



AiM Infotech

Life F88 CAN

Release 1.02

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ECU



This tutorial explains how to connect AiM devices to Life F88 CAN ECU using the CAN Bus.

# 1

## Requested ECU firmware version and software setup

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Life F88 CAN firmware is compatible with AiM devices only from version 1.142.1 onwards. In case your ECU firmware is older please address to your ECU dealer to upgrade it.

**Please note:** always ensure that your AiM device is upgraded to the latest available firmware version checking [www.aim-sportline.com](http://www.aim-sportline.com) download area, firmware section.

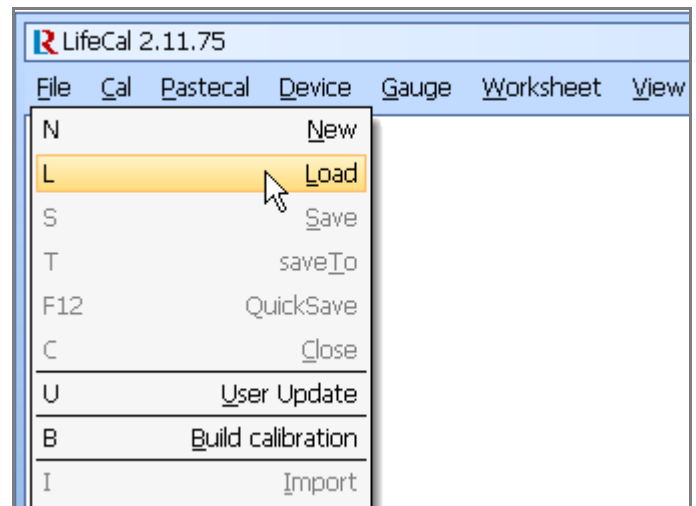
### 1.1

## Software setup

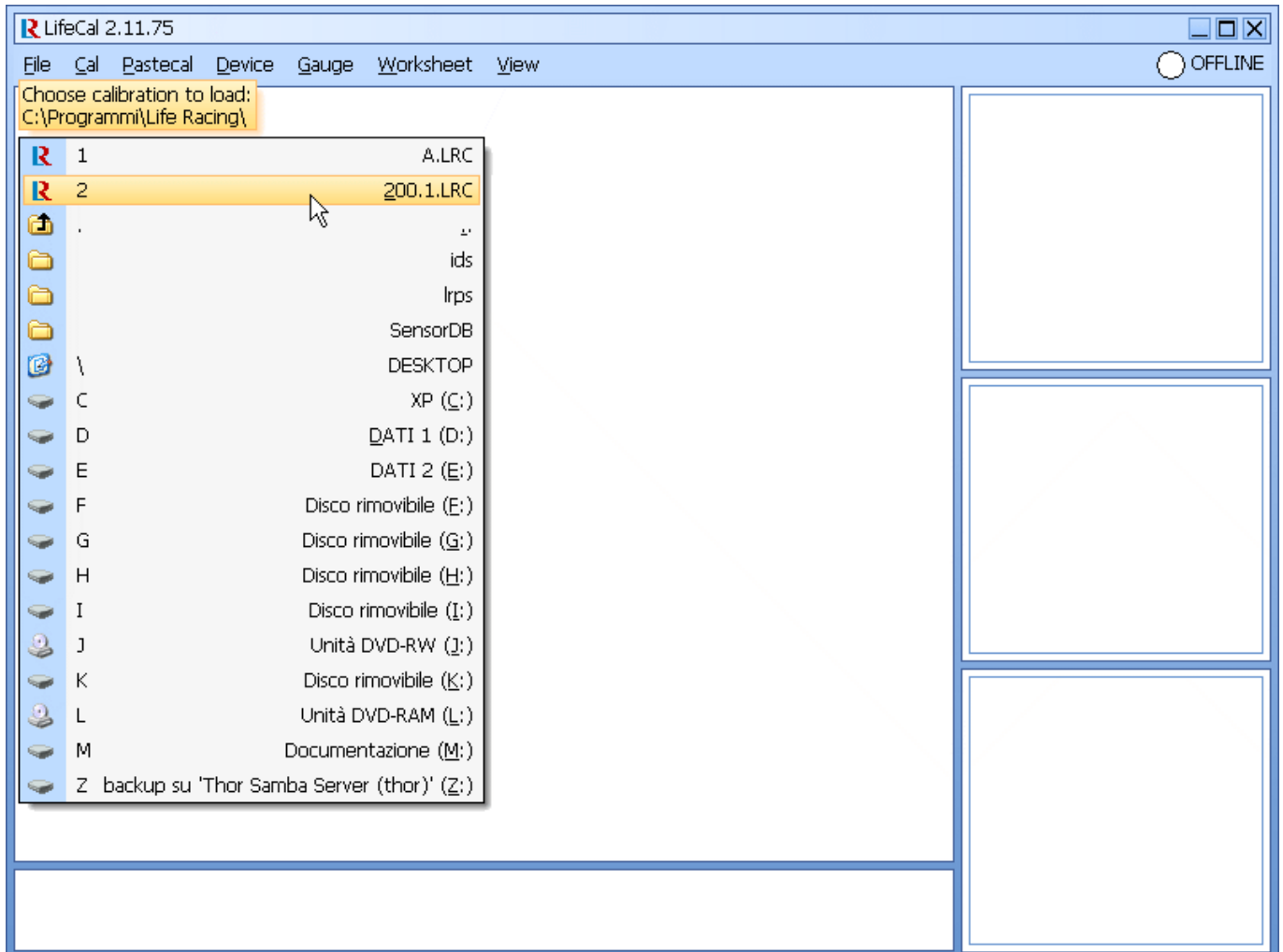
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To setup your Life F88 CAN use LifeCal software and carefully perform this procedure.

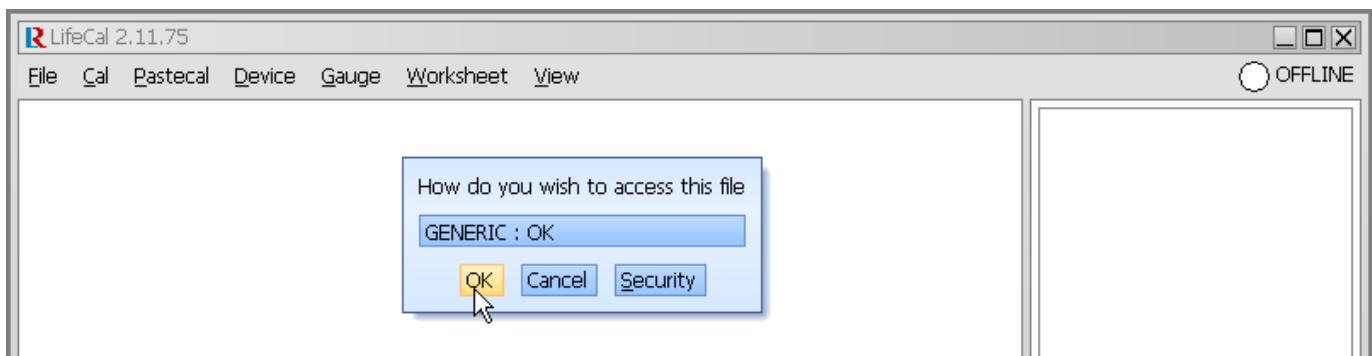
Run "LifeCal" software and select "File -> Load"



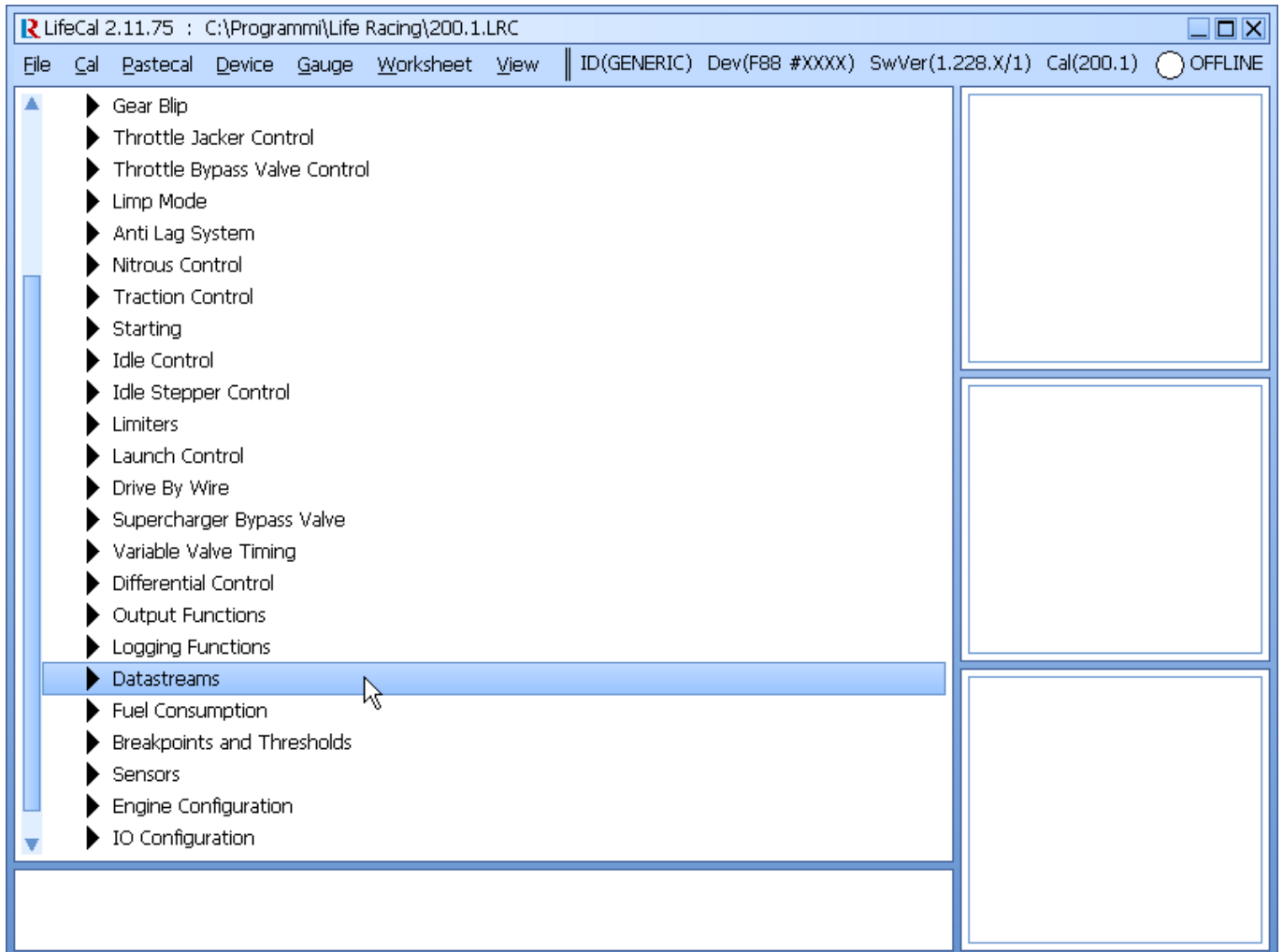
Browse your PC to find the “.LRC” calibration file.



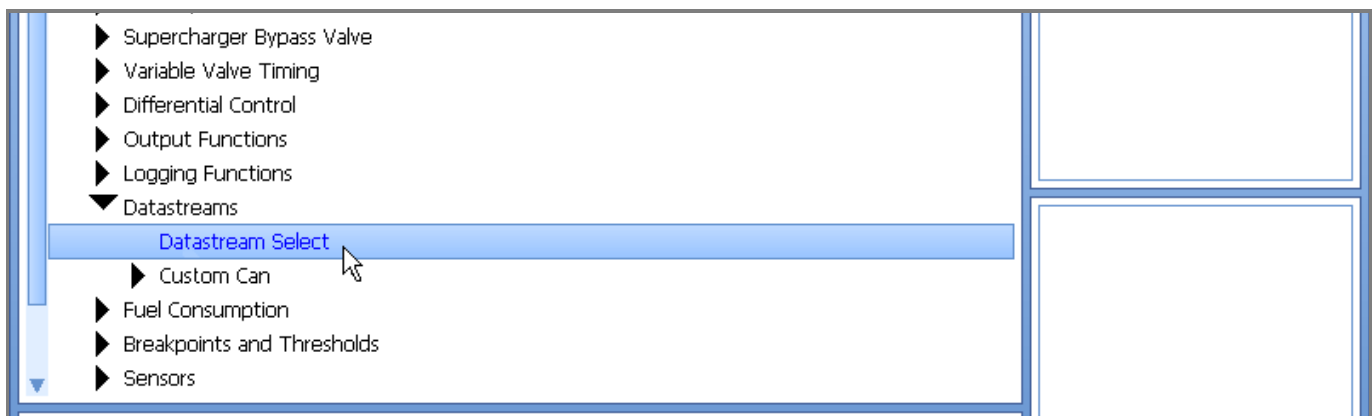
Access this file as “Generic” selecting OK.



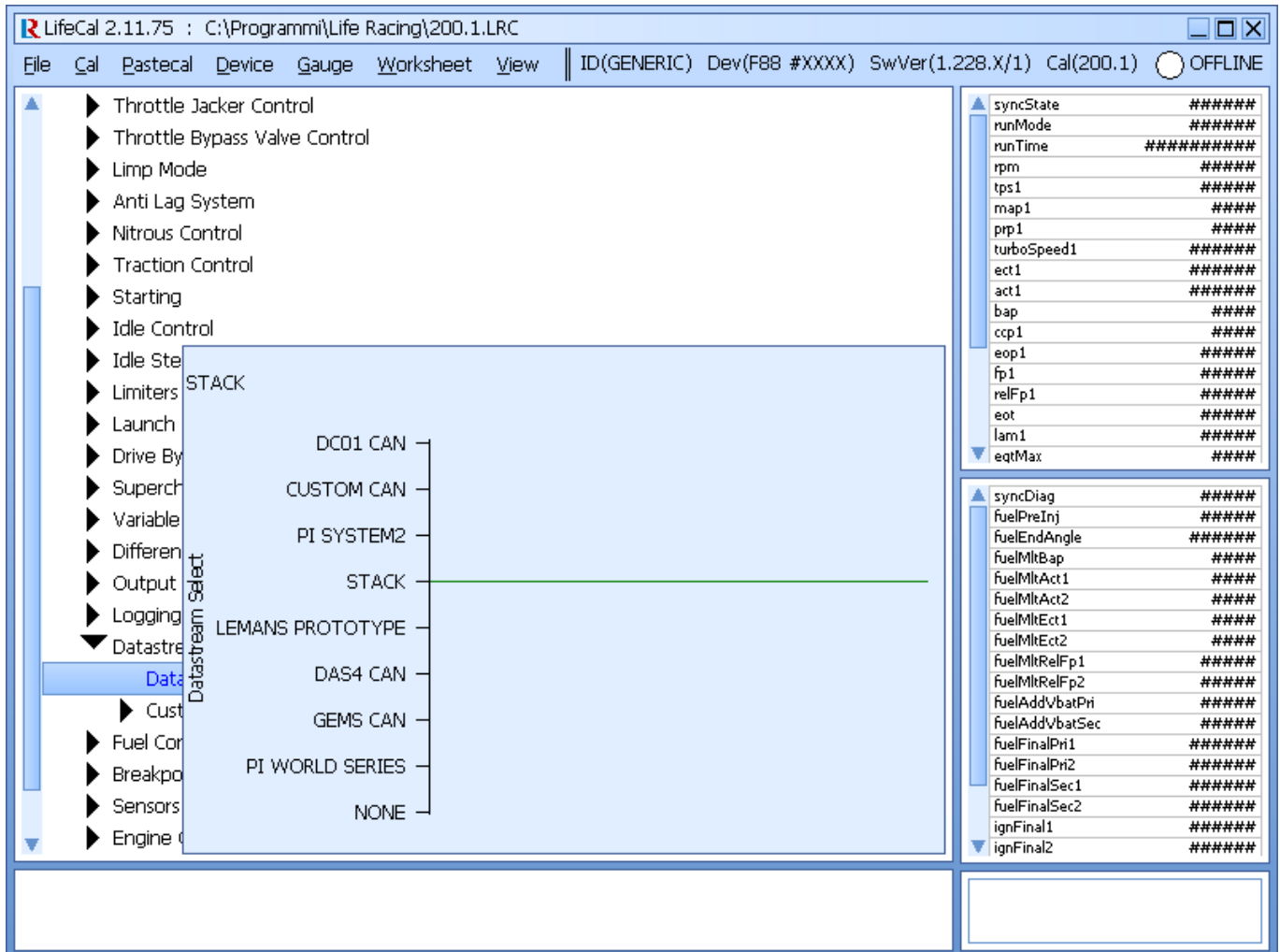
Scroll the page down to “Datastreams” and select it.



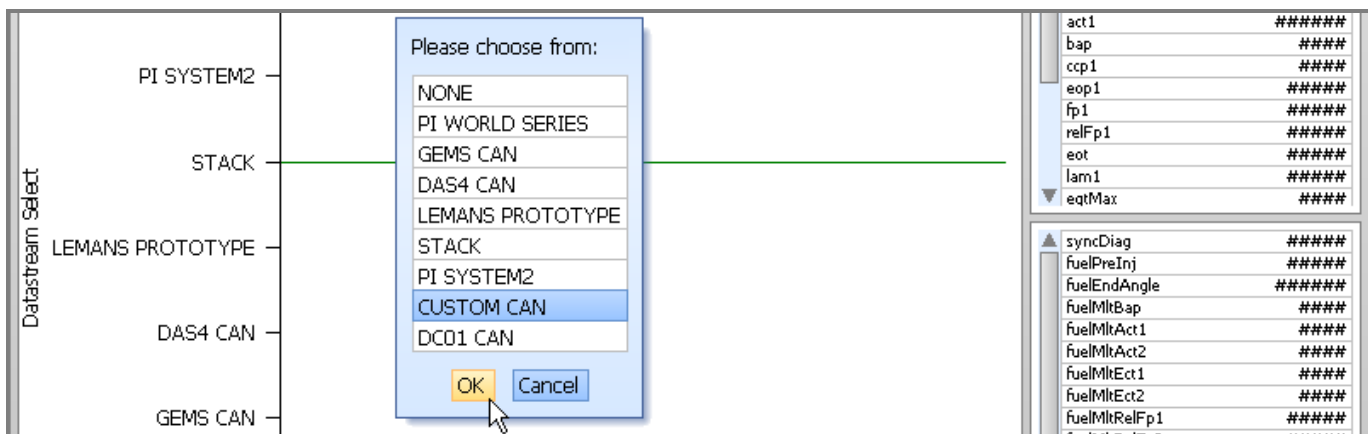
Then, “Datastream Select”.



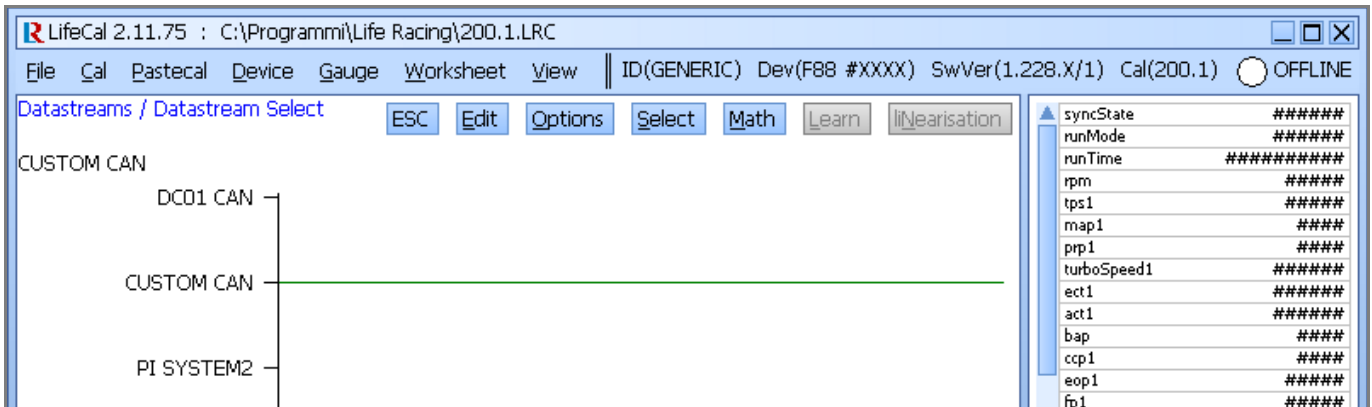
“Datastream Select” panel shows the current setting (STACK). Double click and press enter.



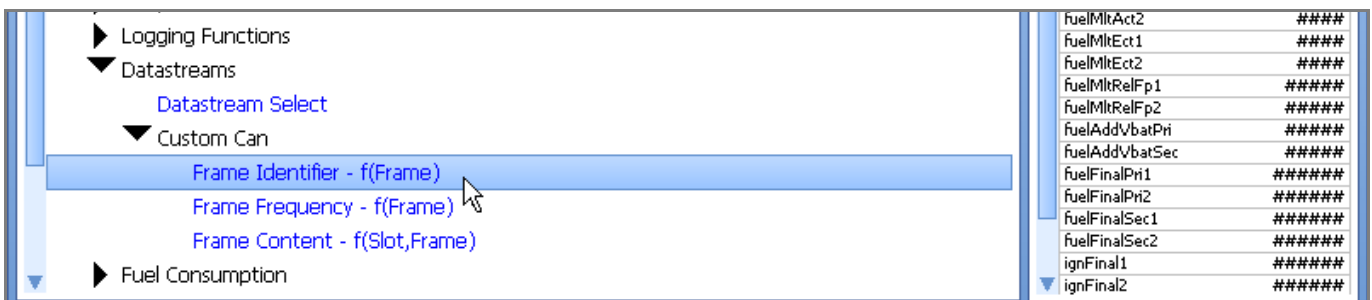
Select “CUSTOM CAN” or “LIFE RACING CAN” according to your software version and then press OK.



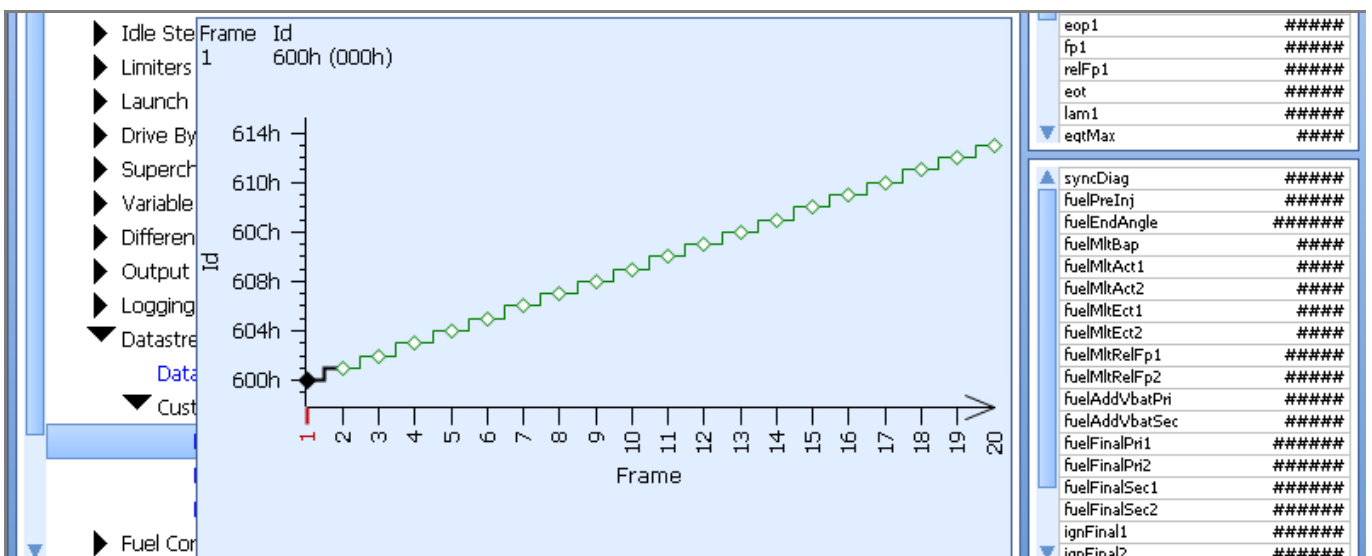
A green line appears to indicate the current setting. Quit this page pressing “ESC”.



The software comes back to the previous page. Scroll the list up to “Custom CAN”, double click and select “Frame identifier – f(frame)”



The related panel shows up in preview. Double click on it.



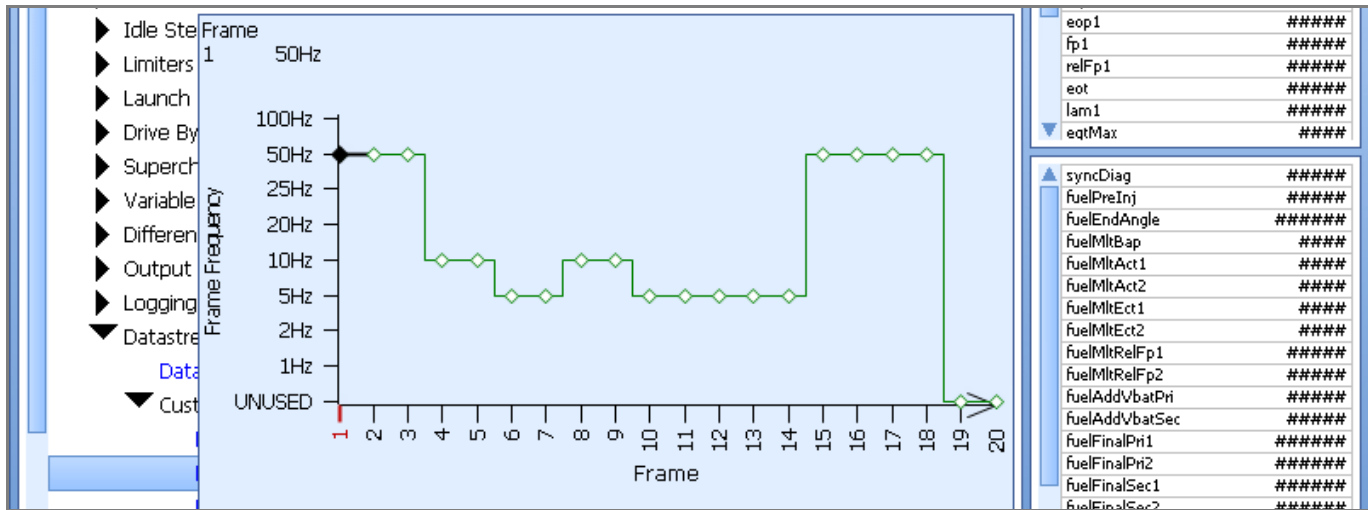
Check the default setting of Frame Identifier page. It should start from 600h as here below and constantly raise. If not press enter and set it. Use “→” button to scroll “X” axis values. Then quit.

The screenshot shows the 'Frame Identifier' configuration window in LifeCal 2.11.75. The main area contains a graph with 'Id' on the y-axis (ranging from 600h to 614h) and 'Frame' on the x-axis (ranging from 1 to 20). A green line graph shows a step-wise increasing trend. A dialog box is open, asking for a 'New value (000h to 7FFh)' with '600h' entered in the text field. Below the graph is a scrollable list of frame values: 600h, 601h, 602h, 603h, 604h, 605h, 606h, 607h, 608h, 609h, 60Ah, 60Bh, 60Ch, 60Dh, 60Eh. The right sidebar displays a list of logging parameters, including syncState, runMode, rpm, map1, turboSpeed1, ect1, act1, bap, ccp1, eop1, fp1, relFp1, eot, lam1, eqtMax, syncDiag, fuelPreInj, fuelEndAngle, fuelMltBap, fuelMltAct1, fuelMltAct2, fuelMltEct1, fuelMltEct2, fuelMltRelFp1, fuelMltRelFp2, fuelAddVbatPri, fuelAddVbatSec, fuelFinalPri1, fuelFinalPri2, fuelFinalSec1, fuelFinalSec2, ignFinal1, and ignFinal2.

The software comes back to the previous page. Press “↓” to select “Frame Frequency – f(Frame)”.

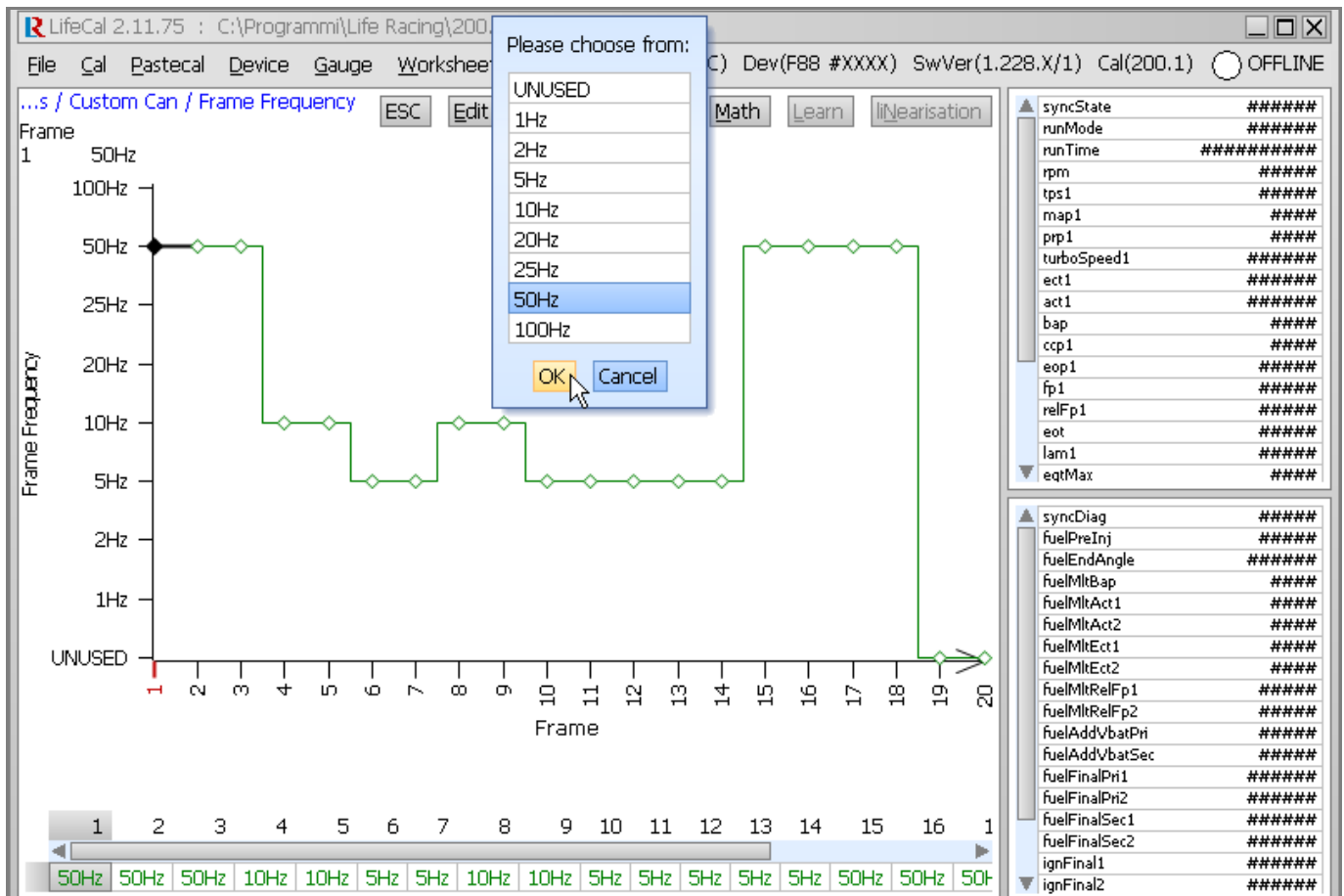
The screenshot shows the software's menu structure. The 'Custom Can' menu is expanded, showing options like 'Frame Identifier - f(Frame)', 'Frame Frequency - f(Frame)', and 'Frame Content - f(Slot,Frame)'. The 'Frame Frequency - f(Frame)' option is highlighted. The right sidebar shows the same list of logging parameters as in the previous screenshot.

You will see this preview window. Double click on it.



The default setting should be as below. If not click enter and set it up as this one. Use “→” button to scroll “X” axis values. Then quit.





The software comes back to the previous page. Press “ ↓ ” to select “Frame Content – f(Slot, Frame)”.

Logging Functions  
 Datastreams  
 Datastream Select  
 Custom Can  
 Frame Identifier - f(Frame)  
 Frame Frequency - f(Frame)  
 Frame Content - f(Slot,Frame)  
 Fuel Consumption

fuelMltAct2	####
fuelMltEct1	####
fuelMltEct2	####
fuelMltRelFp1	#####
fuelMltRelFp2	#####
fuelAddVbatPri	#####
fuelAddVbatSec	#####
fuelFinalPri1	#####
fuelFinalPri2	#####
fuelFinalSec1	#####
fuelFinalSec2	#####
ignFinal1	#####
ignFinal2	#####

You will see this preview window. Double click on it.

<ul style="list-style-type: none"> <li>▶ Idle Ste</li> <li>▶ Limiters</li> <li>▶ Launch</li> <li>▶ Drive By</li> <li>▶ Superch</li> <li>▶ Variable</li> <li>▶ Differen</li> <li>▶ Output</li> <li>▶ Logging</li> <li>▼ Datastre</li> <li>    Data</li> <li>    ▼ Cust</li> </ul>	<table border="1"> <tr> <td>Slot</td> <td>Frame</td> <td></td> </tr> <tr> <td>1</td> <td>1</td> <td>rpm(S) convert using y=(1*x)+0 to engineering units in the range 0</td> </tr> </table> <p>Frame Content</p> <ul style="list-style-type: none"> <li>wsPitLimitProp(S)</li> <li>wg2MapErrPct1(S)</li> <li>tjps(S)</li> <li>s1An03V(U)</li> <li>loadCell2IC(U)</li> <li>gearCutInputV(U)</li> <li>fDamper(S)</li> <li>dTInjOpenFb8(U)</li> <li>cyl10Knock(S)</li> <li>NOT_SET</li> </ul>	Slot	Frame		1	1	rpm(S) convert using y=(1*x)+0 to engineering units in the range 0	<table border="1"> <tr> <td>eop1</td> <td>#####</td> </tr> <tr> <td>fp1</td> <td>#####</td> </tr> <tr> <td>relFp1</td> <td>#####</td> </tr> <tr> <td>eot</td> <td>#####</td> </tr> <tr> <td>lam1</td> <td>#####</td> </tr> <tr> <td>eqtMax</td> <td>####</td> </tr> </table> <table border="1"> <tr> <td>▲ syncDiag</td> <td>#####</td> </tr> <tr> <td>fuelPreInj</td> <td>#####</td> </tr> <tr> <td>fuelEndAngle</td> <td>#####</td> </tr> <tr> <td>fuelMltBap</td> <td>####</td> </tr> <tr> <td>fuelMltAct1</td> <td>####</td> </tr> <tr> <td>fuelMltAct2</td> <td>####</td> </tr> <tr> <td>fuelMltEct1</td> <td>####</td> </tr> <tr> <td>fuelMltEct2</td> <td>####</td> </tr> <tr> <td>fuelMltRelFp1</td> <td>#####</td> </tr> <tr> <td>fuelMltRelFp2</td> <td>#####</td> </tr> <tr> <td>fuelAddVbatPri</td> <td>#####</td> </tr> <tr> <td>fuelAddVbatSec</td> <td>#####</td> </tr> <tr> <td>fuelFinalPri1</td> <td>#####</td> </tr> <tr> <td>fuelFinalPri2</td> <td>#####</td> </tr> <tr> <td>fuelFinalSec1</td> <td>#####</td> </tr> <tr> <td>fuelFinalSec2</td> <td>#####</td> </tr> <tr> <td>ignFinal1</td> <td>#####</td> </tr> <tr> <td>ignFinal2</td> <td>#####</td> </tr> </table>	eop1	#####	fp1	#####	relFp1	#####	eot	#####	lam1	#####	eqtMax	####	▲ syncDiag	#####	fuelPreInj	#####	fuelEndAngle	#####	fuelMltBap	####	fuelMltAct1	####	fuelMltAct2	####	fuelMltEct1	####	fuelMltEct2	####	fuelMltRelFp1	#####	fuelMltRelFp2	#####	fuelAddVbatPri	#####	fuelAddVbatSec	#####	fuelFinalPri1	#####	fuelFinalPri2	#####	fuelFinalSec1	#####	fuelFinalSec2	#####	ignFinal1	#####	ignFinal2	#####
Slot	Frame																																																							
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fuelFinalPri1	#####																																																							
fuelFinalPri2	#####																																																							
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fuelFinalSec2	#####																																																							
ignFinal1	#####																																																							
ignFinal2	#####																																																							

You need to set up the table highlighted in the image below.

LifeCal 2.11.75 : C:\Programmi\Life Racing\200.1.LRC

File Cal Pastecal Device Gauge Worksheet View ID(GENERIC) Dev(F88 #XXXX) SwVer(1.228.X/1) Cal(200.1) OFFLINE

...ams / Custom Can / Frame Content

Slot Frame  
1 1 rpm(S) convert using  $y=(1*x)+0$  to engineering units in the range 0..10000 (Angular Sp

Frame Content

- vvt2InI(S)
- sbvIC(U)
- map2(S)
- gdpV(U)
- ectIn(S)
- cyl4KnockIgnRtd(S)
- NOT\_SET

Slot

	1	2	3	4
1	rpm(S)	ppsA(S)	vbat(S)	longG(S)
2	map1Ds(S)	prp1(S)	turboSpeed1DeSpiked(S)	SPARE(U)
3	map2Ds(S)	prp2(S)	turboSpeed2DeSpiked(S)	SPARE(U)
4	relFp1(S)	lam1(S)	fuelMtcI1(S)	SPARE(U)
5	relFp2(S)	lam2(S)	fuelMtcI2(S)	SPARE(U)
6	act1(S)	ect1(S)	egt1(S)	SPARE(U)
7	act2(S)	ect2(S)	egt2(S)	SPARE(U)
8	ccp1(S)	ccp2(S)	ccp3(S)	ccp4(S)
9	eop1(S)	eop2(S)	eop3(S)	eop4(S)
10	eot(S)	ft(S)	ecp(S)	bap(S)
11	engineEnable(U)	calSwitch(U)	tcSwitch(U)	pitSwitch(U)
12	clutchSwitch(I I)	map&AutoSwitch(I I)	wow(I I)	autoStartState(I I)

syncState #####  
runMode #####  
runTime #####  
rpm #####  
tps1 #####  
map1 #####  
prp1 #####  
turboSpeed1 #####  
ect1 #####  
act1 #####  
bap #####  
ccp1 #####  
eop1 #####  
fp1 #####  
relFp1 #####  
eot #####  
lam1 #####  
eqtMax #####

syncDiag #####  
FuelPreInj #####  
FuelEndAngle #####  
FuelMkBap #####  
FuelMkAct1 #####  
FuelMkAct2 #####  
FuelMkEct1 #####  
FuelMkEct2 #####  
FuelMkRelFp1 #####  
FuelMkRelFp2 #####  
FuelAddVbatPri #####  
FuelAddVbatSec #####  
FuelFinalPri1 #####  
FuelFinalPri2 #####  
FuelFinalSec1 #####  
FuelFinalSec2 #####  
IgnFinal1 #####  
IgnFinal2 #####



The values to be modified are highlighted below. Use keyboard arrows to reach the cell to set; press enter and select the correct value in the drop down window. The bottom image shows the values set.

	1	2	3	4
1	rpm(S)	ppsA(S)	vbat(S)	longG(S)
2	map1Ds(S)	prp1(S)	turboSpeed1DeSpiked(S)	SPARE(U)
3	map2Ds(S)	prp2(S)	turboSpeed2DeSpiked(S)	SPARE(U)
4	relFp1(S)	lam1(S)	fuelMltCl1(S)	SPARE(U)
5	relFp2(S)	lam2(S)	fuelMltCl2(S)	SPARE(U)
6	act1(S)	ect1(S)	egt1(S)	SPARE(U)
7	act2(S)	ect2(S)	egt2(S)	SPARE(U)
8	ccp1(S)	ccp2(S)	ccp3(S)	ccp4(S)
9	eop1(S)	eop2(S)	eop3(S)	eop4(S)
10	eot(S)	ft(S)	ecp(S)	bap(S)
11	engineEnable(U)	calSwitch(U)	tcSwitch(U)	pitSwitch(U)
12	clutchSwitch(U)	manAutoSwitch(U)	wow(U)	autoStartState(U)
13	fuelConsLR(U)	sensorSwitch(U)	alsState(U)	wgcStrategyActive(U)
14	gearCutDogKickCount(U)	gearCutFailCount(U)	dbwStatus(U)	knockStatus(U)
15	gearV(U)	gear(S)	paddleSwitch(U)	gsp(S)
16	flSpeed(S)	frSpeed(S)	rlSpeed(S)	rrSpeed(S)
17	swa(S)	latG(S)	vehicleSpeed(S)	drivenSpeed(S)
18	wheelSpin(S)	tcSpinTarg(S)	tcSpinErr(S)	tcTrq(S)
19	NOT_SET	NOT_SET	NOT_SET	NOT_SET
20	NOT_SET	NOT_SET	NOT_SET	NOT_SET

fuelPreInj	#####
fuelEndAngle	#####
fuelMltBap	####
fuelMltAct1	####
fuelMltAct2	####
fuelMltEct1	####
fuelMltEct2	####
fuelMltRelFp1	#####
fuelMltRelFp2	#####
fuelAddVbatPri	#####
fuelAddVbatSec	#####
fuelFinalPri1	#####
fuelFinalPri2	#####
fuelFinalSec1	#####
fuelFinalSec2	#####
ignFinal1	#####
ignFinal2	#####
ignCharge	####
cylTrimEnable1	#####
cylTrimEnable2	#####

	1	2	3	4
1	rpm(S)	ppsA(S)	vbat(S)	longG(S)
2	map1Ds(S)	prp1(S)	turboSpeed1DeSpiked(S)	tps1(S)
3	map2Ds(S)	prp2(S)	turboSpeed2DeSpiked(S)	SPARE(U)
4	relFp1(S)	lam1(S)	fuelMltCl1(S)	SPARE(U)
5	relFp2(S)	lam2(S)	fuelMltCl2(S)	SPARE(U)
6	act1(S)	ect1(S)	egt1(S)	btMax(S)
7	act2(S)	ect2(S)	egt2(S)	SPARE(U)
8	ccp1(S)	ccp2(S)	ccp3(S)	ccp4(S)
9	eop1(S)	eop2(S)	eop3(S)	eop4(S)
10	eot(S)	ft(S)	ecp(S)	bap(S)
11	engineEnable(U)	calSwitch(U)	tcSwitch(U)	pitSwitch(U)
12	clutchSwitch(U)	manAutoSwitch(U)	wow(U)	autoStartState(U)
13	fuelConsLR(U)	sensorSwitch(U)	alsState(U)	wgcStrategyActive(U)
14	gearCutDogKickCount(U)	gearCutFailCount(U)	dbwStatus(U)	knockStatus(U)
15	gearV(U)	gear(S)	paddleSwitch(U)	gsp(S)
16	flSpeed(S)	frSpeed(S)	rlSpeed(S)	rrSpeed(S)
17	swa(S)	latG(S)	vehicleSpeed(S)	drivenSpeed(S)
18	wheelSpin(S)	tcSpinTarg(S)	tcSpinErr(S)	tcTrq(S)
19	NOT_SET	NOT_SET	NOT_SET	NOT_SET
20	NOT_SET	NOT_SET	NOT_SET	NOT_SET

fuelPreInj	#####
fuelEndAngle	#####
fuelMltBap	####
fuelMltAct1	####
fuelMltAct2	####
fuelMltEct1	####
fuelMltEct2	####
fuelMltRelFp1	#####
fuelMltRelFp2	#####
fuelAddVbatPri	#####
fuelAddVbatSec	#####
fuelFinalPri1	#####
fuelFinalPri2	#####
fuelFinalSec1	#####
fuelFinalSec2	#####
ignFinal1	#####
ignFinal2	#####
ignCharge	####
cylTrimEnable1	#####
cylTrimEnable2	#####

## 2

### Wiring connection

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To connect Life F88 CAN ECU with AiM devices use the 88 pins AMP male connector located frontally on it. Here below is connection table.

<b>AMP connector pin</b>	<b>Pin function</b>	<b>AiM cable</b>
82	CAN High	CAN+
81	CAN Low	CAN-

## 3

### AiM device configuration

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

- ECU manufacturer "Life"
- ECU Model "F88\_CAN";

## 4

# Available channels

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Channels received by AiM loggers connected to "Life" "F88\_CAN" protocol are:

<b>ID</b>	<b>CHANNEL NAME</b>	<b>FUNCTION</b>
ECU_1	F88_RPM	RPM
ECU_2	F88_PPSA	"A" Pedal position
ECU_3	F88_V_SPEED	Vehicle speed
ECU_4	F88_D_SPEED	Driven speed
ECU_5	F88_SPEED_FL	Front left wheel speed
ECU_6	F88_SPEED_FR	Front right wheel speed
ECU_7	F88_SPEED_RL	Rear left wheel speed
ECU_8	F88_SPEED_RR	Rear right wheel speed
ECU_9	F88_LONG_ACC	Longitudinal acceleration
ECU_10	F88_LAT_ACC	Lateral acceleration
ECU_11	F88_MAP1	Manifold air pressure bank 1
ECU_12	F88_MAP2	Manifold air pressure bank 2
ECU_13	F88_TRBO_SPD1	Turbo speed bank 1
ECU_14	F88_TRBO_SPD2	Turbo speed bank 2
ECU_15	F88_LAMBDA1	Lambda value bank 1
ECU_16	F88_LAMBDA2	Lambda value bank 2
ECU_17	F88_ACT1	Air coolant temperature bank 1
ECU_18	F88_ACT2	Air coolant temperature bank 2
ECU_19	F88_ECT1	Engine coolant temperature bank 1
ECU_20	F88_ECT2	Engine coolant temperature bank 2
ECU_21	F88_EGT1	Exhaust gas temperature bank 1
ECU_22	F88_EGT2	Exhaust gas temperature bank 2
ECU_23	F88_FUEL_CONS	Fuel consumption
ECU_24	F88_GEAR	Engaged 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 supply
ECU_30	F88_FUEL_PR1	Fuel pressure bank 1
ECU_31	F88_FUEL_PR2	Fuel pressure bank 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 ECU internal temperature
ECU_38	F88_OVERBOOST	Over boost pressure
ECU_39	F88_CRANK1_PR	Crank 1 pressure
ECU_40	F88_COOL_PRESS	Engine coolant pressure
ECU_41	F88_ENG_ENABLE	Engine enable
ECU_42	F88_CAL_SWITCH	Calibration switch
ECU_43	F88_TC_SWITCH	Traction control switch
ECU_44	F88_PIT_SWITCH	Pit lane limiter switch
ECU_45	F88_ALS_STATE	ALS signal status
ECU_46	F88_GEAR_VOLT	Gearbox voltage
ECU_47	F88_GEAR_PRESS	Gear pressure
ECU_48	F88_WHEEL_SPIN	Wheel spin
ECU_49	F88_PPSB	"B" Pedal position
ECU_50	F88_DBW_STATUS	DBW Status
ECU_51	F88_KNK_STATUS	Knock status