MINI
CHALLENGE

Hi All,

Firstly thank you for joining the MINI CHALLENGE for the 2019 season, working throughout last year I have put together a few things for this season to hopefully make the data side of things more accessible for all the teams.

Secondly, it is imperative that your Toolbox, Toolset and Dashboards are kept up to date with the latest firmware from Cosworth. A lot of issues experienced last year, from inaccessible data, to dashboard errors and setup faults could have all been negated by ensuring they are all up to date. Please see links below:

https://www.cosworth.com/products/toolset/

https://www.cosworth.com/products/toolbox/

Please see below for changes to the 2019 season to help aid teams and drivers get the most out of the software capabilities of the cars.

1. Previously a screenshot could be made available to show the fastest lap time of the session by coming to the data engineer with a memory stick. To make this process more efficient, fastest lap data (via a screenshot) will be uploaded to the following location: https://drive.google.com/open?id=17598mTGnHvo6e4PUNrKvyTtEbScRj7rW
With the same channels as previous: Brake Pressure, Pedal Position, RPM, Speed and Gear Position. Please check this shortly after a session ends.

   For those wanting to carry out direct analysis to the screenshot, please find an example Toolbox Template uploaded to the drive at the following location: https://drive.google.com/open?id=1IN9WnxQF09UcD11Ka8TVP4WFzjxk1gZP

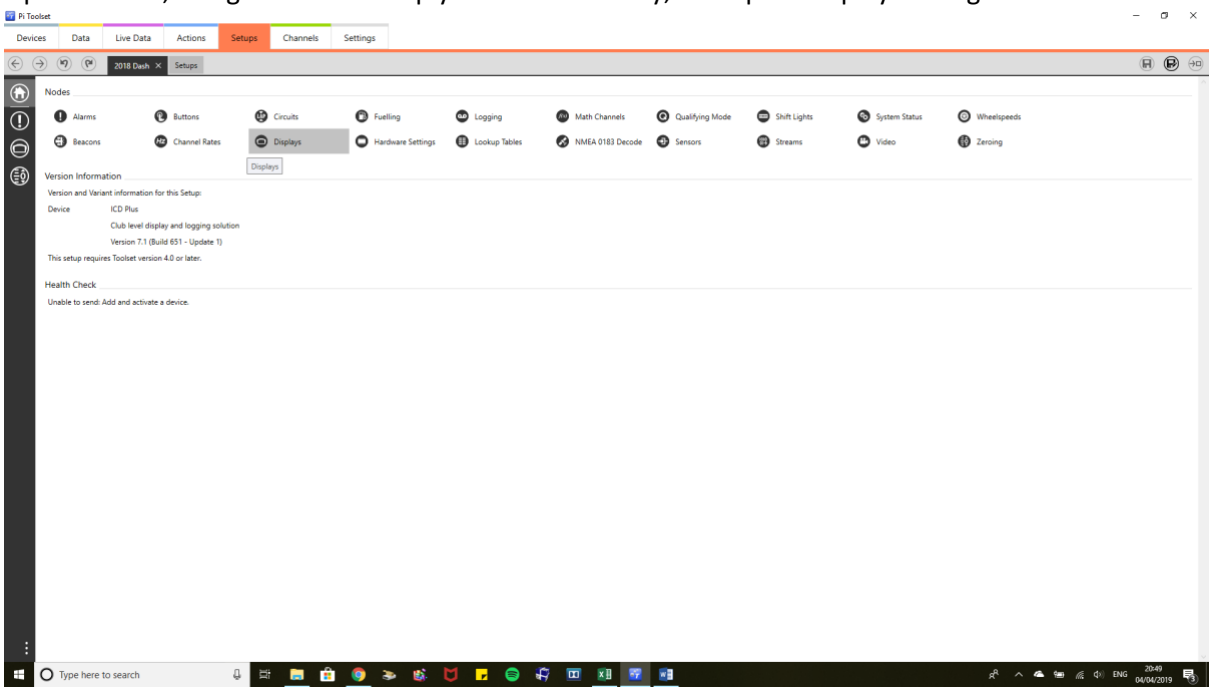
2. To help teams self-diagnose faults with their vehicles I have also developed an engine diagnostics workbook with many targets vs actual readouts for a range of engine parameters. I suggest that this workbook is used to look at running data from last year as well as what is observed this year to make comparisons with 'good running' and perceived 'bad running'. With the grids being even fuller this year, it will simply not be possible for me to look at every single lap, for a certain engine parameter where I have been told that you have an issue with a car to help diagnose. I will be dependent on yourselves assessing your own data and making conclusions where I hope to be able to confirm perceived poor running and potential solutions where you have concisely highlighted the issue and have everything loaded for me to view. I am here to help but want to be transparent and evenly shared through the entire entry list.

3. Finally, to assist driver manage temperatures to maintain optimum engine performance, we would like to suggest incorporating 'Air Temperature' and if applicable 'Gearbox Temperature' on page one of the dashboards. Please check your data to see if you have TGearbox channel reading reliable data. Some vehicles don't have TGearbox channel available due to wiring loom changes (early builds and other variants).

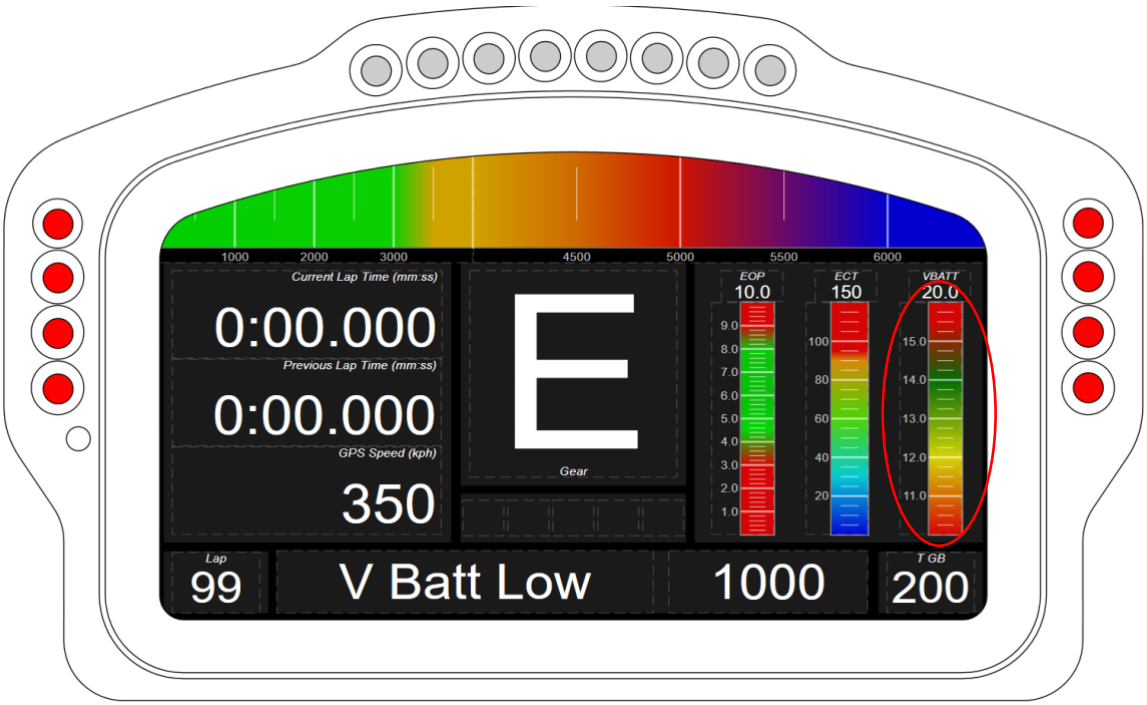
   Please see below how to add 'Air Temperature' only to your dashboard if you do not have Gearbox Temperature data (method to add both Gearbox Temp and Air Temp following).

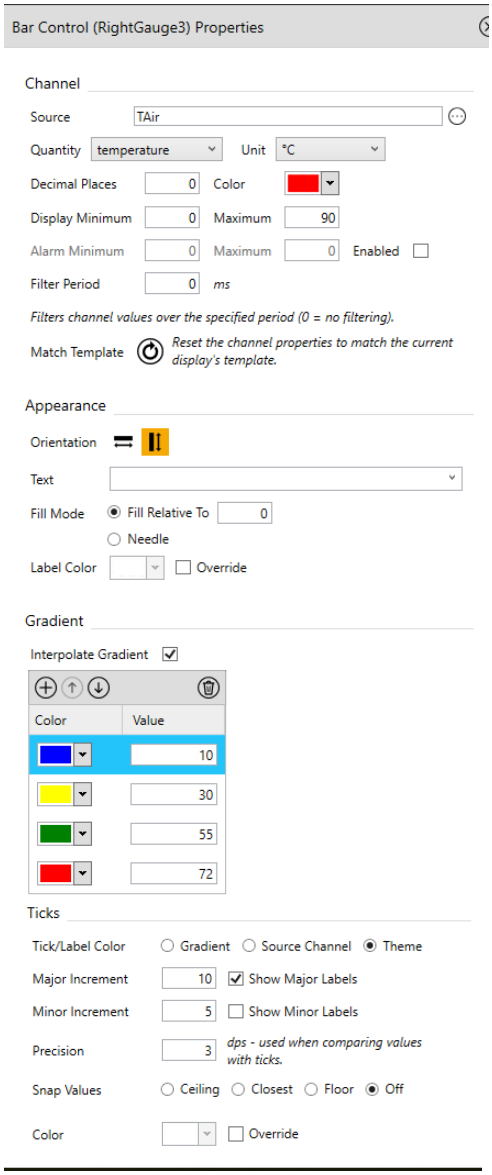
We suggest removing (or moving to page two) a lesser priority readout, in this example I use battery voltage (as I have a duplicate on page two).

a. Open Toolset, navigate to the setup you wish to modify, and open ‘Display Settings’.

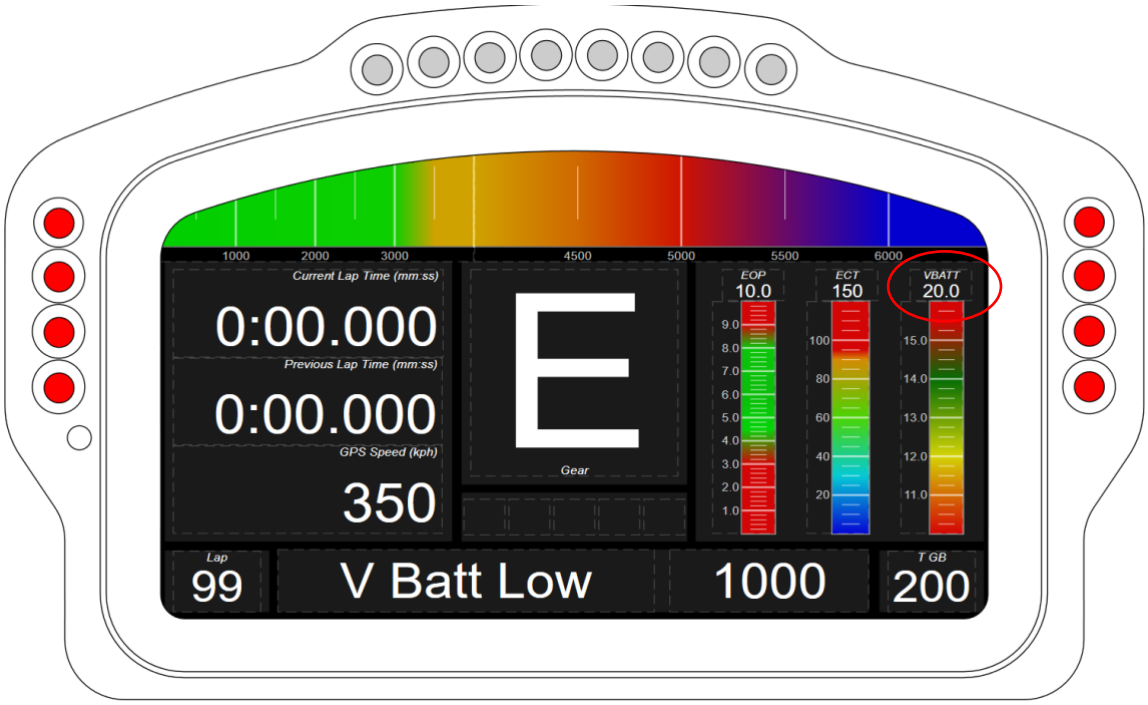


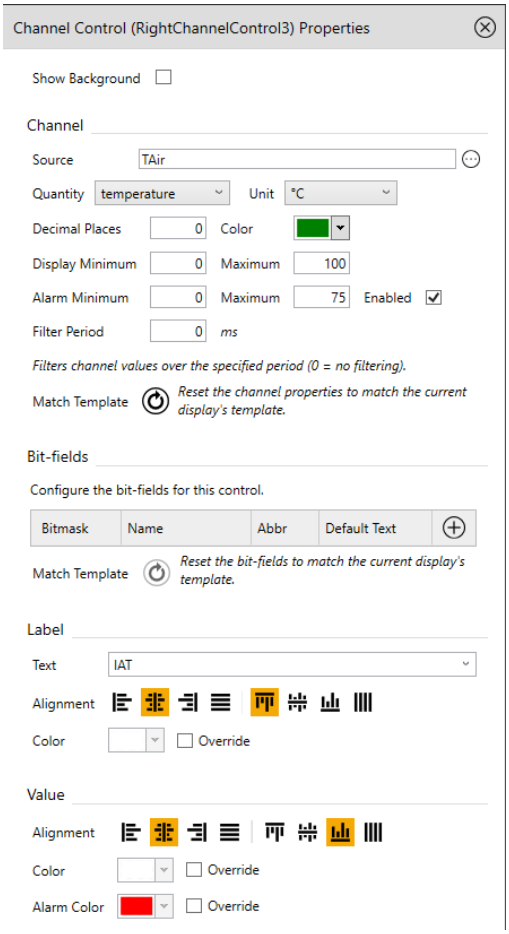
b. Click the colour readout bar an apply the numbers outlined in the screenshots following:



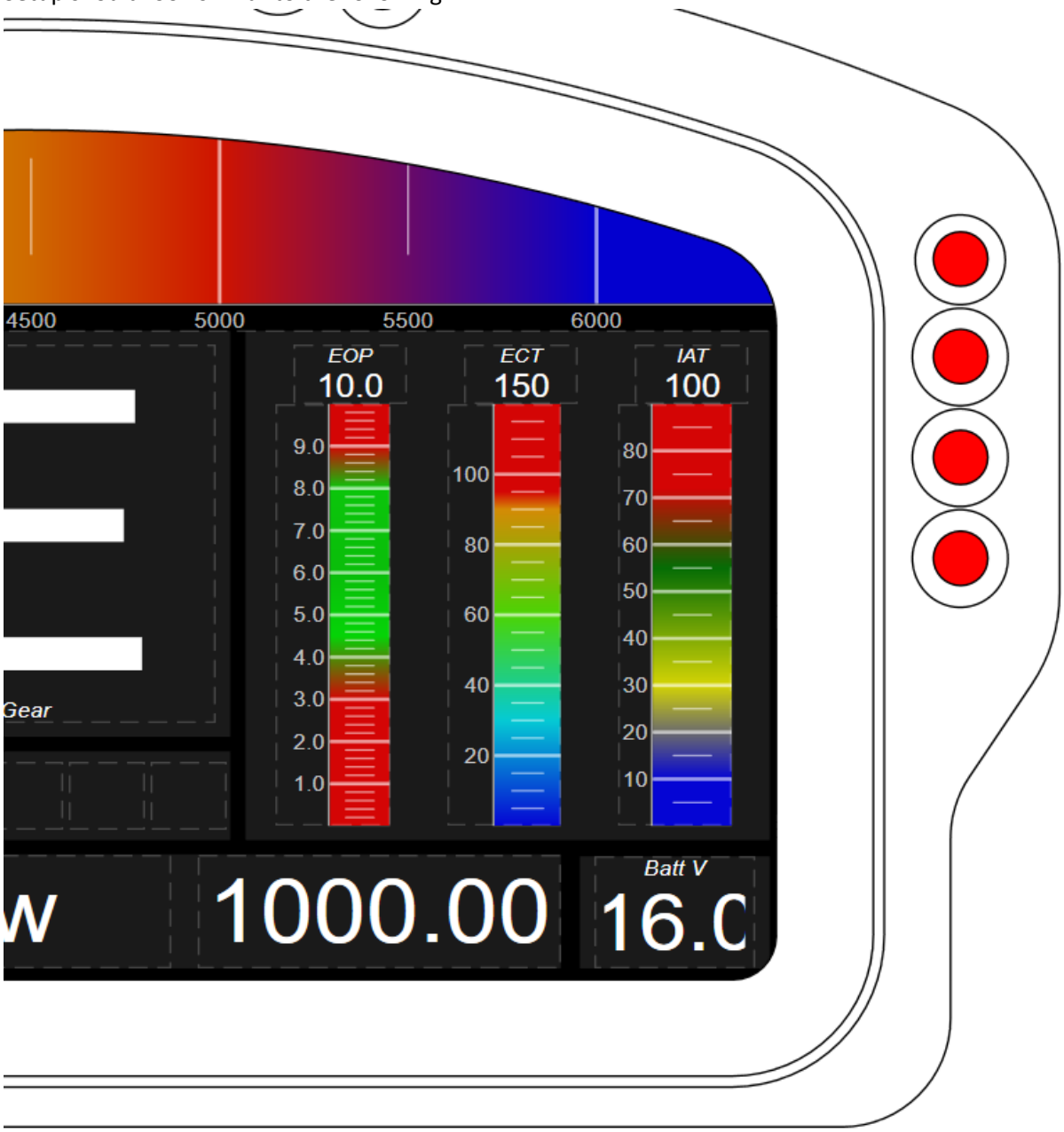

Bar Control (RightGauge3) Properties
Channel
Source
TAir
Quantity
temperature
Unit
°C
Decimal Places
0
Color
Display Minimum
0
Maximum
90
Alarm Minimum
0
Maximum
0
Enabled
Filter Period
0
ms
Filters channel values over the specified period (0 = no filtering).
Match Template
Reset the channel properties to match the current display's template.
Appearance
Orientation
Text
Fill Mode
Fill Relative To
0
Needle
Label Color
Override
Gradient
Interpolate Gradient
Color
Value
10
30
55
72
Ticks
Tick/Label Color
Gradient
Source Channel
Theme
Major Increment
10
Show Major Labels
Minor Increment
5
Show Minor Labels
Precision
3
dps - used when comparing values with ticks.
Snap Values
Ceiling
Closest
Floor
Off
Color
Override

c. Next open the box above the gauge and apply the following parameters:





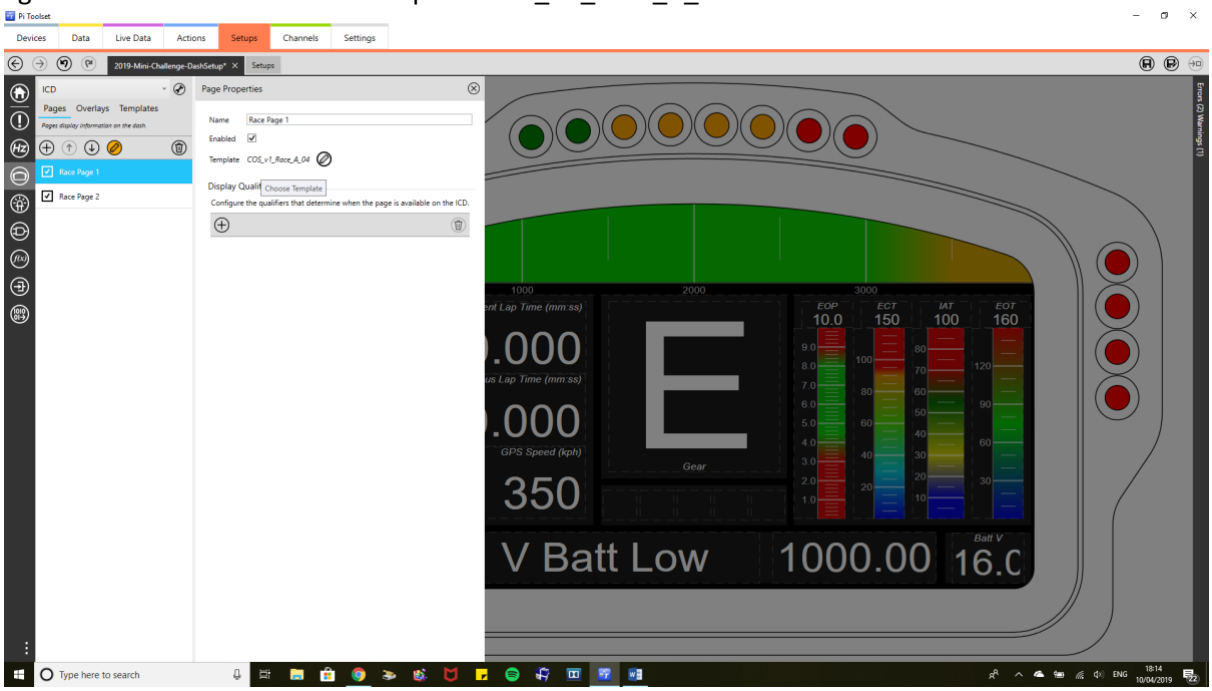
d. Setup should look similar to the following:



To add Gearbox Temperature and Air Temperature to your dashboard you will need to apply a different display template to the dash.

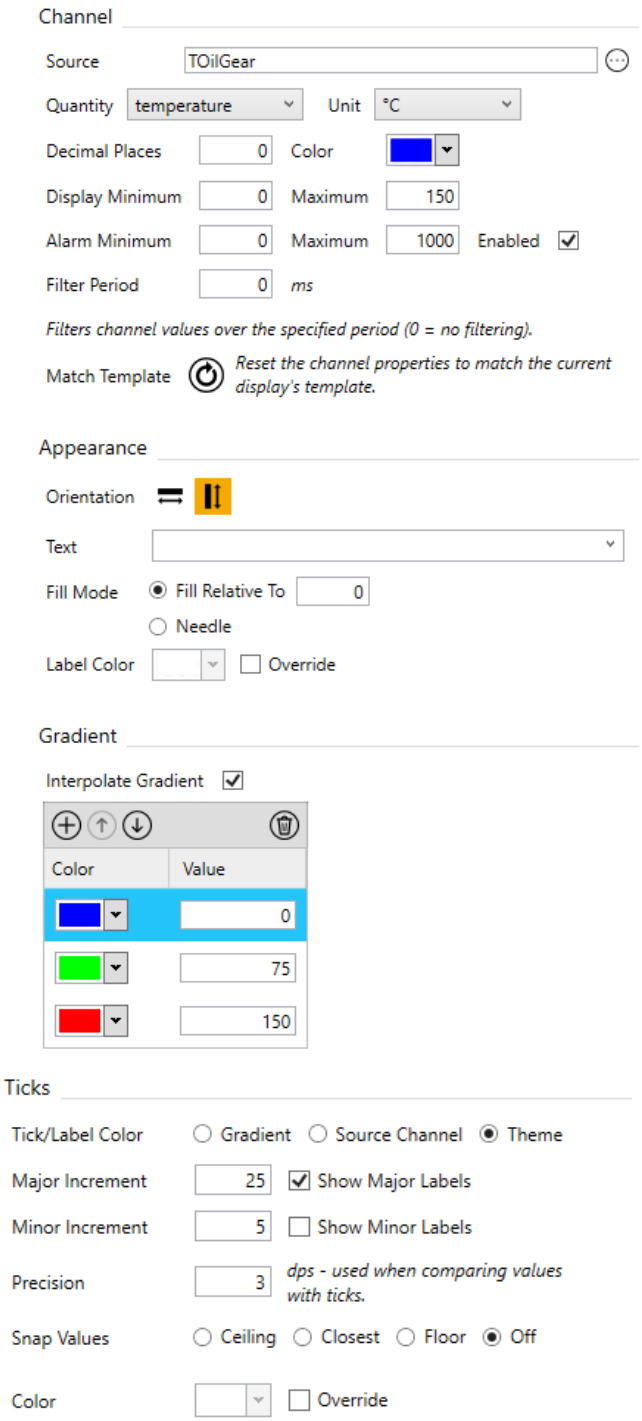
a. Open up the display settings as per the instructions above.

b. On Race Page 1, select the ‘pencil button’ and on the properties tab press the ‘pencil button’ again. You can now select the template ‘COS_V1_Race_A_04’.

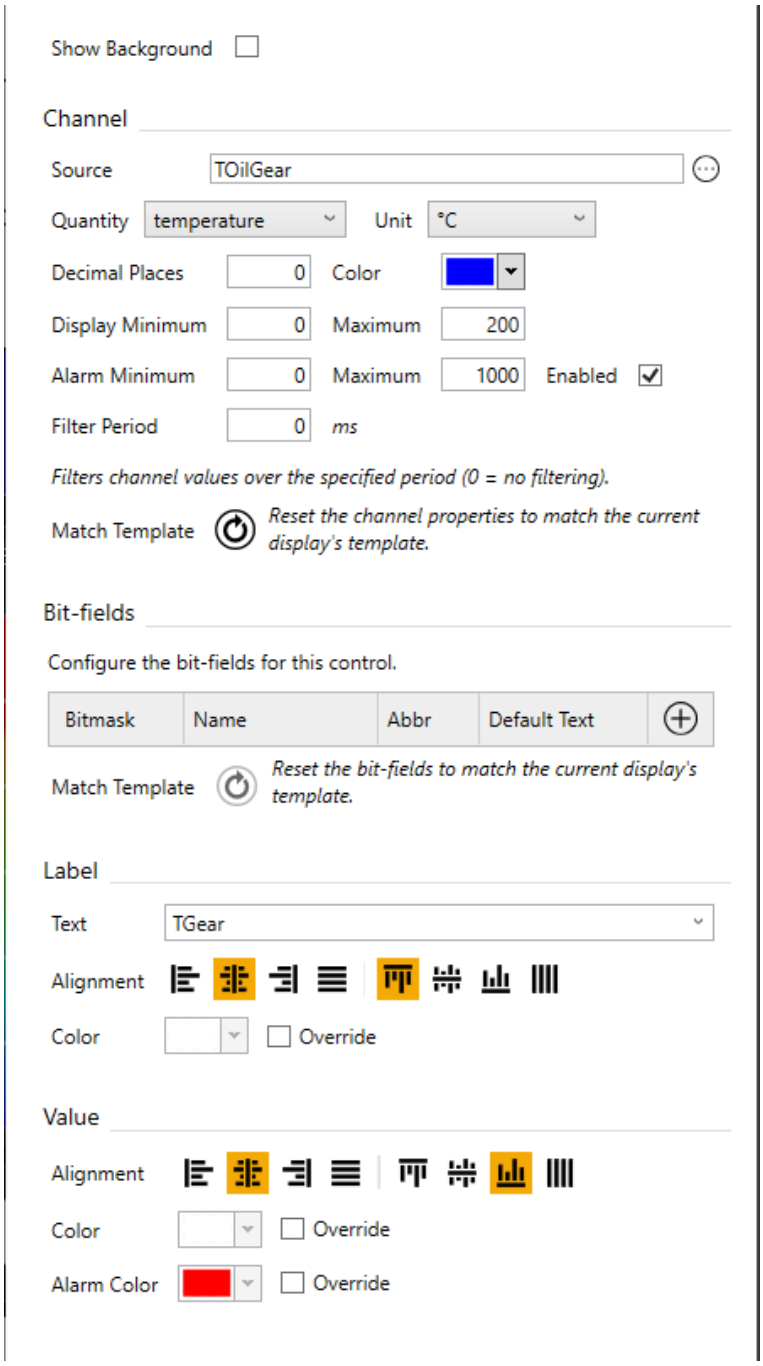


c. This should introduce a new bar gauge to the setup. It should also carry over all the channels and warnings, but please check the values against old setups to confirm that these are correct.

d. Now to add Gearbox Temperature variables to the additional bar that will have appeared the same way we added IAT variables earlier in the guide. Please apply these variables for the bar itself:



e. Then finally add the top box values (above the bar) again similar to previously shown in the IAT setup.



Please check for errors (RHS of toolset) and rectify these before applying setups to your dashboards to negate all errors.

Thanks all, I hope for a successful and enjoyable 2019 season!!

Zac