CANTCU - MoTeC integration v1.0

- **CAN Speed** is configurable
- CAN2.0B, Standard 11bit identifiers

NOTE!

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

Before activating the blip function, it's recommended to test downshifting and verify (realtime or logging) that the user table is behaving correctly during the blip. Starting values for tuning the blip should be low and gradually increased to avoid overrevving and undesired behavior/acceleration during shifting.

CANTCU Configuration – Standard CAN

When using the standard GPRP package configuration, the **Car Protocol Recv ID** should be defined as **0x640h**. MoTeC -> CANTCU-communication is predefined.

For the CANTCU -> MoTeC-communication, the **Car Protocol Recv ID** can be freely chosen, but needs to be defined identically in the MoTeC configuration.
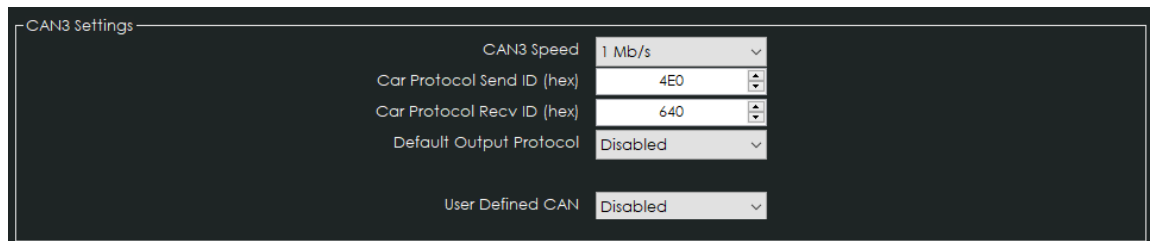
MoTeC Configuration – Standard CAN

Values received from CANTCU should be first configured in the **ECU** -> **Receive** to match the CAN ID defined in CANTCU. Value mappings for variable offsets are listed below.
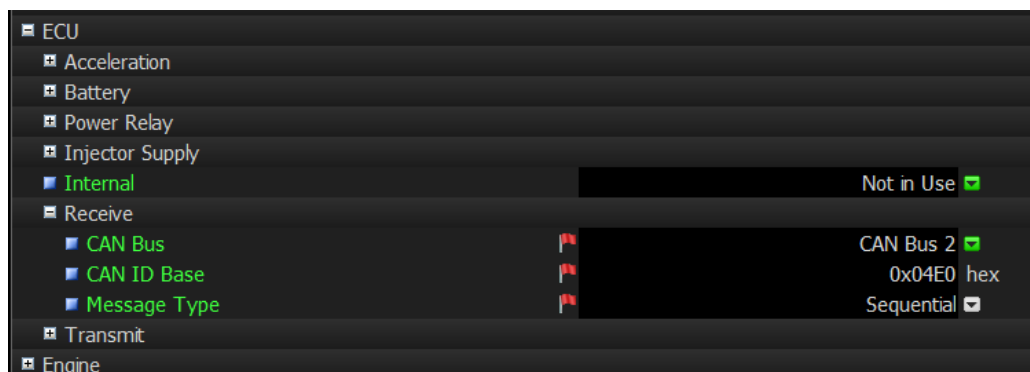
Values sent from CANTCU to MoTeC and their names/channels in MoTeC:

Channel	ID	Type	Start Byte	Description	CANTCU variable	Scaling
CAN0 offset 0	Base	INT16	0	0/1	Cut Active	x1000
CAN0 offset 2	Base	INT16	2	0/1	Blip Active	x1000
CAN0 offset 4	Base	INT16	4	2V = 1st gear, 0.4V increments	Gear Number Main	
CAN0 offset 6	Base	INT16	6	2V = 1st gear, 0.4V increments	Gear Number Backup	
CAN1 offset 0	Base + 1	INT16	0	from 0 to 1	Cut %	x10
CAN1 offset 2	Base + 1	INT16	2	from 0 to 1	Blip %	x10
CAN1 offset 4	Base + 1	INT16	4	from -100 to 100 is -1-0-1V	Clutch Slip %	x10
CAN1 offset 6	Base + 1	INT16	6	from -100 to 100 is -1-0-1V	TQConv Slip %	x10
CAN2 offset 0	Base + 2	INT16	0		Input RPM	x1
CAN2 offset 2	Base + 2	INT16	2		Output RPM	
CAN2 offset 4	Base + 2	INT16	4		Delta RPM	
CAN2 offset 6	Base	INT16	6	from -10 to + 10V = -100c to +100c	TCU Oil Temperature	x100

Values sent from MoTeC to CANTCU:

Name	ID	Type	Start Byte
Engine RPM	0x640	UINT16	0
Engine MAP	0x640	UINT16	2
TPS	0x642	UINT16	0
Wheel Speed VL	0x648	UINT16	0
Wheel Speed VR	0x648	UINT16	2
Wheel Speed HL	0x648	UINT16	4
Wheel Speed HR	0x648	UINT16	6
Engine WaterTemp	0x649	UINT8	0
Engine OilTemp	0x649	UINT8	8
Brake State	0x64E	Single Bit	bit 28

Available Realtime-values in CANTCU (sent from MoTeC)

- *Engine RPM*
- *TPS Value*
- *Engine MAP*
- *Wheel Speeds*
- *Brake Switch*
- *Coolant Temperature*
- *Engine Oil Tempetature*

Available Realtime-values in MoTeC (sent from CANTCU)

- *Gear Number*
- *Cut / Blip Active (0/1)*
- *Cut / Blip %*
- *Input RPM*
- *Output RPM*
- *Delta RPM*
- *Clutch Slip %*
- *Torque Converter Slip %*
- *TCU Oil Temperature*

CANTCU Configuration – User Defined CAN

When using the User Defined CAN -configuration, the **Car Protocol Send & Recv IDs** can be freely defined as long as they're matched in the MoTeC-configuration.

CAN3 Settings

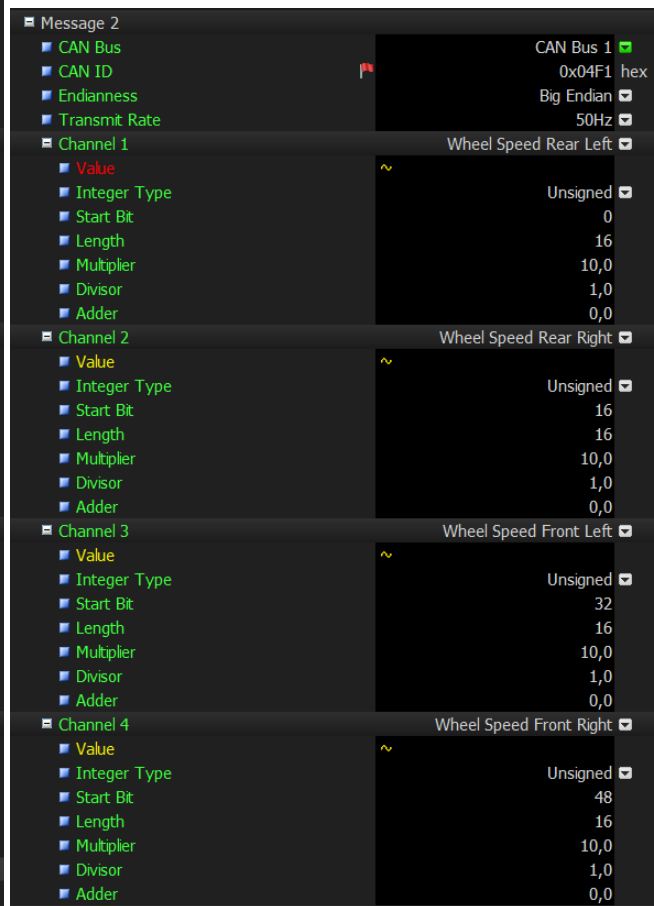|	
CAN3 Speed	1 Mb/s
Car Protocol Send ID (hex)	4E0
Car Protocol Recv ID (hex)	4F0
Default Output Protocol	Disabled
User Defined CAN	Enabled

MoTeC Configuration – User Defined CAN

Values sent from MoTeC to CANTCU need to be defined in the **User Defined Dynamic Transmit** messages found under **External CAN Devices**. **Message 1** is mandatory as it includes all the necessary running values of the engine. **Message 2** contains WheelSpeeds and is mandatory on DCT-transmissions, but optional when using 8HP transmissions (with simulated wheelspeed in CANTCU). The **Message** addressing (CAN ID) should be two consecutive addresses and **Message 1** CAN ID should match the address input in CANTCU **Car Protocol Send ID**.

Message 1	
CAN Bus	CAN Bus 1
CAN ID	0x04F0 hex
Endianness	Big Endian
Transmit Rate	50Hz
Channel 1	Engine Speed
Value	~
Integer Type	Unsigned
Start Bit	0
Length	16
Multiplier	1,0
Divisor	1,0
Adder	0,0
Channel 2	Inlet Manifold Pressure
Value	~
Integer Type	Unsigned
Start Bit	16
Length	16
Multiplier	1,0
Divisor	1,0
Adder	0,0
Channel 3	Engine Efficiency
Value	~
Integer Type	Unsigned
Start Bit	32
Length	16
Multiplier	1,0
Divisor	1,0
Adder	0,0
Channel 4	Throttle Pedal Position
Value	~
Integer Type	Unsigned
Start Bit	48
Length	8
Multiplier	1,0
Divisor	1,0
Adder	0,0
Channel 5	Brake State
Value	~
Integer Type	Unsigned
Start Bit	56
Length	8
Multiplier	1,0
Divisor	1,0
Adder	0,0

Message 2	
CAN Bus	CAN Bus 1
CAN ID	0x04F1 hex
Endianness	Big Endian
Transmit Rate	50Hz
Channel 1	Wheel Speed Rear Left
Value	~
Integer Type	Unsigned
Start Bit	0
Length	16
Multiplier	10,0
Divisor	1,0
Adder	0,0
Channel 2	Wheel Speed Rear Right
Value	~
Integer Type	Unsigned
Start Bit	16
Length	16
Multiplier	10,0
Divisor	1,0
Adder	0,0
Channel 3	Wheel Speed Front Left
Value	~
Integer Type	Unsigned
Start Bit	32
Length	16
Multiplier	10,0
Divisor	1,0
Adder	0,0
Channel 4	Wheel Speed Front Right
Value	~
Integer Type	Unsigned
Start Bit	48
Length	16
Multiplier	10,0
Divisor	1,0
Adder	0,0