HOGGAN SCIENTIFIC, LLC.

microFET 2™

USER GUIDE

Congratulations on becoming the proud owner of the new microFET2™ with wireless technology, Hoggan Scientific, LLC highly renowned handheld digital muscle tester. The microFET2™ is the cornerstone of Hoggan's highly functional and innovative medical products group, and is the most widely recognized muscle tester on the market today. The new microFET2™ wireless allows muscle testing to be done FREE of cords in conjunction with microFET clinical patient software. This provides freedom and ease of use performing muscle tests.

Hoggan has been creating innovative solutions for accurate, objective measurement since 1984, with the introduction of the original FET muscle tester. Over the past 20 + years, our product line has expanded to include inclinometers, grip and pinch gauges, and innovative ergonomic measurement instruments.

During that time, Hoggan's products have developed reputation for innovation, excellent quality, ease of use, and long lasting accuracy and reliability. Our highly satisfied customers include hospitals, universities, clinics and research institutions worldwide. The microFET products have been used by organizations as diverse as NASA, the Shands Institute, the US Olympics and professional sports teams.

At Hoggan, we are constantly improving our products to better meet your needs. Besides the addition of the new wireless technology incorporated into the microFET line of products, we've added some important new features to the microFET2™. You can now measure forces up to 300 lbs and select the unit of measure to read out in lbs, Newtons, or kgf.

We understand the value of customer feedback. Our customers provide us with many of our best product improvement ideas, as well as interesting new measurement applications. As you have comments and suggestions, we'd love to hear from you. Please e-mail us at contact@hogganhealth.net.

In the meantime, we hope you enjoy using your microFET2™ with new wireless technology immediately, and for many years to come. For more information on all of our innovative medical, ergonomic and fitness products, please visit us at www.hogganhealth.net.

microFET2™ Wireless Overview

The microFET2™ is an accurate, portable Force Evaluation and Testing (FET) dynamometer, designed specifically for taking objective, reliable, and quantifiable muscle testing measurements. The microFET2™ can be used as a stand alone device, or used with available software. The updated microFET2™ Wireless with radio frequency technology provides convenience for both you and your patients. The wireless microFET2™, when used with Hoggan Scientific microFET clinical software, alleviates the inconvenience of being wired to the computer and provides easier interaction with patients. A wireless instrument allows greater freedom in the exam room or testing area, and eliminates dictating the location of the computer and length of instrument cable so you can move freely during testing.

This unique, handheld device is battery operated, weighs less than 1 pound, and is ergonomically designed to fit comfortably in the palm of your hand. microFET2™ sophisticated digital technology was designed to achieve its high degree of accuracy and reliability.

Information from the gauge is displayed in two LCD windows, Peak Force, and Duration/Sec. During the test, the Peak Force LCD shows the force being applied against the transducer pad, and at the conclusion of the test, the LCD displays the maximum force reached. Duration/Secs shows the elapsed time of the test from the time the testing threshold was crossed until the test was concluded.

The microFET2™ was designed to be a standalone gauge for capturing individual force measurements for any muscle test. However, the gauge can also be attached to Hoggan Scientifics optional muscle testing software to increase your evaluation and documentation capability.

We hope you enjoy your microFET2™ experience.

Hoggan Scientific, LLC

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HOGGAN SCIENTIFIC, LLC.

microFET2™ System

CAUTION: Federal (USA) law restricts the sale of this device by or on the order of a physician.

USER QUALIFICATION
The microFET2™ must be used by a physician or by medical personnel under the supervision of a physician. The user must have received sufficient training in clinical procedures.

DESCRIPTION
The microFET2™ is a wireless-capable dynamometer that measures the peak force applied to the transducer pad and its duration during any muscle test.

INDICATIONS
microFET2™ is a dynamometer device for performing muscle tests to quantitatively measure muscle weakness caused by injury, as well as measure general muscle strength. The device is used to record and convey an individual's ability to resist force for a specific muscle or muscle group being tested.

HOW SUPPLIED
The microFET2™ is a reusable and provided non-sterile to the end-user. The device is packaged in a carrying case (See figure 1) to protect the device during transport. The microFET2™ is supplied with:

- microFET2™ wireless digital dynamometer (5021)
- Flat/Round Transducer pad (0001)
- Curved Transducer pad (00035)
- Digit Transducer pad (00003)
- Muscle Testing Positions wall chart
- Upper Body test recording tablet
- Lower Body test recording tablet
- User Guide
- Product/Warranty card
- Calibration certificate
- Carrying Case
- Rechargeable LI-ion Battery
- Wall Pack Power Supply Charger
- *Optional – Bluetooth / FET Stick (Included with software when software ordered)*

CONTRAINDICATIONS
The microFET2™ is contraindicated under the following:

- On or near open wounds
- Patients having severe osteoporosis
- On or near burned tissue
- On or near the eye
- On or near fractures
- Not to be used for any purpose other than indicated

Figure 1: The microFET2™ device in supplied carrying case

WARNINGS AND PRECAUTIONS:

- **The microFET2™ device should only be used by trained professionals.**
- **The microFET2™ device and accessories are provided non-sterile and are not compatible with autoclave or other sterilization techniques. Do not autoclave.**
- **Use only a factory supplied wall pack power supply, charger. Use of another charger may result in electrical shock or equipment damage.**
- **microFET2™ devices are not intended for use while attached to wall pack power supply, charger. Never attempt to operate the instrument while it is connected to the charger as electrical shock or damage to the instrument may occur.**
- **The microFET2™ device is not protected against ingress of liquids. Keep device dry. Do not immerse the microFET2™ device or accessories in water.**
- **When in use device should be used on top of clothing.**
- **Discontinue use of any product if skin irritation develops.**
- **The microFET2™ is a precision medical device. Device should be treated with care. Do not drop, bang or hit or cause other impact to the device.**
- **Not recommended for use in extreme temperatures.**
- **Applied part is microFET2™ device with a transducer pad attached.**
- **Do not dispose of microFET2™ device in fire. microFET2™ device contains lithium ion battery.**

- **Device is not known to contain any hazardous materials. For proper disposal instructions, consult your local waste management facility. Recycling should be used where available.**
- **Hoggan Scientific microFET2™ and USB dongle should not be used while stacked on, or adjacent to, other electrical or medical electrical equipment. If microFET2™ is stacked or adjacent to other electrical or medical electrical equipment, all electrical equipment should be checked to confirm normal operation.**
- **Rechargeable lithium ion battery is only serviceable part.**
- **Do not service the battery while in use with patient.**
- **Making any modifications or using any accessories not specifically approved by Hoggan Scientific, LLC may void the warranty as well as reduce immunity to electromagnetic interference, or increase electromagnetic emissions, and result in improper operation.**
- **The use of portable and mobile Bluetooth (RF) equipment:**
  - **A. Can possibly affect medical electrical equipment normal operation.**
  - **B. The RESPONSIBLE ORGANIZATION (Hospital, clinic, healthcare professional) should identify, analyze, evaluate and control related risks.**
  - **C. RESPONSIBLE ORGANIZATION - Changes to IT-Network (Updates or upgrades to the microFET2 device, changes to the IT Network Configuration, connections or disconnections of items to the IT Network) could introduce new risks that require additional analysis.**
- **Medical Electrical Equipment needs special precautions regarding EMC. microFET2™ needs to be installed and put into service according to the information provided in this manual.**

DIRECTIONS FOR USE

OPERATING FEATURES

- On/Off Switch – turns device on or off.
- Sleep Mode – The device enters a low power mode after being left on for three minutes. The device can be awoken by turning off the power for at least five minutes or pressing the reset button.
- Reset Button – (see Figure 2) The reset button activates the microFET2™ and reinitializes the unit for testing. It is not necessary to reset after each test, but may be necessary to clear false readings caused by static discharge.

Figure 2. Device Buttons

- Threshold Button – (See Figure 2) Controls the amount of force required before the microFET2™ begins recording test data.
- LCD Windows – Display Test Results and Option Settings.
  - Peak Force – Displays peak force of muscle test
  - Duration – Displays the duration of the muscle test

GENERAL USE

- Read all instructions before use.
- Select the appropriate transducer pad for the test being performed: Flat Pad for flat surfaces, curved pad for rounded surfaces, and digit pad for fingers and toes.
- Attach appropriate transducer test pad to muscle tester by screwing the transducer test pad onto the threaded stud on the muscle tester. Tighten to snug fit but do not over tighten.
- Switch the power button to the "On" position.
- To perform a muscle test, place examiner's hand through the elastic strap of the microFET2™.
- The device is placed between the examiner's hand and the patient's limb to be tested, with the transducer pad contacting the patient.
- The examiner applies a force against the limb, while the patient provides a counter or resistive force.
- After the test, the device displays the peak force measured along with the duration of the applied force for review and recording of test results (see Figure 5).
- To begin another test, perform muscle test. The device will automatically clear previous test results and begin recording data for new test. Pressing the Reset button will also clear previous test results and will display zeroes in both LCD display windows for start of new test.
- Up to 30 previous stored test results can be accessed. See Data Retrieval Mode Instructions below.

DATA RETRIEVAL MODE

- With the device in the test mode (displaying zeroes in both display windows), hold down the threshold button and click the reset button, this puts the device

in data retrieval mode.

- The device will display the peak force (in the peak force window), test number (in the left hand side of the duration window), and duration of the test (in the right hand side of the duration window) See Figure 3).

Figure 3. Data Retrieval Mode Test Result Display Example

- Press the threshold button to cycle through the stored test results (up to 30).
- For tests shorter than 10 seconds, a decimal point will appear for the duration.
- For tests longer than 10 seconds, no decimal point will appear for the duration.
- To delete saved tests, hold down threshold button and click reset button twice.
- Note: If wireless or RF mode is powered on (wireless mode turned on for use of device with software), device will not save and store tests.
-

microFET2™ WIRELESS OPERATION

The microFET2™ may wirelessly transfer data to accompanying software if desired by the examiner.

- To turn the wireless mode on, hold down the threshold button for ten (10) seconds.
- The device will enter force unit of measure setting mode after five (5) seconds, continue to hold down the threshold button until the peak force display shows "rF", this is the wireless power setting menu (see Figure 4).

Figure 4. Wireless Mode Setting

- The duration screen will display the current wireless power mode as "On" or "Off".
- Toggle the wireless power setting by pressing the threshold button.
- Return to test mode by pressing the reset button.

THRESHOLD SETTINGS

- The device threshold determines the minimum force required before the microFET2™ begins recording test data as shown in the table below.

Threshold Setting	High	Low
Force Required to Start Test	3 lbf 12.1 N	0.8 lbf 3.6 N
Measurement	Up to 300 lbf in 0.1 lbf increments (1320 N in 0.44 N increments)	
When to Use	Normal Use – Reduces False Starts	Weak Muscles, Finger and Toe Tests

- The current threshold setting is displayed as either an "L" or "H" on the left side of the duration window. Figure 5 shows the device in Low Threshold Setting.

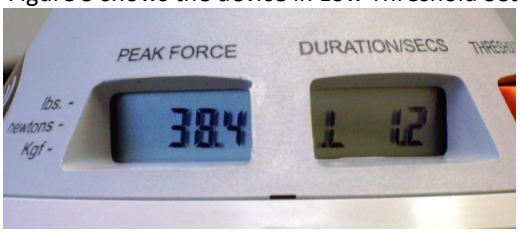

Figure 5. LCD Display Windows /Threshold Setting and Sample Test Results

- The threshold can be toggled between high and low by pressing the threshold button (see Figure 2) when the device is in test mode.

FORCE MEASUREMENT SETTINGS

- The force unit of measure may be changed between Pounds, Newtons, and Kilogram force.
- With the device in test mode, hold down the threshold button for five seconds, this puts the device in force unit of measure mode.
- The Peak Force display will then display a hash mark next to the current measurement unit in the peak force window (See Figure 6) .

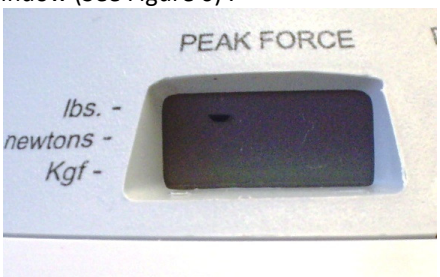

Figure 6. Force Measurement Mode

- Press the threshold button to toggle through the available units of measure.
- Once the desired unit is selected, press the reset button to return to test mode.

BATTERY CHECK

- With the device powered on in test mode, hold down the threshold button and click the reset button.
- Continue to hold the threshold button for five seconds. The device will display “P” in the peak force window and a number from 1 to 100 in the duration window. The number in the duration window indicates the battery charge in percentage (See Figure 7).

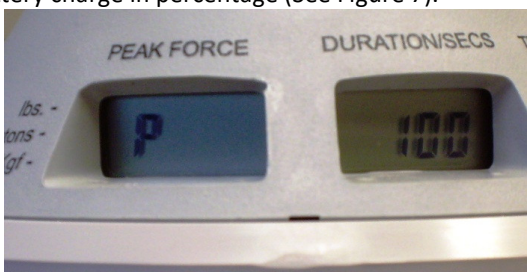

Figure 7. Power Check Display

- The unit will return to data retrieval mode after five seconds. To regain access to battery check, hold the threshold button for five seconds.
- To return to test mode, press the reset button.

“MAKE” OR “BREAK” MUSCLE TESTING

The microFET2™ is designed to be used with either the "make" or the "break" form of manual muscle testing.

To perform “make” testing the clinician positions the patient to isolate and contract the muscle of interest with the device in the proper position (see Figure 8 for examples). The clinician gets into "power position", a stable position that will provide the clinician the maximum ability to resist the force applied by the patient. The clinician instructs the patient to apply force against the device, while the clinician resists. The object of the test is for the patient to exert or "make" the maximum force he is capable of, using only the muscle being tested. "Make" tests typically run for seconds (slow count of 4). Many people find it helpful to start the test by announcing "go" and end the test by stating "relax".

"Break" testing is also performed by carefully positioning the patient and the device. The clinician stabilizes the patient in the isolated position, with one hand, while placing the microFET2™ unit in position to exert force against the limb associated with the muscle. The test begins with the clinician gradually applying force and the patient trying to resist. The object of the test is for the clinician to overcome, or "break" the patient's resistance.

Multiple published studies have proven manual muscle testing to provide consistent, reliable results, both across multiple tests by single tester, and across multiple testers. The keys to achieving valid results are proper patient and device positioning, and consistency of the testing methodology used.

Figure 8. Examples of Muscle Tests

For information on positions and manual muscle testing for main muscle groups, refer to the Manual Muscle Testing Positions Wall Chart included with your microFET2™. For additional clarification or how to test for additional muscle test positions, refer to manuals such as Daniels and Worthingham.

LOW BATTERY INDICATOR

Blinking readouts in LCD displays or unlit segments of the LCD display are indications that the microFET2™ battery power may be low. If LCD displays still blink or unlit segments remain after pressing Reset, the battery should be charged.

To avoid testing interruptions due to low battery power, we recommend that you check remaining battery power regularly, and re-charge battery when reaches approximately 15% power level. To check battery power, follow the battery check instructions.

CHARGING THE BATTERY

- To charge the battery, unscrew the transducer test pad to remove from the main unit.
- Insert the barrel connector from the wall pack transformer into the power connector that is located under the attachment. (see power connector on microFET2™ , Figure 9).
- If the unit is turned on the right display will show the battery power while the battery is charging.
- When the battery power reaches 100% then the battery is fully charged.
- To check battery level charge, turn power button to On position.
- If device is stored longer than 30 days, check battery power level and recharge battery before using if necessary.

Caution: *Only use power supply provided by manufacturer: Phihong Model PSAC05R-050-L6.*

Caution: *The power supply is the disconnect device and shall remain readily accessible for easy disconnection.*

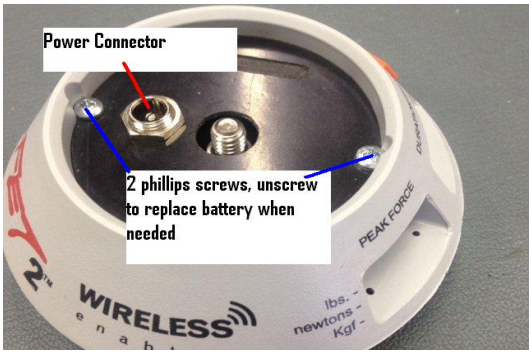

Figure 9. Device Charging and Battery Access

REPLACING THE BATTERY

When replacing rechargeable battery, use only rechargeable battery supplied by Hoggan Scientific: Model ICR14250 (1) 3.7V 1/2 AA LI-ion rechargeable battery, 280 mAH. Other batteries may cause damage to device and void warranty. These batteries can be purchased from Hoggan Scientific LLC. To change the battery:

- When replacing battery, do not touch the internal circuitry, battery, and patient simultaneously.
- Remove the attachment from the main unit. Carefully remove the 2 Philips head screws from the battery cover (see Figure 9).
- Pull the battery cover up and rotate to the side to allow access to the battery.
- When installing new battery, make sure the positive (+) post of battery aligns with the (+) mark on the microFET2™ pc board (see Figure 10).
- Check power level of rechargeable battery to see if needs charging before use.
- If after installing replacement battery, the segments do not light up in LCD displays, please contact Hoggan Scientific LLC Customer Service Department at ph: 800-678-7888 / 801-572-6500.

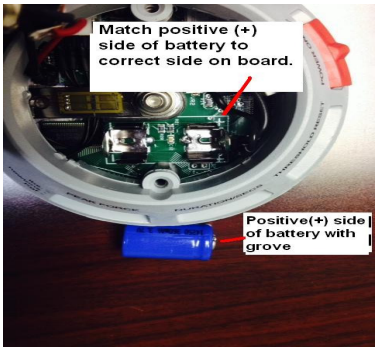

Figure 10. Battery Replacement

STORAGE AND TRANSPORTING

The microFET2™ is provided with a hard sided protective carrying case. It is recommended to keep the device in this case when in transportation or when not in use. Store the device in a cool dry location.

SERVICE, MAINTENANCE, AND CLEANING

Your microFET2™ is built to provide long lasting, reliable service. As with any precision instrument, it should be used with care. It should not be dropped, banged against hard surfaces, or used as scale.

The microFET2™ 's exterior surface can be cleaned with soft cloth dampened with clean water We recommend that you periodically inspect your unit for wear, and proper functioning.

Caution: Do not immerse microFET2™ or accessories in water or other fluids or liquids. Device is not protected against moisture, water or liquids.

DEVICE DISPOSAL:

Follow electronic device disposal guidelines when disposing of used device. There are no special risks related to the disposal of these devices.

USE LIFE:

The microFET2™ is designed to provide long lasting reliable service. The expected use life of the device 5-10 years. This is determined by the use frequency and proper maintenance and care by the user. Improper use, dropping, or mistreatment of the device will likely shorten its functioning Use Life.

CALIBRATION:

The microFET2™ comes with calibration certificate, ensuring that the unit was properly calibrated at the time of shipment. To ensure continued accuracy and reliability, your microFET2™ unit should be recalibrated annually, by properly authorized Hoggan Scientific, LLC service technicians.

If the microFET2™ device is to be used with the optional software, software setup and USB driver installation is required. Please refer to software and USB driver set up instructions that comes with the software.

WARRANTY

The microFET2™ is warranted for a period of one (1) year from the time of purchase. If the microFET2™ fails to operate because of defect in materials or workmanship at any time within one (1) year of the purchase date, it will be repaired free of charge by Hoggan Scientific LLC. (return shipping not included). Extended warranties are available at an additional nominal fee.

If you wish to purchase and extended warranty after the purchase of your microFET2™, there is a 30 day grace period to purchase an extended warranty package. Contact Hoggan Scientific, LLC for more information.

WARRANTY REGISTRATION

To ensure your warranty is in force, please complete and mail, or fax your warranty card to Hoggan Scientific LLC at 800-915-3439. Or visit www.hogganhealth.net to register your warranty information online. Please save proof of your original purchase date, such as your sales slip, invoice, credit card voucher, or cancelled check to establish the warranty period.

WARRANTY REPAIRS

Before deciding that your microFET2™ is inoperable or defective, please review and follow the information in this instruction booklet.

In the unlikely event your microFET2™ becomes inoperable, please contact Hoggan Scientific, LLC to arrange to have the equipment repaired. Hoggan reserves the right to repair or replace the unit with new or refurbished parts or equipment**.**

Hoggan's Customer Service Department can be contacted at 800-678-7888, or by email at contact@hogganhealth.net. When Hoggan Customer Service Representative authorizes return of the product, you will be given Return Merchandise Authorization (RMA) number. Please include the RMA number with your unit. For confirmed warranty repairs, the customer is responsible for the applicable shipping costs and shipping to Hoggan Scientific.

WARRANTY EXCLUSIONS AND LIMITATIONS

The microFET2™ warranty does not cover damage by negligence, misuse, or accident. Damage or unit failure caused by modifications or repairs other than those approved by Hoggan or its authorized repair agent, or damage to equipment resulting from improper installation or operation is not covered. Any warning or instructional labels or decals must remain on the unit for the warranty to be valid.

This warranty applies to the original purchaser. Some states do not allow the exclusion or limitation of incidental or consequential damages, in which case the exclusions and limitations may not apply. This warranty gives specific legal rights, and may also have other rights, which vary from state to state. To determine the legal rights in your state, consult your local or state consumer affairs office or State Attorney General.

CUSTOMER SERVICE REPAIRS

Customer satisfaction is important to Hoggan. We are happy to assist with questions, problems or service issues on any Hoggan products you may own. Our business has grown on the basis of excellent product quality and customer satisfaction. Our fulltime customer service representatives are available from 7:00 am to 4:30 pm MST at 800-678-7888 to meet your needs. You can also contact Hoggan Scientific online regarding your customer service issue or calibration needs by e-mailing us at contact@hogganhealth.net.

ORDERING REPLACEMENT PARTS

Hoggan Products are manufactured to exacting specifications. When replacing worn or damaged parts, use only original parts supplied by Hoggan Scientific. The use of substitute or unauthorized parts will void your warranty and may increase the possibility of injury to the user, or cause additional damage to the unit.

When ordering Replacement Parts, please take the unit out of service, and complete the following:

- Identify the brand, model, and serial number, and note the unit's function.
- Identify and document the problem and the worn or missing parts.
- Contact Hoggan Scientific LLC. Replacement parts (attachments) will be shipped directly from Hoggan.

All repair services will be performed at Hoggan Scientific LLC Manufacturing plant.

Except for replacing batteries, do not attempt to repair the unit on your own. This will void all warranties.

microFET2™ batteries, replacement parts and Preferred Service Contracts can be ordered either by calling Hoggan Scientific LLC or order online at www.hogganhealth.net.

microFET2™ SPECIFICATIONS

- Weight: 1 lb.
- Operation Use Time:
  - Non-wireless mode - 90 hours continuous
  - Wireless mode - 6 hours continuous
- Transportation, Storage, and Operating Conditions:
  - Temperature: 11 – 33 degrees Celsius (52 – 92 degrees Fahrenheit)
  - Humidity: 30 - 80% humidity non-condensing
  - Atmospheric Pressure: 800 hPA - 1060 hPA. (11.60 psi – 15.37 psi)
- Maximum Force Capacity: 300 lbs. (136 kgf / 1320 Newtons)
- Internal Power Source - Battery: Model ICR14250 user serviceable, 3.7 volt 1/2 AA lithium ion rechargeable battery 280 mAH.
- Input Power: 5V 1.0A
- Recharge Time: Three (3) continuous hours of charging
- Power Supply: Phihong Model PSAC05R-050-L6. Input - 100-240V. Output – 1A. 5 volt DC regulated
- No Protection Against Harmful Ingress of Water: IPX0 – ordinary equipment
- Test Range:
  - Low Threshold 0.8 lbs to 300 lbs in 0.1 lb increments Metric Newtons: 3.6N 1320N in 0.4N increments KGF (kilograms force):
  - 0.4kgf to 135kgf in .1kgf increments

- High Threshold 3.0 lbs to 300 lbs in 0.1 lb increments Metric Newtons: 12.1N to 1320N in 0.4N increments KGF: 0.4kgf to 135kgf in 0.1 increments
- Accuracy: Within 1%
- Data Storage Stores 30 most recent tests.
- Wireless Frequency Operating Distance: 25 feet, 7.6 meters from receiver, indoor environment
- Device is Class II ME equipment while charging, and internally powered when in use.
- FCC ID: T9J-RN42
- Radio Frequency: 2.4 GHz

DEVICE CLASSIFICATIONS
Classifications: Class II
Type B Applied Part
Mode of Operation: Continuous
IPX0 (Do Not Wet the Device)

Device complies with:
IEC 60601-1-2:2014 (EMC)
IEC 61000-4-2 (2008)
IEC 61000-4-3 (2006), A1:(2007), +A2:(2010)
IEC 61000-4-8 (2009)
CISPR 11 Emissions Class B (2009), +A1:2010
Radiated Emissions Conducted Emissions
FCC Part 15B

TECHNICAL ASSISTANCE:
For further assistance, contact Hoggan Scientific at:
www.hogganhealth.net
Phone: 800-678-7888 / 801-572-6500
Email: contact@hogganhealth.net

GRAPHIC SYMBOLS AND DEFINITIONS

						**Rx Only**
Device will not work when connected to AC outlet	Device is provided non-sterile	Attention, See Instructions for Use	Catalogue number	Serial Number	Keep Dry	For prescription use only
	**IPX0**					
Manufacturer	Do not wet the device	Class II Electrical Equipment	Type B applied part – External Body only contact	FCC Compliant Device	Radio Frequency	

microFET2™ is a registered trademark of ***Hoggan Scientific, LLC***.

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FDC FET Data Collection Software Manual

Hoggan Scientific, LLC

Software Manual 2016 Version 2.1.1

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FDC FET Data Collection Software Computer System Requirements

The following computer system requirements are recommended for Hoggan Scientific FDC software to function properly.

Minimum Computer System Requirements

- Pentium 450 MHz or higher
- Windows XP, Vista, 7, 8
- 1024 x 768 display
- 256 Screen Colors
- 64 MB RAM
- CD/DVD drive for software installation
- USB Port
- 1 GB free hard disk space
- Mouse
- 16 bit sound card with speakers
- Color Printer
- Microsoft Word 2003 or newer

Customer Support
If you have further questions about computer system requirements for running FDC software, installing the software, or require technical assistance, please contact Hoggan Scientific at 800-678-7888 / 801-572-6500 or by email at contact@hogganhealth.net.

Important Notice:
For customer service calls, it is necessary to have a telephone located within reach of the computer running the FDC software. This is vital during installation and technical support calls because you will have to access the computer while working with our customer service staff. Without a telephone located near the computer, Hoggan Scientific, LLC support staff will be unable to provide you with proper, timely service.

Product Return Policy
Purchased FDC software is non-returnable.

Sample Rate
Sample Rate is 100 samples per second.

***NOTE: Before installation of the FDC data collection software and driver for microFET and ergoFET devices, check to make sure that the computer and/or the user account installing the software and driver has full administrative rights enabled to allow for installation. Otherwise problems may be encountered with the install.**

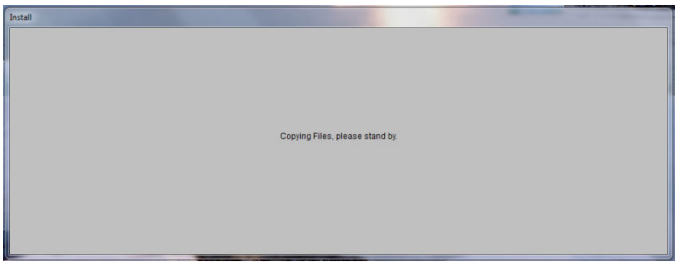
Software Installation

The following procedure describes the installation process whether you are installing new software or upgrading from a previous software version or windows operating system.

Auto Installation:

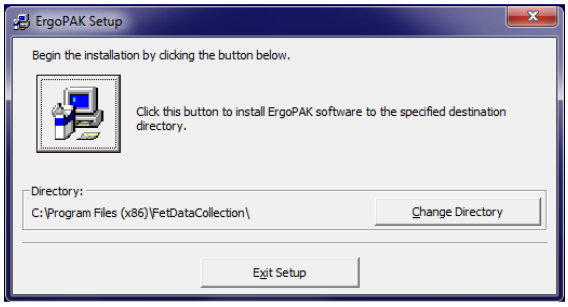
1. Start your computer and exit any applications that might be running.
2. Insert the FDC Software CD into the CD-ROM drive.
3. AutoPlay Window will appear on screen. Select Run setup.exe.

4. The set up application will start copying files.

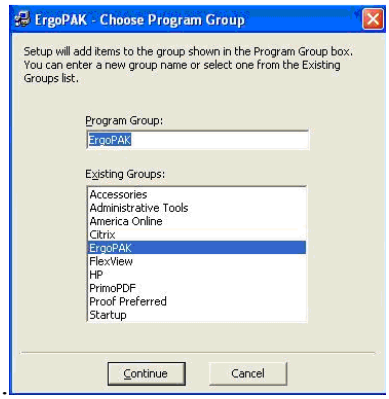


5. ErgoPAK Setup Screen will appear.

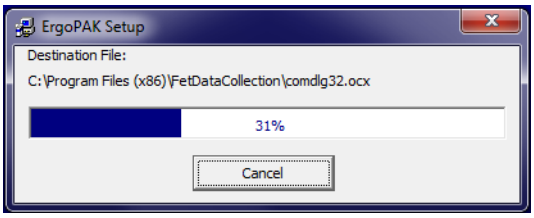
6. Click on the OK button.
7. To begin installation of the FDC software, click on the Computer Icon button, and Setup will install FDC in the default folder.
To install FDC software in a different location, click the Change Directory button and select the location. Then click on the Computer Icon button to begin installation. If you choose not to install FDC software, click on exit Setup button to exit the installation program.



8. Choose Program Group: Setup will add FDC software to the group shown in the Program Group box along with other program files in the Programs file, under default name FetDataCollection. If desired you can enter a new group name or select from the Existing Groups list.



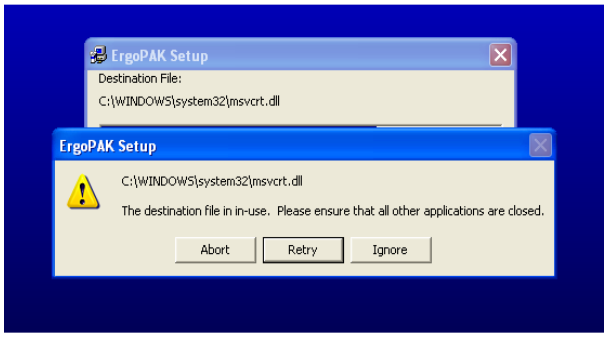
9. After selection is made, click on Continue. FDC software is now being installed to the Destination File.



10. During installation, one of the following messages will appear based on the operating system of the computer:

A. FOR WINDOWS XP: A message will appear during installation:

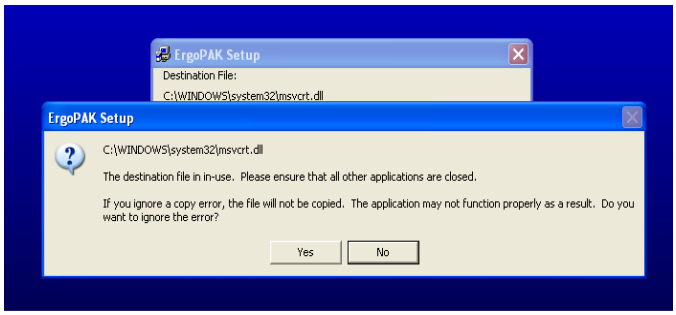
Destination File:
C:\WINDOWS\system32\msvcrt.dll
The destination file in use. Please ensure that all other applications are closed. (See software screen shot below)



- Select, click on Ignore.
- A second message will appear:
  C:\WINDOWS\system32\msvcrt.dll

  The destination file in in-use. Please ensure all other applications are closed.

  If you ignore a copy error, the file will not be copied. The application may not function properly as a result. Do you want to ignore the error?
  (See software screen shot below)



- Select, click on Yes.
- The software will now continue to install.

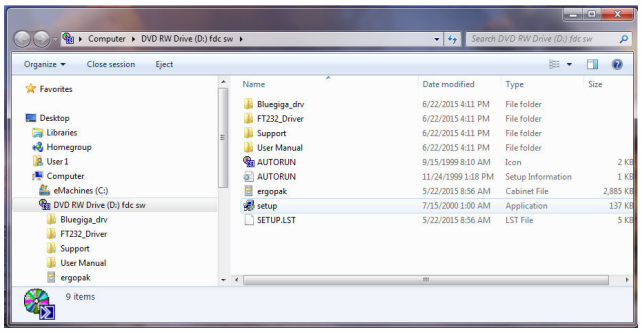
B. FOR WINDOWS VISTA: A message will appear during installation:

- Select, click on Yes.
- The software will now continue to install. A message will appear showing that the FDC software was successfully installed.

Manual Installation

If the computer does not automatically initialize the FDC Software that brings up the welcome screen, the following instructions are to install software manually:

1. Insert the software disk into the CD-ROM or DVD-ROM drive.
2. Click on Start button in bottom left corner of computer screen.
3. In Start menu select Run.
4. Type the following, which includes location of the CD-ROM or DVD-ROM drive for the computer. Following is an example: D:\setup.exe
   As option, click on Start button, then click Browse in Start menu, or open Windows Explorer. Locate the CD-ROM or DVD-ROM drive on the computer, and click on the drive.
5. A screen will appear of files listed on the software installation disk.



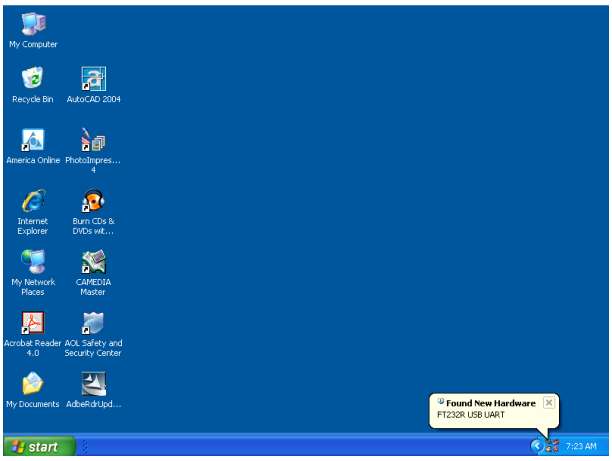
6. Select and click on the setup.exe icon.
7. Continue software installation under Auto Installation instructions, step #4.

Open FDC FET Data Collection Software

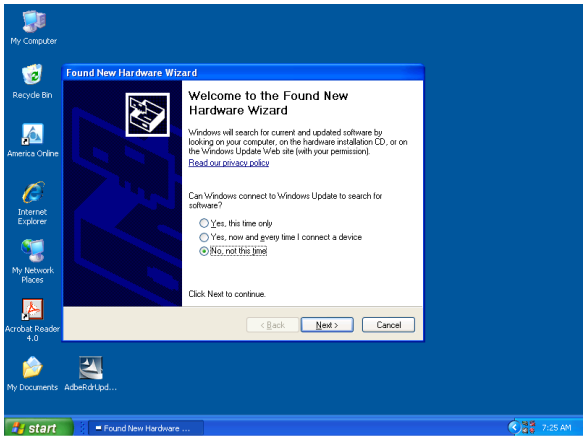
1. To access the software, go to Start button icon at the bottom left hand corner of your desktop and left click on Start.
2. In the Start menu, place the cursor over All Programs.
3. All installed programs on the computer are listed. Click on ergoPAK folder
4. The ergoPAK software icon appears. Click on the ergoPAK icon to start the program.
5. As option for software program, can create shortcut to desktop, and/or pin the software program to the Start Menu or Task Bar. Shortcut for program will appear as below on computer desktop screen.

USB Dongle Device Driver Installation microFET and ergoFET Products

1. Insert USB dongle included with software disk into a USB port.
2. On newer versions Windows Operating Systems, the computer may detect the USB dongle, and auto install the driver for the USB dongle, so that installing driver from software disk is not required.
3. If USB driver is not auto installed, install the USB driver from the software disk. Have software disk in CD tray prior to installing USB driver.
4. The Message Found New Hardware dialog bubble will appear on bottom right hand corner of the desktop computer screen.

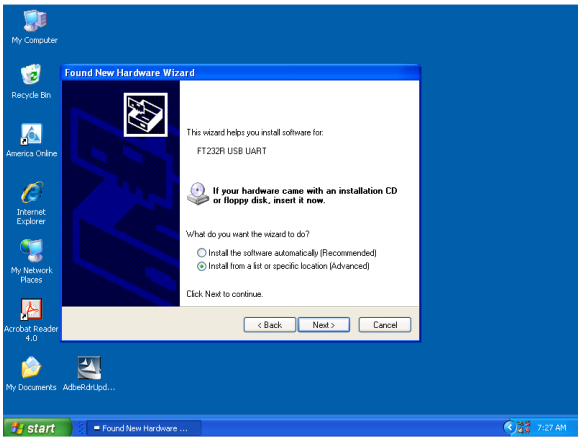


5. Click on the Found New Hardware dialog bubble.
6. The Found New Hardware Install Wizard dialog box will appear.

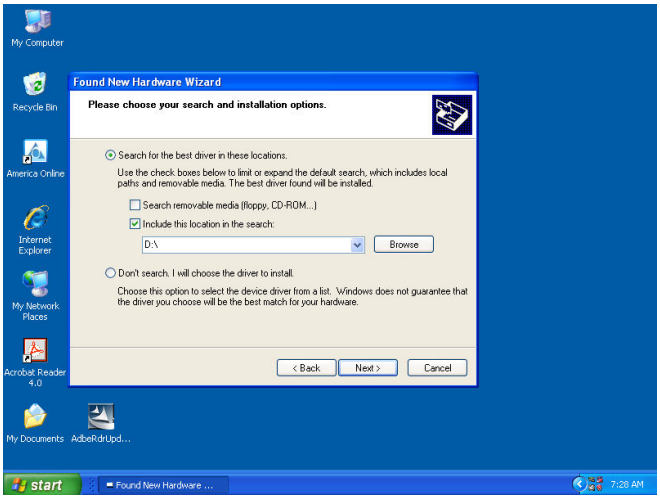


5. In the Found New Hardware dialog box, for the question – Can Windows connect to Windows Update to search for software? **- Select No, not this time.** Then click the Next button to continue.

6. The next Wizard dialog box will assist looking for the USB driver to install.



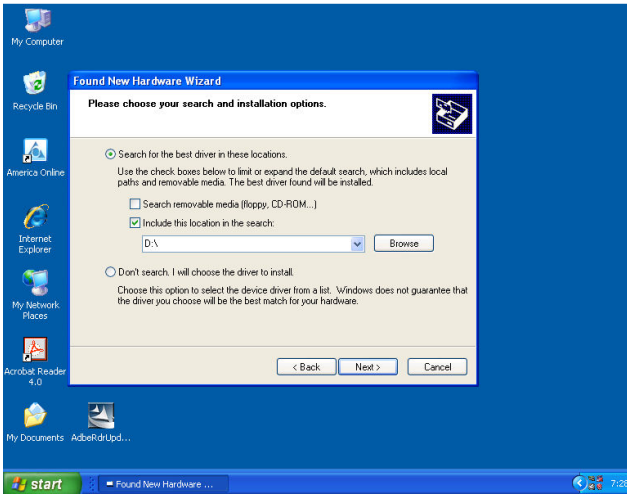
7. A question will appear – What do you want the wizard to do? **- Select (Advanced) Install from a list or specific location.** Then click the Next button to continue.
8. Found New Hardware Wizard – Please choose your search and installation options dialog box appears.



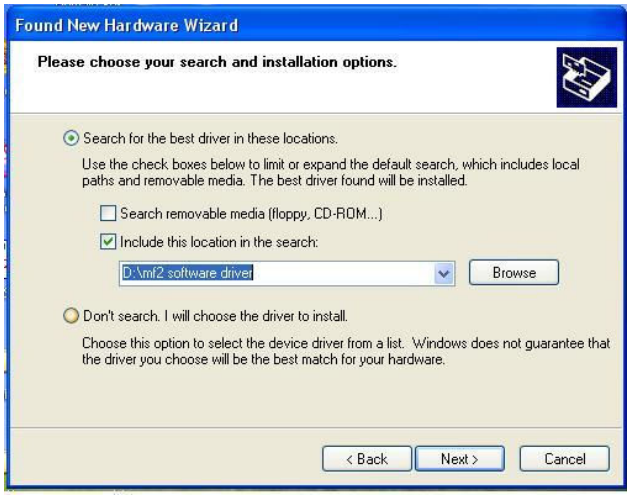
9. In this dialog box, If Search removable media floppy CD-ROM has a check in the box next to it, unselect this option.
   Select – Search for the best drive in these locations: Then click on the box next to Include this location in the search.

10. Next click on the Browse button. A Browse Folder Dialog box will appear. Locate the drive on your computer in which the software CD is in the CD tray.

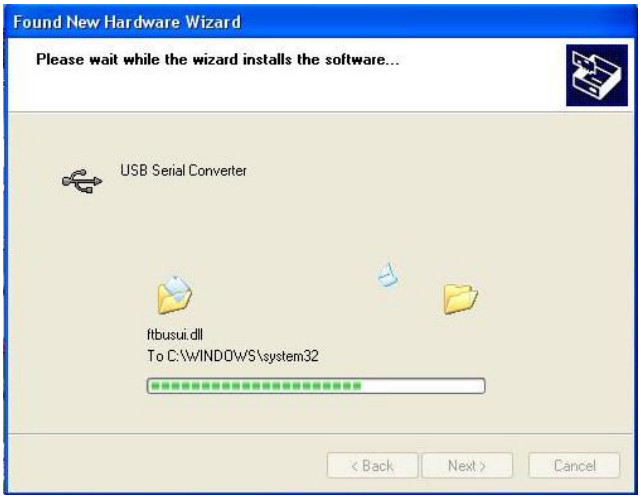
11. When you have located the drive where the software CD is located, click on the drive with your cursor to highlight. Then click the OK button and the bottom of the Folder Dialog box.
12. The CD Drive in which the CD that contains the mf2 driver (for microFET2 or ergoFET) is the destination location to select to search for the USB driver software



13. When you have located the drive where the software CD is located, click on the drive with your cursor to highlight. Then click the OK button and the bottom of the Folder Dialog box.
14. The CD Drive in which the CD that contains the mf2 driver (for microFET2 or ergoFET) is the destination location to select to search for the USB driver software.



15. Click on the Next button at the bottom of the Found New Hardware Wizard dialog box. The Hardware Wizard will locate and begin installation of the USB driver.



16. The Found New Hardware Wizard has finished installing the USB Driver. **Click Finish to close the wizard.**

17. The USB dongle (or USB connector box for corded models) is now ready for use with FDC Data Collection Software.

If you encounter problems installing software or USB driver, please contact Hoggan Scientific, LLC by phone at 800-678-7888/801-572-6500, or e-mail contact@hogganhealth.net, and one of our support staff will be glad to assist you.

Testing

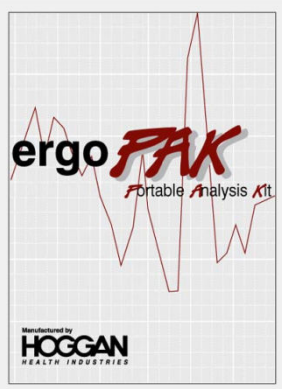
Device Set Up Prior to Software Use/Testing

1. Plug in the wireless USB dongle into available USB port.
2. Turn on your microFET or ergoFET device. Make sure the device does not go into sleep mode, as this will cause interruption in communication between device and software.
3. Check on device that RF or wireless mode is turned on. For wireless RF mode function, refer to the device user manual included with the unit.

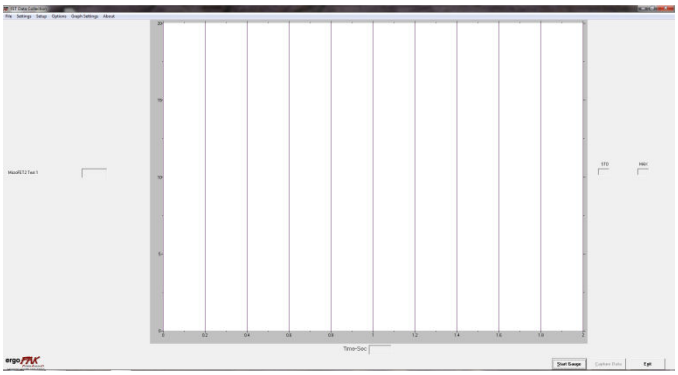
Open Software

1. To start software, click on the ergoPAK shortcut on your desktop, or select ergoPAK in Start Menu or Task Bar.

2. The software initialization screen appears.

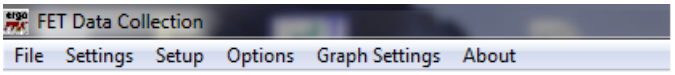


3. Software main test screen appears after approximately 2 seconds.

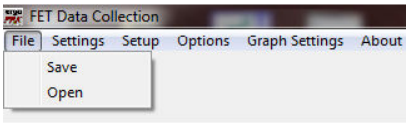


Software Menu

The software menu is located in the upper left hand corner of main software screen.



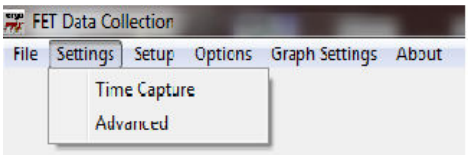
1. File Tab: File tab is for performing and saving tests in File tab, to allow to open up saved file in software to view data from test. Saving tests in File tab is option to normal default saving of test results.



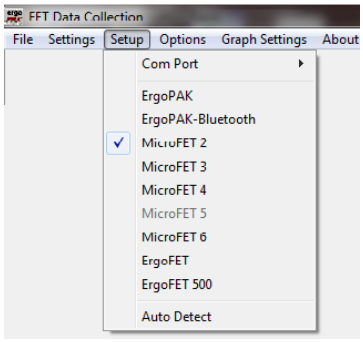
2. Settings Tab:
   a. Time Capture allows option to set Delay Time, Warning Time and Capture Time parameters in seconds to capture sample

points from device when away from computer.

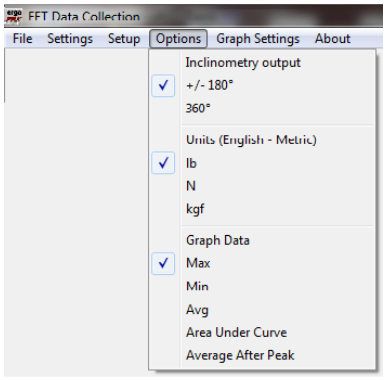
b. Advanced Settings allows option to select or set certain parameters or limits for test.



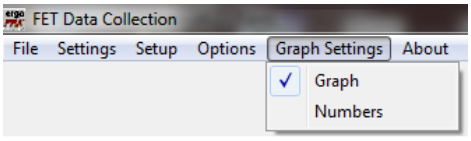
3. Setup Tab: Setup Tab is for selection of device to be used for testing; and check Com Port and Auto Detect Com Port to check and confirm communication of device with software.



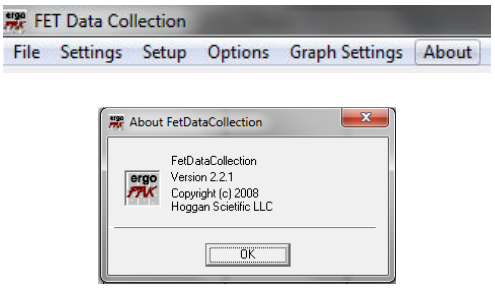
4. Options Tab: Options Tab allows to select unit of measure for device and output of test results, and graph data numerical readout display.



5. Graph Settings Tab: Allows to select to display output from the device in graph or numerical readout display in software screen during testing.

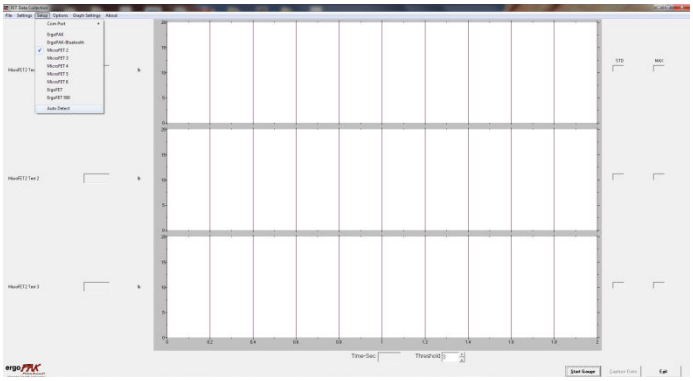


6. About: When click About, software version information is displayed.

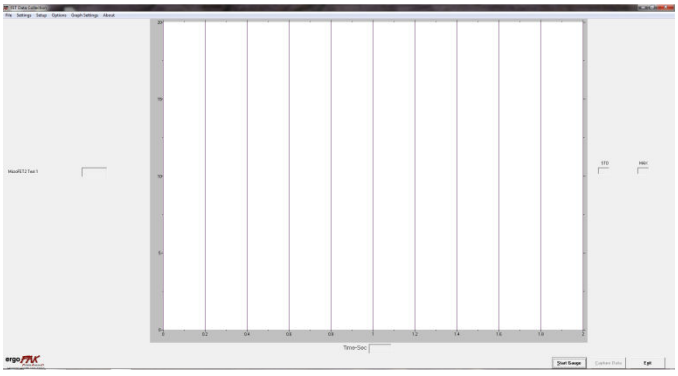


Device Selection and Com Port Set Up

1. In the FDC software main test screen, in the top left hand corner of the software screen go to and click Setup. The drop down menu will list the Devices, Com Port and Auto Detect.



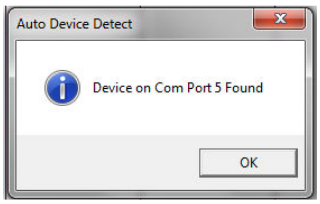
2. Select the appropriate device you are testing with.



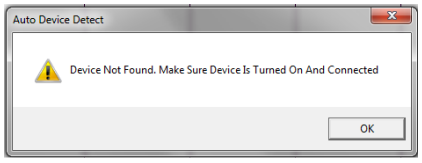
2. The software identifies and confirms the device connected, and device selected will be listed in the software screen (example microFET2).

3. The software should auto detect the com port for the device using. A com port setting does not need to be selected.

4. Check Com Port with Auto Detect: Under Set Up select Auto Detect. If com port in the software matches the com port assigned to the USB driver on the computer, a message will appear stating the com port found.



5. In the event the com port selection in the software do not match the com port setting selection on the computer, an error message Device Not Found will appear.



6. Device Not Found error message indicates that either device not powered on or com port settings do not match. First check to see that device is powered on. If confirm device is powered on, will need to check, set com ports manually.

7. For manual Com Port Set Up, go to Set Up and select Com Port. Note the current com port selection in the software.

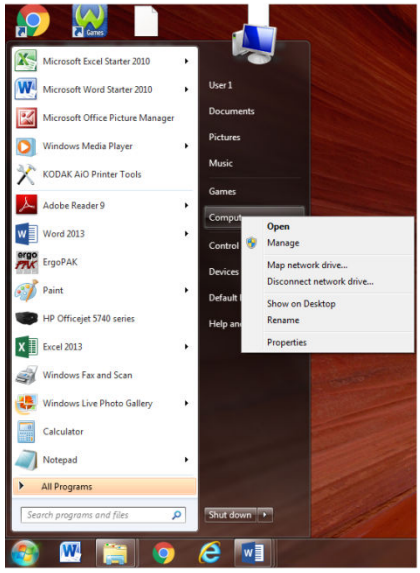
5. Com Port Setting Computer: To check the com port setting on the computer, follow these steps:

A. Go to the Start button located in the bottom left hand corner of the desktop screen.

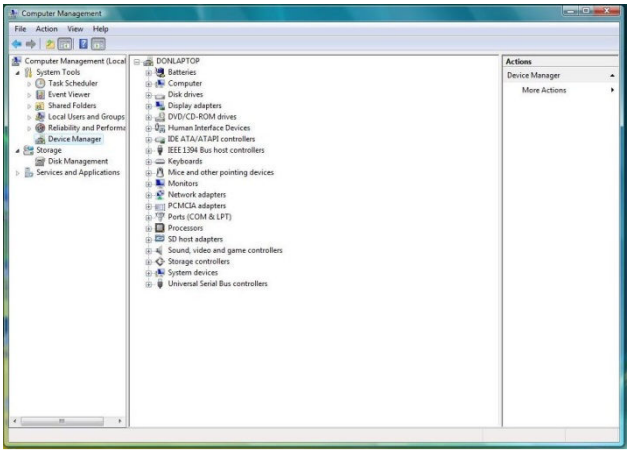
B. Click on the Start button, and the Start Pop Up Menu will appear.

C. In the Start Up menu, locate and right click on Computer

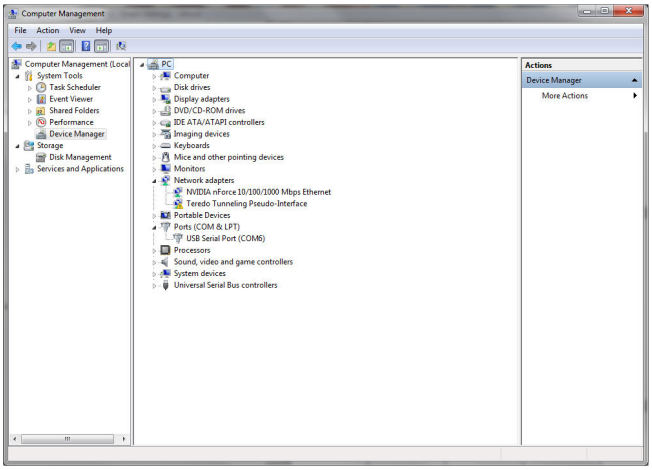
D. A drop down menu will appear. Select and right click on Manage.



E. The Computer Management Screen will appear. On the left side of the Computer Management Screen, select and click on Device Manager, or click on the plus (+) sign in front of Device Manager. A list of devices will appear on the right side of the Computer Management Screen.

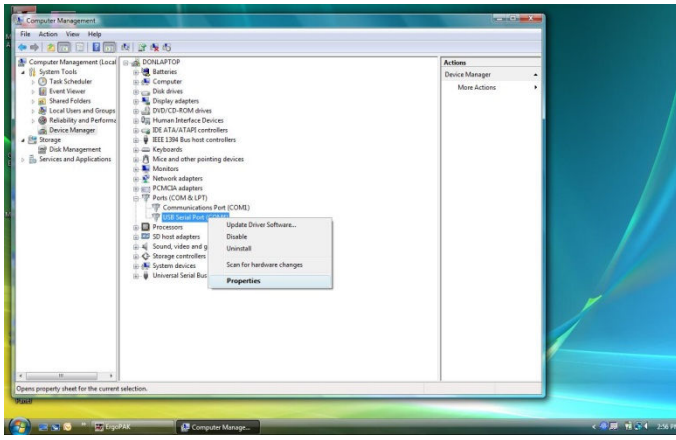


F. In the list of devices, locate Ports (COM and LPT). Either select/click on Ports (COM and LPT), or click on the plus (+) sign in front of Ports (COM and LPT). This will open up to show the COM and LPT ports currently being used.

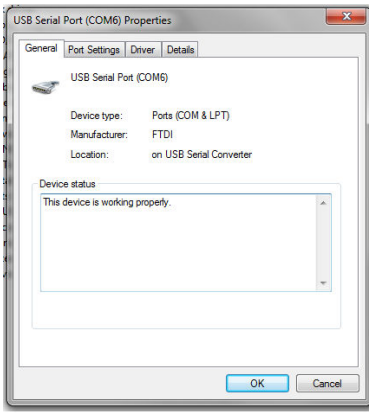


G. In Ports (COM and LPT), USB Serial Port COM with a port number shown after COM (1, 2, 3,….) should be listed.

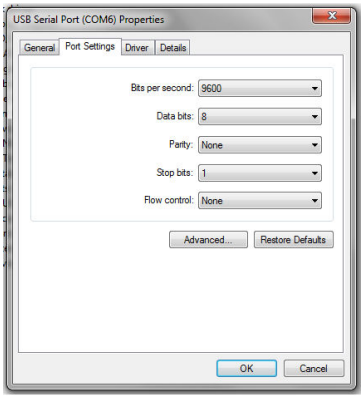
H. Select and either Right click or double click on the USB Serial Port COM_. A drop down menu will appear. In the drop menu select Properties.



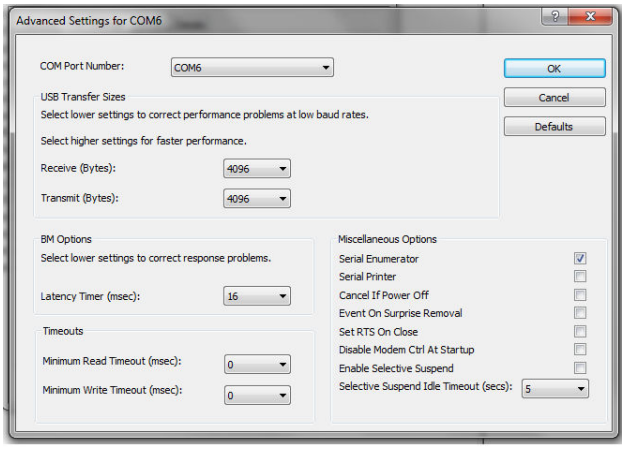
I. The USB COM Port Property Windows appears.



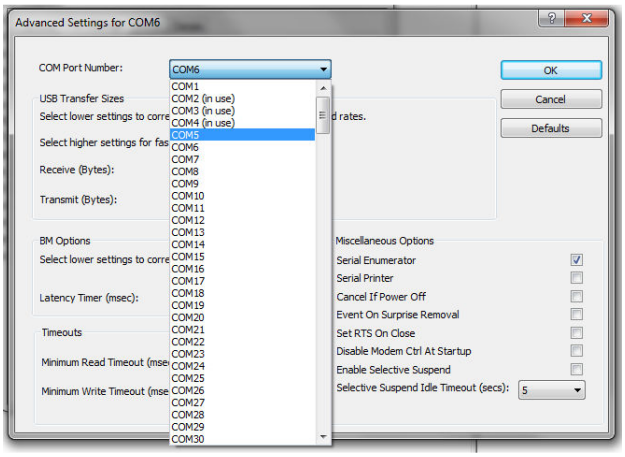
J. Select Port Settings Tab.



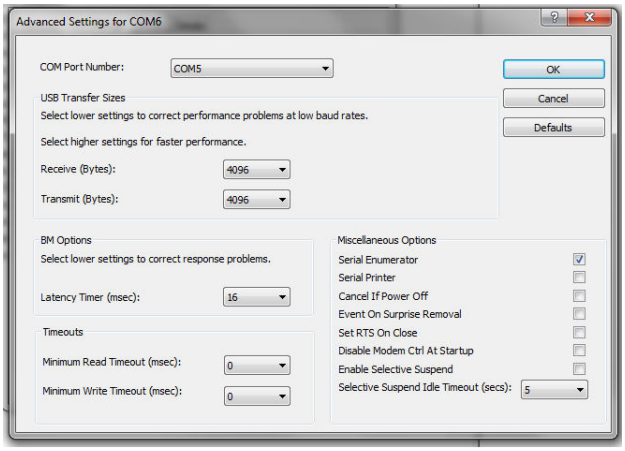
K. Select Advanced button in Port Setting Tab. The Advanced Settings Window will display.



L. If com port is not the com port selected for the USB driver by the computer when driver was installed does not match com port selected in the software, the com port needs to be changed to be able to have the device communicate with the software. Click on the down arrow next to com port number, and select the COM Port Number that is an open COM port.

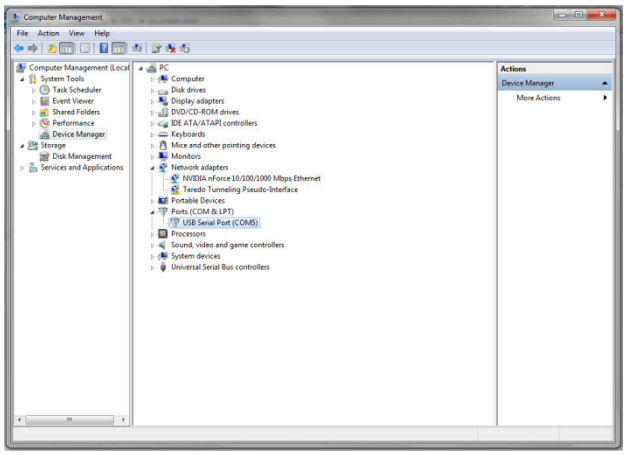


M. Selected com port now shows in the Advanced Settings Window.



N, Click “OK” in the Advanced Settings Window USB Serial Port Properties Window to bring you back to the Computer Management Window.

O. In the Computer Management Screen the new selected com port will show in Ports.

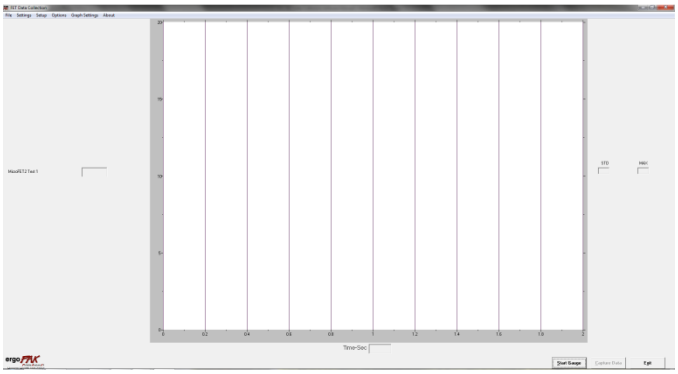


P. Close out or “X” out of the Computer Management Window.

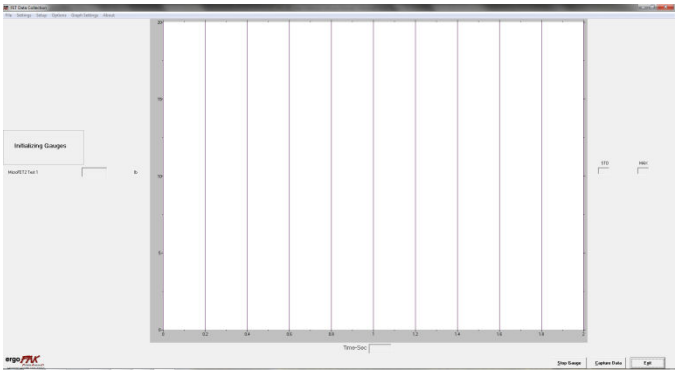
Q. Go back into the software and click on Setup in the Menu. Click Auto Detect. Message will appear that com port found.

Testing

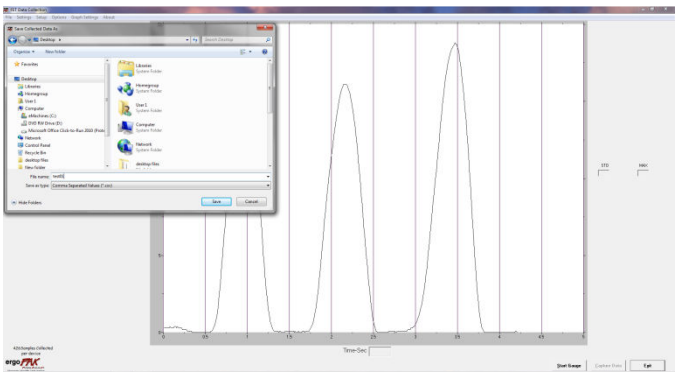
1. To begin testing, click on Start Gauge button in the bottom right hand corner of software screen.



2. Initializing Gauges message will display on the software screen.



3. The gauge connected is now reading live in the software.
4. To capture the test data to save be able to save as a file, click on the Capture Data button located in the bottom right hand corner of the main software screen.
5. Perform your tests, exertions with gauge. The data will be captured by the software to be able to save the completed test.
6. The Capture Data button will change to Stop Capture Button. At the end of test you perform, click on the Stop Capture button.
7. At the end of the completed test Save Collected Data As dialog box appears.

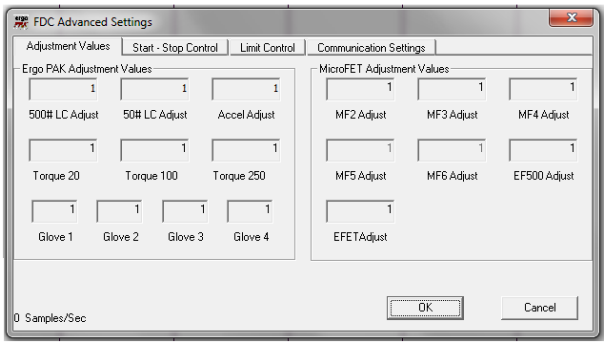


8. Name the file how you want it saved. The file will be saved in a .csv format. The .csv format you can open in any spreadsheet application program that recognizes that format.

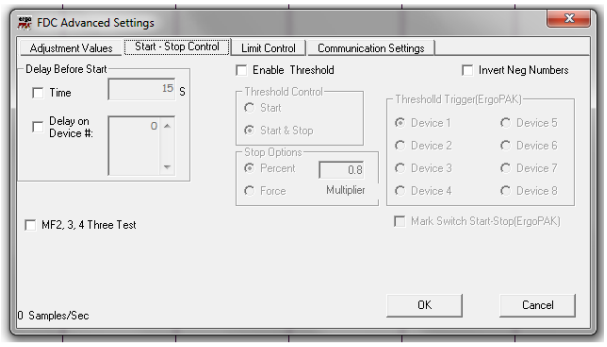
microFET2/microFET3/Handgrip Single Continuous or 3 Trail Test Capture Selection Options

The Software has feature to select between single continuous test data capture, or 3 separate trial tests data capture for microFET2, microFET3, and handGRIP. Instructions:

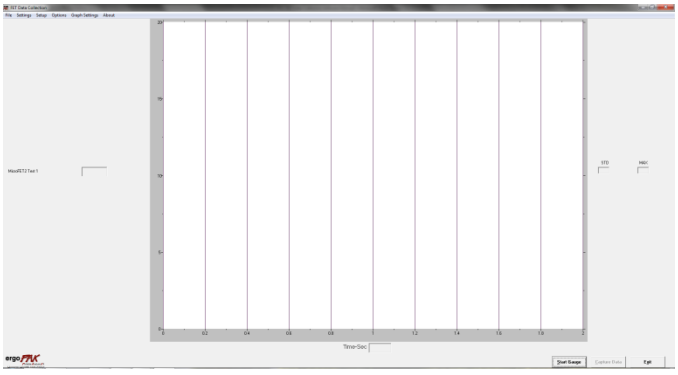
1. In Menu click Settings Tab.
2. Select Advanced.
3. Caution Window Appears. Please note to take care when making changes in Advanced settings.
4. FDC Advanced Settings Windows appears.



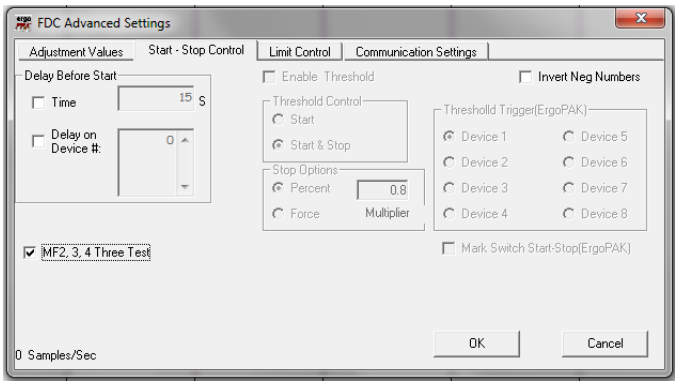
5. Click on Start – Stop Control Tab. Start-Control Window appears. MF2, 3, 4 Three Test Selection box is located in the bottom left corner of FDC Advanced Settings box.



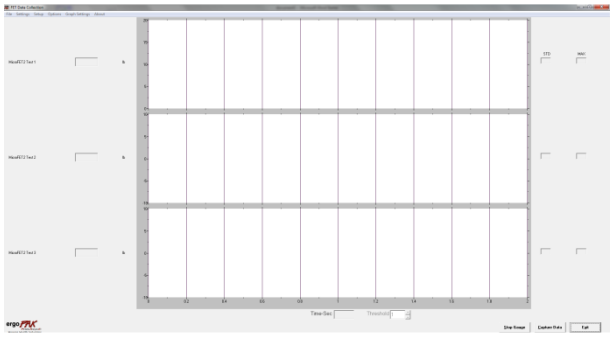
6. To perform a single continuous test, leave box unchecked same as above software screen, then click ok. Main software screen will show single continuous test selection.



7. To perform 3 single exertion test trails, click box and check mark will appear in box as shown in software screen below. Then click ok.



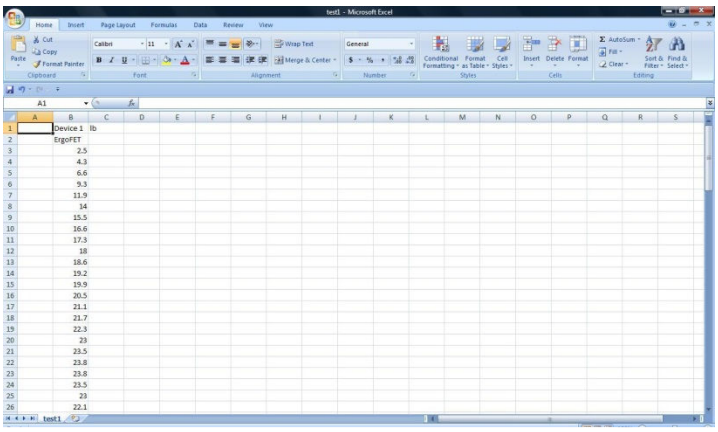
8. Main software screen will show Three Test Trial Selection after click Start Gauge button.



View Saved .csv Test File in Spreadsheet Program

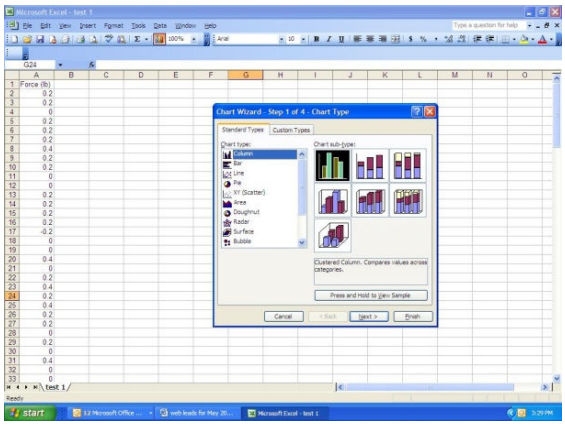
Note: Microsoft Excel spreadsheet program used in following example for displaying saved test data.

1. Click on saved .csv test file to open and view sample points collected from saved test.

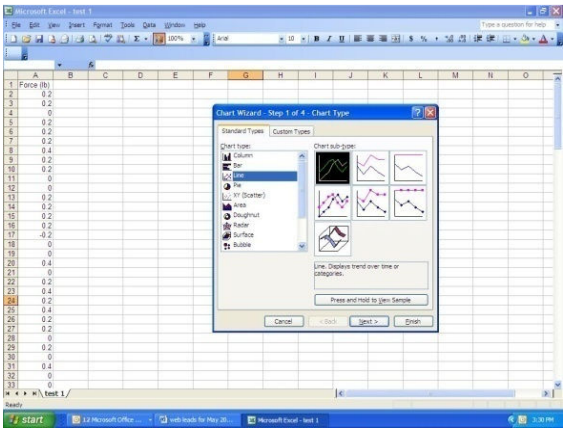


2. The test data will appear in an Excel spreadsheet. The top of the spreadsheet displays device used and unit of measure. In the column underneath the device used for test, is the sample points collected during the test.

3. View Tests in Excel Chart or Graph: Click on the Excel chart wizard icon button located in the Toolbar and displays Select Chart Type dialog box.



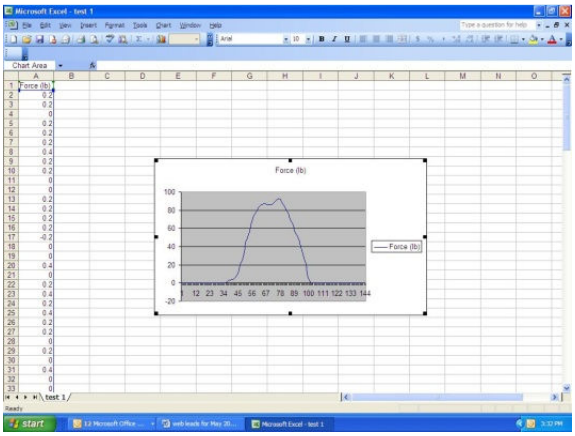
4. Select chart type, then click Next. (For demonstration purposes in this manual, a line chart type highlighted in diagram below was selected).



5. Click Finish if you want Excel to finish and generate a graph for viewing.

Option: If you wish to set any parameters for the graph, click Next. A Chart Source Data dialog box appears. Set the data range to view and select series to graph. Follow the additional steps to complete the graph. For additional information or instruction on how to make changes in the Chart Source Data dialog box, refer to your Microsoft Excel software user manual.

6. Below is the generated graph of the test data collected for the test selected.



For additional information or instructions on how to change values of the graph, format the axes or advanced formatting of graphs, refer to your Microsoft Office Excel software instructions.

If you encounter an error message or cannot get the gauge to communicate with the clinical software, please contact Technical Support and Customer Service at Phone: 800-678-7888 / 801-572-6500, or by e-mail at contact@hogganhealth.net.

SOFTWARE SUPPORT INFORMATION

For technical support and questions on software and hardware, please contact 800-678-7888/ 801-572-6500, or contact@hogganhealth.net.

CONTACT INFORMATION

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