

<p>Doc #: QMS-PS-0012</p> <p>Rev #: 5</p>	<p>Title:</p> <p>Customer Supplied Material Standard - Telematics Devices and Systems</p>	
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1.0 Product Specification:

1.1 Description

- 1.1.1 This document provides information to be used by anyone who will be supplying telematics devices or systems to be installed on products produced by Wabash. This includes the following:
 - 1.1.1.1 Suppliers specified by or used by customers of Wabash to provide telematics devices for use on trailers being produced for customers of Wabash.
 - 1.1.1.2 It also applies to those suppliers contracted by Wabash to provide telematics devices for use on Wabash products.

1.2 Product Specifications:

- 1.2.1 Product specifications for telematics systems are not specified by Wabash.
- 1.2.2 All telematics systems, whether from original Vendor or Customer Supplied, must conform to original Vendor's specifications and requirements when received at Wabash (Battery charge level, Shelf-life dating, Firmware configuration, Engineering level).

1.3 Process Specifications:

- 1.3.1 The supplier is to provide all necessary assembly and installation instructions for their system\model with the shipment and as noted in 2.3.4. Provided instructions must include estimated time of completion for each step to be reviewed by Wabash before accepting installation process.
- 1.3.2 Installation and assembly information is available in work instructions developed for this purpose for each production line.
- 1.3.3 All related mobile applications for associating, pairing, or verifying telematics must be available in iOS\Apple format. Any end of line verification procedures (including end user application permissions) must be communicated as noted in 2.3.4.

1.4 Packaging Specifications and Product Shipping Requirements

1.4.1 Packaging

- 1.4.1.1 Telematics components must be packaged to prevent physical and environmental damage.
 - 1.4.1.1.1 This potential damage could include dents, bent parts, abrasion, missing parts, rust etc.
 - 1.4.1.1.2 Packaging must ensure that all contents remain in the package during shipping and handling.
- 1.4.1.2 Packaging must include Wabash sales order (formerly referred to as PC number) and all Wabash part numbers as installed.

1.4.2 Quantity

1.4.2.1 Supplied product quantity must be equal to the requested amount on the Wabash Purchasing Department's no-cost purchase order, or per Wabash material requirement needs.

1.4.3 Delivery Window

1.4.3.1 The delivery for product is no earlier than 30 days prior to scheduled build, and not later than 10 days prior to scheduled build.

1.4.3.2 Wabash Purchasing Department will send a no-cost purchase order to the customer or their supplier with a 10-day lead time for delivery of requested parts (telematics systems).

2.0 Special Requirements:

2.1 Packaging Special Requirements

2.1.1 Every shipment must include a detailed packing slip.

2.1.1.1 If the shipment includes multiple telematics systems, or telematics systems with multiple parts, a breakdown with individual descriptions, sizes and quantities must be included.

2.1.1.2 If the shipment includes telematics systems with paired components, a detailed list of device serial numbers and paired component serial numbers (or MAC addresses) must be provided.

2.1.2 The exterior package label must be applied to each telematics device carton and indicate the carton number and the total number of cartons (such as "3 of 4"). Additionally, this label must include the following:

2.1.2.1 Supplier/vendor name, address, and phone number.

2.1.2.2 Part number, name of part, and quantity.

2.1.2.3 Purchase order number.

2.1.2.4 End customer name.

2.1.2.5 Wabash part number.

2.1.2.6 Sales Order number (formerly referred to as PC number).

2.1.2.7 Serial numbers and/or IMEI for each individual device included in carton.

2.2 Returns – RMA process responsibilities for discrepant or defective telematic material.

2.2.1 For Wabash supplied telematic units Wabash owns the RMA process.

2.2.2 For Customer Supplied telematic units Vendor owns the RMA process.

2.2.3 If Vendor requires Customer to supply RMA for returned units, original Customer owns RMA process.

2.3 Wiring Requirements - Schematics, Power Supply and Consumption

- 2.3.1 The trailer's electrical system will *only* be revised for trailer telematics installation with prior specific notification of requirement.
- 2.3.2 Supplier to provide detailed system schematics with descriptions and Wabash part numbers.
- 2.3.3 Supplier to provide complete layout prints for the system and all assemblies and components as supplied with descriptions and Wabash part numbers **90 calendar days before the first scheduled build**. *NOTE: Supplier's connector part numbers, wire gauge, conductor, insulation, and lengths must be clearly noted.*
- 2.3.4 Supplier to provide a system installation manual **90 calendar days before the first scheduled build**. *NOTE: All power requirements and consumption for the system, including the telematics devices and sensors must be clearly noted.*
- 2.3.5 The vendor-supplied system cannot overload the trailer's electrical system's amperage limit or affect the functionality of the trailer lighting per FMVSS 108. The vendor-supplied system cannot exceed 5 amps.

2.4 Notification Requirements

- 2.4.1 All relative information regarding the installation and assignment of supplier's telematics systems, including the use of any mobile app or online webpage needed to complete required processes must be communicated to Wabash, along with any potential impact of said processes/components on trailer operation and assembly.

2.5 Self-Contained Batteries (Non-Rechargeable)

- 2.5.1 If the battery is to be remote mounted (not enclosed in the unit), the supplier must provide prints denoting the physical envelope of the battery, its connections, and any necessary space for air movement. These prints are to be provided **90 calendar days before the first scheduled build**.

2.6 Harness Connections

- 2.6.1 All connections tapping into the trailer's electrical system must be clearly documented and must be compatible with the trailer's existing electrical system.
- 2.6.2 All leads must be terminated by approved connectors. Butt splicing is *not* acceptable.
- 2.6.3 Only the connectors listed below are approved for use. All other connectors are *not* acceptable due to their historic poor quality and the fact they are easily damaged in this application.
 - 2.6.3.1 Tyco / Amp
 - 2.6.3.2 Sure Seal
 - 2.6.3.3 Deutsch
- 2.6.4 The maximum allowable outer diameter (in inches) for connectors by area of the trailer are as follows:
 - 2.6.4.1 Nose Cavity: 2 inches

2.6.4.2 Nose to Coupler: 0.75 inch

2.6.4.3 Rear Frame: 0.75 inch

2.6.4.4 Coupler: 0.75 inch

2.6.4.5 Floor: 0.75 inch.

2.6.4.6 Top Rail: 1 inch

2.6.5 In-line fuse holders will not be packaged in the trailer's 7-way enclosure.

2.7 Installation Location and Compatibility – Main Unit / ECU

	Inside Nose	On Top of Roof Liner	On Exterior (Top) of Roof
Mounting Locations / Styles	Cavity formed by vertical structural post	Cavity between roof bows	On exterior (top) of roof. No holes will be placed in trailer roof sheet into cargo area to install system. Will allow screws into top rail flange.
Required Maximum Dimensions	12" wide X 24" Tall X 2.25" thick	12" wide X 12" long X 1" thick	As required X 1" thick
Required Mounting / Attachment	Supplier-required mounting plate / pan assembly per vendor instructions	High bond strength tape / pull rivet	High bond strength tape. No holes will be placed in trailer roof sheet into cargo area to install system. Will allow screws into top rail flange.

2.8 Antenna Mountings - Type / Location

2.8.1 Roof Mount - integral to unit; no external installation – *Recommended*

2.8.2 Nose (Front Wall) Mount

2.8.2.1 Attached with self-tapping screw.

2.8.2.2 Nose mount with aluminum roof - adhesive, self-tapping screw or pull rivet.

2.8.3 Ceiling Cavity Mount - integral with translucent roof

2.9 Harnesses

2.9.1 The design and manufacture of the trailer telematics devices (including power units, antenna, and sensors) is the responsibility of the system supplier. Refer to Paragraph 2.2 above.

2.10 Remote Sensors

2.10.1 Cargo

2.10.1.1 Can be integral to unit – *Recommended*

2.10.1.2 Can be non-integral to unit.

2.10.1.3 Required maximum dimensions are 10" wide X 10" tall X 2" thick.

2.10.1.4 Required location in trailer nose.

2.10.2 Door

2.10.2.1 Required location for attachment to rear frame door post is on post, 10.4" from bottom of rear frame header.

2.10.2.1.1 Attachment to rear frame header is *not* acceptable due to historic warranty issues.

2.10.2.1.2 Attachment to stainless steel rear frames is *not recommended*.

2.10.3 Coupler

2.10.3.1 Attached to coupler within a 10" radius of the king pin, 2.25" diameter hole, with snap-in attachment. Only applicable to couplers with a 50k rating. No installations will be completed for high strength steel couplers.