

Team Plus CANGate Setup and Configuration



The Team Plus CANGate is a combined display and data gateway for Team Plus Tyre Temperature and Pressure sensors. The CANGate reads the Bluetooth sensor information and displays it live, and can optionally forward the data to Race Dash Loggers that support external CAN based devices.

Team Plus sensors are Bluetooth devices, so a Team Plus CANGate is essential to capture the Bluetooth signals and add them to the CAN bus needed for this integration.

Team Plus sensors that are compatible with the CANGate include:

- Team Plus Wheel Turtle - Tyre Temperature System (all models)
- Team Plus Street Grade External TPMS – Tyre Pressure Sensors
- Team Plus Track Grade External TPMS – Tyre Pressure Sensors
- Team Plus Track Grade Internal TPMS – Tyre Pressure Sensors
- Team Plus Brake Temp Sensors (coming in 2024)

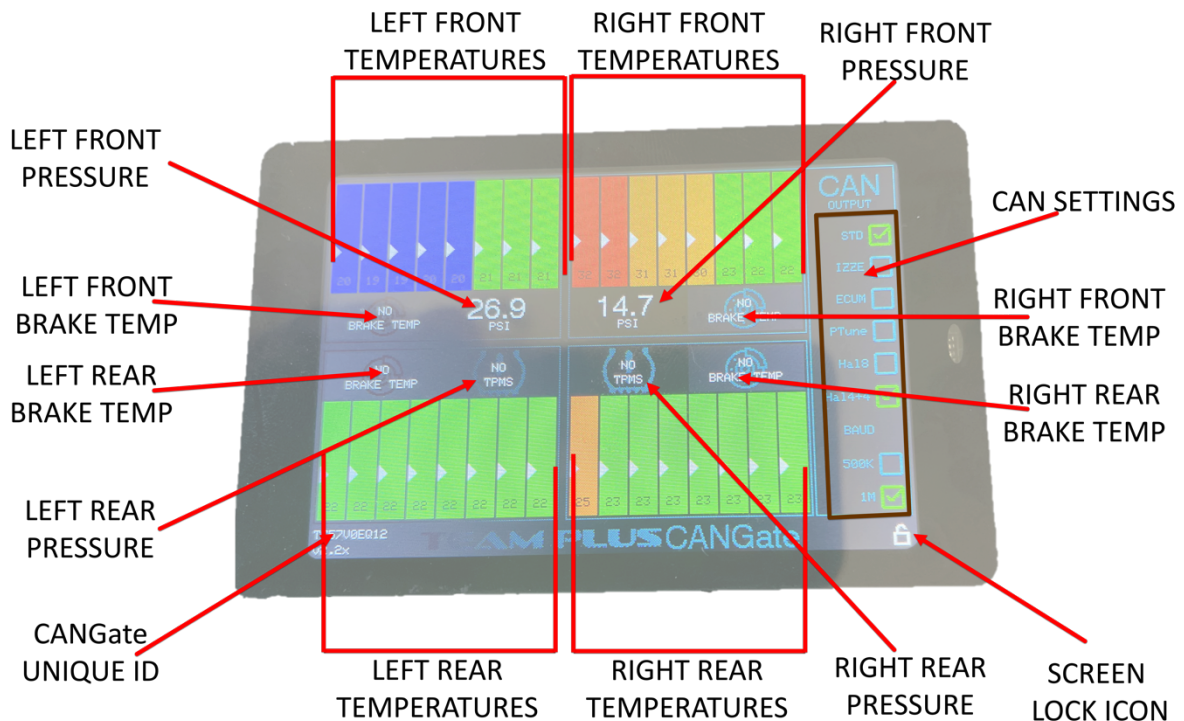
Team Plus sensor devices are available from

<https://team-plus.com/>

Understanding the CANGate Screen:

The CANGate screen displays 8 temperatures, 1 tyre pressure and 1 brake temperature for each of the 4 wheels.

- Temperature data is colour coded to be Blue (cold), Green (OK), Orange (warning), and Red (HOT). These colour bands are adjustable in the config.
- Pressure data is highlighted in Red if out of set pressure range. Pressure range is adjustable in the config.
- Brake Temperature sensors are coming soon.
- If no Wheel Turtle is configured but a TPMS is found, the temperatures for that wheel will show the TPMS sensor temperature for all 8 sectors.
- If no TPMS is configured or not found, it will show the NO TPMS icon.
- If TPMS was active, but now asleep due to lack of motion, the pressure value will fade to a be a grey colour, but still visible with last known pressure.





There are 3 common scenarios for using the CANGate.

- CANGate as a standalone display for Team Plus Temperature and/or Pressure, and/or Brake Temperature Sensors
- CANGate to put Team Plus Temperature and/or Pressure and/or Brake Temperature sensor data onto the CANBus.
- CANGate as both a display and the data gateway to CANBus.

Depending on your scenario, use the steps below to configure the components you need to use.

WHAT DO I NEED:

- Team Plus CANGate
- At least one of Team Plus sensor types
 - Team Plus Wheel Turtle – set of 4. (any model)
 - Team Plus TPMS – set of 4 (any model)
 - Team Plus Brake Temp Sensor (coming soon)
- Team Plus TeleDash phone app – Android or iOS (for configuration of devices)
- Power supply connection to the CANGate (12V and Ground)
- Optionally, connection to your compatible CAN based Race Dash Logger.

STEP 1: Install Hardware

- Find a location for the CANGate in the car. You may choose to mount it in a visible location as a second dash to monitor temperatures or hide it away depending on your usage plan.
- If you are using Team Plus Wheel Turtle tyre temperature sensors, Install them in each wheel arch as per the quick start guide. We suggest you use the supplied Mounting Brackets for Battery Powered Wheel Turtle models, so you can remove them for charging, and the mounting bracket provides important protection to the connection port and switch on the wheel turtle itself.
- If you are using Team Plus TPMS sensors, install on each wheel.
 - For Street Grade External TPMS, install each on the wheel indicated on the sensor.
 - For Track Day Grade External TPMS, install any sensor on any wheel, taking note of the ID code laser etched on the outside of each sensor for each wheel.



- For Track Day Grade Internal TPMS, the sensors will need to be installed when the tyre is off the rim in place of the existing valve stem. Take note of the ID code laser etched on the body of each sensor for each wheel, so that you can identify this wheel within the CANGate later. We suggest placing a small label with the TPMS ID on it on the front of rim next to the valve stem for easy reference.
- CANGate is supplied with a 4 pin DTM plug configured as per diagram on the right. Ensure that the USB-C connector on the CANGate cable is plugged into the CANGate USB-C socket.



- If you are using CANGate to connect to a CAN Dash logger, connect the CANGate to dash logger CAN port via direct wiring or through a CAN Hub. We suggest using the second CAN port of any Dash Logger when available keeping CANGate data away from standard ECU and other Vehicle CAN messages.

STEP 2: Configure CANGate

- Using the TeleDash app for iOS or Android, you can make any required configuration changes to the CANGate. The changes you may need to make are:
 - **CANGate Wheel Turtle Selection:** If you have more than one set of wheel turtles or use them close to others, you will need to set the specific ID of each of your wheel turtles into the CANGate to ensure you are seeing the correct one.
 - **CANGate TPMS Selection:**
 - **Street Grade** - Ensure TPMS Type is set to "STREET" and the 4 id's should be set to "1" "2" "3" and "4" respectively.
 - **Track Day Grade** - Ensure TPMS Type is set to "TRACK" and the 4 id's need to be set using the last 5 digits of the id code etched onto the respective sensor in the format "xx:xx". (this is case sensitive)
Note: because of a security limitation in Apple iOS, the TPMS id's need to be manually entered. However if



you are using the Android app version, you can scan for the available sensors.

- **Measurement Units:** Set the units of measurement you want to see on the CANGate itself for temperatures (C or F) and pressure (psi, kpa or bar). This does not impact the units of measurement used on the dash logger, only the CANGate screen.
- **Temperature Display Colour Limits:** Set the values for when CANGate will display colour for the temperature using the sliding bars. You set where it changes from blue to green, green to orange and orange to red. The value limits are set in the chosen measurement unit (C or F). This does not impact the alerts or colours used on the Dash Logger systems, only the CANGate screen.
- **Pressure OK range:** set the lower and upper pressure value that represent an acceptable pressure level. Pressures outside of the set range these will show as RED on the CANGate. This does not impact the alerts or colours used on the Dash Logger systems, only the CANGate screen.
- **CANGate CAN speed:** The CANGate can use 500K or 1M CANbus speeds. This can be set on the screen of the CANGate or in the configuration settings in the TeleDash app.
- **CANGate protocol:** If you are setting up the CANGate to pass data to a Race Dash Logger, you need to choose the CAN message protocol that will be transmitted. In most cases, you should use the native Team Plus CAN protocol. The CANGate can use multiple protocols at the same time, but to ensure best performance on the CAN Bus we suggest only enabling the required protocol. The TP protocol can be set on the CANGate screen or in the configuration setting in the TeleDash app.
- If you are using Wheel Turtle Temperature Sensors you can also use the TeleDash app to configure some parameters of each individual wheel turtle sensor. This includes:
 - **Wheel Turtle mounting direction:** Wheel Turtles can be mounted in a reverse direction depending on the location you place it. You may find that the temperatures are showing the wrong direction across the tyre. You can fix that by

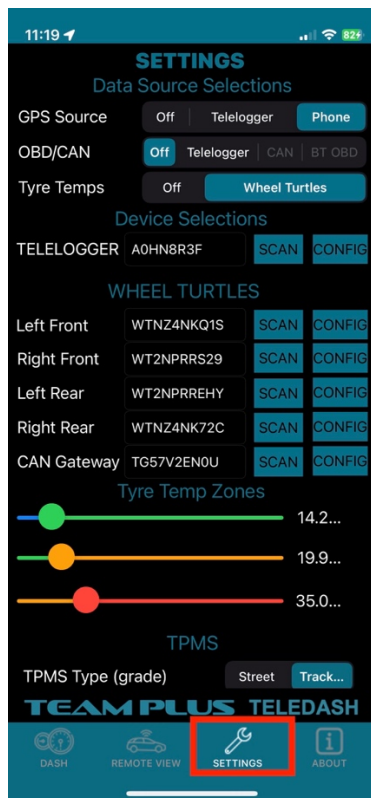


changing a setting in the Wheel Turtle called “Reverse Mount”

- **Wheel Turtle Distance Calibration:** If you are using the wheel turtle distance sensor to act as a suspension travel meter, you may wish to set the calibration numbers of each wheel turtle to provide a zero starting point.
- Once each device is configured check that the CANGate finds each one and is showing the live data.
 - The CANGate screen shows each wheel turtle data live within a few seconds of the sensor being turned on.
 - The CANGate will show each TPMS sensor data live only if the TPMS is reading pressure AND it senses the wheel is rotating. The TPMS will not update data if the wheel is not turning.
- Using the TeleDash app to configure CANGate:
 - Install TeleDash app from Apple app store or Google Play Store.
 - Start TeleDash app, and accept the permissions requested for location and Bluetooth access. On some model phones, this may require restarting the app a second time to ensure all permissions are granted.
 - The iOS and Android versions of Teledash are very similar, however there are platform driven differences. The images in this guide are using the iOS version, and may vary a little from the Android releases. For example the Android version has the menu selection at a top bar, where iOS has it at the bottom.



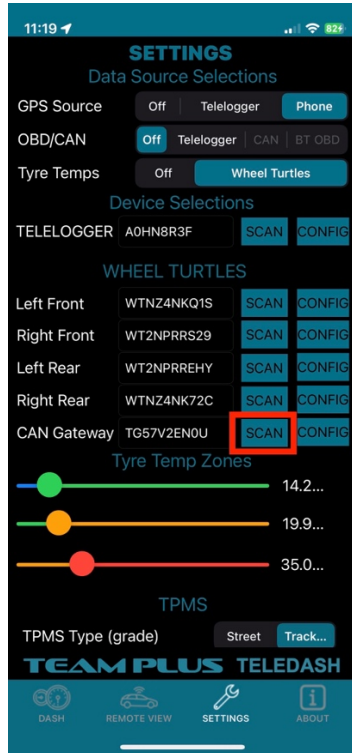
- Go to the settings tab. The setting tab will present to you many options in a scrolling screen. Most of these options manage the behaviour of the Teledash app itself, including which sensors it should connect to and display directly. CANGate configuration is SEPARATE from the configuration of the Teledash, however it is configured using the Teledash app. See more below.



- Make sure the CANGate is turned on and within Bluetooth range of the phone. Ideally within 5 metres (15 feet) to keep a good strong signal.



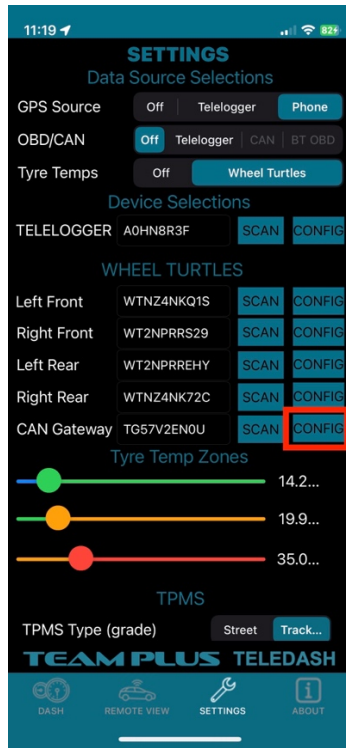
- From Settings tab, find the CANGate selection option, and press the “SCAN” button next to it.



- You will then be shown a list of CANGate devices within Bluetooth range that are turned on. Select the device with the same ID as shown on your CANGate Screen.
- Once the CANGate ID is selected you will return back to the Settings page, and the CANGate ID option will now be populated with the ID you selected.



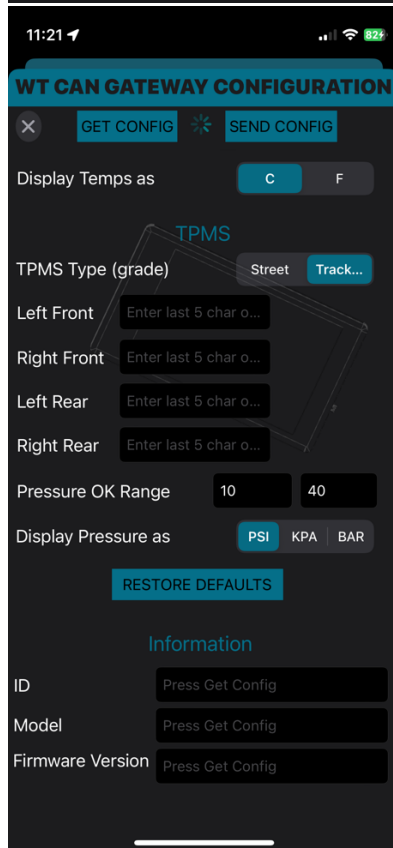
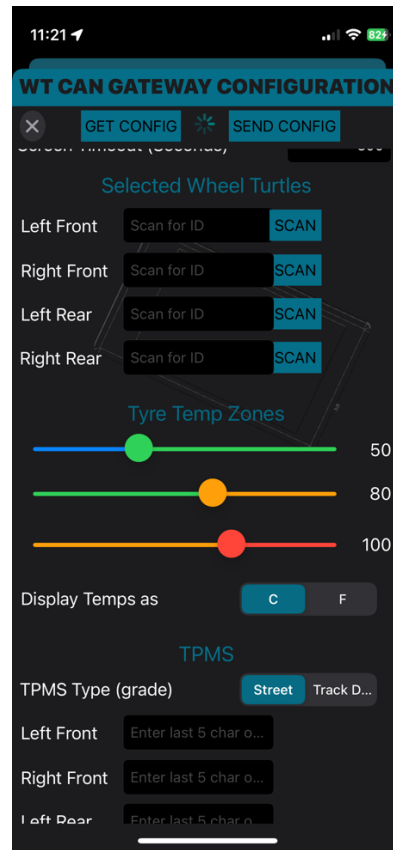
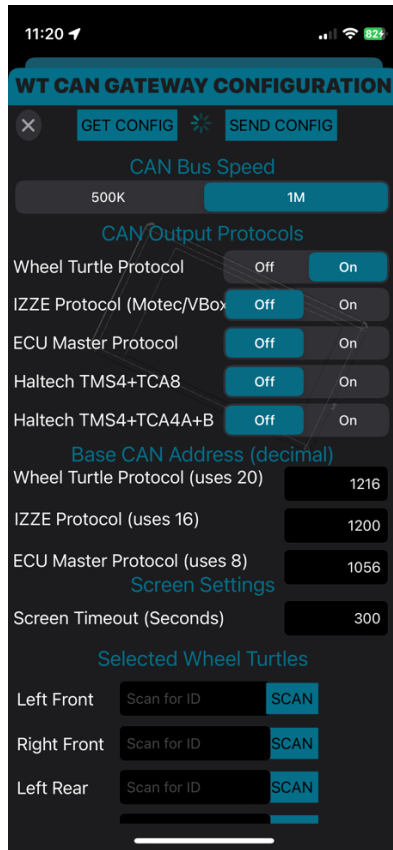
- Press the “CONFIG” button on the CANGate line of the Settings page



- The configuration page for your CANGate will now open in the phone app. You will notice a small spinning icon while the current config is read from the CANGate over bluetooth.

Once the configuration has been loaded, the spinner will disappear and the current configuration settings of your CANGate will be visible.

CANGate Setup Guide



- **Change the settings as needed, and then when to activate the new settings, press the “SEND CONFIG” button.**



Once confirmed, the settings will be transmitted back to the CANGate over Bluetooth and the CANGate will reboot to activate the new config.

- Notes on CANGate Settings:
 - Use the “SCAN” button next to each wheel turtle ID field to look for available Wheel Turtles that are turned on and in range. By default, your CANGate is set to find the first available wheel turtle for the appropriate corner of the car. This is fine except if another car close to you is also using wheel turtles. So we do suggest you set the ID fully.
 - because of a security limitation in Apple iOS, the TPMS id's need to be manually entered. However, if you are using the Android app version, you can scan for the available sensors.
 - Use the slider bars to set the thresholds for temperature colour ranges.
 - Enter the values for high and low thresholds for pressure ranges. Any pressure reported outside of these ranges will show with a RED background.
 - A “RESET DEFAULT SETTINGS” button is available to get back to the starting point if you need it. But remember to save that back to the CANGate.
 - Screen Timeout can be set to 0 if you wish the screen to never timeout.

STEP 3: Configure your CAN Dash Logger

If you are using CANGate to send data to your CAN based Dash Logger, you need to configure the dash logger to understand the data being sent.

Each brand and model of CAN Dash logger has different methods for achieving this configuration. Team Plus provides integration packs for the leading brands, which include config files, a guide and samples. Integration guides are available to download from

<https://team-plus.com>



CANGate Touch Screen:

Settings:

CANGate allows some settings to be changed using its touch screen:

- CAN bus Speed
- Protocol selection

To set these options on the touch screen, simply tap the check box next to the desired setting. The changes are instant and are saved automatically.

Screen Lock:

To prevent accidental change of settings on the screen, the touch screen can be locked.

To Lock.... Hold your finger on the word "CAN" in the top right corner of the screen for more than 6 seconds. You will see the lock icon in the bottom right corner change from open to closed.

To Unlock.... Hold your finger on the word "CAN" in the top right corner of the screen for more than 6 seconds. You will see the lock icon in the bottom right corner change from closed to open.

Screen Rotate:

The CANGate screen can be rotated 180 degrees to allow it to be mounted with the cables on the left or right.

To Rotate.. Press and hold your finger in any part of the temperature or pressure display areas on the screen for more than 6 seconds. You will see the screen rotate to the new orientation.

Note: the screen needs to be unlocked to be able to rotate.

MORE HELP NEEDED?

If you require support please see our support pages at:

<https://telemetry.teamplus.cloud/support/>