

AiM Infotech

E-Race D4-E46-M48 ECUs

Release 1.00

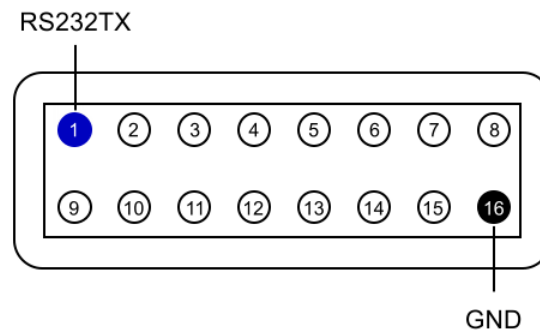


This tutorial explains how to connect E-Race D4, E46 and M48 ECUs to AiM devices.

1

Wiring connection

E-Race D4, E46 and M48 ECUs feature a serial data transmission bus on the front connector. Here below you see connector pinout and connection table.



Front connector pin	Pin function	AiM cable
1	RS232TX	RS232RX
16	GROUND	GND

2

AiM device configuration

Before connecting AiM device to the ECU, set it up as follows:

Run Race Studio 2 software and select:

- Device Configuration → Select the device you are using;
- select the configuration or press "New" to create a new one;
- select ECU manufacturer "E-Race" and, according to your ECU Model:
 - "D4" or
 - "E46_M48"
- transmit the configuration to the device pressing "Transmit".

3

Available channels

Channels received by AiM devices depends on the protocol you set in Race Studio software.

3.1

E-Race E4 protocol

Channels received by AiM devices connected to E-Race D4 protocol are

ID	CHANNEL NAME	FUNCTION
ECU_1	D4_RPM	RPM
ECU_2	D4_GAS_PEDAL	Gas pedal
ECU_3	D4_GAS_PEDAL_ADC	Gas pedal advanced counter
ECU_4	D4_AIR_PRESS	Air pressure
ECU_5	D4_INPUT1	Custom input switch 1
ECU_6	D4_INPUT2	Custom input switch 2
ECU_7	D4_INPUT3	Custom input switch 3
ECU_8	D4_OUTPUT1	Custom output switch 1
ECU_9	D4_OUTPUT2	Custom output switch 2
ECU_10	D4_OUTPUT3	Custom output switch 3
ECU_11	D4_OUTPUT4	Custom output switch 4
ECU_12	D4_AIR_TEMP	Intake air temperature
ECU_13	D4_BASE_INJT	Base injection time
ECU_14	D4_COUPURE	Cut percentage
ECU_15	D4_BATT_VOLT	Battery supply
ECU_16	D4_MAX_INJT	Max injection time
ECU_17	D4_APP_INJT	Applied injection time
ECU_18	D4_INJ_ADV	Injection advance
ECU_19	D4_TURBO_VALVE	Turbo valve

ECU_20	D4_PWM1	Power module 1 output
ECU_21	D4_ECU_TYPE	ECU type
ECU_22	D4_ECU_SN	ECU serial number
ECU_23	D4_CRK_ULO_ERR	Crankshaft sensor error while engine unloaded
ECU_24	D4_CRK_LO_ERR	Crankshaft sensor error while engine loaded
ECU_25	D4_GAS_PDL_ERR	Gas pedal error
ECU_26	D4_AIR_PRS_ERR	Air pressure error
ECU_27	D4_AIR_TEM_ERR	Intake air temperature error
ECU_28	D4_VBAT_ERR	Battery supply error
ECU_29	D4_OVBOOST_ERR	Overboost error
ECU_30	D4_AIRHAIT_ERR	Air over heat

3.2

E-Race E46-M48 protocol

Channels received by AiM devices connected to E-Race "E46_M48" protocol are

ID	CHANNEL NAME	FUNCTION
ECU_1	E46_RPM	RPM
ECU_2	E46_THROTTLE	Throttle position sensor
ECU_3	E46_THRT_ADC	Throttle advance
ECU_4	E46_AIR_PRESS_SENSOR	Air pressure sensor
ECU_5	E46_AIR_TEMP	Air temperature
ECU_6	E46_ENG_TEMP	Engine temperature
ECU_7	E46_INPUT1	Custom input switch 1
ECU_8	E46_INPUT2	Custom input switch 2
ECU_9	E46_INPUT3	Custom input switch 3
ECU_10	E46_OUTPUT1	Custom output switch 1
ECU_11	E46_OUTPUT2	Custom output switch 2
ECU_12	E46_OUTPUT3	Custom output switch 3
ECU_13	E46_OUTPUT4	Custom output switch 4



ECU_14	E46_PWM_OUTPUT	Pulse width modulation output
ECU_15	E46_PWM_OUT_ERR	Pulse width modulation output error
ECU_16	E46_BATT_VOLTAGE	Battery voltage
ECU_17	E46_INJ_TIME1	Injection time 1
ECU_18	E46_INJ_TIME2	Injection time 2
ECU_19	E46_IGN_POINT	Ignition point
ECU_20	E46_DWELL_TIME	Coil dwell time
ECU_21	E46_ECU_TYPE	ECU Type
ECU_22	E46_ECU_SN	ECU Serial Number
ECU_23	E46_RPM_ERROR	RPM error
ECU_24	E46_TPS_ERROR	Throttle position error
ECU_25	E46_AIR_PRESS_ERR	Air pressure error
ECU_26	E46_ECT_ERROR	Engine cooling temperature
ECU_27	E46_AIR_T_ERR	Air temperature error
ECU_28	E46_BATT_V_ERR	Battery voltage error
ECU_29	E46_OVR_BOOST_ERR	Over boost error
ECU_30	E46_OVR_REVS_ERR	Over revs error