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AiM InfoTech

Pectel SQ6 and SQ6M ECUs

Release 1.04

ECU

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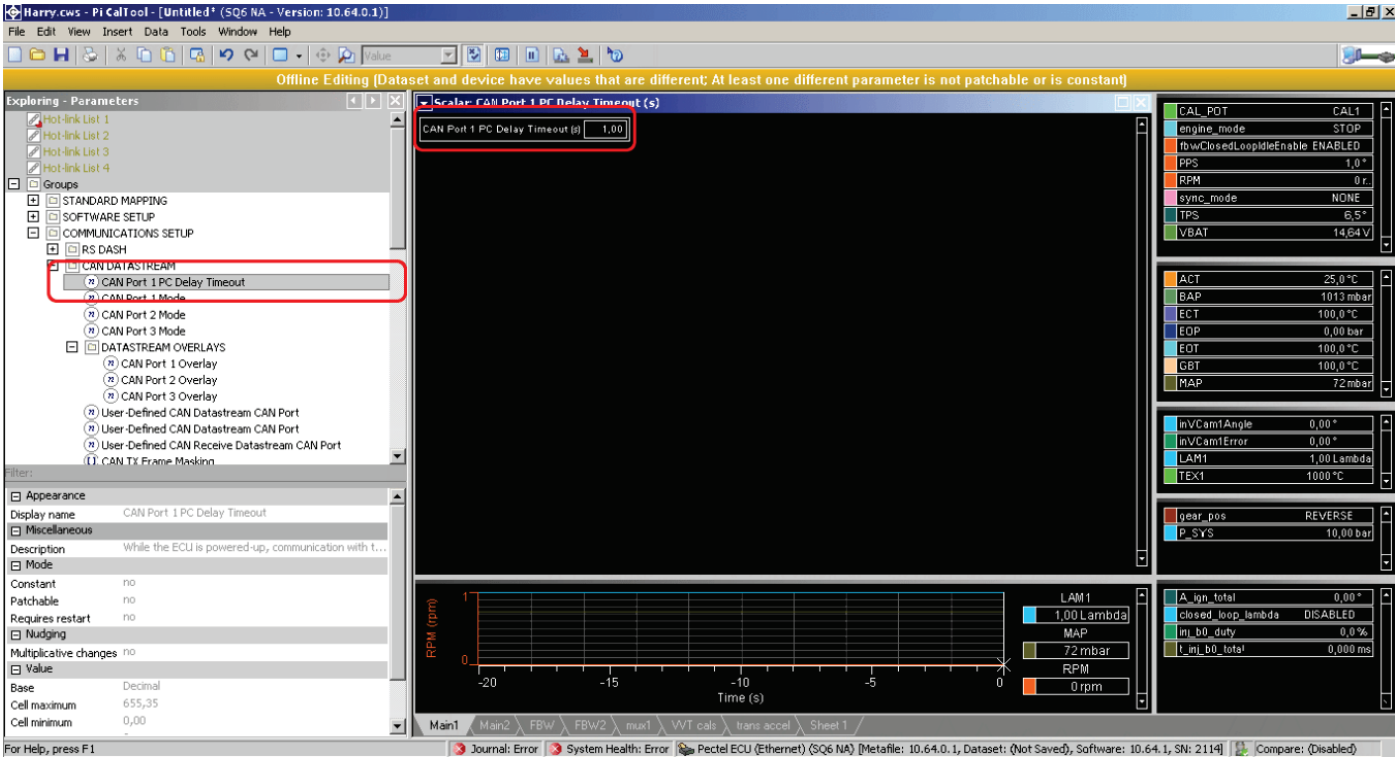
This tutorial explains how to connect Pectel ECUs to AiM devices. Supported models are:

- SQ6
- SQ6M

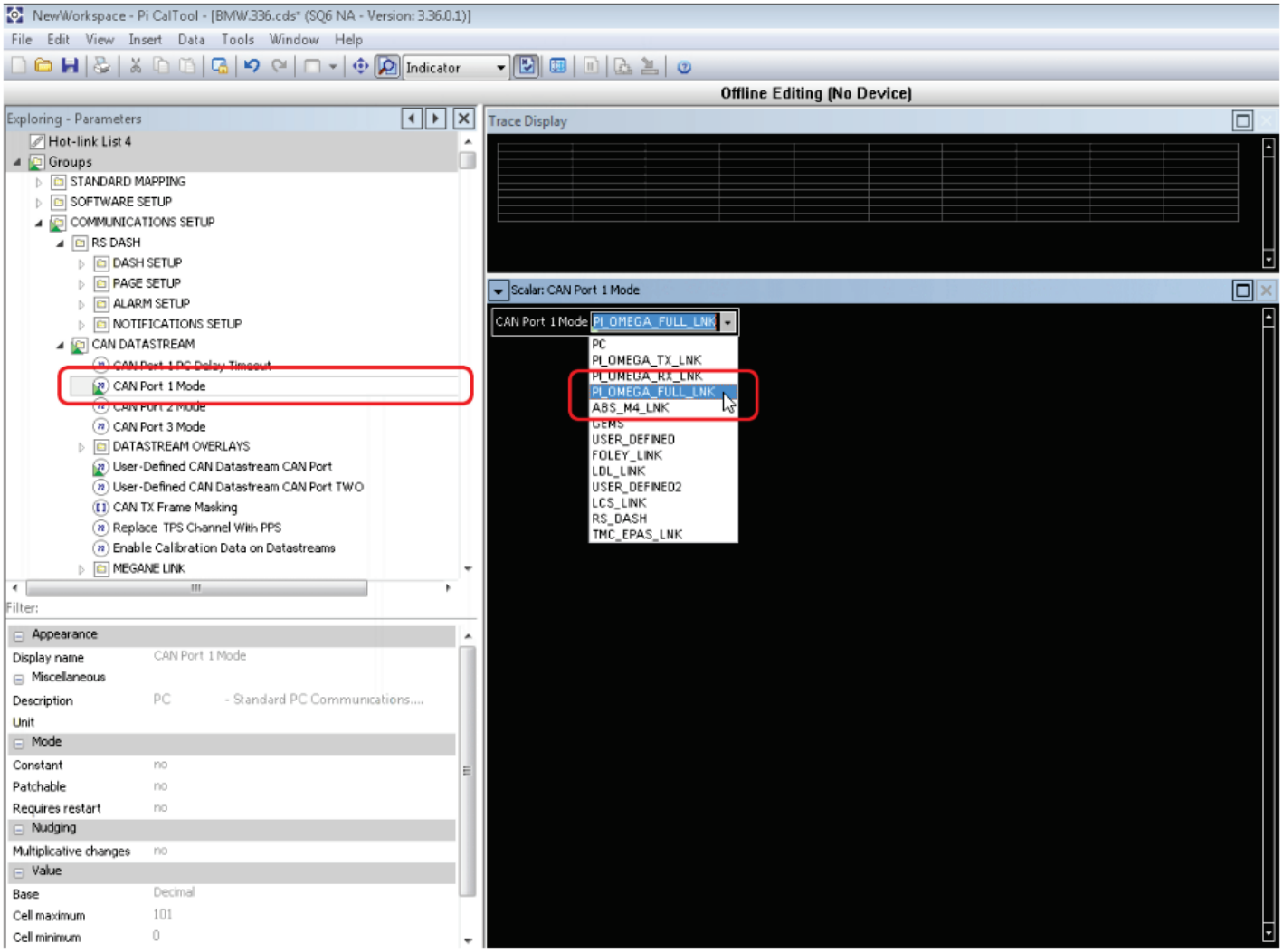
1 Software configuration

Pectel ECUs are equipped with a bus communication protocol based on CAN. CAN stream needs a software setup through PiCalTool, the software provided by Pectel. To correctly configure the CAN stream, follow these steps.

- Run the software and load ECU configuration
- This window appears; scroll the left panel and select “CAN Port 1 PC Delay Timeout”
- Set the corresponding box on the right on “1.00”

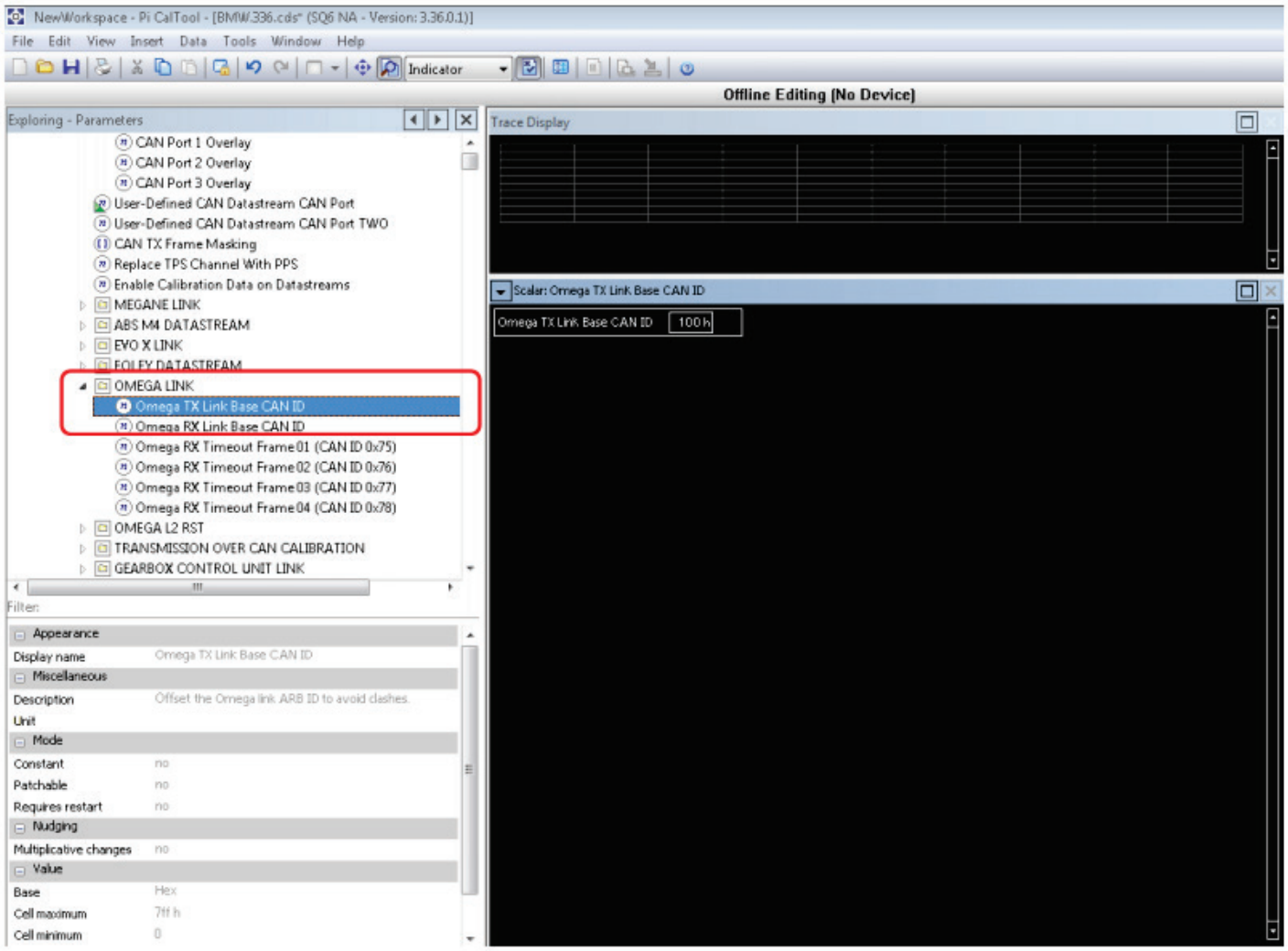


- Now come back to the left panel and select “CAN 1 Port mode”
- Scroll the drop-down menu that appears on the right and select “PI_OMEGA_FULL LNK”



Please note: Pectel SQ6 has two CAN port available while SQ6M has three so if a CAN Port is for any reason unavailable other are supplied. It is very important that the same CAN line you have connected on the ECU hardware is set via software. in this example we have selected CAN Port 1.

- Scroll the left panel of the window
- Open “OMEGA LINK” and select “OMEGA TX Link Base CAN ID”
- Set “Omega TX Link Base CAN ID” to 100H (the protocol will use the base address 0x100)

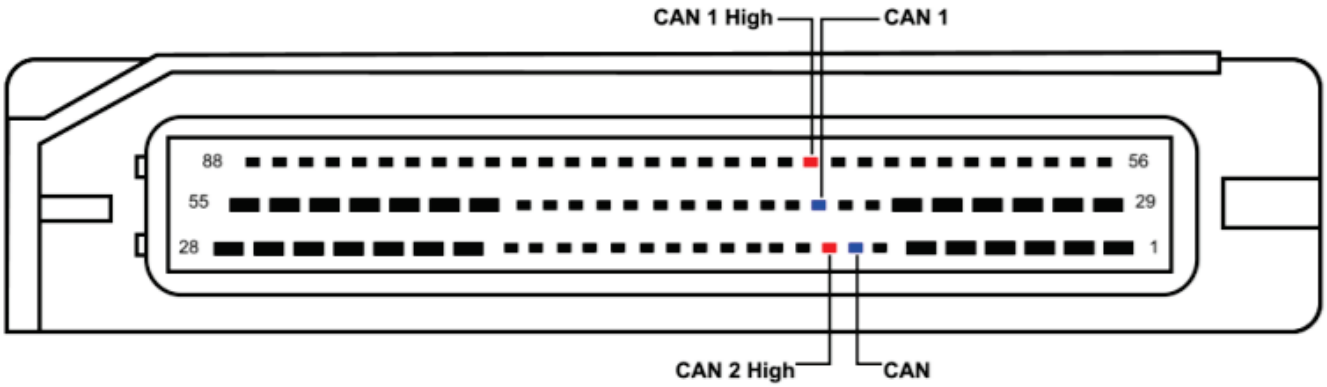


2
Wiring connection

Pectel SQ6 and SQ6M ECUs are equipped with a bus communication protocol based on CAN on the front connectors.

2.1
Pectel SQ6 connection

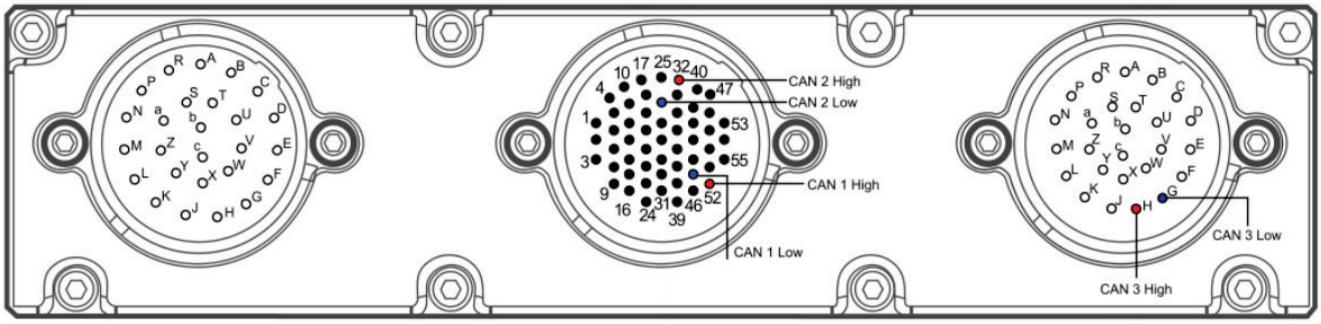
To connect Pectel SQ6 to AiM devices use the 88 pins front connector. Here below are connector pinout and connection table.



Pin	Pin function	AiM cable	AiM color cable
67	CAN 1 High	CAN +	White
37	CAN 1 Low	CAN -	Blue
9	CAN 2 High	CAN +	White
8	CAN 2 Low	CAN -	Blue

2.2
Pectel SQ6M connection

To connect Pectel SQ6M to AiM devices use the central and the right front connectors labelled respectively "Connector 2" and "Connector 3". Here below are connectors pinout and connection table.



Connector	Pin	Pin function	AiM cable
Connector 2	52	CAN 1 High	CAN +
Connector 2	45	CAN 1 Low	CAN -
Connector 2	32	CAN 2 High	CAN +
Connector 2	26	CAN 2 Low	CAN -
Connector 3	H	CAN 3 high	CAN +
Connector 3	G	CAN 3 Low	CAN -

3 Race Studio 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: **PECTEL**
- ECU Model: **SQ6_OMEGA_CAN**

4 “PECTEL – SQ6_OMEGA_CAN” Protocol

Channels received by AiM devices connected to "PECTEL - SQ6_OMEGA_CAN" protocol are:

CHANNEL NAME	FUNCTION
CAN RPM	Engine RPM
CAN GEAR	Engaged gear
CAN SPEED	Vehicle speed
CAN FR SPEED	Front right wheel speed
CAN FL SPEED	Front left wheel speed
CAN RL SPEED	Rear left wheel speed
CAN RR SPEED	Rear right wheel speed
CAN TURBO2	Turbo speed 2
CAN TURBO1	Turbo speed 1
CAN ECT	Engine coolant temperature
CAN TEX1	Thermocouple 1 Temperature
CAN TEX2	Thermocouple 2 Temperature
CAN TEX3	Thermocouple 3 temperature
CAN ACT	Intake air temperature
CAN AAT	Ambient temperature
CAN EOT	Engine oil temperature

CAN FT	Fuel temperature
CAN ECUT	ECU internal temperature
CAN EOP	Engine oil pressure
CAN BRAKE P F	Front brake pressure
CAN BRAKE P R	Rear brake pressure
CAN FP	Fuel pressure
CAN FRP	Fuel rail pressure
CAN MAP	Manifold air pressure
CAN PRP	Restrictor pressure
CAN CRANK PRES	Crank pressure
CAN P WAT	Water pressure
CAN P SYS	Transmission system pressure
CAN BAP	Barometric pressure
CAN WG TARGET	Waste gate target
CAN TPS A	Throttle position sensor A
CAN STEER	Steering position sensor
CAN TPS C	Throttle position sensor C
CAN IGN ANG	Ignition angle
CAN TPS B	Throttle position sensor B
CAN D WG TOTAL	Waste gate total
CAN PPS	Pedal position sensor
CAN INJ TIME	Injection time
CAN VBAT	Battery voltage
CAN GEAR CUT	Gear cut load cell voltage
CAN FUEL USED	Fuel used
CAN LAMB3	Lambda 3
CAN LAMB4	Lambda 4
CAN LAMB1	Lambda 1
CAN LAMB2	Lambda 2
CAN CAL POT	Calibration potentiometer
CAN TCS POT	Traction control system potentiometer position
CAN BOOST POT	Boost pressure

CAN OIL LEVEL	Oil level
CAN P2P SW	Push to pass switch on
CAN ENGINE ERR	Engine error
CAN ALS STATE	ALS state
CAN TCS STATE	Traction control system state
CAN BRAKE SW	Brake switch

Technical note: not all data channels outlined in the ECU template are validated for each manufacturer model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.