MoTec ECU – MoTec Dash

User manual for connection with

ECU Bridge and SmartyCam

Racing Data Power

Foreword

This tutorial helps you connecting ECU Bridge and SmartyCam to MoTec Dash using the CAN Bus.

Supported MoTec Dashes are:

- ADL2;
- ADL3;
- SDL3.

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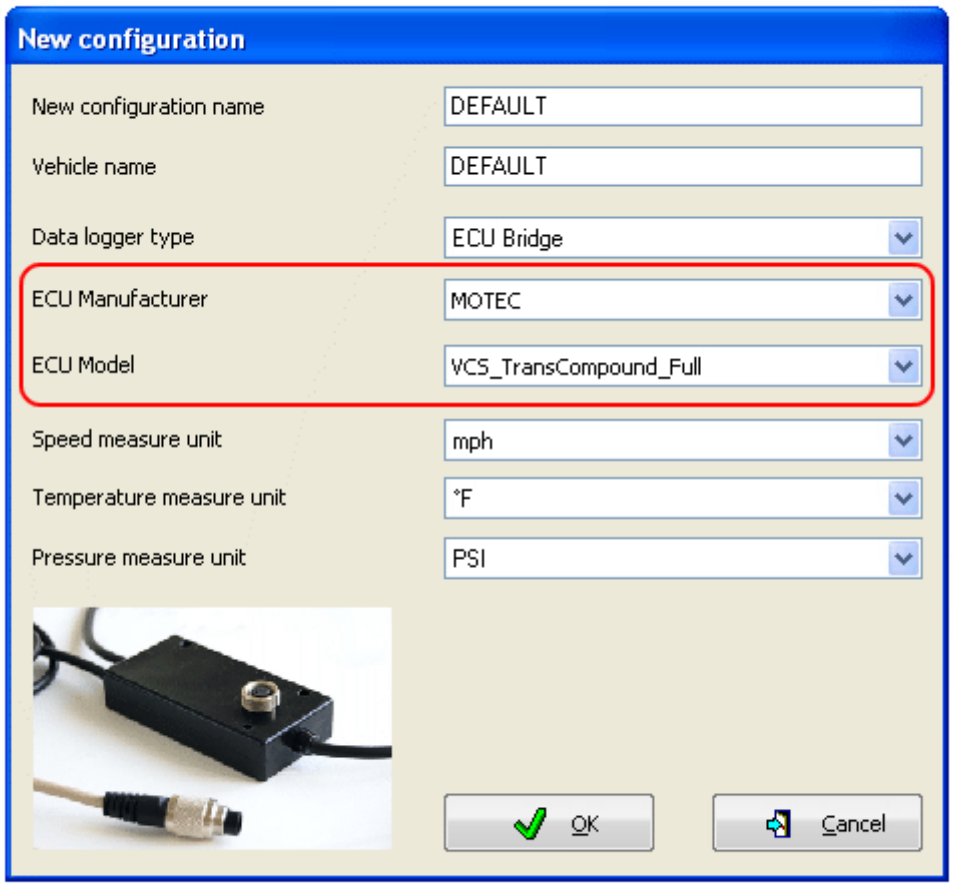
1 – ECU Bridge Configuration

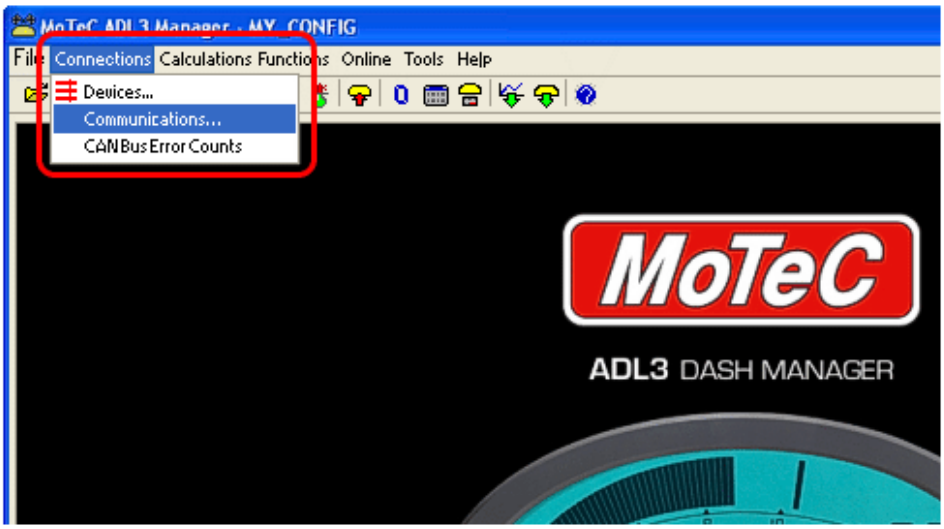
For ECU Bridge to correctly communicate with MoTec Dash a Race Studio 2 configuration is needed. The software Race Studio 2 comes with the Bridge and can be freely downloaded from www.aim-sportline.com.

Run the software and follow this path: Device Configuration –> SMC Bridge –> Go To. Press “New” button to create a new configuration and fill in the panel that shows up.



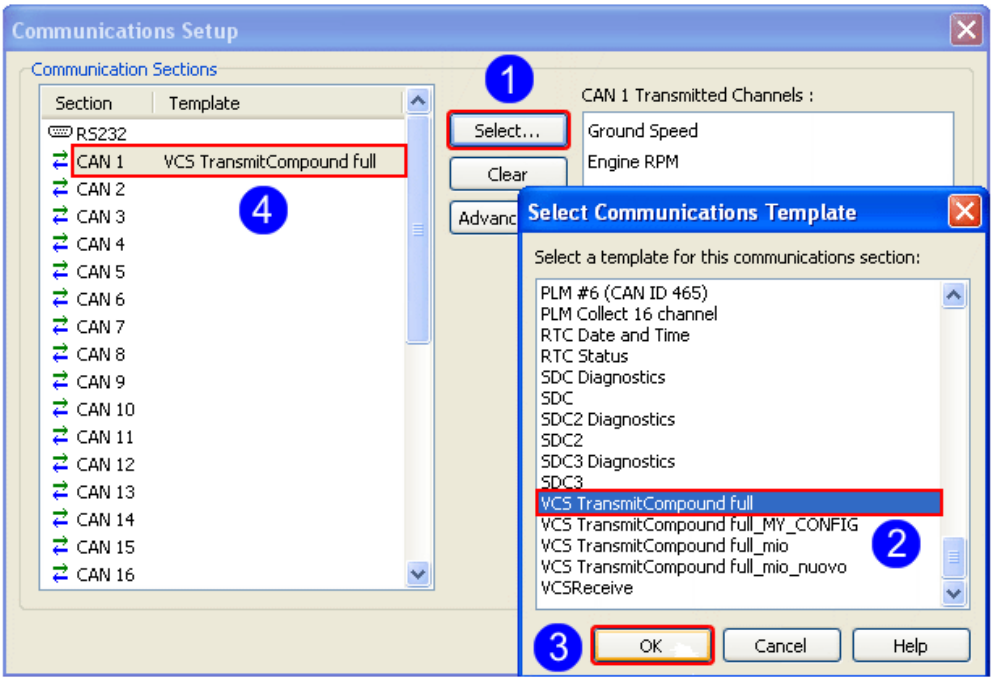
2 – MoTec Dash configuration

To configure MoTec Dash (AD2, ADL3 and SDL3 only) run MoTec software (in the image here below MoTec ADL3 Manager) and follow this path: Connections –> Communications.



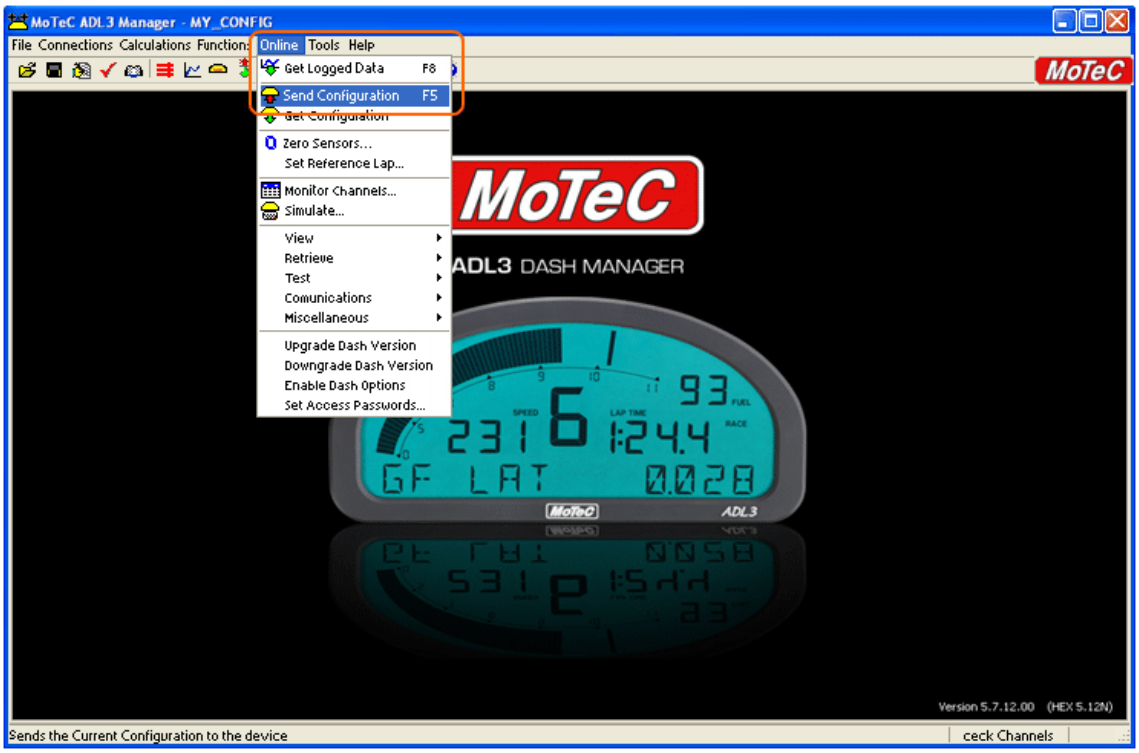
Communications Setup panel shows up. Then:

- Select a free CAN (for example CAN 1) and push “Select” (**1**);
- in “Select Communications Template” select “VCS TransmitCompound full” (**2**) and press “OK” (**3**);
- The CAN is set as in the figure here below (**4**).



Please note: refer to MoTec website to check compatibility between your MoTec Dash and VCS “video Capture System”.

Send the configuration to the Dash (Online –> Send Configuration or F5).



3 – Wiring connections and channel list

For ECU Bridge to correctly communicate with MoTec Dash and thereby MoTec ECU connect:

- the ECU Bridge bleu cable (CAN low) with the MoTec dash CAN Low
- the ECU Bridge white cable (CAN High) with the MoTec dash CAN high.

Here follow tables of the different MoTec Dash CAN lines.

ADL3 dash

Pin	Name	Function
73	CAN0L	CAN 0 Low
74	CAN0H	CAN 0 High
75	CAN1L	CAN 1 Low
76	CAN1H	CAN 1 High

ADL2 Dash 2

Pin	Name	Function	Corresponding to
73	CANAL	CAN A Low	CAN 0 Low
74	CANAH	CAN A High	CAN 0 High
75	CANBL	CAN B Low	CAN 1 Low
76	CANBL	CAN B High	CAN 1 High

SDL3 Dash

Pin	Name	Function
35	CAN0L	CAN 0 Low
36	CAN0H	CAN 0 High
29	CAN1L	CAN 1 Low
30	CAN1H	CAN 1 High

Here follows list of the ECU channels available according to the default MoTec CAN Template “VCS TransmitCompoundFull”:

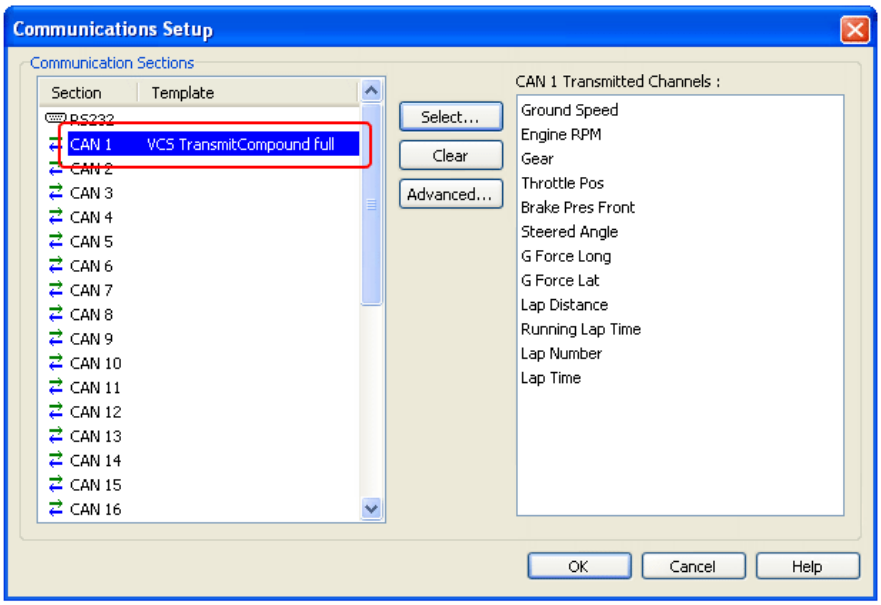
- **VCS_RPM**: Engine speed
- **VCS_GRND_SPEED**: Ground Speed
- **VCS_GEAR**: Engaged Gear
- **VCS_TPS**: Throttle Position Sensor
- **VCS_BRAKE_PR**: Brake Pressure Front
- **VCS_STEER_ANG**: Steering Angle
- **VCS_G_LONG**: Longitudinal Acceleration
- **VCS_G_LAT**: Lateral acceleration

4 – Troubleshooting

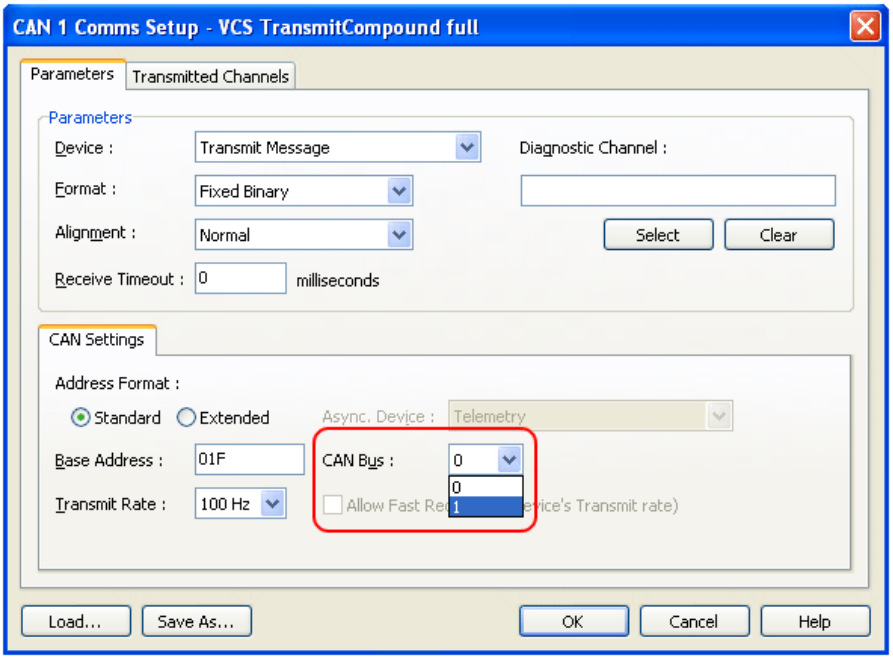
Once the connection is over all should work. In case of problems you can try performing these operations.

4.1 – Check default “VCS Transmit Compound Full”

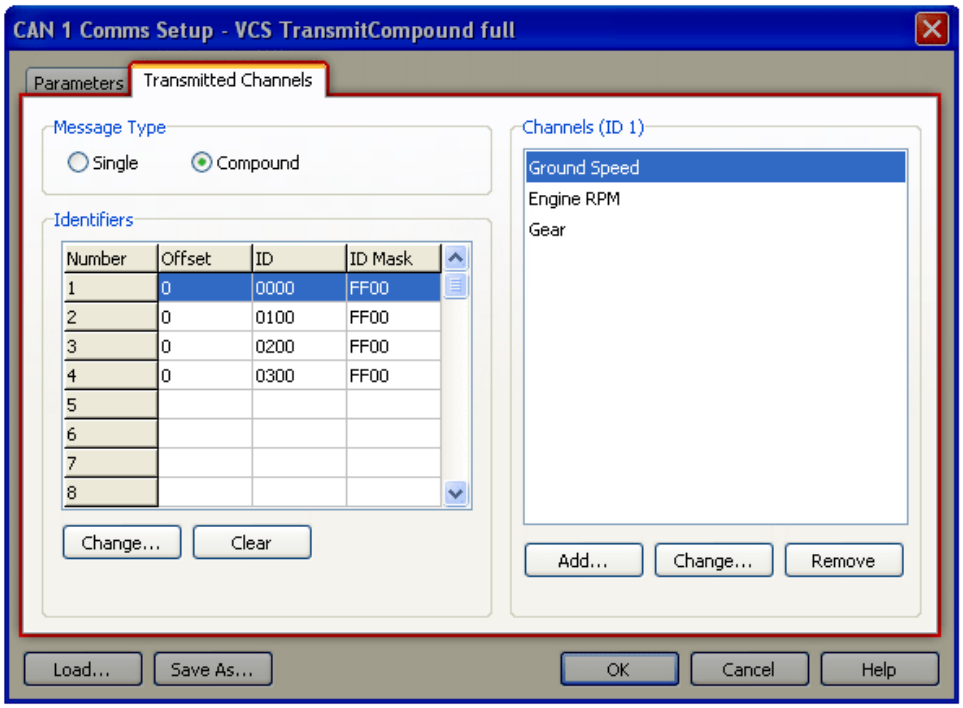
Check the list of transmitted ECU channels (RPM, throttle, etc...). In communication setup panel (shown here below) click “VCS TransmitCompound full”.



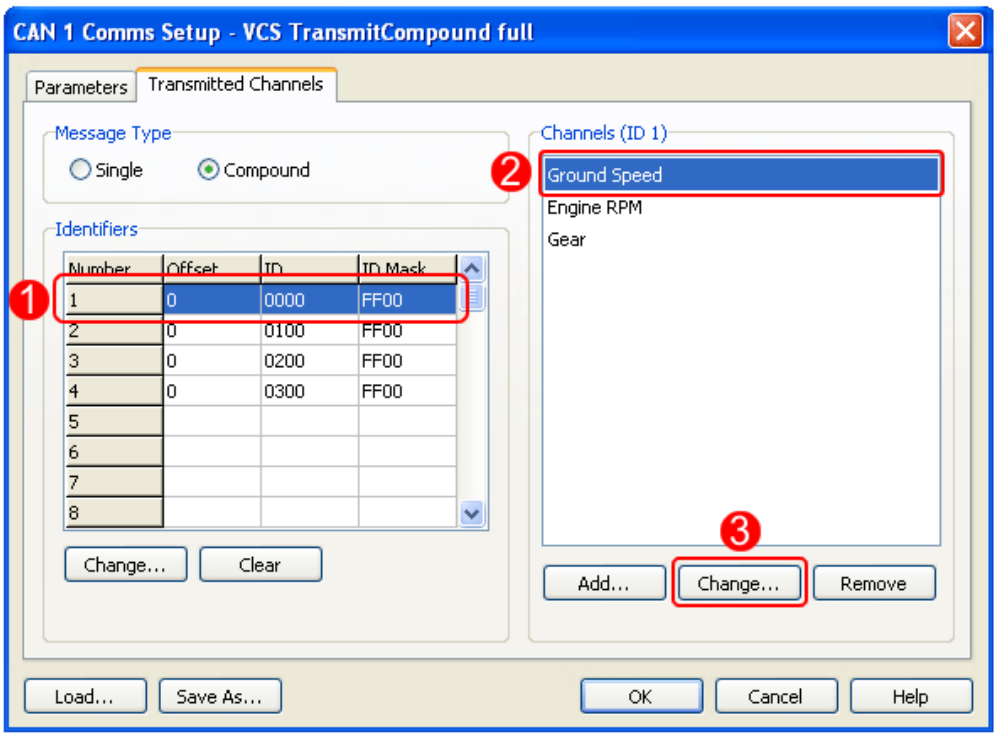
CAN Communication Setup panel shows up: check all parameters and select the CAN line you are using.



Activate “Transmitted Channels” layer as here below and check all “Channels (ID1[1]).

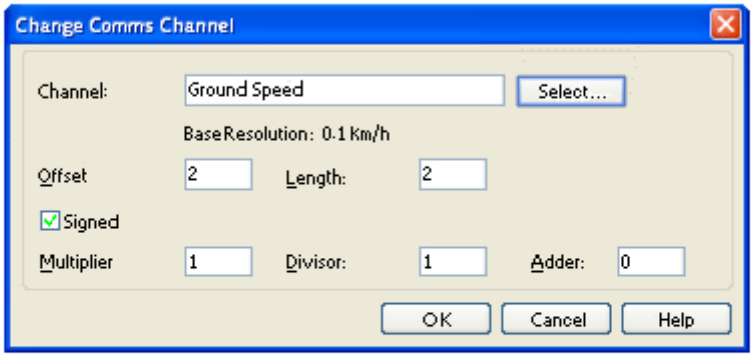


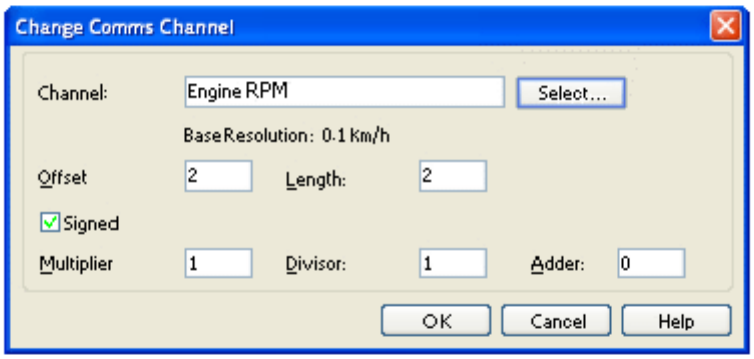
This check is to be performed this way: with an identifier of “Identifiers” panel selected (**1**) click on a channel of “Channels (ID 1)” panel – in the image here below “Ground speed” (**2**) – and click “Change” (**3**).

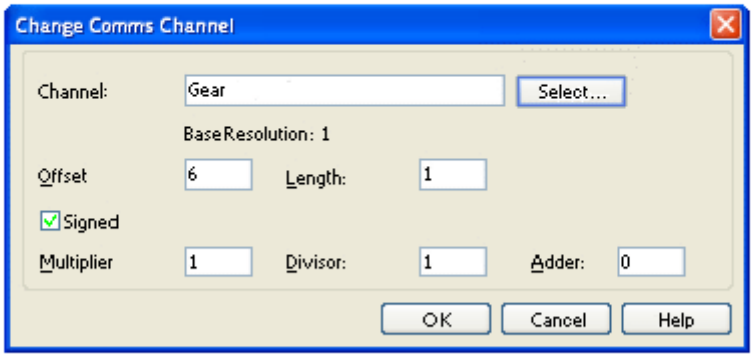


[1] ID 1 means that the channels shown are related to identifier 1 of “Identifiers” panel and changes according to the selected Identifier.

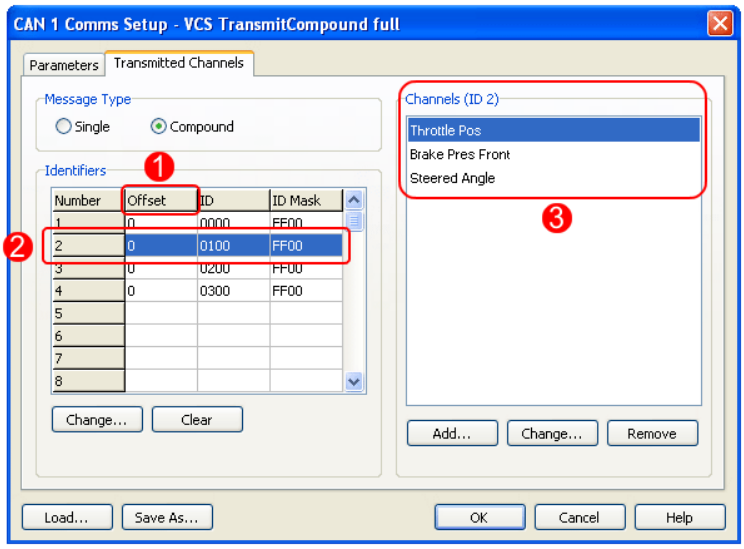
The corresponding panel shows up.
You can scroll the list of “Channels (ID 1)” in Communication Setup panel and pressing each time “Change” it is possible to check the setting of all ID. The image here below shows the correct settings of all Ids.



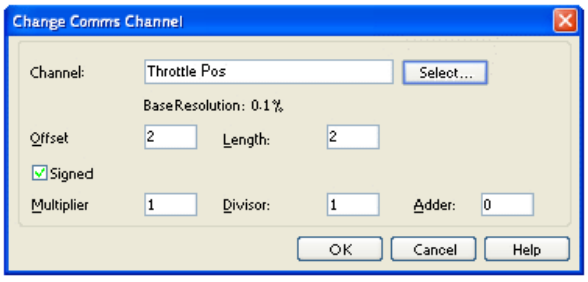


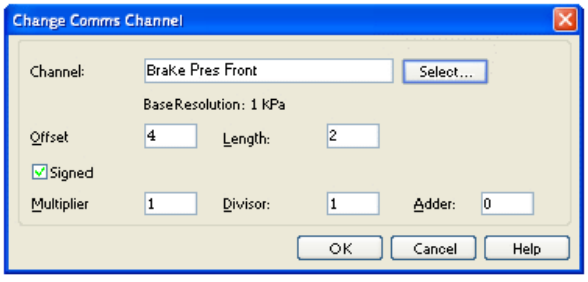


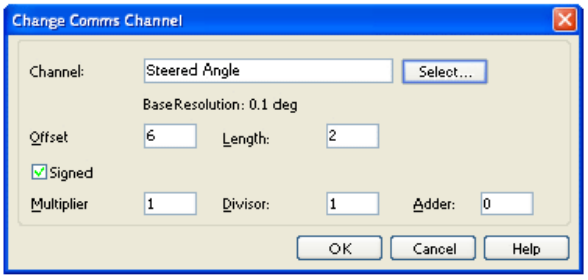
To see other channels select “Offset” in “Identifiers” panel (**1**): the identifier scrolls (**2**) showing the related channels (**3**) in the right panel as shown below.



Select the desired channel in the right panel – Channels (ID2[2]) – and press “Change” to check the channel settings. Here below are shown the correct settings for Channels (ID2).

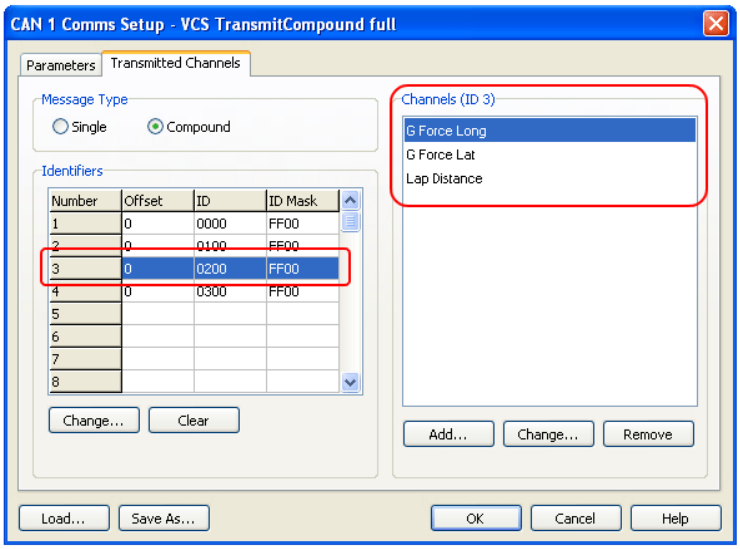




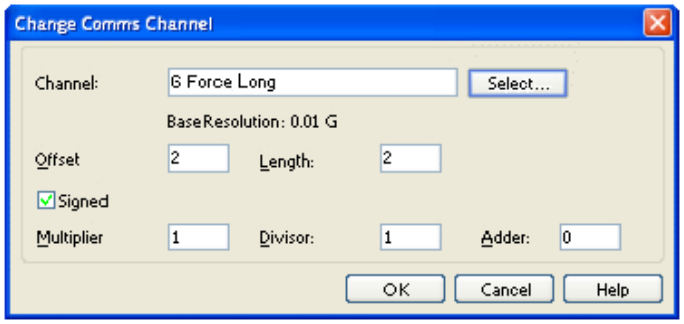


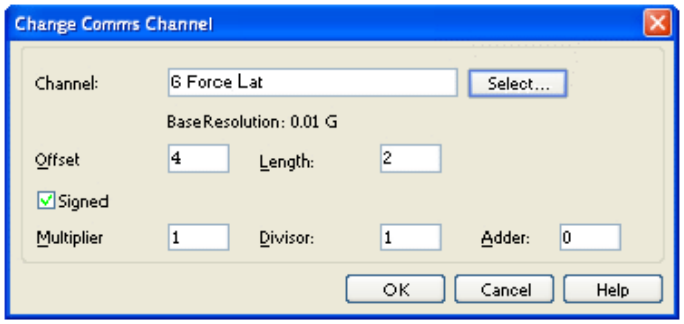
[2] ID2 means that the channels shown are related identifier 2 in “Identifiers” panel.

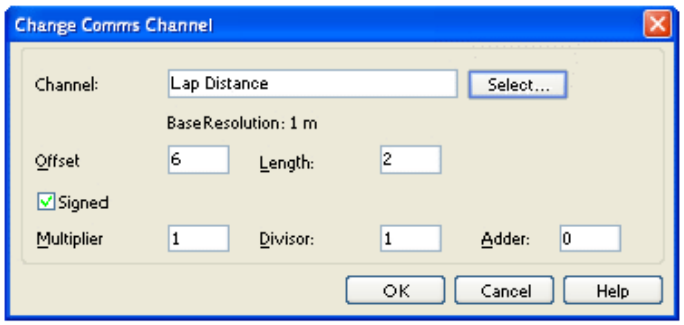
Coming back to the previous panel click “Offset” and select Identifier “3” with the related channels on the right as here below.



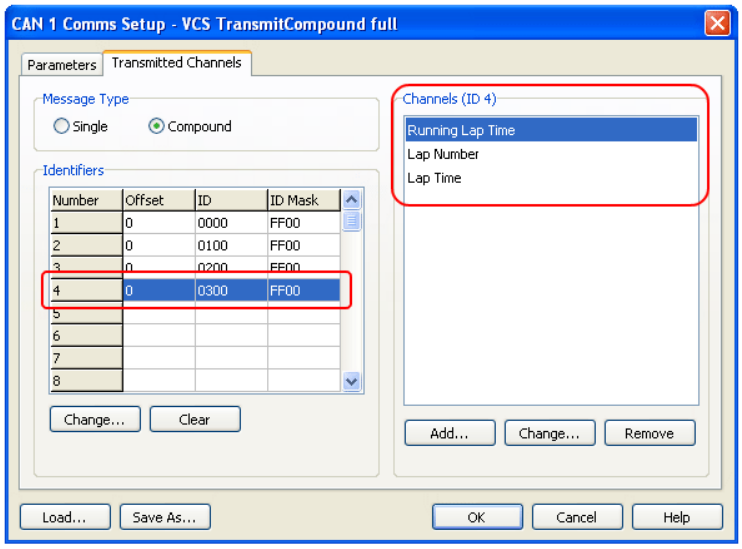
Select each channel and press “Change” to see the related channel setting. Here below are the correct settings for each channel.



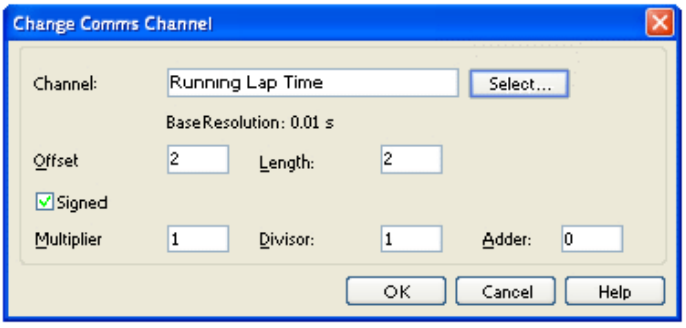


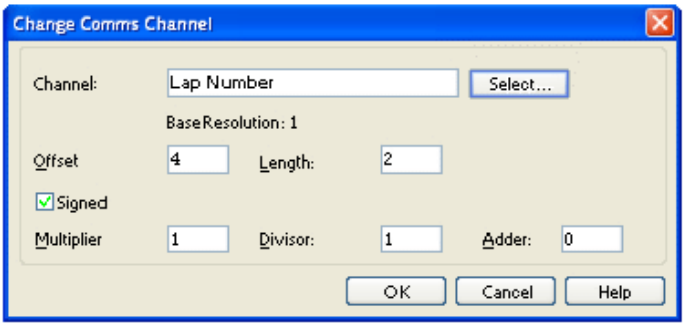


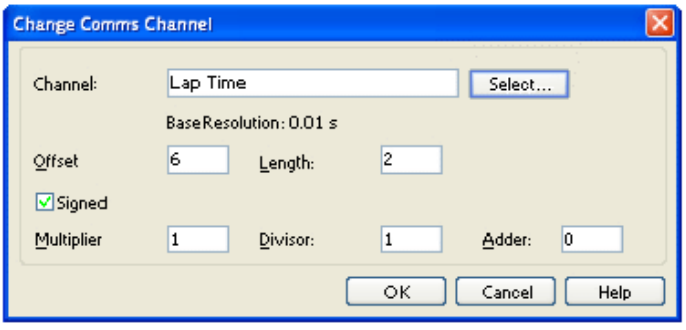
Coming back to the previous panel click “Offset” and select Identifier “4” with the related channels on the right as here below.



Select each channel and press “Change” to see the related channel setting. Here below are the correct settings for each channel.







4.2 – Unsupported ECU channels

It can occur that MoTec Dash does not support one or more ECU channels included by default in “VCS TransmitCompound Full” Template. If, for instance, there is not a steering sensor the corresponding channel is not supported and it seem thereby impossible to send the configuration to the dash. In this case that ECU channel is to be removed.
To remove an unsupported channel select it in “Channel IDx” panel (the right panel), click “Remove” and then save the configuration with a new name with “Save as...” button as shown here below.