AIM Infotech

Nemesis 2 ECU for Ducati

Release 1.01

This tutorial explains how to connect Nemesis 2 ECU to AIM loggers using the CAN Bus.
For any further information concerning ECU firmware / software settings and/or upgrading it is always recommended to address to the ECU dealer.

1 Bike Models

Nemesis 2 Plug&Play ECU fits perfectly the following Ducati Bike models (all years):

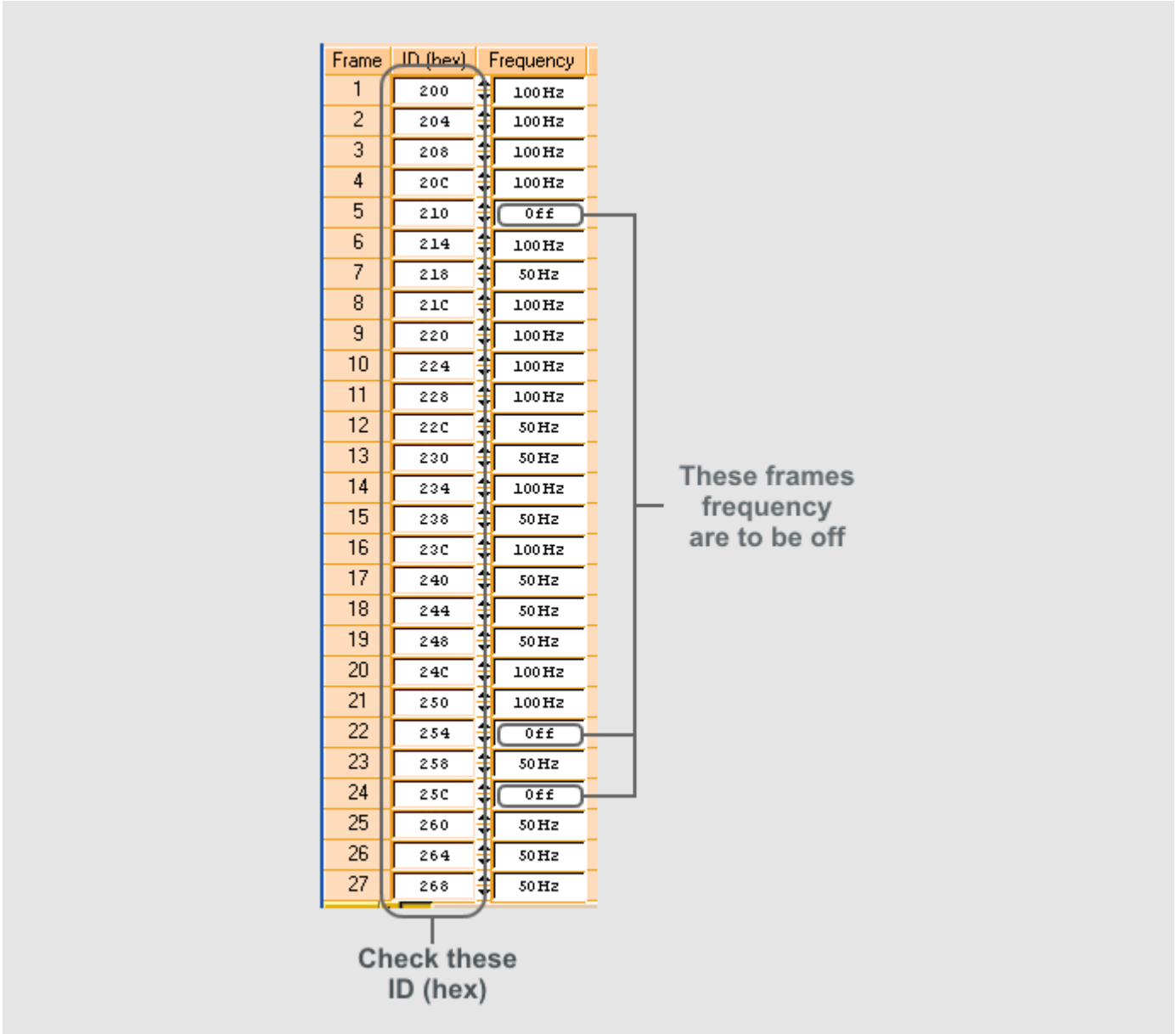
- Ducati 749;
- Ducati 749S;
- Ducati 749R;
- Ducati 999;
- Ducati 999S;
- Ducati 999R;
- Ducati 848;
- Ducati 1098;
- Ducati 1098S;
- Ducati 1098R;
- Ducati 1198;
- Ducati 1198.

2
ECU Software setting

For Nemesis 2 ECU to correctly communicate with AIM loggers the ECU is to be set using MON 175 software that comes with the ECU. Run it and open “CAN-Acquisition” table as shown here below.

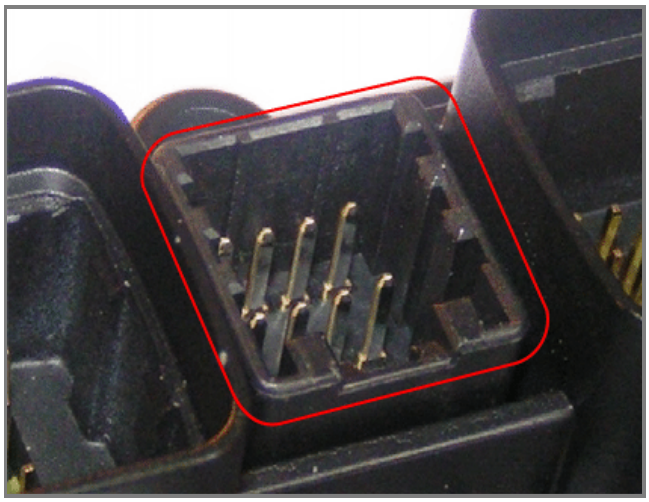
Please note: according to MON software version this page can be slightly different.

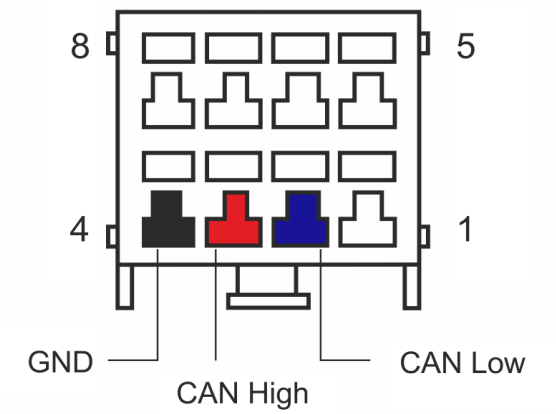
The column to be set is the first one on the left labelled “ID(hex)”. Please check that set values are as shown here below. It is also important to check that frames 6, 22 and 24 frequency is set “OFF” because these frames should remain disabled.



3
Wiring connection

Nemesis 2 ECU features a data transmission bus based on CAN on the front central AMP connector, highlighted here below.





All AiM devices are provided with a 120 Ohm CAN termination resistor. To make them communicate with Nemesis 2 ECU it is necessary to remove it. SoloDL and EVO4 resistor is on the ECU connection cable and it is thereby possible to remove it, while in all MXL the resistor is integrated and it is not removable. For this reason the wiring connection is different. Here below are AMP connector pinout as well as the different connection tables.

AMP Pin	**Pin function**	**EVO4, SoloDL cable**
Pin 2	Can Low	CAN-
Pin 3	Can High	CAN+

AMP Pin	**Pin function**	**MXL cable**
Pin3	CAN High	CAN+
Pin4	GND	CAN-

4 AIM Logger configuration

Before connecting the ECU to the loggerset it up as connected to that ECU.

Run Race Studio 2 software and follow this path:

- Device Configuration –> Select the device you are using;
- select the configuration or press “New” to create a new one;
- select ECU manufacturer “DUCATI” and ECU Model “ECU_Nemesis_2”;
- transmit the configuration to the device pressing “Transmit”.

5 Available channels

Channels received by AIM loggers connected to Nemesis 2 ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	N2_RPM	RPM
ECU_2	N2_SPEED	Bike speed in km/h taken from rear wheel speed sensro that is wired to the ECU
ECU_3	N2_SMOT_ERRORS	Engine speed sensor error count
ECU_4	N2_GAP_ERRORS	Crank wheel error in gap count
ECU_5	N2_THROTTLE	Throttle sensor position
ECU_6	N2_LAMBDA	Value of lambda as calibrated in AFR by the configuration file (if fitted)
ECU_7	N2_ADVANCE_1	Final corrected ignition advance – horizontal
ECU_8	N2_ADVANCE_2	Final corrected ignition advance – vertical
ECU_9	N2_TEROG_1	Final injection time after corrections in m/sec - horizontal
ECU_10	N2_TEROG_2	Final injection time after corrections in m/sec - vertical
ECU_11	N2_TEROG_BASE1	Base map fuel injection time in m/sec - horizontal
ECU_12	N2_TEROG_BASE2	Base map fuel injection time in m/sec - vertical
ECU_13	N2_KACYL_1	Correction advance - horizontal - deg - from trim map

ECU_14	N2_KACYL_2	Correction advance - vertical - deg - from trim map
ECU_15	N2_KJCYL_1	Correction injection - horizontal - ms - from trim map
ECU_16	N2_KJCYL_2	Correction injection - vertical - ms - from trim map
ECU_17	N2_KABNC_1	Correction advance - horizontal - deg - temp trim
ECU_18	N2_KABNC_2	Correction advance - vertical - deg - temp trim
ECU_19	N2_KJBNC_1	Correction injection - horizontal - ms - temp trim
ECU_20	N2_KJBNC_2	Correction injection - vertical - ms - temp trim
ECU_21	N2_KJCRANK	Correction injection - function of crancking map
ECU_22	N2_KJBNC	Correction injection – all cyl – ms – temp trim
ECU_23	N2_KABNC	Correction advance – all cyl – deg – temp trim
ECU_24	N2_KFBNC	Correction phase – all cyl – deg – temp trim
ECU_25	N2_DJDINT	Final ms injection correction – from throttle transient
ECU_26	N2_DADINT	Final deg advance correction – from throttle transient
ECU_27	N2_DJDINT_RPM	ms injection correction – from throttle transient / Rpm
ECU_28	N2_DJDINT_H2O	ms injection correction – from throttle transient / water
ECU_29	N2_TETABASE	Advance base map
ECU_30	N2_PHASE	Final Injection phase angle
ECU_31	N2_PHASE_BASE	Base Injection phase angle map
ECU_32	N2_ADV_TRANS	Advance transient calculation / function throttle
ECU_33	N2_INJ_TRANS	Injection transient calculation / function throttle
ECU_34	N2_KJTAIR	Injection correction – function of air temp
ECU_35	N2_KATAIR	Advance correction – function of air temp
ECU_36	N2_KJTH20	Injection correction – function of water temp
ECU_37	N2_KATH2O	Advance correction – function of water temp
ECU_38	N2_KJPBARO	Injection correction – function of air pressure
ECU_39	N2_KAPBARO	Advance correction – function of air pressure
ECU_40	N2_IDLE_RPM	Idle set point – RPM target
ECU_41	N2_STEP	Idle step %
ECU_42	N2_AIR_TEMP	Air temperature - deg°
ECU_43	N2_WATER_TEMP	Water temperature - deg°
ECU_44	N2_BARO_PRESS	Air pressure in millibar
ECU_45	N2_DWELL	Coil charge time - ms

ECU_46	N2_BATTERY	Battery voltage
ECU_47	N2_CRANKING	Crancking
ECU_48	N2_BRAKE_SW	Brake switch
ECU_49	N2_NEUTRAL	Neutral sensor
ECU_50	N2_SIDE_STAND	Side stand sensor