



CoDRIVER

INSTALLATION MANUAL



InTouch CoDriver | Revision Date 09-24-09

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BEFORE INSTALLING

Prior to the installation process, thoroughly review and adhere to the following items.

- Installation Manual
- Use only a Digital or Analog Volt Meter - DO NOT USE TEST LIGHT!
- Check for possible installation locations for the GPS unit prior to permanent installation.
- ALWAYS LOOK BEFORE DRILLING. Make sure that the installation process does not cause damage to any vehicle hose, electrical loom, or physical damage to the vehicle.
- Make note of the unit serial number prior to installation.
- Prior to working on any part of the dashboard (instrument cluster, center console, glove box, etc.), remove the negative and positive terminal from the battery to deactivate the sensors for the airbags. Refer to the Owner's Manual and to a Shop Manual for the vehicle for specific instructions in the temporary deactivation process.
- DO NOT place objects, including communication equipment, in the area over the airbag or near the airbag deployment area.
- Refer to the Owners Manual and to a Shop Manual of the vehicle for specific information related to the electrical wiring, interior disassembly, and any other mechanical aspects of the vehicle.

TOOLS NEEDED FOR INSTALLATION

- Metric and standard socket set
- Screwdriver set
- Side cutters, wire cutters
- Wire strippers
- Pliers
- Terminal crimpers
- Digital Multimeter
- Electrical tape
- Flashlight

Warning: It is highly recommended that a Digital Multimeter be used when probing electrical systems in the vehicle to prevent damage to factory components.

GPS FUNDAMENTALS

There is a minimum of 24 operational GPS satellites at all times. The satellites, operated by the U.S. Air Force, orbit the earth every of 12 hours. Each GPS satellite transmits data that indicates its location and the current time. All GPS satellites synchronize operations so that these repeating signals are transmitted at the same instant. The signals, moving at the speed of light, arrive at a GPS receiver at slightly different times because some satellites are farther away than others. The distance to the GPS satellites can be determined by determining the amount of time it takes for their signals to reach the receiver. When the receiver

determines the distance to at least four GPS satellites, it can by triangulation, calculate its position in three dimensions.

To ensure the GPS unit receives enough satellite signals at acceptable signal strength, it must be mounted so that it has a clear view of the sky. In hidden locations, such as under the dash, a clear view can be challenging. In these locations, it is important to keep any metal interference as far as possible from the top portion of the GPS unit so that the most accurate position can be calculated.

While GPS data collection has improved in ease and speed, some obstacles remain. Solid or dense objects can block GPS signals. Wet trees with heavy branches and leaves can mask or attenuate GPS signals. Mountains and buildings can block satellite transmission. Multipath signals can corrupt GPS data. Multipath is a reflected signal from some nearby objects. The resulting propagation delay can affect measurement accuracy. GPS electronics advancements have reduced the multipath threat but GPS field operators and users should be aware of obvious multipath environments.

CHECKING THE CONTENTS OF THE BOX

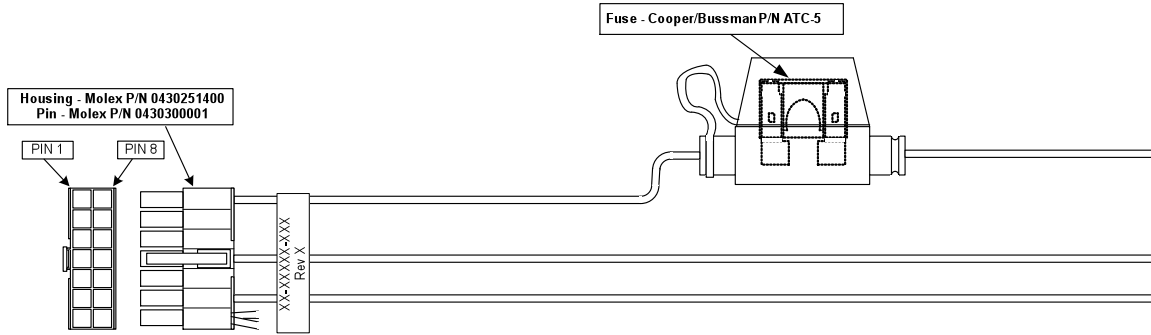
The contents of the box containing the NM5500-1 are shown below:

Model	Contents
CD-WIRED	CoDriver Unit Cable Harness with Fuse and Relay SIM Card

CABLE INTERFACE

The drawing of the cable is shown below:

Cable for the CoDriver



The pin out for the cable is listed below:

Pin	Function	Wire color
1	NC	
2	NC	
3	NC	
4	Ground	Black
5	NC	
6	Output 1	Orange
7	Ignition (Input 1)	Yellow
8	Main Power Input	Red with Fuse Holder
9	NC	
10	NC	
11	NC	
12	NC	
13	NC	
14	Input 2	Brown

INSTALLING AND MOUNTING THE GPS UNIT

The best location for a stealth installation is beneath the front dash behind the radio or instrument cluster. The GPS and GSM antennas are internally located within the GPS unit. The unit must be mounted with the label facing the bottom of the vehicle. The GPS antenna is located on the side opposite of the label. The GPS unit will work best if it has a clear view of the sky and as much of the horizon as possible. Any metallic objects between the GPS unit and the satellites will degrade the signal and reduce the overall performance.

The GPS unit can be installed in any type of vehicle. The unit should be mounted so it will not be exposed to damage from people or objects. Use nylon tie straps to firmly mount the GPS unit.

WARNING *The body of the car or any other metal structure can affect the accuracy of the GPS signals and prevent normal operation. Location of the GPS unit is critical to the operation.*

12-VDC POWER CONNECTION (RED WIRE)

Locate the Red wire found on the connector supplied with the GPS unit. The red wire must be connected to a constant 12-volt source from the vehicle to power the GPS unit. It's important that the 12 volt power source maintains 12 volts at all times.

GROUND CONNECTION (BLACK WIRE)

Locate the Black wire found on the connector supplied with the GPS unit. The black wire must be connected to a solid chassis ground uninhibited by paint or plastics. It is important that you do not use any floating grounds from the vehicles electrical system. Always connect the ground directly to the chassis body and secure with a factory bolt or aftermarket screw.

SWITCHED 12 VOLT CONNECTION (YELLOW WIRE)

Locate the blue wire found on the connector supplied with GPS unit. The Yellow wire must be connected to a switched 12-volt source from the vehicle. This connection is used to monitor the engines on/off state. It's important that the switched 12-volt source drops to (0) zero with the ignition off and restores the switched 12 volts with ignition on.

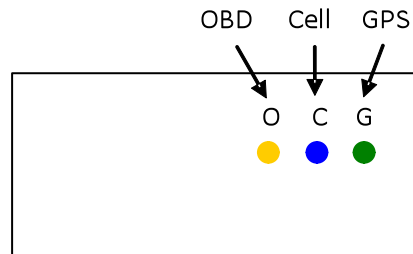
Testing the CoDriver Unit

Prior to the initial powering of the unit, move the vehicle outside, so that the GPS receiver can receive signals from the GPS satellites.

Upon initial power up of the CoDriver observe the LEDs located on the front side of the unit to determine if the unit is powered on. If the LED is not flashing, check the power connections. The status of the LEDs is below:

Status LED Definitions

Mode	State	OBD LED	Cell LED	GPS LED
Initial Power Up (unit plugged into OBD port)	GSM Unregistered (searching)	Not Applicable	Fast Blink – On, 0.5 sec Off, 0.5 sec	ON (Solid) soon after OBD LED is ON (No GPS fix)
Active, NO GPS Fix	Ignition ON	Not Applicable	Slow Blink – On, 2.7 sec OFF, 0.3sec	ON, Solid
Active, with GPS Fix	Ignition ON	Not Applicable	Slow Blink – On, 2.7 sec OFF, 0.3sec	ON, Blinking (number of blinks is the number of satellites acquired)
Trip Upload (immediately after Ignition is off)	Ignition OFF	Not Applicable	Slow Blink – On, 2.7 sec OFF, 0.3sec	ON, Solid (after 30 sec from Ignition OFF)
Sleep	Ignition OFF	Not Applicable	Slow Blink – On, 2.7 sec OFF, 0.3sec	ON, Solid



CoDriver LED Location and Function

After the unit has been powered for 10 minutes, the unit will send in a “power-up” message that will include position.

If no GPS fixed has been acquired by the time the tests are complete, verify that the unit is installed correctly, there is no metallic structure blocking the GPS signal from the unit, and that the vehicle is outside. Call in and retest the verification of position.

TROUBLESHOOTING CHART

Symptom	Causes
Unit Does Not Power-up	Power is not connected to the unit. With a Digital Volt Meter, measure the voltage at the input to the unit. A positive voltage should be measured on the + terminal of the unit when measuring between the + terminal and the - terminal or chassis ground. This voltage should also measure 12 VDC. Correct the wiring to assure the correct polarity and the correct voltage level.
Unit Does Not Find Cellular Service	The unit is not receiving the local cellular system. The main cause of this is poor signal strength due to shielding. Move the vehicle outside the building and re-apply power to the unit.
Unit Does Not Receive a GPS Signal	The cause is that the GPS receiver is not locking into the satellites. The main cause is due to the receiver not receiving the signal from the satellites. Make sure that the unit's label toward the bottom of the vehicle. If it is, the move the vehicle outside of any building/garage to allow the internal GPS antenna in the unit to have a clear view of the sky.