BRIO SCANNER

Scanning & Flashing tool for ECU's

USER MAINTENANCE

1. Ground
2. Ground
3. CAN High
4. K Line
5. CAN Low
6. NC
7. NC
8. L Line
9. Power (+ve)

User Name

User Email

Password

Date Created

Matrix Access

Flashing Access

Create User

Modify User

Delete User

Vehicle Communication Interface

PRAGATHI SOLUTIONS

POWER
USB
Wifi
ECU
RESET

PRAGATHI SOLUTIONS

Core Features:

- PC / Laptop interfaced Flashing Tool
- Online & Offline Flashing mode
- Flash multiple ECU's in Online mode
- Multiple Protocols & Automatic Protocol selection
- Inbuilt Power Supply, no external Battery required
- Complete Diagnostics & Flashing solutions enabled
- DTC's with Cause & Remedial action
- Adjust required parameters
- Injector Quantity Adjustment (IQA) Flashing
- 1D / 2D Scanner can be attached
- Online Firmware updation
- Offline GUI Software for Logged Data Analysis

PRAGATHI SOLUTIONS

An ISO 9001:2015 Certified Company

Developed by:

pragathisolutions.in

ITL International Tractors Limited

SOLIS

POWER
USB
Bluetooth
ECU Communication Status
Hardware Reset

BRIO SCANNER

ECU Diagnostics & Flashing Tool

BRIO Scanner

Pragathi Solutions
An ISO 9001:2015 Certified Company

Flashing is the complex mechanism with which the Dataset will be induce to the ECU. Single or multiple ECU's can be re-programmed & configured simultaneously.

ECU Diagnostics is the process through which the User will able to Diagnose the ECU's condition. This will support & lead the User's towards rectification of the problem.

Tools that are customized to OE specific requirements and developed in **complete confidentiality with proprietary controls governed by OEM**.

- An automotive **diagnostic tool** (scan tool) is an electronic device. Interface with Vehicle, diagnose the error codes, read the engine/vehicle sensor related parameter values. Reprogramming of vehicle/engine control modules(ECU's) is also possible with Diagnostics.

USB Cable

OBD Cable

Image: Diagnostic Tool

Core Features

-PC / Laptop interfaced Flashing Tool

-Online & Offline flashing mode

-Flash multiple ECU's in Online mode

-Multiple Protocols & Automatic Protocol selection

-Inbuilt Power supply, no external Battery required

-Complete Diagnostics & Flashing solutions enabled

-DTC's with Cause & Remedial action

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-Injector Quantity Adjustment (IQA) flashing

-1D / 2D Scanner can be attached

-Online firmware updation

-Offline GUI Software for Logged data analysis

Hardware features

- External Communication via K – Line / CAN
- CAN Communication via J1939 Protocol / UDS
- Power supply range 08 Volt – 32 Volt
- Current consumption by the device is less then 150 mA
- Idle / Sleep mode option enabled, if the device is not operating in any modes for SET duration.
- Password protected, ' USER Settings ' option present.
- Hardware is capable to handle Diagnostics & Flashing Application.
- 32 Bit, 120 MHz ARM Cortex Series Processer
- Internal / program Memory 2GB inbuilt
- External Memory 32 GB
- J1962M to DB9F, molded OBD Cable (Standard length 1.76 meters.).
- Diagnostic tool hardware use on-board vehicle battery while connected to Vehicle. To visualise the Post processing data or Firmware loading USB port can be used. No separate battery required.
- Uploading the data to PC / LAPTOP via USB 3.0 / Bluetooth
- LED status indication
- Device is resistant to vibrations and mechanical shocks
- Protection against transients, ESD
- EMI/ EMC protection enabled
- Hardware will support addition of future models /any up gradation in legalization requirements etc.

Software Features

- Windows based User interface
- Software wise selection for Diagnostics & Flashing activity
- Software Selectable options for multiple ECU's
- Supported protocols:
    i. CAN: ISO-11898/ISO 15031 ,ISO 14229 (UDS over CAN), J1939Data logging Supported for Diagnostics Session. GUI also support for view
    ii. K-Line: KWP/ISO 14230,ISO9141
- Encryption code will be generated each & every time between the Device Hardware & GUI Software for validation purpose. AES Encryption 128 bits for Data Security - Chip inbuilting of post processed data.
- Model wise software file to be upgradable in base software, without affecting on existing Version functioning.
- Software should be compatible for an upgrade with new features and technology for future requirement .
- 1D / 2D Barcode & Label Printer integration
- Online update of Firmware

Package Contains

◆ BRIO Scanner (Diagnostics & Flashing Tool)

◆ J1962M to DB9F, OBD Cable

◆ USB Cable 3.0

◆ User's Manual(Softcopy)

◆ Carrying Pouch

◆ Barcode (1D / 2D) Scanner (Optional)

- Size W x H x D- 100 x 82 x 32 mm.
- Weight - 330 Gram (Approx.)
- Body Color – Black & Navy Blue
- PC / Laptop Sync – USB Port (3.0)
- Vehicle Interface – OBDII - Cable
- Version – 12.0.0
- Language – English
- Product Type - Compact
- User Manual Language - English

- ECU Diagnostics

- ECU Flashing

- Read Live Parameters
- Diagnostics Trouble Codes
- Freeze frame data
- Cause & Remedial – DTC's
- Clear Trouble Codes
- Adjust Parameter
- Test Actuators
- Graphical view - Live Parameters
- Logged data analysis

ECU Flashing Modes

- Complete Flashing
- BOOT Area Flashing
- Async Software Flashing
- DATA Area Flashing

How do I connect a Diagnostic Tool?

- Below is a picture for reference of connecting a diagnostic tool to the system(Desktop Computer or Laptop) and to the Vehicle.

- Turn on the Ignition of the Vehicle.

Desktop PC/ Laptop
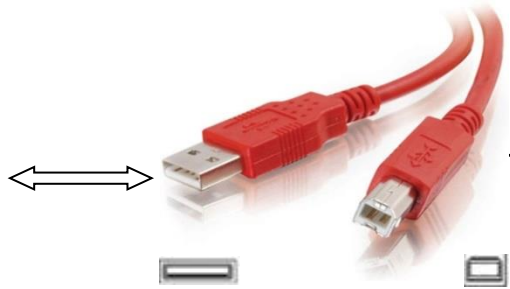
USB Cable

Diagnostic Tool

Tractor

OBD-II Cable

System Requirements
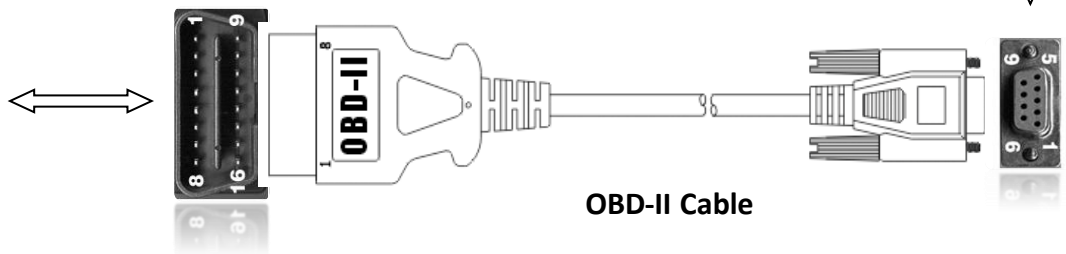
1. OS Supports- Windows 10

2. **Driver Required**:-

a).NET Framework v4.7 and above
Link to download .NET Framework:
https://drive.google.com/file/d/14EQUefo-pgts4ffmIuW3oo_Kh0wskTny/view?usp=sharing

b)USB-UART Drivers :
Link to download USB-UART Drivers :
https://drive.google.com/file/d/1bVOvJ93fRWzlKzYeB7ONXLPZ8qogl-Y3/view?usp=sharing

c) Application Setup File (Aftermarket):
Link to download Application Setup File(Aftermarket):
https://drive.google.com/file/d/1M9zfvlWfY4CLc9zFeSG6omU07oVvNdVc/view?usp=sharing

d) Application Setup File (Plant):
Link to download Application Setup File(Plant):
https://drive.google.com/file/d/1GJWgKSf8ogK-FNjIjbi4wWl_6CNVCyP1/view?usp=sharing

Sonalika_VCI_App
User Manual

Download Procedure For Application Setup & Driver

Step 1-Click on the below given URL to download the USB-UART driver
https://drive.google.com/file/d/1bVOvJ93fRWzlKzYeB7ONXLPZ8qogl-Y3/view?usp=sharing
Click on the below given URL to download the Application Set up(Aftermarket)
https://drive.google.com/file/d/1M9zfvlWfY4CLc9zFeSG6omU07oVvNdVc/view?usp=sharing
Click on the below given URL to download the Application Set up(Plant)
https://drive.google.com/file/d/1GJWgKSf8ogK-FNjIjbi4wWl_6CNVCyP1/view?usp=sharing

After clicking the URL below given page will open and then click on Download.
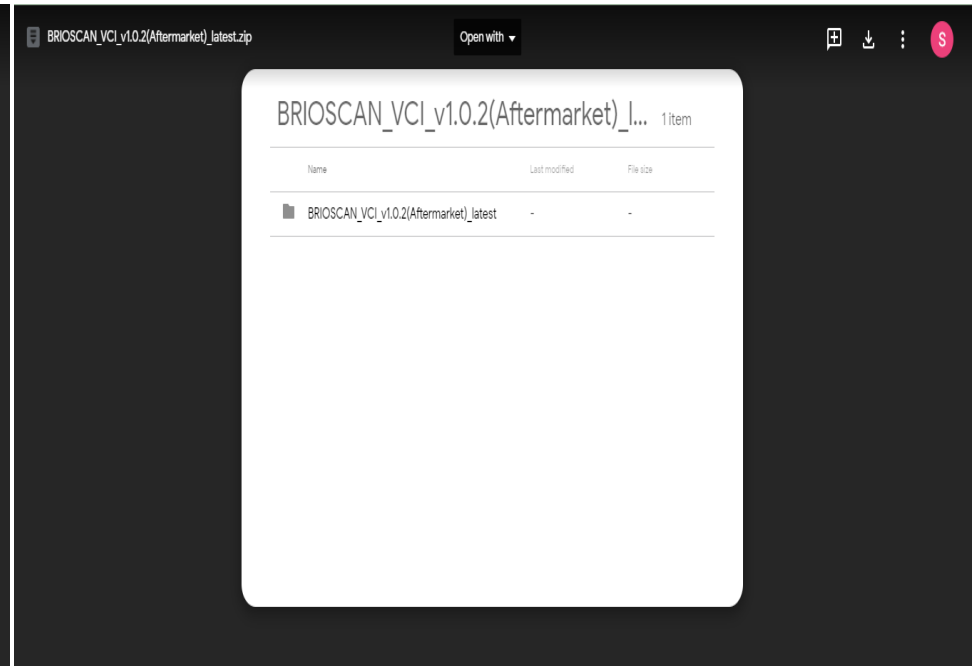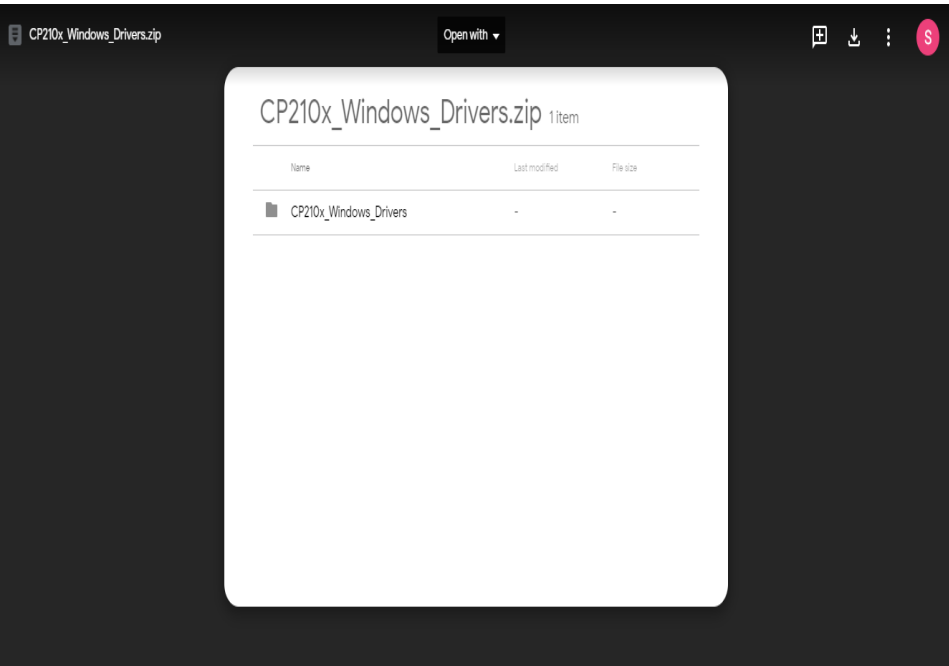
Step 2- Click on **Download anyway**. Then the folder will start to download.
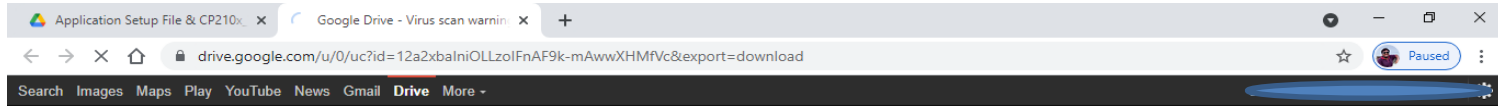
Step 3- To Extract the zip folder Click on **Extract To** and click **OK**.
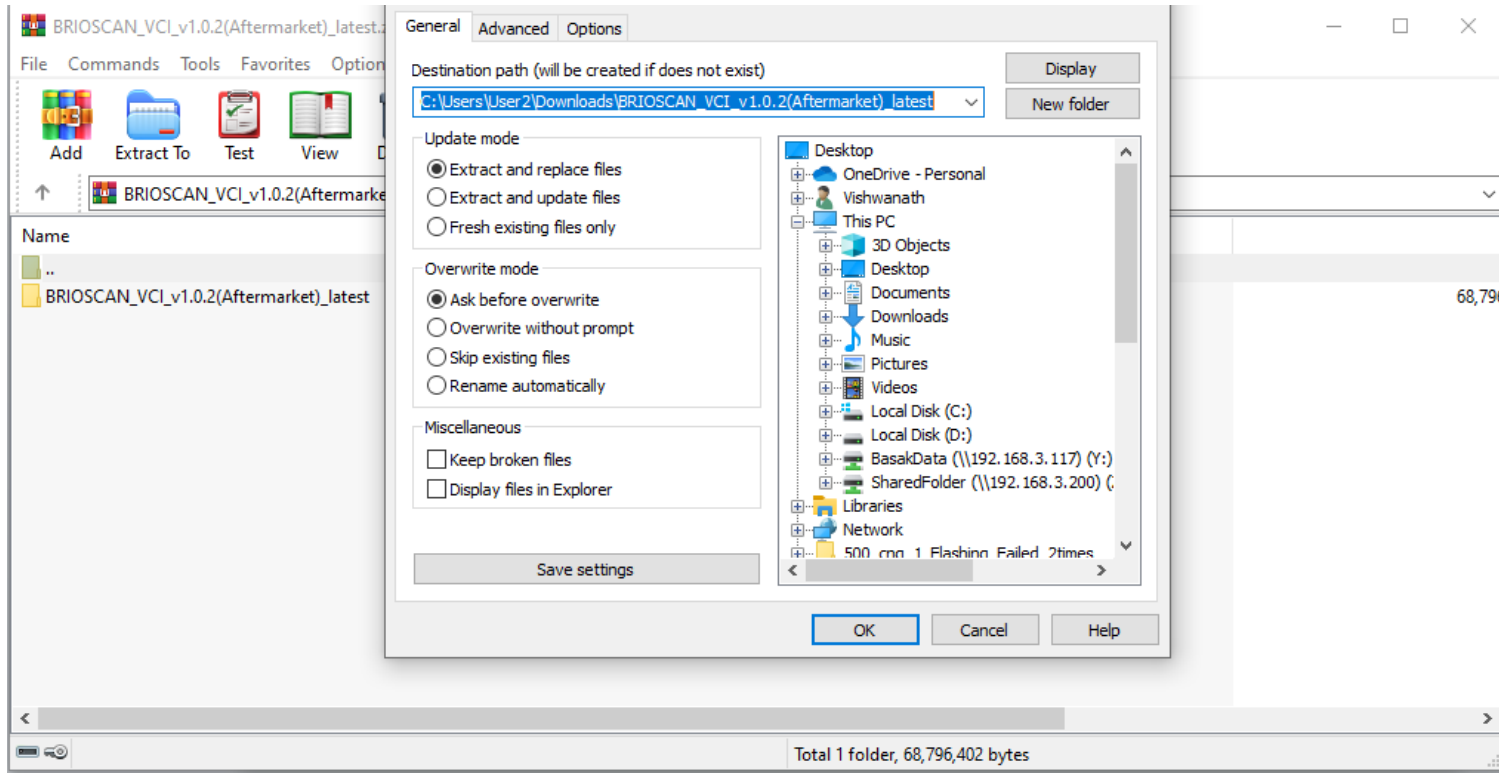
Step 4- Folder are started to extract**.**
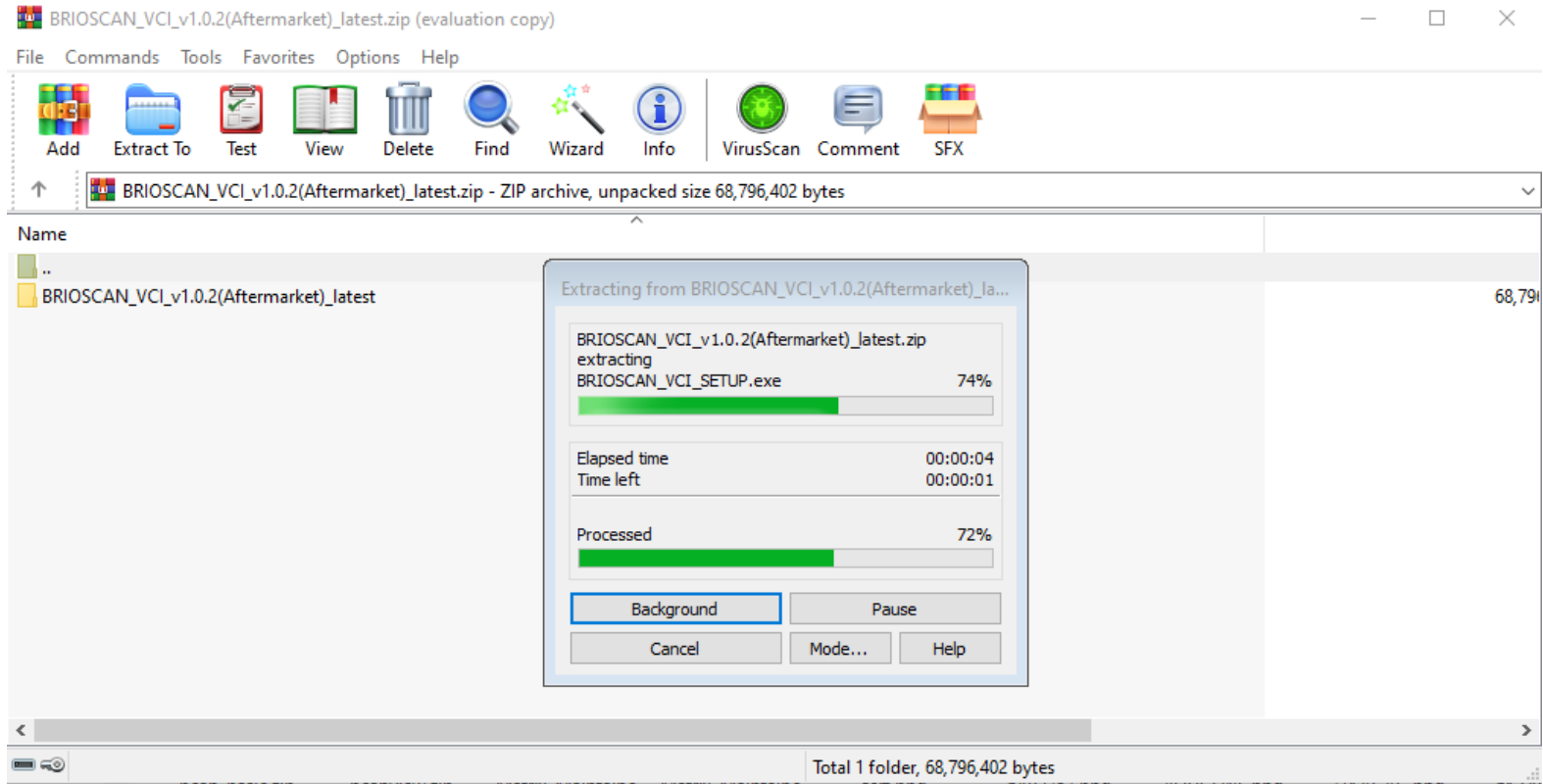
Step 5- The Folder is extracted. To open Double click on the folder.
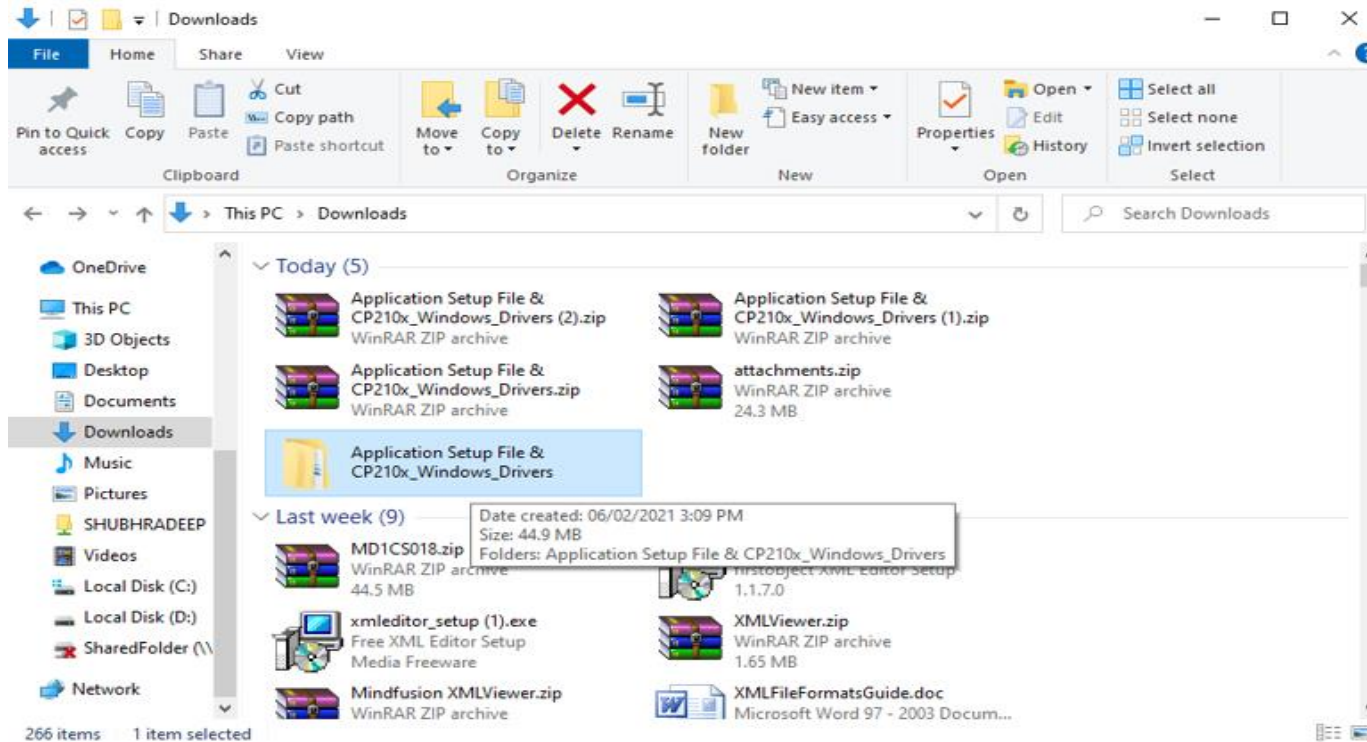
INSTALLATION PROCEDURE FOR CP210x_USB to UART DRIVER

Step 6- Double click on the folder.
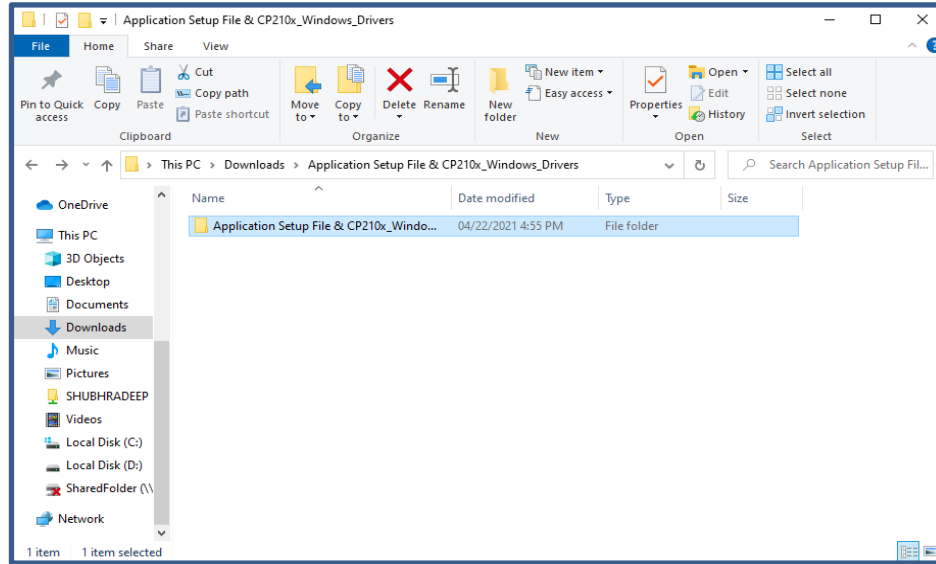
Step 7- To install the driver Double click on **CP210x_USB to UART Driver**.

Note- Installation of the drivers required only for the first time installation of the application. If already installed kindly ignore the step
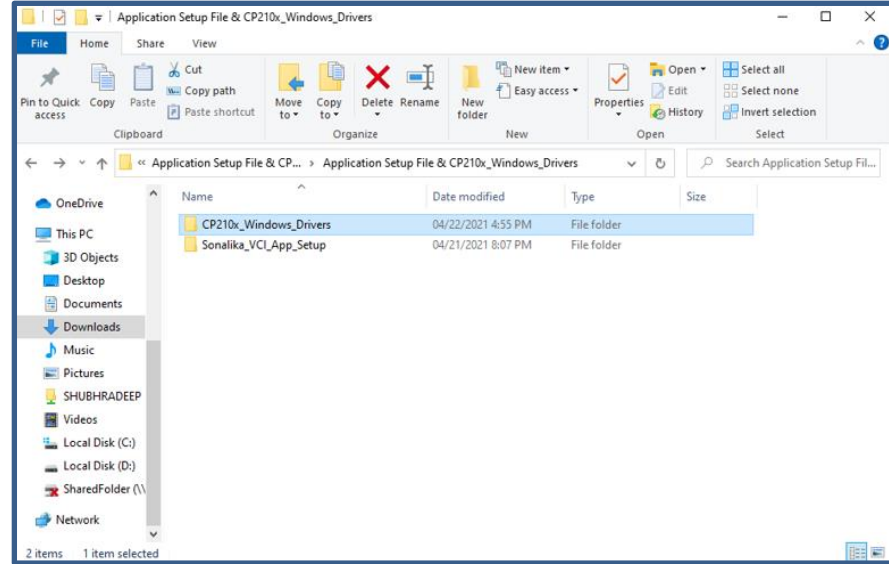
Step 8: If you are using 64-bit system then kindly install the **CP210x VCI installer_x64.exe .**

Step 9: If you are using 32-bit system then kindly install the **CP210x VCI installer_x86.exe .**
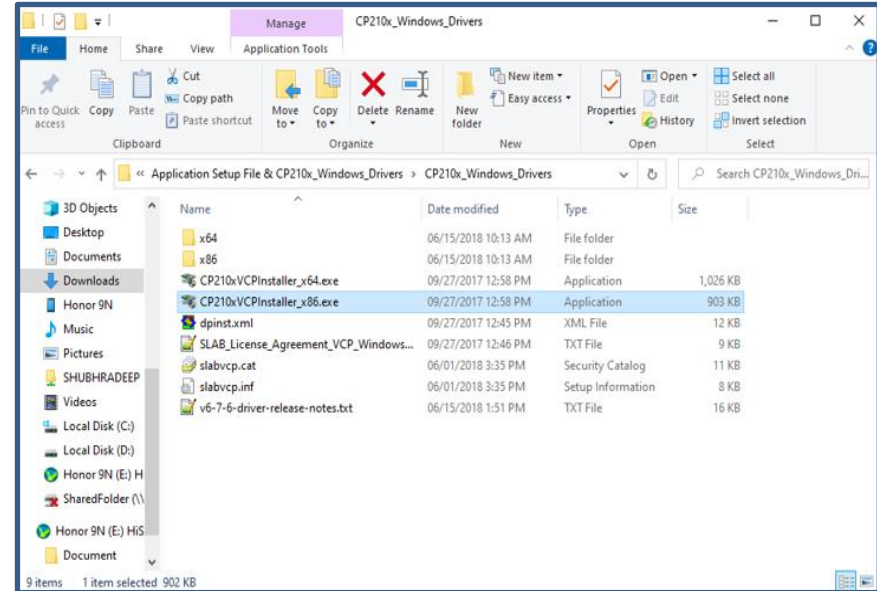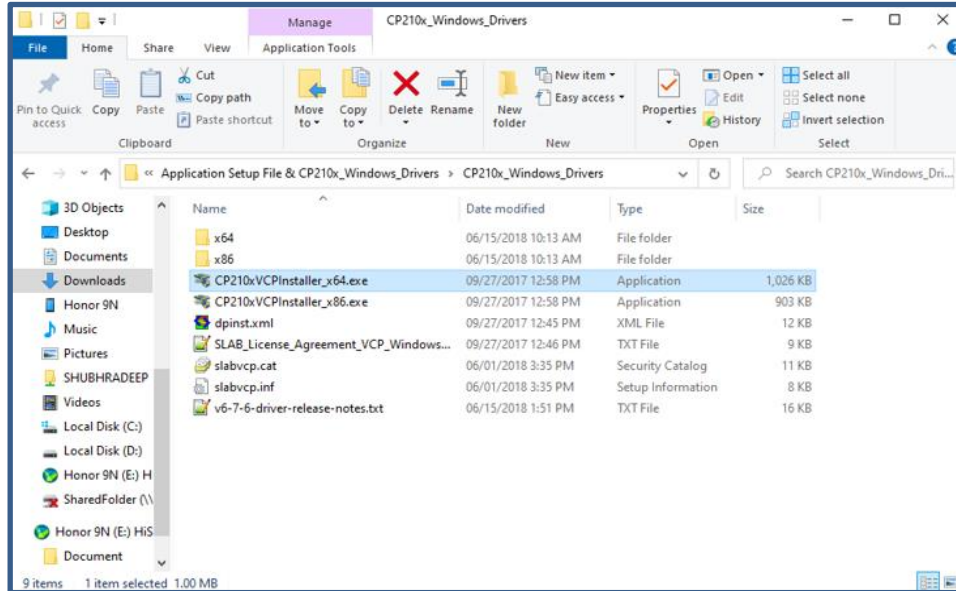
Step 10: Click Next.
Note- Installation steps are same for 32-bit & 64bit system.

Step 11: Select **I accept this agreement.** Then click Next.
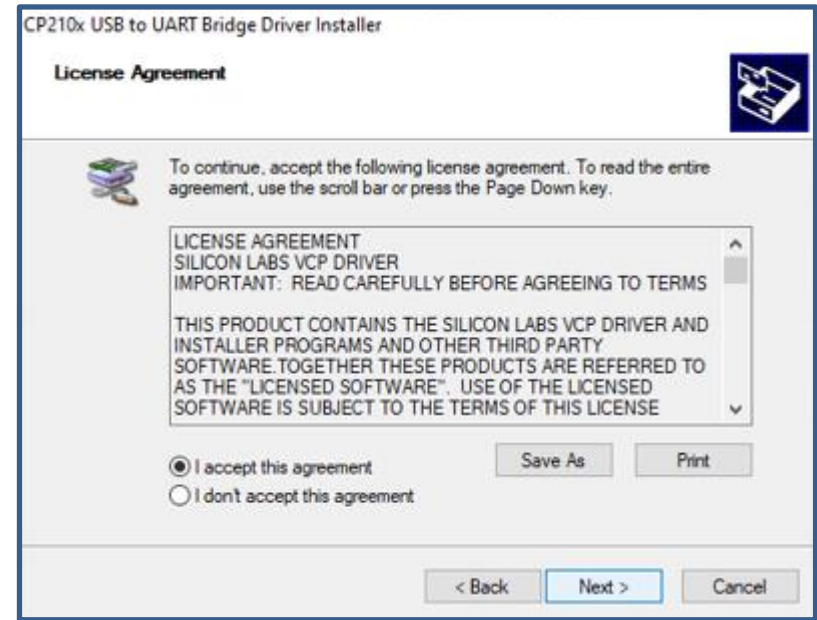
Step 12: Click Finish. **CP210x_USB to UART Driver** successfully installed .

Application Installation Process

Step 1: To install the application Double click on **Brioscan_VCI_Plant_1.2.2.**
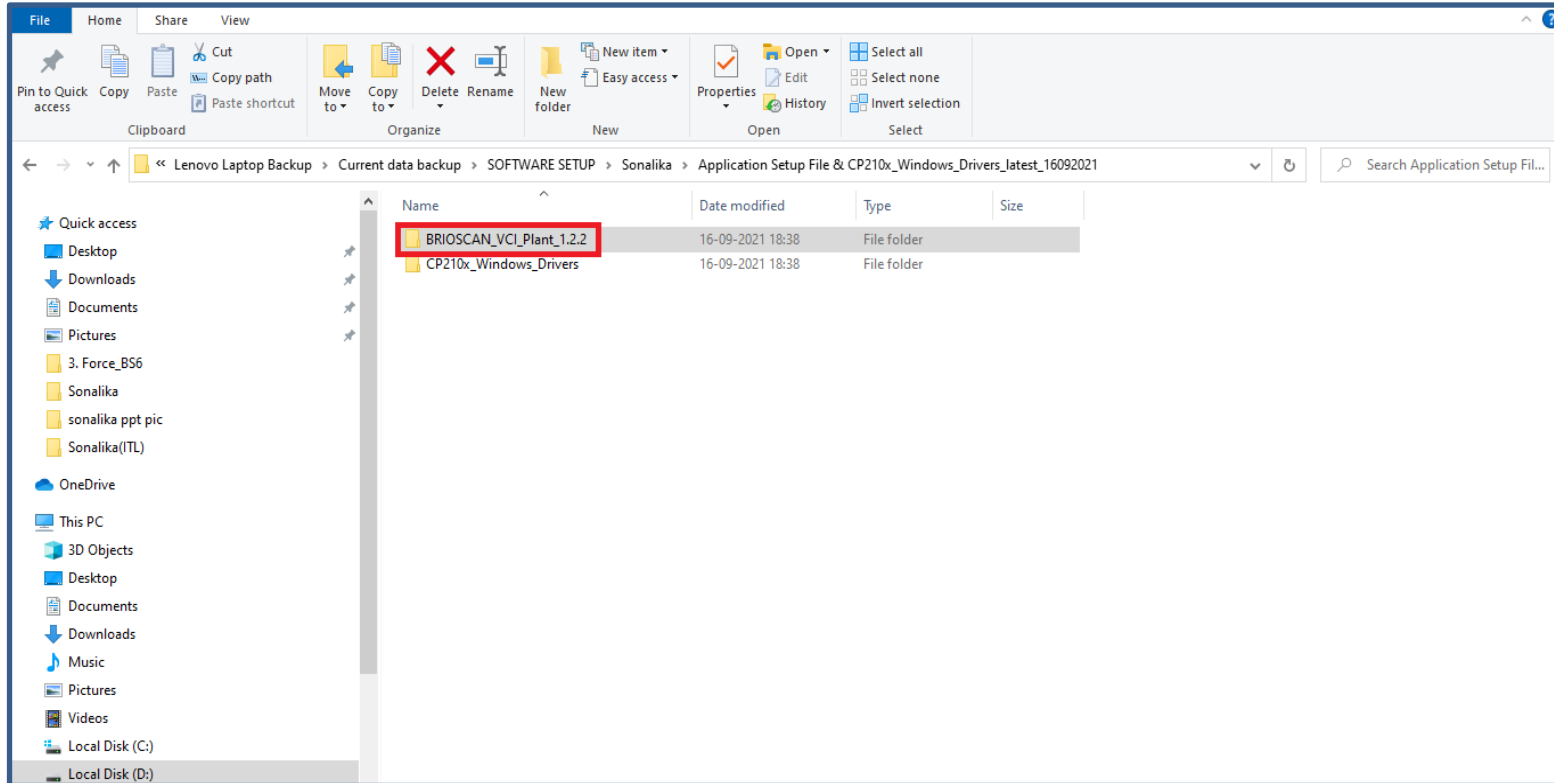
Step 2: To install the application setup. Double click on **setup.exe.**
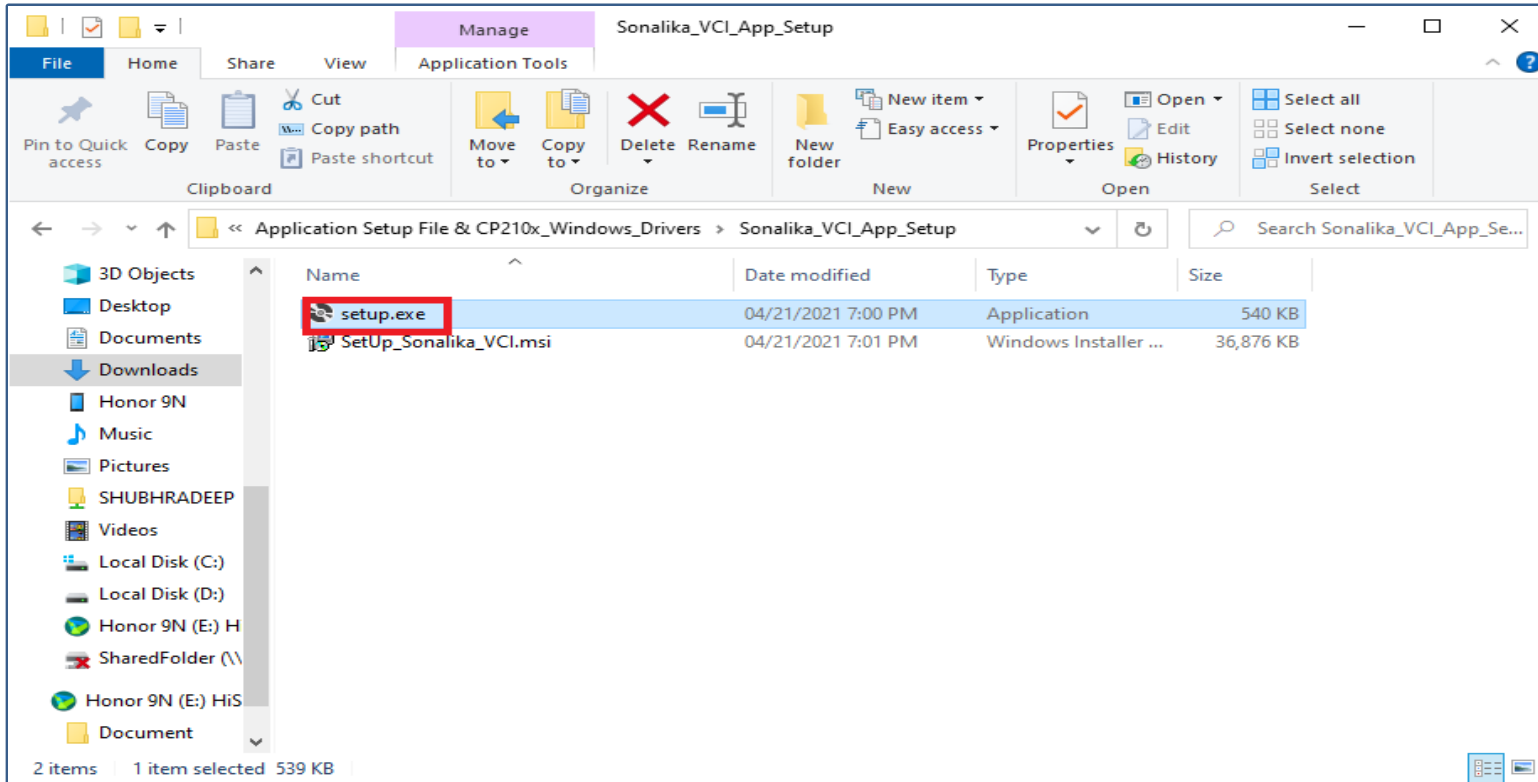
Step 3: Click on **Next.**
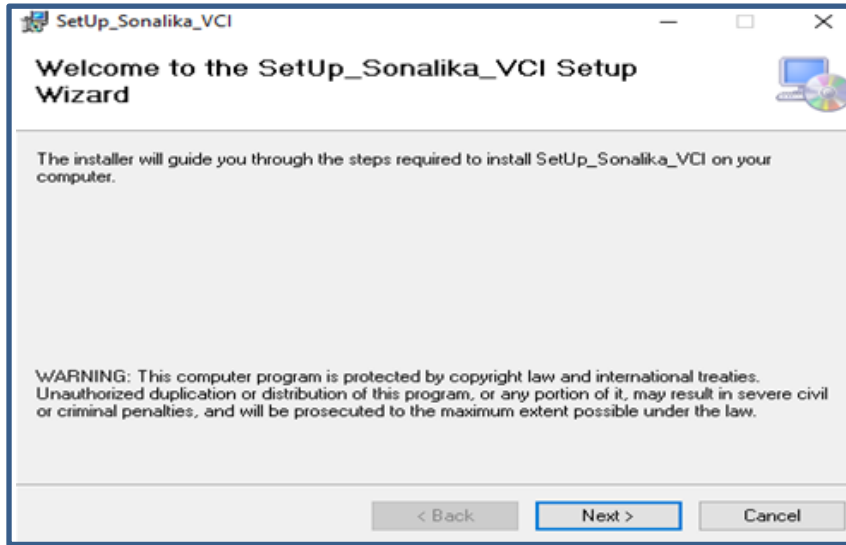
Step 4: Click **Next** if you want to install in C drive.
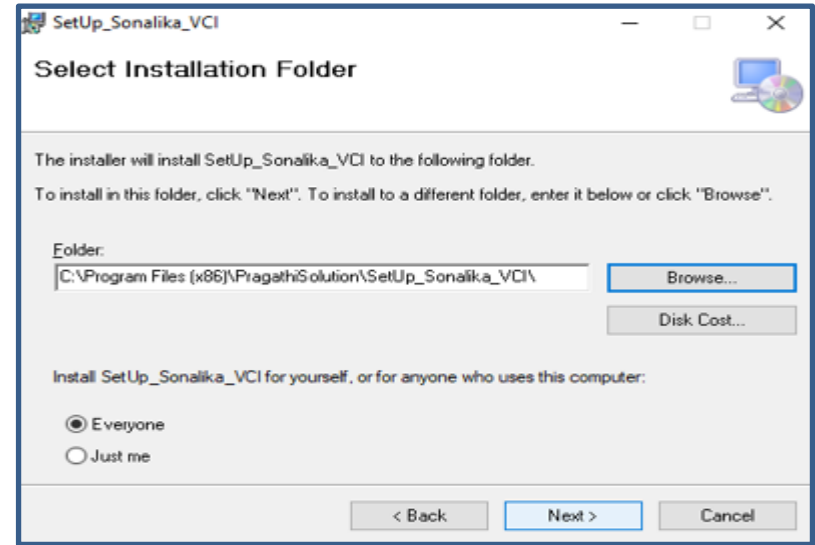
Step 5- : If the application is installed in C Drive then the application must Run with Administrator Access Enabled. To enable the Admin Access right click on the installed application .exe file and select properties & check the box **'Run this program as an Administrator'** and apply as shown in the image below
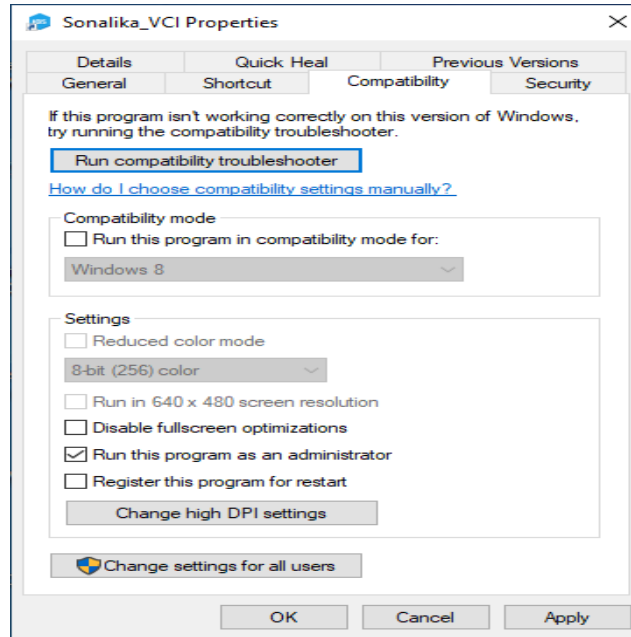
Step 6:If you want install in other path then click on **Browse** and select the path.
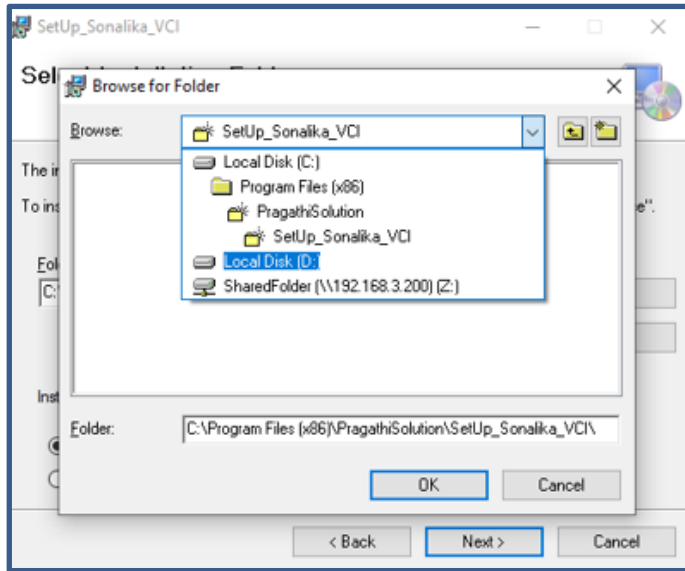
Step 7: Click on **Yes**
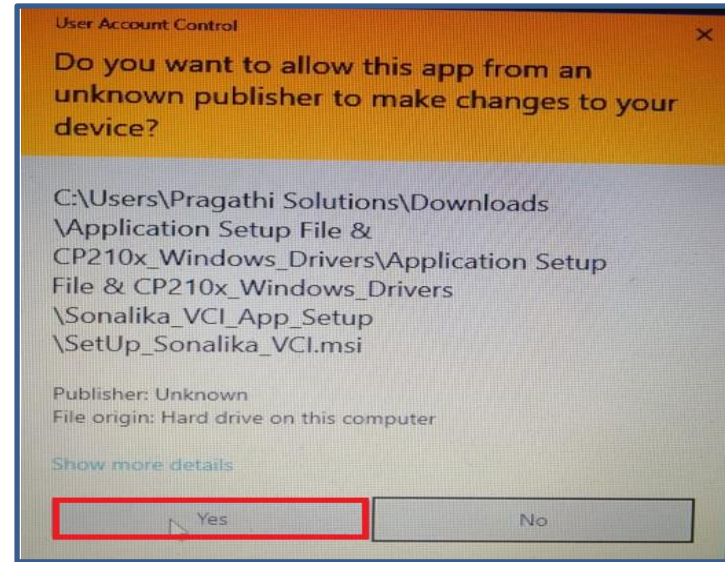
Step 8: Click **Next**.
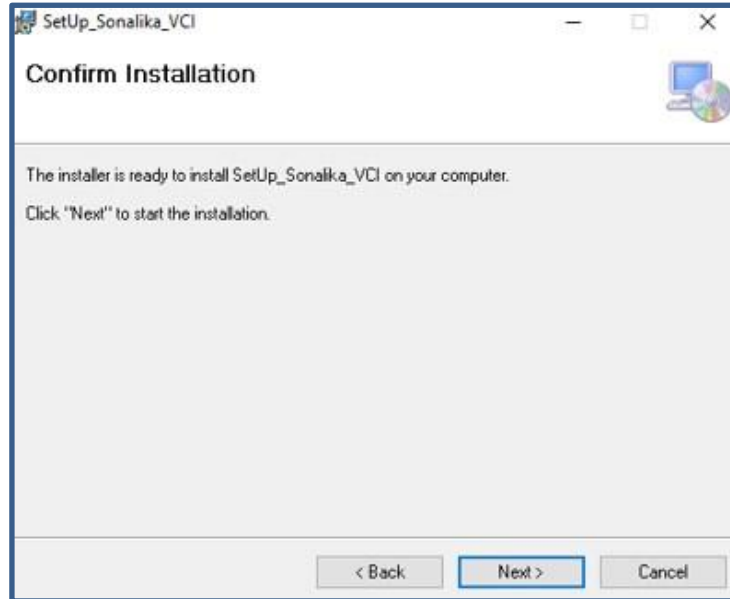
Step 9: Installation is in progress. Please wait until installation is complete
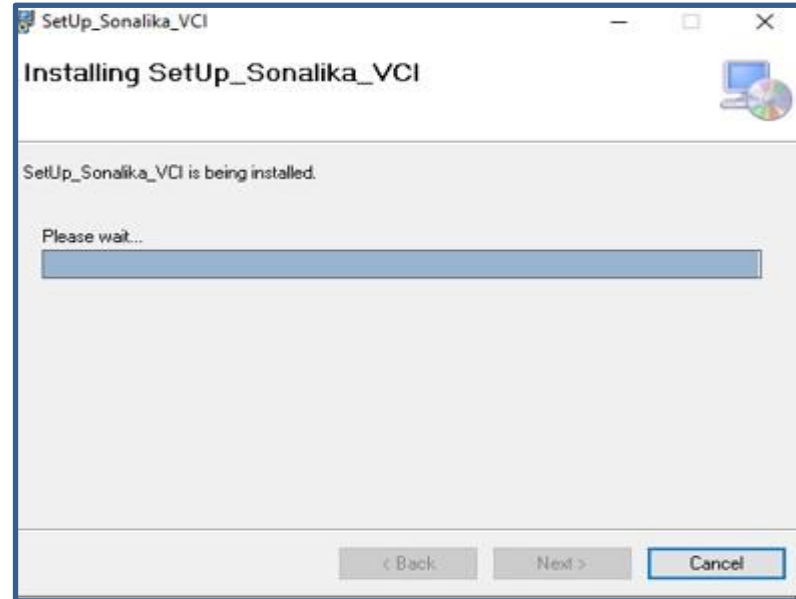
Step 10: Installation is completed. Click on Close.
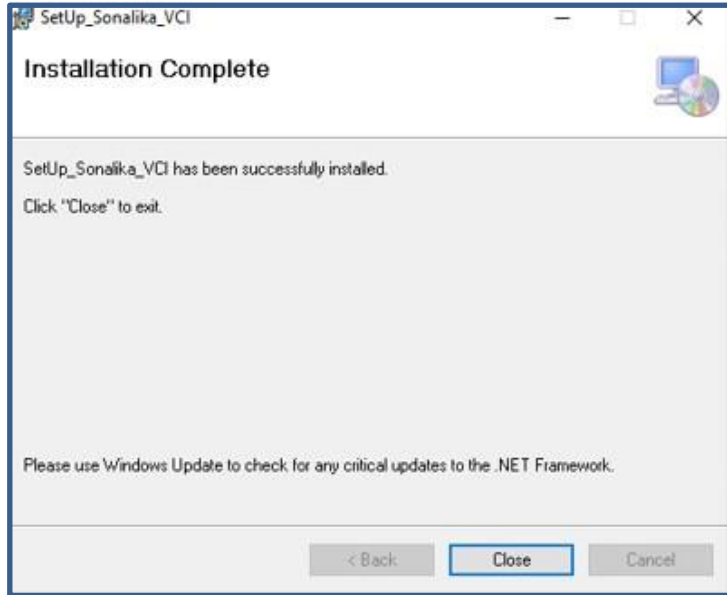
Step 11: After successful installation the icon will show as below highlighted.

Installation Complete

SetUp_Sonalika_VCI has been successfully installed.

Click "Close" to exit.

Please use Windows Update to check for any critical updates to the .NET Framework.

< Back   Close   Cancel
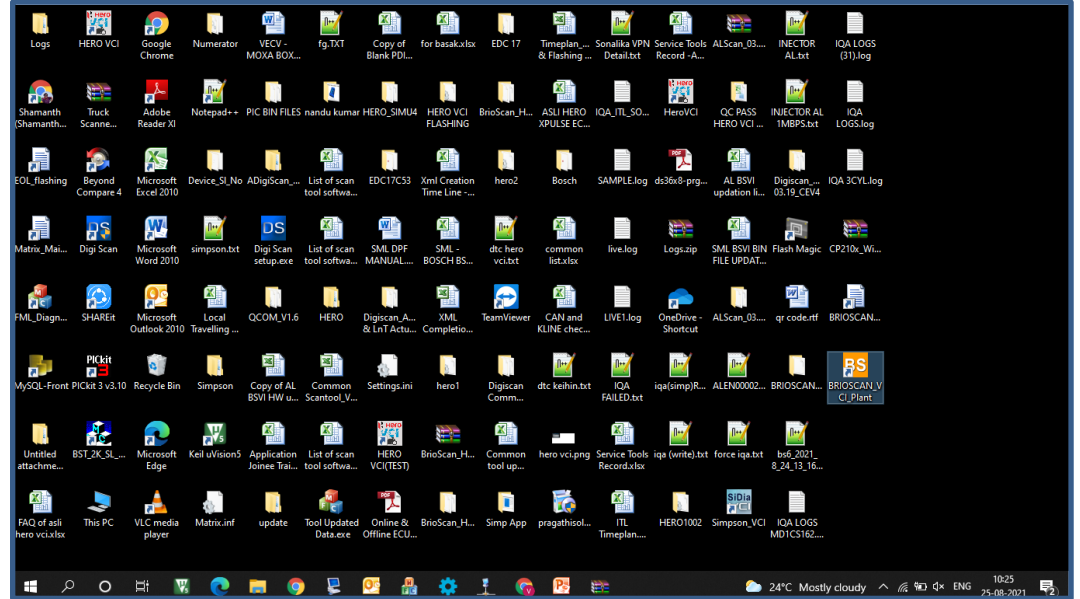
ECU Diagnostics Process

Step 1: Connect the Brio scan Tool to the System using USB Cable and Connect the OBD Cable to the Vehicle.

Step 2: Open the Sonalika_VCI Diagnostic Application.

Step 3: The COM Port is displayed in **'Select the COM Port'** Box. Enter the Username & Password and Click on Login. If Username & Password is valid then **'Login Successful'** message is popped up else **'Invalid Username or Password'** message is displayed.

User Name- Admin

Password- Admin@123456

Step 4: Select the ECU Type
ECU Type: 1. BOSCH MD1CS162
      2.BOSCH EDC17C53
      3. BOSCH MD1CS018

Step 5: Select the ECU Type- Bosch MD1CS162 to start the communication with the ECU. If the Communication is established then ECU Details page is loaded. If the ECU is Not Connected/Ignition is Off then 'Failed ECU Communication...! Please Turn ON Ignition and Try Again.'
Note: Please make sure the Ignition is turned ON before proceeding.

Parameter Name	Values
ECU Software Version Number	P2150_ITL_V410
Dataset ID	
ECU Part No.	
Engine Serial No.	5555
List No.	236
VIN No.	32156487945612365
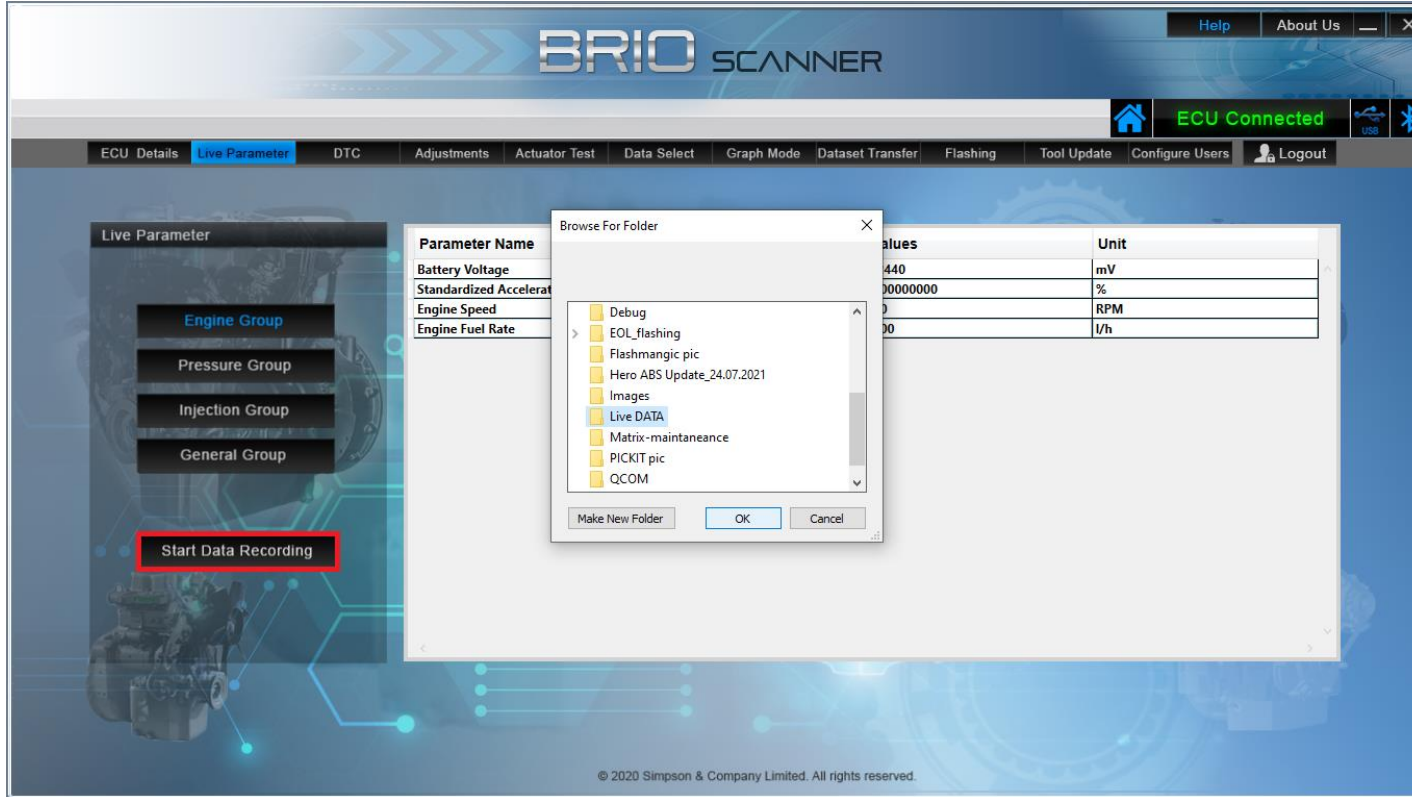
Step 6: Click on Live Data (Tab) to view the Vehicle Live(Read) Parameters. Select the Live Parameter Group from left pane.

Step 7: To record the Live Parameters Reading, click on Start Data Recording and select the path or Make new Folder to create the log file and click Ok.

Step 8: The data is logged and saved in .csv format

Step 9: The data is logged and saved in .csv format which can be viewed in Excel Format.

	Date and Time	Battery Voltage(mV)	Standardized Accelerator Pedal Position(%)	Engine Speed(RPM)	Engine Fuel Rate(l/h)
3	2021-09-16-20:56:49	12440	0	0	0
4	2021-09-16-20:56:50	12440	0	0	0
5	2021-09-16-20:56:50	12440	0	0	0
6	2021-09-16-20:56:51	12440	0	0	0
7	2021-09-16-20:56:51	12440	0	0	0
8	2021-09-16-20:56:52	12440	0	0	0
9	2021-09-16-20:56:53	12440	0	0	0
10	2021-09-16-20:56:53	12440	0	0	0
11	2021-09-16-20:56:54	12440	0	0	0
12	2021-09-16-20:56:54	12440	0	0	0
13	2021-09-16-20:56:55	12440	0	0	0
14	2021-09-16-20:56:56	12440	0	0	0
15	2021-09-16-20:56:56	12440	0	0	0
16	2021-09-16-20:56:57	12440	0	0	0
17	2021-09-16-20:56:58	12440	0	0	0
18	2021-09-16-20:56:58	12440	0	0	0
19	2021-09-16-20:56:59	12440	0	0	0
20	2021-09-16-20:56:59	12440	0	0	0
21	2021-09-16-20:57:00	12440	0	0	0
22	2021-09-16-20:57:01	12440	0	0	0
23	2021-09-16-20:57:01	12440	0	0	0
24	2021-09-16-20:57:02	12440	0	0	0
25	2021-09-16-20:57:03	12440	0	0	0

Step 10: Select DTC menu to Read DTC (Diagnostic Trouble Codes), Clear DTC, View Cause & Remedial Actions for the logged errors.
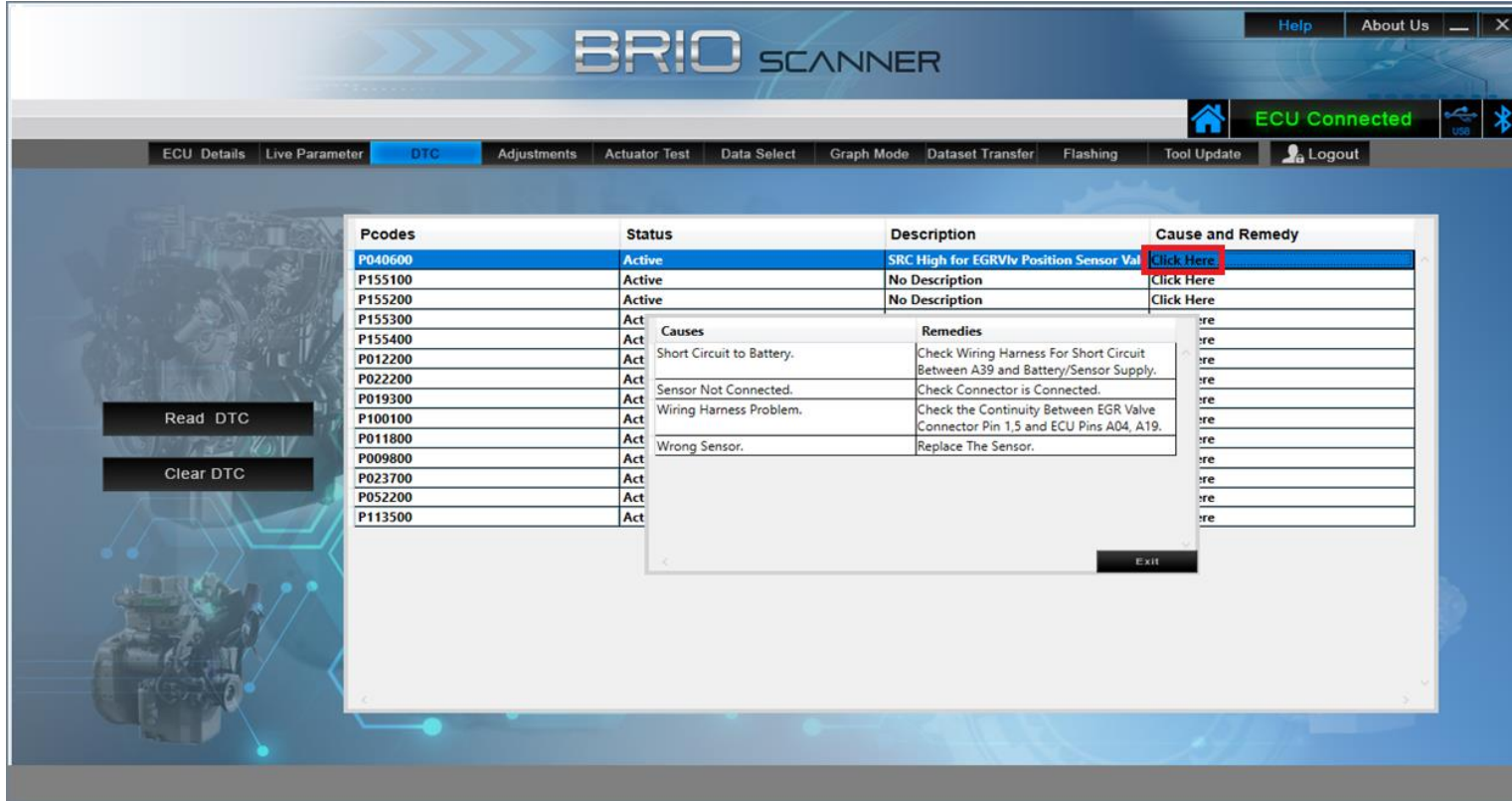
Step 11: Click on Read DTC button to view the Errors/Trouble Codes in the Vehicle.

Pcodes	Status	Description	Cause and Remedy
P012200	Active	Internal Fault Path No. :Short Circuit to GND of Acce Pedal Signal 1	Click Here
P022200	Active	Internal Fault Path No. :Short Circuit to GND of Acce Pedal Signal 2	Click Here
P019300	Active	Exceeding of the Maximum Rail Pressure Sensor Voltage	Click Here
P025100	Active	Negative Governor Deviation at Zero Delivery	Click Here
P011800	Active	SRC High For Engine Coolant Temp(Down Stream)	Click Here
P011000	Active	No Description	Click Here
P000000	Active	Signal Range Check Minimum For ECU Temp Sensor	Click Here
P023700	Active	No Description	Click Here
P000000	Active	Signal Range Check Minimum For ECU Temp Sensor	Click Here
P040300	Active	Open Load Error for Egrvlv H-Bridge Powerstage	Click Here

Read DTC

Clear DTC

Step 12: To view the Causes and Remedies click on **'Click Here'** of specified Error Code.
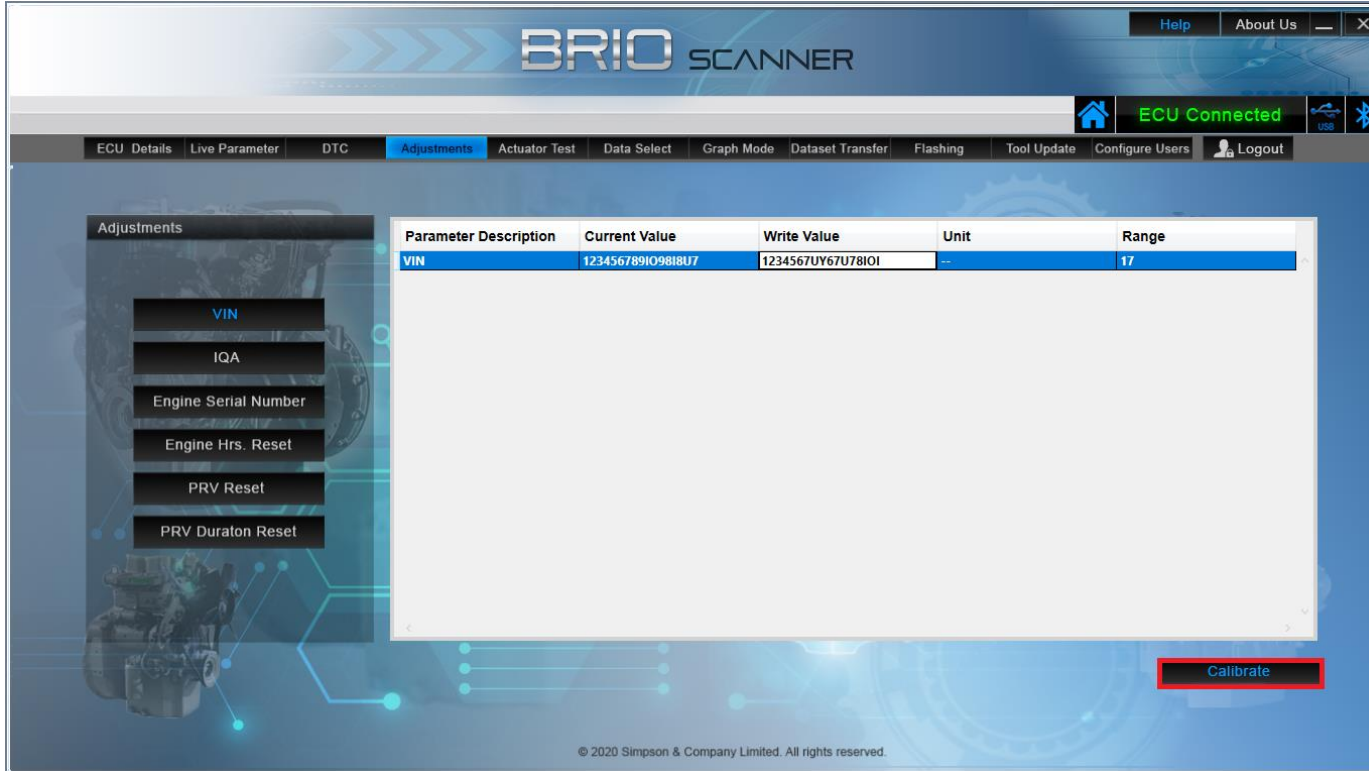
Step 13: Click on Clear DTC button to Clear the DTC. On Successful Clearing attempt the application displays the pop up message as '**DTC Cleared Successfully**'.

Step 14: Select Adjustments Menu to write VIN, Injector Codes, Engine Serial No., Engine Hrs. Reset, PRV Reset & PRV Duration Reset. Enter the Data in Write Value Column and click on Calibrate button to write in the ECU Memory. '**VIN Write Success**' message is displayed if the value is written successfully.
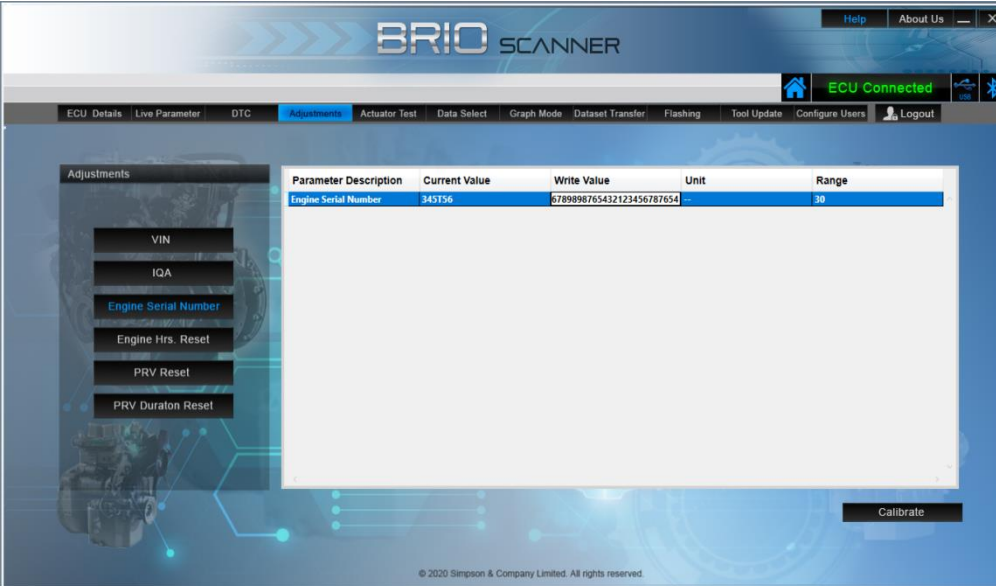
Step 15: Select IQA : **1. IQA-3 Cylinder**
                        2. IQA-4 Cylinder

Step 16: If User is selecting IQA-4 Cylinder then enter the IQA codes(IQA1,IQA2,IQA3,IQA4) and click on calibrate to write in the ECU Memory. '**IQA Write Success**' message is displayed if the value is written successfully.
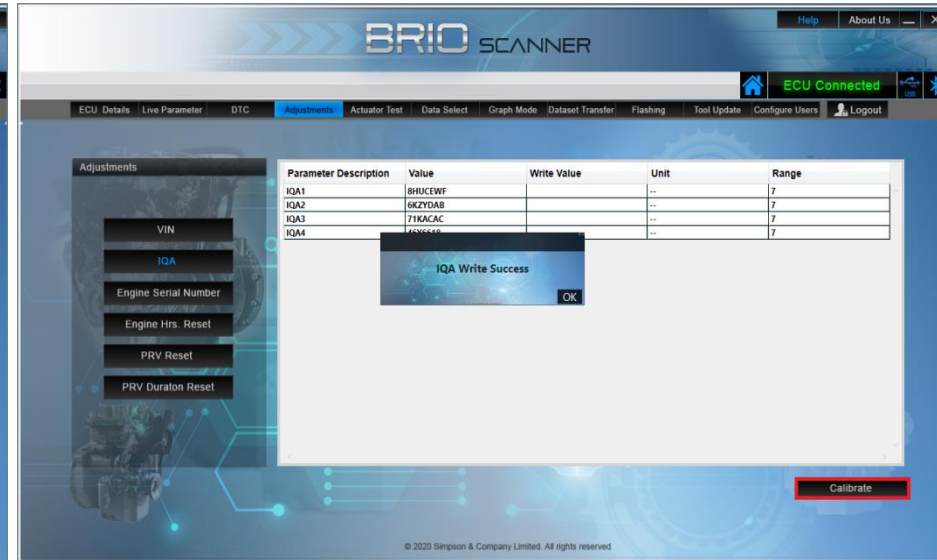
Step 17: Enter the Data in Write Value Column and click on Calibrate button to write in the ECU Memory.

Step 18: '**Engine Serial Number Success'** message is displayed if the value is written successfully.

Step 19: '**Engine Hours Reset Success'** message is displayed if the value is written successfully.

Step 20: '**PRV Reset Success'** message is displayed if the value is written successfully.
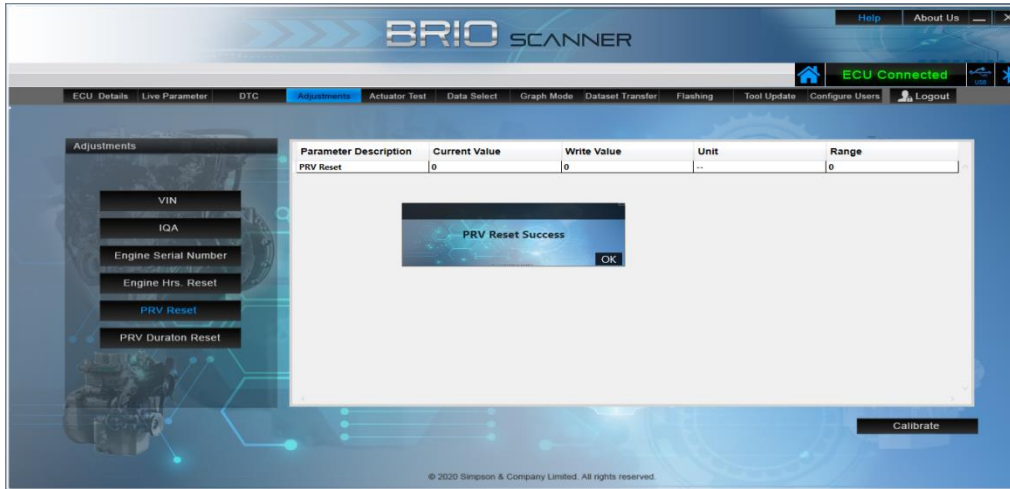
Step 21: '**PRV Duration Reset Success'** message is displayed if the value is written successfully
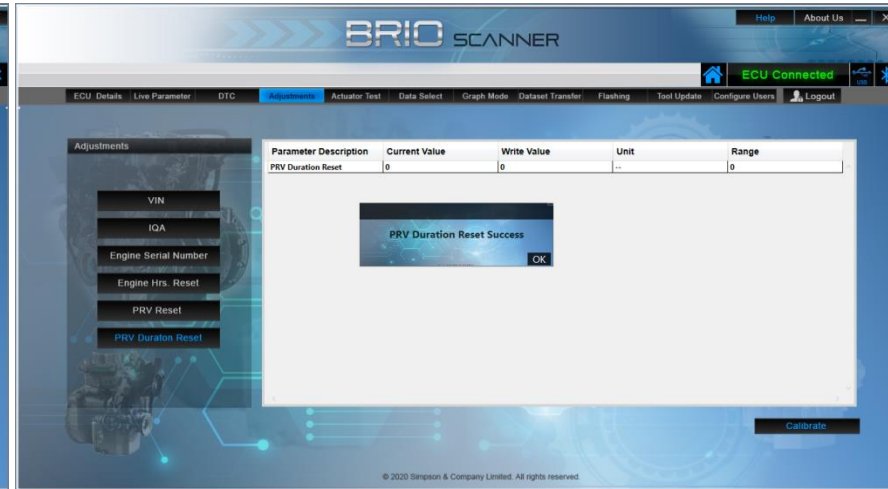
Step 22: Enter the Data in the Input Value Column and click on the Start button to activate the Test and then Click OK. '**Test Activated'** message is displayed if the value is written successfully.
Input Range: 5-95

Step 23: Enter the Data in the Input Value Column and click on the Stop button to deactivate the Test and then Click OK. '**Test Deactivated'** message is displayed.
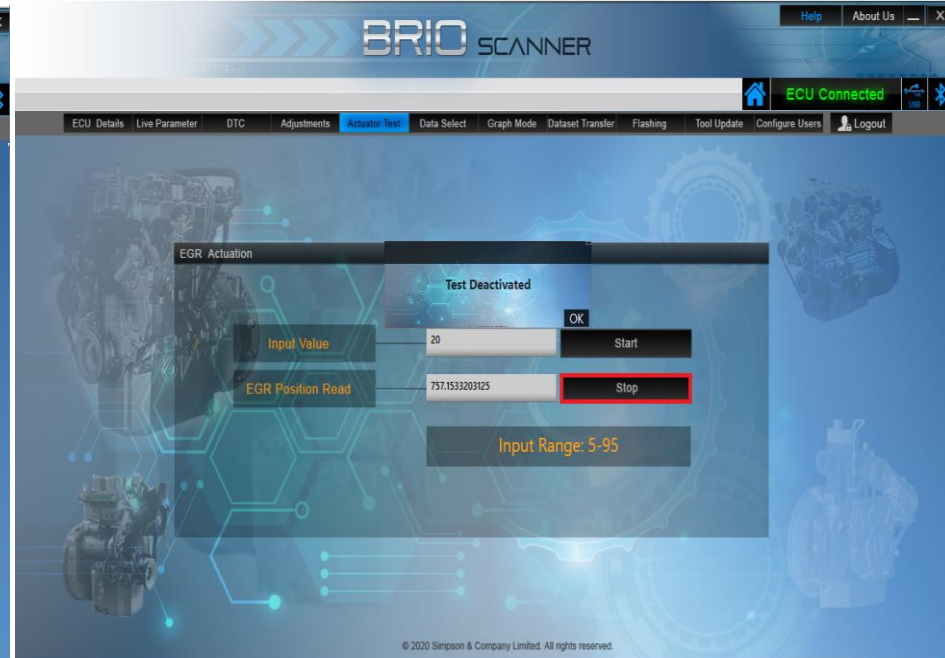
Data Select:
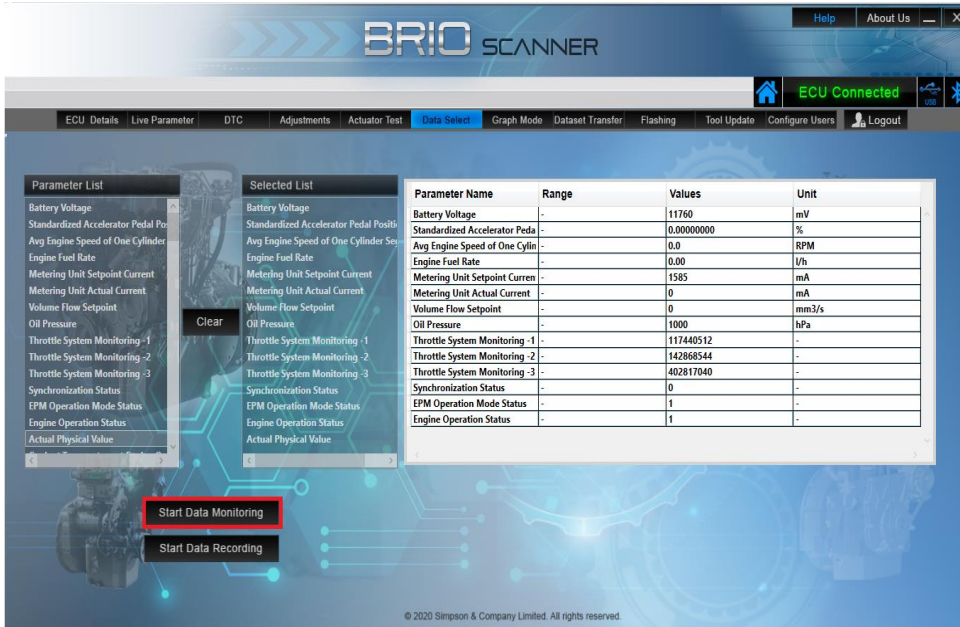
Step 24: Data Select is used to view Read Parameters Data based on Custom Selection.
Note: Maximum 15 Parameters only can be selected.

Step 25: To select the parameters double click on the parameter. The Selected parameter list is displayed in the Selected List box as shown in the image below
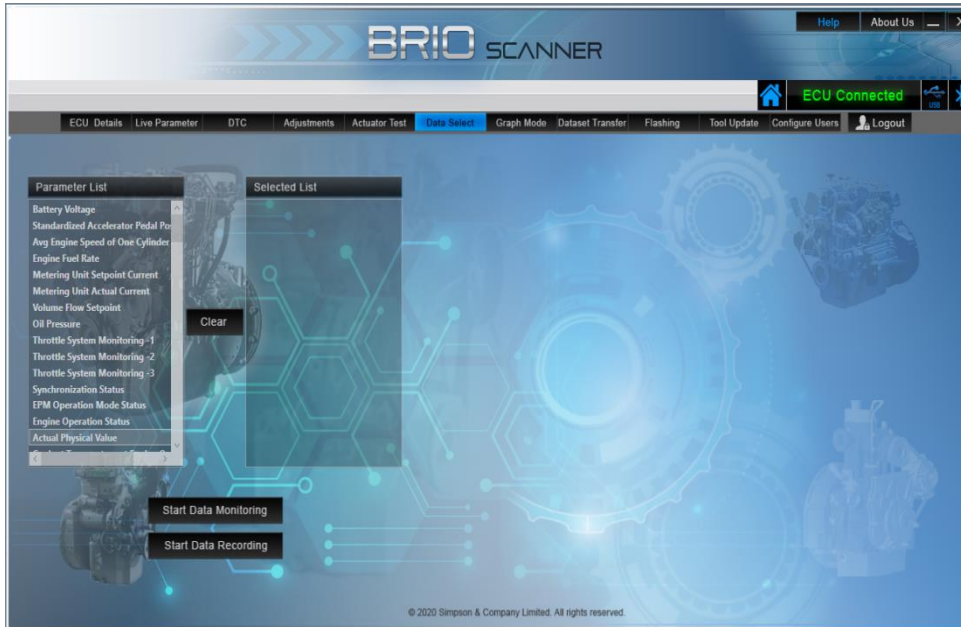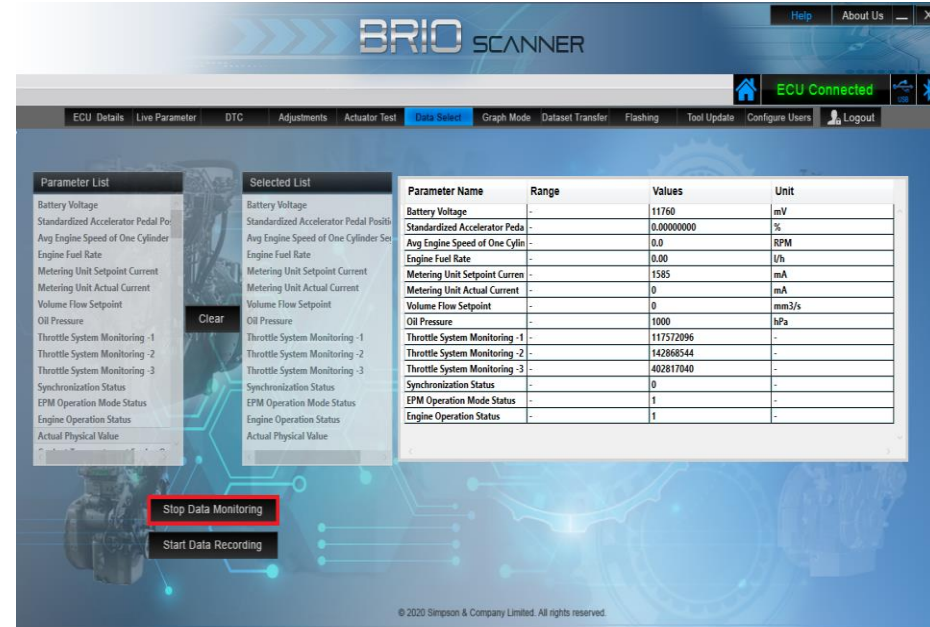
Step 26: After selection, click on Start Data Monitoring button to view the data.

Step 27: Click on Stop Data Monitoring button to stop monitor the data.

Step 28:To record the Parameters Reading, click on Start Data Recording and select the path to create the log file and click Ok. The data is logged and saved in .csv format which can be viewed using Excel

Step 29: The data is logged and saved in .csv format

Step 30: The data is logged and saved in .csv format which can be viewed in Excel Format.

Date and Time	Battery Voltage(mV)	Standardized Accelerator Pedal Position(%)	Engine Speed(RPM)	Engine Fuel Rate(l/h)
2021-09-16-20:56:49	12440	0	0	0
2021-09-16-20:56:50	12440	0	0	0
2021-09-16-20:56:50	12440	0	0	0
2021-09-16-20:56:51	12440	0	0	0
2021-09-16-20:56:51	12440	0	0	0
2021-09-16-20:56:52	12440	0	0	0
2021-09-16-20:56:53	12440	0	0	0
2021-09-16-20:56:53	12440	0	0	0
2021-09-16-20:56:54	12440	0	0	0
2021-09-16-20:56:54	12440	0	0	0
2021-09-16-20:56:55	12440	0	0	0
2021-09-16-20:56:56	12440	0	0	0
2021-09-16-20:56:56	12440	0	0	0
2021-09-16-20:56:57	12440	0	0	0
2021-09-16-20:56:58	12440	0	0	0
2021-09-16-20:56:58	12440	0	0	0
2021-09-16-20:56:59	12440	0	0	0
2021-09-16-20:56:59	12440	0	0	0
2021-09-16-20:57:00	12440	0	0	0
2021-09-16-20:57:01	12440	0	0	0
2021-09-16-20:57:01	12440	0	0	0
2021-09-16-20:57:02	12440	0	0	0
2021-09-16-20:57:03	12440	0	0	0

Graph Mode:

Step 31: Select the Graph Mode Menu to view the parameters in Graphical Representation.
Double Click on the parameter to select. Click on Start Data Monitoring button to view the graph and Stop Monitoring to stop.
Note: Maximum 3 Parameters only can be selected.

Step 32: Click on Stop Monitoring button to stop monitor the data.

Dataset Transfer & Flashing Process

Dataset Transfer

Step 1: Select Dataset Transfer Menu to transfer the Dataset to VCI Memory. The Available files list will be showed in the grid as shown in the image below. If files are not available then the pop up message 'No Files Available' is displayed.
Note: Once you enter Dataset Transfer or Flashing Menu, you cannot go to any other Menu. You need to logout the application and log in again to enter in Diagnostic Mode

Step 2: To Transfer the Dataset, click on Browse File.

Select the Dataset File from the system that is to be transferred. Click on Transfer File to start transferring.

Note: Only One Dataset can be transferred at one instance.
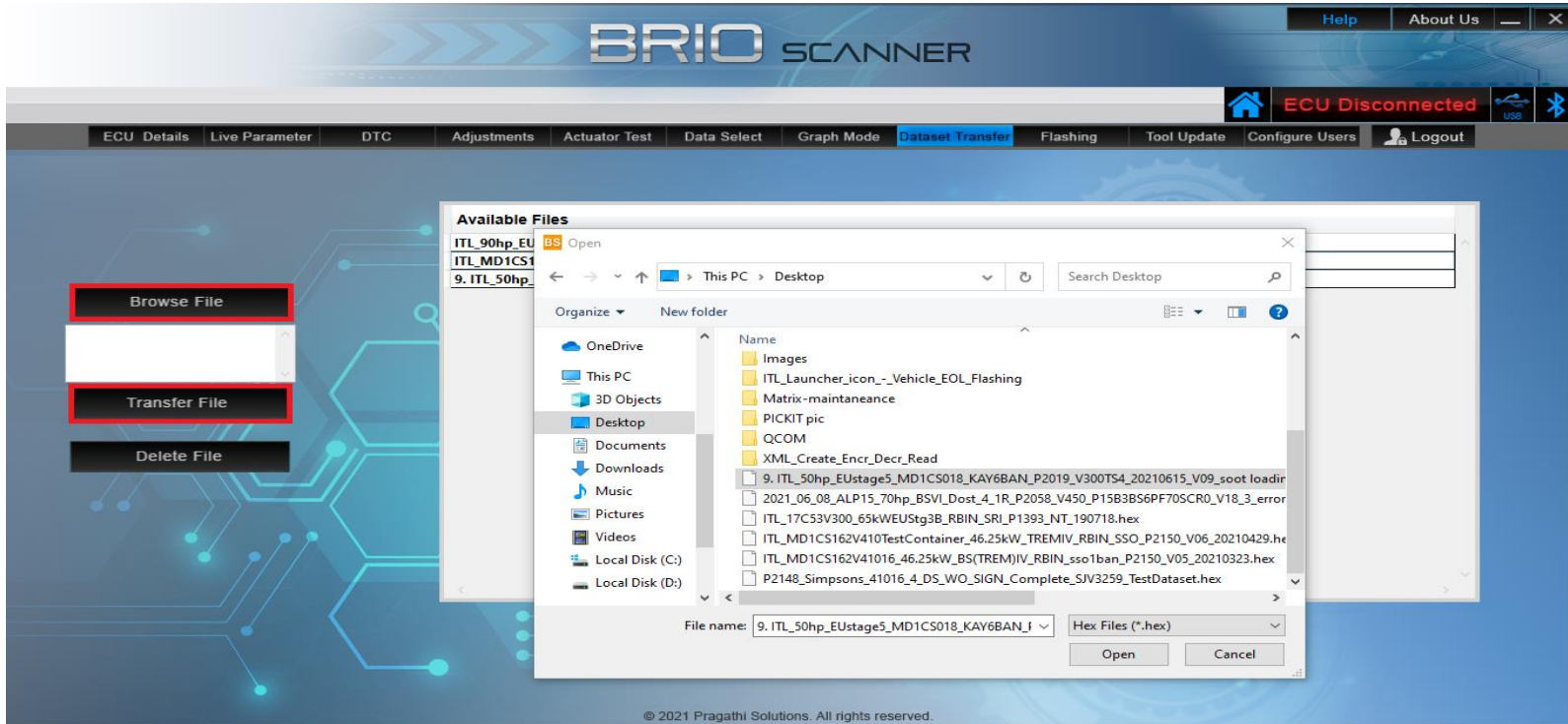
Step 3: The application is logged out automatically during the Dataset Transfer operation.
Note: Only One Dataset can be transferred at one instance.

Step 4: On Completion of Dataset Transfer the **'File Transfer Completed'** message pop up is displayed.
Note: The four instances of 100% transfer operation has to be completed for full single dataset transfer.

Flashing- 1.SD Card
      2.System Based

1. SD Card Flashing

Step 1: To Flash the ECU select the Flashing Menu. Available Files in SD Card will be displayed in the application. If the files are not available transfer the files first and then perform the Flashing operation. Select the file from the list that needs to be flashed and Click on Start Flashing button.

Step 2: On successful completion of ECU Dataset Flashing **'Flashing Success'** message is displayed and the application is logged out automatically. The user now can login and perform the Diagnostic Operations.

2) System Based Flashing.

Step 1: To Flash the ECU select the Flashing Menu. Then select **"System Based flashing".**

Note: Before selecting the system based flashing, ensure that the dataset which you are going to flash that dataset should be available in your system. If not available kindly copy the dataset on your system.

Step 2: Click on Browse File. Select the Dataset File from the system.
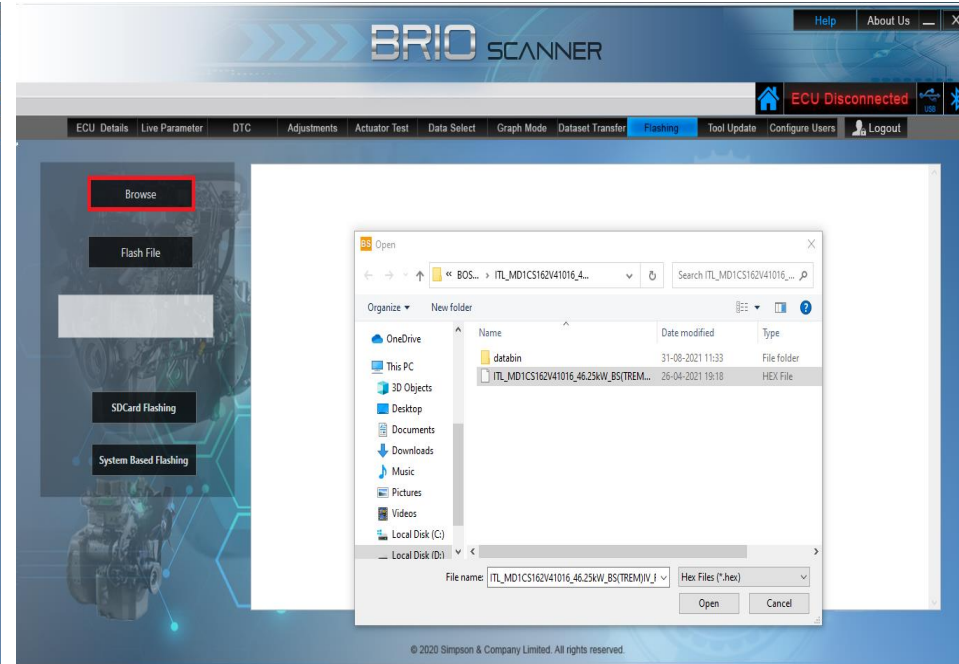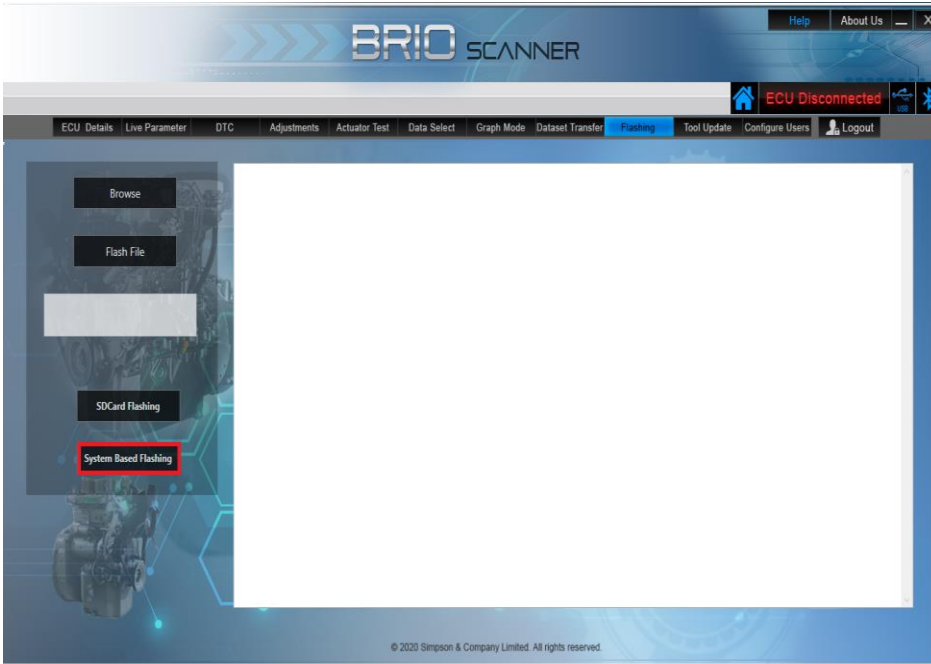
Step 3: Click on a **'Flash File'** to start the flashing. Flashing Process is being displayed in the Flashing Status window.

Step 4: On successful completion of ECU Dataset Flashing **'Flashing Success'** message is displayed and the application is logged out automatically. The user now can login and perform the Diagnostic Operations.

TOOL UPDATE PROCESS

Tool Update:

Step 1: Select Tool Update Menu to Update the VCI tool.

Step 2: Click on Browse File. Select the .bin file from the system and click Open .
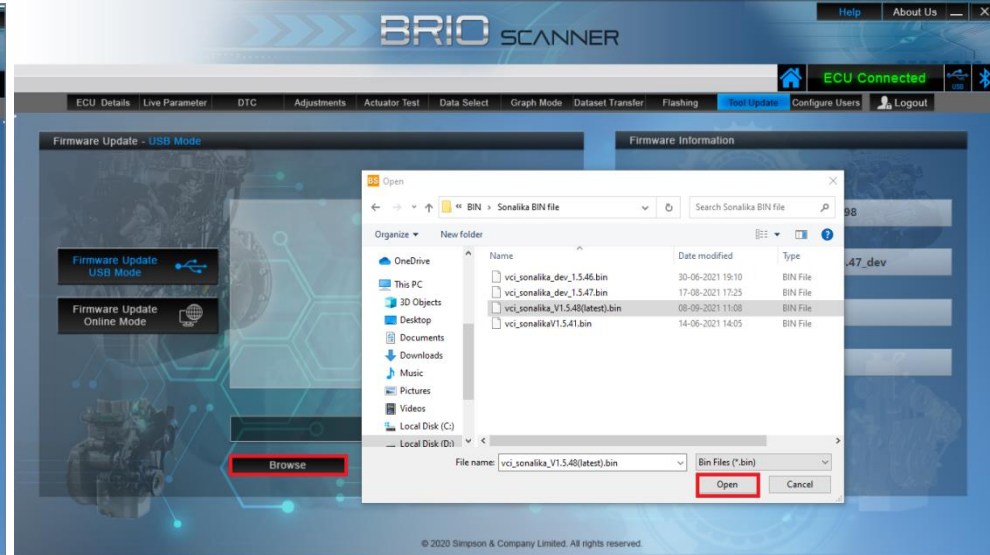
Step 3: Click on Update tool. Tool updating is in progress and is being displayed in the Update tool window.
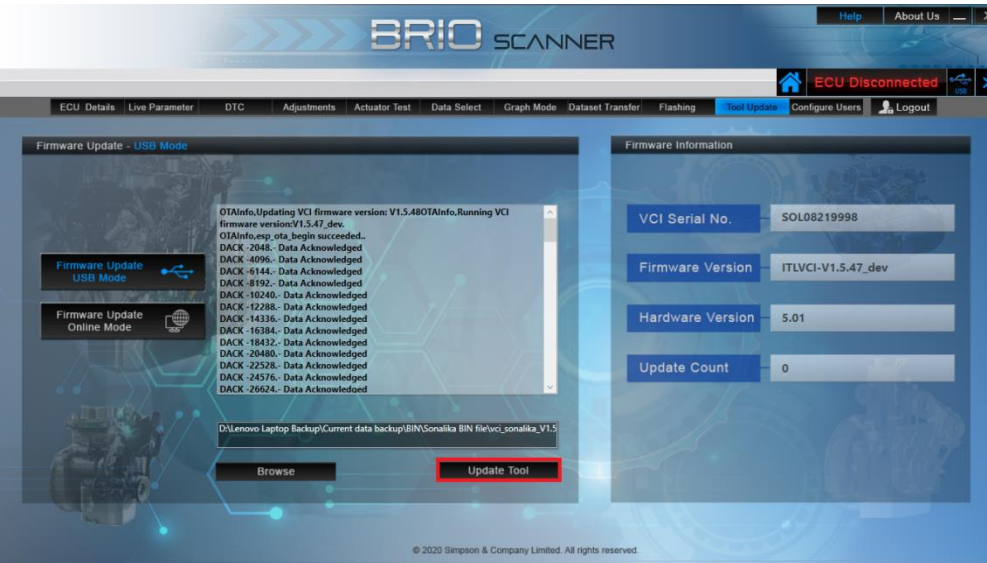
Step 4: Once Tool update is completed **"RESET Success. Please Login Again"** message is displayed and the application will log out.

Configure Users:

Step 1: To create New User Login's click on Configure User.

Step 2: Enter the Details in User Creation Menu as shown in the image below.

Step 3: The Admin user has the rights to decide which user has to be given the Access for Adjustments or Flashing or Dataset Transfer. Selected Checkboxes Menu Access will be provided to the user. Click on Create User to add the login. **"User Created Successfully"** pop up message is displayed.

Step 4: To Modify the existing User. First select the User from the grid which is to be modified as shown in the image below Modify the details and click on Modify User. **"User Modified Successfully"** pop up message is displayed.

Step 5: To Delete the existing User, first select the User.

Step 6: Click on Delete button. "**User Deleted Successfully"** pop up message will display.

Step 7: Click on the Reset button to reset the details from the User Creation panel.

OFFLINE MODE: In offline mode, user can access only Dataset Transfer and Tool Update.

THANK YOU