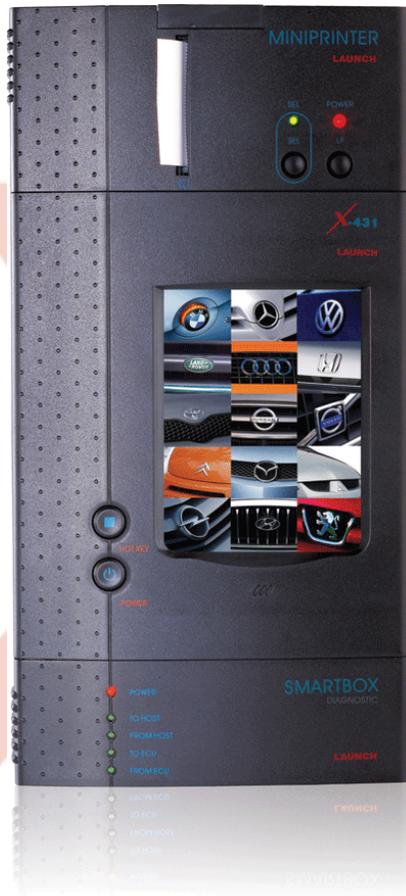


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# X-431 Getting Started Guide



X-431 Scanner With Open Diagnostic Platform



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# 1 • Introduction

---

This guide will help you quickly start using your X-431. It will introduce you to the components of the X-431 and how to properly care for it. It will then guide you step by step through the registration process, downloading updates from the Internet, and transferring those updates to the X-431 CF Card. This guide will teach you how to start using your X-431 to diagnose vehicles.

## LAUNCH TECH CO., LTD

### *About*

Launch was founded in 1992 in Shenzhen, People's Republic of China. They specialize in the research and development of automotive aftermarket products and services.

Launch is a major provider of automobile diagnostic, test, maintenance, and repair equipment. In 1999, Launch began to explore international markets and is now established in North America, Europe, Asia Pacific, Central and South America, the Middle East, North Africa, and South Africa. Launch is supported by 2000 employees and 400 Distributors across more than 60 countries, and they are still expanding. In March of 2004, Launch opened the Launch (Shanghai) Machinery Co., Ltd., a 68,380 square meter facility that manufactures lifts.

## X-431 USA

### *About*

X-431 USA was established in September of 2003 to better serve our U.S. customers. Our mission is to provide continuous customer support, including access to advanced training so that our customers may enjoy the X-431 to the fullest extent of its potential. From basic tech support to advanced training, the team at X-431 USA is committed to customer satisfaction. We maintain a continuous working relationship with LAUNCH, in order to maintain and expand the X-431 automotive line coverage, as well as to address the needs and concerns of our U.S. customers.

To learn more about the X431, visit our website at: [www.X431USA.com](http://www.X431USA.com).

# INTRODUCING THE X-431



The X-431 is a newly developed, automobile diagnostic computer, based on the technology of the open diagnostic platform, the most advanced automobile diagnostic technology brought forward by Launch. The open diagnostic platform represents the highest level of automobile diagnostic technology today and is the developing trend for the future of this field.

The X-431 has the following characteristics:

- Covers the largest range of vehicle models in the world (with as many as 148 systems that are available)
  - Full-range coverage of Mercedes Benz, BMW, VW/Audi, Volvo, Land Rover, Fiat, Subaru, Renault, Citroen, Opel, Honda, Toyota, Nissan, General Motors, Ford, European Mazda, Mitsubishi, European Chrysler, Hyundai, Kia, Daewoo, and OBDII/EOBD
- Provides original programs from over 20 automobile manufacturers
- Diagnoses all of the electronic systems in a vehicle
- Supported by the largest R&D team in the world
- Displays the data stream in graphic form.

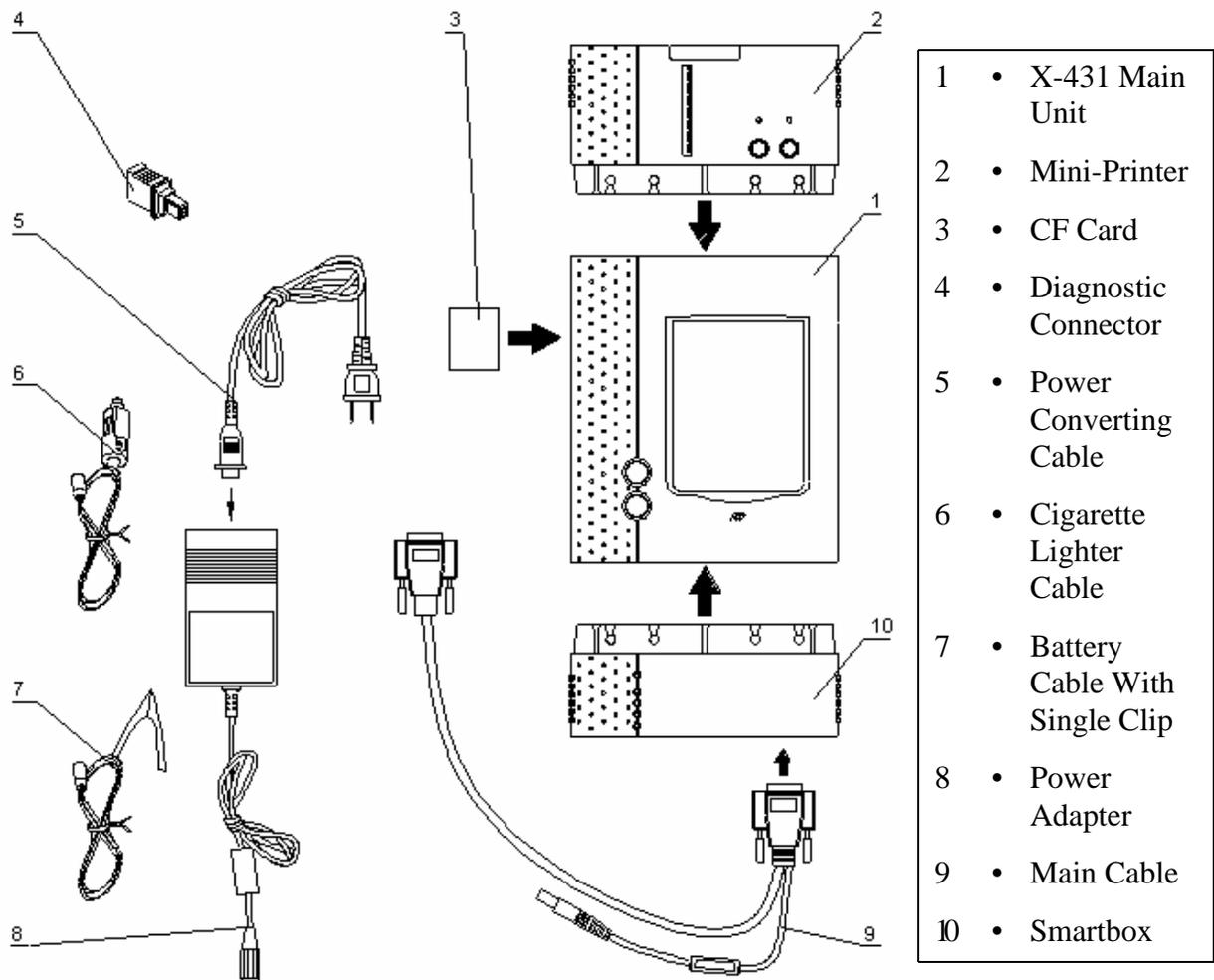
- Comes with all of the necessary socket connectors
- Ease of use through a touch screen
- Real-time printout of test data
- Multi-language interface
- Software that is updated often and is easily downloaded through the Internet
- Over 100 upgrades are provided each year to keep pace with the latest models
- 1 full year of software updates are included along with a 1 year warranty
- Open-platform Diagnosis
  - With the help of the SMARTBOX platform and various onboard diagnostic sockets, the scanner can perform standard flash code, data stream, and OBD-II tests on automotive Engines, Transmission, ABS, and Airbags
  - Capacities also extend to reading, displaying, and erasing trouble codes, reading data streams, testing actions, and communicating with computers
  - LINUX system and Compact Flash Card facilitates simple operation and easy upgrading
  - PDA functions



# 2 • The X-431 Scanner

## Components

The main console of the X-431 is composed of three separate pieces: the Main Unit, the Mini-Printer, and the Smartbox. The following diagram displays the main console and many of the connectors.



## Main Console

The X-431 main console comes apart into three components. Should one of your components break, you will only need to replace the broken component, as opposed to replacing the entire console.

### Smartbox



The X-431 Smartbox houses the processor. The information contained within the CF Card is transmitted to the Smartbox, which is initialized with the software, and can then be used to diagnose vehicles.



### Main Unit

The Main Unit houses the LCD display, the on/off button, and the Hot key. The Mini-Printer plugs into the top of the Main Unit and the Smartbox plugs into the bottom.



### Mini-Printer

The Mini-Printer uses 57mm, heat sensitive paper to provide you with convenient print-outs of real-time data. To replace the printer paper, see “Printer Operation - Replacing Paper” on page 2-6.

## Cables



### Main Cable

The Main Cable has one end attached to the Smartbox and the other end attached to a connector, which is then attached to the vehicle. A power adapter cord is attached to one end of the cable to allow you to power the unit from a standard wall outlet, the car battery, or cigarette lighter.

A 15ft extended cable is also available.



### X-431 Power Adapter

The X-431 comes with a 12DC power adapter that plugs into any standard wall outlet. Use this if you'd like to use the unit without being connected to a car.

---

NOTE • If you are not connected to a car, you cannot view diagnostic data.

---



### X-431/CPDA Battery Cable

Use this cable to get power directly from the battery.



### X-431/CPDA Cigarette Lighter Cable

Use this cable to get power from the vehicle's cigarette lighter socket.

**WARNING:** Do not use the power cables listed above if the unit is receiving power from the vehicle's diagnostic socket.

## Connectors

There are several connectors that are included with the X-431. Many of them are designed for specific vehicle lines,

such as the 38-pin connector for Mercedes-Benz



or the 20-pin connector for BMW.



The connectors that are included are:

- Toyota -17
- Mitsubishi/Hyundai-12+16
- Honda-3
- Kia-20
- BMW-20
- Ford-6+1
- OBDII -16C
- Universal-3
- Audi/VW-4
- Toyota-16
- Toyota -17F (22F)
- Nissan-14+16
- Mazda-17
- Mercedes Benz-38
- GM/Daewoo-12
- Chrysler-6
- Smart OBDII-16 (*General use for Honda vehicles only*)
- Fiat-3
- BMW-16
- Daewoo
- CAN Connector
- Volvo CAN Connector

## CF Card and Reader

The X-431 utilizes a CF Card that stores software downloaded from [www.x431.com](http://www.x431.com). This software is then transferred to the Smartbox to diagnose the vehicle.

A CF Card Reader and USB cable is included with the X-431. The Reader connects directly to your PC as a removable disk drive.

Any compact flash card and reader can be used by the X-431.

## Documentation

A packet of informational materials is included with your X-431.

### Registration Paper

The registration paper contains two important numbers you will need to register your unit: the 12-digit Smartbox serial number and the 8-digit secret registration number printed inside, on the right side.



### CDs

Three CDs are included with your X-431. The *Flash Card Reader Drivers* CD contains the necessary drivers for the CF Card Reader, if you are using Microsoft® Windows® 98. The *Operation Demo* CD contains information on complete visual operation of the X-431 scanner. The *X-431 Open Automobile Diagnostic Platform* CD contains PDF documents for the following car lines:

- BMW
- Honda
- Mercedes Benz
- Nissan
- Opel
- Toyota
- European Chrysler
- European Mazda
- Mitsubishi
- OBDII
- Volkswagen

These documents provide information about how to connect to vehicles and use the X-431, including how to change the printer paper.

## User's Manual

The User's Manual is written in eleven languages and contains basic information about using the X-431.

## Be Careful

The X-431 is durably constructed, but a level of care should be taken with its use. Be especially careful with the connectors and cables. The pins on these objects are delicate and can bend or break. **Never force a connector or a cable into a port.**

Special attention should be given to the CF Card.

- **Always** eject the CF Card completely **before** taking the leather case off, because it is possible to damage the ejector lever when removing the case.
- **Always** eject the CF Card from your PC properly (see “Ejecting the CF Card” on page 4-19 for instructions).
- **Never** pull the CF Card out if the unit is on.
- **Never** force the CF Card into the Reader or the Unit.

## Security Features

The Smartbox component of the X-431 has a 12-digit serial number assigned to it by Launch. When the unit is registered by the owner on [www.x431.com](http://www.x431.com), this serial number is coupled with the username and password that the owner inputs. Updates downloaded using that username and password will only work with the associated Smartbox. The CF Card is formatted with the serial number too, and so it will only work in conjunction with the correct Smartbox, username, and password.

## Printer Operation - Replacing Paper

The MiniPrinter uses heat sensitive, 30 X 57mm (7mm core) thermal paper.

To mount the printer paper, follow the procedure outlined below:

1. Open the paper lid on the back of the printer
2. Remove the spindle and mount the paper scroll onto the spindle.

3. Place the paper spindle into the printer with the 'shiny' side of the paper facing up. The paper may not be fed correctly if the orientation is incorrect.
4. Open the side plate, pull up the pressing rod and lead the paper into the slot. Turn the feed knob clockwise until the paper comes out of the outlet.
5. Push down the pressing rod, mount the side plate, attach the paper lid and re-attach the MiniPrinter to the X-431 Main unit.



# 3 • Registration

---

Your X-431 Scanner is ready to use right out of the box. The CF Card included with your X-431 was pre-loaded with the software available at the time of production. Keep in mind that this software could be outdated by the time the unit gets to you, so you should update your machine before using it.

The first step is to register your Smartbox at [www.x431usa.com](http://www.x431usa.com) -> **Update/Register** -> '**Register a New Tool.**' Before doing so, read the following section on technical requirements.

## Technical Requirements

### CF Card Reader - Operating System Requirements

The Compact Flash Card Reader can use the default drivers for Windows® 2000, Windows® ME, and Windows® XP, as well as for Mac OS® 9.x and Mac OS X. Just plug it in to use it.

---

**Windows 98 Users** • If your PC is running Windows 98 then you will have to install the CF Card Reader driver from the CD, which is included in the documentation envelope. **Do not connect the compact flash reader before installing the driver.**

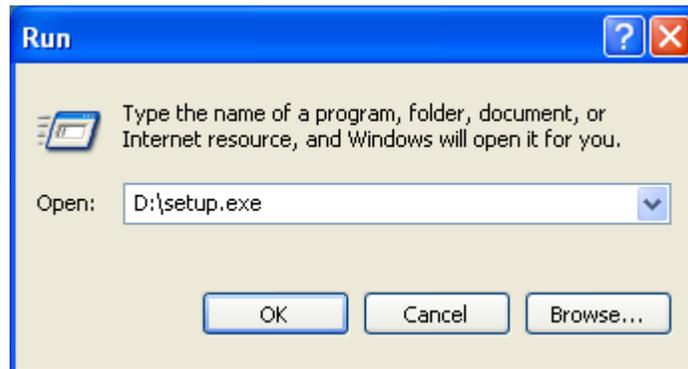
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To install the CF Card Reader driver for Windows 98, complete the following steps:

1. Turn on your PC.
2. Insert the CD titled *Flash Card Reader Drivers*.
3. In the lower left-hand corner of your screen, click the **Start** button and select **Run**.

4. Type **D:\setup.exe**, where D represents your CD-ROM drive. Press **ENTER**.



5. The **InstallShield Wizard** will appear. When the **Welcome** screen appears, click **Next**. Follow the steps the Wizard provides.
6. Reboot your PC.
7. Connect one end of the USB cable to the CF Card Reader and the other end to a free USB port on your PC.

When the CF Card Reader is installed successfully, a *Removable disk* icon will be added in the *My Computer* catalog.

## Internet Connection

A Broadband or DSL connection is recommended. A dial-up connection works, but it is much slower.

## USB Port for CF Card Reader

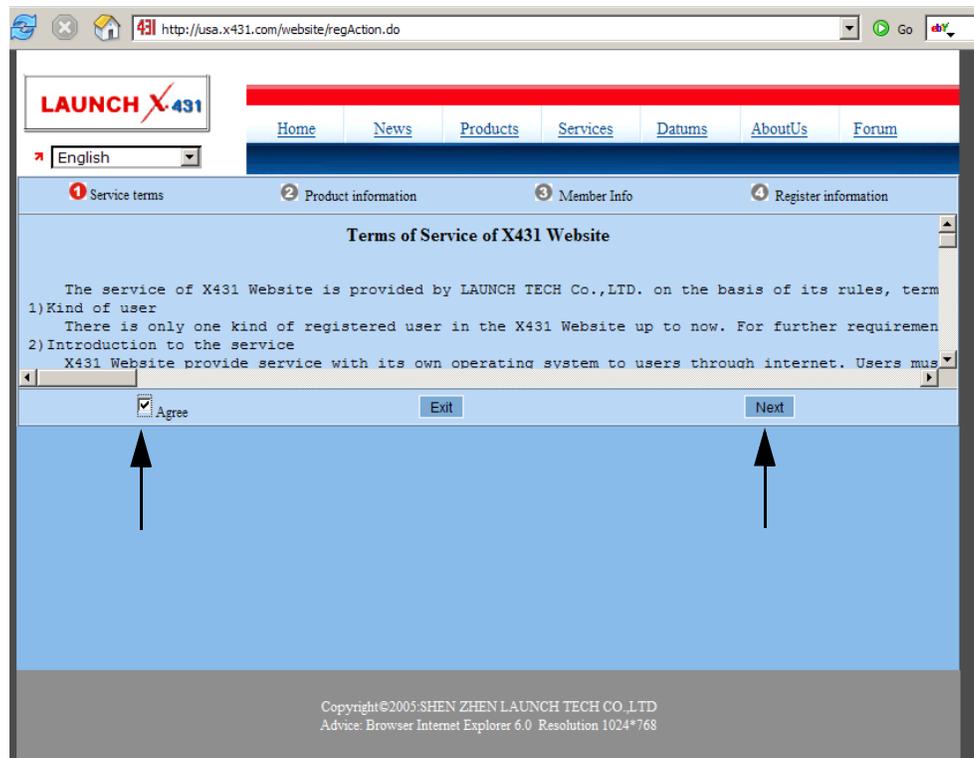
A free USB port is required for the CF Card Reader. You should plug your CF Card Reader in now, but make sure the CF Card is **NOT** in the Reader. A pop-up window should appear saying “New Hardware has been found.”

# X431USA.COM Registration Area

**WARNING** • If your PC is running pop-up blocker software, you will need to disable it in order to download successfully.

## Registering Your X-431 Smartbox

1. Connect to the Internet.
2. Go to **www.x431usa.com**, click **Update/Register** and select the “**Register a New Tool**” link at the top of the page.
3. The Terms of Service will appear. Read through it, select the ‘**I agree**’ check box on the bottom left, and click ‘**Next**’



- The **Product info** window appears.

The screenshot displays the registration interface for X431. At the top left is the 'LAUNCH X431' logo. A navigation menu includes links for Home, News, Products, Services, Datums, AboutUs, and Forum. A language dropdown menu is set to 'English'. Below the navigation is a progress bar with four steps: 1 Service terms, 2 Product information (highlighted in red), 3 Member Info, and 4 Register information. The main content area contains three input fields: 'Product serial No.', 'Register password', and 'Vendor code'. At the bottom of the form are three buttons: 'Previous', 'Exit', and 'Next'.

Included in the X-431 documentation envelope is a slip of paper (see page 2-5) that has your 12-digit Smartbox serial number printed on it. Type that number in the **Serial No. of SMARTBOX** field.

- Open the slip of paper to find the confidential, 8-digit registration password. In the **Register Password** field, type that number.
- Contact your sales distributor for the **Vendor code**.

7. Click **Next**. The **User's info** window appears. Fill in the appropriate details. Username/Password combinations should be easy for you to remember, yet hard for others to guess. Make sure to include all current information, including address, telephone number and e-mail address.

The screenshot shows the registration process on the X431USA.COM website. The page has a red header with the logo and a navigation menu with links for Home, News, Products, Services, Datures, AboutUs, and Forum. Below the navigation is a language dropdown set to English. The main content area is divided into four steps: 1. Service terms, 2. Product information, 3. Member Info (the current step), and 4. Register information. The 'Member Info' section contains three sub-sections: 'Logon information' with fields for Username, Password, and Confirm password; 'Company information' with fields for Dealer name, Telephone, Fax, Postcode, Address, Country, Province, and City; and 'Contact information' with fields for Name, Gender (set to Male), Telephone, Email, and Confirm Email. At the bottom of the form are buttons for 'Previous', 'Exit', and 'Next'.

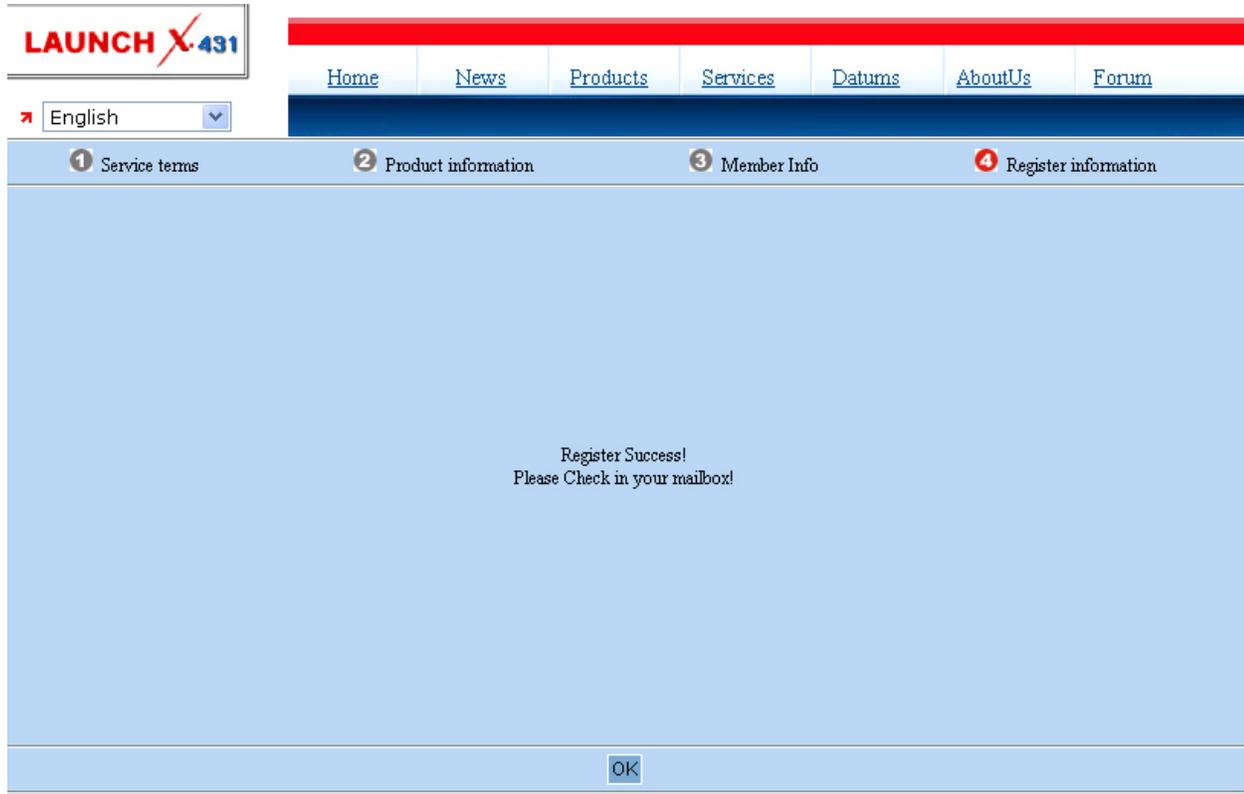
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**IMPORTANT** • You will need this Username and Password every time you log into the X-431 Registration & Updates area. Write it down and be sure that you do not lose it.

---

8. When you have finished, click **Next**.

9. The **Confirmation** window appears notifying you that your username and password have been registered and sent to your email. Click **OK** to return to the main screen.



Now that you have registered your X-431 Smartbox, you are ready to start downloading updates. See the next section to begin.

# 4 • Downloading

---

## Downloading New Updates

Your X-431 comes preloaded with the software that was available at the time of the unit's production. This software may be several versions behind what is currently available on the Internet, so you should take the time now to update your X-431.

---

**WARNING • If your PC is running pop-up blocker software, you will need to disable it in order to download successfully.**

---

## Logging Into [WWW.X431USA.COM](http://www.x431usa.com)

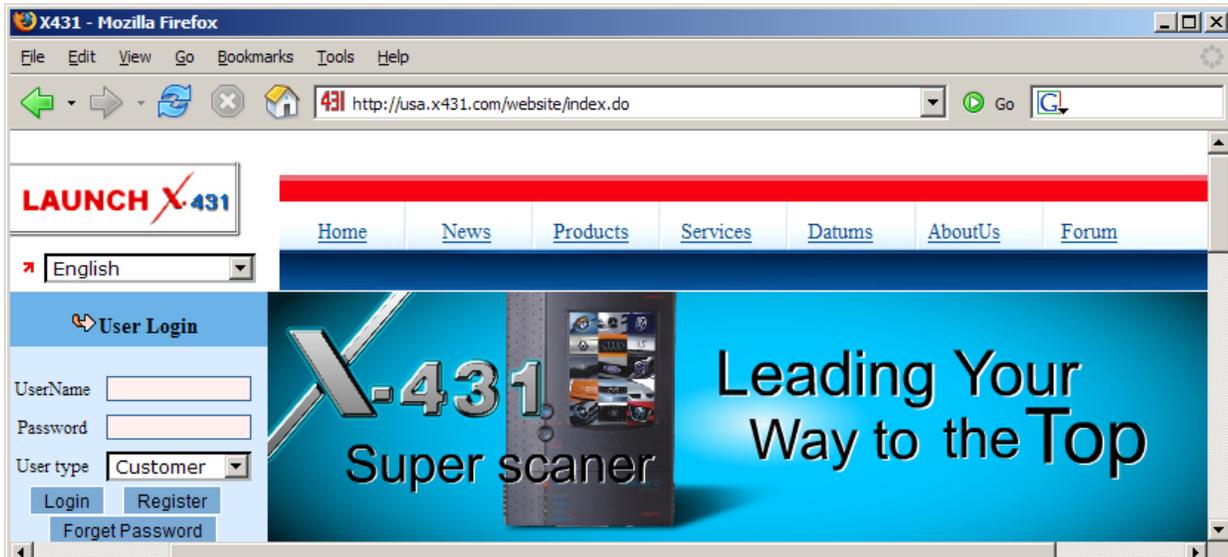
---

**NOTE • If you have just finished registering your Smartbox, skip to step 4.**

---

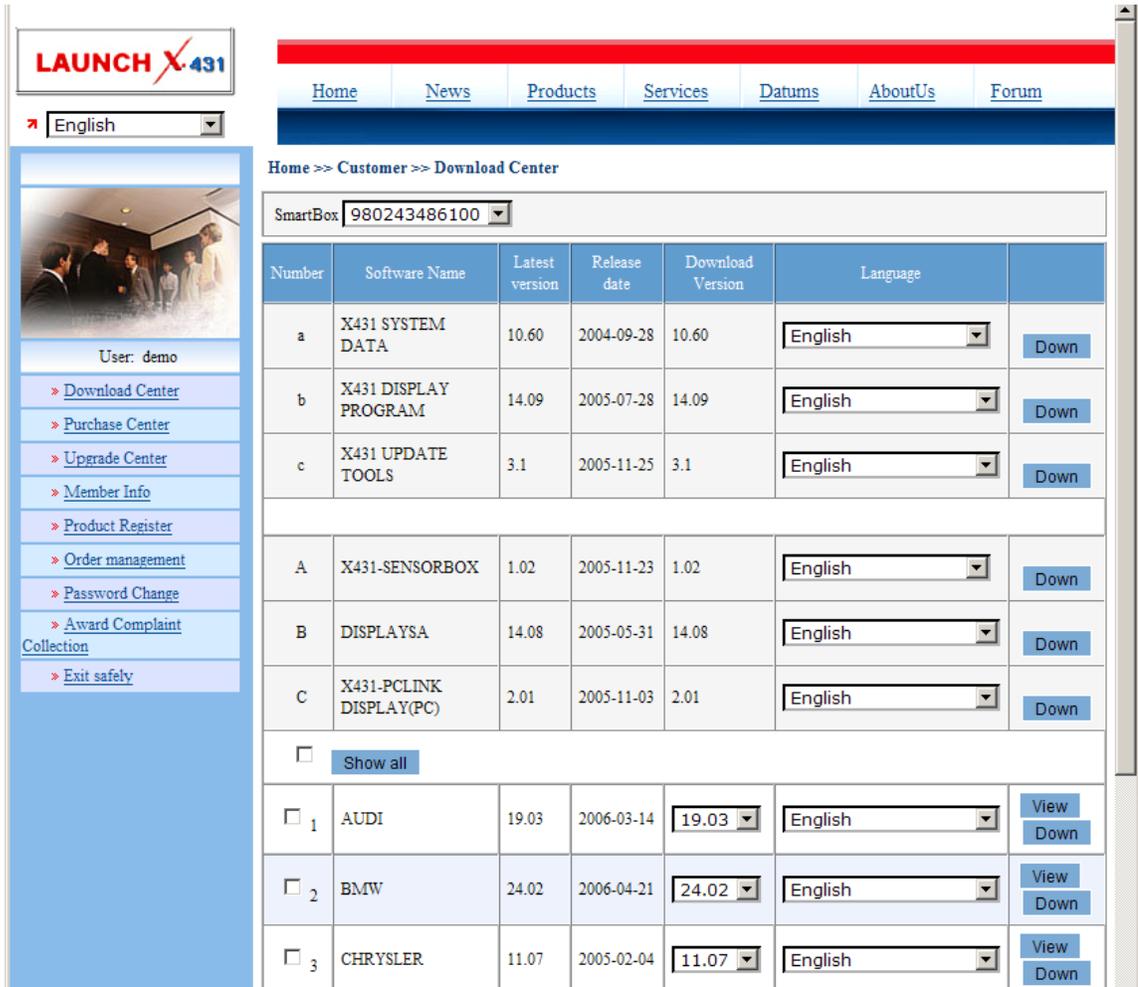
1. Connect to the Internet.
2. Go to: [www.x431usa.com](http://www.x431usa.com), click **Update/Register**, select the “**Download Updates**” link at the top of the page

3. You are now on the entrance page of the X-431 Updating area. If you look to the lower left, you will see the Login/Registration area.



4. In the **Username** field type your username.
5. In the **Password** field type your password.
6. Make sure the **User type** is set to **Customer**.
7. Click **Login**.

8. You are now in the **Download Center**.



## The Download Center

You should consider the Download Center as your primary source of information for all X-431 software updates.

The Download Center consists of a table with the following 7 columns.

Column 1	Lists the software letter or number. Letters represent system software. Numbers represent software for a particular car line. Lowercase letters are required.
Column 2	Displays the software name.
Column 3	Lists the latest version of the software.
Column 4	Lists the release date of the version in Column 3.

Column 5	Contains information on the latest available software version.
Column 6	Contains a pull-down menu with all of the available languages for that software version.
Column 7	Contains the links to either view information or download the software

The following software downloads are required: X431 SYSTEM DATA, X431 DISPLAY PROGRAM, and X431 UPDATE TOOLS. These downloads are grouped in the lowercase letter section.

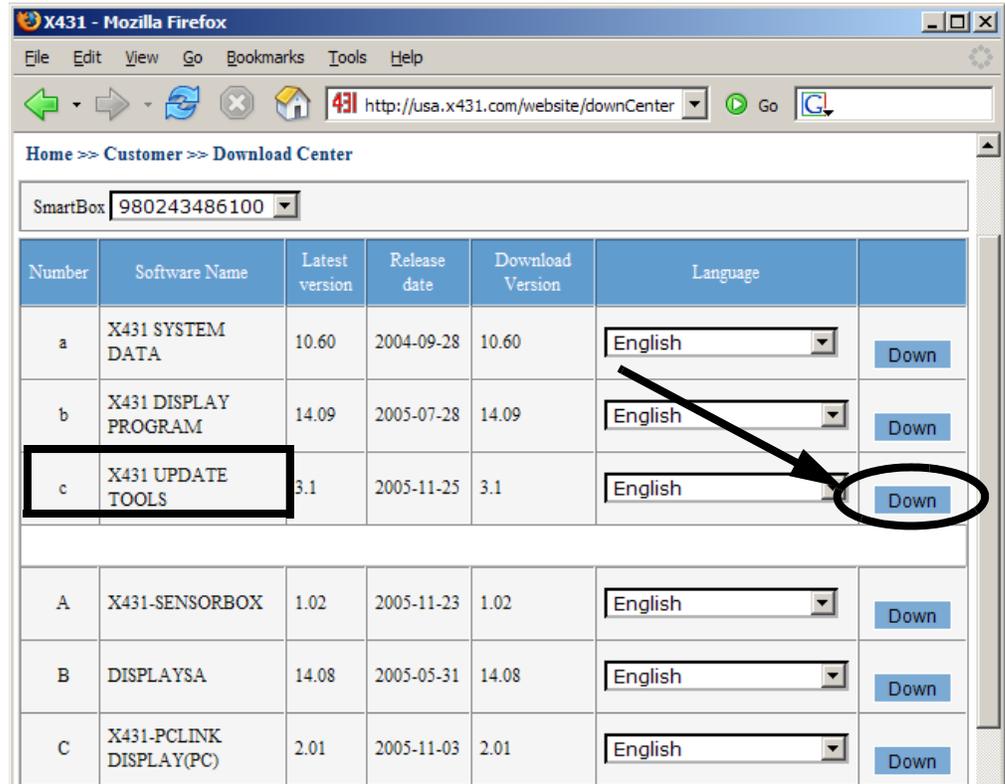
X431 UPDATE TOOLS is an Application Download Manager that you install on your PC and allows you to transfer downloads from your PC to the Compact Flash Card which we discuss shortly.

The DISPLAY PROGRAM and SYSTEM DATA downloads provide program information for the X-431. These downloads are necessary for the X-431 to function correctly. Both of these downloads have multiple versions, so be sure to check them once in a while to make sure you have the most current version.

Typically though, all three of these downloads are performed infrequently.

The first download is the **X431 Update Tools**. This file can either be downloaded from this page, as noted below, or from the ‘**Update/Register**’ page at [www.x431usa.com](http://www.x431usa.com). You will not **save** this file, you will select **RUN** after clicking ‘**DOWN**’ (short for Download) as noted in **Figure A**. This program will update your CF card when you are completed with downloading each of the software updates. After clicking “Down”, you will

Figure A



complete the following steps.

---

**NOTE • It's important to note that the X431 Update Tools download is the the only download in which you will select “Run” when the download window appears. All subsequent downloads will utilize the “Save” function. This is explained in step-by-step detail in the pages ahead.**

---



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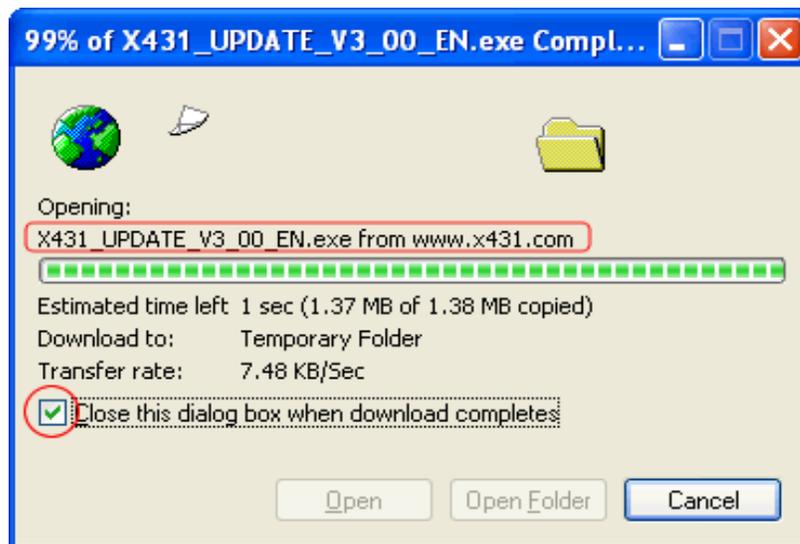
**NOTE • If you click Download and nothing happens, it may be because you have pop-up blocker software enabled. Try holding the CTRL key at the same time as you click Download. Hold the CTRL key until you see the download begin. If that does not work, you will have to disable your pop-up blocker software in order to download. This may be crucial for AOL users**

---

9. The **File Download** window appears. Be sure that **File name** is the file that you just selected. Click **Run**.



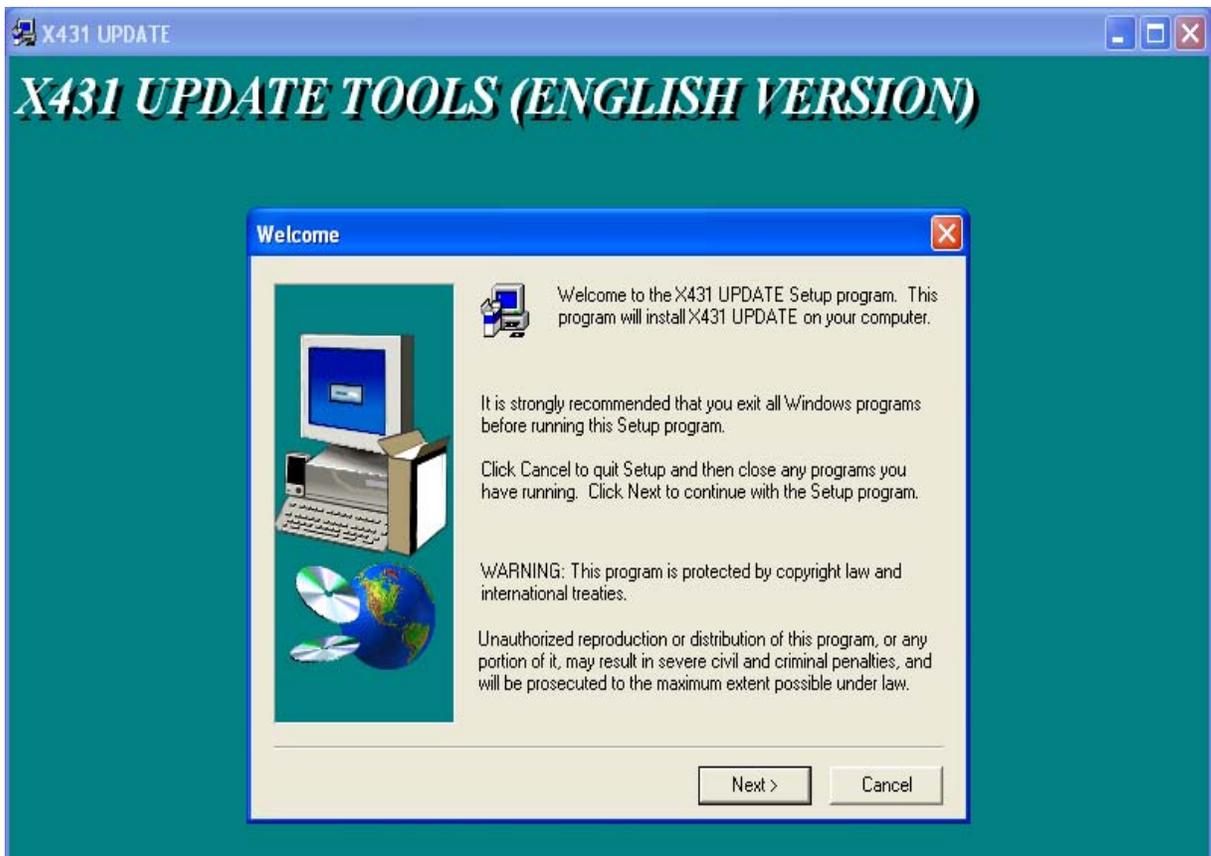
10. The following window shows the download progress.



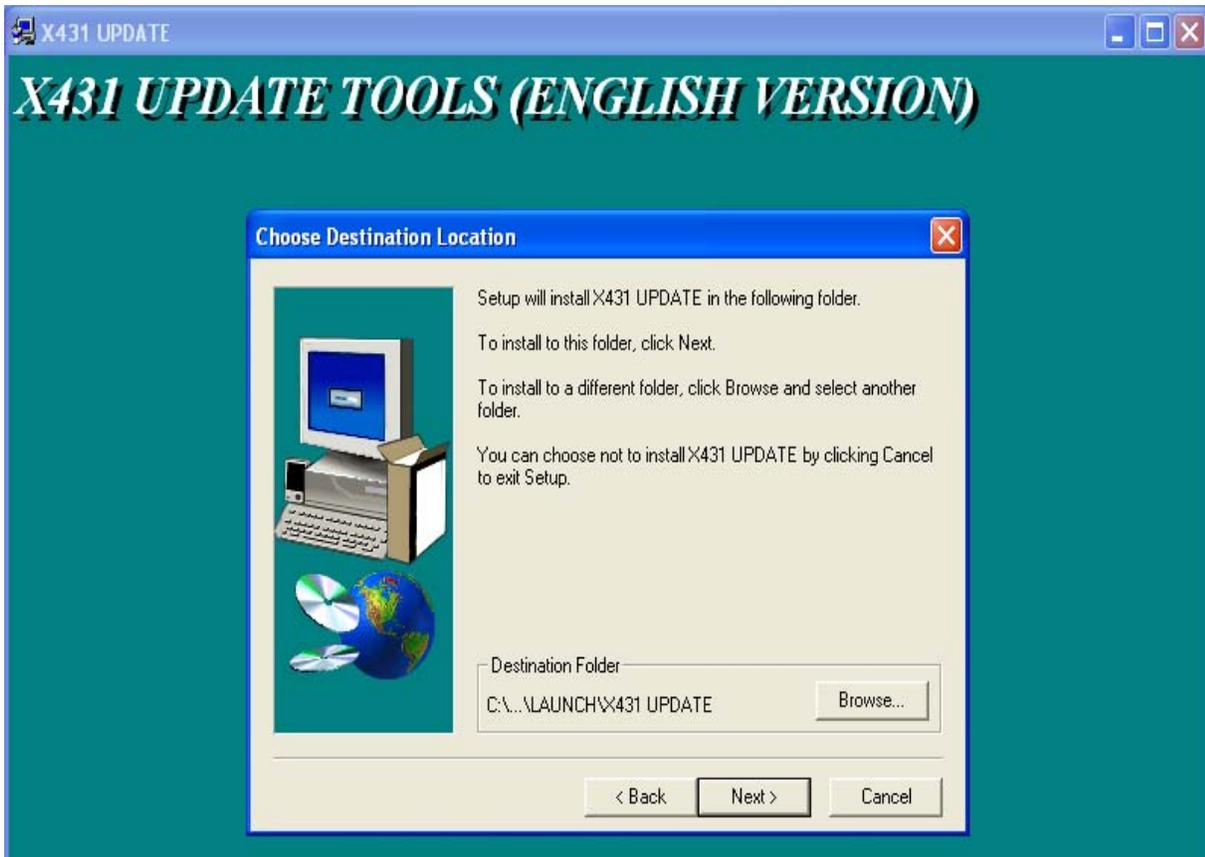
11. When the download completes, you will be shown the following dialog box. Select **Run**.



12. The **X431 UPDATE TOOLS** install wizard appears, with the **Welcome** window displayed. Click **Next**.



13. The **Choose Destination Location** window appears. Click **Next** to accept the default destination or click **Browse** to choose a different folder.

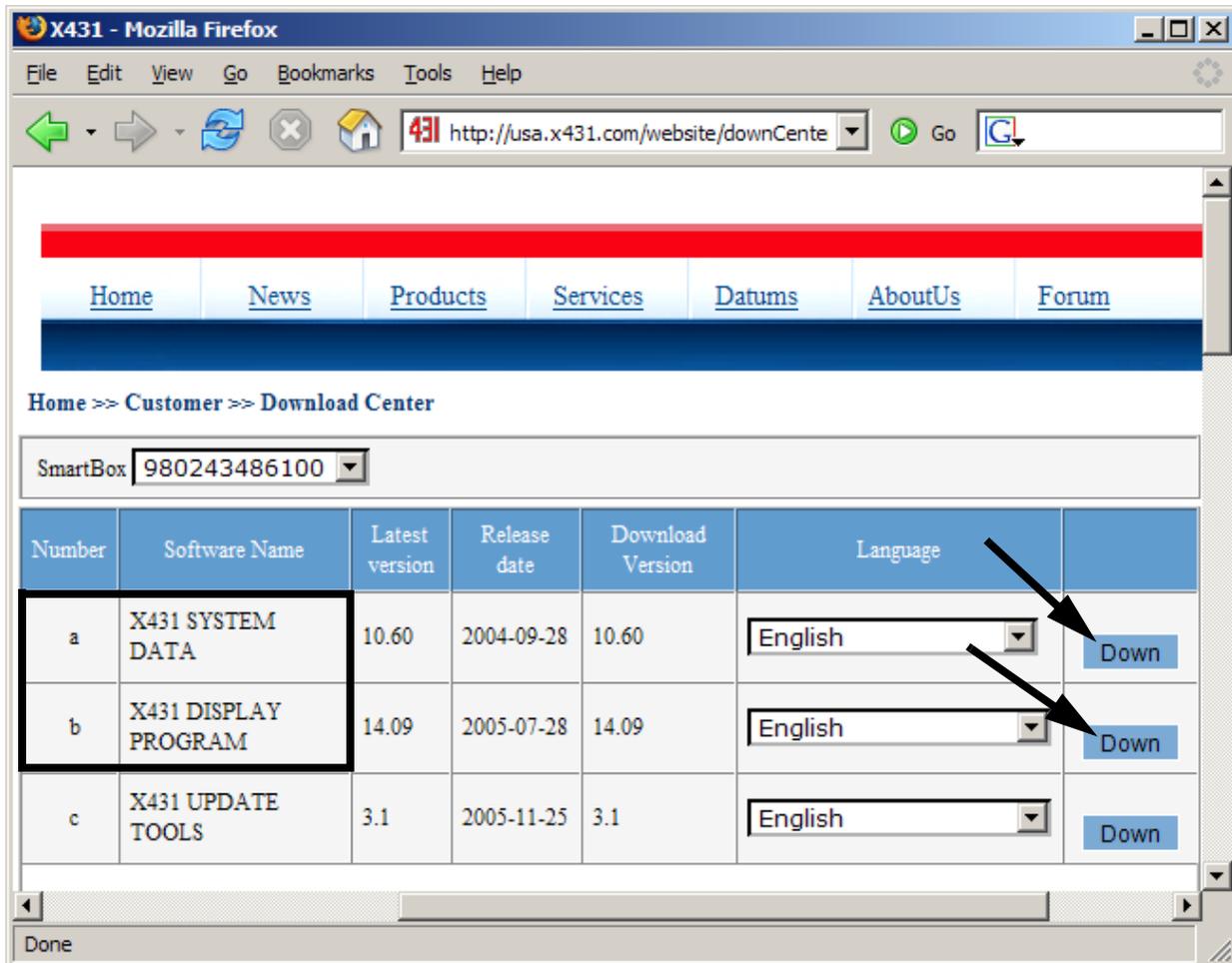


The **Setup Complete** window appears. Click **Finish**.



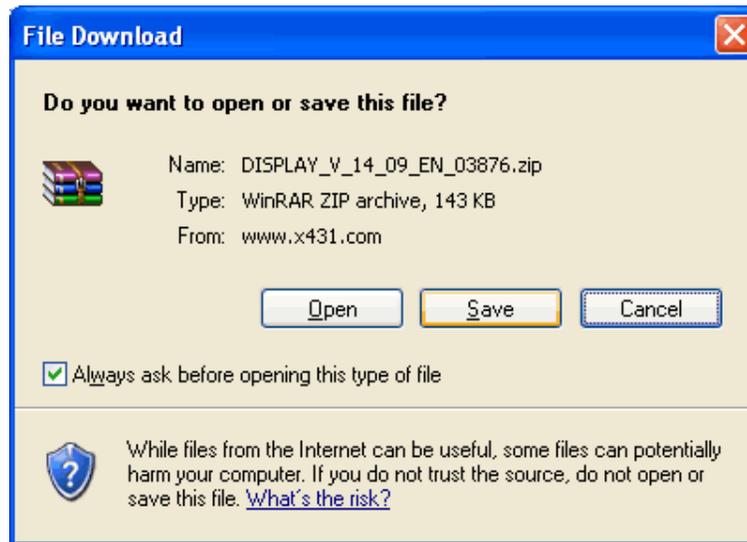
Once you click **Finish**, you will be returned to the **Download Center**.

**NOTE** • If you click **'Download'** and nothing happens, it may be because you have pop-up blocker software enabled. Try holding the **CTRL** key at the same time as you click **'Download'**. Keep the **CTRL** key depressed until the download begins. If that does not work, you will have to disable your pop-up blocker software in order to download. This may be crucial for AOL users.



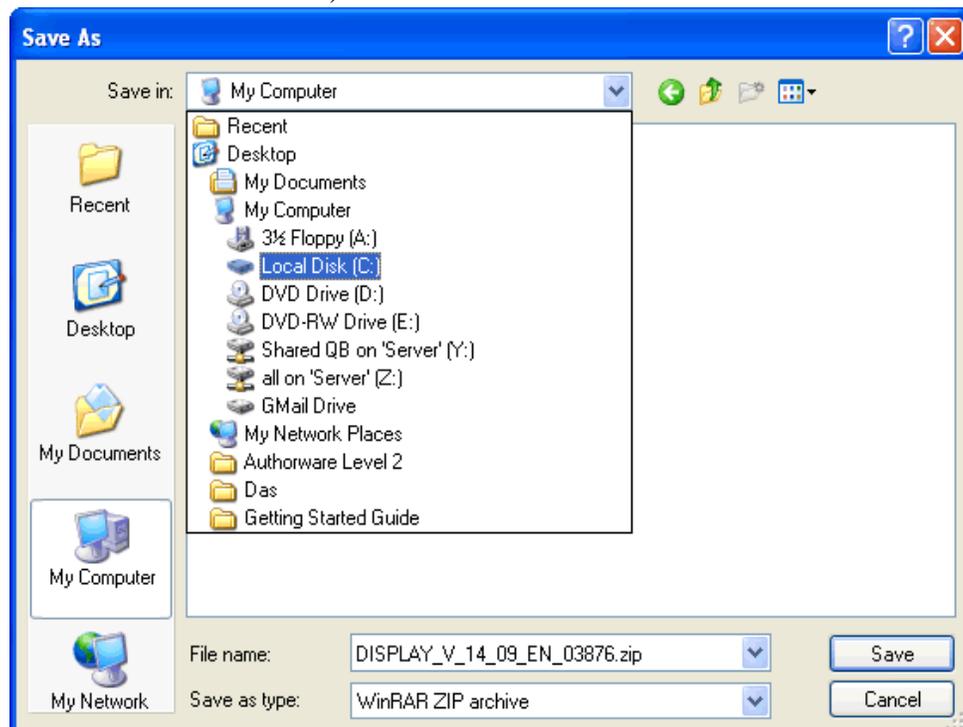
14. You are now ready to begin downloading the **X431 DISPLAY PROGRAM**, which will be immediately followed by the downloading of **X431 SYSTEM DATA**. These utilities must be downloaded. You will click on the **'Download'** button in the last column for each of the files.

15. The **File Download** window appears after clicking **Down**. Click **Save**.

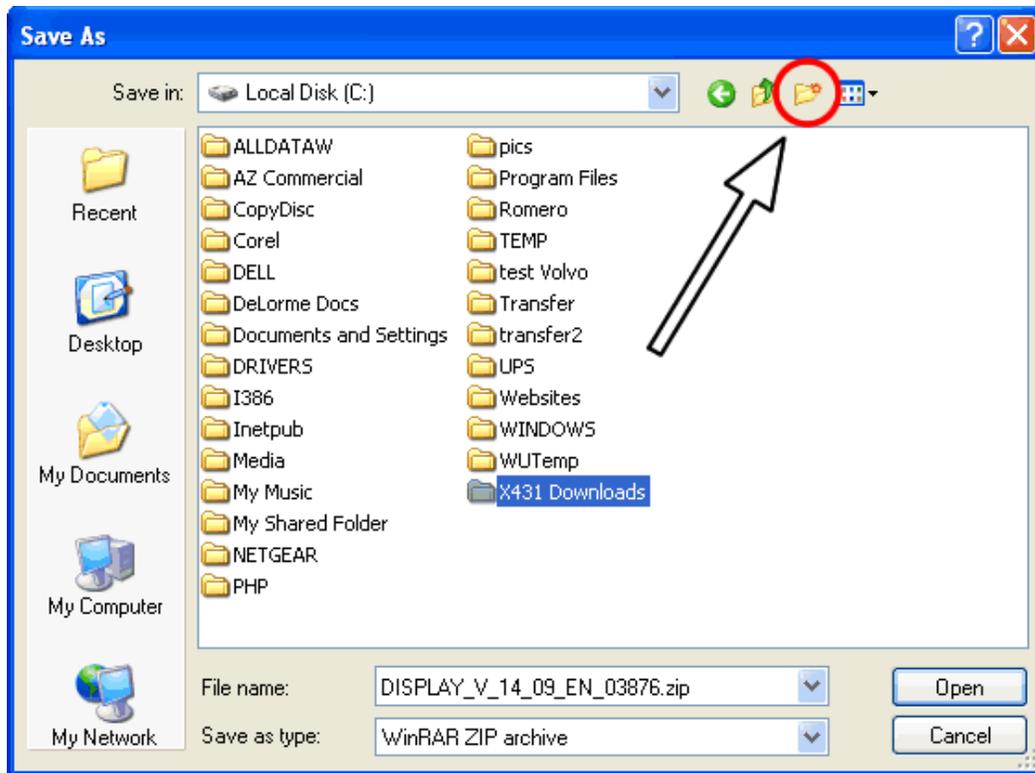


Next, the **Save As** window appears. Here you will need to select the folder where you will store all of your downloads. We recommend that you create a folder on your local drive called *X431 Downloads*, so that you will always know where to find all of your updates. To do this, follow these steps. If you have already completed this step, you will continue saving updates in this location.

16. On the left-hand side, click **My Computer**. Then from the **Save in:** pull-down at the top, select **Local Disk(C:)** (most likely your local drive is the C: drive).

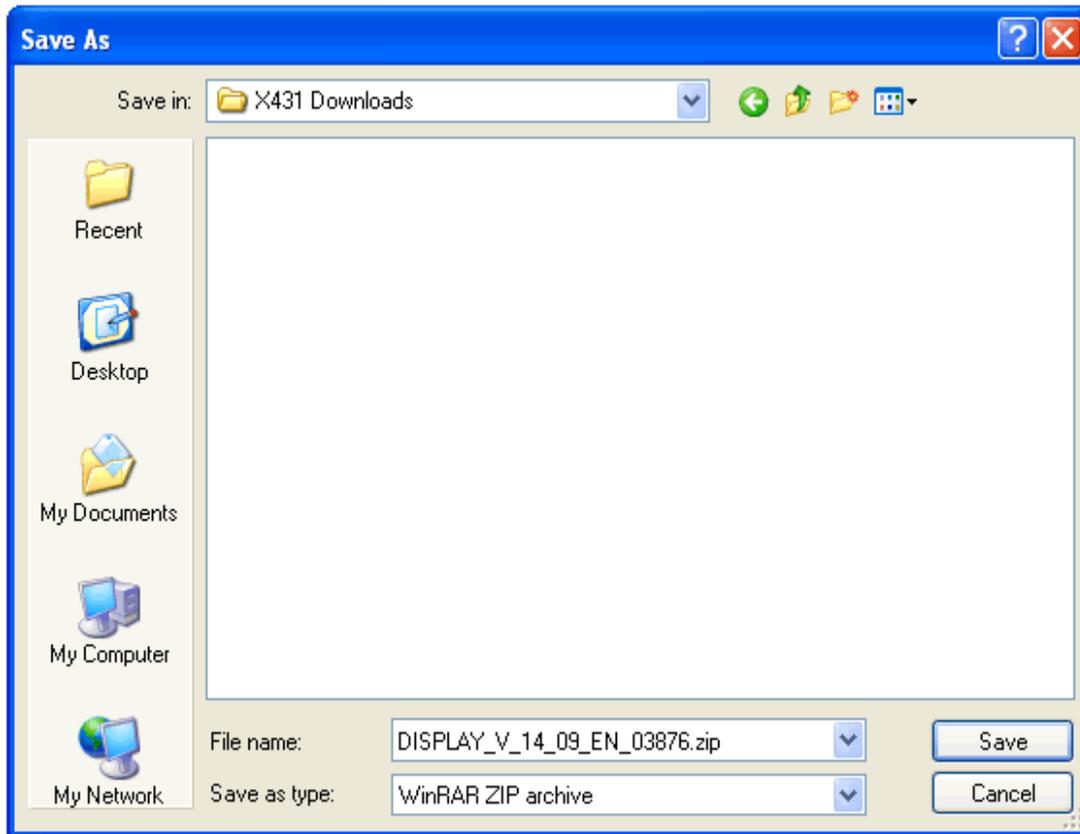


- The folders contained in your local drive are displayed in the main window. Click the **Create New Folder** icon (as shown circled below). A **New Folder** will appear in the main window underneath the other folders. Type **X431 Downloads** and press **ENTER**.

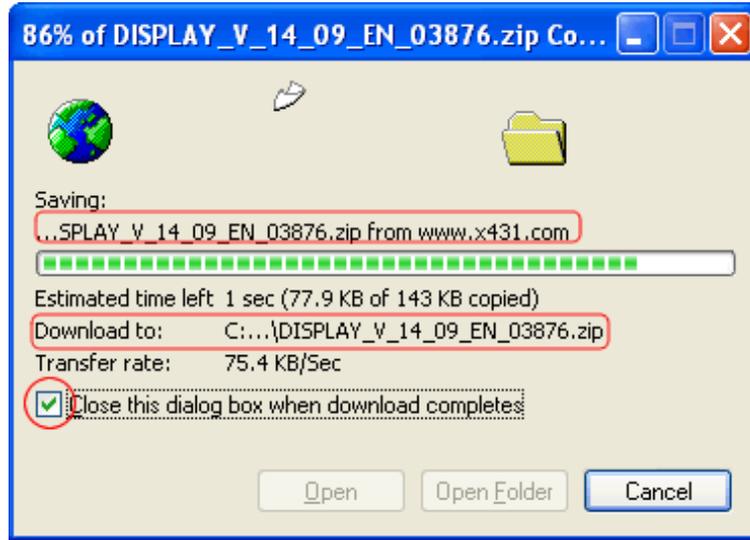


- You have now created your **X431 Downloads** folder. Select this folder and click **Open**.

19. A new **Save As** window will appear. It should resemble the following window. Click **Save**. The download will now begin.



- a. The following window will appear notifying you of your download’s progress.

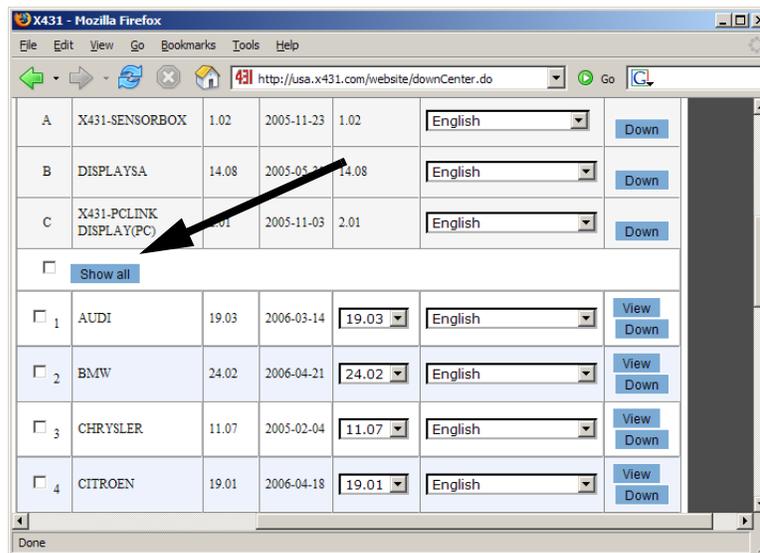


Click the checkbox that reads, “Close this dialog box when download completes” if you want to return directly to the previous window once the download is finished.

- 20. Repeat steps 19-22 for the remaining software downloads.

## Show All

If you need to download many car lines, and would like to see all available car lines while downloading, click the [Show All](#) link just above vehicle car lines. Note, the checkbox to the left is not associated with ‘Show All’.



**NOTE** • You may not need to download every car line. In the United States, it is unlikely that you will work on Opel or Fiat. Keep in mind that you can always come back and download anything else you might need later.

After you have finished downloading all of the car lines that you need, your next step is transfer the software to the CF Card.

---

## Downloading to the CF Card Reader

If you go to your Desktop, you will notice a new icon has been added to it.



You will use this program to transfer software to the CF Card.

## Updating the CF Card

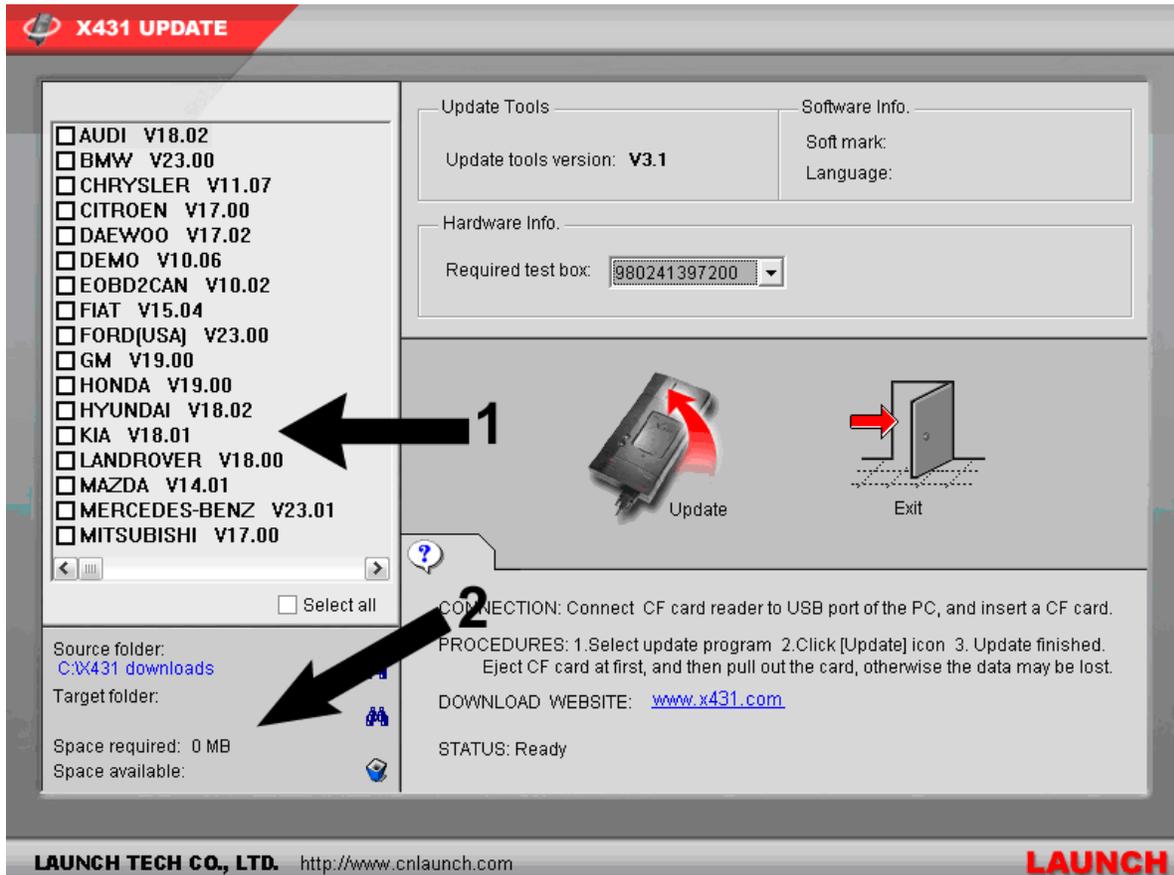
1. If you have not already done so, connect one end of the USB cable to the CF Card Reader and the other end to a free USB port on your PC.
2. Install CF Card into reader.

---

**NOTE** • If you are running Microsoft Windows 98, see “CF Card Reader - Operating System Requirements” on page 3-1.

---

3. Double-click the **X431 Update** icon on your **Desktop**. The **X431 Update** program opens.



There are two areas on this window to which you need to pay attention. In the upper left corner is the vehicle list, which is taken directly from the *X431 Downloads* folder that is on your local drive. Each vehicle line title is followed by its version number. Also notice the empty checkboxes next to each line. You can check these off one by one to select the lines that you want to make available to the X-431. Or at the bottom of the list you can check off the *Select all* checkbox to select all of the lines in the list. Any programs you load onto the CF Card remain there until you manually delete them.

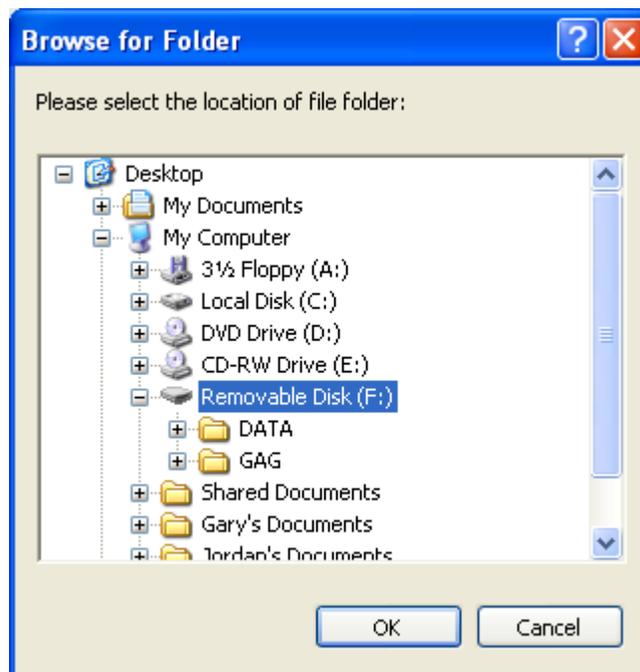
The second area is below the vehicle list and contains your *Source folder* destination, *Target folder* destination, and the space statistics for your CF Card. Your *Source folder* is the *X431 Downloads* folder that you created previously. The *Target folder* is the *CF Card Reader*. The space statistics will change depending on the contents of the *x431 update* folder and the capacity of the CF Card.

4. To change the *Source folder*, click the binoculars  to the right.

- a. Select the correct folder, and click **OK**. (C: -> X431 Downloads)



- b. If you need to change the *Target folder*, click the binoculars, select the correct drive, and click **OK**.



**You only want the outermost file in the target drive selected. For example, if the removable drive is E:, and it has two subfolders, DATA & GAG, you want the target to read E:, not E:\DATA or E:\GAG. The update program will place the software into the appropriate folders automatically.**

---

**NOTE** • The correct drive is a *Removable Disk* drive. If you are not sure which is the right drive, the way to check is when the CF Card is inserted in the Reader, the correct drive will have two folders in it: **DATA** and **GAG** (as shown in the previous screenshot).

---

5. Once you have selected your updates and determined your source and target folders, click the **X431 Update** icon.



---

**NOTE** • The light on the CF Card Reader will flicker while the card is being updated.

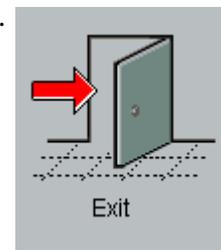
---

6. When it is finished updating, a pop-up window will appear.



Click **OK**.

7. Your CF Card is now updated. Click the **Exit** icon.



---

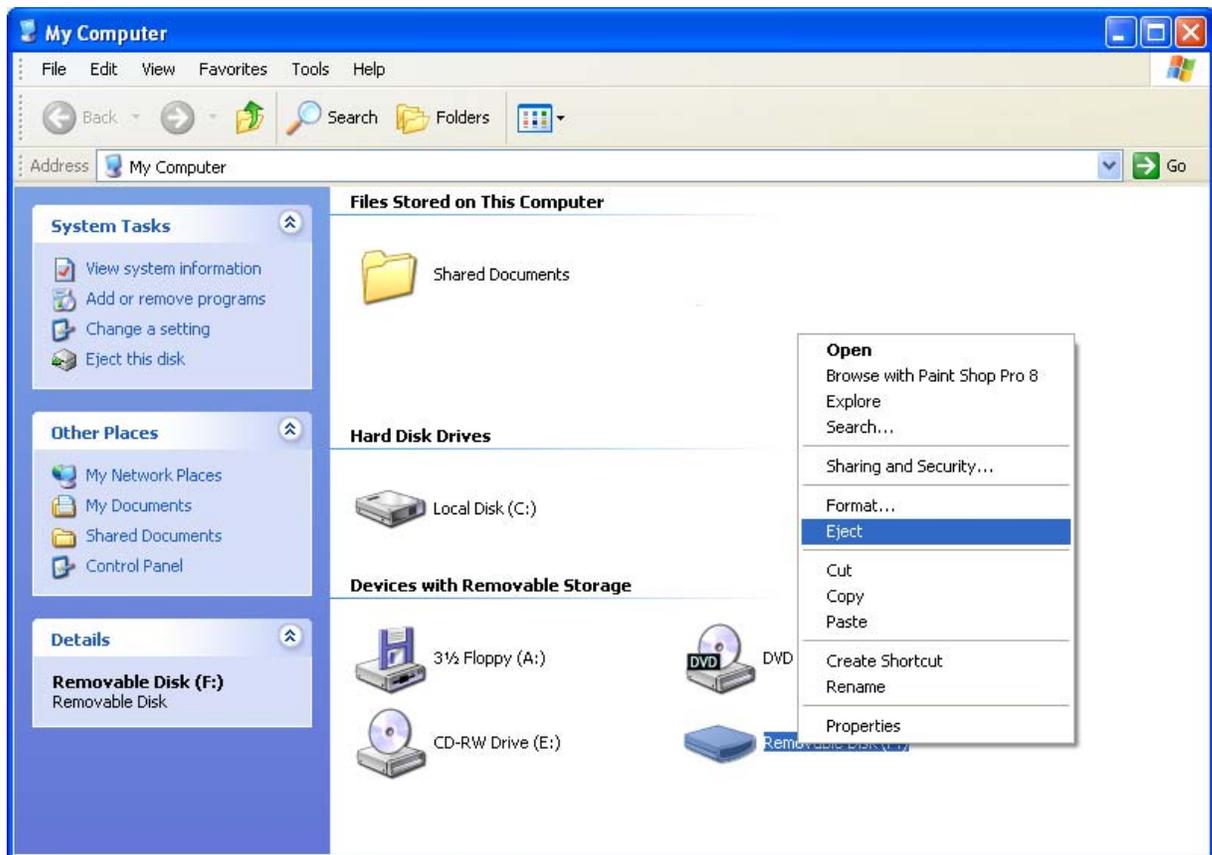
**WARNING** • **DO NOT REMOVE THE CF CARD YET.**

---

## Ejecting the CF Card

If you pull out the CF Card without ejecting it, you can lose data. Always follow these steps to eject the CF Card.

1. Open **My Computer** from your **Desktop** or the **Start** menu.
2. Right-click **Removable Disk**. A pop-up menu appears. Click **Eject**.



It is now safe to remove the CF Card.

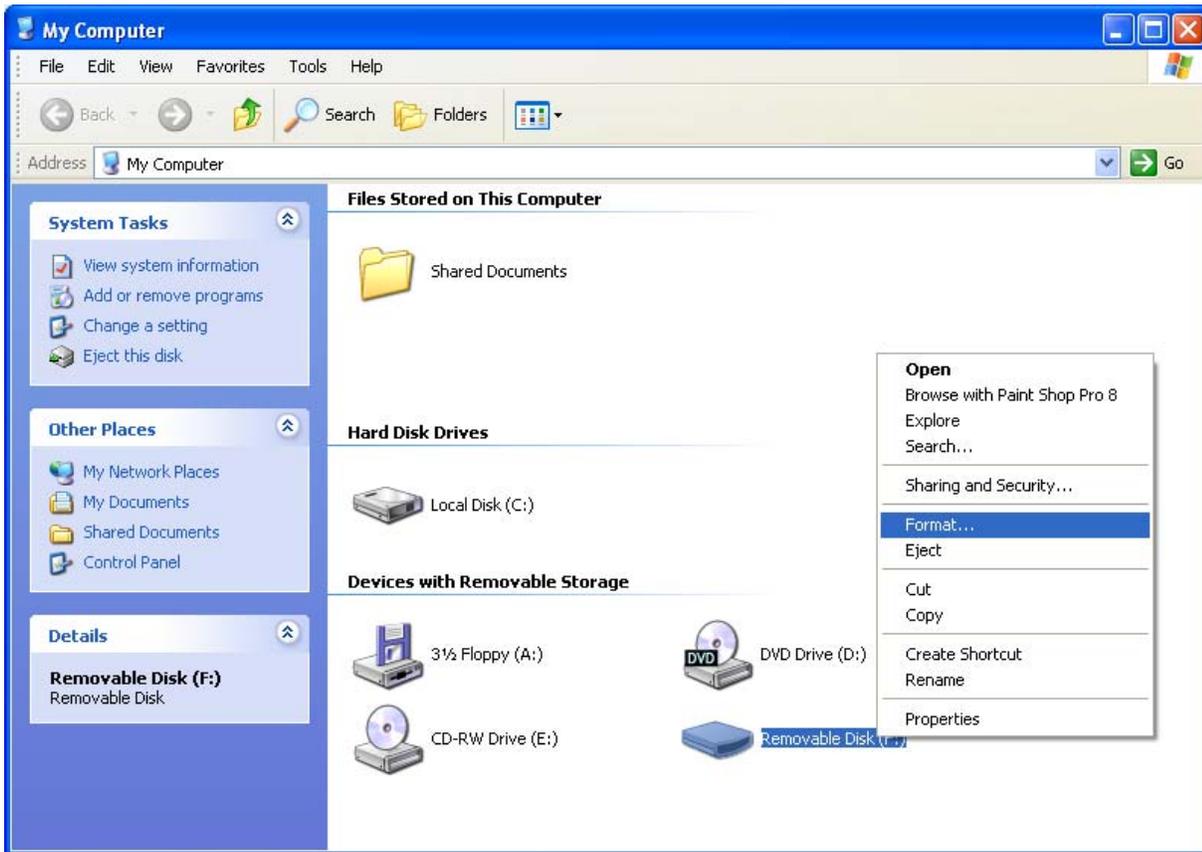
## Formatting the CF Card

Formatting the CF Card deletes all of the files that are stored on it. You may experience errors while trying to update your card. Formatting your card clears the data and allows a fresh update to complete successfully.

To do this, follow these steps.

1. Open **My Computer** from your **Desktop** or the **Start** menu.

2. Right-click **Removable Disk**. A pop-up menu appears. Click **Format**.



The CF Card is now formatted.

---

**NOTE** • You may want to format your CF Card if you do not plan to use all of the car lines. Format your card first and then update it.

---

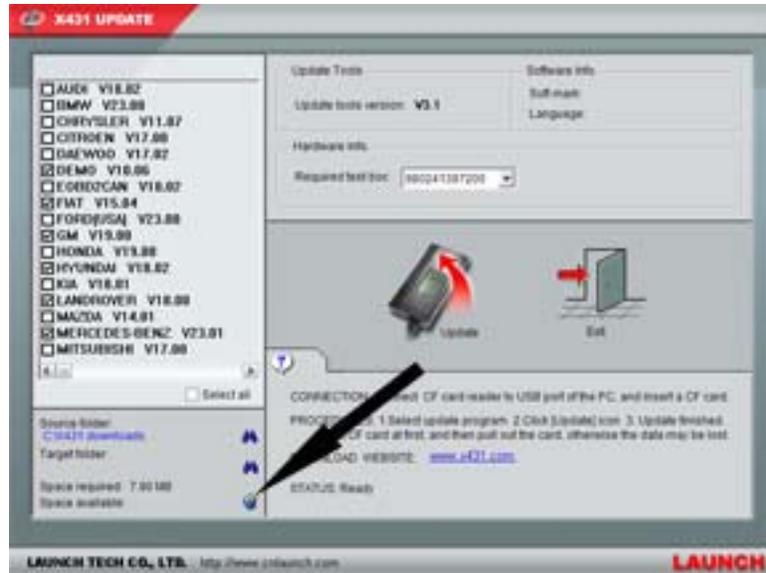
## Deleting Old Software Versions from CF Card

You can delete old versions of software from your CF card using the same X431 Update software on your desktop.

1. Connect your CF Card to the reader
2. Double Click the X431 Update software icon on your desktop
3. Select the software versions you'd like to delete by placing a checkmark next to its name (*See Figure 4-1*)

4. Click the trashcan icon (See Figure 4-1)
5. Select 'Delete' when the program asks you to confirm the delete

Figure 4-1: Software Deletion from CF Card using X431 Update software





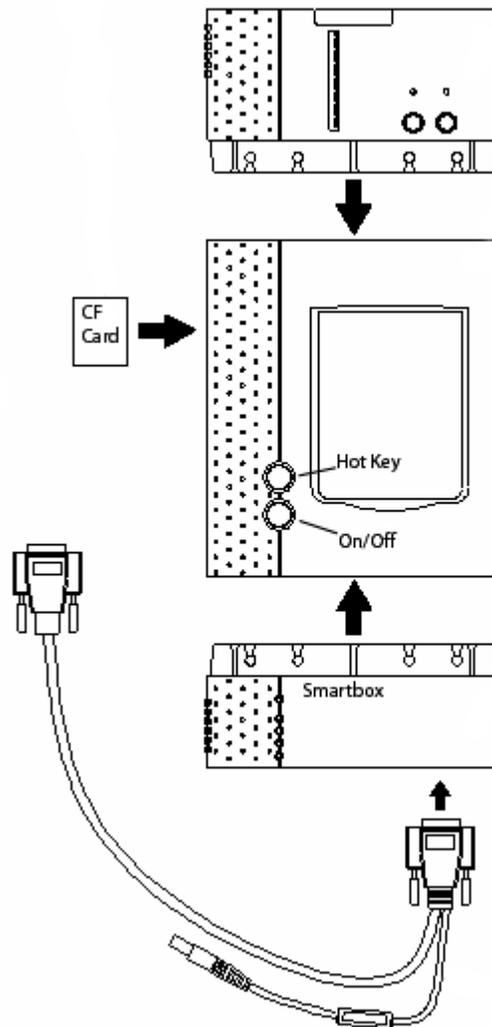
# 5 • Using the X-431

---

## To Get Started

Now that you have registered your unit and downloaded all of the necessary software, you are ready to start using the X-431.

1. Begin by connecting the main cable and inserting the CF Card (the label on the CF Card that reads “Up Side” should face up).

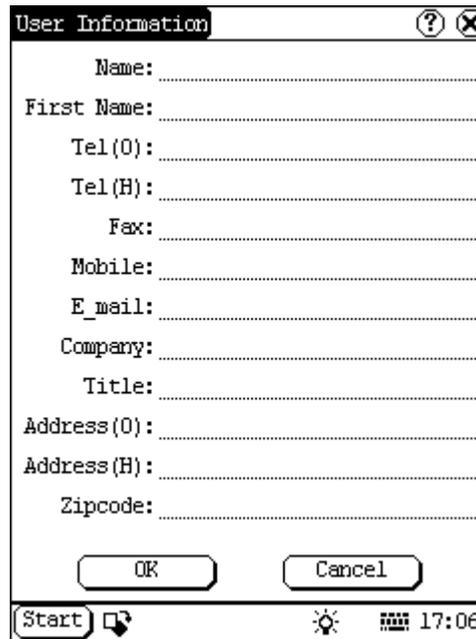


2. Connect the X-431 Power Adapter to the main cable's power adapter cord and plug the other end into a wall outlet.
3. Press the **On/Off** button to turn the X-431 on.

4. The LCD screen will light up and will read “Press the Hot-Key to adjust Touch Panel.” Similar to a palm pilot, the touch screen has quadrants that need to be initialized. If you do not press the Hot Key, you will be taken to the X-431 Desktop, which allows you to begin diagnosing a vehicle.

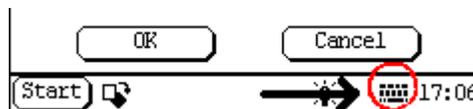
If this is the first time you are using your X-431 or if you are having trouble with your LCD Display, then you should press the **Hot Key** to initialize the quadrants.

5. The screen will read “Detecting noise...Please wait.” Then a cross-hair cursor will appear on the screen and travel to the center of the screen. Using the stylus, press and hold it to the cross-hair until the cross-hair glows. Then remove the stylus from the LCD. The cross-hair moves to another location. Repeat this procedure for the four corners.
6. The **User Information** screen appears. The information you input here will be displayed on any printouts.

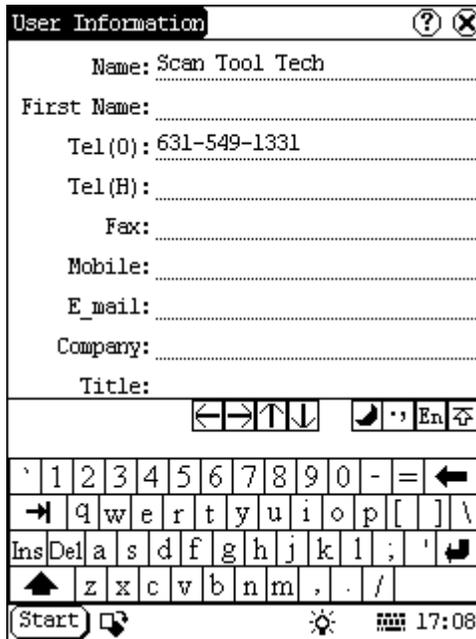


Unless you fill out this screen now and press **OK**, it will appear every time you turn the machine on (you do not have to fill out every field). To input information you will need to launch the Keyboard.

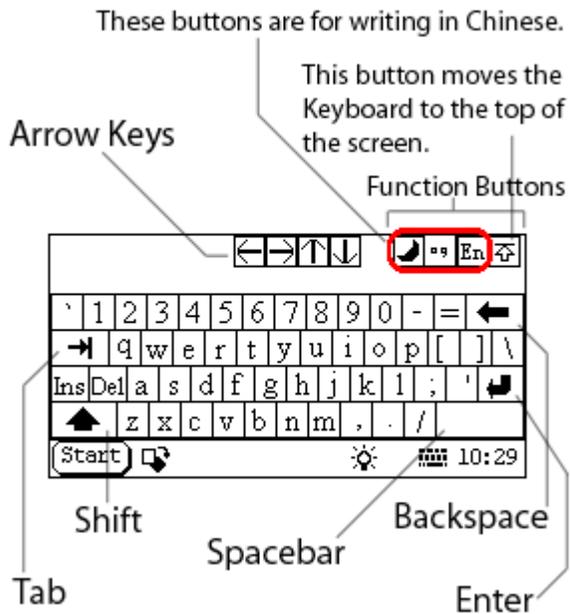
- a. On the bottom of the screen next to the clock, is a symbol of a Keyboard. Tap it with the stylus to launch the Keyboard (or tap it again to close the Keyboard).



The Keyboard appears on the bottom of the screen.

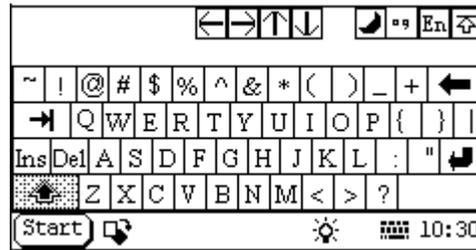


The Keyboard emulates a standard PCs keyboard.



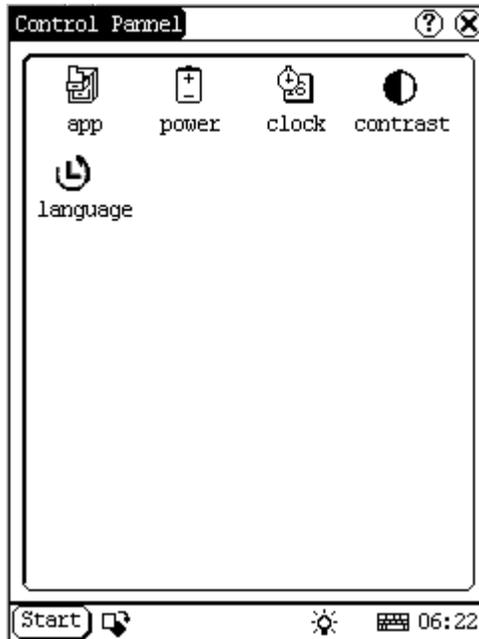
Three of the four function buttons are used for writing Chinese with the stylus. The last function button moves the Keyboard from the bottom of the screen to the top of the screen (this is useful because some screens do not have a scrolling feature).

Tap the Shift key to access capital letters and additional punctuation. Notice how the Keyboard changes.



- b. Fill out the information that you want to appear on your printouts (such as the company name, phone number, and address) and then press **OK**.
7. The next screen to appear will say “LAUNCH” across it. On the bottom of the screen tap **Start**. You are presented with the following seven choices:
    - 1     **GAG**             • Select **GAG** and then **GD Scan** to start scanning vehicles.
    - 2     **PIM**             • Personal Information Management - grants you access to the PDA functions of the X-431 (**Memo, Address, To do, and Schedule**).
    - 3     **Tools**           • Grants you access to the **Calculator**, the **World Time** feature, **Minidict** (Chinese/English dictionary), **Picview** (a picture application), and **Run**.
    - 4     **Game**            • You can play **FIR** and **Reversi** (tap the question mark at the top for instructions).
    - 5     **Control Panel**   • Offers access to five systems: **app, power, clock, contrast, and language**.
    - 6     **Turn off**         • Turns off the X-431 (it takes 4 seconds to power down).
    - 7     **Information**     • Grants access to the **User Information** screen and the **About** screen. The About screen displays your Serial (Smartbox) number, Hardware version, System Software version, and lists your GAG Software.

8. Select **Control Panel**. The following screen appears:



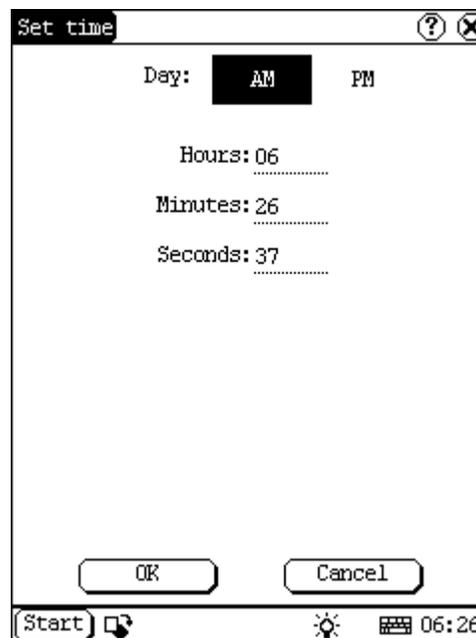
a. Select **clock**. The **Date/Time** screen appears.



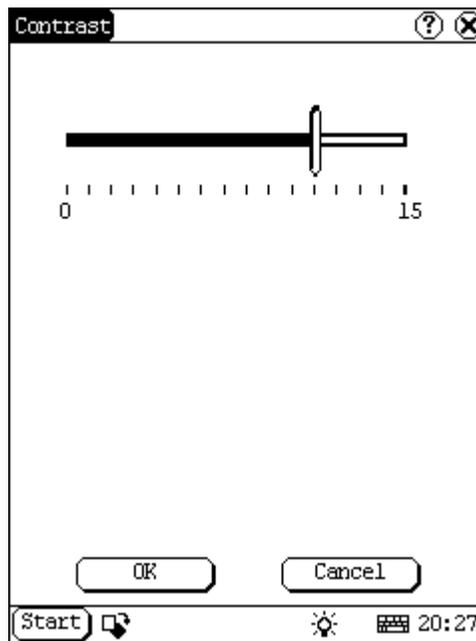
- b. You must set the time zone first. Select **Set time zone**.



- c. Select your time zone and click **OK**. The top of the screen will read, “Updating configuration, please wait...” When it is finished, you will be returned to the **Date/Time** screen.
- d. Now you must set the date. Use the calendar to locate today’s date and select it. Then select **Set date**. The date at the top of the screen will change.
- e. Now set the time by selecting **Set time**.



- f. Open the **Keyboard**. Select **AM** or **PM**.
  - g. Tap the **Hours** field to establish your cursor there and then use the Keyboard to input the correct hour.
  - h. Repeat this procedure for **Minutes** and **Seconds**.
  - i. Close the Keyboard and select **OK**.
  - j. You are now back on the **Date/Time** screen. Select **Quit** to return to the **Control Panel**.
9. Now select **contrast**.



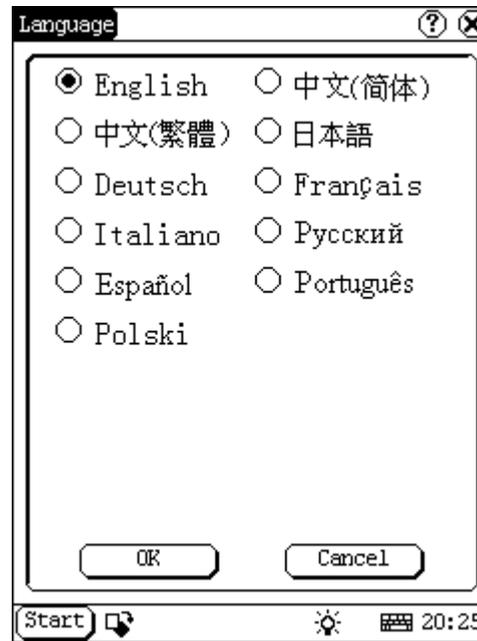
Use the slide-scale to adjust the contrast and then select **OK**. Wait while the configuration updates.

The **language** screen allows you to change the language.

---

**WARNING • To change the language, you have to download the software updates in that language. DO NOT ATTEMPT TO CHANGE THE LANGUAGE WITHOUT DOWNLOADING THE CORRECT SOFTWARE UPDATES FIRST.**

---



10. Close the **Control Panel** by selecting the **X** in the upper right hand corner.

You are now ready to start scanning vehicles. Turn off the unit and choose your first vehicle. To turn off the unit, refer to the following section.

## Turning Off the X-431

There are two correct ways to turn off the X-431.

- Select **Start** and then select **Turn off**. It takes 4 seconds for the unit to power down. **If possible, you should always follow this procedure to turn off the unit.**
- This method should only be used if the X-431 gets hung or is unresponsive. Hold down the **On/Off** button until the screen turns off.

Never unplug the connector from the vehicle without turning the unit off first.

# Connecting to a Vehicle

There are a few things to keep in mind when using the X-431.

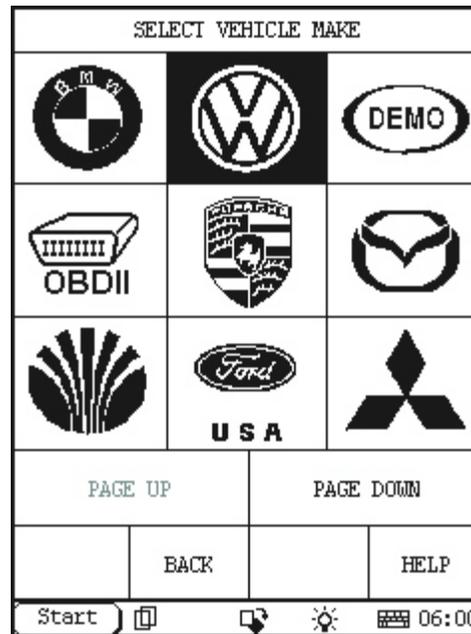
- Always use the OEM connector that comes with the X-431, even if the vehicle has an OBDII socket.
- If the unit is cold, the monitor may not function properly. Allow it to warm up before using.
- The X-431 is powered by the vehicle's battery. If the battery voltage is less than 10, the unit will notify you by beeping.

You are now ready to connect to the car.

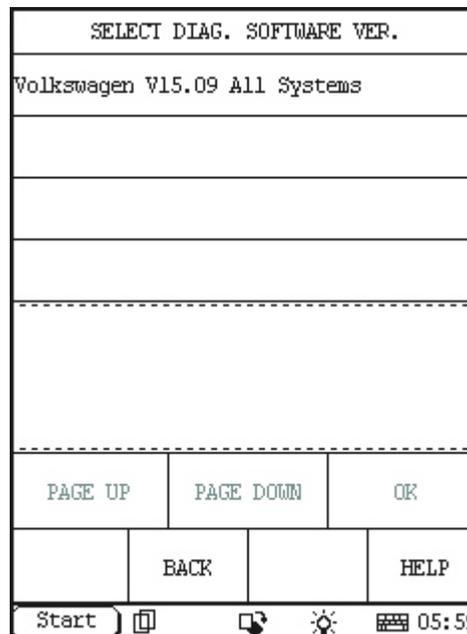
1. Take the appropriate connector and attach it to the free end of the main cable. Then take that end and attach it to the car.
2. Turn on the X-431.
3. Allow it to run until you see “**LAUNCH**” displayed across the screen. Then press the Hot Key (button above the power key). The following screen will appear:



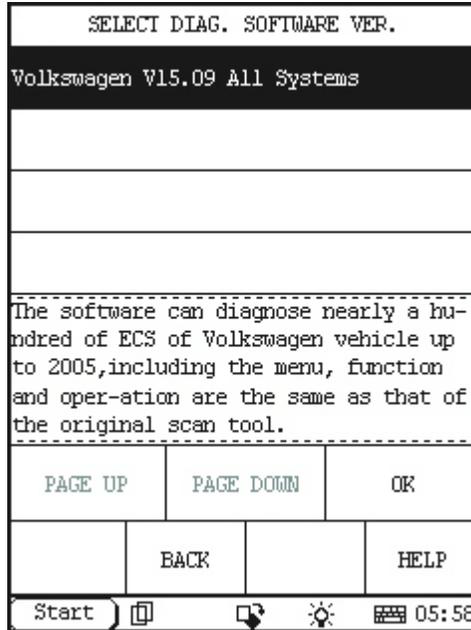
4. Touch **START**. A screen resembling the following will be displayed.



5. Select the car line to which you are connected (we have selected Volkswagen). From this point on, the X-431 mirrors the OEM factory tool.



6. Choose the software version that you would like to use to scan the vehicle (keep in mind that you may have only one version because that is all you have downloaded so far. If you would like multiple versions, go back to [www.x431.com](http://www.x431.com) and download previous versions).



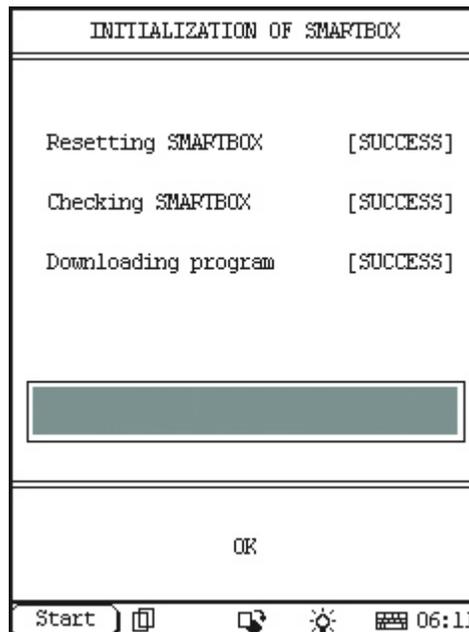
The latest version will be listed on top. Select it and then press **OK**.

---

**NOTE** • If you have more than four versions stored on your CF Card, you need to press **Page Down** to see the remaining versions.

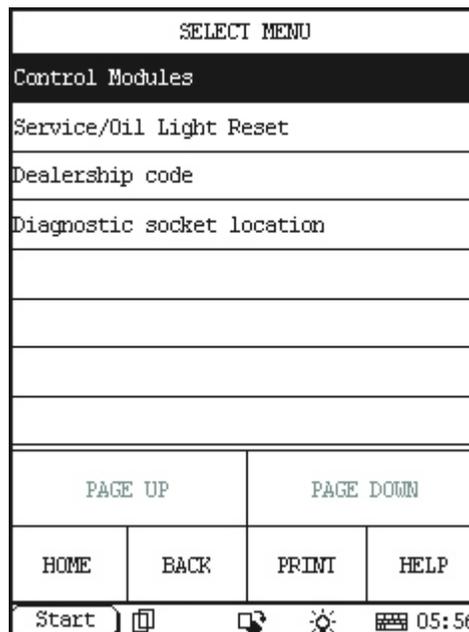
---

- The Smartbox will now be initialized (that is, the software stored on the CF Card will be uploaded to the Smartbox), as shown below.



When initialization is finished, press **OK**.

- Your X-431 is now ready for diagnosis. A screen similar to the following is displayed. (Note, for some vehicles lines, you may be required to select the vehicle model on which you are working before this screen is displayed.)



At this point, the X-431 becomes highly intuitive and is really very user friendly. Choose from the systems displayed to find out which systems have codes.

## Your Comments Matter

Launch has more than 150 engineers dedicated to perfecting the software for the X-431. In order to help them achieve this, your feedback is critical.

Should you find a system that has unidentified codes, please notify X-431 USA with the following information:

- Vehicle make, model, and year.
- The connector you used.
- The particular system in which you were working.
- Any codes that came out of the system.
- The ECU version or ID number.
- The X-431 software version.

You can contact X-431 USA at 1(877) GET-X431.



# A • Connector Usage/Chassis Identification

---

## Connector Usage

- Due to the complexity of models and years, this is compiled as a *guide* only. You should refer to the manufacturer's service information for complete connector usage information.
- If the car has an OEM-style connector in conjunction with an OBD-II style connector, the OEM style will provide the most capabilities for the OEM software. If the car only has an OBD-II style connector, that connector will provide both OEM and generic (OBD-II) capabilities.

## Connector Usage Guide as of June 2006

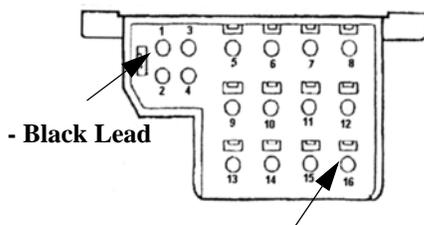
<b>Manufacturer</b>		<b>Year Range</b>	<b>Connector</b>
<b>Audi</b>	OEM	Up to 1995	Audi/VW 4
		1996 Onward	OBD II -16C
		2004 Onward (Audi A8)	CAN Connector
	OBD II	1996 Onward	OBD II -16C
<b>BMW</b>	OEM	UP to 2002	BMW 20
		2000 Onward	BMW 16
	OBD II	1996 Onward	OBD II -16C
<b>Chrysler</b>	OEM	Up to 1996	Chrysler -6
		1996 Onward	Smart OBD II -16
	OBD II	1996 Onward	OBD II -16C
<b>Daewoo</b>	OEM	1999 Onward (USA)	OBD II -16C
	OBD II	1999 Onward (USA)	OBD II -16C
<b>Ford</b>	OEM	UP to 1995	Ford 6+1
		1996-2004	OBD II -16C
		2005 Onward	CAN Connector
	OBD II	1996 Onward	OBD II -16C
<b>GM</b>	OEM	Up to 1996	GM/Daewoo -12
		1996 Onward	OBD II -16C
		1996 Onward	OBD II -16C
<b>Honda / Acura</b>	OEM	Up to 1996	Honda -3
		1996 Onward	Smart OBD II -16
	OBD II	1996-2005	Smart OBD II -16
<b>Hyundai</b>	OEM	Up to 1995	Mits/Hyun 12-16
		1996 Onward	Mits/Hyun 12-16 (OBD II Side)
	OBD II	1996 Onward	Mits/Hyun 12-16 (OBD II Side)
<b>Kia</b>	OEM	Up to 2003	Kia 20
		2003 Onward	SMART OBD II-16
	OBD II	1996 Onward	OBD II -16C
<b>Landrover</b>	OEM	Up to 1995	N/A
		1995 Onward	OBD II -16C
	OBD II	1996 Onward	OBD II -16C

<u>Manufacturer</u>		<u>Year Range</u>	<u>Connector</u>
<b>Mazda</b>	OEM	UP to 2004	Mazda -17
		2004 Onward	OBD II -16C
	OBD II	1996 Onward	OBD II -16C
<b>Mitsubishi</b>	OEM	Up to 2004	Mitsubishi/Hyundai -12+ 16
	OBD II	1996 Onwards	Mitsubishi/Hyundai -12+ 16
<b>Mercedes Benz</b>	OEM	Up to 1993	Universal -3
		1992 - 2000	Mercedes Benz -38
	(See CAN-Bus Guide)	1999 Onwards	OBD II -16C
		2003 Onwards	CAN Connector
	OBD II	1996 Onwards	OBD-II -16c
<b>Nissan/Infiniti</b>	OEM	Up to 1999	Nissan -14 +16
		2000 Onward	Nissan -14 +16
	OBD II	1996 Onward	Nissan -14 +16
<b>Porsche</b>	OBD II	911 & 996 <b>ONLY</b>	OBD II -16C
		1996 Onward	
<b>Saab</b>	OEM	1996 Onward	Smart OBD II -16
	OBD II	1996 Onward	OBD II -16C
<b>Sprinter</b>	OEM		OBD II -16C
	OBD II	1996 onwards	OBD II -16C
<b>Subaru</b>	OEM	1996 Onwards	OBD II -16C
	OBD II	1996 Onwards	OBD II -16C
<b>Suzuki</b>	OEM	1996 Onwards	Smart OBD II -16
	OBD II	1996 Onwards	Smart OBD II -16
<b>Toyota/Lexus</b>		DLC 1	Toyota -22(17f) ABS/TRACS/AB
		DLC 2	Toyota -17 All Sys./Blink Codes
		DLC3	Toyota -16 1996 UP All Sys./OBDII
<b>Volkswagen</b>	OEM	Up to 1995	Audi/VW 4
		1996 Onward	OBD II -16C
		2004 Onward (Audi A8)	CAN Connector
	OBD II	1996 Onward	OBD II -16C
<b>Volvo</b>	OEM	1996-1998	Smart OBD II -16
		1999 Onward	Volvo CAN
	OBD II	1996 Onward	OBD II -16C

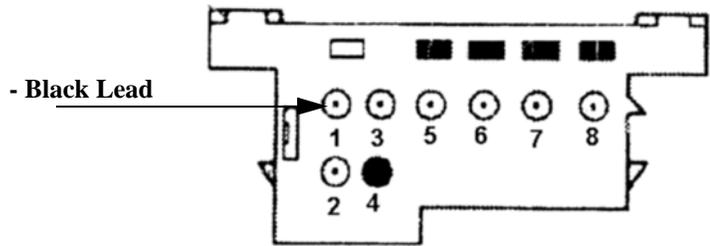
## Mercedes Benz 16PIN & 8pin Diagnostic Socket

### USE 3-PIN UNIVERSAL CONNECTOR

Some Mercedes-Benz models up to 1996 may have an 8 or 16 pin diagnostic connector. The diagnosis program for these models is performed through the “Flash Fault Code” option, which is at the bottom of the Mercedes-Benz chassis number selection menu. See the below graphics below to help with the proper connections.



**Red Lead**  
(or battery clip connector if no power is present)

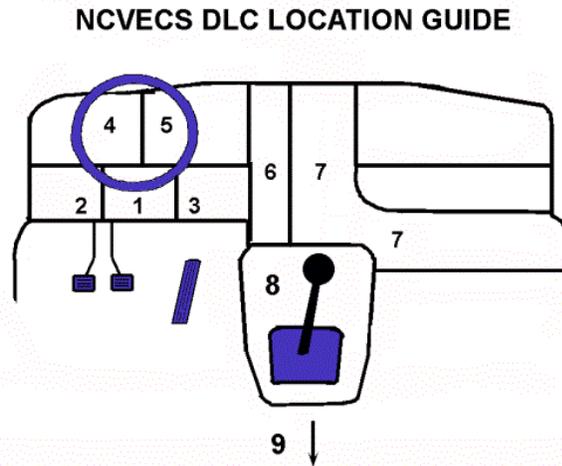


**Note: Use battery clip connector for positive (red lead) connection.**

Pin	Definition
1	Body ground - Black Lead
2	On-board diagnostic switch
3	CIS-E/DM
4	EDS/LED
5	ASD
6	AB
7	AC(124)/RB(129)
8	DI/HFM, SFI, MFI/DMS
9	ADS/RB(124)
10	RST(129)/Speed signal
11	ATA
12	IRCL
13	EATC
14	EA(124)/ISC(124)/ESCM(129)/CC
15	Not used
16	Positive pole of power - Red Lead (Sometimes not present- If so, then use battery clip)

Pin	Definition
1	Body ground (black lead)
2	Ignition signal/Press button
3	Diagnosis percentage
4	Engine trouble code/LED
5	ASD
6	SUS trouble code
7	A/C trouble code
8	Ignition control system

# NCVECS Hard to Find Locator Guide



The image above represents the actual location codes used in this Guide

**Figure A-1**

Manufacturer	Year	Model	Location	Comments
Acura	1996-98	Integra, CL, RL, NSX	7/open	behind console, passenger side
Acura	1999-2001	Integra, NSX	7/open	behind console, passenger side
Acura	1996-98	TL	8/cover	behind ashtray in console
Acura	1999-2001	TL, CL	8/cover	cover below radio in center console
Acura	1999-2001	RL	8/cover	behind ashtray in center console (rubber flap)
Audi	1996-1997	A6, Cabriolet	9/open	rear ashtray, behind sliding cover
Bentley	1996-98	All	7/cover	behind glove box
BMW	1996-2000	3,5,& 8 series	2/cover	cover in trim panel under drivers side dash
BMW	1996-2001	7 series	8/cover	cover marked OBD below radio
BMW	2000-02	Z8	2/cover	next to kick panel, pull cover down
BMW	1996-2001	X5	2/cover	cover marked OBD below radio
Daewoo	1999-2001	Lanos	6/open	
Ferrari	96-2000	All	3/open	deep under drivers dash, right side of column
Ford	1996-97	Bronco	7/cover	some-under passenger side of dash
Ford	1996-97	F series	7/cover	some-under passenger side of dash
Ford	1996-97	Thunderbird	7/cover	
Ford	1999-2000	Focus	2/cover	left of hood release, behind pull-down cover
Honda	1996-98	Accord	6/cover	behind ashtray/storage compartment

**Figure A-1**

<b>Manufacturer</b>	<b>Year</b>	<b>Model</b>	<b>Location</b>	<b>Comments</b>
Honda	1996-98	Odyssey	7/cover	behind console, passenger side, rubber cover
Honda	1996-99	Del Sol	7/open	under passenger dash
Honda	1996	Prelude	8/open	above shifter, below cup holder
Honda	1997-98	Prelude	7/open	passenger side of console, behind trim panel
Honda	1997-2001	CR-V	7/open	behind console, passenger side
Honda	2001-2002	Insight (hybrid)	8/open	right edge of console
Honda	2000-02	S2000	7/open	behind console, passenger side
Hyundai	1996-99	Accent	2/open	above coin box
Land Rover	1997	Defender 90	8/cover	behind fuse box cover, under parcel tray
Land Rover	1996-2001	Range Rover	7/open	next to console
Lexus	1996-2001	SC 300/400	2/cover	
Lexus	1996-2001	LS 400	1/cover	behind cover, above parking brake
Lexus	2001	LS 430	2/cover	
Lexus	2000-01	IS 300	2/cover	Lower left side of driver's dash, next to kick panel
Lexus	1996-97	LX 450	2/cover	Lower right edge of dash, behind fuse box cover
Lexus	1998-2001	LX 470	2/cover	Lower right edge of dash, behind fuse box cover
Mazda	1996-98	Miata	1/cover	behind fuse box access panel
Mitsubishi	1996	Expo	2/open	behind fuse box, slide connector alongside panel
Mercedes-Benz	1996-99	All Vehicles	2/cover	behind trim panel
Mercedes-Benz	2000	S Class	2/cover	behind trim panel
Mercedes-Benz	2000	C Class	3/cover	
Mercury	1996-97	Cougar	7/cover	
Porsche	1996-2001	911	6/cover	drivers side of center console
Rolls-Royce	1996-98	All	7/cover	behind glove box
Subaru	1996-97	SVX	3/cover	right of steering column, hinged cover by ignition
Subaru	2000-01	Forrester	2/cover	lower dash, pull-down door
Subaru	2000-02	Impreza, WRX	2/cover	lower dash, pull-down door
Subaru	1996-2002	Legacy	2/cover	left side of dash, behind hinged cover
Toyota	1996-1999	Avalon	2/cover	behind fuse box cover
Toyota	1996	Camry	2/cover	behind coin-box- remove box
Toyota	1996-99	Celica	3/cover	

**Figure A-1**

<b>Manufacturer</b>	<b>Year</b>	<b>Model</b>	<b>Location</b>	<b>Comments</b>
Toyota	2000-01	Celica	2/cover	
Toyota	2000-01	Echo	2/cover	
Toyota	2002	Highlander	2/cover	
Toyota	1996-2001	Land Cruiser	2/cover	behind fuse cover
Toyota	1996	MR2	n/a	Use engine bay connector
Toyota	1996-99	Paseo	2/cover	behind fuse cover
Toyota	1996-97	Previa	6/cover	top of instrument panel under cover- center latch
Toyota	1996-99	Supra	2/cover	
Toyota	1996-98	Tercel	2/cover	behind fuse box cover
Volkswagen	1996-98	Cabrio, Golf, Jetta	6/cover	remove ashtray, slide cover to access
Volkswagen	1996-97	Passat, Eurovan	4/cover	"L" shaped panel behind steering wheel
Volkswagen	1996-2001	GTI	6/cover	remove ashtray, slide cover to access
Volkswagen	2001 1/2 - on	Passat	4/open	
Volvo	1997-98	850	7/cover	Under coin tray in center console
Volvo	1996-2000	960, C70, S70, V70, V90	9/cover	front edge of console storage, under cover
Volvo	2000-2001	S40	6/open	
Volvo	1998-2000	S80	2/cover	under driver's dash behind cover, left side

# CAN BUS GUIDE

## Use Specification of SMART OBD-II-16/OBD-II-16C & OBD-Can Connector

- 1. SMART OBD-II-16** connector is used for testing the vehicle model without a CAN Bus system (if the 6 and 1-pin positions of 16-pin diagnostic socket doesn't have sheet metal, it indicates that the vehicle doesn't have a CAN-Bus system).
- 2. OBD-II-16C** connector is used for testing the non-CAN-Bus systems of the vehicle model with CAN-Bus system (if the 6 and 14 pin positions of 16 pin diagnostic socket has sheet metal, it indicates that the vehicle is a CAN-Bus system).
- 3. OBD CAN** connector is used for testing CAN-Bus system (if the 6 and 14- pin positions of 16-PIN diagnostic socket has sheet metal, it indicates that the vehicle is a CAN-Bus system).

## When is the CAN-Bus connector used?

1. Must use CAN-Bus connector when using diagnostic software OBD CAN.
2. Must use CAN-Bus connector when testing certain CAN-Bus systems of BENZ, VW, RENAULT, and MAZDA.

## CAN-Bus function table (each vehicle)

Available models and systems tested by X-431 at present are as following:

1. Mercedes-Benz

Table A-1

MERCEDES-BENZ	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
190D	201	201																
190E	201	201	201	201	201	201												
260E	124	124																
300CE	124	124	124	124	124													
300CE CABRIOLET						124												
300D			124															
300D TURBO				124	124	124												
300E	124	124	124	124	124	124												
300E 4MATIC			124	124	124	124												
300SD TURBO						140	140											
300SE	126	126	126	126	140	140												
300SEL	126	126	126	126														
300SL			129	129	129	129												
300TE	124	124	124	124	124	124												
300TE 4MATIC			124	124	124	124												
350SD TURBO				126														
350SDL			126															
350SDL TURBO				126														
400E					124	124												
400SE					140													
400SEL						140												
420SEL	126	126	126	126														
500E					124	124												
500SEC						140												
500SEL					140	140												
500SL			129	129	129	129												
560SEC	126	126	126	126														
560SEL	126	126	126	126														
560SL	107	107																
600SEC						140												
600SEL					140	140												
600SL						129												
C220							202	202	202									
C230										202	202					203.040	203.040	203.040
C230CL																203.740	203.740	203.740
C230K												202	202	202	203.7			
C240 SEDAN 4MATIC																203.081	203.081	203.081
C240 4MATIC WAGON																203.281	203.281	203.281

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MERCEDES-BENZ	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
C240 SEDAN														203.061	203.061	203.061	203.061	203.061
C240 WAGON																203.261	203.261	203.261
C280							202	202	202	202	202	202	202.029					
C320 4MATIC SEDAN																203.084	203.084	203.084
C320 4MATIC WAGON																203.284	203.284	203.284
C320 SEDAN														203.064	203.064	203.064	203.064	203.064
C320 WAGON															203.264	203.264	203.264	203.264
C320CL																	203.764	203.764
C32 AMG															203.065	203.065	203.065	
C36									202	202								
C43											202	202						
C43 AMG														202.033				
C55 AMG																		203.076
C86								202										
CL55 AMG														215.373	215.373	215.373	215.374	215.374
CL500													215.375	215.375	215.375	215.375	215.375	215.375
CL500 COUPE											140	140						
CL600														215.378	215.378	215.376	215.376	215.376
CL65 AMG																		215.379
CL600 COUPE											140	140						
CLK320											208.365	208.365	208.365	208.365	208.365	209.365	209.365	209.365
CLK320 CABRIOLET												208.465	208.465	208.465	208.465	209.465	209.465	209.465
CLK430												208.37	208.370	208.370	208.370			
CLK430 CABRIOLET													208.470	208.470	208.470	208.470		
CLK500																	209.375	209.375
CLK500 CABRIOLET																	209.475	209.475
CLK55 AMG														208.374	208.374	209.376	209.376	209.376
CLK55 AMG CABRIOLET															208.474		209.476	209.476
E300D									210	210		210						
E300DT											210							
E320										210	210							
E320 4MATIC SEDAN											210.082	210.082	210.082	210.082	210.082		211.082	211.082
E320 4MATIC WAGON											210.282	210.282	210.282	210.282	210.282	211.282	211.282	211.282
E320 CABRIOLET								124	124									
E320 COUPE								124	124									
E320 SEDAN								124	124		210.065	210.065	210.065	210.065	210.065	211.065	211.065	211.065

MERCEDES-BENZ	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
E320 WAGON							124	124			210.265	210.265	210.265	210.265	210.265	211.265	211.265	211.265
E320 CDI																		211.026
E420							124	124		210								
E430											210.070	210.070	210.070	210.070	210.070			
E430 4MATIC													210.083	210.083	210.083			
E500							124									211.070	211.070	211.070
E500 4MATIC SEDAN																	211.083	211.083
E500 4MATIC WAGON																	211.283	211.283
E55 AMG											210.074	210.074	210.074	210.074	210.074	211.076	211.076	211.076
G500															463.249	463.249	463.249	463.249
G55 AMG															463.246	463.246	463.246	463.246
ML320											163.154	163.154	163.154	163.154	163.154			
ML350																163.157	163.157	163.157
ML430												163.172		163.172				
ML500															163.175	163.175	163.175	163.175
ML55 AMG													163.174	163.174	163.174	163.174		
S320							140	140	140	140		140						
S320 LWB												140						
S320 SEDAN											140							
S320 SEDAN LWB											140							
S350							140	140										
S420							140	140	140	140	140	140						
S430													220.170	220.170	220.170	220.170	220.170	220.170
S430 4MATIC																220.183	221.183	221.183
S500											140	220.175	220.175	220.175	220.175	220.175	220.175	220.175
S500 4MATIC																220.184	220.184	220.184
S55 AMG													220.173	220.173	220.173	220.174	220.174	220.174
S600											140		220.178	220.178	220.178	220.176	220.176	220.176
S500 COUPE							140	140	140	140								
S500 SEDAN							140	140	140	140	140							
S600 COUPE							140	140	140	140								
S600 SEDAN							140	140	140	140	140							
SL320							129	129	129	129								
SL500							129	129	129	129	129	129	129.068	129.068	129.068	230.475	230.475	230.475
SL55 AMG																230.474	230.474	230.474
SL600							129	129	129	129	129	129	129.076	129.076	129.076		230.476	230.476
SL65 AMG																		230.479
SLK230											170.447	170.447	170.447	170.449	170.449	170.449	170.449	
SLK32 AMG															170.466	170.466	170.466	
SLK320													170.465	170.465	170.465	170.465	170.465	
SLK350																		171.456
SLK55 AMG																		171.473

## BMW Chassis Chart 1988-2005

BMW	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
318i				E30	E36	E36	E36	E36	E36	E36								
318i Conv.				E30	E30			E36	E36	E36								
318is				E36		E36	E36	E36	E36	E36	E36							
318ti								E36/5	E36/5	E36/5	E36/5	E36/5						
323Ci													E46	E46				
323Ci Conv													E46	E46				
323i												E46	E46					
323i Conv.											E46	E46						
323is											E46	E46						
325	E30	E30																
325																	E46	E46
325Ci Conv															E46	E46		
325Ci															E46	E46		
325i	E30		E30	E30	E36	E36	E36	E36						E46	E46	E46		
325i Conv.	E30	E30	E30	E30	E30	E30	E36	E36										
325i SPORT WAGON														E46	E46	E46		
325is	E30	E30	E30	E30	E36	E36	E36	E36										
325ix	E30																	
325iX AWD	E30	E30	E30	E30														
325xi SEDAN														E46	E46	E46		
325Xi SPORT WAGON														E46	E46	E46		
328Ci													E46					
328i									E36	E36	E36	E46	E46					
328i Conv.									E36	E36	E36	E36						
328is									E36	E36	E36	E36						
330																	E46	E46
330Ci CONV														E46	E46	E46		
330Ci COUPE														E46	E46	E46		
330i														E46	E46	E46		
330xi AWD SEDAN														E46	E46	E46		
525																	E60	E60
525i		E34	E34	E34	E34	E34	E34	E34										
525i sedan														E39	E39	E39		
525i sport wagon														E39	E39	E39		
525i touring wagon						E34/2	E34/2	E34/2										
528e	E28																	
528i										E39	E39	E39						
528i sport wagon												E39	E39					
530																	E60	E60

BMW	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
530i							E34	E34										
530i sedan														E39	E39	E39		
530i touring wagon							E34/3	E34/3										
535i	E28	E34	E34	E34	E34	E34												
535is	E28																	
540i							E34	E34										
540i sedan														E39	E39	E39		
540i sport wagon												E39		E39	E39	E39		
540i										E39	E39	E39	E39					
545																	E60	E60
635csi	E24	E24																
645																	E63/64	E63/64
735i	E32	E32	E32	E32	E32													
735iL			E32/2	E32/2	E32/2													
740i						E32	E32	E38		E38	E38	E38	E38	E38				
740iL						E32/2	E32/2	E38										
745i																E65	E65	E65
745Li															E66	E66	E66	
750iL	E32/2	E38																
760i																		E65
760Li																E66	E66	E66
840Ci							E31	E31	E31	E31								
850i				E31	E31													
850Ci						E31	E31	E31	E31	E31								
850CSi							E31											
L6	E24	E24																
M Coupe											E36/7	E36/7	E36/7	E36/7	E36/7			
M Roadster											E36/7	E36/7	E36/7	E36/7	E36/7			
M3	E30	E30	E30	E30					E36	E36							E46	E46
M3 CONV											E36	E36		E46	E46	E46		
M3 COUPE											E36	E36		E46	E46	E46		
M3 SEDAN											E36							
M5	E28			E34	E34	E34							E39					
M5 SEDAN														E39	E39	E39		
M6	E24																	
X3																	E83	E83
X5													E53				E53	E53
X5 3.0i														E53	E53	E53		
X5 4.4i														E53	E53	E53		
X5 4.6iS															E53	E53		
Z3 COUPE												E36/7	E36/7					
Z3 COUPE 3.0i														E36/7	E36/7			
Z3 Roadster 2.5												E36/7	E36/7					
Z3 Roadster 2.5i														E36/7	E36/7			
Z3 Roadster 3.0i														E36/7	E36/7			
Z3 Roadster 2.8									E36/7	E36/7	E36/7	E36/7	E36/7					
Z4																	E85	E85
Z4 Roadster																E85	E85	
Z8 Roadster														E52	E52			



# B • Troubleshooting/F.A.Q.

## General Information

### Why is my screen blank after I power on the machine?

Remove the CF card and restart the machine to see if there is a normal display. If the display is normal when the CF card is taken out, the CF card should be replaced. If the screen is still blank, contact your local dealer for assistance.

### Why won't my unit power up?

Make sure the connector is firmly connected to both the unit and the vehicle. In addition, make sure that the CF card is in the machine. If the unit still refuses to power up, contact your local dealer for assistance.

### Why does the LCD touch-screen respond so slowly?

It is most likely because the temperature in your location is close to the lower limit of the operating temperature range of the unit (0°-50°C). If this is the case, warm up the unit for 10-20 minutes before operating.

### Why can't I see the information on the screen clearly when the ambient light is not good?

Locate the light bulb icon on the lower right corner of the touch screen. Click it to turn the backlight on/off.

### Why can't I see characters on the backlit screen?

Check to see if the power is firmly connected. If so, turn off the machine, unplug the power connector and re-plug it back in. Turn on the machine after it has been connected to a power source for at least 2 seconds.

### The screen is too white, I cannot see the display. How do I adjust the contrast?

In the Control Panel interface, click the 'Contrast' icon to open the Contrast Interface. Click the position you want, and then click 'OK'.

Why does the screen either not respond, or respond incorrectly when I click it with the stylus (included pointing device). How do I realign the screen to correct the situation?

It is necessary to realign or recalibrate the screen. Follow these steps to initialize the calibration:

1. After switching on the machine, follow the tips to press the hot key. The calibration interface will be opened.
2. Click the cross cursor on the screen accurately (precisely in the center of the cross), and wait until it changes. The cross-cursor will then move to each of the four corners.
3. Repeat the process of clicking in the center of each cross-cursor until the process finishes. The screen will then return to the main interface.

## **Entering Information**

### **Why can't I input data using the Soft Keyboard (on-screen keyboard)?**

Either the position where the cursor lies cannot be edited, or you haven't activated the cursor on the input position. Use the stylus to select the field you wish to edit. When the cursor blinks, you can input the data.

### **Why is the screen inactive after the cross-cursor appears on the screen? How do I adjust the screen?**

The system is calibrating the touch screen. The machine will work after this calibration is completed. Refer to the section "Calibrate Touch Screen" in your User's Manual.

### **Why can't I click any of the buttons on the screen? I'm pressing the 'Start' button, but nothing is happening.**

You need to adjust the touch screen. When the machine powers up, press the 'Hot Key' located just above the 'Power button'. You will see a cross-cursor appear on the screen. (You may need to press the 'Hot button' twice on some machines) Click the center of the cross-cursor with your stylus or pointing device. The cross-cursor will then move to each of the four corners of the screen, continue clicking the center of each as they appear. This completes the adjustment or calibration of the screen. You should now be able to click the available buttons.

## **CF Card**

### **How does the CF Card fit into my machine?**

There is only one way for the card to fit. If you feel yourself forcing it, turn it over and try putting it in on the other side. The end with the holes always faces down.

### **Why doesn't my unit recognize my updated CF Card?**

There are two possible causes for this:

1. Some programs are lost or damaged. Download the latest "System Data" from the download page at [www.x431.com](http://www.x431.com), and update again.
2. CF Card is damaged. Contact your local dealer for replacement.

### **Why doesn't my unit recognize my new (replacement) CF card?**

There are two possible causes for this:

1. The original CF card has not been fully copied. Format the card and perform the update again.
2. The CF card reader is not compatible with the CF card. Contact your local dealer for assistance.

### **Why is the unit telling me that no CF card is found when the machine is turned on?**

Check to make sure that your CF card is firmly inserted into the machine. If it is, it may be damaged. Try formatting it and reinserting. If this doesn't correct the problem, you may need a new CF card. Contact your local dealer for replacement.

:

## **I've connected my CF Card and reader to the computer, but it's not showing up in "My Computer." How can I correct this?**

One possible cause is that there may not be a driver for the CF card reader in the computer. The default driver is included with most Windows operating systems as well as Mac OS 9.x/OS X and Linux 2.4.x However, there is no such default driver included with Windows 98.

If you are using a Windows 98 system, you must install the driver from the included CD-Rom or from <http://x431usa.com/downloads.htm>. When it is installed correctly, a "removable disk" icon will appear in "My Computer."

Usually, it is listed after the built-in drives, such as the C:\ drive. The removable drive will be the new letter. For example, if you had a C, D, & E drive before installing the CF card reader, afterwards you will have an F drive. This would be the removable disk.

## **Registering**

### **Why can't I access [www.X431.com](http://www.X431.com) or [www.x431usa.com](http://www.x431usa.com)?**

Check your internet connection. Try connecting to [www.yahoo.com](http://www.yahoo.com) or [www.google.com](http://www.google.com). If you are able to connect to either of these websites your internet connection is fine. Wait a few minutes and try our website again.

If you are unable to view our websites or [www.yahoo.com](http://www.yahoo.com) or [www.google.com](http://www.google.com), and are receiving a message that says, "Page Can Not be Displayed" or similar messages, the problem resides within your internet connection. Contact your Internet Service Provider (ISP) for assistance.

### **How do I register the X-431 Scan Tool? What if I don't have Internet Access? What if I only have dial-up?**

In-depth instructions for registering your X431 Scan Tool are available for download at <http://x431usa.com/downloads.htm>

If you don't have Internet access, you will not be able to register the X431 scan tool nor will you be able to download updates. Consider asking a colleague if you can utilize their Internet connection for registering and future downloading.

If you have dial-up Internet access, you will be able to both register your X431 scan tool as well as download updates as necessary. Consider upgrading to broadband in order to enable faster downloads.

### **What is my Registration No.?**

Your Registration Number is a unique identifier which is shipped with your X431 scan tool. You'll find this number in the sealed envelope located with your User Manuals in the X431 Kit. This number is necessary for registration.

### **Where is my Smartbox number listed?**

Your smartbox number is listed on your CF card and on the shipping carton you received the unit in. It is also listed on the back of the smartbox (the bottom section of the scan tool).

### **What is my dealer code?**

Your local dealer will provide you with this code. This code is necessary for registration.

### **Can I make my Username and Password anything I want?**

Your Username can be anything you'd like as long as it's between 3-16 characters. There is no restrictions on your Password. Choose a username and password combination that's easy for you to remember, and hard for others to guess.

### **Will the password that X431 is sending me after I click 'submit' be the same as the password I created in the registration process?**

Yes. We are emailing it to you for reference purposes.

### **Can I update my X431 scan tool immediately after I register my unit?**

Yes. We encourage you to update to the latest software versions as soon as possible before beginning work on vehicles.

## **Updating**

### **What do I do if I forget my username and/or password?**

If you forget your password, use the 'Forgot my password' link located just below the login fields at [www.x431.com](http://www.x431.com). If you have forgotten your username, contact your local dealer for assistance.

### **Where do I go for updates?**

<http://www.x431.com>. Once you login, you are brought to your "Download Center" page. Updates are downloaded from here. A comprehensive guide to Updating your tool is located at <http://x431usa.com/downloads.htm>.

### **What car lines/coverage does the X431 cover?**

The most up-to-date list of vehicles is at the "Download Center" accessible when you login to your account at [www.x431.com](http://www.x431.com). Additionally, you can access [http://www.x431.com/diag/x431List\\_en.htm](http://www.x431.com/diag/x431List_en.htm) for more information. Check back often as this list is updated frequently.

### **Why won't my computer download the updates?**

Your Internet browser may have a pop-up blocker enabled. You may have seen a gold bar appear at the top of your browser window entitled "Information Bar." This signifies a pop-up blocker is active.

To override the pop-up blocker settings, you must press and hold the 'Ctrl' key on your keyboard while clicking the link for the download. Keep the 'Ctrl' key depressed until you see the "Save As" dialog box appear for the download. You may need to do this for each download.

Another possible reason for not being able to download the updates is an expired subscription. Contact your local dealer for current subscription rates and/or to purchase.

### **What is the X431 Update software, and where/how do I download it? Should I 'Save' it or 'Open' it after clicking the download link?**

The X431 Update software is the program that transfers your newly downloaded software updates from your hard drive on the computer, to the CF card for use with your scan tool.

This software utility is downloaded from the “Download Center” accessible after logging into [www.X431.com](http://www.X431.com). When the ‘Save As’ dialog box opens, select ‘Open’ and follow the on-screen instructions to install. After successful installation, you will notice a new icon on your desktop called X431 Update.

Comprehensive, in-depth instructions detailing this and the entire update process are available for download in the ‘Getting Started Guide’ located at <http://x431usa.com/downloads.htm>.

### **Do I need to use the X431 Software update utility?**

Yes. If you attempt to simply copy the software onto the CF card, you will render the card unusable, and will have to format it. The X431 Software utility has integrated copy-protection which “authenticates” your updates and puts them in the proper place on the CF card for use with the scan tool.

Comprehensive instructions detailing this and the entire update process are available for download in the ‘Getting Started Guide’ located at <http://x431usa.com/downloads.htm>.

### **There are many ‘system’ downloads on the download page. Which do I need to download?**

Most users only need to download *X431 Update Tools*, *X431 Display Program*, and *X431 System Data*. If you have PC-Link hardware, you may also need to download *X431 PC-Link Display*.

Comprehensive instructions detailing this and the entire update process are available for download in the ‘Getting Started Guide’ located at <http://x431usa.com/downloads.htm>.

### **Can I download more than one update at a time?**

You may download as many files at a time as you wish, however most Internet browsers only allow for a maximum of two downloads at a time.

### **What folder do I save the updates to as I download them?**

The very first update you should download is the *X431 Update Tools* update. You must select ‘Open’ when the ‘Save As’ dialog box appears after clicking the download link. You will then follow the on-screen instruction to install this program. This is the X431 Update software which is the “main” update you will download.

All subsequent downloads should be saved when the ‘Save As’ dialog box opens after clicking the download link. The first time you select ‘save’, it will ask you where to save it. You must create a new folder in your C:\ drive called X431 Downloads. You will be saving all your updates into this folder.

Comprehensive, in-depth instructions detailing this and the entire update process are available for download in the ‘Getting Started Guide’ located at <http://x431usa.com/downloads.htm>.

### **How do I create a new folder called ‘X431 Downloads’ in my C:\ drive?**

When the “Save As” dialog box opens, choose ‘My Computer’ from the selection bar on the far left of the dialog box. Next choose the C:\ drive or your local drive from the list by double-clicking it. When the window opens, **right**-click on any blank area in the window and select **new** and then select **folder**. Name this folder X431 Downloads and click ‘Open’. Save all future updates into this folder.

Comprehensive, in-depth instructions detailing this and the entire update process are available for download in the 'Getting Started Guide' located at <http://x431usa.com/downloads.htm>.

### **How do I select a 'source' & 'target' folder in the X431 Update software?**

You will notice a small icon of binoculars next to both the 'source' folder and 'target' folder. Clicking this icon allows you to select the appropriate folder where your updates have been downloaded to. If you have followed the directions to create a folder in your C:\ drive called 'X431 Downloads', your updates are downloaded to this folder. This should be selected as your 'source' folder.

The 'target' folder should be set as the CF card or removable disk drive, located in 'My Computer.' Do not select a subfolder of the CF card. The 'target' folder should only be set as the "letter" of the drive. For example, if your removable disk drive has been labeled as the F:\ drive, your 'target' folder should simply be F:\.

### **When updating with X431 Software update, should I use the 'Select All' checkbox to download all of the updates from my computer to the CF card?**

In most cases, you should use the 'Select All' checkbox if you want to download every update in your X431 downloads folder, or every update you've downloaded. If you are only interested in transferring a few updates from your computer to the CF card, use the individual checkboxes next to the updates to select them.

In both cases, to complete the update process, you would click the 'update' icon on the other side of the screen once you've selected the updates that you'd like to transfer.

### **How can I see all the available vehicle updates at one time?**

At the bottom of the "Download Center" page, you will notice a link called 'Download Shortcut'. Clicking this link will open a window showing every available download. You may then begin the download process from there.

### **Why are some of the updates I downloaded not listed in the X431 Update software window with all my other downloads?**

There are two possible reasons for this:

1. When saving the downloads, you may have not saved them in the same folder, X431 Downloads (folder you created for downloads).
2. You may need to scroll to the right to see the remaining downloads. Note the scroll bar at the bottom of the window showing the individual downloads. Place your mouse on that scroll bar and drag to the right. You will then see the remaining downloads.

### **Why can't I download updates after logging in?**

Your Internet browser may have a pop-up blocker enabled. You may have seen a gold bar appear at the top of your browser window entitled "Information Bar." This signifies a pop-up blocker is active.

To override the pop-up blocker settings, you must press and hold the 'Ctrl' key on your keyboard while clicking the link for the download. Keep the 'Ctrl' key depressed until you see the "Save As" dialog box appear for the download. You may need to do this for each download.

Another possible reason for not being able to download the updates is an expired subscription. Contact your local dealer for current subscription rates and/or to purchase.

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### **When I try to download updates, the screen flashes and a gold “Information Bar” appears at the top of my browser window. What’s going on?**

Your Internet browser has a pop-up blocker enabled. You may have seen a gold bar appear at the top of your browser window entitled “Information Bar.” This signifies a pop-up blocker is active.

To override the pop-up blocker settings, you must press and hold the ‘Ctrl’ key on your keyboard while clicking the link for the download. Keep the ‘Ctrl’ key depressed until you see the “Save As” dialog box appear for the download. You may need to do this for each download.

### **Why am I getting an error when using the X431 Update software? Should I format the CF card?**

There are various types of errors that can occur while transferring updates from your hard drive to your CF card. Decompression errors are common, and they occur because of a corrupt file system in the card, or the card may be full.

Reformatting the CF card will correct these errors. The process for a CF card reformat is as follows:

1. Insert your card reader into an available USB port and insert the CF card into the reader
2. Open ‘My Computer’ and **right-click** on the removable disk (CF card)
3. Select Format from the menu
4. Select “Quick Format” and let it run
5. The CF card is now ready for use with the X431 Update software.

If this doesn’t correct the situation, you may need a new CF card, Contact your local dealer for assistance.

### **Why do I get the message “Please contact your local dealer” after downloading the diagnostic program from the CF card to the X431?**

The X431 has authentication built-in and will not allow software to run if smartbox numbers on the software and the hardware don’t match. There are a few reasons why you may receive this message:

1. When logging into [www.X431.com](http://www.X431.com) to download software updates, you may have selected the wrong smartbox number from the pull-down list.
2. You may have more than one X431 scan tool, and you may have put the wrong CF card into the wrong unit.

If you have corrected the situation and still receive this message, contact your local dealer for assistance.

## **Vehicle Coverage**

**What kind of coverage does the X431 scan tool have in regards to vehicle lines?**

The tool provides coverage for the most popular German vehicles and the most popular Asian vehicles: Mercedes, BMW, VW/Audi, Toyota, Honda, Nissan, Mitsubishi.

Launch X431 also provides coverage for the following manufacturers: Chrysler, Daewoo, Fiat, Ford (USA), GM, Hyundai, Kia, Land Rover, Lexus, Mazda, Peugeot, Porsche, Renault, Subaru, and Volvo.

#### **How can I tell if the tool covers the vehicles I work with?**

The most up-to-date list of vehicles is at the “Download Center” accessible when you login to your account at [www.x431.com](http://www.x431.com). Additionally, you can access [http://www.x431.com/diag/x431List\\_en.htm](http://www.x431.com/diag/x431List_en.htm) for more information. Check back often as this list is updated frequently.

### **Connectors/Cables**

#### **Does the X431 Scan Tool come with all the connectors/cables I need to begin working immediately?**

Yes. The X431 scan tool ships with all necessary accessories.

#### **What happens if I break or lose a connector or a cable? Is this covered under warranty?**

If the breakage occurred due to a manufacturer’s defect within one year, it is covered by our warranty.

#### **How do I know which connector/cable works for which vehicle?**

Each connector has the vehicle’s manufacturer printed on it’s housing.

#### **Where do I plug these connectors in on the vehicle? How do I find out?**

Popular shop software such as Alldata® includes sections on scan tool connections and the locations in each vehicle.

### **Printer**

#### **Why is my printer only printing unreadable symbols?**

Check if the printer module is well-connected with the main unit. Unplug the printer module by grasping it firmly and pulling it apart from the main unit, and then re-connecting it.

This should correct the problem. If you are still experiencing unreadable printing, contact your local distributor for assistance.

#### **Does the X431 Kit include extra printer paper?**

Yes. It includes one extra roll.

#### **What type of paper does the printer use?**

The printer uses thermal, calculator-sized paper.

#### **Can I purchase this paper in my local office supply store?**

If you can find the correct size thermal paper (30 x 57mm, 7mm bore diameter) by all means, purchase it yourself locally.

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### **How do I replace the printer paper?**

The below steps are also outlined with pictures in the X431's User Manual, pages 7-8.

1. Open the paper lid on the back of the printer.
2. Take out the spindle and mount the paper scroll onto the spindle.
3. Put the paper spindle into the printer making sure to feed it in the proper direction.
4. Open the side plate, pull up the pressing rod and lead the paper into the slot. Turn the feed knob clockwise until the paper comes out of the outlet at the top.
5. Push down the pressing rod, replace the side plate, attach the paper lid and reconnect the printer module to the main unit.

### **What are the functions of the two buttons on the printer module?**

1. SEL key. When the LED next to this button is lit, the printer is selected and available to print.
2. FL key: Paper-feed button

### **Can I print anything at any time?**

You can print whatever is on the screen when the 'Print' button is selectable on the touch screen. If the 'Print' button is grayed out or not showing, you cannot print the screen at that time.

### **Why doesn't my printer work? When I select print, it doesn't do anything.**

There are a few reasons why this may happen:

1. The SEL key next to the printer may not be selected. This button enables the printer. When it is off, the printer will not print.
2. You may be out of paper. Check the paper and try again
3. The printer may not be connected to the main unit fully. Disconnect the printer module and re-connect.

If these solutions don't remedy the situation, contact your local dealer for assistance.

## **Troubleshooting**

### **My screen froze in the middle of a diagnosis, how can I reset the unit?**

Press and hold the power button until the unit powers itself off. Wait 30 seconds and press the power button again to restart the unit.

### **Why does my unit power off when it has been sitting for a while?**

The machine has a built-in energy saver function. Automatic shutdown will take place if the machine is not operated for a specified period of time. Refer to the "Power Management" section of the X431 User Manual to set the "power-off time" to "none" or to select a longer standby time.

### **Why is the time in the lower corner of the screen incorrect? How can I fix this?**

Refer to the "Clock" section in the X431 User Manual to set the correct time.

### **Why can't I access the diagnostic interface upon powering up the unit?**

There are a few reasons why this may happen:

1. The CF card is not inserted
2. The CF card is inserted incorrectly.
3. A CF card from another X431 unit may be inserted
4. The CF card may also be damaged. If you insert the CF card correctly and you still cannot access the diagnostic programs, contact your local dealer for assistance.

**Why won't the unit power on when I have it connected to a vehicle? Shouldn't the power button work?**

If the unit is not powering up once connected to a vehicle, check the connection between the vehicle and the X431. Some vehicle connections don't provide power.

Check the power pin of the vehicle diagnostic socket with a multimeter for power. The location of this power pin varies from one vehicle to another. Please refer to your repair information database to find the power pin. If there is no power supply from the diagnostic socket, use the cigarette lighter attachment for power\*\*.

**\*\*WARNING: DO NOT USE THE CIGARETTE LIGHT ATTACHMENT IF THE UNIT IS ALREADY POWERED UP. YOU CAN DAMAGE THE VEHICLE AS WELL AS THE UNIT!**

**Why does the system freeze when reading a data stream?**

It may be due to a loose connector. Turn off the machine, firmly connect the connector, and switch the machine back on again.

**Upon first glance, it looks as if my tool only has 9 vehicle lines. Are there more lines? How can I access them from the main screen with the manufacturer's logos?**

It looks as if you only have 9 lines because that's all that can fit on the screen at one time. Press the 'Page Down' button on the lower right of the touch screen. You can scroll through all available vehicle lines in this manner.

**The Mercedes-Benz 38-pin connector doesn't fit onto the port under the hood. The fender gets in the way. How do I fix this issue?**

The base of the 38-pin connector swivels to allow access to tight spaces. Grasp the top of the connector firmly, and twist the stem. This should give you sufficient access to the port.

## **Purchasing updates**

**Can I purchase a year's worth of updates at any time?**

Yes.

**I ordered an update, but the 'Download Center' won't allow me to download anything. It says "Sale of Unit has not been Recorded".**

If you get this message, contact your local dealer for assistance.

**Does X431USA offer a tutorial or video on Registering and Updating?**

Yes. Visit <http://x431usa.com/downloads.htm> to download this step-by-step video fully outlining every step of the registering and downloading process.

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## USA Warranty

This warranty is expressly limited to persons who purchase LAUNCH products for purposes of resale or use in the ordinary course of the buyer's business.

The LAUNCH electronic product is warranted against defects in materials and workmanship for one year (12 months) from date of delivery to the user.

This warranty does not cover any part that has been abused, altered, used for a purpose other than for which it was intended, or used in a manner inconsistent with instructions regarding use. The exclusive remedy for any automotive meter found to be defective is repair or replacement, and LAUNCH shall not be liable for any consequential or incidental damages.

Final determination of defects shall be made by LAUNCH in accordance with procedures established by LAUNCH. No agent, employee, or representative of LAUNCH has any authority to bind LAUNCH to any affirmation, representation, or warranty concerning LAUNCH automotive meters, except as stated herein.

## Disclaimer

The above warranty is in lieu of any other warranty, expressed or implied, including any warranty of merchantability or fitness for a particular purpose.

## Customer Service

If you have any questions on the operation of the unit, please contact us and have your smartbox number available for verification:

Tel: 1.877.GET.X431  
Fax: 631.357.3304  
Email: [contact@x431usa.com](mailto:contact@x431usa.com)

If your unit requires repair service, call X-431USA at 1-877-GET-X431 for an RMA number (please do not send any units without contacting us) and return it freight prepaid. If the unit is determined to be in warranty, it will be repaired or replaced at no charge via ground freight prepaid. If the unit is determined to be out of warranty, it will be repaired for a nominal service charge plus return freight on your behalf. Send the unit, freight pre-paid to:

X-431USA  
RMA#:[insert assigned RMA # here]  
116 Spring Road  
Huntington, NY 11743