

AiM Infotech

MoTec VCS Transmit Compound Full + Transmit Compound Full 500k ECU

Release 1.01



ECU





1 Supported models

This tutorial explains how to connect MoTec Dash loggers to AiM SmartyCam and ECU Bridge using MoTec VCS (Video Capture System). Supported models are:

•	Motec	ADL2
•	МоТес	ADL3
•	MoTec	SDL3

Please note: refer to MoTec website to check compatibility between your MoTec Dash and VCS.

1 MoTec dash configuration

MoTec dash loggers can communicate with AiM device, mainly SmartyCam and ECU Bridge, only through a MoTec software setup. In the following images is an example of MoTec ADL3 Manager.

- Run MoTec software
- follow the path Connections -> Communications





- "Communications Setup" panel shows up
- Select a free CAN (in the example we are using CAN1) and push select (1)
- "Select Communication Template" panel shows up: select "VCS Transmit Compound full" (2)
- press "OK" (3)
- "VCS Transmit Compound full" protocol is set on CAN1 (4)
- Send the configuration to the Dash logger pressing: Online -> Send Configuration







2 Wiring connection

MoTec ADL2/ADL3/SDL3 Dash loggers feature a bus communication protocol based on CAN on the rear Autosport connectors. MoTec ADL2/ADL3 are equipped with a 79 pins Autosport male connectors while MoTec SDL3 features a 39 pins Autosport male connectors. Both of them are shown here below (contact insertion view). Bottom is connection table.

	CAN High CAN Low CAN L	$ \begin{array}{c} \begin{tabular}{ c c c c c c } & \begin{tabular}{c c c c c c c } & \begin{tabular}{c c c c c c c c c c c c c c c c c c c $
ADL2 – 79 pins connector pin	Pin function	AiM cable
74	CAN A High	CAN+
73	CAN A Low	CAN-
76	CAN B High	CAN+
75	CAN B Low	CAN-
ADL3 – 79 pins connector pin	Pin function	AiM cable
74	CAN 0 High	CAN+
73	CAN 0 Low	CAN-
76	CAN1 High	CAN+
75	CAN1 Low	CAN-
SDL3 – 37 pins connector pin	Pin function	AiM cable
36	CAN 0 High	CAN+
35	CAN 0 Low	CAN-
30	CAN1 High	CAN+
29	CAN1 Low	CAN-



3 AiM device configuration

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

- ECU manufacturer "MoTec"
- ECU Model, according to the bit rate you are using:
 - "VCS_TransCompound_Full" or
 - "VCS_TransCompound_Full_500k"

4 Available channels

Channels received by AiM loggers connected to MoTec "VCS_TransCompound_Full" and "VCS_TransCompound_Full_500k" are the same.

ID	CHANNEL NAME	FUNCTION
ECU_1	VCS_RPM	RPM
ECU_2	VCS_GRND_SPEED	Ground speed
ECU_3	VCS_GEAR	Engaged gear
ECU_4	VCS_TPS	Throttle position sensor
ECU_5	VCS_BRAKE_PR	Brake pressure
ECU_6	VCS_STEER_ANG	Steering angle
ECU_7	VCS_G_LONG	Longitudinal acceleration
ECU_8	VCS_G_LAT	Lateral acceleration



5 Troubleshooting

Once the connection is over all should work properly. In case something is wrong try these tips and tricks.

5.1 Check default "VCS Transmit Compound Full"

In "Communication Setup" panel shown here below:

- select "VCS TransmitCompound full"
- press "Select..."
- check the list of transmitted ECU channels (right part of the panel)



CAN Communication setup panel shows up:

- check all parameters
- select the CAN line you are using
- press "OK"



You come back to the previous panel:

- activate "Transmitted channels" layer (1)
- select an identifier in "Identifiers panel" identifier 1 in the example on the right (2)
- the channels corresponding to that identifier are shown in "Channels (ID1)" box on the right; select a channel – Ground speed in the example (3)
- click "Change" (4)
- the setting panel of that channel appears
- check its settings following the parameters reported in the following pages and press "OK"

To set other channels:

- press "Offset" (1)
- the identifier scrolls (2) to the following identifier showing the related channels on the right of the panel
- select the desired channel and press "Change" (3)
- the setting panel of that channel appears
- set it following the parameters reported in the following pages and press "OK"
- repeat the procedure until all channels are verified/set









Here follows the correct settings of all channels:

• Identifier 1

Change Comms	Channel				
Chappel:	Ground Spe	ed.		Salant	
Channel.	De se De se bu	No. 01k		Deleot	
	Base Kesolu	tion: 0-1 Kr	nyn		
Offset	2	Length:	2		
Signed 🗹					
Multiplier	1	Divisor:	1	Adder: 0	
			ОК	Cancel	Help
Change Commo	Channel				
Change Comms	Channel				
Channel:	Engine RPN	4		Select	
	BaseResolu	tion: 0.1 Kr	o/b		
Offset	2	Length:	2		
✓ Signed					
Multiplier	1	Divisor:	1	Adder: 0	
				Cancel	Help
					Troop
Change Comms	Channel				
	-				
Channel:	Gear			Select	
	BaseResolu	ition: 1			
Offset	6	Length:	1		
Signed 🗹					
Multiplier	1	Divisor:	1	Adder: 0	

ок

Cancel

Help



• Identifier 2

¢	Change Comms Channel 🛛 🛛 🔀					
	Channel:	Throttle Pos			Select	
		BaseResolution	n: 0.1%			
	Offset	2 <u>L</u> e	ength:	2		
	Signed					
	Multiplier	1 <u>D</u> i	ivisor:	1	Adder: 0	
				ок 🗌	Cancel	Help

Change Comms Channel 🛛 🔀				
Channel:	Brake Pres Front	Select		
	BaseResolution: 1 KPa			
Offset	4 <u>L</u> ength:	2		
Signed				
Multiplier	1 <u>D</u> ivisor:	1 <u>A</u> dder: 0		
		OK Cancel Help		

Change Comms Channel				
Channel:	Steered Angle	Select		
	BaseResolution: 0.1 deg			
Offset	6 Length:	2		
Signed				
Multiplier	1 <u>D</u> ivisor:	1 <u>A</u> dder: 0		
	(OK Cancel Help		



• Identifier 3

0	Change Comms Channel 🛛 🛛 🛛 🛛				
	Channel:	6 Force Long		Select	
		BaseResolution: 0.01	G		
	Offset	2 Length:	2		
	Signed				
	Multiplier	1 <u>D</u> ivisor:	1	Adder: 0	
			ок (Cancel Hel	•

Change Comms Channel 🛛 🛛 🔀				
Channel:	6 Force Lat	Select		
	BaseResolution: 0.01 G			
Offset	4 Length:	2		
✓ Signed				
Multiplier	1 Divisor:	1 <u>A</u> dder: 0		
		OK Cancel Help		

Change Comms	Channel	X
Channel:	Lap Distance	Select
	BaseResolution: 1 m	
Offset	6 <u>L</u> ength:	2
✓ Signed		
Multiplier	1 Divisor:	1 <u>A</u> dder: 0
		OK Cancel Help



• Identifier 4

Change Comms Channel				
Channel:	Running Lap Time	Select		
	BaseResolution: 0.01 s			
Offset	2 <u>L</u> ength:	2		
✓ Signed				
Multiplier	1 <u>D</u> ivisor:	1 <u>A</u> dder: 0		
		OK Cancel Help		

Change Comms Channel				
Channel:	Lap Number	Select		
	BaseResolution: 1			
Offset	4 <u>L</u> ength:	2		
✓ Signed				
Multiplier	1 <u>D</u> ivisor:	1 <u>A</u> dder: 0		
		OK Cancel Help		

Change Comm		
Channel:	Lap Time	Select
	BaseResolution: 0.01 s	
Offset	6 Length:	2
✓ Signed		
Multiplier	1 Divisor:	1 <u>A</u> dder: 0
		OK Cancel Help



5.2 Remove unsupported ECU channels

It can occur that MoTec Dash does not support one or more ECU channels included in default "VCS TransmitCompound Full" template. If – for example – there is not a steering sensor, the corresponding channel is not supported and it seems thereby impossible to send the configuration to the dash. In this case that ECU channel is to be removed:

- select the channel to remove (1)
- click "Remove" (2)
- click "Save As..." and save the configuration with a new name (3).

CAN 1 Comms Setup - VCS TransmitCompound full							
Parameters Transmitted Channels							
Message Type							
Single OCompound					Throttle Pos		
Identifiers				Brake Pres Front Steered Angle			
Number	Offset	ID	ID Mask	^			
1	0	0000	FF00		0		
2	0	0100	FF00				
3	0	0200	FF00				
4	0	0300	FF00				
5							
6							
7							
8				~	9		
Change Clear Add Change Persove							
Mdd Change Keniove							
3							
Load Save As OK Cancel Help							