

KONNWEI[®] KW850

User's Manual **OBD2/EOBD SCANNER**



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1. Safety Precautions and Warnings

To prevent personal injury or damage to vehicles and/or the scan tool, read this user's manual first carefully and observe the following safety Precautions at a minimum whenever working on a vehicle:

- Always perform automotive testing in a safe environment.
- Do not attempt to operate or observe the tool while driving a vehicle. Operating or observing the tool will cause driver distraction and could cause a fatal accident.
- Wear safety eye protection that meets ANSI standards.
- Keep clothing, hair, hands, tools, test equipment, etc. Away from all moving or hot engine parts.
- Operate the vehicle in a well-ventilated work area: Exhaust gases are poisonous.
- Put blocks in front of the drive wheels and never leave the vehicle Unattended while running tests.
- Use extreme caution when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.
- Put the transmission in P (for A/T) or N (for M/T) and make sure the parking brake is engaged.
- Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.
- Don't connect or disconnect any test equipment while the ignition is on or the engine is running.
- Keep the scan tool dry, clean, free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the scan tool when necessary.

2. General Information

2.1 About KONNWEI KW850

The KONNWEI KW850 OBD2 / EOBD Car Diagnostic Scanner supports all 10 OBD II test modes on all OBD II compliant vehicles for a complete diagnosis. Featuring the unique patented One-Click I/M Readiness Key, TFT color display and built-in speaker, Real Time Battery Voltage Monitoring, the KONNWEI KW850 is truly the ultimate in power and affordability, allowing users to do their jobs faster.

In addition, thousands of troubleshooter code tips (by ? button) help technicians and home DIY users to accurately diagnose even the toughest problems. With the newest friendly diagnostic interface, KW850 will be the most useful car diagnostic tool for every family and professional mechanic technician!

2.2 Specifications

- 1) Display: TFT color display (320 x 240 dpi)
- 2) Operating Temperature: 0 to 60°C (32 to 140 F°)
- 3) Storage Temperature: -20 to 70°C (-4 to 158 F°)
- 4) External Power: 8.0 to 18.0V power provided via vehicle battery
- 5) Dimensions: 199 * 104.5 * 37.5 mm
- 6) Weight: 0.28kg (without wire) / 0.484kg (with wire)




2.3 Package Included

- 1) User' s Manual - Instructions on tool operations
- 2) OBD2 cable - Provides power to tool and communicates between tool and vehicle
- 3) USB cable - Used to upgrade the scan tool, and to print retrieved data
- 4) Protective Nylon case - A nylon case to store the tool when not in use

3. Using the Scan Tool

3.1 Tool Description

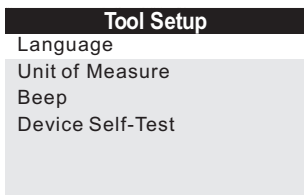


- 1) **OBD II CONNECTOR** - Connects the scan tool to the vehicle's Data Link Connector (DLC)
- 2) **LCD DISPLAY** - Displays menus and test results
- 3)  **GREEN LED** - Indicates that engine systems are running
- 4)  **YELLOW LED**- Indicates there is a possible problem. A “pending” DTC is present and/or some of the vehicle's emission monitors have not run their diagnostic testing.
- 5)  **RED LED**- Indicates there is a problem in one or more of the Vehicle's systems. The red LED is also used to show that DTCs are present. DTCs are shown on the Scan Tool's emission monitors have not run their diagnostic testing.

- 6) **I/M One-Click I/M Readiness Key** - Quick-checks State Emissions readiness and drive cycle verification.
- 7) **ESC BUTTON** - Returns to previous menu
- 8) **LEFT SCROLL BUTTON** - Move cursor left for selection, or turn page up when more than one page is displayed.
- 9) **HELP BUTTON** - Provides help information and Code Breaking Function.
- 10) **UP SCROLL BUTTON** - Move cursor up for selection
- 11) **OK BUTTON**- Confirms a selection (or action) from a menu list.
- 12) **RIGHT SCROLL BUTTON** - Move cursor right for selection, or turn page down when more than one page is displayed.
- 13) **DOWN SCROLL BUTTON** -- Move cursor down for selection.
- 14) **USB CONNECTOR** - Connects the scan tool to the PC for printing and upgrading.

3.2 Tool Language Setup

Use the **UP/DOWN** and **LEFT/RIGHT** scroll button to Select [**Tool Setup**] in the **Main Menu** and press **OK**, The screen will display the interface as shown below:



The scan tool allows you to make the following adjustments, settings:


1) Select language: Selects desired language. Press **UP/DOWN** key to Choose [**Language**] and press **OK** button, the screen will display the interface as shown below:



You can press **UP/DOWN** key to select any language and press **OK** button to confirm. The system will convert to the chosen language interface at once.

3.3 Vehicles Coverage

The scan tool is specially designed to work with all OBD II compliant vehicle's including control area network (CAN), it is required by EPA that all 1996 and newer vehicles (Cars and light trucks) sold in the united states must be OBD II compliant. For European car makes, after 2001 (gasoline engine) and 2003(diesel) should be correspond with OBD II; For Asian car makes it should be after 2005 at least. A small number of 1994 and 1995 model year gasoline vehicles are OBD compliant. To verify if a 1994 or 1995 vehicle is OBD II compliant, check the vehicle emissions control information (VECI) Label, which is located under the hood of engine or by the radiator of most vehicles. If the vehicle is OBD II compliant, the label will designate "OBD II Certified". Additionally, Government regulations mandate that all OBD II compliant vehicles must have a "common" 16 pins Data Link Connector (DLC)

VEHICLE EMISSION CONTROL INFORMATION		
A <small>motor co. inc.</small>	ENGINE FAMILY DISPLACEMENT	EFN2.8YBT2BA 2.8L
	OBD II CERTIFIED	
THIS VEHICLE CONFORMS TO U.S. EPA AND STATE OF CALIFORNIA REGULATIONS APPLICABLE TO 1997 MODEL YEAR NEW TLEV PASSENGER CARS.		
REFER TO SERVICE MANUAL FOR ADDITIONAL INFORMATION TUNE-UP CONDITIONS: NORMAL OPERATING ENGINE TEMPERATURE. ACCESSORIES OFF, COOLING FAN OFF, TRANSMISSION IN NEUTRAL		
EXHAUST EMISSIONS STANDARDS CERTIFICATION IN-USE	STANDARD CATEGORY TLEV TLEV INTERMEDIATE	
SPARK PLUG TYPE NGK BPRE-11 GAP-1.1mm	CATALYST	EFN2.8YBT2BA 



For the vehicle to be OBD II compliant it must have a 16-pin DLC (Data Link Connector) under the dash and the vehicle emission control information label must state that the vehicle is OBD II compliant.

4. Tool Operation

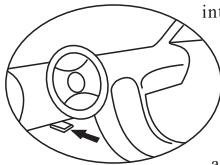
- 1) Turn the ignition off,
- 2) Locate the vehicle's 16-pin Data Link Connector(DLC)*
- 3) Plug the OBD II cable into the vehicle's DLC'
- 4) Turn on the ignition and engine fully.
- 5) After finishing, press **OK** button enter Main Menu as following



CAUTION: Don't disconnect any test equipment with ignition ON or engine Running.

Location of the Data Link Connector (DLC)

The DLC (Data Link Connector or Diagnostic Link Connector) is the Standardized 16-cavity connector where diagnostic scan tools



interface with the vehicle's side for most vehicles. If Data Link Connector is not located under dashboard, a label should be there telling location. For Some Asian and European vehicles, the DLC is located behind the ashtray and the ashtray must be removed to access the

connector. If the DLC can not be found, refer to the vehicle's service manual for the location or contact us online.

4.1 Diagnostic

Use the **LEFT/RIGHT** button or **UP/DOWN** button to select [Diagnostic] in Main Menu and press **OK** button, the screen will display Monitor Status interface as following figure4.3:

Monitor Status	
MIL Status	OFF
DTCs in this ECU	0
Readiness Completed	
Readiness Not Completed	0
Readiness Not Supported	9
DataStream Supported	21
Ignition	Spark
Protocol Type	VPW

Figure 4.3

Press **ESC** button to back to the Main Menu of Diagnostic, the screen will display as following Figure 4.4:

Diagnostic Menu	
Read Codes	?
Erase Codes	?
I/M Readiness	?
Data Stream	?
Freeze Frame	?
O2 Sensor Test	?
On-Board Monitoring	?
Evap System(mode \$ 8)	?

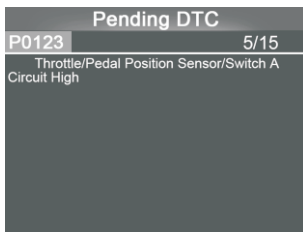
Figure 4.4

4.1.1 Read Codes

Select [**Read Codes**] and press **OK** button in Diagnostic Menu, if there are some codes, the screen will display the codes as shown below:

Read Codes
Current DTCs(\$ 03)
Pending DTCs(\$ 07)
Permanent DTCs(\$ 0A)
Record DTC

- According to the above Figure to select different item by pressing **UP** or **DOWN** and press **OK** to confirm. Then you can use **DOWN** key to view the next code. After viewing all the codes, you can press **ESC** to return to the Diagnostic Menu.



1) **Current DTCs:**

Current DTCs is meaning the existing codes currently in your car computer's engine systems, normally it can be reset by choosing function of "EASE CODE"

2) **Pending DTCs:**

Pending DTCs are also referred to as "maturing codes" or "continuous monitor codes". They indicate problems that the control module has detected during the current or last driving cycle but are not considered serious yet. Pending codes will not turn on the malfunction indicator light (MIL). If the fault does not occur within a certain number of warm-up cycles, the code clear from memory.

3) **Permanent DTCs:**

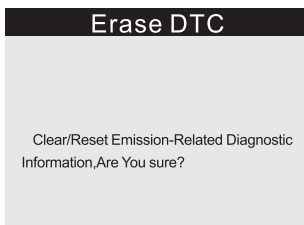
Permanent DTCs are codes that are "confirmed" and are retained in the non-volatile memory of the computer until the appropriate monitor for Each codes has determined that the malfunction is no longer present and is not commanding the MIL on. Permanent codes shall be stored in non-volatile memory and may not be erased by any diagnostic services or by disconnecting power to ECU.

4) **Record DTC:**

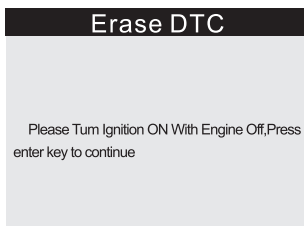
Record DTC allows you to record the found codes in previous options, and write them into the scanner's integrated memory chip set. Every recorded DTCs can be playback and printed with KONNWEI's updating tool. The device can be turned on from USB port, and playback data even when you are off vehicles.

4.1.2 Erase Codes

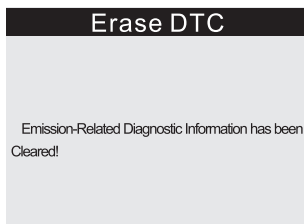
Select [**Erase Codes**], the screen will display the interface as shown below:



Press **OK** button to erase DTCs, and the screen will display the interface as shown below:



According to the above figure to press **OK** button and the screen will display the interface as shown on the next page:



Notes:

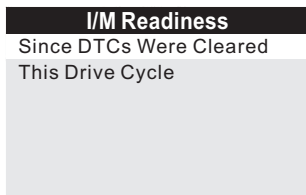
- Before performing this function, make sure to retrieve and record the trouble codes
- After clearing, you should retrieve trouble codes once more or turn ignition on and retrieve codes again. If there are still some trouble codes in the system, please troubleshoot the code using a factory diagnosis guide, you may need to replace some mechanical parts and then clear the code and recheck again.

4.1.3 I/M Readiness

I/M refers to Inspection and Maintenance that is legislated by the Government to meet federal clean-air standards. I/M Readiness indicates whether or not the various emissions-related systems on the vehicle are operating properly and are ready for inspection and Maintenance testing.

The purpose of the I/M Readiness Monitor Status is to indicate which of the vehicle's monitors have run and completed their diagnosis and testing, and which ones have not yet run and completed testing and diagnosis of their designated sections of the vehicle's emissions system.

The I/M Readiness Monitor Status function also can be used (after repair of a fault has been performed) to confirm that the repair has been performed correctly, and/or to check for Monitor Run Status. Select [**I/M Readiness**] and press **OK** button, the screen will display the interface as shown below:



You can use **UP/DOWN** button to select and press **OK** button, the screen will display the interface as shown below:

I/M Readiness			
MIL		IGM	Spark
DTC	0	Pd DTC	15
MIS	✓	EVAP	✗
FUE	✓	AIR	✗
CCM	✓	O2S	✗
CAT	✗	HRT	✗
HCAAT	⊘	EGR	✗

- You can use **LEFT/RIGHT** button to view other data of vehicle.
- Press **ESC** to return to Diagnostic Menu.
- N/A means not available on this vehicle, **INC** means incomplete or not ready, **OK** means Completed or Monitor OK.

4.1.4 Data Stream

Press **UP** or **DOWN** button to select **Data Stream** in **Main Menu** interface and then press **OK** button to confirm, the screen will display the interface as shown below:

Data stream
View All Items
Select Items
View Graphic Items
Record All
Record Select

Select [**View All Items**] and press OK button, the screen will display the interface as shown below:

Datastream		1/1
Fuel system 1 status	CL	
Fuel system 2 status	CL	
Calculated LOAD Value	9%	
Engine Coolant Temperature	158°F	
Short Term Fuel Trim - Bank 1	-24.2%	

You can use **LEFT/RIGHT** button to view other data stream. Press **ESC** to return to Diagnostic Menu.

Select [**Select Items**] and press **OK** button, the screen will display the interface as shown below:

Datastream		1/17
[]	Fuel system1 status	
[]	Fuel system2 status	
[]	Calculated LOAD Value	
[]	Engine Coolant Temperature	
[]	Short Term Fuel Trim - Bank 1	

You can use **UP/DOWN** button to select data stream items, and press **LEFT/RIGHT** button to turn page, the screen will display the interface as shown on the next page:

Datastream		1/17
[√]	Fuel system1 status	
[√]	Fuel system2 status	
[√]	Calculated LOAD Value	
[√]	Engine Coolant Temperature	
[√]	Short Term Fuel Trim - Bank 1	

After selected items and press **ESC**, the screen will display the interface as shown below:

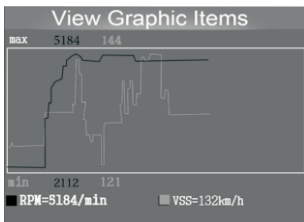
Datastream		1/1
Fuel system 1 status	CL	
Fuel system 2 status	CL	
Calculated LOAD Value	9%	
Engine Coolant Temperature	158°F	
Short Term Fuel Trim - Bank 1	-24.2%	

Press **ESC** to return to Diagnostic Menu.

Select [**View Graphic Items**] in Data stream menu and press **OK**, the screen will display the interface as shown below:

Datastream		1/15
[]	Calculated LOAD Value	
[]	Engine Coolant Temperature	
[]	Short Term Fuel Trim - Bank 1	
[]	Long Term Fuel Trim - Bank 1	
[]	Engine RPM	

You can use **UP/DOWN** button to select single data stream items to view of live data with a graph, and press OK button, the screen will display the interface as shown below:



Press **ESC** to return to Diagnostic Menu.

You can view all data stream items or select a certain item of live data with a graph.

4.1.5 Freeze Frame

When an emission-related fault occurs, certain vehicle conditions are recorded by the on-board computer. This information is referred to as freeze frame data. Freeze Data is a snapshot of the operating conditions at the time of an emission-related fault.

Note: if DTCs were erased, Freeze Data may not be stored in vehicle memory depending on vehicle.

Select [Freeze Frame] in main menu interface, the screen will display the interface as shown below:

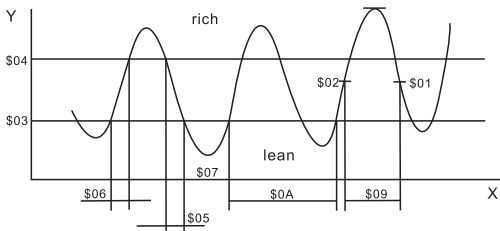
Freeze Frame	
DTC that caused required freeze frame data storage	P0113
Fuel system 1 status	OL
Fuel system 2 status	---
Calculated LOAD Value	0.0%
Engine Coolant Temperature	96°C

You can use **LEFT/RIGHT** button to view the data. Press **ESC** to return to Diagnostic Menu.

4.1.6 O2 sensor Test

The results of O2 sensor test are not live values but instead the results of the ECU's last O2 sensor test. For live O2 sensor readings, refer to any of the live sensor screens such as Graph Screen.

Not all test values are applicable to all vehicles. Therefore, the list generated will vary depending on vehicle. In addition, not all vehicles support the Oxygen Sensors screen. For results of latest mandated on-board oxygen sensor monitoring test, see Figure below:



Select [**O2 Sensor Test**] in Diagnostic Menu and press OK and the screen will display as shown below:

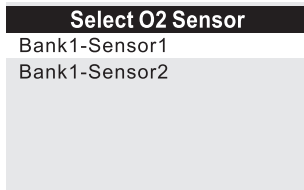
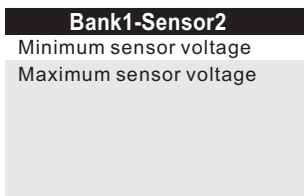


Figure 4.22

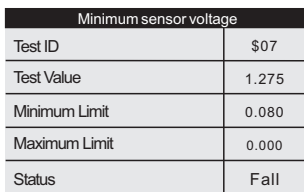
Press **OK** button, the screen will display as shown below:



Bank1-Sensor2	
Minimum sensor voltage	
Maximum sensor voltage	

Figure 4.23

You can use **UP/DOWN** button to select an item and press **OK**, the screen will display as shown below:



Minimum sensor voltage	
Test ID	\$07
Test Value	1.275
Minimum Limit	0.080
Maximum Limit	0.000
Status	Fall

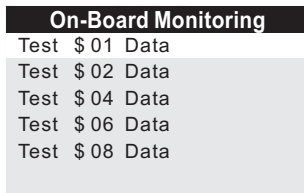
Figure 4.24

Press **ESC** to return to Diagnostic Menu.

4.1.7 On-board monitoring

This function can be utilized to read the results of on-board diagnostic monitoring tests for specific components/systems.

Select [**On-board Monitoring**] in main menu and press **OK** and the screen will display as show below:



On-Board Monitoring	
Test \$01 Data	
Test \$02 Data	
Test \$04 Data	
Test \$06 Data	
Test \$08 Data	

You can use **UP/DOWN** button to select an item and press **ok**, the screen will display as shown below:

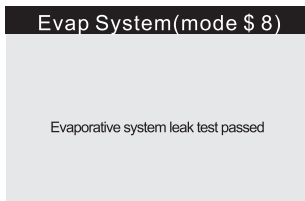
Test \$01 Data	
Component ID	\$07
Limit Type	Max
Test Value	0
Minimum Limit	---
Maximum Limit	128
Status	Pass

Press **ESC** to return to Diagnostic Menu.

4.1.8 Evap System

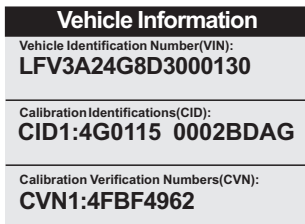
The EVAP test function lets you initiate a leak test for the Vehicle's EVAP system. The scan tool does not perform the leak test, but signals to vehicle's on-board computer to initiate the test. Before using the system test function, refer to the vehicle's service repair manual to determine the procedures necessary to stop the test.

Select [**Evap System**] and press **OK**, the screen will display their native information about EVAP system. Some vehicle manufacturers do not allow external devices to vehicle system. If the car supports this function, it will display as below:



4.1.9 Vehicle Information

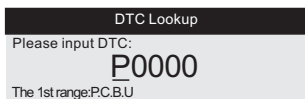
Select [**Vehicle Information**] and press **OK**, the screen will display the information, such as VIN (Vehicle identification Number), CID (Calibration ID) and CVN (Calibration verification number), as shown below:



Press **ESC** to return to Diagnostic Menu.

4.2 Code Look up

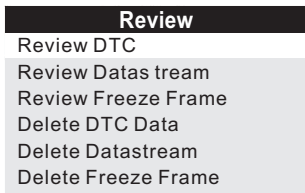
Select [**Code Look up**] in the **Main Menu** and press **OK** and the screen will display the interface as shown below:



You can use **UP/DOWN** key to change the first letter. It can be switched among “P”“B”, “C” and “U” . Press **OK** moves the cursor to next. And then press **LEFT/RIGHT** key to input number. After you input the code number, press **OK** to view the definition of the code.

4.3 Review

This function is used to review the recorded Data Streams, DTC, and Freeze. Select [**Review**] in the Main Menu and press **OK** and the screen will display the interface as shown below:



1) Review DTC

Select [Review DTC] in the Review and press **OK** and screen will display the interface. You can use UP/DOWN key and press **OK** button to view detailed information.

2) Review Data stream

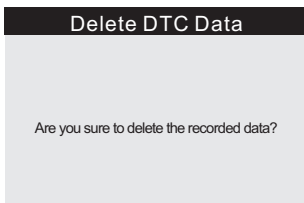
The operation is similar to the “Review DTC” function.

3) Review Freeze Frame

The operation is similar to the “Review DTC” function.

4) Delete DTC

Select [Delete DTC] in the Review and press **OK** and the screen will display the interface as showing below:



Press **OK** to confirm, and press **ESC** to return to Main Menu.

5) Delete Data stream

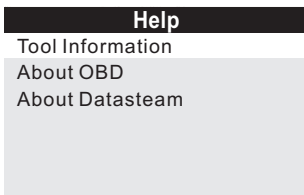
The operation is similar to the “Delete DTC” function.

6) Delete Freeze Frame

The operation is similar to the “Delete DTC” function.

4.4 Help

This Function is used to view tool information, About OBD, and About Data stream.

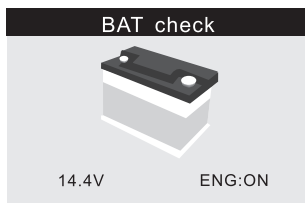


Tool Information includes: software version, hardware version, serial number, supported, time and date.

About OBD: Relevant introductions information about OBD.

About Data stream: Relevant introductions information about Data stream.

4.5 BAT Check



Kw850 Supports Real-time Battery Monitoring, Displays the Voltage. <10.8V (before Starting)--Too Low, change battery, otherwise, might not be able to start.

10.8V-11.8V (before starting)--Slightly Low, difficult to start, please turn off other electronics and start vehicle to charge.

11.8V-12.8V (before starting)--Normal.

12.8V-13.2V (after starting)--Too Low, might not be able to charge the battery, please check other electrical load.

13.2V-14.8V (after starting)--Normal.

>14.8V (after starting)--Too High, might damage the battery, please check the engine stabilizer.

4.6 LED Interpretation

1) **GREEN LED** -- Indicates that engine systems are "OK" and operating normally (the number of Monitors supported by the vehicle which have run and performed their self-diagnostic testing is in the allowed limit. MEL is off). There are no stored and pending DTCs. The vehicle is ready for an Emissions Test, and there is a good possibility that it can be certified.

2) **YELLOW LED** ~ With MIL off, there may be three possible conditions to cause the yellow LED to light.

A. If a "stored" Diagnostic Trouble Code is causing the Yellow LED to light, it is still possible that the vehicle will be allowed to be tested for emissions and certified.

B. If a “Pending” Diagnostic Trouble Code is causing the Yellow LED to light, it is still possible that the vehicle will be allowed to be tested for emissions and certified.

C. If the illumination of the Yellow LED is being caused by monitors that have not completed their diagnostic testing, then the issue of the vehicle being ready for an Emissions Test depends on the emissions regulations and laws of your local area.

NOTE: From the code retrieval procedure, determine the status of each Monitor, take this information to an emissions professional to determine (based on your test results) if your vehicle is ready for an Emissions Test.

3) **RED LED** -- Indicates there is a problem with one or more of the vehicle's system. A vehicle displaying a red LED is definitely not ready for an Emissions Test. The red LED is also vehicle's instrument panel will light steady. The problem that is causing the red LED to light must be repaired before an Emissions Test can be performed. It is also suggested that the vehicle be inspected/repaired before driving the vehicle further.

A. Repair the vehicle yourself. If you are going to perform the repairs yourself, proceed by reading the vehicle service manual and following all its procedures and recommendations.

B. Take the vehicle to a professional to have it serviced. The problem(s) causing the red LED to light must be repaired before the vehicle is ready for is ready for an Emissions Test.

5. Printing Diagnostic Report

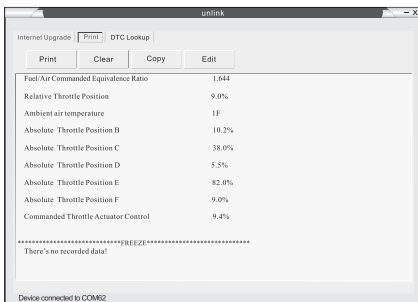
The Print Data function allows printing out diagnostic data recorded by the scan tool or customized test reports.

• **To print out retrieved data, you need the following tools:**

1. Scan tool
2. A Windows PC or laptop with USB ports. (Support only official version windows XP-10, 32/64 Bits OS)
3. A USB cable

Steps:

- 1) Download the applications from our website: WWW.KONNWEI.COM or our distributor's site.
- 2) Connect the scanner to computer with the USB cable supplied.
- 3) Run uplink.exe in your computer.



4) Use the **UP/DOWN** scroll button to select **Print Data** from **Main Menu** in the scan tool, and press the **OK** button. (Figure 5.2)

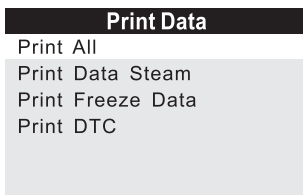


Figure5.2

5) Use the **UP/DOWN** scroll button to select the desired item to print from **Print Data menu**.

- To print all retrieved data, use the **UP/DOWN** scroll button to select **Print All Data** from **Print Data menu**.

6) Press the **OK** button to upload data to the computer.

7) In the uplink.exe Tool Kit, you could edit, delete, copy and print the data in the text box by selecting the by selecting the icons on the upper right of window.

NOTE: Data stored in a language different from current system settings of the scan tool will not be printable, please adjust language settings before printing. A reminder would pop up under such circumstances.

6.Scanner Update

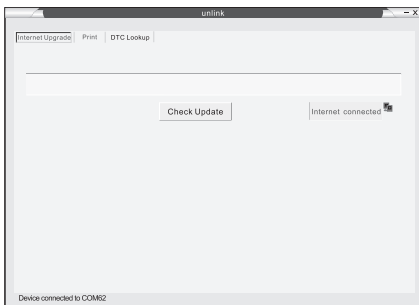
This function allows you to update the scan tool software and DTC library through a Windows computer

•To update your scan tool, you need the following items.

- 1.Scan tool
- 2.A PC or laptop with USB ports. (Support only official version windows XP-10, 32/64 Bits OS)
- 3.USB cable

Steps:

- 1) Download the program from official website: www.konnwei.com
- 2) Install the uplink.exe on your computer (Mac OS does not compatible)
- 3) Press and hold any button until the USB cable is connected with computer and Release it after the scan tool displays a message "Update Mode"
- 4) Return to the uplink software, click "Check update" button, will download the upgrade file from internet then update the scan tool automatically.
- 5) Wait for few minutes until update succeed.
- 6) During the update procedure, please do not disconnect the usb connection.
- 7) Restart the scan tool to finish the whole update.



NOTE: When you made a wrong choice and the scan tool is unable to work properly, you may need to update the programs. To hold LEFT scroll button and power on the scan tool, you will enter the update mode forcedly. Then follow the update procedure to refresh the program.

7. Service Procedures

If you have any questions, please contact your local store, distributor or visit our official website at www.konnwei.com to get more information.

If it becomes necessary to return the scan tool for repair, contact your local distributor for more information.

WWW.KONNWEI.COM