



# SMART TPMS

Operating Manual

Scan the appropriate QR Code below to install the TireMinder TPMS Application



iPhone



Android

## Thank you for purchasing the TireMinder® SMART TPMS

This book is designed to be a complete resource for any information you may need when using the TireMinder® TPMS. We highly recommend reading **this entire book**. We know it's a lot, but a safety device like a TPMS, is only good when you know how to use it.

Now for the good part. This TPMS is easy to use. It's by far the easiest TPMS we've ever made. If you have any questions, please look through the book (specifically the Table of Contents page), the answer is most likely here. Also, we have a lot of great resources on our websites, [www.MinderResearch.com](http://www.MinderResearch.com) and [www.TireMinder.com](http://www.TireMinder.com), including videos and tutorials on how to do anything and everything regarding this system.

Also, if you prefer having an actual human walk you through this setup, give us a call! We've got TireMinder Experts standing by ready to help.

Thanks again for using a TireMinder® TPMS and we hope you enjoy this product!

Best Regards,

The Minder Team

### **Minder Research, Inc.**

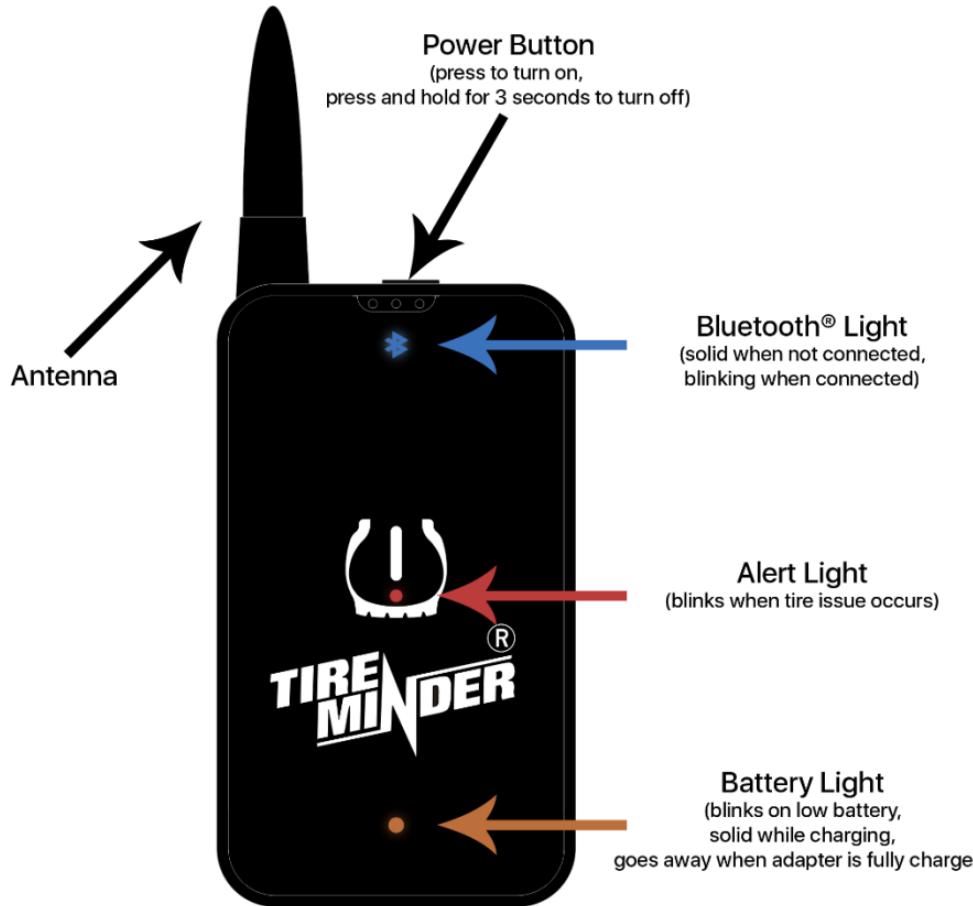
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## Kit Contents

- 1 TireMinder® Bluetooth® Adapter
- 4 or 6 TireMinder® Transmitters
- 1 "RHINO" Signal Booster
- 1 Micro USB Cable and DC Adapter
- 8 or 12 CR1632 Batteries (1 Extra Set)
- 4 or 6 O-Rings (Extra)
- 4 or 6 Locking Nuts
- 1 Locking Wrench with Valve Core Tool
- 1 "Carry-All" Pouch
- 1 TireMinder® Smart TPMS Manual
- 1 Warranty Card



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## Initial Setup – Get Up and Running with the TireMinder® TPMS App

**Note: Images may not be the same as your specific brand of phone or tablet.**

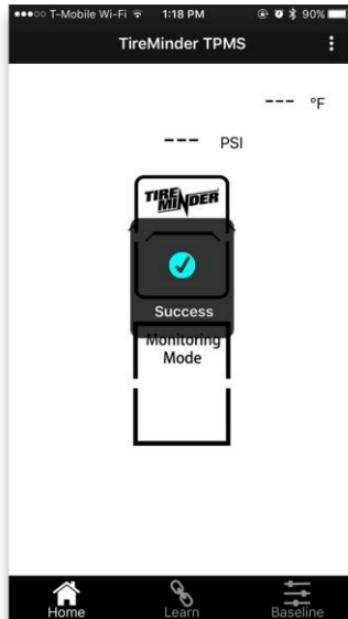
1. Get everything ready prior to install.
  - A. Plug the TireMinder® Bluetooth Adapter into a USB charger and charge for 6 hours.
  - B. Install the TireMinder® Signal Booster. Please refer to the directions inside the booster pouch for detailed information on installing the booster.



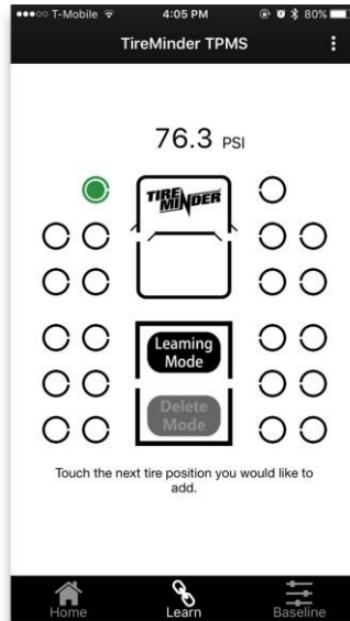
- C. Insert the provided CR1632 batteries into each transmitter.
- D. Download the TireMinder® TPMS App from the Apple App store or Google Play Store. If you have a QR Code Reader, simply scan the appropriate QR Code on the front inside cover of this manual. If not, go to your app store and type in "TireMinder TPMS".



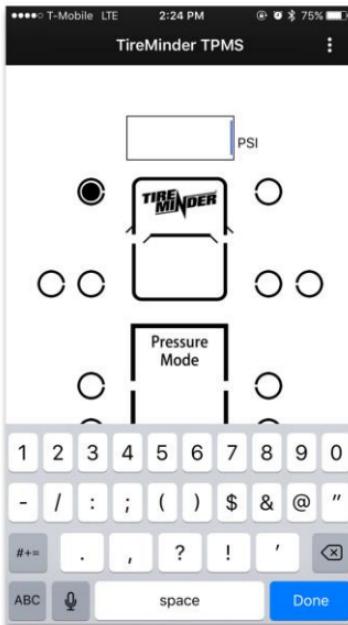
2. Once everything is ready, it's time to connect your phone to the TireMinder® Bluetooth Adapter.
  - A. Turn on the TireMinder® Bluetooth Adapter by pressing the top power button.
  - B. Open the TireMinder® TPMS App. Once open, the App will automatically connect to the TireMinder® Bluetooth Adapter (it will look similar to the image to the right).



3. Adding transmitters to your setup. For this step, keep the Bluetooth® Adapter near you (within 10 feet).
  - A. Touch “Learn” on the bottom bar of the TireMinder® TPMS App. This will take you to where you can add and remove transmitters.
  - B. By default, you will be in Learn Mode (note how “Learning Mode” is highlighted near the center of the screen). This is mode where you can add transmitters to your system.
  - C. Touch the tire position that you would like to add a transmitter to.
  - D. Once touched, the display will show “Learning”. Screw a transmitter onto the corresponding tire.
  - E. Once the transmitter is on the valve stem, you will see a pressure reading on the display and the tire position will turn green.
  - F. Press the next tire position you would like to add and follow steps D & E until all of your transmitters have been added to the system.



4. Setting the baseline pressures.
  - A. Once all of your transmitters have been added to the app, press "Baseline" on the bottom bar of the TireMinder® TPMS App.
  - B. In "Baseline" you will be able to adjust the desired pressures of your system (Default Baseline – 116PSI).
  - C. Touch the tire position in which you would like to adjust the baseline pressure.
  - D. Once pressed, type in the cold pressure of your tire (e.g. if your tire uses 100PSI, type in 100).
  - E. After typing in the pressure, press **Done** on the keyboard.
  - F. Touch the next tire position you would like to adjust. Continue to adjust each tire position, touching **Done** to confirm, until all tire positions are set to your correct baseline pressures.
5. The system is now setup.
  - A. Press the Home button. You are now completely setup and ready to monitor all of your tire positions. You may exit the app without disrupting the ability to monitor and receive alerts.
  - B. Do not close the App. Both Apple and Android Apps are able to run in the background, however, if they are closed the App will no longer monitor your tires. A similar circumstance would be no longer having the ability to receive phone calls if your phone is turned off.
  - C. Before going on a trip, make sure the App is running (if you're not sure how to check, just open the app).



## Alerts – How the TireMinder® TPMS Alerts Work and What to do if an Alert Occurs

The system will send an alert notification if you become disconnected from the Bluetooth Adapter (mainly due to distance). We know this may be a bit of an annoyance, but we prefer that you know when you are disconnected from the adapter at all times. If you are disconnected from the adapter, you will not receive alerts!

The system also checks for the following alerts every 5 seconds:

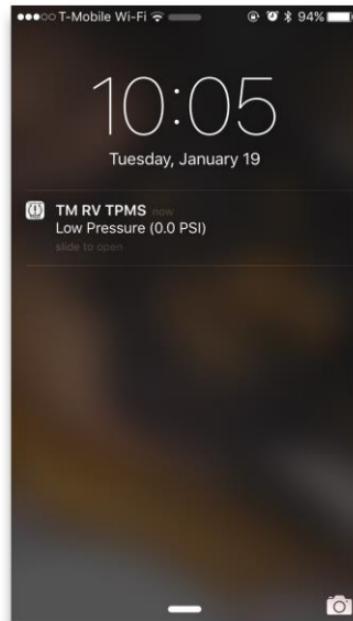
1. Pressure loss of 3 PSI or more in less than 2 minutes.
2. Pressure loss of 6 PSI or more in 2 to 10 minutes.
3. Pressure loss of 15% or more below the baseline pressure.
4. Pressure increase of 20% or more above the baseline pressure.
5. Internal tire temperature of 167°F (75°C).
6. Internal tire temperature that exceeds 185°F (85°C).

In the event of a tire issue, the appropriate alert will be displayed in both the app and a push notification on your phone. Also, the Bluetooth Adapter will blink red and beep.

### If an alert occurs, don't panic.

If an alert does appear on your display, please remain calm.

Remember, DO NOT PANIC! Also, the DRIVER SHOULD NEVER try to figure out what the problem is. Let your husband (or wife), co-pilot, navigator, partner, etc., look at the monitor and try to determine the cause of the alert.

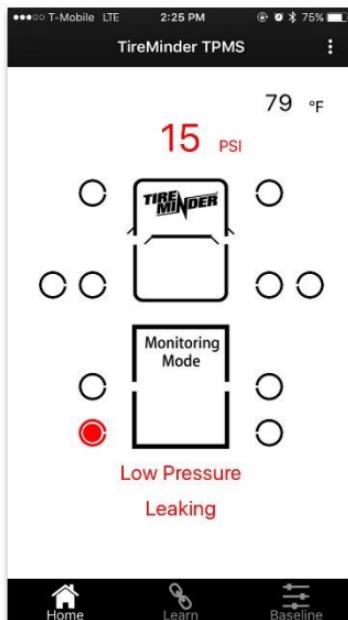


## What to do if an alert occurs.

If you receive a **leaking alert**, please note how much air is left in your tire. If you are running 110 psi (normal) and the alert has come on at 95 psi, you may decide to drive to the next rest stop. If the pressure drops significantly or more rapidly, cautiously bring the vehicle to a safe, off-road location to check the offending tire.

If you receive a **high pressure alert**, cautiously bring the vehicle to a stop and check the offending tire. If the high pressure is "within reason" you may need to adjust your baseline pressures. Not sure what to do, call us!

If you receive a **high temperature alert**, cautiously "get off the road" & determine the cause of the overheating. In most cases, this will be due to a brake caliper that is sticking or a bearing which has overheated.



## The New TireMinder® Hard Wired Rhino Booster™

In today's world, the TireMinder® Rhino Booster™ helps our 433MHz transmitters avoid signal interference from the ever more prevalent wireless devices. As we all know, you can't throw a stone anymore without hitting a wireless device. This creates a lot of electronic noise, which limits the potential range of other devices operating in the same vicinity. This is why **the booster is crucial** for operating a tire pressure monitoring system on a multi-wheel vehicle (RVs, 5th Wheels, MotorHomes, Motor Coaches, Boat Trailers, Travel Trailers, etc.).



## Installing the TireMinder® Rhino Booster™0

While the booster is fully weather proof, it is recommended to install the booster in a relatively protected area. The best place to put the booster is near the middle of the rig. Also, the closer the booster is to the outside, the better. An example would be at the front of a 5th Wheel or towards the rear of a MotorHome, especially if you have an additional tow. Please see example below.



Once you have chosen a good location, connect the booster's red (positive: +) and black (ground) wires to a 12v or 24v power supply line. Please mount the booster as securely as possible to minimize vibration. You may use the provided wire ties to secure the booster and wires. **If you have any uncertainty, please contact your local RV dealer for help on the installation.**





## An Ideal Location

The ideal booster location is underneath the vehicle. This allows the booster to easily communicate with all of the transmitters.

Please note, the images below indicate the standard TireMinder® signal booster. This kit includes the newest, Extra Strength Rhino Booster™ which greatly increases signal strength.

## More Locations



Inside Battery Compartment



Front of Car Hauler



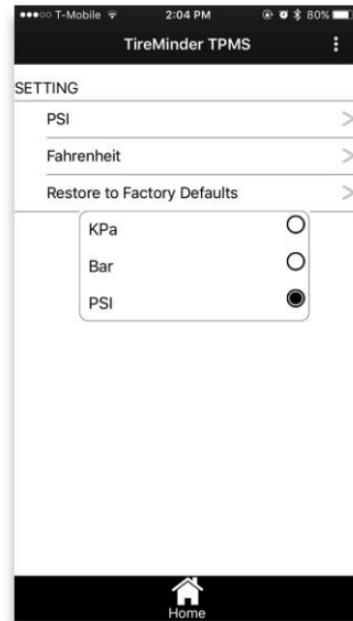
Attached to License Plate Light

## Units of Pressure – How to switch between PSI, kPa and BAR

The TireMinder® TPMS App is able to read units of pressure in PSI (Pressure per Square Inch), kPa (Kilopascal) and BAR (Barometric).

To change the unit of pressure, please refer to the following:

1. Touch the ellipse (⋮) on the top right of the screen. This will pull up the main menu.
2. Touch on the button labeled “Settings”.
3. When in Settings, touch the unit of pressure (PSI, kPa or BAR).
4. Once you have selected the appropriate unit of pressure, click the Home button on the bottom of the screen to exit Settings.

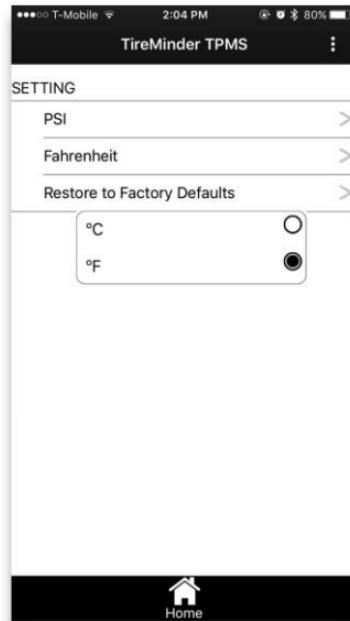


## Units of Temperature – How to switch between Fahrenheit and Celsius.

The TireMinder® TPMS App is able to read units of temperature in Fahrenheit and Celsius.

To change the unit of temperature, please refer to the following:

1. Touch the ellipse (⋮) on the top right of the screen. This will pull up the main menu.
2. Touch on the button labeled "Settings".
3. When in Settings, touch the unit of temperate (Fahrenheit or Celsius).
4. Once you have selected the appropriate unit of pressure, touch the Home button on the bottom of the screen to exit Settings.



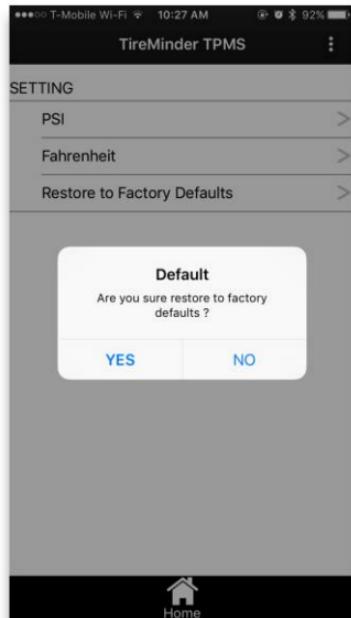
## Start Over – Reset Everything to Factory Defaults

If you would like to start over from scratch, the TireMinder® TPMS App allows you to simply reset everything and start over.

To reset the TireMinder® TPMS App and Bluetooth Adapter, please refer to the following:

1. Touch the ellipse (⋮) on the top right of the screen. This will pull up the main menu.
2. Touch on the button labeled “Settings”.
3. When in Settings, touch the button labeled “Restore to Factory Defaults”.
4. A menu will pop up, allowing you to confirm or cancel the restoration process.

Click “Yes” to confirm and your TireMinder® TPMS App and Bluetooth Adapter will be restored to factory defaults.

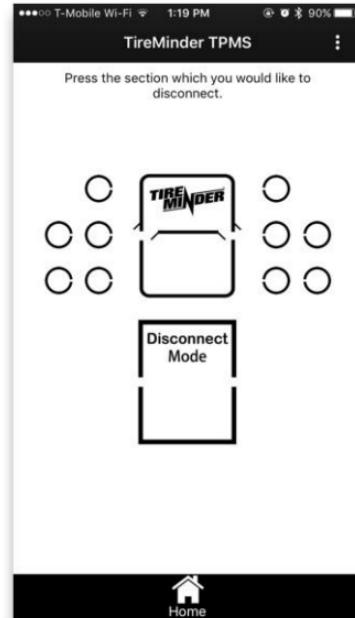


## About Disconnect and Reconnect Mode

Disconnect and Reconnect Mode allows the TireMinder® TPMS to stop monitoring either the top or bottom section of the display. An example of disconnecting would be if you monitored both a truck and a 5<sup>th</sup> Wheel Trailer and wanted to drive off from the 5<sup>th</sup> Wheel. You can simply disconnect the 5<sup>th</sup> Wheel's portion and not have to worry about receiving alerts because you are not near the 5<sup>th</sup> Wheel. Another example would be if you monitored both a MotorHome and tow vehicle and wanted to drive away from the MotorHome while still monitoring your tow vehicle. You can simply disconnect the MotorHome and continue monitoring the tow car without receiving alert notifications.

## How to Disconnect and Reconnect Sections of your TireMinder® TPMS.

1. Touch the ellipse (⋮) on the top right corner of the screen to bring up the main menu.
2. Touch the button labeled "Disconnect".
3. From here, touch on the section you want to disconnect. Touching the top section disconnects the top, touching the bottom section disconnects the bottom. Click the Home button to confirm selection.



**To reconnect** a section, touch the section you wish to reconnect and it will reappear. Press Home to confirm.

## About Auto-Scroll

Auto-Scroll allows the TireMinder® TPMS App to scroll between all of your transmitters so you can view the pressure and temperature reading of each tire automatically.

### How to use Auto-Scroll

1. Touch the ellipse (⋮) on the top right corner of the screen to bring up the main menu.
2. Touch the button labeled "Auto-Scroll".
3. Once touched, the display will cycle through all of your available tire positions, at a rate of 6 seconds per tire.
4. To stop Auto-Scroll, touch any tire position.

## About Auto-Search

Auto-Search allows the TireMinder® TPMS App to completely "erase" all previous tire pressure and temperature readings and actively find new, updated readings. If a reading is not received from a transmitter within 20 minutes of initiating Auto-Search, the App will signal a warning at the

problematic tire position. This is useful for getting the system ready after your MotorHome, 5<sup>th</sup> Wheel, etc. has been in storage for some time and you would like to make sure all of your tires and transmitters are in good working order. After initiating Auto-Search, wait until you have received an updated reading from all of your transmitters. If a transmitter does not update, go to the transmitter and check for any issues.

### How to use Auto-Search

1. Touch the ellipse (⋮) on the top right corner of the screen to bring up the main menu.
2. Touch the button labeled "Auto-Search".
3. All of your tire positions will go to 0 PSI and 32°F.
4. After a few minutes, the updated tire pressures and temperatures return.

If a tire pressure and temperature does not return, that position will show "0 PSI" and "No Signal" on the bottom of the screen. Please check that transmitter for any issues.

## **Disable Sleep – Stop Your Phone from Turning off While Using the App**

The TireMinder® TPMS App has a feature that will allow the App to stop your phone from going to sleep or dimming the screen. We call this “Disable Sleep”.

To disable the sleep mode of your phone while using the App, please refer to the following:

1. Touch the ellipse (⋮) on the top right of the screen. This will pull up the main menu.
2. Touch on the button labeled “Settings”.
3. Touch on the button labeled “Disable Sleep” under Advanced Settings.
4. A menu will pop up, allowing you to choose enable or disable. Choose “On” to disable sleep mode or “Off” to enable sleep mode.
5. Once you have enabled or disabled sleep mode, touch the Home button to exit Settings.

**Note:** Using the Disable Sleep feature may cause significant battery usage. If you are experiencing significant battery drain, turn this feature off.

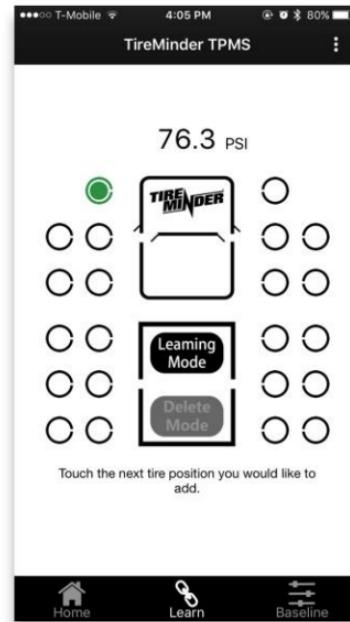
## **How to Close the TireMinder® TPMS App**

1. Touch the ellipse on the top right of the screen.
2. Touch the button labeled “Close App”.
3. The App will now be closed.

## Adding a Transmitter – How to Add a Transmitter to the TireMinder® TPMS App

Use the following directions to add a transmitter to the TireMinder® TPMS App. Please make sure there is a CR1632 battery in the transmitter before starting the process below.

1. Open the TireMinder® TPMS App.
2. Touch “Learn” on the bottom bar.
3. Towards the center of the screen you will see two buttons labeled “Learning Mode” and “Delete Mode”, make sure “Learning Mode” is highlighted. If “Learning Mode” is not highlighted, press “Learning Mode”.
4. Touch the tire position you would like to add a transmitter to. Once touched, you will see “Learning” on the display.
5. Attach the transmitter to valve stem of the corresponding tire position (if you clicked the driver’s front, add the transmitter to your driver’s front tire).
6. Once the transmitter is on the tire, allow up to 20 seconds for the TireMinder® TPMS App to find the sensor and display it on the screen. Once found, the tire position will turn green and display the tire’s pressure and temperature on the screen.
7. You may add as many transmitters using the same directions as above (up to 22 in total).



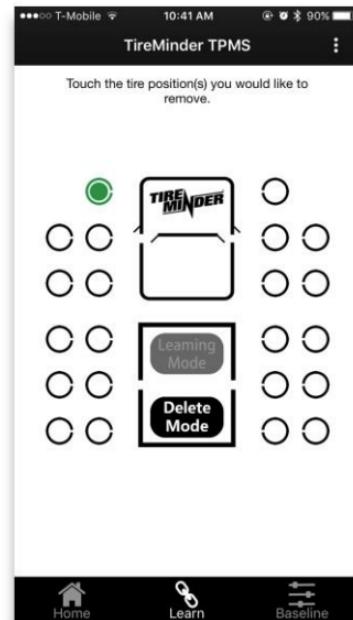
## Removing a Transmitter – How to Remove a Transmitter from the TireMinder® TPMS App

Use the following directions to remove a transmitter from the TireMinder® TPMS App.

1. Open the TireMinder® TPMS App.
2. Touch “Learn” on the bottom bar.
3. Towards the center of the screen you will see two buttons labeled “Learning Mode” and “Delete Mode”, touch “Delete Mode”.
4. Touch the transmitter you would like to remove from your system.
5. Once touched, the transmitter will disappear from the display and be deleted from the TireMinder® TPMS App.

### Why Remove a Transmitter?

1. You purchased a new RV (congrats!) and want to move the transmitters to a different location.
2. The transmitters were removed and you’re unsure of the original tire position of the transmitters.
3. A transmitter has become damaged and failed.
4. For fun? This smartphone stuff is pretty amazing... We’ve been playing with it for hours.



## Adjusting the Baseline Pressure - How to Set the Baseline Pressure for Each Tire Position

The baseline pressure is the cold tire pressure which you run in your tires. Let's say you run 100 PSI in your front driver and passenger tires. That means you would set the two front tires to 100 PSI as the baseline in the TireMinder® TPMS App.

To adjust a tire's baseline pressure, please refer to the following:

1. Open the TireMinder® TPMS App.
2. Touch the button labeled "Baseline" on the bottom bar of the TireMinder® TPMS App.
3. When in Baseline Mode, you will see all of the tire positions that have been learned/added to the monitor.
4. Touch the tire position you would like to adjust the baseline.
5. Type in the baseline pressure you would like to use for that tire position, confirm by pressing **Done**.
6. Touch each tire position you would like to adjust and type in the appropriate pressure for that tire position. Press **Done** to confirm the baseline pressure.
7. Once you have adjusted all the baseline pressures, press the Home button to go back the Home screen.

**Note:** You will only be able to adjust the baseline pressure of a tire position if it is currently learned to the TireMinder® TPMS App.

## Charging the TireMinder® RV Bluetooth Adapter

The TireMinder® RV Bluetooth Adapter uses a Micro USB style charger to charge the internal lithium-ion battery. When the Bluetooth adapter is connected to the USB charger, the bottom power light will turn solid orange. When charging is complete, the power light will turn off (~6 hours to fully charge). If the battery becomes low, the Bluetooth® Adapter's power light will blink orange. The TireMinder® Bluetooth Adapter can be used while charging. The adapter's battery charge will last between 2 to 4 weeks on a single charge (depending on use).

## Turning the TireMinder® RV Bluetooth Adapter On or Off

To turn the TireMinder® Bluetooth Adapter on, press the top power button. Once pressed, the lights on the adapter will turn on. To turn off the adapter, press and hold the top button for 3 seconds. After 3 seconds, the lights on the front of the adapter will turn off and the adapter will be completely powered off.

## Accuracy of Pressure Gauges and TPMS

No (reasonably priced) pressure gauge is going to be 100% accurate. Likewise, **NO** TPMS is going to be 100% accurate. What's important is that they are reasonably close and relatively consistent. You engineers and pilots probably have steam coming out of your ears after that last sentence!!

Maybe this will help.....

- The TireMinder® transmitters are accurate to  $\pm$  3%.
- TireMinder® brand pressure gauges (mechanical or digital) are among the most accurate on the market at  $\pm$  1 to 2 psi.

So, if you are running 100 psi in your tires, you could have a gauge reading 2 psi high and a TPMS transmitter reading 3 psi low leaving a difference of 5 psi. This is not uncommon and is considered totally acceptable. We have had calls from customers doing their initial installation saying all 8 or 10 TireMinder® transmitters are reading 9 to 11 pounds low!!! Can you guess what the problem is?? What is important to understand is that the TireMinder® TPMS (and any other brand for that matter) is designed to warn you of changes. For example, it really does not care whether it starts at 97 psi or 108 psi. It is the changes and deviations from the baselines you need to know about.

So, please look at "the big picture". You may use your trusty pressure gauge as the "standard" or you can use the TPMS as the standard. The important point is that they are all relatively consistent.

## Hexagonal Locking Nut Instructions

**Note:** Only use the locking nuts when your vehicle is going to be in a static, high risk area. The locking nuts are for security only. They will not affect the functionality of the transmitters.

1. Fasten hex nut clockwise onto valve stem. Nut must be positioned at least  $\frac{1}{4}$ " (6.35mm) from top of valve stem.
2. Fasten transmitter onto valve stem until hand tight.
3. Rotate hex nut counter-clockwise towards the transmitter. Use wrench to tighten hex nut against transmitter.

## "O"hhh! Rings

Transmitter "O" rings will also need to be replaced at some point. Their life varies greatly depending mostly on climate conditions. If you are not sure of their condition, consider changing them annually when you replace your batteries. Contact Minder Research (phone or web site to order). We can replace them at minimal expense. Please do not try to find them at Home Depot or Lowes. They will cost you more and will not be the right size. We know as we have tried!

## Transmitter Caps

The TireMinder® caps are a crucial piece of the transmitter. The cap, along with the O-Rings, keeps the transmitter away from any weather and environmental damage. Like the O-Ring, their life depends mostly on climate conditions. The caps should be checked frequently. If one becomes broken or cracked, it should be replaced as soon as possible. Remember, caps are significantly cheaper than replacing a whole transmitter!



## **Adapter Location – Where to put the TireMinder® RV Bluetooth Adapter**

The TireMinder® TPMS Bluetooth Adapter can be located anywhere in your RV. The main thing is to try and keep it away from other major electronic devices and do not put it inside metal enclosures. Other than that, you will want the TireMinder® Bluetooth Adapter in range of your phone. Bluetooth has a **MAXIMUM** range of 30 FT. This does not mean put it 30 FT away. It's best to have the Bluetooth Adapter within 10 FT of where your phone will be (generally in the cockpit/front driver's seat).

Also, the TireMinder® Bluetooth Adapter will alarm (red light and beep) when there is a tire issue. If for any reason your phone or the App itself is turned off, the Bluetooth Adapter will still alarm.

## **Transmitters and Friction – Do Not Let the Transmitter Rub against the Wheel**

Once a transmitter is mounted on the valve stem, be sure it does not touch any solid portion of the wheel or hub cap. This can cause friction from constantly rubbing up against the wheel, damaging the transmitter.

## **Tire Rotation – What to do Before Getting Your Tires Rotated**

Once a transmitter is learned to a specific wheel location, they are dedicated to that position. Mark and remove your transmitters before a tire rotation. That way, they can be easily put back on. If the transmitters somehow get mixed up, delete all of your tire positions and re-install as if new.

## Valve Extenders

These could be considered the "Necessary Evil" many RVers can't live without. If you are installing new valve extenders, we highly recommend the solid steel type (rather than the flexible mesh or rubber type). If you are mounting TireMinder® transmitters to a valve extender, you must test for leakage using the latest high tech technique. It's commonly called the "Soapy Water Test".

- First attach the transmitter to the extender.
- Second, using a highly concentrated mix (more soap than water), soak the transmitter end as well the end attached to the original valve stem. If the extenders are the flexible type, soak them along their entire length (not just the two ends).
- Hopefully we do not need to tell you what you are looking for.

From experience, when users call or write complaining their TireMinder® transmitter is leaking, it invariably turns out the problem is with their valve extenders. It should be understood that most valve extenders (especially the flexible ones) are not pressurized until a gauge is pressed against the open end of the valve. They are then only pressurized for a few seconds (long enough to take a reading on the gauge).

When a TireMinder® transmitter is attached, the entire length of the extender becomes permanently pressurized (until it is removed). This is when a leak would appear. So, please check carefully.

## Brass and Aluminum Transmitters. Which one do I need?

Minder Research makes two types of transmitters, the TM-2BRASS and the TM-2ALUM. The basic kits come with either 4 or 6 of the TM-Brass type transmitters. These will fit ALL Motor Homes (Class A, B or C), ALL 5th wheel trailers and ALL towables.

**TIP:** you ONLY need the special TM-2ALUM if you are towing a car or light truck which already has a built in Tire Pressure Monitoring System (TPMS) and aluminum valve stems.

- These will usually be 2007 or newer (as mandated).
- These valve stems will be dull silver (vs. the shiny silver on your motor home).
- The shiny ones are either stainless steel or chrome plated brass and do not require special transmitters.
- Don't bother with the "magnet test." Most stainless steel is not magnetic.

What you are avoiding here is called "galvanic corrosion." This happens when dissimilar metals come into contact for a period of time. Moisture (especially if salty) will cause the two metals to become so corroded that they cannot be separated.



**Remember, you will only find aluminum valve stems on a car or light truck which has a factory installed TPMS.**

We gather from several phone calls that the above explanation is difficult to comprehend. For this we apologize and will try to put it in simpler words:

- If your towed vehicle (that's the thing you are hauling behind your motorhome) has metal valve stems, you need TM-2ALUM transmitters.
- If it has black rubber valve stems, you need TM-2BRASS transmitters.
- Your motorhome, 5th wheel, trailer or tow dolly will use what comes in all TireMinder® kits (Brass). Yes, even if you have those big 22.5" shiny aluminum wheels, you will need Brass transmitters.
- If that's still not clear, well, you are just going to have to call us (**we really don't mind**).

If you have purchased or received the wrong type, simply contact Minder Research and we will arrange to exchange them at no charge.

## CR1632 Lithium Battery Installation:

Look at the illustration below. Note that the battery slides **UNDER** the aluminum "bridge", "clip" or "bracket". Do **NOT** place it on top!! Be sure the plus (+) side is up. Incorrect insertion will burn out the circuit or break the solder connection.

The cover should only be finger tight (*snug*) so as to remain waterproof. Please, DO NOT use pliers and a pipe wrench! Over tightening will damage the "O" ring. Obvious signs of abuse (pliers or rubbing marks) will void the warranty.



## FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **Monitor/Receiver**

Working Voltage	3V DC
Working Temperature	(-20°C to 60°C) -4°F to 140°F
Working Humidity	0 – 90%
Standby Current	50uA
Working Current	16mA
Battery	1400mAh Lithium-Ion
Recharge Time	6 Hours
Time Before Needing Recharge	2 to 4 Weeks
Dimensions	108 x 62 x 16 mm - 4.25"x2.5"x0.6"
Antenna Dimensions	36.5 x 10 x 10 mm - 1.4"x 0.4" x 0.4"
Operating Distance	Sorry, no hard number – varies with amount of electronic interference. Booster is mandatory as is antenna UP! If these conditions are met, 100 to 120 ft may be possible. Without the booster, distance is extremely limited.

## **Charger**

Input Voltage 12/24 VDC

Output Amperage 1.0 Amp

Internal Fuse 3.0 Amps

## **Rhino Booster™**

Input Voltage 12/24 VDC

Red & Black hard wire connect 3 ft. + length

Battery Draw 75mA (while transmitting), 14mA (rest of the time)

## **Never Use the TireMinder TPMS App While Driving**

Stop at a Rest Area or hand your phone to your passenger and ask them to use the information provided by the app. Minder Research, Inc. assumes no liability for damage and/or injury caused by the misuse of smartphones or smartphone apps while driving in a moving vehicle. The user assumes all liability for use or misuse of these apps on a smartphone. By using the TireMinder Smart TPMS and TireMinder TPMS smartphone app, you agree to the terms and conditions above.

## **Limited Warranty**

In order for Minder to extend its' award winning customer service, it is extremely important that you complete and mail the enclosed warranty card along with a copy of your bill of sale. In addition to the warranty, this will register you for the FREE battery exchange program (CR1632 transmitter batteries only) valid through the end of 2018.

This TireMinder® TPMS is guaranteed against manufacturing defects for a period of one year from date of purchase. Should the unit not function as designed, The Minder Research Inc. will repair or replace the section at no charge to the owner.

Excluded are products that have been damaged through impact, water, fire, misuse or unauthorized service.

This warranty is limited to the replacement of the product only and does not extend to any incremental cost incurred. In no case shall Minder's liability exceed the purchase price. This warranty gives you specific legal rights which may vary from state to state or province to province.

If you have a question or a problem, please contact the TPMS specialist at The Minder Research Inc. before returning the product. Many issues can be resolved over the phone. Extended Warranty? Contact Minder Research, Inc. for cost and availability.

### **If service is required return w/copy of bill of sale to:**

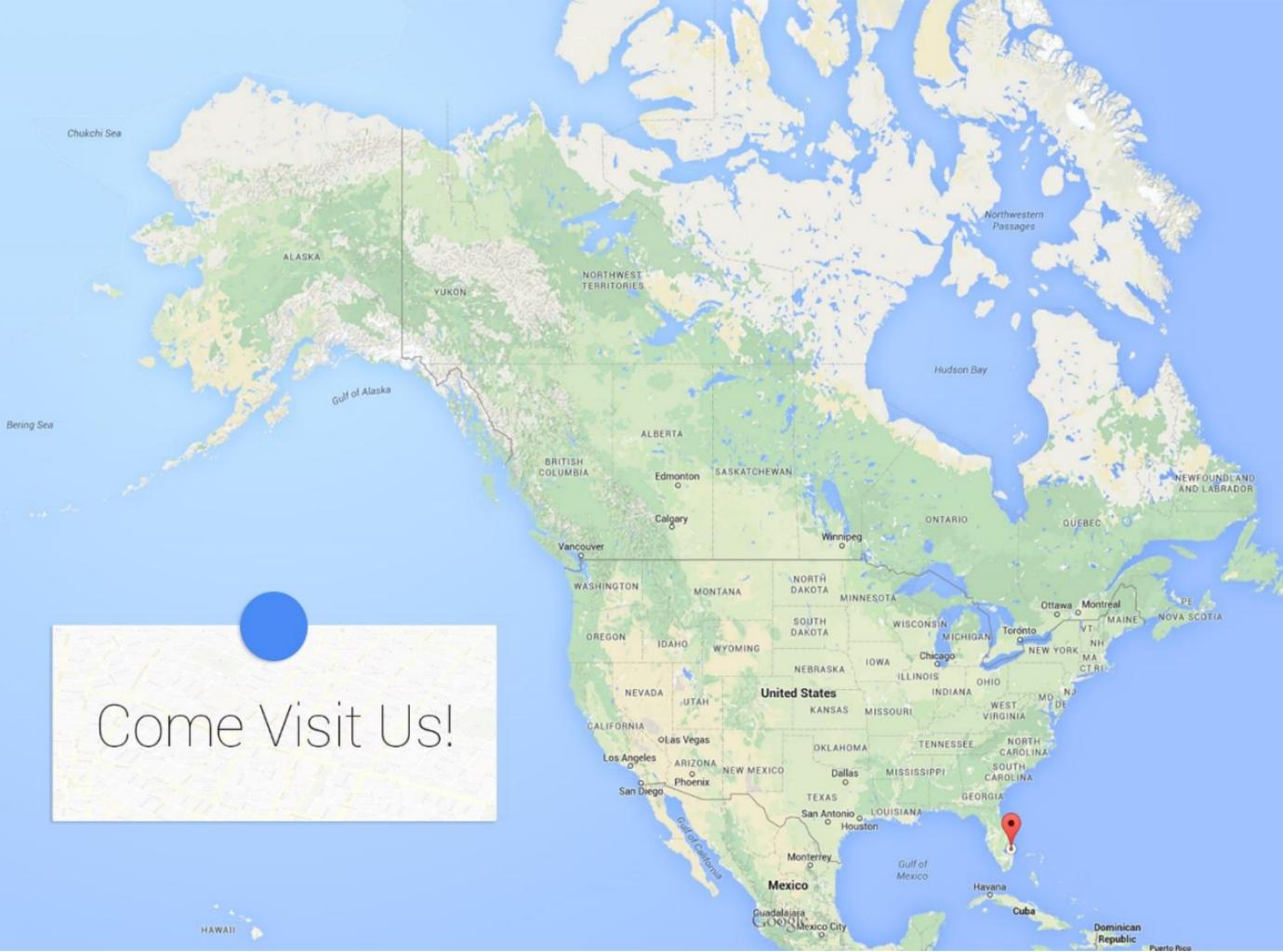
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