



AiM Infotech

Michl Motorsport MM5 ECU

Release 1.01

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ECU



This tutorial explains how to connect Michl Motorsport ECU to AiM devices. Supported models are:

- MM5 from firmware version V.154 onward

# 1 Software Setup

MM5 ECU needs to be set up via "ECU Michl Motorsport" software. Run it and this panel appears.

- go to motor layer and ensure that CAN parameters highlighted here below are enabled.

The screenshot shows the "ECU Michl Motorsport" software interface, specifically the "Motor" layer settings. The window title is "ECU Michl Motorsport - [Nastavení el. klapka\TSIRS110628A]". The menu bar includes "Soubor", "Editace", "Jednotka", "Okna", "Nástroje", and "Nápověda". The toolbar contains "Nastavení", "Graficky", "Grafika", "Reference", "Stav", "Záznam", "Naladění", "Závady", "Ověření", and "Terminál". The main menu includes "Obecné", "Osy", "Palivo", "Zapalování", "Volnoběh", "Omezení", "Přechody", "Emise", "Výstupy", "Ochran", "Závady", "Snímače", "Motor", and "Vstupy".

The "Motor" layer settings are displayed in a grid. The "vstřík 1" section includes "základní úhel" (0,0), "výstup" (budič 3), "× korekce dodávky" (žádná), "+ korekce úhlu vstříku" (žádná), "perioda peak & hold" (100 μs), "základní střída peak & hold" (50 %), "horní výstup" (budič 2), and "přídavný horní výstup" (budič 1). The "režim vstříkovače" section includes "peak & hold", "palivová rampa č.2", "interpolace úhlu vstříku", "horní omezení doby vstříku", "úhel vstříku odpovídá ukončení", "vstřík bude každých 360°", "sekundární smyčka lambda regulace", and "sekundární snímač zátěže".

The "zapalování 1" section includes "základní úhel" (0,0), "výstup" (budič 1), "+ korekce předstihu" (žádná), and "+ korekce délky nabíjení" (žádná). The "režim zapalování" section includes "sekundární snímač zátěže".

The "Parametry horních budičů injektorů" section includes "předstih zapnutí spodního budiče" (50 μs), "přesah vypnutí spodního budiče" (10 μs), "doba prvního zapnutí horního budiče" (700 μs), "doba prvního vypnutí horního budiče" (140 μs), "maximální doba přídavného budiče" (350 μs), "perioda šířkové modulace" (100 μs), and "střída šířkové modulace" (40 %).

The "snímání polohy kliky a vačky" section includes "crank falling edge", "crank tooth length measur", "crank sensor inductive", "ignition interference crank sensor filtration", "počet zubů kliky při startu" (3), "vstup kliky" (i33 pin 87 (PS1)), "systém snímání kliky" (60:2), "cam falling edge", "cam tooth length measur", "cam sensor inductive", "ignition interference cam sensor filtration", "cam teeth count while start" (2), "vstup vačky" (i34 pin 86 (PS2)), "swap cam and crank inputs", "vstup sekundární vačky" (žádný), "cam maximum length" (320,0), "cam minimum length" (260,0), "cam window start" (0,0), "cam window end" (721,4), "referenční úhel vačky" (381,2), and "sensor blocking during ignition" (38,4 μs).

The "CAN bus active" and "Tx Datalog CAN active" options are highlighted with red boxes. Other options include "Rx ABS CAN active", "digital inputs have pulldown", "digital inputs have pullup", "tachometer output" (o1/0,5A+PU pin 49), "fuel pump output" (o15/1,0A pin 65), "vzorkování napájecího napětí", "úhel vzorkování" (100,0), and "perioda vzorkování" (180,0).

## 2

# Wiring connection

MM5 ECU features a data transmission bus based on CAN. This is available on the ECU front connector shown. Below the image you find the connection table.



Connector pin	Pin function	AiM cable
60	CAN High	CAN+
58	CAN Low	CAN-

## 3

# AiM device configuration

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Before connecting AiM device to the ECU, set this up using AiM Race Studio Software. The parameters to select in the device configuration are:

- ECU manufacturer "MICHL\_MOTORSPORT"
- ECU Model "ECU\_MM5"

## 4

# Available channels

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Channels received by AiM devices connected to "MICHL MOTORSPORT" "ECU\_MM5" protocol are.

<b>ID</b>	<b>CHANNEL NAME</b>	<b>FUNCTION</b>
ECU_1	MM_RPM	RPM
ECU_2	MM_LOAD	Engine load
ECU_3	MM_ADV	Ignition advance
ECU_4	MM_ONTIME	Injector on time
ECU_5	MM_ANGLE	Injector fire angle
ECU_6	MM_DUTY	Injector duty
ECU_7	MM_EGO1	Exhaust gas oxygen sensor 1
ECU_8	MM_EGO2	Exhaust gas oxygen sensor 2
ECU_9	MM_EGOL1	Lambda correction 1
ECU_10	MM_EGOL2	Lambda correction 2
ECU_11	MM_MAP	Manifold air pressure
ECU_12	MM_OIP	Oil pressure
ECU_13	MM_FUP	Fuel pressure
ECU_14	MM_BAP	Barometric pressure
ECU_15	MM_KNOCK1	Knock sensor value 1
ECU_16	MM_KNOCK2	Knock sensor value 2



ECU_17	MM_AP1	Gas pedal position 1
ECU_18	MM_AP2	Gas pedal position 2
ECU_19	MM_TPS	Throttle position
ECU_20	MM_ITS	Idle throttle position
ECU_21	MM_BATT	Battery supply
ECU_22	MM_MAV	Manifold air volume
ECU_23	MM_STAT_MSB	Binary status description higher
ECU_24	MM_STAT_LSB	Binary status description lower
ECU_25	MM_CAM1	Camshaft angle
ECU_26	MM_CAM2	Second camshaft angle
ECU_27	MM_SLIP	Calculated wheel slip
ECU_28	MM_SPEED_LEFT	Left wheel speed
ECU_29	MM_SPEED_RIGHT	Right wheel speed
ECU_30	MM_SPEED_DRVN	Driven wheel speed
ECU_31	MM_SPEED_PULL	Pulled wheel speed
ECU_32	MM_FHP	Fuel high pressure
ECU_33	MM_MIP	Air pressure before throttle
ECU_34	MM_ITP	Idle throttle required position
ECU_35	MM_SPEED	Average wheel speed
ECU_36	MM_FUT	Fuel temperature
ECU_37	MM_CLT	Engine coolant temperature
ECU_38	MM_OIT	Oil temperature
ECU_39	MM_MAT	Manifold air temperature
ECU_40	MM_HDT	Heat temperature