

CAN protocols selection – SmartyCam GP HD 2.2

Question:

How can I configure the compatible CAN protocol with my vehicle Engine Control Unit (ECU), to represent data through my SmartyCam GP HD 2.2 overlays, when directly connected to the ECU?

Answer:

After SmartyCam GP HD 2.2 has been directly connected to the vehicle ECU, it is necessary to proceed selecting the compatible communication protocol through Race Studio 3, in the way explained below:

Turn the camera on and connect it to the PC, run Race Studio 3, enter the Configurations section (20), open an existing configuration or create a new one, pressing "New" (following image), selecting the device and adding a name/comment, then press "OK".





CAN Data

• The camera configuration window appears, from which it is possible to choose and set the overlays that will be displayed into recorded video, positioning them in the left preview area. To enable the CAN protocol selection, click the "Use ECU" button (red box; following picture).



• The "ECU and SmartyCam Stream" tab shows up, displaying the protocol Manufacturer and Model selection window (red box; following picture).

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		ECU: Click button to select a ECU protocol		Change ECU 💲 🕐					
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	Speed	Nano	^		\$				
	Gear	20			\$				
	Water Temp	ABIT			able channel				
	Head Temp	AFM			\$				
	Exhaust Temp	AIM (CUSTOM CAN)							
	Oil Temp	ALFA ROMEO							
	Oil Press	APRILIA			able channel				
	Brake Press	ARCTIC_CAT			able channel				
	Throttle Pos	ASTON_MARTIN			able channel				
	Brake Pos	AUDI			nole channel				
	Clutch Pos	AURION							
	Lambda	BENTLEY							
	Eucl Lovel	BLACK_BOX							
	Battery Voltage	BMW							
	buttery voltage	BOSCH							
		BRP							
		CARROT							
		0.7700.00							
				OK Cancel					



Once the protocol has been selected, its channels are automatically associated to the camera overlays functions (in the following picture, "Ferrari – 458 SMC" communication protocol has been chosen). To change reference channel, click on its name: the window to select the new reference channel appears (1), that shows a filtered list of protocol channels with the same function; to remove the filter and enable all the channels, tick the "Enable all Channels for Functions" box (2).

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Overlay	Overfav (ECU and SmartyCan Stream)								
ECU: FERRARI - 458 SMC (ve				FERRARI - 458 SMC (ver. 02.00.05)	Change ECU	• •			
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	source	Chainer	Head Temp	No available channel	Sat Number	Sats Number			
	ECU	ECU CAT2 TEMP	Exhaust Temp	ECU CAT2 TEMP					
	Not set	ECU CAT1 TEMP	Oil Temp	ECU ENG OILT	SmartyCam Lap Function	Channel			
		ECU OUT AIR T	Oil Press	ECU ENG OILP	Lap Time	No available channel			
		OK Cancel	Brake Press	ECU BRAKE PRESS	Lap Number	No available channel			
		on ouncer	Throttle Pos	ECU TPS	Best Lap Number	No available channel			
			Brake Pos	No available channel	Best Lap Time	No available channel			
			Clutch Pos	No available channel					
			Steering Pos	ECU STEER ANGLE					
			Lambda	No available channel					
			Fuel Level	No available channel					
			Battery Voltage	Battery					
				CAN Output Message Enable					

• When this operation is ended, press "Transmit" to transmit the configuration to the camera, making the new settings effective (red box; following picture).

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SmartyCam Function	Channel	SmartyCam Gps Function	Channel					
Engine RPM	ECU RPM 🗘	Latitude	Latitude					
Speed	ECU VEH SPEED 🛟	Longitude	Longitude 🗘					
Gear	ECU GEAR 🗘	Altitude	Altitude 🗘					
Water Temp	ECU ECT 🛟	Master Clock	No available channel					
Head Temp	No available channel	Sat Number	Sats Number 💲					
Exhaust Temp	ECU CAT2 TEMP							
Oil Temp	ECU ENG OILT	SmartyCam Lap Function	Channel					
Oil Press	ECU ENG OILP	Lap Time	No available channel	_				
Brake Press	ECU BRAKE PRESS	Lap Number	No available channel	_				
Throttle Pos	ECU TPS	Best Lap Number	No available channel	_				
Brake Pos	No available channel	Best Lap Time	No available channel					
Clutch Pos	No available channel							
Steering Pos	ECU STEER ANGLE							
Lambda	No available channel							
Fuel Level	No available channel							
Battery Voltage	Battery \$							
	CAN Output Message Enable							



If the ECU communication protocol is not included into the Race Studio 3 list and the user has relevant details to build a custom protocol (ID, baud rate, endianness, gain/offset...), the ECU driver can be

independently created from Race Studio 3 CAN Builder section (



N.B.: SmartyCam GP HD 2.2 only handles standard CAN communication protocols that are automatically broadcast by the ECU: **no CAN protocols simulating serial streams nor CAN** protocols with remote frame messages (requests for data transmission) are allowed.