

# CANTCU – AEM Infinity 5 Series (506/508) Integration

- AEMNET CAN: 29 bit, **500 kb/s**, 8 data bytes per message
- AEM Infinity DBW must be configured and functional prior to setting up CANTCU Integration

## Wiring between CANTCU and AEM Infinity



AEM Infinity-6

Pin Out

Function	Input-Output	Pin
FlexSensorCal	Dig3 [Hz]	C1-28
VSS_Dig_Sel	Dig4 [Hz]	C1-29
	Digital5	C1-30
TurboSpeed_Sel	Dig6 [Hz]	C1-31
	Digital7	C1-32
Chassis Ground		C1-33
CANL A out		C1-34
CANH A out		C1-35
CanH B out		C1-36
CanL B out		C1-37
AirboxTemp_Input	Analog1_In_Temp	C1-38
CoolantTemp_Input	Analog1_In_Temp	C1-38
ChargeTemp_Input	Analog1_In_Temp	C1-38
AirTemp_Input	Analog2_In_Temp	C1-39
TransTemp_Input	Analog3_In_Temp	C1-40
OilTemp_Input	Analog3_In_Temp	C1-40
Lowside 0	LS0_HW	C1-41
Lowside 1	LS1_HW	C1-42
Chassis Ground		C1-43
Knock Sensor 1		C1-44
Knock Sensor 2		C1-45
Chassis Ground		C1-46
EFI Relay Control, Switche...	Relay_HW	C1-47
+12V Ignition Switch signal		C1-48
+5V, analog sensor power		C1-49
-5V, analog sensor power		C1-50

Selected Pin : C1 - 34

Warning: Pin out contains inputs assigned to multiple functions.

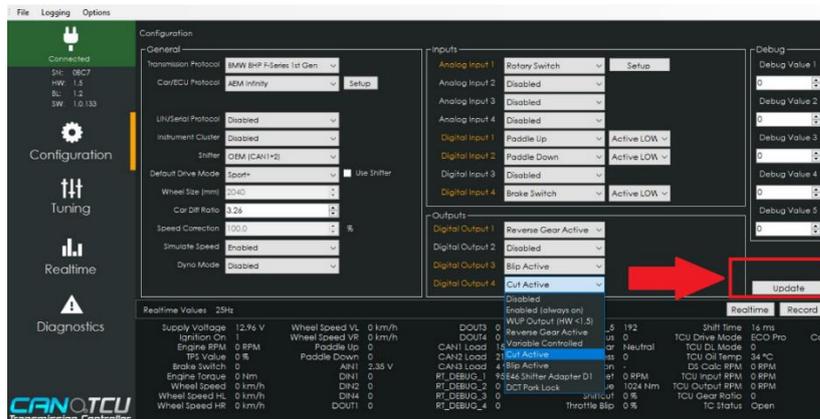
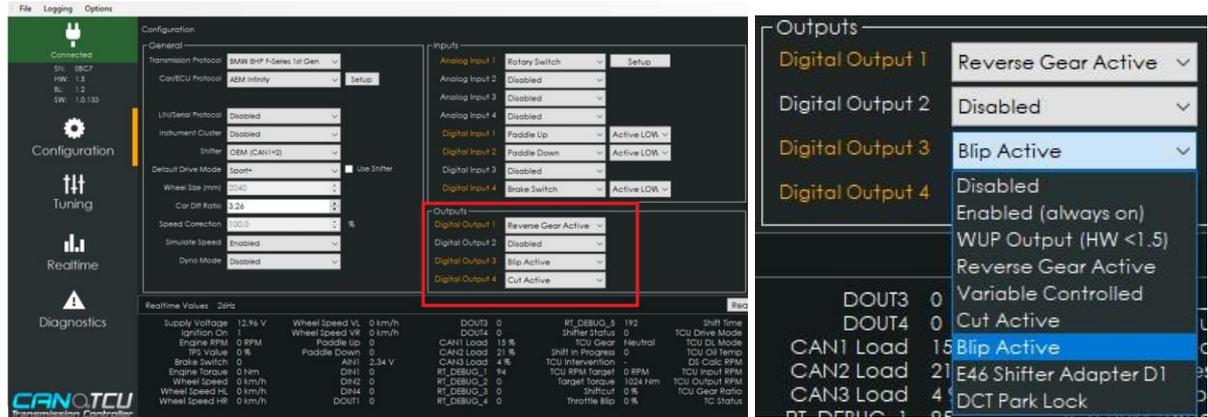
Copy

- **AEM** CANL A (C1-34) to **CANTCU** C3L (A7)
- **AEM** CANH A (C1-35) to **CANTCU** C3H (A6)
- **CANTCU** DOUTs (B1/B8/C1/C8) to **AEM** Digital 5/7

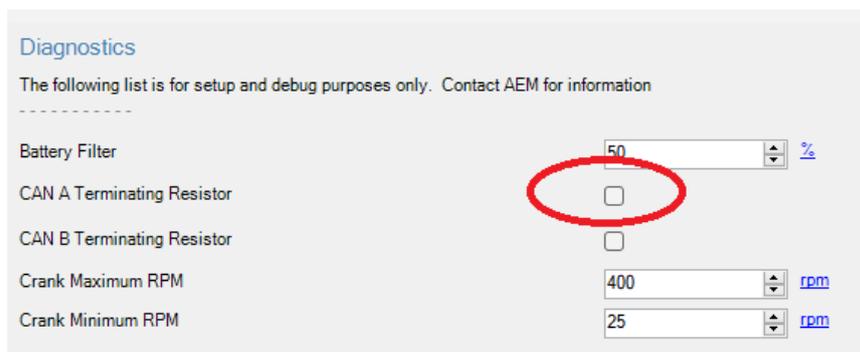
# Software Configuration

The AEMNet allows only one way communication. Data streams such as Engine RPM/MAP/PPS/VE/coolant Temp/Oil temp are broadcasted from the AEM Infinity to CANTCU CAN3. Triggers for **Blip** and **Shiftcut** must use Digital Outputs from CANTCU to AEM Infinity Digital Inputs.

In CANTCU Configurator, enable **Blip** and **Cut** trigger functions on chosen Digital Outputs. Confirm settings by clicking the **Update**-button.

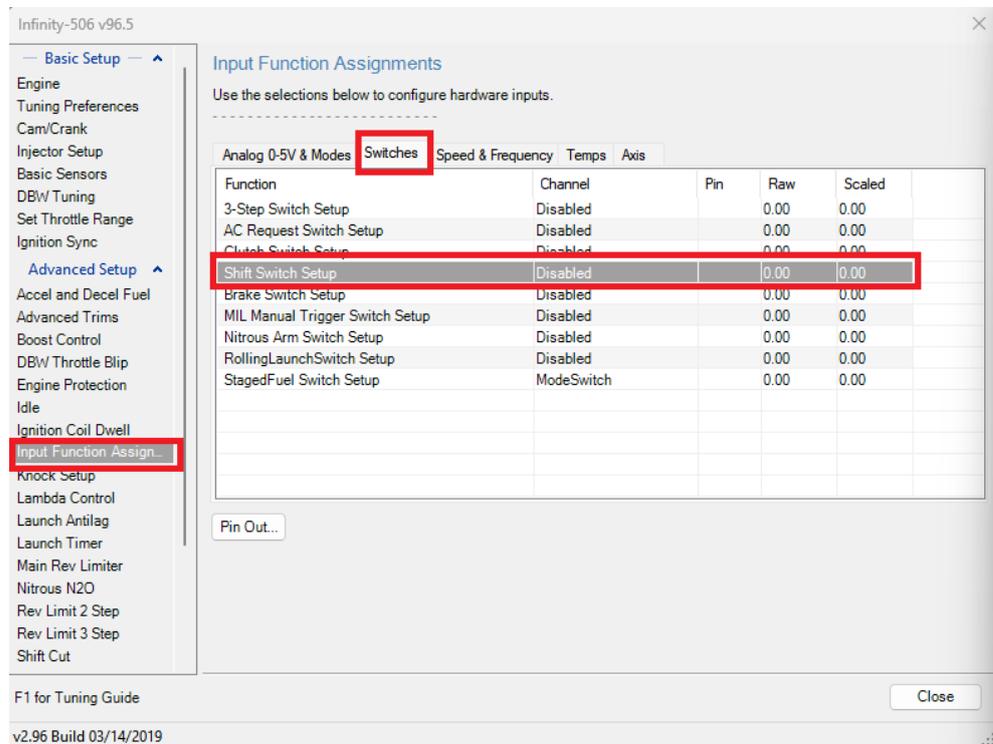


In the diagnostics tab of the AEM configuration wizard, turn on CAN A Terminating resistor.

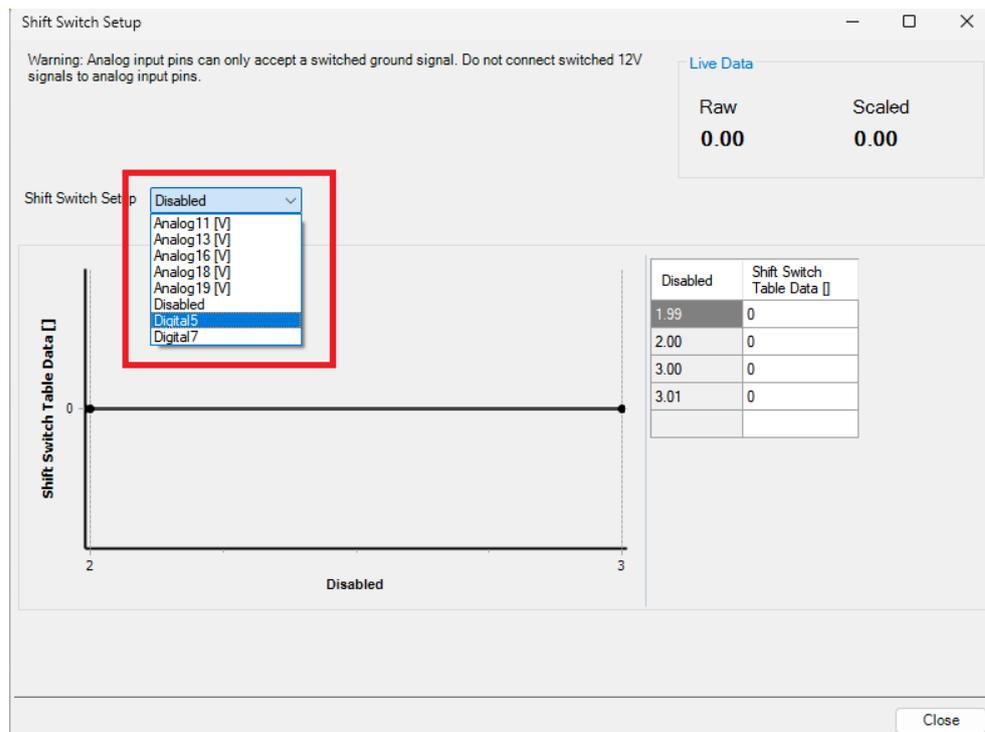


## Shift Cut / Shift Switch Configuration

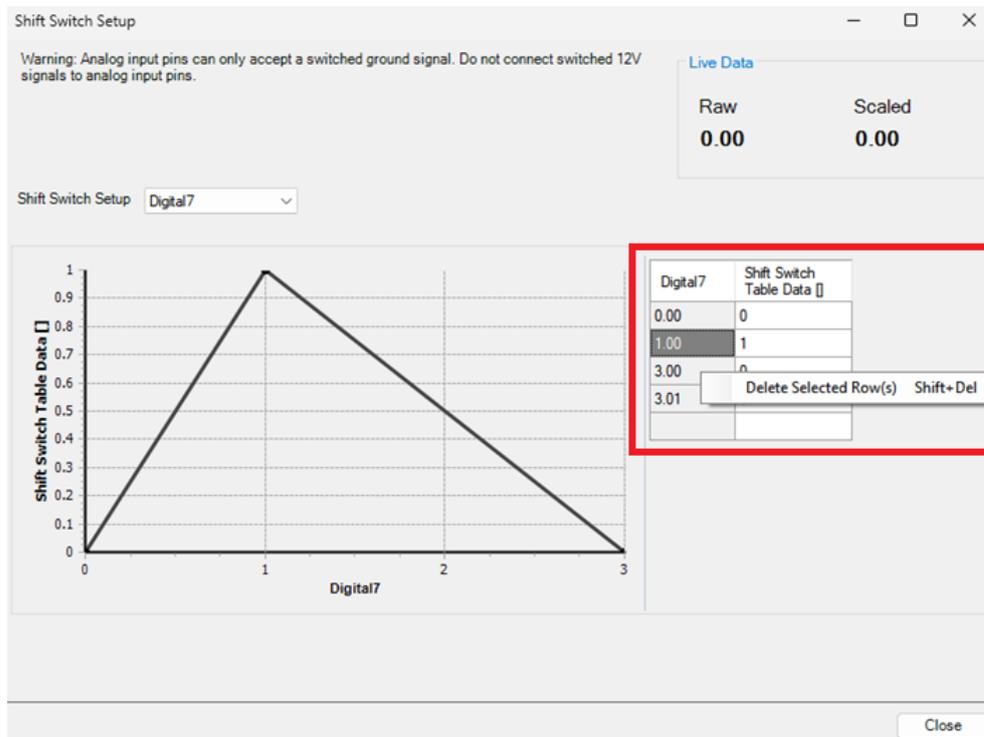
Shift switch trigger must be defined in the Input Function Assignment Menu by double clicking Shift Switch Setup under the Switch Tab.



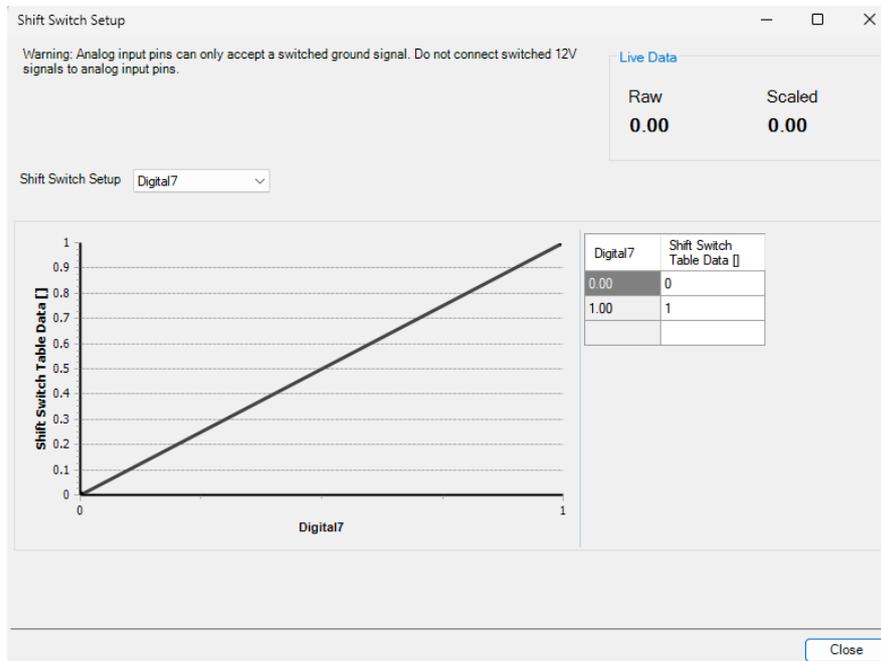
Select the Digital Input designated for the **Shift Cut** Switch.



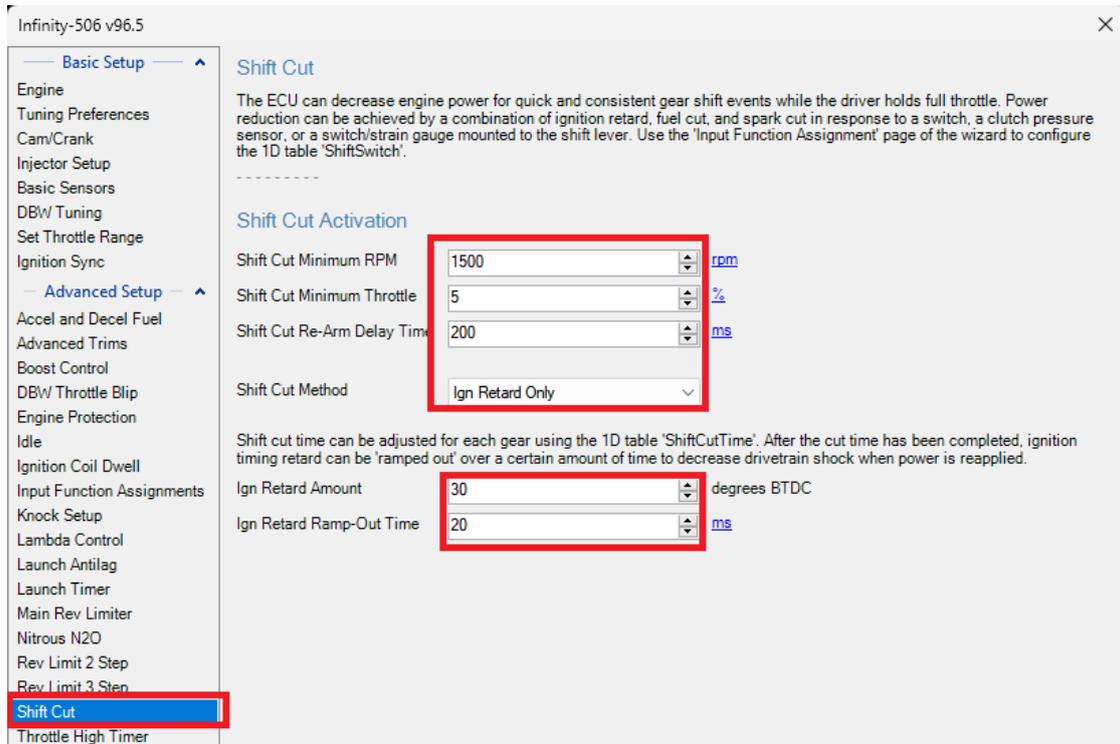
Configure the Shift Switch Table Data as shown below. Right click to delete extra rows.



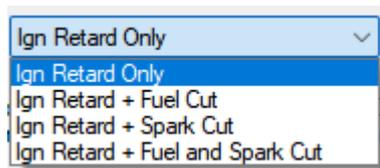
The Shift Switch Table Data should appear as follow:



In the Shift Cut tab of the wizard, configure the settings as follows for a starting point.



Note: The following Shift Cut Method can be implemented, however using "Ign Retard Only" will offer the fastest and smoothest shifts. Users may tune these settings accordingly to their desired comfort level.



In the **ShiftCut** tuning tab, configure the **ShiftCutTime[ms]** table as follows for a starting point:

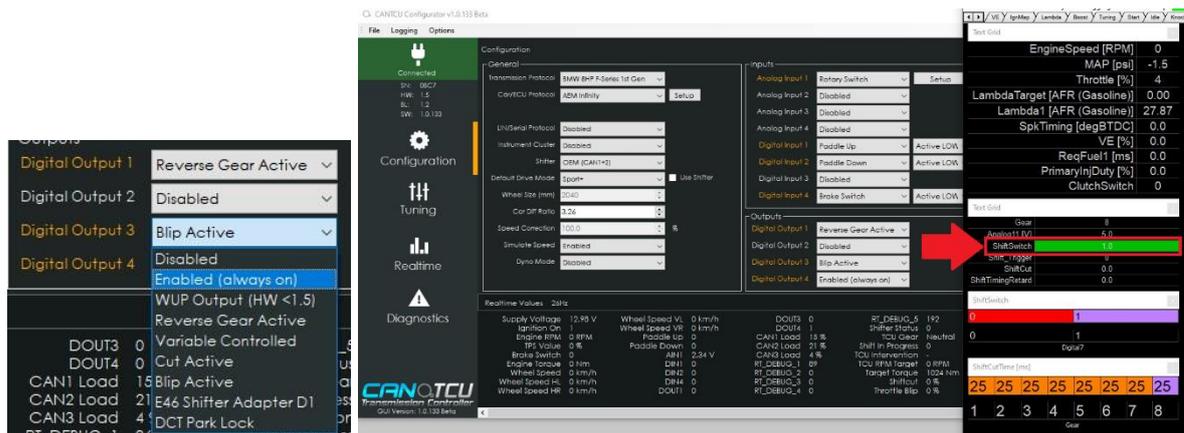
ShiftCutTime [ms]							
40	40	40	40	40	40	40	40
1	2	3	4	5	6	7	8
Gear							

Test drive and log to verify Shift Cut is occurring at over 1500 RPM. Adjust the **ShiftCutTime[ms]** table accordingly.



AEM Log showing Shift Cut activating on upshifts

Note: If AEM Shift Cut is not triggering during upshifts, test and verify your input assignment by setting the corresponding CANTCU Digital Output to **"Enabled (always on)"**.

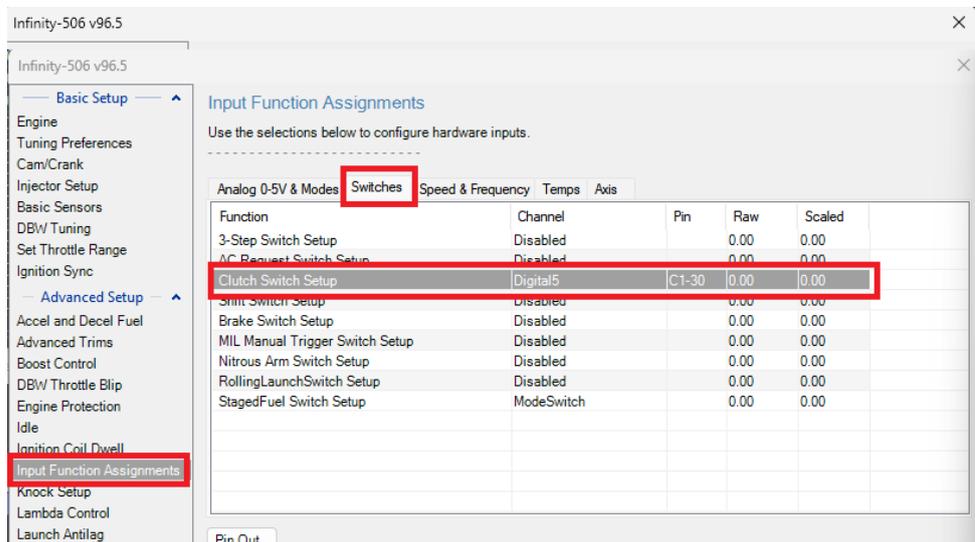


If ShiftSwitch in AEM shows a value of 1.0, it is assigned correctly. If not, verify your wiring and Input Function Assignment settings.

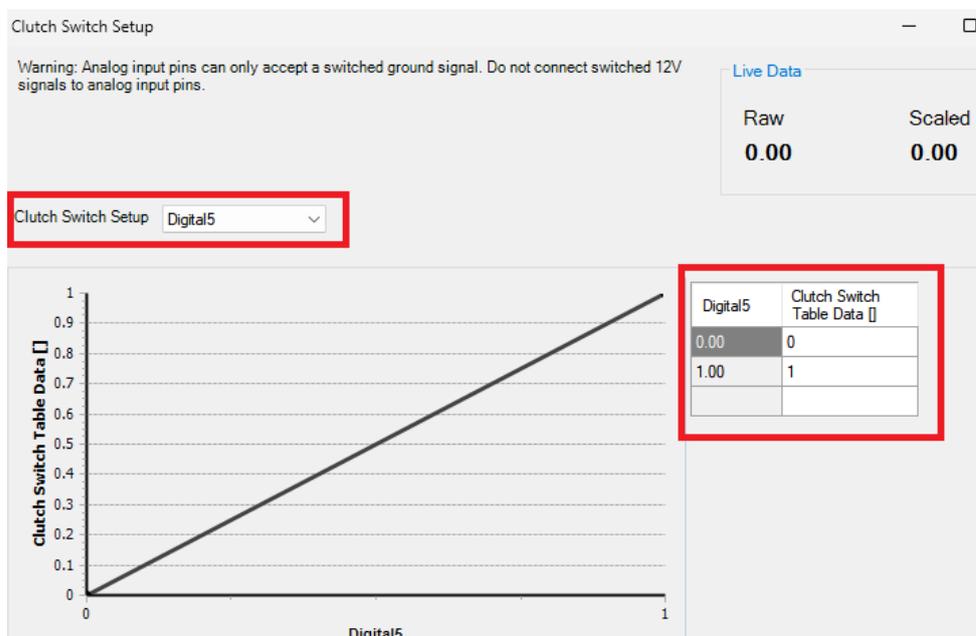
## DBW Throttle Blip configuration

In order to use the DBW Throttle blip, DBW Blip Arm Switch Setup and Clutch must be assigned to the same Digital Input.

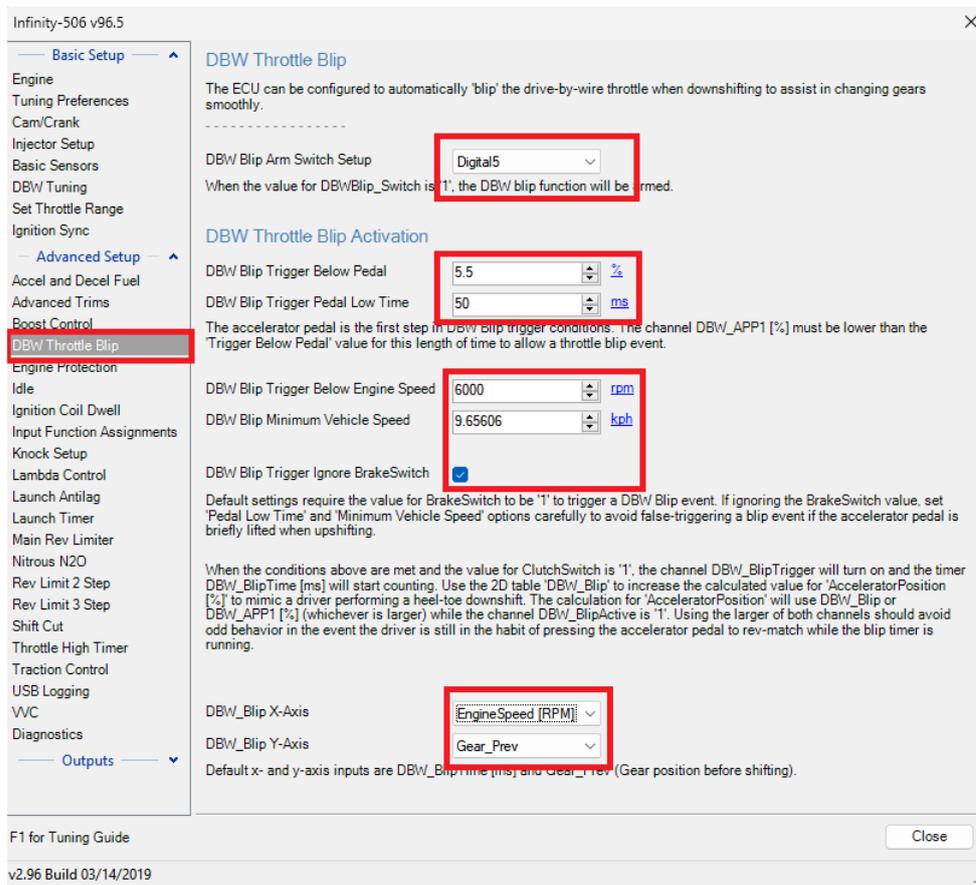
In the wizard, open the **Clutch Switch Setup** in the Input Function Assignment / Switch Tab.



Assign the Clutch Switch to the same Digital Input used for DBW Blip. Configure the Clutch Switch Table Data as shown below.

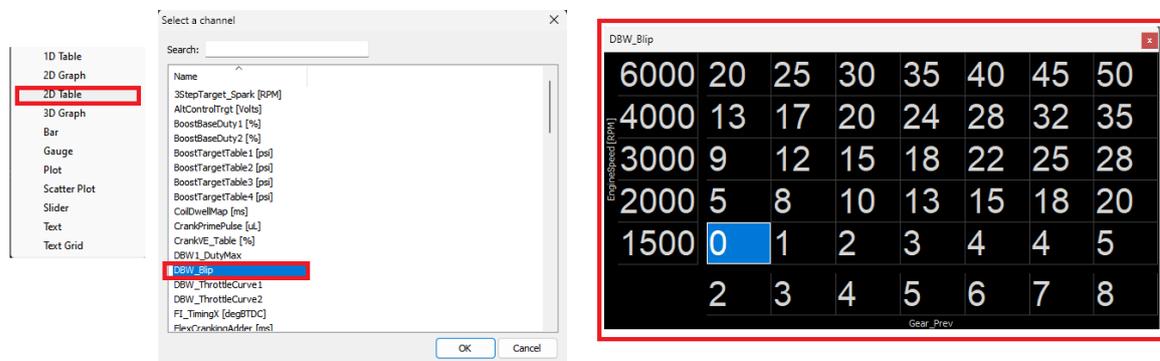


In the DBW Throttle Blip tab of the wizard, configure the DBW Blip Arm Switch Setup as the same Clutch Switch input.



Note: Activation settings provided here are just a starting point example. These parameters should be tuned to your preference.

The DBW Blip Table is hidden by default. In the DBW Layout Tab, right click and add a 2D Table. Select DBW Blip as the channel and a new 2D Table will appear.



## General Notes on Blip tuning

- The **Gear\_Prev** should be assigned as 2-8. RPM should be assigned according to your engine's limits. The throttle blip values should be tuned to your vehicle's throttle rate.
- DBW Blip will only occur when all conditions are met. Blip will continue for as long as CANTCU Digital output trigger is active. Although the timer will continue to run for 1000ms, the throttle blip will stop as soon as CANTCU Digital Output is inactive.
- Multiple blips may occur if the TCU determines the RPM is too low to rev match and complete the shift. Adjust the throttle rate accordingly if you experience multiple blip triggers.
- **Setting the throttle rate too high may overshoot the blip target and cause the vehicle to lunge forward.**

