CANTCU – Differential Ratio Calibration

Differential ratio needs to be calibrated for proper functionality of the transmission. It is a simple process that requires driving at constant speed and observing/making adjustments of realtime values in CANTCU Configurator. The calibration can be performed on a lift. The higher the speed, the more precise the calibration will be. At minimum a speed of 50km/h is recommended to achieve a good calibration.

1. Open CANTCU Configurator and verify correct Wheel Size and Differential Ratio in the Configuration-section.



- 2. Drive the car using 1:1 gear ratio (5th gear on F-DCT, 7th gear on E-DCT) and follow Realtime-values **TCU Output RPM** and **Engine RPM**. If you are unable to watch the values during driving, you can record a log and stop to check values afterwards.
- 3. If the difference of the two aforementioned values is greater than 15 RPM at decent speed (>50km/h), you need to adjust the **Speed Correction** factor (in **Configuration**-section).



O CANTCU Configurator v1.0.131 B	eta							-	
File Logging Options									
÷	Configuration			Inputs				- Debu	a
Connected	Transmission Protocol	BMW 8HP F-Series 2nd Ge ∨		Analog Input 1	Disabled V			Debu	g Value 1
SN: 0769 HW: 1.5	Car/ECU Protocol	Emtron 🗸	Setup	Analog Input 2	Disabled 🗸 🗸			d	
BL: 1.1				Anglog Input 3	Dirabled V			Debu	a Value 2
SW: 1.0.131	UNI/Sector Protocol	25 11 1							
**	Linv/sendi Protocol	Disabled V		Andiog input 4	Disabled V		.		
	Instrument Cluster/Dash	Disabled ~	Setup	Digital Input I	Paddle Up 🗸 🗸	Active LOW ~		Debu	g Value 3
Configuration	Shifter	Fxx DCT (CAN3) V		Digital Input 2	Paddle Down 🗸	Active LOW $ \sim $		0	÷
411	Default Drive Mode	Sport+ ~		Digital Input 3	Disabled \vee			Debu	g Value 4
141	Wheel Size (mm)	1990 🔹	Calculate	Digital Input 4	Disabled \vee			0	-
Tuning	Car Diff Ratio	2,93						Debu	g Value 5
	Speed Correction	101,2	%	Digital Output 1	Disabled \vee			0	÷
ıl.ı	Simulate Wheelspeed	Disabled \vee			Reverse Gear Active 🗸				
Realtime	Dyno Mode	Disabled \vee		Digital Output 3	Disabled ~				
				Digital Output 4	Disabled \vee			Ur	odate
A	Realtime Values 51Hz						Rec	altime	Record
Diagnostics	Supply Voltage 13 Ignition On 1 Engine RPM 0 TPS Value 0 Brake Switch 0 Engine Torque 0 Wheel Speed 1	3.80 V Wheel Speed VL Wheel Speed VR Wheel Speed VR RPM Paddle Up % Paddle Down DIN1 DIN1 Nm DIN2 km/h DOUT2	0 km/h 0 km/h 0 0 0 0	CAN3 Load Engine Water Rigine Oil RT_DEBUG_1 RT_DEBUG_2 RT_DEBUG_3 RT_DEBUG_4 CRT_DEBUG_4 CRT_DEBUG_4	7 % TCU Ge 0 °C Shift In Progra 0 °C TCU Interventin 0 TCU RPM Targ 0 Target Torq 0 Target Torq 0 Throttle B	ar 0 ss 0 on 0 et 0 RPM ue 1024 Nm uf 0 % lip 0 %	TCU DL Mode TCU Oil Temp DS Calc RPM TCU Input RPM TCU Gear Ratio TCU Gear Ratio TC Status	0 42 °C 0 RPM 0 RPM 0 RPM 0 0	
Transmission Controller GUI Version: 1.0.131 Beta	Wheel Speed HR 0	km/h CAN2 Load	0%	Shifter Status	0 TCU Drive Mo	de 3	Converter Slip	0%	

- I. Engine RPM < TCU Output RPM \rightarrow Decrease Speed Correction factor
- II. Engine RPM > TCU Output RPM \rightarrow Increase Speed Correction factor

Adjust the **Speed Correction** factor using 1-2% increments until you are close, then fine tune using 0.1% increments.

NOTE! If you experience inaccurate **TCU Target RPM** requests while shifting after a successful calibration, please make sure you have the correct differential ratio flashed to the transmission.

