AiM Infotech

MekTronik MK E6 ECU

Release 1.01

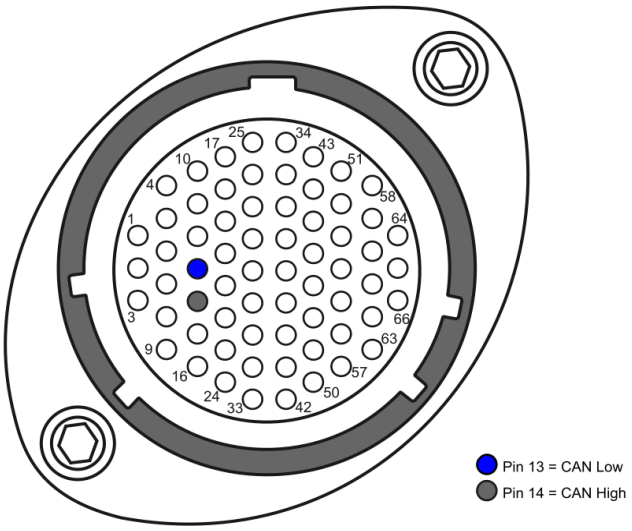
ECU

This tutorial explains how to connect MekTronik ECU to AiM devices. Supported model is:

- Mektronik MKE6 Firmware versions from 1.0 to 3.1 500k

1 Connection to AiM devices

MekTronic MKE6 ECU features a bus communication protocol based on CAN on the Deutsch Autosport 66 pins front male connector. Here below is connector pinout – front view –as well as connection table.



66 pins Autosport male connector pin	Pin function	AiM cable
13	CAN Low	CAN-
14	CAN High	CAN+

2 AiM Logger 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: “MekTronic”
- ECU Model:
    - "MK_E6_1.0_2.0" for ECUs with firmware version 1.0 or 2.0
    - "MK_E6_2.1" for ECUs with firmware version 2.1
    - "MK_E6_3.0_1Mbit" for ECUs with firmware version 3.0 and 1Mbit rate
    - "MK_E6_3.1_500K" for ECUs with firmware version 3.1 and 500k bit rate

3 Available channels

Channels received by AiM devices connected to MekTronic MKE6 ECU changes according to the selected protocol.

3.1 "MekTronic" "MK_E6_1.0_2.0" protocol

Channels received by AiM devices connected to "MekTronic" "MK_E6_1.0_2.0" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MK6_ENG_RPM720	RPM
ECU_2	MK6_CALC_TPS	Calculated Throttle position sensor
ECU_3	MK6_LOAD1	Engine Load 1
ECU_4	MK6_CALC_DRPM	RPM Derivative
ECU_5	MK6_VCL_WHSP_F	Front wheel speed sensor

ECU_6	MK6_VCL_WHSP_R	Rear wheel speed sensor
ECU_7	MK6_VCL_SPEED	Vehicle speed
ECU_8	MK6_VCL_SLIP	Vehicle Slip
ECU_9	MK6_WTS	Engine coolant temperature
ECU_10	MK6_ATS	Intake air temperature
ECU_11	MK6_OTS	Oil temperature
ECU_12	MK6_FTS	Fuel Temperature
ECU_13	MK6_MAP	Manifold air pressure
ECU_14	MK6_BAP	Barometric air pressure
ECU_15	MK6_OPS	Oil pressure
ECU_16	MK6_FPS	Fuel pressure
ECU_17	MK6_LAMBDA_1	Lambda sensor 1
ECU_18	MK6_LAMBDA_2	Lambda sensor 2
ECU_19	MK6_CUT_LEVEL	Engine Cut level
ECU_20	MK6_CUT_PATTERN	Engine cut pattern
ECU_21	MK6_GEAR_POS	Gear sensor
ECU_22	MK6_WORK_MODE	Selected Map
ECU_23	MK6_TRACCTRL_SP	Traction Control Set Point
ECU_24	MK6_ECU_TIME_SEC	ECU Time
ECU_25	MK6_GEARCUT_ADC	Gear cut level (raw value)
ECU_26	MK6_V_POWER	Battery supply
ECU_27	MK6_V_REF	V reference
ECU_28	MK6_ENG_REVSCTR	Engine revolutions counter
ECU_29	MK6_ENG_STATE	Engine status
ECU_30	MK6_ENG_SMOTC	Engine SMOT Counter
ECU_31	MK6_ENG_ERROR	Engine Error
ECU_32	MK6_IN_TBOARD	ECU temperature
ECU_33	MK6_PID1_ERROR	VVT Right intake air error
ECU_34	MK6_PID2_ERROR	VVT Right output air error
ECU_35	MK6_PID3_ERROR	VVT Left intake air error
ECU_36	MK6_PID4_ERROR	VVT Left output air error
ECU_37	MK6_SPARE_S1	Custom channel

ECU_38	MK6_SPARE_S2	Custom channel
ECU_39	MK6_SPARE_S3	Custom channel
ECU_40	MK6_SPARE_S4	Custom channel
ECU_41	MK6_SPARE_S5	Custom channel
ECU_42	MK6_SPARE_S6	Custom channel
ECU_43	MK6_SPARE_S7	Custom channel
ECU_44	MK6_SPARE_S8	Custom channel
ECU_45	MK6_SPARE_U9	Custom channel
ECU_46	MK6_SPARE_U10	Custom channel
ECU_47	MK6_SPARE_U11	Custom channel
ECU_48	MK6_SPARE_U12	Custom channel
ECU_49	MK6_SPARE_U13	Custom channel
ECU_50	MK6_SPARE_U14	Custom channel
ECU_51	MK6_SPARE_U15	Custom channel
ECU_52	MK6_SPARE_U16	Custom channel

3.2 "MekTronic" "MK_E6_2.1" protocol

Channels received by AiM devices connected to "MekTronic" "MK_E6_2.1" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MK6_ENG_RPM720	RPM
ECU_2	MK6_CALC_TPS	Calculated Throttle position sensor
ECU_3	MK6_LOAD1	Engine Load
ECU_4	MK6_CALC_DRPM	RPM Derivative
ECU_5	MK6_VCL_WHSP_F	Front wheel speed
ECU_6	MK6_VCL_WHSP_R	Rear wheel speed
ECU_7	MK6_VCL_SPEED	Vehicle speed
ECU_8	MK6_VCL_SLIP	Vehicle Slip
ECU_9	MK6_WTS	Engine coolant temperature

ECU_10	MK6_ATS	Intake air temperature
ECU_11	MK6_OTS	Oil Temperature
ECU_12	MK6_FTS	Fuel Temperature
ECU_13	MK6_MAP	Manifold air pressure
ECU_14	MK6_BAP	Barometric pressure
ECU_15	MK6_OPS	Oil pressure
ECU_16	MK6_FPS	Fuel pressure
ECU_17	MK6_LAMBDA_1	Lambda sensor 1
ECU_18	MK6_LAMBDA_2	Lambda sensor 2
ECU_19	MK6_CUT_LEVEL	Engine Cut level
ECU_20	MK6_CUT_PATTERN	Engine cut pattern
ECU_21	MK6_GEAR_POS	Gear sensor
ECU_22	MK6_WORK_MODE	Selected Map
ECU_23	MK6_TRACCTRL_SP	Traction Control Set Point
ECU_24	MK6_ECU_TIME_SEC	ECU Time
ECU_25	MK6_GEARCUT_ADC	Gear cut level (raw value)
ECU_26	MK6_V_POWER	Battery supply
ECU_27	MK6_V_REF	V reference
ECU_28	MK6_ENG_REVSCTR	Revolutions counter
ECU_29	MK6_ENG_STATE	Engine status
ECU_30	MK6_ENG_SMOTC	SMOT Counter
ECU_31	MK6_ENG_ERROR	Engine error
ECU_32	MK6_IN_TBOARD	ECU temperature
ECU_33	MK6_PID1_ERROR	VVT Right intake air error
ECU_34	MK6_PID2_ERROR	VVT Right output air error
ECU_35	MK6_PID3_ERROR	VVT Left intake air error
ECU_36	MK6_PID4_ERROR	VVT Left output air error
ECU_37	MK6_SPARE_S1	Custom channel
ECU_38	MK6_SPARE_S2	Custom channel
ECU_39	MK6_SPARE_S3	Custom channel
ECU_40	MK6_SPARE_S4	Custom channel
ECU_41	MK6_SPARE_S5	Custom channel

ECU_42	MK6_SPARE_S6	Custom channel
ECU_43	MK6_SPARE_S7	Custom channel
ECU_44	MK6_SPARE_S8	Custom channel
ECU_45	MK6_SPARE_U9	Custom channel
ECU_46	MK6_SPARE_U10	Custom channel
ECU_47	MK6_SPARE_U11	Custom channel
ECU_48	MK6_SPARE_U12	Custom channel
ECU_49	MK6_SPARE_U13	Custom channel
ECU_50	MK6_SPARE_U14	Custom channel
ECU_51	MK6_SPARE_U15	Custom channel
ECU_52	MK6_SPARE_U16	Custom channel

3.3 "MekTronic" "MK_E6_3.0_1Mbit" protocol

Channels received by AiM devices connected to "MekTronic" "MK_E6_3.0_1Mbit" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	E_RPM720	RPM
ECU_2	E_LOAD	Engine load
ECU_3	E_CUTLEV	Engine cut level
ECU_4	E_CUTPAT	Engine cut pattern
ECU_5	E_LAM1	Lambda sensor 1
ECU_6	E_LAM2	Lambda sensor 2
ECU_7	E_LAM1_K	Correction Lambda 1
ECU_8	E_LAM2_K	Correction Lambda 2
ECU_9	E_GAS	Throttle position
ECU_10	E_TSP_SP	Throttle set point
ECU_11	E_TPS_1	Throttle position sensor 1
ECU_12	E_TPS_2	Throttle position sensor 2
ECU_13	E_MAP	Manifold Air pressure

ECU_14	E_BAP	Barometric air pressure
ECU_15	E_OPS	Oil pressure
ECU_16	E_FPS	Fuel pressure
ECU_17	E_WTS	Engine coolant temperature
ECU_18	E_ATS	Intake air temperature
ECU_19	E_OTS	Oil temperature
ECU_20	E_FTS	Fuel temperature
ECU_21	E_GEARPOS	Gear sensor
ECU_22	D_REVS	Engine revolution at start up
ECU_23	D_STR_ON	Active strategy
ECU_24	D_STR_REC	Recovery strategy
ECU_25	V_SPD_FRONT	Front vehicle speed
ECU_26	V_SPD_REAR	Rear vehicle speed
ECU_27	V_SLIP	Vehicle slip
ECU_28	V_SLIP_SP	Target slip
ECU_29	V_ACCEL_X	Horizontal accelerometer
ECU_30	V_ACCEL_Y	Vertical Accelerometer
ECU_31	V_YAW_RATE	Yaw rate
ECU_32	V_ROLL_ANGLE	Rolling angle
ECU_33	V_BRK_FRONT	Front break pressure
ECU_34	V_BRK_REAR	Rear break pressure
ECU_35	V_AUX1	Auxiliary 1
ECU_36	V_AUX2	Auxiliary 2
ECU_37	R_MODE	Selected mode
ECU_38	R_TCSET	Traction control setup
ECU_39	R_TCSET_K	Slip increment from traction control set
ECU_40	R_ANGLE_K	Slip increment from bike angle
ECU_41	D_SMOT_CTR	SMOT Counter
ECU_42	D_ENG_ERR	Engine error
ECU_43	D_ENG_STATE	Engine status
ECU_44	D_DBW_ERR	Drive by wire error
ECU_45	D_AN_GEARPOS	Gear position tension

ECU_46	D_AN_LOADCELL	Gear cut level (raw value)
ECU_47	D_SPD_FRONT	Front speed
ECU_48	D_SPD_REAR	Rear speed
ECU_49	D_VPOWER	Battery supply
ECU_50	D_VREF	V reference
ECU_51	D_AN_AUX1	Auxiliary sensor 1 tension
ECU_52	D_AN_TILT	Tilt sensor tension
ECU_53	D_ECUTIME	ECU Time
ECU_54	D_ECUTEMP	ECU Temperature
ECU_55	D_ECU_INT1	Internal ECU diagnostic 1
ECU_56	D_ECU_INT2	Internal ECU diagnostic 2
ECU_57	P_CP_1	Proportional computation 1
ECU_58	P_CI_1	Integral computation 1
ECU_59	P_CD_1	Derivative computation 1
ECU_60	P_CFF_1	Feed forward computation 1
ECU_61	P_CP_2	Proportional computation 2
ECU_62	P_CI_2	Integrative computation 2
ECU_63	P_CD_2	Derivative computation 2
ECU_64	P_CFF_2	Feed Forward computation 2

3.4 "MekTronic" "MK_E6_3.1_500k" protocol

Channels received by AiM devices connected to "MekTronic" "MK_E6_3.1_500K" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	E_RPM720	RPM
ECU_2	E_LOAD	Engine load
ECU_3	E_CUTLEV	Engine Cut level
ECU_4	E_CUTPAT	Engine cut pattern
ECU_5	E_LAM1	Lambda sensor 1

ECU_6	E_LAM2	Lambda sensor 2
ECU_7	E_LAM1_K	Correction Lambda 1
ECU_8	E_LAM2_K	Correction Lambda 2
ECU_9	E_GAS	Throttle position
ECU_10	E_TSP_SP	Throttle set point
ECU_11	E_TPS_1	Throttle position sensor 1
ECU_12	E_TPS_2	Throttle position sensor 2
ECU_13	E_MAP	Manifold air pressure
ECU_14	E_BAP	Barometric pressure
ECU_15	E_OPS	Oil pressure
ECU_16	E_FPS	Fuel pressure
ECU_17	E_WTS	Water temperature
ECU_18	E_ATS	Intake air temperature
ECU_19	E_OTS	Oil temperature
ECU_20	E_FTS	Fuel temperature
ECU_21	E_GEARPOS	Gear position
ECU_22	D_REVS	Engine revolution at start up
ECU_23	D_STR_ON	Active strategy
ECU_24	D_STR_REC	Recovery strategy
ECU_25	V_SPD_FRONT	Front vehicle speed
ECU_26	V_SPD_REAR	Rear vehicle speed
ECU_27	V_SLIP	Vehicle slip
ECU_28	V_SLIP_SP	Target slip
ECU_29	V_ACCEL_X	Horizontal accelerometer
ECU_30	V_ACCEL_Y	Vertical Accelerometer
ECU_31	V_YAW_RATE	Yaw rate
ECU_32	V_ROLL_ANGLE	Rolling angle
ECU_33	V_BRK_FRONT	Front break pressure
ECU_34	V_BRK_REAR	Rear break pressure
ECU_35	V_AUX1	Auxiliary 1
ECU_36	V_AUX2	Auxiliary 2
ECU_37	R_MODE	Selected mode

ECU_38	R_TCSET	TC setup
ECU_39	R_TCSET_K	Slip increment from TC set
ECU_40	R_ANGLE_K	Slip increment from bike angle
ECU_41	D_SMOT_CTR	SMOT counter
ECU_42	D_ENG_ERR	Engine error
ECU_43	D_ENG_STATE	Engine status
ECU_44	D_DBW_ERR	Drive by wire error
ECU_45	D_AN_GEARPOS	Gear position tension
ECU_46	D_AN_LOADCELL	Gear cut level (raw value)
ECU_47	D_SPD_FRONT	Front speed
ECU_48	D_SPD_REAR	Rear speed
ECU_49	D_VPOWER	Battery voltage
ECU_50	D_VREF	V reference
ECU_51	D_AN_AUX1	Auxiliary sensor 1 tension
ECU_52	D_AN_TILT	Tilt sensor tension
ECU_53	D_ECUTIME	ECU time
ECU_54	D_ECUTEMP	ECU temperature
ECU_55	D_ECU_INT1	ECU internal diagnostic 1
ECU_56	D_ECU_INT2	ECU internal diagnostic 2
ECU_57	P_CP_1	Proportional computation 1
ECU_58	P_CI_1	Integral computation 1
ECU_59	P_CD_1	Derivative computation 1
ECU_60	P_CFF_1	Feed forward computation 1
ECU_61	P_CP_2	Proportional computation 2
ECU_62	P_CI_2	Integrative computation 2
ECU_63	P_CD_2	Derivative computation 2
ECU_64	P_CFF_2	Feed forward computation 2