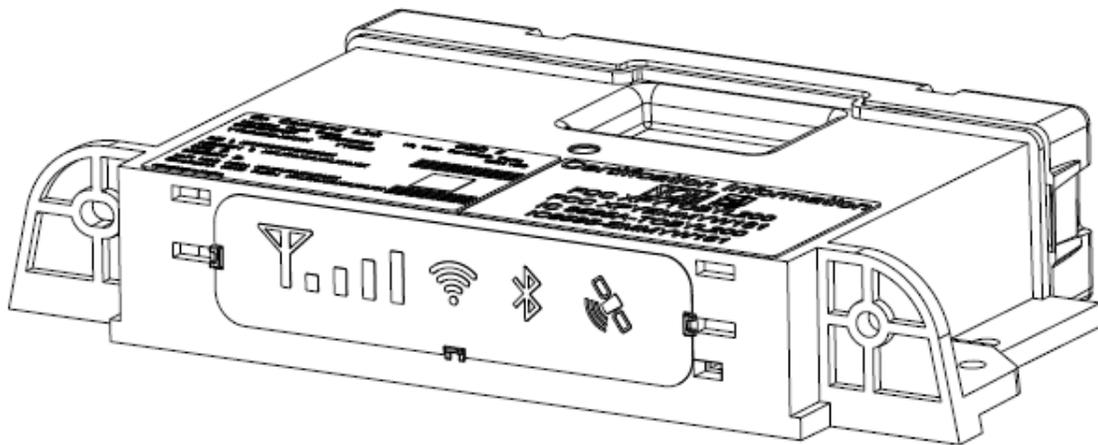


Vehicle Data Communication Terminal

(Navistar N2 Telematics)



User's Manual

See the contents of this document for module connection

Model: TBM3-N2

Brand: Navistar

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Review F

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DOCUMENT REVIEW

Revision	Date	Comments
A	March 15, 2019	Initial Review
B	June 13, 2019	Added description of module indicators, added module images and connectors
C	June 27, 2019	Added interference caption and transmitter frequency
D	June 28, 2019	Added the caption to read instructions, company phone number and image on the home page
E	June 29, 2019	Frequency clarification
F	July 15, 2019	Amount digits separate by comma

Review F

1. Introduction.

This document describes the steps to connect the Navistar N2 Telematics module to the truck's harness, as well as the module's operation voltage ranges.

2. Description of the trucks connected devices.

The Navistar N2 Telematics module includes cellular communication interfaces, Wi-Fi and Bluetooth, which enables 3G and 4G network communication and, also to connect with devices inside the vehicle.

The Navistar N2 Telematics module is mounted on commercial and after-sales vehicles. The N2 unit architecture has a unique CPU with virtual software partitions. Using a SW for- virtualization, the security and isolation philosophy for open structures from the N2 unit's internal network can be maintained for flexibility purposes and reliable structures.

The vehicle tracking function basically refers to monitoring the location, movements, status and behavior of one or more vehicles jointly, this is achieved thanks to a combination of a GPS receiver (GNSS) and an electronic device (usually consists of a GSM GPRS modem or SMS transmitter) installed in each vehicle, communicating with the user (dispatching, emergency units) and PC and Web-based software. The data is converted into information using tools that report any changes together with a visual display in a computerized mapping software. Vehicle tracking systems often use odometry or recognition as an alternative or component for navigation sources.

Navistar N2 Telematics modules are designed to provide a data connection gap between vehicle communication, backup servers and onboard services.

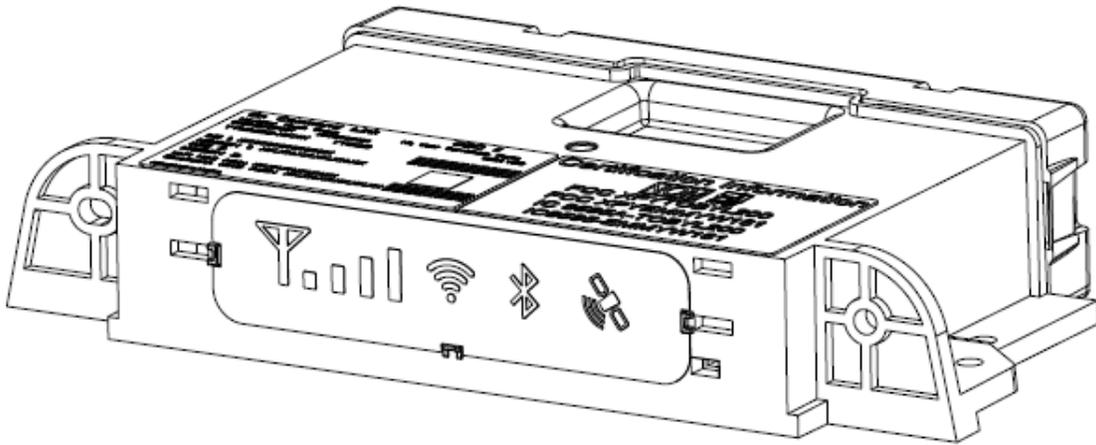


Figure 2.1 Navistar N2 Telematics

2.1. Module indicators

The telematics module displays four indicators that transmit information such as: cellular connectivity and signal strength, Wi-Fi power, Bluetooth connectivity® and Global Positioning System (GPS) status.

Refer to the following table for information about the indicators:

Indicator	Function	Description
	Searching for signal	Displays module is on and searching for a cellular signal.
	Power strength	Displays cellular signal power using a bar for low signal and increases to four bars to display strong signal.
	Wi-Fi	When light is on, a Wi-Fi connection is activated, when light is off, Wi-Fi is not activated.
	Bluetooth	When light is on, a Bluetooth connection is activated; when light is off, Bluetooth is not activated.
	GPS	When light is on, a GPS connection is activated, when light is flashing, GPS is searching for a connection.

3. Electrical requirements

3.1. Power supply.

The device can operate without performance degradation, covering the operating range shown in the following Table:

System	Nominal Operating Voltage
12 Volts or 24 volts	12– 24 +/-0.1Vcc

Table 3.1-1 Range.

4. Initial preparation for installation

4.1. Connections

In the following images you can see the connectors' identification on the Navistar N2 Telematics module and the connectors that will be used in the truck's harness.

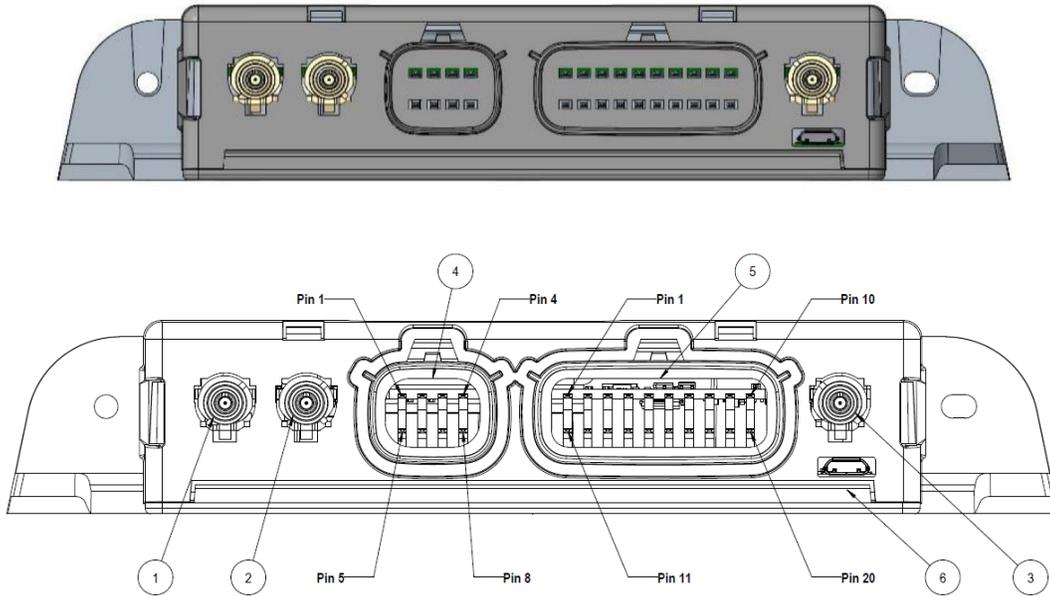


Figure 4.1-1

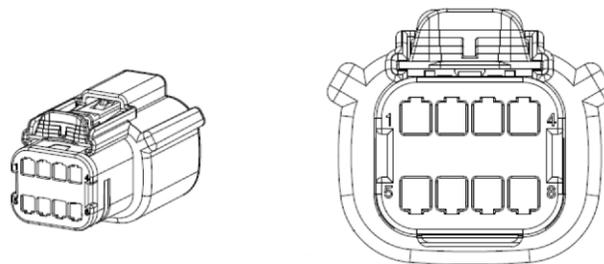


Figure 4.1-2 and power connector

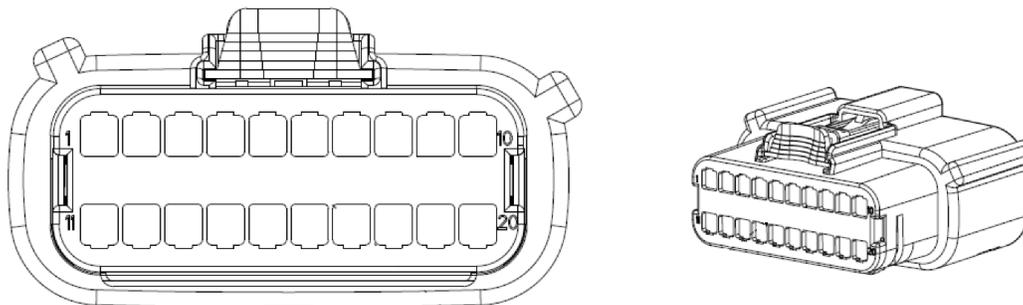


Figure 4.1-3 Harness Interface Connector

Below are the steps to connect the harness connectors to the Navistar N2 Telematics module:

1. Identify 4 connector (8-pin connector) on the module (See Figure 4.1.1)
2. Identify the Communication and Power Connector on the truck's harness (see Figure 4. 1.2), this harness provides access to CAN 1, CAN 2 & J1708 communication channels
3. Assemble the Truck's Harness Communication Connector to the module's 4 connector
4. Identify connector 5 (20-pin connector) on the module (See Figure 4.1.1)
5. Identify the Interface Connector in the truck's harness (see Figure 4. 1.3)
6. Assemble the Interface Connector in the truck's harness to the module's 5 connector
7. Once the module has been assembled, the module is able to operate for a 12V or 24 V system with the operating range specified in the Electrical Requirements Section

4.2. Notes

1. Module operation cannot be guaranteed at a low voltage of 8.9Vcc and at a high voltage of 36.1Vcc
2. The device can be mounted horizontally, vertically or at an angle (Depends on the client)

5. Radio Transmitters

The module (Navistar N2 Telematics) has two transmitters which are mentioned below:

TOBY-L200-03S-00

Module LTE Cat 4 multimode with HSPA+ and/or 2G fallback
It is mainly designed for operation in America

4G LTE	3G UMTS/HSDPA/HSUPA	2G GSM/GPRS/EDGE
Band 17 (700MHz)	Band 5 (850MHz)	GSM 850MHz
Band 5 (85MHz)	Band 8 (900MHz)	E-GSM 900MHz
Band 4 (1,700MHz)	Band 4 (AWS, e.g., 1,700MHz)	DCS 1,800MHz
Band 2 (1,900MHz)	Band 2 (1,900MHz)	PCS 1,900MHz
Band 7 (2,600MHz)	Band 1 (2,100MHz)	

Note:

TOBY-L2 series modules support all E-UTRA channel bandwidths for each operating band in accordance with 3GPP TS 36.521-1

EMMY-W161

Host based multi radio modules with Wi-Fi and Bluetooth
EMMY-W161 supports Wi-Fi IEEE 802.11 a/b/g/n/ac standards in the 2.4GHz radio band.

"The operation of this equipment is subject to the following two conditions

(1) this equipment or device may not cause harmful interference and

(2) this equipment or device must accept any interference received, including interference that may cause undesired operation."