Pectel SQ6 ECU







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 "Pectel" Model "SQ6". Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

Warning: for any further information concerning ECU firmware/software settings and/or upgrading it is always recommended to address to the ECU dealer.



1 – ECU configuration by DESC ProW software

To communicate with **AIM** loggers, **Pectel SQ6** ECU is to be configured using "DESCPRO", the software provided by **Pectel** to communicate with data loggers. To set the ECU, follow these steps:

- Connect the ECU to a PC with "DESCPRO" installed and turn the ECU on;
- Launch "DESCPRO" (current version is 3.3 build 43);
- click on [ON-LINE];
- Load File map calibration following these steps:
 - press [F] or click on FILE [low] on the left;
 - o press [L] or select [Load MAPS] (see image below)

DESCProW Version 3.3 (Build 43) Pectel External No profile loaded [mapshone]	PECTEL
File Load maps L Save maps S Map details D Load paste buffer man details M	
Pogram configuration C Quit Quit Q	

File Comms Trace Freeze Beacon



- select Map/Calibration file (e.i. "350Z_D1_253" see image below);
- click [Enter]: the software reads the ECU configuration (called "MAPS");

Load : select maps file 350Z_D1.253				
D:\DESC\PEXT\MAPS				
A:	3502_D1.253 3502_D10.253 3502_D11.253 3502_D12.253 3502_D12.253 3502_D12.253 3502_D15.253 3502_D15.253 3502_D15.253 3502_D15.253 3502_D18.253 3502_D19.253 3502_D2.253 3502_D21.253 3502_D21.253 3502_D22.253	96K 17/10/09 00:40 96K 20/10/09 15:31 96K 20/10/09 15:51 96K 20/10/09 15:51 96K 20/10/09 17:26 96K 20/10/09 18:07 96K 20/10/09 19:09 96K 20/10/09 19:09 96K 21/10/09 19:06 96K 21/10/09 15:06 96K 21/10/09 15:06 96K 21/10/09 15:07 96K 22/10/09 15:27 96K 23/10/09 12:37 96K 23/10/09 11:49	<u>Return</u>	
Map type : SQ6v2-53:Naturally Aspirated Developer : Pectel External Password : NO Last saved : 1:40:09 on 17/10/2009 Encryption : Any engine developer				
Banco NO VVT WORKING NO WHEEL SPEED accordato fuel e ign per dyno STD 350Z Crank and cam pattern MUX 1 and 2 set. NO DBW - ND PPS, TPS+, FBW A+B ALTN RELAY SU PWM27(51)				
START CUT				

- when finished, press [M] or click [Menu];
- select [Communication Setup];

DESCProW Version 3.3 (Build 43) Pectel External SQ6(Speed/Throttle) [maps:350Z_D1253]

COMMUNICATIONS SETUP RS DASH -> CAN DATASTREAM -> SERIAL DATASTREAM <-Indefault Communication Mode Enable Calibration Data on Datastreams Enable Fuel Used on Stack Datastreams DATASTREAM DASHBOARDS -> USER-DEFINED CHANNELS -> DELTA STREAM ALARMS -> SHIFT LIGHTS -> INERTIAL MOTION UNIT -> SERIAL DASH SETUP ->



- double click on [Serial DataStream];
- then select [Default Communication Mode];

DESCProW Version 3.3 (Build 43) Pectel External SQ6(Speed/Throttle) [maps:350Z_D1253]

COMMUNICATIONS SETUP
RS DASH -> CAN DATASTREAM -> SERIAL DATASTREAM <- Default Communication Mode Enable Calibration Data on Datastreams Enable Fuel Used on Stack Datastreams DATASTREAM DASHBOARDS -> USER-DEFINED CHANNELS -> DELTA STREAM ALARMS -> SHIFT LIGHTS -> 'INERTIAL MOTION UNIT -> SERIAL DASH SETUP ->

- check if default communication mode is already set [STACK_1], otherwise press [ENTER];
- select [STACK_1];
- press [Return].

	xternal SQb(Speed/Throttle) Lmaps:3502_01.2533
Default Communication Mode	
STACK_2	
	Set to: PC JECS STACK_1 STACK_2 PLSYS_2 DELTA_STREAM GEMS PECTEL PLSYS_3A PLTFT PLSYS_3B PLSYS

The new configuration needs to be transmitted to the ECU:

• click [File>>Program current maps into ECU flash] and confirm when prompted.





• confirm when prompted pressing [YES].

Go ahead and program the ECU's flash?

- press [F10] to save the ECU configuration;
- if the programming is successfully completed the following message appears:

flash programming complete Return

• after data transfer quit "DESCPRO", ECU is ready to communicate with AIM logger

2 – Communication setup and connection to AIM logger

The ECU is equipped with a serial communication setup (RS232) used to communicate parameters to an external data logger, or to configure the ECU itself.

The serial communication is shown here below:



Pectel SQ6 is equipped with a 88 pins connector used to communicate parameters to AIM logger (image below).

To connect AIM datalogger to the ECU, please connect:

- cable labelled "RS232RX" of AIM logger to pin 36 of the ECU (ECU TX);
- cable labelled "GND" of AIM logger to pin 23 or 24 of the ECU (ECU GND).



PIN	Function	Comments
36	ECU RS232TX	Connection to "RS232RX" AIM cable
23-24	ECU GND	Connection to "GND" AIM cable



3 – ECU communication protocol

Channels received by AIM loggers connected to **Pectel SQ6** ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	PECTEL_RPM	RPM VALUE
ECU_2	PECTEL_SPEED	SPEED VEHICLE
ECU_3	PECTEL_OILPRESS	OIL PRESSURE
ECU_4	PECTEL_OILTEMP	OIL TEMPERATURE
ECU_5	PECTEL_ECT	WATER TEMPERATURE
ECU_6	PECTEL_FUELPRESS	FUEL PRESSURE
ECU_7	PECTEL_BATTVOLT	BATTERY VOLTAGE
ECU_8	PECTEL_TPS	THROTTLE POSITION SENSOR
ECU_9	PECTEL_MAP	MANIFOLD PRESURE
ECU_10	PECTEL_AIRCHARGETEMP	AIR CHARGE TEMPERATURE
ECU_11	PECTEL_EXHTEMP	EXHAUST GAS TEMPERATURE
ECU_12	PECTEL_LAMBDA	LAMBDA VALUE
ECU_13	PECTEL_FUELTEMP	FUEL TEMPERATURE
ECU_14	PECTEL_GEAR	GEAR NUMBER
ECU_15	PECTEL_COUNTER	COUNTER
ECU_16	PECTEL_FUELLEVEL	FUEL LEVEL
ECU_17	PECTEL_ERRORFLAG	ERROR