TERION

DRIVER MESSAGING SYSTEM INSTALLATION MANUAL

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The TERION Network is a two-way mobile data system, which provides wireless wide area messaging services. This installation manual will provide instructions on how to install the DRIVER MESSAGING SYSTEM in a truck - tractor.
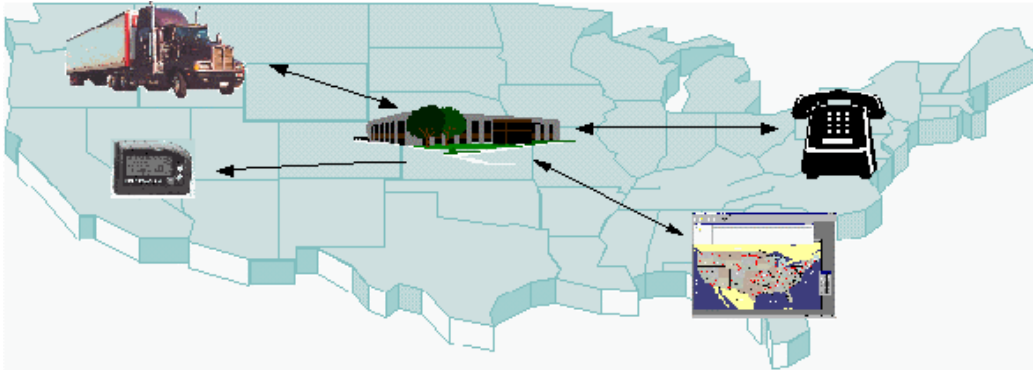
Safety Instructions

Proper installation of the Driver Messaging System is essential for the safety of the installer, driver, the public, as well as correct function of the unit. Prior to beginning installation be sure to read and understand all instructions. During the installation follow the instructions carefully.

Throughout this document there may be blocks of text printed in bold or in italic type. These blocks are warnings, cautions, and notes. They are used as follows:

WARNING! – A WARNING indicates the potential for bodily harm and tells how to avoid the problem.

CAUTION! – A CAUTION indicates either potential damage to the system or tractor and tells you how to avoid the problem.

NOTE – A NOTE indicates important information that helps you make a better installation of the system.

MAJOR COMPONENTS

There are three major components of the DRIVER MESSAGING SYSTEM. These are the Antenna System, the Intelligent Transceiver Unit (ITU), and the Driver Terminal (DT).

Antenna System

The Antenna System consists of a Frequency Modulation/Digital High Frequency (FM/DHF) antenna, a Global Positioning System (GPS) antenna, and the assorted cabling and mounting hardware. The antennas are typically mounted on the mirrors or outside of the rear cab bulkhead.
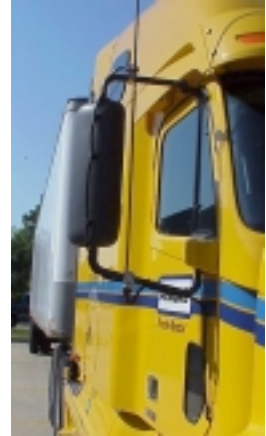
Intelligent Transceiver Unit (ITU)

The ITU is the "black box" that accepts messages from the dispatcher, performs actions according to their instructions and then automatically responds by transmitting data or messages back to the dispatcher. Power, antenna, and DT cables are connected to the ITU. The ITU is mounted in an inconspicuous location, typically under the sleeper berth.

Driver Terminal (DT)

The DT is where the driver interfaces with the system. Messages are viewed on the screen and entered on the keyboard. The DT is typically mounted inside of the truck cab.

CUSTOMER PROFILE INFORMATION

Each installation is different. Specific information is compiled from sales documents. This information is compiled to create a customer profile. There is a customer profile for each customer and should be included with the with the Driver Messaging System kit. Information such as types and number of trucks, as well as customer information are included.

NOTE – MAKE sure Customer Profile is the one for the product you are installing. If the profile does not match the specific client and location call Customer Service @ (877) 283-7466 to get the correct installation guide.

Example Customer Profile of Terion, Inc.

> 300-A1 North Drive
> Melbourne, Florida 32934
> Phone (407) 752-3000
> FAX (407) 752-0294
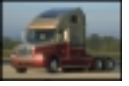
Point of Contact: Ron Buanno

Truck Profile

Number of trucks	1
Number of company owned	1
Number of owner operators	0
Types of trailers used	van

Breakdown of Tractors

QTY	MAKE	MODEL	YEAR	TYPE OF ROOF SHIELD	EXHAUST PIPE LOCATIONS	CB ANTENNA LOCATIONS	SLEEPER TYPE	ADD-ON EQUIPMENT	PHOTO
1	Freightliner	Century Class C112 with 58" raised roof sleeper cab	1999	Full height integrated with sleeper	Behind sleeper passenger side	One mounted on driver side mirror	Condo, lower bunk raises for access to storage boxes.	none	

Fleet Operations Profile

Number of Dispatchers	Number of Locations	Routes and areas traveled	Type of computers and systems types	Internet Connections	Software Used
1	1	Local – East Central Florida	PC – LAN, Windows 98 with Novel Netware.	Local provider with unlimited service	Commercial software vendor, ICC, TMW, etc. Additional proprietary programs.

TOOLS AND SUPPLIES REQUIRED FOR INSTALLATION

You will need the following tools and supplies:

NOTE – These are only minimum tools and supplies requirement for an installation with no complications. A wise installer will have additional tools to solve any problems encountered.

Description	Part Number	Use
Heat gun 120 VAC or battery		To shrink the shrink wrap tubing at the HF antenna connection
Tie wrap gun		To install tie wraps tightly
25/64" Brad Point drill bit		To drill holes for the ¼-20 RIVNUTS
5/8" Brad Point drill bit		To drill holes for all grommets going into the truck
3/16" drill bit		To drill Cradle Rivet holes
RIVNUT install tool for ¼-20, quick release		To install ¼ -20 RIVNUTS
Pop rivet install tool for 3/16 rivets		To install 3/16 Cradle Rivets
Ratchet and 7/16 socket with short and long extensions		To turn ¼-20 screws and nuts
7/16 wrench		To turn ¼-20 screws and nuts
Cross recessed driver		To install sheet metal screws, holding down tie wrap bases, and ground lugs
Portable drill		To drill holes
De-burring tool		To de-burr holes prior to inserting grommets
Wire stripper and crimper		To install fuses and terminals
Clear Insulating Spray	Scotch 1601	To seal the ground lugs from moisture
Isopropyl Alcohol		To clean surfaces where the double sided tape is applied
Silicon sealant		To seal cables where they pass through grommets.

Correct installation will insure equipment integrity, reliable operation and ease of maintenance.

⚠ **CAUTION! – IN ORDER to function properly and insure a long operating life the Driver Messaging System must be properly located and securely mounted**

➡ *NOTE – DEVISING an optimum location plan is critical for a successful installation.*

Verification of Truck Type

Prior to removing the contents from the shipping container, verify that the Customer Profile is accurate and matches the make and model of the truck in which you will be installing the system. Different types of trucks, conventional or cab-over, no sleeper or with sleeper may require installation kits matched to a certain type of truck.

⚠ **CAUTION! – USING an installation kit not specifically assigned to the type of truck may result in shortages of installation hardware and cable lengths.**

Verification of Assigned ITU and DT Serial Numbers

Immediately after removing the ITU and DT from the carton, review and verify that the serial numbers match the Kit Contents section. Record these numbers on the Installation – Test Data Sheet.

Location of serial number on ITU

Location of serial number on DT
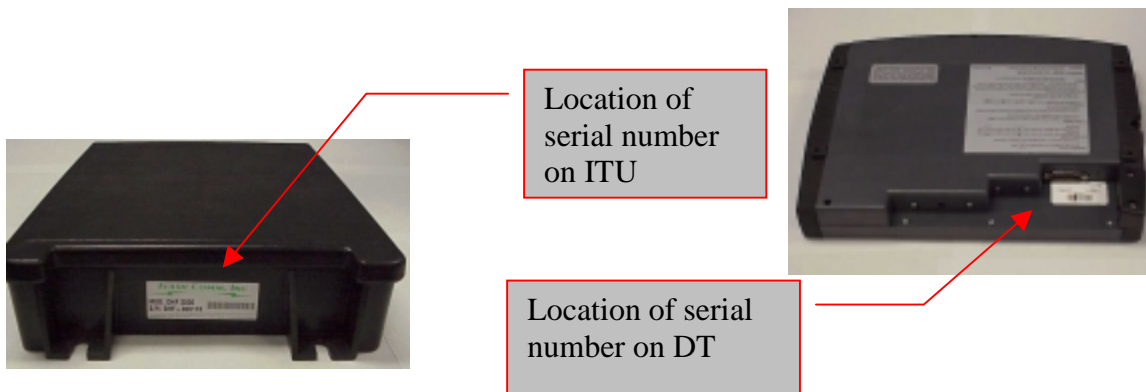
➡ *NOTE – THE DT serial number is located behind the DT Cable. Record DT serial number before attaching DT Cable.*

Inspection for Non-Standard Modifications or Protrusions

A visual inspection of the truck is required to assess any modifications or changes to the vehicle that were not indicated on the Customer Profile. Changes include additional farings, modified exhaust, additional antennas, or additional mirrors that may interfere with the installation and operation of the system.

Selection Review of FM/DHF Antenna Mount (Mirror vs. Rear Mount)

Each kit is pre-selected with either a FM/DHF mirror or a rear mount assembly. Please review the following criteria to verify the appropriateness of the selection:

⚠ **CAUTION! – SYSTEM performance requires that antenna locations be mounted away from sources of interference.**

1. PROXIMITY OF EXISTING ANTENNAS. Citizens Band (CB) or any other type antennas up to three feet in length must remain a minimum of three feet from the FM/DHF antenna. Any other antenna larger than three feet must remain that same distance from the FM/DHF antenna.

> Example: A two foot antenna must remain at least three feet from the FM/DHF antenna while a six foot two inch antenna must be six foot two inches from the FM/DHF antenna

2. WILL EXISTING MIRROR BRACKET SUPPORT FM/DHF ANTENNA MOUNT? For mirror mounted antennas the preferred mount is the "West Coast Type" mirror which will provide both top and bottom supports.

3. IS EXISTING MIRROR BRACKET TOO TALL OR SHORT? The overall height of the FM/DHF antenna must be between 13' and 13'6". The mirror mount antenna is 78 inches tall. Make sure the antenna base mount is attached to the mirror bracket no higher than 83 inches and no shorter than 78 inches as measured from the ground.

4. IS PASSENGER SIDE MIRROR MOUNT POSSIBLE? If a mirror mount is determined to be the best location, select the passenger door, if possible, to minimize the cable flex.

5. LENGTH OF ANTENNA COAXIAL CABLE. The provided antenna cables are available in seven and eleven-foot lengths, these lengths have been pre-configured and should not be modified.

6. REAR MOUNTED ANTENNA SHOULD NOT INTERFERE. If rear mounted, will the antenna interfere with the trailer or other obstacles such as refrigeration units, hydraulic tanks, vertically mounted load bars, or other accessories? Rear mounted antennas are required to be a minimum of ten inches from the rear wall of the cab structure and as far away from the exhaust stack as possible.

7. IS THE HEIGHT OF THE ANTENNA BASE MOUNTING LOCATION TOO TALL OR SHORT? The overall height of the FM/DHF antenna must be between 13' and 13'5". The rear mount antenna is 96 inches tall. Make sure the antenna base

mount is attached to the rear cab no higher than 65 inches and no shorter than 60 inches as measured from the ground.

Once the best FM/DHF antenna location has been determined, verify that the antenna kit is correct for your antenna mounting application.

> **WARNING! – FEDERAL Motor Carrier Safety Regulations prohibit the overall height from exceeding 13'6". Be sure the antenna height is less than 13'6".**

Selection of GPS Antenna Mount

Prior to selecting the GPS antenna location please consider:

1. PREFERRED LOCATION. The preferred GPS antenna location is the top of the cab or roof structure with the ability to look upward.

2. MOUNT ON FLAT SURFACE. The GPS antenna should be mounted on a flat surface.

3. MOUNT NEAR FM/DHF ANTENNA. If possible mount GPS antenna near the FM/DHF antenna so the antenna cables can share a common route to the ITU.

4. ANTENNA CAN BE MOUNTED UNDER ROOF MOUNTED AIR DAM, if constructed of either fiberglass or other non-metallic composite material.

5. VERIFY CABLE LENGTH. Upon determination of a suitable mounting location, verify that there will be an adequate length of cable to reach the ITU. This antenna is packaged with a pre-configured length of cable and cannot be modified.

Selection of DT Location

The DT location must be located far enough away from the driver so the driver cannot attempt to drive and use the DT at the same time, yet, it must remain within easy access. Cable length from the DT to the ITU, and sturdiness of the desired DT cradle attachment points all are important considerations.

Typical locations are on the passenger side dash, behind either seat, on closet, or bunk walls. On day cabs locate between seats or the back wall. Select a location where the DT will not be subjected to direct sunlight. Places to avoid include the top of the dash or a rear seat window. The customer should also be consulted when choosing a DT location.

Selection of ITU Location

Now that the mounting locations for the FM/DHF and GPS antennas have been determined, a suitable location for the ITU will need to be set. As the FM/DHF and GPS antennas have a fixed length of cable, the location of the ITU will be determined by the

proximity of the cable ends. In addition to the FM/DHF and GPS the location of the DT needs to be considered as this unit also has a fixed non-adjustable length cable.

> *NOTE – CABLE routing always takes more wire length than expected. Mirror mount cable = 11' and rear mount cable = 7'.*

The most preferred location for the ITU is to have it mounted inside the cab area. Locations within the cab would be behind the drivers or passengers seat, in a storage compartment, in the living area or under the bunk, between the seats on a day cab, or under the drivers or passengers seat. For the protection of the ITU it is recommended that the unit be installed in the **vertical position** that would provide the best access to the antenna and power connectors.

KIT CONTENTS

This section is a checklist to verify all the components of the Driver Messaging System are present and in good shape. Use this checklist to inspect and verify all components and accessories are correct and ready to install.

Antenna System

QTY	P/N	PART DESCRIPTION	REC	COND
MIRROR MOUNT INSTALLATION KIT AD20-100107
1	AD30-100111	ITU RF Cable 11'	❑	
1	AD30-100109	ITU Power Cable-External Cab	❑	
1	AD30-100108	ITU Data Cable-Internal Cab	❑	
1	AD30-100121	Assembly, ITU Ground Wire	❑	
1	6115-00001	Fuse Holder, In-line, ATO, 20A, 32V, w/cover 4" lg 14AWG leads	❑	
1	6116-00001	Fuse holder, In-line, Mini-ATO, 20A, 32V, w/cover, 4"lg 14AWG leads	❑	
1	6130-007R5	Fuse, ATO, 7.5A, 32V, Fast Acting, 257 07.5	❑	
1	6140-00002	Fuse ATO Mini, 2A,, 32V, Fast Acting, 297 002, 297 Series	❑	
2	7510-00007	Butt Connector, Wire Mount, General Purpose, Crimp, Butt Splice 14-16AWG, Nylon insulated, heavy duty, 7113K87	❑	
1	7510-00008	Connector, Wire Mount, Gen Purpose, Nylon insulated, Heavy duty ring terminal, Crimp, 16-14AWG, 3/8 stud, 7113K96	❑	
3	7510-00009	Connector, Wire mount, Gen Purpose, Nylon insulated, Heavy duty, Ring Terminal Crimp, 16-14AWG, ¼" stud, 7113K65	❑	
10	9080-00075	Screw, #8, X ¾" lg flat head self drilling, SST, 94195A140	❑	
4	9140-00002	Screw, Grade 2, #1/4, ¼ X 20 X 2" Cap screw, hex hd, SST ANSI/ASME	❑	
1	9140-03050	Screw, SST, ¼ X ½" Self threading, Phillips head, 90410A320	❑	
8	9140-04063	Screw, Grade 2, ¼ X 20 X .63" lg, Cap screw, Machine, Hex hd, SST, 93190A539	❑	
6	9141-00002	Nut, Grade 2, ¼" X 20, Locknut, SST, Locking nylon insert, 90715A	❑	
4	9141-00027	Nut, ¼ X 20, Rivnut, .027-.165 grip, ALS-420-165	❑	
4	9142-00004	Washer, ¼", Split Lock, SST, 92147A029	❑	
7	9142-00006	Washer, ¼", Internal tooth, SST, 98449A029	❑	

MIRROR MOUNT INSTALLATION KIT AD20-100107				
QTY	P/N	PART DESCRIPTION	REC	COND
8	9142-00007	Washer, ¼", Flat, .734" OD, SST, 98019A160	❑	
9	9200-00001	Rivet, Alum w/Alum mandrel, 0.188 - .126 -.250 grip, Pop Rivets, Dome head, 97447A050	❑	
17	9400-00002	Tie wrap mount, 1" sq, UV stable, Black nylon, Adhesive backed, FTH-7A-RT-UVB	❑	
2	9401-00003	Cable Clamp, Adhesive backed, KKD-16-RT	❑	
1	9401-00004	Cable Clamp, Loop, .250 dia, 7/32 mtg hole, Black nylon, 8876T13-Black	❑	
36	9410-00003	Cable tie, Black, 50lb tensile, 8" X 0.185, UV stable, weather resistant, 96F99450	❑	
1	9450-00001	Bracket, Antenna Mounting Bracket, 4 7/8" lg with S0239 stud, 4332 R/L	❑	
1	9450-00002	Bracket, C-clamp, 2330-BRIN	❑	
2	9765-00003	Grommet, Neoprene, split, 3/8 ID, 5/8 groove dia, 1/16 groove thick, Z-2258 (split)	❑	
1	9765-00004	Grommet, ID=5/16", OD=1", Thick=3/8", Split, Z-2257 (SPLIT)	❑	
3	9765-00005	Grommet, ID=5/16", OD=1", Thick=3/8", Split, Z-3058 (SPLIT)	❑	
1	9770-00003	Antenna, GPS Antenna, GPS-F-26-TNC-01-C-03	❑	
2	9810-00001	Rubber, Medium (5-9 psi), Closed Cell, 1" thick, Blended neoprene/EPDM/SBR, 8647K39	❑	
1	PD20-100113	Part Drawing, Mechanical, DT Cradle	❑	
1	PD20-100114	Part Drawing, Mechanical, Nut Plate.	❑	
1	PD20-100116	Part Drawing, Mechanical, ITU Mounting Plate—Floor Mount	❑	
1	PD20-100118	Part Drawing, Mechanical, Antenna Support—Mirror mount.	❑	
1	PD20-100143	Part Drawing, Mechanical, Split Tubing	❑	
1	PD20-100144	Part Drawing, Mechanical, Heat Shrink Tubing	❑	

QTY	P/N	PART DESCRIPTION	REC	COND
		REAR MOUNT INSTALLATION KIT **AD20-100108**		
1	AD30-100111	ITU RF Cable 11'	❏	
1	AD30-100109	ITU Power Cable-External Cab	❏	
1	AD30-100108	ITU Data Cable-Internal Cab	❏	
1	AD30-100121	Assembly, ITU Ground Wire	❏	
1	AD30-100122	Assembly, Rear Mount Antenna Support	❏	
1	6115-00001	Fuse Holder, In-line, ATO, 20A, 32V, w/cover 4" lg 14AWG leads	❏	
1	6116-00001	Fuse holder, In-line, Mini-ATO, 20A, 32V, w/cover, 4"lg 14AWG leads	❏	
1	6130-007R5	Fuse, ATO, 7.5A, 32V, Fast Acting, 257 07.5	❏	
1	6140-00002	Fuse ATO Mini, 2A,, 32V, Fast Acting, 297 002, 297 Series	❏	
2	7510-00007	Butt Connector, Wire Mount, General Purpose, Crimp, Butt Splice 14-16AWG, Nylon insulated, heavy duty, 7113K87	❏	
1	7510-00008	Connector, Wire Mount, Gen Purpose, Nylon insulated, Heavy duty ring terminal, Crimp, 16-14AWG, 3/8 stud, 7113K96	❏	
3	7510-00009	Connector, Wire mount, Gen Purpose, Nylon insulated, Heavy duty, Ring Terminal Crimp, 16-14AWG, ¼" stud, 7113K65	❏	
1	7520-00003	Connector, Panel Mount, Antenna Stud, 4302, SO-239	❏	
10	9080-00075	Screw, #8, X ¾" lg flat head self drilling, SST, 94195A140	❏	
1	9122-00001	Washer, ½", Flat, SST, 0.5 ID, .062 T, 1.25 OD, 92141A033	❏	
2	9140-03050	Screw, SST, ¼ X ½" Self threading, Phillips head, 90410A320	❏	
11	9140-04063	Screw, Grade 2, ¼ X 20 X .63" lg, Cap screw, Machine, Hex hd, SST, 93190A539	❏	
4	9141-00002	Nut, Grade 2, ¼" X 20, Locknut, SST, Locking nylon insert, 90715A	❏	
7	9141-00027	Nut, ¼ X 20, Rivnut, .027-.165 grip, ALS-420-165	❏	
4	9142-00004	Washer, ¼", Split Lock, SST, 92147A029	❏	
7	9142-00006	Washer, ¼", Internal tooth, SST, 98449A029	❏	
8	9142-00007	Washer, ¼", Flat, .734" OD, SST, 98019A160	❏	
9	9200-00001	Rivet, Alum w/Alum mandrel, 0.188 - .126 -.250	❏	

QTY	P/N	PART DESCRIPTION	REC	COND
REAR MOUNT INSTALLATION KIT   AD20-100108
		grip, Pop Rivets, Dome head, 97447A050		
1	9200-00002	Rivet, Alum w/alum mandrel, Pop Rivet, Flange Head, .188 dia., .250-.375 grip, 97447A155	❑	
17	9400-00002	Tie wrap mount, 1" sq, UV stable, Black nylon, Adhesive backed, FTH-7A-RT-UVB	❑	
2	9401-00003	Cable Clamp, Adhesive backed, KKD-16-RT	❑	
1	9401-00004	Cable Clamp, Loop, .250 dia, 7/32 mtg hole, Black nylon, 8876T13-Black	❑	
36	9410-00003	Cable tie, Black, 50lb tensile, 8" X 0.185, UV stable, weather resistant, 96F99450	❑	
1	9765-000001	Grommet, Neoprene, 9/16 ID, 13*16 groove dia., 3/16 groove thick, Z-3205	❑	
3	9765-00005	Grommet, ID=5/16", OD=1", Thick=3/8", Split, Z-3058 (SPLIT)	❑	
1	9770-00003	Antenna, GPS Antenna, GPS-F-26-TNC-01-C-03	❑	
2	9810-00001	Rubber, Medium (5-9 psi), Closed Cell, 1" thick, Blended neoprene/EPDM/SBR, 8647K39	❑	
1	PD20-100113	Part Drawing, Mechanical, DT Cradle	❑	
1	PD20-100114	Part Drawing, Mechanical, Nut Plate.	❑	
1	PD20-100116	Part Drawing, Mechanical, ITU Mounting Plate—Floor Mount	❑	
1	PD20-100117	Part Drawing, Mechanical, Antenna Mounting Bracket—Rear	❑	
1	PD20-100142	Part Drawing, Mechanical, Split Tubing 20'	❑	
1	PD20-100144	Part Drawing, Mechanical, Heat Shrink Tubing	❑	

GPS Antenna				
QTY	P/N	DESCRIPTION	REC	COND
1	9610-00009	GPS Antenna W/ 20' coaxial cable	❏	

Intelligent Transceiver Unit

ITU AD10-100106				
QTY	P/N	DESCRIPTION	REC	COND
1	AD10-100106	ITU s/n _____	❏	

Driver Terminal

DT Components				
QTY	P/N	DESCRIPTION	REC	COND
1	9610-00019	Driver terminal unit s/n _____	❏	

FM – DHF ANTENNA INSTALLATION
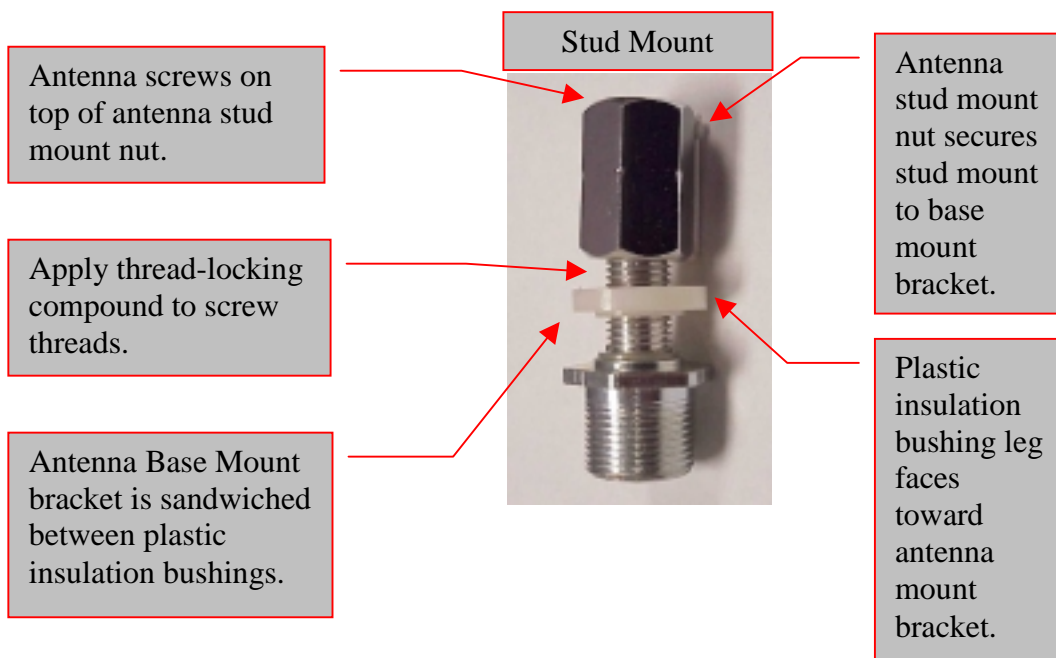
Mirror Mount Instructions

1. ATTACH BASE MOUNT BRACKET to the lower arm of the mirror bracket with supplied ¼ X 20 cap screws. The kit contains two lengths of screws, 2" and 1 ½", use the length most appropriate for the diameter of the mirror bracket. Align antenna vertically and tighten screws.

2. ATTACH THE ANTENNA SUPPORT BRACKET to the upper arm of the mirror bracket. Place a grommet in the antenna guide hole. The antenna guide hole in the antenna support bracket should line up vertically with the antenna attachment hole in the base mount. Use the FM/DHF antenna as an alignment guide.

3. SECURE BASE MOUNT AND ANTENNA SUPPORT BRACKET. Be sure the base mount and antenna support is aligned vertically. The base mount and antenna support is secure.

4. SECURE FM/DHF ANTENNA TO BASE MOUNT AND ANTENNA SUPPORT BRACKET. Place the antenna stud mount through the stud mount hole in the Base Mount Bracket and hold in place. Put plastic insulation bushing on stud bolt with leg facing toward base mount bracket. Put a few drops of thread locking compound on stud bolt and secure antenna stud mount nut to bolt. Place FM/DHF antenna through upper support bracket and place thread locking compound to threads on end of antenna and secure antenna to antenna stud mount.

Stud Mount

Antenna screws on top of antenna stud mount nut.

Antenna stud mount nut secures stud mount to base mount bracket.

Apply thread-locking compound to screw threads.

Antenna Base Mount bracket is sandwiched between plastic insulation bushings.

Plastic insulation bushing leg faces toward antenna mount bracket.

5. ATTACH GROUND WIRE TO ANTENNA BASE MOUNT. Strip and crimp a ¼" terminal to the end to the ground wire.

6. TIE WRAP GROUND WIRE TO COAX. Approximately three inches (so the tie wrap will not be in the heat shrink) from the coax termination tie wrap the ground wire to the coax. If GPS antenna is also mirror-mounted tie wrap all three wires together.

| Ground wire. |
| GPS antenna wire. |
| FM/DHF antenna coax. |
| Tie wrap. |
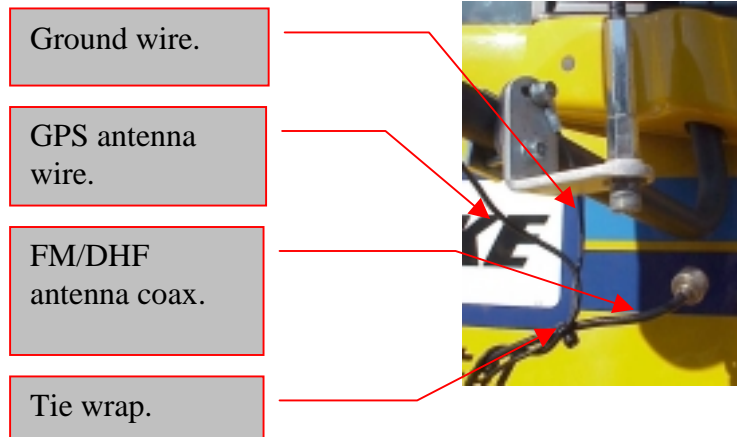
7. LOCATE AND DRILL CABLE ENTRY POINT. Find an entry point where the coax and ground wire will enter the truck cab. It should be a place where the cables will enter behind a panel in the truck cab. Use a center punch to start hole, then drill a 1/8" pilot hole. Then drill a 5/8" hole. Use a de-burring tool to clean up edge of hole.

WARNING! – CHECK both sides before drilling. Drilling into a wire could cause a fire. Drilling into an air brake line could cause brake failure.

8. PASS COAX AND GROUND WIRE THROUGH HOLE. Place 5/8" grommet in hole and wires through grommet.

9. PLACE THE COAX AND GROUND WIRE INTO SPLIT TUBE. Place wires in path they will follow from the base mount to the entry hole and measure length and cut split tube. If the GPS antenna is mounted where cables can be routed together, then place and measure wires and cut split tubing in a three-wire configuration. Place wires in the split tube. Tie wrap both ends of the split tubing. The antenna end of the split tubing should be close enough to the end so the be over the split tube. Place a tie wrap 3" from the end of the split tube so the shrink does not extend over the tie wrap. Leave a 3/8" length of exposed cabling at the cab end of the split tubing so the grommet may be sealed. Place another tie wrap around the junction of the coax, ground and GPS wires.

NOTE – BE SURE there will be no other exposed wires or cables.

NOTE –GPS ANTENNA CABLE MAY ALSO BE mounted where they may pass through the same entry hole. Please see section on GPS ANTENNA INSTALLATION.

NOTE – FOR DRAINAGE PURPOSES the split in the split tubing should face either down or toward the rear of the truck cab.

10. HEAT SHRINK END OF COAX TO ANTENNA BASE. Slide heat shrink tube over coax and attach FM/DHF coax to end of antenna stud mount. Use heat gun to set heat shrink tube in place.
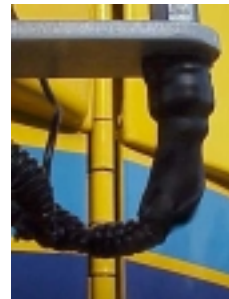
CAUTION! – DO-NOT BURN either the cable or heat shrink tubing with the heat gun.

⇨ *NOTE – TIE WRAP BASE PLATES must be attached to thoroughly clean surfaces in order for them to adhere to he cab mounting surface. stick. Use* isopropyl *alcohol to clean where the plates are attached.*

11. TIE-WRAP AND SECURE. Secure split tubing with wires and cables to mirror bracket and truck cab body with tie wraps. Use tie wrap bases on the truck cab body.

⇨ *NOTE –* WHENEVER A WIRE GOES THROUGH A CAB PUNCTURE a grommet and a tie wrap base with a screw must be used to properly secure the entry point. The grommet will seal the entry point and prevent wire abrasion. The tie wrap base screwed to the cab body will prevent the grommet and wires from being pulled out.

First tie wrap base must be additionally secured with self-drilling tapping screw. #8 X ¾" P/N 9080-00075

Place tie wraps at least 8" but not more than 12" apart.

Add slack service loop at flex point and attach the tie wrap base mounts at the beginning and end of a flex point with self drilling tapping screws.

Seal cable entry grommet with silicone sealant.

These tie wrap base mounts are screwed.

Rear Mount Instructions

1. LOCATE WHERE ANTENNA BASE MOUNT AND SUPPORT WILL ATTACH. You don't have the luxury of setting the base plate and upper support in place then aligning and retightening. Draw a vertical centerline on the truck extending from where the base plate location through the upper support bracket attachment point. The brackets will be mounted centered along this centerline at the intersection of a cab support framing rivet line. The top of the 8' antenna must be measured at **13'1' to 13'5"**. Do this by measuring from the ground to the proposed location of the rear base mount and adding 8'.
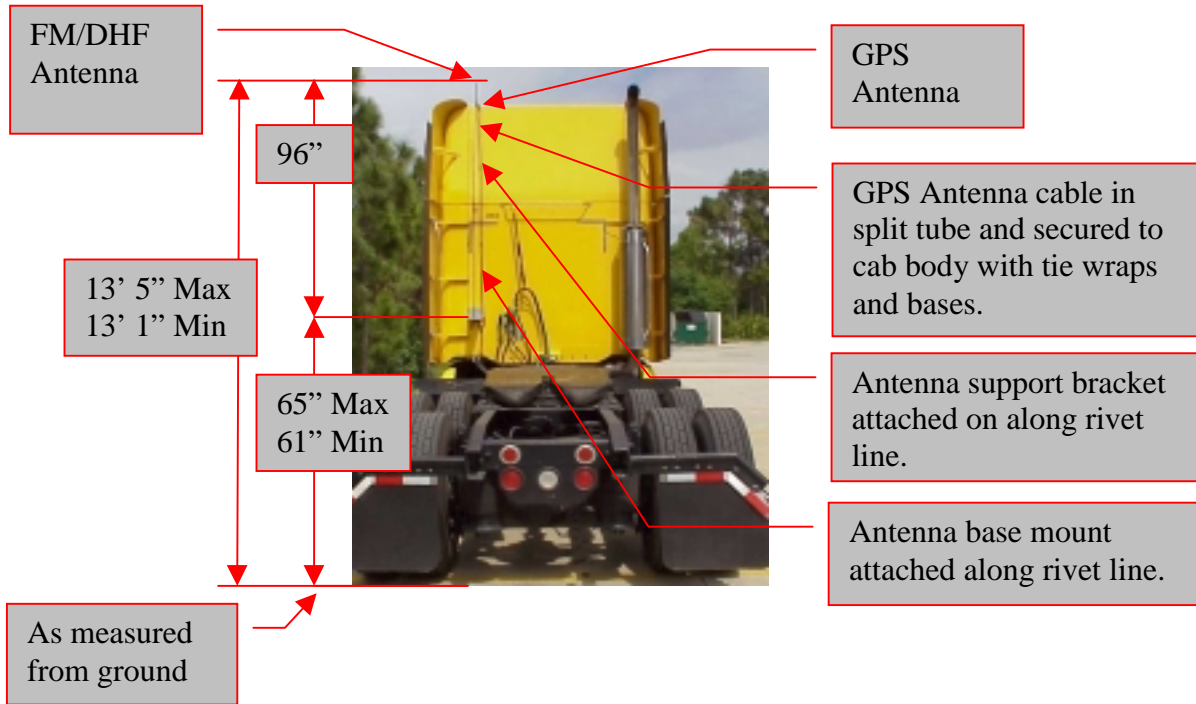
FM/DHF Antenna

96"

13' 5" Max
13' 1" Min

65" Max
61" Min

As measured from ground

GPS Antenna

GPS Antenna cable in split tube and secured to cab body with tie wraps and bases.

Antenna support bracket attached on along rivet line.

Antenna base mount attached along rivet line.

⚠️ **WARNING! – FEDERAL Motor Carrier Safety Regulations prohibit the overall height from exceeding 13'6". Be sure the over all antenna height is 13'6" or less.**

△ **CAUTION! – REAR BASE MOUNT and antenna support must be attached where rear cab skin is supported. Attach to a location where there is framing behind cab skin. This is the intersection of the centerline and a rivet line.**

2. MARK AND DRILL HOLES. Use the antenna base plate and support as guides to mark hole locations. Center punch to start holes. Drill 25/64" holes, use a brad point drill bit.

⚠️ **WARNING! – CHECK both sides before drilling. Drilling into a wire could cause a fire. Drilling into an airline could cause brake failure.**

3. ATTACH ANTENNA BASE PLATE AND SUPPORT USING RIVNUTS AND ¼"
X 20 X 1" CAP SCREWS. Insert rivnut in hole and secure to truck with rivnut tool.
With rivnuts and brackets in place start and tighten screws.

4. SECURE ANTENNA TO BASE MOUNT AND ANTENNA SUPPORT
BRACKET. Hold stud mount in base mount and screw FM/DHF antenna to the stud
mount. Be careful not to strip the threads at the antenna and coax attachment points.

Stud Mount

Antenna screws on
top of antenna stud
mount nut.

Antenna
stud mount
nut secures
stud mount
to base
mount
bracket.

Apply thread-locking
compound to screw
threads.

Antenna Base Mount
bracket is sandwiched
between plastic
insulation bushings.

Plastic
insulation
bushing leg
faces
toward
antenna
mount
bracket.
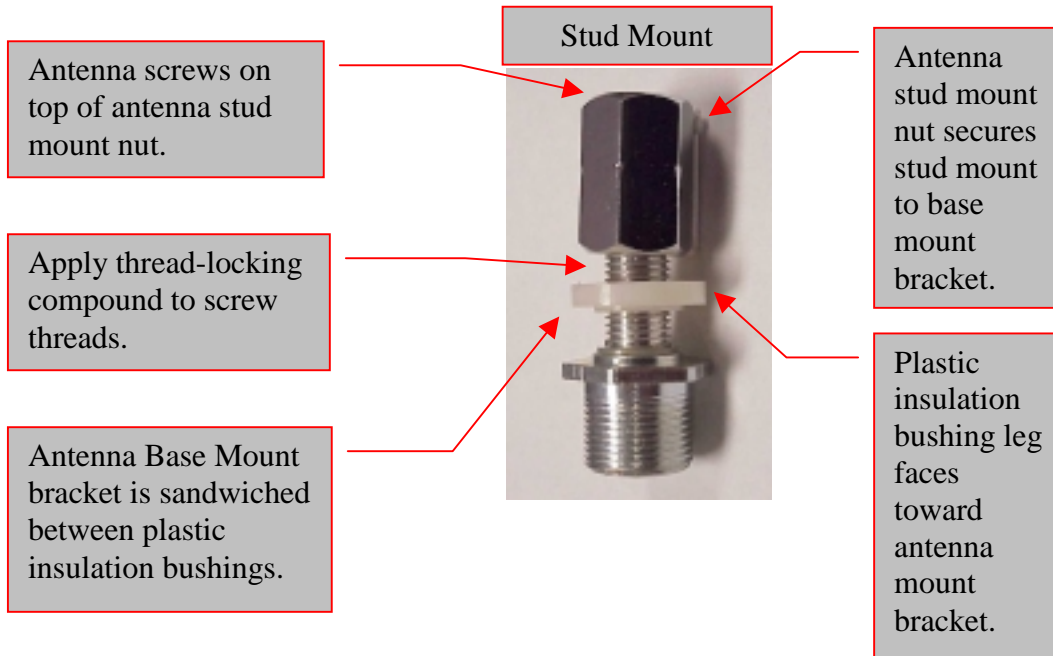
5. ATTACH FM/DHF COAX TO END OF ANTENNA.

6. ATTACH GROUND WIRE TO ANTENNA BASE MOUNT. Strip and crimp a ¼"
terminal to the end of the ground wire. Screw the ground wire to the antenna base
mount.

Tie wrap ground wire to coax
and merge ground wire into
coax split tubing here.
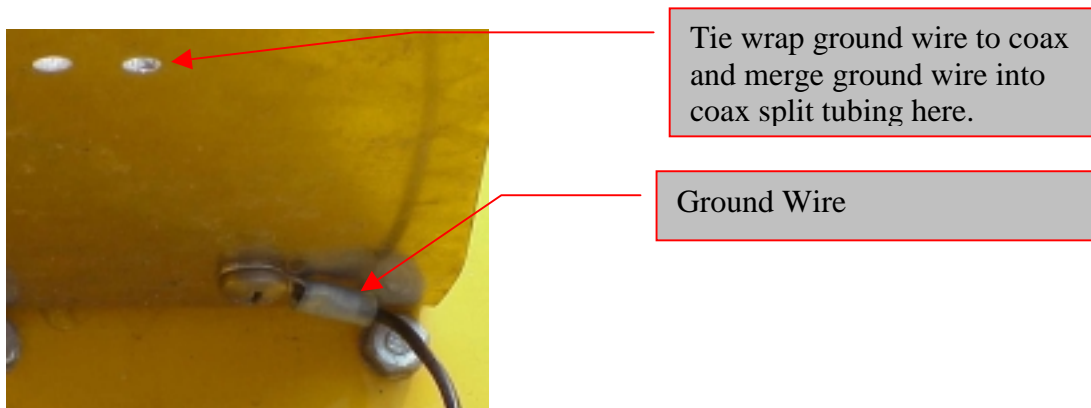
Ground Wire

7. TIE WRAP COAX TO GROUND WIRE. At the tie wrap holes in the antenna base mount merge the FM/DHF antenna coax and ground wire into the split tube, and tie wrap together. Be sure to include a service coax cable service loop.

Coax secured to antenna stud mount

Heat-shrink tubing slides to cover split tubing but not tie wrap.

Service loop

End of split tubing secured with tie wrap.

8. LOCATE AND DRILL CABLE ENTRY POINT. Find an entry point where the FM/DHF and GPS coax and ground wire will enter the truck cab. It should be preferably under the cab. Look for an existing hole that may have a plug in it if so use this hole, otherwise, you will have to drill through the cab skin. Use a center punch to start hole, then drill a 1/8" pilot hole. Then drill a 5/8" hole. Use a de-burring tool to clean up edge of hole.

⚠ **WARNING! – CHECK both sides before drilling. Drilling into a wire could cause a fire. Drilling into an airline could cause brake failure.**

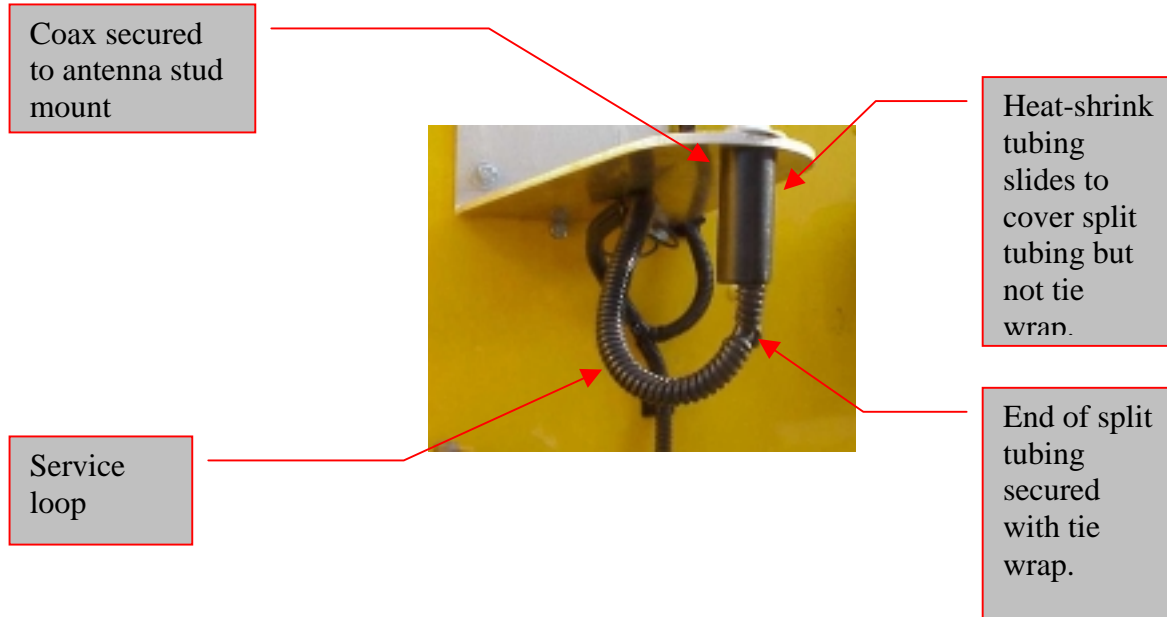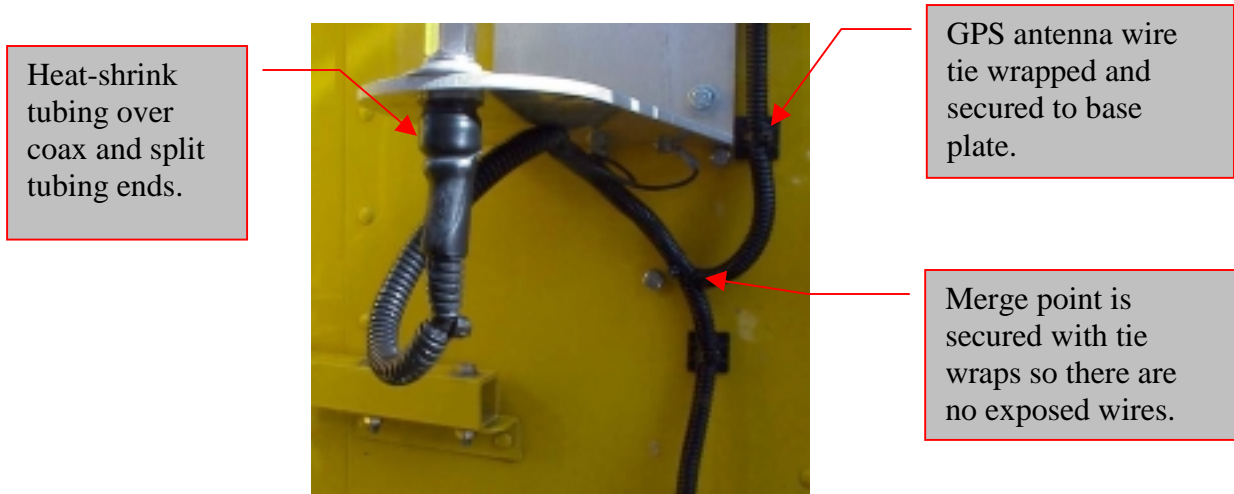9. PASS COAX AND GROUND WIRE THROUGH HOLE. Place 5/8" grommet in hole and wires through grommet.

10. PLACE THE COAX AND GROUND WIRE INTO SPLIT TUBE. Place wires in path they will follow from the base mount to the entry hole. Join the GPS cable near the antenna-mounting bracket so all cables can be placed in the same split tubing. Measure length and cut split tube. Place wires in the split tube.

11. HEAT SHRINK END OF COAX TO ANTENNA BASE. Slide heat shrink tube over end of antenna base and pull up split tube so it extends under heat shrink tube. Place a tie wrap on split tubing to hold tubing in place. This split tubing tie wrap should be above the tie wrap holding the coax and ground wires together and just below the heat shrink. Heat shrink tubing with heat gun.

12. TIE-WRAP AND SECURE. Secure split tubing with wires and cables truck cab body with tie wraps. Use tie wrap bases on the truck cab body.   Be sure the beginning and ending tie wrap base plate is screwed to the cab body. Additionally, service loops should have tie wrap base plates screwed to the beginning and end of the service loop.

Heat-shrink tubing over coax and split tubing ends.

GPS antenna wire tie wrapped and secured to base plate.

Merge point is secured with tie wraps so there are no exposed wires.

Run FM/DHF Coax to ITU

1. ATTACH GROUND WIRE TO GROUNDING POINT INSIDE TRUCK CAB.
    Find a ground by using a circuit tester. If necessary, drill a hole at grounding source
    and attach with ¼" X ½" long, self-threading Phillips head screw. (P/N 9140-0000??)
    Cut the ground wire to length, strip and crimp terminal to wire end. Attach at ground
    point. On rear mount installations you may attach the ground wire to the trailer light
    lead plug on rear of cab.

2. RUN COAX FROM ENTRY POINT TO FLOOR. Ideally the coax should be
    located behind a panel. If not, all exposed wires must be incased in split tubing.

    **WARNING! – BE SURE drivers and passengers cannot be entangled
    in wires and cables. Make sure all wires and cable are secure and not
    exposed.**

    **WARNING! – Panel and cover screws can penetrate wires and cause
    a short circuit. When reattaching panels and covers make sure screws
    do not touch wires.**

3. RUN COAX UNDER FLOOR TO ITU. An ideal cable path is under the doorjamb
    base plate. It may be necessary to drill a hole to pass the cable through to the ITU.

    *NOTE – MANY TRUCK MANUFACTURERS have a wiring tray under the
   doorjamb. If there is one of these trays take advantage of it.*

    **CAUTION! – EVERY TIME A WIRE HOLE IS DRILLED to pass
    wires or cables through different sections of the cab (puncturing cab skin
    or going through closets, walls or tool box walls use a grommet provided
    in the kit.**

GPS ANTENNA INSTALLATION

1. IDENTIFY LOCATION OF GPS ANTENNA. The GPS antenna should be mounted on the cab top or other similar location pointing skyward. There should be no metal obstructions above the antenna.

2. PREPARE SURFACE OF GPS ANTENNA LOCATION. When the antenna location is identified, the cab-mounting surface **and** antenna must be thoroughly cleaned with isopropyl alcohol.

3. ATTACH THE ANTENNA. Peel the back off one side of the adhesive foam tape, (P/N 952-00006), and stick to cleaned surface. Peel the top backing off the adhesive foam tape stick the cleaned GPS antenna in position and firmly press.
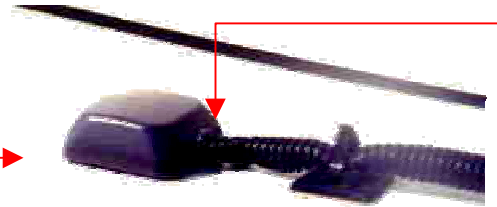
   Tie-wrap end of split tubing.

   NOTE – CLEAN THE ANTENNA. Thoroughly clean the mounting surface of the GPS antenna with isopropyl alcohol.

4. DRILL ENTRY HOLE FOR GPS ANTENNA CABLE. Locate entry point, check both sides, center punch, drill hole, and de-burr. If possible, avoid this step by using a common route and entry point with the FM/DHF antenna wire.

5. PLACE GPS ANTENNA WIRE IN SPLIT TUBING. Tie-wrap and secure as was done with the FM/DHF antenna wire. Remember to end split-tubing 1-2" before grommet to prevent leakage and ensure a tight seal in grommet.

6. RUN ANTENNA CABLE TO ITU USING THE SAME METHOD AND PROCEDURE AS THE FM/DHF ANTENNA WIRE. Make sure to leave a drip loop before the cabling enters the cab skin. All cab skin entry points must be in grommets and sealed with silicone.

NOTE – IF THE FM/DHF antenna runs near or parallel to the GPS coaxial antenna wire then run it into the truck using the same split tubing and entry point. As shown below:

GPS antenna mounted on upper antenna support.

GPS antenna wire in split tubing and secured with tie wraps and tie wrap mounts.

GPS antenna wire, FM/DHF and ground wire merge into common split tubing.

1. IDENTIFY LOCATION OF DT. The DT should be located within easy reach of the driver but far enough away so the driver will have to pull over and stop to respond to a message. Typical locations are on the passenger side dash, behind either seat, on

> NOTE -- ON INSTALLATIONS IN CAB-OVER ENGINE TRACTORS this creates a problem, as the driver will have to crawl over the motor box (doghouse) to get to the DT. And mounting the DT on the doghouse would mean the driver would have to crawl over the DT to get in and out of the sleeper. If possible, mount the DT in cab over tractors on the dash in front of the doghouse.

closet, or bunk walls. On day cabs between seats or the back wall. The customer should also be consulted when choosing a DT location.

> △ **CAUTION! – DT MUST BE MOUNTED IN A STURDY LOCATION. The DT Cradle must be attached to a place sturdy enough to hold the DT in place even through the roughest driving conditions.**

2. DRILL HOLES. Place the DT Cradle (P/N PD20-100113) at the desired location and mark the mounting holes. Drill six 3/16" holes for the aluminum pop rivets. (P/N 9200-00001)

1/3 from inside edge

0.5"
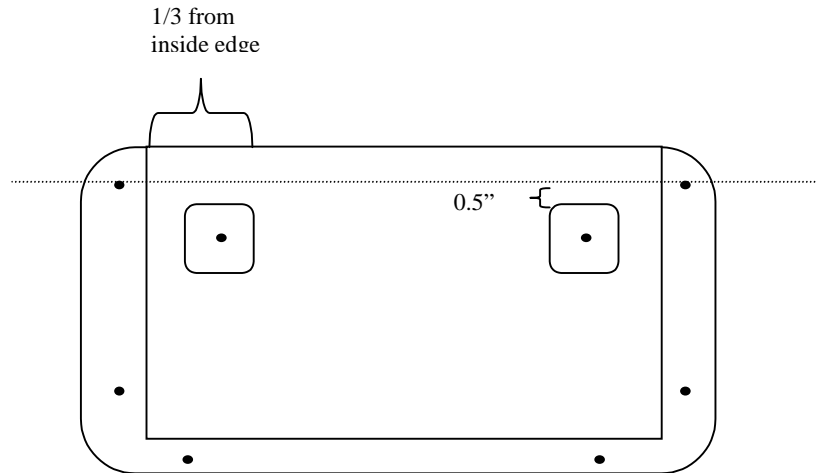
3. ATTACH PLASTIC SPRINGS. Locate plastic springs 1/3 from each end. The sticky tape on the back of the springs is not sturdy enough to permanently attach the springs, only to hold the plastic springs in place while you drill and rivet plastic springs in place.

> NOTE – *THE NARROW OR LEADING EDGE of the plastic springs should be installed facing upward.*

4. ATTACH DT CRADLE. Hold DT Cradle in place with holes aligned and pop rivet in place.

> ⚠ **WARNING! – BE SURE drivers and passengers cannot be entangled in wires and cables. Make sure all wires and cable are not exposed and secure.**

5. RUN DT CABLE FROM DT CRADLE TO ITU LOCATION. The end of the DT cable that attaches to the DT is the wide connector and the round connector is connected to the ITU. It is better to run the cable from the DT Cradle to the ITU. The DT cable runs to the ITU much the same way the antenna cables were run through the truck cab. Use a grommet every time the cabling passes through various sections of the cab to prevent wire chaffing.

6. CONFIRM DT SERIAL NUMBER. Before attaching the DT cable, copy the DT serial number on the provided installer form for warranty confirmation.

7. ATTACH DT CABLE TO DT. Unscrew integrated cable clamp on DT. Connect and secure DT cable to DT. Replace top of cable clamp. Place DT into DT Cradle.

8. PLACE CABLE CLAMP (P/N 9401-00003) AROUND END OF THE COILED PORTION OF THE DT CABLE. Drill and pop rivet cable clamp next to the DT Cradle.

---
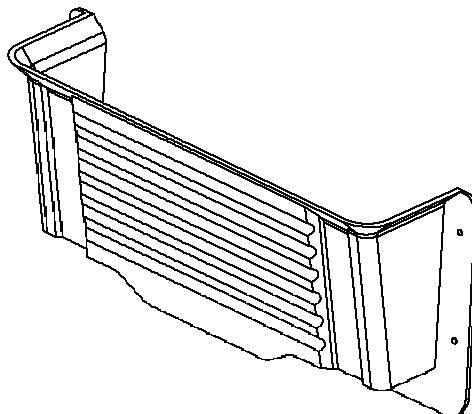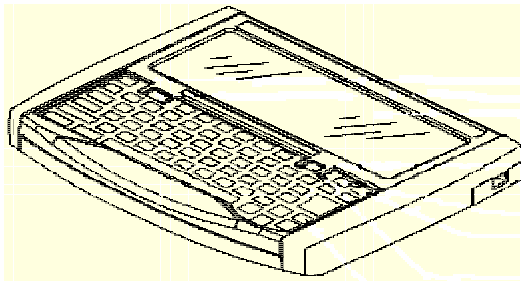
1. RUN POWER CORD FROM ITU TO TRACTOR'S FUSE BOX. The power cord is a three-wire ribbon with the round ITU plug attached to one end. All exposed ribbon wire must be placed in split tubing. If possible, don't have any exposed wire just run under flooring or behind various cab moldings and cover plates.
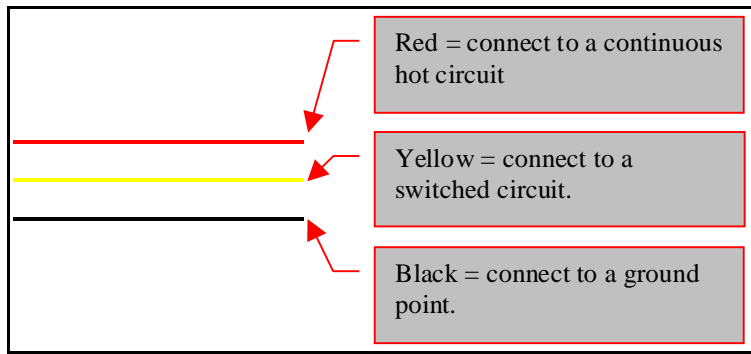
	Red = connect to a continuous hot circuit
	Yellow = connect to a switched circuit.
	Black = connect to a ground point.

> **WARNING! – Panel and cover screws can penetrate wires and cause a short circuit. When reattaching panels and covers make sure screws do not touch wires.**

2. IDENTIFY NON-SWITCHED, SWITCHED CIRCUIT, AND A GROUND. Use a test light to verify switched (with key), non-switched, and ground points.

3. CUT WIRE TO LENGTH. Be sure to leave extra wire for a service loop.

> *NOTE – GROUND WIRE may require additional length.*

4. SECURE POWER CORD TO FUSE PANEL. Use a tie wrap to attach power cord to fuse panel to prevent power cord from being pulled.

5. INSTALL INLINE FUSE TO YELLOW SWITCHED LINE. Split power cord ribbon into separate lines. Use butt connector to crimp yellow wire to mini in line fuse holder. (P/N 6116-00001) Crimp a ring terminal connector (P/N 7510-00009) to end of in line fuse holder and attach to switched power source. Insert Mini ATO 2A fuse (P/N 6140-00002) into fuse holder.

6. INSTALL INLINE FUSE TO RED CONTINUOUS HOT LINE. Use butt connector to crimp red wire to inline fuse holder. Crimp a ring terminal connector (P/N 7510-00009) to end of in line fuse holder and attach to non-switched circuit. Connect to a non-switched power source. Insert ATO 10A fuse into fuse holder.

7. CONNECT GROUND WIRE TO GROUND. Attach ring terminal connector to end of black wire connect to a ground source.

8. LOOP EXTRA SERVICE LENGTH AND TIE WRAP TO TRACTOR'S WIRE HARNESS. Example:

Freightliner cab-over fuse panel

Mini ATO fuse holder connected to Yellow wire.

Ground wire connected to ground source.

Power cord tie wrapped to fuse panel.

Yellow wire connected to switched power

Red wire connected to ATO in line fuse holder.

Extra service length looped and tie wrapped to wire harness.

Red wire connected to continuous power source.
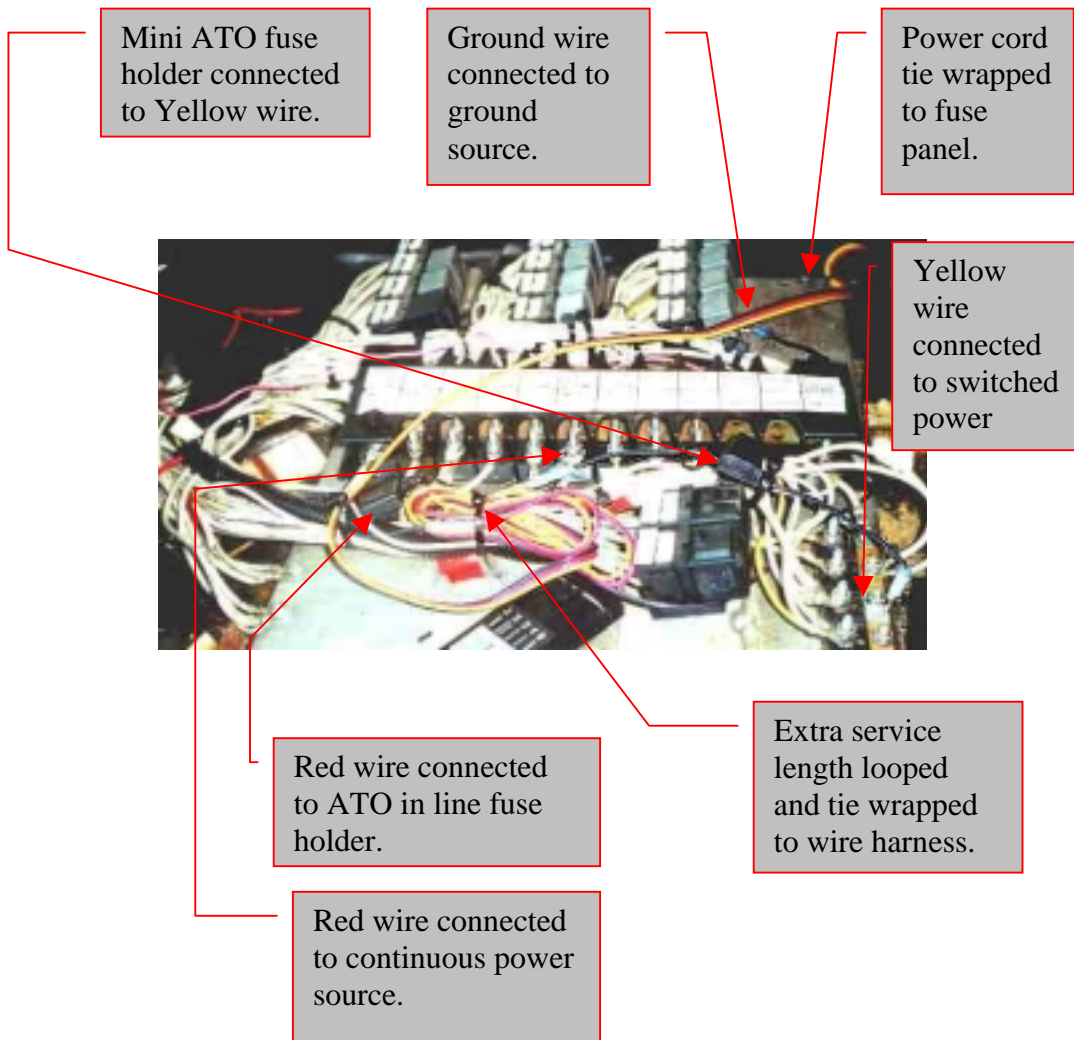
1. IDENTIFY LOCATION OF ITU. The ITU should be mounted on a vertical panel with the ITU cable attachment panel pointing either upward or away. The FM/DHF and GPS antenna cables, Power, and DT cables all should reach the ITU location.
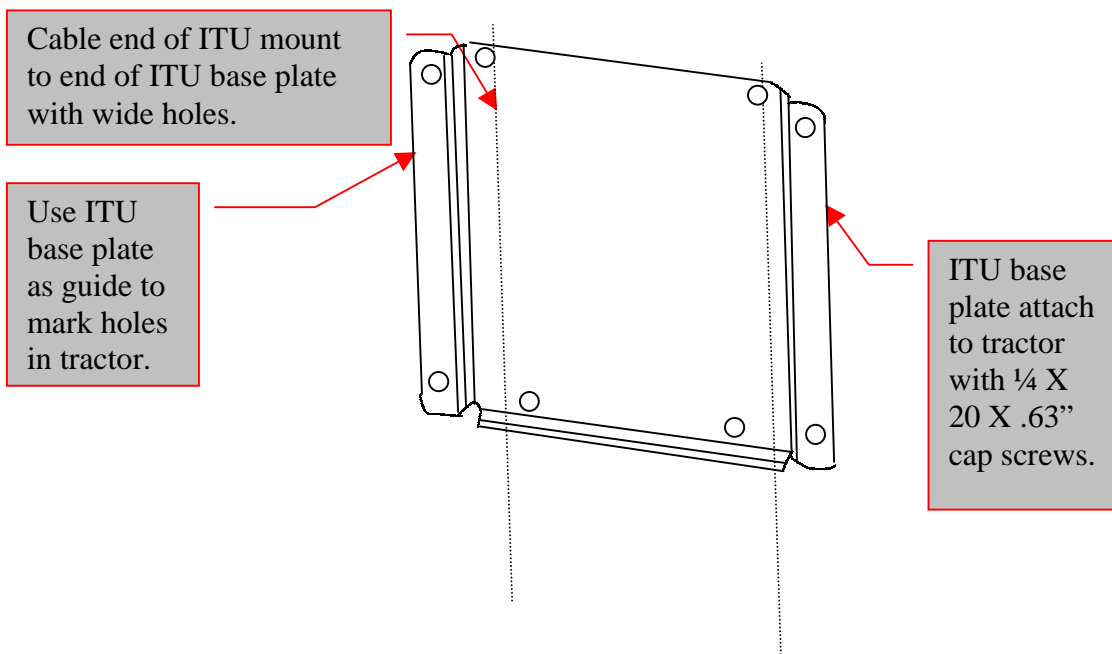
   ⚠ **CAUTION! – DO NOT INSTALL ITU flat or upside-down. Other equipment such as chains and binders lying on top of ITU can crush the unit. Moisture collects under ITU lid when mounted upside-down.**

   ⚠ **CAUTION! – ITU MUST BE ORIENTATED so the cables attach away from drivers access. This will prevent cables from becoming entangled with other equipment.**

2. INSTALL ITU BASE PLATE. Use the ITU base plate as a guide to mark rivnut

   Cable end of ITU mount to end of ITU base plate with wide holes.

   Use ITU base plate as guide to mark holes in tractor.

   ITU base plate attach to tractor with ¼ X 20 X .63" cap screws.

   holes. Center punch and 4 drill 25/64" holes. Screw ITU base plate to tractor with ¼ X 20 X .63" cap screws.

   ⇨ *NOTE – VERIFY THAT RIVNUTS MAY BE USED.   If the skin is too thick or thin use ¼ X 20 X .63 cap screws and drill ¼" hole. Use nylon lock nuts.*

   ⚠ **WARNING! – CHECK BOTH SIDES BEFORE DRILLING. Drilling into a wire could cause a fire. Drilling into an air brake line could cause brake failure.**

3. ATTACH ITU TO BASE PLATE. Screw ITU to ITU base plate with ¼ X 20 X .63" cap screws.

> ⚠ **CAUTION! – DO NOT OVER-TIGHTEN. Excessive torque will damage the ITU case. Tighten only enough to secure ITU to the base plate.**

4. ATTACH CABLES. Plug FM/DHF, GPS and Data Cables into ITU. Wait until you are ready to calibrate the DT before plugging the power cable into the ITU.

GPS coax cable connection, GPS is closest to the power connection.

FM/DHF coax cable connection, FM/DHF connection is closest to edge.

Power connection

DT connection

5. SECURE CABLES. All exposed cables must be in split tubing and secured to the tractor with tie wraps and tie wrap base plates.

DT connection

Power Connection

GPS Connection

DHF/FM Connection

DT cable secured to act as a strain relief.

Service Loop

Exposed cables in split tubing.
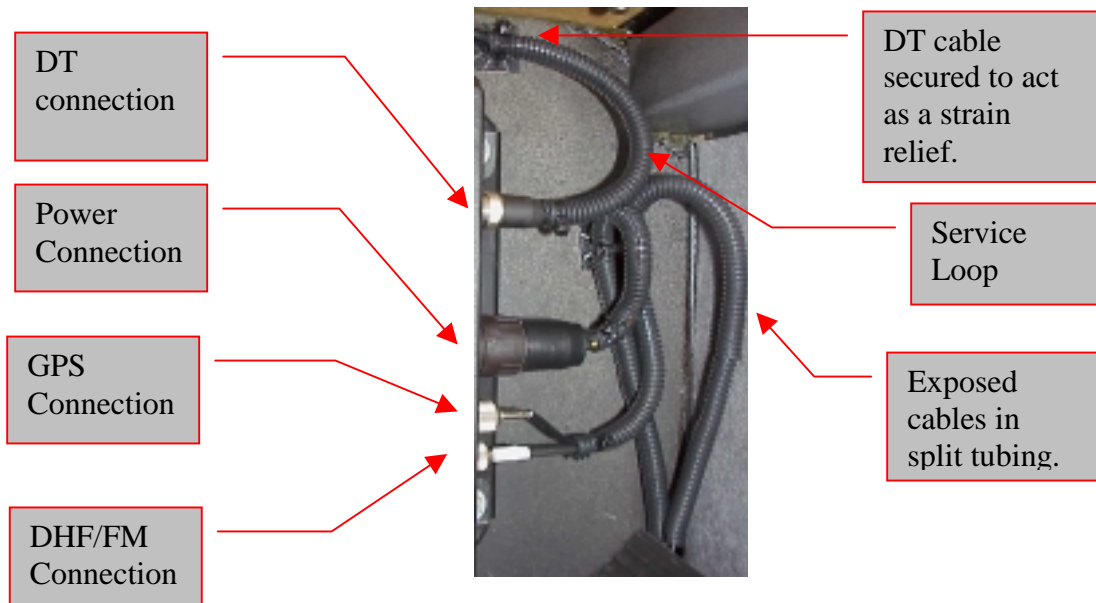
DRIVER MESSAGING SYSTEM ACTIVATION PROCESS

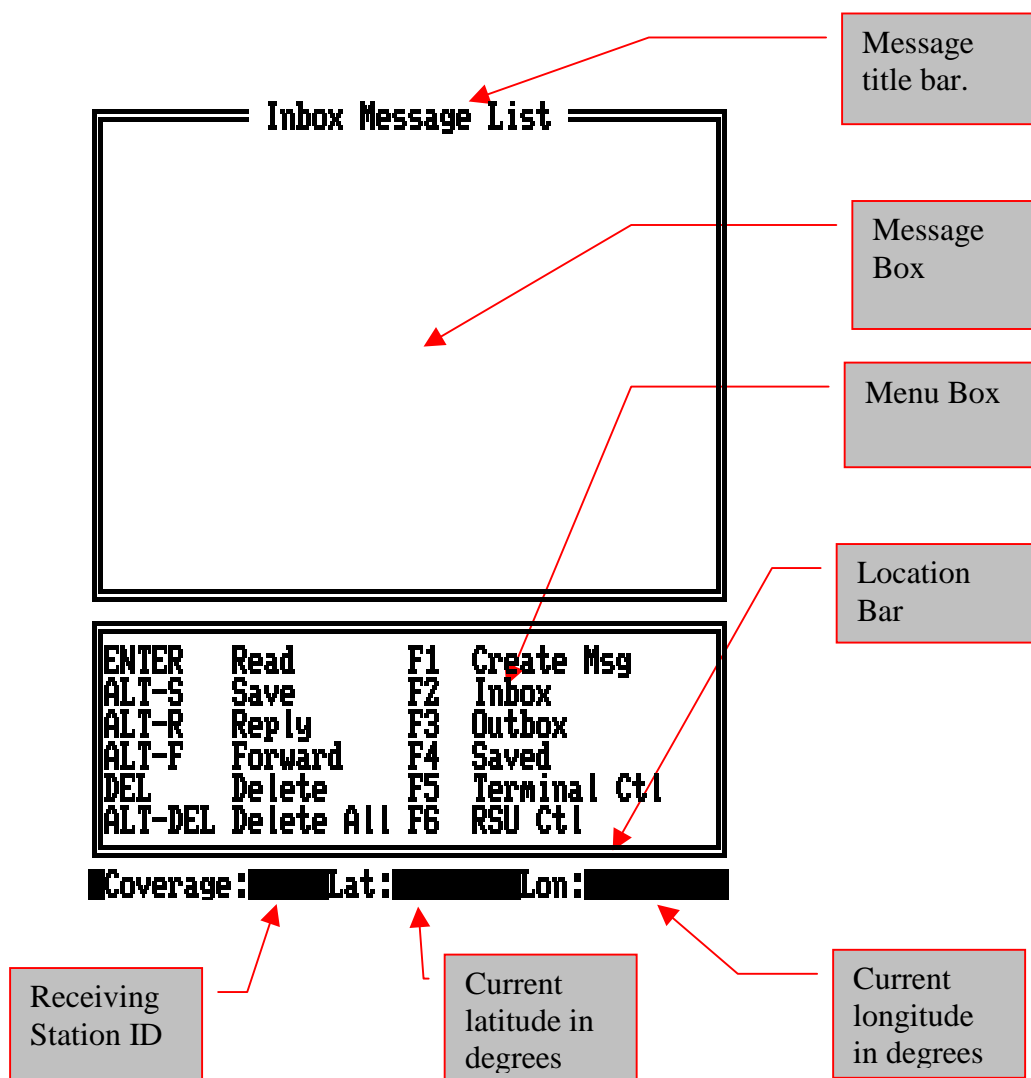The Driver Messaging System hardware is now installed. The system now needs calibration and activation. Use the following steps to calibrate and activate the Driver Messaging System:

Screen Elements

Messages are received, read, created and sent from different screens on the display screen. To increase the ease of operation each screen has common screen elements. This page shows the common screen elements.

```
========= Inbox Message List =========




ENTER    Read       F1  Create Msg
ALT-S    Save       F2  Inbox
ALT-R    Reply      F3  Outbox
ALT-F    Forward    F4  Saved
DEL      Delete     F5  Terminal Ctl
ALT-DEL  Delete All F6  RSU Ctl

Coverage:     Lat:         Lon:
```

- Message title bar.
- Message Box
- Menu Box
- Location Bar
- Receiving Station ID
- Current latitude in degrees
- Current longitude in degrees

1. MESSAGE TITLE BAR - The name of the current screen is shown here.

2. MESSAGE BOX – The message information is displayed here.

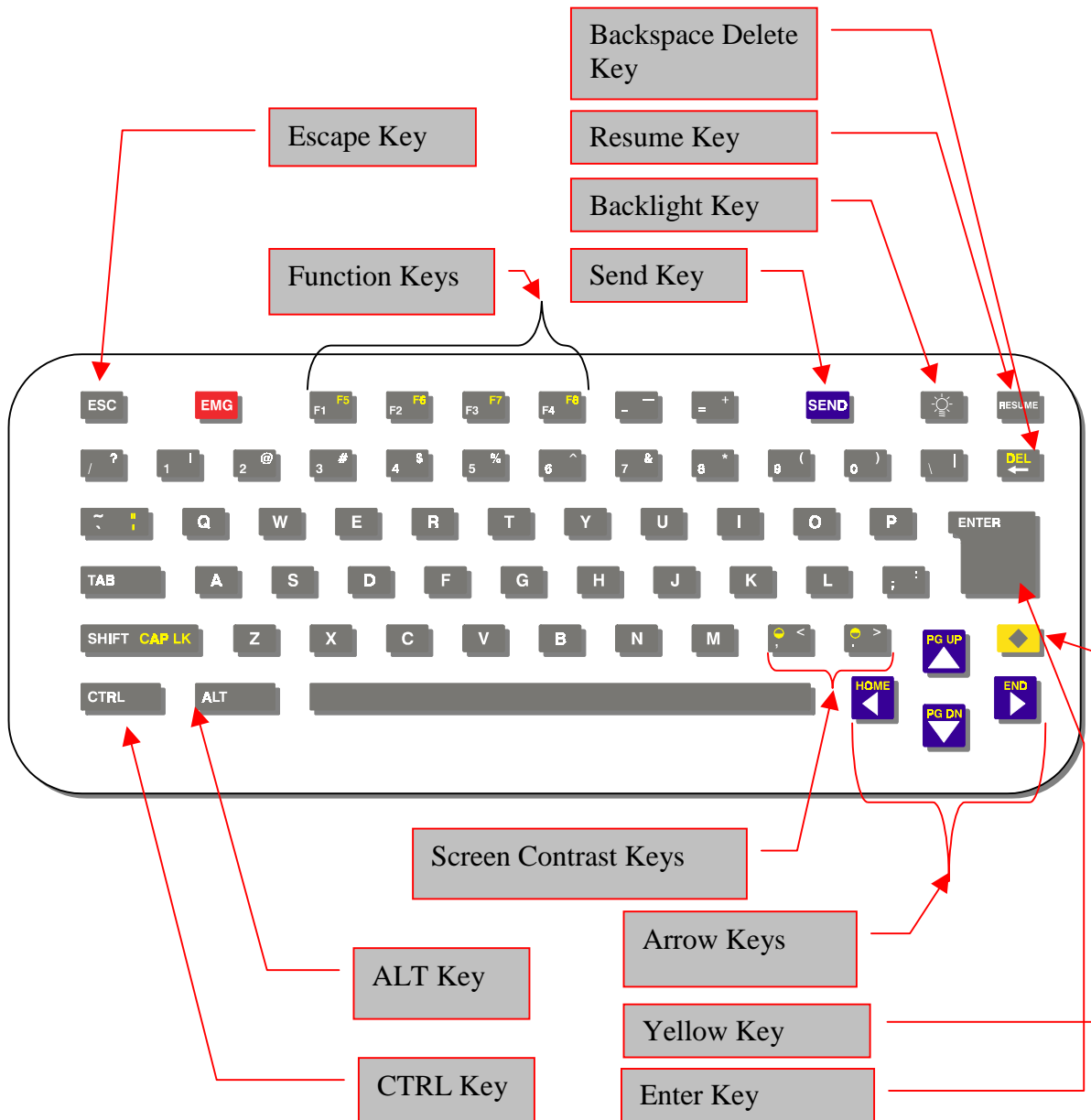3. MENU BOX – A list of the keyboard commands appear here.

4. LOCATION BAR – The current location in latitude and longitude as well as the receiving station identification codes are displayed.

> *NOTE – MOVE truck to a remote location away from buildings and other trucks prior to activating system. This ensures best possible reception.*

> *NOTE – SIMULTANEOUS KEYS, often one key must be held down while another key is pressed. In such cases, the keys are shown side-by-side like this: ALT + A. In this example, the ALT key is pressed first and held down while the A key is pressed.*

The Driver Terminal Keyboard

The Driver Terminal Keyboard is a standard layout used by most computers. For space considerations there are some multi-function keys. There are also special purpose keys not found on a standard computer keyboard. Multi-function keys have white and yellow

Backspace Delete Key

Escape Key

Resume Key

Backlight Key

Function Keys

Send Key

Screen Contrast Keys

ALT Key

Arrow Keys

CTRL Key

Yellow Key

Enter Key

characters on the key face.

ESC- Escape Key, the ESC key cancels Pop-Up Menu boxes.

F1 through F8 – Function Keys are used to go to the desired screen. A list of screens that appears in the Menu Box located below the screen box. To use F5 or higher, Yellow + (desired F Key).

SEND – Send key transmits message in create/edit screen.

☼ -   Backlight Key turns the backlight on and off.

RESUME – Resume Key turns the DT on.

← DEL - Backspace/Delete Key, while in the Create/Edit message box, moves the insertion-point one space to the left and deletes the left character. Using the Yellow Key and the Backspace Delete key deletes the character to the right of the insertion point. In the other screens the Backspace key deletes the highlighted message.

ENTER - The Enter Key is used to read the selected message or to accept selected menu command.

YELLOW – Yellow Key, is a combination key used to operate the multifunction keys. Multifunction keys appear as yellow over white with white representing the normal key function and yellow representing the function utilized by simultaneously pressing the Yellow key and the desired key.

◀ ▶ ▲ ▼ - Arrow Keys are used to move to the desired menu selection or to move the insertion point without deleting.

⊖ ⊖   - Screen Contrast Keys are used to adjust the screen contrast. The ⊖ key lightens the screen and the ⊖ key darkens the screen.   These are multifunction keys, to change the screen contrast press Yellow + [a screen contrast key]. The screen contrast can also be adjusted in the Driver Terminal Control Screen.

ALT & CTRL – Alternate and Control keys are combination keys that you hold while pressing another key in order to give a program command.

Calibration

1. CONNECT THE ITU TO THE POWER CABLE. The system will power up and the DT will default to the INBOX screen. (If the ITU is on and the DT does not come on press the **RESUME** key on keyboard.)

```
══════ RSU Control ══════
Transmitter          Receiver
Hub Msg       0   Hub Msg      24
Loc Rpt       0   Loc Rqst   6168
Cnfg Rpt   6168   Cnfg Rqst     0
FM Change     0   Net Mgt Ack   0
ACK         112   ACK           0
HF Msgs       0   Dup Msgs      0
HF Retry      0   RIF        6168
HF Queue      0   SIF           0
HF Failed     0   CRC Error  6144
Ant Failed    0   Frame Err  6168

Xmt Freq  0.000   SW Ver   00.118
                  Address       0
```

2. INITIATE THE ACTIVATION PROCESS BY PRESSING THE **YELLOW** + **F2** (**F6**)KEYS ON THE DT KEYBOARD. The Remote Subscriber Unit (RSU) screen appears.

```
ALT-U  Updt Stats   F1  Create Msg
DEL    Clear Stats  F2  Inbox
ALT-C  Calibrate    F3  Outbox
ALT-S  Send Loc     F4  Saved
ALT-L  Get Loc      F5  Terminal Ctl
                    F6  RSU Ctl
```

`Coverage:▮▮▮ Lat:▮▮▮▮ Lon:▮▮▮`

3. CALIBRATE THE SYSTEM, PRESS THE **ALT** + **C** KEYS ON THE DT KEYBOARD. The Calibration Quality Index (CQI) box appears.

```
CQI = 250              CALIBRATE


    OK                   CANCEL
```

4. PRESS ▶ (ARROW KEY) SO OK IS SELECTED, PRESS ENTER AND THE CALIBRATION PROCESS BEGINS. This may take a few minutes.

```
═ Characterization – IN PROGRESS ═
```

5. WHEN CALIBRATION IS COMPLETE the Calibration Complete Screen will appear. Record the CQI number on the Installation – Test Data Sheet.

6. PRESS **ESC** KEY ON THE DT KEYBOARD to remove the Calibration Complete Screen and the RSU Control Screen remains.

7. PRESS THE **DEL** key to clear statistics.

DT Activation

1. PRESS THE **ALT** + **A** KEY on the DT keyboard **while in the RSU Control Screen** to begin the DT Remote Activation Sequence and the Unit Activation Block Screen will appear. If you are not in the RSU control screen press the **YELLOW** + **F2** keys.

> *NOTE – THE* **ALT** + **A** *is not an option that appears on the RSU screen menu. This is to prevent non-trained personnel from DT activation screen.*

2. USE INFORMATION FROM THE SUPPLIED CUSTOMER PROFILE and Installer Information enter:

   - NAME - This is the name of installer assigned during training. Press **TAB** key.

   - PASSWORD - This is the installer's password assigned during training. Press **TAB** key.

   - CUSTOMER # - This is the number assigned to the fleet from the Customer Profile Sheet. Press **TAB** key.

   - ITU SERIAL # - This is the number assigned to the fleet from the Customer Profile Sheet and is also found on the ITU. Type the ITU serial number exactly as it appears including the DHF and -. Example: Type DHF-001231 and press **TAB**. Be sure the ITU serial number is recorded in the Installation – Test Data Sheet.

   - UNIT NAME - This is the name designated by the fleet dispatcher.

3. PRESS THE **ENTER** KEY and the screen will show the Activation Success screen.
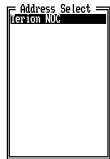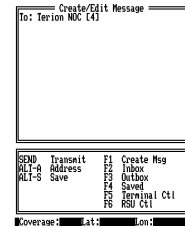
<p align="center">**-OR-**</p>

   You will receive a diagnostic message showing failure, if so, modify or correct problem.

4. PRESS **F2** KEY and the screen will return to the Inbox.

Address Entry

At this time the Driver Messaging System is now activated. Terion is the only address messages can be sent to and received from. You will now need to add the customer's dispatchers and other addresses.

```
========= Create/Edit Message =======
To: Terion NOC [4]




SEND   Transmit   F1  Create Msg
ALT-A  Address    F2  Inbox
ALT-S  Save       F3  Outbox
                  F4  Saved
                  F5  Terminal Ctl
                  F6  RSU Ctl
Coverage:    Lat:    Lon:
```

1. PRESS **F1** and the Create/Edit Message screen appears.

```
== Address Select ==
Terion NOC
```

2. PRESS **ALT** + **A** and the Address Select pop up menu appears.

3. PRESS **F8** (**YELLOW** + **F4**) and the Add Address pop up form appears.

4. TYPE THE ADDRESS NAME ON THE FIRST LINE. This is the name that will appear on address in the Create/Edit Message screen and Address Select pop up menu.

```
======= Add Address ======
Description:
Address    :
```
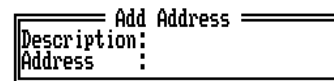
5. PRESS THE **TAB** KEY AND TYPE THE ADDRESS NUMBER. This is the address the network computer uses to find the message recipient. It is a number included in the Customer Profile Information.

```
======= Add Address ======
Description:Main Dispatch
Address    :23456
```

```
== Address Select ==
Terion NOC
Main Dispatch
```

6. PRESS THE **ENTER** KEY and the Address Select Menu appears with the new address name in the menu.

7. SEND A TEST MESSAGE TO THE NEW ADDRESS. Confirm the message was delivered to the correct address. *(Please see Create/Edit message.)*

8. ADD ANY SECONDARY ADDRESS requested by the customer.
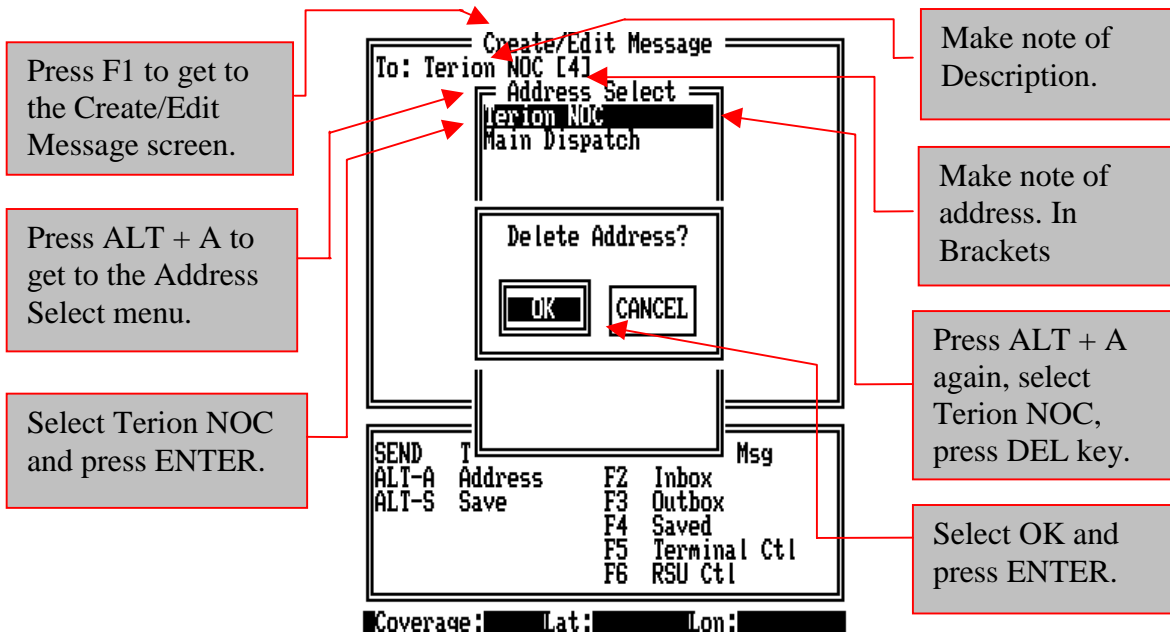
Set Default Address

The first address on the Address Select pop up menu is the default address. The DT remembers the last address a message was sent to, however, should there be a loss of power or the DT is turned off, the DT will use the default address. You will need to make the main dispatch address the first on the list.

1. PRESS THE **F1** THEN **ALT** + **A** to return the Address Select pop up menu.

2. SELECT THE TERION NOC address and press the **ENTER** key.

3. MAKE A CAREFUL NOTE OF THE ADDRESS DESCRIPTION AND NUMBER; you will need to reenter this address later.

4. PRESS THE **ALT** + **A** again and the Address Select pop up menu returns.

5. SELECT THE TERION NOC address and press the **DEL** key and the Delete address box appears.

6. SELECT OK WITH AN ARROW   KEY AND PRESS THE ENTER KEY. The Address Select pop up menu appears without Terion NOC as an address.

7. PRESS **YELLOW** + **F4** AND REENTER THE TERION NOC ADDRESS. The Terion NOC address is now the last address.

Press F1 to get to the Create/Edit Message screen.

Press ALT + A to get to the Address Select menu.

Select Terion NOC and press ENTER.

Make note of Description.

Make note of address. In Brackets

Press ALT + A again, select Terion NOC, press DEL key.

Select OK and press ENTER.

```
═══ Create/Edit Message ═══
To: Terion NOC [4]
    ═ Address Select ═
    Terion NOC
    Main Dispatch


        Delete Address?

        ┌──┐  ┌──────┐
        │OK│  │CANCEL│
        └──┘  └──────┘




SEND    T                    Msg
ALT-A  Address      F2   Inbox
ALT-S  Save         F3   Outbox
                    F4   Saved
                    F5   Terminal Ctl
                    F6   RSU Ctl
■Coverage:■■■■Lat:■■■■■Lon:■■■■
```
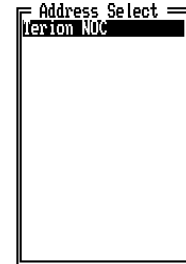
Create/Edit Message

1. TO CREATE AND SEND MESSAGES PRESS THE F1 KEY. The Create/Edit command box appears.

2. AT ANY TIME YOU WISH TO LEAVE THE CREATE/EDIT MESSAGE SCREEN PRESS ANOTHER **F** KEY. The Cancel Edit box appears. Select OK and **ENTER** and the screen will change. Select Cancel and the screen will return to Create/Edit.

3. IF THE ADDRESS ON THE TOP OF THE BOX IS CORRECT TYPE YOUR MESSAGE. Otherwise, simultaneously press **ALT** + **A,** and the Address Select box appears. In the Address Select box use the arrow keys to select the desired address and press enter to return to the Create/Edit screen with the new address on the To line.

4. IN THE CREATE/EDIT SCREEN TYPE YOUR MESSAGE. When the message is complete press the send button.

   NOTE – There is a 41-character limit to outbound messages. A character includes a space.

   Address to where message is sent

   Message

   Cursor (insertion point)
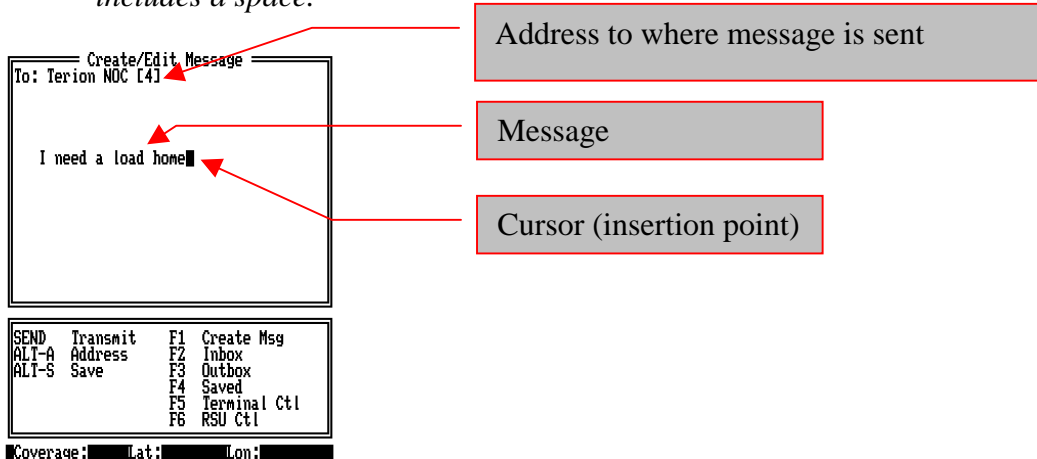
5. THE SEND MESSAGE BOX APPEARS. With the OK box selected press **Enter** key and the Outbox Message List screen appear. If the selection is not what you want to do then press an arrow key to select the correct command.
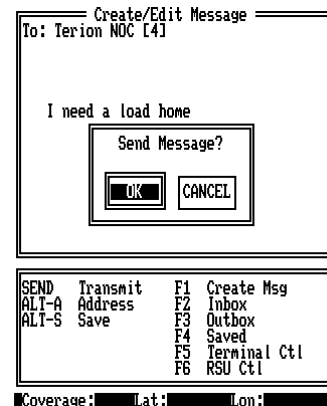
TROUBLE SHOOTING GUIDE

The following is a list of common installation and initialization problems and solutions:

Problem	Solution
Driver Terminal	
Power up – screen is blank or flashing	Press the RESET switch located next to the 15-pin power/com port connector. If the DT does not boot, check the input power. If power is supplied to the DT and it still does not boot, send the unit in for repair.
Soft boot (CTRL + ALT + + YELLOW + DEL) does not work	Press the RESET switch located next to the 15-pin power/com port connector. If the DT does not boot, check the input power. If power is supplied to the DT and it still does not boot, send the unit in for repair.
When pressing the RESET switch, the system crashes and does not com on again	The DT needs to be sent in for repair.
Communication port doesn't work	Make sure you have the correct communication cable securely connected to the serial port. Soft boot the system CTRL + ALT + YELLOW + DEL.

Attempt to establish communication once again.

Make sure the device your are trying to communicate with (ITU) is working properly.

If the above steps fail, the DT probable needs to be sent in for repair. |
| System shut down when the backlight is turned on | Check the power going to the DT. Make sure that there is enough current available to drive the backlight. (Current consumption with the backlight on is approximately 450 ma) |
| No sound from the beeper | Make sure that the beeper is turned on. The beeper is controlled with BIOS calls and it may be a problem with how the application program is implemented. Try resetting the DT. If the above fails, send the DT in for repairs. |

Installation -Test Data Sheet

Fax when complete to:
Terion, Inc. at 407-752-0294
Attention: Ron Buanno

Installation Date: _____

Customer Name: _____

Customer #: _____

Customer Password: _____

Customer Address _____

_____

_____

_____

Installer Name: _____

Subscriber Address: _____

ITU Serial Number: _____

DT Serial Number: _____

Reported CQI Number: _____

FM Coverage – PI code: _____

Latitude: _____   Longitude: _____