



BusView Installation Manual with StudentView RFID Scanner



NFT-2600 Tracker | Revision Date 3/6/20

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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 Voltmeter - 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 to any part of 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 vehicle Owners Manual and to a Shop Manual 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 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 due to the varying distances of satellites. The distance to the GPS satellites can be determined by calculating 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 triangulate and 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 away 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 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 NFT-2600 are shown below:

Model	Contents
NFT-2600	<ol style="list-style-type: none">1. NFT-2600 Unit2. Cable Harness with Fuse
SV-RFID	<ol style="list-style-type: none">1. RFID scanner2. RAM mount

INSTALLING AND MOUNTING THE GPS UNIT

The best location for a stealth installation is beneath the top of the dash behind, above or next to the instrument cluster. The GPS and GSM antennas are internally located within the GPS unit. The unit must be mounted with the label facing the sky. The GPS antenna is located under this label. The GPS unit will work best if it has a clear view of the sky and as much of the horizon as possible with no metal between it and the sky. Any metallic objects between the GPS unit and the satellites will degrade the signal and reduce the overall performance. Try to keep the device at least 12 inches away from audio devices such as vehicle radio and speakers.

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.*

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. The GPS unit has tie strap grips, use nylon tie straps to firmly mount the GPS unit.

CABLE INTERFACE

Diagrams of the Cables are shown below:

Main Harness



Pin	Description	Lead Color
1	AUX 1	Black
2	Starter Disable	Green
3	Input 1*	Blue
4	AUX 1	Blue
5	Not Used	Pink
6	Not Used	Violet
7	Not Used	Grey
8	Ignition	White
9	AUX 1 /AUX 2	Orange
10	Not Used	Brown
11	RFID Buzzer	Yellow
12	Input 2*	Orange
13	AUX 1	Green
14	Primary Power Input	Red
15	Primary Ground	Black
16	RFID Ground	Black
17	RFID Data	White/Blue Stripe
18	AUX 2	White/Orange Stripe
19	AUX 2	Black
20	AUX 2	White/Yellow Stripe

RFID Scanner Wiring

Description	Lead Color
Ground	Black
Buzzer	Brown
12v +	Blue
Data	White



Main Harness Connections in Detail

RED (+) Constant 12 volt Input

Locate the Red wire found on the 20-pin 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.

BLACK (-) Chassis Ground Input

Locate the Black wire found on the 20-pin 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 vehicle's electrical system. Always connect the ground directly to the chassis body and secure with a factory bolt or aftermarket screw insuring wire to metal connection.

WHITE (+) Ignition Input

Locate the white wire found on the 20-pin connector supplied with GPS unit. The white wire must be connected to a true ignition 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 is (0) zero when the engine is off and switched 12 volts with the engine cranking and running. **WARNING: White wire must be connected for the GPS receiver to work properly!**

Blue - Warning Light Master

This input requires a transition from 0v to 12v. Some bus models have 12v when the WLM is off and 0v when on and others are opposite. We will need to know which option during the activation process.

White/Blue Stripe - RFID scanner interface

Located on pin 17, this wire will be connected to the white wire in the Rfid scanner cable.

Black - RFID Ground

Located on pin 16, this wire will be connected to the black wire on the RFID scanner cable.

Yellow- RFID Buzzer

Located on pin 11, this wire will be connected to the brown wire on the RFID scanner cable.

Red- RFID Power

Cut the red wire that is connected to the plug labeled AUX 2, this wire will be connected to the blue wire on the RFID scanner cable.

RFID Cable connections in Detail

White - RFID data

This wire will be connected to the white wire with blue stripe (pin 17) on the main harness.

Black - RFID Ground

This wire will be connected to the black wire (pin 16) on the main harness.

Brown - RFID Buzzer

This wire will be connected to the yellow wire (pin 11) on the main harness.

Blue - RFID Power

This wire will be connected to the red wire that is part of AUX 2 on the main harness.

Activating the NFT-2600 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 NFT-2600 the LEDs start flashing on the front side of the unit to determine if the unit is powered on. If the LED is not flashing after 60 sec, check the power connections. The statuses of the LED's are below.

Status LED Definitions

Orange LED Status GSM/GPRS Cellular Communications	Green LED Status GPS Communications
Blinking – Tracker on, searching for wireless signal	Blinking – GPS on, searching for satellite signal
Patterned Blinking – Signal acquired, unit trying to establish connection to the communication server	
Solid – 2-way communication link with the communication server established	Solid – GPS lock established



After the unit has been powered for 5 to 15 minutes, the unit will send in a “power-up” message.

While waiting for the power-up message, collect the following information before calling in (855-438-4771 option 2) for activating the unit:




- Account ID
- Vehicle Name
- Device IMEI number

Please verify with tech support that the device has been activated and is working properly before putting the unit back in service.

TROUBLESHOOTING CHART

Symptom	Cause
Unit Does Not Power-up	<p>Power is not connected to the unit. With a Digital VoltMeter, 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. Check fuse.</p> <p>Bad Ground connection. Make sure the ground is connected directly to metal with no paint or residue. Use a Digital Multimeter to test continuity to ground to ensure good connection.</p>
Unit Does Not Find Cellular Service	<p>The unit is not receiving the local cellular system. The main cause of this is poor signal strength due to shielding or coverage. Make sure the GSM (Orange) light is solid, move the unit outside the building and or outside of vehicle if necessary and re-apply power to the unit. Move vehicle to acquire a better signal area if necessary. Contact tech support if the problem persists.</p>
Unit Does Not Receive a GPS Signal	<p>The GPS receiver is unable to lock into the satellites or receive signal. Make sure GPS (Green) light is solid if not, make sure that the unit's label is facing skyward and that there is no metal between it and the sky including but not limited to the roof of the vehicle and any dash bracing. If it is, the move the vehicle outside of or away from any building/garage to allow the internal GPS antenna in the unit to have a clear view of the sky. You may need to power the unit outside of the vehicle as some vehicles may have metallic or leaded windshields. Contact tech support if the problem persists.</p>

Items Needed for BusView Installation

Qty	Items	Photo
2	<p>Fuse Taps If your bus uses blade style fuses these make installation very easy. The size needed depends on the bus model.</p>	
1 - 3	<p>Ring Terminals If your model bus does not use blade fuses you will need 3 otherwise you will only use this for the ground</p>	
1	<p>Inline Splice This is used for tying into the warning light master.</p>	
8-inches	<p>Small Heat Shrink Tubes This is used for making the connections to the scanner, there are 4 wires (20 AWG) and you need approximately 2 inches per wire.</p>	