CGSULIT

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CGSULIT SC301

CAN OBDII & EOBD Code Reader

USER MANUAL

CONTENT

Safety Precautions and Warnings ⚠

1. Always perform automotive testing in a safe environment.

2. Wear safety eye protection that meets ANSI standards.

3. Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.

4. Operate the vehicle in a well-ventilated work area: Exhaust gases are poisonous.

5. Put blocks in front of the drive wheels and never leave the vehicle unattended while running tests.

6. 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.

7. Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.

8. Don't connect or disconnect any test equipment while the ignition is on or the engine is running.

9. Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.

10. Keep the code reader dry, clean, and free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the code reader, when necessary.

Welcome

Thank you for purchasing CGSULIT SC301 OBD2 scan tool. Please patiently read and understand this User Manual before operating this product.

About CGSULIT SC301

As specially designed for DIY users and small service workshops, CGSULIT SC301 works with OBDII (CAN) compliant vehicles for a complete 10 modes of OBDII diagnostics, with built-in DTC lookup library, LED for different DTC types, and print ability. Diagnosing and repairing is now easier than ever!

Package List

1. CGSULIT SC301　　　**2.** USB Cable　　　**3.** User Manual

Compatibility

CGSULIT SC301 is compatible with following protocols:
- J1859-41.6
- J1850-10.4
- KWP2000 (ISO 14230)
- ISO9141
- CAN (Control Area Network ISO 11898)

Applicable Functions

✓ Read Code / Erase Code

✓ Live Data / Freeze Frame Data

✓ I/M Readiness / O2 Sensor Test

✓ On-board Monitor Test / Component Test

✓ Vehicle Information / Modules Present

✓ Record/Playback/Print Data / DTC Guide

General Information of OBDII (On-Board Diagnostics II)

The OBDII system is designed to monitor emission control systems and key engine components by performing either continuous or periodic tests of specific components and vehicle conditions, which will offer three pieces of such valuable information:
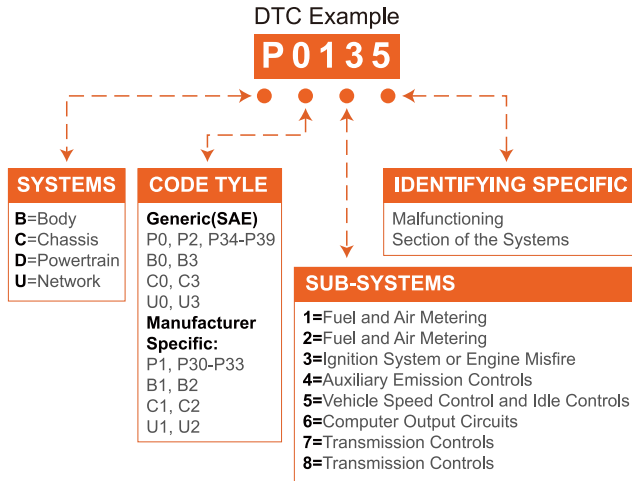
1) Whether the Malfunction Indicator Light (MIL) is commanded "on" or "off";

2) Which, if any Diagnostic Trouble Codes (DTCs) are stored;

3) Readiness Monitor status.

Code Reader Description

1

2

3

4

5

6
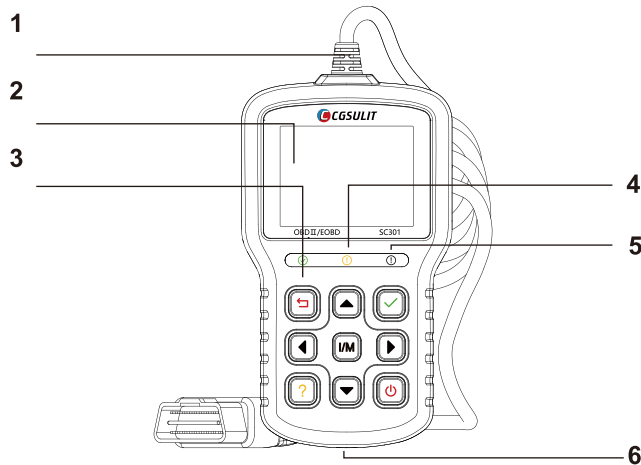
1	OBD-16 connector	To Connect to the vehicle's DLC (Data Link Connector).
2	LCD Display	Shows test results.
3	Green LED Display	Indicates the engine system is working normally (all monitors on the vehicles are active and performing their diagnostic testing), and no DTCs are found.
4	Yellow LED Display	Shows the tool finds a possible problem. Pending DTCs exist or/and some of the vehicle's emission monitors have not run their diagnostic testing.
5	Red LED Display	Indicates there are some problems in one or more of the vehicle's systems. In this case, the MIL lamp on the instrument panel is on.
6	USB Port	Connect the scanner to PC via USB cable for upgrade or printing.
7	▲	Move up for selection.
8	▼	Move down for selection.
9	◀	Move left for selection. Or skip to the previous page when more than one page is displayed.
10	▶	Move right for selection. Or skip to the next page when more than one page is displayed.
11	I/M	Just One Key to Check Emission-Related Systems.
12	⇆	Back to the previous page.
13	✓	To confirm the current operation.
14	⏻	Reboot the code reader.
15	?	Provides detailed descriptions/tips for diagnostics.

Diagnostic Trouble Codes (DTCs)

DTC Example

P 0 1 3 5

SYSTEMS	CODE TYLE		IDENTIFYING SPECIFIC
B=Body **C**=Chassis **D**=Powertrain **U**=Network	**Generic(SAE)** P0, P2, P34-P39 B0, B3 C0, C3 U0, U3 **Manufacturer** **Specific:** P1, P30-P33 B1, B2 C1, C2 U1, U2		Malfunctioning Section of the Systems

SUB-SYSTEMS

1=Fuel and Air Metering
2=Fuel and Air Metering
3=Ignition System or Engine Misfire
4=Auxiliary Emission Controls
5=Vehicle Speed Control and Idle Controls
6=Computer Output Circuits
7=Transmission Controls
8=Transmission Controls

Operation Introduction

Turn on the ignition of your car.

2. In the main menu, ENTER OBDII/EOBD, then SC301 starts scanning, wait for several seconds, choose 'Yes/No' with right arrow key, and enter the Diagnostic Menu.

Choose "Read Codes" - Choose each selection to check. Pending Codes mean the codes need to be confirmed after several driving cycles.

If the code with "?" symbol, please press "?" key to get DTC guide for possible car issues. If not, take photos of each code you have or write them down. Google them and find more references on Internet to help to locate your car issues.

Enter "Live Data", graphing selected live data will also help locate bad sensors.

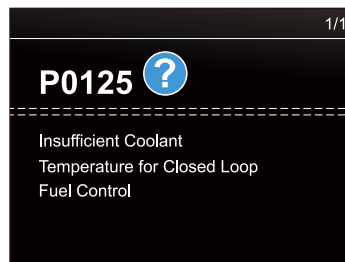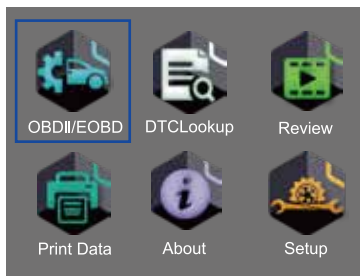Enter "View Freeze Frame", which is a snapshot of critical vehicle operating conditions automatically recorded by the on-board computer at the time DTC (Diagnostic Trouble Code) set. Check the data which you need to locate bad sensors.

Enter "I/M Readiness".

O2 Monitor Test, On-Board Monitor Test, Component Test, the availability of these tests may depend on the actual conditions of your vehicle.

Diagnostic Menu

After the tool is properly connected to the vehicle's DLC port, Select [OBDII/EOBD] in Main Menu and press [√]. The scanner will automatically check the vehicle's computer and display a diagnostic menu. Select [YES] and press [√], to enter the Diagnostic Menu.

OBDII/EOBD	DTCLookup	Review
Print Data	About	Setup

Read Code

This option identifies which section of the emission control system has malfunctioned.

Diagnostic Menu	1/11
Read Codes	
Erase Codes	
Live Data	
View Freeze Frame	
I/M Readiness	
O2 Monitor Test	
On-Board Monitor Test	

Read Codes	1/2
Stored Codes	
Pending Codes	
Permanent Codes	

1/1
P0125 ?
Insufficient Coolant Temperature for Closed Loop Fuel Control

Use the [Up/Down] button to select [Read Codes] and press [√].

Use the [Up/Down] button to select [Current Codes]/[Pending Codes]/[Permanent Codes] and press [√].

The DTC with its definition will be displayed on the screen. Press [Left/Right] to scroll back and forth through different screens of data.

Tips: The vehicle's code is defined by the manufacturer, please enter to select the manufacturer.

Erase Code

This option erases the codes from the vehicle, after retrieving codes from the vehicle and certain repairs have been carried out.

Diagnostic Menu 2/11	Erase Codes	Erase Codes
Read Codes		
Erase Codes	Erase previously codes!	
Live Data	Are you sure	Erase Done!
View Freeze Frame		
I/M Readiness		
O2 Monitor Test		
On-Board Monitor Test	Yes No	
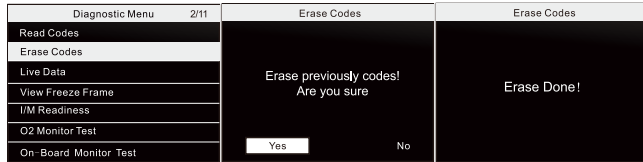
Use the [Up/Down] button to select [Erase Codes] and press [√].

Follow the on-screen instructions and answer questions about the vehicle being tested to complete the procedure.

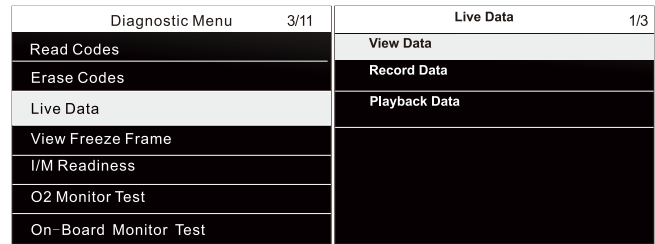Check the codes again, if any code remains, repeat the erase code   steps.

*Note: Clearing DTCs does not fix the problem(s) that caused the code(s) to be set. If proper repairs to correct the problem that caused the code(s) to be set are not made, the code(s) will appear again and the check engine light will illuminate as soon as the problem that cause the DTC to set manifests itself.

Live Data

Live Data menu lets you view, record and playback real-time data from the electronic control module.

Menu options include:
● View Data
● Record Data
● Playback Data

Diagnostic Menu 3/11	Live Data 1/3
Read Codes	View Data
Erase Codes	Record Data
Live Data	Playback Data
View Freeze Frame	
I/M Readiness	
O2 Monitor Test	
On-Board Monitor Test	

View Data

This option retrieves and displays live data and parameters from the vehicle's ECU, including sensor data, operation of switches, solenoids and relays.

View Data	1/3		Live Data	1
Complete Data Set			DTC_CNT	7
Custom Data Set			FUELSYS1	--
Unit of Measure			FUELSYS2	--
			LOAD_PCT(%)	0.0
			ECT(℃)	-12
			SHRTFT1(1%)	0.0
			LINGFT1(%)	2.3

Use the [Up/Down] button to select [Live Data] and press [√].

Select [View Data] and press [√].

Select an option and press [√]. The result will be displayed on screen.

Record Data

Select [Record Data] and press [√].

Select an option and press [√].
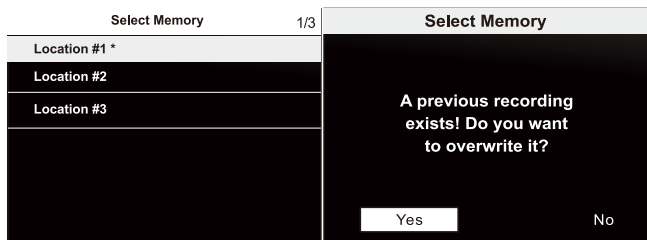
Select [Manual Trigger] or [DTC Trigger] and press [√].

Live Data	2/3		Record Data	1/3
View Data	OFF		Complete Data Set	
Record Data			Custom Data Set	
Playback Data			Unit of Measure	

Pick Trigger Mode	1/2
Manual Trigger	
DTC Trigger	

There are two types of trigger methods used.

● **Manual Trigger -** triggers recording whenever operators press the [√] key.

● **DTC trigger -** automatically triggers recording when a code is detected by vehicle. DTC Trigger is not available on all vehicles. Some vehicles need to be driven for a long period of time to store a code after a drivability fault occurs. If DTC trigger is selected to make a recording, there might not be drastic change in the data before and after trigger.

Use the [Up/Down] key to select a memory location and press [√].

If an area with an asterisk (*) was picked, a message prompting to erase data displays. If the recording is to be overwritten, selected [Yes]; if data is not to be overwritten, pick [No] to return to Select Memory screen and choose another one.

Select Memory	1/3
Location #1 *	
Location #2	
Location #3	

Select Memory
A previous recording exists! Do you want to overwrite it?
Yes   No

If [Manual Trigger] is selected, following screen displays:

Manual Trigger
Ready to record! Press [Enter] to start recording.... Press [Back] to exit
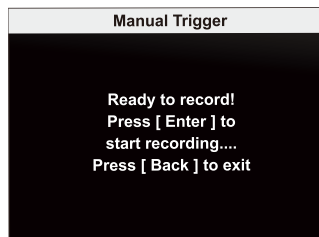
If [DTC Trigger] is picked, following screen displays:

DTC Trigger
Waiting for DTC to trigger recording... Press [Back] to exit
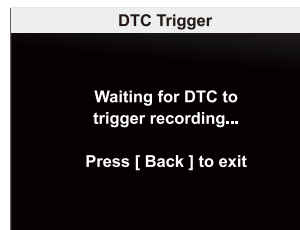
Press the [√] to start recording or wait codes to trigger.

Recording...2/31	1
DTC_CNT	7
FUELSYS1	--
FUELSYS2	--
LOAD_PCT(%)	0.0
ECT(℃)	-12
SHRTFT1(1%)	0.0
LINGFT1(%)	2.3

Playback Data

The Playback Data is used to playback recorded data.

Live Data	3/3
View Data	
Record Data	
Playback Data	

Select Memory	1/3
Location #1 *	
Location #2	
Location #3	

1 of 36 frame	6
DTC_CNT	0
FUELSYS1	OL
FUELSYS2	N/A
LOAD_PCT(%)	0.0
ECT(℃)	-40
SHRTFT1(1%)	99.2

Select [Playback Data] and press [√].

Use the [Up/Down] key to select a memory area that is marked withan asterisk (*) and press [√].

Press the [Up/Down] key to view recorded data.

View Freeze Frame

This option takes the snapshot of the operating conditions when an emission-related fault occurs.

Diagnostic Menu	4/11
Read Coders	
Eease Codes	
Live Data	
View Freeze Frame	
I/M Readiness	
O2 Monitor Test	
On-Board Monitor Test	

View Freeze Frame	27
BARO(psi)	14.6
VPWR(V)	12.226
LOAD_ABS%	0. 0
EQ_RAT	0.995
TP_R(%)	0. 0
AAT(°F)	-40
TP_B(%)	0. 0

Use the [Up/Down] button select [View Freeze Frame] and press [√]. The result will be displayed on screen.

If no freeze frame is detected, the message "No freeze frame data stored!" is displayed.

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

I/M Readiness

This option checks whether or not the various emissions-related systems on the vehicle are operating properly, and are ready for Inspection and Maintenance testing.It also can be used to confirm t hat the repair has been performed correctly, and/or to check for Monitor Run Status after the repair of a fault has been performed.

There are two ways to retrieve the I/M Readiness Status Data.

A. I/M Hotkey.

Press the [I/M] button, the result will be displayed on screen.

I/M Readiness			
MIL	💡	ING	Spark
DTC	9	Pd DTC	0
MIS	✔	EVAP	✖
FUE	✔	AIR	🚫
CCM	✔	O2S	✖
CAT	✖	HRT	✖
HCAT	🚫	EGR	✖

*Explanation of terms:

• MIL - Malfunction Indicator Light
• IGN - The Ignition Method of the Vehicle
• DTC - Diagnostic Trouble Code
• Pd DTC - Pending Diagnostic Trouble Code
• MIS - Misfire Monitor
• FUE - Fuel System Monitor
• CCM - Comprehensive Components Monitor
• EGR - Exhaust Gas Recirculation System Monitor

• HCAT - Heated Catalyst Monitor
• EVAP - Evaporative System Monitor
• AIR - Secondary Air Monitor
• O2S - O2 Sensors Monitor
• HRT - O2 Sensor Heater Monitor

B. Select [I/M Readiness] from Diagnostic Menu.

Use the [Up/Down] botton to select [I/M Readiness] and press [√].
If the vehicle being tested supports both types of monitors, following screen displays.

Diagnostic Menu 5/11	I/M Readiness 2/11
Read Codes	Since DTCs cleared
Erase Codes	This driving cycle
Live Data	
View Freeze Frame	
I/M Readiness	
O2 Monitor Test	
On-Board Monitor Test	

Since DTCs Cleared - Shows status of the monitors since the Diagnostic Trouble Codes were last erased.

This Driving Cycle - Shows status of monitors since start of current drive cycle.

Since DTCs cleared 1		This driving cycle 1	
MIL	OFF	MIS	OK
MIS	ING	FUEL	OK
FUEL	ING	CCM	OK
CCM	OK	CAT	ING
CAT	ING	HCAT	N/A
HCAT	N/A	EVAP	OK
EVAP	N/A	AIR	N/A

When the monitor status is:

• **"OK"**- vehicle has been driven enough for function.

• **"ING"** (incomplete) - the vehicle was not driven enough to complete all of the monitors.

• **"N/A"** (not applicable) - the vehicle does not support that monitor.

O2 Monitor Test

This option retrieves O2 sensor monitor test results of the most recently completed tests from your vehicle's on-board computer.

Diagnostic Menu	6/11
Read Codes	
Erase Codes	
Live Data	
View Freeze Frame	
I/M Readiness	
O2 Monitor Test	
On-Board Monitor Test	

O2 Monitor Test	1/4
O2 Bank1 Sensor1	
O2 Bank1 Sensor2	
O2 Bank2 Sensor1	
O2 Bank2 Sensor2	

Use the [Up/Down] button to select [O2 Monitor Test] and press [√].

Select an option and press [√].

Select an option and press [√].

O2 Bank1 Sensor1	1/8
Rich-Lean Threshd(V)	
Lean-Rich Threshd(V)	
Min for test Cyc(V)	
Max for test Cyc(V)	
O2 Transition(S)	
$30(S)	
$31(S)	

Tips: Use the [Up/Down] button to scroll through data to select lines and use the [⇦] to return diagnostic menu.

On-board Monitor Test

This option retrieves test results for emission-related powertrain components and systems that are not continuously monitored. The tests available are determined by the vehicle manufacturer.

Use the [Up/Down] button to select [On-board Monitor Test] and press [√].

Depending on the protocol the vehicle used, one of these 2 screens shows.

For Non-CAN vehicles, test screen is illustrated as below:

On-Board Monitor Test	3/5
Oxygen Sensor Monitors and Const ...	
O2 Sensor Heater System Time to ...	
Exhaust Gas Recirculation System ...	
Ehanced Evaporative System Monit ...	
Catalyst Efficiency Monitor	

Exhaust Gas Recirculation System Mon.
EGRF decel service test

EGRF decel service test	
ID	4D
MOD	$10
TEST(kPa)	0
MIN(kPa)	- - - -
MAX(kPa)	8451
STS	OK

For CAN vehicles, test screen is illustrated as below:

On-Board Monitor	1/25
EGR MON.B1S1	
EGR MON.B1S2	
EGR MON.B2S1	
EGR MON.B2S2	
Catalyst Mon.B1	
Catalyst Mon.B1	
EGR Monitor Bank 1	

EGR MON.B1S1	1/2
$82 Test	
$83 Test	

$82 Test	1
TEST	0
MIN	0
MAX	0
STS	ok

Component Test (EVAP System Test)

This option initiates a leak test for the vehicle's EVAP system.

Diagnostic Menu	8/11	Component Text	1/1
Component Test		1 EVAP Sys. Leak test	
Vehicle Information			
Modules Present			
Unit of Measure			

If the vehicle supports EAVP test, the message "Command Sent!" will be displayed on screen.
Select [Component Test] and press [√].
Select [EVAP Sys. Leak Test] and press [√].

- -

*Note: Before using the system test function, refer to the vehicle's service repair manual to determine the necessary procedure.

Vehicle Information

This option retrieves a list of information (provided by the vehicle manufacturer) from the vehicle's on-board computer.

This information may include:

VIN (Vehicle Identification Number).   In-use Perform Track.
CID (Calibration ID).   ECU Name.
CVN (Calibration Verification Number).

Diagnostic Menu	9/11	Vehicle Information	5/5
Com ponent Test		Vehicle ID Number	
Vehicle Information		Calibration ID	
Modules Present		Cal Verf Number	
Unit of Measure		In-use Perform Track	
		ECU Name	

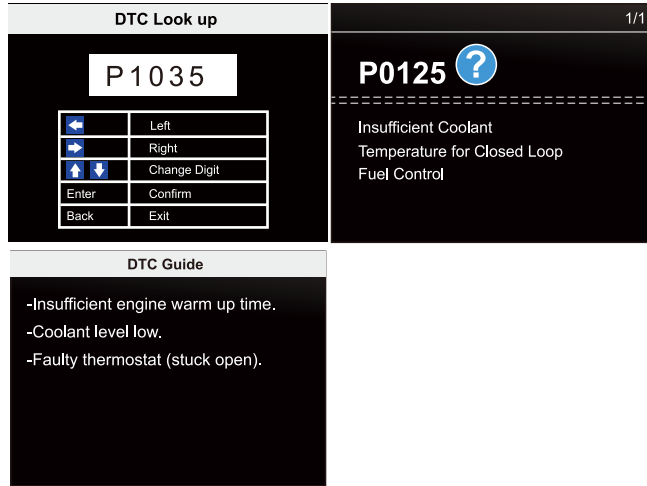| Vehicle ID Number	
VIN:	SALAE25456A411919

Select [Vehicle Information] and press [√].
A screen with a list of available options displays.
Choose an available option and press [√] Button. The result will be displayed on screen.

DTC Lookup

This function enables you to view the detailed definition of the retrieved DTC.

DTC Look up	1/1

P 1 0 3 5

←	Left
➡	Right
⬆ ⬇	Change Digit
Enter	Confirm
Back	Exit

P0125 ?

Insufficient Coolant
Temperature for Closed Loop
Fuel Control

DTC Guide

-Insufficient engine warm up time.

-Coolant level low.

-Faulty thermostat (stuck open).

Select [DTC Lookup] in the Main Menu and press [√]. The following screen will appear.

After you input the DTC, press [√] to view its detailed definition.

You can press the [?] button to view the diagnostic tips/solution related to the DTC.

Review Data

This option is designed to review or delete the recorded Liva Data, Freeze Frame etc, as follows.

Review Data	1/5
Live Data	
View Freeze Frame	
I/M Readiness	
Vehicle Information	
Modules Present	
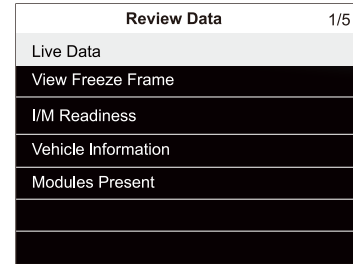
*Note: The message "No Data Available!" is displayed if no data is recorded.
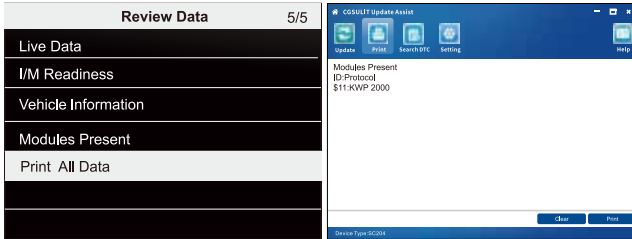
Print Data

The Print Data function is used to print test results through computer.
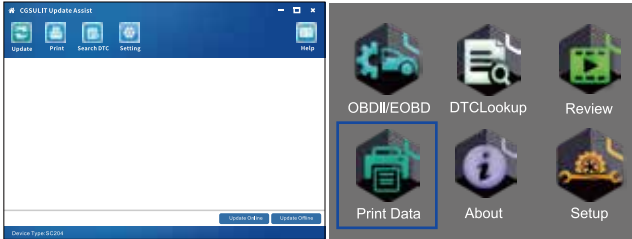
Connect the scanner to the computer via USB cable to power it on.

Run the Update Tool on your computer. Select [Print].

Select [Print Data] on the OBDII scanner.

Select desired data to print. If all recorded data is to be printed, select [Print All Data]. Then press the [√] key.

The selected file will be uploaded to your computer, and displayed on the print manager. It also allows the users to edit the text by moving the cursor to the edit box.

With the printer correctly connected, use the [Print] key to print the testing data.

About

Selecting [About] on Main Menu to check this code reader information.
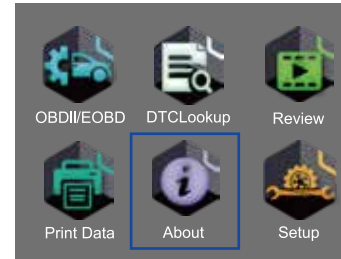
The result will be displayed on the screen.

Setup

Select [Setup] in the Main menu and press the [√] key.

The following screen will appear.

Setup	1/6
Language	
Configure Monitors	
Unit of Measure	
Key Beep Set	
Diag Beep Set	
Tool Self-test	

*Explanation of terms:

• Language - to set the user interface language.

• Configure Monitors - allows the users to configure the monitors required to test spark ignition and compression ignition, the number of monitors to pass diagnosis, and restore the default settings.

• Key Beep Set - to set key pressing beep On/Off.

• Unit of Measure - to set measurement unit.

• Diag Beep Set - to set the buzzer On/Off.

• Tool Self-test - to check if the LCD display and the operation of thekeyboard and LED Indicators are working correctly.

Update

PC

https://www.cgsulit.com
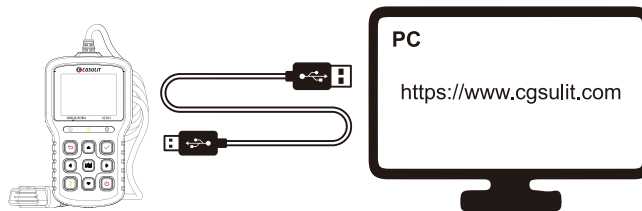
1   Go to https://www.cgsulit.com, click "Download" on the page.

2   Download the update tool and install it.

3   Connect CGSULIT SC301 with PC via USB cable, wait for the device to display hardware information.

4   Click <Update Online> or <Update Offline> to start updating according to the software version conditions.

5   An Update Finished Message displays when the update is completed.

Technical Specification

Display   : 2.8" color LCD
Power Supply   : 8-18V
Working Temperature : 0 to 60 °C (32 to 140 °F)
Storage Temperature : -20 to 70 °C (-4 to 158 °F)
Dimensions (L*W*H) : 145*94*32mm
Weight   : 0.5kg (18 oz)

Warranty

1. CGSULIT One-Year Limited Warranty
   The CGSULIT Company warrants to its original purchaser that
   CGSULIT products will be free from defects in material and
   workmanship for 12 months from the date of purchase
   (Warranty Period). For the defects reported during the Warranty
   Period, CGSULIT will according to the technical support analysis
   and confirmation, either repair or replace the defective part or
   product.

2. This limited warranty is void under the following conditions:
   Misused, disassembled, altered or repaired by a non-CGSULIT
   technical repair specialist.
   Careless handling and violation of operation.

FQA

Q: System halts when reading data stream. What is the reason?
A: It may be caused by a slackened connector. Please turn off the
   tool, firmly connect the connector; and switch it on again.

Q: There is no response when communicating with on-board
   computer.
A: Please confirm the proper voltage of power supply and check
   if the throttle has been closed, the transmission is in the neutral
   position, and the water is at the proper temperature.

Q: Why are there so many fault codes?
A: Usually, it's caused by poor connection or fault circuit grounding.

Q: Why can the DTCs not be erased?
A: 1. Please confirm the malfunction related to DTCs has been
   adequately fixed.
   2. Please switch the ignition OFF. Wait for 1~3 minutes, then start
   the vehicle. After that, try to run "Read Codes" again. (Some DTCs
   can only be erased in this way.)