

HALTECH TO MAXXECU GATEWAY SETUP FOR 8HP TRANSMISSION CONTROL

Thank you for the purchase of the Haltech to MaxxECU gateway controller. This module will allow seamless communication between a Haltech ECU running NSP firmware and a MaxxECU for the control of a 8HPXX transmission.

The CAN gateway is a triple bus module but for the purpose of integrating the MaxxECU for transmission control we will only be using two CAN busses.

Bus #1 runs at 1Mbit/s and connects to the Haltech side of the network.

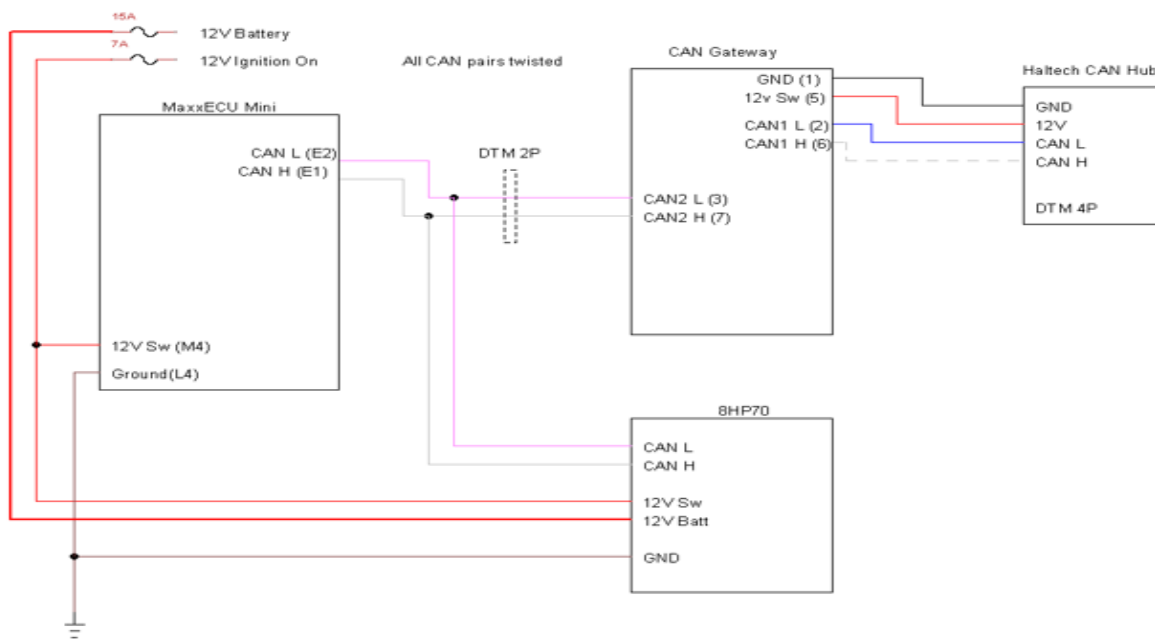
Bus#2 runs at 500Kbit/s and connects to the MaxxECU side of the network.

To simplify connection, the module comes with a pre-made harness. Bus #1, 12V and Gnd are connected to a 4 pin DTM connector that can plug directly into a Haltech CAN hub or into a Haltech CAN expansion port.

Bus #2 is terminated into a 2 pin DTM connector and will need to be connected to the MaxxECU CAN bus wires that are Pink and Grey by default.

The 8HPXX transmission by default operates at 500Kbit/s which cannot be changed.

Below you will find a wiring diagram of how the system is to be laid out.

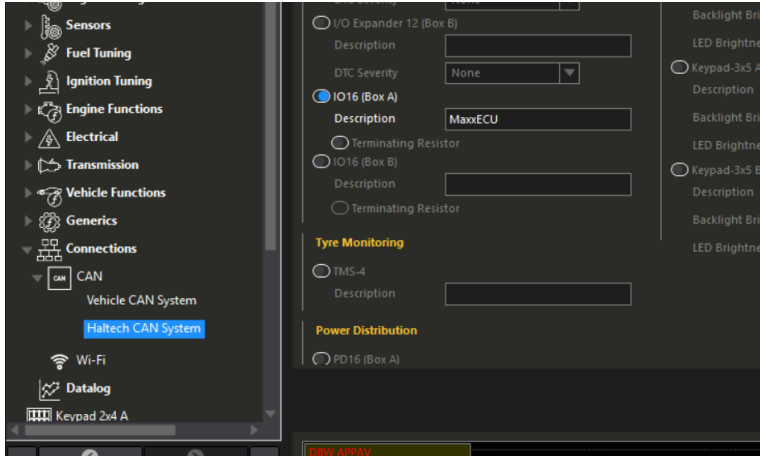


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To set this system up requires the programming of several inputs and outputs. Below is a list of such items to be configured.

Haltech System:

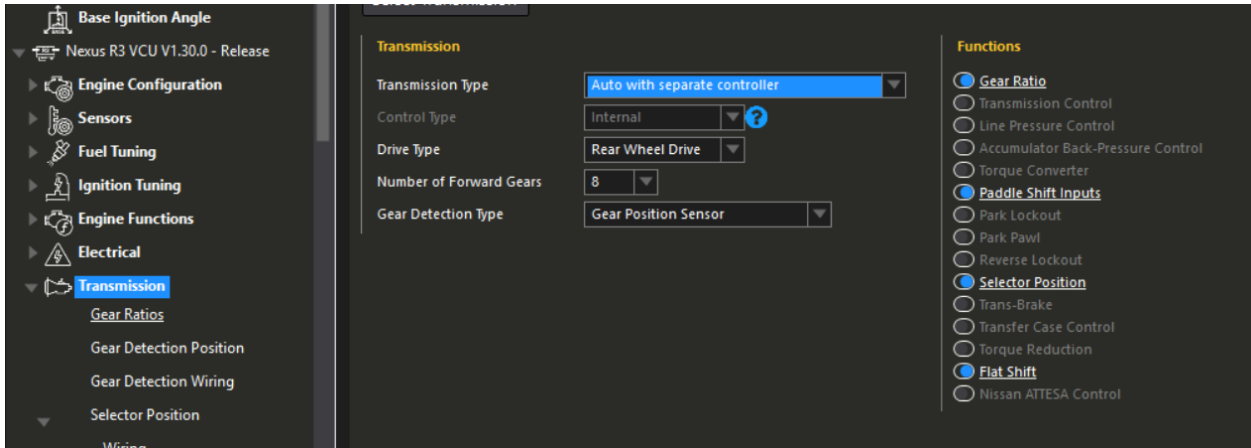
Go under Connections>CAN>Haltech CAN System> and enable IO16 Box A and name it MaxxECU. This now allows us to route CAN messages from the Maxx through the gateway to the Haltech.



Transmission setup-

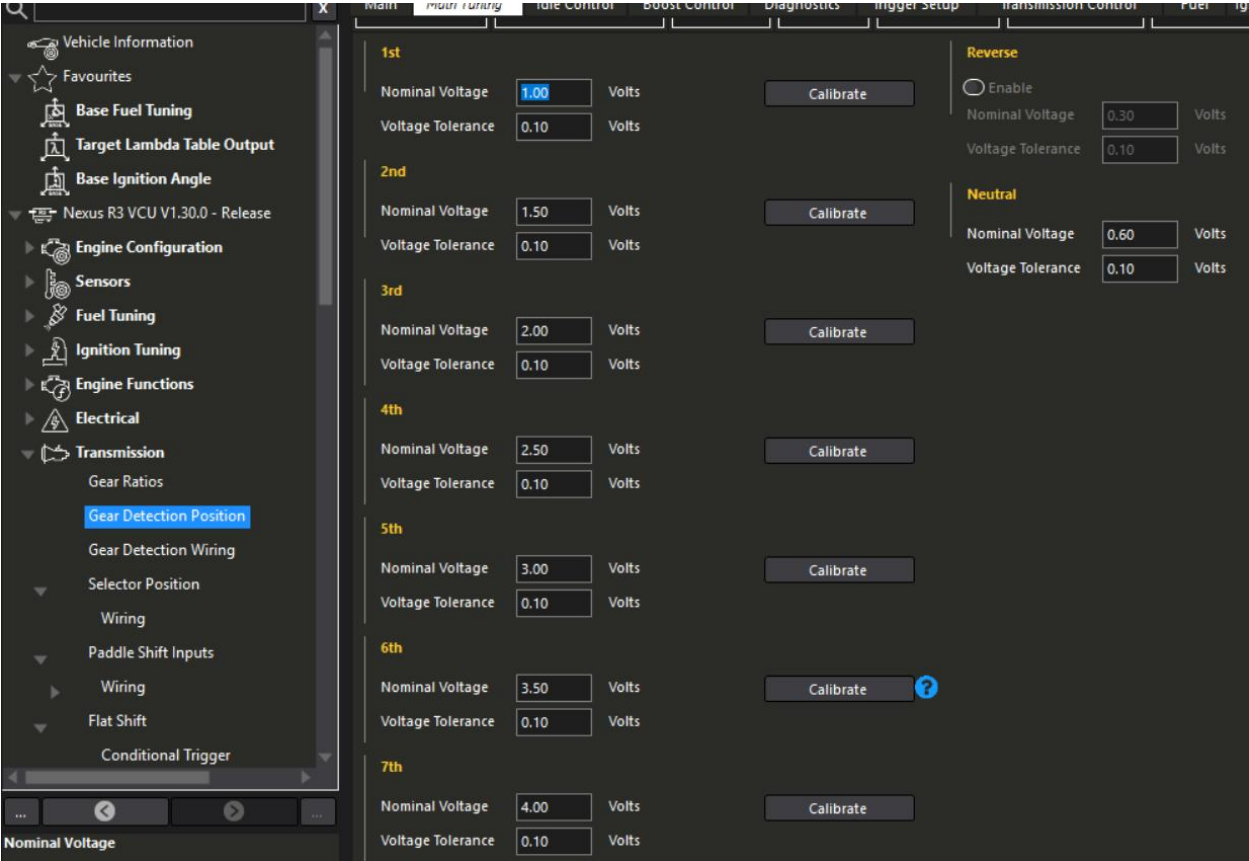
Now we need to setup all the transmission functions on the haltech side of things.

First step- Select Auto with separate controller, enable Gear Ratio, Paddle Shift, Selector Position and Flat Shift. Set to Rear Wheel Drive, 8 forward gears and Gear Position Sensor

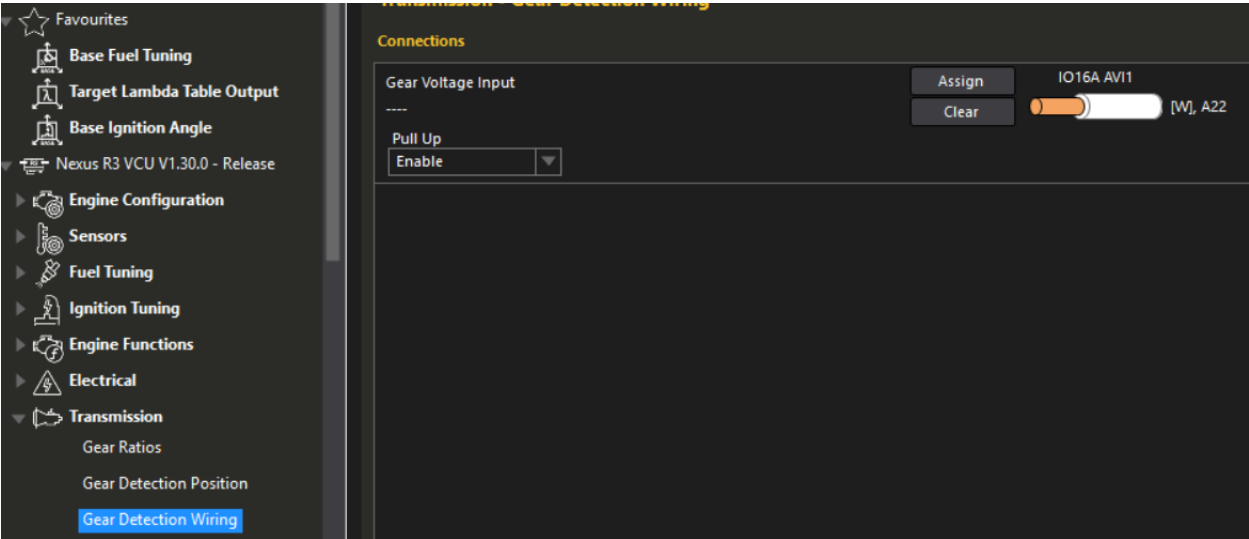


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Next we will setup Gear Positions- Enter the voltage values as below.

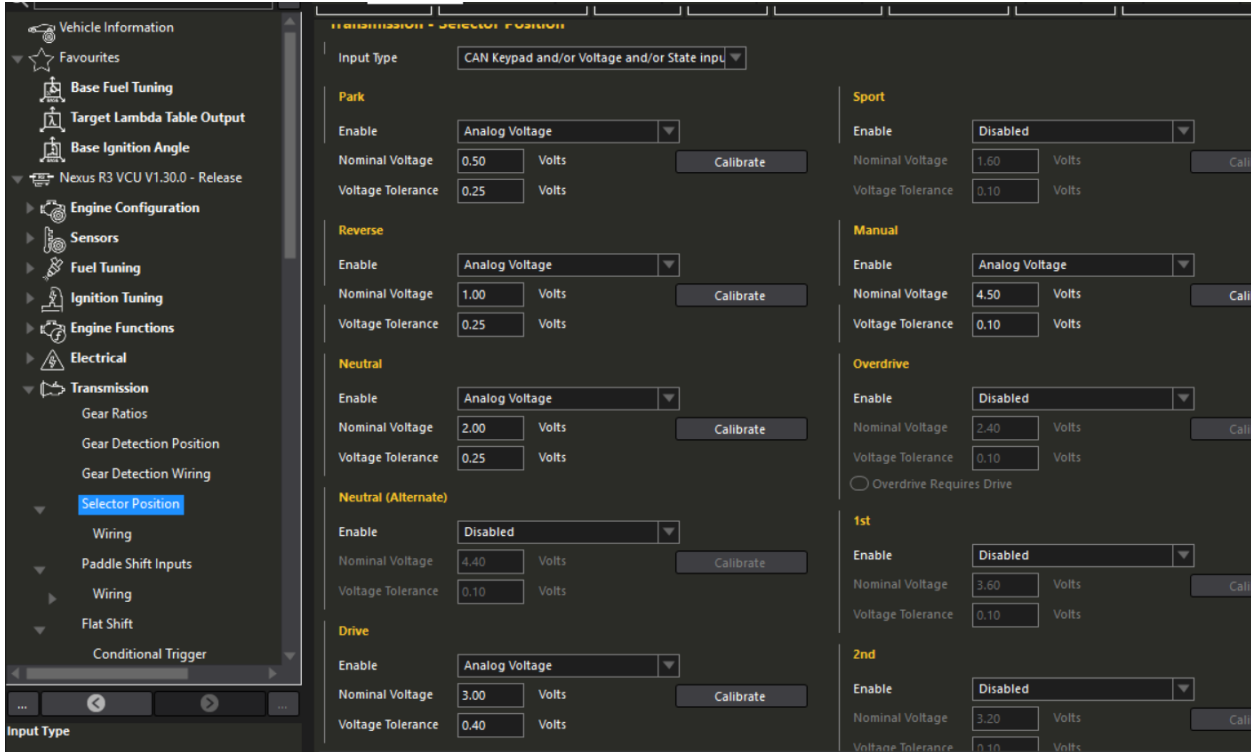


Next we set the Gear Position Wiring as below. Make sure to select IO16A, AV11

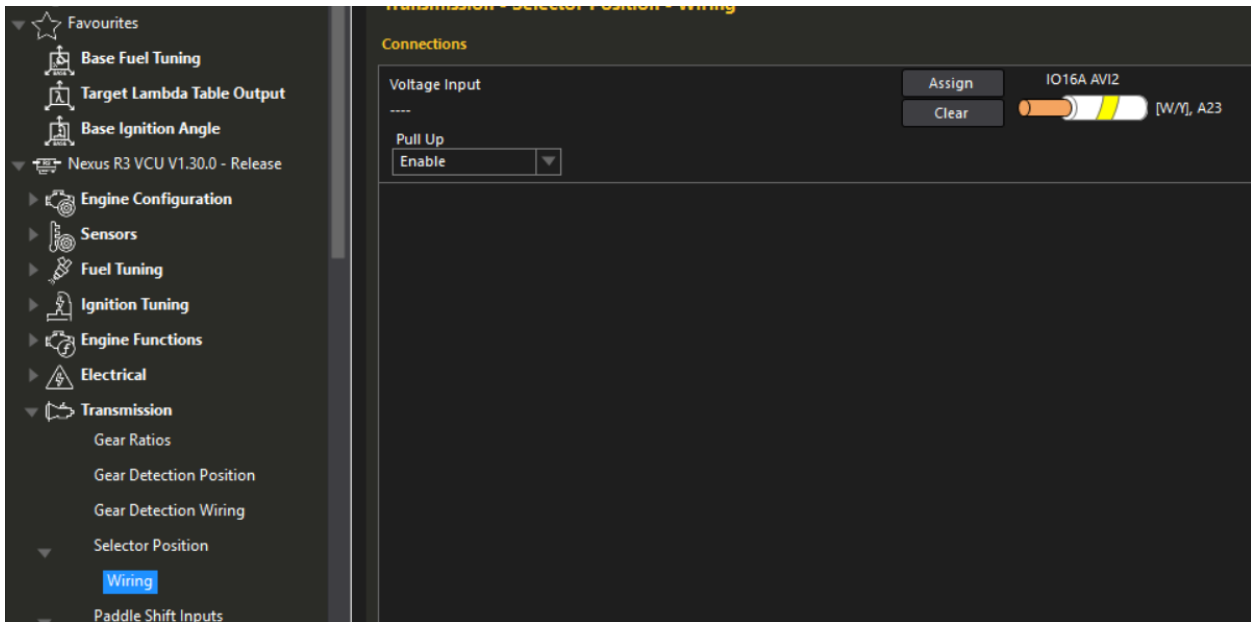


Next is Select Position- Set the voltages as per below. Make sure input type is CAN Keypad or Voltage.

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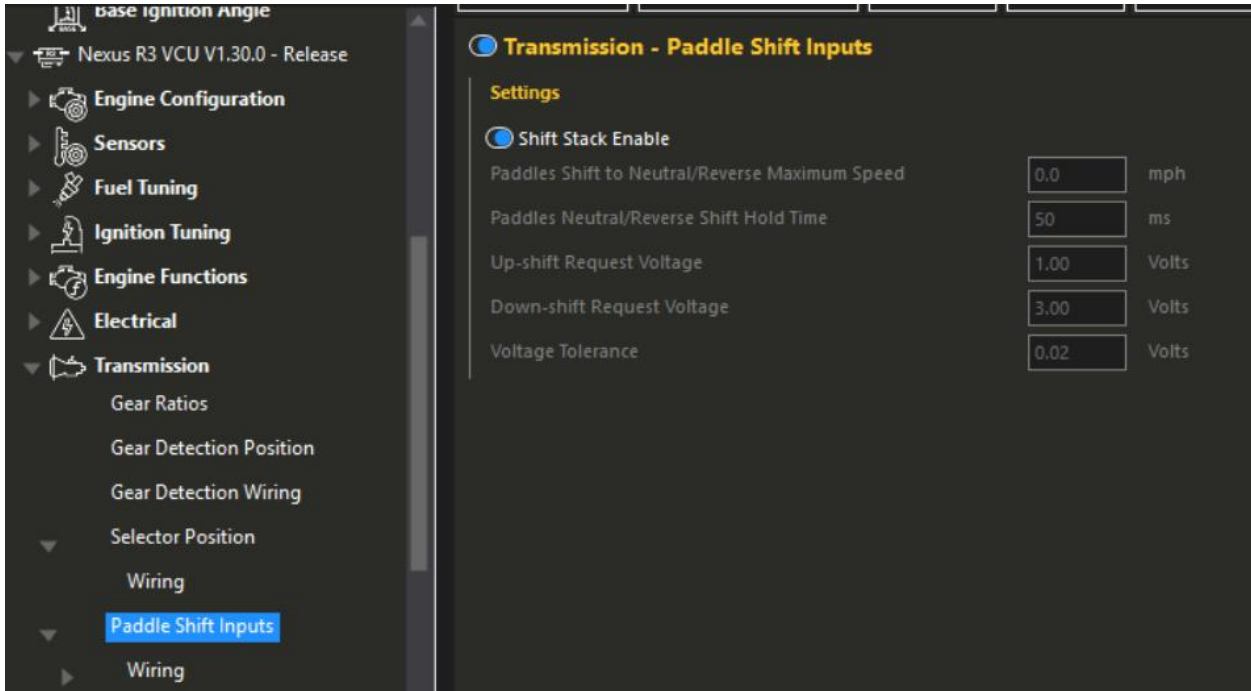


Selector Position Wiring – IO16A, AVI2

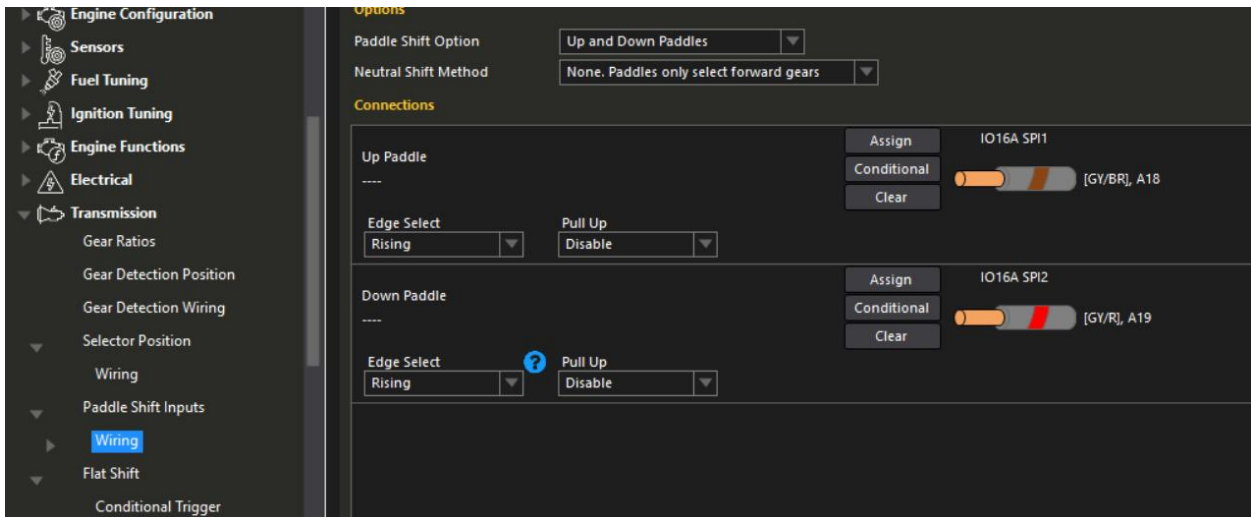


Paddle shift setup- Simply enable Shift Stack

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Paddle Shift Wiring- Select Up and Down Paddles, Neutral shift method set to None. Up Paddle- IO16A, SPI1. Down Paddle- IO16A, SPI2. Set both to Rising edge with pull up disabled.



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Flat Shift setup- Set all settings as below.

The screenshot displays the 'Transmission - Flat Shift' configuration page. The left sidebar shows a tree view with 'Flat Shift' selected. The main panel is divided into three sections:

- Flat Shift:** Mode is set to 'While Active'. Max Shift Time is 750 ms. Blockout is 800 ms.
- Throttle Blip on Down Shift:** 'Enable' is selected. Min Speed is 12.4 mph. Min RPM is 1200. Delay is 300 ms. TPS Correction is 4.0 %/sec. 'Post Shift TPS Fade Enable' is selected with a rate of 100.0 %/sec. 'Gear Tolerance Enable' and 'Allow When Anti-Lag Active' are unselected. Actuation Method is 'Drive by Wire'.
- Trigger Options:** 'Conditional Trigger' is selected. Input Select is 'Paddles with external controller'.
- Torque Reduction:** Torque Reduction Method is 'Fuel Cut & Ignition Retard'. Torque Reduction Type is 'Cut Percentage'. Rev Match Offset is 0 RPM. Recovery Method is 'Ramp Out Cut and Retard Together'. Shift Direction is 'Up Shifts'. Min TPS is 75.0 %. Min RPM is 4000 RPM.

The screenshot displays the 'Transmission - Flat Shift - Conditional Trigger' configuration page. The left sidebar shows 'Conditional Trigger' selected. The main panel shows the trigger logic:

- When Flat Shift Switch is On: **And**
- Paddle Shift State** **Select** is **Equal To** **Up Shift**

HALTECH TO MAXXECU GATEWAY SETUP FOR 8HP TRANSMISSION CONTROL

Nexus R3 VCU V1.30.0 - Release

- Engine Configuration
- Sensors
- Fuel Tuning
- Ignition Tuning
- Engine Functions
- Electrical
- Transmission
 - Gear Ratios
 - Gear Detection Position
 - Gear Detection Wiring
 - Selector Position
 - Wiring
 - Paddle Shift Inputs
 - Wiring
 - Flat Shift
 - Conditional Trigger
 - Cut Percentage**

Flat Shift Cut Percentage Table

Output: ---- %

Manifold Pressure (psi/inHg)

RPM (RPM)

	1000	2000	3000	4000	5000	6000	7000	8000
45.0	50.0	50.0	50.0	46.0	46.0	46.0	46.0	46.0
40.0	43.7	43.7	44.4	41.2	41.9	42.7	43.5	44.3
30.0	32.8	32.8	35.1	33.5	35.8	38.1	40.4	42.9
20.0	25.9	25.9	27.3	27.0	31.0	34.1	37.2	40.5
10.0	19.0	19.0	19.4	20.6	26.1	30.1	34.0	38.0
0.0	0.0	0.0	7.1	14.1	21.3	26.0	30.7	35.5

HALTECH TO MAXXECU GATEWAY SETUP FOR 8HP TRANSMISSION CONTROL

- base ignition angle
- ▼ Nexus R3 VCU V1.30.0 - Release
 - ▶ Engine Configuration
 - ▶ Sensors
 - ▶ Fuel Tuning
 - ▶ Ignition Tuning
 - ▶ Engine Functions
 - ▶ Electrical
 - ▼ Transmission
 - Gear Ratios
 - Gear Detection Position
 - Gear Detection Wiring
 - ▼ Selector Position
 - Wiring
 - ▼ Paddle Shift Inputs
 - Wiring
 - ▼ Flat Shift
 - Conditional Trigger
 - Cut Percentage
 - Ignition Retard**

Flat Shift Retard Table

Output: ---- °

Manifold Pressure (psi/inHg)

RPM (RPM)

	1000	2000	3000	4000	5000	6000	7000	8000
45.0	14.2	14.2	14.2	15.2	15.2	15.2	15.2	15.2
40.0	10.4	10.6	10.8	12.1	12.3	12.5	12.8	13.0
30.0	7.8	8.5	9.2	10.7	11.4	12.1	12.8	13.5
20.0	5.2	6.4	7.6	9.3	10.5	11.7	12.9	14.0
10.0	2.6	4.3	5.9	7.9	9.5	11.2	12.9	14.5
0.0	0.0	2.2	4.3	6.5	8.6	10.8	12.9	15.0

HALTECH TO MAXXECU GATEWAY SETUP FOR 8HP TRANSMISSION CONTROL

- base ignition angle
- Nexus R3 VCU V1.30.0 - Release
 - Engine Configuration
 - Sensors
 - Fuel Tuning
 - Ignition Tuning
 - Engine Functions
 - Electrical
 - Transmission
 - Gear Ratios
 - Gear Detection Position
 - Gear Detection Wiring
 - Selector Position
 - Wiring
 - Paddle Shift Inputs
 - Wiring
 - Flat Shift
 - Conditional Trigger
 - Cut Percentage
 - Ignition Retard
 - Recovery Time**

Flat Shift Recovery Time Output: ---- ms

Manifold Pressure (psi/inHg) RPM (RPM)

	1000	2000	3000	4000	5000	6000	7000	8000
45.0	10	30	33	37	40	49	67	95
40.0	9	27	29	31	33	42	59	85
30.0	7	22	24	26	27	35	49	72
20.0	5	17	18	20	26	33	40	59
10.0	2	12	15	18	25	32	39	55
0.0	0	7	12	17	24	31	38	50

HALTECH TO MAXXECU GATEWAY SETUP FOR 8HP TRANSMISSION CONTROL

The screenshot displays the Haltech software interface for configuring an 8HP transmission. The left sidebar shows a navigation menu with the following items: Nexus R3 VCU V1.30.0 - Release, Engine Configuration, Sensors, Fuel Tuning, Ignition Tuning, Engine Functions, Electrical, and Transmission. The Transmission menu is expanded, showing sub-items: Gear Ratios, Gear Detection Position, Gear Detection Wiring, Selector Position, Wiring, Paddle Shift Inputs, Wiring, Flat Shift, Conditional Trigger, Cut Percentage, Ignition Retard, Recovery Time, and Throttle Blip Amount (highlighted in blue).

The main window displays the **Throttle Blip Amount** configuration. The output is shown as **Output: --- %**. The table below shows the blip amount for each gear (1-8) at various RPM levels (1000-8000). The values are consistent across all gears for each RPM level.

RPM (RPM)	1	2	3	4	5	6	7	8
8000	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
7000	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6
6000	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2
5000	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7
4000	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3
3000	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9
2000	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
1000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0

The values assigned to shift cut, shift retard, recovery time and blip amount are all base line values and can be adjusted to clean up shifts if need be.

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Launch Control Setup- Enable Launch Control under Vehicle Functions then assign IO16A SPI4 as the wiring input as below.

Launch Control will enable whenever the transmission is put into Launch mode or Trans brake mode.

