

## Beacon and Garmin: Dispatch and Navigation

The Contigo 6150 & 6151 provide a fleet management interface to Garmin™ Personal Navigation Devices (PNDs) including the nüvi® 2x5, 465, 12xx, 13xx, and 14xx series. The 6150 & 6151 may be connected to Garmin PNDs via a custom wiring harness that supports Dispatch and Navigation in addition to all existing Contigo functions. From the Contigo web application, Dispatchers may send jobs and messages to vehicles, and monitor the status of jobs as drivers accept their jobs on the PND. Drivers may navigate to the destination and complete these jobs.

This document is an addendum to the 6150 & 6151 Installation Guide, and describes the additional steps to install the Garmin unit and connect its related wiring to the Beacon and vehicle.



### 1. Before You Begin

#### Prerequisites

- › Ensure you have all the equipment, tools and supplies indicated in this document.
- › Ensure that the Beacon has been upgraded to the correct firmware revision (v50) to support the Garmin Fleet Management Interface. Contact Contigo for more information.
- › Ensure that the Beacon has been sent an activation code. This is a numeric value that is sent over-the-air to the device by Contigo to enable Dispatch and Navigation.
- › Have the standard 6150 & 6151 Installation Guide on hand as a reference for installing the Beacon and making standard connections to the vehicle (including un-switched power, ground, ignition sense, auxiliary inputs and outputs).
- › Have the appropriate Beacon/Garmin wiring harness for the PND you are installing.
- › Understand and be familiar with the Contigo web-based software portal, including Beacon provisioning, Beacon management, and Dispatch functions including sending a message. Alternatively, ensure someone is available to support you during the installation who has access to this information and to the portal.

#### Requirements

- › Beacon / Garmin Wiring harness for the appropriate PND model
- › v50 firmware upgrade for the Beacon
- › Garmin PND and mounting bracket

#### Tools and Supplies

- › All those required for Beacon installation (see 6150 & 6151 Installation Guide)
- › Electrical tape
- › Plastic cable ties
- › Screw drivers, mounting screws
- › Wrenches, sockets

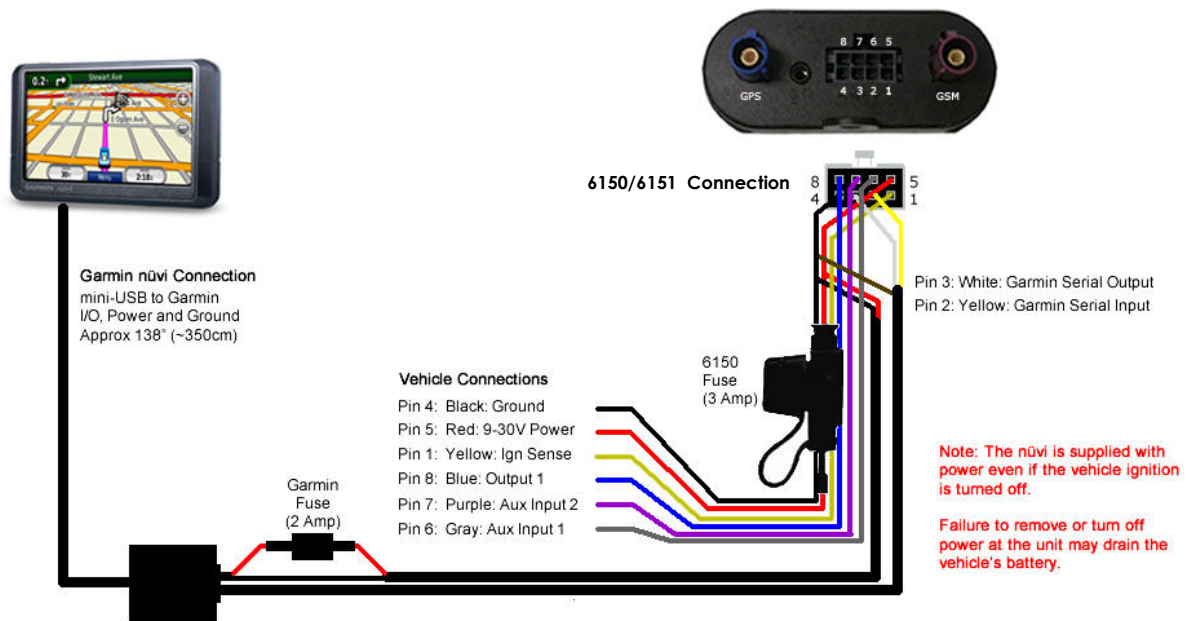
### IMPORTANT NOTE

- › If the Beacon is already installed in the vehicle:
  - › The Beacon's firmware must be v50. This may be verified through the Contigo portal's Beacon Manager.
  - › The Fleet Management activation code must be sent over the air.
  - › Firmware may not be upgraded in the field. You must swap the Beacon for one with firmware v48.
  - › The existing harness must be replaced.
  - › Contact your Contigo representative for more information.
- › Some Garmin models are not interchangeable from vehicle to vehicle as their wiring harnesses may be different.

### Wiring Harness Diagram

The following diagram illustrates the connections between the Beacon and the Garmin units currently supported. Familiarize yourself with the appropriate wiring harness for your installation.

#### Garmin nüvi 2x5, 465, 12xx, 13xx and 14xx series to 6150 or 6151



Not to scale. All measurements are approximate and may vary slightly from harness to harness

## Select a Suitable PND Installation Position

Garmin PNDs are shipped with portable/removable mounting brackets. These are typically designed to adhere to the inside of the windshield glass (which usually provides the clearest line-of-sight to the sky). Alternatively, you may choose to permanently mount the bracket using your own fasteners or adhesive.

- › Locate all the mounting hardware provided in the Garmin PND packaging to ensure the kit is complete.
- › Determine the best location for the PND, and ensure there is a smooth, clean area of glass to affix the mounting bracket, or other suitable mounting location.
- › Ensure the PND is in clear line of sight to the sky and that it is able to acquire GPS satellite signal.
- › Ensure the placement of the Garmin PND and its mounting hardware will not obscure the driver's vision or prevent normal operation of the vehicle and its controls. The PND should be placed within reach of the driver for easy access to the Garmin navigation and dispatch controls.
- › Ensure that the mini-USB cable can reach from the planned Beacon location to the PND.

The mini-USB data cable carries data from the Beacon to the PND. It also provides the power and the grounding point for the PND.

The mini-USB data cable must be routed up to the PND from the rest of the harness. Take note of the size and shape of the mini-USB connector to ensure your routing accommodates it.

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## 2. Install the Beacon

### Install the Beacon, Antenna and Wiring Harness

- › Following the instructions in the 6150 & 6151 Installation Guide, install the Beacon and antenna: Using the Beacon/Garmin wiring harness, make the standard wiring connections (power, ground, ignition sense) and optional connections if desired (auxiliary inputs and outputs).

### Test the Beacon

- › Perform an end-to-end system test by locating the Beacon via the Contigo portal.

### Configure the Beacon for PND Use

- › In the Contigo portal, configure the Beacon as having a PND attached. See the Dispatch Administration and Configuration Guide for more information.

### 3. Install the PND

#### Mount the PND

- › Install the mounting bracket securely in the position selected, following the manufacturer's instructions.
- › Mount the PND to the bracket and verify that the PND is held firmly in position.

#### Connect PND to Beacon

- › Route the mini-USB data cable from the Beacon wiring harness to the PND mounting location.
- › Connect the mini-USB cable to the PND's data port.

#### Test the PND

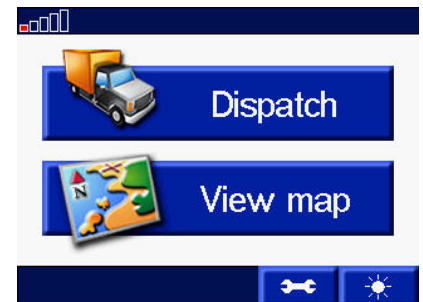
- › Remove the PND screen protector.
- › Press the Power button, ensure that the Garmin screen illuminates and the unit appears to be operating correctly. Refer to the user documentation as provided by Garmin.
- › Ensure the PND is in clear line of sight to the sky and that it is able to acquire GPS satellite signal.

- › **IMPORTANT: BEFORE SENDING ANY MESSAGES OR JOBS TO THE VEHICLE,** verify that the fleet management interface has been enabled on the PND. The **Dispatch option** will appear in the menu screen as shown in the image to the right.

**If the Dispatch option does not appear, the Beacon may not be enabled for PND connectivity on the Contigo portal or the activation code may not have been sent to the device.**

**See Troubleshooting options in section 4 below.**

- › From the Contigo portal, you may then use the Dispatch interface to send a text message to the Vehicle. Verify that it is received by the PND.



#### IMPORTANT NOTE

**Once installed, do not intentionally swap PNDs between vehicles. Always use the same PND in the same vehicle.**

Should you be forced to move a PND from one vehicle to another:

- › All Jobs and Messages will be automatically deleted from the PND.
- › Jobs and Messages assigned to the current vehicle in the Contigo Dispatch interface will be re-sent to the PND.

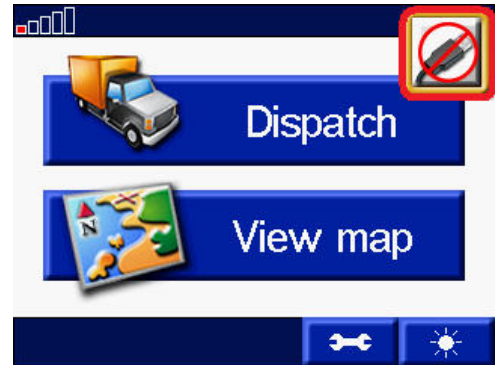
## 4. Troubleshooting the Beacon/Garmin Connection

### The Garmin shows that the data cable is disconnected.

The Garmin screen may display a **data disconnection icon**, even when the cable appears to be connected correctly.

First:

1. Verify that the disconnection icon is not displayed in error by attempting to send a message from the PND (Menu > Dispatch > Messages > Create Message). Verify on the Contigo portal that the message is or is not received. If the message is received, the icon can be disregarded and may clear itself after some time. If not, proceed to the next step.
2. Ensure the data cable is firmly inserted into the mini USB data port (usually on the back of the unit).
3. Ensure the data cable is still connected to the Beacon harness. If not, a replacement harness may be required.
4. Ensure the Beacon harness connector is correctly inserted into the rear of the Beacon unit.
5. Ensure the Beacon unit has power (PWR/GPS light is illuminated). Ensure that the PND has power and is not operating on its internal battery.
6. Power off the Garmin unit.
7. Disconnect the data/power cable from the Garmin PND.
8. **Wait a minimum of 30 seconds.**
9. Reconnect the data/power cable to the Garmin PND.
10. Turn on the Garmin PND.



If this does not resolve the condition, contact your Contigo support representative.

### The Garmin PND appears to be connected and the Beacon is locatable, but PND is not sending/receiving Jobs or Messages.

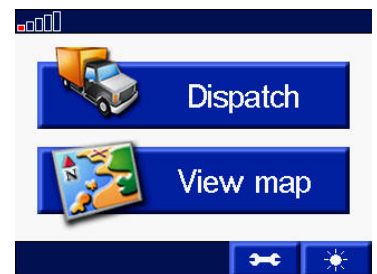
The Garmin may be unable to send or receive jobs or messages even when the data cable is confirmed to be connected correctly, and even when no disconnection icon appears on the screen.

There are a few conditions that may cause this behavior:

- The PND may be operating on internal battery. In this state, the communication link between the PND and the Beacon is broken, and Jobs and Messages will be lost.
- The Garmin Fleet Management Interface (GFMI) protocol has not been correctly enabled on the PND.
- Messages were sent from the Contigo Dispatch portal **before** GFMI was correctly enabled on the PND.
- If the Beacon lost power while Jobs or Messages were being sent, communications may have been disrupted. Even if the Beacon is now correctly powered, Jobs or Messages may have been blocked temporarily. Usually, resending Jobs or Messages should resolve this issue.

Once you have confirmed that the Beacon and PND are connected correctly, both have power (and the PND is not running off its internal battery), proceed with the steps below. (**Ensure that the Dispatcher is not attempting to send Jobs or Messages to the PND until notified to do so**).

1. Ensure that the PND is not operating on its internal battery. The PND must be connected to an active source of external power.
2. Ensure that the Beacon may be located or tracked. If not, it may not have a GPRS wireless data connection.
3. Verify that the **Dispatch option** appears on the Garmin menu screen as shown in the image to the right. If this does not appear, then initial configuration of the Beacon for Dispatch may not have been completed correctly on the Contigo portal. Contact the Contigo system administrator who must follow the instructions in the Dispatch and Navigation Administration and Configuration Guide to correctly configure the Beacon for PND connectivity.
4. Send a message from the PND to the Dispatcher. (Menu > Dispatch > Messages > Create Message). Confirm that this message is received correctly. If not, proceed to the next step.
5. Request the Dispatcher send a Job from the Contigo portal to the PND. Confirm that this job is received correctly. If not, proceed to the next step.
6. Power cycle the Beacon (turn off, and turn back on). Once this has been completed, verify that the Beacon may be located or tracked from the Contigo portal.



7. Have the Dispatcher attempt to send a Job or Message to the PND. Verify that this is received correctly on the PND.

If this does not resolve the condition, contact your Contigo support representative.

### **The Dispatch option does not appear on the PND**

The Garmin screen may not display the Dispatch option even though Dispatch has been correctly enabled on the Contigo portal (see the Administration and Configuration Guide).

1. Power off the PND unit.
2. Disconnect the Beacon harness connector from the rear of the Beacon unit. Wait 30 seconds and reconnect. Verify that the Beacon may be located.
3. Power on the PND unit and attempt to send a Job from the Contigo portal to the PND.

If this does not resolve the condition, contact your Contigo support representative.