



## Installation Instructions

### 18SP545—Planning an IRIS Installation

#### INTRODUCTION

This document is to be used with the *IRIS User and Installation Guide (6SE36)* as a help to successfully creating a working IRIS Installation. Before continuing with this document it is recommended that you carefully read and understand the *IRIS User and Installation Guide (6SE36)*.

#### SYSTEM OVERVIEW

The InfraRed Information System (IRIS) provides for infrared two-way communication between a vehicle and

a PC. IRIS replaces direct cable hook-up with an infrared beam (see Figure 1).

IRIS works with the Detroit Diesel extraction hardware, which includes the RS 232 cable, and either the DDEC® Translator or the Multi-Link Translator. IRIS will also work with the RDI for data extractions. Distance restrictions must be taken into consideration when planning the IRIS installation.

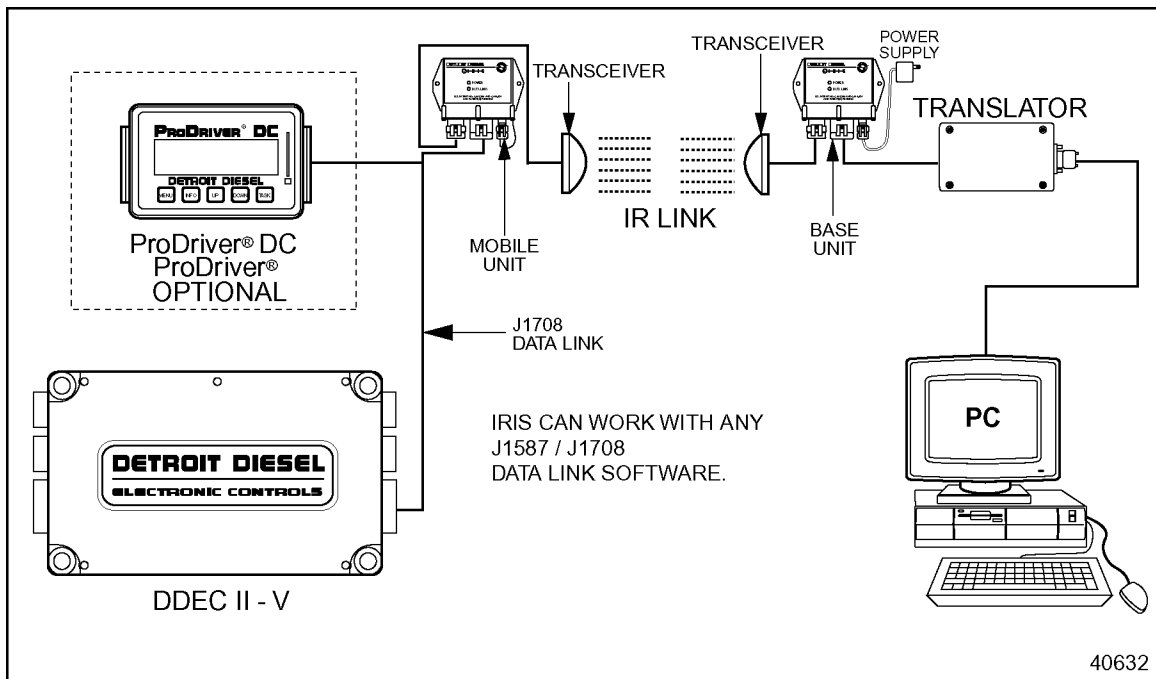


Figure 1. IRIS System.

## PLANNING SITE INSTALLATION

Careful planning should take place before any of the IRIS components are installed to ensure the most efficient overall use of the product. The Base and Mobile Transceivers should be installed so that they are as well aligned as possible to ensure maximum range and satisfactory performance. The infrared beam may allow misalignment of several feet, depending on the distance between transceivers.

For optimal performance, mount the transceiver at least 7 ft. above the ground to minimize beam obstruction during operation.

When the IRIS installation is indoors, the maximum connection range is 50 ft. When the IRIS installation is outdoors, the maximum connection range is 25 ft. See Figure 2. Detroit Diesel recommends strict adherence to these guidelines.

## Sunlight and Shading Base Transceiver

Lighting conditions can affect IRIS operation. Use the following lighting guidelines:

- Do not shine electronic ballast fluorescent lights into the transceiver.
- Do not install transceivers where they are exposed to strobe lights.

### NOTE:

The transceivers can be shaded to minimize the adverse effects of less than ideal lighting conditions.

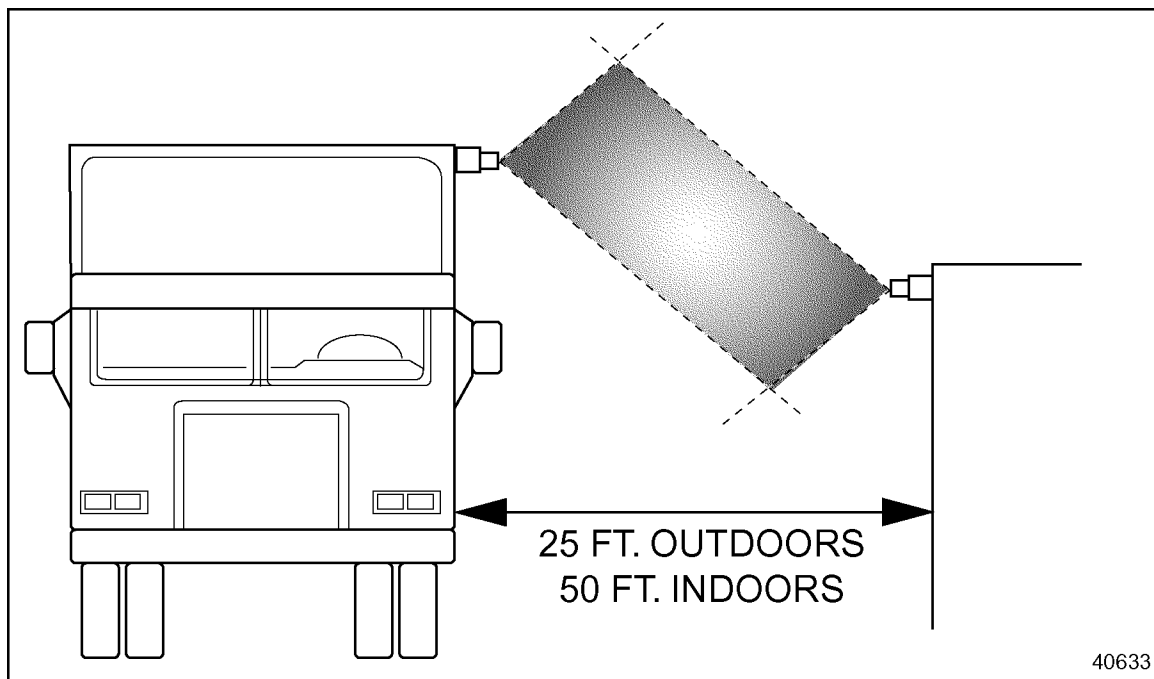


Figure 2 . IRIS Alignment and Connection Range

### Overall Layout of the Facility

Observe the layout of the yard or facility. Consider the direction of vehicle traffic, i.e. trucks entering and exiting the yard or service bay. Identify a location where the

trucks stop for lengthy periods of time (at least 2-5 minutes). If installing IRIS in a facility where there is one lane, you can choose one of the following options (see Figure 3 and see Figure 4).

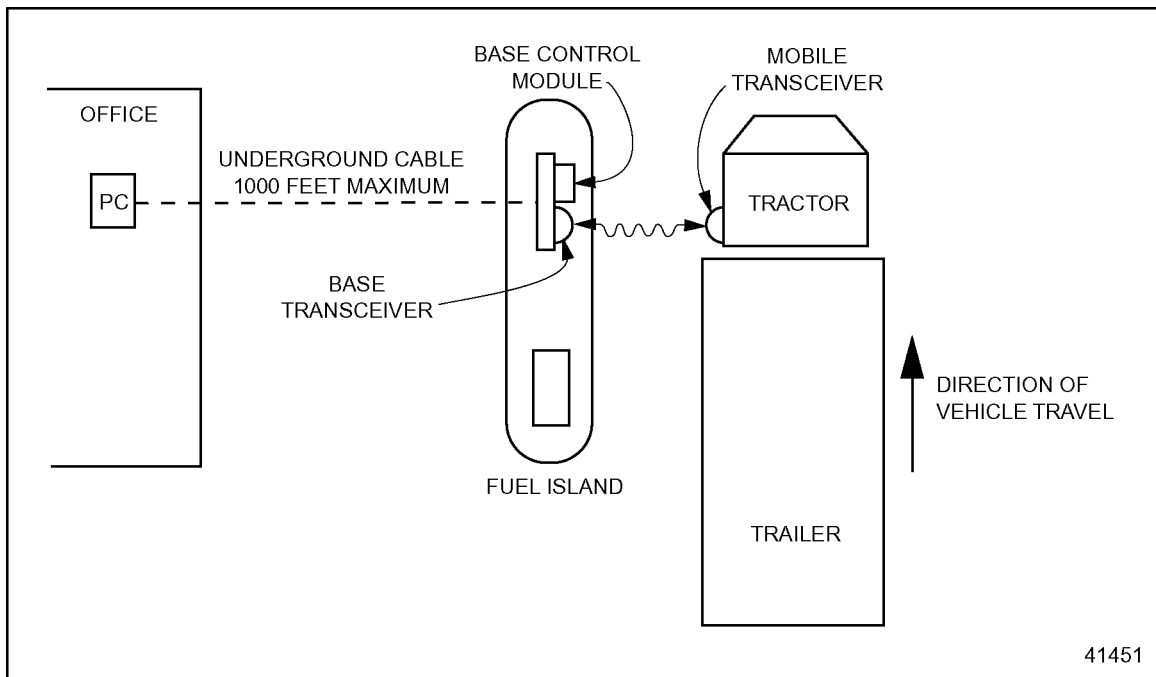


Figure 3. One Base Transceiver, One Base Control Module – Example One

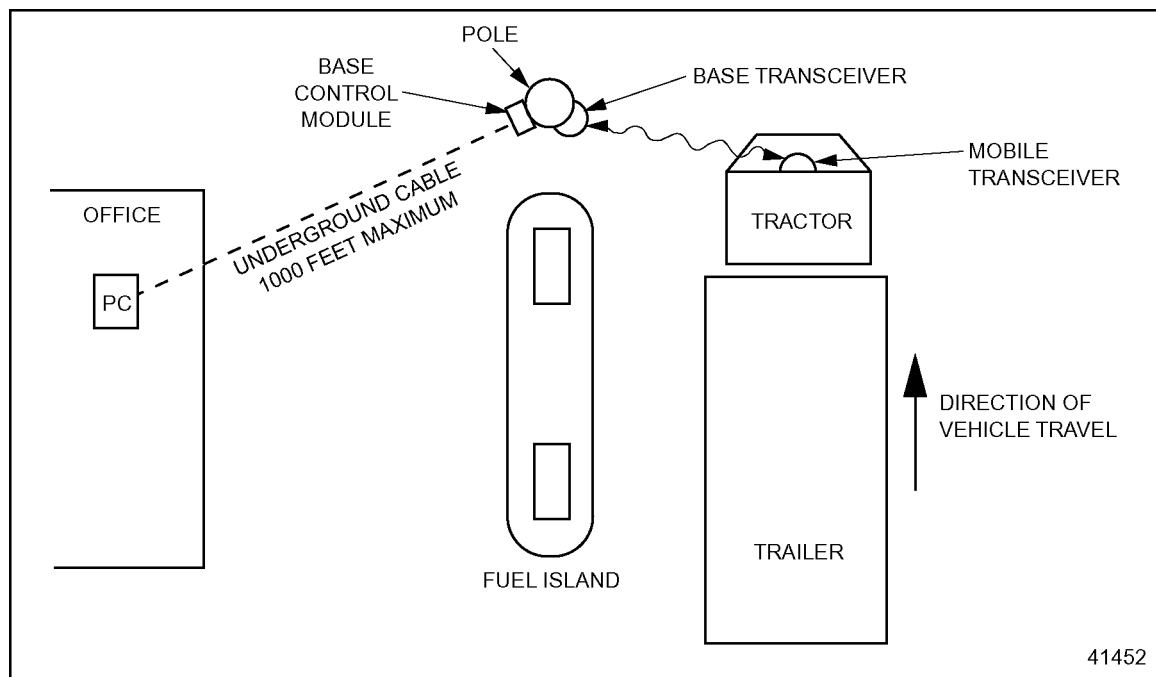
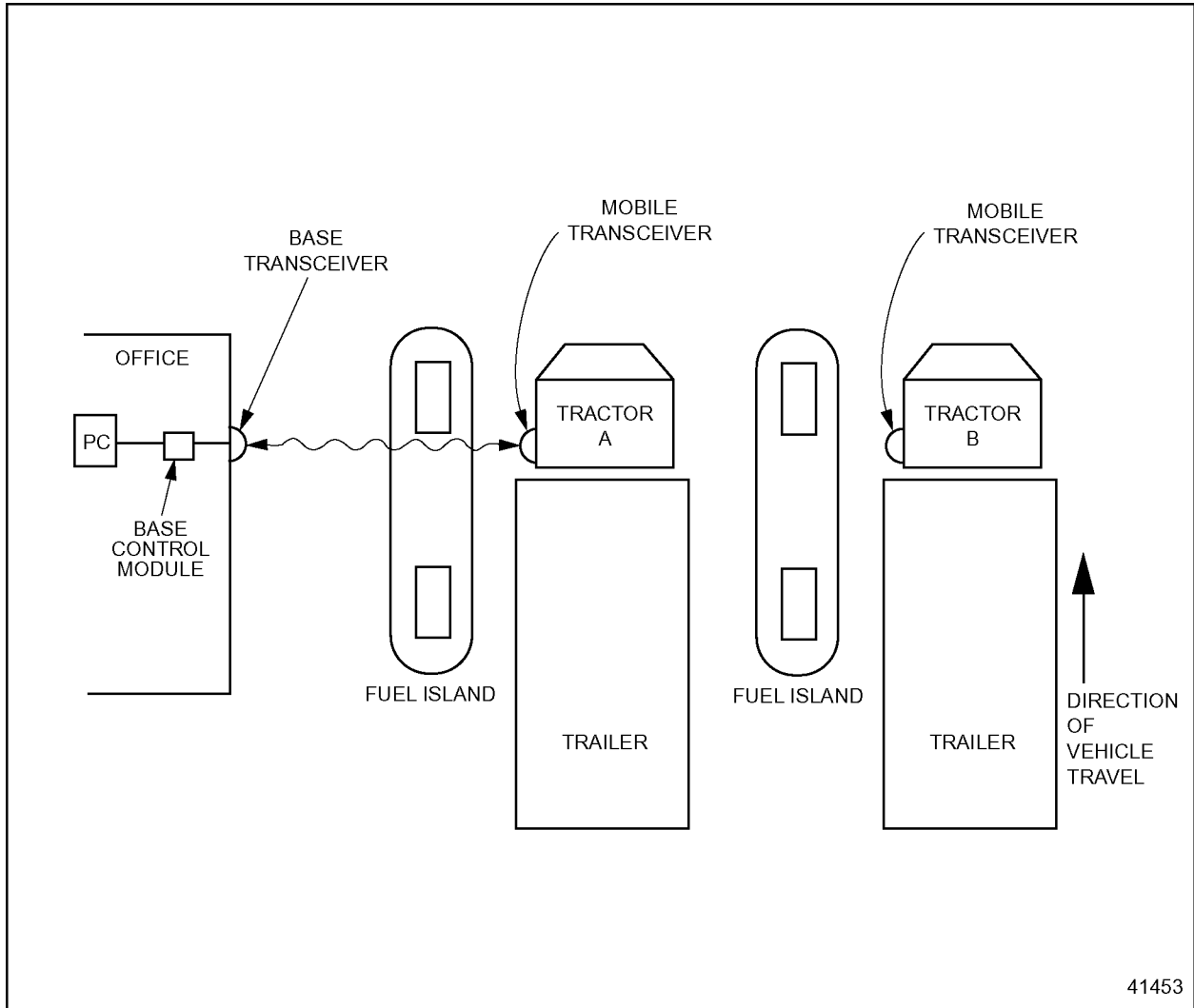


Figure 4. One Base Transceiver, One Base Control Module – Example Two

If installing IRIS in a facility where there are multiple lanes, you can choose any of the following options:

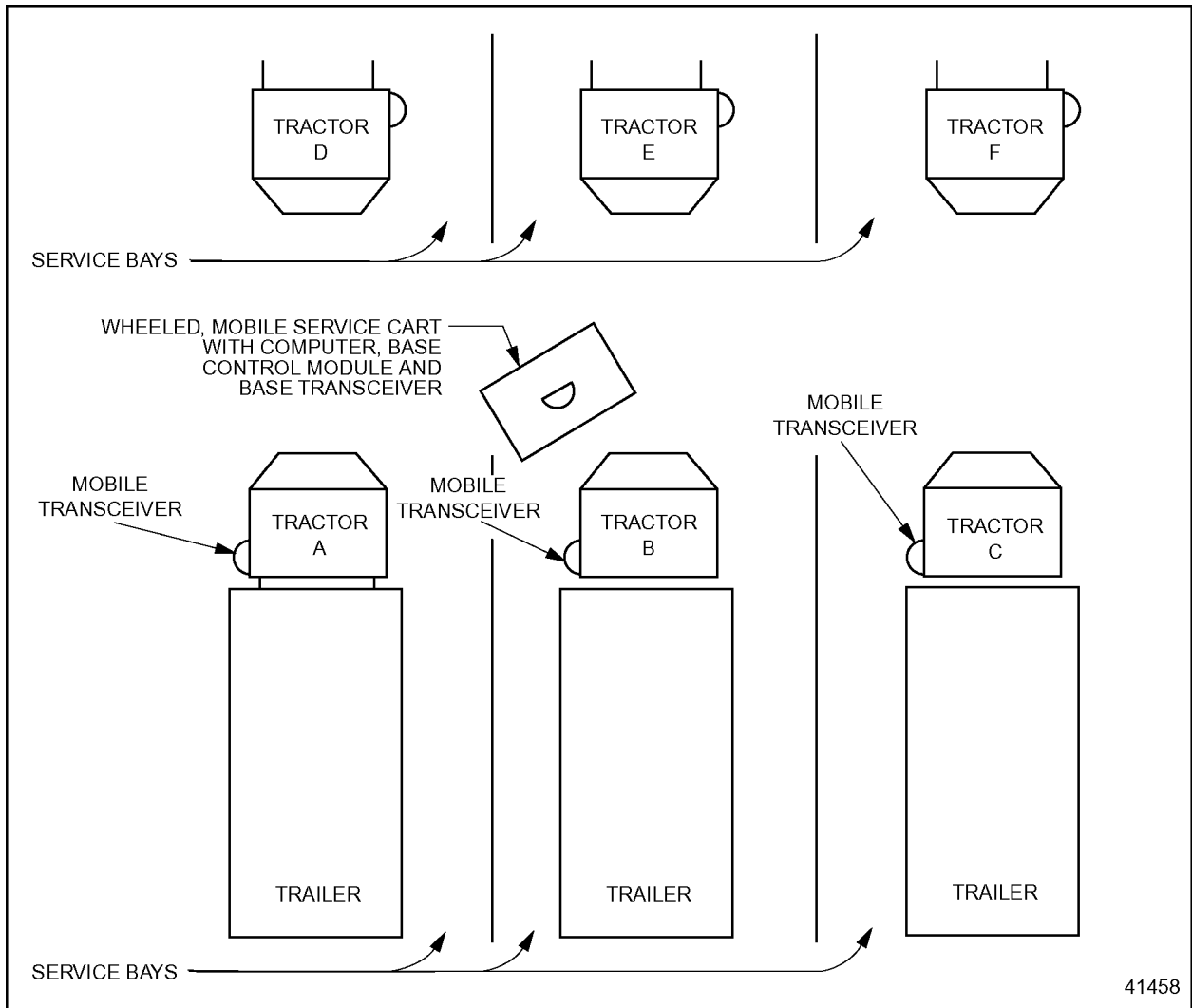
- One Transceiver, one Control Module covering multiple lanes; only one vehicle is serviced at a time (see Figure 5 and Figure 6).
- Two Transceivers, one Control Module covering multiple lanes; only one vehicle is serviced at a time (see Figure 7, Figure 8, and Figure 9).
- Multiple Transceivers, multiple Control Modules covering multiple lanes for simultaneous servicing of multiple vehicles (see Figure 10).



**Figure 5. One Base Transceiver, One Base Control Module, Multiple Lanes**

**NOTE:**

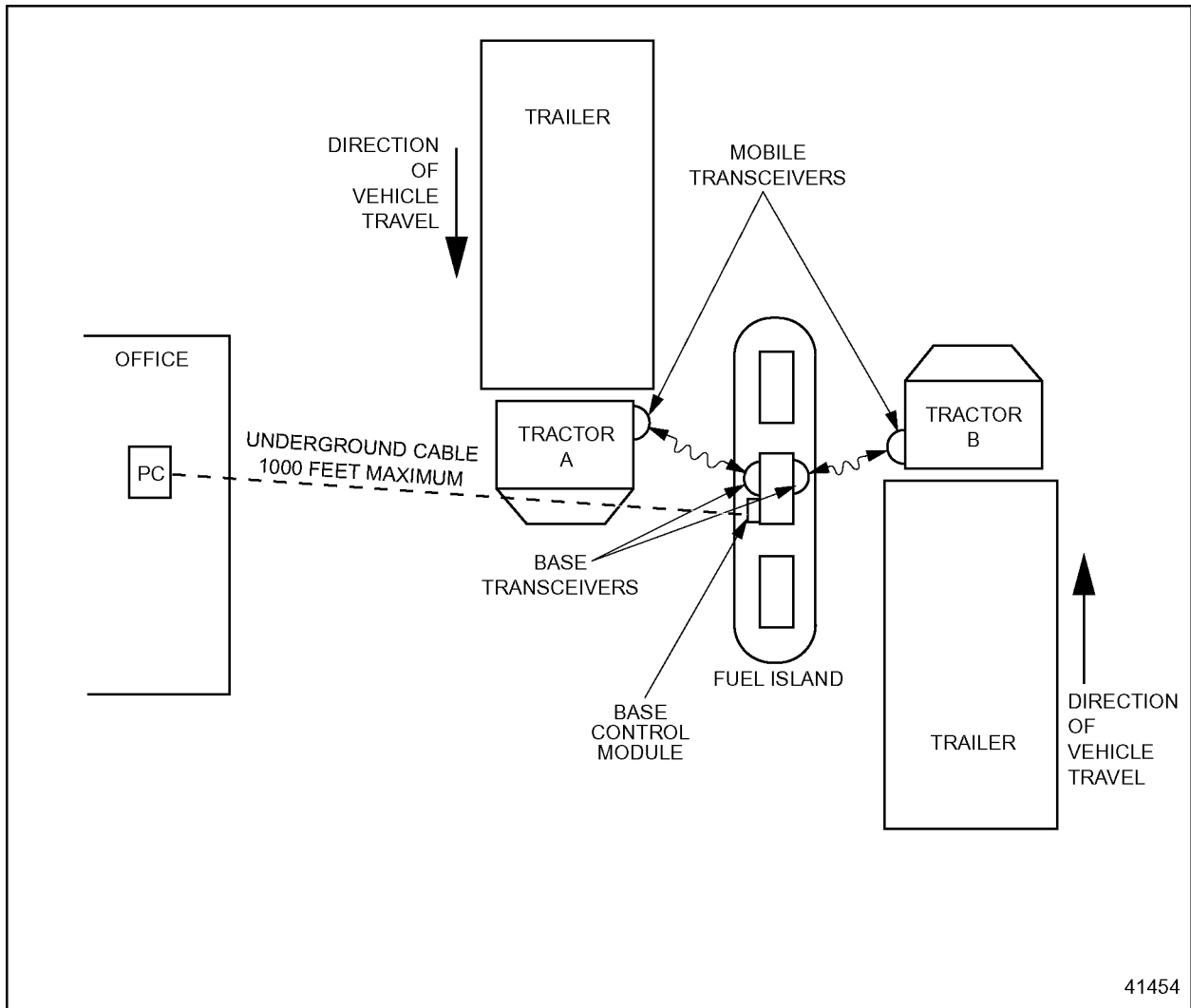
Only one vehicle is serviced at a time. The communication link must break with Tractor A before Tractor B is located.



**Figure 6. One Base Transceiver, One Base Control Module with Multiple Lanes**

**NOTE:**

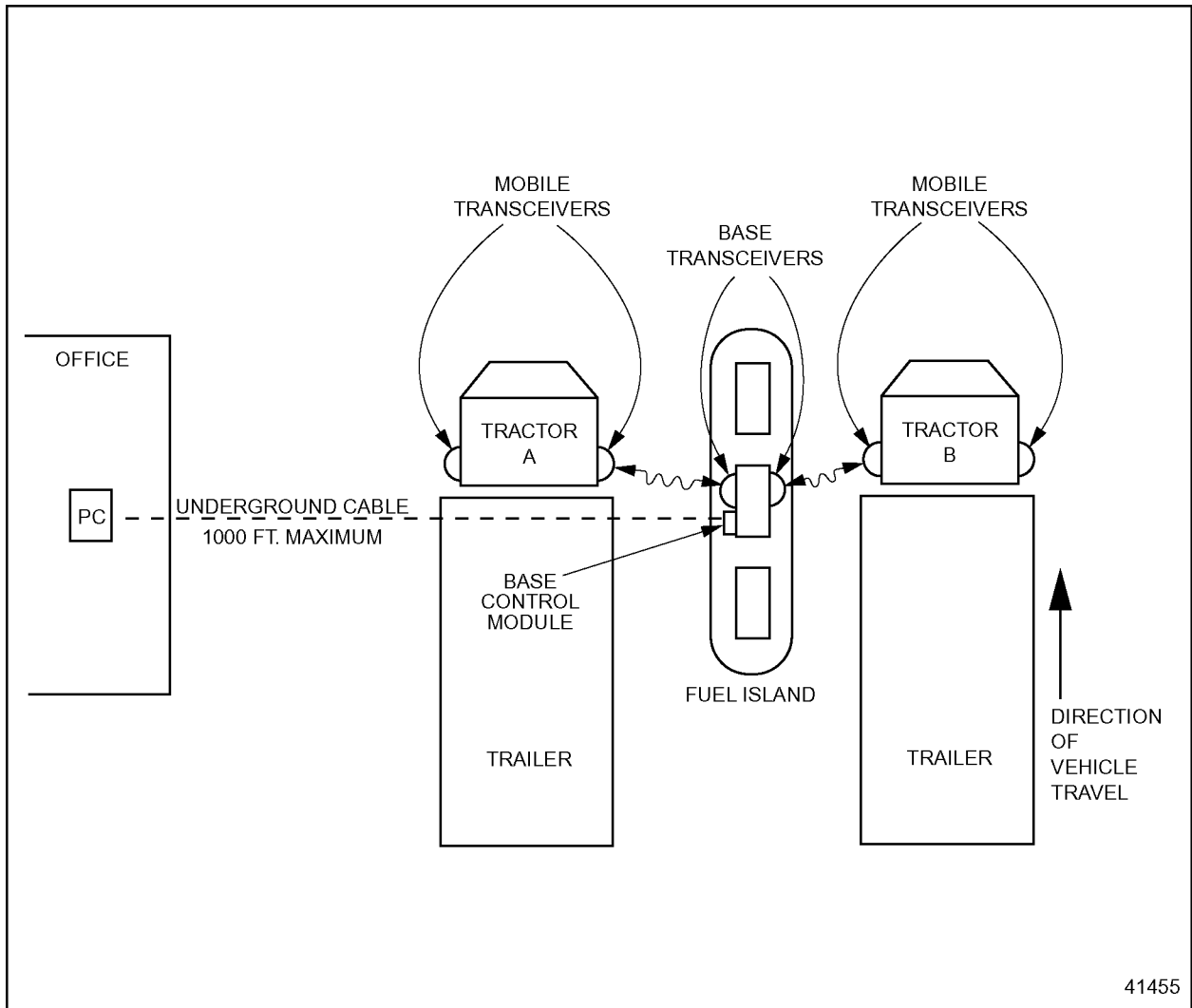
Only one vehicle is serviced at a time. The communication link must break with Tractor B before Tractor A or C is located. Multiple mobile service carts would provide simultaneous servicing of multiple lanes.



**Figure 7. Two Transceivers, One Base Control Module, Multiple Lanes – Example 1**

**NOTE:**

Only one vehicle is serviced at a time. The communication link must break with Tractor A before Tractor B is located.

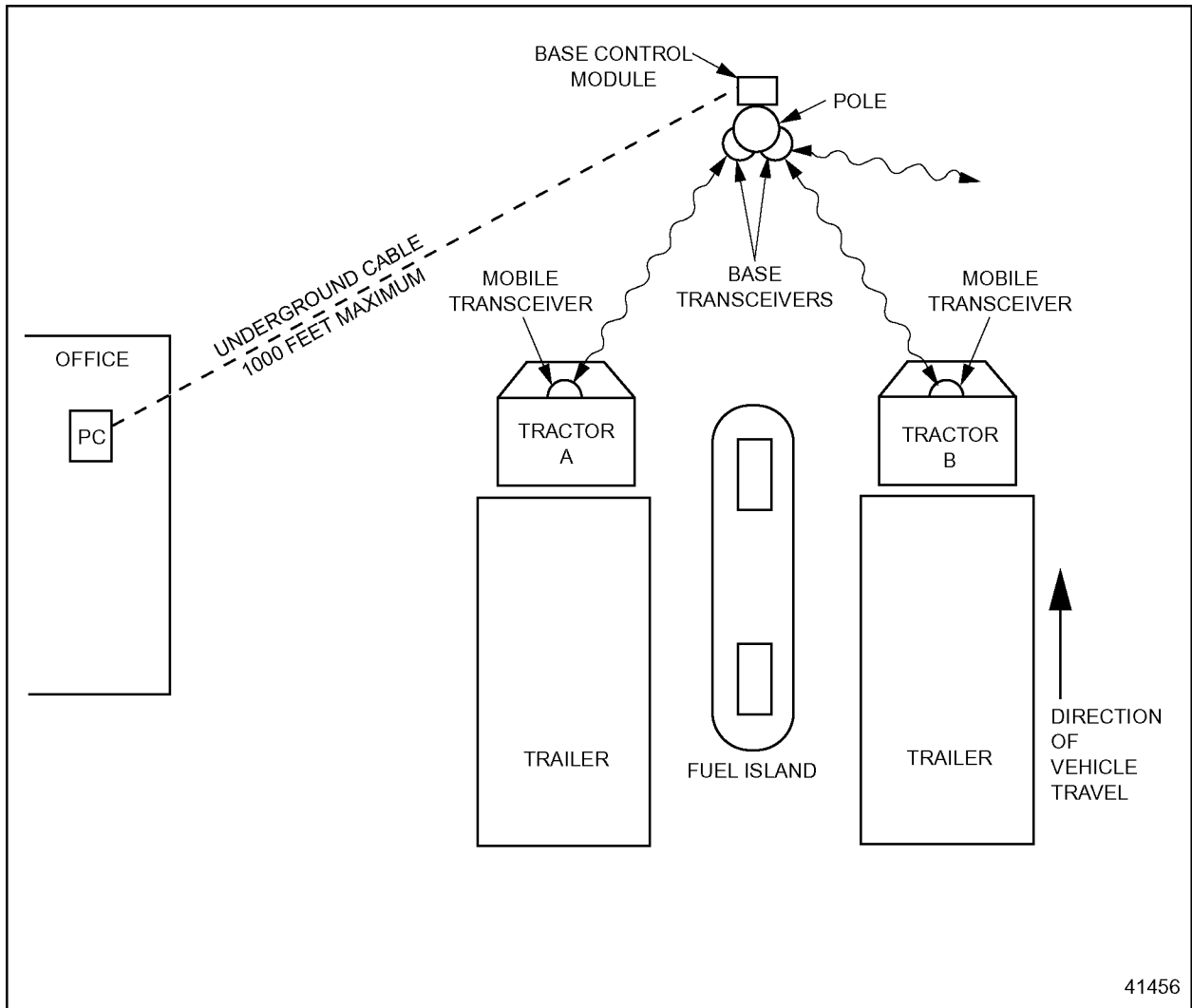


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**Figure 8. Two Base Transceivers, One Base Control Module, Multiple Lanes – Example 2**

**NOTE:**

Only one vehicle is serviced at a time. The communication link must break with Tractor A before Tractor B is located.

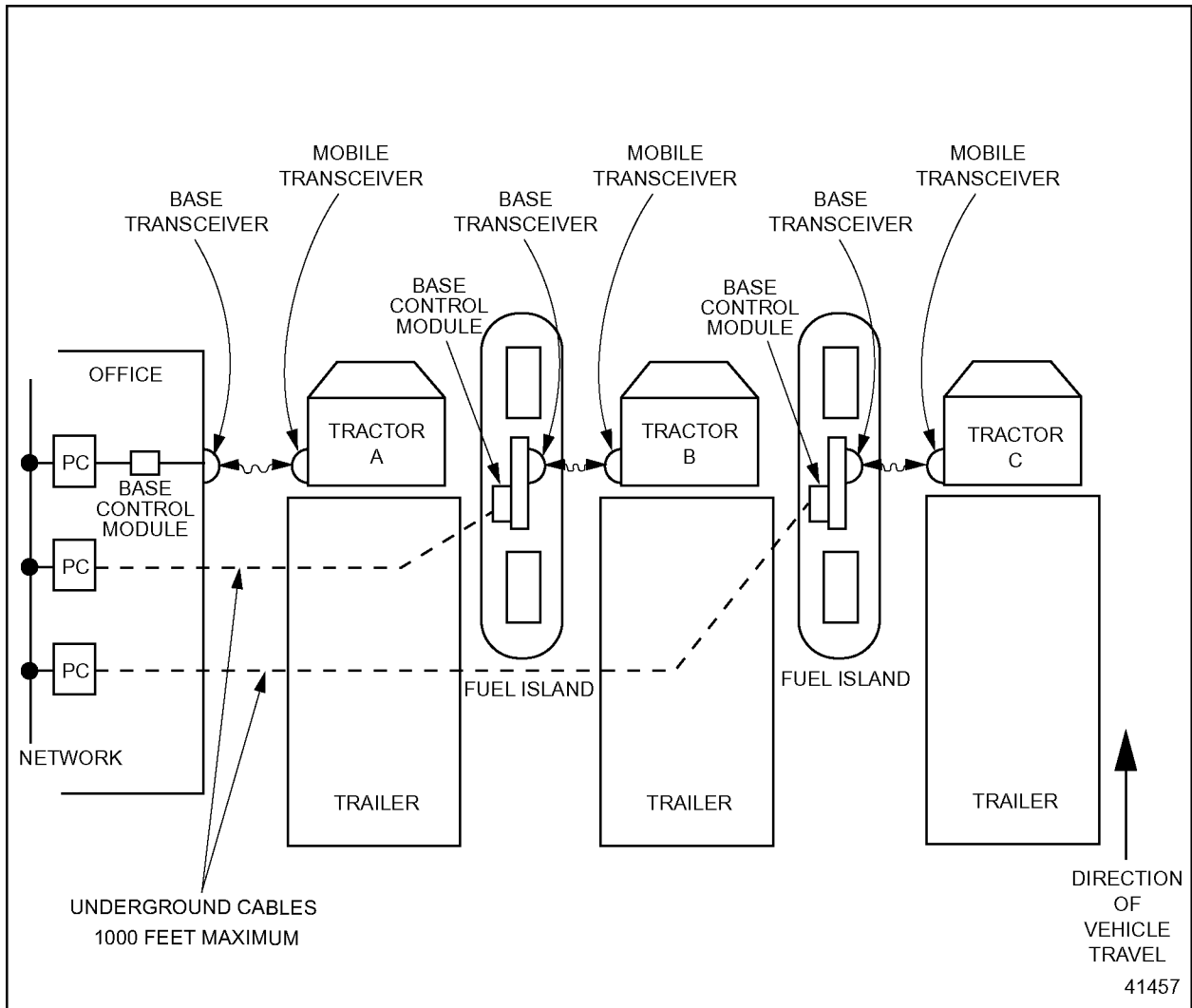


**Figure 9. Two Base Transceivers, One Base Control Module, Multiple Lanes – Example 3**

**NOTE:**

Only one vehicle is serviced at a time. The communication link must break with Tractor A before Tractor B is located.





**Figure 10. Multiple Transceivers, Multiple Base Control Modules, Multiple Lanes Providing Simultaneous Servicing**

## Base Unit

The distance from the PC to the Base Control Module can vary depending upon certain conditions. The RS-232 cable, which runs between the PC and the translator box, should be no longer than 25 ft. This can be extended up to 1000 ft. by adding two RS-232/RS-422 converters (P/N: 23519054). See Figure 11.

The cable recommended for the distance between the PC and the translator box is listed in Table 1.

The standard connection length between the DDEC Translator and the Base Control Module is 6 ft. This can be extended up to 100 ft. using a cable (P/N: 23528917).

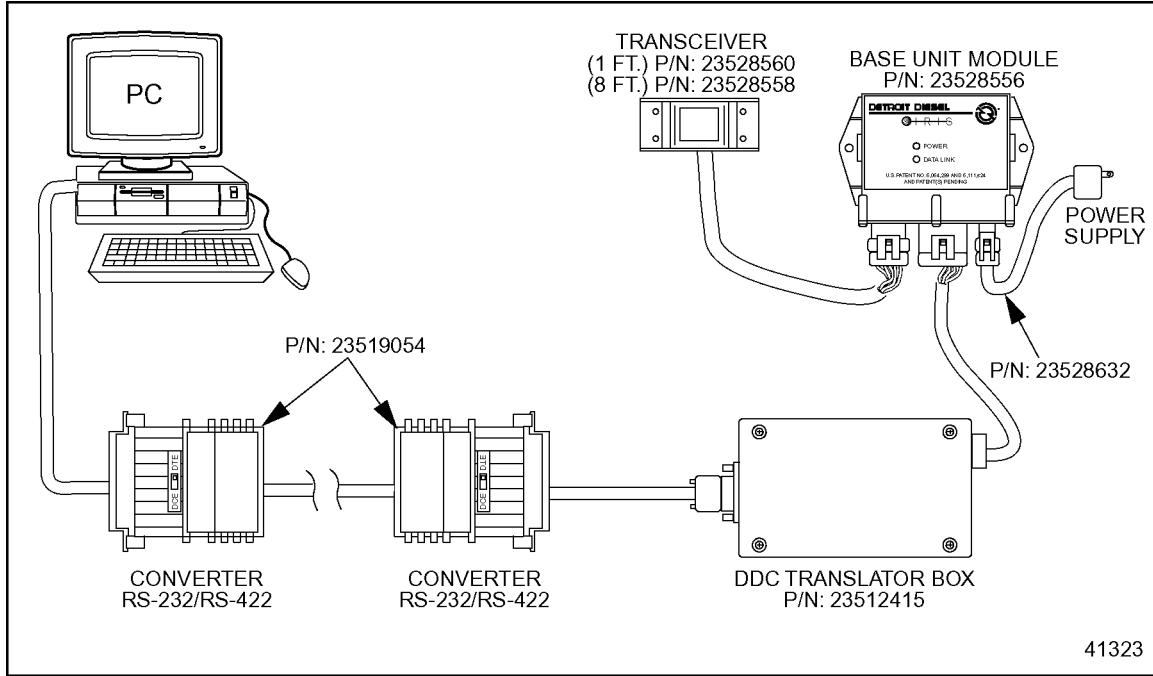


Figure 11. RS-232 to RS-422 Converters

Distance	Cable Type
Up to 30 ft. (10 m)	Unshielded telephone wire would be suitable, although Belden 8723 is recommended
Up to 200 ft. (60 m)	Belden 8723 – Two twisted pairs with individual shields
Up to 1000 ft. (300 m)	Individually shielded pairs such as Belden 8760

Table 1. Recommended Cable

The standard length of the connection between the Base Control Module and the IR Transceiver is 1 ft., using the base bracket included in the base kits. The power supply for the Base Control Module has a length of 8 ft. See Figure 12.

The distance between the IR Transceiver and the Base Control Module can be extended to 8 ft. using the IR Transceiver (8 ft.), (P/N: 23528558) if the Base brackets are not used.

The Base Control Module and power supply should be mounted in a protected area, away from dirt and moisture.

The computer can be located in any convenient place such as an office, shop, or on a mobile service cart. Once the installation is planned, ensure that PC and cables are in a safe and out-of-the-way place.

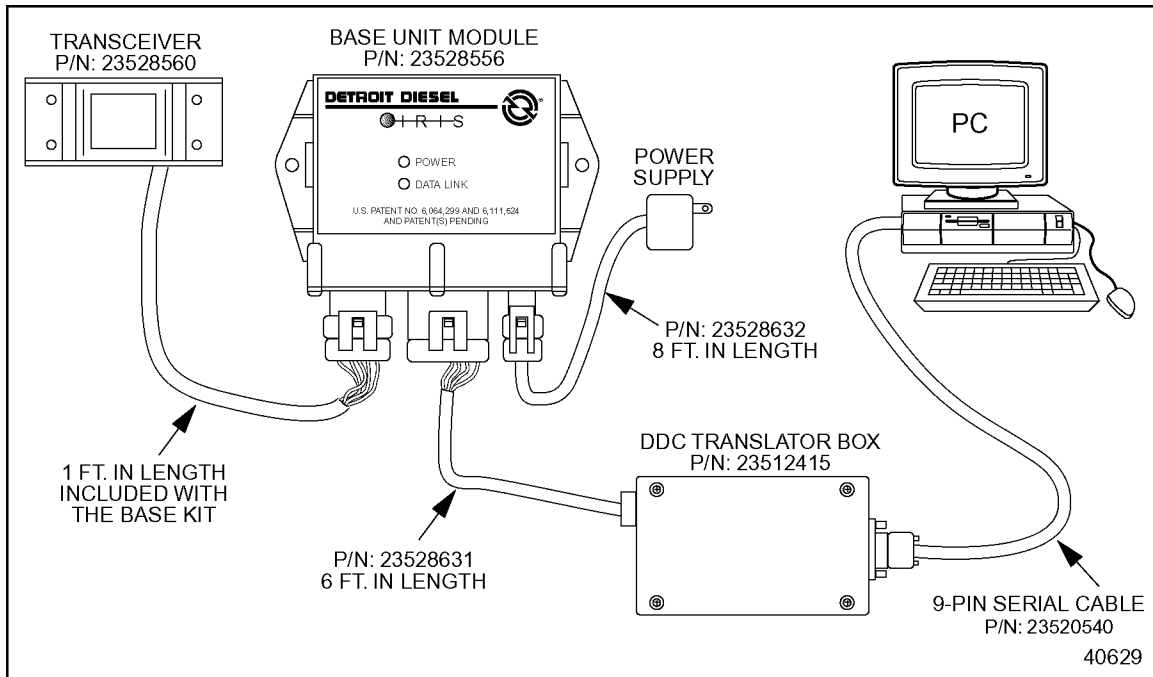


Figure 12. Base Unit Installation

## Mobile Unit

Once the location of the base transceiver is decided, and traffic route is established, determine the optimum location of the Mobile Transceiver, which will be permanently installed on the vehicle. In doing so, keep both transceivers at least 7 ft. above ground. This will minimize connection problems.

At this time, plan the installation of the control module, wiring harness, and connection with the data link inside of the truck.

The standard length of the wiring harness is 8 ft. See Figure 13. The suggested location of the transceiver is on the driver's side of the cab at least 7 ft. above ground. The control module should be mounted inside the vehicle in an area protected from water, dust, etc. and accessible for the IR transceiver connection. The diagnostic connector contains the data link and power wiring that is required for the control module.

Also ensure that the IR beam path between the mobile and base transceiver is unobstructed.

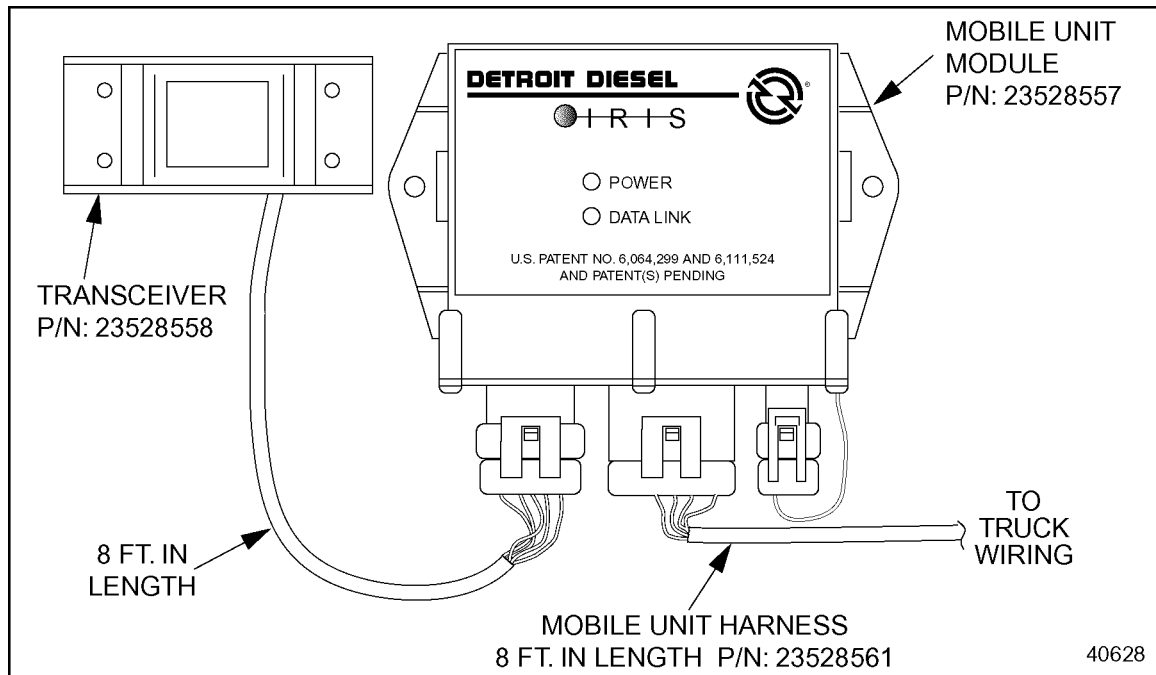


Figure 13. IRIS Mobile Unit

## SOFTWARE APPLICATION

Once IRIS has been correctly installed on the vehicle and base locations, it is time to begin using IRIS. IRIS is compatible with all Detroit Diesel extraction and diagnostic software that communicates using the SAE J1708 / J1587 data link. When using IRIS, ensure that the software is correctly installed and that the DDC Translator Box and RS 232 cables are also correctly connected.

Once connected, consult the software manual or Help function to ensure communications and extractions are being executed correctly. IRIS will not change any of the necessary software functions required to initiate or perform tasks.

## IRIS and DDComm (Automatic Extractions)

IRIS adds a significant feature to the function of DDComm. It allows extractions to take place without manual prompting or any command action by the

user. This feature will allow users to set up DDComm and make it a "hands free" extraction process, regardless of the number of vehicles that are connecting with IRIS. Once extracted, this data can be used in such programs as DDEC Reports, ProDriver® Reports or Detroit Diesel Data Summaries.

DDComm can be acquired individually or it can be found residing in Detroit Diesel Diagnostic Link (DDDL) or Detroit Diesel Data Summaries software.

For automatic launch of DDComm, place a shortcut to "C:\Program Files\Detroit Diesel\Communications\dhcm.exe" into the "C:\Windows\Start Menu\Programs\Start Up" folder. The Communications Manager will be launched upon PC reboot and will enable automatic extractions. Whenever the PC is rebooted, the Extraction Log Viewer will be displayed and extractions will occur as IRIS equipped vehicles come into range. (See Figure 15).

For manual launch of DDComm, run the DDComm program/software by selecting the dhcm.exe file on the drive where it was installed. If you are running DDComm from another software application such as DDEC Reports or Data Summaries, ensure that all programs/applications are shut down.

Begin using DDComm as follows:

1. Select the Start button in the lower left corner.
2. Go up to the Programs menu.
3. Scroll down to the Detroit Diesel menu.
4. Select Communications (see Figure 14).

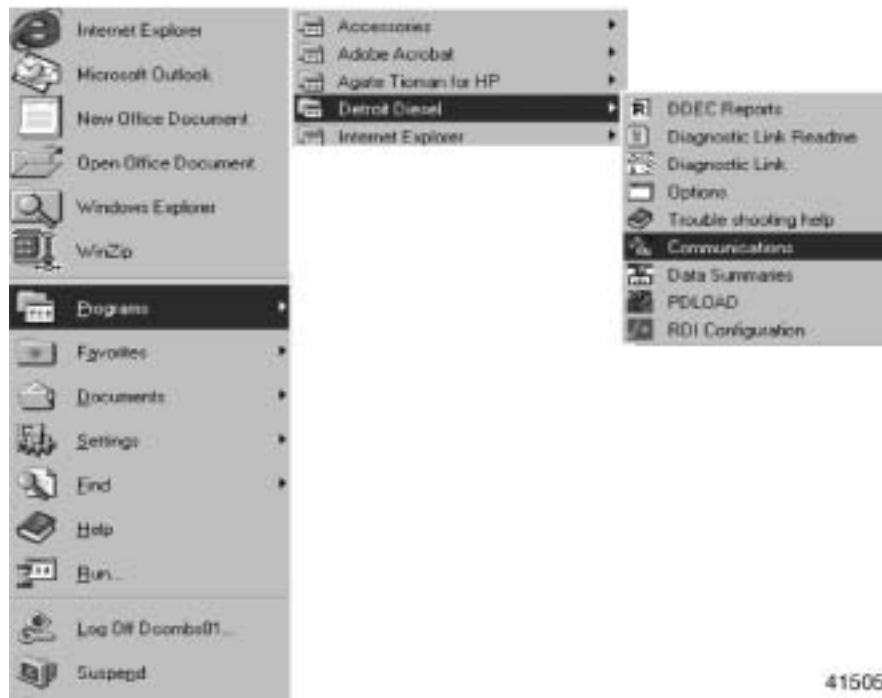


Figure 14. Select Communications

5. At this time the extraction log viewer will be displayed.
6. Select the Tools pull down menu.
7. Select Communications Manager or select the Stop Light Icon located along the top row of icons (see Figure 15).

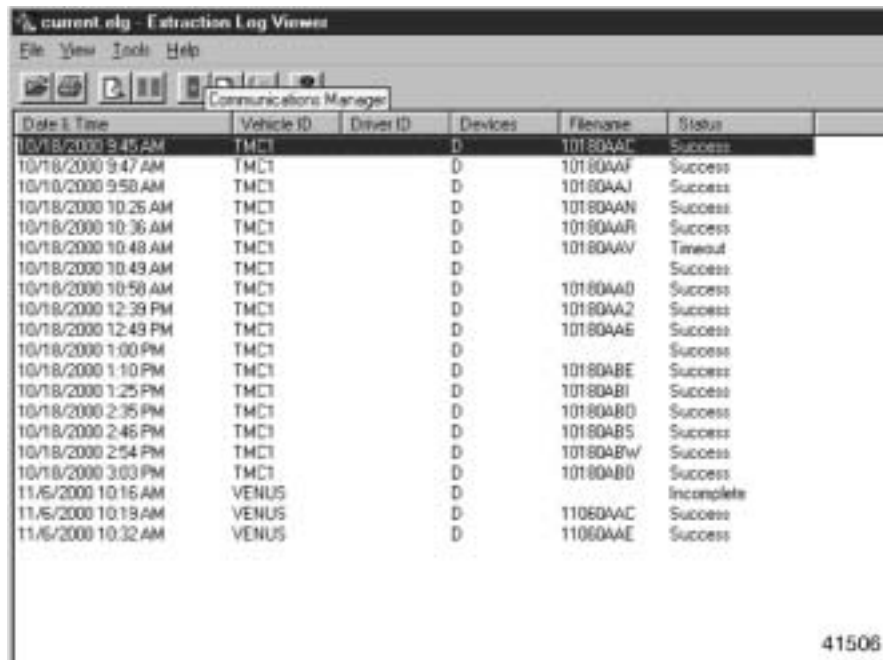
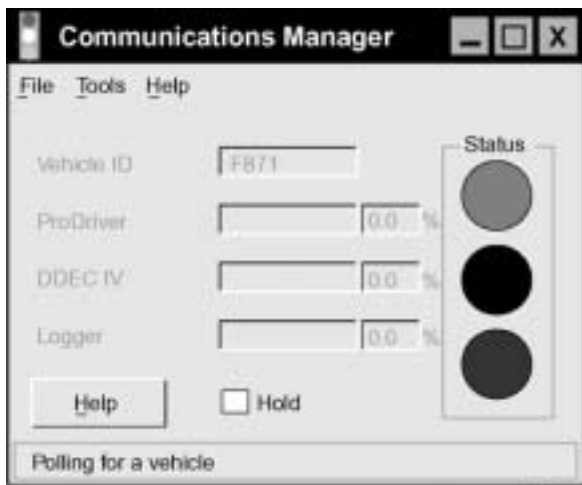


Figure 15. Select the Stop Light Icon

Either selection will initiate DDComm. A stop light will appear on the screen and the extraction sequence will begin (see Figure 16).

If your computer does not have Detroit Diesel in the program files menu, DDComm can typically be accessed directly through Windows explorer. It will also be represented by a stop light icon.



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Figure 16. Communications Manager Stop Light

To minimize difficulty with automation, ensure that all vehicles are entered into the Vehicle Registry prior to attempting automatic extraction. This ensures that the information from all vehicles is extracted. This also allows DDComm to recognize the vehicle without disrupting to prompt for entry of information on an unknown vehicle. For more details, consult the DDComm software Help or Detroit Diesel Technical Support, phone (313-592-5959).

With DDDS and DDComm 2.07, the engine serial number can be entered for the first time extraction from the vehicle. Older DDComm versions (before 2.07) require operator input for the first extraction.

Once DDComm runs through the extraction sequence, the stop light will switch to green, indicating the extraction is complete. Once complete, IRIS will stay connected until the connection is broken by blocking the signal, turning the vehicle off, or moving the vehicle out of range of the IRIS base transceiver. Once the connection is broken, DDComm will automatically return to the red light, which indicates it is polling for another vehicle. When another vehicle with an IRIS transceiver pulls into range, the extraction process will be repeated.

For additional help or information contact Detroit Diesel at 313-592-5959.

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