User Guide

ST-550
Radio Service Tracker

OEM DATA DELIVERY
A Division of OEM Controls, Inc.

10 Controls Drive, Shelton CT 06484
203.929.8431
www.oemdd.com

WARNING: It is the purchaser's responsibility to determine the suitability of any OEM Controls, Inc. product for an intended application and to ensure that it is installed and guarded in accordance with all federal, state, local and private safety and health regulations, codes and standards.

We can advise you of the various features that are available, but we believe that our customer's engineering departments should be qualified experts in their own product field. If the product will be used in a safety critical application, the customer must undertake appropriate testing and evaluation to prevent injury to the ultimate user.

Should you have any questions or if any of the above warning is unclear, please contact OEM Controls, Inc. at 10 Controls Drive, Shelton, CT, 06484, FAX: 203.929.3867, TEL: 203.929.8431

WARNING: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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Document Revision History

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About this guide:
This guide provides basic instruction on the installation and use of the ST-550

About the Cover

Shown on the cover are two (2) versions of the ST-550 Service Tracker supported by OEM Data Delivery, Inc. The ST-550 featured on the cover, (center) is an (I) version with an internal antenna. (ST-550 I) Also pictured is the ST-550 (pictured lower right and still supported) with an external antenna. Both units are now furnished with a pigtail cable (not shown) and identified by P/N ST-550 IC- Internal antenna and cable and P/N ST-550 C External antenna and cable.

Overview of the ST-550

This document will serve the user of this equipment as a Manual of Operations and basic troubleshooting guide, thereby allowing for the proper installation and use of the ST-550 Service Tracker.

This section provides an overview of the ST-550 Service Tracker System.

Figure 1.- ST-550 Service Tracker

Features

- Radio Terminal Downloader
- Travel logs are logged every (6) minutes while the vehicle is in motion
- Work/Idle/Run/Count and Duration logs recorded.
- Cumulative Machine Hours (CMH) compiled.
- 7 User Programmable Service Alerts.
- Power conservation (Sleep State).

The Service Tracker (ST-550) is a radio device that compiles and stores work/ idle, run and maintenance logs; connectivity is accomplished in RS232 and USB format via a secure radio link. The ST-550 does not support IrDA communication.

In the operation mode, an ST-550 mounted on the dash board or on the top of the vehicle, has been logging in CMH (*Cumulative Machine Hours*), and compiling maintenance service times on the vehicle. Each maintenance procedure is assigned a Service Tracker number (up to seven different procedures can be tracked). The maintenance issues are displayed as service alerts. Each service alert has a designated identifier number (one through seven) that display on the "window eye" of the ST-550. The number indicates that a particular maintenance procedure should be completed. When the service alert is satisfied the counter is reset with any supporting PDA (*Personal Data Assistant*).

Retrieving the ST-550 data, such as the profile, service alerts, work/ idle/ run/ count/duration logs is accomplished with a supporting PDA, or by using the OEM Data Delivery manufactured mobile CPU called GoPOD. The GoPOD is configured with 512 MB Memory, 1 GB CF, Windows XP Embedded for ease of use. The housing is designed to be installed on a lube or fuel truck, low boy truck, mechanics' truck or supervisor's vehicle. The GoPOD is equipped with a GPS antenna, and a radio antenna. Information is collected passively, from the ST-550 and "hands-free". GPS coordinates are automatically stamped into the record as hourly data is collected. Information is collected via drive-by, within a range of 300 ft. line of site, and transmitted via secure radio link.

Data is then downloaded into a web report each night, and made available on a password-protected website. Information easily integrates with any major back office management system. There is never an interruption of equipment operation.

A supporting type PDA will also allow the user to update (modify) the real time clock, as well as capturing the Work/Idle/Run, Count/Duration logs.

For systems without the GoPOD CPU: Use an external GPS antenna, if available, in the proximity of the communication between the (ST-550) and the servicing equipment, to gather location information.

When used with the OEM Data delivery Vibration Sensor, the service tracker can differentiate the subtle differences in engine vibration, between run/work and idle, and compile a report, for the user, on where fuel consumption occurs verses work output.

ST-550 Assembly with a Vibration Sensor Shown

OEM recommends use of the Vibration Sensor (ST-103) an OEM Controls, Inc. product, for accuracy in reading work and idle times and for ease of installation.

If not used the OEM wiring supplied with the service tracker must be connected to the vehicle alternator.

Cable shown is supplied for Service Trackers with the Vibration Sensor option.

Figure 2.- ST-550IC Assembly with Vibration Sensor

ST-550 ASSEMBLY With a Vibration Sensor			
PIN #	**Description**	**OEM Part Number**	**Qty**
1	SERVICE TRACKER ST-550	ST-550IC	**X**
2	MAIN CABLE – SUPPLIED BY OEM	STWH-100A	**1**
3	VIBRATION SENSOR-Optional	ST-103A	**1**

Technical Specifications

ST-550IC TECHNICAL SPECFICATIONS	
ITEM	**DESCRIPTION**
Material	Zinc IP67
Mounting Hardware	8-32 x 3/4 (recommended)
Manual Interface	WAKE Push Button CH. 2 – Calibrating and radio channel switch during fuel mode. CH. 1 – Diagnostic
Display	7 Segment Display for alarms, communication diagnostics, fuel mode, radio GPRS, and connection status.
Real Time Clock	Date (+)Time Stamped Data
Operating Voltage	12VDC to 24VDC Range: 8-32v
Harness Power	(8 – 32 v DC), ground, ignition, 6 digital inputs, 2 digital outputs (1A, Max)
Data Logs	2 optically isolated digital inputs. 4 standard digital inputs
Memory	4K bytes of RAM, 64K bytes of ROM, no external EEPROM
Data Format	Comma Separated Value (CSV) Extensible Markup Language (XML), Open Database Connectivity (OBDC),
Storage	Up to 34 days of saved history for each Idle/Work/ Run/ Count/ Duration log.
Environmental Temperature	-40°C +70°C
Radio	802.15.4 physical layer, normal operating frequency (240.5 MHz)
Antenna	2.4GHz Internally mounted.
Communication interfaces	Radio, RS 232 serial and USB. The primary or the master devices mode of operation is radio mode. It does not support IrDA communication. In the radio mode the primary initiates the communication. The primary receives tokens from a PC/ PDA command interface.
Warranty	Standard 1 year

Figure 3.- Table of Technical Specifications

ST-550 Outline Dimensions and Interface Connectors

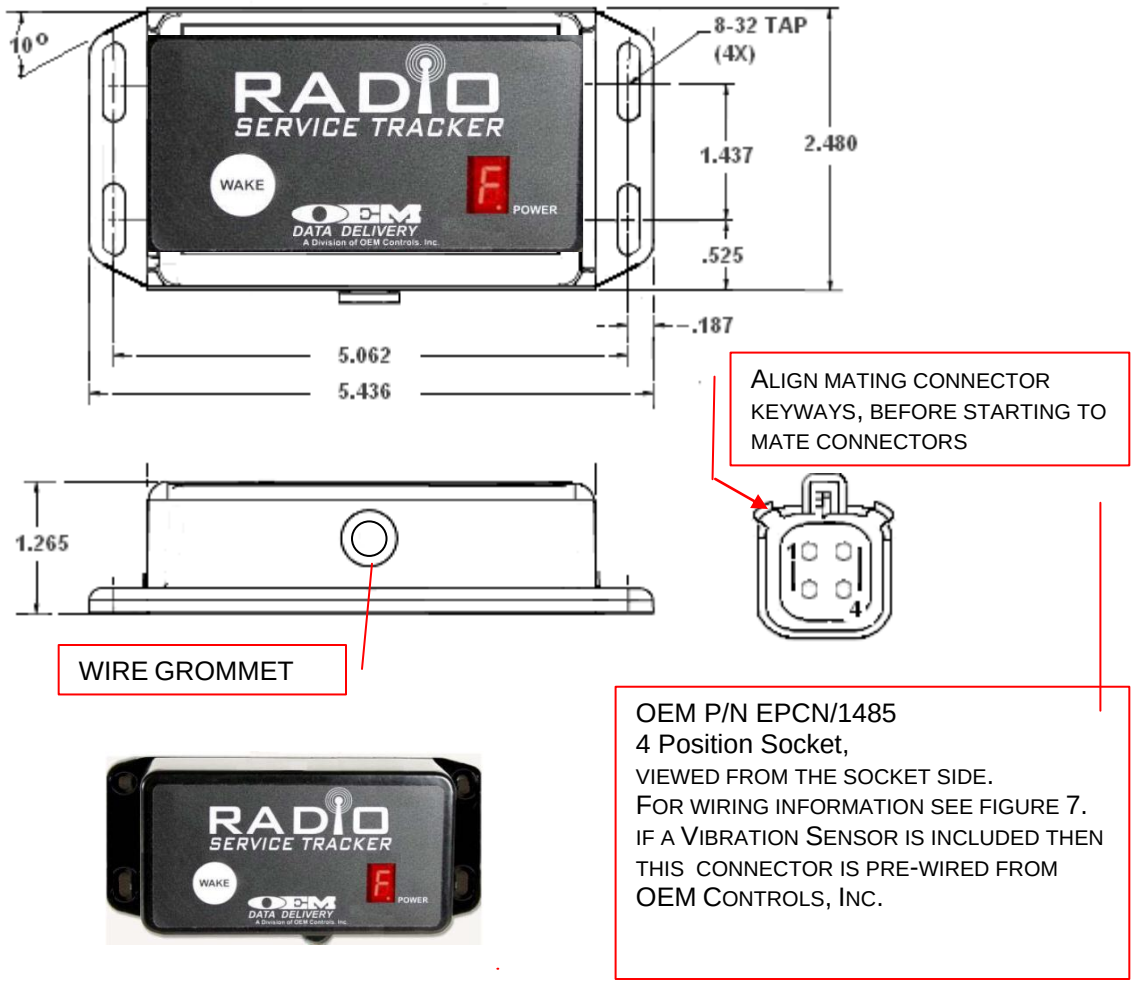


Figure 4.- ST-550 IC Outline and Dimensions

Note:	All dimensions are in inches.

ST-550 Cables with Vibration Sensor

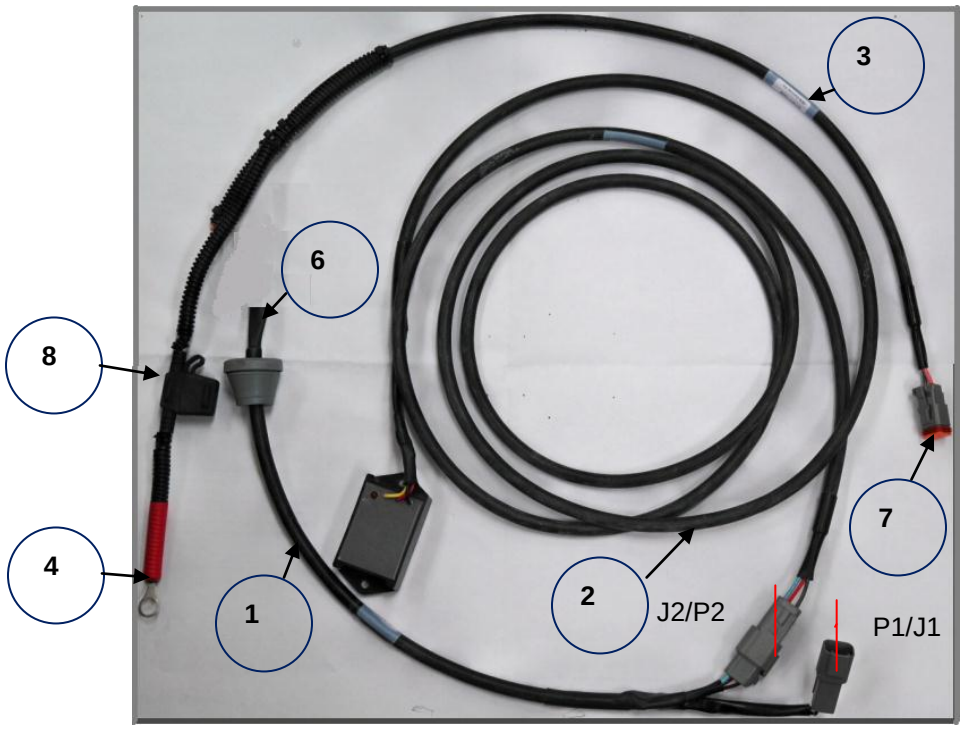


Figure 5.- ST-550 Field Cables with a Vibration Sensor

STWH-200 CABLE HARNESSES for the ST-550 WITH a VIBRATION SENSOR			
ITEM	DESCRIPTION	OEM P/N	CONNECTION
1	ST-550 PIGTAIL CABLE	STWH-200A	ST-550 TO P1 AND J2
2	VIBRATION SENSOR CABLE	STWH-103A-9FT	P2/J2 to VIBRATION SENSOR
3	BATTERY CABLE	STWH-100B	P1/J1 To BATTERY
4	RING TONGUE NON-INSULATED	EPWT/915	BATTERY TO J1/P1
5	HEAT SHRINK 1/8 X 1/16	EPSU/706	
6	ST-550IC OEM SUPPLIED AND PRE-WIRED TO INTERNAL ELECTRONICS	ST-550IC	CABLE CONNECTED TO ST-550 WITH PROVISIONS FOR VIBRATION SENSOR CONNECTIONS
7	AMP PINS (MALE-FEMALE)	EPWT/858	For ALL CONNECTORS
8	FUSE (SEE FUSE HOLDER)	3 OR 5 AMP	INSTALL IN FUSE HOLDER

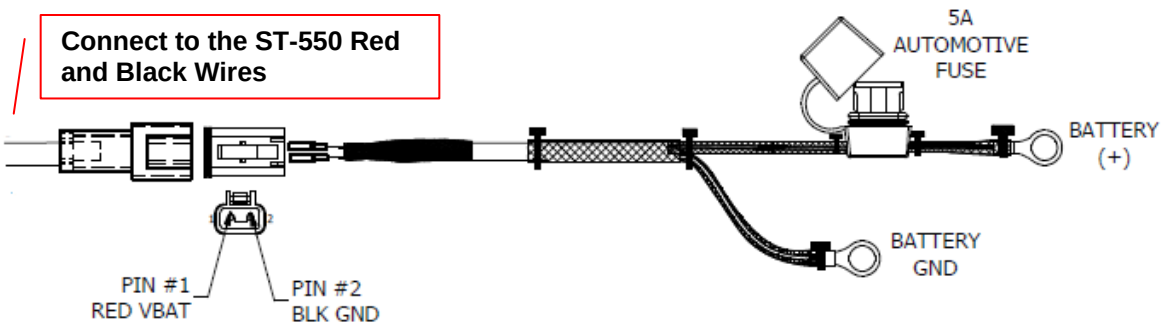


Figure 6.- ST-550 OEM Manufactured Battery Cable-Optional

Field Wiring (Supplied) for the ST-550 W/O a Vibration Sensor

ITEM	DESCRIPTION	OEM P/N	CONNECTION
1	ST-550C	C18694	C18694 EPLB/1080
2	CONTACTS (5) FEMALE PINS	EPWT/858	
3	RING TONGUE	EPWT/915	
4	HEAT SHRINK 1/8 X 1/16	EPSU/706	
5	WIRE- RED 20/19 AWG	EPW8/252	POWER LINE BATTERY (+) TO J1-1,2
6	WIRE- YELLOW 20/19 AWG	EPW8/256	FROM ALTERNATOR (+) 12V
7	WIRE- GREEN 20/19 AWG	EPW8/235	CHASSIS GROUND
8	WIRE- GREEN 20/19 AWG	EPW8/255	MASTER SWITCH
9	WIRE- BLACK 20/19 AWG	EPW8/258	POWER LINE BATTERY (-) AND MASTER SWITCH

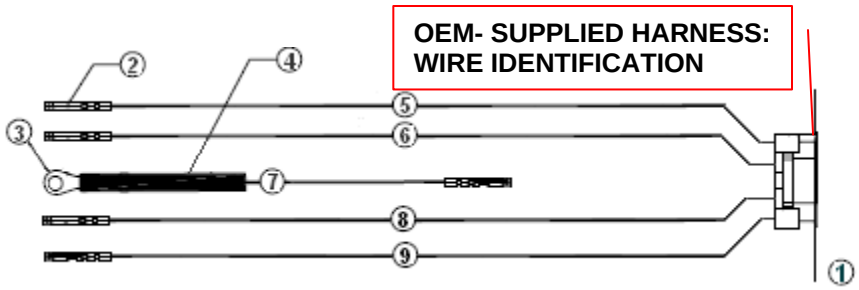


Figure 7.- ST-550 Field Wiring without a Vibration Sensor using the Alternator Output

ST-550 Wiring Diagram Options

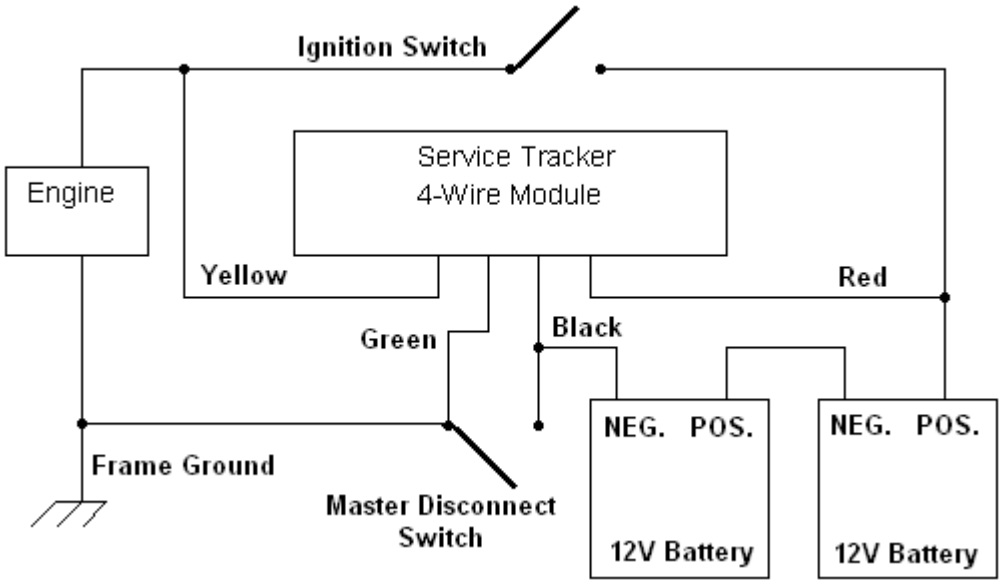


Figure 8.- ST-550 Wiring Diagram W/O the Vibration Sensor Option

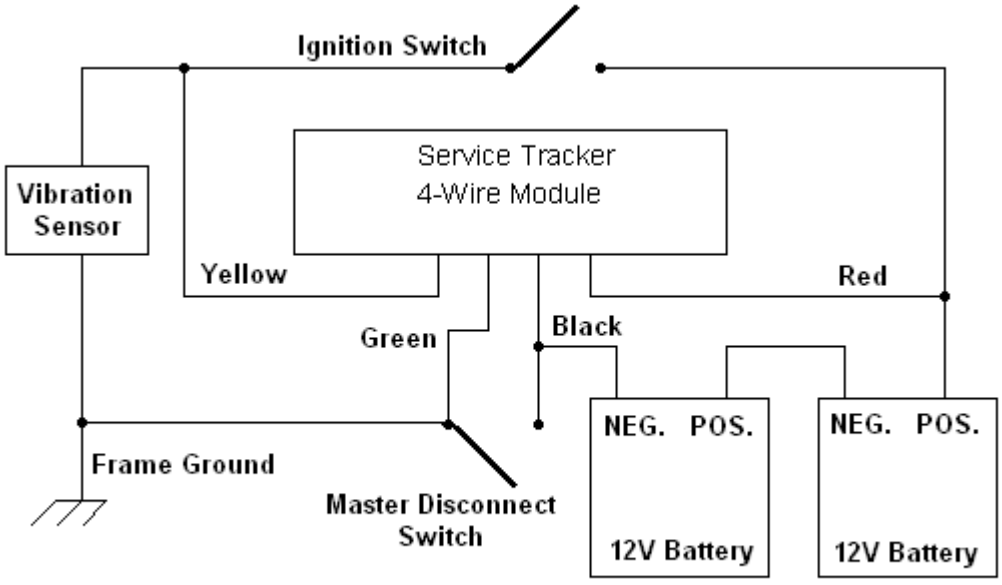


Figure 9.- ST-550 Wiring Diagram with the Vibration Sensor Option

Installation Procedures

How to… Correctly install the ST-550 (Radio Service Tracker) with the Engine Vibration Sensor and Battery Harness.

Before Installing:

- Check the machine frame voltage (e.g. positive or negative ground). The ST-550 operates with a negative ground.
- Installing the ST-550 harness: Be aware of moving parts, provide adequate slack for wires around moving parts, then cable tie all wiring. Do not have unsecured or hanging wires.
- When mounting the Service Tracker, beware of compartments that open; *Example:* Where a radiator assembly lifts up, as in a bob cat or other skid steers. Choosing a secure location will prevent damaging the ST-900.
- Before drilling check for obstructions and sensitive equipment (*e.g. radiators, hydraulic tanks, fuse boxes etc.*).

Record the **ST-550 SERIAL NUMBER,** located on the side of the Service Tracker, and the **MACHINE NUMBER** that you are installing the Service Tracker on, for reference purposes. This information must be reported back to OEM Data Delivery for tracking purposes.

Installing the ST-550

1. Turn off the engine and the master switch.
2. Visualize how to run the wires from the battery box and the engine to the ST-550 Service Tracker.

Not recommended: Mounting the ST-550 in an enclosed environment such as a battery box, metal engine bays, and closed cabs.

3. Mount the ST-550 on a flat surface with the internal antenna pointed upward and secure the enclosure using (4) four self- tapping screws.

4. Once the ST-550 is mounted, drill a hole (3) three inches below the ST-550, and (15/16 inches) in diameter.
5. Pull the pigtail harness from the battery and vibration sensor through this hole. This will protect the harness from the elements and road hazards.
6. Plug the connector (J1) from the pigtail STWH/200A into the ST-550 and push the two cables through the 15/16 inch drilled hole.

Plug the drilled hole with the rubber grommet attached to the harness.

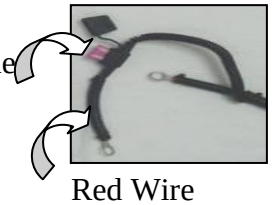
If the ST-550 comes equipped with a Green ground wire

7. Connect the ring terminal **"GREEN"** wire to a chassis ground. (e.g., frame, body, engine or frame side of master switch).

NOTE: ST-550's with a Vibration Sensor option will Not have a chassis ground ring terminal.

The Battery Cable

1. Connect the battery harness ring terminal "RED" wire to the battery positive 12VDC or 24VDC post.
2. Connect the battery harness ring terminal "BLACK" wire to the ground post on the battery.
3. Run the battery cable back to the ST-550 and connect it to the pigtail (supplied by OEM, See Figure 5).
4. Put a 3 or 5 Amp Fuse (supplied by OEM) in the fuse holder and close the cap. The window eye light should be blinking on the ST-550.
5. The ST-550 now has power.


Red Wire

6. Only if you're Not using a Vibration Sensor, you will need to connect the Yellow wire to a positive +12v or +24v power source that ONLY has power while the machine is running (use Alternator "R" DC terminal, to get both work and idle reading inputs if available). OEM recommends use of the Vibration Sensor (ST-103) an OEM Controls, Inc. product, for accuracy in reading work and idle times and for ease of installation.

   Only if you're Not using a Vibration Sensor, You will need at least 7.0 volts "Motor Run" voltage when you connect to the Alternator with the yellow wire. If the voltage source is adequate (Service Tracker will start counting hours).

7. Secure the harness using cable-ties, leaving adequate slack in the wires.

Mobile radios and high power AC equipment or transmission lines are potential sources of interference. If interference is a problem a shielded cable which is connected to chassis ground is advised. Contact OEM Data Delivery for further assistance.

Installing the Vibration Sensor

Warning: This installation should not be attempted while the engine is running.

1. Find a smooth surface on the engine block away from any excessive heat source. The vibration sensor must be securely mounted perpendicular to the engine crankshaft, or parallel to the belts. A good location is the alternator bracket or some other belt-driven accessory bracket. Best results will be obtained when the two mounting holes sit on a horizontal plane. The sensor must be mounted on the engine side of the engine mounts (not on the chassis or frame).

2. Secure the Vibration Sensor using cable-ties.
3. Run the Vibration Sensor cable back to the ST-550, and plug the supplied connector into the harness of the ST-550. (See Item 2 in Figure 5).
4. Using Ty-wraps secure the harness, giving adequate slack in the wires. Be sure to keep the wires away from exhausts and moving parts. Do not block filters or routinely serviced parts.

Calibrating the ST-550

Step 1: Start the engine and keep it idling. Once the engine is warmed:

Step 2: **Press & Hold** the (Wake) button on Service Tracker. (10 to 15 seconds).

"Window Box Eye" display will cycle from  to  to 

Note: If  is not visible on the display during calibration, check the wire connections to the Vibration Sensor or to the vehicle alternator and ground.

Otherwise:
Once the  disappears, two (2)  bars should display in the "Window Box Eye".

Rev the engine. Three (3) bars will display in the Window Box Eye.
Bring the engine back to the idle position, two (2) bars will display.

- The ST-550 will now start generating run logs.

Upon Completion

1. Observe the Radio Service Tracker (ST-550)
2. If the alert light flashes on a one second interval, then it is counting hours.
3. If the alert light flashes on a three second interval, then it is Not counting hours. This indicates that the ST-103 Vibration Sensor is incorrectly positioned or not functioning.
4. If the bars do not change from two (2) bars to three (3), move the Vibration Sensor until they display.
5. To obtain Idle and Work Logs, if a Vibration Sensor is Not used, a pulsed output from the alternator is required.

Note: If alternator does not have a pulsed (RPM) output, the ST-550 display will cycle F to C to n (No pulses) to F again.

In this case there will be a Run Log generated. *Figure 10.- Seven Segment display*

Window Box Displays with Functions			
Display	**Definition**	**Display**	**Definition**
C	CALIBRATION WHEN F1 IS DEPRESSED FOR (10) SECONDS	n	NO PULSES DETECTED NO IDLE/WORK LOGS TRACKED
1 to 7	SERVICE ALARMS DUE, TURNED OFF BY DEFAULT	U	UN-CALIBRATED – IGNITION ON PERFORM CALIBRATION STEPS LISTED ABOVE.
E	GPRS CELLULAR ERROR (NOT NETWORKED)	F	FUEL MODE – CHANNEL 2 OPERATING FREQUENCY – 2410 MHZ WHEN "F1" IS DEPRESSED FOR ABOUT 3 SECONDS
G	GPS ERROR-NO POWER, A MALFUNCTION, NO LOCATION	8	RADIO/SERIAL DOWNLOADER – RADIO OPERATING CHANNEL 6
d	ENTERING DIAGNOSTIC MODE - ACTIVE AFTER UNIT IS CALIBRATED- THEN ERROR CODES DISPLAYED	-	ENGINE IDLING - CALIBRATION COMPLETE
O	GPS OR GPRS COMMUNICATION STATUS IS GOOD	=	ENGINE WORKING - CALIBRATION COMPLETE

Trouble Shooting after the Installation of ST-550 W/O a Vibration Sensor

1. If the motor is OFF, and Master Switch is ON and there is a *fast-pulse*** - check the Yellow wire connection point. Verify the voltage between the YELLOW and GREEN wire is less than (6) VDC.
2. If the motor is ON, and Master Switch is ON, and there is a *slow-pulse** - check the Yellow or Green wire connections for breaks.

   If the motor is OFF, and the Master Switch is OFF, and there is *fast-pulse*** - separate the Green and Black wires. Connect the Green wire to a chassis ground.
3. If the Service Tracker will not turn on or wake, check the Red and Black wires for breaks and correct installation. Check for fuse failure at the Red Wire attachment point to the battery. Using a multi-meter check for 12 or 24v across the Red and Black wires.
4. **Important:** In using an external battery to "jump" power into the system and with the coils frame grounded, be sure to connect the external battery negative to the frame of the vehicle being jumped. This is to keep the external battery ground and the vehicle frame at the same ground potential.

Pass or Fail Counting Hours Test

Observe the ST-550 at Turn ON

- If the alert light flashes, - on a one (1) second interval, then it is counting hours.
- If the alert light flashes, - on a (3) three second interval, then it is NOT counting hours.

***** Fast Pulse - : LED flashes once every one (1) seconds***

**** Slow Pulse - : LED flashes once every three (3) seconds***

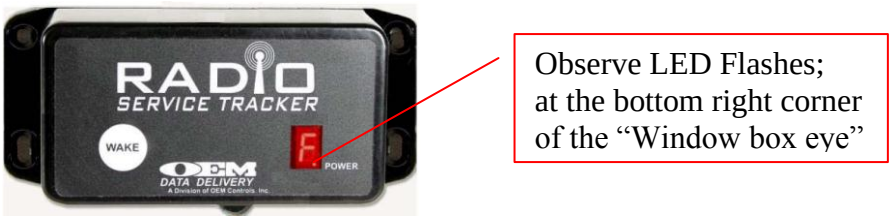


Figure 11.- ST-550 Fast and Slow Pulse Display

Setting the ST-550 Radio Program

Record the following information:

1. CMH- Cumulative Machine Hours.
2. Service tags (if applicable)
3. Serial number of this ST-550.
4. Equipment number.

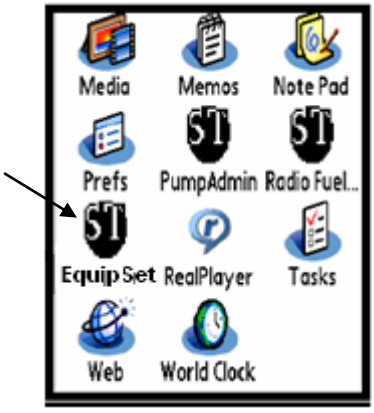
Figure 12.- Setting the ST-550 Radio Tracker Program

Starting the Radio Program on the Supporting PDA

Step 1. Plug in the Primary Antenna to the PDA.

Step 2. On the PDA press the Power Button

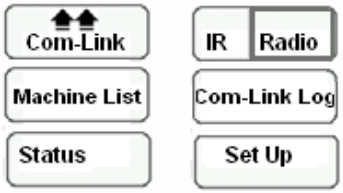
Step 3. Tap on Radio Tracker Icon, for the List of Programs.



Step 4. Tap **Equip**ment Set Up icon from the list of programs.

Step 5. When the **Load** screen launches,

Tap the **Radio** Box to be sure the PDA is set on Channel 2.



Selecting a Channel for Service Tracker

Channel 1: Is the default channel for Service Tracker and is used for most polling.

Channel 2: Is used for the Service Tracker Set-up and Com-link. Channel 2 Is only used for polling when the user is trying ascertain what is in Channel 2.

To use the Radio Com-Link Program with the (ST-550) Service Tracker: Set the Service Tracker on Channel 2 by holding down the **WAKE** button for about (5) five seconds.

Alert Light

Note: If the Service Tracker is set on Channel 2 and does not connect with a primary antenna, it will return to Channel 1 after (15) fifteen seconds. The Service Tracker is in CH. 2 when the Alert Light starts blinking quickly and "F" is displaying in the "Window Eye".

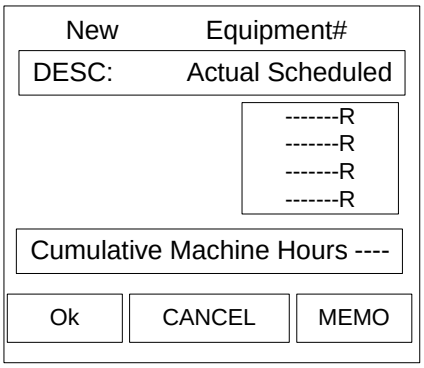
On the PDA press the **Com-Link** button. Once communication is complete **Polling** will disappear and the PDA will beep once.

Now that the communication is in place, the Service Tracker can accept program loading from the PDA. The following steps are required for a first time schedule loading.

Loading a New Profile

To add a Profile

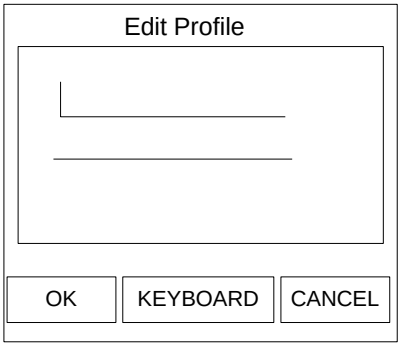
With power on the PDA tap the House icon.  and then select the **Equip Setup** icon.



Step 1. From the Load Screen tap the **Set Up** box, now tap **New Profile**.

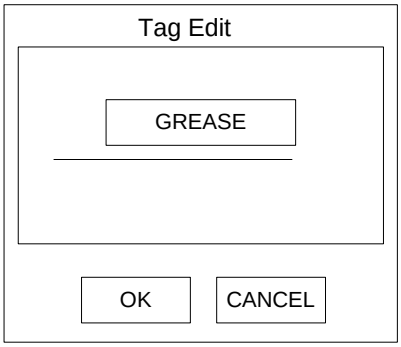
Tap in the **Equipment #** dotted area, and see the Master List of all equipment stored on the PDA. Tap **Edit** and launch the **Profile List Modify** screen and then tap **New**.

Figure 12.- Loading a New Profile Screen

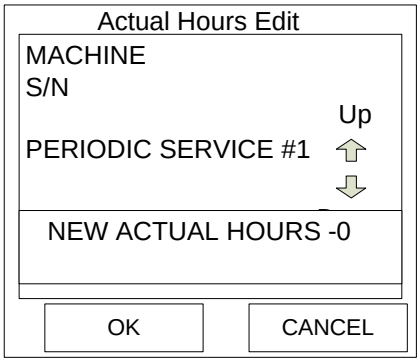


The **Edit Profile** screen will launch. Tap **New**, now tap **Keyboard** and tap in the new description. For any numbers associated with the description entered, tap the abc-123 graffiti pad, and tap in numbers and characters that identify this entry. When the complete description is entered tap **Done**, then **Ok**. The new **Equip**ment # will appear in the **Profile List** screen.

Step 2. To add a **Desc: Record** tap the blank record box under this heading.
This will launch the **Tag Edit** screen. On the Tag Edit screen enter a service description, such as Oil, Hydraulic Fluid, by tapping the *abc-123* alpha numeric's, in the lower corners of the graffiti pad and tapping the description in the keyboards that appear. When complete tap **OK,** to save the description on the new screen.



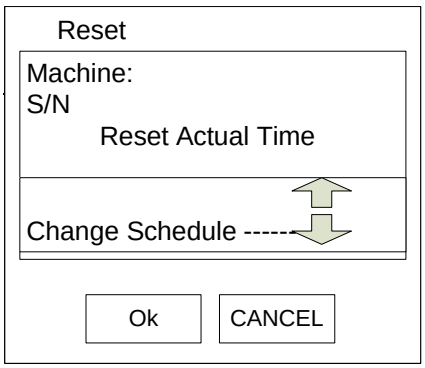
Step 3. To add the **Actual Hours** or **Schedule** times, for this equipment number, tap the box where this information is shown. Doing this for **Actual Hours** will launch the **Actual Hours Edit** screen.

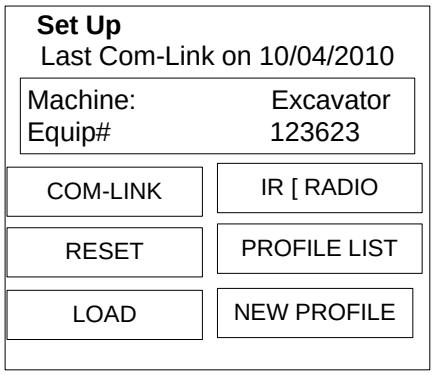


On the **Actual Hours Edit** screen, tap the up or down arrows to increase or decrease the hours displayed. Tap OK for the hours to appear on the New Profile Screen for this equipment number.

Step 4. To add Schedule times, tap the **R** box, in the **New Profile** Screen, (*See Figure 12*). This will launch the Reset screen.

Tap the up or down arrows to increase or decrease the scheduled hours for service. Tap **Ok** for the time to appear next to the **R** box for this equipment number.
To enter a start point for Cumulative Machine Hours, tap on the line to the right of Cumulative Machine Hours (*see Figure 12*). When a blinking cursor is present; tap the *abc-123* corners in the graffiti keypad and enter the number amounts. Then tap **Ok** and see the **Write Warning**

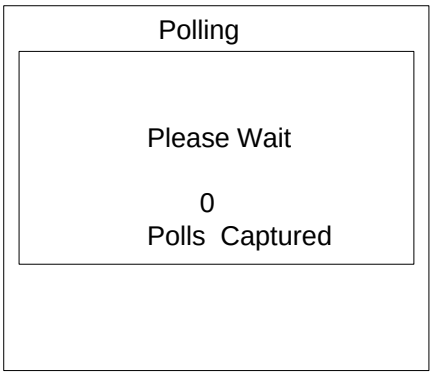




The Write Warning message tells the user that any old information will be overwritten.
Tap Ok and the **Set Up** screen will launch with a **Com-Link** button visible, prompting a data transfer to the Service Tracker ST-550.

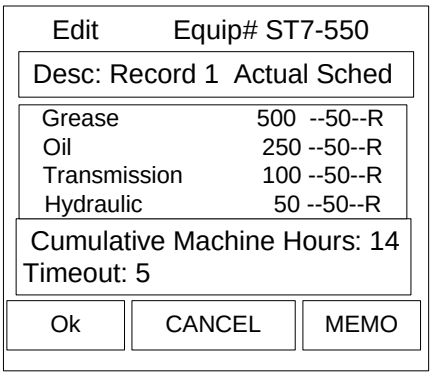
Step 5. To load the new profile into the ST-550, press and hold the **Wake** button on the Service Tracker until it switches to Channel 2, (See the "F" in the "Window Box"). Tap the **Com-Link** button to start the data transfer to the ST-550.

When data is transferring, observe the "Window Box" on the ST-550 and see the rotating LED segments. While the transfer is in progress the **Polling** screen will appear. When the transfer is complete the polling screen will show a (1) in the Captured box of the screen. Verifying the transfer is complete to the Service Tracker.



Step 6. The Set Up screen will launch with the **Com-Link** arrow pointing down. The new transfer is complete.

Editing a Profile

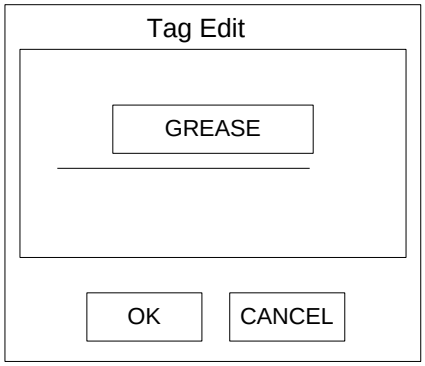


To Edit an existing Profile
With power on the PDA tap the House icon and select the **Equip Setup** icon.

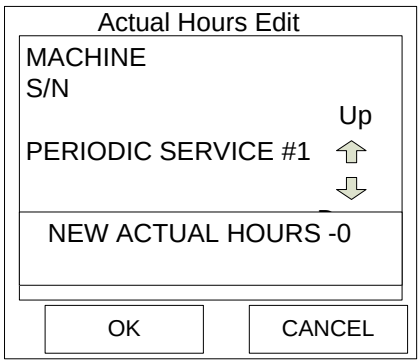
See the **Load** screen and tap the **Set Up** box. When the **Set Up** screen appears, tap the **Profile List** box.

Step 1. From the **Profile List** tap the Equipment (#) number you wish to edit. Tap the **Edit** box and the edit profile screen will launch.

Step 2. To change or add a **Desc: Record** tap an existing or blank record box.
This will launch the **Tag Edit** screen. On the Tag Edit screen enter
or change a service description, such as Oil, Hydraulic Fluid. Tap **Ok** for it to appear on a new Edit screen.



Step 3. To change the **Actual Hours** or **Sched**ule times, for this equipment number, tap the box where this information is displayed. Doing this for **Actual Hours** will launch the **Tag Edit** screen.



On the **Actual Hours Edit** screen, tap the up or down arrows to increase or decrease the hours displayed. Tap OK for the hours to appear on the new profile screen for this equipment number.

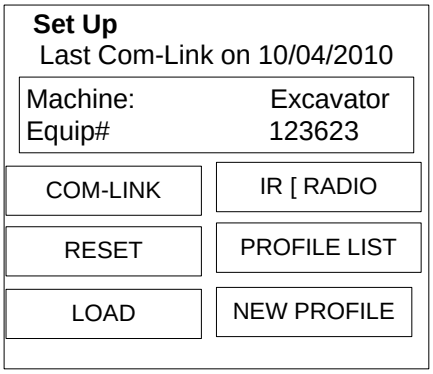
To enter or change the number of hours that should occur between each servicing, tap the **R** box in the Edit Equipment # screen.
The Reset screen will appear, tap the up or down arrows next to Change Schedule line to increase or decrease the hours displayed.

Tap **Ok** for the hours to appear on the new profile screen for this equipment number.

Step 4. The **Edit** screen will also show the Cumulative Machine Hours (CMH) by tapping the number line on the right side of the CMH. Change or add numbers, by using the abc-123 corners on the graffiti pad of the PDA. Enter or change the total hours and tap **Ok**.
The CMH total will now appear on the new screen.
Enter the **Timeout** value in the timeout section of the Edit Field, by tapping the number line and using the graffiti pad enter or change the number value.

The **Timeout** value is a settable time period the ST-550 waits, with no activity, before going to sleep. In the **Edit** Field, tap the number line. Using the abc-123 corners of the graffiti pad enter or change the number value. Timeout is measured in hours.

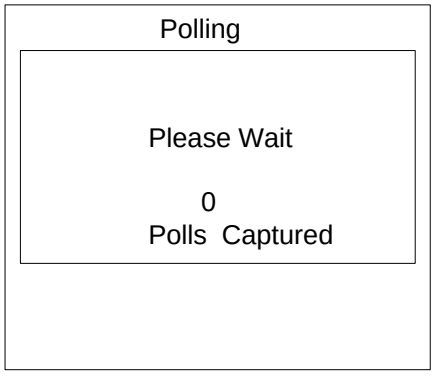
Step 5. Tap on the **Memo** button to enter some special service instructions, or parts required, for machine maintenance.
Tap **Ok** when all changes and additions have been entered for this equipment number.



The Write Warning message tells the user that any old information will be overwritten.
Tap Ok and the **Set Up** screen will launch with a **Com-Link** button visible prompting a data transfer to the Service Tracker ST-550.

Step 6. To load the new profile into the ST-550, press and hold the **Wake** button on the Service Tracker until it switches to Channel 2, (See the "F" in the "Window Box"). Tap the **Com-Link** button to start the data transfer to the ST-550.

When data is transferring, observe the "Window Box" on the ST-550 and see the rotating LED segments. While the transfer is in progress the **Polling** screen will appear. When the transfer is complete the polling screen will show a (1) in the Captured box of the screen.



Step 7. The Set Up screen will launch with the **Com-Link** arrow pointing down. The new transfer is complete

Copying a Profile to Another Service Tracker

This is used when there are (2) two or more identical machines with similar maintenance schedules in a fleet. The copy function creates a new machine profile

from the one previously set up. All information from the previous profile is copied to the new with the exception of the serial number and cumulative machine hours.

Step 1. From the **Set Up** screen select the **Profile List** box.

Step 2. From the **Profile List** screen tap the profile to be copied, then tap the **Copy** button and the new screen will appear.

Step 3. Enter the new equipment number, by tapping on the dotted box to the right of the Equipment number, the **Master List** will launch. Tap any equipment number, then, tap the **Edit** button. The **Profile List Modify** screen will display.

Step 4. On the **Profile List Modify** screen, tap the **New** button and the **Edit Profile** screen will show.

Step 5. On the **Edit Profile** screen enter a serial number unique to this equipment. Use the abc-123 alpha numeric keyboards from the graffiti pad to enter this information. Enter a description of this equipment and tap OK.

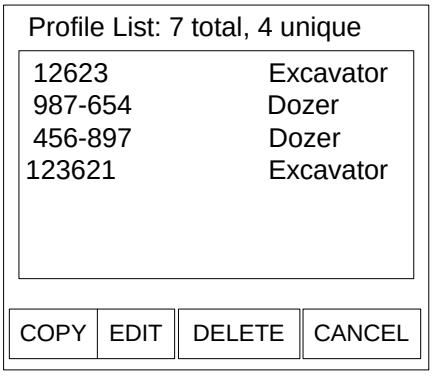
Step 6. To enter other service tags follow the directions from the **Editing a Profile** section. Upload this new equipment profile to the Service Tracker ST-550, following the directions in **Editing a Profile** section, steps 5, 6, and 7.

Deleting a Machine Profile

This is used to delete a stored profile on the PDA. Profiles can only be deleted on the PDA and not the Service Tracker. Profiles on the Service Tracker can only be overwritten.

Step 1. From the **Set Up** screen, select the **Profile List** box.

Step 2. From the **Profile List** screen, select the profile to be deleted, then, tap the Delete box. Continue tapping the Delete button until the profile is deleted from the screen.



Note: Once the Delete button is tapped the **total** field will be reduced by one; but the **unique** field will remain the same until all the Com-Link records for that profile are gone. Each time the PDA is beamed at the Service Tracker a record is created within the Com-Link database. The **total** field, on the profile screen displays the total number of records within the Com-Link database. The unique field is the total number of machine profiles within the database.

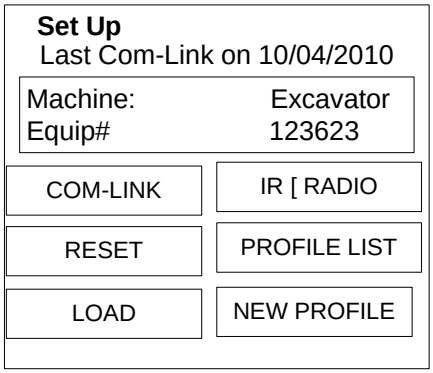
Downloading a Machine Profile

Use this option to download a profile from a Service Tracker for viewing or modification on the PDA. After the changes to the Profile are made, the profile can then be uploaded back to the Service Tracker.

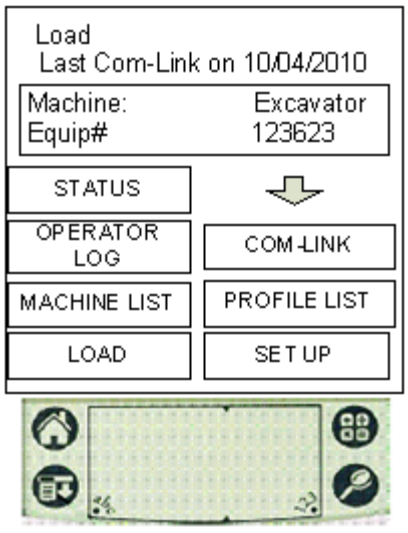
Step 1. Start at the **Load** screen. The load screen is accessed when the Radio Com-Link software is started at the **Set Up** screen. Refer to the Loading a New Profile section.

Step 2. With the PDA at the **Set Up** screen, point the PDA at the Service Tracker to be accessed. Tap the Com-Link box to start the download process of the Service Tracker's equipment information.

Step 3. When the download is complete, the PDA will beep once. The Status screen and Operator logs can now be viewed. To change any portion, use the Editing a Profile instructions to change the profile of this down loaded equipment number.



Communicating With the ST-550



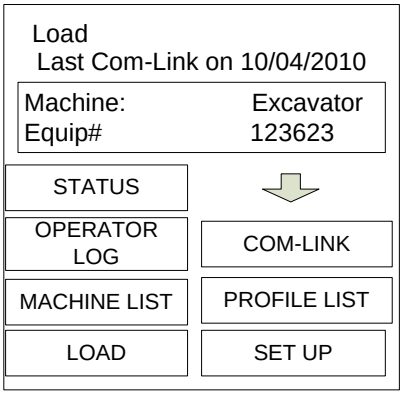
From the **Load** screen find the Com-Link and the Com-Link Log boxes.

Com-Link button: This box is used to read service information or upload profile changes to the Service Tracker.

Com-Link Log button: Displays a list of records for each the Service Tracker was beamed. It shows the equipment number, date, time and hours on the equipment when the information was beamed.

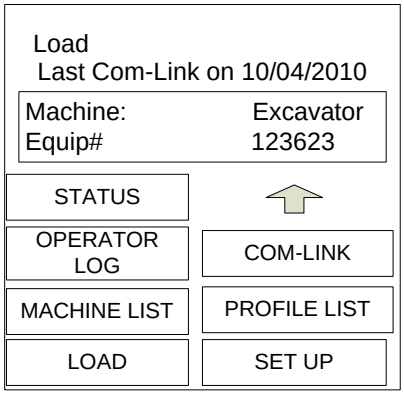
Note: This log can be transferred to another PDA by tapping on the beam box of the **Com-Link Log** screen and aligning the PDA's infrared panels.

Data Loading Modes

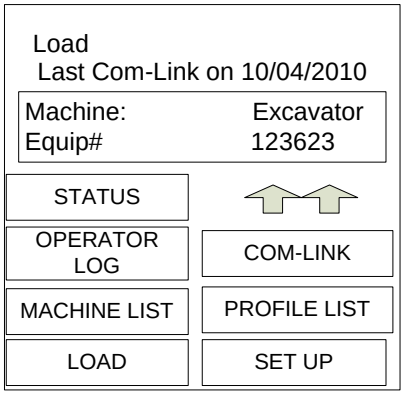


The **Down Load Mode:** Recognizable by a single down pointing arrow toward the **Com-Link** box on either the **Load** or **Set Up** screens. This indicates that the last action performed was a download from the Service Tracker.

The **Update Load Mode:** Recognizable by a single up pointing arrow above the **Com-Link** box on either the **Load** or **Set Up** screens.



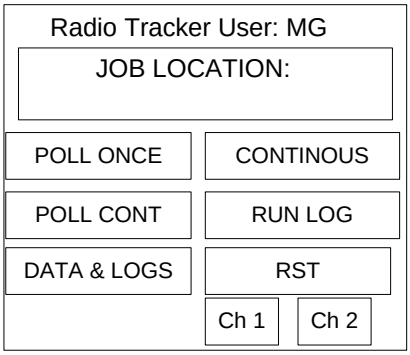
This indicates that information has been changed in the **Status** screen. Changed Information, such as Actual Hours (the hours between servicing for this equipment number), Reset, (this is used to reset an alarm, if this set to zero no alarms will occur for this equipment number), or the Scheduled Hours (used in conjunction with the Reset box to change the scheduled hours), will update the Service Tracker through the Com-Link software. The Com-Link software will synchronize this changed information and then update the Service Tracker through the **Com-Link** box, as noted



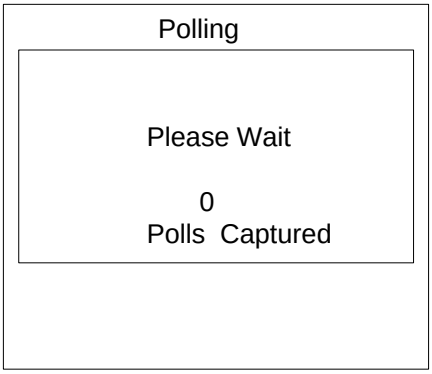
The **Overwrite Mode:** Recognizable by the two up pointing arrows above the **Com-Link** box on either the Load or Set Up screens, indicates that the Com-Link software will overwrite any profile on the Service Tracker with the profile as displayed in the **Machine List** screen.

Collecting Data – Polling

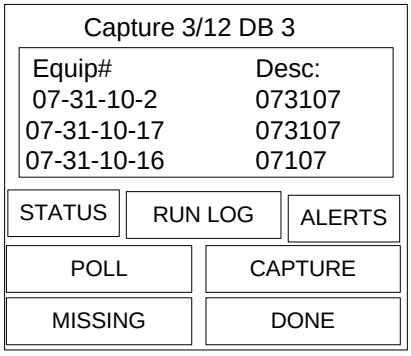
From the main PDA menu screen tap **EquipHours** to download a profile from a Service Tracker for viewing or modification on the PDA. After the changes to the Profile are made, the profile can then be uploaded back to the Service Tracker.



Tapping either **Poll, Poll Cont, Continuous, or Run Log:** the PDA will go to the polling screen. "Syncing" will appear on the PDA. During this process the PDA is searching for all Service Trackers in its range. This may take a few moments.

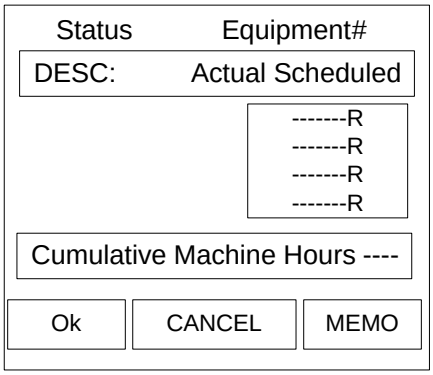


The process is complete when the **Captured** information appears.

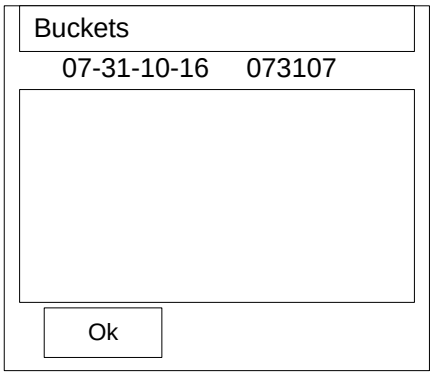


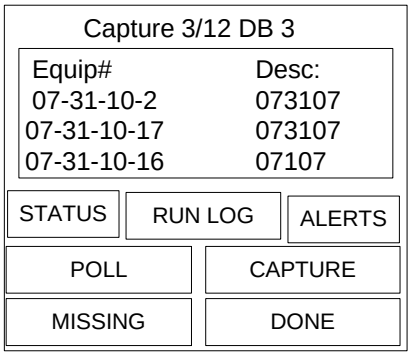
From the **Capture** screen, scroll down and select and tap the Service Tracker to view by Equipment Number.

Tap **Status** on the PDA. This will switch to the Status Screen, showing the equipment profile. This screen is also available from the **Data and Logs** menu. See the selected number description, actual and scheduled hours for Service Alerts and the cumulative machine hours (CMH) for the equipment number selected.

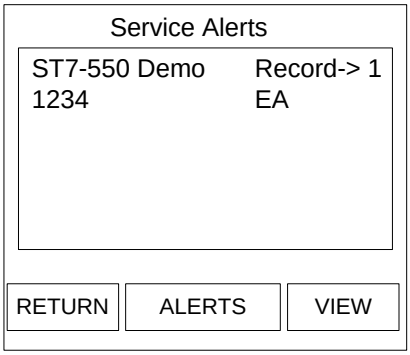


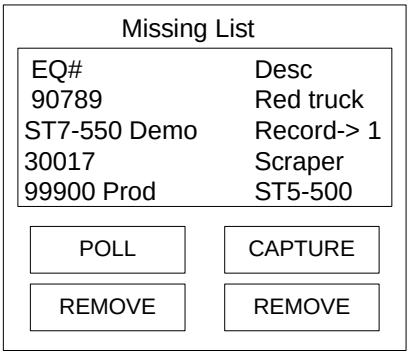
Tap **Run Log** and the Buckets screen will appear. This screen will display run log information, or the work and idle time times associated with the equipment selected.
Tap **Ok** to return to the **Capture** screen.





Tap **Alerts** and the Service Alerts screen will appear. This screen notifies the user when a maintenance function on this equipment number is required. It will give the option to service now or later. This Service Tracker will also indicate a service alert at the LED display window (*see Figure 10*).

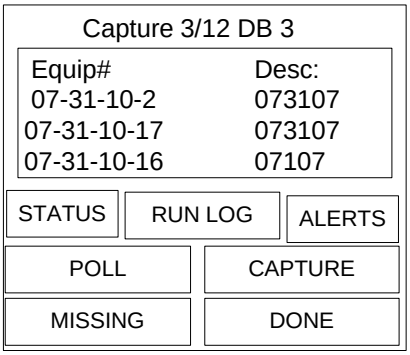




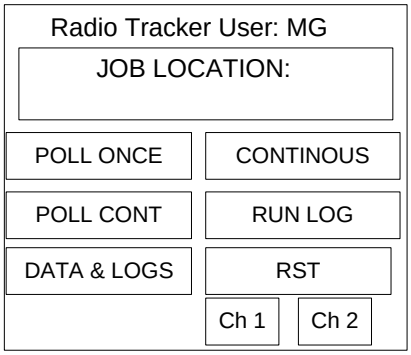
Tap **Missing** and the **Missing List** screen will launch. This screen displays a list of Service Trackers that have previously been polled but have not been captured in this round of polling. Tapping the **Poll** box; visible from the Capture or Missing List screen, initiates a cycle through stored information.

This action overwrites the information on the PDA, that was previously stored, with the latest polled data configuration.

Tapping the **Capture** box; visible from the Capture or Missing List screen, retains all previous polled information rather than resets it; as the Poll feature does. A poll cycle will occur to capture any Service Trackers that were not detected during the first round of tracking and this new information will be added to the existing list.



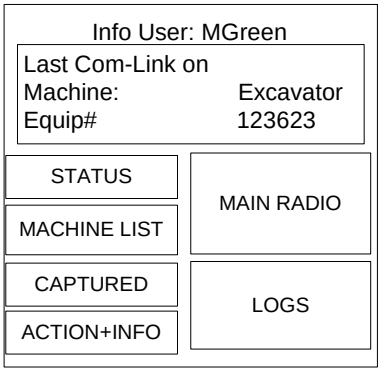
Viewing Equipment Maintenance Schedules



From the Radio Tracker Main Menu tap **Data & Logs** and Launch this **Info** screen.

Tap **Status** to view a Machine Profile (See Monitoring the Equipment Section).

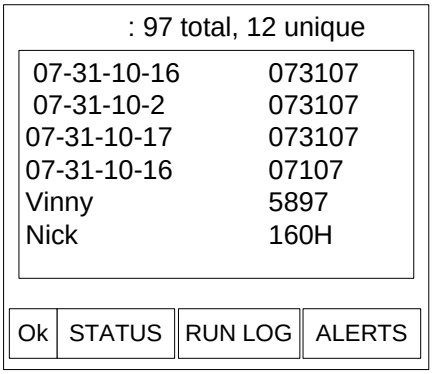
Tap **Machine List** to launch the machines screen. This screen displays a list of machines you have stored in the PDA.



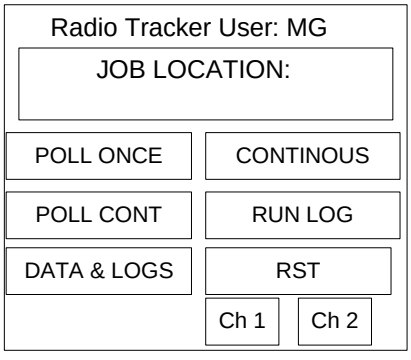
Tap **Captured** to view all previously polled and captured equipment maintenance schedules.

Entering Notes for this Equipment Number

From the Main Menu (above) tap the **Data & Logs** box, to launch **Info** screen (upper right) and tap **Action +Info**. From this screen (see right), select the machine/equipment type record and tap **Ok**. The info screen will return; now tap **Action +Info** again and launch the note screen for this equipment number. Enter the pertinent information for this equipment, by selecting the keyboard or by using the abc graffiti corner keys. Tap **Ok** to save.

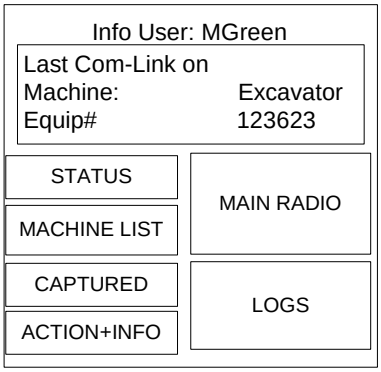


Viewing Equipment Activity



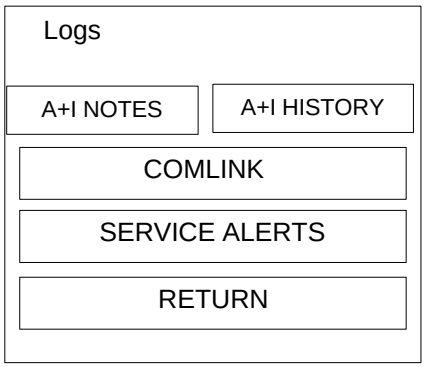
From the Radio Tracker Main Menu tap **Data & Logs** and Launch this **Info** screen.

Tap **Logs**



Viewing A+I Notes, History, Com-Link and Service Alerts records

The following options show current maintenance records of operational field equipment:

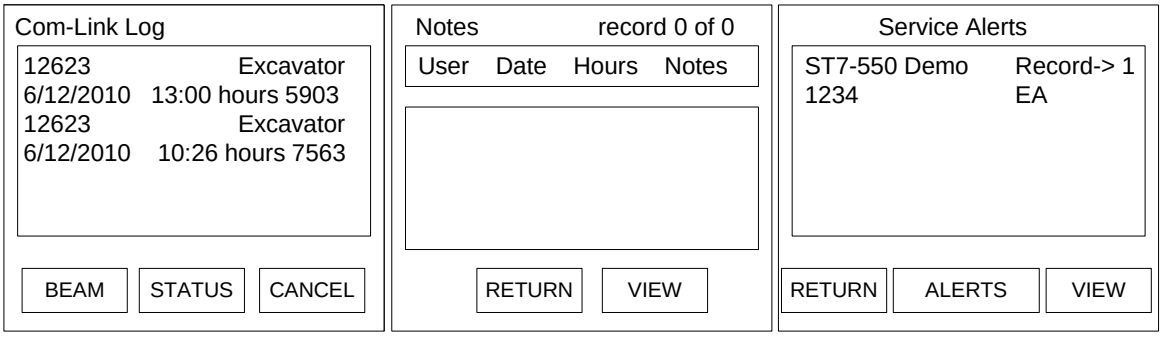


Tap **A+I History** to launch the A+I History screen. This screen displays all the note activity that has been entered through the A+I feature as well as all other activity information.

Tap **A+I Notes** to launch the notes screen. This screen displays all the note activity that has been entered through this activity.

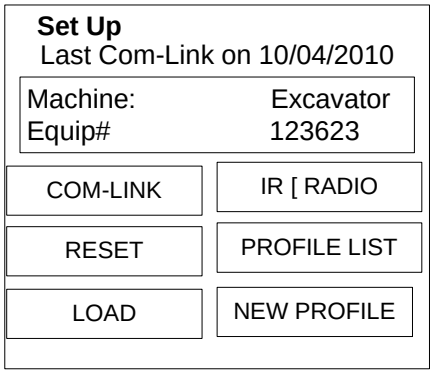
Tap **Service Alerts** to launch the Service Alerts. This screen displays the service alerts for all the pieces of equipment stored on the PDA.

Tap **Com-Link** to launch the **Com-Link Log** screen. This screen displays a list of Service Trackers that have been com-linked most recently. From this list, select any Service Tracker, (within range), and view its status by tapping **Status** box.

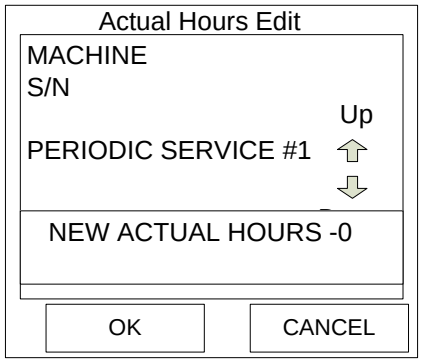


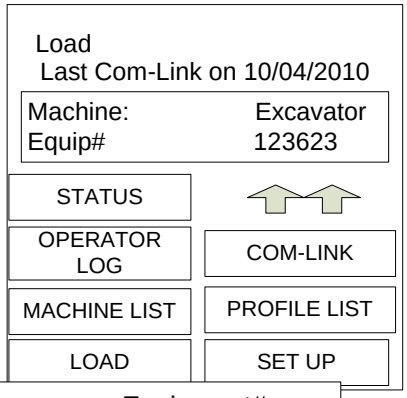
Tap **Return** to launch the **Data & Logs** screen again. From the Data & Logs main screen tap **Radio** to return to the **Main Menu**.

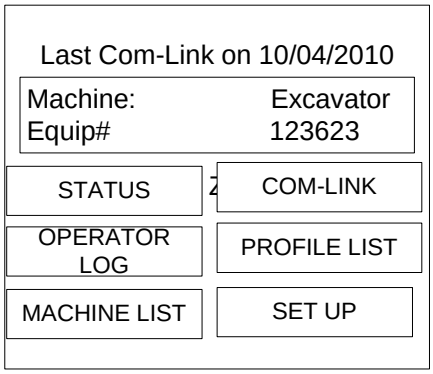
NOTES:

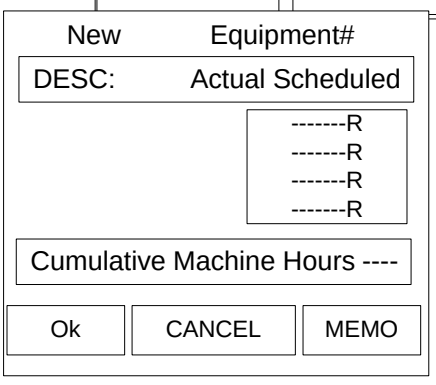

Set Up
Last Com-Link on 10/04/2010
Machine: Excavator
Equip# 123623
COM-LINK
IR [RADIO
RESET
PROFILE LIST
LOAD
NEW PROFILE

LOAD


Actual Hours Edit
MACHINE
S/N
Up
PERIODIC SERVICE #1
NEW ACTUAL HOURS -0
OK
CANCEL


Load
Last Com-Link on 10/04/2010
Machine: Excavator
Equip# 123623
STATUS
OPERATOR LOG
COM-LINK
MACHINE LIST
PROFILE LIST
LOAD
SET UP


Last Com-Link on 10/04/2010
Machine: Excavator
Equip# 123623
STATUS
COM-LINK
OPERATOR LOG
PROFILE LIST
MACHINE LIST
SET UP


New Equipment#
DESC: Actual Scheduled
-------R
-------R
-------R
-------R
Cumulative Machine Hours ----
Ok
CANCEL
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If you have any questions regarding this product, we will be happy to assist you.
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