

User Manual

OBD-II Dongle V1.1



Description: User manual for OBD-II Dongle

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1 Introduction

1.1 Instructions of safety

This chapter contains information on how to operate aQuiLa OBD II Dongle safely. By following these requirements and recommendations, you will avoid risky situations. Please read the instructions carefully and follow them strictly while operating the device.

- aQuiLa track OBD II dongle is designed to work in automotive environment with supply range of +9V to +32V DC power supply.
- To avoid mechanical damage, it is advised to transport the aQuiLa OBD II dongle in an impact proof package.
- Device should be installed in the OBD connector in a vehicle, which already exists in the Vehicle.

1.2 Copyright Notice

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2 Overview of document

This manual covers the various features of OBD II Dongle and information about the terminologies, possibilities, electrical, mechanical characteristics, & configuration of the OBD-II Dongle.

PC	Personal Computer
GPRS	General Packet Radio Service.
GSM	Global System for Mobile Communication.
GPS	Global Positioning System
SMS	Short Message Service
AC/DC	Alternating Current/Direct Current
I/O	Input /Output
GNSS	Global Navigation Satellite System
CAN	Controller Area Network
K-line	Keyword Protocol -2000

Table 1:Acronym

3 Basic Description

The on-Board Diagnostics system is composed of a computer that monitors the emissions system and key engine components. It can usually detect a malfunction or deterioration in these components before the driver becomes aware of the problem.

OBD systems are designed to alert the driver when a component in the engine management or emissions systems begins to deteriorate or malfunction. Early detection of minor problems, followed by timely repair, can often prevent more costly damage to components such as the catalytic converter.

OBD II is an electronic device which locates its position, PIDs, DTC and sends it by using GPRS network. This device is suitable for applications, where it needs the location of remote vehicle and vehicle health check-up's.

3.1 Contents of the package

Usually the OBD II dongle is supplied to the customer in a cardboard box containing all the equipment that is necessary for operation.

3.1.1 3.1.1 The package contains:

- Unsealed One- piece OBD II dongle.
- OBD II Connector Cable – Length 1 Meter
- Warranty card

3.2 Basic Characteristics

3.2.1 GSM/GPRS

- Quad - Band GSM 850/900/1800/1900 MHz
- GPRS: Class 10 Coding Scheme CS1 (1W @ 1800/1900MHz) to CS4 (2W @ 850/900MHz)
- SMS (text).
- GPRS multi-slot class 12/10

3.2.2 GPS Module:

- GPS: 66 search channel acquisition -/22 simultaneous tracking channels.
- Tracking Sensitivity: -165dBm, inbuilt patch antenna.
- 5 Meters Accuracy @ -130 dBm.
- Hot Starts: < 1 s
- Cold Starts; -147dBm
- Cold Starts: 31 s [Typical]
- Warm Starts: 30 s

3.2.3 Hardware features:

- MT6260 Chipset
- 8 MB Solid State Flash, 100K Erase and Program Cycle, 10 Year data retention
- Motion Sensor - 3 Axis accelerometer
- Internal backup battery
- Supports SIM card: 1.8V and 3V Micro SIM

3.2.4 USB Interface features:

- Wide DC Input Voltage Range [9V – 32V]
- CAN
- K-Line [KWP]
- LEDs Indicating device status

3.2.5 Record Storage/Buffer:

- Up to 10000 tracking records [May vary based on configuration and parameter chosen]

3.2.6 Operating Condition:

- Operating temperature : -10 °C to +60°C
- Storage temperature :- 10°C to +85°C [Without Battery]
- Humidity: 95% Non-condensing

3.2.7 Firmware Features

- Detect Harsh Breaking, Harsh Acceleration [Speed Based]
- Firmware upgrade over the air Available [FOTA]
- Data acquisition – Heading & time based
- Maintenance server
- Sleep Mode

3.2.8 Mechanical Details

- Dimensions (mm X mm X mm) -- 55 X 53 X 30
- Weight -- 120 Gram
- Enclosure -- 30% Glass Filled PA6 Casing

4 Technical Information about internal Battery:

Li-Ion Rechargeable battery, 3.7V, 500mAh

OBD II operating time with internal backup battery depends on temperature, data sending frequency (SMS and GPRS) and accumulator age, number of charge/discharge cycle.

- Charging temperature : 0 – 45°C



CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

4.1.1 Battery Disposal Instruction:



Battery should not be disposed with house hold waste. Damaged batteries are disposed to battery recycle bin found in stores

5 Mechanical Overlay

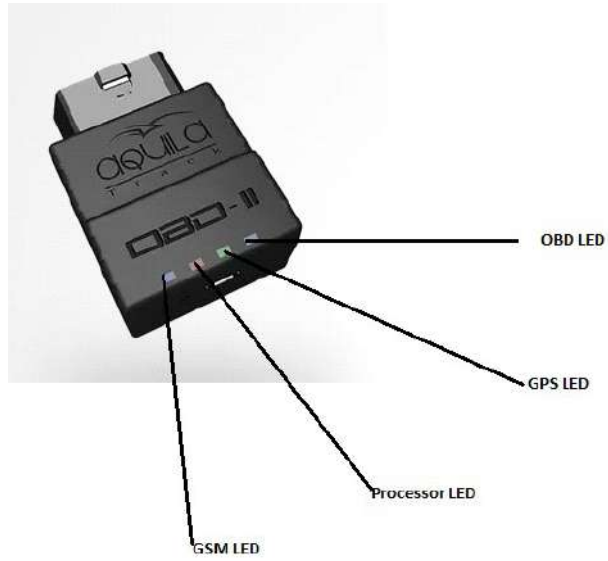


Figure 1: LED Indicators



Figure 2: Interfaces



Figure 3: LED Blinking



Figure 4: OBDII extension cable

6 LED Indications

6.1 OBD

Behaviour	Meaning
Continuously Blinking	Communication with OBD
Continuously OFF	No communication with OBD

Table 2: OBD LED behaviour

6.2 GPS LED (Blue 📶)

Behaviour	Meaning
Permanently Switched OFF	GPS signal is not received
Blinking Every Second	Normal Mode, GPS is working

Table 3: GPS LED behaviour

6.3 Process LED (Red 🚫)

Behaviour	Meaning
Blinking Every Second	Normal Mode
LED is in OFF State	Sleep Mode / Device is not working

Table 4: Process LED behaviour

6.4 GSM LED (Green 📶)

Behaviour	Meaning
Blinking Every one Second	Before SIM Register
Blinking fast constantly	After SIM Register
LED is OFF	Device is in Sleep Mode

Table 5: GSM LED behaviour

7 Configuration

7.1 System requirements

- Operating system version: 32-bit and 64-bit.
- Operating system: Windows 7 and later.
- Java: JDK and JRE 8.0 and above.

Download PL2303 & MTK driver and install them, download the USB driver from below link

<https://www.itriangle.in/aquila-hardware-board-diagnostics-obd-ii/>

7.2 Setup Java Environment

7.2.1 Installation of JDK

- Download and follow below procedure for installing jdk 1.8. Download the appropriate jdk (32bit/64bit) based on the system which it is intended to use.
<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>
- Select and open the downloaded file.
- Pop up message will come by requesting Yes or No. select Yes.
- Below mentioned window will appear.



Figure 5: JDK Installation step 2

- Then select Next, it goes to next step.

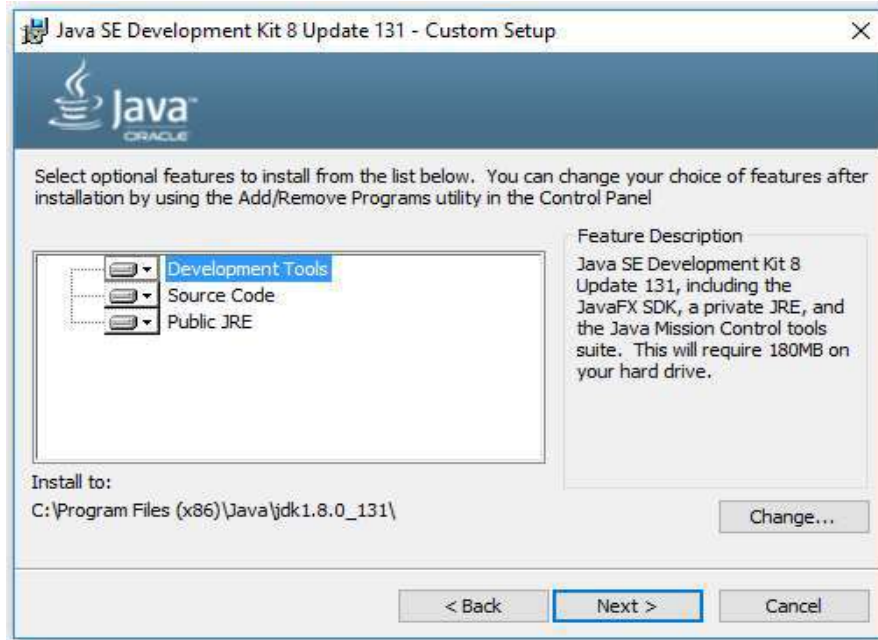


Figure 6: JDK Installation step 3

- Again, select to proceed further, wait till the process completes.

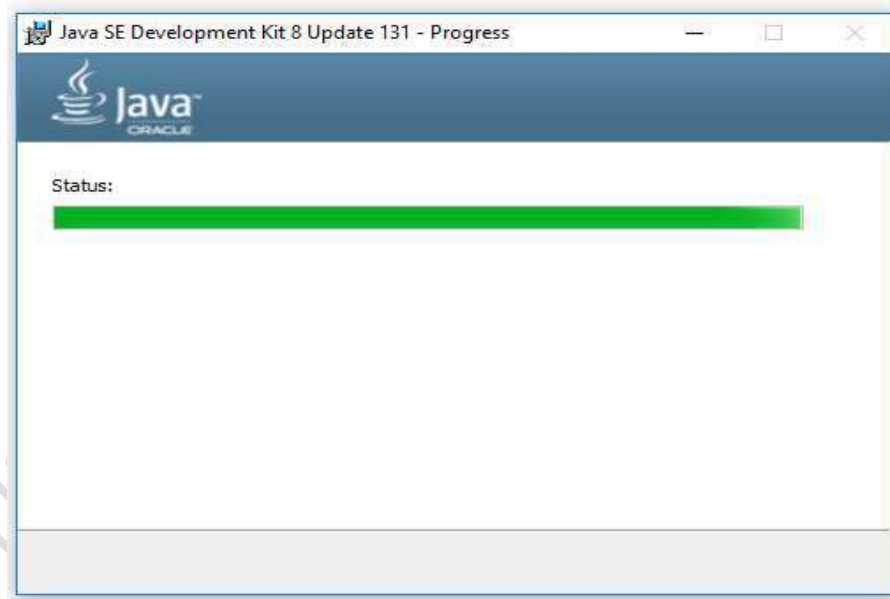


Figure 7: JDK installation step 4

- Destination folder interface will be displayed, click on next.



Figure 8: JDK Installation step 5

- In the final step, click on close.



Figure 9: JDK installation step 6

7.2.2 Setting environmental variables

- Copy the bin folder path from the folder in which the Java is installed. Below is the example path.

- C:\Program Files\Java\jdk1.8.0_141\bin
- Right click on My Computer/This PC icon in your system and click on properties.

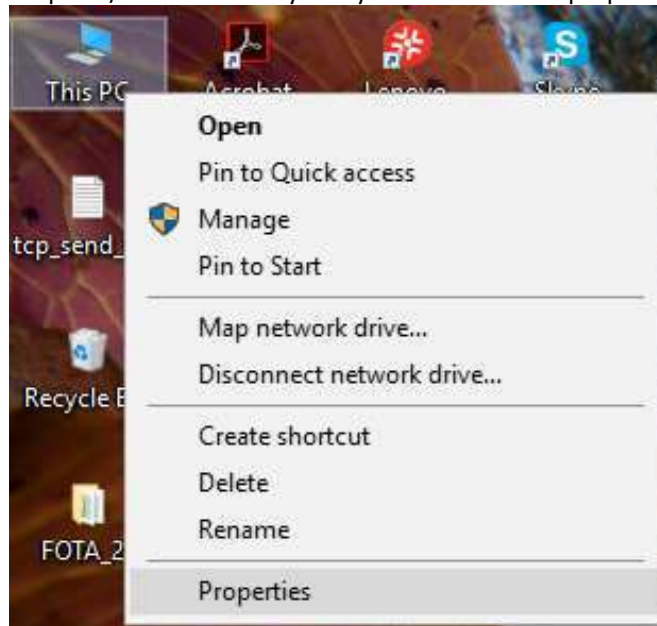


Figure 10: System Properties

- Select Advanced System settings in the System window. (For windows 10)
- In system properties window, click on “Environmental Variables”

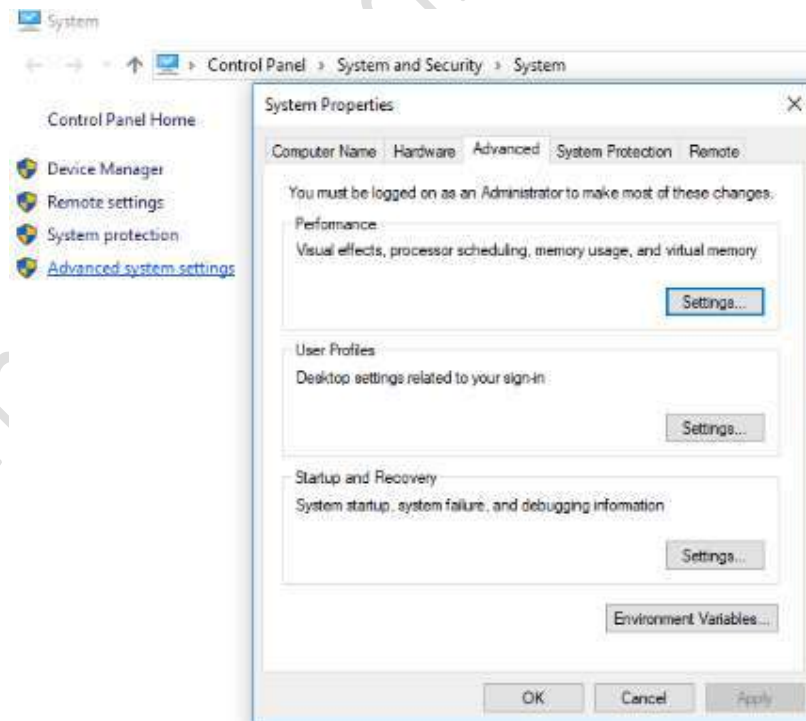


Figure 11: Environmental variables

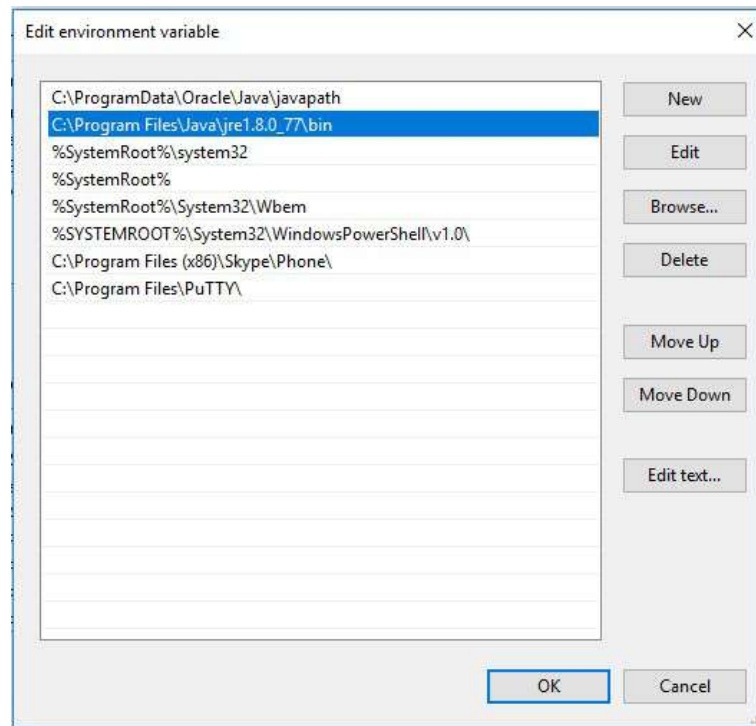


Figure 13: Edit Environmental variables

8 Configuration

8.1 SMS command

SMS command should be sent to the device mobile number to update the firmware. Once the FOTA is completed Admin 2 number will get the FOTA status. Below is the SMS command format to upgrade the firmware over the Air.

Syntax: set\$<serial_no>@<device_password>#INIT_FOTA:<FTP_server_address>,<FTP port>,<FTP_username>,<FTP_password>,<path>,<upgrade_filename>,1234*

8.2 GPRS Command

GPRS command must be sent to the device over the communication channel with prefix "#". Once the FOTA is completed, Admin 2 number will receive a confirmation SMS. Below is the GPRS command format to upgrade the firmware over the Air.

Syntax: #set\$<serial_no>@<device_password>#INIT_FOTA:<FTP_server_address>,<FTP port>,<FTP_username>,<FTP_password>,<path>,<upgrade_filename>,1234*

8.3 Device configuration tool

The Device configuration tool (DCT) is the tool to configure the device with different configuration parameters.

- Connect the device to the PC via USB and open the configuration tool.
- Once the configuration tool is opened, it will direct to landing page

8.3.1 Landing Page:

- The image shows the options present on the landing page.

Figure 14: Landing Page

- **Select Com:** - The tool automatically detects the appropriate COM port where the device is connected to. In case the port is not automatically detected, please restart the tool.
- **Select model:** - Please select the appropriate device model.
- Once selected, the device model the parameters menu will be displayed.

Figure 15: Menu population

By default, all the columns in parameters menu will display as blank.

- **Device Password:** - Enter the device password once Model, port was selected.

- **Connect:** - After the password has been rightly entered, click on the “Connect” button. Proceeding further, device statistics like Firmware Version, Serial number and IMEI will be displayed.
- **Disconnect:** -This option is to be used to disconnect the device after the configuration has been completed successfully.
- **Change Password:** -This option is used to change the password of the device.
- **Load from flash:** - This option displays the default settings which are currently configured in the device.
- **Save to file:** - The settings present in the device can be saved/exported to a “.txt” file by using this option. The saved settings are non-editable by the user.
- **Load from file:** - The previously saved settings files can be re-loaded by using the “Load from file” option.

8.3.2 Communication Parameters

Communication parameters column contains the below points to configure.

- **IP Address/Domain:** - This option is used to configure the IP of server to which data must send.
- **Port:** - The port number to be configured must be input in this field.
- **Client ID:** - This prefers to configure client ID. It is combination of alpha-numeric and single underscore.
- **APN:** - This option is meant for configuring the Access Point Name. It can be alpha-numeric and must be in range of 1-30 characters.

The screenshot shows the 'Device configuration Tool' interface. At the top, there are fields for 'Select Model' (OBD), 'Select Com' (COM8), 'Device Password' (masked), 'Firmware Version' (1_340B1B01EM64), 'Serial number' (109999), and 'IMEI' (861693034636498). Below these are buttons for 'Load From Flash', 'Load From File', 'Save To File', 'Connect', 'Disconnect', and 'Change Password'. The 'Communication parameters' section is active, showing a sidebar with options: 'Transmission parameters', 'Eco driving', 'Miscellaneous', and 'PID settings'. The main area contains four input fields: 'Ip Address/Domain' (103.19.89.83), 'Client ID' (CLIENT_INS), 'APN' (internet), and 'Port' (10241). A 'Write To Flash' button is located at the bottom.

Figure 16: Communication parameters

8.3.3 Transmission Parameters

In general, the data will be sent from device in 2-time intervals. Those intervals can be configured in two conditions When Ignition is ON and When Ignition is OFF.

- **Ignition ON:** - This option is used to configure the interval for data transmission from device when the ignition is in ON condition. The range lies in between 10 to 600 seconds
- **Ignition OFF:** - This selection is used to configure the interval for data transmission from device when the ignition is in OFF condition. The range is between 01 to 60 mins.

Apart from the Ignition ON and OFF time intervals, there is another optional setting – “Angle Polling”. Clicking the checkbox will configure the setting in the device else will be omitted.

Angle polling: - This option is used to configure Angle polling; it will be in form of degrees. It lies in between 30 to 120 degrees.

The screenshot shows the 'Device configuration Tool' interface. At the top, there are fields for 'Select Model' (set to OBD), 'Select Com', 'Device Password', 'Firmware Version', 'Serial number', and 'IMEI'. Below these are buttons for 'Load From Flash', 'Load From File', 'Save To File', 'Connect', 'Disconnect', and 'Change Password'. A 'Clear' button is also present. On the left, a sidebar lists navigation options: 'Communication parameters', 'Transmission parameters' (highlighted), 'Eco driving', 'Miscellaneous', and 'PID settings'. The main area displays 'Ignition On Interval' (input field with 'secs' unit), 'Angle Polling' (checkbox and input field), and 'Ignition Off Interval' (input field with 'mins' unit). A 'Write To Flash' button is located at the bottom center.

Figure 17: Transmission parameters

8.3.4 Eco Driving

It consists of parameters which are observed at the time of driving.

HA Threshold: - The Harsh Acceleration threshold value is the value which must be set in the device in Kmph/sec. If the vehicle crosses this threshold, an alert will be generated stating Harsh Acceleration. The typical range is from 5kmph/s – 120kmph/s.

HB Threshold: - The Harsh Braking threshold value is the value which must be set in the device in Kmph/sec. If the vehicle crosses this threshold, an alert will be generated stating Harsh Braking. The typical range is from 5kmph/s – 120kmph/s.

HC Threshold: - The Harsh Curving threshold value is the value which must be set in the device in Kmph/sec. If the vehicle crosses this threshold, an alert will be generated stating harsh curving. The typical range is from 5kmph/s – 120kmph/s.

Over Speed Threshold: - The name in the sense represents that it will detect over speed case. It is configured by using over speed threshold. It lies in between 5 to 255 Kmph.

Over Speed Duration: - The duration is used to detect over speed condition if the vehicle continuously moves with over speed configured for the given duration, it is configured by using this option. In general, it is in range of 5 to 60 Secs.

The screenshot shows the 'Device configuration Tool' interface. At the top, there are input fields for 'Select Model' (OBD), 'Select Com' (COM8), 'Device Password' (masked with dots), 'Firmware Version' (1_360B1B01B3M64), 'Serial number' (109999), and 'IMEI' (861693034636498). Below these are buttons for 'Load From Flash', 'Load From File', 'Save To File', 'Connect', 'Disconnect', and 'Change Password'. A sidebar on the left contains a tree view with categories: 'Communication parameters', 'Transmission parameters', 'Eco driving' (highlighted), 'Miscellaneous', and 'PID settings'. The main content area displays configuration options for 'Eco driving':
 - HA Threshold: 20 Kmph/sec
 - HB Threshold: 20 Kmph/sec
 - HC Threshold: 50 Kmph/sec
 - OverSpeed Threshold: 75 Kmph
 - Over Speed Duration: 5 sec
 At the bottom center is a 'Write To Flash' button.

Figure 18: Eco Driving

If the checkbox present near the column is checked, then the setting will be configured else will be omitted.

8.3.5 Miscellaneous:

- **TOF:** - This is used to set the GMT offset in the device. The offset should be entered in seconds. Ex: +5.30hrs must be entered as 19800 seconds.
- **Admin Mob1 & Admin Mob2:** This option is used to configure admin mobile numbers, default it starts with +91
- **IMEI/Serial Number:** - This selection indicates the selection of IMEI or Serial number in the tracking data packet.
- **Set Odometer:** This setting feature is used to pre-set the Odometer value.
- **Compress BF:** To enable Compress BF the checkbox near it must be checked.

Device configuration Tool

Select Model: OBD | Select Com: COM8 | Device Password: [REDACTED] | Firmware Version: 1_36OB1B01B1M64 | Serial number: 109999 | IMEI: 861693034636498

Buttons: Load From Flash, Load From File, Save To File, Connect, Disconnected, Change Password, Clear

Miscellaneous Settings:

- TOF: 19800 sec
- Admin Mob 1: +919844533753
- Admin Mob 2: +919844533753
- IMEI-SERIAL Number: SERIAL
- Set Odometer: 0

Buttons: Write To Flash

Figure 19: Miscellaneous

8.3.6 PID settings:

This section is used to configure the CAN/KWP data parameters.

- **Index:** - The index notifies the position of the PID in the PID section in the tracking packet.
- **Enable/Disable:** - This is used to enable or disable the PID configured to the respective index.
- **Mode:** - This option specifies the OBD mode/ service whose information must be requested. In general, it is hexadecimal.
- **PID:** - In general they are known as Parameter IDs, The OBD mode and PID together convey the information that must be requested from the vehicle.

The image shows the layout of the PID settings page.

Device configuration Tool

Select Model: OBD | Select Com: COM8 | Device Password: [REDACTED] | Firmware Version: 1_36OB1B01B1M64 | Serial number: 109999 | IMEI: 861693034636498

Buttons: Load From Flash, Load From File, Save To File, Connect, Disconnected, Change Password, Clear

Index	Enable/Disable	Mode	PID
00	Enable	01	01
01	Enable	09	6S
02	Enable	16	08
03	Enable	01	0B
04	Enable	01	0C
05	Enable	01	0D
06	Enable	01	10
07	Enable	01	1C
08	Enable	01	0F
09	Enable	01	23
10	Enable	01	30
11	Enable	01	33
12	Enable	01	1F
13	Enable	01	11
14	Enable	01	2F
15	Enable	01	5C

Buttons: Write To Flash

Figure 20: PID settings

8.3.7 Write to Flash:

After all the values in the corresponding setting fields have been input, clicking the “Write to Flash” option will configure the device with the provided settings.

After the process is completed successfully, a success message is displayed.

8.4 Commands

The commands which are mentioned in the below sections are categorized in to 3 valiant based on the application.

- Configuration commands
- Diagnostic/Status commands.
- Control commands.
- Getter commands

Based on the channel of the command execution the commands are categorized in to 2 variants.

- SMS: The commands will be sent to the device mobile number.
- GPRS commands: Same configuration commands can be sent over GPRS channel by prefixing “#” in each command.

8.4.1 Configuration Commands

8.4.1.1 CFG_GPRS

The below command is used to configure “IP/DNS, APN & PORT” settings:

Format: set\$<Serial Number/IMEI>@<Password>#CFG_GPRS:<APN>, , <IP Address/DNS>,<Port Number>*

Example: set\$141214426@aquila123#CFG_GPRS:airtelgprs.com, , 60.243.245.181,3555*
set\$141214426@aquila123#CFG_GPRS:airtelgprs.com, , itriangle.com,3555*

8.4.1.2 CFG_TL

The below command is used to configure the “Polling Interval”

Format: set\$<Serial Number/IMEI>@<Password>#CFG_TL:GPRS,<IGN On interval in seconds>S,<IGN Off interval in Minutes>M*

Example: set\$141214426@aquila123#CFG_TL:GPRS,10S,5M*

Note: The Minimum IGN ON interval should be 10 S & IGN OFF Interval Should be 5 M

8.4.1.3 IRU_REG

The below command is used to configure the “Client ID “Parameter

Format: set\$<Serial Number/IMEI>@<Password>#IRU_REG:<Client ID>*

Example: set\$141214426@aquila123#IRU_REG:CLIENT_1DU*

8.4.1.4 CFG_GSM

The below command is used to configure Admin 1 & Admin 2 Phone numbers for device status replies

Format: set\$<Serial Number/IMEI>@<Password>#CFG_GSM:<Admin1>,<Admin 2>,TEXT*

Example: set\$141214426@aquila123#CFG_GSM:+918884007979,+919901935194,TEXT*

8.4.1.5 CHG_TOF

The below command is used to configure TOF [GMT Offset] Country specific Offset setting

Format: set\$<Serial Number/IMEI>@<Password>#CHG_TOF:<Time Zone Offset in seconds>*

Example: set\$141214426@aquila123#CHG_TOF:19800*

8.4.1.6 CHG_PASS

The below command is used to change the device password

Format: set\$<Serial No>@<Password>#CHG_PASS:<New Password>*

Example: set\$141214426@aquila123#CHG_PASS:iTriangle123*

8.4.1.7 CFG_OS

The below command is used to configure "Over Speed Limit"

Format: set\$<Serial Number/IMEI>@<Password>#CFG_OS:<over speed limit>,<Duration in seconds>S*

Example: set\$141214807@aquila123#CFG_OS:60,5S*

8.4.1.8 SET_ODOM

The below command is used to configure "Set Odometer"

Format: set\$<Serial Number/IMEI>@<Password>#SET_ODOM:<Distance in meter>*

Example: set\$140613238@aquila123#SET_ODOM:5000*

8.4.1.9 CFG_ANGLPOL

The below command is used to configure "Angle Polling" to enable & configure the min angle for the angle polling feature

Format: set\$<Serial Number>@<Password>#CFG_ANGLPOL:<1=Enable/0=disable>,<Angle in degree (Angle range: 30-330)>*

Example: set\$140613238@aquila123#CFG_ANGLPOL:1,45*

8.4.1.10 CFG_DID

Device ID configuration to choose IMEI/Serial_Number/IMEI while sending the data packet

Format: set\$<Serial_Number/IMEI>@<Password>#CFG_DID:<1=IMEI/0=SerialNumber>*

Example: set\$140613238@aquila123#CFG_DID:1*

8.4.1.11 CFG_COMPBF

The below command is used to configure the string get in to a "Compress Bit field" (Compressed Packet Format)

Format: set\$<Serial Number/IMEI>@<Password>#CFG_COMPBF:<1=Enable/0=Disable>*

Example: set\$140613238@aquila123#CFG_COMPBF:1*

8.4.1.12 CFG_HA

Below command is used to set the Harsh Acceleration Configuration to configure Harsh Acceleration threshold

Format: set\$<SerialNumber/IMEI>@<Password>#CFG_HA:<1=Enable/0=Disable>,<speed change (Kmph/s)>*

Example: set\$140613238@aquila123#CFG_HA:1,5*

8.4.1.13 CFG_HB

The below command is used to set the Harsh Braking Configuration to configure Harsh Braking threshold

Format: set\$<Serial Number/IMEI>@<Password>#CFG_HB:<1=Enable/0=Disable>,<speed change (Kmph/s)>*

Example: set\$140613238@aquila123#CFG_HB:1,5*

8.4.1.14 UPDATE_PIDLIST

Below command is used to configure all 16 PIDs in the device with single command.

Format: set\$<Serial Number>@<Password> UPDATE_PIDLIST:<Mode>,<PID>,<interval>.....up to 16 PIDS,*<CR><LF>

Example: set\$101010101@aquila123#UPDATE_PIDLIST:01,0D,10,01,0C,10,01,0A,50..... (16PIDS) *<CR><LF>

8.4.2 Diagnostic Commands

The diagnostic commands are used for the getting the current information from the devices when the devices are deployed in the field.

8.4.2.1 CHKCFG

This command returns the configuration of the device along with the GPS fix status of the device.

Syntax:

%CHKCFG%<Password>

Example:

%CHKCFG%aquila123

Response Format:

SL:<Serial_Number>;CID:<Client_ID>;VER:<Firmware_Version>;APN:<Access_Point_Name>; IP :< IP/Domain>;POR:<Destination_port>;TOF:<Time_Offset>;GSM:<GSM_Status>;ODO:<current_odometer>GPS :< Fix_Status>;

<GSM_Status>: 0 -- Connection establishment not yet started

- 1 – Wrong APN
- 2 – No GPRS Connection
- 3 – PDP Deactivated
- 4 – Connection Active
- 5 – Wrong server details
- 7 – GPRS connection closed

<FIX_Status> : YES – GPS fix available
NO – No GPS fix

Example:

SL:150910889; CID:CLIENT_1GV; VER:1_35S01B0532M; APN:internet; IP:121.244.198.205;
POR:18222; TOF:19800; GSM:4,ODO:1143564GPS:YES;

8.4.2.2 CHKCFG2

This command returns the configuration of the device along with the Admin number, Over Speed in KM, VLNP [vehicle number], Ignition on interval, Ignition off interval. Min.

Syntax:

%CHKCFG2%<Password>

Example:

%CHKCFG2%aquila123

Response Format:

AD1:<Admin_Number>;AD2:<Admin_Number>;VLPN:<Vehicle_Number>;TI1:<Re
Cording Delay>; TI2:<Transmission Delay>;OS:<Over Speed in KM>;

Example:

AD1:9945782119; AD2:9945782119; VLNP:KA-01 I-2000; TI1:15 Sec; TI2:1 Min; OS:80 KM 10
Sec;

8.4.2.3 GLOCATE

The below command is used to get the current location of the device in the form of a URL, from which the location of the device can be viewed on the map.

Syntax:

GLOCATE:<Password>

Example:

GLOCATE:aquila123

Format of the return message:

<http://maps.google.com/maps?q=12.995135,77.525017>

8.4.3 Getter commands

This group of commands will get the current configuration information from the device. Please find the below details. This command will be applicable only for the configuration commands.

Syntax: get\$<SerialNumber/IMEI>@<Password>#<Command_ID>*

e.g.: get\$141214426@aquila123#IRU_REG*

8.4.4 Control Commands

8.4.4.1 FORCE_MS

The below command is used to "Maintenance Server" It will force to immediately divert the device to the maintenance server

Format: FORCE_MS:<password>

Example: FORCE_MS:aquila123

8.4.4.2 Soft Restart

The below command is used for Software Reset

restart:aquila123

8.4.4.3 FOTA command

This below command is used to start the FOTA command

Command format:

set\$<Serialnumber>@<Password>#INIT_FOTA:<IPaddress>,<Port>,<Username>,<Password>,<Path>,<File Name>,<Size of File>*

Parameters:

<IP Address>: Ip address which is to be set.

IP Address Length Range – 1 to 32.

Data Type: NA

<Port Number>: Port Number which is to be set

Port Number Length Range – 1 to 5.

Port Number Range – 1025 to 65535

Data Type: Numeric

<Username>: Username which is to be set

Username length range: 1-20

<Password>: Password which is to be set

Password length: 1-20

<Path>: Path which is to be set

Filename Length: 1 -30

It should be started with the name as "0B1B01M64"

Example: set\$101010119@aquila123#IRU_REG:CLIENT_1OBD*

CFG PID's

The below command is to add PIDS in to RAM Structure

Command format:

set\$<Serialnumber>@<Password>#SET_CANFILT:<Index>,<Mode>,<PID>,<interval >*<CR><LF>

Example: set\$101010101@aquila123SET_CANFILT:12,01,0D,10*

9 Installation

9.1 General Prerequisite

- The device has internal GSM and GNSS antenna.
- Internal battery terminal should be connected to the PCB.
- SIM card should be inserted in the SIM card slot.
- Device should be configured and ready for installation.

9.2 Inserting the Battery connector

Below are the steps to install the battery to the device.

- Open the front casing of the device.
- Connect the battery terminal to on-board connector of the device.



Figure 21: Installation of the battery

Close the front casing of the device.

9.3 SIM Card Insertion Scheme

- Open the casing of the device as shown.



Figure 22: SIM card not inserted

- Insert the sim card.



Figure 23: SIM card inserted

9.4 Installation Location in the vehicles

- In every vehicle there will be OBD-II port, the device must connect to the port.
- If the OBDII port in the vehicle is not easily accessible, use the extension cable to vehicle's OBD port and place the device in the appropriate location in the vehicle.

10 Troubleshooting

10.1 Trouble shooting steps

- Check Vehicle Battery voltage, if less than 9 volts or over 32 volts, replace vehicle battery or get the vehicle electrical system rectified
- Check for Power Connection (both +ve and -ve) and if loose or disconnected, reconnect
- Check FUSE and if blown off, replace it with 5 A Blade Fuse
- Check FUSE Holder and if it is loose and/or broken replace the cable

If GPS LED is OFF:

- Check if the vehicle is parked in a covered area and move the vehicle to an open area

- Check the location of device installation in the vehicle and follow instructions in this manual to correct it
- Check if there is any metal above the device and if yes, change the location of the vehicle where there is no metal surrounding the device.
- Check if any metal or item kept on the device and clear the same

If Processor LED is OFF:

- Contact aQuiLa Track Customer Care

If GSM LED is OFF:

- Remove SIM card from the device and check in a mobile for SIM registration.

11 Do's & Don'ts

11.1 Do's

- Device should connect to the proper Port and before insert check the PINs of the connector from the device.

11.2 Don'ts

- Avoid water droplets fallen inside the device while washing car.

12 FAQ (Frequently Asked Question)

- What is GPS Tracking?

Our device uses the Global Positioning System to determine the precise location of a vehicle or other asset to which it is attached. The position is recorded at regular intervals and is transmitted to a central database using a cellular (GPRS) modem embedded in the unit. This allows the location to be displayed on a map in the real-time or over a span of time in control centre.

- What are GPS tracking alerts

GPS tracking alerts are unique limits that a customer can set up for their tracked vehicle. When the limit is broken, an SMS is sent to the customer by admin numbers which is pre-assigned internally in the configuration. If a speed limit, for example is broken, the customer will be notified. Depending on which GPS tracking system or service plan the customer chooses, they will be alerted to these types of occurrence

- What is OBD II?

The On Board Diagnostics system is composed of a computer that monitors the emissions system and key engine components. It can usually detect a malfunction or deterioration in these components before the driver becomes aware of the problem.

OBD systems are designed to alert the driver when a component in the engine management or emissions systems begins to deteriorate or malfunction. Early detection of minor problems, followed by timely repair, can often prevent more costly damage to components such as the catalytic converter.

➤ How Does OBD II Work?

When the OBD computer detects a problem, it stores a Diagnostics Trouble Code and may illuminate the "Check Engine" or "Service Engine" light on the vehicle's dashboard. This light cannot be turned off until the necessary repairs are completed or the condition no longer exists.

When you take your car in for diagnosis or for an annual emission inspection, the repair technician retrieves the trouble codes from the computer using a "Scan Tool." By using this information, a properly trained repair technician can quickly and accurately fix any problem.

Under certain conditions, the dashboard light will blink or flash. This indicates a severe problem. The driver should reduce speed and seek service as soon as possible. Malfunctions which cause a flashing light can seriously damage emission control system components in a short period of time, especially the catalytic converter.

➤ How do I contact customer support?

Customer support can be reached via email: service@itriangle.in or +91- 9739008344

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