

CANTCU - Syvecs integration v1.1

- **CAN Speed** is configurable
- CAN2.0B, Standard 11bit identifiers
- All values are 16 bit **Big Endian**
- CAN ID:s freely configurable

Syvecs Configuration

Communication between CANTCU and Syvecs is fully done through CAN. CAN-messages with specific content needs to be added for both sending and receiving data. To achieve this, functions **Generic CAN Transmit** and **Generic CAN Receive** are used in the Syvecs.

These instructions define specific CAN ID:s to be used on both transmit and receive, but if needed, these CAN ID:s can be changed to a more suitable range.

Available Realtime-values in CANTCU (sent from Syvecs)

- *Engine RPM*
- *TPS Value*
- *Engine Torque*
- *Wheel Speeds*
- *Brake Switch*

Available Realtime-values in Syvecs (sent from CANTCU)

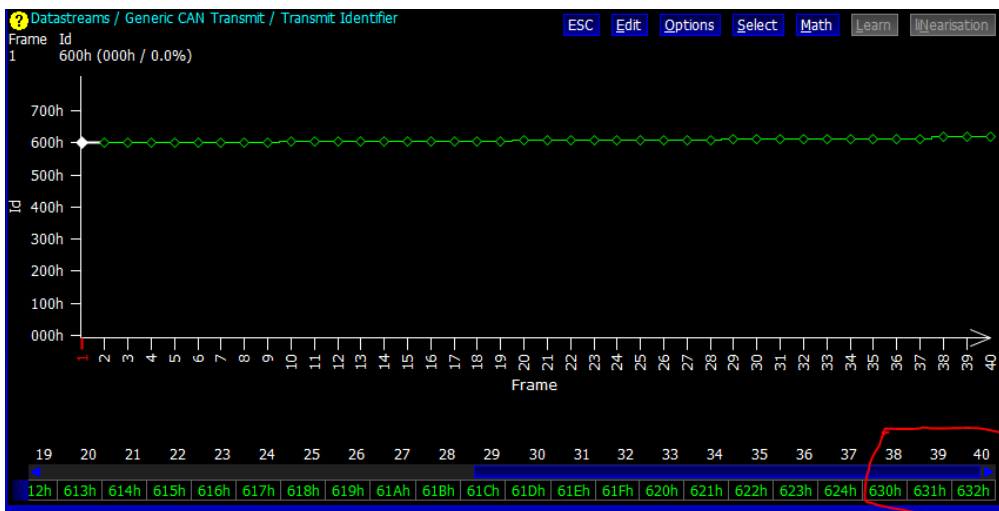
- *Engine Torque Limit*
- *Gear Shift Manual Blip Request*
- *Gear Position*
- *Auto Trans Oil Temperature*
- *TCMRpmTarg*

Generic CAN Transmit

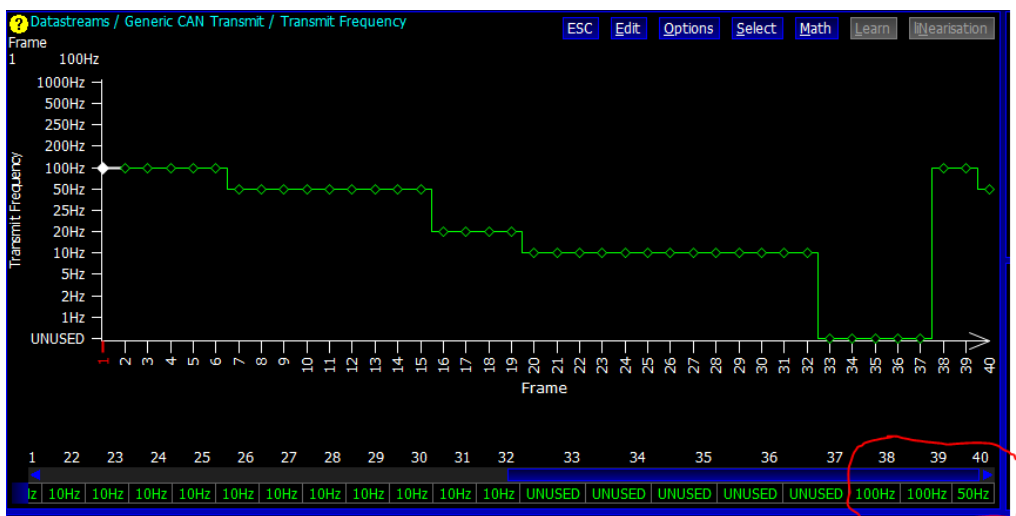
Three subsequent CAN messages need to be defined. Start by defining the message structure in **Generic CAN Transmit -> Transmit Content**. In this example, we are using the last three slots, but any three subsequent slots can be used. Define the variables identically to the picture below.

35	SPARE	SPARE	SPARE	SPARE
36	SPARE	SPARE	SPARE	SPARE
37	SPARE	SPARE	SPARE	SPARE
38	rpm	engTrqEstOutputPot	engTrqEstOutput	engTrqDmdPps
39	rlSpeedA	rrSpeedA	flSpeedA	frSpeedA
40	ppsDriver	bpd	ect1	SPARE

Next, define CAN ID:s for the earlier defined messages (**Generic CAN Transmit -> Transmit Identifier**). The ID:s also need to be subsequent, but can start at any address. The starting address (0x630h) needs to match the *Car Protocol Recv ID* in CANTCU.



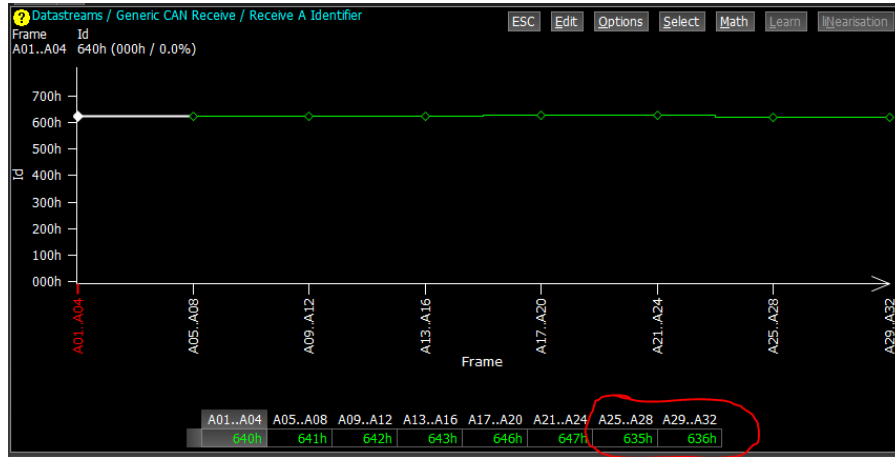
In **Generic CAN Transmit -> Transmit Frequency**, set the transmit rates for the messages to 100/100/50Hz for the configured message slots 38/39/40.



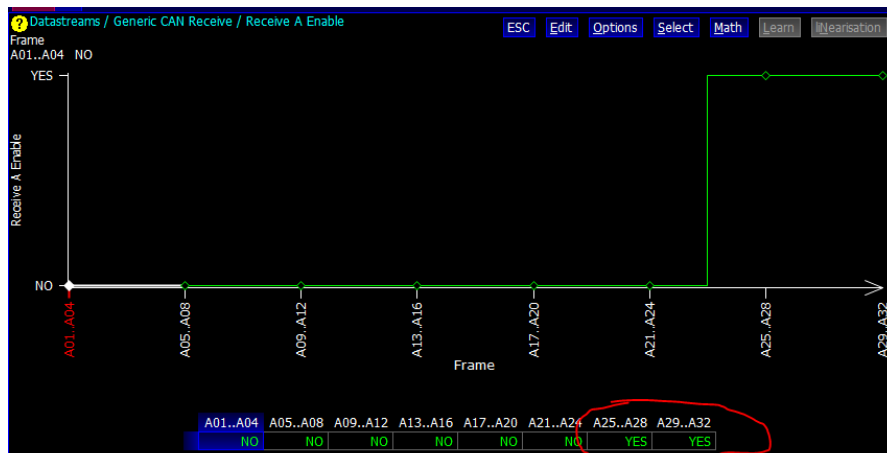
Lastly, verify that the **Transmit Bus** and the **Bus Speed** is correctly configured.

Generic CAN Receive

Two subsequent CAN messages need to be defined. Start by defining the identifiers in **Generic CAN Receive -> Receive A Identifier**. We use 0x635h & 0x636h mapped to CAN Receive A values A25-A32.



Remember to also enable the frames in **Generic CAN Receive -> Receive A Enable** and select the correct CAN-bus in **Generic CAN Receive -> Receive A Bus**.



Inputs in Syvecs

The values sent through CAN from CANTCU are received on Syvecs CAN Receive A25-A32 and can be defined for use in the **IO Configuration -> Pin Assignments**.

Engine Torque Limit	CAN Receive A #25
Gear Shift Manual Blip Request	CAN Receive A #26
Gear Position	CAN Receive A #27
Auto Trans Oil Temperature	CAN Receive A #28
TCMRpmTarg	CAN Receive A #29

A) Inputs : Full Course Yellow Boost Switch	NOT CONNECTED
A) Inputs : Full Course Yellow Switch	NOT CONNECTED
A) Inputs : Gear Position	X:CAN RECEIVE A #27 :
A) Inputs : Gear Shift Combined Paddle Switch	NOT CONNECTED
A) Inputs : Gear Shift Down Paddle Switch	NOT CONNECTED
A) Inputs : Gear Shift Downshift Pressure	NOT CONNECTED
A) Inputs : Gear Shift Manual Blip Request	X:CAN RECEIVE A #26 :
A) Inputs : Gear Shift Manual Cut Request	NOT CONNECTED
A) Inputs : Gear Shift Manual Upshift Request	NOT CONNECTED

CANTCU Configuration

In CANTCU CAN configuration, the aforementioned starting CAN ID:s for both sending and receiving are used. The subsequent ID:s and their data will automatically be fetched from the CAN stream.

CAN3 Configuration

CAN3 Settings

CAN3 Speed	1 Mb/s	▼
Car Protocol Send ID (hex)	635	▲▼
Car Protocol Recv ID (hex)	630	▲▼
Default Output Protocol	Disabled	▼

Remember to restart CANTCU after making changes to CAN settings.

Tuning – Torque Limitation and Blips

For torque limitation (normally during upshifts) a limit value **engTrqLim** is sent through CAN to Syvecs. When this value falls under the current engine torque, a limitation takes place. There are several ways and criterias to perform torque limitation in Syvecs. If you aren't familiar with how to tune the torque limitation, consider consulting your local Syvecs tuner or reseller.

For blips (normally during downshifts on certain drive modes), a **blip request** signal (0/1) is sent through CAN to Syvecs. The signal is active for as long as the blip is needed. As Syvecs is in charge of controlling the blip intensity, the tuning of blip accuracy and smoothness is all done in Syvecs, and preferably to be done by a tuner with knowledge of the blip logic.

NOTE!

All tuning should always be done by a professional in safe environment (track/dyno)

A poorly/incorrectly tuned blip may result in erratic behavior of the car during downshifts. It's recommended to dial in cuts and blips on a rolling road dyno or a closed track. Starting values for tuning the blip should be low and gradually increased to avoid overrevving and undesired behavior/acceleration during the shift.