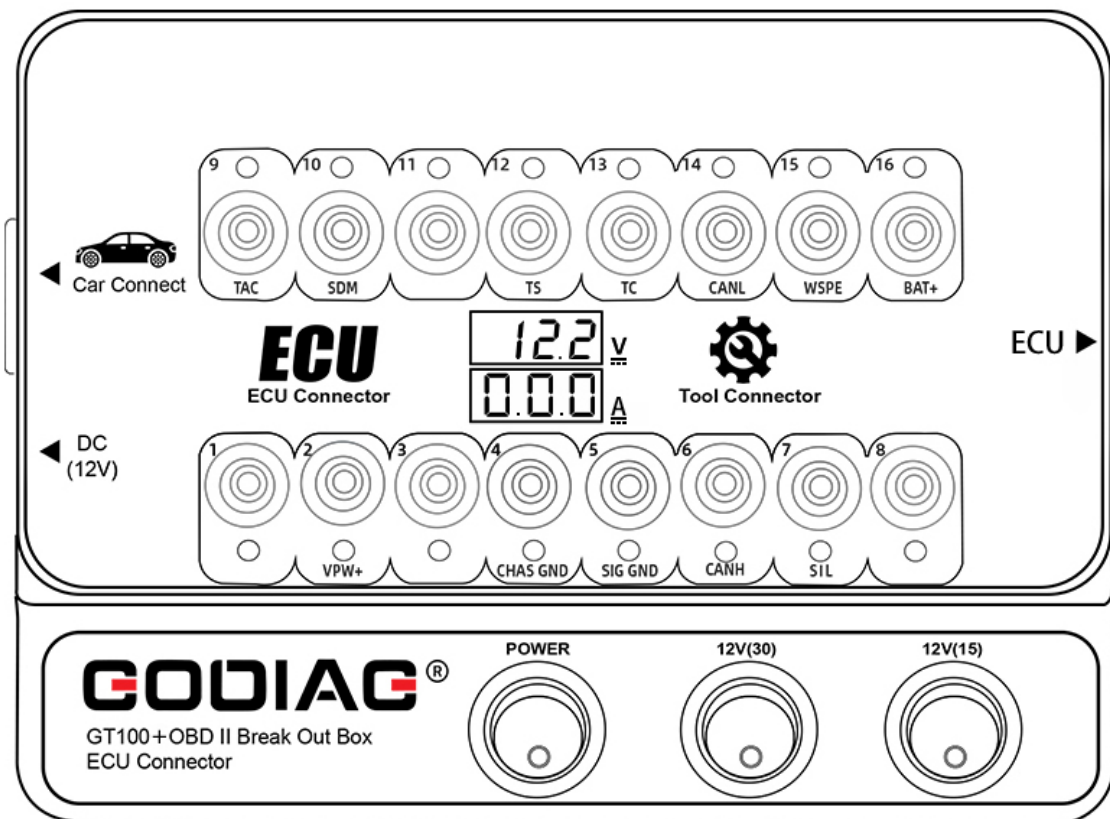# GODIAG GT100+AUTO TOOLS OBD II
Breakout Box ECU Connector
Operation Manual

1.2021

1. Document Statements

Please read the following instructions carefully:

The manual may help you learn about how to use GODIAG GT100+ AUTO TOOLS OBD II Breakout Box ECU Connector in a faster pace. Please observe your local national laws and regulations. In case of illegal use of GODIAG equipment, the user shall bear all risks and the company shall not assume any liability.

GODIAG GT100+AUTO TOOLS OBD II Breakout Box ECU Connector Operation Manual is compiled by GODIAG. No company or individual may copy or backup this manual in any form (electronic seal, mechanical, photocopy, recording, picture or other forms) without the written consent of GODIAG. The document shall not be used for commercial purposes.

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Disclaimer and limitation of liability
All information, specifications and images included in the manual are latest information as of the date of publication. GODIAG reserves the right to make changes without prior notice. The contents in the manual have been carefully reviewed, but no warranty is given as to its completeness and accuracy of contents (including specifications, functions and images). GODIAG does not bear any direct or indirect compensation for damages or economic damages.

Notes: before operating or maintaining the equipment, please read the manual carefully, especially the safety precautions.

3. Service and Technical Support

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Sales@GoDiag.com

4. Safety Precautions

In order to protect the safety of yourself and others and prevent damaging the equipment and vehicles, please read the safety precautions carefully.

Since various programs, tools, parts and techniques are used for the vehicle maintenance and different operators may have different operations, due to various kinds of diagnostics compliers, the manual cannot predict every situation and provide related safety suggestions.

Vehicle service technicians are in charge of fully learning about the system under tests, and applying appropriate repairing approaches and testing programs.

When conducting tests, it's necessary to apply proper operations to avoid personal safety risks to yourself and other people inside the working area and prevent damages to the equipment in use or vehicles under tests.

Before starting to use the equipment, please refer to and observe the safety information provided by the vehicle or equipment manufacturer and applicable testing programs. Please use the equipment according to the Operation Manual, read, understand, and observe all safety information and instructions included in this manual.

Please at least observe the following safety precautions working at the vehicle:

◆ Please work at a safe environment where it's essential to keep the working area ventilated since the vehicle exhaust is harmful to human bodies.

◆ Wear goggles that meet the ANSI standard

◆ Set the gear to P (auto) or N (manual) and guarantee the parking brake is enabled (hand brake pulled)

◆ Make sure your clothes, hair, hands, and tools stay away from the operating engine parts or hot engine parts

◆ Place bricks before each wheel to prevent the vehicle from moving accidentally

◆ The vehicle must be attended during testing and operating

◆ Pay special attention when working around the ignition coil, distributor cap, ignition wire, and ignition plug for that these parts can generate dangerous voltages

◆ Make sure fire extinguishers suitable for the gas/chemicals/are electrical provided at the site

◆ Do not plug or unplug the equipment when the ignition switch is on or the engine is working

◆ Keep the equipment dry, clean, and avoid touching oil, water or grease. Use a clean cloth to clean the equipment.

◆ Do not operate the diagnostic equipment during driving to avoid accidents owing to the distraction.

◆ Please refer to the maintenance manual when maintaining the vehicle and operate strictly according to the precautions, otherwise it may cause human injury or damages to the diagnostic equipment.

◆ Do not place the diagnostic equipment onto the distributor of the vehicle for that strong EMI may damage the equipment.

◆ When replacing the battery with GT100+, do not switch on the ignition switch or start the vehicle.
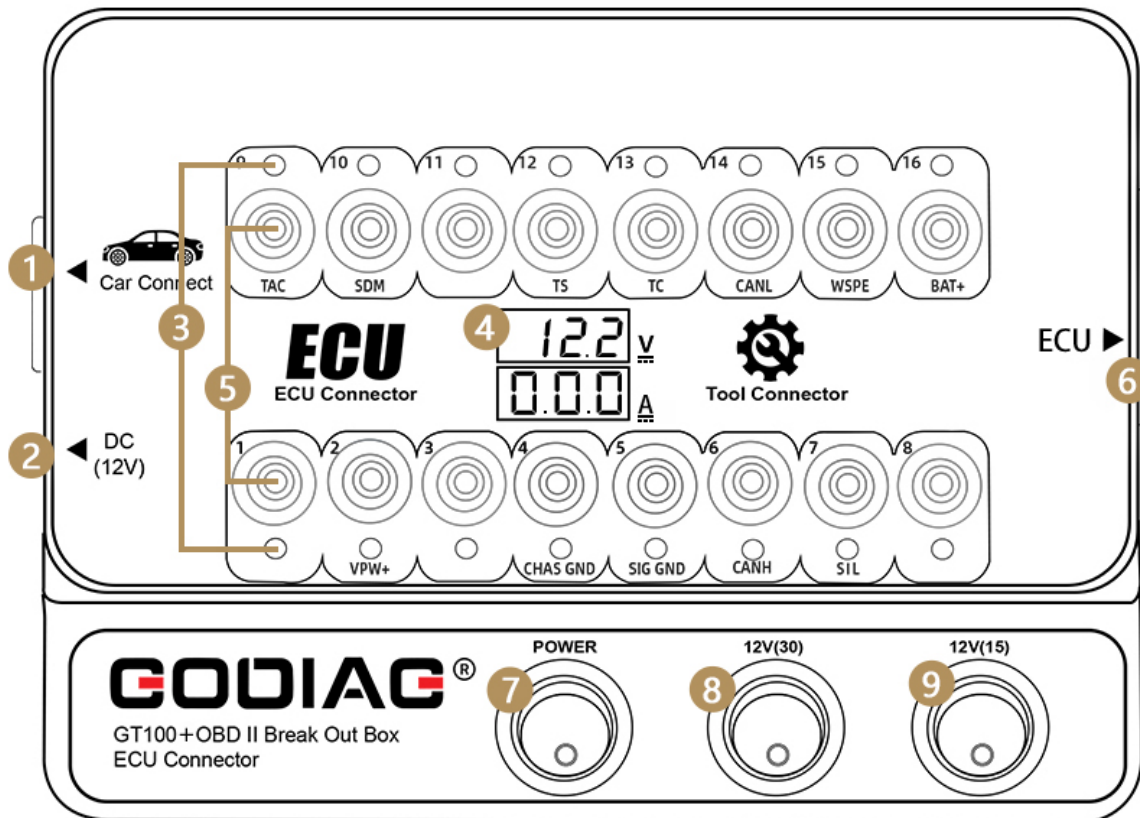
5.	Contents

6. Feature Overview

GODIAG GT100+ is a new ECU connector and protocol communication testing equipment. It's convenient for users to individually connect the ECU module to diagnose, program and code. It may also be used for testing whether the diagnostic / programming /coding tool can send communication signals. See the detailed functions as below:

- GT100+   OBDII Protocol Detector and Protocol Communication Diagnosis
- GT100+   Short circuit to forcibly activate the instrument and immobilizer.
- GT100+   Voltage / Current Value Display
- GT100+   OBDII Display custom CAN protocol communication
- GT100+   ECU Connection
- GT100+   Expanded Connection
- GT100+   OBD1 Diagnostic Interface Converted to Standard OBD2
- GT100+   Multi-ECU Connection Mode
- GT100+   Extension cable Function
- GT100+   Power the Car When Replacing the Battery
- GT100+   Optional dedicated Adapter
- GT100+   Work with CAS4/CAS4 + Programming Test Platform
- GT100+   Work with FEM/BDC Programming Test Platform

7. Outlook

10 11 12 13 14 15 16

① Car Connect

TAC SDM TS TC CANL WSPE BAT+

ECU
ECU Connector

③

⑤

12.2 V

0.0.0 A

Tool Connector

ECU ▶

④

② DC (12V)

1 2 3 4 5 6 7 8

VPW+ CHAS GND SIG GND CANH SIL

⑥

GODIAG®
GT100+OBD II Break Out Box
ECU Connector

POWER ⑦   12V(30) ⑧   12V(15) ⑨

① OBD2-DB15 diagnostic main cable
② DC12V interface
③ Indicators
④ Working voltage and current value display
⑤ Banana plug interface
⑥ DB25 color jumper ECU dedicated interface
⑦ Power switch
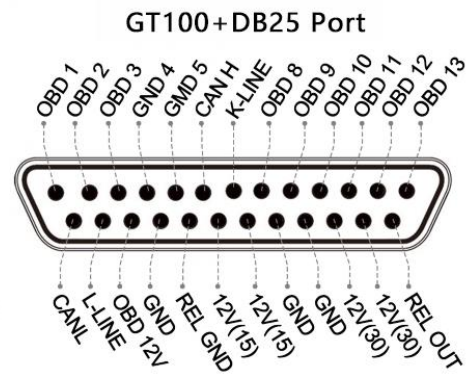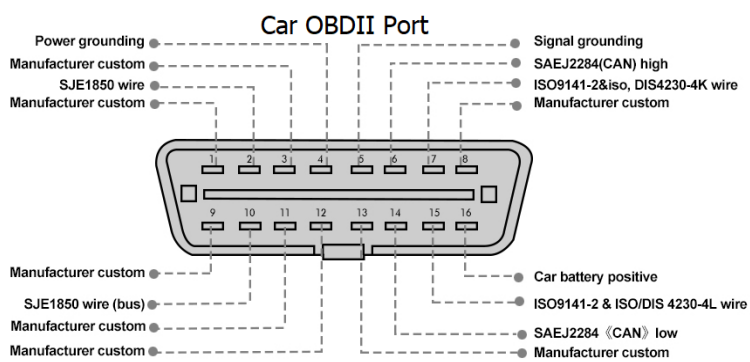⑧ 12v (30) power switch.
⑨ 12v (15) power switch

8. Functions and How to Use

➢ 1. **OBDII Protocol Detector and Protocol Communication Determination**
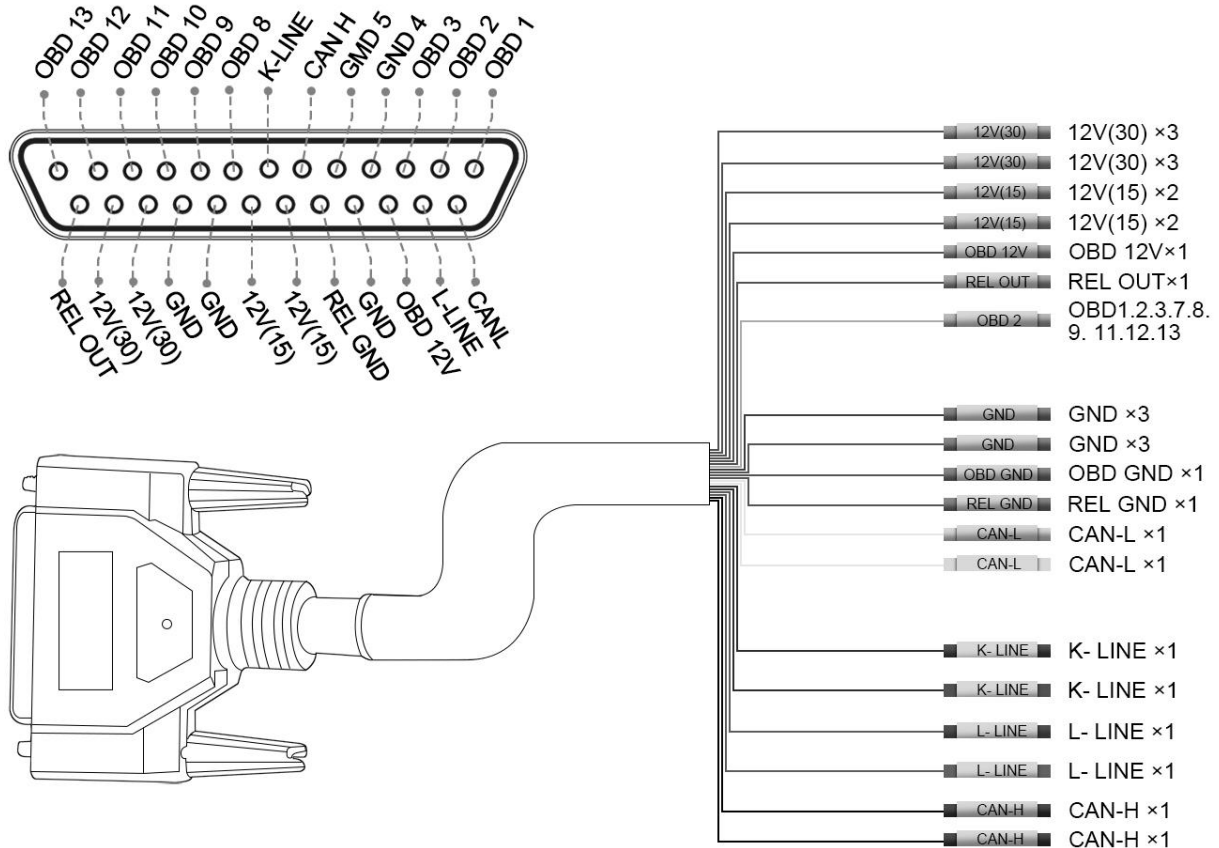Standard OBDII interface protocol
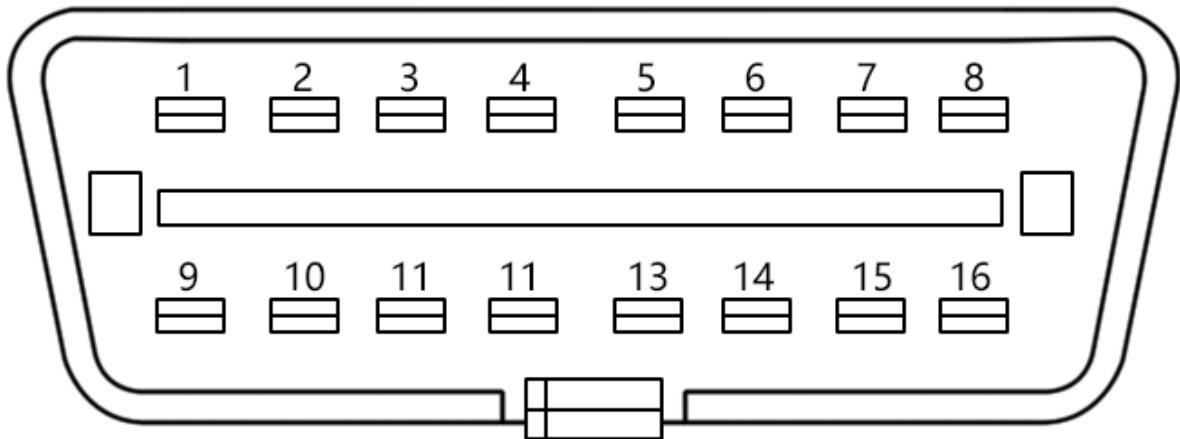
Indicator Light Meaning

1. Manufactory custom	9. Manufactory custom
2. SJE1850 wire <bus+>	10. SJE1850 wire<bus->
3. Manufactory custom	11. Manufactory custom
4. Power grounding	12. Manufactory custom
5. Signal grounding	13. Manufactory custom
6. SAEJ2284 <CAN> high	14. SAEJ2284 <CAN> low
7. ISO9141-2 & iso, DIS4230-4K wire	15. ISO9141-2 & ISO/DIS 4230-4L wire
8. Manufactory custom	16. Car battery positive

Car OBDII Port

Power grounding
Manufacturer custom
SJE1850 wire
Manufacturer custom

Signal grounding
SAEJ2284(CAN) high
ISO9141-2&iso, DIS4230-4K wire
Manufacturer custom

Manufacturer custom
SJE1850 wire (bus)
Manufacturer custom
Manufacturer custom

Car battery positive
ISO9141-2 & ISO/DIS 4230-4L wire
SAEJ2284《CAN》low
Manufacturer custom

GT100+DB25 Port

OBD 1, OBD 2, OBD 3, GND 4, GMD 5, CAN H, K-LINE, OBD 8, OBD 9, OBD 10, OBD 11, OBD 12, OBD 13

CANL, L-LINE, OBD 12V, GND, REL GND, 12V(15), 12V(15), GND, GND, 12V(30), 12V(30), REL OUT

DB25 Color jumper Cable

Tips on Using DB25 Color Jumper Cable:

1. 12V (30) defined as car positive (+)

2. 12V (15) defined as car ignition with power supply

3. OBD 12V directly connected to the vehicle OBDII diagnostic port 12V

4. OBD 1.2.3.7.8.9.11.12.13 are correspondingly connected to the 1.2.3.7.8.9.11.12.13 pin port.

5. Once REL GND and GND are connected, REL OUT outputs 12V vehicle battery positive electricity.

6. K-LINE L-LINE are correspondingly connected to the 7.K-LINE and 15. L-LINE port.

4. CAN-H and CAN-L are correspondingly connected to the 6.CAN-H　and 14.CAN-L port.

✓ By connecting the vehicle and the diagnostic tool via OBDII, Godiag GT100+ can check whether the communication of the vehicle OBDII diagnostic port is normal.

✓ To monitor and display in real-time the voltage of vehicle OBDII interface. If the voltage is lower than 11V, please stop diagnosing and programming, otherwise the car will fail to start, the data is lost, the module is locked etc because of low battery.

1.) Used to check whether the diagnostic / programming / coding tool can send communication signals.
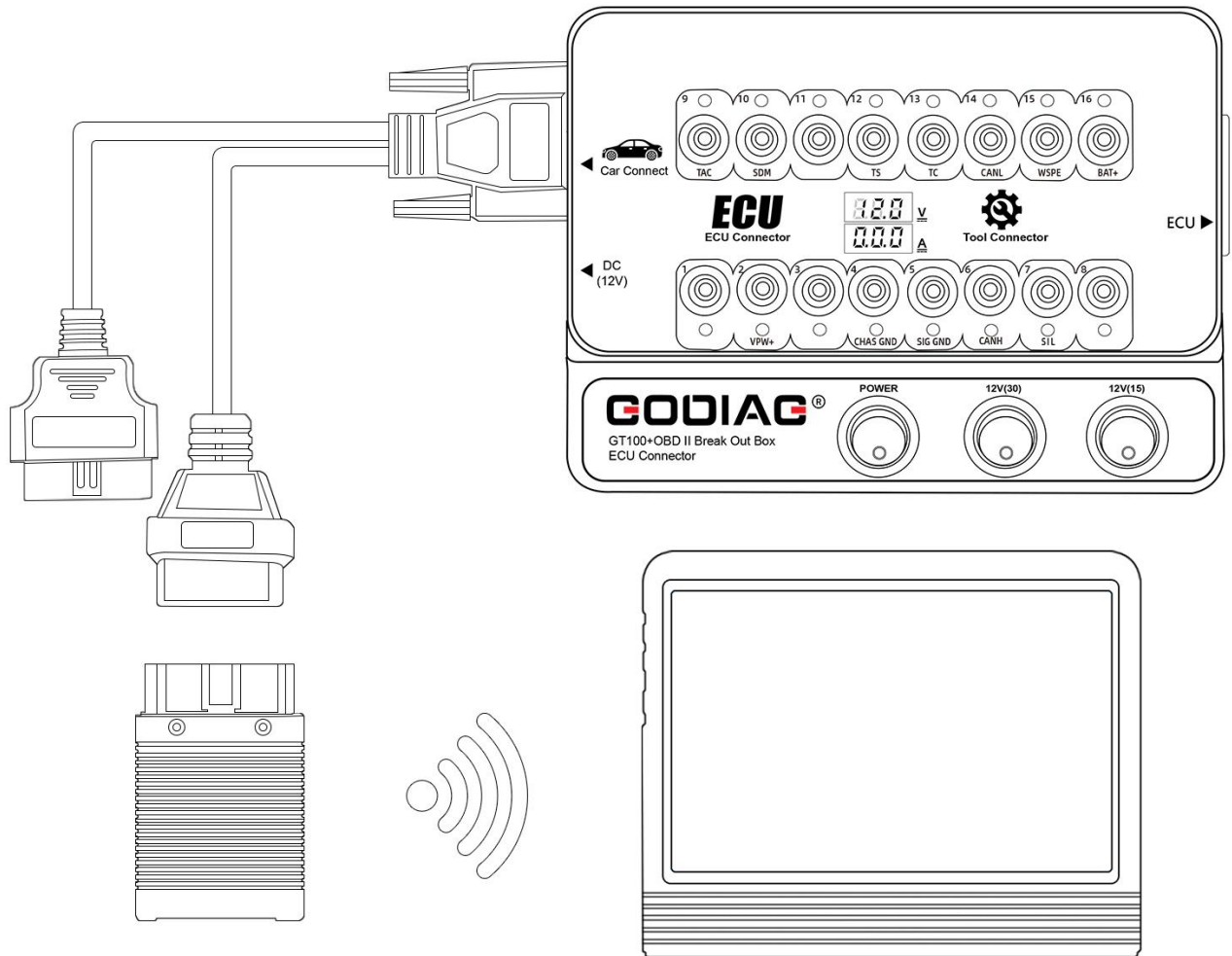
① Connect the diagnostic / programming / coding tool to the OBD2 port of GT100+. (Do not connect it to the vehicle)

② Select the vehicle model and functions to operate.

③ If the device can send the communication signals, the corresponding protocol indicators on the GT100+ will be ON or blink. If the device can't send the communication signals, there will be no indicator light on, it means the device has a connection problem or is damaged.

2.) Test the communication status between the code reader and the vehicle protocol
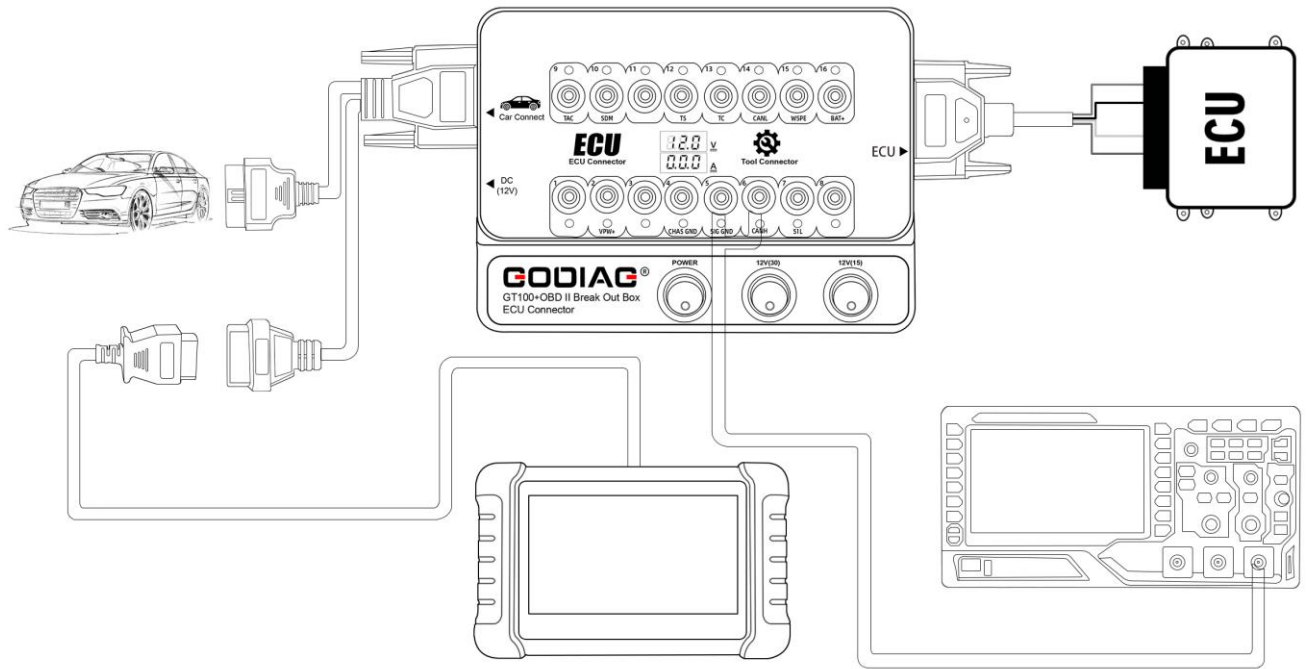
① GT100+ is connected to the vehicle OBD2 port.
② Start the Power switch, and GT100+ will display the current accumulator voltage. (If no voltage is displayed, please check the vehicle diagnostic interface and the cable. If the voltage is lower than 10V, please do not start the vehicle or go ahead for function operation, Please charge the car with a car charger.)
③ Connect the diagnostics / programming / coding tool well. When it communicates with the vehicle, the corresponding protocol indicators on the GT100+ equipment will be lit up or blink. It's convenient for users to observe which protocol is under use by the vehicle module and the status of the communication.

3.) GT100+ program key for VW, Porsche, Mitsubishi etc with all keys lost - activate the instrument or immobilizer module.
A. To program VW 4th generation / 5th generation Lost all keys (for example: new A6L Touareg A4 Q5 A7), please use GT100+ to short-circuit banana connector PIN 16----PIN 1 to lit up the dashboard, aft that use the key programmer tool to connect with the female adapter of GT100+ for data collection. Some vehicle dashboards won't be lit up, but data can also be collected, for example: A6L Q7.
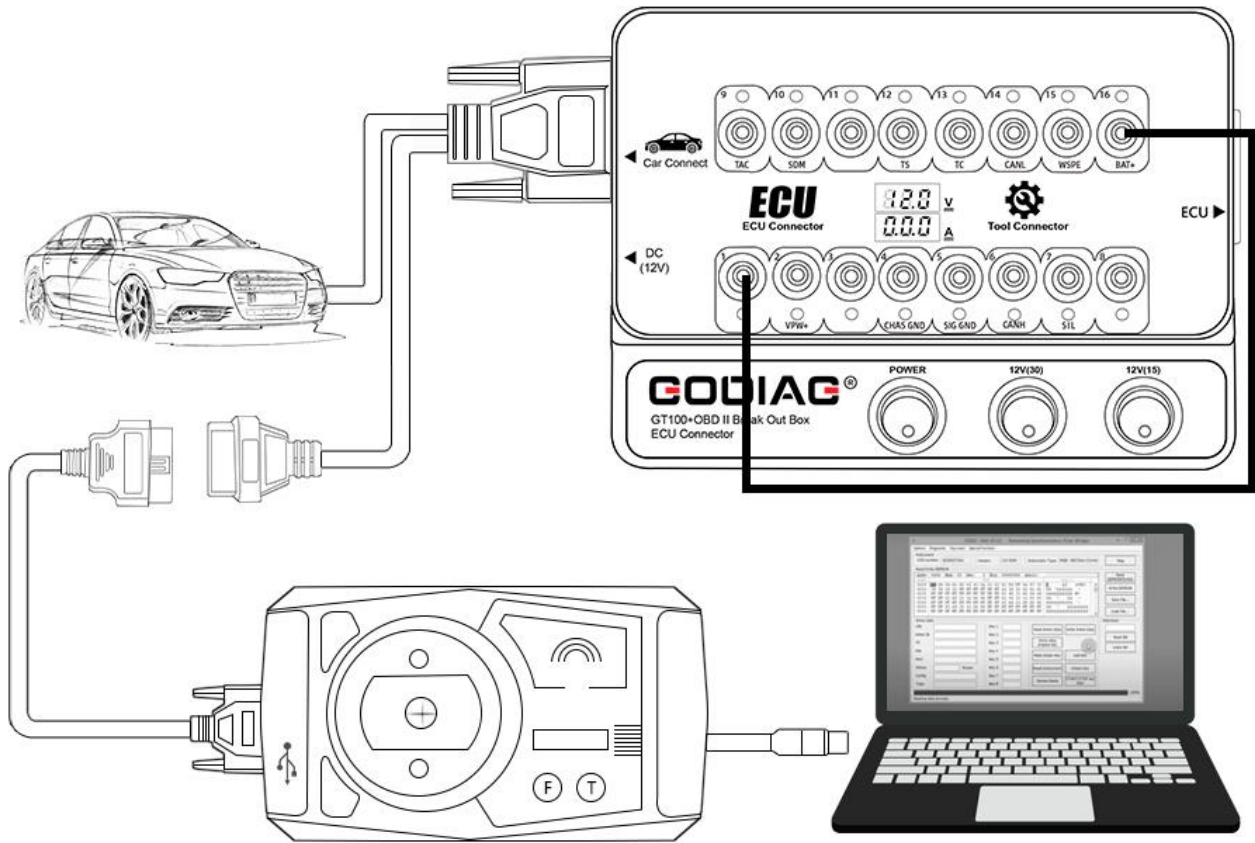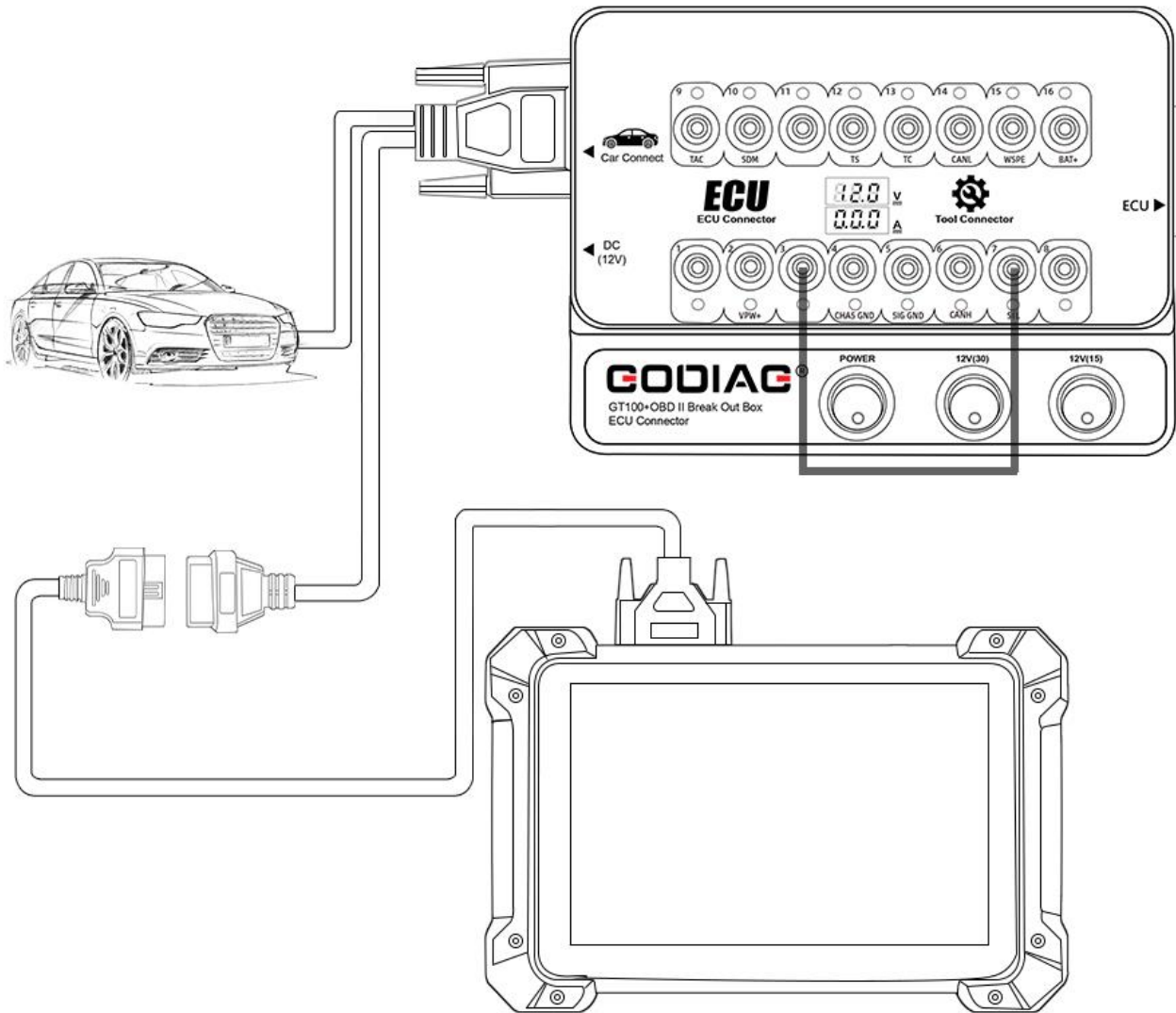
B. To replace the engine ECU of Toyota or to use some key programmer to program Toyota when all keys lost, it needs to short-circuit PIN13-PIN4
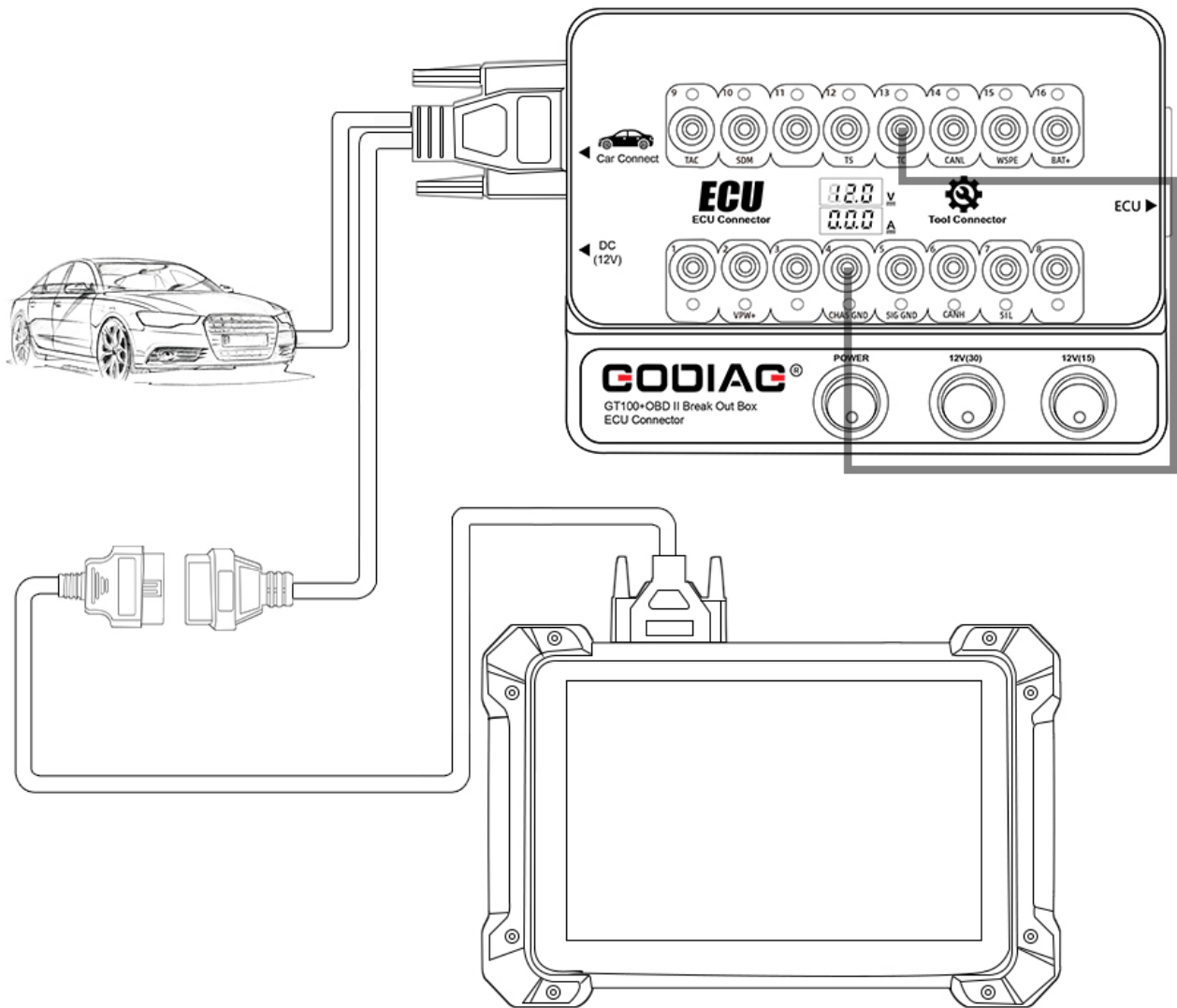
C. To program Mitsubishi key with all keys lost or to set OBDII when all remote key lost, please short-circuit PIN1-PIN4.
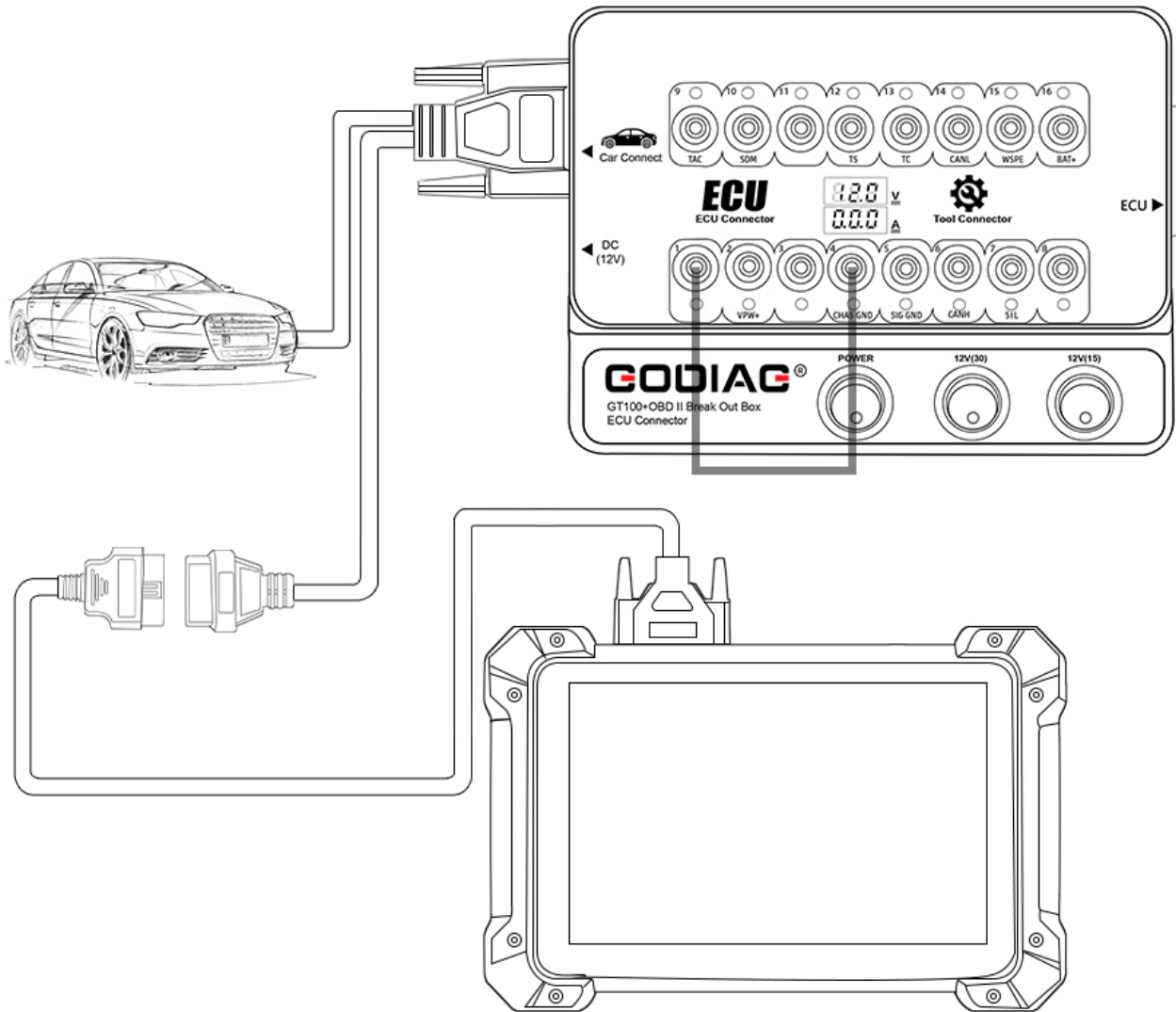
D. To program Porsche Cayenne transponder or remote all keys lost, please short circuit PIN3-PIN7.

4.) Voltage and Current Value Display function

On bench connect the ECU module by using the banana connector or db25 dedicated ECU interface, and Godiag GT100+ will display the voltage / current value.

The user can intuitively see the current status of the ECU. There is no current display or The actual displayed current is inconsistent with the engineer's expected current, then you can immediately check whether the wiring is wrong, if the wiring is correct, he can judge that the ECU may be broken, so there is no need to perform diagnostic communication and can directly repair the ECU.

If it shows too much current, then you can also determine if the cable is wrongly connected or the ECU is broken.

5.) GT100+ Pin 1, 9, 3, 11 12, 13, 8 [corresponding to the yellow banana connector on the machine], these non-standard obd2 protocol interface may display CAN BUS or K-Line communication protocol. GT100+ can only display K- Line PWM VPW+ KWP 2000 protocol. GT100+ will display CANBUS K-Line PWM VPW+ KWP 2000 protocol communication.
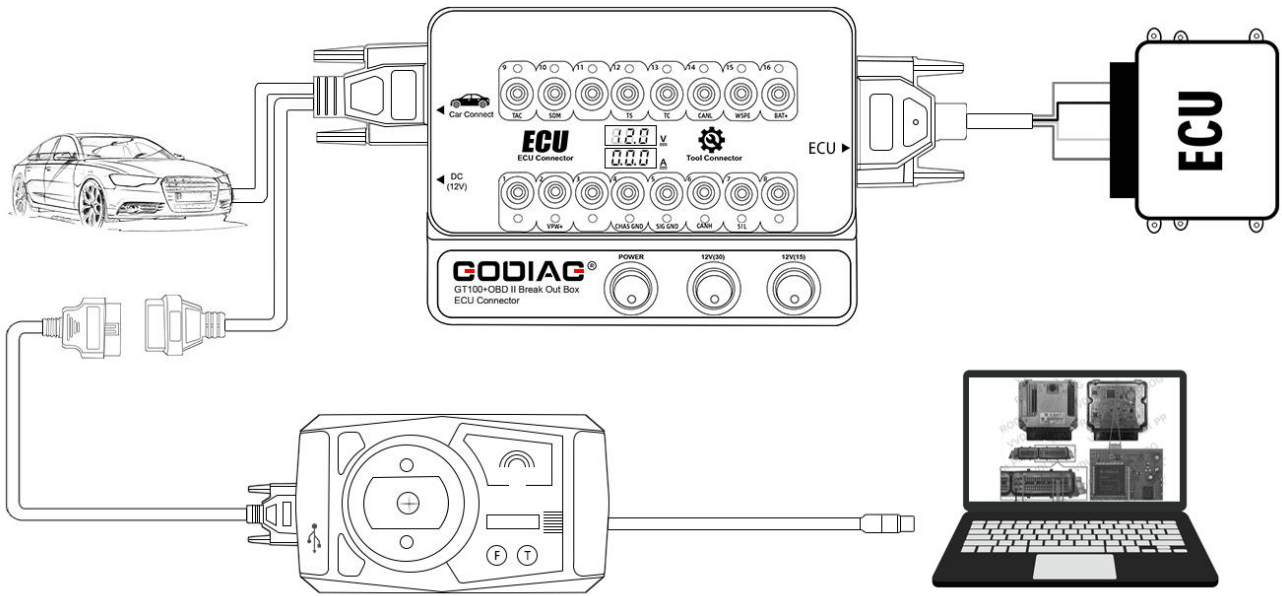
6). Quickly communicate with a single ECU on bench by connecting with the ECU diagnostic / programming tool. [Which allow the engineers or technicians to complete the job on bench, also keep away the risk of data loss in other modules when directly testing on the vehicle.]
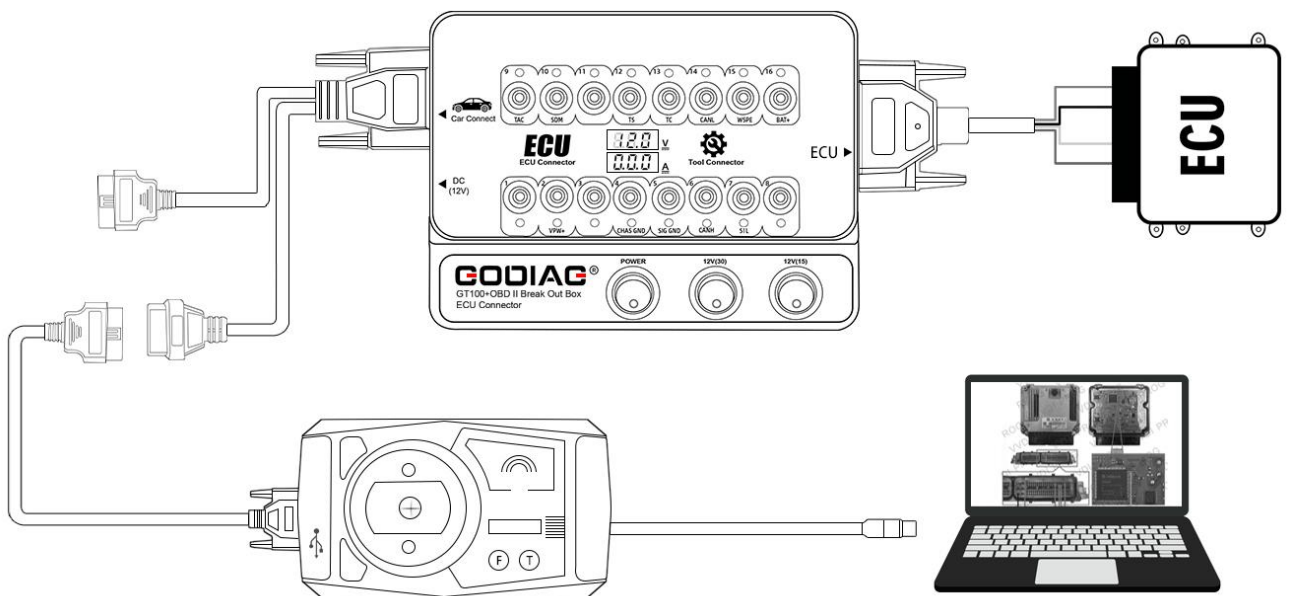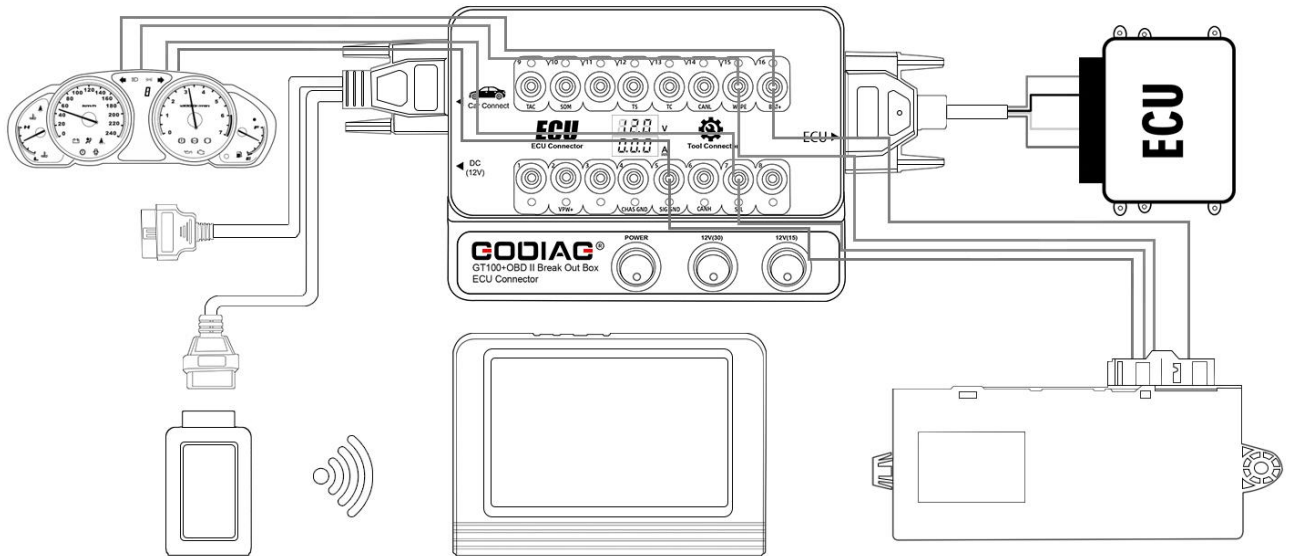

How to Operate:

① Connect GT100+ and the dedicated ECU color jumper.

② Connect the ECU which needs to diagnose or program by following the definition of ECU connecting.

③ Connect the 12V DC power adapter.

④ Start the Power switch, and GT100+ will display the current working voltage of the power adapter.

⑤ By connecting well the diagnostic / programming / coding tool, GT100+ protocol indicator will turn on or blink to indicate which protocol of the car module and the communication status.

7.) Multiple vehicle ECU module connecting. [It's aimed at solving the problem of engineers and technicians who need to connect multiple ECU during programming a module, such as connecting to

multiple ECU modules for key programming]

Multiple ECU Module Connection Operation Steps:

① Connect GT100+ and Colorful Jumper Cable DB25. Insert the DB25 jumper into the banana plug, tighten the screw, and then insert it into the corresponding port of gt100+ .

② Connect the ECU which needs to diagnose or program by following the definition of ECU connecting.

③ Connect the 12V DC power adapter.

④ Start the Power switch, and GT100+ will display the current working voltage of the power adapter.

⑤ When there is a good communicating between the car and the diagnostic / programming / coding tool, GT100+ protocol indicator will turn on or blink to indicate which protocol of the car module and the communication status.

8.) Replace the Auxiliary Power Supply for the Battery - uninterruptible power supply connecting mode. [Since there's failure or missing antitheft remote control data of some vehicles when the battery is dismantled, the auxiliary power supply aims at supplying power to the vehicle through GT100+ before replacing the battery to sustain the power supply to the vehicle. It guarantees the vehicle ECU is power connected during replacement of the battery.]
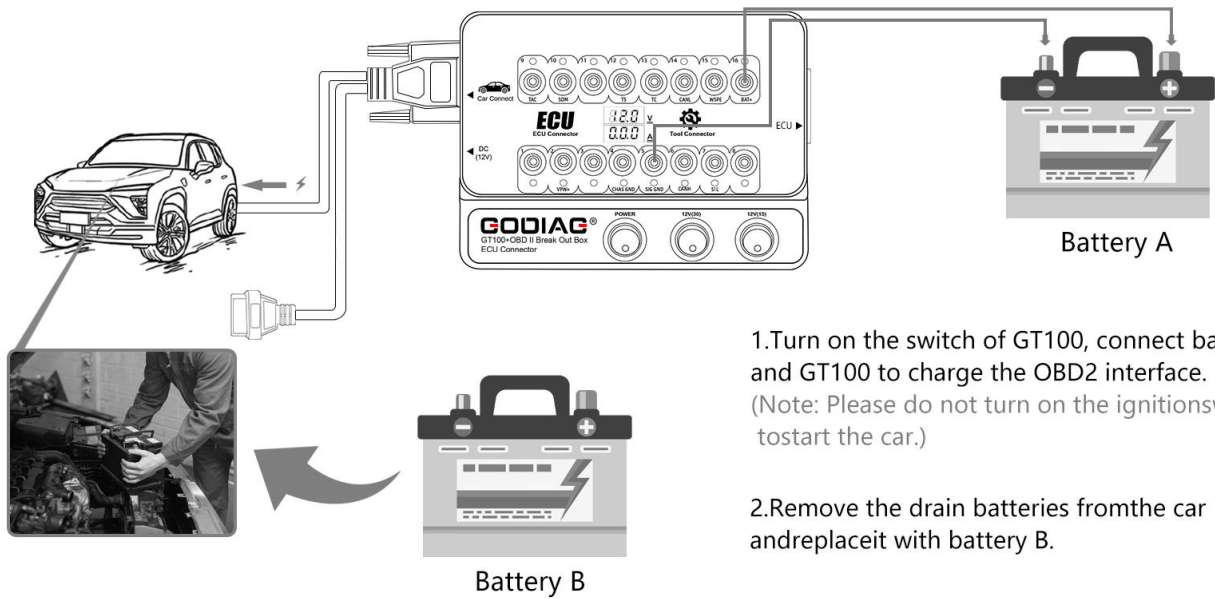
1.Turn on the switch of GT100, connect battery A and GT100 to charge the OBD2 interface.
(Note: Please do not turn on the ignitionswitch tostart the car.)

2.Remove the drain batteries fromthe car andreplaceit with battery B.

Battery A

Battery B

Uninterruptible Power Supply Connecting Mode Operation Steps

① Prepare a spare battery "A" and a new battery "B" to be installed.

② Connect to NO.16 /4 /5 holes of Godiag GT100+ and the OBD2 diagnostic port of the car, and connect to the spare battery "A".

③ Switch on GT100+ Power.

④ Connect GT100+ diagnostic cable to the OBD2 port of the vehicle. [Notes: do not turn on the ignition or start the vehicle.]

⑤ Install the new battery "B"

9.) The OBD2 cable of GT100+ is as long as 1.4 meters, which will solve the problem that the diagnostic tool cable is not long enough or the vehicle diagnostic port is too narrow to connect. Please connect GT100+ first, turn on the power switch and you will see the voltage on the screen which can tell whether the power supply of the vehicle is normal. [Which keep away the risk of burning out the diagnostic & programming tool due to the modified vehicle OBD2 port]
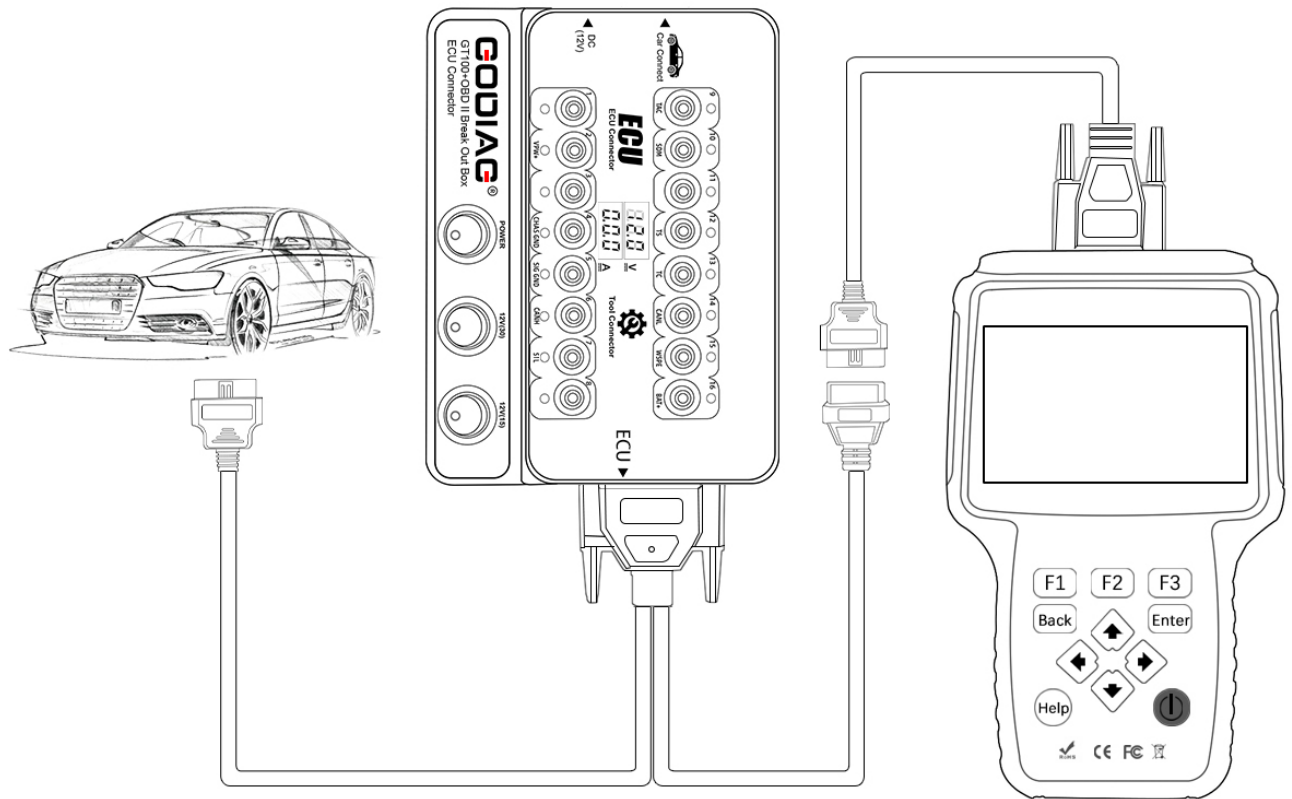
Operation Steps:

① Connect GT100+ OBD2 to the OBD2 port of the vehicle.

② Switch on GT100+ Power. (If no voltage is displayed, please check the vehicle diagnostic port and the cable. If the voltage is lower than 10V, please do not start the vehicle or operate. Please charge the accumulator with a car charger first)

③ The other OBD2 port of GT100+ is connected to the diagnostic tool.

④ When there is a good communicating between the car and the diagnostic / programming / coding tool, GT100+ protocol indicator will turn on or blink to indicate which protocol of the car module and the communication status.

10.) For old OBD1 vehicles or special diagnostic port, please connect GT100+ through the banana plug and DB25 jumper. The OBD1 diagnostic port or special diagnostic port can be transferred to the standard OBD2 diagnostic port.
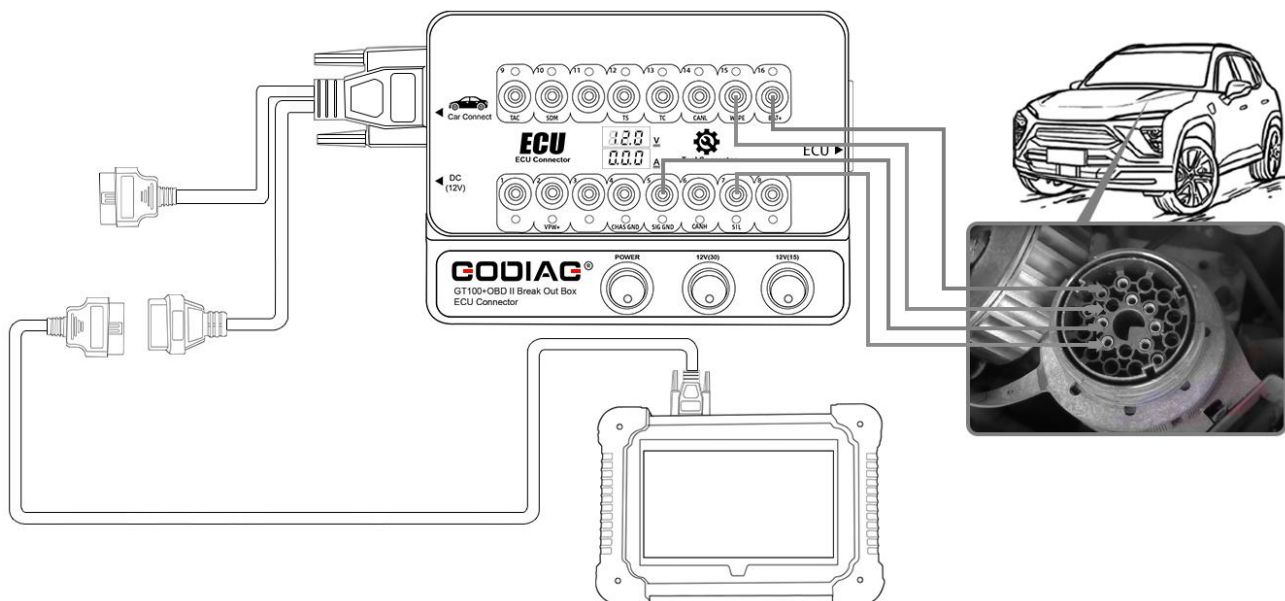
① Insert the DB25 jumper into the banana plug, tighten the screw.

② Insert the banana plug into the corresponding port of GT100+ by following the OBD1 protocol.

③ Connect the OBD2 port of GT100+ to the diagnostic tool.

④ When there is a good communicating between the car and the diagnostic / programming / coding tool, GT100+ protocol indicator will turn on or blink to indicate which protocol of the car module and the communication status.

11.) GT100+ will convert the OBD1 port of special truck to the standard OBD2 diagnostic port according to the protocol.
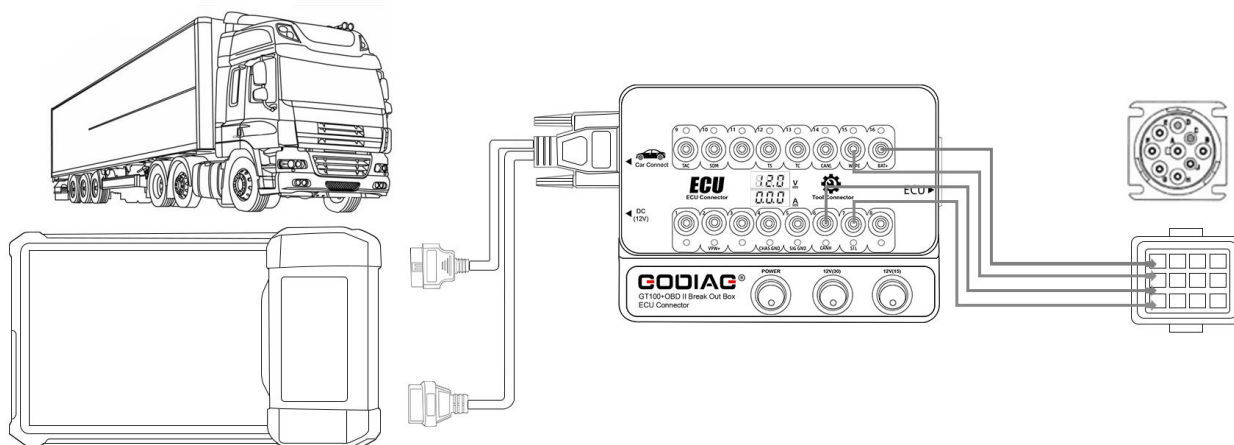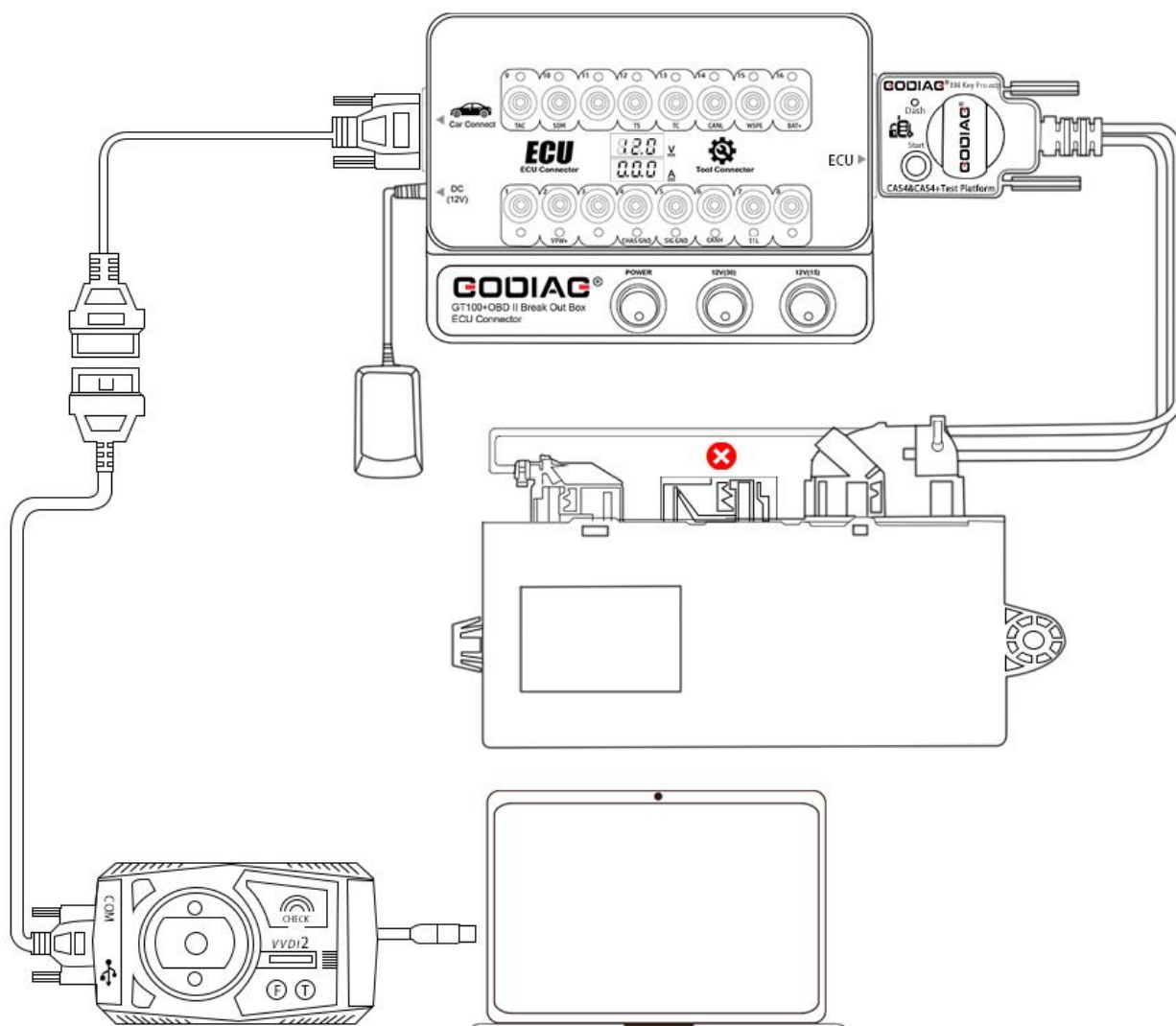

Steps:

① Insert the DB25 jumper into the banana plug, tighten the screw.

② Insert the banana plug into the corresponding port of GT100+ by following the truck OBD protocol.

③ Connect the OBD2 port of GT100+ to the diagnostic tool.

When there is a good communicating between the car and the diagnostic / programming / coding tool, GT100+ protocol indicator will turn on or blink to indicate which protocol of the car module and the communication status.

12.) For BMW-CAS4/CAS4+Programming Test Platform, it's used to test whether the programmed
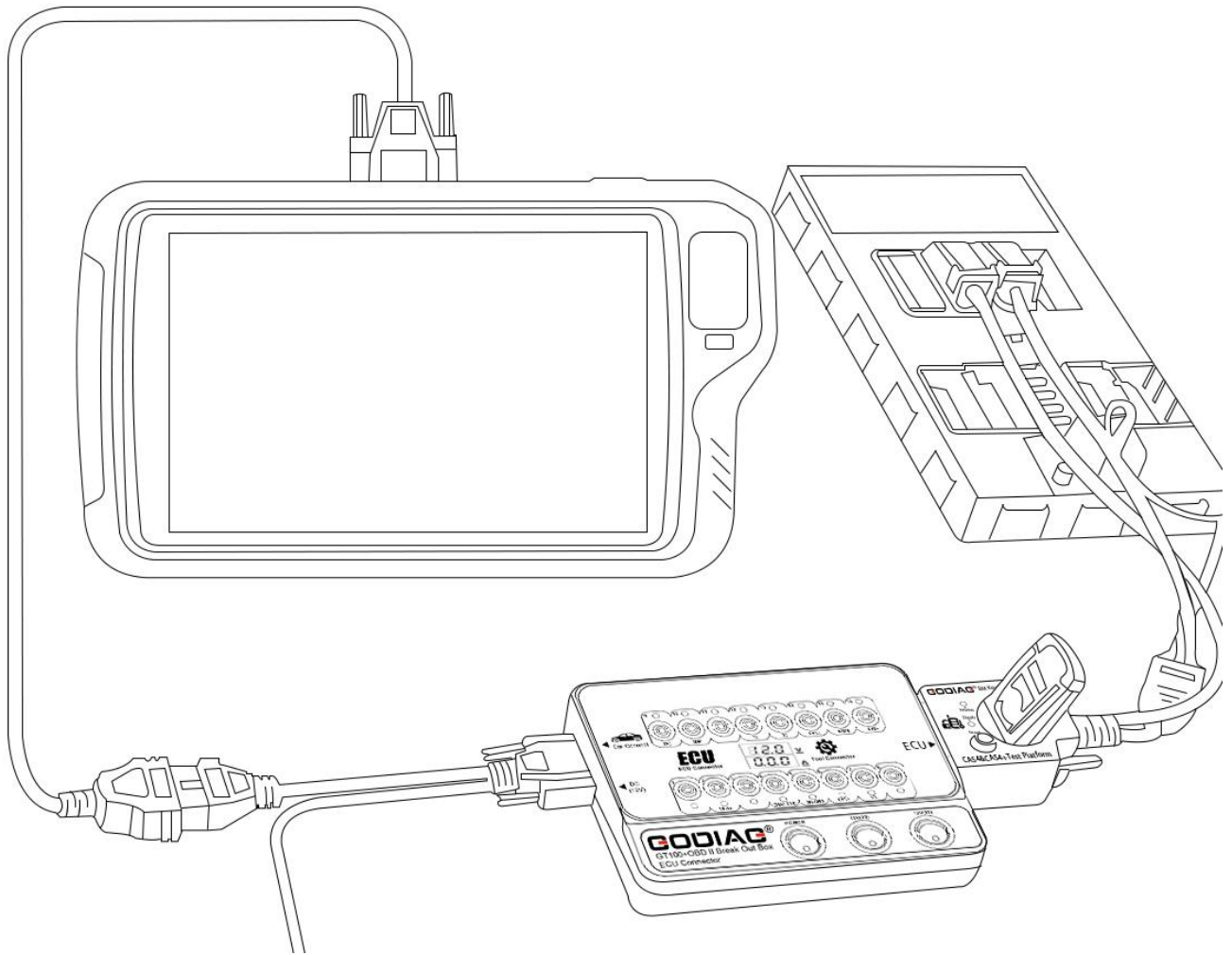
key works with CAS4 normally.

CAS4/CAS4 + Programming Test Platform Operation Steps:

① Connect the CAS dedicated plug to the CAS4 immobilizer module.

② Connect Godiag CAS4 / CAS4+ programming test platform to GT100+.

③ Connect the OBD2 female cable of GT100+ to VVDI2 or the device which can read the data of CAS4.

④ Open the key programmer software, follow the instruction to obtain the data to complete key programming.

⑤ If all keys lost, please keep pressing the start switch to forcibly start CAS4 so that the key programmer can read the data of CAS4.

⑥ Put the programmed key into the key coil of Godiag CAS4 / CAS4+ programming test platform.

⑦ Press the start switch of Godiag CAS4 / CAS4+ programming test platform, if the dashboard indicator turn on, it means that the key and the CAS4 module are synchronized, otherwise, they are not synchronized.

⑧ Press the start switch again, and the dashboard indicator turn off.

⑨ Press the start switch again, wait for about 10s and GT100+ CAN protocol indicator turn off.

13.) For BMW FEM/BDC Programming Test Platform

BMW FEM/BDC Programming Test Platform Operation Steps:

① Connect FEM/BDC dedicated plug to FEM/BDC immobilizer module.

② Connect GT100+ or Godiag OBD2-DB25 cable to Godiag FEM/BDC programming test platform.

③ Connect the OBD2 female cable of GT100+ to VVDI2/ VVDI KEY Tool plus or any other key programmer which can read data of FEM/BDC.

④ Open the key programmer software, follow the instruction to obtain the data to complete key programming.

⑤ Put the programmed key into the key coil of Godiag FEM/BDC programming test platform.

⑥ Press the start switch of Godiag FEM/BDC programming test platform, if the dashboard indicator turn on, it means that the key and the FEM/BDC module are synchronized, otherwise, they are not synchronized.

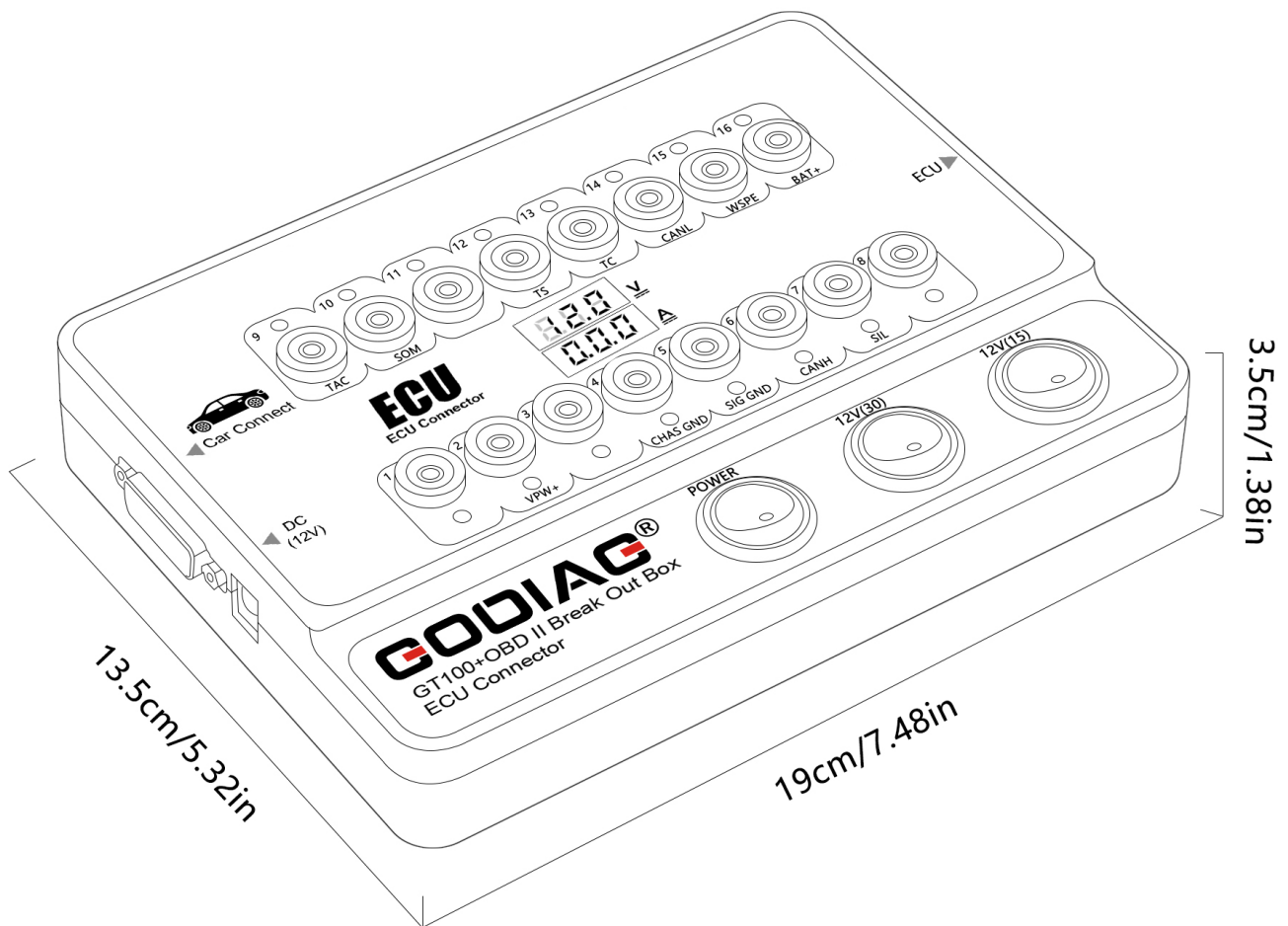⑦ Press the start switch for more than 3s, and the dashboard indicator turn off.

14.) More connectors and dedicated modules are under development, please wait...
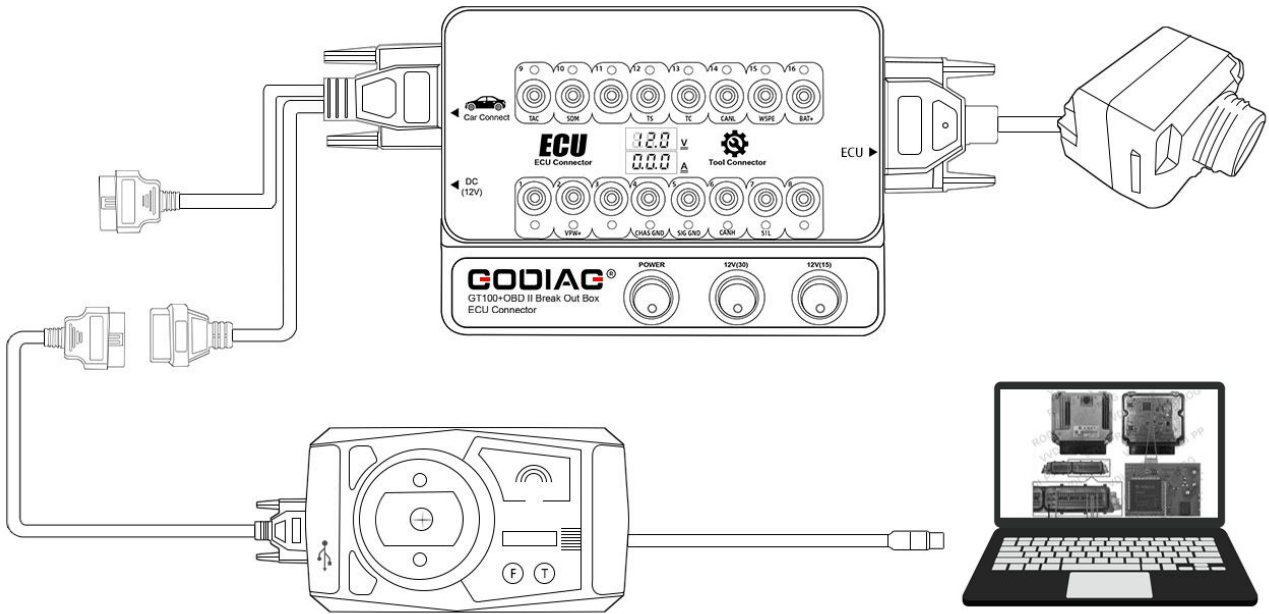
9. GT100+ Package List

- GT100+ host
- DB15-OBDII male connector-OBDII female connector
- DB25-ECU cable
- Banana plug connector
- 12V 1a power adapter
- Jumper
- CAN 120 ohm resistor

10. Product Specifications

Content	Description
Diagnostic interface	OBDII 16 pin
Working voltage	DC 9V-24V
Product power	0.8W
Adapter power	Input AC100v-240v output DC12V 1A
Working temperature range	-20 to 70 °C (-4 to 158 °F)
Storage temperature range	-40 to 85 °C (-40 to 185 °F)
Product packaging size	Carton 24*18*8 CM

11. Warranty

The product has a warranty of 1 year

Please fill in the following maintenance information for any after-sales services:

Contact name

Mailing address

Tel.

Complete problem

Proof of purchase

Send the equipment to your local distributor.

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Thank you for choosing GODIAG GT100+ AUTO TOOLS!