VP16 Auxiliary Port Manual

Function:

The Auxiliary port allows the VP16 to control external devices or read external switches/buttons.

Pinout:

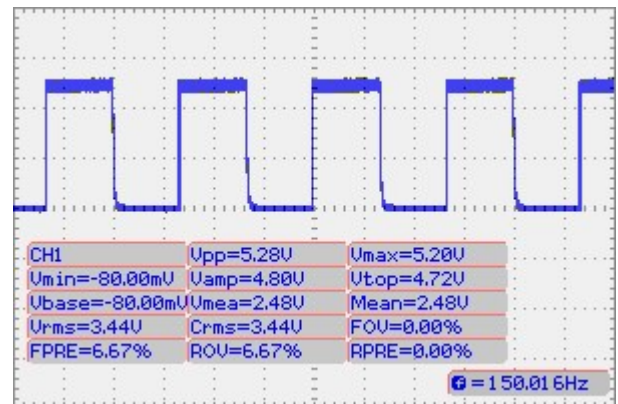| Pin	Description	High	Low
1	PWM Channel 1 Output	5V 100mA max	Signal Ground
2	PWM Channel 2 Output	5V 100mA max	Signal Ground
3	Switch/Button Input	Signal Ground	Float / No Connection
4	Signal Ground		

PWM Profile:

Voltage: 5V

Update Speed: <10ms

Frequency Range: 150Hz – 1Hz

Frequency = 1/Periodic Time or f = 1/T Hz
Periodic Time = 1/Frequency or T= 1/f sec

Controller Setup:

1. Connect battery power to the Controller's Positive (+) and Negative (-) terminals. An ignition switched relay is recommended to prevent battery drain.
2. Connect the Load to the Controller's Output terminals.
3. Connect the RJ11 cable to the back of your VP16.

Creating a Simple Map:

You must create a Map to tell the VP16 exactly when to turn the controller on or off.

For this example, we are creating a simple Map that will: **Switch on the controller when the engine exceeds 3,000 RPM.**
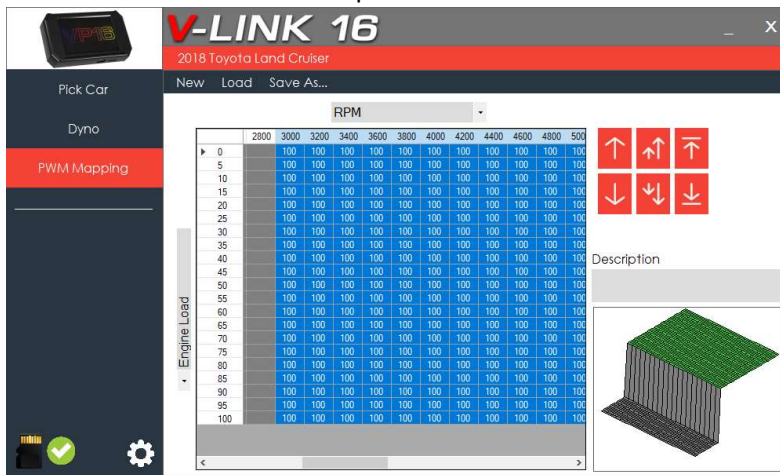
1. Start V-Link 16 and insert your Micro SD Card

2. Click PWM Mapping

3. To select all RPM over 3,000, click the column header labeled 3000 and drag all the way right.

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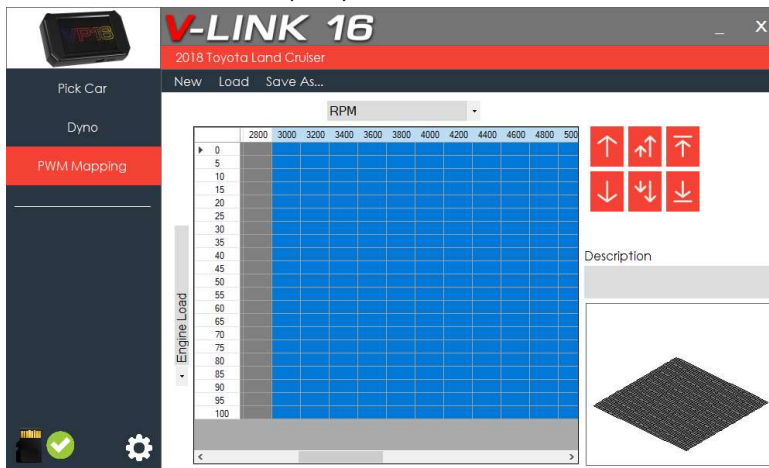
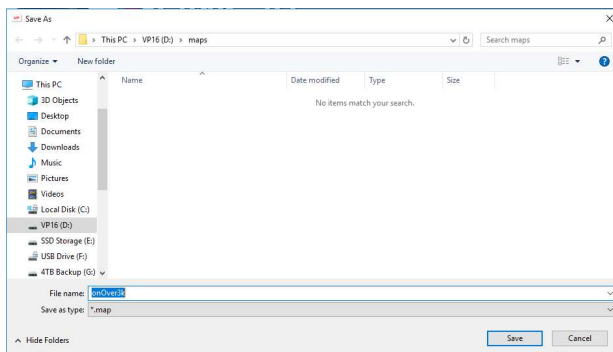4. Click the ⬆ button to set output to 100%

5. Click the Description box and create a description for this map
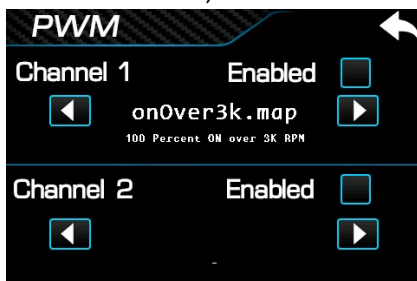

6. Click Save As… and name the map "onOver3k.map"
   NOTE: Name cannot exceed 8 characters.

7. Return the Micro SD Card to your VP16.

8. Start the vehicle and select PWM from the VP16's menu.

9. Under Channel 1, use the arrows to select the file.

10. Check Enabled ☑ to enable the map.

11. Verify map is loaded by revving engine over 3,000 RPM. The controller will switch on at 100% power.
    NOTE: The VP16 will automatically save your PWM map settings and reload them on restart.
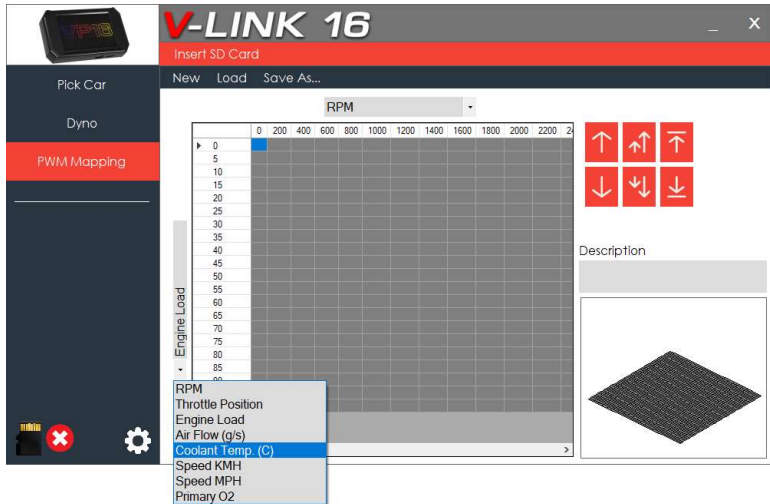
Creating a Complex Map:

For this example, we are creating a Map that will: **Switch on the controller slowly with RPM, but only if the vehicle is warm.**

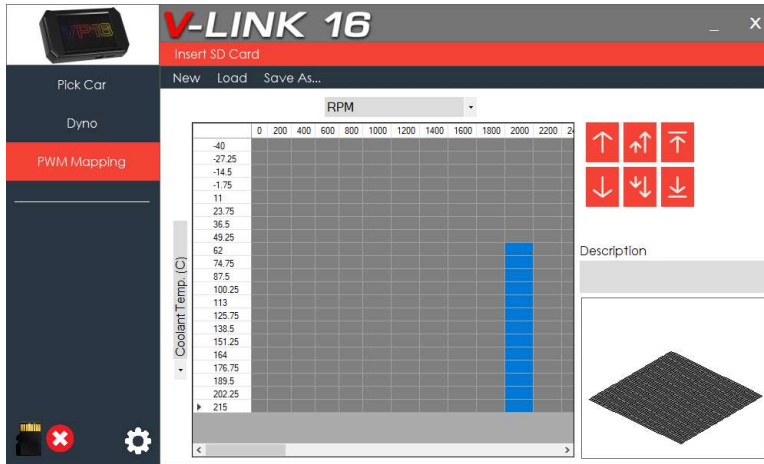1. Start V-Link 16 and insert your Micro SD Card
2. Click PWM Mapping
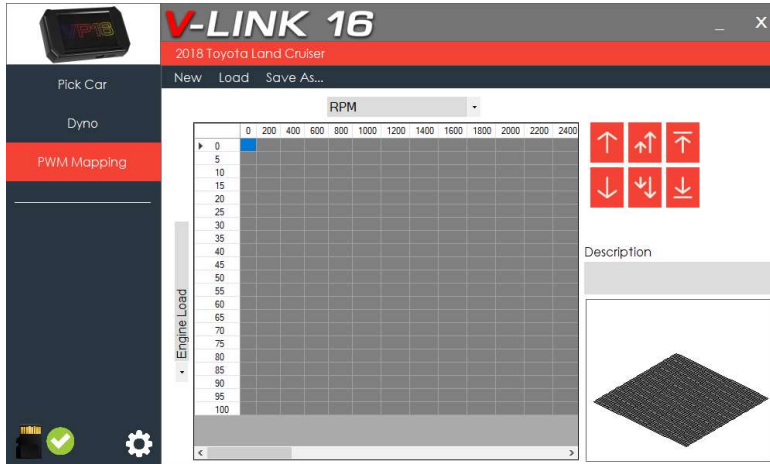
3. Click the arrow below Engine Load to bring up a list of available parameters.

4. Select Coolant Temp. (C) to change the Y-Axis to Coolant Temp values.

5. Click on the cell at Coolant Temp 62 and RPM 2000, and drag down to select the temperature range.
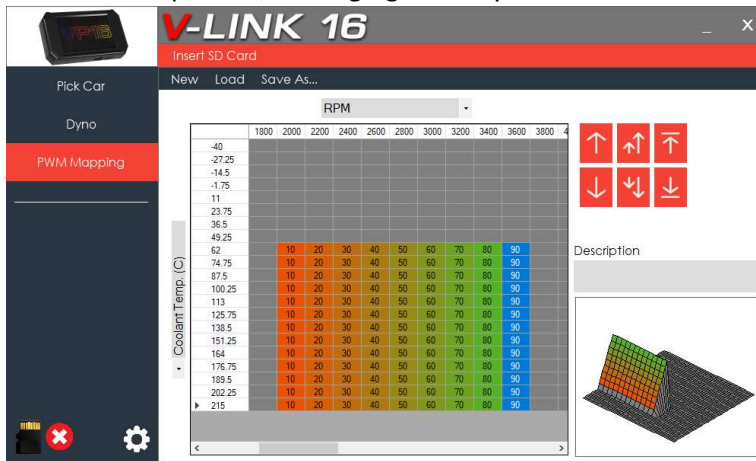

6. Click the ↑ button to increase the output by 10%. The controller will now output only 10% of its power when Coolant Temperature and RPM are within this range.
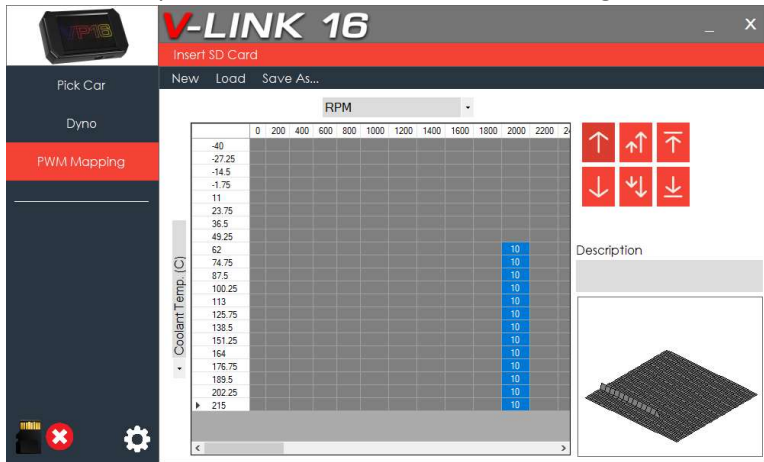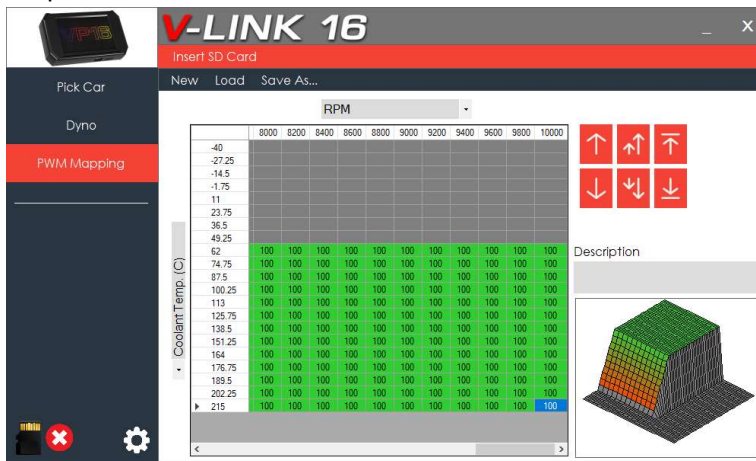

7. Select the next group of cells under 2200 RPM and click ↑ twice to set the output to 20%
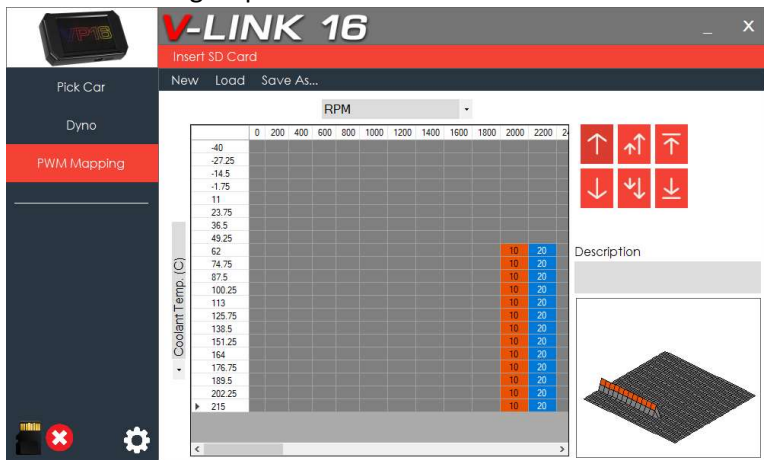
8. Continue this pattern, moving right until you reach 90%

9. Select the remaining cells from 3800 RPM to 10000 RPM in this temperature range and click the ⬆ button to set output to 100%

10. Create a description for the map

11. Click Save As… and create a file name

12. Return the Micro SD Card to your VP16.

13. Start the vehicle and select PWM from the VP16's menu.

14. Under Channel 1, use the arrows to select the file you made and then click Enabled.

15. Test the map.
- If engine coolant temperature is below 62C then the controller will not power on.
- If engine coolant temperature is above 62C then the controller will ramp up power proportional to RPM.

Input Button/Switch

Coming soon.

Frequency Changing

Coming soon.