GTAFE Electric Automotive Mechanic v1.2.2

User and Customer Support Guide



Shenzhen GTA Education Tech Ltd. All rights reserved



Table of Contents

1.	Intro	duction	3
	1.1.	Objective	3
	1.2.	Background	3
	1.3.	Definition	3
	1.4.	References	3
2.	Purpo	DSE	3
	2.1.	Functional Features	3
	2.2.	Performance Features	4
Uni	nvolve	d	4
3.	Runti	me Environment	4
	3.1.	Hardware Environment	4
	3.2.	Software Environment	5
4.	Opera	ating Procedures	5
	4.1.	Installation and Initialization	5
	4.1.1.	Client Installation	5
	4.2.	Operation Description	9
		4.2.1. Client login	9
		4.2.2. Main interface	9
		4.2.3. Components	10
		4.2.4. Training of Whole Vehicle	20
5.	Appli	cation notes	34
6. A	ppend	lix	35



1. Introduction

1.1. Objective

This manual is the user and customer support guide, intended to providing installation and operating guidance for users of GTAFE Electric Automotive Mechanic V1.2.2. Users mainly include students and teachers related to new energy automobiles in secondary and higher vocational schools, colleges, and universities.

1.2. Background

Proposed by the VR Department, the software is developed by the VR Product R&D Center. Its clients cover secondary and higher vocational schools, colleges, and universities.

1.3. Definition

Term	Definition or description			
3D	Digital three dimensional / stereoscopic technology based on computer			
Virtual Disassembly	Product disassembly and assembly based on virtual reality			
and Assembly				
VR	Virtual reality			

1.4. References

GTAFE Electric Automotive Mechanic V1.2.2 - Installation and Deployment Manual

GTAFE Electric Automotive Mechanic V1.2.2 - Customer Requirements List

2. Purpose

2.1. Functional Features

1 Functional UI adjustment UI involved in text chang	e is
--	------



Requirement

adjusted in design.

2.2. Performance Features

Uninvolved

3. Runtime Environment

3.1. Hardware Environment

Parameter	Descrip	Specifications	
	Monitor	 24-inch, resolution: 1920 x 1080; supporting 2D and 3D Brightness: 2D ≥ 250cd / m2 ; 3D ≥ 150cd / m2, Horizontal visual angle ≥ 170°, Vertical visual angle ≥ 160° Contrast: 800 : 1 or above; Color ≥ 16700000 Pixel defect: ≤ 7. 	
	Capture Locator	Equipped in the monitor, the locator can achieve a 3D effect and localization by means of 3D glasses. Available capture range: 1.2m in length, 1.5m in width, and 1m in height based on the center of the motor	
Hardware Configuration	Tracking 3D Glasses	The 3D glasses can be used to view the 3D scenario. There are five tracking points, so that the capture locator can accurately achieve a 3D effect and localization. A set of tracking 3D glasses includes complete tracking glasses and legless tracking Clip-ons.	
	Stylus	It can move, rotate and split the objects in the 3D scenario. It offers movement and rotation data in 3 degrees of freedom coordinate axes, and the related resolution, accuracy and refresh rate are required as follows: 3D axial resolution: X axis ≤2mm, Y axis ≤2mm, Z axis ≤ 2mm. Accuracy: spacing accuracy ≤ 2deg, swing accuracy ≤2deg, deflection accuracy ≤2deg. 3D axial accuracy: X axis≤+/-3mm, Y	



	axis≤+/-3mm, Z axis≤+/-3mm. 3D axial refresh rate: X axis ≥ 100Hz, Y axis ≥ 100Hz, Z axis ≥ 100 Hz.	
Port	Display Port (1.2): ≥1; DVI port: ≥1;	
FOIL	positioning processing unit interface	

3.2. Software Environment

Windows 10 and zSpace software

4. Operating Procedures

- 4.1. Installation and Initialization
- 4.1.1. Client Installation
- 1. Double click on the setup program GTAFE Electric Automotive Mechanic V1.2.2.exe enter the installation interface as shown below.

d GTAFE Electric Automotive Mechanic V1.2.2 Setup



×

to



🛃 GTAFE Electric Automotive Mechanic V1.2.2 Setup	×
End-User License Agreement	
Please read the following license agreement carefully	S I
This agreement is between Shenzhen GTAFE Education Tech Ltd. (hereinafter referred to as GTAFE) and the user on the right to use the product and the scope of use. Before installing the "GTAFE Electric Automotive Mechanic V1.2.2" software, please read this software use agreement, only accept the agreement to continue the installation process. If you continue with the installation, you are deemed to agree to the Software Use Agreement. 1. GTAFE Software Products are protected by the Copyright Law an the Chinese and international copyright treaties, as well as othe intellectual property laws and treaties. All intellectual propert I accept the terms in the License Agreement I do not accept the terms in the License Agreement	d er
< Back Next > Ca	incel

2. Click on "Next", and then click on "Browse" to select a new directory, otherwise the default directory will be used.



🕼 GTAFE Electric Automotive Mechanic V1.2.2 Setup	—		×
Select Installation Folder This is the folder where GTAFE Electric Automotive Mechanic V1.2.2 w installed.	ill be	e	Ð
To install in this folder, click "Next". To install to a different folder, ente "Browse".	er it bel	ow or clicł	¢
<u>F</u> older: C:\Program Files (x86)\GTAFE\GTAFE Electric Automotive Mechanic \		Browse	
< Back Next >		Canc	el

3. Click on "Next" to prepare for the installation.

🛃 GTAFE Electric Automotive Mechani	c V1.2.2 Setup	×
Ready to Install The Setup Wizard is ready to begin the G installation	TAFE Electric Automotive Med	hanic V1.2.2
Click "Install" to begin the installation. If installation settings, click "Back". Click "Ci	you want to review or change ancel" to exit the wizard.	any of your
	< Back Install	Cancel

4. Click on "Install" to start the installation and configuration.



GTAFE Electric Automotive Mechanic V1.2.2 Setup	×
Installing GTAFE Electric Automotive Mechanic V1.2.2	\mathfrak{B}
Please wait while the Setup Wizard installs GTAFE Electric Automotive Mechanic V1.2.2. This may take several minutes.	
Status: Extracting files from archive	
< Back Next > C	ancel

5. Click on "Finish" to exit.





4.2. Operation Description

4.2.1. Client login

Launch the client and enter the registration interface. Fill in the registration code and authorization code obtained through the application code, and then click on 'Activate

Software License Registration	
Product Key	
Activate License :	

License' to start using the software.

License Registration Interface

4.2.2. Main interface

After the license is activated, user will enter the main interface. There are two buttons: Components and Training of Whole Vehicle. The default is Components, corresponding to the function modules of the components. User can click on 'Training of Whole Vehicle' to switch to the function modules of the training of whole vehicle. On the right, there are three buttons: Naked Eye 3D, zView, and Settings. User can click on the Exit button on the lower-right corner of the interface to exit the software. Click on the Guide button to play the guide animation.





Main interface

Users can set their own pupillary distance and ray length in the 'Settings' interface.

	Settings		(
Adjustments			
Pupillary Distance: 🦲	6 cm 🔫		
Stylus Beam Length: 😑	30 cm 🕒		
License Management			
Key: xxxx-xxxx-xx Expiration Date: 2020-01-17 Current Version: 1.2.1	Deactivate License		
Cancel	ОК		
		? (Ð

Settings Interface

4.2.3. Components

After user enters the main interface, the default is the function interface of the Components. In the center, it is the vehicle model with a transparent shell. Its internal components include



Powertrain, Power battery, High voltage cable, High voltage distribution box, Charging port, Motor controller, DC/DC, and Electric air conditioner compressor. When the ray is moved over a corresponding component, the label of hint will pop up, and the selected component will be highlighted in yellow.



Label of Hint

After selecting a part, press the middle button of the stylus to select and enter the corresponding modules, and then the selected part will be highlighted in green.





Function menu button of component

4.2.3.1. Powertrain

Click on the Powertrain model on the structure interface to show four function menu buttons of related component: Powertrain structure, Principles of the drive motor, Powertrain disassembly training, and Powertrain animation. Click on the button to enter the corresponding module.

The powertrain structure interface is as below,





Function interface of the powertrain structure



Powertrain structure





Post-explosion view

The interface of the principles of the drive motor is as below,



Function interface of the principles of the drive motor





Principles of the drive motor interface

The powertrain disassembly training is as below,



Powertrain disassembly training interface





Powertrain disassembly training interface



Function Menu

The powertrain animation interface is as below,





Powertrain animation interface



Powertrain animation interface

4.2.3.2. Power battery

Click on the pwertrain model on the structure interface to show four function menu buttons of related component: Power battery structure, Power battery principles, Power battery removal



training, and Power battery installation training. Click on the button to enter the corresponding module.



Function modules of power battery

The interfaces of the power battery structure, power battery removal training, and power battery installation training is similar to that of the powertrain. The interface of the power battery principles is as belwo,





Power battery principles interface



Introduction to functions of parts

4.2.3.3. Other components

As for High voltage cable, High voltage distribution box, Charging port, Motor controller, DC/DC, and Electric AC compressor, only the structure interface is available. Press the middle button of the stylus to select the component, and click the corresponding function menu to enter the structure interface.





Structure interface of other components



Interface of other components

4.2.4. Training of Whole Vehicle

Click on 'Training of Whole Vehicle' button on the main interface, to enter the interface of the training of Whole Vehicle. On the right, there are three buttons: High voltage safety and action



rules, Failure training simulation, and Training examination. User can click on the button to enter the corresponding function interface.



Interface of the training of whole vehicle



Function button of the training of whole vehicle



4.2.4.1. High voltage safety and action rules

Click on 'High voltage safety and action rules' button on the right to enter the interface of the high voltage safety and action rules. There are five modules: Environmental requirements, Safety requirements, Precautions, Training for charging, and Energy flow. Select the module to enter.



Interface of high voltage safety and action rules





Environmental requirements





Precautions



GTAFE Electric Automotive Mechanic V1.2.2 - User's Guide



Power on/off operation



Multimeter operation





High voltage cable protection



Training for charging





Charging Safety



Training for DC / AC / household charging





Energy flow



Energy flow

4.2.4.2. Failure training simulation

Click on 'Failure training simulation' button on the right to enter the interface of the failure training simulation. There are eleven failures in the failure list: Reduction in the power battery capacity, Blown fuse of the power battery, Fast draining of power battery, Vehicle charging failure, Nuisance tripping, Power battery alarm, Leakage in the power battery, DC/DC leakage, Leakage



in the AC compressor, Leakage in the motor controller, and Leakage in the high voltage cable. Click on the name of failure to enter the corresponding training module.



Failure training simulation interface



Checking failure





View of dashboard

	T tt	The failure is check	ked. Please check thecklist.	the failure records on		Lannovanseure uibeut
		M	aintenance cl	necklist	×	
After checking failure,	Customer name Telophone		Userievel	NUMBER : 005R	909	
the Maintenance work	VIN L	LSVAM4187C3612459	Misape	7540km		
records related maintenance and detection information.	Failure phenomy The SOC jurn starting the vehicle battery failure alar Fault detection:	enon: nps down from 100% t le again, the OK light i rm light and the low br	o 0% sharpiy after drivir s on and dashboard sho Mery alarm light are on.	g 80km, and the vehicle canno ws 'Please check the power bi	trun. After attery'. The power	
	Troubleshooting	g scheme:				(ii)
	Task checklist:					\sim
	Troublesho	ooting	Vehicle return	Archival	records	

Maintenance checklist





Proceed to failure diagnosis



Failure diagnosis interface





Function Menu

Disassembled Replacement			Failures	Failure diagnos	is Maintenance&Rop	air		Fault5:Nuisa	nce tripping
		The failures of the battery manager and the sampling wiring harness are excluded. It can be concluded the power battery itself is the cause, and needs to be replaced. Please check the diagnosis records on the maintenance checklist.						TOOLS	
		Customer name Telephone		Maintenance	checklist	SR009	×		
		VIN	LSVAM4187C3612	459 Mileage	7540km				
	Failure phenomenon: The SOC jumps down from 100% to 0% sharply after driving 80km, and the vehicle cannot run. After starting the vehicle again, the OK light is on and dashboard shows "Please check the power battery". The power								
									Supervisor oper
		battery failure	alarm light and the low	v battery alarm light are o	n.		-		ation area
	After the failure	Fault detection: There is no failure code in the power battery system. The battery CAN diagnostic instrument shows abnormal voltage in No. 25 to No. 31 batteries. Check the battery manager and sampling.							
• E	diagnosis, the Maintenance Checklist will pop up, which records related result and scheme	Troubleshoot Replace t	ting scheme: he power battery						
		Task checklis	st:				-		
(\equiv)		Troubles	shooting	D Vehicle return	Arcl	hival records			

Complete the failure diagnosis



GTAFE Electric Automotive Mechanic V1.2.2 - User's Guide



Proceed to failure diagnosis



Maintenance & Repair interface

4.2.4.3. Training examination

Click on 'Training examination' button on the right to enter the training examination interface.





Start examination



Hidden hints and timing





Examination grade

5. Application notes

In case of abnormal startup or effect, please reinstall or repair the program as below, Click on 'Modify' and then 'Next' to complete the repair.



🖟 GTAFE Electric Automotive Mechanic V1.2.2 Setup							
Modify, Repair or Remove installation Select the operation you wish to perform.							
	<u>Modify</u> Allows users to change the way features are installed.						
1	Repair Repairs errors in the most recent installation state - fixes missing or corrupt files, shortcuts and registry entries.						
Remove Removes GTAFE Electric Automotive Mechanic V1.2.2 from you computer.							
Advanced Installer							
	< Back Next > Ca	ancel					

6. Appendix

None