Micro-SMART Systems, Inc.





HT-750 & HT-1250 Mini Smart

Operator's Manual



Memory Pressure Gauge

HT-750 Kit







HT-7502 Kit



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Introduction

1.1 Forward

Thank you for using Micro-Smart Tools.

To help our repeat customers, or our customers who have time constraints, we have provided a **SMART Manual** to help ensure no critical steps are missed which might cause costly delays or unnecessary problems using our tool. We have an outstanding reliability record when our customers follow the prescribed procedures. Our goal is to make the experience with our tools as Rewarding and Trouble-Free as possible.

The second page (page 2) is a photographic image of our different HT Kits

This manual is designed to provide detailed information about installing and using our Smart Data Software, setting up the tool for a downhole run and redressing the tool. We recommend that you read the entire manual, in sequence, while setting up the tool for the first time, prior to its downhole run. To help in using this manual, **Notes** and **Warnings** are provided in **black**, **blue** and **red** according to importance.

1.2 Introduction

The Micro-Smart **HT** and **Mini Smart 2** Series Pressure Temperature Gauges are versatile and useful for almost any type of Pressure Temperature Test. With superior reliability, small size, high temperature capabilities and enhanced detail features make the HT series gauges outperformers against the competition.

The Micro-Smart - HT / Mini Smart 2 features:

1.3 Specifications

Memory Capacity		500,000 Data Sets		
HT-750		1.5Ksi, 3Ksi, 5Ksi, 10Ksi, 15Ksi		
Pressure Ranges:	HT-1250	5Ksi, 10Ksi, 15Ksi, 20Ksi		
Sampling Intervals		1 second to 1 hour		
Operating Temperature	9	32° F to 356°F (0° C to 180°C)		
Resolution Pressure03 psi Temperature03°F		Pressure03 psi Temperature03°F		
Accuracy		Pressure ± .05% Full Scale Temperature		
Moight	HT-750	< 1lb. (.45Kg)		
vveignt	HT-1250	1lb. (.45Kg)		
Dewer	HT-750	3.6V (1-'AA' Cell Lithium)		
Power	HT-1250	3.6V (1-'C' Cell Lithium)		
Housing Material		Inconel 718		

1.4 System Description

The **HT-750** / **HT-1250** pressure gauge is a microprocessor based tool combining two major assemblies in a small package: the Battery Section, and Electronic Section. The housing material is made of Inconel 718

The Battery Section houses a 3.6V 1-'AA' Cell Lithium battery pack in the HT-750 and 3.6V 1-'C' Cell Lithium battery in the HT-1250.

Note: For extended tests a 3.6V 'C-C' Cell Lithium Battery Pack can be used on the HT-1250

The Electronics Section is microprocessor programmable to a wide range of different sample rates and captures all points in flash memory. The flash memory is capable of holding 500,000 data sets.

All housing material is made of Inconel 718. The Flats are provided on the housings to tighten the tool without using pipe wrenches.



1.5 Running Configuration

The HT-750 / HT-1250 can be placed in numerous locations in the well. Placement can be determined by test type and objective.

- The HT-750 has a $\frac{1}{2}$ " 13 UN Thread Pin (male) Looking Up. The bottom has a $\frac{1}{2}$ " 13 UN Thread Box (female) looking down that can be observed with the removal of the landing nose.
- The HT-1250 has an Amerada pin (male) looking up. The bottom has an Amerada box (female) looking down that can be observed with the removal of the landing nose. An Amerada to Sucker Rod crossover is typically supplied in the gauge transit case.

Smart Data Installation & Communication

Smart Data is the software package created by Micro-Smart Systems to navigate, program and test our tools. The software also includes Graphing and Report Generating features, to enhance the data presentation to your customer.

2.1 SOFTWARE REQUIREMENTS

- 2.1.1 The Smart Data software can be used with Windows XP, Vista, Windows 7, Windows 8 / 8.1 or Windows 10.
- 2.1.2 It is recommended that the screen resolution be set to 800x600 (and font size set to small) or 1024x768 to properly view the program screens. Other screen resolutions can be used, however program screens may very in size.

Note: Some older computers will not allow 800x600 resolution

2.1.4 To change resolution, **right click** on a blank area of the desktop, left click **Properties**, left click **Settings**, change resolution to **800x600**, change font size to **small and select OK**. It may be necessary to reboot the computer.

2.2 SOFTWARE INSTALLATION

- 2.2.1 Insert the USB Thumb Drive into a USB port.
- 2.2.2 Install the Smart Data software on drive C Note: It is recommended that User Access Control be turned off prior to installation (App. D)
- 2.2.3 Double Click the appropriate drive letter of the USB Thumb Drive from **My Computer**
- 2.2.4 Double Click on "Setup.exe" (without the quotes ("))
- 2.2.5 Choose the default options by clicking "NEXT"
- 2.2.6 A **Smart Data** folder is created in the **C:\Program Files** directory. This folder will be the location of the program files.
- 2.2.7 When the program is first run, a folder named **Micro Smart Data** is created in the **C:** directory folder and data files will be stored there.
- 2.2.8 If a shortcut is not automatically created on the desktop, it can be accomplished by a right mouse click, anywhere on the desktop. From the menu, select New, Shortcut, Browse and find C:\Program Files\Smart Data\Smart Data.exe, select Open, Next and Finish.
 - a. If using Windows Vista or Windows 7, make a shortcut folder to C:\Users\<name>\App Data\Local\Virtual Store\Program Files\Smart Data
 - Note: If shortcuts for Smart Data, SST and Slick Shot are not created, this could be an indication that the software did not install correctly
- 2.2.9 Installation Instructions of USB driver can be found in Appendix C in the back of the manual

2.3 Communicating With Smart Data

2.3.1 Connect the USB connector to a USB port on your computer.



2.3.2 Remove the battery housing and battery, if necessary, from to HT-750/1250 using the supplied wrenches.



2.3.4 Connect the cableface to the receiver end of the Electronics Section. (Verify that correct interface cable is being used. The cable for the HT-750 / HT-1250 is orange)



2.4 COMMUNICATION PROBLEMS - TROUBLESHOOTING THE INTERFACE

- 2.4.1 If the software is unable to find the tool followed by an error message:
 - a. Verify All connections
 - b. From the Main Program screen, select User Setup
 - c. From the Configuration Screen, check to ensure that the proper communication port selected.

minutes
feet
deg. F
psiG
rps
MM/DD/YY
14.67 psi
C:\Micro Smart Data
Hard Disk [C:\Micro Smart Data\Calibration Files]

2.4.2 If the software is unable to connect, try re-installing Smart Data.

Note: The "Repair" option could fix installation of Smart Data.



Smart Data - User Setup

3.1 Smart Data - User Setup

3.1.1 Double click the Smart Data icon on the desktop of your computer.



3.1.2 Smart data navigation window appears.

<u>File</u> <u>H</u> elp		
Gauge Operations		Graph
Data File Operations	Mice SHART STILLS	Reports
*		9
<u>U</u> ser Setup		<u>E</u> xit
Copyright 2002 - 2012	Micro-Smart Systems, Inc.	Version: 12.8.9

- 3.1.3 Select User Setup (or alt+ U) button to set preferences within Smart Data
 - a. Set communications port (com port) for connecting to Smart Tools
 - b. Set units of measure for Time, Depth, Pressure, Temperature, and Spinner
 - c. Date Format
 - d. Set Reference for Atmospheric Pressure
 - e. Set Data File and Calibration File locations

Gauge Serial Port		
adage benarr en		
Elapsed Time Units	minutes	
Depth Units	feet	
Temperature Units	deg. F	
Pressure Units	psiG	
Spinner Speed Units	rps	
Date Format	MM/DD/YY	
Atmospheric Pressure	14.67 psi	
Data File Location	C\/Micro Smart Data	_
Calibration File Location	Hard Disk [C:\Micro Smart Data\Calibration Files]	
Logo	Back	

User Setup Options

Gauge Serial Port (Number)	Com 1 to 14		Note: Found in Manag	n Ports & Com jer	s in Device
Elapsed Time Units	Seconds	Minutes	Hours		
Depth Units	Feet	Meters			
Temperature Units	Deg. F	Deg. C	Deg. K		
Pressure Units	psiG psiA	kPaG kPaA	MPaG MPaA	barG barA	Kg/cm ² G Kg/cm ² A
Spinner Speed Units	rps	rpm			
Date Format	MM/DI	D/YY	DD/MM/YY		
Atmospheric Pressure	Atmospheric Value at your location				
Data File Location	Default: C:\Micro Smart Data\				
Calibration File Location	Most Common: C:\Micro Smart Data\Calibration Files				
Logo	Allows you to import your logo for reporting.				
Back	Saves Infor Screen	mation. G	oes back to	the Smart	Data Main

Note: The **Logo** button provides the option to use company logos on reports. Company logos can be loaded and modified when using this button

3.2 Logo	🗑, Smart Data - Adjust Logo	×
	MICRO SMART SYSTEMS	
	Filename [Default]	Select File
	Width (in.) Height (in.) 1.01041 1.01041	Preview
	Save and Continue	<u>C</u> ancel

Note: Logo files should be copied into the 'C:\Micro Smart Data\Logos' Folder

- 3.2.1 On the Adjust Logo Screen (see Screenshot), select **Select File** (or alt + L) to find a graphic file of your logo or your customers logo.
 - a. Logo can be no more than 3.25" in width and 1.25" in height
 - b. Supported logo formats: *.bmp or *.jpg
- 3.2.2 Select **Preview** (or alt + P) to see a report page using the selected logo.
- 3.2.3 Adjust the logo as necessary
- 3.2.4 Select **Save and Continue** (or alt + S) to save the current setup. Save and Continue goes back to the User Setup Screen

minutes feet	<u>·</u>
feet	.
deg. ⊢	•
psiG	•
rps	•
MM/DD/YY	•
14.67	psi
C. Micro Smart Date	a 💌
Hard Disk (C: Wicro Sm	art Data\Calibration Files]
	Back
	selG p8 MM/DD/YY 14.67 C:VMicro Smert Dat Hard Disk (C:VMicro Ser

3.2.5 Once all fields have been modified to your specified settings click the **Back** Button. The **Back** button automatically saves the information in this dialog box.



Smart Data - Gauge Operations

4.1 Smart Data - Gauge Status

4.1.1 From the Main Menu select Gauge Operations



4.1.2 On the Smart Gauge Operations screen, select Downhole Pressure (HT-750, HT-1250, HS-1250) from the drop down list of tools.

🕅 Smart Gauge Operations	Mart Gauge Operations	×
Gauge Selection	Gauge Selection	
Smart Blaster (SB-1500/DS-4000) / SmartETD Downhole Pressure (HT-750,HT-1250,HS-1250) Downhole Quartz Pressure (SQ-1250) Fast Temperature (FT-1000) Downhole Pressure (SP-2000,SG-1000,SQ-5000)) Smart Blaster (SB-1500/DS-4000) / SmartETD Surface Pressure Recorder (QS-2000) Downhole Shut-In Tool Downhole Temperature (BHT-100)	Downhole Pressure (HT-750,HT-1250,HS-1250) Gauge Status C Dump Main Memory Program Custom Setup C Real Time Test	
<u>C</u> ontinue <u>Back</u>	<u>C</u> ontinue <u>B</u> ack	

4.1.3 Select Gauge Status and Click Continue

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	Gauge Type
Gauge Number 🗕	Gauge Number 7019 Gauge Type Downhole Pressure (HT-750,HT-1250,HS-1250)
Memory Information	Memory Information Gauge Information Main Memory Used 0 % Number of Tests 0 Revision [4] Last Cal. Date [12/07/12]
Tool's Program —	Step Start Time End Time Duration Normal Sample Number (Minutes) (Hours) Intervals 1 0 MAX 30 Sec.
	Print Export Back

- 4.1.4 Select **Print** to get a printout of this status
- 4.1.5 Select **Export** to save this status to a file.
- 4.1.6 Select **<u>Back</u>** to return to the Gauge Operations menu

Gauge Header Information	Gauge NumberType of Tool connected
Memory Information	Memory UsedNumber of Test in tool
Gauge Information	Pressure RangeTemperature RangeCalibration Date/ Repair Date
Tool's Current Program	 Tool's current program. Changes to the program must be completed in program custom setup
Print	Print Custom Program and Tool's Status
Export	 Export allows the status window to be exported to another file instead or in addition to printing
Back	Returns to the Gauge Operation Menu

4.2 Smart Data - Programming the HT Gauge

4.2.1 If on the Smart Data Main Screen, select the "Gauge Operations" Button



4.2.2 If "Downhole Pressure (HT-750, HT-1250, HS-1250) is not selected, please choose from the Gauge Selection Screen.

🎋 Smart Gauge Operations	×
Gauge Selection	
Smart Blaster (SB-1500/DS-4000) / SmartETD	•
Downhole Pressure (HT-750,HT-1250,HS-1250) Downhole Quartz Pressure (SQ-1250) Fast Temperature (FT-1000) Downhole Pressure (SP-2000,SG-1000,SQ-5000) Smart Blaster (SB-1500/DS-4000) / SmartETD Surface Pressure Recorder (QS-2000) Downhole Shut-In Tool Downhole Temperature (BHT-100)	•
<u>C</u> ontinue <u>B</u> ack	

4.2.3 Select Program Custom Setup from the Smart Gauge Operations screen.

Smart Gauge Operations		×
Gauge Selection		
Downhole Pressure (HT-7	50,HT-1250,HS-1250)	•
 Gauge Status Program Custom Setup Real Time Test 	 Dump Main Memory Erase Data Memory 	
<u>C</u> ontinue	Back]

4.2.4 Select Continue

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7019 Step Number 1	Start Time Er (Minutes) (M	Index Provide Press Downhole Press Ind Time Duration Inutes) (Hours) MAX MAX	ure (HT-750,HT-1250,HS Normal Sample Interval 30 Sec.	S-1250)	
Step	Start Time	End Time Dura	tion Normal Sample		SMART
Number 1 Calculate Time Da	(Minutes) 0 Run ys	(Minutes) (Hot MAX MA Smart Gauge ca memory is full.	irs) Interval	s before	– Program Device / Exit-
	A c	- Load 7 Sav Load From	e Setup Setup Disk		Program Gauge

Gauge Header Information	 Gauge Number Pressure Range of Tool Connected Type of Tool connected
Current program stored in connected tool	
Calculate Run Time Days	Calculates the number of days the listed program will run before the tool memory is full
Adding / Deleting Steps in a program	 Adds a step to the program, provided the program is not beyond the 14th step or the maximum time allowed Delete Last Step - deletes the last step of a program Delete All Steps - deletes all steps to recreate the custom program
Load / Save Setup from disk	 Loads a saved custom program Saves a custom program for another Micro-Smart tool with similar programming features
Program Device	 Program Gauge - stores the provided program into the Micro-Smart tool
Back/Exit	Returns to the Gauge Status screen

Notes: • The fastest sample rate is 1 second

- Longest sample rate is 1 hour
- Up to 14 different sample rates may be entered into a single program
- The Last step added to the program must have the Max in the End Time and Duration window
- After Programming the gauge, always run a Gauge Status to ensure program was entered and stored

- 4.2.5 From the **Program Custom Setup** Screen (shown below):
 - Add Steps
 - Delete Steps
 - Load an existing setup from the hard drive.
 - Save the current setup to the hard drive.

NOTE: Steps CANNOT be added or deleted in the middle of the program, but the sample interval can be edited in a step.

- 4.2.6 Adding Steps When programming a gauge, enter the **Duration** in hours or the **End Time** in minutes, select the **Normal Sample Interval** from the dropdown menu and select **Add**. (Add will appear "greyed out" when the max step is reached)
- 4.2.7 The last step added to the program must have **MAX** in the **End Time** and **Duration** windows.
- 4.2.8 When all the steps are added, select **Program Gauge** (alt +P) to program the gauge.

Note: Program Gauge can only be clicked when it is highlighted in green.

4.2.9 Select <u>Calculate Run Time Days</u> (alt + C) to calculate the number of days the tool will run, before the memory is full based on the program entered. The calculated run time is calculated automatically after the last step is added to the program. Reselect this option if steps have been edited.

Note: Up to 14 different steps can be programmed into the HT-750 / HT-1250. Each tool can store up to 500,000 data points.

Note: After programming the gauge, go to Gauge Status to ensure the custom program was correctly entered into the tool's memory.

Gauge Number Press 7019 1500	ure Range 0 j	Gauge Type Downhole Pressure	(HT-750,HT-1250,HS-1250)]
Step Start Time	End Time	Duration	Normal Sample A	HICRO SMART SYSTEMS
Number (Minutes)	(Minutes)	(Hours)	Interval	
1 0	MAX	MAX	30 Sec.	
Step Start Tin	e End 1	Fime Duration	Normal Sample	
Number (Minute:	(Minu	tes) (Hours)	Interval	
1 0	MAX	K MAX	30 Sec.	
Calculate Run Time Days Add / Delete Add Delete Last Step	Si m lete All iteps	mart Gauge can ri emory is full. Load / Save Set Load Setu From Disk Save Setu To Disk	un for 179.74 days before etup p	- Program Device / Exit- Program Gauge <u>B</u> ack

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4.3 Smart Data - Real Time Test

Real Time Test provides Time, Pressure and Temperature in real Time

4.3.1 If coming from Smart Data Main Menu, choose the "<u>Gauge Operations</u>" (alt + G) button



4.3.2 If "Downhole Pressure (HT-750, HT-1250, HS-1250) is not selected, please choose from the Gauge Selection Screen.

🏁 Smart Gauge Operations	×
Gauge Selection	
Smart Blaster (SB-1500/DS-4000) / SmartETD	•
Downhole Pressure (HT-750,HT-1250,HS-1250) Downhole Quartz Pressure (SQ-1250) Fast Temperature (FT-1000) Downhole Pressure (SP-2000,SG-1000,SQ-5000) Smart Blaster (SB-1500/DS-4000) / SmartETD Surface Pressure Recorder (QS-2000) Downhole Shut-In Tool	
Continue	_

4.3.3 Select "**Real Time Test**" from the Smart Gauge Operations Screen and select <u>Continue</u> (alt + C)

wnhole Pressure (HT-	750,HT-1250,HS-1250)
Gauge Status	Dump Main Memory
Program Custom Setup Real Time Test	C Erase Data Memory

4.3.4 The screen below appears after clicking "Continue"

Smart Data - SMINI Real Time Test	
Gauge Number	7019
Select Calibration File G(7019)(12-07-12).cal C:\Micr	Calibration File Directory o Smart Data\Calibration Files
Start	Back

4.3.5 Left click the calibration file and left click "**Start**" button to enable the Real Time Test

🔄 Smart Data - S	MINI Real Time Test	-	
	Gauge Number	7019	
Time	Pressure	T emperature	
	Start		Back

4.3.6 Left click the "<u>Back</u>" button (alt +B) to end the Real Time test. Back returns to the Gauge Operations Screen.

4.4 Smart Data—Dump Main Memory

Dump Main Memory downloads the data recorded into the tool to the hard drive of the computer. This data can then be graphed or retrieved for building a report.

4.4.1 If on the Smart Data Main screen, left click the "Gauge Operations" button or (alt + G).



4.4.2 If "Downhole Pressure (HT-750, HT-1250, HS-1250) is not selected, please choose from the Gauge Selection Screen.

🏁 Smart Gauge Operations	×
Gauge Selection	
Smart Blaster (SB-1500/DS-4000) / SmartETD	•
Downhole Pressure (HT-750,HT-1250,HS-1250) Downhole Quartz Pressure (SQ-1250) Fast Temperature (FT-1000) Downhole Pressure (SP-2000,SG-1000,SQ-5000) Smart Blaster (SB-1500/DS-4000) / SmartETD Surface Pressure Recorder (QS-2000) Downhole Shut-In Tool Downhole Temperature (BHT-100)	
<u>C</u> ontinue <u>B</u> ack	

4.4.3 Select "**Dump Main Memory**" from the Smart Gauge Operations Screen and Left click the "<u>Continue</u>" button or (alt +C).

ownhole Pressure (HT-7	/50,HT-1250,HS-1250)
C Gauge Status	Dump Main Memory
C Program Custom Setup	C Erase Data Memory
C Real Time Test	

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Gauge Number 7019 Gauge I Connected 7019 Gauge I Gauge Number To 7019 Use	Name Downhole Pressure (HT-750,HT-1250,HS-1250)
Gauge Power Up Date	/IM/DD/YY
Gauge Power Up Time	IH:MM:SS [24 Hr. Time]
Select Calibration File C	alibration File Directory
[G [7 (1] 5][1 2-07412].cal	C:\Micro Smart Data\Calibration Files
<u>C</u> ontinue	<u>B</u> ack

Enter Power up date in (MM/DD/YY) format
Enter Power Up Time (24 hour/ military time), including seconds
Continue will start the downloading process Note: Continue will only illuminate green after Power Up Date and Time are entered and a Calibration file is chosen
Back returns to the Smart Gauge Operations screen

- 4.4.4 Enter the Power Up Date (MM/DD/YY) 2 digit format
- 4.4.5 Enter the Power Up Time (24 hour/military time)
- 4.4.6 Choose the Calibration File (Typically Software will locate calibration file associated with gauge number)
- 4.4.7 Left click the "Continue" button (alt + C)
- Note: Continue will illuminate green after the power up date, time have been entered and a calibration file has been chosen.

⁸ Smart Data - Dump	Main Memory		2
Gauge Number Connected Gauge Number To Use	7019 Gauge	Name Downhole Quartz Pre	ssure (MQ-760, MQ-1260)
Gauge Power Up Da Gauge Power Up Tim	e 03/18/11 e 01:10:11	MM/DD/YY HH:MM:SS [24 Hr. Time]	
Data Points in File	28569	Number of tests in data file	6
Time 🛛	Minimum Value 1.00000	Maximum Value	Units minutes
Pressure 🛛	.010	.010	psiG
Temperature [32.000	32.000	deg. F
F(610)(01-04-80 Directory path:)(2).DAT C:\MICRO SMART	DATA	
Print Info	<u>E</u> xport	Info Plot to Scree	n <u>B</u> ack

Gauge Number Connected	Gauge connected is 7019
Gauge Name (Gauge Type)	Pressure Gauges is connected
Power Up Date/ Time	Date 03/18/11 Time 01:10:11
Data Points in File	Number of data points in the file. Number of points 28569
Number of Tests in Data File	The number of tests stored in memory. In the above screen there are 6 different tests stored in memory.
Min/Max Values and Units	Minimum and Maximum values from the test. Units of measure selected from User Setup
File Path Directory	File saved to the Micro Smart Data folder on the C drive under tool number and date down loaded
Print info	Print value depicted on screen
Export info	Will generate a *.pdf , Microsoft Word or Excel file
Plot to Screen	Plot to a graphic form
Back	Back goes back to the Gauge Operations Screen

Note: The file created is an ASCII text file that can be opened in Notepad, WordPad, Word or imported into Excel. It can be attached to an email or copied to a removable disk using Windows Explorer.

- 4.4.8 The tool downloads the data to the C:\Micro Smart Data directory
 - a. The created file will have a name that includes the tool serial number, today's date, and the test number. Ex. F(7019)(03-18-11)(1).dat

Note: The file created is an ASCII text file that can be opened by WordPad, Word or imported into Excel. It can be attached to an email or copied to a removable disk using Windows Explorer.

b. When dumping of the memory is complete, the program will display a second screen with the minimum and maximum values of the time, pressure and temperature.

Button Options

- Print Info will print the information shown on screen
- Export Info will generate a *.pdf, Microsoft Word or Microsoft Excel file
- Plot to Screen displays the information in graphic form.

🏁 Smart Data - Dum	p Main Memory		X
Gauge Number Connected Gauge Number To Use	7019 Gauge	e Name Downhole Pressur	e (HT-750, HT-1250)
Gauge Power Up Da	ate 12/12/12	MM/DD/YY	
Gauge Power Up Tir	me 12:12:12	HH:MM:SS [24 Hr. Time]	
Data Points in File	1455	Number of tests in data fil	
Data Foints in File	1455	Number of tests in data hit	
Time	Minimum Value	Maximum Value	Units seconds
Pressure	8.490	10.631	psiG
Temperature	75.657	78.319	deg. F
F(4148)(04-14- Directory path: Print <u>I</u> nfo	03)(1).DAT C:\MICRO SMAR	T DATA	reen <u>B</u> ack

4.5 Smart Data - Erasing Data from the HT Gauge

4.5.1 Prior to beginning a new downhole test, it is necessary to erase any old data in memory.

Warning: Be careful not to erase any old data before downloading it to the computer.

4.5.2 If on the Smart Data Main screen, left click the "<u>Gauge Operations</u>" button or (alt + G).



4.5.3 From the Gauge Operations screen choose the Erase Data Memory option

🏁 Smart Gauge Operations		×
Gauge Selection		
Downhole Pressure (HT-7	'50,HT-1250,HS-1250)	•
		_
Gauge Status	O Dump Main Memory	
O Program Custom Setup	Erase Data Memory	
Real Time Test		
<u>C</u> ontinue	Back]

4.5.5 After Left clicking the "<u>Continue</u>" button (alt + C), the following screen will appear asking if you are sure you want to erase the data in the tool. The erase function only erases the data in the tool. It will <u>not</u> erase data on the hard drive of the computer.

Erase SMINI Memory	X
Are you sure you want to erase	the memory in the SMINI gauge?

4.5.6 Left Click the "Yes" button or (alt + Y) to erase the data on the tool. Run a Gauge Status after erasing data to verify the main memory reads 0%. If "No" or (alt + N) is selected the data will not be erased from the tool.

Note: Reference Gauge Status under Gauge Operations for directions to perform a Gauge Status

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Assembling the Tool

5.1 Assembling the HT Tool

5.1.1 Clean and fill the pressure port cavity in the gauge and the landing nose with silicone grease





Warning: Be careful not to poke, puncture or deform the exposed transducer diaphragm.

- 5.1.2 Ensure the 2 o-rings on the gauge are in good condition and lightly coat the o-rings with silicone grease.
- 5.1.3 Lightly coat threads with anti-seize.
- 5.1.4 De-passivate and test battery packs (see Appendix A) CRITICAL STEP



Note: Log the serial number printed on the battery pack in your gauge operators log book

If using the battery for a longer test, ensure that the battery is new for best results

Either of the Battery Testers could be in the gauge transit case

5.1.9 **The LED light on the battery pack should flash 16 times** after power up indicating that the gauge is operating properly.

Warning: If the light does not begin to flash after 10 seconds, there may be a problem. Remove the battery pack, wait 30 seconds, and re-connect it. If the gauge does not respond, re-test the battery using the battery test procedure (Appendix A)

5.1.10 Screw the battery housing onto the gauge. Tighten all connections using the supplied wrenches.



5.1.11 If the HT-750 or HT-1250 gauges are to be run in tandem, remove the landing nose





- 5.1.12 Ensure the **pressure port cavity** on the coupling is filled with silicone grease.
- 5.1.13 After connecting the two gauges, tighten the connections
- 5.1.14 Note the gauge serial numbers and their positions (top and bottom) in the operator's log book

5.2 The HT-7502 Kit

- 5.2.1 The HT-750 Gauges should be run in the Micro-Smart 1-1/4" O.D. protective carrier whenever possible to minimize potential damage to the gauges.
- 5.2.2 Connect the battery housing of each gauge to the center spring shock and tighten (The tandem coupling is not used in this assembly).



- 5.2.3 Clean and grease the internal threads of the carrier's end plugs.
- 5.2.4 Slide the tandem gauge assembly into the carrier and tighten both end plugs, ensuring the landing nose of each mini-smart gauge is centered.

PLEASE: Do not use pipe wrenches, vises, or pliers on the body of the carrier



5.2.5 Gauges are ready to be connected to wireline tool string and go downhole.

Disassembling the Tool

Note: Verify tool has been serviced since previous use. (i.e. check o'rings).

The following instructions are used as preparation for a Downhole Test

6.1 Disassembling the HT tool

6.1.1 Remove Battery Housing and Battery from HT tool.



6.1.2 Connect Cableface to Electronics Section of HT tool



6.1.3 Download tool data to computer

Smart Data - Data File Operations

7.1 Smart Data - Data File Operations

7.1.1 If not in Smart Data, double click the Smart Data icon on the desktop of your computer.



7.1.2 Smart data navigation window appears.



7.1.3 Select **Data File Operations** button (or alt + D) to modify, manipulate, or copy Data (*.DAT) Files within Smart Data.

7.2 Data File Operations—Manipulating and Downloading Data Files

7.2.1 Create Customer Disk copies the data file to a specified location.

🏴 Smart Data - Data File Opera	ations	🎇 Smart Data - Create Customer Disk Operation	
Options		E File To Copy: F[410)(12-21-10)(11 DAT	Select
Select File Operation Create Customer Disk Create Alternate Data File Reduce Data File	Segment Data File Separate Multiple Test File Change Power Un Time/Date	File Size: 213 KB Copy To Drive:	
Continue	Back	© Copy File Only © Zip and Copy Data File © Zip Data File Only © Zip Data and Other Files <u>Continue</u>	Bac

7.2.2 Create Alternate Data File adds the real date and the real time to the data file. The data file increases from three columns (Time, Pressure, Temperature to five columns (Real Date, Real Time, Elapsed Time, Pressure and Temperature)

Note: A new file with *.TXT extention is created and cannot be used with the Smart Data Program

Ex. F(410)(12-21-10)(1).TXT

If the power up Date and Time are not correct within the file, see section '7.2.6 to update before proceeding

🏁 Smart Data - Data File Opera	ations
Options	
Select File Operation	
O Create Customer Disk	O Segment Data File
Create Alternate Data File	O Separate Multiple Test File
O Reduce Data File	O Change Power Up Time/Date
Continue	Back

7.2.3 **Reduce Data File** offers a range of reductions from light to super, or manually choose a number of points to be represented. A new file is created with an additional section in the file name (RED),

ex. F(2343)(11-10-03)(1)(RED).dat

5mart Data - Data File Opera	ations	I 🛛	Smart Data - Reduce Data File Operation	
ptions		E.	File To Reduce:	
Select File Operation			IF(410)(12/21/10)(1).0A1	Select Fi
O Create Customer Disk	O Segment Data File			Automatic Reduction
O Create Alternate Data File	O Separate Multiple Test File			C Light Normal
Reduce Data File	O Change Power Up Time/Date			O Enhanced O Heavy
				Manual Reduction
Continuo	Back			O Nth Point
	Dack			<u>C</u> ontinue

7.2.4 **Segment Data File** allows a selected portion of the data file to be included in a new file. A new file is created with an additional section in the file name (SEG1),

ex. F(2343)(11-10-03)(1)(SEG1).DAT

🏁 Smart Data - Data File Operations	Smart Data - Segment	Data File Operation	×
Options	File To Segment F(410)(12	2-21-10)(1).DAT	Select File
Select File Operation Create Customer Disk Create Alternate Data File Reduce Data File Continue Back	Segnert Start Minut Number Same Start Minut 1. 2. 3. 4. 5. 6. 7. 8.	Ime End Time Zero Data Ime (Minutes) Time [2] Ime (YAN) [3] Ime Ime Ime Ime Ime Ime	a File Information 25000 Minimum Time 58.00000 Maximum Time antinue Back

7.2.5 **Separate Multiple Test File** allows for the separation of multiple tests into new individual files. New files are created with an additional section in the file name (TST#), ex. Two tests would create two files F(2343)(11-10-03)(1)(TST1).DAT and

ex. F(2343)(11-10-03)(1)(TST2).DAT

🏁 Smart Data - Data File Opera	ations	1	🊰 Smart Data - Separate Multiple Test File Operation	×
Options			File To Separate F(410)(12-21-10)(1),DAT	Select File
Select File Operation				
O Create Customer Disk	O Segment Data File		Test Information	
O Create Alternate Data File	Separate Multiple Test File		Number Ur Lests In File: g	
O Reduce Data File	O Change Power Up Time/Date			
<u>C</u> ontinue	<u>B</u> ack			ontinue <u>B</u> ack

Note: This file has 9 tests. The file would be separated in 9 different files using this option

- a. After clicking **Continue** (or alt + C) the following screen will appear
- b. The Power Up Date/Time is requested for each test
- c. Click OK (or alt +O) to proceed to the next screen

Separate Data File	Separate Data File		Separate Data File
Enter Start-Up Date and Time For Test # 1	Enter Start-Up Date and Time For Test # 2		Enter Start-Up Date and Time For Test # 9
Gauge Power Up Date	Gauge Power Up Date		Gauge Power Up Date
Gauge Power Up Time	Gauge Power Up Time		Gauge Power Up Time
<u>O</u> K	<u><u> </u>K</u>		<u><u> </u></u>

d. The following screen appears when all of the Power Up Date/Times have been entered and **OK** (or alt +O) is clicked

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		Summ	ary Of Separatio	on Process			
Nar	le	Size	Of Points	Time (minutes)	Time (minutes)	Pressure (psiG)	Pre_ (psi
F(410)(12-21-10)	1)(TST1).DAT	32 KB	684	2.25000	173.00000	855	152
F(410)(12-21-10)	1)(TST2).DAT	16 KB	336	2.25000	86.00000	546	152
F(410)(12-21-10)	[1)(TST3).DAT	12 KB	240	2.25000	62.00000	-2.980	152
F(410)(12-21-10)	[1)(TST4).DAT	19 KB	396	2.25000	101.00000	-1.115	152 -
•							Ð

Note: In our example nine (9) files are created, each file created will have a *(TST#) indicating the test number created. These files can be used in Smart Data for graphing and reporting.

Print (or alt + P) creates a printout of the files created

Back (or alt + B) goes to the Data Operations File Screen

7.2.6 **Change Power Up Time/Date** is used to change that information in an existing data file.



- 7.2.7 Select <u>Continue</u> (or alt + C) from the Data File Operations Screen after highlighting the desired function
 - a. **Back** (or alt + B) goes to Data File Operations Screen
- 7.2.8 From the Change Power UP Time/Date File Operation screen select <u>Continue</u> (or alt + C) to update the file with the new Power Up Date and Time
 - a. <u>Back</u> (or alt + B) goes to Data File Operations Screen





Smart Data - Graphing

8.1 Getting to Smart Data - Graph

8.1.1 If not in Smart Data, double click the Smart Data icon on the desktop of your computer.



8.1.2 Smart data navigation window appears.



8.1.3 Select **Graph** (or alt + A) button to graph within Smart Data

8.2 Smart Data—Select File Screen

- 8.2.1 **Select** (or alt + S) allows you to select a file to graph
- 8.2.2 Select the desired plot type
 - a. Linear
 - b. Semi-Log
 - c. Log-Log
 - d. Special Plot Gradient
- 8.2.3 After choosing the file and type of plot, select **Continue** to see the graph.

🗱 Smart Data - Select File	×
File To Plat	
F(4148)(04-14-03)(2).DAT	Select
,	
Linear Plot	
Pressure/Temperature vs. Elapsed Time	
Sami Lag Plat	
O Tressure 45. Liapseu Time	
Log-Log Plot	
O Pressure vs. Elapsed Time	
Special Plot	
O Gradient	
<u>C</u> ontinue <u>B</u> ack	

8.3 Smart Data-Graph Screen

8.3.1 Select Print (or alt + P) to print the current displayed graph



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- 8.3.2 There is also a Preference option under <u>Edit</u> (or alt + E) menu which will provide additional options for customizing your graph
- 8.3.3 Select Plot Scaling to change the X and Y scales of the plot
- 8.3.4 To zoom in on a portion of the graph
 - a. Place the cursor on a point above the curve
 - b. Click and hold the left mouse button. A circle with a slash through it will appear.
 - c. Drag the cursor. The circle icon will become a magnifying glass.
 - d. Release the mouse button when you have completed the selection
 - e. The new graph will appear.
- 8.3.5 Select \underline{Z} oom Out (or alt + Z) to return to the original graph.
- 8.3.6 Select **Export Graph** to save the graphic image as a *.bmp, *.jpg, or *.wmf file.
- 8.3.7 Adding comments to the graph or selecting gradient stops
 - a. Move the cursor over the Pressure line.
 - b. A hand with a pointing finger will indicate the cursor is on a valid data point
 - c. Select the point with a left mouse click. The point can then be moved with the left or right arrow keys.

Note: More on Comments can be found on the next page

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		Mart Data - Data Tag Input				
		Data Point: Tag # 32.71250 hours 1 4172.049 psiA 104.634 deg. F				
	 No Comment Plot Comment Dnly Print Comment Dnly Plot and Print Comment 					
	No Gradient Stop Image: Flowing Static TVD feet feet Image: POOH Gradient Stop Image: Static VLM feet Image: Static Image: Tag # Time Pressure Temperature Comments Image: Static Image: Static					
		Depth Comment Save Back				
Sma	rt Da	ata - Data Tag Input Screen				
	Dat	a Point Information				
		Tag # :The number of the comment (annotation) chosen. Tag # will increase by one (1) as each comment is added to the graph				
	Data Point Information : Time, Pressure and Temperature for the point chosen					
	Comment - Description or Important information about point chosen					
	Тур	e of Stop				
		NO Gradient Stop - general comment, not a gradient stop				
		RIH Gradient Stop - Run In Hole Gradient Stop				
		POOH Gradient Stop - Pull Out Of Hole Gradient Stop				
	Cor	idition of well at stop - Flowing or Static				
	τvi) - True Vertical Depth—Value is used to calculate the gradient				
	WL	N - Wireline Measurement				
	MP	P - Mid Point of Perforations - Put zero (0) if not necessary to extrapolate to MPP				
	Grio	of Comments and comment related information				
	<u>D</u> ep	th Comment Button - Automatically creates depth comment after input of RIH/POOH Gradient Stop, Flowing/Static and TVD value				
	<u>S</u> av	e Button - saves the comment and comment information entered				
	<u>B</u> ac	k Button - Returns to the graph screen but does NOT save the comment information				



Smart Data - Report Setup

9.1 Select Reports from the Main Screen



9.2 From **Report** Setup select **Select File** to retrieve the data file to report. Data File defaults from the last *.DAT file created.

⁸ Smart Data - Report Setup			_1
Report Setup	Well Info	Customer Info	Service Company
Data File F(0116)(11-21-01)(3).DAT Data Page Setup ✓ ✓ Include Delta Pressure Calculation Method ○ Current - Previous ○ ○ From Shut-In Elapsed Time 100 100 Minutes Time values in file selected 2.06250 Min value 191.75000 Max value Pages To Include ✓ Cover Page ✓ Event Summary Page ✓ Gradient Page ✓ Data Pages ✓ Print	Header Information - Enter / Ch Service Company Big Surf Oil Well Compan Dig Surf Oil Well Compan Customer Chevron-Texaco, Inc. Well Name East Tornado #5-C Test Type Flowing & Static Gradier	ange Header Info	prmation

9.3 To enter specific report information Left click Enter/Change Report <u>Header</u> information button (alt + H).

Note: Critical data required to print a report section is highlighted in red. They are highlighted in yellow on the Report Setup screen

- <u>Micro-SMART Systems, Inc</u>
 - a. Screens will toggle from right to left. Enter the pertinent data in the fields on the screen
 - b. The File Cabinet can be used to load saved information or to save for future selection.
 - c. Click <u>Continue</u> (alt + C) to proceed to the next screen or <u>Back</u> (alt + B) returns to the previous screen
 - d. Clear (alt + R) clears the form to start over







Report Setup	Test Info	WellInfo	Customer Info	Service Company
Test Type	Flowing & Static Gradients			
Test Date	January 10, 2002			
Start Date/Time	1/10/02 - 10:00:00			
End Date/Time	1/10/02 - 15:15:00			
Duration	5:15:00			
Gauge Depth	5500 ft max			
Gauge Position	bottom			
Casing Pressure	3400 psi			
Tubing Pressure	2000 psi			
Max. Pressure	5500 psi			
Max. Temperature	278 deg F			
Model Number	sp-2000			
Pressure Range	15K			
Battery Used	Lithium, 300 F			
Test Setting	Fixed Sampling			
Test Duration	<1 day			
Job Number	44456 - A			
Reported By	Chromes Fourth	Clear	Continue	Back



Report Setup	Test Info	Well Info	Customer Info	Service Compan
Data File F(0116)(11-21-0	11)(3).DAT		Select File	
Data Page Setup		Header Information		
Include Delta Presso	ure			
Calculation Method		Enter / Ch	hange <u>H</u> eader Info	ormation
C Current - Previous				
From Shut-In		Service Company		
Elapsed Time		Big Surf Oil Well Compa	any	
	(63	Customer		
Time values in file selected		Chevron-Texaco, Inc.		
2.06250 Max	value	Well Name		
191.75000		East Tornado #5-C		
Pages To Include		Test Type		
Cover Page		Flowing & Static Gradie	nts	
Header Page Event Summaru Page	•			
Gradient Page				
- D-I- D ~ 1	1 nages			

9.4 File (alt + F) - Exits out of the Report Setup Window



9.5 Edit (alt + E) - Goes to the graph screen to allow the user to add or edit Comments on the graph

<u>E</u> dit	Print Preview	
	Comments	

9.6 **Print Preview** (alt + P) - Allows user to preview pages prior to creating the report.



Note: The screens can be printed from Print Preview Screen

Menu options could be less if Cover Page, Header Page and Event Summary Page and Gradient Page are not present

Print Preview	
Data Page	

Max value

191.75000

Data Page Setup 9.7 Data Page Setup - Check Include Delta Pressure if there is a preference is to have the Delta Pressures Include Delta Pressure show on data pages **Calculation Method** Current - Previous 9.8 Delta Pressure can be calculated two ways From Shut-In a. Using the Current Value as a base point b. Using the Shut-In Value as a base point Elapsed Time 100 Minutes Note: Gradient Values use the value in the TVD field Time values in file selected Min value 2.06250

Report Setup	Test Info	Well Info	Customer Info	Service Company
ata File F(0116)(11-21- ata Page Setup	-01)(3).DAT	Header Information -	Select File	
Include Delta Pressure Calculation Method C Current - Previous From Shut-In Elapsed Time		Enter / Ch Service Company Big Surf Oil Well Compa	ange <u>H</u> eader Info	ormation
Time values in file s 2.06250 Min 191.75000 Max	utes selected value : value	Customer Chevron-Texaco, Inc. Well Name East Tornado #5-C		
ages To Include 7 Cover Page 7 Header Page 7 Event Summary Pag 7 Gradient Page 7 Data Pages 8 Export	ge 11 pages Print	Test Type Flowing & Static Gradier	its	Back

9.9 Select **Export** (alt + E) to export the entire report in *.pdf, *.doc or other file types.

9.10 To print all of the pages in each selected section, select **Print** (alt + R).

Note: Each page will be saved as a separate *.pdf file. The files will have to be combined in order to create one (1) pdf report.

If there is RIH and POOH gradient information, the default file name for these *.pdf files is the same. Please save the information with RIH gradient information first, followed by POOH information, naming each accordingly.

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Appendix A LITHIUM BATTERIES

DE-PASSIVATING AND PREPARING BATTERIES

Note: Lithium Batteries will "passivate". Passivation is a natural barrier that is formed over time by the charge on the battery. It inhibits the flow of power from the battery. A passivated battery will not operate the tool any better than a battery that is too weak. **Test batteries prior** to every run and de-passivate as necessary.

- 1. Shake battery vigorously for 1-2 minutes.
- 2. Slight tapping on hard surface length wise could help de-passivate.
- 3. The battery temperature for testing should be between 70°F and 90°F.
 - a. If the battery is colder (<60°F), the battery must be warmed up before testing.
 - b. When outdoor temperatures are cold, keep the batteries in a warm location overnight, if possible.

BATTERY TESTING - TWO MANDATORY TESTS

- 1. The battery must be tested under load prior to any lab or downhole test
- 2. Observe the voltage. The measured voltage should be brought up to a minimum of 3.5 volts before use.

Important Notes:

- I. If the battery is tested at room temperature under load and the voltage immediately jumps up to 3.9 volts, the battery may not be properly loaded.
- II. Batteries that are tested under load, after being removed from downhole and are still hot, may measure about 3.9 VDC
- III. Lithium batteries that have been used in previous downhole runs may respond differently from new batteries. It is often more difficult to de-passivate or bring up a used battery's voltage to the minimum voltage required.
 - i. Repeated shaking and load testing may be necessary to prepare used batteries
 - ii. Temperature cycling of the batteries, by using them downhole, appears to change the behavior and life of the battery. They may be reused if the minimum voltage is above 3.5 volts

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When shipping, lithium batteries are generally considered as hazardous goods.
 a. Follow all recommended company policies and government regulations when shipping.

Appendix B

Lithium Battery Safety

- 2. Do Not short lithium batteries. They may generate internal heat, build pressure and rupture.
- 3. Do Not immerse lithium batteries in water. The effect is a short circuit with same results as #2 above.
- 4. **Do Not** greatly over-temperature lithium batteries. They may generate internal pressure and rupture.
- 5. Do Not dispose of lithium batteries in a fire.
- 6. Do Not strike the battery in any manner in an attempt to crush, destroy or open the cell.
- 7. Do Not attempt to recharge lithium batteries.
- 8. Dispose of depleted lithium batteries according to company policy and government regulations. It is illegal to dispose of these lithium batteries in landfills. They must be treated as hazardous waste. They must be neutralized and disposed of by professional disposal companies.
- 9. Should lithium batteries leak, the liquid and the vapors are hazardous.
 - a. Protection and clean up should conform to hazardous spills guidelines.
 - b. Do not inhale the lithium vapors or touch the liquid.
 - c. The liquid can be neutralized with common baking soda.
- 10. In event of fire, use only Class 'D' or "Lith-X" fire extinguishers.



- 3. Insert the Smart USB-Serial or USB Cableface into one of the USB ports on the computer you are using
- 4. The computer should recognize that a thumb drive (USB drive) was inserted into one of the USB ports on the computer (Step 1), if not the drivers will have to be installed manually (Step 2)
 - a. The computer will start a wizard for installing the drivers
 - The drivers are located on the USB-Serial Folder on the Smart Data CD or the Smart Flash drive
 - 2. The wizard should allow for pointing to this folder to obtain the drivers
 - b. The drivers will have to be manually installed

- 1. Left click on Windows Icon 🧐 in the bottom lefthand corner of the screen.
- 2. Right Click on "My Computer" or "Computer"



3. After Right Clicking, Left Click "Properties"



4. Choose Device Manager



5. Windows will highlight drivers that were not installed.

File Action View Help	
⊨ + m 🖸 📓 m 🕸	
🖌 🚔 Red_Targa	
> Joseph Batteries	
Biometric Devices	
Bluetooth Radios	
> 📲 Computer	
Disk drives	
🔉 🖳 Display adapters	
> DVD/CD-ROM drives	
- 🖓 Human Interface Devices	
G IDE ATA/ATAPI controllers	
🖉 Imaging devices	
> - Keyboards	
- 🖞 Mice and other pointing devices	
- Nonitors	
Network adapters	
 By other devices 	
- Bluetooth Peripheral Device	
SMART USB to SERIAL CONVERTER	
Partable Devices	
Processors	
Sound, video and game controllers	
a 👜 Universal Serial Bus controllers	
— 🖗 Generic USB Hub	
— 🏺 Generic USB Hub	
Generic USB Hub	

- 6. Right Click on Smart to USB SERIAL CONVERTER
- 7. Choose Update Driver Software



8. Choose Browse Computer for driver software



- 9. Left click on the Browse option
- 10. Choose the drive that contains MICRO_SMART\USB-Serial (SMART) Folder



- 11. Left Click "OK"
- 12. If you get the window below choose Install this driver software anyway



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13. Windows will install the driver



- 14. The driver should be successfully installed
- 15. Two drivers need to be loaded (one for the USB driver and one for the Serial Driver), so the process will start again. If the process does not start automatically, you will need to install the second driver.

Bevice Manager	
File Action View Help	
Computer	
Disk drives	
🗼 📲 Display adapters	
DVD/CD-ROM drives	
> 🕼 Human Interface Devices	
Der IDE ATA/ATAPI controllers	
EEE 1284.4 compatible printer	
Maging devices	
Mice and other pointing devices	
Monitors	
Network adapters	
↓ D Other devices	
SMART USB to SERIAL CONVERTER	
Image: Portable Devices	
Ports (COM & LPT)	
Communications Port (COM1)	
ECP Printer Port (LPTI)	
Sound video and game controllers	
System devices	
Universal Serial Bus controllers	
🕟 🖶 WSD Print Provider	

a. Expand "Other Devices" (This will show you the device that was not previously installed because the operating system could not locate the driver.



- b. Left Click the "Update Driver/Software " Option
- c. Repeat Steps from 8 through 14

Note: Computer might prompt if you're sure you want to install the drivers.

16. After the second driver is loaded verify the communications port (Com Port) in Device Manager (Com#). This will be needed in Smart Data under User Setup. Please note that our software cannot use communication ports (com ports) higher than 14. If the comport assigned by the computer is higher than com port 14, we recommend you change it to com port 5 or some other number less than 15.

To get back to Device Manager

- a. Left Click on the Windows Start Button
- b. Right Click on the Computer Option
- c. Left Click on "Properties"
- d. Left Click Device Manager
- e. Expand the Ports (COM & LPT1) Option

Bevice Manager	
File Action View Help	
⊿ 🚔 Red_Targa	
De la Batteries	
Biometric Devices	
D-1 Computer	
Disk drives	
Display adapters	
DVD/CD-ROM drives	
De ATA/ATAPI controllers	
Dana Imaging devices	
Explored Sector	
Mice and other pointing devices	
Monitors	
Network adapters	
Detable Devices	
Portable Devices	
MART USB Serial Port (COM3)	
Processors	
Sound, video and game controllers	
System devices	
🛛 🖥 Universal Serial Bus controllers	

Note: Our Communications Port is COM 3 in our example

Uninstalling Smart USB Drivers

Appendix

To UnInstall Smart USB Drivers :

- 1) Plug the Smart USB cable into USB port on computer.
- 2) Click the Start button, go to Settings \ Control Panel \ System \ Hardware \ Device Manager.

(On some older versions of Windows, the Device Manager may be a Tab on the System window)

- a) In Device Manager, perform the following steps
 - i. Click on the '+' or ▶ next to "Ports" to display the ports installed
 - ii. Right click on the SMART USB Serial Port and choose Uninstall or Remove. The Smart USB Serial Port should no longer appear in the list.



- iii. Click on the '+' next to "Universal Serial Bus Controllers" to display the installed devices
- iv. Right click on Smart USB Serial Converter and choose Uninstall or Remove.



v. Smart USB Serial Converter should no longer appear in the list.

Note: If the drivers were not installed properly, the device may appear in Device Manager under Other Devices or Unknown Devices

- 3) In the Start menu go to Settings \ Control Panel \ Add or Remove Programs
- 4) In Add or Remove Programs select "Micro-Smart USB-to-Serial Converter Drivers"
- 5) Click Remove or Uninstall
- 6) Follow instructions to uninstall (it will tell you to disconnect device)
- 7) Reboot computer

Shut down 🕨

P



3. The following window displays. Type "UAC" in the search window in the top righthand portion of the window. Choose change User Account Settings

rol Panel			🐺 UAC - Control Panel	
- Control Panel -	- 🖾 🛛	<u> </u>	Southernol -	• 📴 [uk]
Adjust your computer's settings	View by: Category •		Action Center Change User Account Control settings	
SymbolSymbolSee 1See 1See 2See 2<	Image: An antice of the ant			

Search programs and files

- 4. Left click "Action Center"
- 5. Slide the slider down to "Never Notify". After slider is placed on "Never Notify" left click on "OK". A reboot may be required.



6. Use the UAC at this level when installing Smart Data. This setting can be changed to the original setting after the installation of Smart Data