



---

# Syvecs LTD

---

---

## V1.1

---

# Corolla GR AWD Controller

This document is intended for use by a technical audience and describes a number of procedures that are potentially hazardous. Installations should be carried out by competent persons only.

Syvecs and the author accept no liability for any damage caused by the incorrect installation or configuration of the equipment.

Please Note that due to frequent firmware changes certain windows might not be the same as the manual illustrates. If so please contact the Syvecs Tech Team for Assistance.

[Support@Syvecs.com](mailto:Support@Syvecs.com)



### Contents

- 1 x Syvecs CorollaGR AWD Ecu
- 1 x USB Cable
- 1 x BurnOut Switch **(Optional Extra)**
- 1 x 20k Rotary Potentiometer **(Optional Extra)**

### Installation

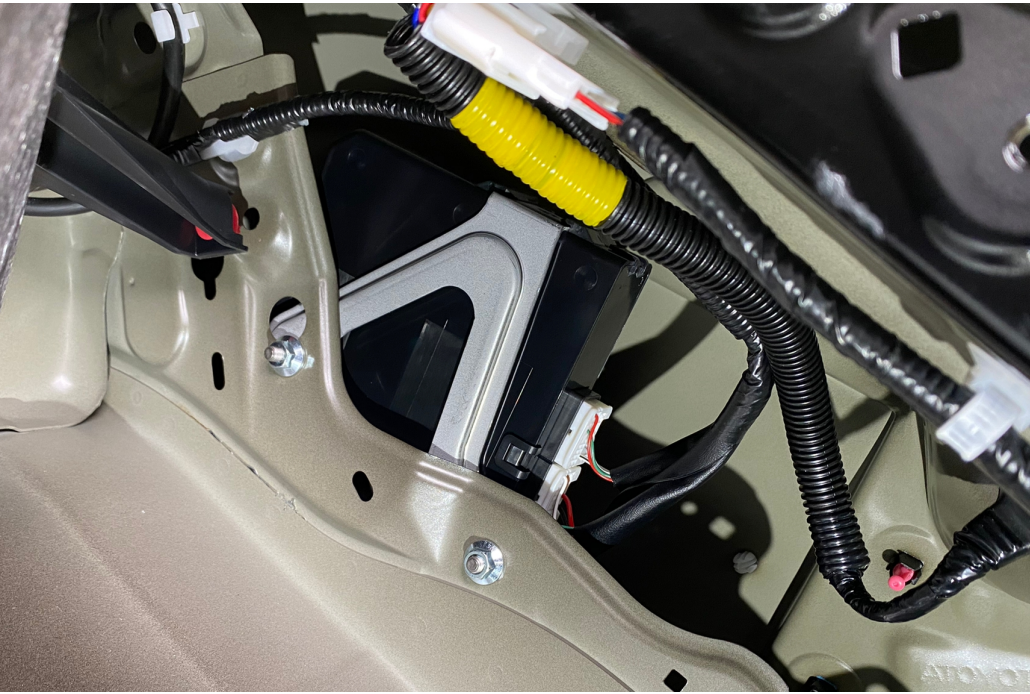
First you need to locate the OEM AWD Ecu on the CorollaGR, this is found in rear right section of the car

To access, you need to remove the boot lining and rear right cover as shown below. The AWD ecu is located behind the area marked in Red.





Once removed, you will find the OEM AWD Ecu behind the panel highlighted above, unplug it and remove



Unplug and remove OEM Controller, mount the Syvecs CorollaGR AWD Unit in its place and secure with cable ties



When mounting the Syvecs AWD Ecu it's best to plug in the USB Cable at the same time and route the cable into the front if you are planning to do live communication with the Unit. The USB port is found at the back connector

The AWD controller will come pre-loaded with a base calibration that has default values which simulate an OEM AWD unit. Use Syvecs Scal software to adjust. See last Page

Updates can also be found on our forum here - <https://www.syvecs.co.uk/forum/>

## Controls

### 2WD Mode / Burnout / AWD Unlock

1. First method is via either the OEM Hazard button or OEM Handbrake
2. Second Option is via wiring in a Burnout Switch to AN01 Input on the Syvecs Awd controller. AN01 has a internal 5v pull-up set so the input will sit at 5v, the other side of the Switch needs to be connected to Ground on the chassis or via Ground Pins on the Syvecs AWD Controller.

AN01, AN02, 5V and Ground are available on the External 4 way DTM connector

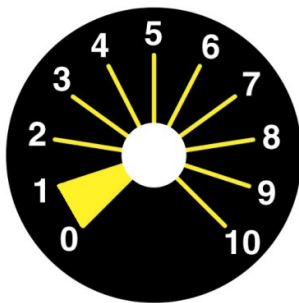
When AN01 is less than 3v it will activate 2WD Mode / Burnout Mode.

**AWD light warning in Burnout Mode is optional and can be turned ON or OFF in Scal software. SCAL - Two Wheel Drive Control - Awd Light Active in Burnout**



### Live Adjustment Potentiometer

Users can have the ability to adjust the AWD Duty live via a laptop or with an external potentiometer with the Syvecs AWD Unit. A 20K Rotary Potentiometer can be wired to the AN2 input of the Syvecs Controller and it will apply a multiplier to the Duty. Wiring for the Pot is here --- >



- 0 -1 = No Adjustment (Logic Off)
- 1 -2 = 0.6 Multiplier (Less Duty)
- 2 -3 = 0.7 Multiplier
- 3 -4 = 0.8 Multiplier
- 4 -5 = 0.9 Multiplier
- 5 -6 = 1.0 Multiplier (No Adjustment)
- 6 -7 = 1.1 Multiplier
- 7 -8 = 1.2 Multiplier
- 8 -9 = 1.3 Multiplier
- 9 -10 = 1.4 Multiplier (More Duty)

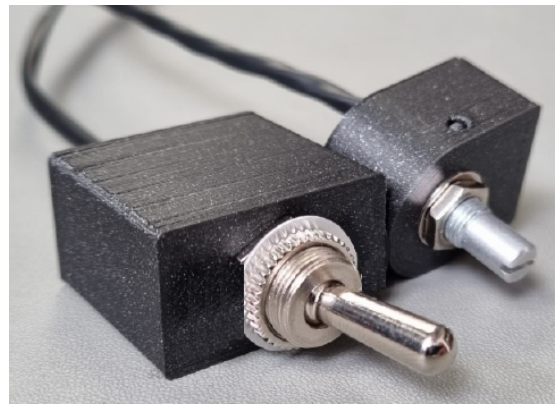
## External DTM4 Pinout

DTM4:

- Pin 1 – Ground (Black)
- Pin 2 – AN2 (Blue) – AWD 20k Pot
- Pin 3 – 5v Out (Red)
- Pin 4 – AN01 (Yellow) - Burnout Switch



Burnout Switch – ON = AWD / OFF = 2WD





## Calibrations of the AWD ECU

Users have the ability to adjust all the controls of the Syvecs AWD Unit via our Scal program that's part of SSuite. This can be downloaded from <https://www.syvecs.com/software/>

The USBC port for communication is found at the back of the AWD Controller, the other side connects to a Windows Laptop or PC.

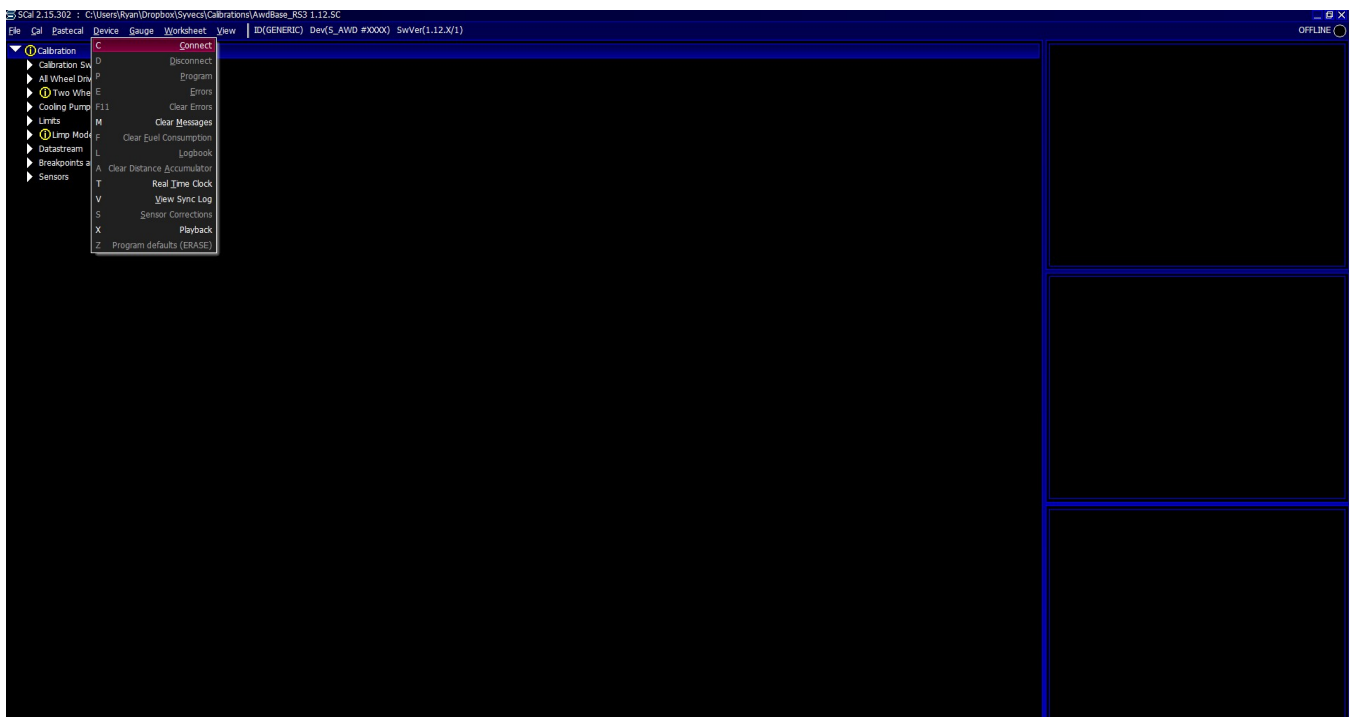
Open the Scal software and select **Device - Connect** Tab at the top. This will connect to the device and grab the calibration from it. If the unit has just been updated then no Cal will be present and Users need to program defaults or load a base map which are found on our Forum. <https://www.syvecs.com/Forum/>

### IMPORTANT:

The AWD Ecu can be connected to and programmed outside of the car as it will power up of the USB cable alone. PLEASE NOTE: If you are connecting the Usb to an Awd Ecu before the Unit is powered up from the car power systems it will enter a bootloader state until a **Device –Connect** is preformed. If wanting to connect to the unit in the car then connect the USB after the Ignition is **ON** or perform a **Device –Connect** first to bring the unit into main code.

Green Maps can be changed live, Blue maps require a **Device – Program** for the calibration change to be flashed into the device.

When all calibration work is done, users must do a **Device – Program** so the green maps which have been changed get flashed and stored in memory.



## Main Code Updates

Please watch the help video here - [https://www.youtube.com/watch?v=RuXkm\\_9gBRU](https://www.youtube.com/watch?v=RuXkm_9gBRU)

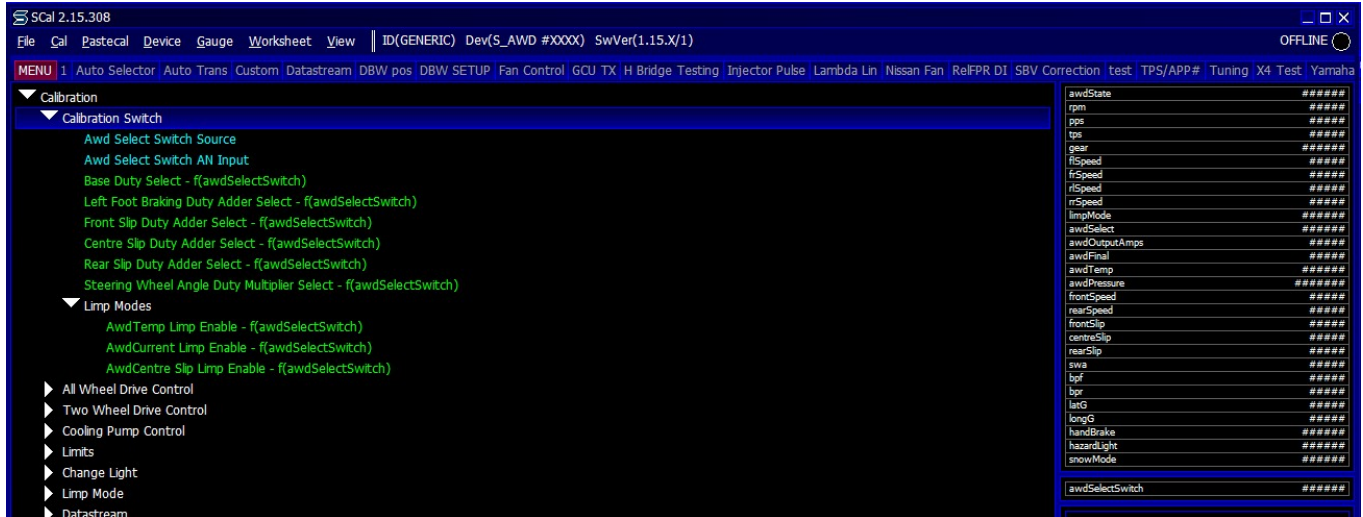
Youtube – SyvecsHelp – Syvecs AWD Firmware Update Guide

## Calibration Switching on the AWD ECU

The Syvecs AWD Unit allows for users to be able to adjust many aspects of the control strategies inside the AWD Ecu via either an external switch or via OEM controls / buttons with plug in AWD units.

At the top of the Scal AWD Calibration tree you will find the Calibration Switch section which list all the maps that can be adjusted based on awdSelect position. There is 4 positions available which can be used to adjust multiple duty maps or if limp modes are active.

Users are able to see the active awdSelect position by viewing it via the right item list. Double clicking on the item will bring up a larger gauge.



The CorollaGr AWD unit sets the awdSelect position based on the follow OEM Modes:

Front Mode – awdSelect = 1

Rear Mode - awdSelect = 2

Track Mode - awdSelect = 3

Base Duty 1 is setup for Normal Mode

Base Duty 2 is setup for Sport Mode

Base Duty 3 is setup for Track Mode