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MultiMUX

User Guide

Document Nr.	Index	Pages	Date	Item	Author
AD128001	1.1	62	24/07/2018	Document creation	R Myatt
AD128001	1.2	62	05/02/2019	Addition of Multi-SCAN	R Myatt
AD128001	1.3	62	11/02/2019	Added Actia UK Helpdesk contact details	R Myatt
AD128001	1.4	62	07/10/2021	EV Diag added	R Myatt

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1. Introduction

Welcome to the Actia MultiMUX diagnostic software for maintaining and updating the Actia ActiMUX multiplexed system. This document gives instructions of how to set-up, use and maintain the PC based diagnostic application.

1.1. System Requirements

1.1.1. PC Requirements

Actia recommend the following PC requirements,

- PC or laptop with 1 GHz processor or greater
- Screen Resolution 1200*800 or higher
- 4Gb Ram
- 15 Gb of available hard disk space
- USB port for VCI Basic XS connection
- Ethernet port for DOIP Connection
- Windows 7 or above
- Internet connection for installing updates

Multi-MUX requires local administrator access to install and update the software. If you are running the application on a company laptop contact your IT support team for further assistance.

Depending on your operating system version you may be prompted to install the .NETFramework v4.5 from Microsoft. This is a requirement to run Multi-MUX. If you see this message, please follow the on-screen instructions. Further support can be found at <http://www.microsoft.com/net>

1.1.2. Additional Hardware

505-01-2900	Main Diagnostic Extension Cable	REQUIRED FOR ALL KITS (Multi-Aid & Multi-Mux)
505-01-0100	Multi-Mux MultiC2 Optare Download Cable	Req for connection to Acti-Mux multiplex system all kits
505-01-0110	Multi-Mux ADL Kibes Cable ZR32A-Diag	Req for connection to ADL with Kibes multiplex system
505-01-0111	Multi-Mux ADL Kibes Cable Moki/Dmux3-Diag	Req for connection to ADL Moki dash & Dmux system
505-01-2700	9pin J1939 Cable Adapter	Standard 9pin Adapter for Cummins & Allison diag, ADL Multic2 Download
505-01-2800	OBDII J1939 Diagnostic Adapter	16pin Adapter for Cummins & Allison diagnostics, ADL Multic2 Download
505-01-3045	M12/RJ45 Ethernet Cable	Optional for connection to Acti-Mux multiplex system

2. Connection Hardware

2.1. The Basic XS Vehicle Communication Interface (VCI)

A PC interface adapter is required to enable the PC to communicate with the vehicle electronic systems. The Basic XS has been designed to replace a number of dedicated interface adapters that are normally supplied with each individual diagnostic application.

The Interface features:

- USB Connectivity
- CAN 2.0B ISO 11898
- High Speed CAN up to 1 MBit/s
- Low Speed CAN fault tolerant
- K-Line ISO 9141 (100 mA)
- K-Line ISO 14230 (KWP2000)
- J1708 Interface



Please note that only the diagnostic interface is powered by the vehicles supply.

2.1. Ethernet Cable

Diagnostics can also be performed via an Ethernet cable. No VCI is required, simply connect the cable between the PC ether net port and the ActiMUX Master ECU Ethernet socket

3. Setting Up Connection Hardware

3.1. The Basic XS VCI

The following gives step-by-step instructions for the assembly and interconnection of the Basic XS system.

1. Connect the Basic XS USB connection to your PC USB port.



2. Connect the main diagnostic extension cable (505-01-2900) to the Vehicle Communication interface (VCI) located in the rubber enclosure at the rear of the tablet.



3. Connect the Multi-Bus Diagnostic Adapter cable (505-01-0062), the Multi-Bus Forced Download cable (505-01-0061) or the SCU Adapter Cable (555-01-2020) to the main diagnostic extension cable.



4. Connect the adapter cable to the vehicle diagnostic connector.



4. Installing the Software

Please refer to the **099-60-6551 Multi-MUX quickstart guide.pdf** document.

Please note: - The Basic XS drivers are not part of the MultiMUX Installation. These will need to be downloaded separately through installing the MultiAid CD that you received free as part of your MultiMux purchase

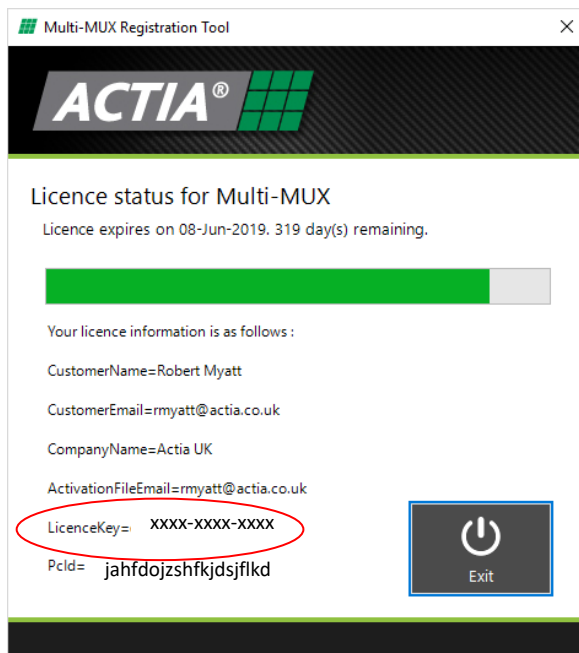
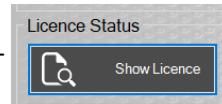
Any issues with any of the above then please contact the Actia Helpdesk on 01686 611166

5. Licencing the Product

Please refer to the **099-60-6551 Multi-MUX quickstart guide.pdf** document.

You will normally require your Licence Key when speaking to an Actia representative.

This can be found by clicking on the: -



Licence Key will be shown in the format above.

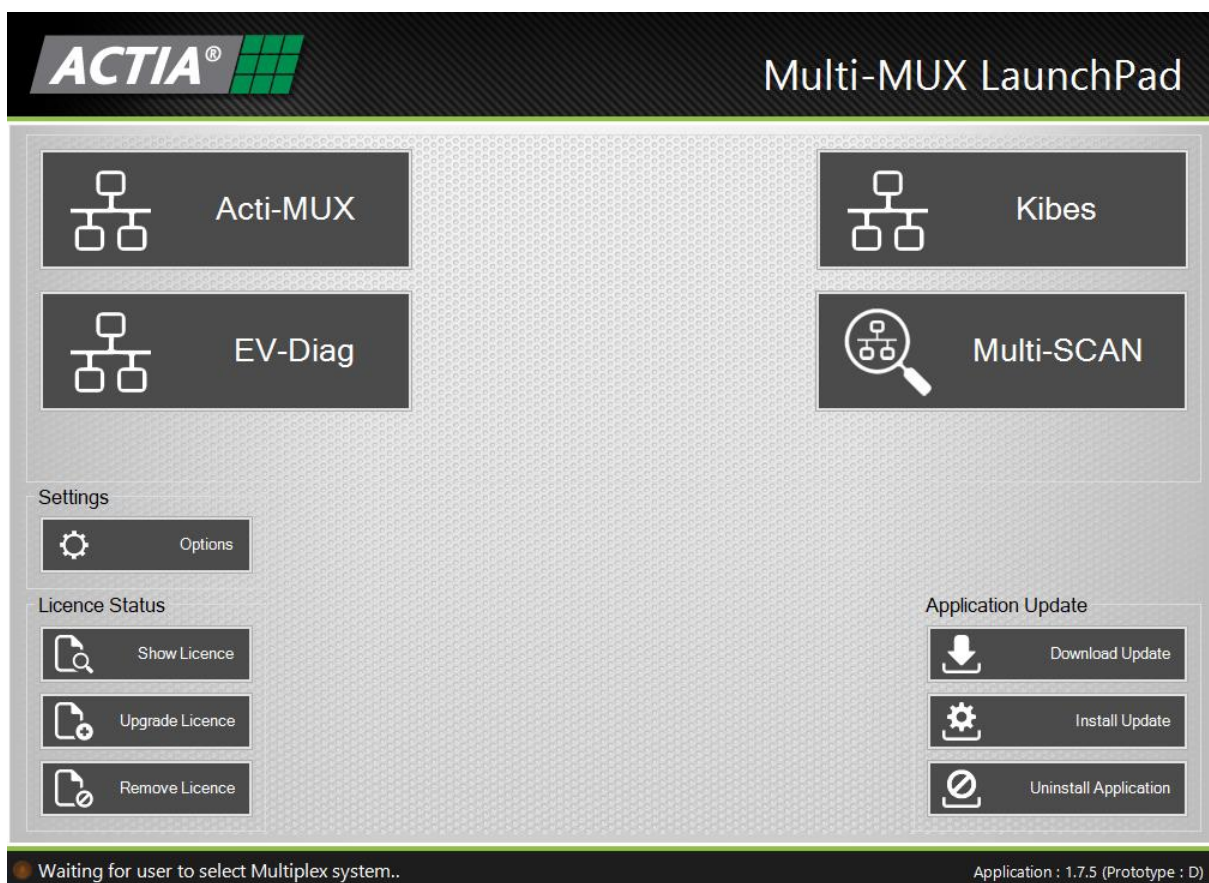
6. Using the Software

6.1. To run the MultiMUX software, please click on the icon on the PC desktop



6.2. The application will start and display the MultiMUX launch pad

Depending on the MultiMUX licence you have purchased, you will see either, or both the Acti-MUX, Kibes buttons.

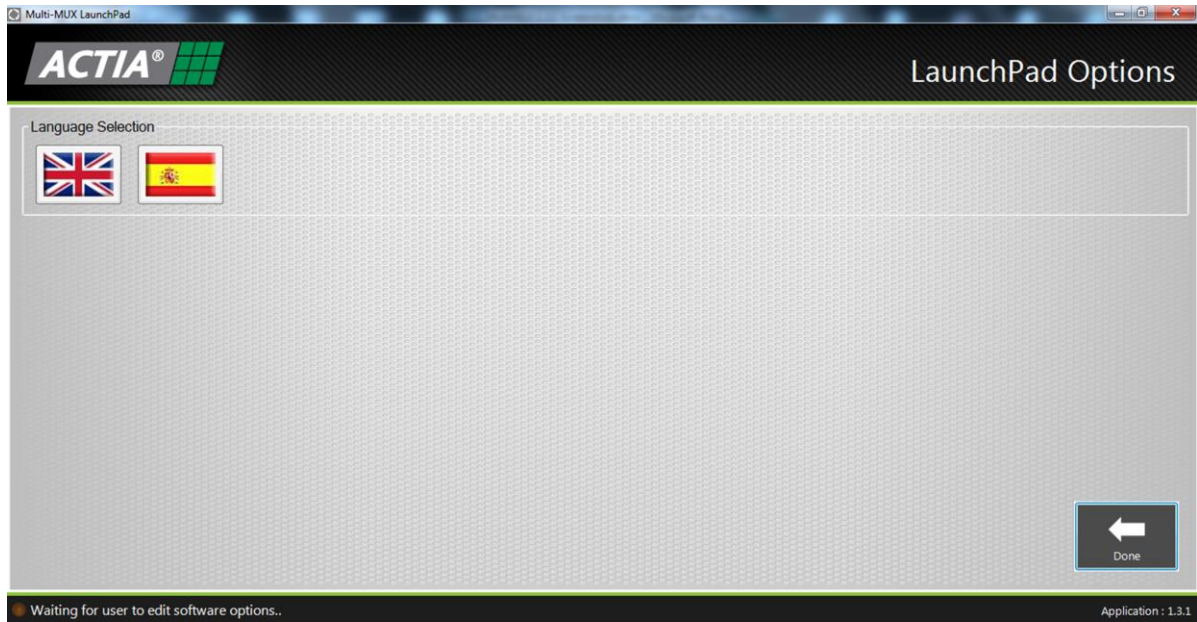


Status of Diagnostic Tool

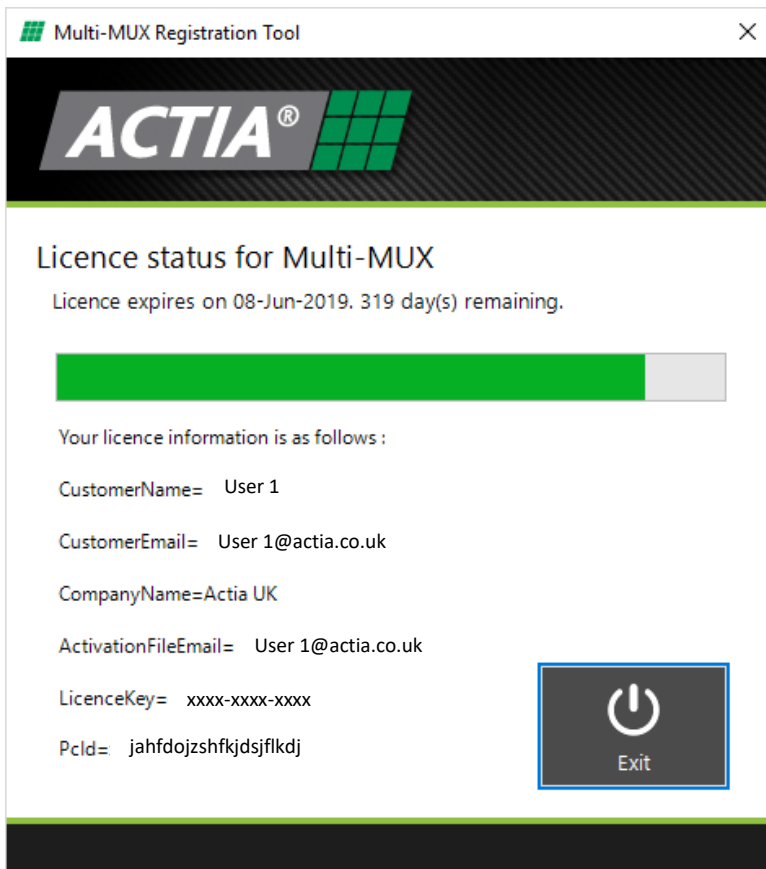
MultiMUX Application Version

6.2.1. Settings - Options

By choosing the options button, the user can select the preferred language option for the diagnostic tool

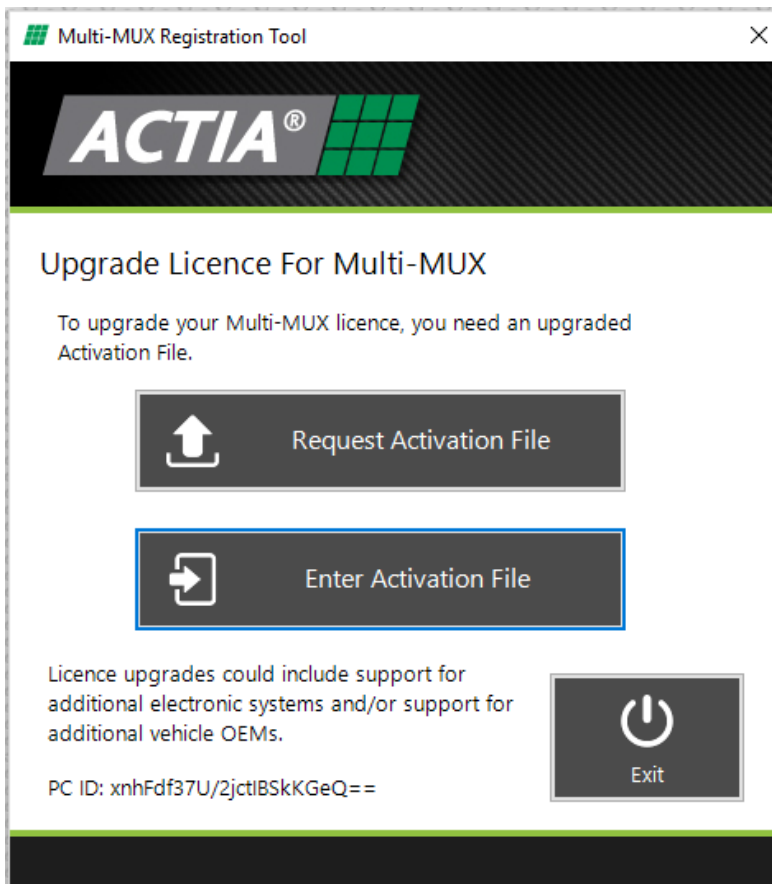


6.2.2. Licence Status - Show licence



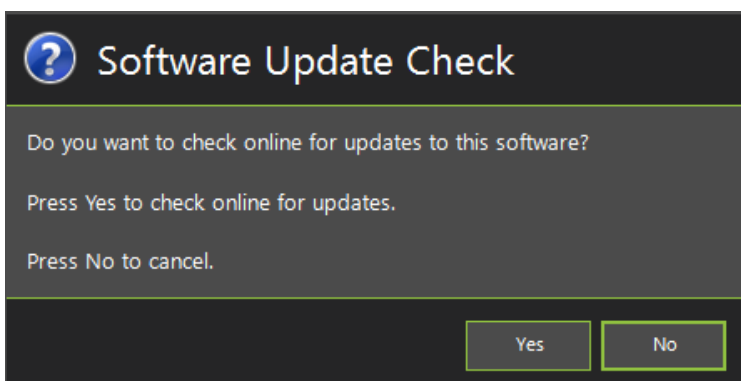
This displays the Licence status of the MultiMUX diagnostic tool.

6.2.3. Licence Status - Upgrading Licence



If you have purchased a licence upgrade for MultiMUX, you will have received an activation file. You can enter the activation file by clicking on the **Update Licence** button, then selecting **Enter Activation File**.

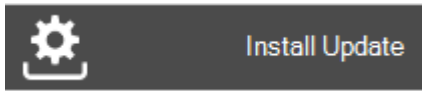
6.2.4. Application update – Download update



Clicking on the **Download Update** button will update the MultiMUX application to the latest release. This is only available if you have an internet connection.

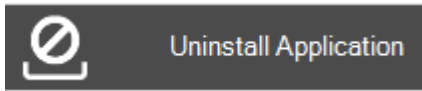
Simple follow the instructions when prompted.

6.2.5. Application update - Install Update



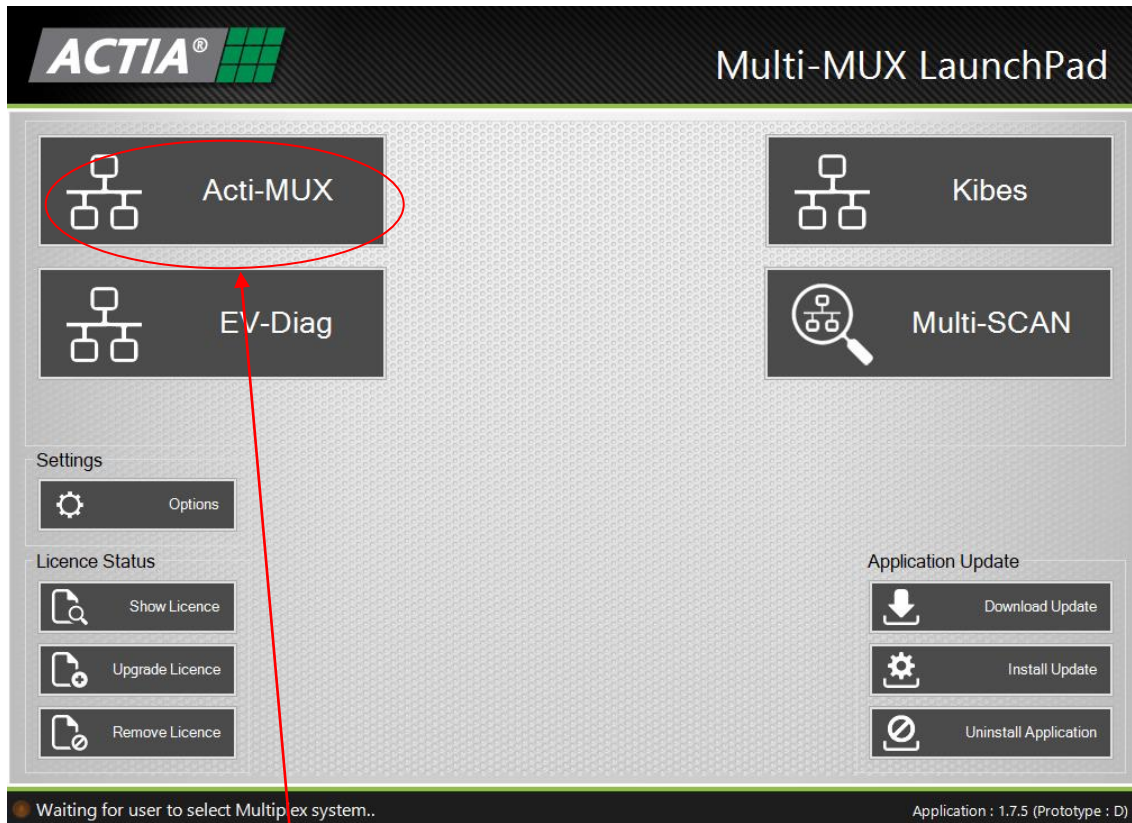
Installs any update downloaded

6.2.6. Application update - Uninstall update

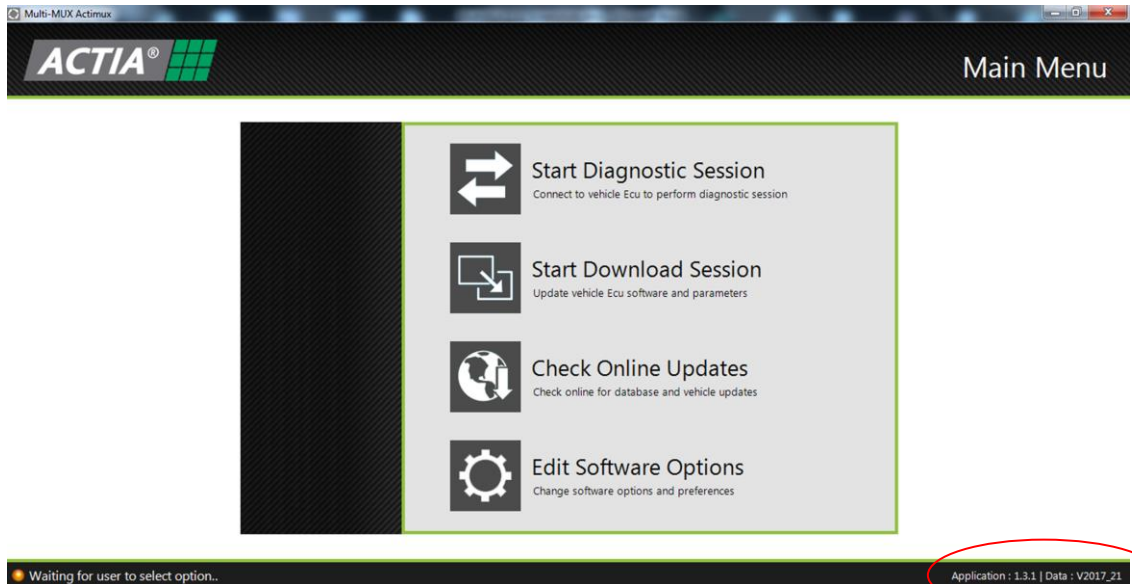


Uninstalls any update downloaded

7. Acti-MUX Diagnostics



After clicking on the **Acti-MUX** button on the launchpad, the following screen will appear:

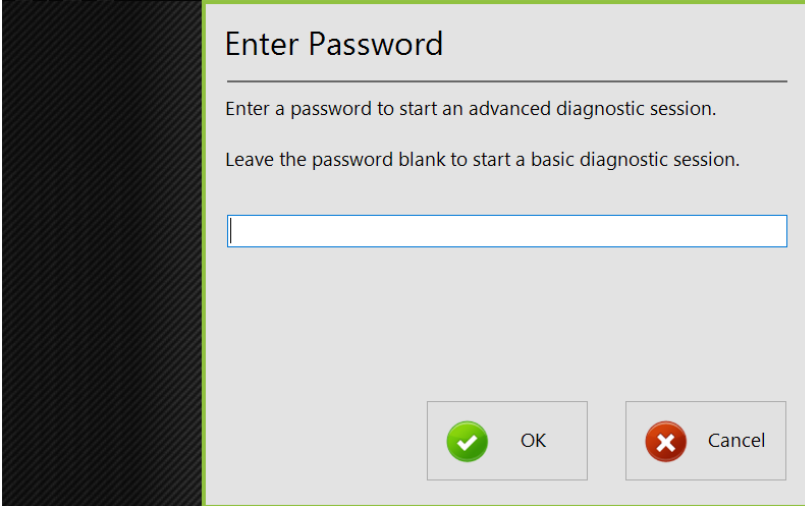


Acti-MUX Diagnostic Data Version

7.1. Start ActiMUX Diagnostic Session

To start a diagnostic session, click on the **Start Diagnostic Session button**

The following screen will be displayed, prompting for a user password (This may not be the same password for accessing the download session)



Enter Password

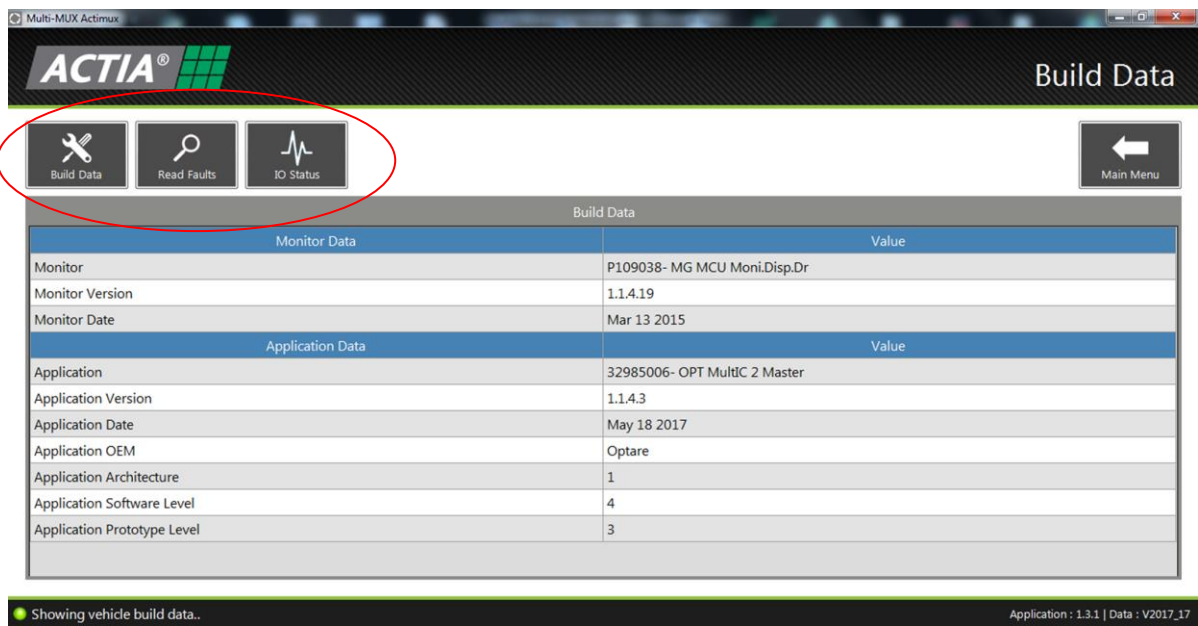
Enter a password to start an advanced diagnostic session.

Leave the password blank to start a basic diagnostic session.

OK Cancel

Enter the user password and click **OK** to start the diagnostic session.

If **the** user does not enter a user password and clicks **OK**, the diagnostic session will start, but will have restricted functionality - access only to :-



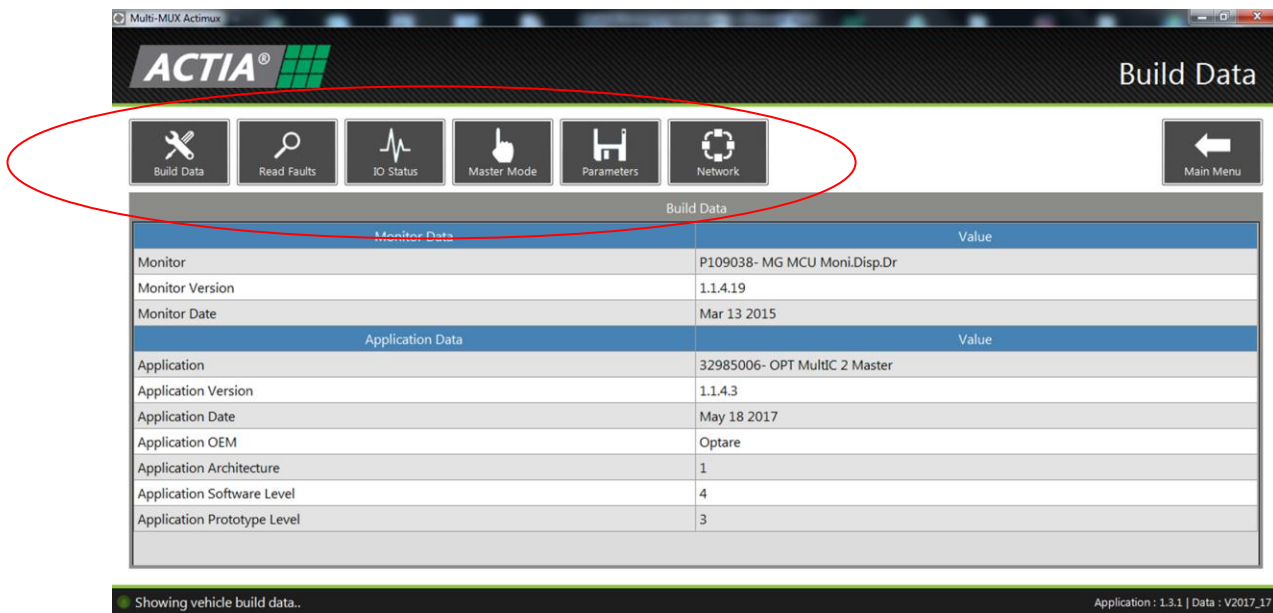
The screenshot shows the ACTIA Multi-MUX Actimux software interface. The title bar reads "Multi-MUX Actimux". The main header features the ACTIA logo and the text "Build Data". Below the header is a navigation bar with three buttons: "Build Data" (circled in red), "Read Faults", and "IO Status". A "Main Menu" button with a left-pointing arrow is also present. The main content area displays a table titled "Build Data" with two sections: "Monitor Data" and "Application Data".

Monitor Data		Value
Monitor	P109038- MG MCU Moni.Disp.Dr	
Monitor Version	1.1.4.19	
Monitor Date	Mar 13 2015	

Application Data		Value
Application	32985006- OPT MultIC 2 Master	
Application Version	1.1.4.3	
Application Date	May 18 2017	
Application OEM	Optare	
Application Architecture	1	
Application Software Level	4	
Application Prototype Level	3	

At the bottom of the interface, a status bar shows "Showing vehicle build data.." on the left and "Application : 1.3.1 | Data : V2017_17" on the right.

If the user does enter a user password and clicks **OK**, the diagnostic session will start with full access:-



The screenshot shows the ACTIA MultiMUX Actimux software interface. The title bar reads "Multi-MUX Actimux" and the window title is "Build Data". The interface features a navigation bar with icons for "Build Data", "Read Faults", "IO Status", "Master Mode", "Parameters", and "Network". The "Build Data" screen displays a table of build data for the Monitor and Application.

Build Data	
Monitor Data	Value
Monitor	P109038- MG MCU Moni.Disp.Dr
Monitor Version	1.1.4.19
Monitor Date	Mar 13 2015
Application Data	
Value	
Application	32985006- OPT MultIC 2 Master
Application Version	1.1.4.3
Application Date	May 18 2017
Application OEM	Optare
Application Architecture	1
Application Software Level	4
Application Prototype Level	3

Showing vehicle build data.. Application : 1.3.1 | Data : V2017_17

The first screen above is the **Build Data** screen.

It contains version information about the Application in the Master ECU you are diagnosing.

From this screen, you can navigate to the additional diagnostic function listed below:

- Read Faults
- IO Status
- Master Mode
- Parameters
- Network

7.2. Read Faults

Section 1

Section 2

Location	Description
CN105:1 On GB_0 (CMD_OUT02_CN105)	Switch Pack Feed [SLU Feed]
CN1:2 On PWR33_1 (DUTYCYCLE_OUT05)	Demister Feed (PWM)
CN1:4 On PWR33_1 (CMD_OUT19)	Door 1 Down lights and Inverter Switch (Courtesy Light Option)
CN1:9 On PWR33_4 (INA01)	Saloon Temperature Sensor
CN1:8 On PWR33_4 (INA02)	Engine Bay Air Temperature Sensor (Optional)
CN3:13 On PWR33_4 (CMD_OUT01)	Brake signal to ABS / Wet Tank / Gearbox etc

Showing faults on vehicle Ecu... [0 Stored Faults] [7 Input/Output Faults] Application : 1.3.1 | Data : V2017_17

The Read faults screen displays: -

- Stored faults (DTC's) - [section 1](#)
- Current faults of the system – [section 2](#)

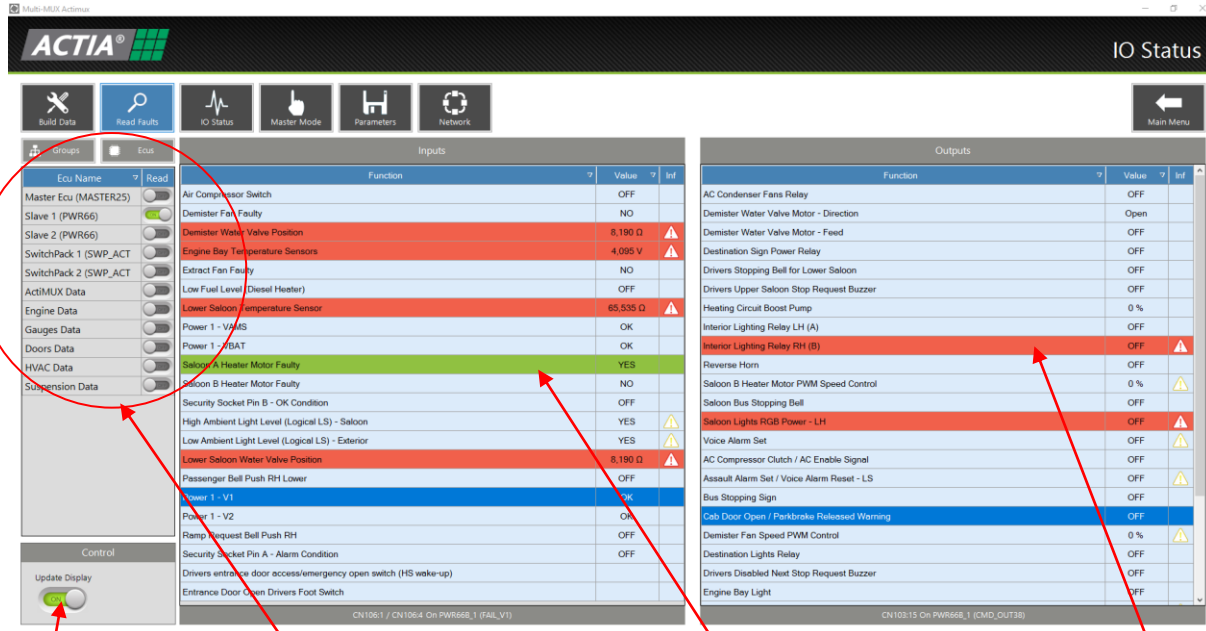
Pressing the **Erase Faults** Button will clear the stored faults from the Master ECU memory.

Pressing the **Refresh** Button will update the current faults display.

7.3. IO Status

IO Status displays status of all inputs / outputs connected to the Acti-MUX electrical system.

The screen below shows IO displayed when the ECU button is pressed.



Enables / Disables the screen refreshing its Status

Select what ECU you want to display status of by clicking on the sliding button

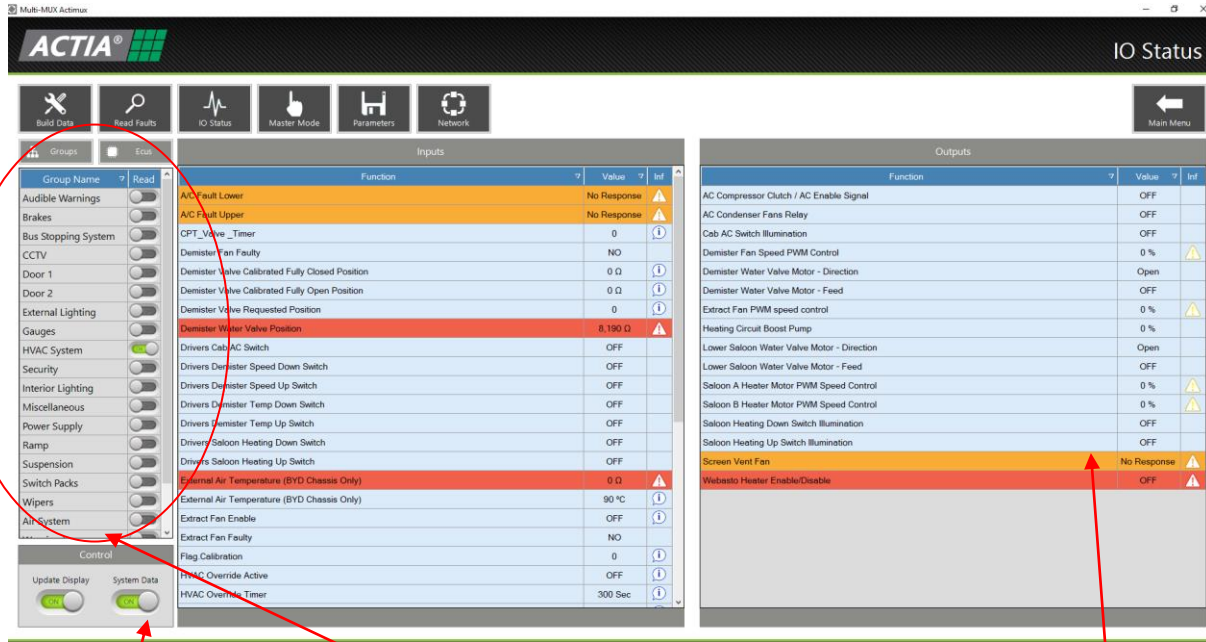
Note: Multiple ECU's can be selected

Green indicates Status = ON, All OK

Red + Red Triangle Indicates status = Fault

Yellow Triangle indicates Fault Detection disabled(needs to be checked manually)

The screen below shows IO displayed when the **Group** button is pressed.



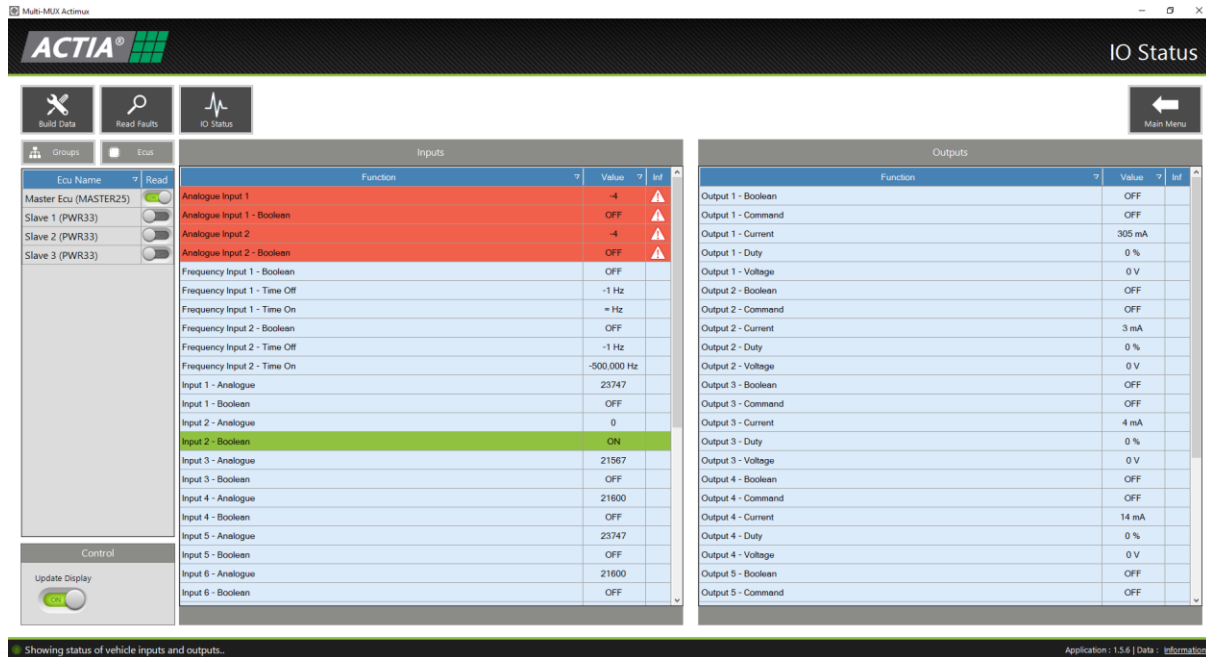
Enables / Disables system data

System Data is information that is not an input / Output, i.e. Internal Information such as CAN data, timers, etc..

Select what ECU you want to display status of by clicking on the sliding button

Note: Multiple ECU's can be selected

No Response in Amber colour indicates the ECU for that Input / output is not communicating on CAN

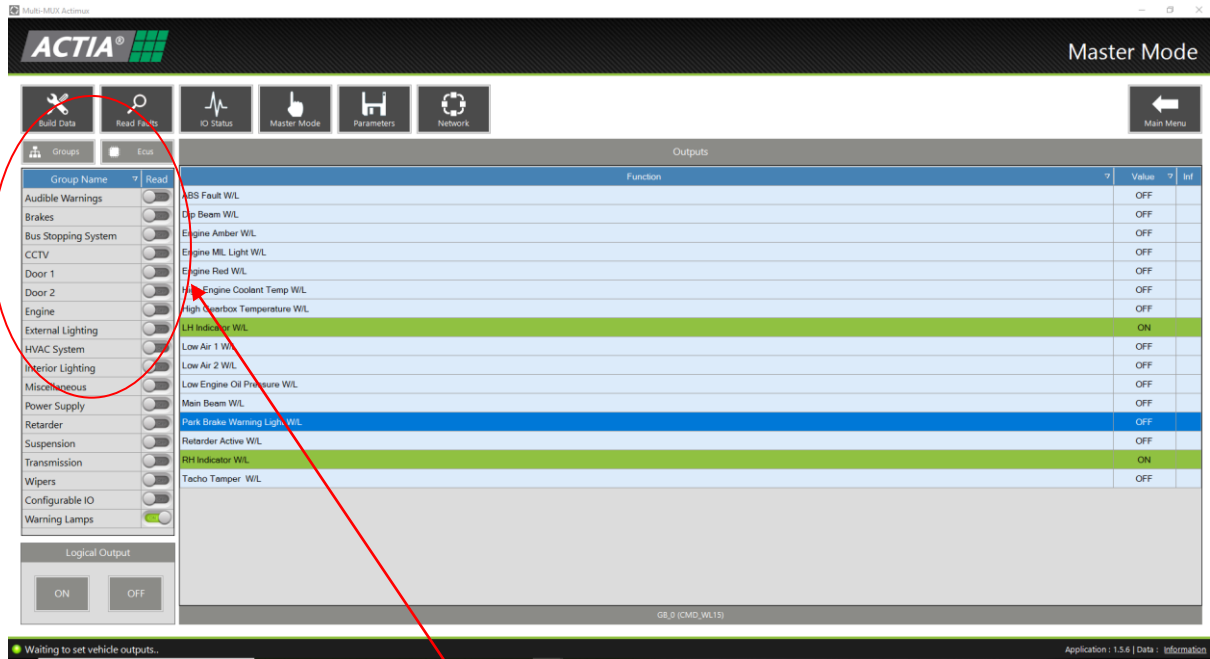


The screen above shows IO displayed when Multi-MUX does not have the diagnostic data for the ecu being diagnosed. (note: no groups - only Default group displayed)

7.4. Master Mode

Master Mode allows the user to directly control outputs connected to the Acti-MUX electrical system.

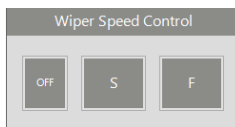
The screen below shows Master Mode when the **Groups** button is pressed.



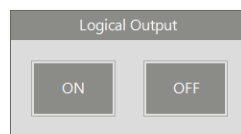
Select what group you want to display parameters of by clicking on the sliding button

Note: Multiple groups can be selected

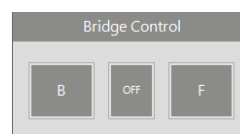
To activate an output, select the output required from the list in the Function window, then use the control panel in the lower LH part of the screen to control the output, see below: -



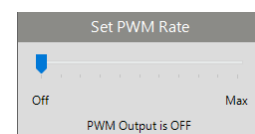
Wiper Control



Logical ON / OFF Control

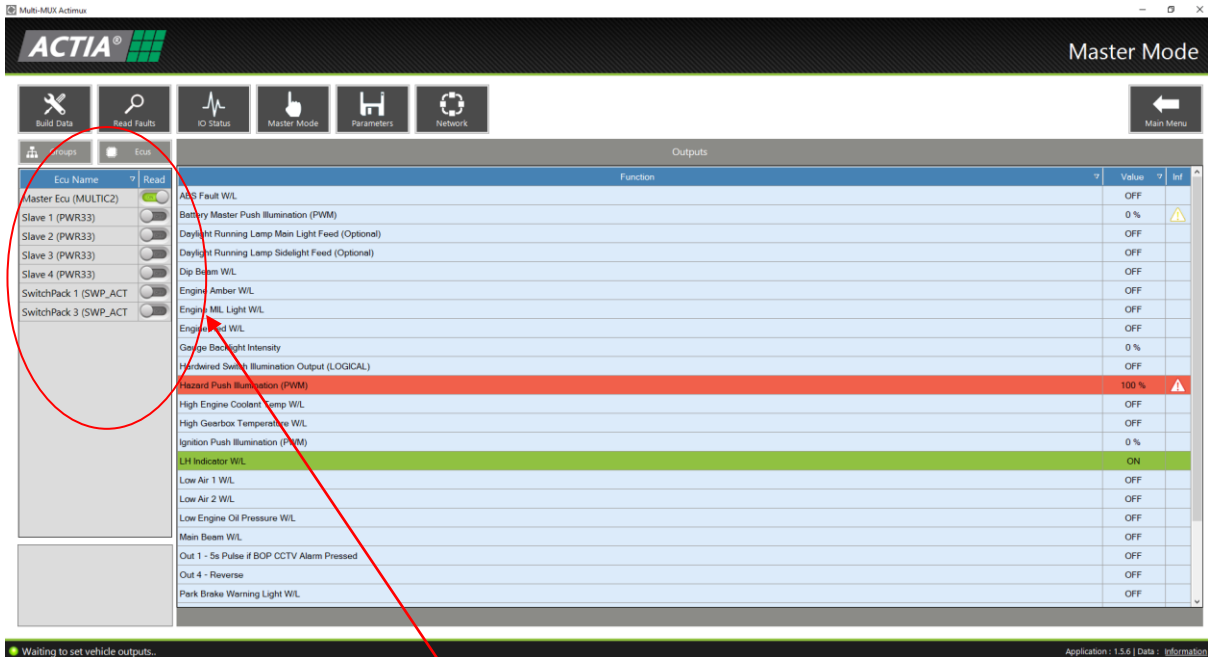


Bridge Control



PWM Control

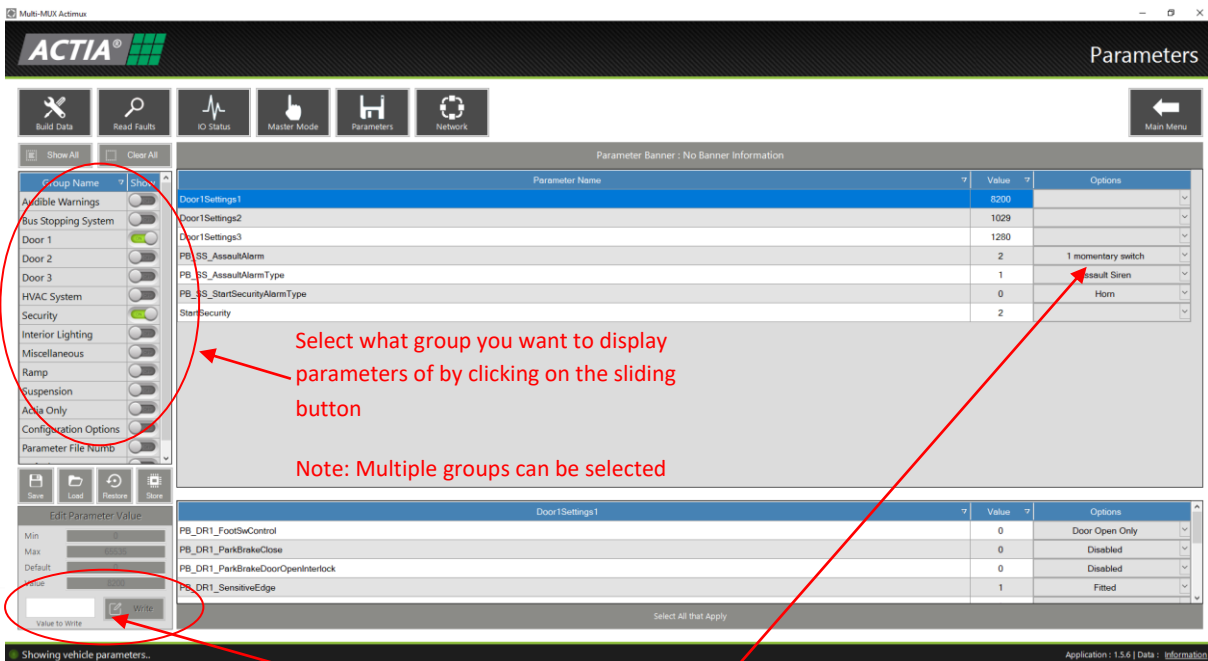
The screen below shows Master Mode when the **ECU** button is pressed.



Select what ECU you want to display IO of by clicking on the sliding button
 Note: Multiple ECU's can be selected

7.5. Parameters

Viewing and adjusting parameters are dependent on what level password is entered by the user.



Select what group you want to display parameters of by clicking on the sliding button

Note: Multiple groups can be selected

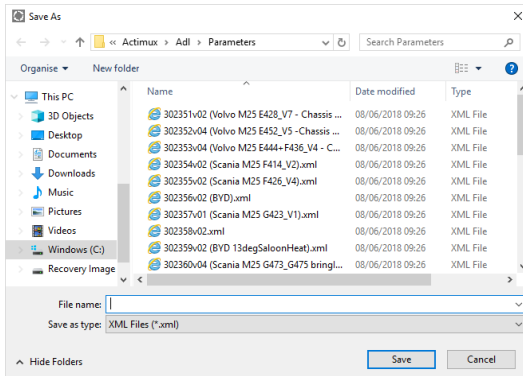
Parameters can be adjusted from: -

- Drop down box
- Edit Parameter Value section

7.5.1. Save



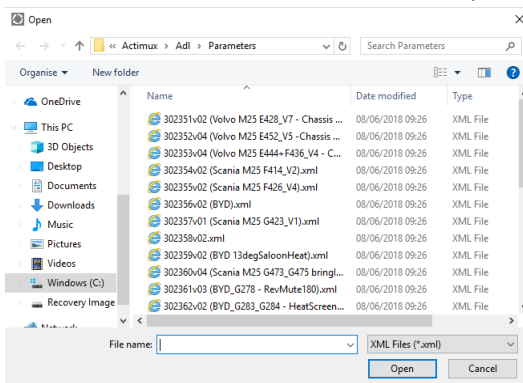
This feature allows the user to save the current Master ECU parameters to a .xml Parameter file. The user will be allowed to name the file to whatever you choose, via a windows browser window, see below: -



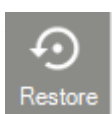
7.5.2. Load



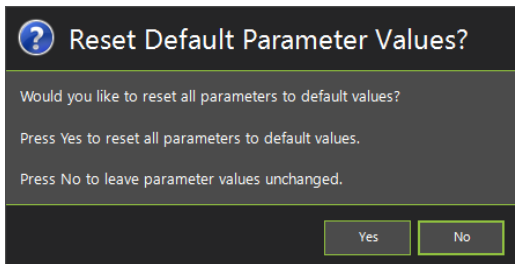
This feature allows user to load an existing .xml Parameter file into the Master ECU. The user will be allowed to choose the parameter file, via a windows browser window, see below: -



7.5.3. Restore



This feature allows the user to restore the parameters to their default values in the Master ECU. The user will be prompted to confirm this function, see below: -

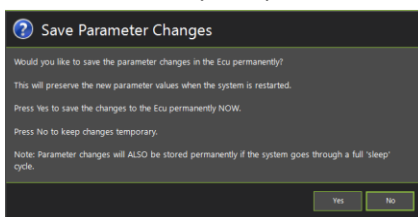


7.5.4. Store





This feature allows the user to store the current displayed Parameters in the Master ECU, instead of manually putting the system to sleep.

The user will be prompted to confirm this function, see below: -



7.6. Network

The Network screen displays summary information about all the ECU's on the electrical system

 indicates no issue,  indicates fault

The summary reports are: -

- Network Initialisation Faults
 - Displays faults from when the Acti-MUX system was first Initialised or powered up, i.e. Power xx Not responding
- Slave Status Report
 - Displays a List of expected slave Power units on the Acti-MUX system.
 - Displays each slave unit's status, ECU number, Wakeup origin, Firmware / Hardware versions
- Initialisation and Integrity Report
 - Displays a List of expected slave Power units on the Acti-MUX system.
 - Displays a summary of possible issues for slave unit when they system was first Initialised or powered up, i.e. No response, CRC Error, Address conflict
- Slave Can Link Status

- Displays a List of expected slave Power units on the Acti-MUX system.
- Displays a summary of what the Master ECU has instructed the Slave ECU to do, i.e. Restart, Reset, Inhibit mode, etc.

The screenshot displays the ACTIA Multi-MUX software interface. The top bar includes the ACTIA logo and the word "Network". Below the bar is a navigation menu with icons for Build Data, Read Faults, IO Status, Master Mode, Parameters, and Network. The main content area is divided into several sections:

- Network Initialisation Faults:** A table showing an "Initialisation Fault" for "PWR66@2 not responding" with a description: "Possible power wiring fault, communications wiring fault, or faulty slave unit".
- Slave Status Report:** A table with columns: Type, Addr, Firmware Version, Firmware Variant, Hardware Number, Parameter Crc, and Wakeup. It shows two entries for PWR66 at addresses 1 and 2.
- Initialisation and Integrity Report:** A table with columns: Type, Addr, Same Addr, Restarted, Not Expected, CRC Error, Sleep Mode, No Response, and Wakeup. It shows two entries for PWR66 at addresses 1 and 2.
- Slave Can Link Status:** A table with columns: Type, Addr, Restarted, CAN Link, Write Param Fail, Wrong Param Crc, Wrong App Variant, Not Expected, Status Missing, Wakeup, Resetted, Inhibited, and Same Addr. It shows two entries for PWR66 at addresses 1 and 2.

At the bottom of the interface, there is a status bar that reads "Showing network configuration..." and "Application: 1.5.6 | Data: Information".

7.7. Start Download Session

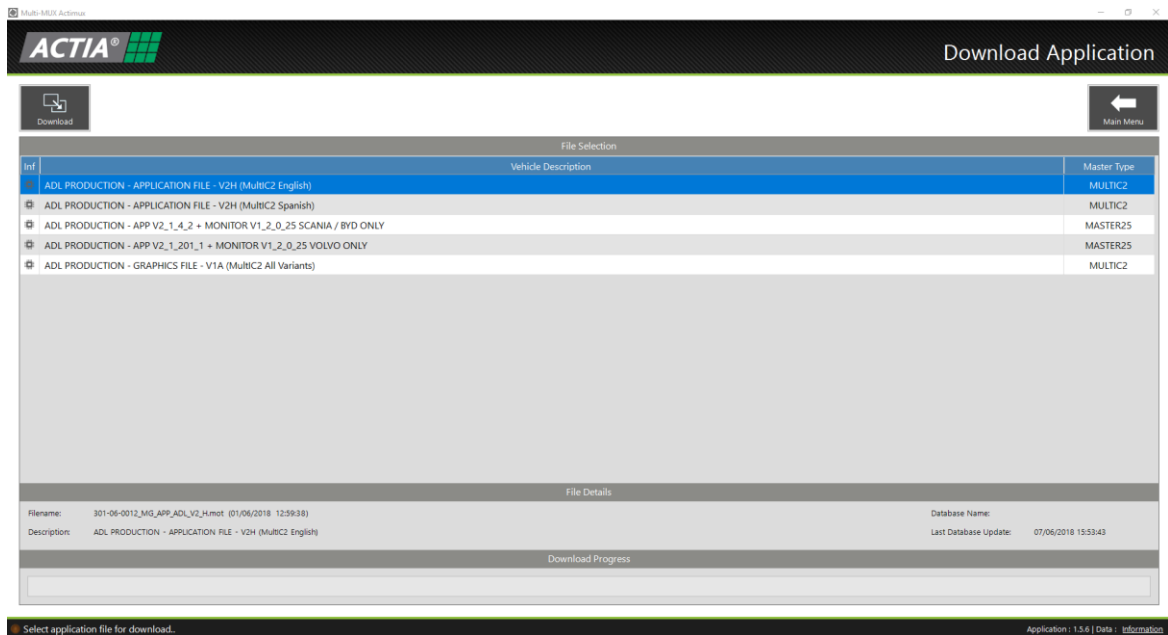
To start a diagnostic session, click on the **Start Download Session** button

The following screen will be displayed, prompting for a download password (This may not be the same password for accessing the diagnostic session)

The screenshot shows a dialog box titled "Enter Password". The text inside reads: "Please enter a password below to start a download session." Below the text is a text input field. At the bottom of the dialog box, there are two buttons: "OK" (with a checkmark icon) and "Cancel" (with a red 'X' icon).

The download password is specific for each vehicle manufacturer. Generally, it is the name of the deployment created in Multi-MUX Manager.

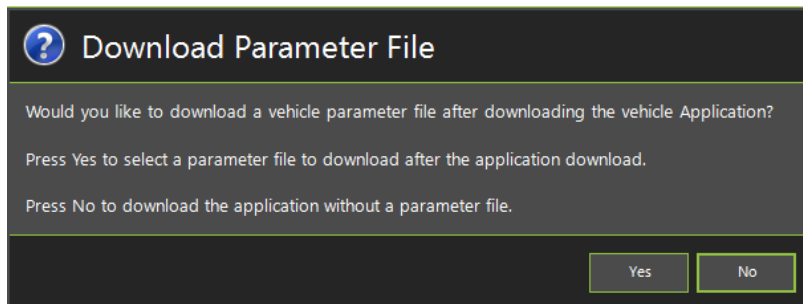
When the correct deployment password is entered, the following screen will be displayed: -



This screen will list the files available for download and the Master ECU that they are for.

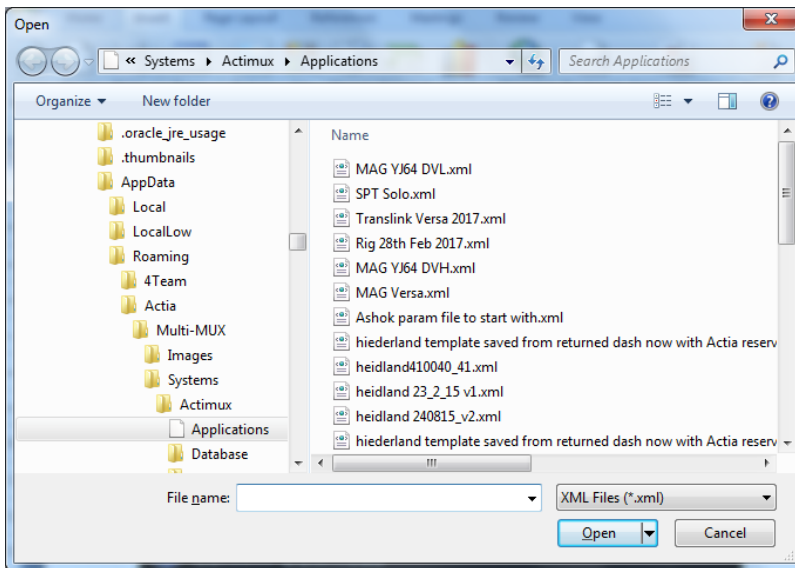
Click on the file required from the list and then click the **Download** button.

You will then be prompted to select a Parameter File to download



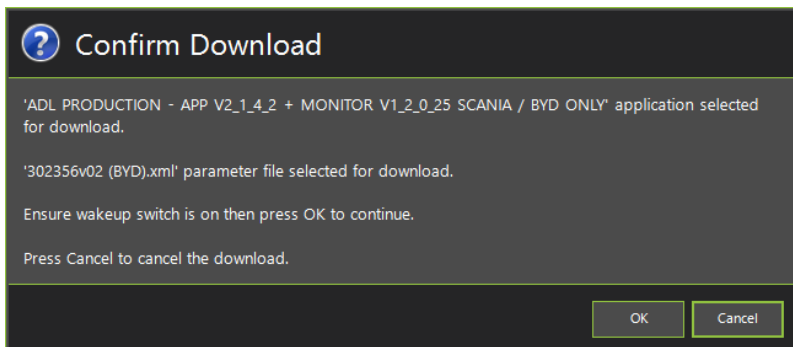
If you require a parameter file to be downloaded, click the **Yes** button

A windows browser window will then open, allowing you to navigate to where the parameter file is located on your PC

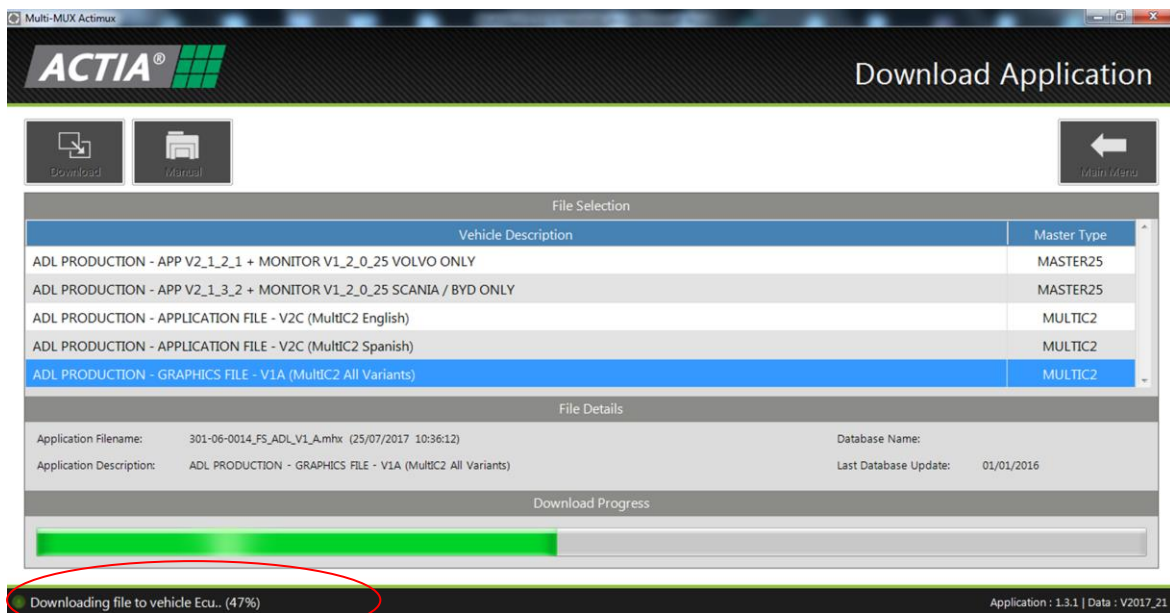


Select the parameter file and click the open Button.

The following confirmation screen will be displayed. Click Yes button to proceed



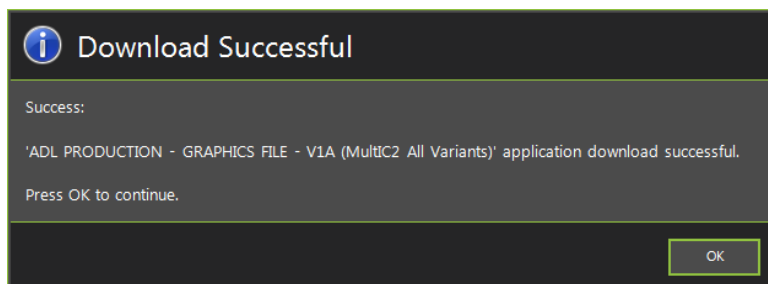
Your Download should now start.



The Status of the download is indicated here and by the green progress bar

A typical download will take approximately 3 minutes to complete.

The following screen will be displayed if download is completed successfully: -

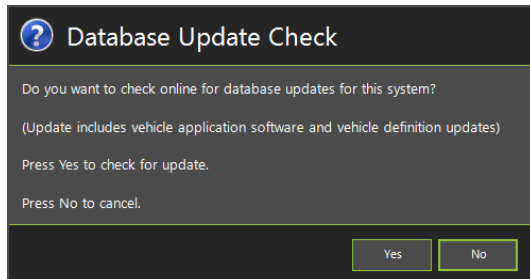


7.8. Check Online Updates

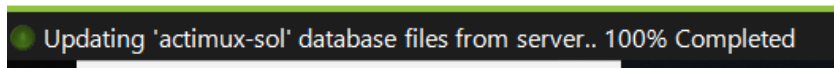


Check Online Updates
Check online for database and vehicle updates

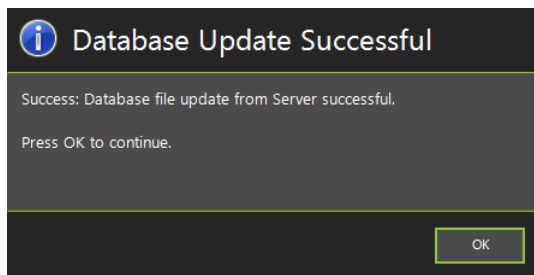
This function allows the user to update the diagnostic data of the Multi-MUX diagnostic tool. Depending upon the licence purchased will determine what vehicle manufacturers are supported.



When the user, clicks the Check Online Updates button, the dialog box above will appear. Click Yes to check for updates.



The lower left status bar will indicate the status of the update, see example above.



Once the update is complete, the dialog box above will appear to confirm the update is successful.

Oem Name	Tag	Installed Database	Latest Database	Requires Generic	Requires Application	Update Status	Inf
Generic	GEN	V2018_01	V2018_01	V2017_01	1.5.1	Current database installed	●
Optare	OPT	V2018_22	V2018_22	V2018_01	1.5.1	Current database installed	●
Alexander Dennis	ADL	V2018_28	V2018_28	V2018_01	1.5.1	Current database installed	●
Dennis Eagle	DNE	V2018_25	V2018_25	V2018_01	1.5.1	Current database installed	●
Inizer	IZR	V2018_23	V2018_23	V2018_01	1.5.1	Current database installed	●
Castrosua	CAS	V2018_20	V2018_20	V2018_01	1.5.1	Current database installed	●
Soleris	SOL	V2018_20	V2018_20	V2018_01	1.5.1	Current database installed	●
Actia	ACT	V2018_27	V2018_27	V2018_01	1.5.1	Current database installed	●

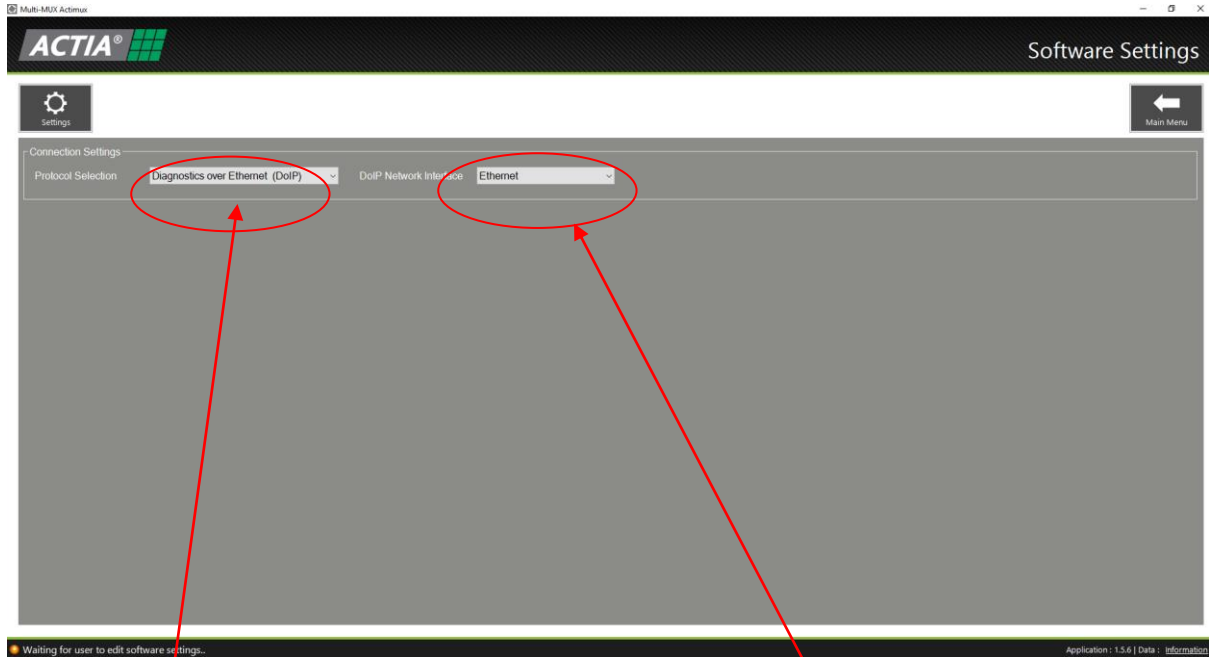
Click OK, then the above information box will appear to indicate what manufacturers have been updated.

7.9. Edit Software Options



Edit Software Options
Change software options and preferences

This function allows the user to select the diagnostic connection options of the Multi-MUX diagnostic tool.



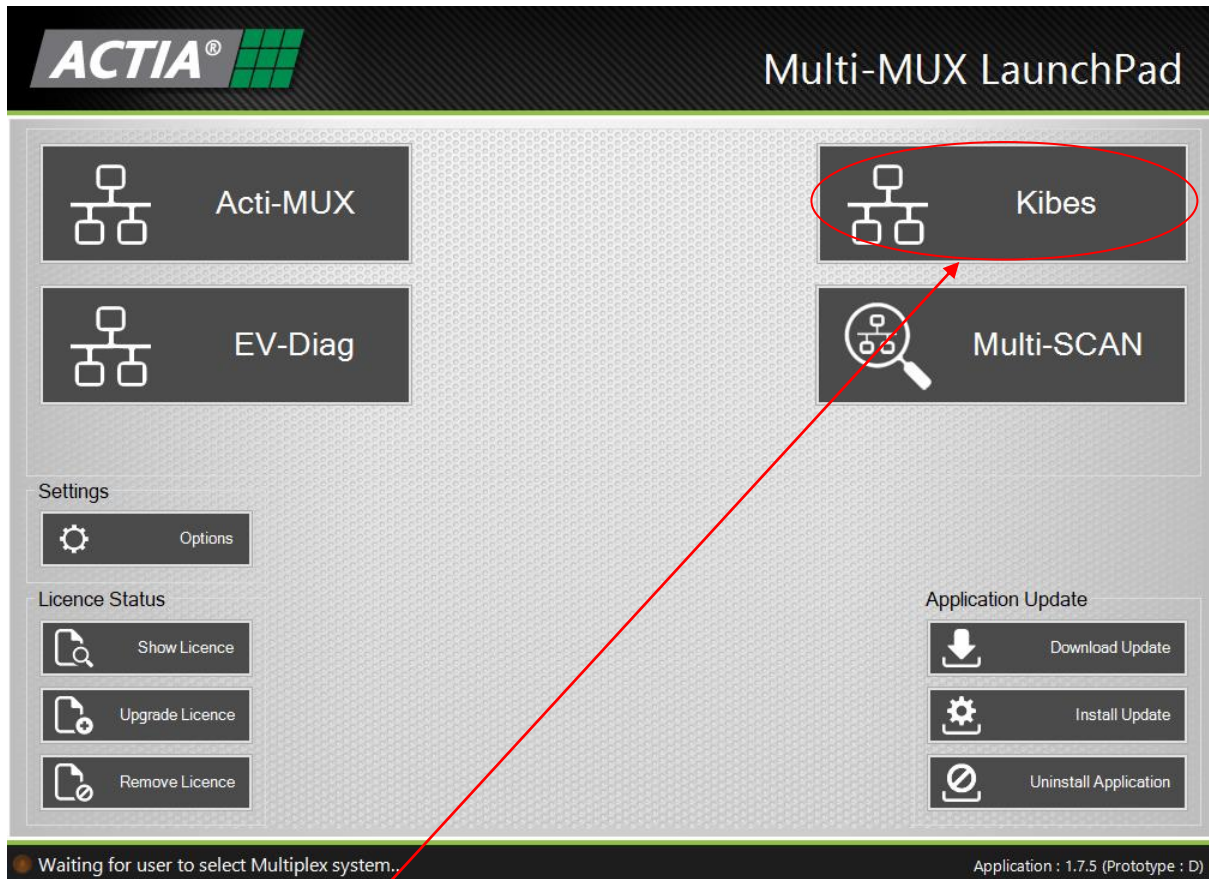
Select the Diagnostic Protocol you want to use from the dropdown box: -

- Diagnostic over CAN (DoCAN) – uses Basic XS
- Diagnostic over Ethernet (DoIP) – Uses Ethernet cable

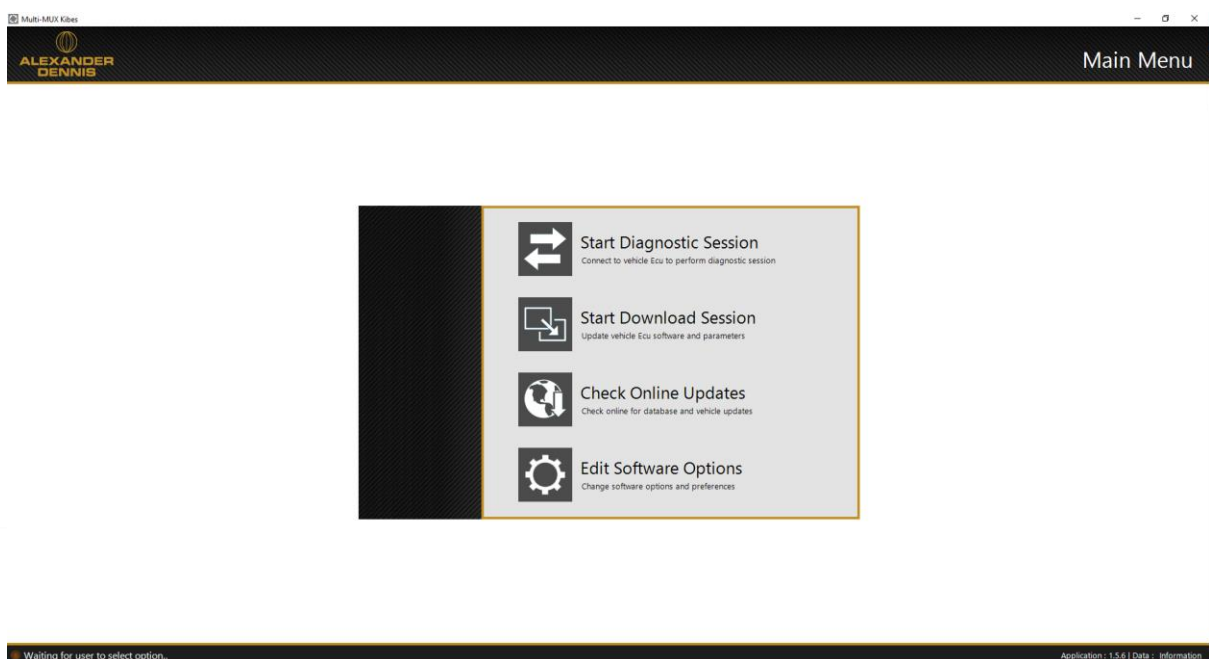
Select the Diagnostic Protocol option you want to use from the dropdown box: -

- Diagnostic over CAN (DoCAN)
 - Auto Detect CAN Bus Speed
- Diagnostic over Ethernet (DoIP)
 - DoIP Network Interface

8. Kibes Diagnostics



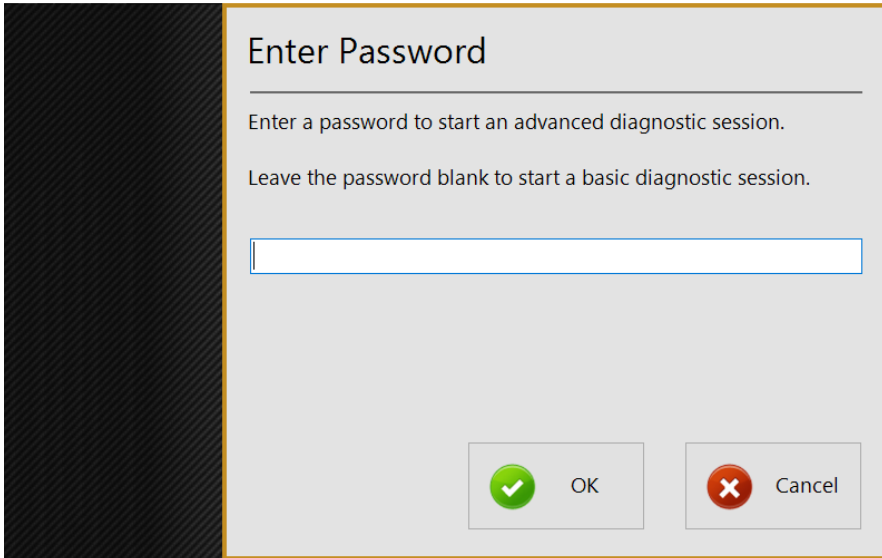
After clicking on the **Kibes** button on the launchpad, the following screen will appear: -



8.1. Start Kibes Diagnostic Session

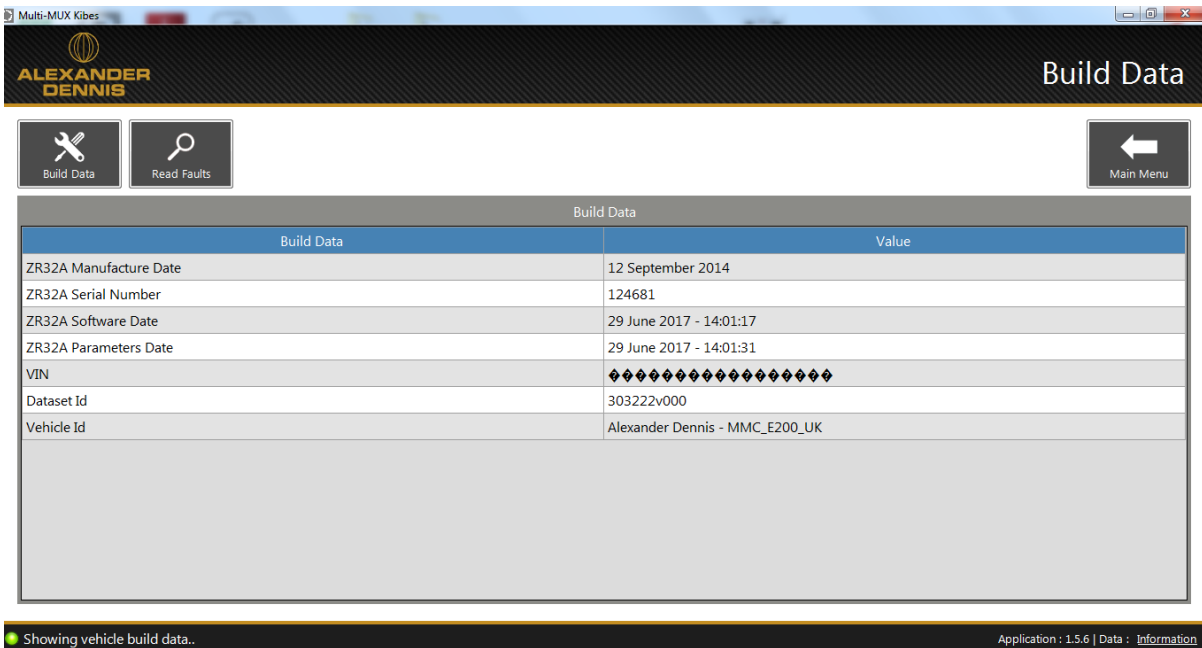
To start a diagnostic session, click on the **Start Diagnostic Session button**

The following screen will be displayed, prompting for a user password (This may not be the same password for accessing the download session)



Enter the user password and click **OK** to start the diagnostic session.

If the user does not enter a user password and clicks **OK**, the diagnostic session will start, but will have restricted functionality - access only to:-



8.2. Read Faults

The screenshot shows the 'Read Faults' screen in the Multi-MUX Kibes software. The interface includes a header with the Alexander Dennis logo and the title 'Read Faults'. Below the header are several control buttons: 'Build Data', 'Read Faults', 'Refresh', 'Erase Faults', and 'Main Menu'. The main area is a table displaying a list of stored faults. The table has the following columns: Status, Priority, SPN, SPN Description, Connector, FMI, FMI Description, and OCC. The data in the table is as follows:

Status	Priority	SPN	SPN Description	Connector	FMI	FMI Description	OCC
Not Active	1	520199	Battery Master Relay	MUX1.1-E15	5	Open Circuit	126
Not Active	1	520427	Alt. 1 Deactivation	MUX1.3-E01	5	Open Circuit	126
Not Active	1	520428	Alt. 2 Deactivation	MUX1.3-E05	5	Open Circuit	126
Not Active	1	520263	Alt. Excitation 1	MUX1.3-E06	5	Open Circuit	126
Not Active	1	520264	Alt. Excitation 2	MUX1.3-E04	5	Open Circuit	126
Not Active	1	523142	HVAC Demister Valve	No Data Found	7	Syst. Not Respond...	3
Not Active	1	523069	Interior Lights	MUX2.1-B12	6	Current Above Nor...	11
Not Active	1	523065	Destination Lights	MUX2.1-E18	6	Current Above Nor...	55
Not Active	1	523103	Dest Sign Rel	MUX2.1-E12	6	Current Above Nor...	55
Not Active	1	524005	MUX 2.1	MCAN 2	9	Time Out	20
Not Active	1	523074	Dis Bell Push for Dr	MUX2.1-B04	6	Current Above Nor...	1
Active	1	520254	Washer Pump	MUX1.2-A02	5	Open Circuit	126
Not Active	1	523062	Interior Lights	MUX2.1-A16	6	Current Above Nor...	4
Not Active	1	520214	Dipp Beam Headl. LH	MUX1.1-B16	6	Current Above Nor...	1

At the bottom of the screen, there is a status bar that reads: 'Showing stored faults on vehicle Ecu..[37 Stored Faults]' and 'Application : 1.5.6 | Data : Information'.

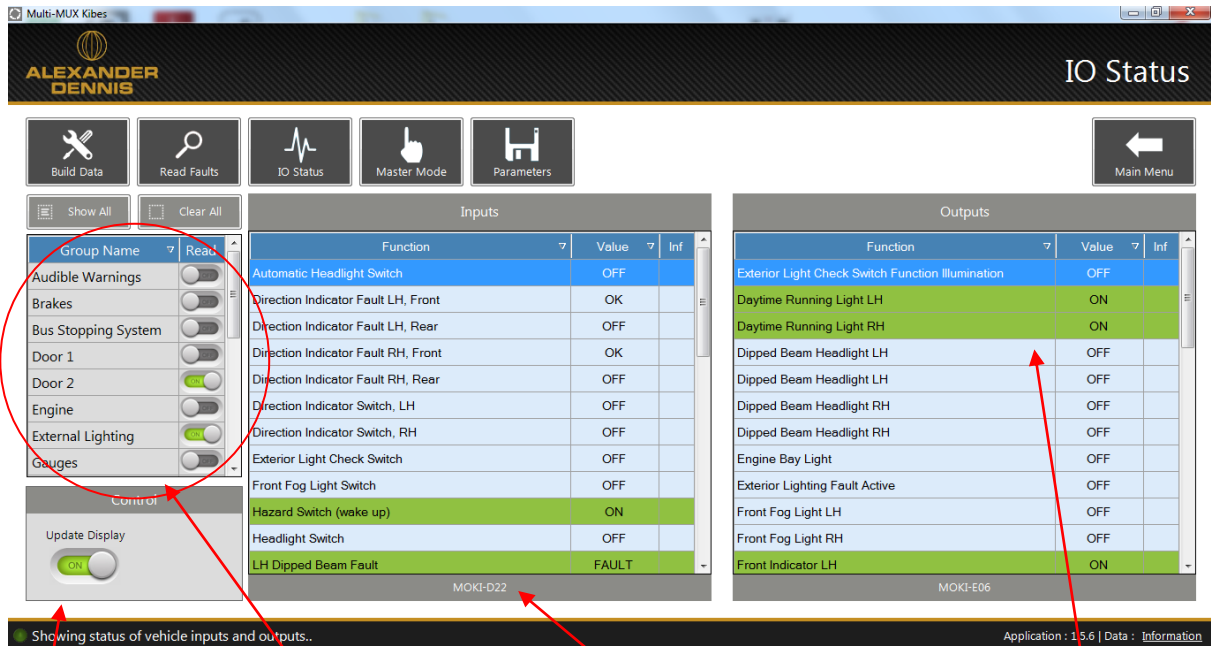
The Read faults screen displays the stored SPN faults stored in the ZR32 memory.:-

Pressing the **Erase Faults** Button will clear the stored faults from the ZR32 memory.

Pressing the **Refresh** Button will update the current faults display.

8.3. IO Status

IO Status displays status of all inputs / outputs connected to the Kibes electrical system.



Enables / Disables the screen refreshing its Status

Select what group you want to display status of by clicking on the sliding button

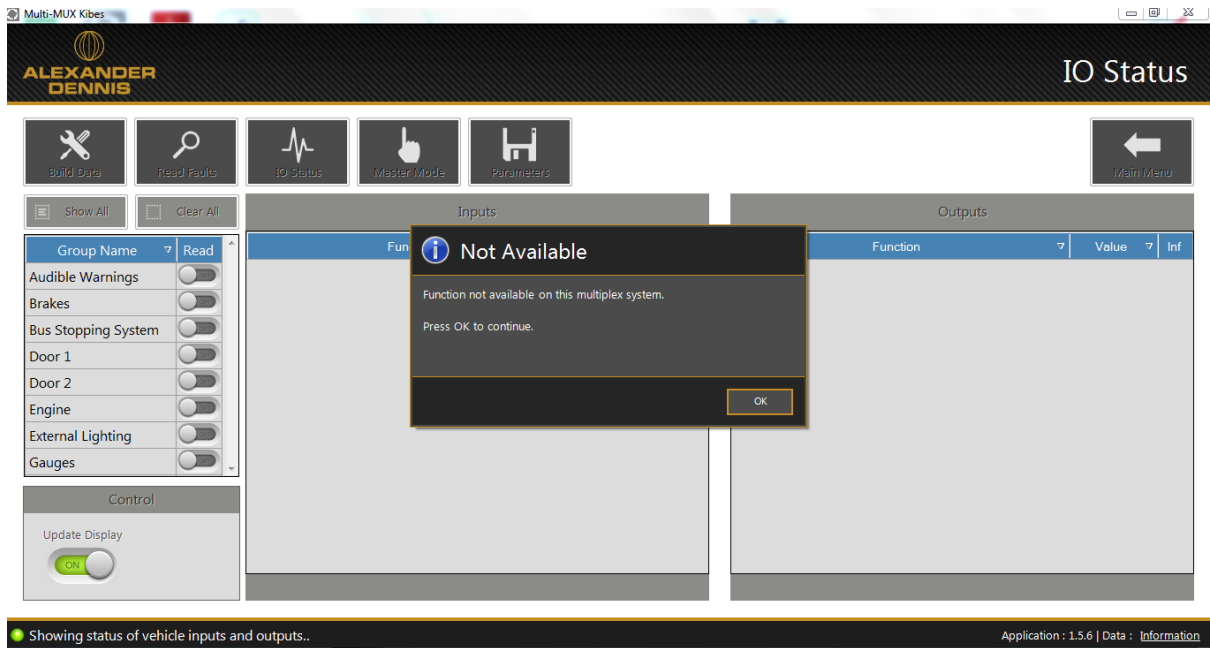
Note: Multiple groups can be selected

Green indicates Status = ON, All OK

Displays ECU and Connector / Pin Connection details

8.4. Master Mode

Master Mode is not available on the Kibes system.



8.5. Parameters

Viewing and adjusting parameters are dependent on what level password is entered by the user.

Level 3 user allows viewing access.

Level 4 user allows parameter adjustment.

The screenshot displays the 'Parameters' screen in the Multi-MUX Kibes application. The interface includes a top navigation bar with the Alexander Dennis logo and a 'Parameters' title. Below the navigation bar are several icons: Build Data, Read Faults, IO Status, Master Mode, Parameters, and Main Menu. The main area is titled 'Adjust Vehicle Parameters' and contains a table of parameters. The table has columns for Parameter Name, Type, and Value. The parameters listed include Assault Alarm, Assault Alarm Type, Driver Reverse Audible, Hammer Audible, Oil Master Warning Enable, Output Configuration Cab LS Stop Request Sounder, Output Configuration Cab US Stop Request Sounder, Output Configuration Saloon Stop Request Sounder, Reverse Alarm Mute Control, Voice Assault Alarm, Door 2 Cushion Timer, and Door 2 Door Button Control. A red circle highlights the 'Audible Warnings' group in the left sidebar, and another red circle highlights the 'Edit Parameter Value' section. A red arrow points from the 'Audible Warnings' group to the 'Edit Parameter Value' section. The 'Edit Parameter Value' section includes fields for Min, Max, Default, and Value, along with a 'Write' button.

Parameter Name	Type	Value
Assault Alarm	EP_L5_USINT	0
Assault Alarm Type	EP_L5_USINT	0
Driver Reverse Audible	EP_L5_BOOL	0
Hammer Audible	EP_L5_BOOL	0
Oil Master Warning Enable	EP_L5_BOOL	1
Output Configuration Cab LS Stop Request Sounder	EP_L5_USINT	2
Output Configuration Cab US Stop Request Sounder	EP_L5_USINT	2
Output Configuration Saloon Stop Request Sounder	EP_L5_USINT	2
Reverse Alarm Mute Control	EP_L5_UINT	0
Voice Assault Alarm	EP_L5_BOOL	0
Door 2 Cushion Timer	EP_L5_UINT	2250
Door 2 Door Button Control	EP_L5_BOOL	1

Parameters can be adjusted from: -

- Edit Parameter Value section

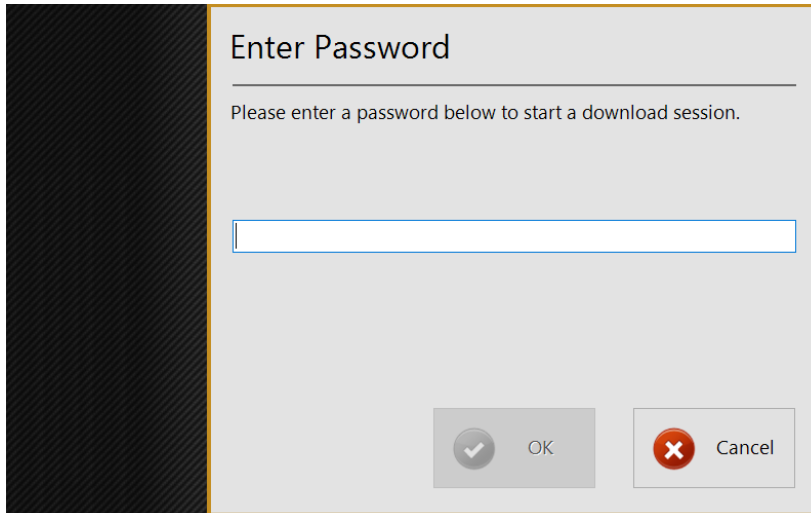
Select what group you want to display parameters of by clicking on the sliding button

Note: Multiple groups can be selected

8.6. Start Download Session

To start a diagnostic session, click on the **Start Download Session** button

The following screen will be displayed, prompting for a download password (This may not be the same password for accessing the diagnostic session)



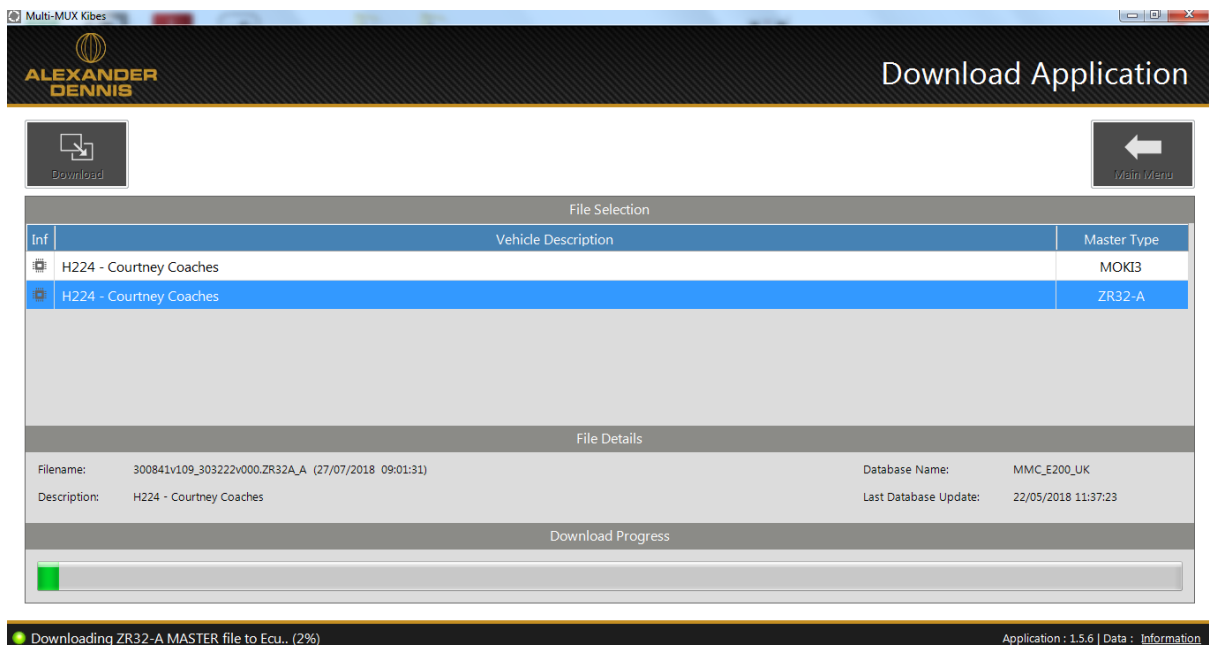
Enter Password

Please enter a password below to start a download session.

OK Cancel

The download password is specific for each vehicle manufacturer. Generally, it is the name of the deployment created in Multi-MUX Manager.

When the correct deployment password is entered, the following screen will be displayed: -



Multi-MUX Kibes

ALEXANDER DENNIS

Download Application

Download Main Menu

Inf	Vehicle Description	Master Type
H224 - Courtney Coaches		MOKI3
H224 - Courtney Coaches		ZR32-A

File Details

Filename:	300841v109_303222v000.ZR32A_A (27/07/2018 09:01:31)	Database Name:	MMC_E200_UK
Description:	H224 - Courtney Coaches	Last Database Update:	22/05/2018 11:37:23

Download Progress

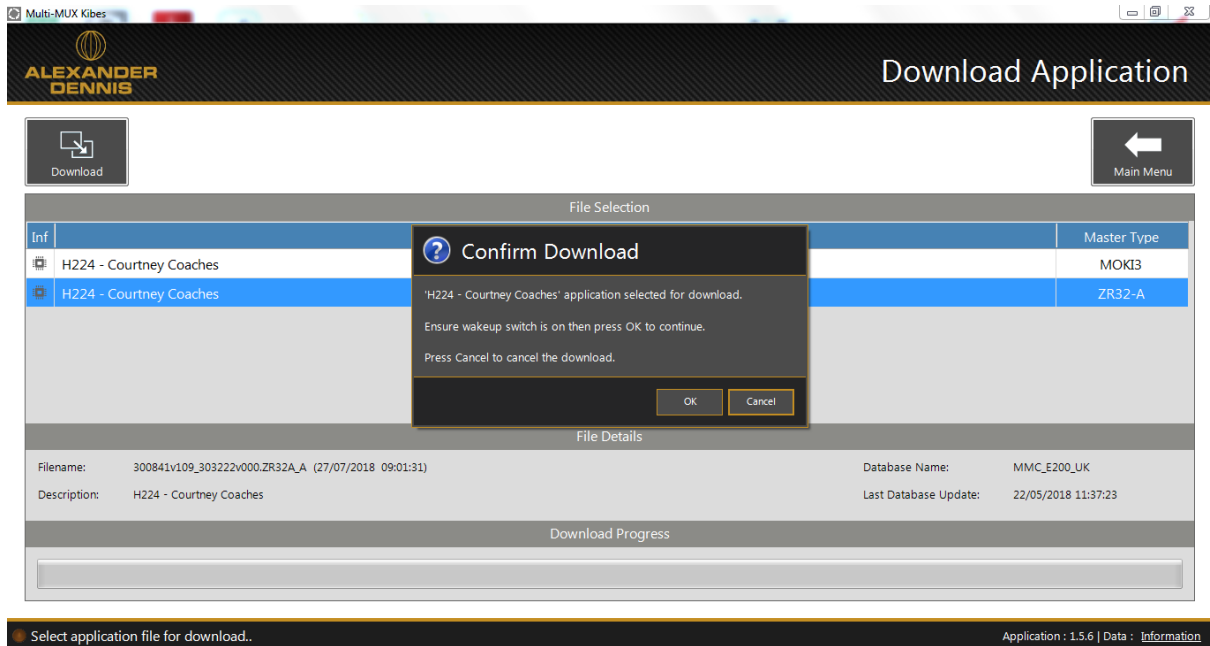
Downloading ZR32-A MASTER file to Ecu.. (2%)

Application : 1.5.6 | Data : Information

This screen will list the files available for download and the Master ECU that they are for.

Click on the file required from the list and then click the **Download** button.

You will then be prompted to confirm download: -



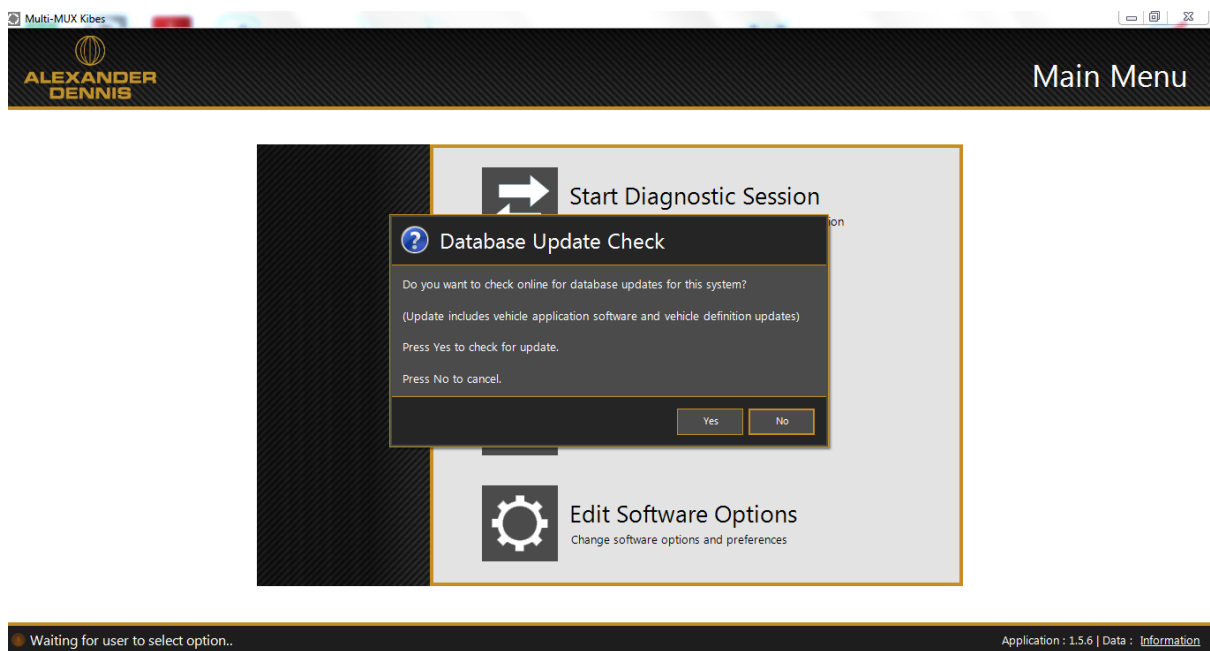
Click OK to initiate the download.

8.7. Check Online Updates



Check Online Updates
Check online for database and vehicle updates

This function allows the user to update the diagnostic data of the Multi-MUX diagnostic tool. Depending upon the licence purchased will determine what vehicle manufacturers are supported.



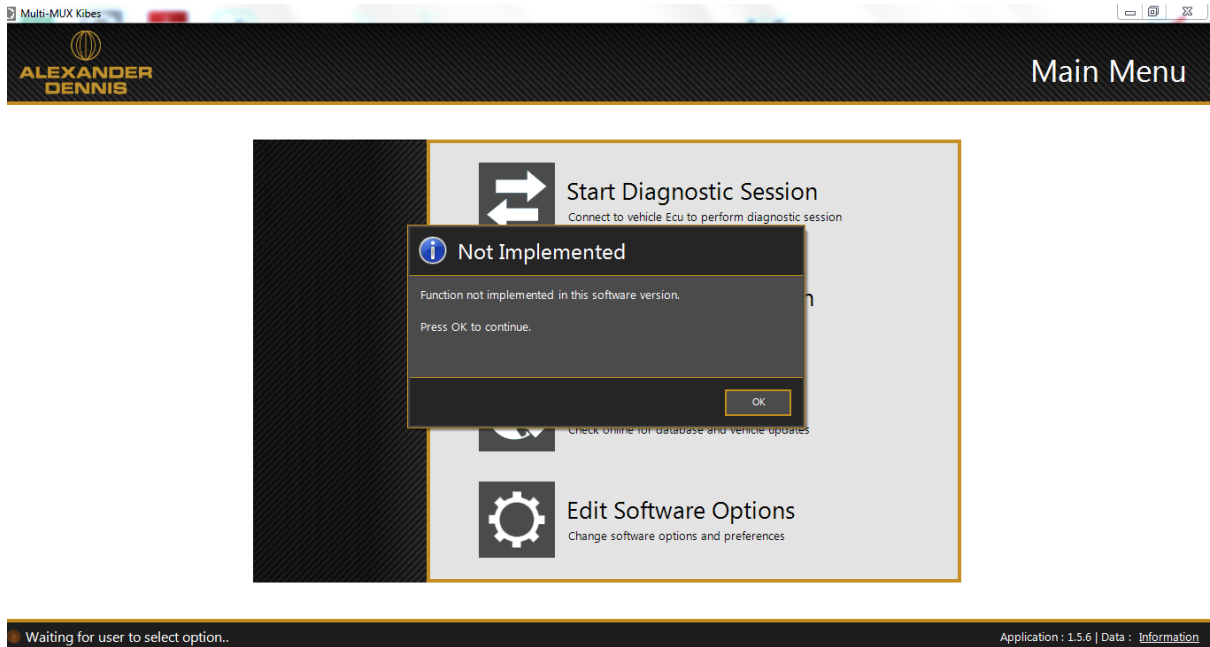
Click Yes to check for online updates.

8.8. Edit Software Options

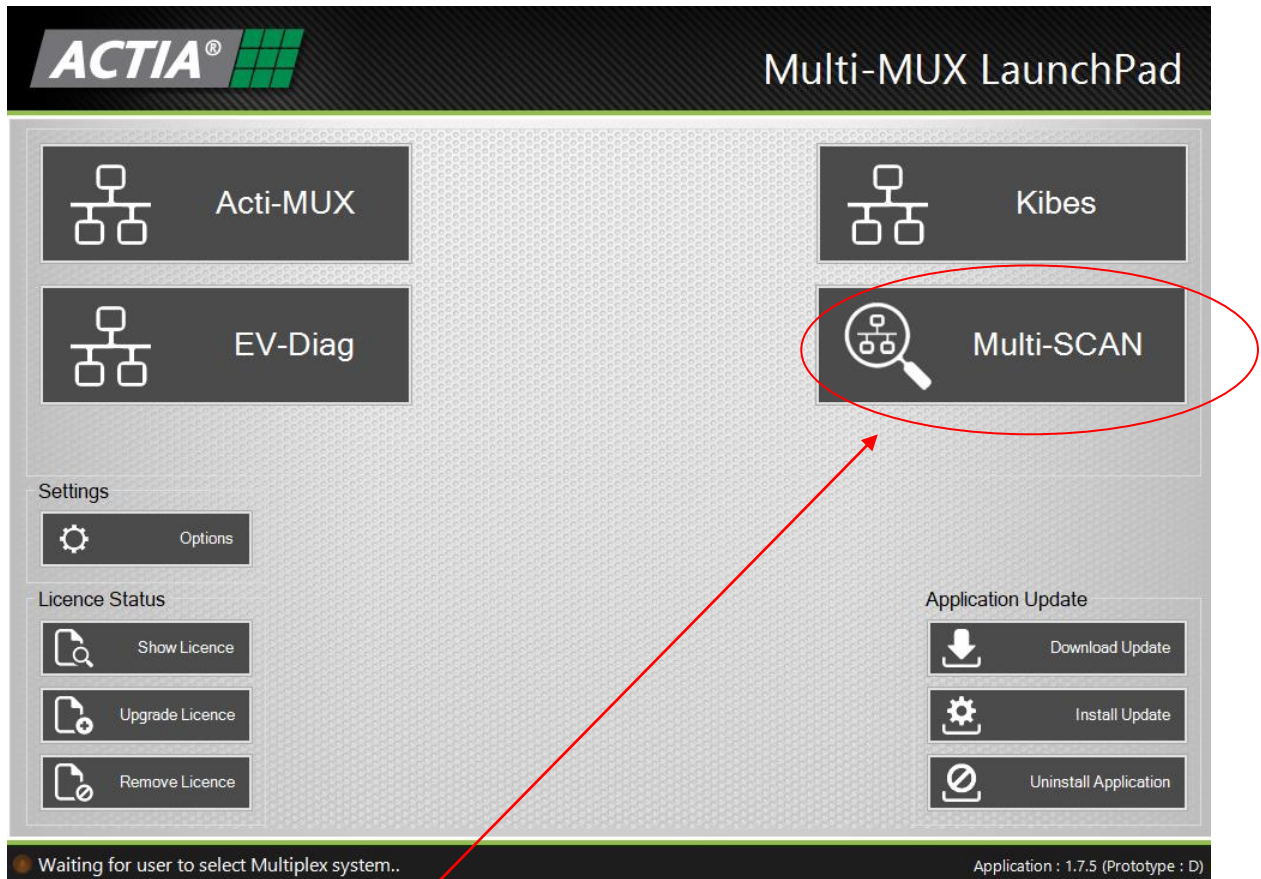


Edit Software Options
Change software options and preferences

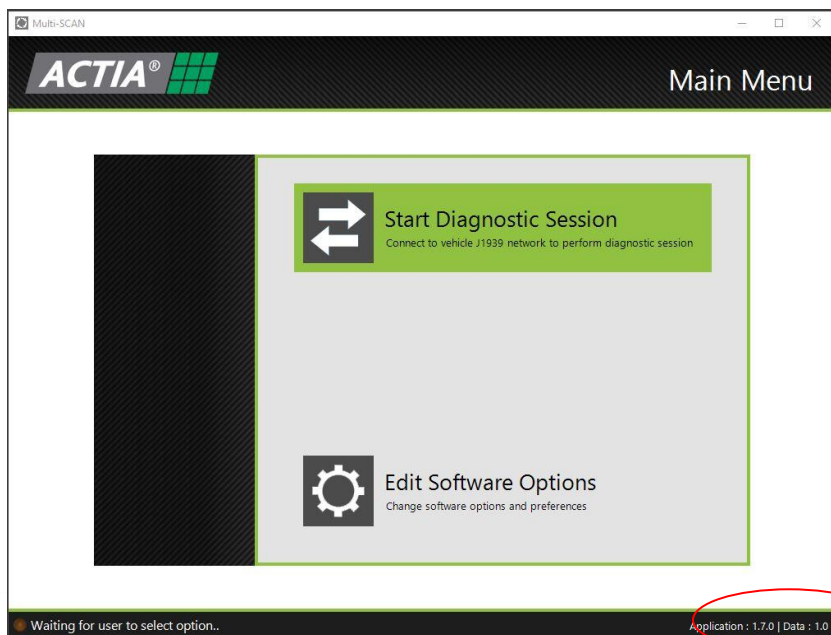
This function is not implemented for the Kibes system: -



9. Multi-SCAN

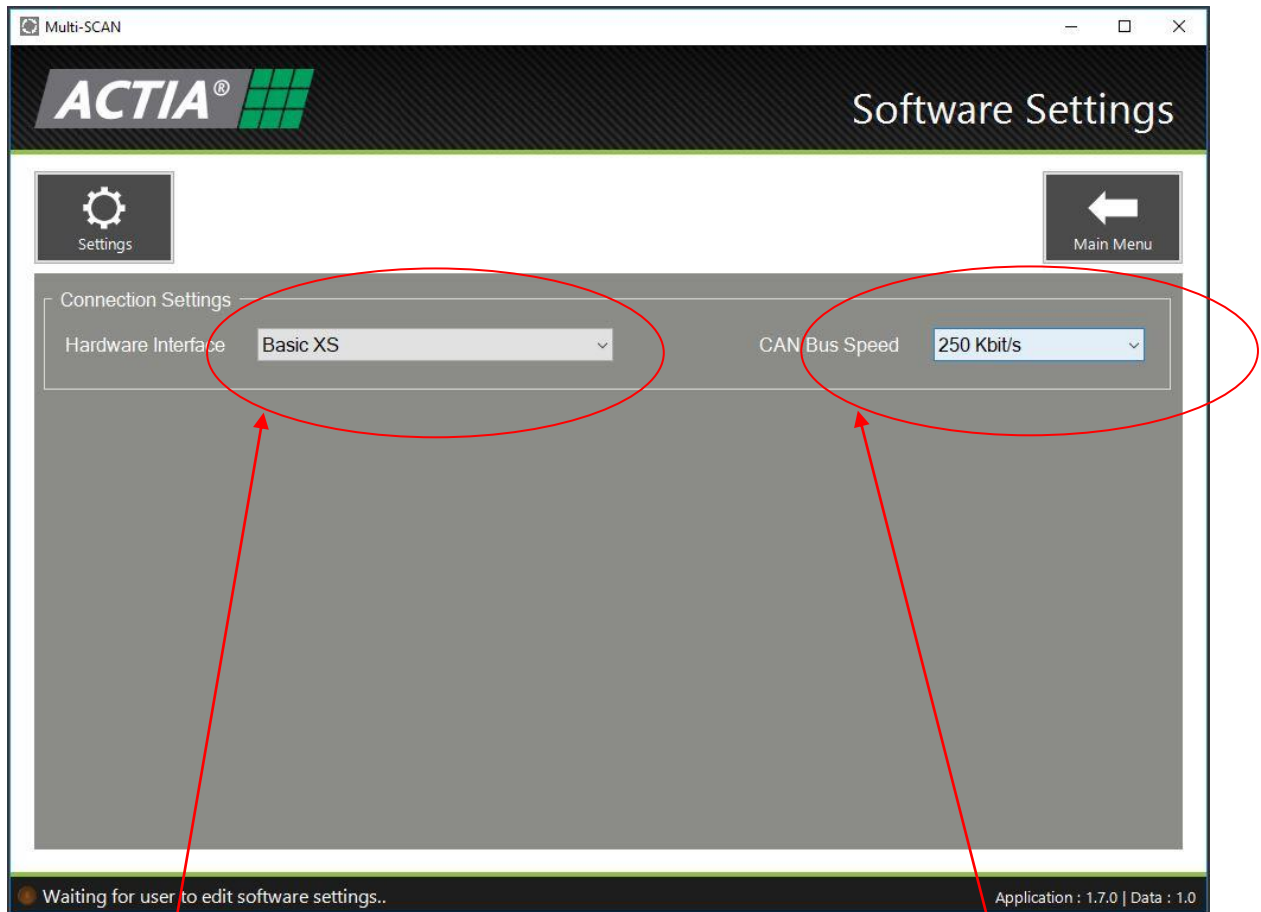


After clicking on the **Multi-SCAN** button on the launchpad, the following screen will appear: -



Acti-MUX Diagnostic Data Version

9.1. Edit Software Options



Select the CAN interface being used(Basic XS is default Interface)

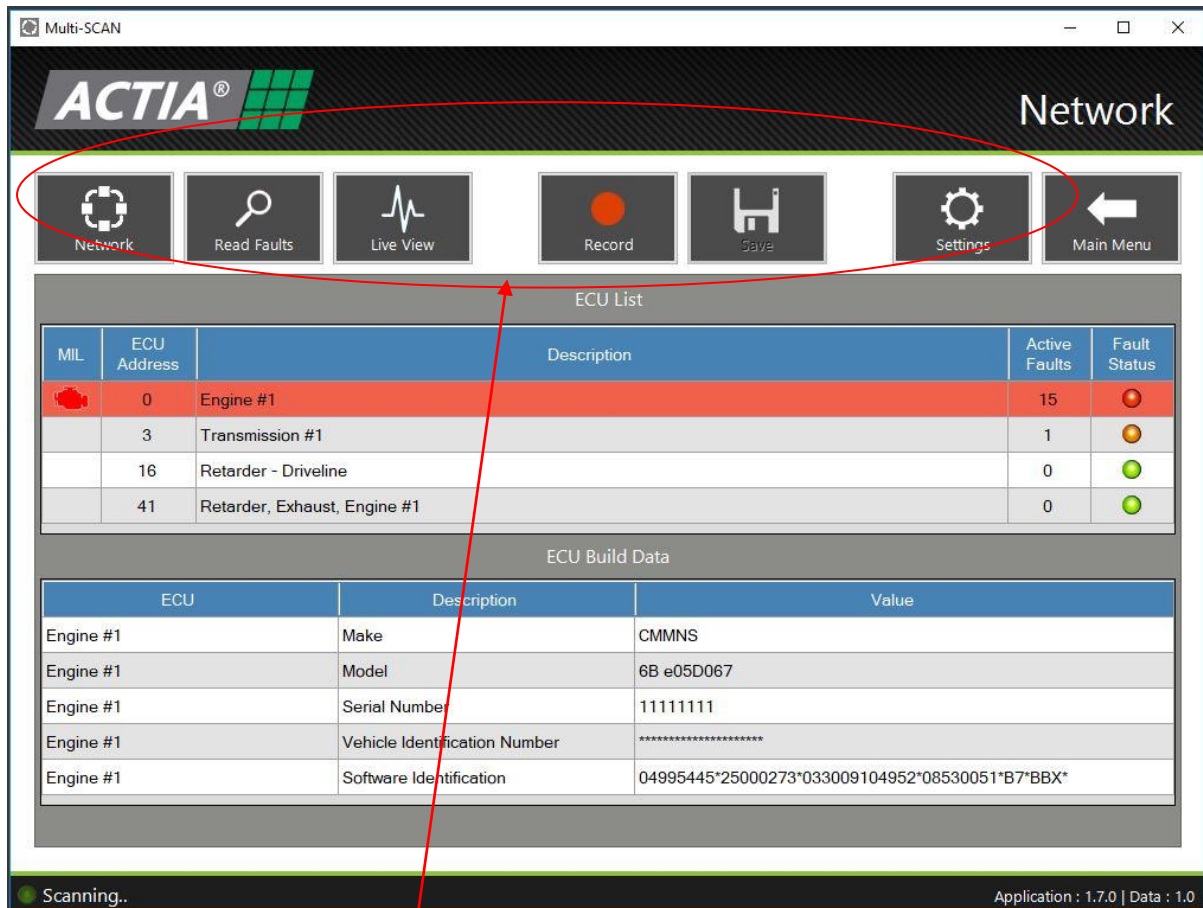
Select the CANBUS Speed here
(Default is 250K)

Clicking on the **Edit Software Options** button will show the above screen.

9.2. Start ActiMUX Diagnostic Session

To start a diagnostic session, click on the **Start Diagnostic Session** button

The following screen will then appear:-



The first screen above is the **Network** screen.

It contains version information about the J1939 network you are connected to.

From this screen, you can navigate to the additional diagnostic function listed below:

- Read Faults
- Live view
- Record J1939 CAN Trace
- Save Recorded J1939 CAN Trace
- Settings

9.3. Network

The screenshot shows the ACTIA Network interface. At the top, there are navigation buttons: Network, Read Faults, Live View, Record, Save, Settings, and Main Menu. Below these is the ECU List table:

MIL	ECU Address	Description	Active Faults	Fault Status
	0	Engine #1	15	
	3	Transmission #1	1	
	16	Retarder - Driveline	0	
	41	Retarder, Exhaust, Engine #1	0	

Below the ECU List is the ECU Build Data table:

ECU	Description	Value
Engine #1	Make	CMMNS
Engine #1	Model	6B e05D067
Engine #1	Serial Number	11111111
Engine #1	Vehicle Identification Number	*****
Engine #1	Software Identification	04995445*25000273*033009104952*08530051*B7*BBX*

At the bottom, there is a 'Scanning..' indicator and 'Application : 1.7.0 | Data : 1.0'.

Section 1

Section 2

The MIL status of each ECU is displayed here

The number of Active Faults is displayed here

The type of Active Faults is displayed here:-
 Red =Major Fault
 Amber= Minor Fault
 Green = All OK

The Network screen displays: -

- **Section 1** - ECU's present on the J1939 network and fault status
- **Section 2** – ECU's Build data

9.4. Read Faults

The screenshot shows the 'Read Faults' window in the ACTIA Multi-SCAN application. The window title is 'Multi-SCAN' and the main title is 'Read Faults'. The interface includes a top navigation bar with icons for Network, Read Faults, Live View, Record, Save, Settings, and Main Menu. Below this are 'Show All' and 'Hide All' buttons. The main content area is divided into three sections: a list of ECUs on the left, a table of Active Faults, and a table of Stored Faults. The ECU list shows 'Engine #1' and 'Transmission #1' with 'Read' buttons. The Active Faults table has columns for ECU, SPN, SPN Description, FMI, FMI Description, and OC. The Stored Faults table has the same columns. At the bottom, there are 'Refresh' and 'Erase Faults' buttons. A status bar at the bottom indicates 'Scanning..' and 'Application : 1.7.0 | Data : 1.0'.

Section 1

Section 2

The ECU's present on the J1939 network that have any Active or stored faults

Erase Faults button will erase all Active and Stored Faults for the ECU's selected – see erase faults section below.

Refresh button updates the view of Active and stored faults

The Network screen displays: -

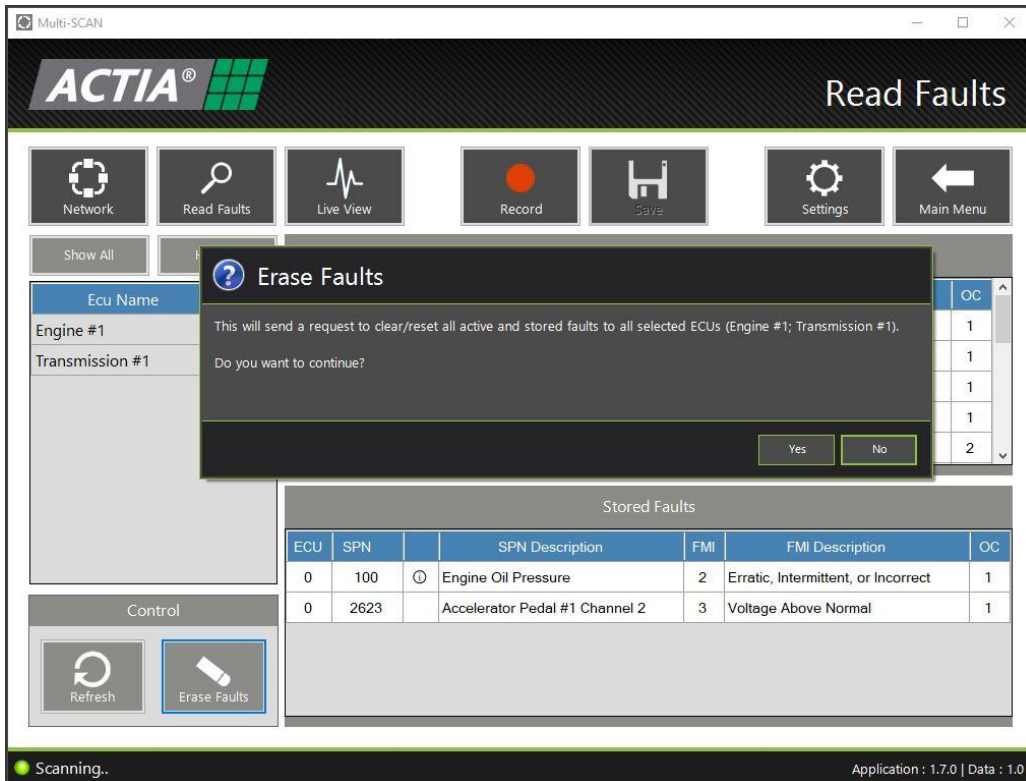
- **Section 1** - ECU's Active fault information (present faults)
- **Section 2** - ECU's Stored fault information

The Information is represented in a table format with the following headings: -

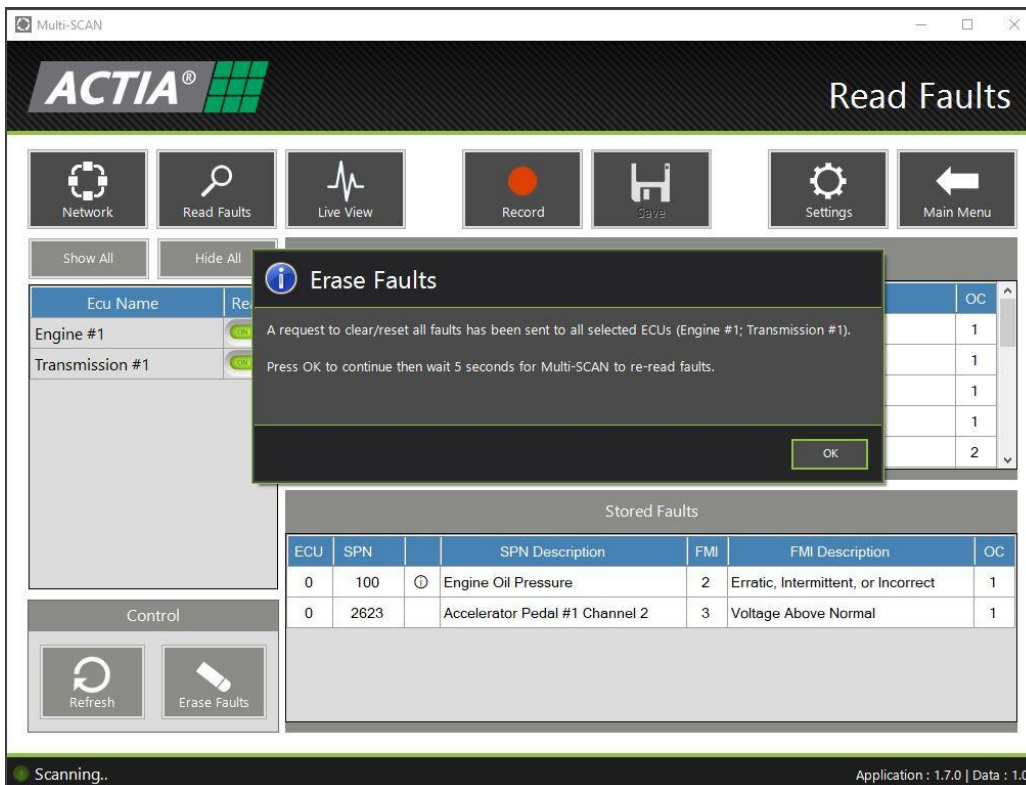
- ECU Column – Shows Address of ECU on the J1939 Network
- SPN Column – Shows the Suspect Parameter Number of the fault
- Information Column(i) – Shows additional SAE help information on the fault
- SPN Description Column – Shows a description of the SPN
- FMI Column – Shows the Failure Mode Identifier of the fault
- FMI Description Column – Shows a description of the FMI
- OC Column – Shows the number of occurrences of the fault

Note: Information is based on data from the SAE J1939 standard

9.5. Erase Faults



The above "Erase Faults" message is displayed when the erase fault button is pressed



The above "Erase Faults" message is then displayed to confirm the request

9.6. Live View

Multi-SCAN

ACTIA®

Live View

Network Read Faults Live View Record Save Settings Main Menu

By Group By ECU Parameters

Ecu Name	Read	ECU	SPN	SPN Description	Value
Engine #1	<input checked="" type="checkbox"/>	0	69	Two Speed Axle Switch	Low speed range
Transmission #1	<input type="checkbox"/>	0	84	Wheel-Based Vehicle Speed	0 km/h
Retarder, Exhaust, Engin...	<input type="checkbox"/>	0	86	Cruise Control Set Speed	0 km/h
		0	91	Accelerator Pedal Position 1	Error
		0	92	Engine Percent Load At Current Speed	0 %
		0	94	Engine Fuel Delivery Pressure	612 kPa
		0	97	Water In Fuel Indicator	Error
		0	100	Engine Oil Pressure	480 kPa
		0	102	Engine Intake Manifold #1 Pressure	Error
		0	105	Engine Intake Manifold 1 Temperature	Error
		0	108	Barometric Pressure	Error
		0	110	Engine Coolant Temperature	Error
		0	168	Battery Potential / Power Input 1	25.65 V

Control

Update Display

Scanning.. Application : 1.7.0 | Data : 1.0

Group Name	Read
Aftertreatment ADBlue	<input type="checkbox"/>
Catalytic Converter	<input type="checkbox"/>
Cruise Control	<input type="checkbox"/>
DPF	<input type="checkbox"/>
Engine Running Data	<input checked="" type="checkbox"/>
Engine Start Interlocks	<input type="checkbox"/>
FMS	<input type="checkbox"/>
Fuel System	<input type="checkbox"/>
Transmission Interloc...	<input type="checkbox"/>

Data on the J1939 can be viewed by ECU or by defined groups

The Information is represented in a table format with the following headings: -

- ECU Column – Shows Address of ECU on the J1939 Network
- SPN Column – Shows the Suspect Parameter Number of the fault
- Information Column(i) – Shows additional SAE help information on the fault
- SPN Description Column – Shows a description of the SPN
- Value Column – Shows the actual value of the SPN in converted units)

The screenshot shows the ACTIA Multi-SCAN software interface. The top bar includes the ACTIA logo and 'Live View' text. Below this is a navigation menu with icons for Network, Read Faults, Live View, Record, Save, Settings, and Main Menu. A sidebar on the left lists various vehicle systems, with 'By Group' selected. A modal window for 'SPN 168' is open, displaying the following text:


SPN 168 - Battery Potential / Power Input 1...

This parameter measures the first source of battery potential as measured at the input of the ECM/actuator etc. coming from one or more batteries, irrespective of the distance between the component and the battery. This SPN is also used when ECM's are interconnected in a series configuration, where the source of power is coming directly or indirectly from the same battery/batteries.

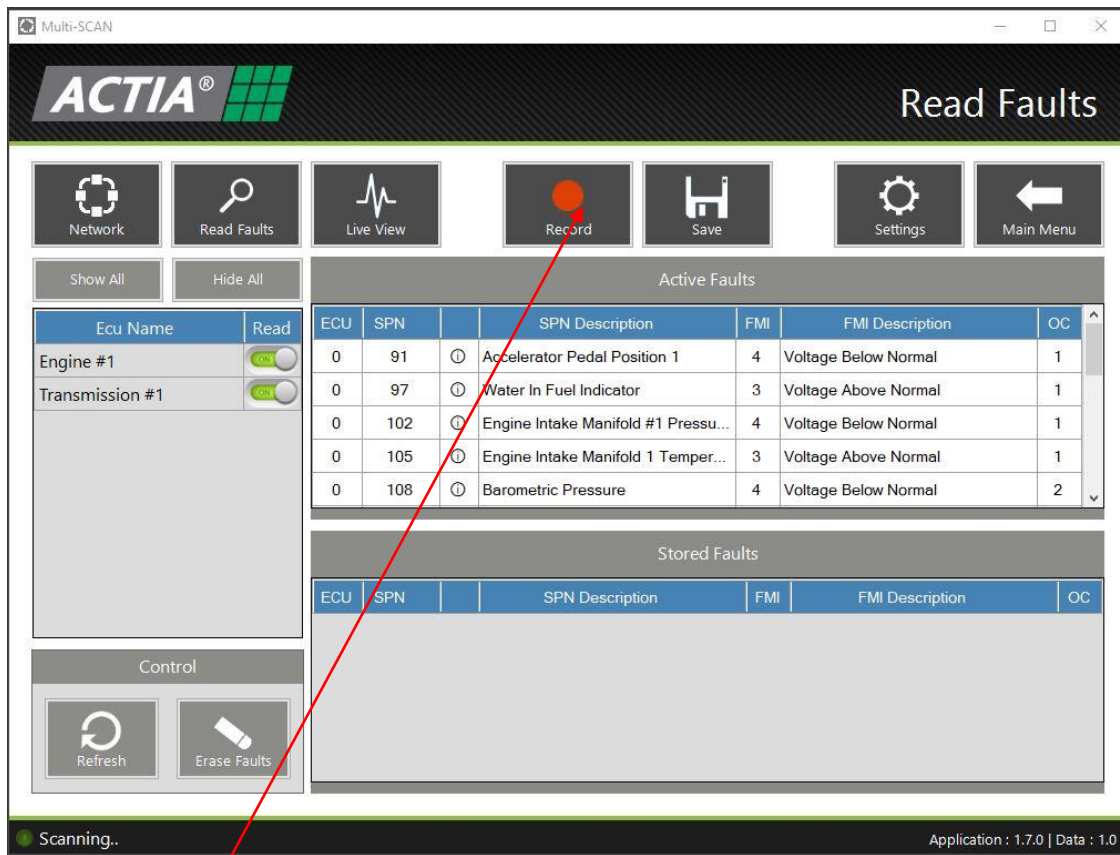
Below the text is a table of live data:

0	190	ⓘ	Engine Speed	0 rpm
0	512	ⓘ	Driver's Demand Engine - Percent Torque	0 %
0	513	ⓘ	Actual Engine - Percent Torque	0 %
0	558	ⓘ	Accelerator Pedal 1 Low Idle Switch	Error

At the bottom of the interface, there is a 'Control' section with an 'Update Display' button and a toggle switch set to 'ON'. The status bar at the bottom indicates 'Scanning..' and 'Application : 1.7.0 | Data : 1.0'.

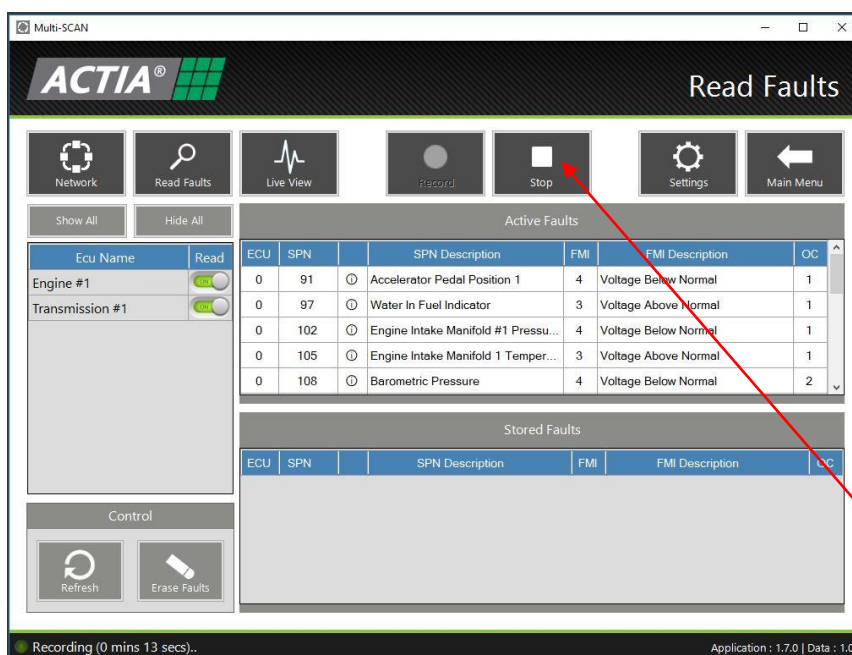
When clicking on the Information Column(i)  – the above SPN information window will appear. The information displayed is text directly from the SAE standard.

9.7. Record



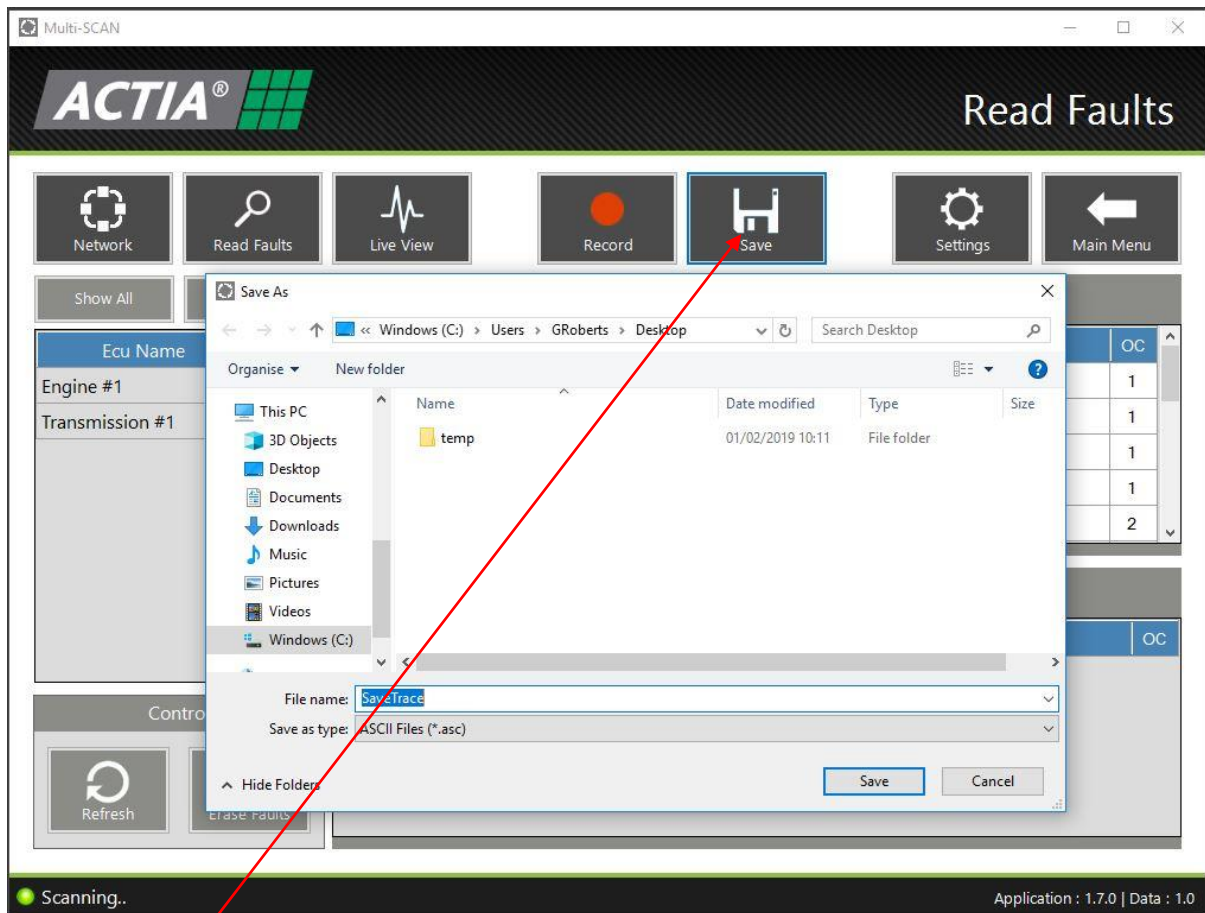
Pressing the Record Button will start recording a trace of the J1939 data bus

When recording is in operation, the record button will be greyed out. (See below)



Once the desired recording is completed, you can stop recording by pressing the Stop button

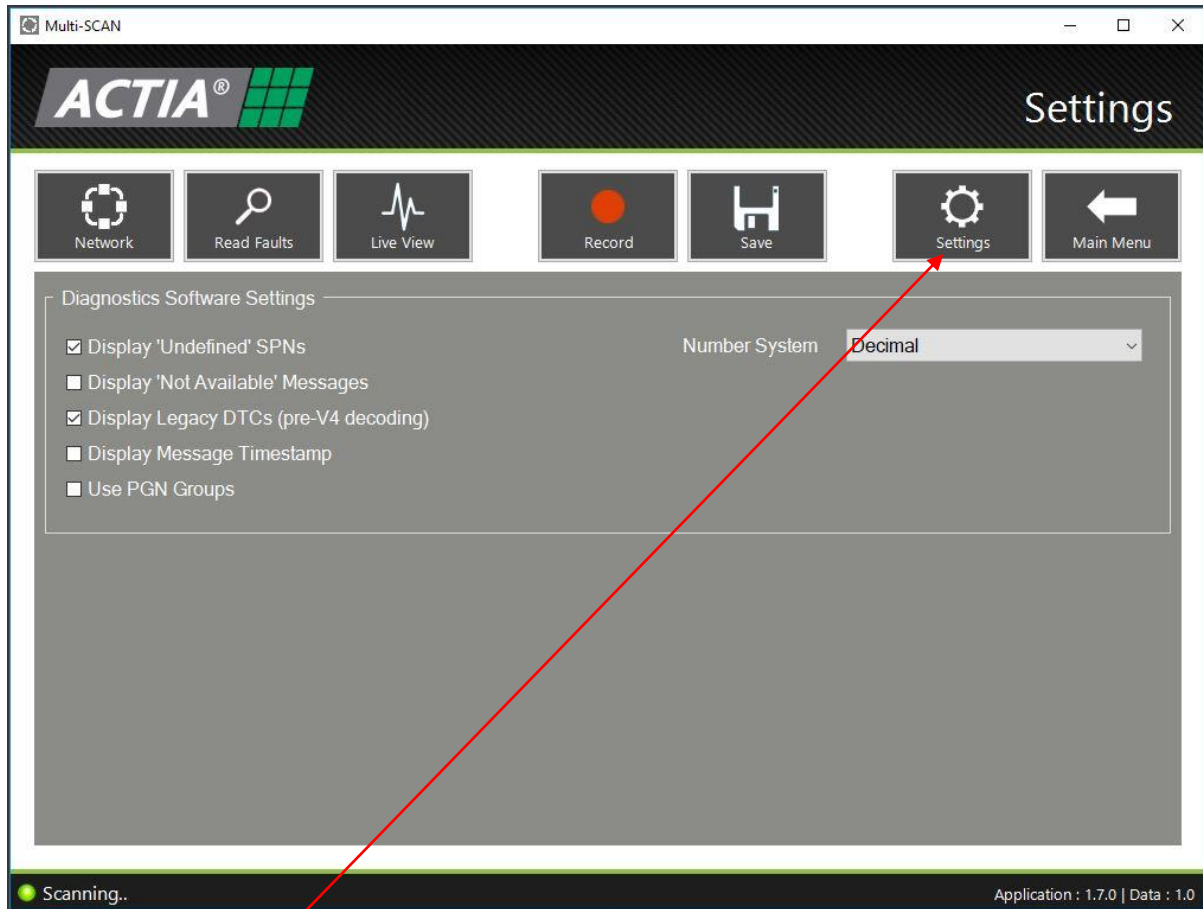
9.8. Save



Pressing the Save Button will save the CAN trace to a file. The above "Save As" browser window open, allowing the user to save the file to a location of their choosing.

The file format (ASC) of the saved file will be compatible with CAN playback software such as Vector, etc...

9.9. Settings

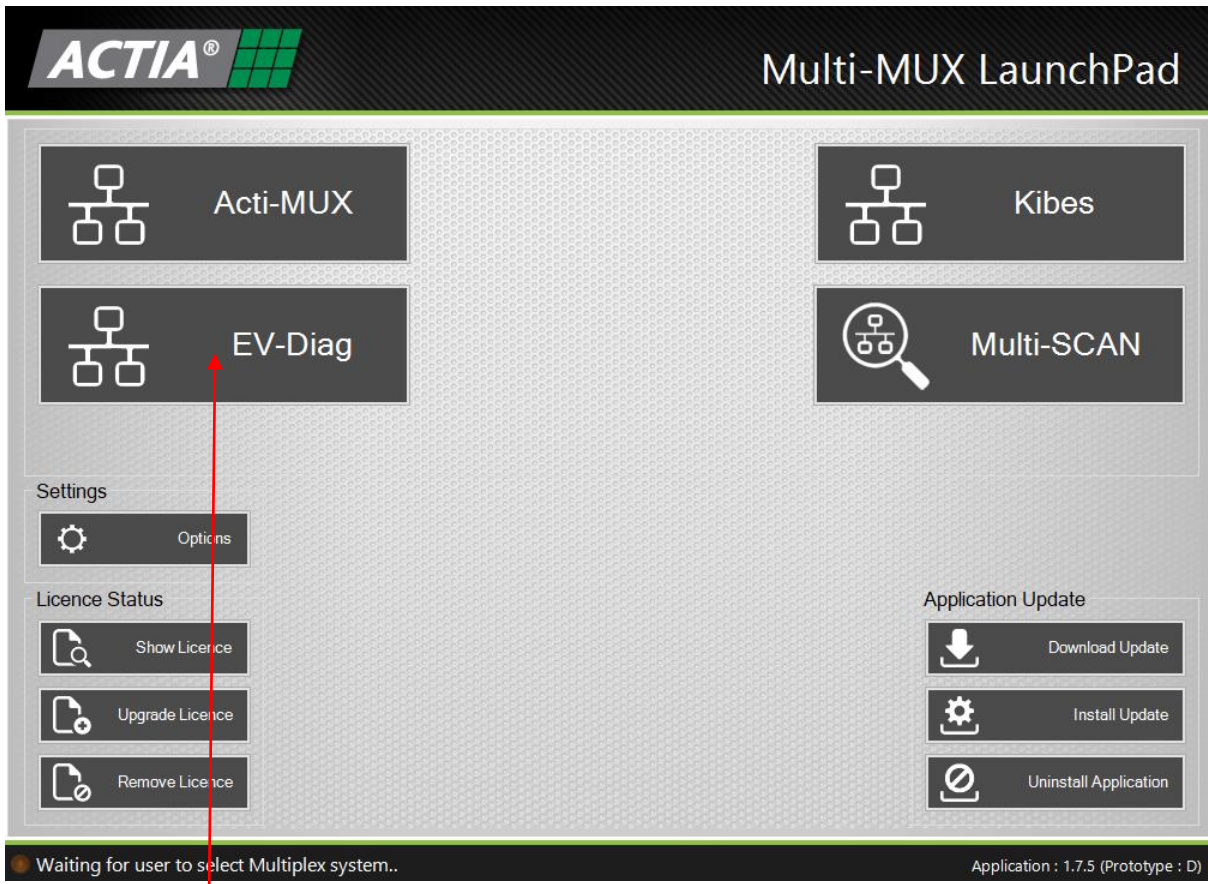


Pressing the Settings Button will open the above screen

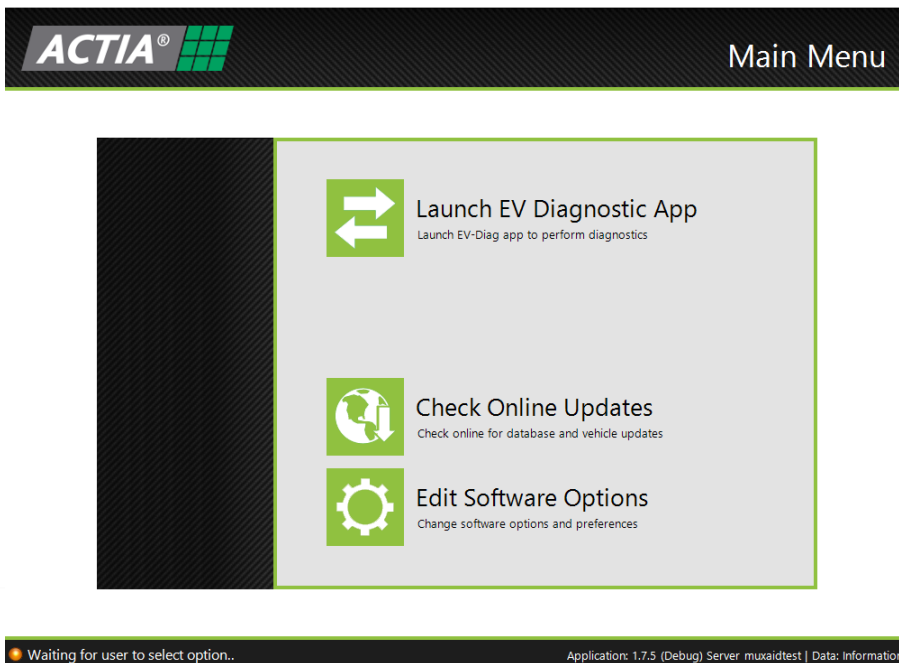
The Diagnostics Software Settings: -

- Display Undefined SPN's – Displays custom messages that are not listed in the J1939 SAE Standard
- Display Not Available Messages – Displays SPN's where the value read is defined as Not Available (i.e. 0xFF, 0x03, etc...)
- Display Legacy DTC's – Displays DTC's that are using the V4 decoding method
- Display Message Timestamps – Displays the time stamp on a CAN trace
- Use PGN Groups – Displays Groups as PGN groups instead of Actia default groups
- Numbering System – Defines if values are displayed in Decimal or Hexadecimal

10. EV-DIAG



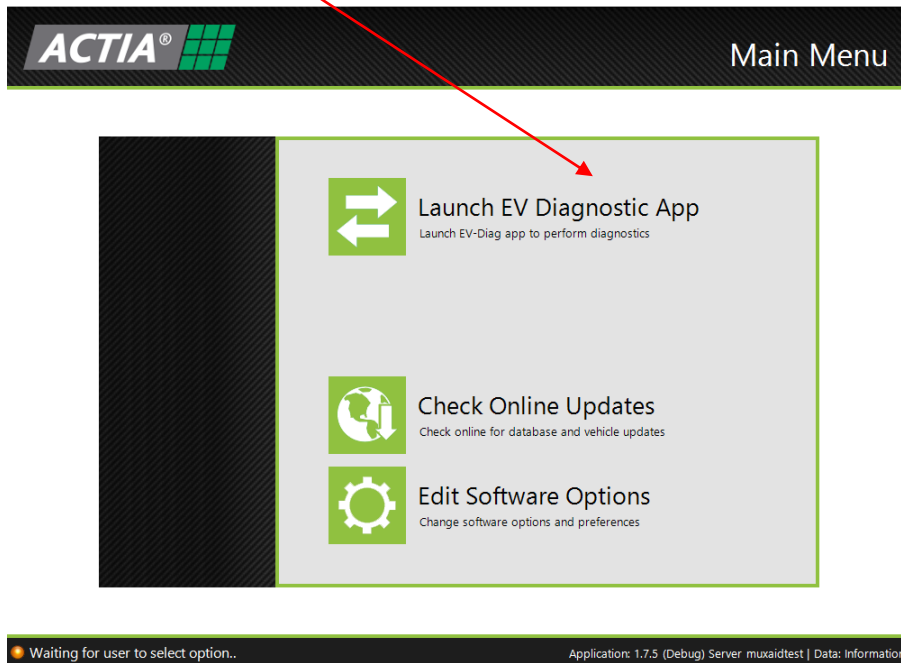
After clicking on the **EV-Diag** button on the launchpad, the following screen will appear: -



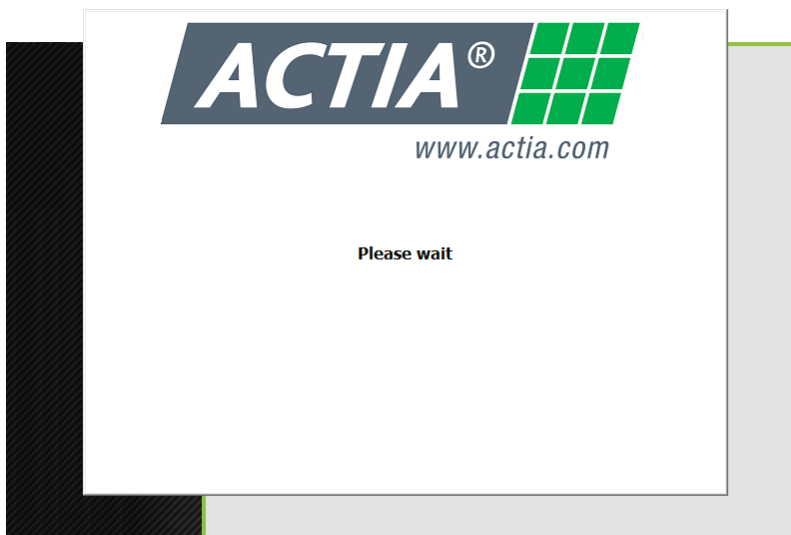
Acti-MUX Diagnostic Data Version

10.1. Launch EV Diag

Click on Launch EV Diagnostic App to launch the application



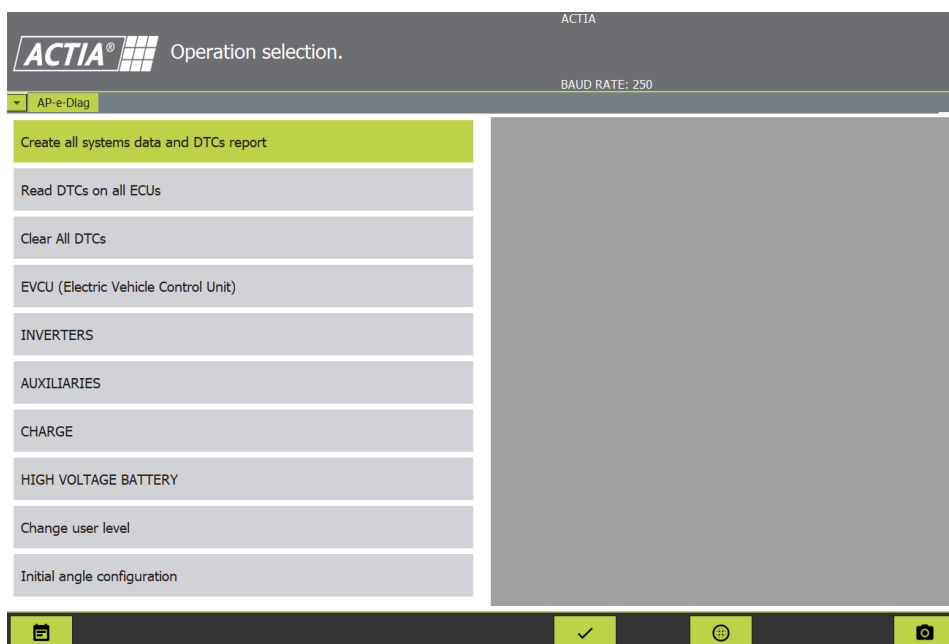
The screen below will appear.





Click on the tick once you've connected your XS, then select your baud rate.

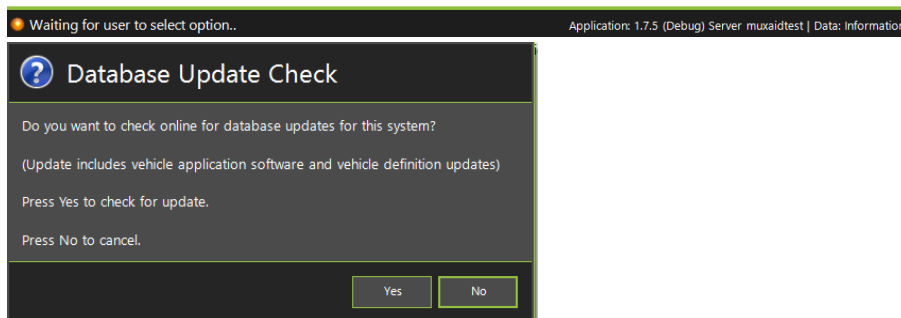
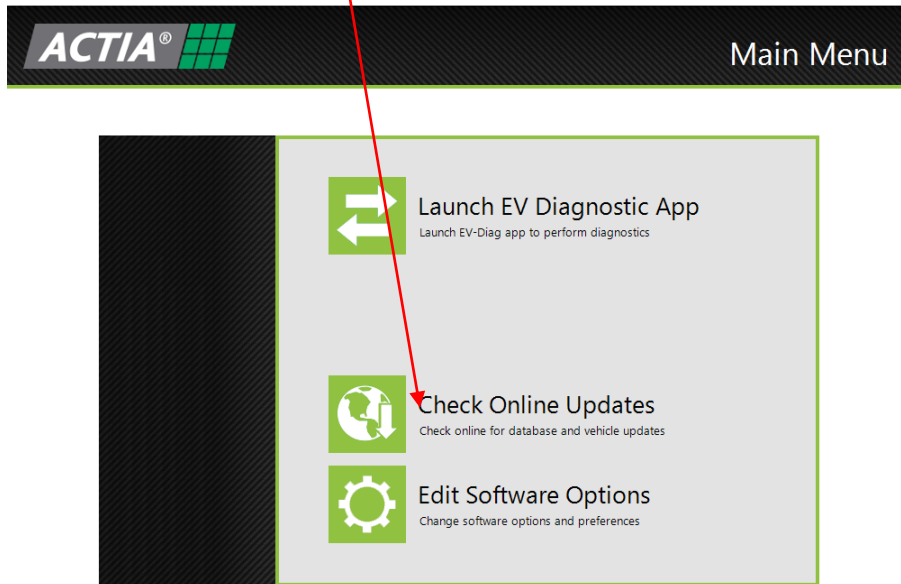
Finally click the tick again and the following screen will show:



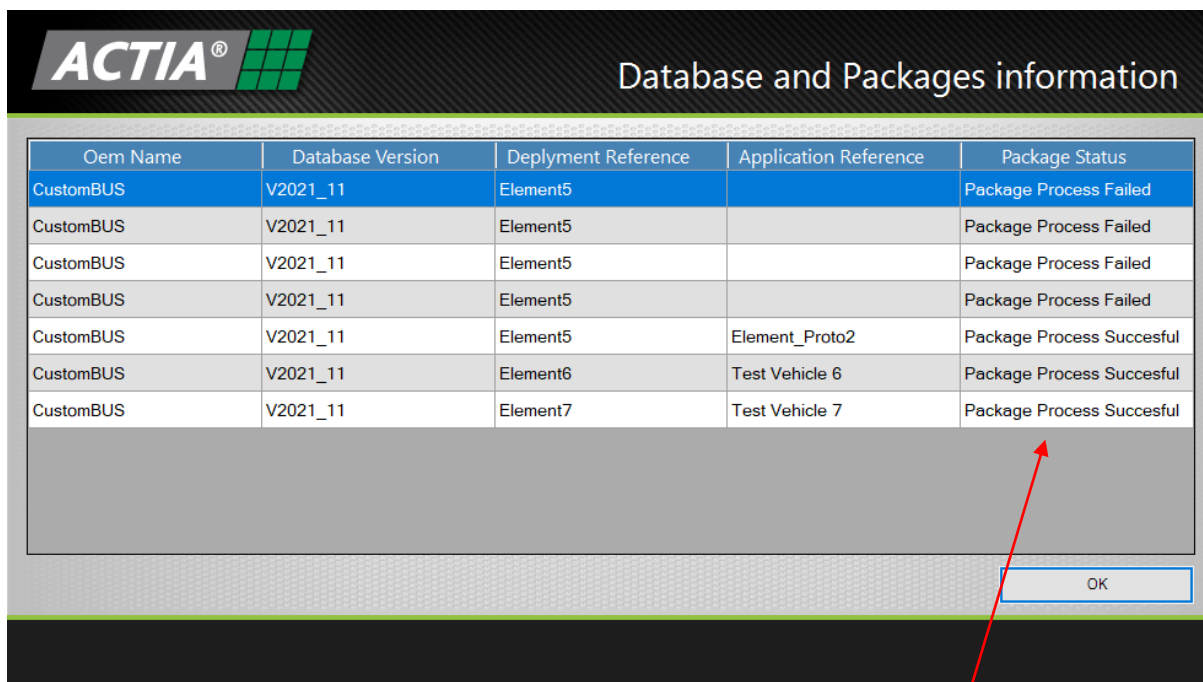
10.2. Check Online Updates

This function allows the user to update the data of the diagnostic tool.

Depending upon the licence purchased will determine what vehicle manufacturers are supported.



When the user, clicks the Check Online Updates button, the dialog box above will appear. Click Yes to check for updates.



Oem Name	Database Version	Deployment Reference	Application Reference	Package Status
CustomBUS	V2021_11	Element5		Package Process Failed
CustomBUS	V2021_11	Element5		Package Process Failed
CustomBUS	V2021_11	Element5		Package Process Failed
CustomBUS	V2021_11	Element5		Package Process Failed
CustomBUS	V2021_11	Element5	Element_Proto2	Package Process Successful
CustomBUS	V2021_11	Element6	Test Vehicle 6	Package Process Successful
CustomBUS	V2021_11	Element7	Test Vehicle 7	Package Process Successful

Once it has completed updating, the status of the download will either show successful or failed.

10.3. Edit Software Options

This allows you to configure which drive to save your packages on.



11. Frequently Asked Question

11.1. Does Multi-MUX support diagnostics of CAMU

No – this is supported by the MultiAID diagnostic tool. Contact your local Actia subsidiary for details.

11.2. My Licence is about to expire – what do I need to do?

You will start receiving reminder emails when your licence is due to expire within the next 30 days and there will also be a count down on the Home Screen of your Multi-MUX software. The email will state the costs of your renewal. Once payment is made for your renewal you will be sent an email to renew your Multi-Mux. Please refer to the **099-60-6551 Multi-MUX quickstart guide.pdf** document on how to activate your renewal, this will be attached to this email.

11.3. Can I Purchase additional Bolt-ON's after my Purchase?

Yes - Contact your local Actia subsidiary for purchase of additional Bolt-on licence.

11.4. CAN I transfer my Multi-MUX licence?

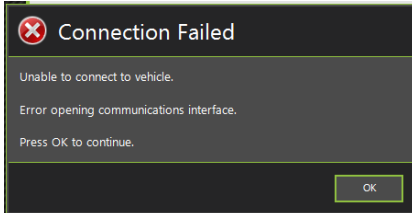
Yes - In the event of your PC failing, please contact your local Actia subsidiary for the transfer of your licence.

9.5 My Multi-MUX has lost its licence – What do I do

Contact your local Actia subsidiary who will assist relicensing your Multi-MUX

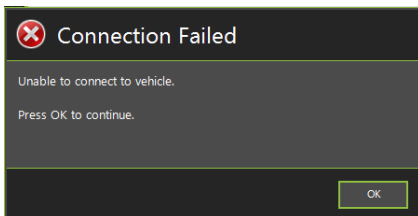
12. Trouble Shooting Guide

12.1. Error Opening Communications Interface



The above error usually indicates that there is an issue with the Basic XS drivers. Please re-install drivers and ensure Basic XS is powered up (Green LED flashing)

12.2. Unable to Connect to Vehicle

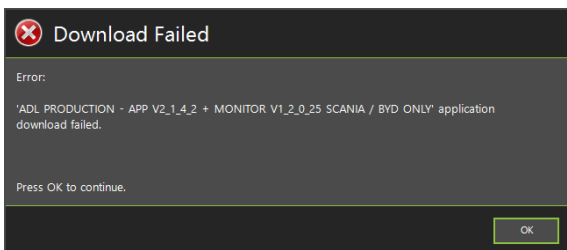


The above error usually indicates that there is an issue with the connection from the Basic XS / Ethernet adapter to the ECU being diagnosed.

Check the following: -

- Correct cable being used - refer to **Additional Hardware** section of this document
- ECU is powered up
- Basic XS is powered up (Green LED flashing)
- Firewall / Antivirus settings (Ethernet connection only)

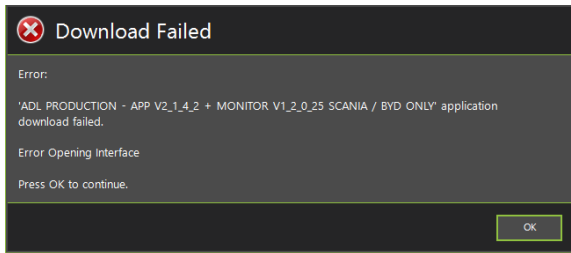
12.3. Download Failed



The above error usually indicates that there is an issue with the connection from the Basic XS / Ethernet adapter to the ECU being diagnosed.

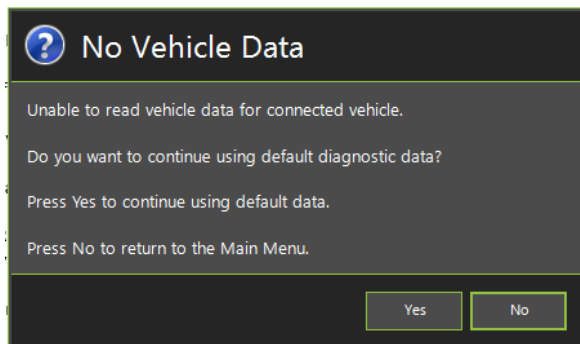
Check the following: -

- Correct cable being used - refer to **Additional Hardware** section of this document
- ECU is powered up
- Basic XS is powered up (Green LED flashing)
- Firewall / Antivirus settings (Ethernet connection only)



The above error usually indicates that there is an issue with the Basic XS drivers. Please re-install drivers and ensure Basic XS is powered up (Green LED flashing)

12.4. No Vehicle Data

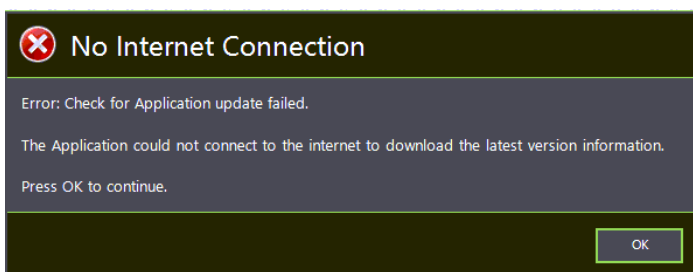


The above error usually indicates that Multi-MUX does not have the latest diagnostic data or recognise the software banner of the ECU being diagnosed.

Check the following: -

- Ensure diagnostic data is up to date – refer to “**Check on-line Updates**” section of this document
- Ensure s-diag export data is correctly installed – Actigraf Users only

12.5. On-Line Update Failure



The above error usually indicates that Multi-MUX does not have an internet connection.

Check the following: -

- Ensure diagnostic tool has internet connection
- Check firewall settings are not blocking connection

13. Actia Contact Information

13.1. Actia Sales

When calling the Actia for assistance. Please ensure you have your Licence Key available. (see **Licencing the Product** section of this document)

13.2. Actia Helpdesk

When calling your local Actia subsidiary for assistance. Please ensure you have your Licence Key available or your KIT ID (this is the WO number on your Basic XS) and your PC has internet access. The Helpdesk Assistant may have to remotely access your PC to resolve the issue.

For UK support please contact

Tel: +44 (0) 1686 611150

Email: helpdesk@actia.co.uk

For International support please visit the ACTIA website to find your local ACTIA representative

<https://www.actia.com/en/the-group/locations>