SAINT2

System Analysis INterface Tool 2

SAINT2 System Set Up Instructions

Version 1.4

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Table of Contents

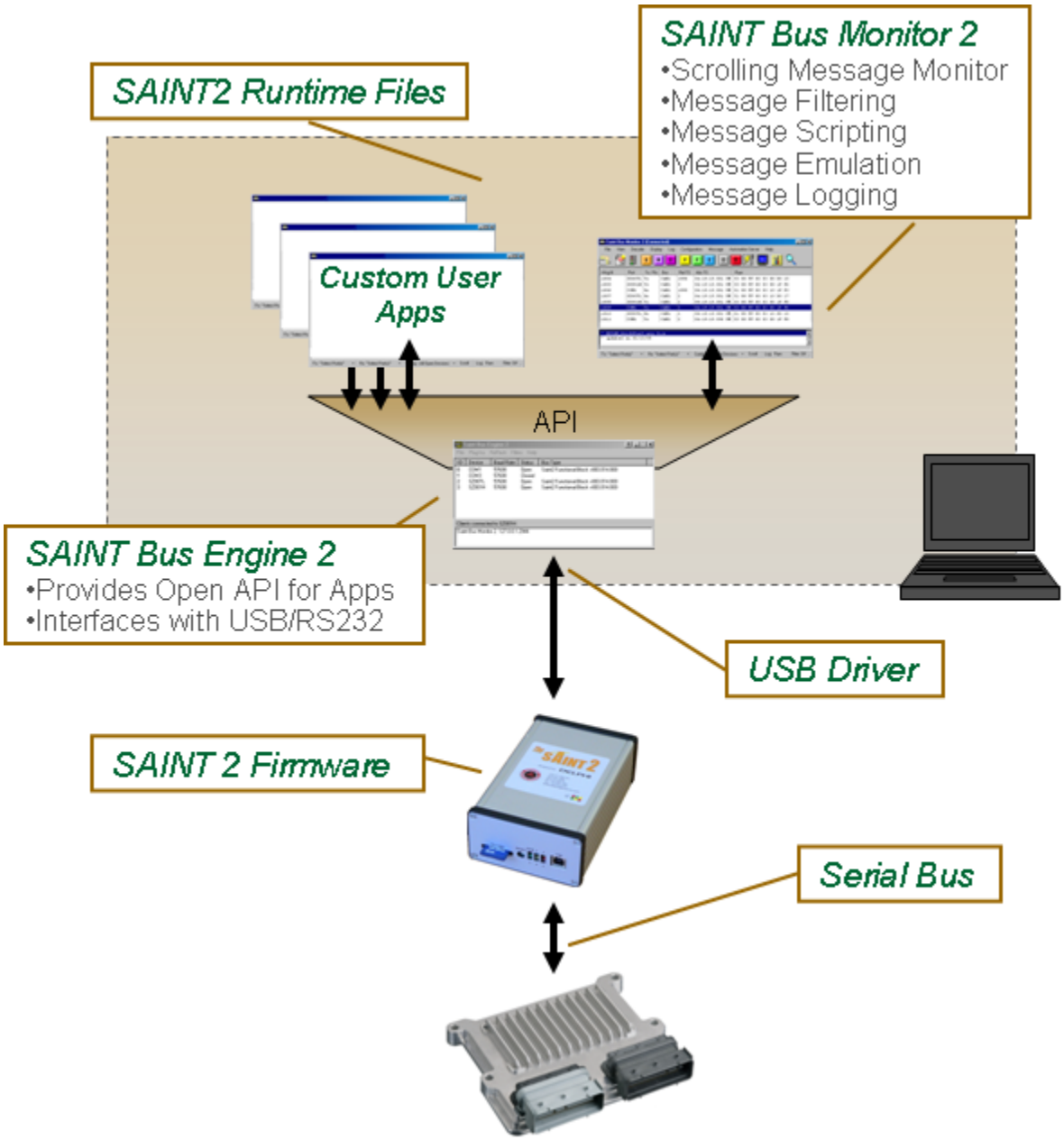
Revision Log

Version	Description of Revision	Date Released
1.0	Initial release to Web	7/21/2010
1.1	Added recommendation to use the latest flash tool, updated driver install for Win7	11/08/2013
1.2	Updated Saint2 links. Removed comment that USB 3.0 is not compatible.	08/19/2016
1.3	Updated driver installation instructions now that Saint2 driver is signed.	06/07/2018
1.4	Updated links to sdt52.aptiv.com host	03/31/2022

1 SAINT2 System Set Up Overview

Complete Set up of the SAINT2 systems includes the following tasks:

- PC software installation
- USB driver installation
- Re-flash of the SAINT2 firmware
- Configuration of the SAINT2 hardware to communicate on the serial bus



2 PC Software Installation

2.1 SAINT2 First Time Installer

The SAINT2 First Time Installer installs the core SAINT2 PC software and the necessary runtime files.

1. Download the SAINT2 First Time Installer from the SAINT2 website: http://sdt52.aptiv.com/wiki/index.php/SAINT2:PC_Software
2. Run the SAINT2 First Time Installer.

- First time installers must install all components.
- Install software components into the default directories.

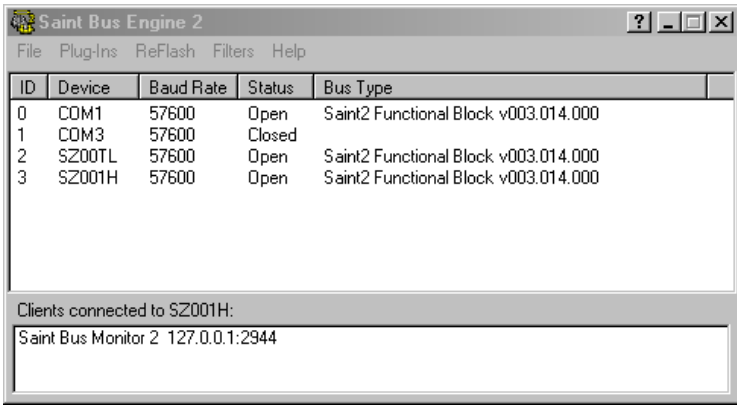
3. The First Time Installer will install the following PC components of the SAINT2 system:
   - VB Runtime Files
   - NI Runtime Files
   - SAINT Bus Engine 2 including Flash tool and drivers
   - SAINT Bus Monitor 2

2.2 Custom User Plug-ins

Any additional plug-ins may also be installed.

3 USB Driver Installation

1. Connect the SAINT2 power cable to 12V and GND.
2. Connect the SAINT2 USB cable to the PC's USB connector.
3. The PC will recognize that a new USB device has been connected and will load the Windows driver automatically. You should see a message that the driver was successfully installed.
4. Using your SAINT2 Bus Engine 2 shortcut or Programs link, run the SAINT2 Bus Engine 2 application.
5. The serial number of your SAINT2 should be listed in the ***Device*** column.



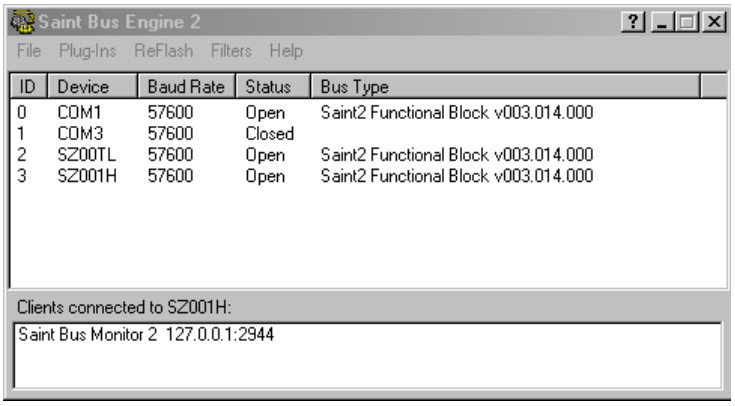
6. If the ***Status*** of your SAINT2 is ***closed***, double click on the word ***closed*** to open the port and display your SAINT2's current firmware version.
7. The USB driver installation is complete for that USB connection.

4 Reflash of the SAINT2 Firmware

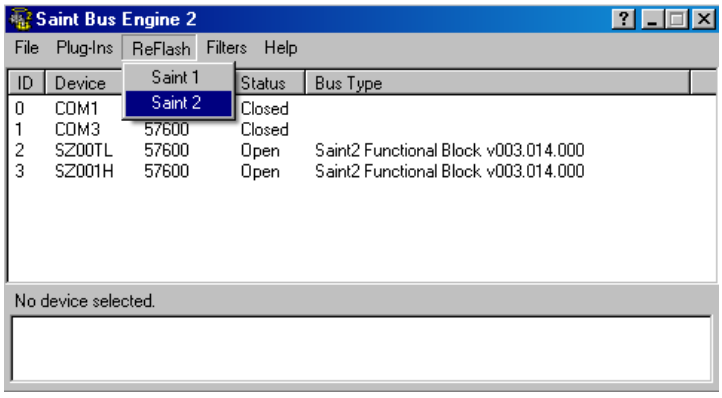
After purchasing a new SAINT2, the SAINT2 firmware must be upgraded to work properly.

1. Download the latest version of the SAINT2 firmware from the SAINT2 Wiki and unzip it to your PC: http://sdt52.aptiv.com/wiki/index.php/SAINT2:Firmware
2. Start the SAINT Bus Engine 2. If the SBE2 is already running, you can restore the window by clicking on the icon in the system tray at the bottom right corner of your task bar.

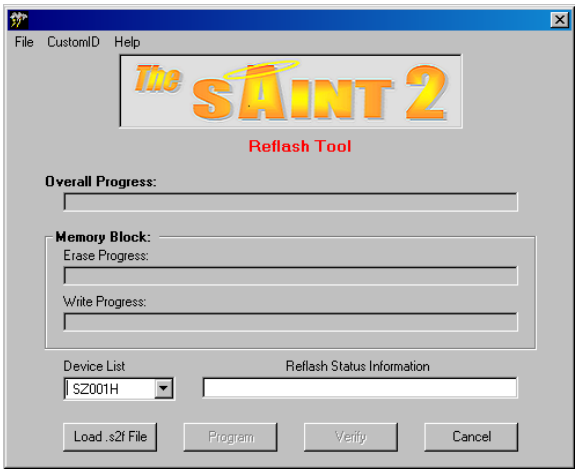
3. If the ***status*** of your SAINT2 is ***closed***, double click on the word ***closed***. The port should open and display the current SAINT2 firmware version.



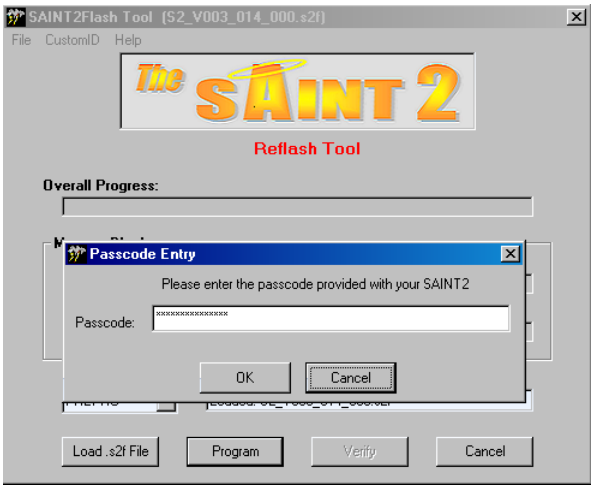
4. Select ***Reflash|SAINT2***.



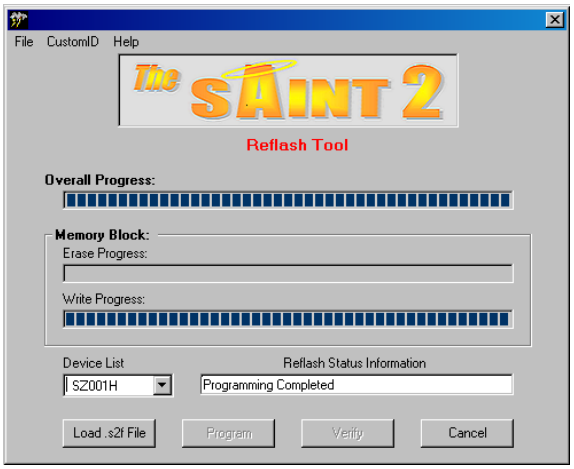
5. The SAINT2Flash Tool will start.
6. Using the Device List, select the SAINT2 you wish to reflash.
7. Click the ***Load .s2f*** *File* button.
8. Select the desired SAINT2 firmware .s2f file that you downloaded and unzipped to your PC.


File
CustomID
Help
The SAINT 2
Reflash Tool
Overall Progress:
Memory Block:
Erase Progress:
Write Progress:
Device List
SZ001H
Reflash Status Information
Load .s2f File
Program
Verify
Cancel

9. When the file is loaded, click the ***Program*** button and enter the passcode if prompted. Note: If you are using internal firmware and are asked for a passcode, upgrade to the latest flash tool to avoid the passcode requirement.



10. The status bars will show the progress and the firmware update is done when ***Programming Completed*** is displayed in the ***Reflash Status Information*** box.



11. Click the ***Finish*** button.
12. In the SBE2 window double click *twice* on the ***Open*** of the SAINT2's FTDI port to display the new firmware version.
13. If no version is displayed, you may need to press the reset button on the SAINT2 box.

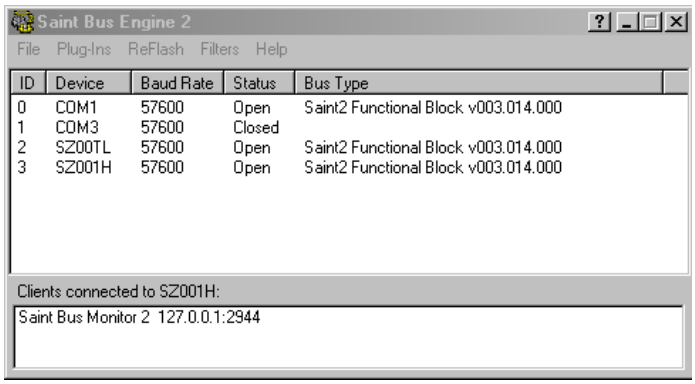
5 Configuration of the SAINT2 Hardware to Communicate on the Serial Bus

Since the SAINT2 supports multiple serial buses and even multiple versions of some serial buses, it must be configured to operate in your desired fashion. For detailed information about each serial bus, its features, capabilities, and commands consult the SAINT2 Programmer's Reference Document: http://sdt52.aptiv.com/saint-tools/files/download/saint2/Documentation/SAINT2_Programmers_Ref.pdf. The following information is only intended to get you started quickly with the basic functions.

5.1 Starting the SAINT Bus Monitor 2

1. Start the SAINT Bus Engine 2. If the SBE2 is already running, you can restore the window by clicking on the icon in the system tray at the bottom right corner of your task bar.

2. If the ***status*** of your SAINT2 is ***closed***, double click on the word ***closed***. The port should open and display the current SAINT2 firmware version.



3. Click on ***Plug-ins*** in the SAINT Bus Engine 2 application and select ***SAINT Bus Monitor 2***.

5.2 Protocol Specific Configuration

5.2.1 CAN

1. Connect the appropriate pins on your SAINT2's power cable to the product's CAN bus.
2. Power your SAINT2 and product.
3. Click on the ***M*** button in the SAINT2 Bus Monitor 2 to load a SAINT2 message file.

4. Open the appropriate CAN Quickstart message file from the following directory: C:\Program Files\Saint Bus Engine 2\Plugins.
   - HSCAN is high speed, dual wire CAN
   - FTCAN is fault tolerant, dual wire CAN
   - SWCAN is single wire CAN
5. Follow the directions in the message file to configure the SAINT2. Double click on the message file line to send the command to the SAINT2 hardware. At a minimum the following configurations must be set for CAN:
   - CAN transceiver baudrate
   - Choice of CAN transceiver
6. To transmit a CAN message, click on the ***O*** button in the SAINT Bus Monitor 2. Enter a message in the following format:

50 XX XX XX… where **XX XX XX…** are the CAN ID and message bytes

- The 50 indicates to the SAINT2 that this message should be transmitted on the CAN 1 serial bus.
- Note that the message is displayed in the message monitor window.

7. CAN messages received on the CAN 1 serial bus will be displayed as they are received in the following format:

51 XX XX XX XX… where **XX XX XX…** are the CAN ID and message bytes.

8. See the SAINT2 Programmer's Reference for more detail on CAN message formats: http://sdt52.aptiv.com/saint-tools/files/download/saint2/Documentation/SAINT2_Programmers_Ref.pdf
9. See the SAINT Bus Monitor 2's Help for more explanation on using the SAINT2 Bus Monitor 2.

5.2.2 Class2

1. Connect the appropriate pin on your SAINT2's power cable to the product's Class 2 bus.
2. Power your SAINT2 and product.
3. To transmit a Class 2 message, click on the ***O*** button in the SAINT Bus Monitor 2. Enter a message in the following format:

60 XX XX XX… where **XX XX XX…** are the Class 2 message bytes

- The 60 indicates to the SAINT2 that this message should be transmitted on the Class2 serial bus.
- Note that the message is displayed in the message monitor window.

4. Class2 messages will be displayed as they are received in the following format:

61 XX XX XX… where **XX XX XX…** are the Class 2 message bytes.

5. See the SAINT2 Programmer's Reference for more detail on Class2 message formats: http://sdt52.aptiv.com/saint-tools/files/download/saint2/Documentation/SAINT2_Programmers_Ref.pdf
6. See the SAINT Bus Monitor 2's Help for more explanation on using the SAINT2 Bus Monitor 2.

5.2.3 KW2K

1. Connect the appropriate pin on your SAINT2's power cable to the product's KW2K bus.
2. Power your SAINT2 and product.
3. Click on the ***M*** button in the SAINT2 Bus Monitor 2 to load a SAINT2 message file.
4. Open the S2 KW2K Commands.msg file from the following directory: C:\Program Files\Saint Bus Engine 2\Plugins.
5. Select the appropriate commands in the message file to configure the SAINT2. Double click on the message file line to send the command to the SAINT2 hardware.
6. To transmit a KW2K message, click on the ***O*** button in the SAINT Bus Monitor 2. Enter a message in the following format:

28 XX XX XX… where **XX XX XX…** are the KW2K message bytes

- The 28 indicates to the SAINT2 that this message should be transmitted on the KW2K serial bus.
- Note that the message is displayed in the message monitor window.

7. KW2K messages will be displayed as they are received in the following format:

28 XX XX XX… where **XX XX XX…** are the KW2K message bytes.

8. See the SAINT2 Programmer's Reference for more detail on KW2K message formats: http://systems-es.delphiauto.net/downloads/SAINT-documents/SAINT2%20Programmers%20Ref.pdf
9. See the SAINT2 Bus Monitor 2's Help for more explanation on using the SAINT2 Bus Monitor 2.

5.2.4 LIN, SPI, IIC

See the SAINT2 Programmer's Reference for information on setting up these serial buses: http://sdt52.aptiv.com/saint-tools/files/download/saint2/Documentation/SAINT2_Programmers_Ref.pdf