AiM Infotech

AiM CAN protocol

Release 1.01

AiM has designed and developed a complete proprietary CAN protocol.

It is already included in Race Studio software so to allow ECU Manufacturer, developing teams and technicians to connect their ECU to AiM devices.

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AiM CAN Protocol template

AiM CAN protocol features are:

- 500 Kbit or 1 Mbit
- little endian

Here below is AiM CAN template.

	ID	CHANNEL NAME	SHORT NAME	BYTE HIGH	BYTE LOW	MULT	DIV	OFFSET	SIGN	SENSOR	LOW RANGE	HIGH RANGE
0	5F0	ECU_RPM	RPM	1	0	1	1	0	0	RPM	0	65535
1	5F0	ECU_TPS	TPS	3	2	1	65	0	0	%x10	0,0	100,8
2	5F0	ECU_PPS	PPS	5	4	1	65	0	0	%x10	0,0	100,8
3	5F0	ECU_VEH_SPD	VSDP	7	6	1	10	0	0	km/hx10	0,0	655,3

4	5F1	ECU_WS_FR	WSFR	1	0	1	10	0	0	km/hx10	0,0	655,3
5	5F1	ECU_WS_FL	WSFL	3	2	1	10	0	0	km/hx10	0,0	655,3
6	5F1	ECU_WS_RR	WSRR	5	4	1	10	0	0	km/hx10	0,0	655,3
7	5F1	ECU_WS_RL	WSRL	7	6	1	10	0	0	km/hx10	0,0	655,3
8	5F2	ECU_INT_AIR_T	IAT	1	0	1	19	-450	0	Cx10	-45,0	299,9
9	5F2	ECU_ENG_T	ECT	3	2	1	19	-450	0	Cx10	-45,0	299,9
10	5F2	ECU_FUEL_T	FUET	5	4	1	19	-450	0	Cx10	-45,0	299,9
11	5F2	ECU_OIL_T	OILT	7	6	1	19	-450	0	Cx10	-45,0	299,9
12	5F3	ECU_MAN_AIR_P	MAP	1	0	1	10	0	0	mBar	0	6553
13	5F3	ECU_BARO	BARO	3	2	1	10	0	0	mBar	0	6553
14	5F3	ECU_OIL_P	OILP	5	4	1	100	0	0	barx10	0,0	65,5
15	5F3	ECU_FUEL_P	FUEP	7	6	1	2	0	0	barx10	0,0	3276,7
16	5F4	ECU_BOOST	BOST	1	0	1	10	0	0	barx1000	0	6,553
17	5F4	ECU_V_BATT	VBAT	3	2	1	32	0	0	Vx100	0	20,47
18	5F4	ECU_FUEL_USE	FUEU	5	4	1	10	0	0	lx10	0	655,3
19	5F4	ECU_GEAR	GEAR	7	6	1	1	0	1	puro	-32767	32767
20	5F5	ECU_SHIFT_FLAG	GESH	1	0	1	1	0	1	puro	-32767	32767
21	5F5	ECU_GEAR_TIME	GETM	3	2	1	10	0	0	ms	0	6553
22	5F5	ECU_THRT_VOLT	TPSV	5	4	1	32	0	0	Vx100	0	20,47
23	5F5	ECU_FUEL_LEV	FULV	7	6	1	10	0	0	lX10	0	655,3

24	5F6	ECU_LAMBDA1	LAM1	1	0	1	2	0	0	lambdaX1000	0	32,767
25	5F6	ECU_LAMBDA2	LAM2	3	2	1	2	0	0	lambdaX1000	0	32,767
26	5F6	ECU_LAMBDA_T1	LAT1	5	4	1	6	-450	0	Cx10	-45,0	1047,2
27	5F6	ECU_LAMBDA_T2	LAT2	7	6	1	6	-450	0	Cx10	-45,0	1047,2
28	5F7	ECU_LAMB1_ERR	LA1E	1	0	1	1	0	1	puro	-32767	32767
29	5F7	ECU_LAMB2_ERR	LA2E	3	2	1	1	0	1	puro	-32767	32767
30	5F7	ECU_LAMB1_TARGET	LTA1	5	4	1	2	0	0	lambdax1000	0	32,767
31	5F7	ECU_LAMB2_TARGET	LTA2	7	6	1	2	0	0	lambdax1000	0	32,767
32	5F8	ECU_STEER_POS	STAG	1	0	1	3	0	1	DEGx10	-1.092,7	1092,8
33	5F8	ECU_STEER_SPD	STSP	3	2	1	1	0	1	DEGsX10	-3.276,8	3276,7
34	5F8	ECU_BRK_P	BRKP	5	4	1	43	0	0	barx10	0,0	152,4
35	5F8	ECU_CLUCH_P	CLUP	7	6	1	43	0	0	barx10	0,0	152,4
36	5F9	ECU_BRK_P_FR	BKFR	1	0	1	43	0	0	barx10	0,0	152,4
37	5F9	ECU_BRK_P_FL	BKFL	3	2	1	43	0	0	barx10	0,0	152,4
38	5F9	ECU_BRK_P_RR	BKRR	5	4	1	43	0	0	barx10	0,0	152,4
39	5F9	ECU_BRK_P_RL	BK_RL	7	6	1	43	0	0	barx10	0,0	152,4
40	5FA	ECU_ACC_LAT	ACLA	1	0	1	32	0	1	m/s2x100	10,24	-10,23
41	5FA	ECU_ACC_LONG	ACLO	3	2	1	32	0	1	m/s2x100	10,24	-10,23
42	5FA	ECU_GYRO	GYRO	5	4	1	3	0	1	degX100	-109,2	109,23
43	5FA	ECU_GEAR_BOX_T	GBOT	7	6	1	6	-450	0	Cx10	-45,0	1047,2

44	5FB	ECU_ENG_TORQ	ETRQ	1	0	1	1	0	1	Nmx10	-3.276,8	3676,7
45	5FB	ECU_SLIP_ANG	SLIP	3	2	1	65	0	0	%x10	0,0	100,8
46	5FB	ECU_IGN_ANG1	IGN1	5	4	1	3	0	1	degX100	-109,2	109,23
47	5FB	ECU_IGN_ANG2	IGN2	7	6	1	3	0	1	degX100	-109,2	109,23
48	5FC	ECU_INJ_TIME1	IJT1	1	0	1	10	0	0	ms	0	6553
49	5FC	ECU_INJ_TIME2	IJT2	3	2	1	10	0	0	ms	0	6553
50	5FC	ECU_INJ_P1	IJP1	5	4	1	21	0	0	BARx10	0,0	312,0
51	5FC	ECU_INJ_P2	IJP2	7	6	1	21	0	0	BARx10	0,0	312,0
52	5FD	ECU_SPARK_ANG_1	SAN1	1	0	1	3	0	1	degX100	-109,2	109,23
53	5FD	ECU_SPARK_ANG_2	SAN2	3	2	1	3	0	1	degX100	-109,2	109,23
54	5FD	ECU_SPARK_ADV_1	SAD1	5	4	1	3	0	1	degX100	-109,2	109,23
55	5FD	ECU_SPARK_ADV_2	SAD2	7	6	1	3	0	1	degX100	-109,2	109,23
56	5FE	ECC_USER01	US01	1	0	1	1	0	1	PUROx10	-3276,7	3276,7
57	5FE	ECC_USER02	US02	3	2	1	1	0	1	PUROx10	-3276,7	3276,7
58	5FE	ECC_USER03	US03	5	4	1	1	0	1	PUROx10	-3276,7	3276,7
59	5FE	ECC_USER04	US04	7	6	1	1	0	1	PUROx10	-3276,7	3276,7
60	5FF	ECC_USER05	US05	1	0	1	1	0	1	PURO	-32767	32767
61	5FF	ECC_USER06	US06	3	2	1	1	0	1	PURO	-32767	32767
62	5FF	ECC_USER07	US07	5	4	1	1	0	1	PURO	-32767	32767
63	5FF	ECC_USER08	US08	7	6	1	1	0	1	PURO	-32767	32767

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AiM Logger configuration

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

- ECU manufacturer: “AIM”
- ECU Model:
    - "CAN_1Mbit " or
    - "CAN_500kbits" according to the bit rate you are using

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Available channels

Channels received by AiM devices connected to "AIM" "CAN_1Mbit" or "CAN_500kbits" protocol are the same:

ID	CHANNEL NAME	FUNCTION
ECU_1	ECU_RPM	RPM
ECU_2	ECU_TPS	Throttle position sensor
ECU_3	ECU_PPS	Pedal position sensor
ECU_4	ECU_VEH_SPD	Vehicle speed
ECU_5	ECU_WS_FR	Front right wheel speed
ECU_6	ECU_WS_FL	Front left wheel speed
ECU_7	ECU_WS_RR	Rear right wheel speed
ECU_8	ECU_WS_RL	Rear left wheel speed
ECU_9	ECU_INT_AIR_T	Intake air temperature
ECU_10	ECU_ENG_T	Engine temperature
ECU_11	ECU_FUEL_T	Fuel temperature
ECU_12	ECU_OIL_T	Oil temperature
ECU_13	ECU_MAN_AIR_P	Manifold air pressure

ECU_14	ECU_BARO	Barometric pressure
ECU_15	ECU_OIL_P	Oil pressure
ECU_16	ECU_FUEL_P	Fuel pressure
ECU_17	ECU_BOOST	Boost pressure
ECU_18	ECU_V_BATT	Battery supply
ECU_19	ECU_FUEL_USE	Used fuel
ECU_20	ECU_GEAR	Engage gear
ECU_21	ECU_SHIFT_FLAG	Shift flag
ECU_22	ECU_GEAR_TIME	Gear timing
ECU_23	ECU_THRT_VOLT	Throttle voltage
ECU_24	ECU_FUEL_LEV	Fuel level
ECU_25	ECU_LAMBDA1	Lambda 1 value
ECU_26	ECU_LAMBDA2	Lambda 2 value
ECU_27	ECU_LAMB_T1	Lambda 1 temperature
ECU_28	ECU_LAMB_T2	Lambda 2 temperature
ECU_29	ECU_LAMB1_ERR	Lambda 1 error
ECU_30	ECU_LAMB2_ERR	Lambda 1 error
ECU_31	ECU_LAMB1_TARG	Lambda 1 target
ECU_32	ECU_LAMB2_TARG	Lambda 2 target
ECU_33	ECU_STEER_POS	Steering position
ECU_34	ECU_STEER_SPD	Steering speed
ECU_35	ECU_BRK_P	Brake pressure
ECU_36	ECU_CLUCH_P	Clutch pressure
ECU_37	ECU_BRK_P_FR	Front right wheel pressure
ECU_38	ECU_BRK_P_FL	Front left wheel pressure
ECU_39	ECU_BRK_P_RR	Rear right wheel pressure
ECU_40	ECU_BRK_P_RL	Rear left wheel pressure
ECU_41	ECU_ACC_LAT	Lateral accelerometer
ECU_42	ECU_ACC_LONG	Longitudinal accelerometer
ECU_43	ECU_GYRO	Gyroscope
ECU_44	ECU_GEAR_BOX_T	Gearbox temperature
ECU_45	ECU_ENG_TORQ	Engine torque

ECU_46	ECU_SLIP_ANG	Slip percentage
ECU_47	ECU_IGN_ANG1	Ignition angle 1
ECU_48	ECU_IGN_ANG2	Ignition angle 2
ECU_49	ECU_INJ_TIME1	Injection time 1
ECU_50	ECU_INJ_TIME2	Injection time 2
ECU_51	ECU_INJ_P1	Injection pressure 1
ECU_52	ECU_INJ_P2	Injection pressure 2
ECU_53	ECU_SPARK_ANG1	Spark angle 1
ECU_54	ECU_SPARK_ANG2	Spark angle 2
ECU_55	ECU_SPARK_ADV1	Spark advance 1
ECU_56	ECU_SPARK_ADV2	Spark advance 2
ECU_57	ECU_USER01	Custom channel 1
ECU_58	ECU_USER02	Custom channel 2
ECU_59	ECU_USER03	Custom channel 3
ECU_60	ECU_USER04	Custom channel 4
ECU_61	ECU_USER05	Custom channel 5
ECU_62	ECU_USER06	Custom channel 6
ECU_63	ECU_USER07	Custom channel 7
ECU_64	ECU_USER08	Custom channel 8