

AiM Infotech

# DTA S Series CAN Protocol and RS232 update to CAN

Release 1.03

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ECU

# 1

## Supported models

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This Document explains how to connect AiM devices to the Engine Control Unit (ECU) datastream. Supported models are:

- S40 Pro
- S60
- S60 Pro
- S80
- S80 Pro
- S100
- S100 Pro

# 2

## Firmware prerequisites

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DTA S Series ECUs have been using CAN bus communication protocol only from a defined firmware version onward. Here you find complete indication of all firmware versions needed for each supported S Series ECU.

- S40/S40 Pro from firmware version V37.00 onward
- S60/S60 Pro from firmware version V36.00 onward
- S80/S60 Pro from firmware version V40.00 onward
- S100/S100 Pro from firmware version V43.00 onward

**Please note:** in case your ECU has a firmware version older than these above specified, please upgrade the firmware.

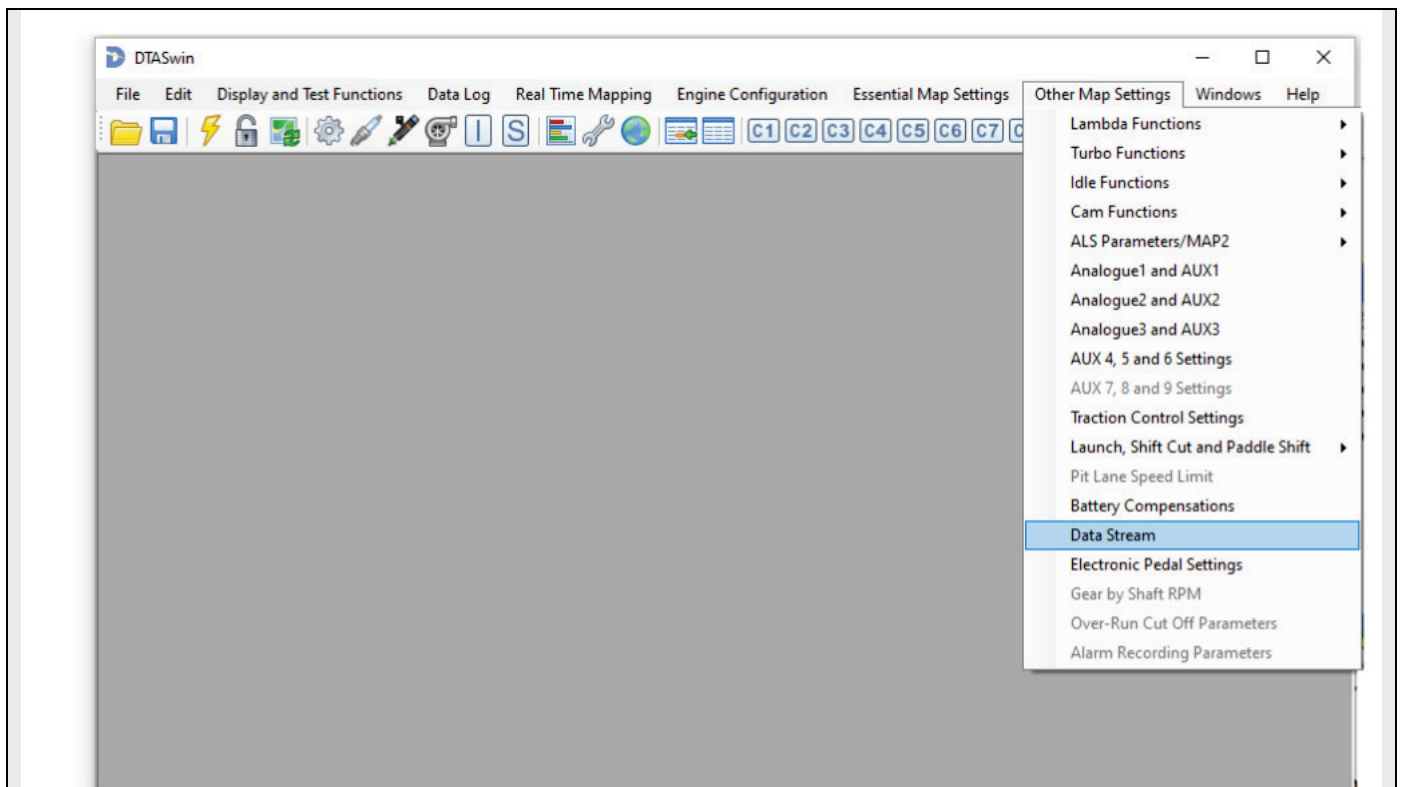
### 3

## Software setting

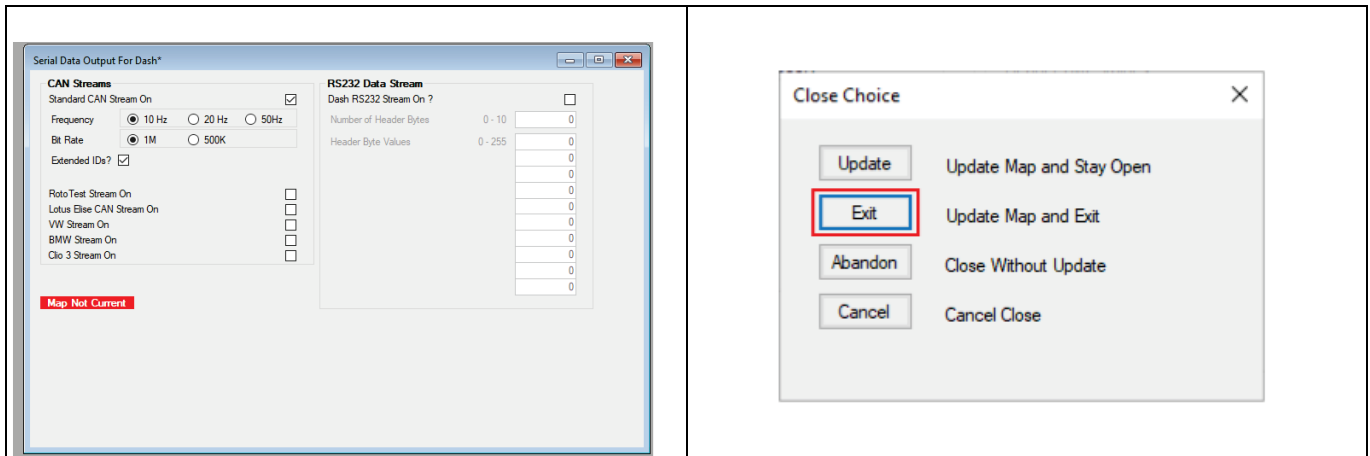
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For DTA ECUs to communicate with AiM devices a software setting is needed. DTA ECU comes with DTASwin software. To configure it in order to communicate with AiM devices follow these steps.

- Run DTASwin software and follow the path: "Other Map settings -> Data stream" as here below.



- “Serial Data Output For Dash” window appears: enable “Standard CAN Stream on” as here below on the left following the specifics settings.



- Click on the red cross top right of “Serial Data Output for Dash” panel to close the window;
- “Close choice” panel, shown above on the left, appears select “Exit” and exit the software.

For any further information concerning ECU firmware/software settings and/or upgrading it is always recommended to address to the ECU dealer.

# 4

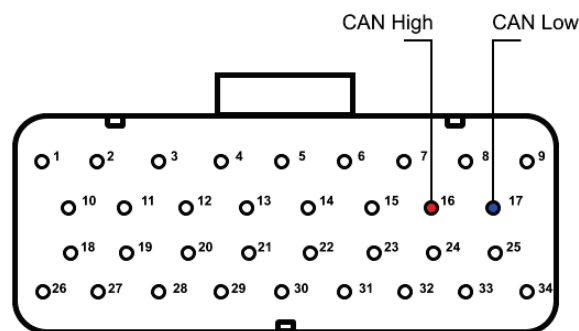
## Wiring connection

DTA ECU CAN communication protocol is on the ECU front connector(s). DTA S40 has only one front connector while the others have two.

### 4.1

## S40/S40 Pro ECU wiring connection

DTA S40/S40 Pro ECU features one 34 pins front male connector. Here below are connector drawing and connection table.



**DTA S40/S40 Pro connector**

16  
17

**Pin function**

CAN High  
CAN Low

**AiM cable**

CAN+  
CAN-

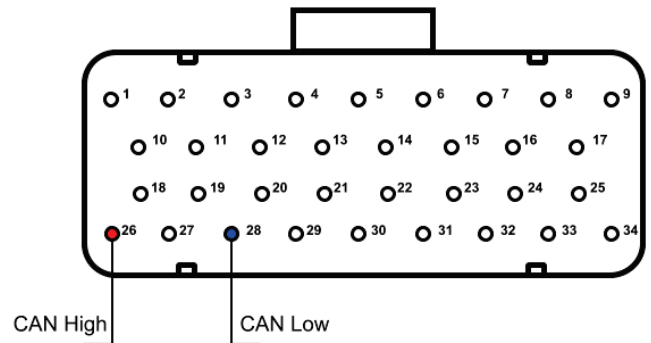
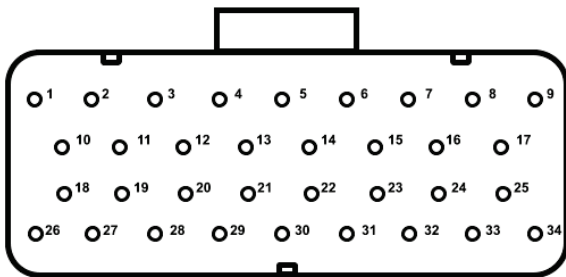
**AiM color cable**

White  
Blue

## 4.2

# S60/S60 Pro, S80/S80 Pro and S100/S100 Pro ECU wiring connection

DTA S60/S60 Pro, S80/S80 Pro and S100/S100 Pro ECUs have two 34 pins front male connectors. They can be distinguished by the number of bottom keys: the one to be used for CAN connection is that with two bottom keys. Here below are connector drawings as well as connection table



**DTA connector**

26  
28

**Pin function**

CAN High  
CAN Low

**AiM cable**

CAN+  
CAN-

**AiM color cable**

White  
Blue

## 5

# Race Studio configuration

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Before connecting the AiM device to the ECU, set all functions using AiM software Race Studio. The parameters to select in the device configuration are:

- ECU manufacturer: **DTA**
- ECU Model: **S\_SERIES\_PRO**

## 6

# “DTA – S\_SERIES\_PRO” protocol

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Channels received by AiM devices configured with “DTA – S\_SERIES\_PRO” protocol are:

<b>CHANNEL NAME</b>	<b>FUNCTION</b>
DTA_RPM	Engine RPM
DTA_TPS	Throttle position sensor
DTA_ECT	Engine coolant temperature
DTA_AIR_TEMP	Intake air temperature
DTA_MAP	Manifold air pressure
DTA_LAM	Lambda value
DTA_SPEED	Vehicle speed
DTA_OIL_PRESS	Oil pressure
DTA_FUEL_PRESS	Fuel pressure
DTA_OIL_TEMP	Oil temperature
DTA_BATT	Battery voltage
DTA_FUEL_CONS_Hr	Fuel consumption per hour in litres
DTA_GEAR	Engaged gear
DTA_ADVANCE	Spark advance
DTA_INJECTIME	Injection time
DTA_FUEL_CONS100	Fuel consumption per 100 km in litres



DTA_ANA1	Analog 1
DTA_ANA2	Analog 2
DTA_ANA3	Analog 3
DTA_CAM_ADV	CAM Advance
DTA_CAM_TAR	CAM Target
DTA_CAM_PWM	CAM Pulse with Modulation
DTA_KNOCK_ERR	Knock error
DTA_CAM_ERR	CAM error

**Technical note:** not all data channels outlined in the ECU template are validated for each manufacture's model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable