# **ECUMASTER ADU**

**Application Note** 



## MAXXECU

Revision 1.01



## 1. Copyright and trademarks

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## 2. Introduction

This application note explains how to connect and configure the MAXXECU series with the ECUMASTER ADU.

#### 3. Electrical connection

The MAXXECU is able to send the standard log stream over the CAN BUS. There are two options for connection. If the MAXXECU CAN1 speed is set to 1Mbps then you may use ADU CAN1 or CAN2. If the MAXXECU CAN1 speed is set to 500kbps then you may only use ADU CAN2.

MAXXECU terminal	ADU CAN1	ADU CAN2	Comment
E2	4	6	CAN L
E3	3	5	CAN H

Twisted pair cable is required for any CAN BUS connection.

Ensure that the CAN BUS is properly terminated.



#### 4. ADU and MAXECU configuration

The first step is to enable the MAXXECU CAN output protocol. The option is available in *"Configuration / CAN settings / Data transmission"*.

Data transmission		
MaxxECU output protocol	? Enabled 💌	
CAN 1 Bitrate	? 1Mbit 🔽	·

It is important to select the proper CAN BUS speed. If you choose to connect ECU to CAN1 or CAN2 at 1Mbps you must select 1Mbit speed. If you choose to connect to CAN2 with 500kbps speed, you must to select 500kbit.

If you use ADU CAN1, the speed is fixed at 1Mbps and no CAN configuration is required. If you choose to connect MAXXECU to CAN2, you must set proper CAN BUS speed and termination.

To open CAN2 configuration, press F9 to show the pane selector. Then open "*General / CAN BUS Serial setup*".

E	CANbus / Serial Setup		
	) 🔒 🗖 🛛		
	CANbus / Serial Setup		
	CAN2 terminator		
	CAN2 speed	500 Kbps	
	GPS CANbus	CAN2	
	Tire temperature cameras CANb	CAN2	
	Tire temperature cameras base 1	408	
	Serial protocol	Ecumaster s	erial protocol

The next step is to load the CANX file with MAXXECU channel definitions.

On the Project tree, click the "Add" button and select "Import .CANX file". When the file dialog opens, select the "MaxxEcu.canx" file. The following dialog appears:



Name: cmultiple>   CANbus: AN1   Base ID (hex): 0x0520   Select channels: Show frames   Elter:   C_ecu_averageLambda   ecu.baro   ecu.baro   ecu.baro   ecu.baro   ecu.baro   ecu.baro   ecu.baro   ecu.cattery   ecu.cattery   ecu.cattery   ecu.cattery   ecu.cattery   ecu.eqt1   ecu.eqt2   ecu.eqt3   ecu.eqt4   c_ecu_eqt5   c_ecu_egt5   c_ecu_egt8   c_ecu_egt8   c_ecu_egtMax   c_ecu_egtMax	Import CANX file: MaxxEcu.can	κ <mark>)</mark>
Base ID (hex): 0x0520 ★ Standard ▼ Select channels: Show frames Eiter:	Name: <pre><multiple></multiple></pre>	
Select channels:       Show frames         Filter:	CANbus: CAN1	
Filter:            C_cecuFWVersion         C_ecu_averageLambda         ecu.baro         ecu.baro         ecu.baro         ecu.baro         ecu.baro         ecu.cuTemp         ecu.eqt1         ecu.eqt2         ecu.eqt3         ecu.eqt4         C_cecu_eqt5         C_ecu_eqt5         C_ecu_eqt6         C_ecu_eqt8         C_ecu_eqt8         C_ecu_eqt8         C_ecu_eqt8         C_ecu_eqt8         C_ecu_eqt0         Select All         Select None         Select None	Base ID (hex): 0x0520	Standard
c_ecuFWVersion         c_ecu_averageLambda         ecu.baro         ecu.cuTemp         ecu.egt1         ecu.egt2         ecu.egt3         ecu.egt4         c_ecu_egt5         c_ecu_egt6         c_ecu_egt8         c_ecu_egt0ifference         c_ecu_egtMax         c_ecu_egtMax         c_ecu_egtMax         select All         Select All	Select channels:	Show frames
□       c_ecu_averageLambda         □       ecu.baro         □       ecu.battery         □       ecu.battery         □       ecu.dt         □       c_ecu_drivenWheelsSpd         □       ecu.equTemp         □       ecu.eqt1         □       ecu.eqt2         □       ecu.eqt3         □       ecu.eqt4         □       c_ecu_eqt5         □       c_ecu_eqt7         □       c_ecu_eqt8         □       c_ecu_eqtMax         □       c_ecu_errorCodeCnt         ■       Select All	Eilter:	
□ ecu.baro         □ ecu.battery         □ ecu.dt         □ c_ecu_drivenWheelsSpd         □ ecu.egt1         □ ecu.egt1         □ ecu.egt3         □ ecu.egt4         □ c_ecu_egt5         □ c_ecu_egt7         □ c_ecu_egt8         □ c_ecu_egtMax         □ c_ecu_errorCodeCnt         ■ cau.ettAll	C_ecuFWVersion	<b>_</b>
□ ecu.battery         □ ecu.dt         □ c_ecu_drivenWheelsSpd         □ ecu.eqtT         □ ecu.eqt1         □ ecu.eqt2         □ ecu.eqt3         □ ecu.eqt4         □ c_ecu_eqt5         □ c_ecu_eqt6         □ c_ecu_eqt88         □ c_ecu_eqtMax         □ c_ecu_errorCodeCnt         ▲ catteredContent	🗌 c_ecu_averageLambda	
□ c_ecu_drivenWheelsSpd         □ c_ecu_edrivenWheelsSpd         □ ecu.edt1         □ ecu.edt2         □ ecu.edt3         □ ecu.edt4         □ c_ecu_edt5         □ c_ecu_edt6         □ c_ecu_edt8         □ c_ecu_edt8         □ c_ecu_edt8         □ c_ecu_edt8         □ c_ecu_edt8         □ c_ecu_edt9t         □ select All	🗌 ecu.baro	
□ c_ecu_drivenWheelsSpd         □ ecu.eqtTemp         □ ecu.egt1         □ ecu.egt2         □ ecu.egt3         □ ecu.egt4         □ c_ecu_egt5         □ c_ecu_egt6         □ c_ecu_egt8         □ c_ecu_egtMax         □ c_ecu_egtMax         □ c_ecu_egtMax         □ select All	cu.battery	
ecu.eqtTemp         ecu.eqt1         ecu.eqt2         ecu.eqt3         ecu.eqt4         c_ecu_eqt5         c_ecu_eqt6         c_ecu_eqt8         c_ecu_eqtB         c_ecu_eqtMax         c_ecu_erorCodeCnt         Select All         Select All	🗌 ecu.dt	
□ ecu.egt1         □ ecu.egt3         □ ecu.egt3         □ ecu.egt4         □ c_ecu_egt5         □ c_ecu_egt6         □ c_ecu_egt7         □ c_ecu_egt8         □ c_ecu_egtMax         □ c_ecu_egtMax         □ c_ecu_erorCodeCnt         ■ call otheredContent	c_ecu_drivenWheelsSpd	
ecu.egt2         ecu.egt3         ecu.egt4         c_ecu_egt5         c_ecu_egt6         c_ecu_egt7         c_ecu_egt0ifference         c_ecu_egtMax         c_ecu_egtMax         c_ecu_egtMax         Select All         Select All	ecu.ecuTemp	
□ ecu.egt3         □ ecu.egt4         □ c_ecu_egt5         □ c_ecu_egt6         □ c_ecu_egt7         □ c_ecu_egt8         □ c_ecu_egtMax	🗌 ecu.egt1	
ecu.egt4         c_ecu_egt5         c_ecu_egt6         c_ecu_egt7         c_ecu_egt8         c_ecu_egtMax         c_ecu_egtMax         c_ecu_egtMax         Select All	🗌 ecu.egt2	
□ c_ecu_egt5         □ c_ecu_egt6         □ c_ecu_egt7         □ c_ecu_egt8         □ c_ecu_egtMax         □ c_ecu_egtMax         □ c_ecu_errorCodeCnt         ▲ select All	🗌 ecu.egt3	
C_ecu_egt6  C_ecu_egt7  C_ecu_egt8  C_ecu_egtDifference  C_ecu_egtMax  C_ecu_errorCodeCnt  Select All Select None	🗌 ecu.egt4	
C_ecu_egt7     C_ecu_egt8     C_ecu_egtDifference     C_ecu_egtMax     C_ecu_errorCodeCnt     Select <u>A</u> II Select <u>None     Select <u>None     Select None     Select None </u></u>	□ c_ecu_egt5	
C_ecu_egt8 C_ecu_egtDifference C_ecu_egtMax C_ecu_errorCodeCnt C_ecu_errorCodeCnt Select <u>A</u> II Select <u>N</u> one	c_ecu_egt6	
C_ecu_egtDifference C_ecu_egtMax C_ecu_errorCodeCnt C_ecu_errorCodeCnt Select <u>A</u> II Select <u>N</u> one	C_ecu_egt7	
C_ecu_egtMax     C_ecu_errorCodeCnt     Select <u>A</u> I     Select <u>N</u> one	□ c_ecu_egt8	
C_ecu_errorCodeCnt	□ c_ecu_egtDifference	
Select All Select None	C_ecu_egtMax	
Select All Select None	c_ecu_errorCodeCnt	
	Contract	<b>_</b>
OK Cancel	Select <u>A</u> ll Select <u>N</u> one	
		OV Cancel

At this point, select the CAN BUS that will be used for communication (CAN1 or CAN2) and the channels you want to read. In most situations all channels should be loaded (Select All). The project tree should look like the following:

Project Tree		
~⊶ ™• [≬] ᢤ•   Ⅲ S	n f 🔤 🖬 🖿 🖬	) 🕜
Name	Formula	Add
∃ [1] m_maxxEcuFast	CAN1 0x520 - 8 frames	
m_maxxEcuSlow	CAN1 0x530 - 8 frames	Duplicate
		Delete
		Edit

If you open "*m\_maxxEcuFast*" or "*m\_maxxEcuSlow*" mobs, all available CAN inputs should be visible.



## 5. Supported channels

ADU channel	Description	
ecu.baro	Barometric pressure	
ecu.battery	Battery voltage	
ecu.clt	Engine coolant temperature	
ecu.ecuTemp	ECU internal temperature	
ecu.egt1	Exhaust gases temperature 1	
ecu.egt2	Exhaust gases temperature 2	
ecu.egt3	Exhaust gases temperature 3	
ecu.egt4	Exhaust gases temperature 4	
ecu.ethanolContent	Fuel ethanol content	
ecu.gear	Current gear	
ecu.iat	Intake manifold temperature	
ecu.ignAngle	Ignition advance	
ecu.injDC	Injectors DC	
ecu.injPW	Injectors pulse width	
ecu.lambda1	Lambda from oxygen sensor #1	
ecu.lambda1Trim	Current lambda #1 fuel trim	
ecu.lambda2	Lambda from oxygen sensor #2	
ecu.lambda2Trim	Current lambda #2 fuel trim	
ecu.map	Manifold absolute pressure	
ecu.rpm	Engine RPM	
ecu.speed	Vehicle speed	
ecu.tps	Throttle position sensor	
c_ecuFWVersion	ECU firmware version	
c_ecu_averageLambda	Average lambda value from sensor #1 and #2	
c_ecu_drivenWheelsSpd	Speed of driven wheels	
c_ecu_egt5	Exhaust gases temperature 5	
c_ecu_egt6	Exhaust gases temperature 6	
c_ecu_egt7	Exhaust gases temperature 7	
c_ecu_egt8	Exhaust gases temperature 8	
c_ecu_egtDifference	Exhaust gases difference between the lowest and the highest	
	temperature	
c_ecu_egtMax	Maximum exhaust gases temperature	
c_ecu_errorCodeCnt	The number of active engine error codes	
c_ecu_fuelCut	Fuel cut percent	
L		



c_ecu_fuelTrimTotal	Value of total fuel trim
c_ecu_ignCompTotal	Value of ignition advance correction
c_ecu_ignCut	Ignition cut percent
c_ecu_syncLostCnt	The number of trigger sync lost
c_ecu_tcPowerLimit	Traction control power limit
c_ecu_undrivenWheelsSpd	Speed of un-driven wheels
c_ecu_userAin1	Value of user analog in #1
c_ecu_userAin2	Value of user analog in #2
c_ecu_userAin3	Value of user analog in #3
c_ecu_userAin4	Value of user analog in #4
c_ecu_wheelSlip	Wheel sleep percent
c_ecu_wheelSlipTrgt	Wheel sleep target percent

# 6. Revision log

1.01

- ADU CAN terminals description fixed