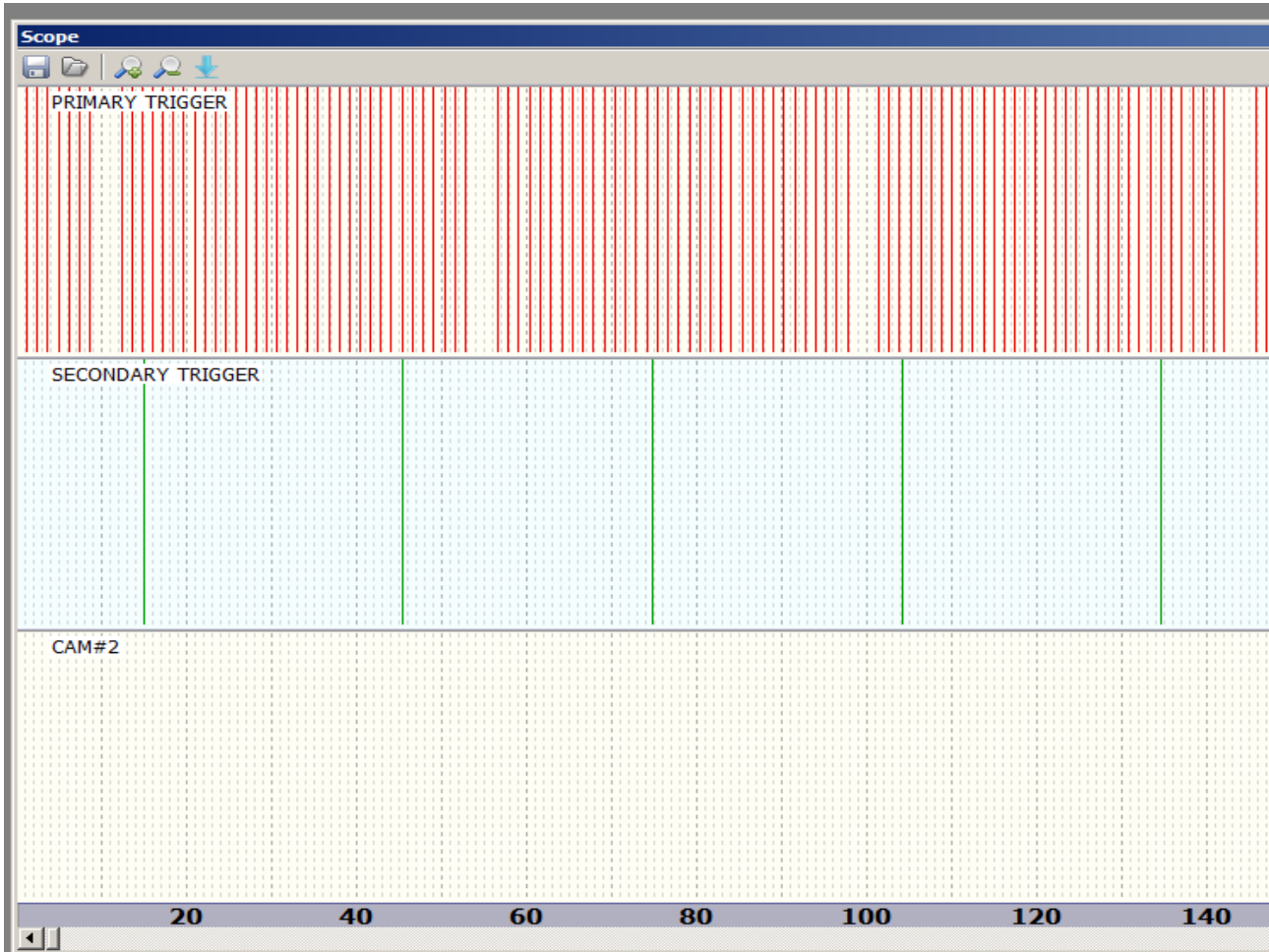


## 2JZGTE VVTi EMU Setup

This guide is for firmware version 1.29 or above.

Signal scope of correct trigger config



## Trigger configuration (full sequential)

Firing order 1-5-3-6-2-4

Coils are connected in the following way:

Cylinder #	EMU Output	EMU Terminal
1	Ignition output #1	G8
2	Ignition output #2	B8
3	Ignition output #3	G9
4	Ignition output #4	G1
5	Ignition output #5	G16
6	Ignition output #6	B16

The image shows three screenshots of software configuration windows for ignition settings:

- Ignition - Primary trigger**:
 

Sensor type	VR Sensor
Enable pullup	<input type="checkbox"/>
Trigger type	Toothed wheel with 2 missing teeth
Trigger edge	Falling
Number of cylinders	6
Num teeth (incl. missing)	36
First trigger tooth	9
Trigger angle	63
Cranking gap detection scale	100 %
Next edge rejection angle	0 deg
Enable scope	<input checked="" type="checkbox"/>
- Ignition - Secondary trigger**:
 

Sensor type	VR Sensor
Enable pullup	<input type="checkbox"/>
Trigger type	2JZ VVT 3 teeth
Trigger edge	Falling
Nissan sync window width	4
Sensitivity switch RPM	12999 RPM
Next edge rejection angle	0 deg
User cam min tooth	0
User cam max tooth	0
Enable advanced filter	<input type="checkbox"/>
Trigger tooth	0
Tooth deviation	0
- Ignition - Ignition outputs**:
 

Spark distribution	Coils
Coils type	Coils with built in amplifier
Output offset	0
Ignition event 1	Ignition output 1 (10A, G8)
Ignition event 2	Ignition output 5 (10A, B8)
Ignition event 3	Ignition output 3 (10A, G9)
Ignition event 4	Ignition output 6 (10A, G1)
Ignition event 5	Ignition output 2 (10A, G16)
Ignition event 6	Ignition output 4 (10A, B16)
Ignition event 7	None
Ignition event 8	None
Ignition event 9	None
Ignition event 10	None
Ignition event 11	None
Ignition event 12	None

## Trigger configuration (wasted spark)

Firing order 1-5-3-6-2-4

Cylinder pairs: 1-6, 5-2, 3-4

Coils are connected in the following way:

Cylinder #	EMU Output	EMU Terminal
1	Ignition output #1	G8
2	Ignition output #2	B8
3	Ignition output #3	G9
4	Ignition output #3	G1
5	Ignition output #2	G16
6	Ignition output #1	B16

The image shows three software configuration windows for an ignition system. The top-left window is titled 'Ignition - Primary trigger' and contains the following settings:

- Sensor type: VR Sensor
- Enable pullup:
- Trigger type: Toothed wheel with 2 missing teeth
- Trigger edge: Falling
- Number of cylinders: 6
- Num teeth (incl. missing): 36
- First trigger tooth: 9
- Trigger angle: 57
- Cranking gap detection scale: 100 %
- Next edge rejection angle: 0 deg
- Enable scope:

The top-right window is titled 'Ignition - Secondary trigger' and contains the following settings:

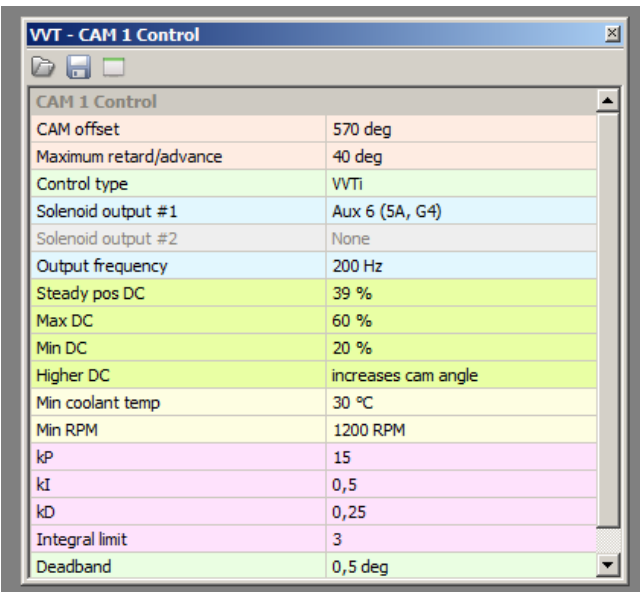
- Sensor type: VR Sensor
- Enable pullup:
- Trigger type: 23Z VVT 3 teeth
- Trigger edge: Falling
- Nissan sync window width: 4
- Sensitivity switch RPM: 1000 RPM
- Next edge rejection angle: 0 deg
- User cam min tooth: 0
- User cam max tooth: 0
- Enable advanced filter:
- Trigger tooth: 0
- Tooth deviation: 0

The bottom window is titled 'Ignition - Ignition outputs' and contains the following settings:

- Spark distribution: Coils
- Coils type: Coils with built in amplifier
- Output offset: 0
- Ignition event 1: Ignition output 1 (10A, G8)
- Ignition event 2: Ignition output 2 (10A, G16)
- Ignition event 3: Ignition output 3 (10A, G9)
- Ignition event 4: Ignition output 1 (10A, G8)
- Ignition event 5: Ignition output 2 (10A, G16)
- Ignition event 6: Ignition output 3 (10A, G9)
- Ignition event 7: None
- Ignition event 8: None
- Ignition event 9: None
- Ignition event 10: None
- Ignition event 11: None
- Ignition event 12: None

VVTi configuration

**Flyback diode on VVTI solenoid is required!!!!**

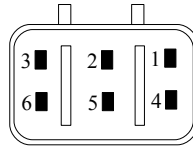


CAM 1 Control	
CAM offset	570 deg
Maximum retard/advance	40 deg
Control type	VVTi
Solenoid output #1	Aux 6 (5A, G4)
Solenoid output #2	None
Output frequency	200 Hz
Steady pos DC	39 %
Max DC	60 %
Min DC	20 %
Higher DC	increases cam angle
Min coolant temp	30 °C
Min RPM	1200 RPM
kP	15
kI	0,5
kD	0,25
Integral limit	3
Deadband	0,5 deg

**Please check on the log if the CAM#1 angle is 0 when there is 0 on the CAM #1 Angle 3D table.**

## Stepper motor

EMU PIN	STEPPER MOTOR
G2	1
+12V	2
G10	3
G3	4
+12V	5
G11	6



Idle valve type is Unipolar stepper. Thre frequency is 100Hz