

Life F88 ECU



Racing Data Power

INTRODUCTION

AIM has developed special applications for many of the most popular ECUs; by special applications we mean user-friendly systems which allow to easily connect your ECU to our high tech data loggers: user needs only to install harness between the **logger** and the ECU.

Once connected, the logger displays (and/or records, depending on the logger and on the ECU data stream and configuration) values like RPM, engine load, throttle position (TPS), air and water temperatures, battery voltage, speed, gear, lambda value (air/fuel ratio) analog channels...

All AIM loggers include – free of charge – **Race Studio 2** software, a powerful tool to configure the system and analyze recorded data on your PC.

Warning: once the ECU is connected to the logger, it is necessary to set it in the logger configuration in Race Studio 2 software.

Select Manufacturer "LIFE" Model "F88_CAN".

Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

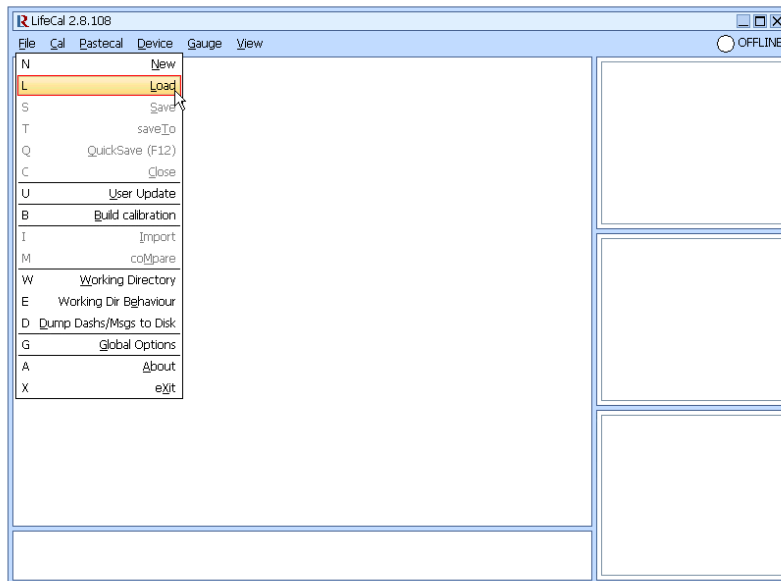
Warning: it is always suggested to verify if the ECU needs any software/firmware setting or upgrade to export data to an external logger.

Chapter 1 – Technical communication notes

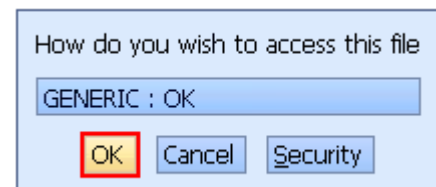
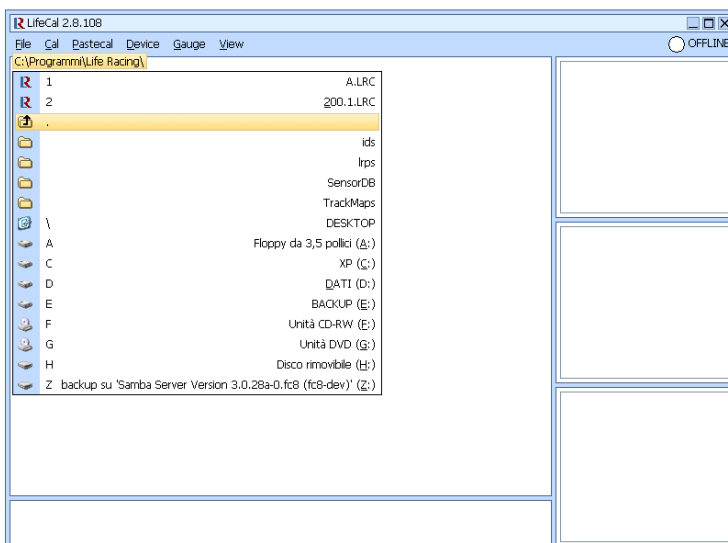
Life F88 ECU communicates with AIM loggers via CAN bus. This requires careful check of software settings (see below). To enable ECU communication with AIM loggers it is necessary to set some ECU parameters using “LifeCal” software.



- Run “LifeCal”
- Load the file calibration following this path: File →Load;

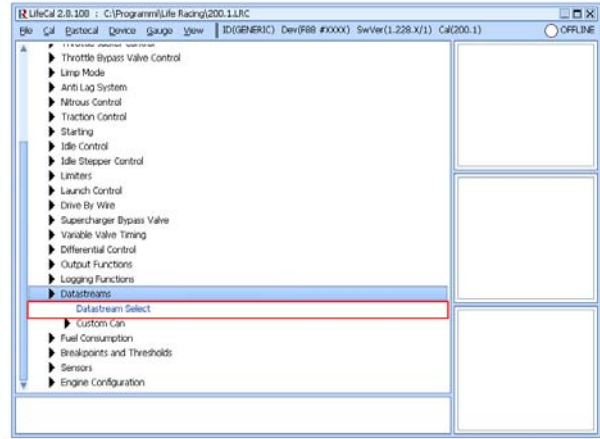
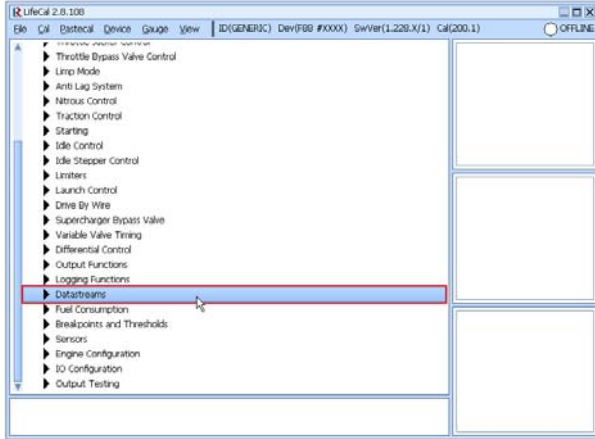


- Select file calibration “.LRC”; then press “OK” (right screen);

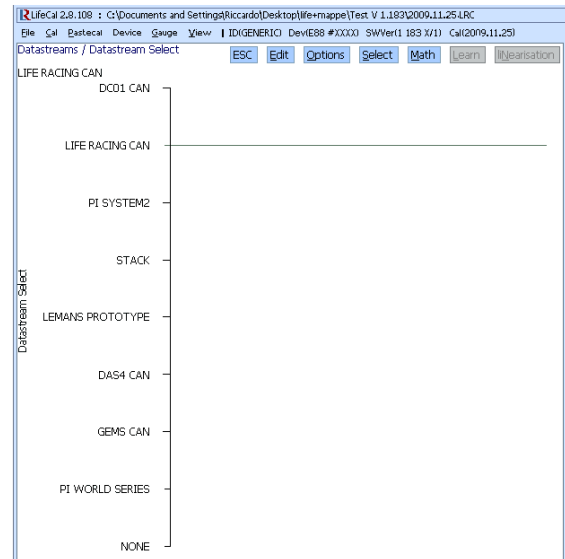
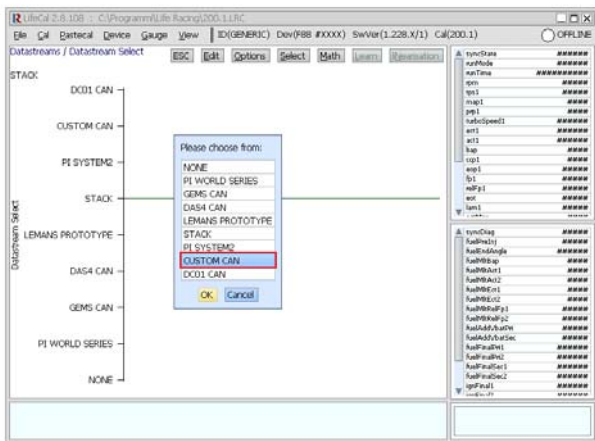


After file calibration loading, the following screen appears:

- select “Datastreams” option and scroll the list (see below);
- double click “Datastream” (“Datastream select” option appears);



- select “Datastream Select” option, then left click;
- press “ENTER”;
- set “CAN CUSTOM” or “LIFE RACING CAN” then press “OK”.



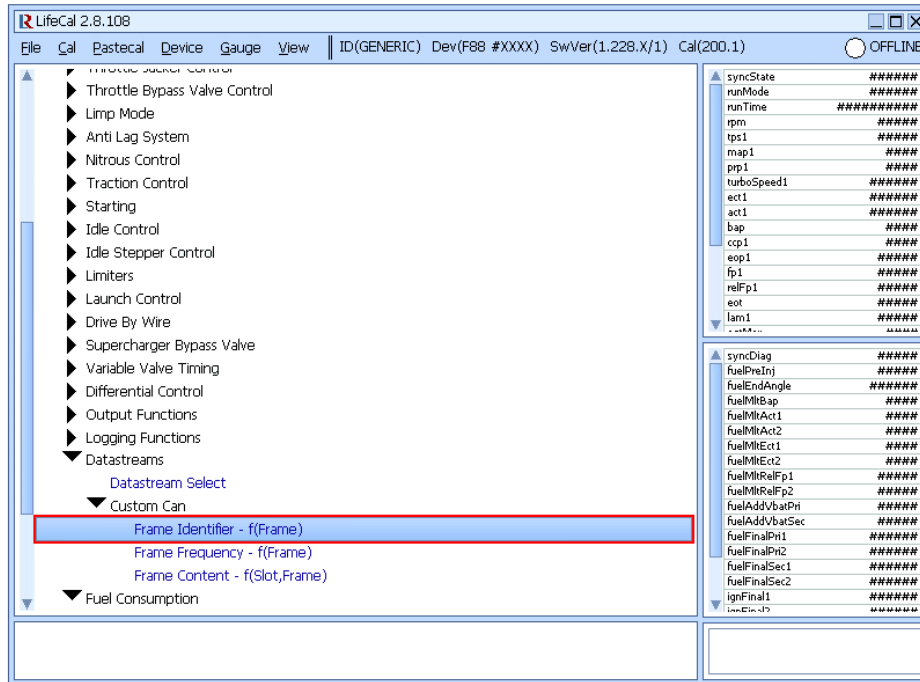
If the selected channel has been properly set a red line appears alongside the name of the channel (see right-above).

Note: CAN Custom is available for firmware version up JAN 2007 release 1.142.1 CAN, and it only works with default CAN Custom settings. The upgrade is needed.

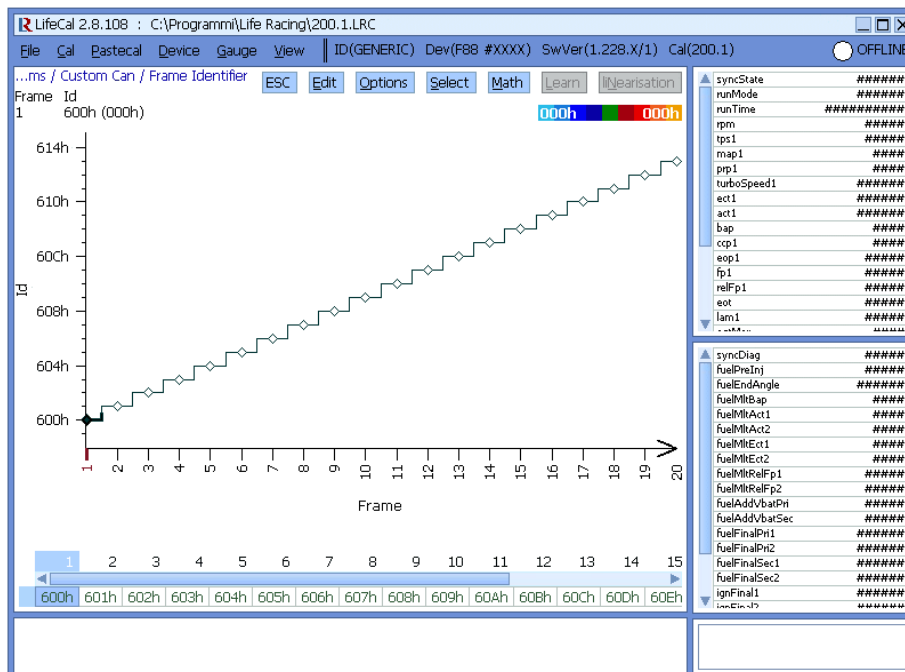
Now it is necessary to properly set Frame Identifier, Frame Frequency and Frame Content:

- double click “Datastreams” option
- double click “Datastream select” option
- double click “Can Custom” option

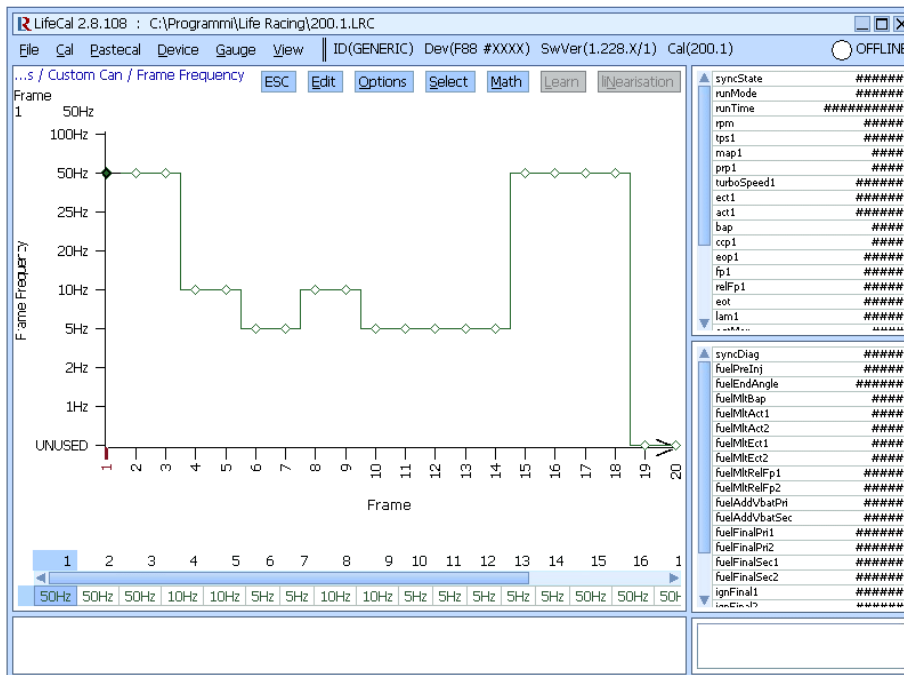
At first select “Frame Identifier” f(Frame) :



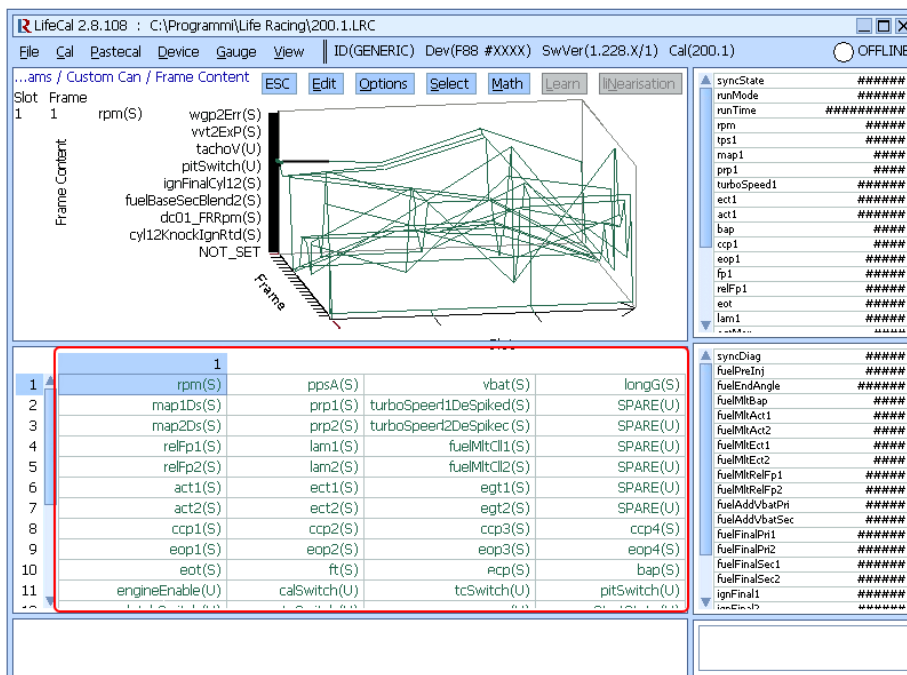
Check the setting of “Frame IDENFIER”; The proper (default) setting should constantly raise, starting from 600 HZ (see below).



Open and check the FRAME Frequency – f(Frame) screen, (the default) CAN frequencies must be set as shown in the image below:



Open “Frame Content” and check the data contained in the red circled section (see below). Compare the data with the ones contained in the table below (see next page).



This table shows the proper Frame content values.

rpm_S	ppsA_S	vbat_S	longG_S
map1Ds_S	prp1_S	turboSpeed1DeSpiked_S	SPARE_U
map2Ds_S	prp2_S	turboSpeed2DeSpiked_S	SPARE_U
relFp1_S	lam1_S	fuelMltCII1_S	SPARE_U
relFp2_S	lam2_S	fuelMltCII2_S	SPARE_U
act1_S	ect1_S	egt1_S	SPARE_U
act2_S	ect2_S	egt2_S	SPARE_U
ccp1_S	ccp2_S	ccp3_S	ccp4_S
eop1_S	eop2_S	eop3_S	eop4_S
eot_S	ft_S	ecp_S	bap_S
engineEnable_U	calSwitch_U	tcSwitch_U	pitSwitch_U
clutchSwitch_U	manAutoSwitch_U	wow_U	autoStartState_U
fuelConsLR_U	sensorSwitch_U	alsState_U	wgcStrategyActive_U
gearCutDogKickCount_U	gearCutFailCount_U	dbwStatus_U	knockStatus_U
gearV_U	gear_S	paddleSwitch_U	gsp_S
flSpeed_S	frSpeed_S	rlSpeed_S	rrSpeed_S
swa_S	latG_S	vehicleSpeed_S	drivenSpeed_S
wheelSpin_S	tcSpinTarg_S	tcSpinErr_S	tcTrq_S
NOT_SET	NOT_SET	NOT_SET	NOT_SET
NOT_SET	NOT_SET	NOT_SET	NOT_SET

In order to receive two more channels, users can change the Frame content values, modifying the data highlighted in the following table:

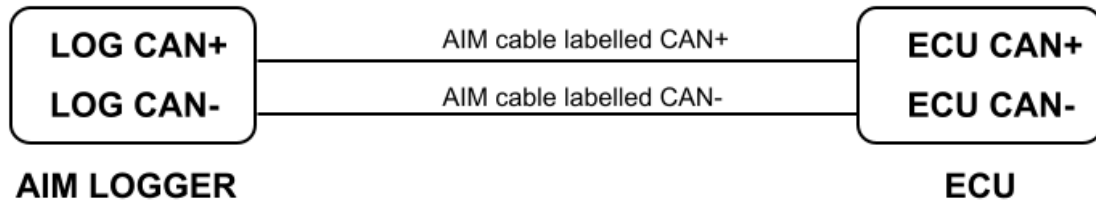
rpm_S	ppsA_S	vbat_S	longG_S
map1Ds_S	prp1_S	turboSpeed1DeSpiked_S	tps1_S
map2Ds_S	prp2_S	turboSpeed2DeSpiked_S	SPARE_U
relFp1_S	lam1_S	fuelMltCII1_S	SPARE_U
relFp2_S	lam2_S	fuelMltCII2_S	SPARE_U
act1_S	ect1_S	egt1_S	btMax_S
act2_S	ect2_S	egt2_S	SPARE_U
ccp1_S	ccp2_S	ccp3_S	ccp4_S
eop1_S	eop2_S	eop3_S	eop4_S
eot_S	ft_S	ecp_S	bap_S
engineEnable_U	calSwitch_U	tcSwitch_U	pitSwitch_U
clutchSwitch_U	manAutoSwitch_U	wow_U	autoStartState_U
fuelConsLR_U	sensorSwitch_U	alsState_U	wgcStrategyActive_U
gearCutDogKickCount_U	gearCutFailCount_U	dbwStatus_U	knockStatus_U
gearV_U	gear_S	paddleSwitch_U	gsp_S
flSpeed_S	frSpeed_S	rlSpeed_S	rrSpeed_S
swa_S	latG_S	vehicleSpeed_S	drivenSpeed_S
wheelSpin_S	tcSpinTarg_S	tcSpinErr_S	tcTrq_S
NOT_SET	NOT_SET	NOT_SET	NOT_SET
NOT_SET	NOT_SET	NOT_SET	NOT_SET

Note: just enabled users can modify the Frame content table.

Now it is possible to transmit the new configuration to the ECU.

Chapter 2 – Life F88 CAN Communication setup

Life F88 SRA ECU is equipped with a CAN communication setup used to communicate parameters to an external logger: it is shown here below.



Chapter 3 – Connection to AIM loggers

To connect Life F88 ECU to AIM loggers it is necessary to use CAN1:

- connect AIM cable labelled CAN+ to pin 82 (CAN1+) of the 88 pins connector;
- connect AIM cable labelled CAN- to pin 81 (CAN1-) of the 88pins connector;

Chapter 4 – Life F88 communication protocol

Channels received by AIM loggers connected to Life F88 ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	F88_RPM	RPM
ECU_2	F88_PPS	Pedal position sensor
ECU_3	F88_V_SPEED	Vehicle Speed
ECU_4	F88_D_SPEED	Driver Speed
ECU_5	F88_SPEED_FL	Wheel speed front left
ECU_6	F88_SPEED_FR	Wheel speed front right
ECU_7	F88_SPEED_RL	Wheel speed rear left
ECU_8	F88_SPEED_RR	Wheel speed rear right
ECU_9	F88_LONG_ACC	Longitudinal G
ECU_10	F88_LAT_ACC	Latitudinal G
ECU_11	F88_MAP1	Manifold absolute pressure 1
ECU_12	F88_MAP2	Manifolds absolute pressure 2
ECU_13	F88_TRBO_SPD1	Turbo Charger Shaft Speed 1
ECU_14	F88_TRBO_SPD2	Turbo Charger Shaft Speed 2
ECU_15	F88_LAMBDA1	Lambda Fuel Air Ratio 1
ECU_16	F88_LAMBDA2	Lambda Fuel Air Ratio 2
ECU_17	F88_ACT1	Air Charge temp 1
ECU_18	F88_ACT2	Air Charge temp 2
ECU_19	F88_ECT1	Engine coolant temperature 1
ECU_20	F88_ECT2	Engine coolant temperature 2
ECU_21	F88_EGT1	Engine Gas Temperature 1
ECU_22	F88_EGT2	Engine Gas Temperature 2
ECU_23	F88_FUEL_CONS	Fuel consumption
ECU_24	F88_GEAR	Gear
ECU_25	F88_OIL_P1	Oil pressure 1
ECU_26	F88_OIL_P2	Oil pressure 2
ECU_27	F88_OIL_P3	Oil pressure 3
ECU_28	F88_OIL_P4	Oil pressure 4
ECU_29	F88_V BATT	Battery voltage
ECU_30	F88_FUEL_PR1	Fuel pressure 1
ECU_31	F88_FUEL_PR2	Fuel Pressure 2
ECU_32	F88_EOT	Engine oil temperature
ECU_33	F88_FUEL_T	Fuel temperature
ECU_34	F88_BARO_PR	Barometric pressure
ECU_35	F88_STEER_ANGLE	Steering Angle
ECU_36	F88_TPS1	Throttle position 1
ECU_37	F88_BTMAX	Max Board temperature