (★). The 2 buttons must be pressed in quick succession. After a few seconds, a pop-up message confirming that a screenshot was taken will appear. Use the “OK” softkey to close the confirmation screen.



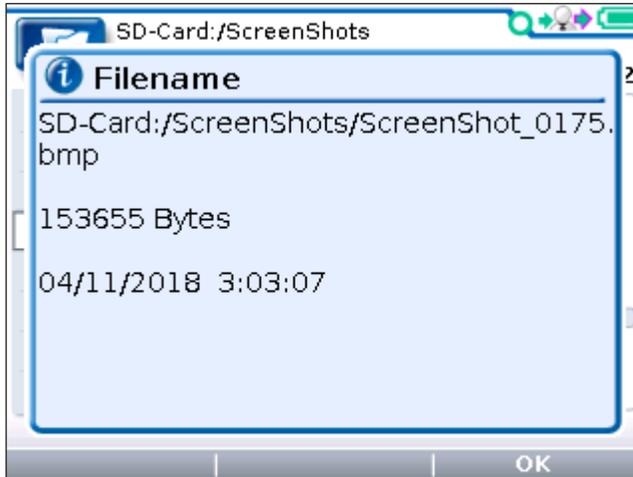
When taking a screenshot of a screen that is requesting a choice (such as Yes/No), the confirmation message will not appear until after the requested choice is completed.

Selecting a screenshot file within File Manager opens a window indicating the file’s path, bytes, date, and time (see image, below).

Screenshot files on the SD card can be renamed, copied, moved, deleted, or put into folders using File Manager ([Chapter 11](#)). However, it is typically easier to edit screenshot files on a PC.

The automatic sequential numbering of screenshots is unaffected by deleting screenshots. After deleting 1 or more screenshots, the filename of the next saved screenshot will increment from the most recently saved screenshot number.

Note: Screenshots can only be taken if “Enable Screenshots” is enabled in the HHP Settings app and a SD Card is installed; see [Chapter 10](#).



File Manager: Screenshot file information



HHP Settings: Enable the screenshot setting

15 – WORKING OFFLINE

Working Offline is the process of performing various 1313 HHP functions while not connected to a device.

The following 1313 HHP operations can be performed while working offline.

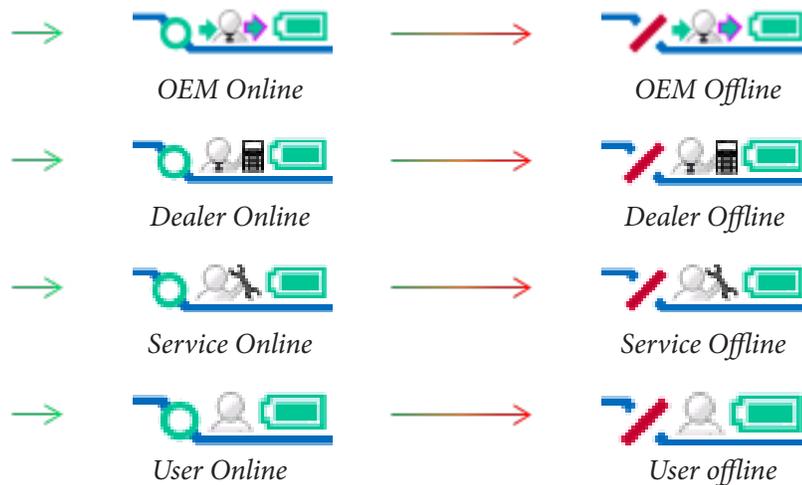
- Load a .cpf file, adjust its parameter settings, and save these into the same or a new .cpf file that can be restored into a controller when the 1313 HHP is online again.
- Delete files and folders, create new folders, and rename and rearrange files and folders using the File Manager app.
- Adjust the 1313 HHP settings and save them to a new .hps file using the HHP Settings app.

New or modified files created while working offline are transferable to other 1313 HHPs and usable when re-connected to a device. To restore a cpf file to a device, the 1313 HHP must be connected to a device.

There are 3 ways to work offline:

1. 1313 HHP Disconnected (1313 HHP cable not connected to anything)–Powered by batteries.
2. 1313 HHP connected to a powered Serial bus with no device–Powered by a system serial bus*
3. 1313 HHP connected to device and then select Go Offline–Powered by the serial bus.

While working offline, the green circle in the upper right-hand corner of the screen is replaced by a red slash—indicating that the 1313 HHP is not connected to a live online system.



* See the controller/device manual for the mating 4-pin Molex wiring: Pin-1 = Rx, Pin-2 = Gnd, Pin-3 = Tx, Pin-4 = +12V.

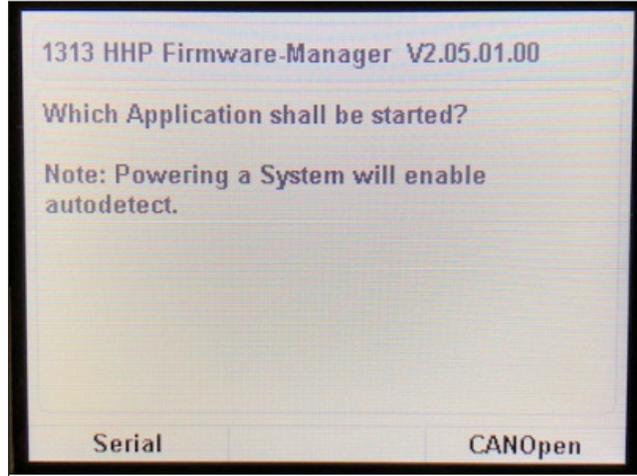
Vehicle/system mating connector: Molex Mini-Fit Jr. dual-row, 4 circuits, vehicle harness plug (p/n 39-01-2046). Male pin terminal (p/n 39-00-0041)

Note: Some controllers/devices are specifically fitted with the mating serial bus connector and thus do not allow a power and ground breakout. For these devices, use either the battery or the connected device/Offline method.

1313 HHP DISCONNECTED

To work offline with the 1313 HHP disconnected (1313 HHP cable not attached to anything), 2 AA batteries must be installed in the 1313 HHP.

Turn on the 1313 HHP using the power key (⏻). The screen will display the option to use “Serial” (serial-based communication) or “CANopen” (CAN-based communication*). Select the “Serial” softkey. The connection status will display the “red slash” indicating no device is connected. The 1313 HHP is offline.

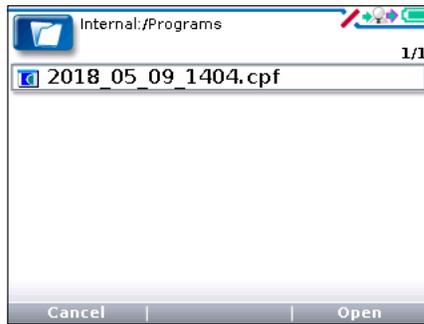


Select “Serial” to begin the Offline mode

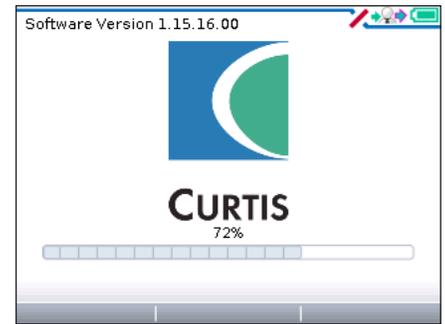
Use this offline mode to adjust parameter settings within a .cpf file, then save the new settings. To open a .cpf file, in the opening screen select the location of the file by pressing the right-arrow key and scrolling to the .cpf file location. Highlighted the desired .cpf file, and then press the “Open” softkey.



Choose the location of the .cpf file



Select the .cpf file (note, file name may vary)



Offline mode, .cpf file data loading progress bar

When the 1313 HHP has finished loading the .cpf file, the Main screen will open. Select and use the Parameters app to make the desired parameter adjustments. Select the Programming app to save these changes; either as the same .cpf file or as a new .cpf file. To make changes to a different .cpf file, return to the Programming app and open the desired .cpf file. Offline mode can be used to make parameter changes to a generic device profile or to view the parameters in a .cpf file received in an email. A .cpf file can be sent to a customer or dealer for restoring (cloning) any device that has a matching family (see Chapter 8).

* For CANopen operation, consult the 1313 HHP manual for CAN-based communication: Curtis document number 53225.

If not working with a .cpf file, press the Main Screen (⏏) button to go directly to the main screen.

Use the File Manager app to delete files and folders, create new folders, and rename and rearrange files and folders in both the Internal memory and the SD Card. [See Chapter 11](#)

Use the HHP Settings app to make 1313 HHP setting changes ([see Chapter 10](#)). If settings in HHP Settings app are adjusted while offline, the settings will continue to be used after the 1313 HHP is connected to a device. Saved 1313 HHP settings (.hps file) can be transferred and restored to other 1313 HHPs.

When finished working offline, to turn off the 1313 HHP, press and hold the power key (⏻) for 5 seconds.

Note: If the 1313 HHP is connected to a device when off line using the batteries, it has to be power-cycled before it will connect to a device. Use the power key (⏻) to turn it off and back on again.

1313 HHP OFFLINE OPERATION FROM POWERED SERIAL BUS WITH NO DEVICE

If the 1313 HHP is connected and powered to a serial bus without a device, the 1313 HHP can work offline using the serial bus power without using batteries. Offline operation is the same as previously discussed offline operation using batteries.

If the device comes on-line during the offline session, the handset has to be power-cycled using the power key (⏻) before it will connect to the device.

1313 HHP CONNECTED TO DEVICE AND THEN GO OFFLINE

If the 1313 HHP is connected to a device and the user would like to go offline, press the “Go Offline” softkey in the Main screen. Navigate to a .cpf file and load it as described in the above battery mode paragraphs. After the file loads, the red-slash will appear and the 1313 HHP is offline.

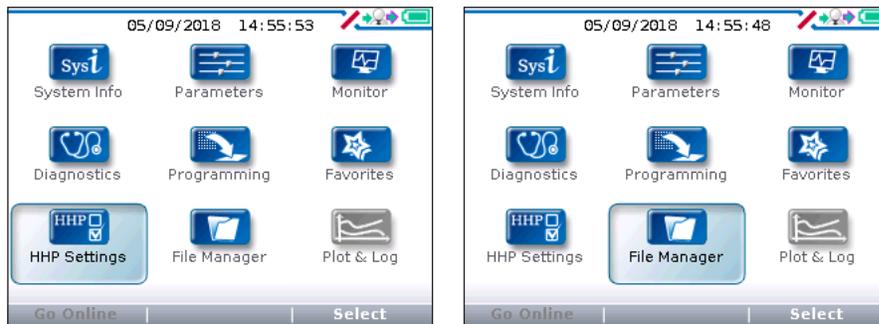
In this device powered case, only after the Offline .cpf file is loaded can the Main Screen (⏏) button be pressed to use the File Manager and HHP Settings apps. Once in this state, the Offline operation is the same as previously discussed for offline operation using batteries.

To switch back to Online mode, from the Main screen, press the “Go Online” softkey. Press “yes” on the next screen asking to confirm going Online. The 1313 HHP will connect to the device and load its cpf data. The red-slash will become the green circle. The 1313 HHP is now back Online.

OFFLINE MODE APPLICATIONS



Offline: These 1313 HHP apps are relevant when a .CPF file is loaded.



Offline: These 1313 HHP apps are relevant without a loaded .CPF file

16 – UPDATING THE SOFTWARE IN THE 1313 HHP

The software in the 1313 HHP is easily updated. As software updates become available, they may be installed into the 1313 HHP via the USB connector or via an SD card.

There will be application files for various 1313 HHP customer models. There may also be additional files (Firmware Manager and Resource files) that are not access-level dependent.

For example,

1313-xx31_Application_HW3_01151600.hap is the application file used by a 1313 HHP that has Model Number 1313-xx31 (where xx indicates the Access Level).

1313-xxxx_Resources_02_HHP_0088.hrc	} are the resource files used by all 1313 HHPs (regardless of Access Level)
1313-xxxx_Resources_02_DME_0098.hrc	
1313-xxxx_Resources_02_MH_0059.hrc	

New Application files loaded on the 1313 HHP's Internal memory or SD-Card memory locations will install the next time that the 1313 HHP powers-up; whether powered from the USB (PC) or the system-device (serial bus) connection. The Resource files work differently, however. If a Resource file is loaded on the Internal Memory or SD-Card locations, the resource file will not update during the next power-up by a USB connection. The resource file will only unpack (where the 1313 HHP shows the "Updating Resources" progress bar) the next time the 1313 HHP is powered by a system-device (serial bus) connection. The Application and Resource updates occur before the 1313 HHP connects to the device.

COPYING NEW FIRMWARE ONTO THE 1313 HHP

If the 1313 HHP is connected to a PC using the USB cable, the PC will display one drive for the 1313 HHP's internal memory and another drive for the SD card (if present). The new software files need be copied to the root directory (top level) of either the 1313 HHP internal memory or the SD card. The files will not be recognized if placed in a folder. Alternatively, insert the SD card into a PC's SD slot and copy the new files onto it.

It doesn't matter if any extra model files for other models are copied to the internal memory or SD card, because only the files appropriate for the specific 1313 HHP model will be installed.

INSTALLING NEW FIRMWARE USING THE SD CARD

The 1313 HHP only looks for new software upon power-up. Therefore, with the SD card in the 1313 HHP, connecting the 1313 HHP to a powered (serial bus) system will begin the update. If the 1313 HHP is already on and connected to a system-device, and then the SD card is inserted into the 1313 HHP, begin the update by turning the 1313 HHP or the system device off and back on again.

1313 HHP DETERMINES WHICH UPDATE FILES TO USE

The 1313 HHP will review all of the software update files placed on the SD card and will recognize files that have already been installed or files that are for a 1313 HHP with a different access level. A series of pop-up screens (one for each extraneous file) will ask whether you want to delete them (yes/no). These extraneous files do not need to be deleted if they're to be used on another 1313 HHP. Deleting them will prevent recurring messages each time the 1313 HHP powers up.

Updates do not need to be sequential. For example, if the present 1313 HHP application software is version 01101200, version 01151600 can be installed without first installing the interim version 01151400.

A pop-up screen will announce that new software has been found and ask whether to perform the update. When the "Yes" softkey is pressed, the Firmware Manager screen appears and a progress bar shows the application and then the data being installed. After the update has been completed, a message will ask whether to remove that application file from the SD card. In most cases, select "Yes." However, if planning to make the identical update to a group of 1313 HHPs, select "No" which will save the files and enable their transfer to the other 1313 HHPs.

If there is a new Resource file*, it will be copied automatically after the Application upgrade.

Do not remove the SD card during the Resource file transfer.

INSTALLING NEW FIRMWARE USING THE INTERNAL MEMORY

Unplug the 1313 HHP from the PC and plug it in again to launch the new Application installation process.

Or unplug it from the PC and remove the USB cable. Insert the 1313 HHP CANbus cable, and plug it into a powered system device (or turn on the device).

If there is a new Resource file*, it will be copied automatically after the Application upgrade.

Do not unplug the 1313 HHP or turn it off during the Resource file transfer.

After installation is complete, the 1313 HHP will delete the installation files that were copied to the internal drive.

* *Reminder. The resource file will only unpack (where the 1313 HHP shows the "Updating Resources" progress bar) if it is connected to a system device (e.g., powered by serial bus).*

APPENDIX A

FILE TYPES

Several types of files are handled by the 1313 handheld programmer. Here they are listed alphabetically, by their extensions.

.cdf	<u>Parameter settings file.</u> These files contain the settings for the adjustable parameters. You can create .cpf files containing your customized settings for the adjustable parameters, using the Parameters app.
.csv	<u>Internal error log file.</u> These files record internal errors.
.dcf	<u>Cache files.</u> The first time you connect the programmer to a system, app cache files are created.
.hap	<u>Programmer software files.</u> These files contain the application software for the hand-held programmer.
.hfc	<u>Favorites file.</u> These files contain customized Favorites collections.
.hfm	<u>Firmware Manager file.</u> These files manage how new handheld programmer software is installed.
.hps	<u>Programmer settings file.</u> This file contains the handheld programmer settings you have chosen and saved, using the HHP Settings app.
.hrc	<u>Resource file.</u> These files contain the text displays (in five languages) and information about how data is displayed by the handheld programmer.

APPENDIX B

SPECIFICATIONS: 1313 HANDHELD PROGRAMMER

Model numbers (four access levels):

1313-4331	HHP GEN2 OEM / OEM DEALER
1313-3231	HHP GEN2 DEALER / FIELD ADVANCED
1313-2131	HHP GEN2 SERVICE / FIELD INT
1313-1031	HHP GEN2 USER / FIELD BASIC

Operating ambient temperature range -20°C to 50°C (-4°F to 122°F)

Storage ambient temperature range -40°C to 85°C (-40°F to 185°F)

Package environmental rating IP53 (with programmer cable plugged in and SD-card cover closed)

Weight 0.27 kg (0.6 lb)

Dimensions (L×W×H) 190 × 100 × 36 mm (7.5" × 3.9" × 1.4")

Regulatory compliance  / RoHS

Manual

1313 Handheld Programmer

For CANbus Communication Protocol



Curtis Instruments, Inc.
200 Kisco Avenue
Mt. Kisco, NY 10549
www.curtisinstruments.com

 Read Instructions Carefully!

Specifications are subject to change without notice.

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1 – The 1313 HANDHELD PROGRAMMER

INTRODUCTION

The Curtis 1313 Handheld Programmer (1313 HHP) performs programming and troubleshooting tasks for Curtis programmable motor controllers, gauges, and control systems. The 1313 HHP connects to Curtis devices in one of two ways—specific to the device: Either directly via the device's RS232 serial port, or through a Controller Area Network (CAN) connection which can have multiple devices on the CANbus. Cables specific to the connection type are supplied with the 1313 HHP.

This manual covers the operation for the CANopen network connected devices.

HOW TO USE THIS MANUAL

This manual describes how to use the 1313 HHP to accomplish these tasks:

- Access and change parameter settings.
- Use it as a diagnostic tool.
- Save, transfer, and clone parameter settings between devices and 1313 HHPs.
- Update device firmware/software and 1313 HHP software.

The first 2 chapters describe the 1313 HHP basic operation, followed by the Main Screen applications. The subsequent chapters explain how to use a specific application (app). Appendix A summarizes the files associated with the 1313 HHP. Appendix B lists the 1313 HHP models and their specifications.

New users will want to read this manual to train themselves on the 1313 HHP. Users familiar with the serial-based 1313 HHP usage will want to reference the chapters for the CANopen differences. Always use the 1313 HHP in conjunction with the device manual. The device manuals contain the information about the parameters, monitor variables, faults, diagnostics, initial set-up, and motor control tuning.

For an additional overview of the 1313 HHP, consult the datasheet, Curtis document number 50194, available on the Curtis website: www.curtisinstruments.com

See: *Home/Products/Motor Controllers/Programming/1313 Handheld Programmer/Datasheet*
Direct Link: [1313 Handheld Programmer: datasheet](#)

Available on the Curtis website is the **1313 Handheld Programmer Operation** video tutorial.

See: *Home/Videos/1313 Handheld Programmer Tutorial*
Direct link: [Tutorial:1313 Handheld Programmer Operation](#)

NOTICE

This document refers to generic Curtis products. The images used are principally of the F2-A motor controller which may not match other devices or applications compatible with this 1313 HHP. This manual does, however, describe the usage of the applications (app) that can be used for all compatible devices. Custom OEM products and applications may not have some features described in this manual.

For technical support or applications not covered in this manual, contact the vehicle manufacturer. OEMs should contact the Curtis distributor where the 1313 HHP and devices were obtained, or the regional Curtis sales-support office.

WARNING

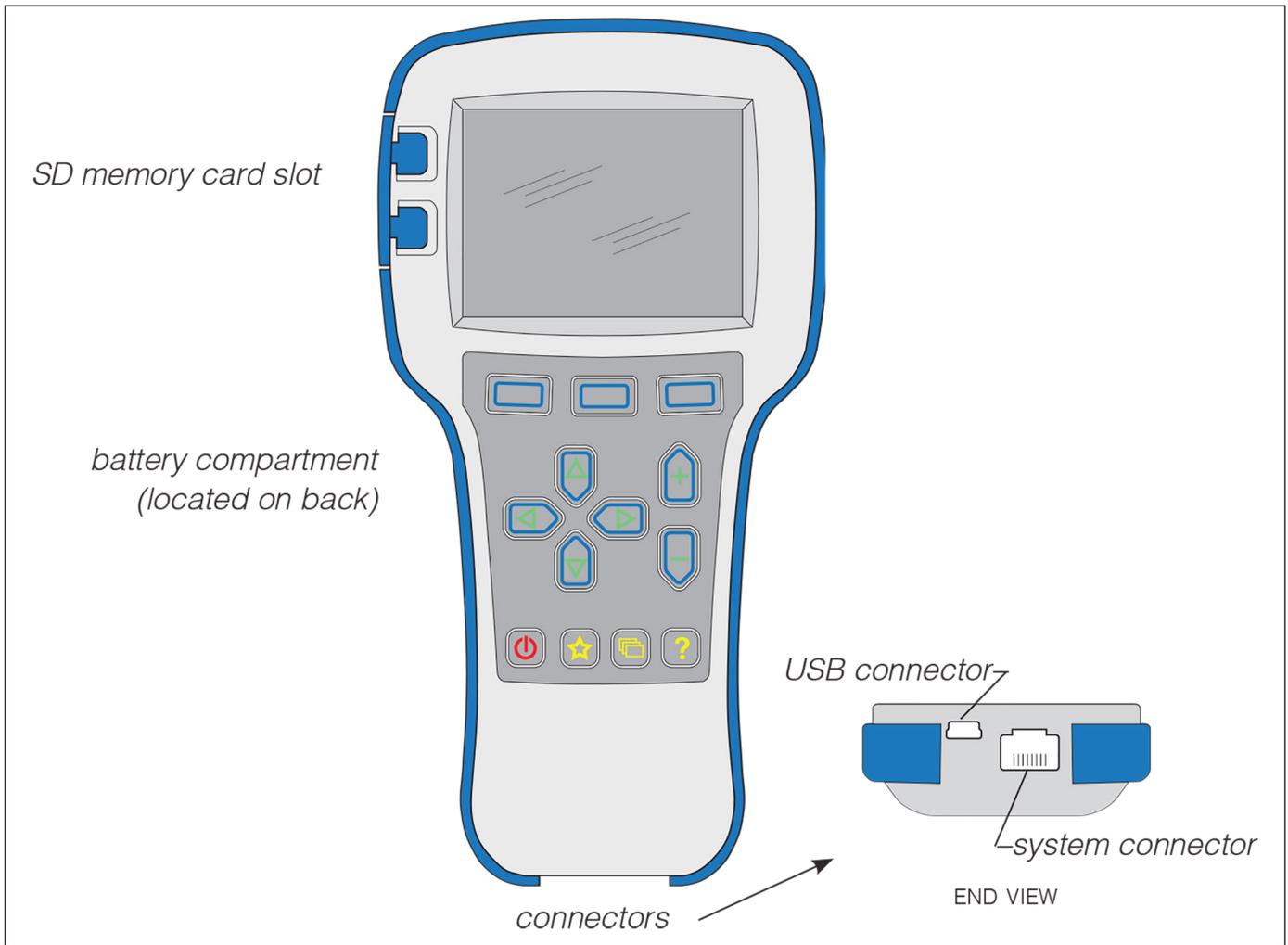
WARNING! The control system can affect speed, acceleration, deceleration, dynamic stability, and braking. If the control system is programmed incorrectly or outside the safe limits as determined by the vehicle manufacturer, a dangerous situation can result. Only the vehicle manufacturer or an authorized service agent or dealer should program the devices that form a control system.

2 – 1313 HHP OPERATION

This Chapter describes how to use the 1313 HHP for CAN-based communication devices. Although there are similarities between the CAN-based devices and the serial devices, there are differences in the connection and the apps.

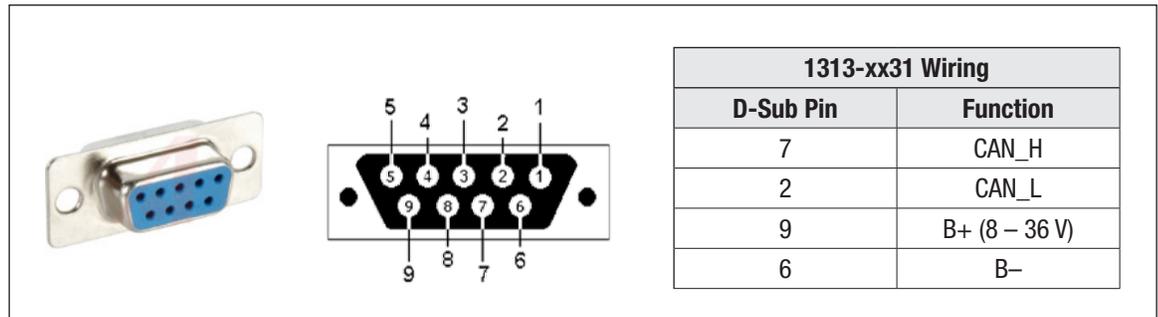
CONNECTIONS

The 1313 HHP has two connectors, one for communicating with the devices and one for interfacing with a PC. The 1313 HHP also has a battery compartment and a memory card slot.



Controller (Vehicle System) Connector

Use the cable with the DB9 connector for connecting to CAN-port programmable devices. The supplied 1313 HHP’s CAN cable has a 9-pin male D-Sub connector*. The vehicle/system CAN port should be fitted with a 9-pin female D-Sub connector wired to correspond to the 1313 cable, including the voltage supply (see figure below). Use D-Sub gender changers should a conflict occur.



Vehicle Harness Wiring for CAN Connected 1313 HHP

USB Connector

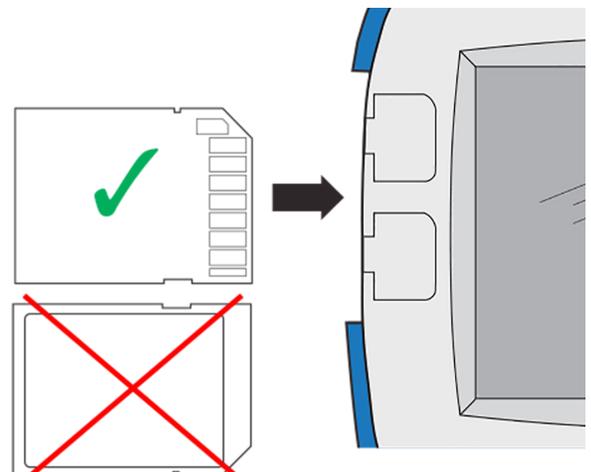
Use this connector with the supplied USB cable to connect the 1313 HHP to a PC. Windows Explorer will display the 1313 HHP as a removable drive. If an SD card is inserted in the 1313 HHP, Windows Explorer will display the 1313 HHP’s “Internal” memory location and the “SD-Card” location as 2 independent removable drives. Files can be transferred to/from the 1313 HHP Internal memory, the SD card, or the PC using any of the standard tools available in Windows Explorer (Copy, Cut, Paste, Drag & Drop).

BATTERIES

A compartment on the back holds two AA sized batteries. The batteries keep the real-time clock running and are used to power the 1313 HHP when working offline. Although the batteries can be used to power the 1313 while connected to a device, operations such as CAN monitoring or data logging may quickly deplete the batteries. Battery life will be extended by powering the 1313 HHP from the device.

SD CARD

SD cards provide additional 64 MB of memory and can be used for transferring files between the 1313 HHP and either a PC or another 1313 HHP. The SD card must be inserted face down (opposite of a PC insertion).

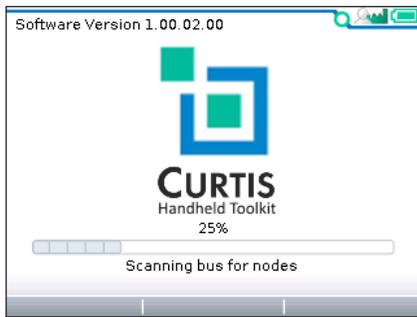


* The 1313 HHP’s cable with the 4-pin Molex connector is for serial-port programmable controllers and devices.

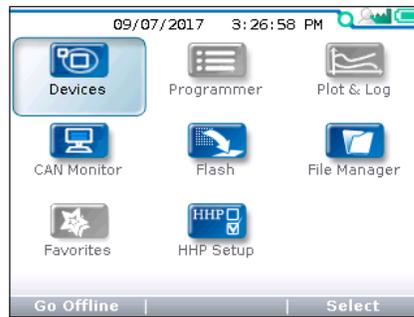
POWER-ON THE 1313 HHP

Connect the 1313 HHP to the system by plugging it into the system’s CANbus using the supplied DB9 CAN-port cable. If the CAN connection point provides power, the 1313 HHP will automatically power up. If not, press the power key (⏻) and it will power up and run off its internal batteries (if batteries are installed). Once running, the 1313 HHP will then listen to the CAN bus and automatically create a list of detected devices.

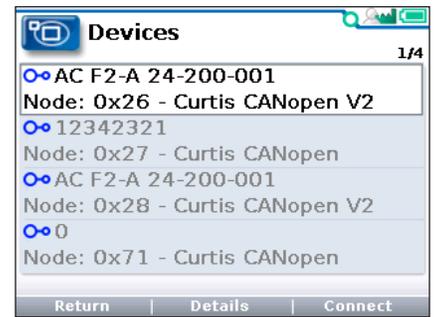
The first screen (see left image) indicates the scanning progress. Systems can have multiple devices on the CANbus, so once the scanning process is complete, press the “Select” softkey on the main screen (middle image) to open the Devices app, then scroll to the desired device and press the “connect” softkey (right image). The device-specific apps are disabled (grayed out) until a device is connected.



Scanning for Nodes

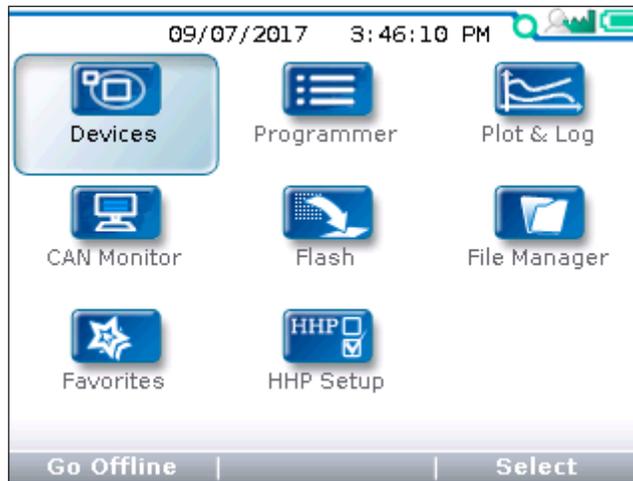


Devices option



Select the device to connect

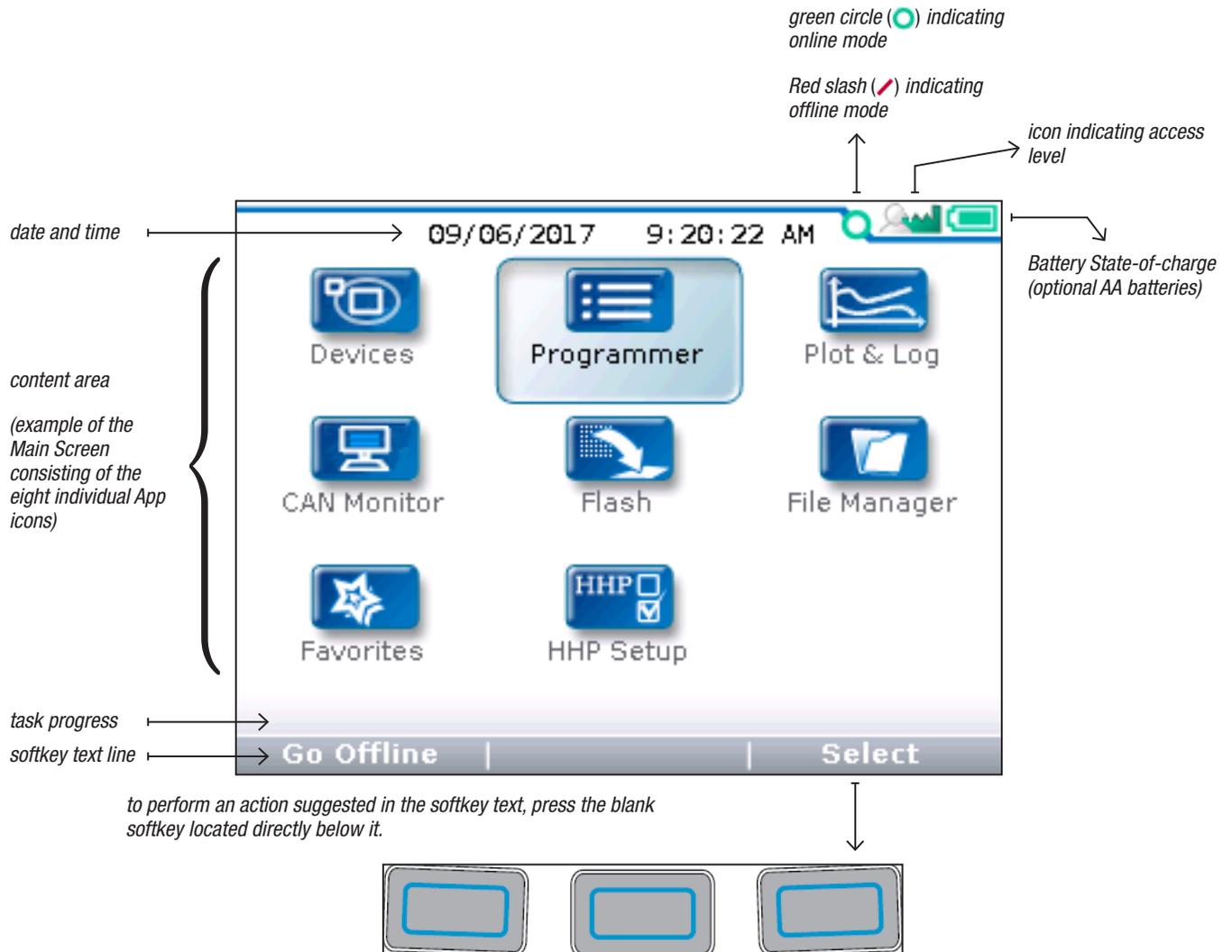
If the 1313 HHP hasn’t previously connected to a selected device, it will sequence through four steps uploading information. The 1313 HHP will automatically remember this device. All subsequent connections to this device, even on a different system, will be much faster, only requiring the final current-data upload step. After the 1313 HHP has uploaded this data from the device, the Main Screen is displayed.



Main Screen: when connected to a device.

DISPLAY FORMAT

The high-resolution clarity of the LCD screen allows a wealth of information to be displayed at once. The example below shows the information available in the Main Screen.



In this above example, pressing the “Select” softkey will open the highlighted Programmer app. The “Select” softkey opens whichever app is highlighted. Pressing the "Offline" softkey switches the 1313 HHP to Offline mode. In Offline Mode, the 1313 HHP cannot communicate with the device. The 1313 HHP can perform operations that do not require communication with the device. [See Chapter 14.](#)

ACCESS LEVEL

The 1313 HHP is available in five access levels: OEM Factory, OEM Dealer, Field Advanced, Field Intermediate, and Field Basic, based upon the model number. Each 1313 HHP model has access to levels below it, but not above it. Using the HHP Setup app, the access levels can be lowered, which is useful to view apps and menus as they would appear to the lower-access 1313 HHP models.

For technical support regarding access levels, contact the vehicle manufacturer. OEMs should contact the Curtis distributor from which the 1313 HHP and device were obtained, or contact the regional Curtis sales-support office.

Access levels:

OEM Factory: 

OEM Dealer: 

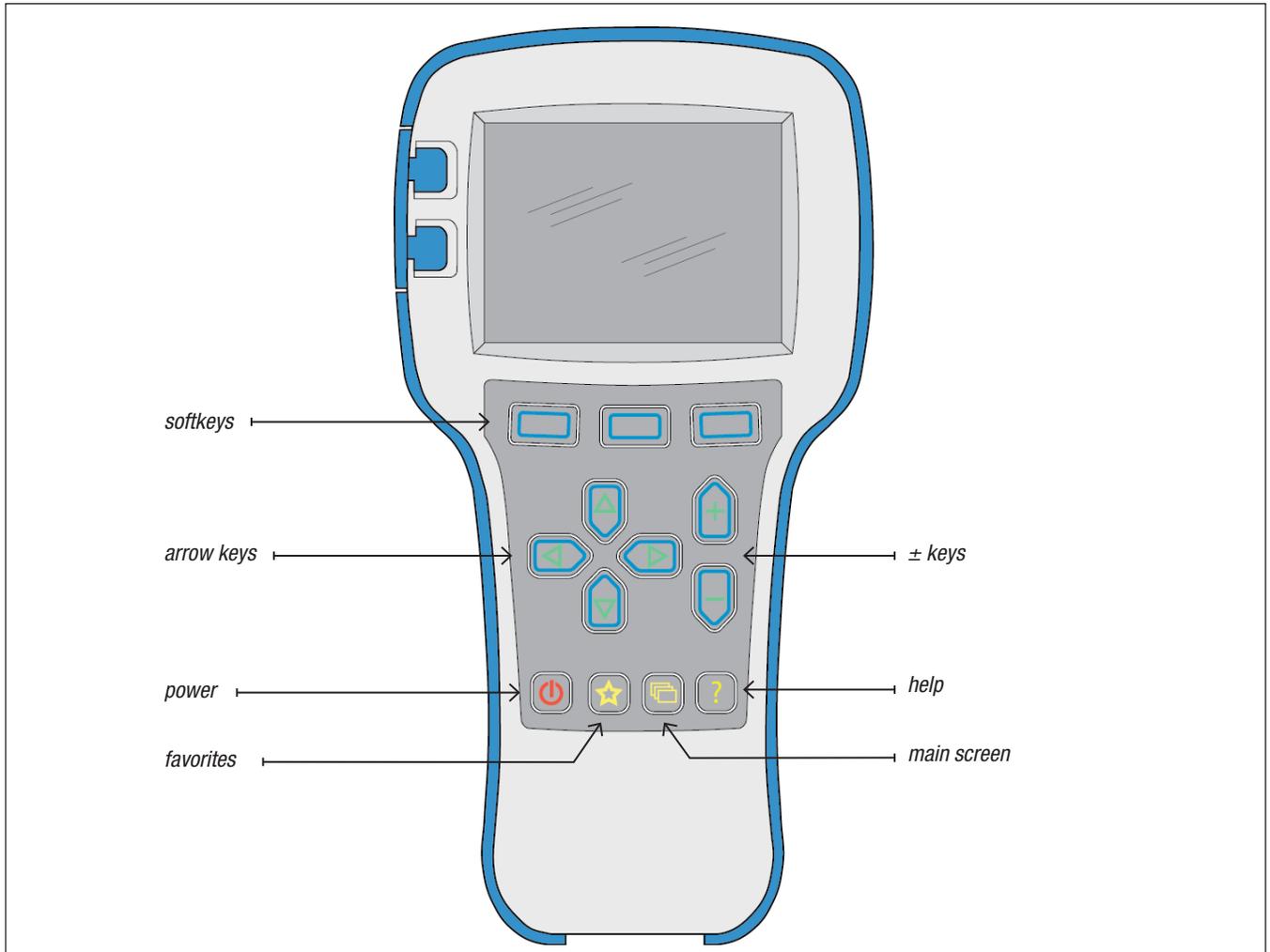
Field Advanced: 

Field Intermediate: 

Field Basic: 

KEY FUNCTIONS

The pushbutton keys on the 1313 HHP's keypad allow rapid navigation through the apps.





Softkeys

These three keys are blank because their function is context-specific. At any given time, their function is shown directly above them on the LCD screen. The symbol “»” indicates more options. Pressing the softkey under the “»” will scroll to another set of softkey options.

Arrow Keys



Use these four keys to scroll up-and-down and right-and-left within the display screen. In the main screen, use the arrow keys to highlight one of the apps; then open the highlighted app using the “Select” softkey.

Within apps, the left-arrow key (◀) is used to navigate back to the previous screen, up to the apps opening screen. If the “Exit menus with left arrow” is set to “Yes” in the HHP Setup options, press this key will exit the app, displaying the main screen.

Within apps, the right-arrow key (▶) is used to navigate forwards—that is, to go to the next screen, the next function, or to open a parameter’s detail screen.

± Keys



Use these keys to increase or decrease the value of parameters. These keys are also used as “+ = Yes” and “- = No” keys. The keys are also used to scroll through optional settings such as access levels or languages.

Power



The Power key turns the 1313 HHP on or off.

If the CANbus is powered, the 1313 HHP will turn on automatically when connected.

Turn off the 1313 HHP by pressing and holding the Power key for 2 seconds. A pop-up message will ask you to confirm. The softkey text will offer the choices “Yes” and “No.”

Unplugging the 1313 HHP will turn it off even if the batteries are installed.

If the 1313 HHP has been turned off, or if it has timed out and shut off, pressing the Power key will turn it on again.

Note: when the 1313 HHP is connected to a PC using the USB cable, the 1313 is powered by the PC. Pressing the power key will have no effect. The 1313 HHP displays “USB Mode Active” and appears as a removable drive to the PC.

Favorites



This key is an alternate way to bring up the Favorites app. Access Favorites by either selecting the Favorites icon on the Main Screen, or by using this Favorites key. [See Chapter 10, Favorites](#), for more information about using the Favorites app.

Screenshots



Momentarily press the Power Key and then momentarily press the Favorites key to save the present image of the LCD display. These are called screenshots. [See Chapter 13](#) for further details about screenshots.

Main Screen



Pressing this key will return the 1313 HHP to the Main Screen from any location. When the main screen is displayed, use this key to cycle through the individual apps. Use either this key or the arrow keys to navigate within the main screen.

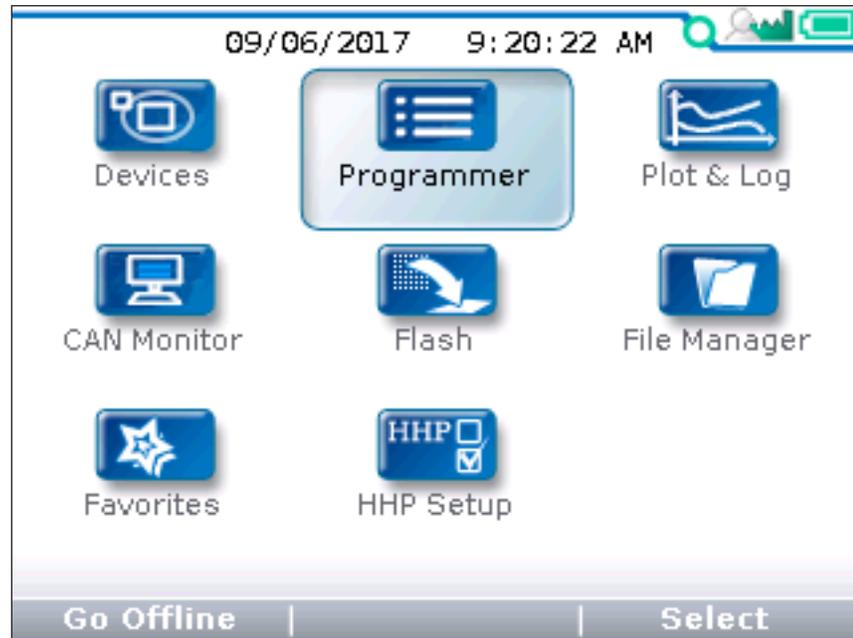
Help



This key is used to display context-specific Help texts.

3 – MAIN SCREEN AND APPS ORGANIZATION

The Main Screen contains 8 apps that are each identified by a specific icon.



To select an app, scroll using the arrow keys (⬆️) until the app is highlighted. Apps can also be selected by successive presses of the main screen key (⏏). Each press will highlight the next app.

When navigating within an app, the left-arrow key (⬅️) can be used to navigate back to the previous screen. (It is possible to limit this left-arrow key function using the “Exit menus with left arrow” item in the HHP Settings menu; see [Chapter 11](#)).

TYPES OF APP ITEMS

Each item in the applications is represented by one of the following icons.



A selectable generic device on the CANbus (as viewed in the Devices app).



These are read-only items providing detailed information.



These are Programmer app menus or sub-menus within a menu.



These are Read/Write parameters within a menu.



An item that is Read-Only. Monitor variables are always read-only.

Note: Some menus group Read-Only monitor items with related Read/Write parameters so that the effect of parameter adjustments can be immediately viewed.



Folders indicate menus or submenus. Pressing select or the right-arrow key opens the folder. Use the left-arrow key to navigate back out of nested menus.



This symbol indicates a file the 1313 HHP cannot recognize (open and use). It is also used for the 1313 HHP Setup setting (.hps) files and CAN trace (.csv) files. This symbol does not necessarily indicate the file is bad or corrupted.



These are faults (See the Programmer app and the device manual).



These are clone data files (.cdf), which include the parameter values obtained from the device.



The parameter is out of range (warning.) See the Programmer app and the device manual.

The Eight Apps

The following 8 applications are available for CANopen devices. Each application will be fully described in the subsequent chapters.

Devices	 <i>Devices</i>	Chapter 4
Programmer	 <i>Programmer</i>	Chapter 5
Plot & Log	 <i>Plot & Log</i>	Chapter 6
CAN Monitor	 <i>CAN Monitor</i>	Chapter 7
Flash	 <i>Flash</i>	Chapter 8
File Manager	 <i>File Manager</i>	Chapter 9
Favorites	 <i>Favorites</i>	Chapter 10
HHP Setup	 <i>HHP Setup</i>	Chapter 11

4 – DEVICES

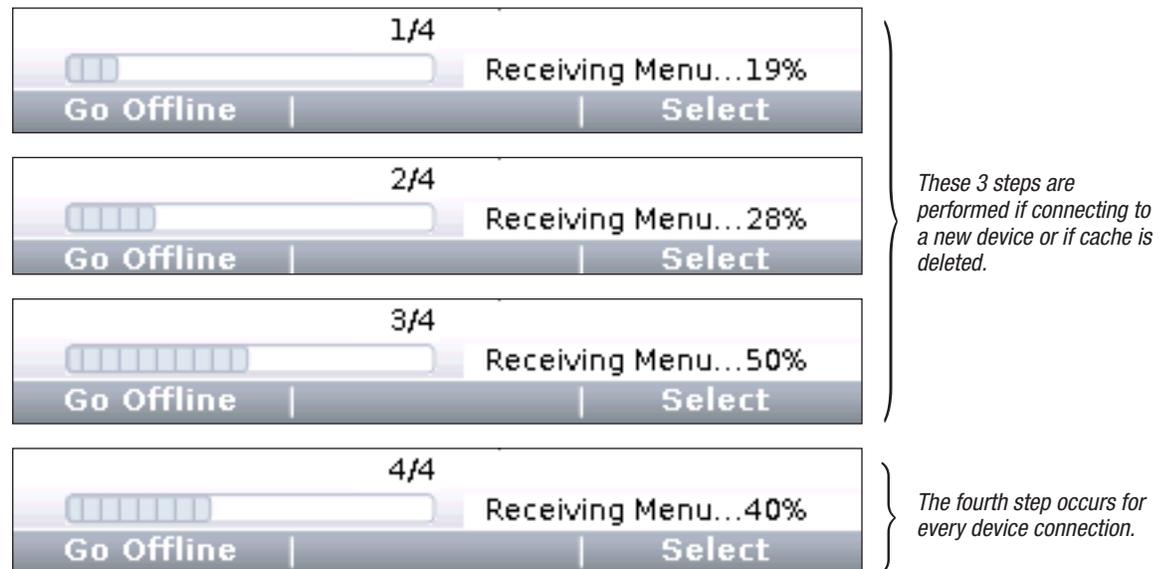
Device Details and Connection

To use the 1313 HHP, a device must be compatible and then a CAN connection established. The Device app is where devices (CAN nodes) discovered during the startup CANbus-scan are listed*.

After the 1313 powers up and completes the start-up scan, the Main Screen is displayed with the Devices app highlighted. Press the “Select” softkey to open the Devices app. The app lists the active devices found on the CANbus. When a compatible device (e.g., Curtis CANopen V2) is highlighted, the “Connect” softkey will be enabled (selectable). If not, the softkey will be disabled (grayed out).

The Device app is also where device-specific information can be viewed before connecting—useful when many devices are listed. Press the “Details” softkey to view information such as the device Family, Model number, Serial number, Manufacture date, and its software/firmware/hardware versions. The “Details” softkey remains available once connected.

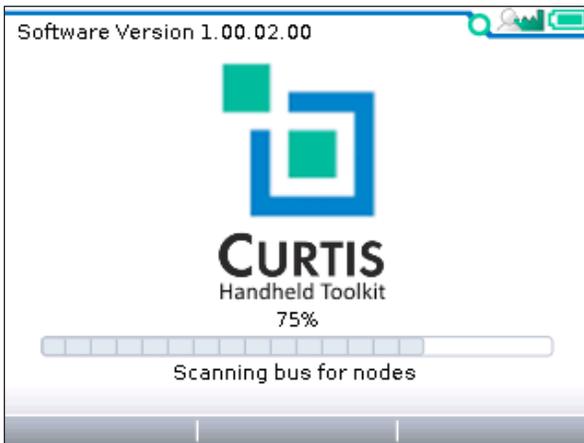
If a selected device hasn’t connected to the 1313 HHP before, the connection-screen displays a series of 4 successive progress bars (*Receiving Menu...x%*) that are identified as 1/4, 2/4, 3/4, 4/4. The 1313 HHP saves the information from the first 3 progress bars in a cache file. If this cache file is deleted (see “Delete Cache File” in the HHP Setup app), the 4 steps will repeat the next time a connection is made to the same device. If the device’s cache file is available, the next connection to the device will skip the first 3 progress bars and will display progress bar 4/4 as the latest parameter settings are acquired from the device. Connection times are greatly improved when a cache file is available.



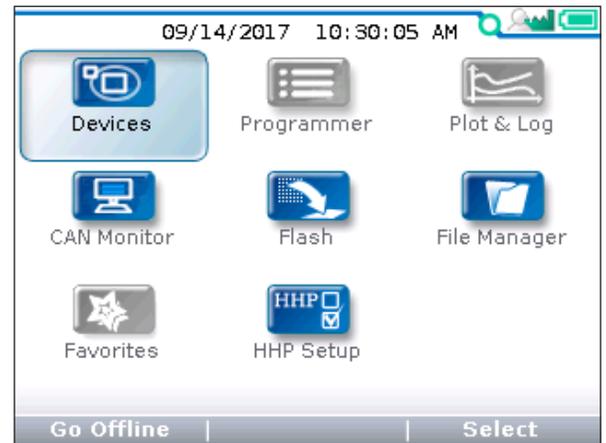
The following screenshots illustrate the Devices app usage. Notice that in the second and fifth images, the Devices app and 4 other apps are available before connecting to a device. (See the CAN Monitor,

* Note: If known devices on the CANbus do not appear on the app's listed devices, check their node ID. Devices on the CANbus cannot have the same node ID and be discovered/shown on the 1313 HHP.

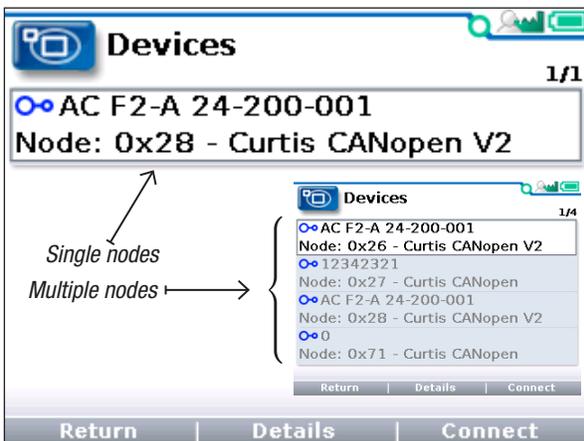
Flash, File Manager, HHP Setup, and Offline Mode chapters.) Once a device is connected, the remaining 3 device-specific apps (Programmer, Plot & Log, and Favorites) become available (see image 6).



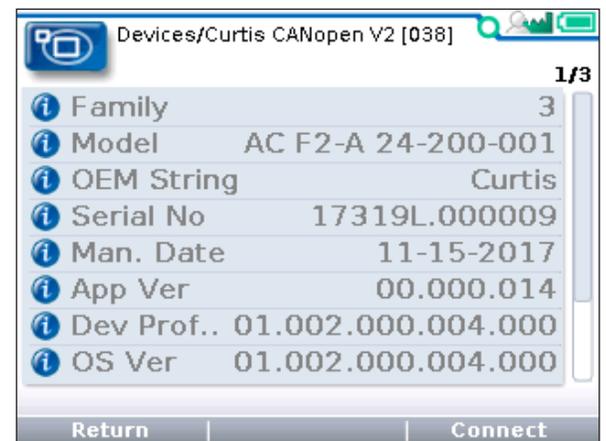
(1) 1313 HHP startup-scan of CANbus for devices



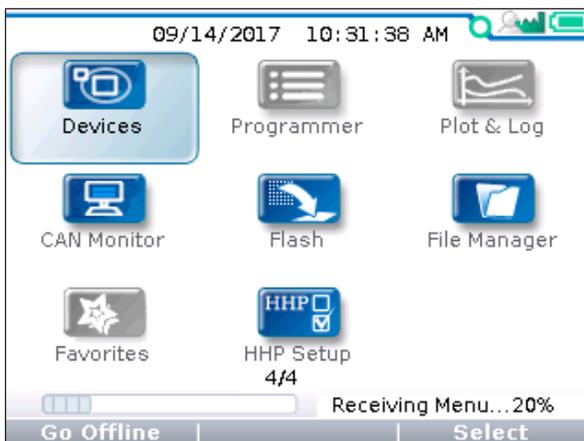
(2) Main Screen following the CANbus scan
Just the "Offline" capable apps are available.



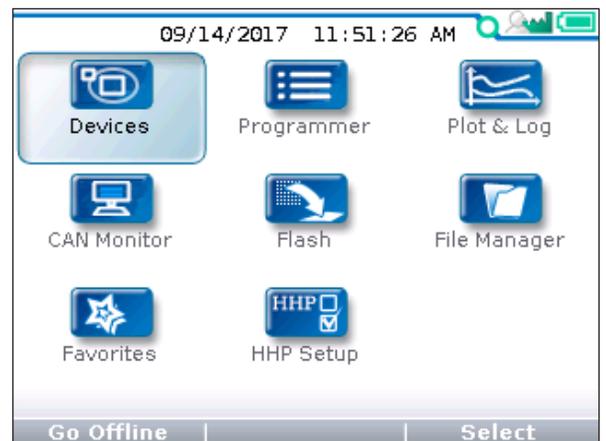
(3) "Select" softkey—opens app and lists devices



(4) "Details" softkey—returns device information

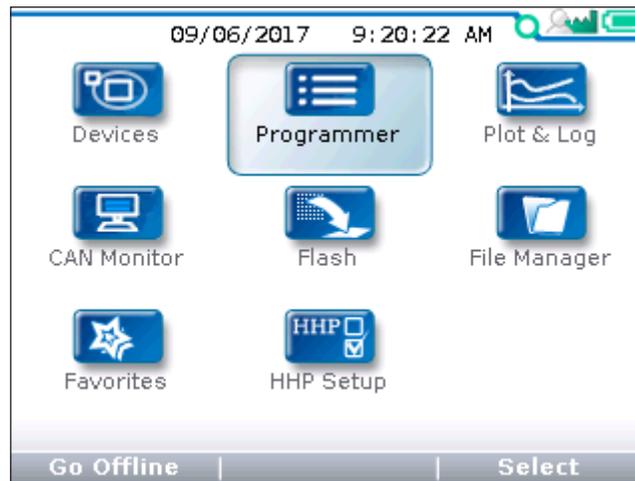


(5) "Connect" softkey—receiving data progress



(6) Device connected—all apps are available

5 – PROGRAMMER



The Programmer* app is where parameters, monitor variables, active-faults, and the fault-history are accessed. There are no separate monitor and diagnostics apps on the main screen. This chapter covers all of the items that can be accessed with the Programmer. It is recommended that the Device manual be consulted for explanations of the read/write and read only variables viewable within Programmer. *Not all devices will have the same Programmer menus pictured here, and some devices may not operate as describe in this chapter. Available faults and diagnostic procedures can vary with the device. See the **NOTICE** on page 2.*

In the main screen, highlight the Programmer icon and press the “Select” softkey to open the app. Use the arrow keys and the softkeys to navigate within Programmer. Use the +/- keys to adjust parameter values. See Chapter 2 for additional information regarding navigation and adjustments.

Each item in Programmer is assigned an icon indicating its type. These are;

- (🖋️) The *pencil* read/write icon indicates an adjustable parameter.
- (📖) The *open-book* read-only icon corresponds to monitor variables.
- (☰) The menu icon, indicating there are additional items, or sub-menus, within.
- (🔴) An active fault, or a fault within the Fault History menu.
- (🚫) The parameter is out of range (warning)

Note that related monitor variables often reside within particular parameter menus—offering immediate feedback for a parameter change**.

PROGRAMMER STRUCTURE

When any of the app’s top-level menus are selected (**Select**) the name of the app is displayed adjacent to the Programmer icon. When navigating through a hierarchical menu, the text at the top of the screen expands to show the path taken. Likewise, the item’s relative position on the screen or

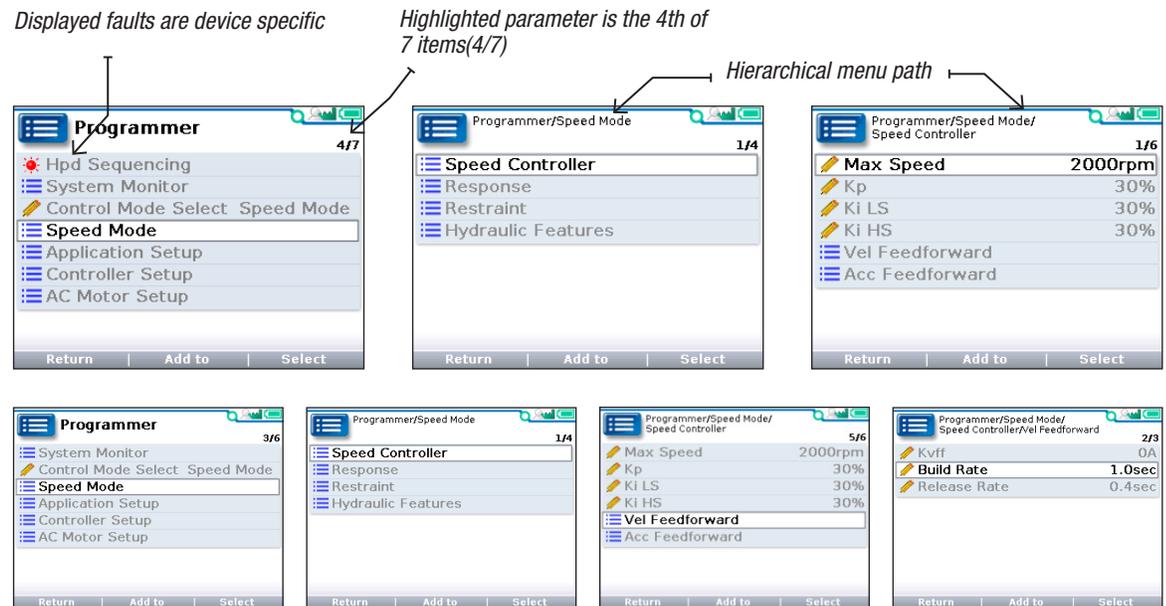
* The Programmer name is a carryover from the Curtis Integrated Toolkit™, and should not be mistaken for the term sometimes used to indicate the 1313 HHP (i.e., handheld Programmer).

** Device menus can vary. Since menus can be customized by an OEM or Curtis app engineer, the parameter, system monitor or fault menus can vary in location, content, and access-level within Programmer. Device menus can vary. Contact the vehicle manufacturer, the Curtis distributor, or support engineer for any application specific parameters, monitor differences, and faults—or items not described within this manual.

in a menu is shown in the window. The top, or first item will indicate “1 of X” while the bottom, or last item will indicate “X of X” on the screen. This is helpful when the quantity of items in the menu/sub-menu exceeds the display’s 8 lines. Illustrated below are two examples showing the path and position of highlighted items in the Speed Mode menu of an F2-A motor controller;

(1) parameter *Max Speed*

(2) parameter *Build Rate*



If exiting an app using the main screen key (⏏) and later returning to the same app, the app will open to a location that depends on the “Remember Last View” setting in the HHP Setup app. If the setting is “Off”, the app opens at the top-level. If the setting is “On”, the app opens to the most recently used location.

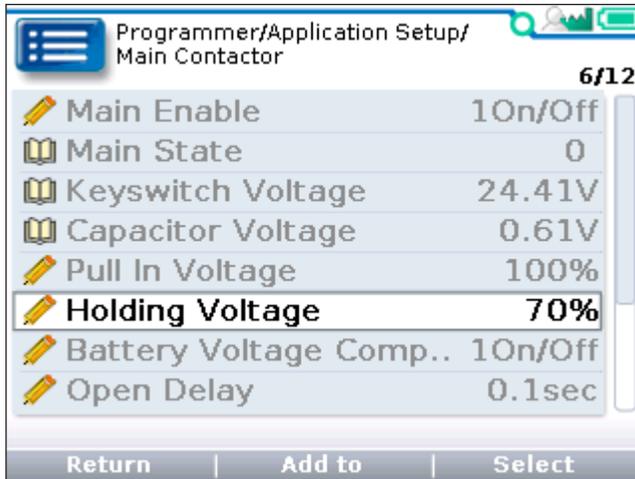
Note: If the 1313 HHP is turned off (e.g., the device or CANbus is key-cycled) the “last-place-memory” is lost. Each power-on session begins the Remember Last View anew, even if the setting is “On”.

ADJUSTING/EDITING PARAMETERS

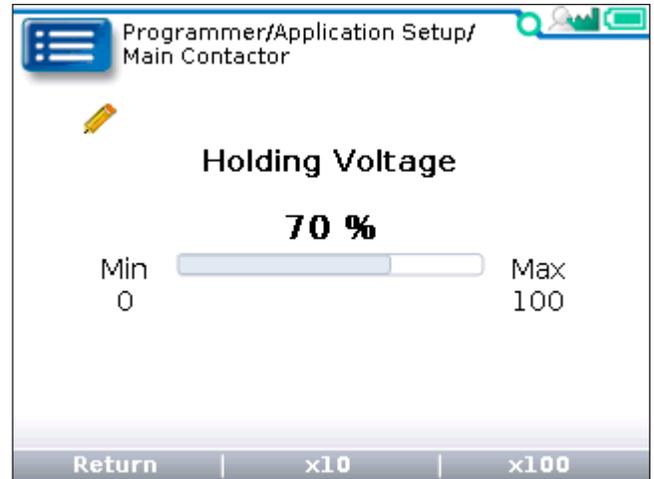
Within Programmer, use the down (▽) or up (△) arrows to navigate between parameters, monitor-items, or sub-menus. If the menu contains more than the 8 items shown on the screen, a scrollbar appears at the right edge of the screen. When a scrollbar is present, the lines wrap around so that navigating up from the top line/item navigates the screen to the last line/item on the list and vice versa.

Use the +/- keys (⊕/⊖) to change the parameter’s value. Changes are immediate, subject to the device’s restrictions (e.g., parameter change fault or requires an idle state).

When a parameter is highlighted, pressing the “Select” softkey or right-arrow key (▶) will open to a detail screen, where the present setting is shown in relation to the available range. The preceding comments regarding parameter adjustments also apply to the detail screen.



Holding Voltage ... highlighted



Holding Voltage _ expanded (detail screen example)

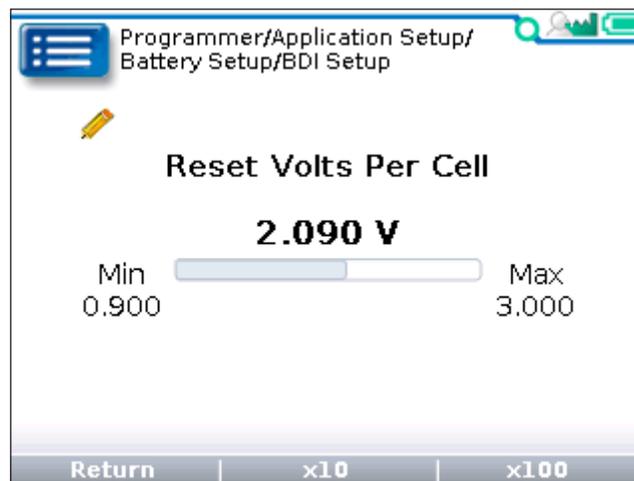
SOFTKEYS AVAILABLE IN PROGRAMMER



The “Return” softkey backs up the screen to the previous menu level. The left-arrow (◀) key accomplishes the same effect.

The “Add to” softkey is available for parameters, monitor items, and faults. This opens a selection screen for choosing to add the item to Favorites, Plot, or Log.

The “Select” softkey opens to the item’s detail screen.



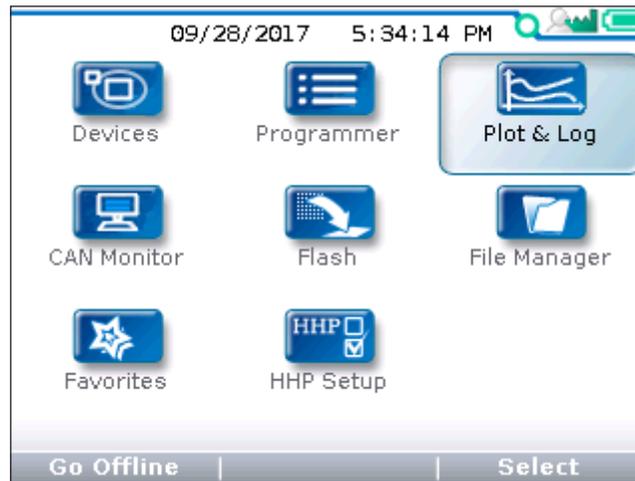


The “x10” or “x100” softkey, when pressed together with the “+” or “-” key (**+** **-**), permits rapid value changes in increments of ten or a hundred times the parameter’s step-size.

For example, the **Reset Volts per Cell** parameter shown above has a range of 0.900 to 3.000 volts, in 0.001V increments. Using the “x10” softkey, the setting changes from 2.090 to 2.080 in one jump instead of ten, or with the “x100” softkey, change the setting from 2.090 to 2.190 in one step instead of a hundred steps. For parameters with narrow ranges (for example, a parameter that can be set to 0 through 100), the “x” softkeys allow moving to the extreme high or low end of the range in one step.

Be aware that as parameter settings are changed, the new value immediately replaces the earlier value. When parameter adjustments are made, they cannot be reversed—there is no “back” key. Therefore, it is recommended to track changes (e.g., write them down). See “save parameter settings” in [Chapter 8](#).

6 – PLOT & LOG



In the main screen, highlight the Plot & Log icon and press the “Select” softkey to open the app. The Plot & Log app has a Plot utility and a Log utility. The Plot utility plots the values of selected variables over time. The Log utility creates a log with the values of selected variables over time. The log can then be viewed in a spreadsheet program on a PC. Return to the main screen at any time by pressing the main screen key (⏪).

Items to be plotted must be added to the Plot Variable List. Items to be logged must be added to the Log Variable List. The 2 lists are independent. Add items from the Programmer app’s menus by highlighting an item and pressing the “Add to” softkey. In the next screen, highlight the Plot or Log icon and then press the “Select” softkey to view the list. To add the item to the list, press the “Add” softkey followed by the “Finish” softkey. The limit is 5 items in the Plot Variable List and 8 items in the Log Variable List. To remove an item from a list, select the item and press the “Delete” softkey.

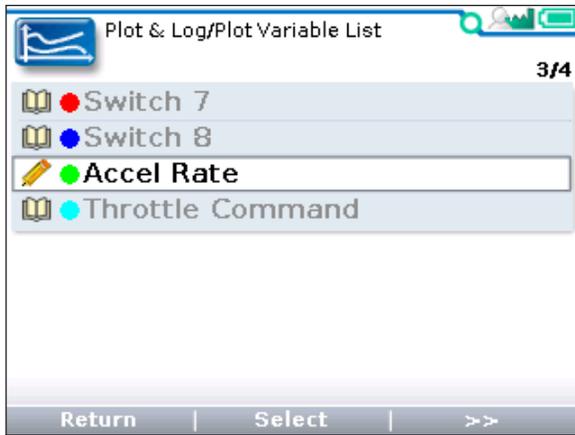
The *Log & Plot Cycle Time* parameter shown in the Plot and Log menu is adjustable. Use the Plus/Minus keys to change the value. Decreasing the time results in more frequent samples and vice versa. This parameter is also adjustable within the HHP Setup app (item 12 of 20).

PLOT

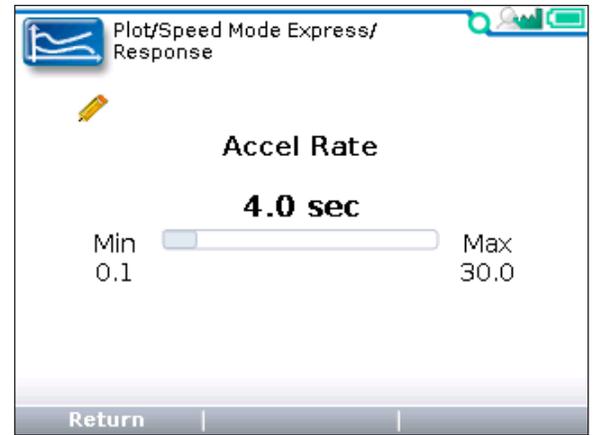
In the Plot Variables List, a colored circle beside each item shows the color that will be used for that item in the plot. The colors are in a fixed order; Red/Blue/Green/Cyan/Magenta. If items are to use a specific color, use the “Move Down” and “Move Up” softkeys to achieve the desired combination. Return to the Plot & Log app by using either the Return softkey or the left-arrow key (⏪).

To create a Plot of the items, highlight “Plot” and then “Select” the plotting program. Press “Start” to begin the plot routine, and “Stop” to end the plotting. Press “Save” to save the screenshot (.bmp format) to the SD card. The saved screenshot file cannot be opened with the 1313 HHP and must be viewed using a PC by navigating to the saved file as described in [Chapter 2](#) (See the “USB Connector” and the “SD card” sections).

Within the Plot Variable List, parameters can be selected and their value changed following the same process as described in the Programmer app ([Chapter 5](#)). Highlight the parameter and press “Select” to open the detail screen. Adjust the parameter and then use the “Return” softkey to return to the Plot Variable List. Changes take place immediately and are carried over into the Programmer and any other locations that the parameter is displayed.

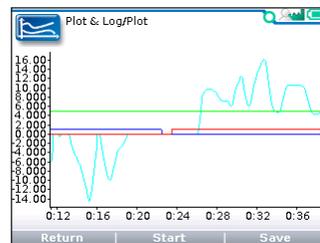
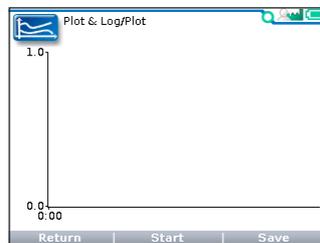
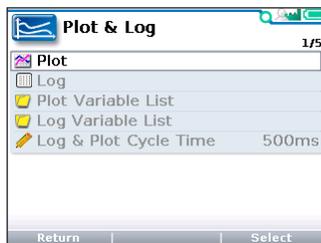


The Plot Variable List menu



Press "Select" to edit →

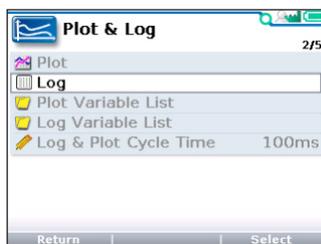
Edit in the normal manner, then press "Return" to exit.



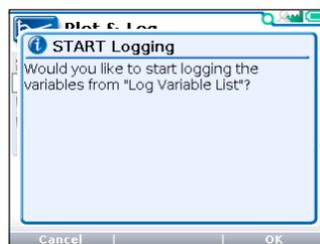
Plot variables versus time: Use the softkeys to **Select Plot**, **Start the Plot**, **Stop** when complete, and then **Save** the file to the SD card.

LOG

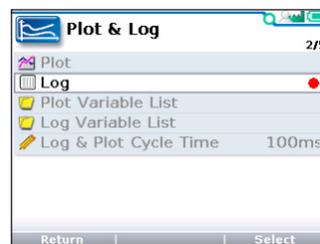
A log of the items in the Log Variable List can be saved to the SD card as an .xls spreadsheet file. Highlight "Log" and then press the "Select" softkey or the right-arrow key (▶). In the "Start Logging" window, press the "OK" softkey. Use the "Save as" softkey to create an xls file with a new name or use the "Save" softkey to overwrite an earlier xls file. After using either technique, select the "OK" softkey to begin logging. The Plot & Log menu will now have a flashing red dot (●) next to Log, indicating that logging is in progress. To stop logging, press "Select" softkey or the right-arrow key (▶), and then in the "Stop Logging" pop-up screen, press the "OK" softkey. The "Data Log" popup shows the name and path of the xls file saved to the SD-Card location. See images, below.



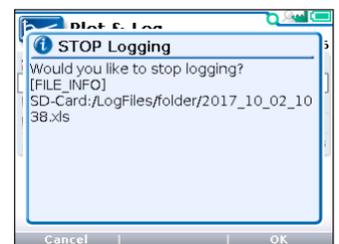
Highlight Log to begin



Select "OK" to start logging



A flashing red dot means logging

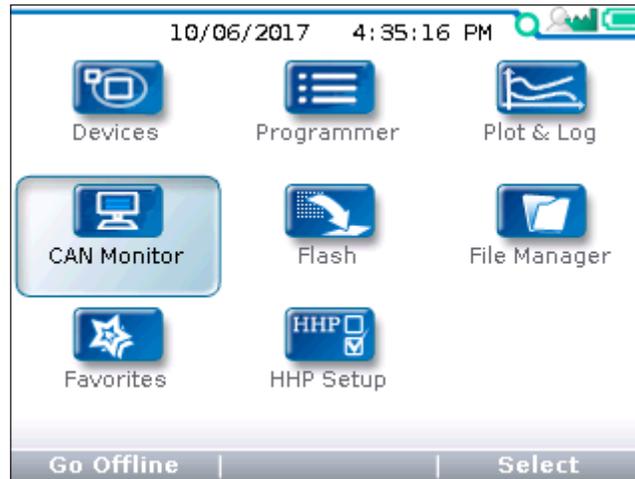


Save file included the path

Plot & Log Notes:

- 1) Due to the limitations of the 1313 HHP screen size, plotting works best if the items being plotted have similar value ranges.
- 2) If a plot is needed for variables with values that do not have similar ranges, it is recommended to use log rather than plot. Open the xls file in Excel and then use the Excel plotting feature to select a suitable vertical scale (or multiple vertical scales).

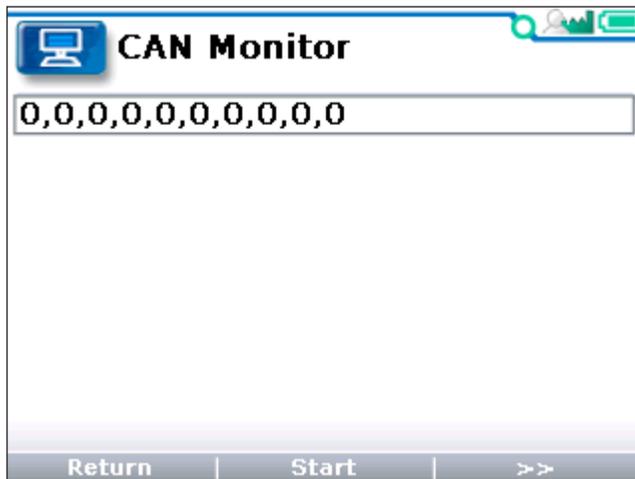
7 – CAN MONITOR



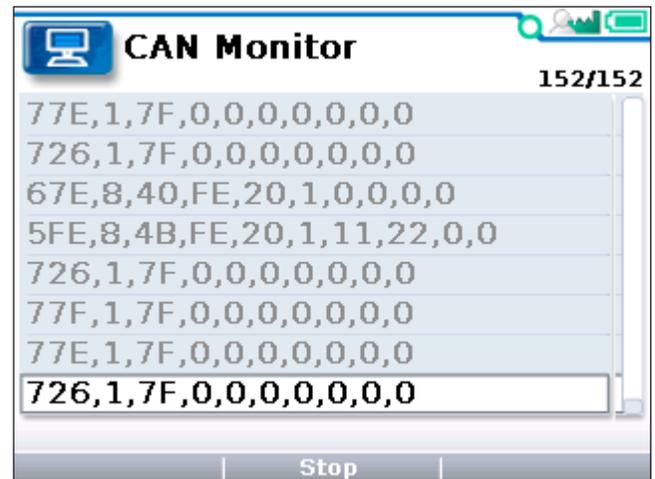
In the main screen, highlight the CAN Monitor icon and press the “Select” softkey to open the app. Return to the main screen at any time by pressing the main screen key (⏏).

CAN Monitor can be used to capture CANbus traffic over time and save the trace as a csv file that can be opened using a PC spreadsheet program. Transfer the .csv files to a PC using the SD card or the USB connection as described in [Chapter 2](#) (See the “USB Connector” and the “SD card” sections).

To begin a trace, press the “Start” softkey. Use the “Stop” softkey to end the trace.



Start a CAN trace



Stop a CAN trace

Prior to starting a trace, the data captured may be filtered. Use the “»” softkey to navigate to the Filters option. Press the “Filters” softkey, and then toggle each of the checkboxes on or off. Set the Object Index range to limit the collected CAN trace or simply collect all messages from a particular Node. The Filters operation modifies (i.e., filters) the capture of the following CANbus data:

- PDOS
- SDOs
- NMTs

Heartbeats

Emergency Messages

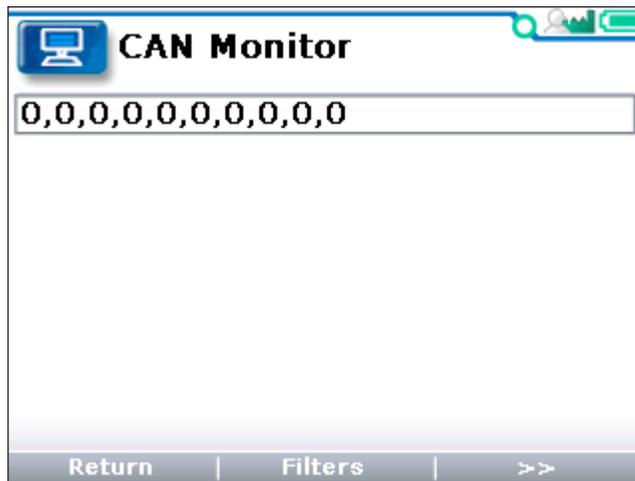
Range

Start at an Object Index (editable from 0x001)

End at an Object Index (editable to 0x77F)

All Msgs for a Node

NodeID (editable from 0x01 to 0x7F). Default is Node ID of connected device.



“Filter” softkey

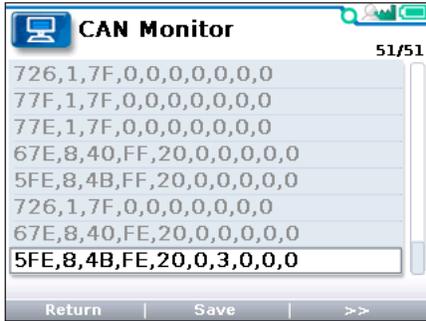


10 Filter Options

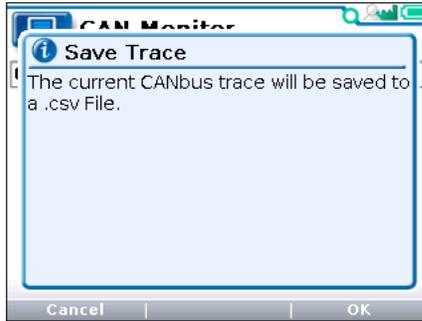
To save a CAN trace, use the “»” softkey to navigate to the save options. Select the “Save” softkey and then press the “OK” softkey. Use the “Save as” softkey to create a csv file with a new name or use the “Save” softkey to overwrite an earlier csv file. After using either technique, select the “OK” softkey to save the csv file. If saving multiple files, the time required to name files can be reduced by using the automatic “Date/Time” format. See “Text for save as” in [Chapter 11](#) (HHP Setup).

The .csv file can be saved to the internal memory or the SD card. A pop-up message alerting the file format (.csv) appears before enabling navigation to the Internal or SD-Card locations.

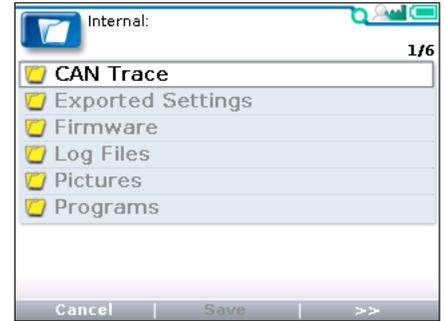
The following screen-images illustrate the saving of a CANbus trace.



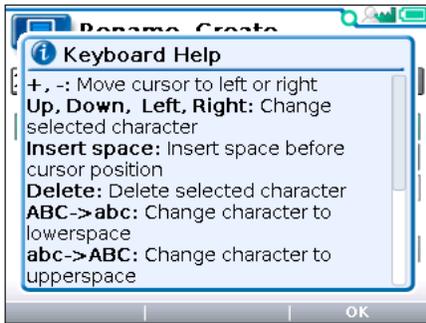
Save the CAN trace.



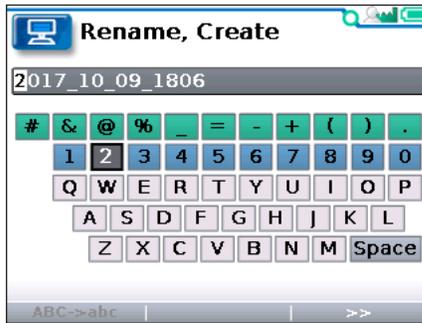
File saved as a .csv



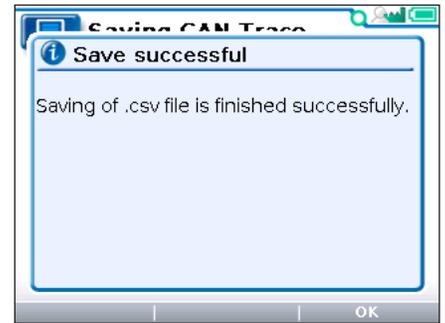
Navigate to the storage location



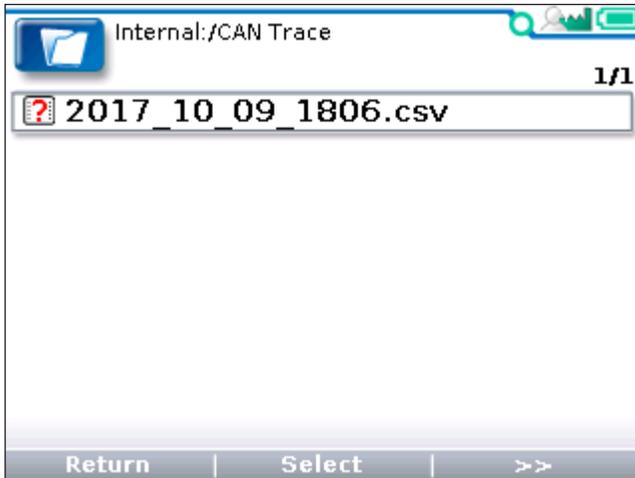
Use the pop-up file name editor



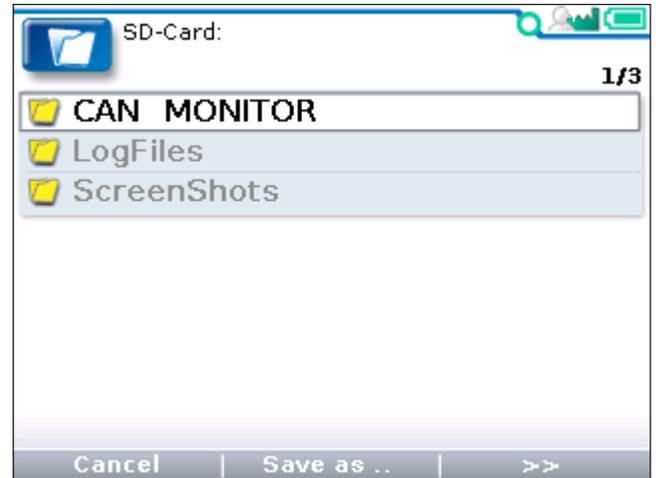
Or ... use the (default) dated file format



File is saved ... confirmation message



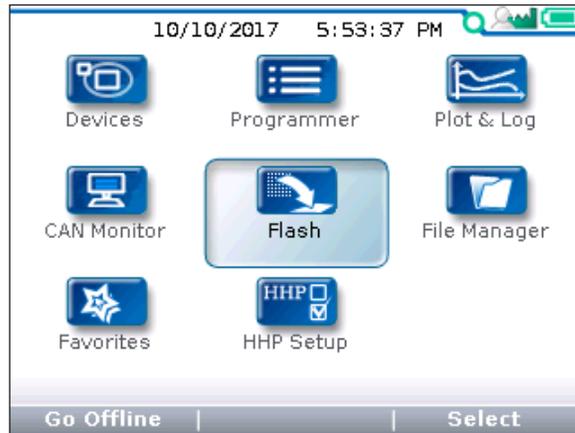
Saved file. Note the file path



The file can also be saved to the SD card

Note that if the HHP Setup parameter “Remember last View” is on, the CAN trace will be stored to the last location, which is convenient if making multiple-saved files. Otherwise, use the left-arrow (⬅) to back-out and navigate to another (different) location.

8 – FLASH

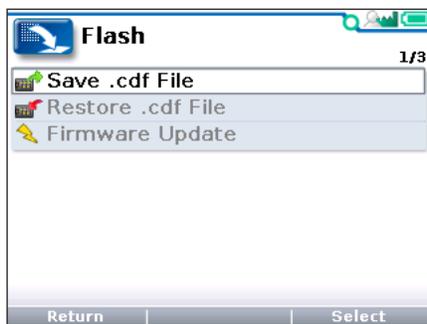


Use the Flash app to obtain and save parameter values, restore (load) parameter values to the device, or update the device’s firmware. Highlight the Flash icon and press the “Select” softkey to open the app.

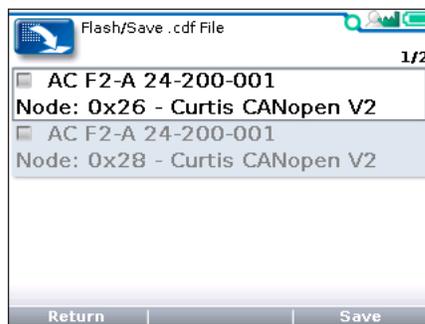
The Flash app is operational whether connected using the Devices app or not. When using Flash app with a system that has more than one compatible device on the CANbus, the app will ask which device should be used for the selected operation.

SAVE PARAMETER SETTINGS

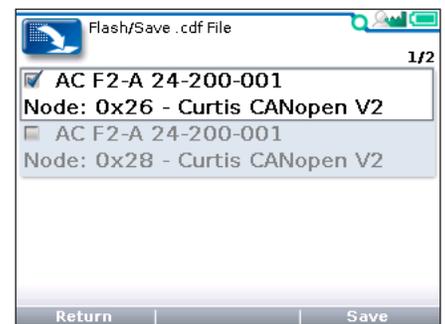
The device parameters and their values can be obtained and saved using the “Save .cdf File” option. The clone data file (.cdf) file name and save process is similar to the Plot, Log, and CAN monitor routines. Follow the screen prompts as illustrated below. In this example, the file is saved to the internal memory using the automatic naming option (Date/Time format).



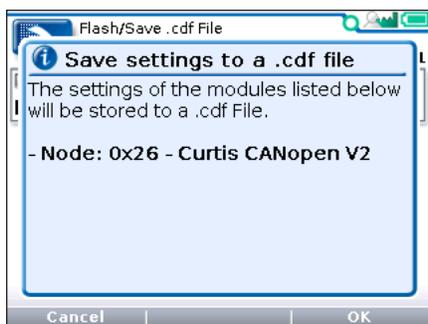
Select to save parameters to a file



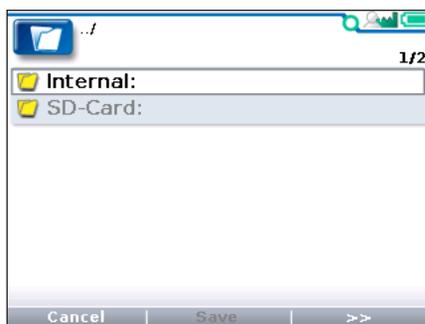
The devices on the CANbus are shown



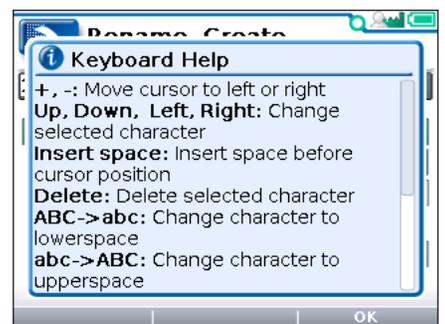
“check” the device



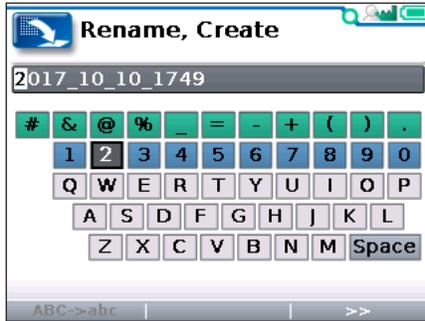
Confirm the device (Node ID)



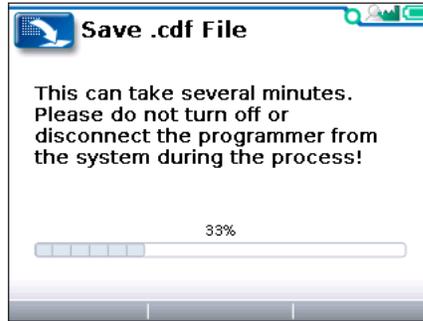
Select location to save the .cdf file



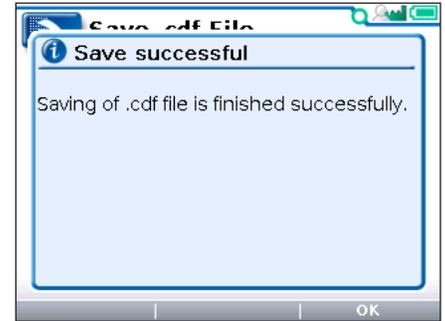
Create a file name



Date and Time file name



Saving the file ... progress bar



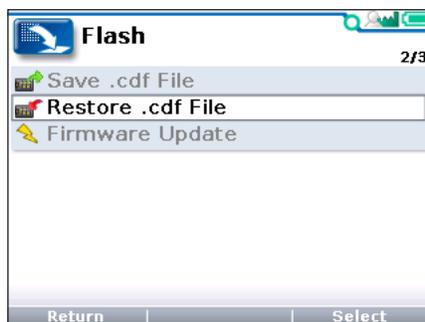
File save process complete

Save .cdf files with user-created filenames or with automatically created filenames that use the “Date/Time” format (See “Text for save as” item in the HHP app, [Chapter 11](#)). The Date/Time format allows rapid saves and is recommended when saving parameter changes during an initial setup of a device. Files can be saved to either the Internal memory or the SD-Card locations. The File Manager app can transfer (move) files between any location in the Internal memory or the SD-Card, but only one file can be moved at a time (See [Chapter 9](#), File Manager.) Transfer of multiple files is facilitated by connecting the 1313 HHP to a PC using the USB cable as described in [Chapter 2](#) (1313 HHP OPERATION, USB Connector,) and then using any of the standard tools available in Windows Explorer (Copy, Cut, Paste, Drag & Drop).

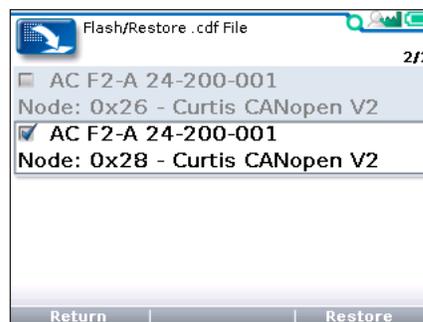
For information on creating names, see [Chapter 12: Using the Keyboard](#).

RESTORE PARAMETER SETTINGS

Use the “Restore .cdf File” to restore parameter values contained in a .cdf file to a device. The process is similar to saving the parameter settings and is illustrated in the series of screenshots below.



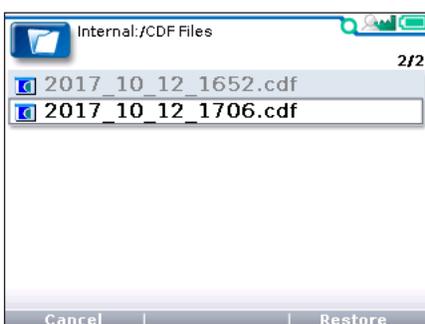
Select to restore parameter values



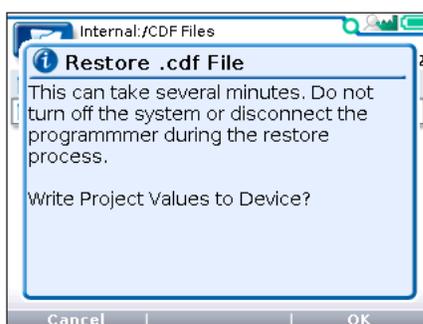
“Check” the device to restore the values



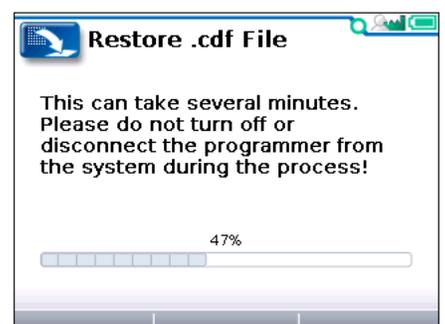
Check the Node ID matches the device



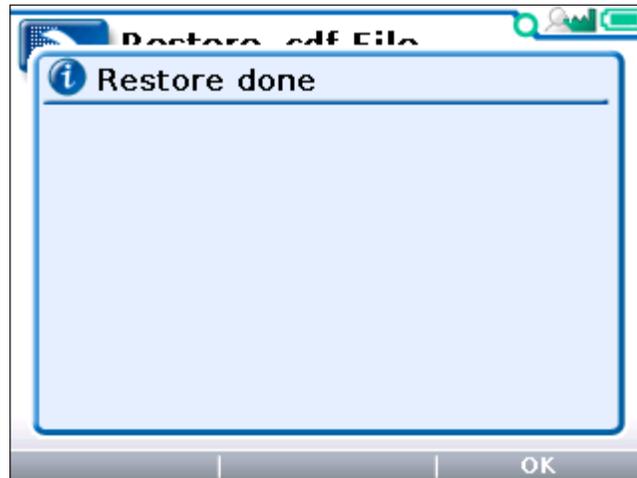
Navigate to and select the .cdf file to restore



Select the OK softkey to begin the process



Process bar tracking

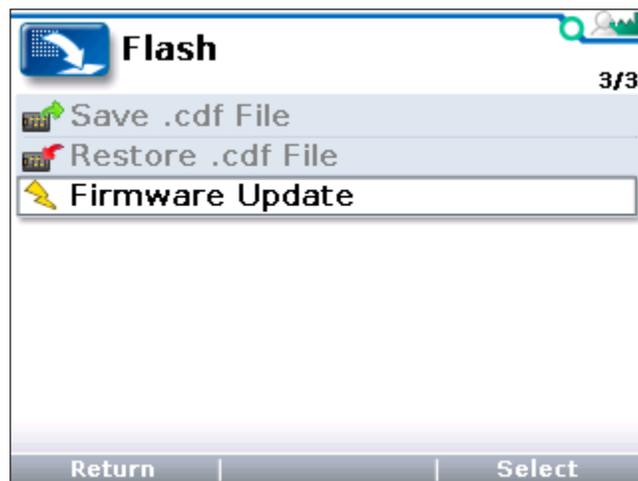


Parameter values are restored

FIRMWARE UPDATE

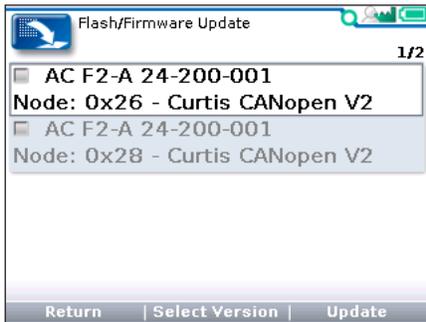
The device firmware can be updated using an osf.c13 file obtained from a Curtis Support Engineer. The .c13 file contains the OS (operating system), VCL code (if used), the Menu for OS parameters and any VCL parameters, and Default or an application's values.

Begin by saving the ".c13" file to the Firmware folder in the internal memory. Highlight the "Firmware Update" and press the "Select" softkey.

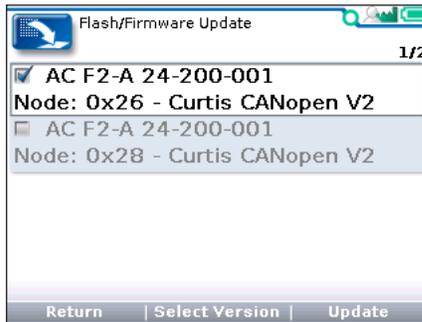


Firmware Update "Select" softkey

Select the device to be updated and then press the “Select Version” softkey. Highlight the appropriate .c13 file and then press the “Select” softkey. Select the “Update” softkey.



Check the device to update



The selected device will have the ✓ mark

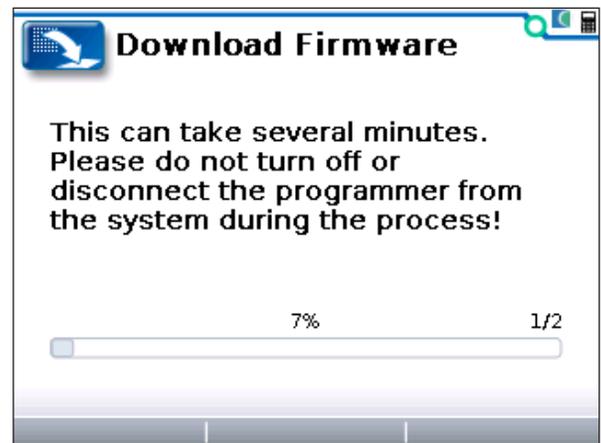


Select the firmware osf.c13 file from the internal memory folder

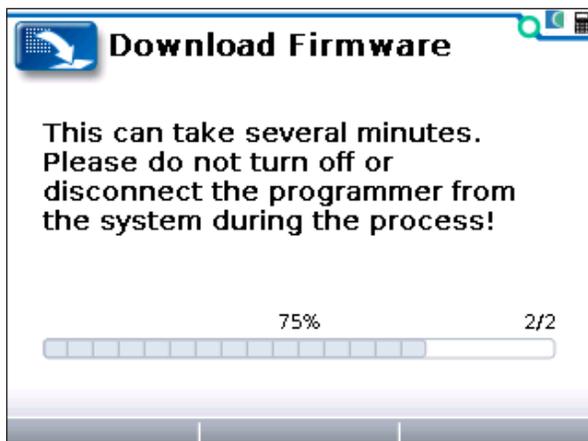
The 1313 HHP will ask for confirmation to update the firmware. The update will take several minutes. The 1313 HHP and the device must remain powered during the firmware update process. Losing power during the update can cause a *field* un-recoverable condition.



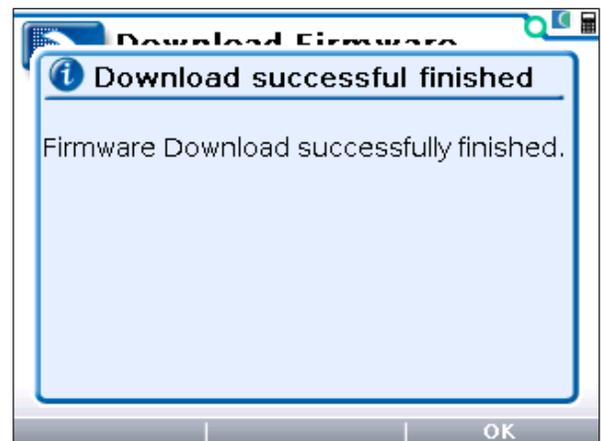
Confirm the update to advance to the download stage



Page 1 of 2 progress bar ...



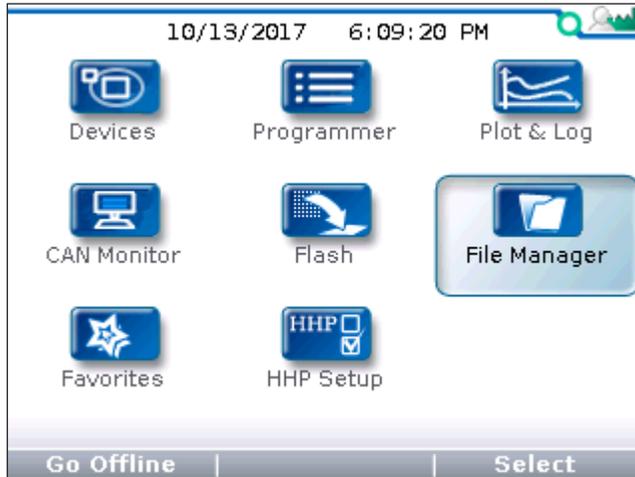
Page 2 of 2 progress bar ...



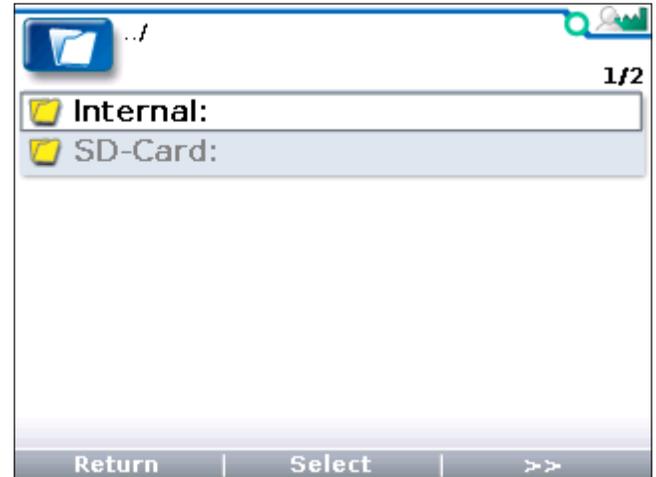
The Firmware update is complete.

9 – FILE MANAGER

In the main screen, highlight the File Manager icon and press the “Select” softkey to enter the app.



Press “Select” to open



Press “Select” to enter the highlighted location

The File Manager softkeys are used to manage Internal and SD-Card files. The softkey navigation includes a “>” softkey that is used to access additional options. Use the “Return” softkey to go back one screen.

Select: Selects the highlighted item (folder, or file).



Rename: Opens the editor to rename the highlighted item.



New Folder: Opens the pop-up to create a new Folder within the highlighted folder or menu.



Copy: Copies the highlighted item.

Paste: Pastes the copied item into the highlighted location (see navigation between folders*).



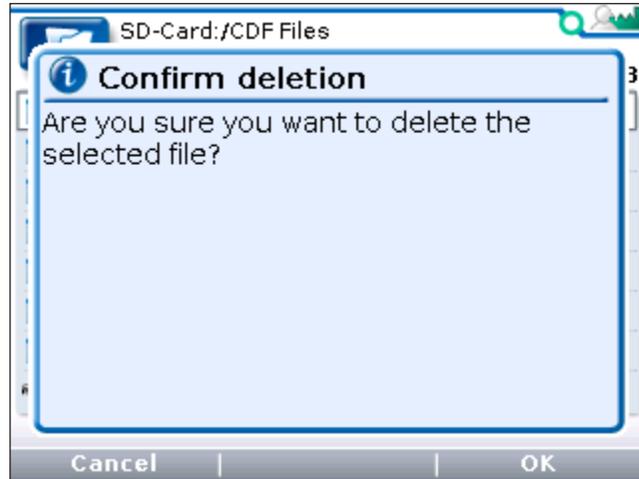
* To navigate between folders, use the “return” softkey to return to the folder list(s), then use the up/down arrow keys to highlight the target folder. Open the target folder using the right-arrow key.

Move: Moves the highlighted item (file or folder) to another folder.

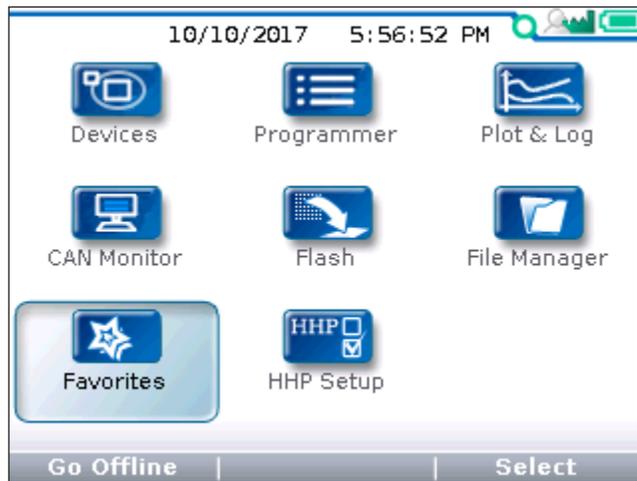
Insert: Insert the item to move it to the new location.



Delete: Deletes the highlighted item. A pop-up message will ask before deleting.



10 – FAVORITES



In the main screen, highlight the Favorites icon and press the “Select” softkey to enter the app. Alternatively, the Favorites key (★) opens the app directly. Return to the main screen at any time by pressing the main screen key (☐).

Use Favorites to build custom sets of parameters and monitor variables that can be easily accessed without needing to navigate through multiple Programmer menus.

- Add to Favorites the frequently adjusted parameters and regularly checked monitor variables.
- Parameter adjustments made within the Favorites app function the same as if the change was made in the parent Programmer app.

Individual parameters or monitor variables can be added to the Favorites app. An entire Programmer menu (including any sub-menus) can be added at once. Any sub-menu can also be added.

- Hint: Instead of individually adding many items to Favorites, it is often easier to add an entire Programmer menu or sub-menu and then remove (delete) a few unwanted items.

Parameters and monitor variables added to Favorites cannot be renamed. A new “folder” with a custom name can be created in Favorites and then parameters or monitor variables can be added to this folder.

- Use this feature to easily navigate to a folder named for a task (such as “throttle setup”). All of the parameters and monitor variables (feedback items) needed for the task can be added to the folder.
- Create folders for specific vehicles, applications, or customers.

USING “ADD TO” IN PROGRAMMER

To add an item to Favorites, from within the Programmer app’s menus, highlight the parameter or monitor variable. The “Add to” screen will list the available destinations. If the item is a parameter or monitor variable, the destinations are Favorites, Plot, or Log. If the item is a menu, the only destination is Favorites.



The “Add to” location options within the Programmer app

Highlight Favorites and press the “Select” softkey to go to the Favorites menu, where a new set of operable softkeys appears:



The “Add” softkey adds the new item to the Favorites main window. The “Cancel” stops the operation and returns the screen back to the highlight item in Programmer. A “Delete” softkey will also be available if anything is in Favorites. The “Delete” softkey will delete the highlighted item (scroll using the up/down keys to highlight an item).



If the item being added to Favorites needs to be placed in a user-created folder, do not press the “Add” softkey yet. Press the “>” softkey to access the “New Folder” softkey. Press the “New Folder” softkey to access the keyboard ([Chapter 12](#)). The default name (“Folder”) can be accepted with “OK” or the name can be edited and then accepted with “OK”. With the New Folder appearing in the Favorites window, “open” the folder by pressing the right-arrow key (▶) and then press the “Add” softkey to place the item in the New Folder.

Whether saving to a New Folder or directly to the Favorites main window, complete the operation by pressing the “Finish” softkey. The screen will return to the Programmer app location where the “Add to” softkey was last pressed.

USING SOFTKEYS WITHIN FAVORITES

With the Favorites app open, use the "»" softkey to scroll through the Favorites app softkeys.

Press the "Select" softkey or use the right-arrow key (▶) to edit a highlighted parameter.

Note: Parameter adjustments made within Favorites are the same as if the change was made in the parent Programmer app.



The "x10" or "x100" softkey, pressed together with the "+" or "-" key, allows rapid changes to parameter values.



View monitor variables the same as in Programmer parameter menus.

The "Move Down" and "Move Up" softkeys are used to change the sequence of items in Favorites. The "Delete" softkey deletes items from within the Favorites app only.



The "Rename" softkey allows the *renaming of a folder* (not a parameter or monitor variable).



The "Add to" softkey enables adding a Favorite item into the Plot or Log app.



The "Export Fav." softkey is used to save any folder in Favorites as an .hfc file. The "Import Fav." softkey is used to import a folder into Favorites from a previously saved .hfc file. These 2 softkeys provide a convenient method to easily restore Favorites to a previously used group of items or to transfer Favorites from one 1313 to another 1313. OEMs can use this technique to provide ready-made Favorites collections to dealers.

Exporting

1. In Favorites, all of the items to be saved must be in 1 folder. This folder can contain any parameters or folders.
2. Highlight the folder to be saved and select "Export Fav."
3. When the 1313 HHP asks, "Do you want to export the selected Favorite folder to a .hfc file?", select the "OK" softkey.
4. The 1313 HHP shows that the file will be saved in "Internal:/Exported Settings/Favorites". Name the file to be saved.

Importing

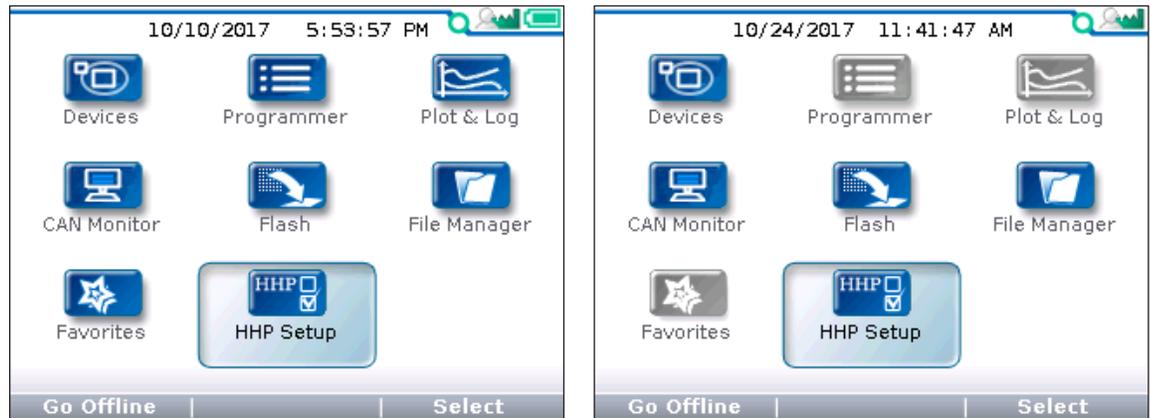
1. Open Favorites. Navigate if necessary to the location where the folder will be imported. Select “Import Fav.” softkey.
2. When the 1313 HHP asks, “*Please select the favorite file you would like to import to the current directory.*”, select the “OK” softkey.
3. In the “Internal:/Exported Settings/Favorites” folder, highlight the .hfc file to be imported.
4. Select the “Import Fav.” softkey.
5. Favorites now contains the imported folder.



Select the “New Folder” softkey to create a new folder as the location to Export or Import .hfc favorites file.

11 – HHP SETUP

The HHP SETUP app allows adjustment to the appearance of the screen displays and the 1313 HHP's functionality. Highlight the "HHP Setup" icon and press the "Select" softkey to enter the app. The app is accessible even when a device is not selected (see 2nd image, below). Return to the main screen at any time by pressing the main screen key (☰).



A slider on the right-hand side of the "HHP Setup" screen indicates there are more items in this menu than can fit on the screen. When the last (8th) item is reached, continue pressing the down-arrow key (▼) to view the rest of the items. When the top item in the menu is highlighted, pressing the up-arrow will wrap to the last item. The upper-right corner of the display indicates the highlighted item's location relative to the total number of items in the menu (e.g., 1/20 through 20/20).



ACCESS LEVEL

The Access Level of the 1313 HHP can be set to its own level or to any lower level. The order (high-to-low) is OEM Factory, OEM Dealer, Field Advanced, Field Intermediate, and Field Basic.

Setting the Access Level to a lower level restricts the parameters and monitor variables that can be viewed. Lower level access allows service and diagnostics without the ability to alter OEM settings that affect vehicle response.

LANGUAGE

Select English, Deutsch, Français, Italiano, or Español for the screen text.

DECIMAL SEPARATOR

Decimal points can be represented by a period or comma.

LEFT HANDED SOFT KEYS

Selecting “Yes” for Left Handed Soft Keys reverses the position of items in the softkey text line to make the keys more convenient for left-handed people.

BACKLIGHT

Sets the brightness of the 1313 HHP’s LCD display from 100% to 20% in 5% increments.

KEYTONE

Choose the sound that will accompany each key press or turn off keytone for silent 1313 HHP operation.

AUTO POWEROFF (BATTERY)

If the 1313 HHP is being powered by its own batteries instead of a device, the 1313 HHP will automatically power off if no buttons are pressed for a period of time that can be adjusted with the “Auto Poweroff (battery)” setting. The available settings are 5, 10, 20, 30, and 60 minutes.

AUTO POWEROFF (EXT)

If the 1313 HHP is being powered by a device, the 1313 HHP will automatically power off if no buttons are pressed for a period of time that can be adjusted with the “Auto Poweroff (ext.)” setting. The available settings are 15, 30, 60, 120 minutes, and never.

EXIT MENUS WITH LEFT ARROW

The left-arrow key () is used to navigate backwards within menus.

When set to Yes, use the left-arrow key to leave the presently displayed screen and return to the next higher (i.e., previous) screen. Using the left-arrow key will ultimately return to the Main Screen.

When set to No, the left-arrow key can return to the next higher screen but cannot return from the top level of an App to the Main Screen. The Main Screen can be accessed using the Return softkey or the Main Screen Button ()

ENABLE SCREENSHOT

The Yes/No setting of this item determines whether the 1313 HHP will allow screenshots to be taken. See [Chapter 13](#) for a description of this function.

When set to “Yes”, take a screenshot by pressing the Power key () followed by the Favorites key ()

When set to “No, attempting to take a screenshot will result in the Power Key being ignored and the Favorites app being opened.

LOG & PLOT CYCLE TIME

Sets the sample rate for the Log and Plot functions. The setting is adjustable from 50ms up to 1 minute in defined steps. The identical setting is also available in the Plot & Log App. Adjustments to either setting will change both settings.

SHOW ONLY EMPTY BATTERY

A battery icon showing the state-of-charge of the 1313 HHP's battery can be displayed in the upper right corner of the screen.

If set to “No”, the battery icon is always displayed.

If set to “Yes”, the battery icon is only displayed if the battery is empty.

TEXT FOR SAVE AS

When creating a new .cdf file (see Flash app, [Chapter 8](#)) or a new Log .xls file (see Plot & Log app, [Chapter 6](#)), the name of the file can be created manually or automatically.

If the setting is “No text”, the field at the top of the keyboard screen is blank and the user can type a filename.

If the setting is “Date/Time”, the field at the top of the keyboard screen is automatically filled with the date and time using the format YYYY_MM_DD_HHMM. The “Date/Time” setting is recommended when saving multiple files in quick succession. The automatically created filenames can then be renamed if necessary.

KEYBOARD HELP TEXT

When set to On, a keyboard help pop-up will appear every time that the keyboard screen is entered.

When set to Off, no pop-up appears when the keyboard screen is entered.

REMEMBER LAST VIEW

When set to On, selecting an app from the main screen will result in the 1313 HHP returning to the last screen that was used in this app. If an app is exited by selecting the Main Screen key, the next selection of this app from the Main Screen will return to the most recently used location in this app.

When set to Off, selecting an app from the main screen will always result in the app opening at the root (top) screen.

DELETE CACHE FILE

Delete Cache File and Delete Favorites are the items in HHP Setup that result in an action instead of a setting change. [Chapter 4](#) (Devices) discussed how cache files are acquired and are used to reduce connection times during subsequent connections. These cache files can be deleted by highlighting “Delete Cache File” and then pressing the right-arrow key (▶). If problems are encountered when connecting, delete cache files and then try to connect again.

DELETE FAVORITES

Delete Favorites and Delete Cache File and are items in HHP Setup that result in an action instead of a setting change. Delete all items in Favorites (including folders) by highlighting “Delete Favorites” and then pressing the right-arrow key (▶).

DATE & TIME

This folder contains the following eight items.

Show Date/Time in header. When set to On, the date and time are displayed at the top of the main screen. The date and time will only be accurate if batteries are installed and the user sets the date and time as described below. The date and time will be used for the timestamps of any files that are saved. If “Text for save as” is set to “Date/Time” (see above), the date and time will be used to automatically name files.

If no batteries are installed, it is recommended that the setting be changed to OFF so that the 1313 will not be displaying an incorrect date and time. Any files that are saved will have an incorrect timestamp.

12h/24h. Select the format used to display the time.

Date Format. Several options are available. The year can appear first or last. The month can appear before or after the day.

Year, Month, Day, Hour, and Minute allow setting the date and the time for the local time zone. After adjusting these settings, selecting the Main Screen Button will result in the Main Screen showing the selected Date and Time with seconds starting from 00.

The “Date/Time” setting is recommended when saving multiple files in quick succession. The automatically created filenames can then be renamed if necessary, preserving the chronological order.

ABOUT

This folder contains 1313 HHP information such as model number, software versions, hardware versions, Serial Number, Manufacturing Date, etc.

SOFTKEYS AVAILABLE IN HHP SETUP



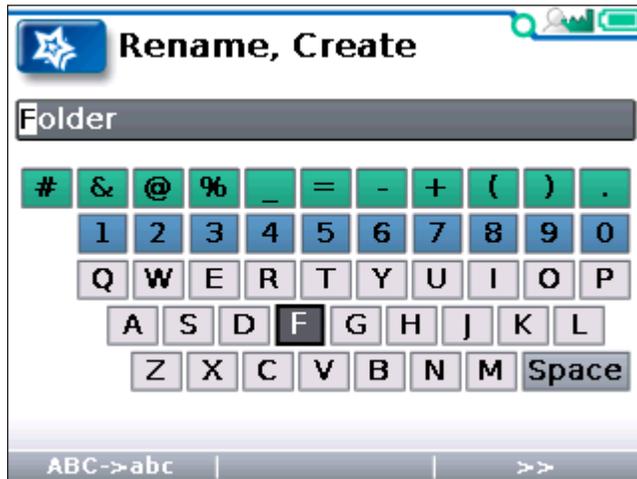
The “Save” softkey saves the settings in “HHP Setup” to an .hps (handheld programmer settings) file in the internal memory. If there is an SD card in the 1313 HHP, the .hps file will be saved to the SD-Card and the Internal memory. Saving an .hps file will result in the previously saved .hps file being overwritten.

After saving the settings to an .hps file, this file is available to restore the settings on the same 1313 or on a different 1313. To restore the settings on the same 1313 HHP, press the “Restore” softkey. The settings from one 1313 HHP can be transferred to a second 1313 HHP by copying the .hps file from the first 1313 HHP and then pasting this file in place of the .hps file on the second 1313 HHP. The “Restore” softkey on the second 1313 HHP can then be used to restore all of the settings to the values from the first 1313 HHP.

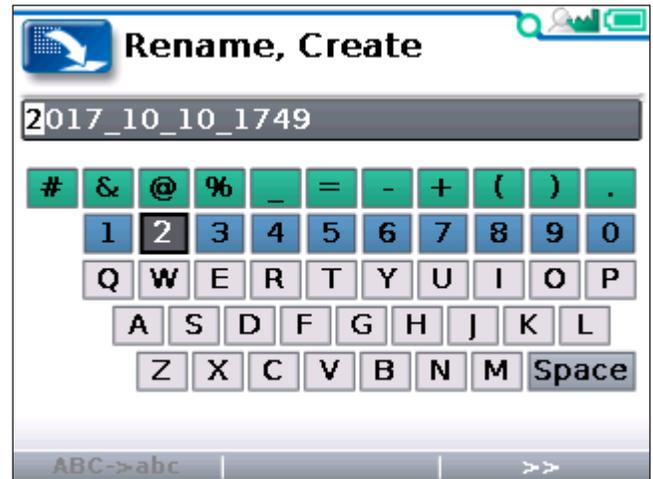
After making adjustments to settings in HHP Setup, it is not necessary to select the “Save” softkey. The new settings will remain in effect unless the “Restore” softkey is selected.

12 – USING THE KEYBOARD

The Favorites and File Manager apps have the ability to rename items or create new folders. The default name “Folder” can be renamed (edited) using the pop-up Keyboard function. In addition, Log (.xls) and clone data file (.cdf) files can be named or renamed. Whenever the “New Folder” or “Rename” softkeys are pressed, the keyboard screen appears:



Creating a new Folder, example



Renaming an existing file, example

If a new folder is being created or a file is being saved using the “Date/Time” feature, the screen will initially display the name with the first character highlighted. The corresponding character on the keyboard will also be highlighted. Use the four arrow keys (up, down, right, and left) to move around the keyboard. Notice how the character in the name is replaced by whichever character on the keyboard is highlighted. When the desired letter or symbol is highlighted, use the “+” key to capture it and move on to the next letter.

In the text line, use the “+” key (⊕) to move the highlight one space to the right, and the “-” key (⊖) to move the highlight one space to the left. The “-” key works as the delete key on existing text.

If saving a filename using “No text” instead of “Date/Time”, the keyboard screen will initially appear with a blank text line. The filename is created as described above.

The following softkeys are available when the keyboard is displayed.



“ABC->abc” (“abc -> ABC”) is a toggle. Each press of this softkey will alternate between “ABC -> abc” and “abc -> ABC”. The letters on the keyboard display will correspondingly change between uppercase and lowercase letters.

“Delete” deletes the highlighted letter.

“Insert space” inserts a blank space to the left of the highlighted letter.

“Cancel” aborts the renaming process.

Press “OK” when the new name is completed.

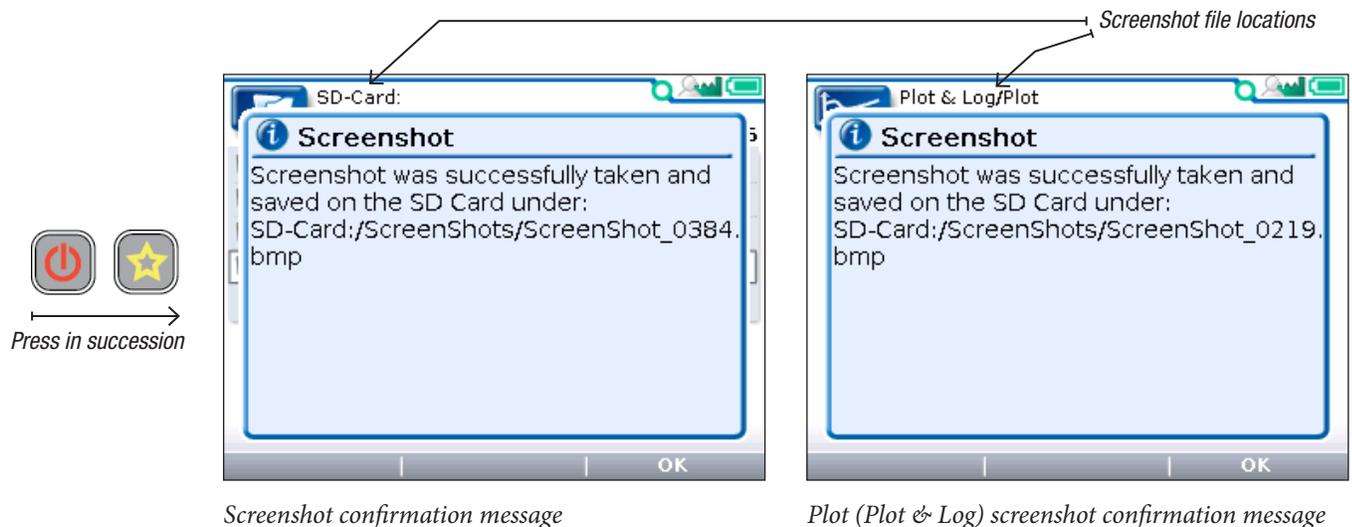
If the “Keyboard help text” option in HHP SETUP is On, the following keyboard help message will precede the keyboard screen. Use the Up and Down Arrow Keys to scroll through the keyboard help. Select the “OK” softkey to close the keyboard help and advance to the keyboard screen.



13 – TAKING SCREEN SHOTS

The 1313 HHP can capture an image of the display screen and save it to the SD memory card as a bit map file (.bmp). These “Screenshots” are numbered sequentially, from 0001 to 9999. The captured image cannot be viewed using the 1313 HHP. The .bmp file must be transferred from the SD card to a PC and then opened from the PC. Each screenshot file is typically about 153 KB and the image is 320 x 240 pixels. Note that the Plot function’s image is also saved as a screenshot in the same directory as a normal screenshot.

Screenshots are taken by pressing and releasing the Power key (⏻) and then immediately pressing and releasing the Favorites key (★). The 2 buttons must be pressed in quick succession. After a few seconds, a pop-up message confirming that a screenshot was taken will appear. Use the “OK” softkey to close the confirmation screen.



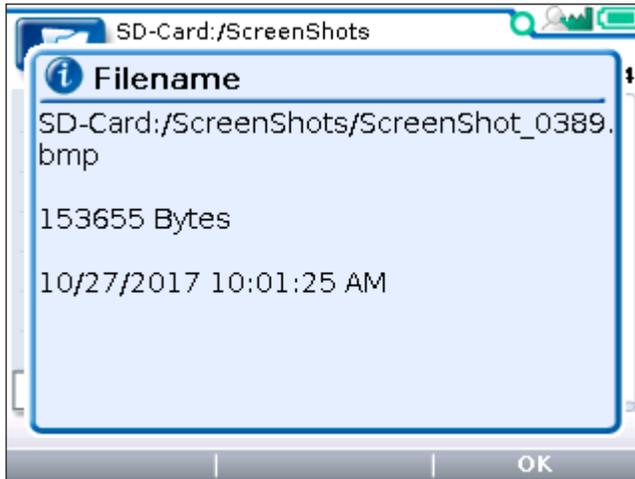
When taking a screenshot of a screen that is requesting a choice (such as yes/no), the confirmation message will not appear until after the requested choice is completed.

Selecting a screenshot file within File Manager opens a window indicating the file’s path, bytes, date, and time (see image, below).

Screenshot files on the SD card can be renamed, copied, moved, deleted, or put into folders using File Manager ([Chapter 9](#)). However, it is typically easier to edit screenshot files on a PC.

The automatic sequential numbering of screenshots is unaffected by deleting screenshots. After deleting 1 or more screenshots, the filename of the next saved screenshot will increment from the most recently saved screenshot number.

Note: Screenshots can only be taken if “Enable Screenshots” is enabled in the HHP Setup app; see [Chapter 11](#).

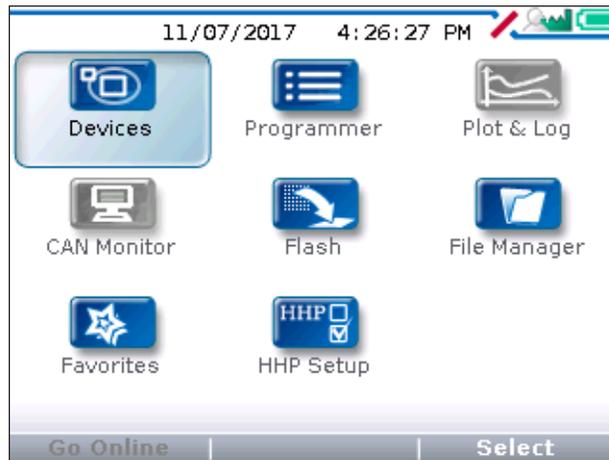


File Manager: Screenshot file information



HHP Setup: Enable screenshot setting

14 – WORKING OFFLINE



Working Offline is the process of performing various 1313 HHP functions while not connected to a device. The following 1313 HHP operations can be performed while working offline.

- Open a .c13 file and then use the “Devices” and “Programmer” apps to view the Device details and Menu tree associated with the .c13 file. Default values for OS and VCL parameters can be viewed. Device-specific information (such as Serial No. or Man. Date) will be blank.
- After opening a .c13 file, adjust parameter values and then save the changes as a new .cdf file that can be used for cloning when the 1313 HHP is online.

Note: The edited C13 parameter values cannot be saved back to the C13 file.

- After opening a .c13 file, use the Flash app’s “restore” function to view the parameter values in a .cdf file. (The .c13 file must have the same family as the .cdf or the restore (cloning) operation will not proceed.)

Note: A .cdf file cannot be opened by itself because this file does not have the parameter scaling information that is available in the .c13 file.

- Using the File Manager app, files and folders can be deleted, renamed, or re-organized. The File Manager app can also create new folders.
- Open a .c13 file and then create or modify Favorites lists.
- Use the HHP Setup app to adjust the settings. Settings can be saved to a new .hps file.

New or modified files created while working offline are transferable to other 1313 HHPs and usable when re-connected to a device.

There are 3 ways to work offline:

1. 1313 HHP Disconnected (1313 HHP cable not connected to anything) – Powered by batteries.
2. 1313 HHP connected to powered CANbus with no device – Powered by CANbus.
3. 1313 HHP connected to device and then select Go Offline – Powered by CANbus.

While working offline, the green circle in the upper right-hand corner of the screen is replaced by a red slash— indicating that the 1313 HHP is not connected to a live online system.

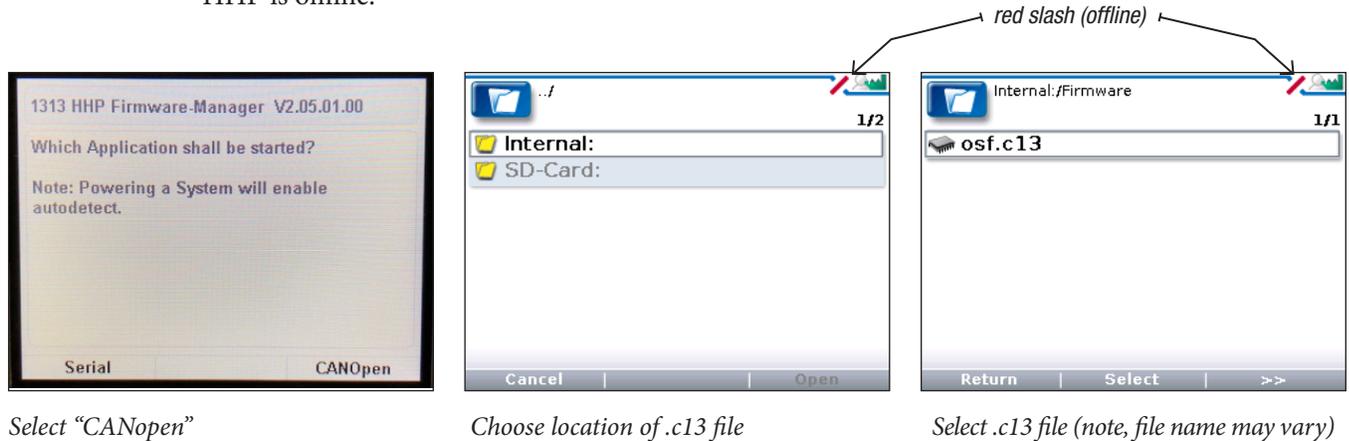


The appropriate .c13 file for a device can be obtained from the device supplier or a Curtis support engineer in your region.

1313 HHP DISCONNECTED

To work offline with the 1313 HHP disconnected (1313 HHP cable not attached to anything), 2 AA batteries must be installed in the 1313 HHP.

Turn on the 1313 HHP using the power key (⏻). The screen will display the option to use “Serial” (serial-based communication*) or “CANopen” (CAN-based communication). Select the “CANopen” softkey. The connection status will display the “red slash” indicating no device is connected. The 1313 HHP is offline.



Choose whether to use the .c13 file from the 1313 HHP’s Internal memory or the SD-Card locations by highlighting the preferred location and pressing the right-arrow key (▶). Navigate to the Firmware folder and highlight the appropriate .c13 file. Press the “Open” softkey to open the Main screen and obtain access to the Devices, Programmer, Flash, File Manager, Favorites, and HHP Setup apps. (See the image at the beginning of the “Working Offline” section). The available apps work as described in their respective chapters.

To view information regarding the C13 file, select the Devices app and then press the “Details” softkey. A window will open listing the family Model, OEM String, and the various software versions included in the C13. If the C13 file is being opened offline so that it will be possible to then restore from a .cdf file, the family of the .c13 file must match the family of the .cdf file.

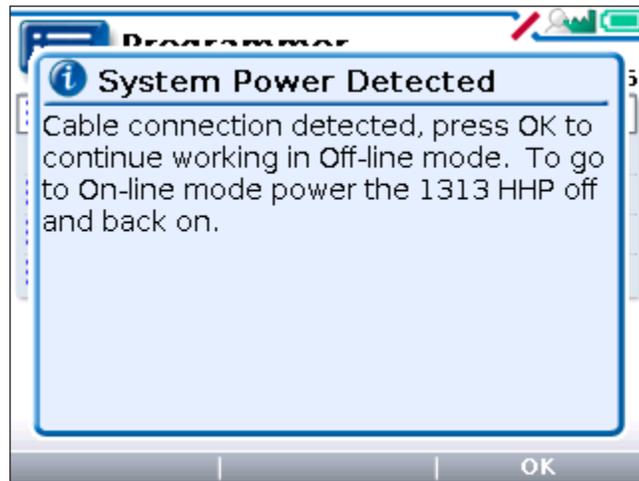
The offline mode is used to view parameters in a .c13 file or to adjust .c13 parameters and save the settings as a new .cdf file. After opening a .c13 file offline and then restoring from a .cdf file, the settings in the .cdf file can be viewed. These settings can be adjusted if necessary and then saved as a new .cdf file. Offline mode can be used to make parameter changes to a generic device profile or to view the parameters in a .cdf file received in an email. A .cdf file can be sent to a customer or dealer for cloning any device that has a matching family.

If settings in HHP Setup are adjusted while offline, the settings will continue to be used after the 1313 HHP is connected to a device.

* For Serial operation, consult the 1313 HHP manual for serial based communication: Curtis document number 38798.

When finished working offline, press the power key to turn off the 1313 HHP.

Note: If the 1313 HHP is connected to a device when off line using the batteries, it has to be power-cycled before it will connect to a device. Use the power key (🔌) to turn it off and back on again.



1313 HHP OFFLINE OPERATION FROM POWERED CANbus WITH NO DEVICE

If the 1313 HHP is connected to a CANbus without devices (nodes), the 1313 HHP can work offline using the CANbus power without using batteries. Offline operation is the same as previously discussed offline operation using batteries.

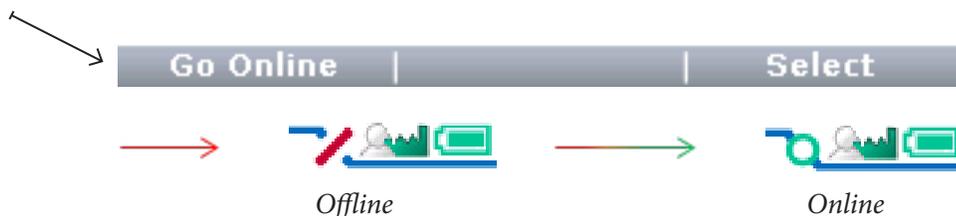
If any device comes-on-line during the offline session, the handset has to be power-cycled using the power key (🔌) before it will scan the CANbus for nodes and detect the device.

1313 HHP CONNECTED TO DEVICE AND THEN GO OFFLINE

If the 1313 HHP is connected to a device and the user would like to go offline, press the “Go Offline” softkey in the Main Screen. Navigate to a C13 file. Offline operation is the same as previously discussed offline operation using batteries.



After switching to offline operation, the user can switch back to online operation by pressing the “Go Online” softkey in the Main Screen. Press “Yes” on the next screen asking to confirm going Online. The 1313 HHP will scan the CANbus for devices. The red slash will become the green circle. From the Device app’s list, select the device of interest and press the “Connect” softkey. Once Online, all operations are as described in the appropriate app chapters.



15 — UPDATING THE SOFTWARE IN THE 1313 HHP

The software in the 1313 HHP is easily updated. As software updates become available, they may be installed into the 1313 HHP via the USB connector or via an SD card.

There will be application files for various 1313 HHP customer models. There may also be additional files (Firmware Manager and Resource files) that are not access-level dependent.

For example,

1313-xx31_Application_HW3_01011100.hap is the application file used by a 1313 HHP that has Model Number 1313-xx31 (where xx indicates the Access Level).

1313-xxxx_FWManager_02050100.hfm is the firmware manager used by all 1313 HHPs (regardless of Access Level).

1313-xxxx_Resources_02_HPG_0010.hrc is the resource file used by all 1313 HHPs (regardless of Access Level).

New Application files or FWManager files loaded on the 1313 HHP's Internal memory or SD-Card memory locations will install the next time that the 1313 HHP powers-up; whether powered from the USB (PC) or the system-device (CANbus) connection. The Resource files work differently, however. If a Resource file is loaded on the Internal Memory or SD-Card locations, the resource file will not update during the next power-up by a USB connection. The resource file will only unpack (where the 1313 HHP shows the "Updating Resources" progress bar) the next time the 1313 HHP is powered by a system-device (CANbus) connection. The Application, FWManager, and Resource updates occur before the 1313 HHP scans the CANbus for devices.

COPYING NEW FIRMWARE ONTO THE 1313 HHP

If the 1313 HHP is connected to a PC using the USB cable, the PC will display one drive for the 1313 HHP's internal memory and another drive for the SD card (if present). The new software files need be copied to the root directory (top level) of either the 1313 HHP internal memory or the SD card. The files will not be recognized if placed in a folder. Alternatively, insert the SD card into a PC's SD slot and copy the new files onto it.

It doesn't matter if any extra model files for other models are copied to the internal memory or SD card, because only the files appropriate for the specific 1313 HHP model will be installed.

INSTALLING NEW FIRMWARE USING THE SD CARD

The 1313 HHP only looks for new software upon power-up. Therefore, with the SD card in the 1313 HHP, connecting the 1313 HHP to a powered (CANbus) system will begin the update. If the 1313 HHP is already on and connected to a system-device, and then the SD card is inserted into the 1313 HHP, begin the update by turning the 1313 HHP or the system device off and back on again.

1313 HHP DETERMINES WHICH UPDATE FILES TO USE

The 1313 HHP will review all of the software update files placed on the SD card and will recognize files that have already been installed or files that are for a 1313 HHP with a different access level. A series of pop-up screens (one for each extraneous file) will ask whether you want to delete them (yes/no). These extraneous files do not need to be deleted if they're to be used on another 1313 HHP. Deleting them will prevent recurring messages each time the 1313 HHP powers up.

Updates do not need to be sequential. For example, if the present 1313 HHP application software is version 01010800, version 01011100 can be installed without first installing the interim versions 01010900 or 01011000.

A pop-up screen will announce that new software has been found and ask whether to perform the update. When the “Yes” softkey is pressed, the Firmware Manager screen appears and a progress bar shows the application and then the data being installed. After the update has been completed, a message will ask whether to remove that application file from the SD card. In most cases, select “Yes.” However, if planning to make the identical update to a group of 1313 HHPs, select “No” which will save the files and enable their transfer to the other 1313 HHPs.

If there is a new Resource file*, it will be copied automatically after the Application upgrade.

Do not remove the SD card during the Resource file transfer.

INSTALLING NEW FIRMWARE USING THE INTERNAL MEMORY

Unplug the 1313 HHP from the PC and plug it in again to launch the new Application installation process.

Or unplug it from the PC and remove the USB cable. Insert the 1313 HHP CANbus cable, and plug it into a powered system device (or turn on the device).

If there is a new Resource file*, it will be copied automatically after the Application upgrade.

Do not unplug the 1313 HHP or turn it off during the Resource file transfer.

After installation is complete, the 1313 HHP will delete the installation files that were copied to the internal drive.

* *Reminder. The resource file will only unpack (where the 1313 HHP shows the “Updating Resources” progress bar) if it is connected to a system device (e.g., powered by CANbus).*

APPENDIX A

FILE TYPES

Several types of files are handled by the 1313 HHP. The file types are listed below extensions.

.bmp	<u>Windows bit-map file</u> Screen shots of the 1313 HHP's screen. The saved Plot images format.
.cdf	<u>Parameter settings file</u> These files contain the values for all parameters, in addition to information regarding the family, the addresses, and which parameters support cloning. Create .cdf files containing customized settings for the adjustable parameters using the "Save .cdf File" option in the Flash app. These files can be transferred to a matching (application) device using the "Restore .cdf File" option.
.csv	<u>Internal error log file</u> These files record internal errors.
.c13	<u>Device and Curtis Integrated Toolkit™ file</u> File for installing device firmware or for working offline.
.hap	<u>1313 HHP software file</u> These files contain the application software for the 1313 HHP.
.hfc	<u>Favorites file</u> These files contain customized Favorites collections. These files are not accessible.
.hfm	<u>Firmware Manager file</u> These files manage how new 1313 HHP software is installed.
.hps	<u>1313 HHP settings file</u> This file contains the saved settings from the HHP Setup app.
.hrc	<u>Resource file</u> These files contain the text displays (in five languages) and information about how data is displayed on the 1313 HHP.
.txt	<u>Cloning Summary file</u> Summary of the last .cdf file flashed to a device.
.xls	<u>Log files</u> Log files are saved to the SD card.

APPENDIX B

SPECIFICATIONS: 1313 HHP

Model numbers (four access levels):

1313K-4331	HHP GEN2 OEM / OEM DEALER
1313K-3231	HHP GEN2 DEALER / FIELD ADVANCED
1313K-2131	HHP GEN2 SERVICE / FIELD INT
1313K-1031	HHP GEN2 USER / FIELD BASIC

Operating ambient temperature range -20°C to 50°C (-4°F to 122°F)

Storage ambient temperature range -40°C to 85°C (-40°F to 185°F)

Package environmental rating IP53 (with 1313 HHP cable plugged in and SD card cover closed)

Weight 0.27 kg (0.6 lb.)

Dimensions (L×W×H) 189 × 100 × 37 mm (7.5" × 3.9" × 1.4")

Regulatory compliance  / RoHS