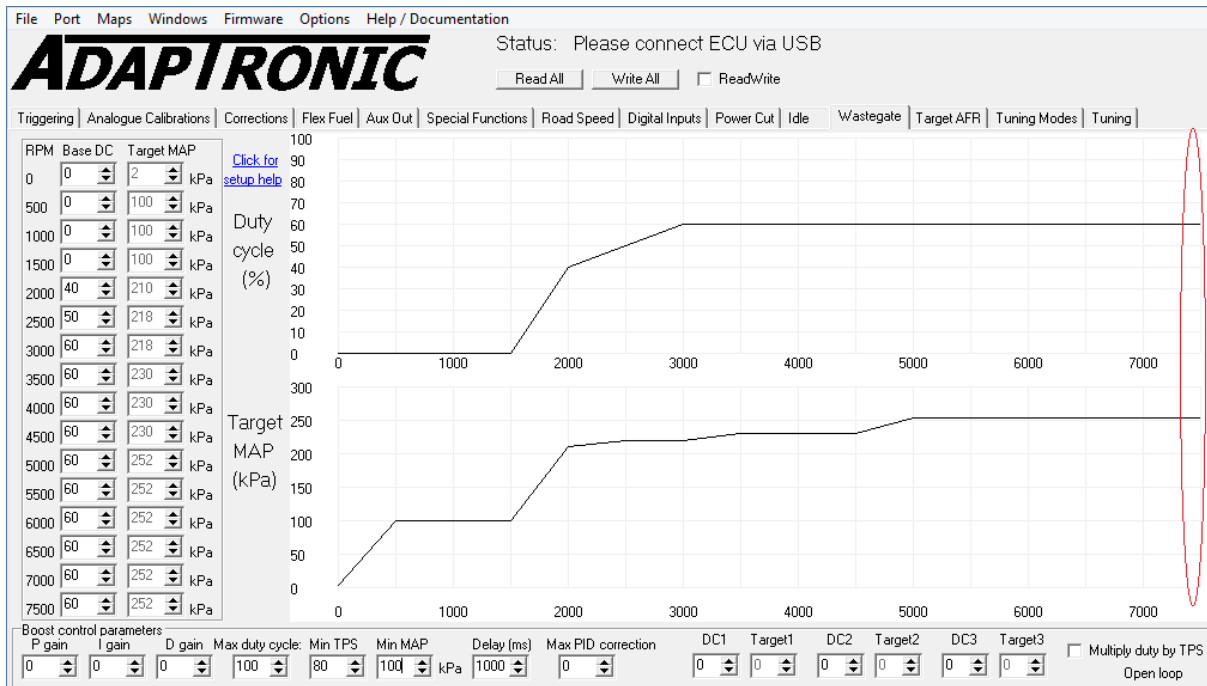


# BOOST CONTROL WORKAROUND

At the moment, the Select ECU's Wastegate (WG) control (i.e. the table) goes up to only 7500 RPM. This doesn't mean the control ends at 7500 RPM though, the ECU just uses the WG duty cycle setting at 7500 for 8000 and above.



If you wish to increase the WG control flexibility higher than 7500 RPM, there is a workaround that we can do at the moment, but this will have a few cons attached to it. The cons are introduced because we will not be using the built-in WG control in the software, and so we lose some of the WG control features such as:

1. Closed loop WG duty cycle control, i.e., you can only do it in open loop.
2. Multi-level boost using switches won't work.
3. Boost per gear won't work.
4. Not a con, but I wanted to clarify that over boost protection will still work.

If your engine's not using VVT control, then this would be one way of controlling the WG in open loop. We do this by:

1. Change your WG output to VVT1.

The image shows two screenshots of the ADAPTRONIC software interface, illustrating the configuration of an Aux Output. Both screenshots show the "Aux Output Number" set to "3 - High current (3A), PWM capable".

The top screenshot shows the configuration for "Wastegate". The "Type" is set to "Wastegate". The "Frequency" is set to "25 Hz". The "Low Threshold" is set to "4400" and the "High Threshold" is set to "4500". The "PWM" checkbox is checked. The "Summary" section on the right lists the Aux outputs: Aux 2: Idle control, PWM @ 500 Hz; Aux 3: Wastegate, PWM @ 25 Hz; Aux 4: Twin turbo control; Aux 5: Fuel pump; Aux 6: OR, 11 / 12; Aux 7: MOP 2; Aux 8: MOP 1. The LED status is also listed: Aux 9 (logic): None; Aux 10 (logic): None; Aux 11 (logic): Water Temp, 85 / 87; Aux 12 (logic): Air conditioner; Aux 13 (logic): None; Red LED: None; Green LED: None; Orange LED: None.

The bottom screenshot shows the configuration for "VVT1". The "Type" is set to "VVT1". The "Frequency" is set to "25 Hz". The "Low Threshold" is set to "4400" and the "High Threshold" is set to "4500". The "PWM" checkbox is checked. The "Summary" section on the right lists the Aux outputs: Aux 2: Idle control, PWM @ 500 Hz; Aux 3: VVT1, PWM @ 25 Hz; Aux 4: Twin turbo control; Aux 5: Fuel pump; Aux 6: OR, 11 / 12; Aux 7: MOP 2; Aux 8: MOP 1. The LED status is also listed: Aux 9 (logic): None; Aux 10 (logic): None; Aux 11 (logic): Water Temp, 85 / 87; Aux 12 (logic): Air conditioner; Aux 13 (logic): None; Red LED: None; Green LED: None; Orange LED: None.

2. Go to the Special Functions Tab. If you want a simple RPM x WG duty cycle (i.e. a 2D table), then set the VVT fields as follows:

Continuous VVT

Actuator Duty Cycle

Min: 0 %

Max: 100 % Default: 0 %

Controller Gains

	1000	3000	5000	7000	RPM
P	0	0	0	0	
I	0	0	0	0	
D	0	0	0	0	

VVT 1 Reference Position: 0 \*BTDC

Intake Cam  
 Exhaust Cam

Target angles based on: RPM & MAP (using fuel map 2)

Target Angles...

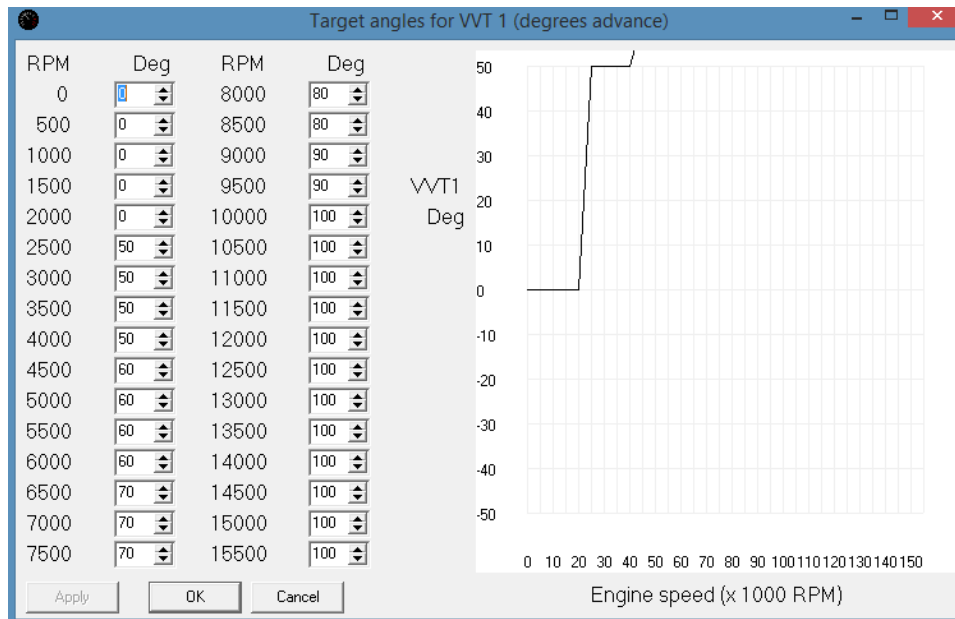
VVT 2 Reference Position: 0 \*BTDC

Intake Cam  
 Exhaust Cam

Target angles based on: RPM only (using angles table)

Target Angles...

Then, setup the Target Angles table which will now be your RPM x WG duty cycle table:



In the log, you must refer to VVT1Duty as the WG duty:

	A	B	C
1	Time (s)	RPM	VVT1Duty
2	0.047	1011	0
55	3.359	2055	0
56	3.406	2153	13
59	3.594	2471	47
60	3.656	2525	50
68	4.172	4380	56
69	4.234	4489	59
70	4.281	4820	60
77	4.719	6061	60
80	4.906	6174	61
81	4.984	6517	66
82	5.031	6736	70
91	5.594	7867	77
92	5.688	7967	79
97	5.969	8535	80
99	6.125	8761	85
101	6.234	8872	87
102	6.281	8872	88
104	6.422	9206	90
109	6.719	9765	94
111	6.844	9765	94
112	6.922	10116	100

3. You can also use Fuel Map 2 (set to VE), if you wish to use a 3D table for the WG duty cycle. You will need to select Fuel Map 2 in the VVT1 control as the Target Angles table:

Continuous VVT

Actuator Duty Cycle

Min: 0 %

Max: 100 % Default: 0 %

Controller Gains

	1000	3000	5000	7000	RPM
P	0	0	0	0	
I	0	0	0	0	
D	0	0	0	0	

WT 1 Reference Position: 0 \*BTDC

Intake Cam  Exhaust Cam

Target angles based on: RPM & MAP (using fuel map 2)

Target Angles...

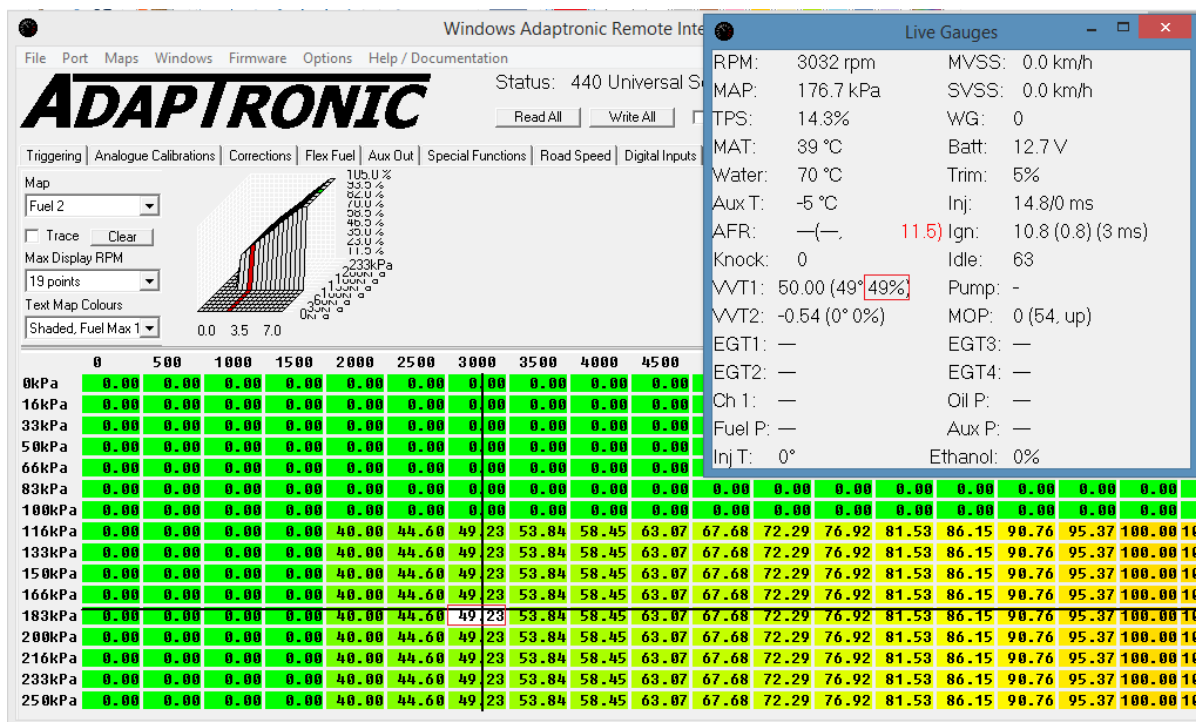
WT 2 Reference Position: 0 \*BTDC

Intake Cam  Exhaust Cam

Target angles based on: RPM only (using angles table)

Target Angles...

And in this screenshot, you can see it working in real time:



- END -