



EQUIPMENT INSTALLATION MANUAL



COMMERCIAL TIRE PRESSURE MONITORING SYSTEM

Equipment Installation Manual

COMPONENT SPECIFICATIONS

TDM InCab Display

Operating Power Requirements:

Operating Voltage	9V to 24V DC
Avg. Power Consumption	0.5A at 12V DC
Peak Power Consumption	2.0A at 12V DC
Idle Power consumption	0.08A at 12V DC

Operating Temperature:

-40 °C to +85 °C (-40 °F to +185 °F)

Dimensions 122 cm (W) x 25 cm (H) x 10.2 cm (D) 6" (W) x 1" (H) x 4" (D)

Weight 241 g (8.5 oz.)

RF Operating Frequency 433.92 MHz

GSM/GPRS Frequency Quad Band EGSM 850 / 900 / 1800 / 1900 MHz

No. of Monitored Tires Unlimited

NHTSA TPMS Compatible YES

Compliance/Certifications FCC/IC/CE/RCN and TPMS 2.0

OST Tire Sensor Transceiver

Operating Voltage 9V to 24V DC

Avg. Power Consumption 0.04 A at 12V DC

Peak Power Consumption 0.10 A at 12V DC

Operating Temperature: -40 °C to +85 °C (-40 °F to +185 °F)

Dimensions 3.8 cm (W) x 6.3 cm (H) x 3.8 cm (D) 1.5" (W) x 2.5" (H) x 1.5" (D)

Weight 70 g (2.4 oz.)

RF Operating Frequency 433.92 MHz

Compliance/Certifications FCC/IC/CE/RCN and TPMS 2.0

FCC and IC Notices

This product complies with Part 15 Class B of the FCC rules and ICES-003 Part B of the Canadian EMI requirements. This product contains two device types, a TDM (Tire Data Monitor) and may contain one or more OST's (Omni Sensor Transceivers). The FCC ID for the TDM device is 2ABNQ-TDM-NGEN-001 and contains FCCID RI7HE910NA. The FCC ID for OST device is 2ABNQ-OST-NGEN-001

Operation is subject to the following conditions: (1) This device cannot cause harmful interference; and (2) This device must accept any interference that may cause undesired operation.

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

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 manufacturer's instructions, may cause interference harmful to radio communications.

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There is no guarantee, however, 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.

Warning RF Exposure Compliance

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

FCC/Industry Canada Two Part Statement:

This device complies with FCC Part 15 and Industry Canada license exempt RSS standards. Per Industry Canada RSS rules: This device complies with Health Canada's Safety Code. The installer of this device should ensure that RF radiation is not emitted in excess of the Health Canada's requirement.

French/Francais

Cet appareil est conforme à FCC Partie 15 d'Industrie Canada RSS standard exempts de licence (s). Son utilisation est soumise à Les deux conditions suivantes: (1) cet appareil ne peut pas provoquer d'interférences et (2) cet appareil doit accepter Toute interférence, y compris les interférences qui peuvent causer un mauvais onctionnement du dispositif.

Cet appareil est conforme avec Santé Canada Code de sécurité 6. Le programme d'installation de cet appareil doit s'assurer que les rayonnements RF n'est pas émis au-delà de l'exigence de Santé Canada.

"Les changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement."

AVERTISSEMENT EXPOSITION AUX RF

Une distance d'au moins 20 cm doit être maintenue entre l'opérateur et l'appareil lorsque ce dernier est en fonctionnement. L'appareil ne doit pas être placée à proximité immédiate d'une autre antenne ou un autre émetteur-récepteur.

Other TireVigil™ TPMS system certifications are pending.



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TireVigil™ TPMS Components

Each TireVigil™ TPMS kit includes:

- One In-Cab Tire Data Monitor (TDM) Display
- OST transceivers to support up to 3 axles*
- TDM and OST Power Connectors

Your Monitoring subscription includes:

- 24/7 Alerts, Reports and Servicing APP
- Vehicle Location awareness
- Vehicle Communications

*Additional Axle Kits can be purchased separately

†TPMS tire sensors sold separately



In-Cab Display



The OSTs

In-Cab Tire Data Monitor (TDM) Display



Lamp Indicators

Acknowledgement (ACK) Pad








Power	GPRS	GPS	NHTSA	TireVigil	TireVigil™ Telltale Lamp
					NHTSA TPMS Telltale Lamp
					⇒GPS Satellite Connectivity Lamp
					⇒CELLULAR Connectivity Lamp
					⇒POWER ON Lamp

Definitions:

Safety Warning Lamps	<p><u>In-Cab Display Lamps:</u></p> <ol style="list-style-type: none"> 1. NHTSA Telltale Lamp: A YELLOW NHTSA compatible TPMS indicator lamp and 2. TireVigil™ Lamp: An AMBER Alert or RED Catastrophic ALERT indicator lamp.
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Installation Tools

1	Each OST requires a Deutsch DT connector, or equivalent, to connect to vehicle power. This connector must be properly crimped using a Deutsch Crimping Tool, Model HDT-48-00, or equivalent.	
2	Digital Voltage meter or Test Lamp.	
3	Pliers, wire cutters, screw drivers, a power drill, in-line fuses (1 Amp and 3 Amp) may be required and other miscellaneous fasteners including: stainless steel screws, washers and locking nuts.	
4	Nylon 12" / 305 mm Tie wraps (approx. QTY 50 per vehicle installation)	
5	Approx. 50 Ft. of 1/4" / 6.35 mm Split Corrugated Loom (also referred to as Split Wire Loom, Flex Tubing or Split Loom Tubing). A split loom insertion tool is also recommended.	
6	Loom T-fittings. Qty 4.	
7	2 Color (e.g. Red and White) Wire Automotive 16 AWG SXL Automotive Cross-Linked XLPE wire.	

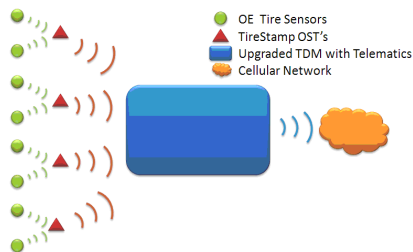
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1. Introduction

The **TireVigil™ TPMS** system was designed to provide an extra level of protection when driving a vehicle and is an essential system to help ensure vehicle and tire safety. The TPMS system continuously monitors each vehicle's tire pressures and temperatures whether it is moving or parked. If the TPMS system detects any tire pressure or temperature-related problems, it will generate Alerts to warn the driver immediately via the In-Cab Display and also by sending e-mail Alerts to all company designated personnel and service providers.

This **TireVigil™ TPMS** equipment installation manual provides service technicians with details on the installation of the **In-Cab Display** (also referred to as the Tire Data Monitor [TDM]) and the tire sensor transceivers (also referred to as OSTs). These components are very easy to install and only require that they be connected to a power source since all communications are wireless.

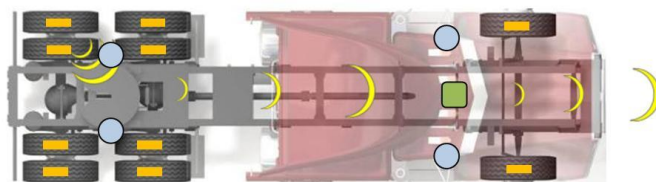
Before your company can begin to receive **TireVigil™ TPMS** Alerts and Reports each vehicle must be equipped with a Tire Data Monitor (TDM) and OST transceivers that read tire data generated from tire sensors installed on each tire/wheel assembly. The TDM also acts as the **In-Cab Display** for fleets that choose to have their drivers receive tire Alerts. The TDM and OSTs are included with each **TireVigil™ TPMS** kit. Tire sensors are packaged and sold separately.



System Overview

After installing this equipment on the vehicle, the service technician must activate the TDM and each OST using the **TireVigil™ TPMS** Servicing App. Instructions for activation can be found in the **TireVigil™ TPMS** Servicing App Manual. Once the TDM, OSTs and tire sensors are activated and linked to the vehicle, the vehicle can be placed into service with its tires being monitored.

Top View of Installation Components







Legend

- Tire Sensor
- OST
- TDM

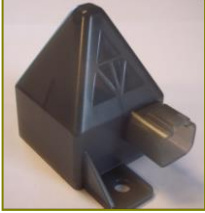

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2. InCab Display Installation





Step	Process	Photo
1	<p>Mount the TDM on the dash using the supplied Velcro pad and position it so that the driver can easily view each of the display Lamps and can reach the ACK pad comfortably while in the driver's seat.</p> <p>If your fleet has decided that drivers are not to receive TireVigil™ TPMS Alert notifications, the Alerts can be turned off and the TDM can be mounted out of sight such as in an overhead compartment or glove box. It may be necessary to try placing the TDM in several locations to determine the best signal reception for both the GPS and cellular network. (Refer to Section 4, Optional Installation Tips for more details).</p>	
2	<p>The TDM is shipped with a 8 ft. (3m) 3-wire power cable (Black=Ground, Red=12V non-interruptible Battery Power and White=Ignition). Run the TDM cable along the back and under the dashboard and then down to the lower part of the dashboard to the location where the electrical connections will be made. Wires should be connected to the vehicle breaker box. (If there is no breaker box, refer to Section 4, Optional Installation Tips).</p>	
3	<p>When the ground, power and ignition connections have been completed, the cable should be plugged into the back of the TDM. With ignition OFF, the TDM's POWER ON lamp will turn solid green if installation was completed correctly.</p> <p>If the TDM POWER ON lamp remains OFF, recheck the wiring connections.</p>	
4	<p>Once the TDM is installed, follow these steps to complete the installation:</p> <ul style="list-style-type: none"> A) Make sure the cable is tucked safely under the trim and cannot get pinched by any moving parts. B) Finalize all electrical connections. Use cable-ties to bundle and secure all wires so they don't come loose. 	
5	<p>Congratulations! You have successfully installed a TDM.</p>	

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3. Tire Sensor Transceiver (OST) Installation

Step	Process	Photo
1	<p>Each OST must be installed in a location that can receive tire sensor transmissions. Every vehicle type has a unique RF transmission profile influenced by the amount and location of metal on the vehicle. Since metal impedes sensor transmissions, the locations for mounting the OSTs must be selected taking this into account. Refer to the TireVigil Technical Bulletin #7 which provides detailed positioning information for every vehicle type.</p>	
2	<p>Each OST is shipped with a Deutsch DT Connector that plugs into the OST and is used to supply the OST with a 12V-to-24V continuous (non-interruptible) power source.</p>	
3	<p>The top part of the OSTs dome should point to open space, not to any piece of metal since the OST antenna is located in the dome. The base can be attached to any piece of metal or wood.</p> <p>The OST should be installed a minimum of 2" away from any other metal parts to maximize the antenna's reception range. Refer to the TireVigil Technical Bulletin #7 which provides detailed positioning information for every vehicle type.</p> <p>To install an OST on metal:</p> <ul style="list-style-type: none"> - Use the OST base plate holes as a drilling guide and drill 2 holes to secure the OST to the vehicle. In some situations a bracket may be required. - Install a rubber washer under and on top of the OST tab for each position. - Use a stainless steel bolt with a stainless steel washer and a locking nut to secure the OST to the vehicle structure. - Do not over-tighten the nut as it may damage the OST enclosure. 	 <p style="text-align: center;">Typical OST Placement</p>

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<p>4</p>	<p>Using a 2-wire (16-18 AWG) cable, locate the nearest 12V-to-24V power source. The OSTs are usually connected to the breaker panel on a separate circuit. Connect the BLACK Ground wire to a clean chassis ground point and then connect the RED 12V–24V power source to the breaker panel. If connecting to another always-on power source, use an in-line fuse (1 Amp recommended) between the vehicle power line and the OST connection.</p> <p>An OST can also receive power from any other OST that has power by connecting multiple OSTs in series (daisy chained). (Refer to Section 4, Optional Installation Tips for more details on wiring options). Also refer to the TireVigil Technical Bulletin #7 that describes additional OST wiring options.</p>	
<p>5</p>	<p>Once the ground and power wire connections are completed, securely route the cable back to the OST installation location and prepare the OST cable end to be connected to the DT connector. Apply a bead of dielectric grease (included with each kit) around the connector perimeter and on the OST pins before seating the connector in the OST.</p> <p>Pay extra attention to wiring the connectors, as per the instructions in Section 4.3. Repeat these steps for the remaining OSTs.</p>	
<p>6</p>	<p>Once the connections to the DT connectors have been completed, the DT connectors should be pushed all the way into each OST. The OST Power Indicator light will start flashing for up to 5 minutes to indicate that the OST has been correctly installed then turns off.</p> <p>If the OST Power Indicator Light does not flash, recheck the wiring connections. Also, check the troubleshooting tips in Technical Bulletin #7.</p>	
<p>7</p>	<p>When all the OSTs are installed, follow these steps to complete the OST installation process:</p> <ul style="list-style-type: none"> A) Finalize all electrical connections. Use cable-ties to bundle and secure all wires so they don't come loose. B) Make sure that all cables are tied down and placed safely away from any moving vehicle parts and cannot get pinched or damaged by any moving parts. 	
<p>8</p>	<p>Congratulations! You have successfully installed the OSTs.</p>	

When the TDM and OSTs have been installed they are ready to be activated

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4. Optional Installation Tips

4.1 NON-DASH MOUNTED TDMs

For fleets that choose not to use the **In-Cab Display** features, the TDM may be installed in an out-of-sight location but one that provides the TDM with adequate signal reception for both the GPS and cellular communication. Each particular vehicle type may require a different location depending on its unique RF profile. Similar models of the same vehicle type may also require a different placement for the TDM due to different vehicle options that might change the RF profile. The TDM should be mounted with the ACK button toward the sky. There should be no metal between the TDM and the sky. Therefore, several locations may need to be tried.

The proper location of the TDM can be determined by connecting the TDM to power, moving it to different positions, and observing whether the GPS Positioning Connectivity Lamp and the Communication Connectivity Lamp stay ON (GREEN) in reception locations.

If additional information is required contact your TireVigil™ TPMS Technical Support representative.

4.2 NON-BREAKER PANEL TDM CONNECTIONS

The TDM 3-Wire Cable provides the electrical connections that power the TDM. The **Black, Red and White** wires are the three required connections for the TDM to function and should be connected into the vehicle's breaker panel. If the **Red** and **White** wires are connected to the breaker box, no additional fuses are required. The **Red** wire provides primary power and must be connected to a continuous power source. The **White** wire is an ignition-sense, used by the TDM to acknowledge that the vehicle ignition is switched on. The **Black** wire is ground.

Some vehicles may have no available slots in their breaker panel or may require that a direct connection be made to other existing wires within or around the cab area. If this is the case the following suggestions are provided for making alternative connections using the TDM 3-wire cable:

Finding an ALWAYS ON Power Source:

The TDM requires a constant power source that is not controlled by the ignition key or any other device or switch. This connection is usually made just after the fuse box on the battery-side of a vehicle control module. Use a voltmeter to make sure the circuit provides continuous 12V or 24V power when the key is removed from the ignition and all lights, devices and switches are off.

Connecting the **RED** wire to a **12V-24V** power source that is **ALWAYS ON** and that is not located on the breaker box will require that you install an in-line **3 AMP** fuse between the cable and the **ALWAYS ON** power source connection point.

Finding an IGNITION Power Source:

Connecting the **WHITE** wire to a **12V-24V** power source that is **IGNITION-SWITCHED** and that is not on the breaker box will require that you install an in-line **1 AMP** fuse between the cable and the power source connection point.

This connection senses when the ignition is switched on. This requires a power source that is "on" only when the key is turned all the way forward to the "on" position and when the engine is running. It's very important that this is connected properly.

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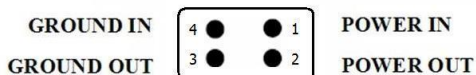
4.3 IN-LINE OST POWER CONNECTIONS

Any OST can be powered from any other OST that has power by connecting multiple OSTs in series (daisy chained). It is preferable that the rear OSTs be on a separate power run from the front OSTs for remote diagnostic purposes. If power is not readily available on the rear of the vehicle, it is acceptable to power all OSTs in series on one run. The TDM should always be on a separate breaker from the OSTs.

Simply run an additional 2-wire cable from the powered OST to the next non-powered OST. When an OST is connected directly to power, or is last in the daisy chain, it only utilizes two (2) of the available four (4) locations on its connector. The unused locations must be plugged with the provided pegs to seal the connector.

The series installation method can simplify vehicle cabling and reduce the amount of wiring needed to power the **TireVigil™ TPMS** system.

Follow the diagram for specific pin assignments for an OST connector.



Connector Rear View

4.4 WIRE CRIMPING TIPS:

Each OST has been built to meet the IP67 environmental specifications required to operate externally on a commercial vehicle. Therefore it is important when connecting external wiring that the correct DT connector contacts supplied with each DT connector kit are used. Follow the instructions below for the proper method of using the Crimp Tool and for installing the DT connector contacts to each wire.

ATTACHING THE DT CONNECTOR CONTACT



- 1) Strip (6.3mm) 1/4" insulation from wire
- 2) Raise selector knob and rotate until arrow is aligned with wire size to be crimped.
- 3) Loosen lock nut, turn adjusting screw in until it stops.



- 4) Insert contact, turn adjusting screw counter clockwise out until contact is flush with indenter cover. Tighten lock nut.



- 5) Insert wire in contact, contact must be centered between indicators, close handles until handle contacts the stop.
- 6) Release handles and remove crimped contact.



- 7) Inspect terminal to insure that all strands are in crimp barrel.
- Note; tool must be readjusted for each type/size of contact or wire.

WIRE STRIPPING



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4.5 OTHER INSTALLATION TIPS & TIME SAVERS:

The manufacturer recommends the following tips and time savers to shorten installation time and/or avoid the potential risk of damage, fire and voiding of the equipment warranty:

- If installing the OSTs directly to the vehicle rail, a Power Tap drill bit tool may reduce installation time. See below for tool description and sourcing.
- No TireVigil™ TPMS equipment (TDM or OST) should ever be powered directly from the alternator's output. Avoid connecting any TireVigil™ TPMS equipment to any of the alternator's poles.
- Industry best practices, in addition to OEM guidelines recommend that circuits not be connected directly to the battery lugs. TireVigil™ TPMS equipment should get its power AFTER the main breaker (fuse) panel.
- It is acceptable to use fuse taps. There are two different kinds of fuse taps: mini (ATM) fuse taps and ATO/ATC (large) fuse taps. Depending on vehicle's make and year, typically one or the other type is used. Sometimes both types are used on the same vehicle.
- There are other ways of connecting into the fuse box, such as by fitting over a leg of a fuse into the non-fused (bus) side of a fuse. However, the crimp-on connector should be followed by an in-line fuse. NEVER SHARE AN EXISTING FUSE WITH TIREVIGIL™ TPMS EQUIPMENT!
- Ground can be taken from the battery lug, but do NOT share a ground with other circuits! The TireVigil™ TPMS equipment ground connection should be completely independent.

Power Taps:

Benefits of using a power drill tap include:

- Power Taps quickly drill and tap in one operation.
- They drill and tap material thickness up to 2 times the tap diameter.
- Their self-centering 135 degree split point quickly forms the ideal hole size before the threading tap section engages.
- No separate special drill bit sizes are required as with regular taps.
- They let the power of the drill motor do all the work.
- The proper size hole is always drilled which provides ideal thread formation and superior thread strength.

One source for Power Tap drill bits is Kimball Tools (at www.kimballmidwest.com). Below is an image of a 1/4-20 drill bit, part number 82-1274.



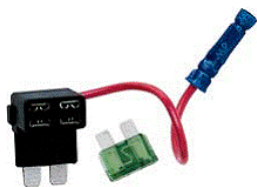
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Fuse Taps:

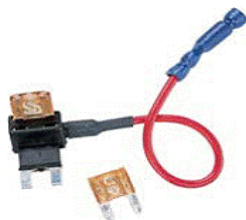
If using fuse taps, normally, three to four fuse taps would be needed per vehicle:

- one for the TDM's power,
- one for the TDM's Ignition, and
- one or two for the OSTs, depending on the location from where the OST power is being taken.

Sample Fuse Taps:



ATO/ATC Fuse



ATM Fuse.

Other fuse connection methods include using an ATM tap or an ATO/ATC tap that go straight into the bus. The blue crimp connector should be followed by an inline fuse.



ATO/ATC Fuse Tap



ATM Fuse Circuit.

4.6 CHECK FOR PROPER TDM INSTALLATION

After installing and applying power to the TDM, follow this quick test procedure:

1. Ignition off
 - a. The Power ON lamp should be green
 - b. Hold your hand on the ACK pad for 5 seconds. All lamps should turn on. Wait for the lamps to turn back off.
2. Turn the ignition on
 - a. After allowing a few minutes for the TDM to register on the cellular network and the GPS to acquire all satellites in range, the Cellular Connectivity and GPS Satellite Connectivity lamps should be turned on in addition to the green Power ON lamp. If after five minutes one or both lamps are still off, review the troubleshooting tips.
3. Activate the cellular communication
 - a. With the Cellular Connectivity lamp lit, press and hold the ACK button for five seconds. The Power ON lamp will start flashing green and yellow. After a few seconds all lamps will stay on for 15 seconds before returning back to their normal states.

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4.7 TDM TROUBLESHOOTING TIPS

Problem:	Potential Causes:
TDM's Power ON lamp is off	<ul style="list-style-type: none"> - Wrong wiring (i.e. red and white wires reversed) - No fuse on the power line (RED wire) or fuse blown - Red wire is not connected to a continuous power source - Vehicle's battery is dead or disconnected (i.e. kill switch) - Bad or corroded ground connection - TDM power connector is not inserted properly - Defective power connector or cable - Defective TDM
TDM's Power ON lamp is yellow	<ul style="list-style-type: none"> - Defective TDM
TDM's Cellular Connectivity lamp is off	<ul style="list-style-type: none"> - Ignition switch is off (when ignition is off, the only lamp that stays on is the Power ON lamp) - TDM is out of cellular coverage range - Incorrect TDM placement (metal parts are in the vicinity of the TDM are blocking the cellular antenna) - Defective or wrong SIM card inside the TDM
TDM's GPS Satellite Connectivity lamp is off	<ul style="list-style-type: none"> - Ignition switch is off (when ignition is off, the only lamp that stays on is the Power ON lamp) - TDM out of GPS satellite coverage range (i.e. inside a garage, under a metallic roof, etc.) - Incorrect TDM placement (metal parts are in the vicinity of the TDM which are blocking the GPS satellite antenna) - Objects are on top of the TDM enclosure (i.e. books, tools, etc.) - Defective TDM

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EC DECLARATION OF CONFORMITY

OST-NGEN-001 (Product name)

1. TireStamp Inc. 350 Terry Fox Drive, Suite 320, Kanata, Ontario, Canada. Manufacturer
2. This declaration of conformity is issued under the sole responsibility of the manufacturer
3. Omni Sensor Transmitter
4. The object of the declaration described above is in conformity with the relevant Community harmonization: European Directive 2007/95/EC
5. The conformity with the essential requirements of the 2007/95/EC has been demonstrated against the following standards:
 - Radio and telecommunications terminal equipment (RTTE) Directive 1999/5/EC
 - STANDARD: ETSI EN 300 220-2 V2.4.1 (2012-05)
 - REPORTS: 248160-2TRFWL (ETSI EN 300 220-2 433 MHz TDM)
 - STANDARD: EN 50371:2002 (human exposure to electromagnetic fields (10 MHz - 300 GHz))

This RTTE directive calls up

- 1) Low Voltage Directive 2004/108/EC and STANDARD: EN 60950-1:2006/A11:2009/A1:2010/A12:2011
REPORT: 248160-1TRFSAF (EN 60950-1)
- 2) Electromagnetic compatibility (EMC) Directive 2004/108/EC
STANDARD: EN 55022: 2010
REPORT: 248160-2TRFEMC (Emissions)
STANDARD: EN 301 489-3 V1.6.1 (2013-08)
REPORT: 248160-1TRFEMC (EN 301 489-3)

Signed for on behalf of **TireStamp Inc.**, date: **9 January, 2014** at Kanata (Ontario), Canada

x \s\ D. S. Feagan, CEO
Signature and Title

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EC DECLARATION OF CONFORMITY

TDM-NGEN-001 (Product name)

1. TireStamp Inc. 350 Terry Fox Drive, Suite 320, Kanata, Ontario, Canada.
Manufacturer
2. This declaration of conformity is issued under the sole responsibility of the manufacturer
3. Tire Data Monitor
4. The object of the declaration described above is in conformity with the relevant Community harmonization: European Directive 2007/95/EC
5. The conformity with the essential requirements of the 2007/95/EC has been demonstrated against the following standards:
Radio and telecommunications terminal equipment (RTTE) Directive 1999/5/EC
STANDARD: ETSI EN 300 220-2 V2.4.1 (2012-05)
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This RTTE directive calls up

- 1) Low Voltage Directive 2004/108/EC and
STANDARD: EN 60950-1:2006/A11:2009/A1:2010/A12:2011
REPORT: 248160-1TRFSAF (EN 60950-1)
- 2) Electromagnetic compatibility (EMC) Directive 2004/108/EC
STANDARD: EN 55022: 2010
REPORT: 248160-2TRFEMC (Emissions)
STANDARD: EN 301 489-3 V1.6.1 (2013-08)
REPORT: 248160-1TRFEMC(EN 301 489-3)

This product contains a component which has its own Declaration of Conformity (see attached),

Signed for on behalf of **TireStamp Inc.**, date: **9 January. 2014** at Kanata (Ontario), Canada

x \s\ D. S. Feagan, CEO
Signature and Title

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WARRANTY

STANDARD WARRANTY POLICY

The manufacturer or its authorized representation (the "Seller") warrants to the original end user or fleet (the "Buyer") that the product purchased (the "Product") is free from defects in materials and workmanship and will substantially conform to the specifications for this product for a period of one (1) year from the date of original purchase. Should the product fail within the warranty period, it will be replaced or repaired at the option of the Seller. The Seller reserves the right to replace defective products with either new or refurbished products that are functionally equivalent to new.

1 **Warranty Procedures.** Buyer will, within the Warranty Period, notify Seller in writing or by facsimile of any Products containing defects covered by the limited warranties provided herein, and will request a Returned Material Authorization ("RMA") number. Seller will provide the RMA number in writing or by facsimile to Buyer promptly following receipt of the request. Promptly following its receipt of the RMA number, Buyer shall send such defective Products, freight and insurance prepaid by Buyer, to Seller directly or, if requested by Seller, to a repair facility designated by the Seller. The Buyer shall ship Products in their original shipping containers or in containers which provide equivalent protections, and shall display the RMA number(s) on the outside of the container(s). Seller reserves the right to refuse to accept any rejected Products that do not bear an RMA number on the outside of the container. If a defective Product is received by the Seller during the applicable warranty period, Seller will, at its sole option and expense, repair or replace such Product using new and or used Products or materials to make such repair or replacement, and will ship the repaired or replaced Product to Buyer. Seller shall pay the shipping charges back to buyer for properly returned products; otherwise, Buyer shall be responsible for the return shipping charges. This Warranty Procedure states Buyer's sole remedy, and Seller's sole liability, arising out of the limited warranties provided by Seller.

2 **Limitations.** The foregoing warranties do not extend to (i) nonconformities, defect or errors in the Product due to accident, abuse, misuse or negligent use of the Product or use in other than a normal and customary manner, environmental conditions not conforming to Seller's instructions, or failure to follow prescribed operating maintenance procedures, (ii) defects, errors or nonconformities in the Product due to normal wear and tear, or (iii) damage caused by force of nature or act of any third party, or (iv) Seller does not warrant tires and rims/wheels or labor associated with replacement of products, tires, and/or rims/wheels resulting from product failures.

3 **No Other Warranty.** EXCEPT AS EXPRESSLY SET FORTH HEREIN, SELLER MAKES AND BUYER RECEIVES NO REPRESENTATIONS OR WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, WITH RESPECT TO THE PRODUCTS OR ANY SERVICES PROVIDED HEREUNDER, AND SELLER SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES AND REPRESENTATIONS, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT, AND ANY WARRANTIES ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE.