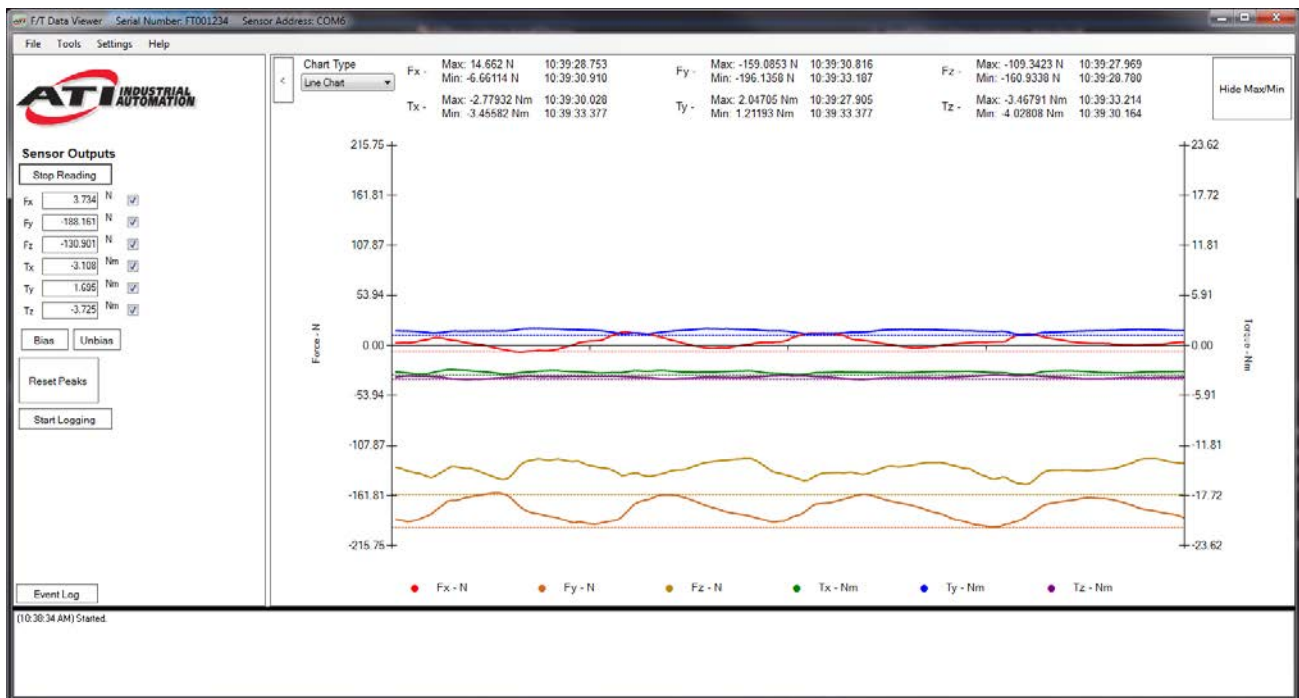




# F/T Data Viewer Software Application Manual



Document #: 9610-05-1042

*Engineered Products for Robotic Productivity*

Pinnacle Park • 1031 Goodworth Drive • Apex, NC 27539 • Tel: +1 919.772.0115 • Fax: +1 919.772.8259 • [www.ati-ia.com](http://www.ati-ia.com)

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### Note

Please read the manual before calling customer service, and have the following information available:

1. Serial number (e.g., FT01234)
2. Transducer model (e.g., Axia, etc.)
3. Calibration (e.g., US-15-50, SI-65-6, etc.)
4. Accurate and complete description of the concern or question
5. Computer and software information, for example: operating system, PC type, drivers, and application software

Be near the F/T system when calling (if possible).

Please contact an ATI representative for assistance, if needed:

Sale, Service and Information about ATI products:

#### **ATI Industrial Automation**

1031 Goodworth Drive  
Apex, NC 27539 USA

[www.ati-ia.com](http://www.ati-ia.com)

Tel: +1.919.772.0115

Fax: +1.919.772.8259

#### **Application Engineering**

Tel: +1.919.772.0115, Extension 511

Fax: +1.919.772.8259

E-mail: [ft\\_support@ati-ia.com](mailto:ft_support@ati-ia.com)

24/7 Support

Tel: +1.855.ATI-IA.00 (+1.855.284.4200)

## Table of Contents

<b>Foreword</b> .....	<b>2</b>
<b>Glossary</b> .....	<b>5</b>
<b>1. Safety</b> .....	<b>6</b>
1.1 Explanation of Notifications.....	6
1.2 General Safety Guidelines.....	6
<b>2. Product Overview</b> .....	<b>7</b>
<b>3. Installation</b> .....	<b>8</b>
3.1 Installing the F/T Data Viewer on a PC .....	8
<b>4. Initiate the F/T Data Viewer Application and Set Up the Sensor</b> .....	<b>9</b>
4.1 Initiate the F/T Data Viewer Application .....	9
4.2 Set-Up Communication to an Ethernet Sensor .....	10
4.2.1 Before Connecting to the Sensor with the F/T Data Viewer .....	10
4.2.2 After Starting the F/T Data Viewer.....	10
4.3 Set Up Communication to a Serial F/T Axia Sensor.....	12
4.3.1 Before Connecting to the Sensor with the F/T Data Viewer .....	12
4.3.2 After Starting the F/T Data Viewer.....	12
<b>5. Sensor Outputs</b> .....	<b>14</b>
5.1 Bias Data .....	15
5.2 Sensor Output Display (F/T or Gages) .....	16
5.2.1 Display Gage Data .....	16
5.2.2 Display F/T Data.....	17
5.3 Setting F/T Units.....	17
5.4 RDT Sample Rate and Filtering for NET F/T Sensors .....	18
5.5 RDT Sample Rate and Filtering for Serial F/T Sensors.....	19
5.6 Logging Data .....	20
5.6.1 Logging .CSV File .....	23
<b>6. Tools</b> .....	<b>25</b>
6.1 ATI F/T Webpages.....	25
6.2 Sensor Information (Sensor Info) .....	26
<b>7. Event Log</b> .....	<b>27</b>
7.1 Clear the Event Log.....	27
<b>8. Chart</b> .....	<b>28</b>
8.1 Chart Type.....	28
8.2 Chart Maximum and Minimum Values.....	29
8.3 Graph Settings.....	29

- 8.4 **Reset Graph Settings Back to Default..... 31**
- 9. Troubleshooting ..... 32**
  - 9.1 **Troubleshooting Resources..... 32**
  - 9.2 **Latency..... 32**
    - 9.2.1 Method One (Preferred) ..... 32
    - 9.2.2 Method Two ..... 32
  - 9.3 **Resolving Firewall Issues..... 33**
  - 9.4 **Customer Service..... 34**
- 10. Terms and Conditions of Sale..... 35**

## Glossary

Term	Definitions
ADC	Analog-to-digital converter
ATI Ethernet Axia Sensor or ATI NET F/T Sensor	An ATI F/T sensor that uses Ethernet protocol.
ATI NET F/T Sensor	An ATI Ethernet F/T sensor that is not an Axia80.
ATI Serial Axia Sensor	An ATI F/T Axia sensor that uses RS485 protocol.
Baud Rate	A number that is related to the speed of data transmission in a system. The data indicates the number of electrical oscillations per second that occurs within a data transmission.
Bias	When the sensor software subtracts a reference value from the F/T data, before data is transmitted from the sensor. The action of biasing a sensor is commonly referred to as <i>to tare</i> or <i>to zero</i> the sensor.
Comma Separated Value (CSV)	A type of file that stores tabular data in plain text. The data is in one or more fields that is separated by commas. CSV is the file extension name.
COM Port (Communication Port)	A physical or virtual serial port interface on a device such as a PC or robot.
Data Rate	How fast data can be output over a serial interface or network.
DoF	Degrees of Freedom (refer to the following definition: Six Degrees of Freedom)
FT or F/T	Force and Torque
F/T Data Viewer software application	A downloadable application or program that demonstrates the capabilities of the ATI F/T software.
Latency	On a computer network, this is the time for the network to receive a response to a request.
N/A	Not Applicable
PC	Personal Computer
P/N	Part Number
RDT	RDT (Raw Data Transfer) is the rate per second at which the sensor sends streaming RDT data to a host. RDT is a fast and simple Ethernet protocol for control and data transfer via UDP.
Sample rate	How fast the ADCs are sampling inside the unit.
Sensor	The component that converts a detected load into electrical signals.
Six Degrees of Freedom	Fx, Fy, Fz, Tx, Ty, and Tz
Status Bit	A unit of computer data that is sent from the ATI F/T sensor.
Transducer	Every transducer is also (or has) a sensor but every sensor isn't a transducer. A transducer is more than a sensor. It consists of a sensor/ actuator along with signal conditioning circuits.

## 1. Safety

The safety section describes general safety guidelines to be followed with this product, explanations of the notifications found in this manual, and safety precautions that apply to the product. Product specific notifications are imbedded within the sections of this manual (where they apply).

### 1.1 Explanation of Notifications

These notifications are used in all of ATI manuals and are not specific to this product. The user should heed all notifications from the robot manufacturer and/or the manufacturers of other components used in the product installation.



**DANGER:** Notification of information or instructions that if not followed will result in death or serious injury. The notification provides information about the nature of the hazardous situation, the consequences of not avoiding the hazard, and the method for avoiding the situation.



**WARNING:** Notification of information or instructions that if not followed could result in death or serious injury. The notification provides information about the nature of the hazardous situation, the consequences of not avoiding the hazard, and the method for avoiding the situation.



**CAUTION:** Notification of information or instructions that if not followed could result in moderate injury or will cause damage to equipment. The notification provides information about the nature of the hazardous situation, the consequences of not avoiding the hazard, and the method for avoiding the situation.

**NOTICE:** Notification of specific information or instructions about maintaining, operating, installing, or setting up the product that if not followed could result in damage to equipment. The notification can emphasize, but is not limited to: specific grease types, best operating practices, and maintenance tips.

### 1.2 General Safety Guidelines

The customer should verify that the sensor is rated for maximum loads and torques expected during operation. Because static forces are less than the dynamic forces from the acceleration or deceleration of the robot, be aware of the dynamic loads caused by the robot.

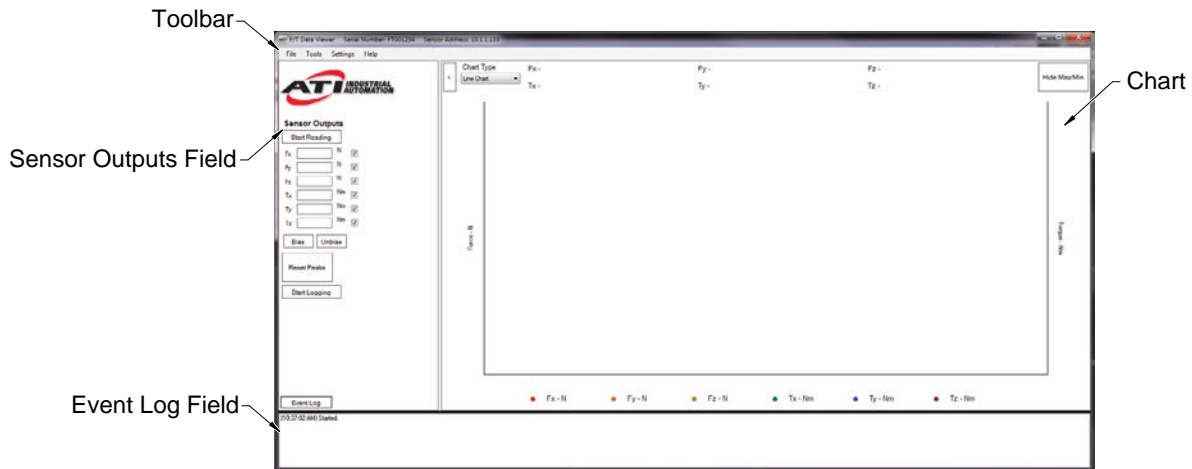
## 2. Product Overview

The F/T Data Viewer software application presents live F/T data from an ATI sensor in a graphical interface on a customer's PC. In addition to viewing the data within the F/T Data Viewer, save data to a CSV file, bias data, change units, and apply sensor settings (RDT sampling rate and filtering). The software is compatible with Microsoft Windows® operating systems. The F/T Data Viewer application is compatible with the following ATI F/T sensors: Ethernet, Ethernet Axia, and Serial Axia. For more information about these sensors, refer to the applicable ATI manual in the following table:

Table 2.1—ATI F/T Sensor Manuals	
ATI F/T Sensor	ATI Manual Document#
Serial (RS485) Axia	<a href="#">9610-05-Serial Axia</a>
Ethernet Axia	9620-05-C-Ethernet Axia
All Other Ethernet Sensors	<a href="#">9620-05-NET FT</a> and <a href="#">9620-05-Transducer Section</a>

The main features of the F/T Data Viewer are a **Toolbar** on the top of the screen, a **Sensor Outputs** field on the left side of the screen, a **Chart** on the right side of the screen, and an **Event Log** field on the bottom of the screen.

Figure 2.1—F/T Data Viewer Main Screen



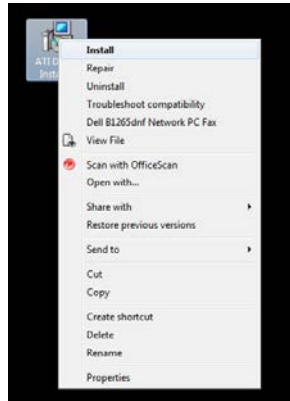
### 3. Installation

To load the F/T Data Viewer on a PC, refer to the instructions in the following sections.

#### 3.1 Installing the F/T Data Viewer on a PC

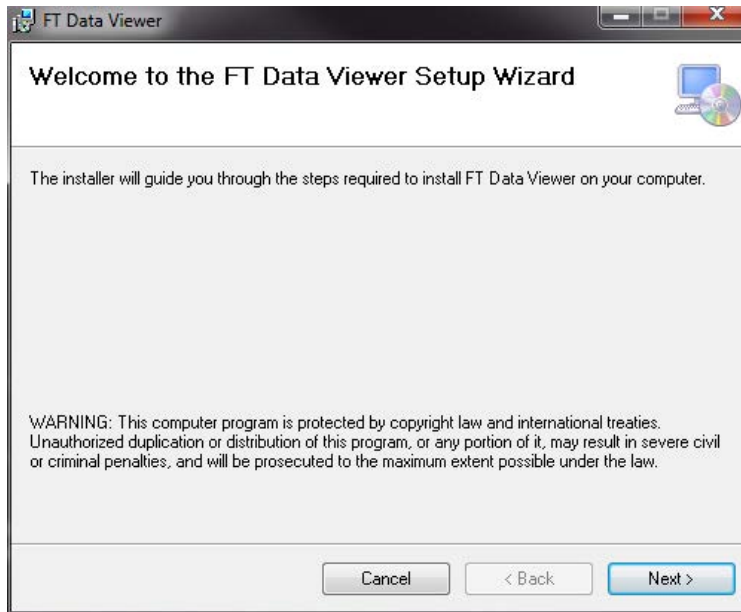
1. Access the F/T Data Viewer software application file from the ATI website <https://www.ati-ia.com/library/download.aspx>.
2. Right click on the **F/T Data Viewer Installer** icon, and select **Install**.

Figure 3.1—F/T Data Viewer Installer Icon



3. Follow the steps that the installer provides through the **F/T Data Viewer Setup Wizard** interface.

Figure 3.2—ATI Demo Setup Wizard



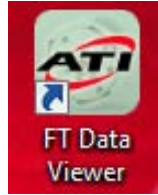


## 4. Initiate the F/T Data Viewer Application and Set Up the Sensor

### 4.1 Initiate the F/T Data Viewer Application

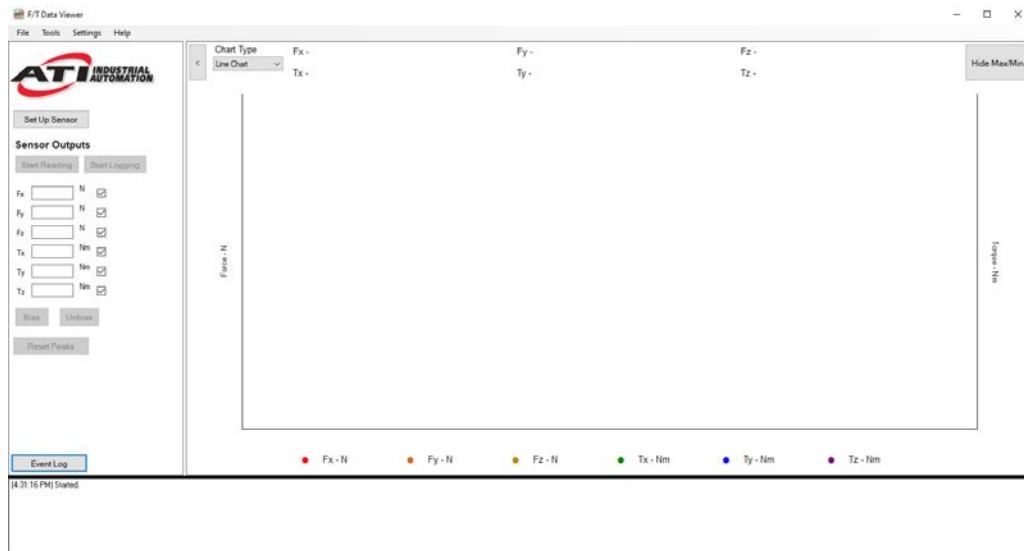
1. On the PC's desktop, click and open the **FT Data Viewer** icon.

**Figure 4.1—Click and Open the FT Data Viewer Icon**



2. The F/T Data Viewer opens in a limited mode until communication with the sensor is established. Unavailable features are grayed-out and cannot be clicked.

**Figure 4.2—Limited Features Before the Sensor is Set-Up**



3. Set-up the sensor:
  - a. For an Ethernet sensor, refer to [Section 4.2—Set-Up Communication to an Ethernet Sensor](#).
  - b. For a Serial sensor, refer to [Section 4.3—Set Up Communication to a Serial F/T Axia Sensor](#).

## 4.2 Set-Up Communication to an Ethernet Sensor

### 4.2.1 Before Connecting to the Sensor with the F/T Data Viewer

1. Verify that the Ethernet cable is installed to the user's PC and sensor.
2. Establish an Ethernet network connection to the sensor.
  - a. For instructions on how to set-up the PC's IP address and connect to the sensor, refer to the appropriate manual in [Table 2.1](#): 9620-05-C-Ethernet Axia or [9620-05-NET FT](#).

**NOTICE:** Ensure the Ethernet network connection between the PC and the sensor is properly configured before using the F/T Data Viewer application:

- To test the connection, type the IP address of the sensor into a web browser on the PC. If it does not open the sensor's internal web page, then the network connection is not configured properly.
- For instructions on how to properly set-up the PC's IP address and connect to the sensor refer to either the 9620-05-C-Ethernet Axia or [9620-05-NET FT](#) manual.
- If the sensor's web page is accessible but F/T Data Viewer still cannot find the sensor, a firewall may be blocking F/T Data Viewer. See [Section 9.3—Resolving Firewall Issues](#).

### 4.2.2 After Starting the F/T Data Viewer

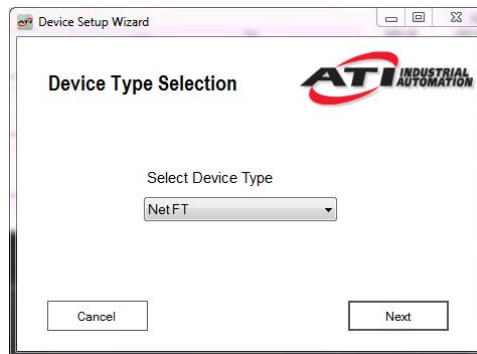
1. Click **Set Up Sensor**. The **Device Setup Wizard** initiates.

Figure 4.3—Set Up Sensor



2. From the **Select Device Type** drop-down menu, select **Net F/T**.

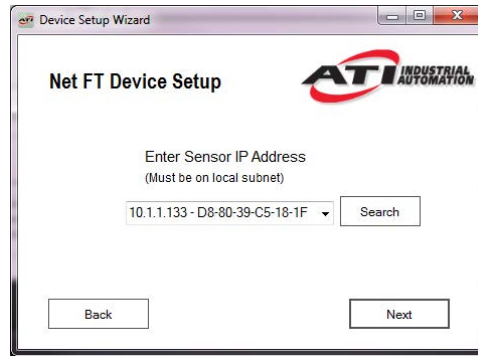
Figure 4.4—Select the Device Type



3. Click **Next**.

4. Type the **Sensor IP Address** in the text field, or click the **Search** button to find a sensor. The **Search** function may activate a firewall; refer to [Section 9.3—Resolving Firewall Issues](#).

**Figure 4.5—Enter the Sensor IP Address**



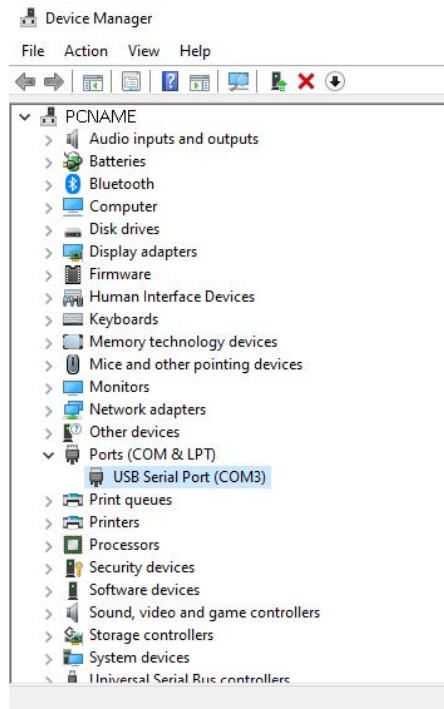
5. Click **Next**.
6. The F/T Data Viewer opens in full mode, which allows the user to access all available functions.
7. Click **Start Reading** to start streaming data from the sensor. For other features, refer to [Section 5—Sensor Outputs](#).

## 4.3 Set Up Communication to a Serial F/T Axia Sensor

### 4.3.1 Before Connecting to the Sensor with the F/T Data Viewer

1. Connect the sensor's USB cable into the PC's USB port. Verify the sensor's Run and Status LEDs illuminate.
2. Determine which COM port the PC has assigned to the sensor. This information is listed in the Device Manager, under Ports. In the following example, the PC has assigned COM3 to the sensor.

**Figure 4.6—Check COM Port Assignment in Device Manager**



3. Verify that the USB driver for the sensor cable is installed.

**NOTICE:** This driver should be installed automatically with F/T Data Viewer, but some PCs may block installation. If installed, the device displays in the Device Manager under Ports as: "USB Serial Port." For the manual installation procedure, refer to the ATI manual [9610-05-Serial Axia](#).

### 4.3.2 After Starting the F/T Data Viewer

1. Click **Set Up Sensor**. The **Device Setup Wizard** initiates.

**Figure 4.7—Set Up Sensor**



- From the **Select Device Type** drop-down menu, select **Serial F/T**.

**Figure 4.8—Select the Device Type**

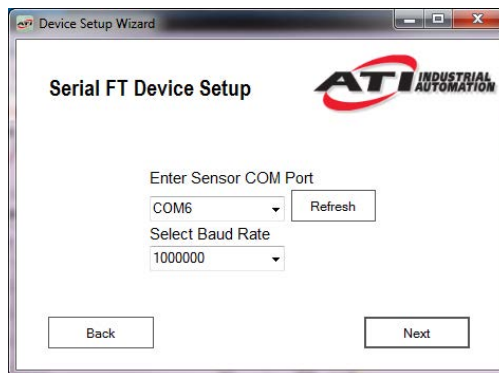


- Click **Next**.

**NOTICE:** Ensure the value in the Baud Rate field matches the sensor's set baud rate. To find the baud rate of the sensor, refer to the console commands in the [9610-05-Serial Axia](#) manual. ATI ships the sensor with a default baud rate that is 115200.

- Select the **COM Port** and **Baud Rate** from the drop-down menus. The default baud rate setting from the factory is 115200. To know which of the computer's COM ports the sensor is connected to, refer to the [9610-05-Serial Axia](#) manual.

**Figure 4.9—Serial F/T Device Setup**



- The F/T Data Viewer opens in full mode, which allows the user to access all available functions.
- Click **Start Reading** to start streaming data from the sensor. For other features, refer to [Section 5—Sensor Outputs](#).

## 5. Sensor Outputs

On the left side of the **F/T Data Viewer** screen, in the **Sensor Outputs** field view F/T outputs in each of the six DoF or gage data. Next to the output fields, select the checkboxes of the desired axes to view on the view on the graph.

Additionally, in this field, start or stop readings, bias or unbiased data, reset peak values for a new sample, and start or stop logging the data to an exported .csv file.

Figure 5.1—Sensor Outputs Field



## 5.1 Bias Data

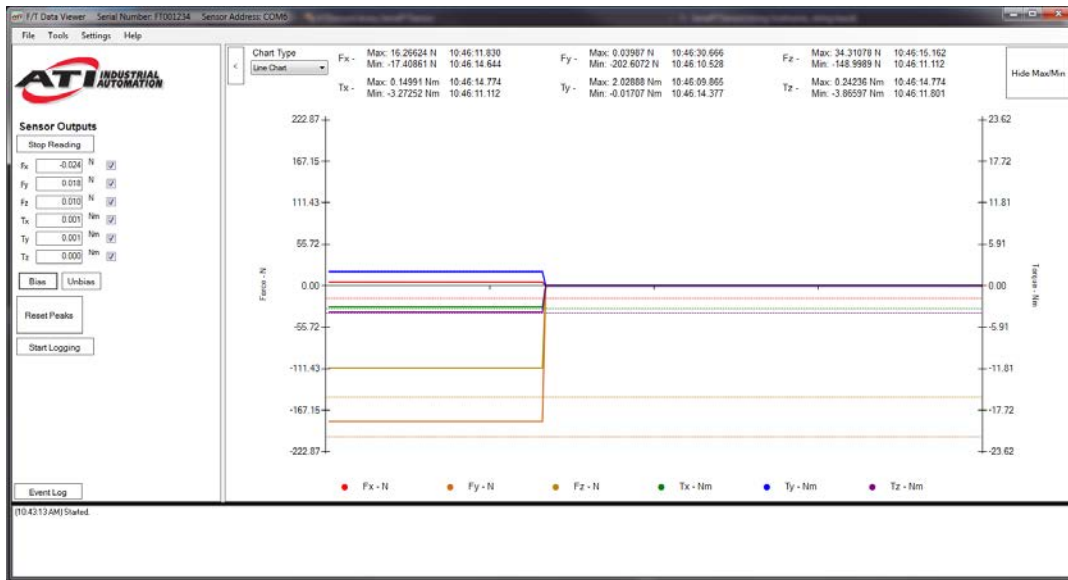
Biassing is useful for eliminating the effects of gravity (tool weight) or other acting forces. When the bias function is used, the software collects data for the forces and torques that are currently acting on the sensor, and uses these readings as a reference for future readings. Future readings have this reference subtracted from them before they are transmitted. Biassing is commonly referred to as taring or zeroing.

In the following figure, the user clicked the **Bias** button in the **Sensor Outputs** field. Force and torque values converge towards zero.

**NOTICE:** When biasing, ensure the force and torque readings are steady-state. Biassing while the sensor is vibrating, accelerating, or decelerating can provide a poor reference for the user's application.

To remove the bias feature, click the **Unbias** button in the **Sensor Outputs** field.

Figure 5.2—Bias Functionality



## 5.2 Sensor Output Display (F/T or Gages)

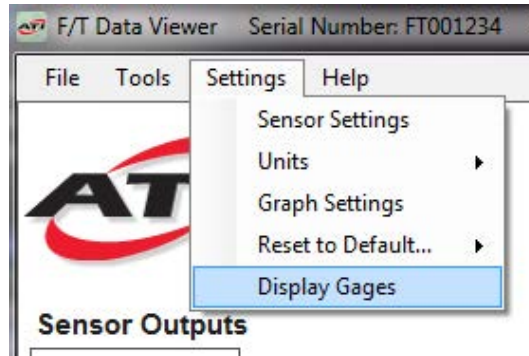
### 5.2.1 Display Gage Data

**NOTICE:** Gage data is not plotted to the graphs.

To change the **Sensor Outputs** from the default display of F/T data to display gage data, complete the following steps:

1. On the toolbar, select **Settings**.
2. Select **Display Gages**, from the drop-down menu.

**Figure 5.3—Change Display Settings**



In the **Sensor Output** field, the F/T display changes to the following:

**Figure 5.4—Change Display Settings**



#### Sensor Outputs

G0

G1

G2

G3

G4

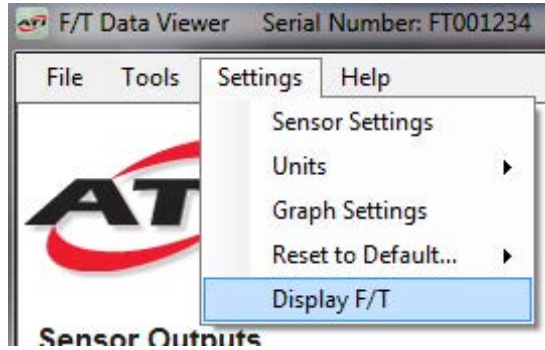
G5



## 5.2.2 Display F/T Data

1. On the toolbar, select **Settings**.
2. Select **Display F/T**, from the drop-down menu.

Figure 5.5—Change Display Settings



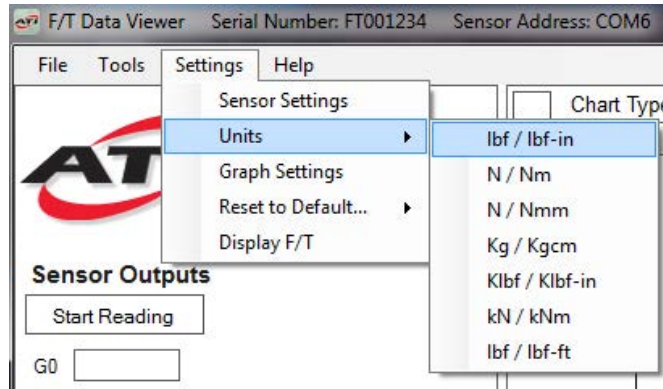
## 5.3 Setting F/T Units

**NOTICE:** Users may not be able to change the units of some devices.

To change the F/T units, complete the following steps:

1. At the toolbar, select **Settings**.
2. Select **Units**, from the drop-down menu.
3. Select the desired force units/torque units, from the side-navigation menu.

Figure 5.6—Unit Settings



## 5.4 RDT Sample Rate and Filtering for NET F/T Sensors

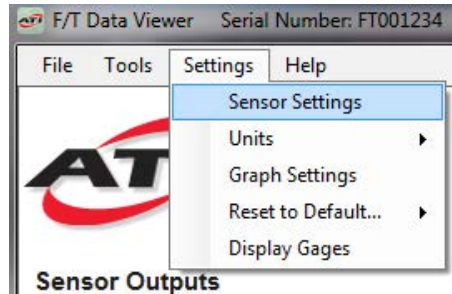


**CAUTION:** Logging data at a high-speed data collection rate for extended periods of time could cause the application to stop running. Therefore, collect high-speed data over short time periods.

Within the F/T Data Viewer, to adjust an Ethernet F/T sensor's RDT rate and filtering settings, complete the following steps:

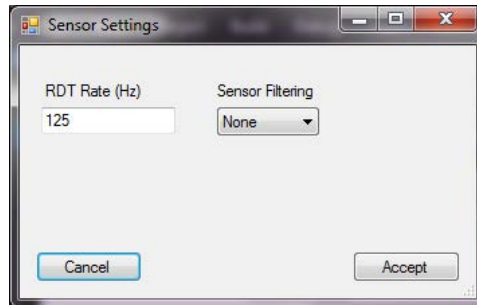
1. On the toolbar, select **Settings**.
2. Select **Sensor Settings**, from the drop-down menu.

**Figure 5.7—Sensor Settings**



3. In the **Sensor Settings** window, type the desired RDT Rate in Hz (Hertz) in the **RDT Rate** field.
4. From the **Sensor Filtering** drop-down menu, select the desired filter.

**Figure 5.8—Sensor Settings**



5. Click the **Accept** button to complete the changes, and close the window.

## 5.5 RDT Sample Rate and Filtering for Serial F/T Sensors

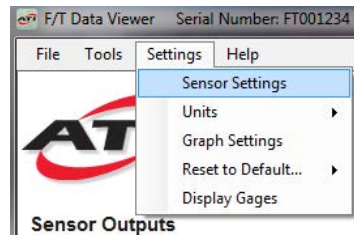


**CAUTION:** Logging data at a high-speed data collection rate for extended periods of time could cause the application to stop running. Therefore, collect high-speed data over short time periods.

Within the F/T Data Viewer, to adjust a Serial F/T sensor's RDT rate and filtering, complete the following steps:

1. On the toolbar, select **Settings**.
2. Select **Sensor Settings**, from the drop-down menu.

**Figure 5.9—Sensor Settings**



3. In the **Sensor Settings** window, type the desired RDT Rate in Hz (Hertz) in the **RDT Rate** field.

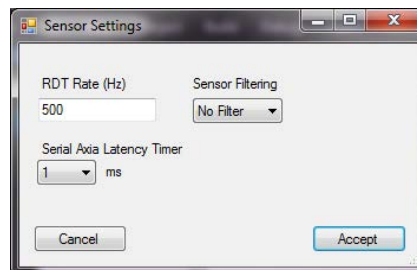
**NOTICE:** For ATI F/T Serial EDU (Educational-RS485-Axia80) sensors, the **Sensor Filtering** cannot be set. So, when using these sensors with this application, the **Sensor Filtering** drop-down menu is grayed-out.

4. Select the desired filter, from the **Sensor Filtering** drop-down menu.

**NOTICE:** The **Latency Timer** is a setting on the PC, used for serial communication. Longer latency timers cause a delay in the data shown in F/T Data Viewer. A short latency timer of 4 ms or less is recommended. The default for most PCs is a long latency timer.

5. Select a time in ms (milliseconds), from the **Serial Axia Latency Timer** drop-down menu.

**Figure 5.10—Sensor Settings Window**



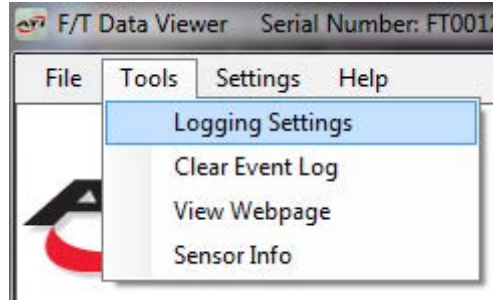
6. Click the **Accept** button to complete the changes, and close the window.

## 5.6 Logging Data

Export and save streamed data to a .CSV file. To complete this logging action, refer to the following steps:

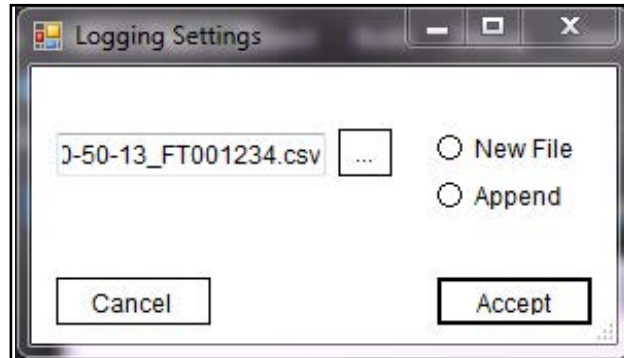
1. On the toolbar, select **Tools**.
2. Select **Logging Settings** from the drop-down menu.

**Figure 5.11—Tools: Logging Settings**



3. In the Logging window, create or add data to a file:
  - a. Click the **New File** radio button, to create a new file.
  - b. (or) click the **Append** radio button, to add data to an existing file.
  - c. Click the  button.

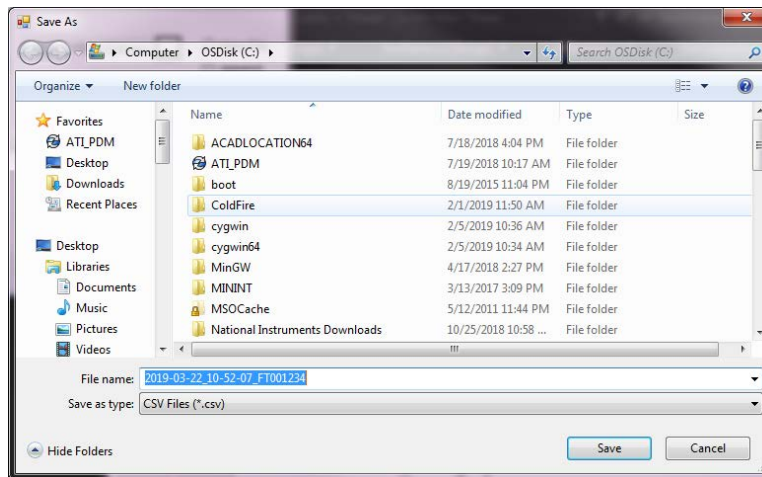
**Figure 5.12—Tools: Logging Settings**



- d. In the **Save As** window, navigate to the directory for either a new or existing file.
- e. In the **File name** field, do one of the following:
  - Keep the default auto-filled name (date, time, and FT serial number).
  - Type a new file name.
  - Select an existing file.
- f. In the **Save as type** field, select **.csv**.
- g. Click the **Save** button.

**NOTICE:** If collecting large amounts of data, understand any limitations the spreadsheet or data analysis program may have on the number of rows it can accommodate.

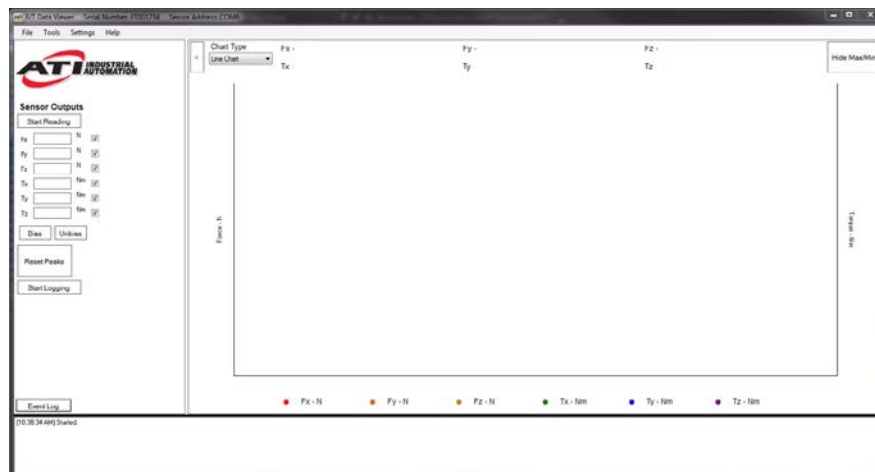
**Figure 5.13—Save As Window**




**NOTICE:** Data can only be logged while data is in the process of being streamed. **Logging Settings** can be configured before data is streamed.

4. In the **Sensor Output** field, click the **Start Reading** button.

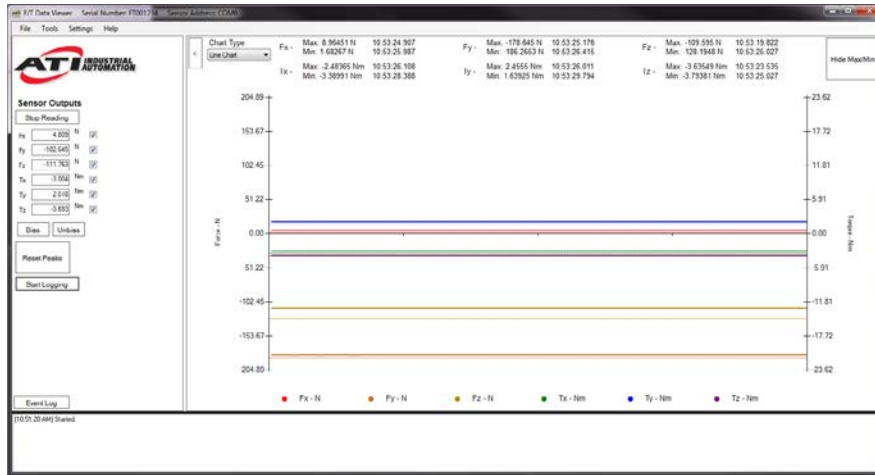
**Figure 5.14—Start Running**



 **CAUTION:** Logging data at a high-speed data collection rate for extended periods of time could cause the application to stop running. Therefore, collect high-speed data over short time periods.

- Click the **Start Logging** button.

**Figure 5.15—Start Logging**



- Click the **Stop Logging** button to end data collection.

**Figure 5.16—Stop Logging**



## 5.6.1 Logging .CSV File

When the output file is opened, information is stored in the CSV file as follows:

**Figure 5.17—.CSV Output File Opened by a Spreadsheet Program**

The screenshot shows a Microsoft Excel spreadsheet with the following data in the first few rows:

1	Start Time:	1/17/2013 3:07:43 PM
2	RDT Sample Rate:	175
3	Force Units:	N
4	Counts per Unit Force:	1000000
5	Torque Units:	Nm
6	Counts per Unit Torque:	1000000
7	Status (Hex)	RDSequence
8	Seq	168
9	Seq	169
10	Seq	170
11	Seq	171
12	Seq	172
13	Seq	173
14	Seq	174
15	Seq	175
16	Seq	176
17	Seq	177
18	Seq	178
19	Seq	179
20	Seq	180
21	Seq	181
22	Seq	182
23	Seq	183
24	Seq	184
25	Seq	185
26	Seq	186
27	Seq	187
28	Seq	188
29	Seq	189
30	Seq	190

- Row 1: **Start Time:** The date and time when the measurement was started.
- Row 2: **RDT Sample Rate:** The speed (in samples per second) at which the measurement data is sent from the sensor. This rate can be set in Settings (refer to [Section 5.4—RDT Sample Rate and Filtering for NET F/T Sensors](#) or [Section 5.5—RDT Sample Rate and Filtering for Serial F/T Sensors](#)).  
 Note: If the sample rate is changed after F/T Data Viewer application starts, this value will not be updated.
- Row 3: **Force Units:** These are the force units selected in the **Settings** (refer to [Section 5.3—Setting F/T Units](#)).
- Row 4: **Counts per Unit Force:** All force values (Fx, Fy, Fz) in the CSV file must be divided by this number to get the force values in the selected unit.
- Row 5: **Torque Units:** These are the torque units selected in the **Settings** (refer to [Section 5.3—Setting F/T Units](#)).
- Row 6: **Counts per Unit Torque:** All torque values (Tx, Ty, Tz) in the CSV file must be divided by this number to get the torque values in the selected unit.
- Row 8: **Header Row:** This row displays the title for each column of data or sensor condition.

Table 5.1—CSV File Column Headings										
Column:	A	B	C	D	E	F	G	H	I	J
Name:	Status (hex)	RDT Sequence	F/T Sequence	Fx	Fy	Fz	Tx	Ty	Tz	Time

Column A: **Status (hex)** is the 32-bit system status code associated with the data packet represented by this row of the CSV file.

Each bit signals a certain diagnostic condition (normally this code is zero). A non-zero status code normally means that the F/T system needs attention. For a detailed description of the status code, refer to the applicable manual in [Table 2.1](#).

Column B: **RDT Sequence** is a number that starts at one and is incremented with each set of data that is sent from the sensor to the host computer.

To find the elapsed measurement time, use the following formula:

$$\text{Elapsed Measurement Time} = \frac{\text{RDT Sequence Number}}{\text{RDT Sample Rate}}$$

Missing sequences indicate that data packages were lost. To avoid lost samples, to the troubleshooting section in the applicable sensor manual in [Table 2.1](#).

Column C: **F/T Sequence** is a number that is incremented with each new F/T measurement.

Column D: **Fx** : the Fx axis reading in units.

Column E: **Fy** : the Fy axis reading in units.

Column F: **Fz** : the Fz axis reading in units.

Column G: **Tx** : the Tx axis reading in units.

Column H: **Ty** : the Ty axis reading in units.

Column I: **Tz** : the Tz axis reading in units.

Column J: **Time** : when the F/T Data Viewer application received the data row from the Ethernet F/T. This time stamp is created by the computer and is limited to the clock resolution of the computer.



## 6. Tools

While using the F/T Data Viewer, the following tools are available:

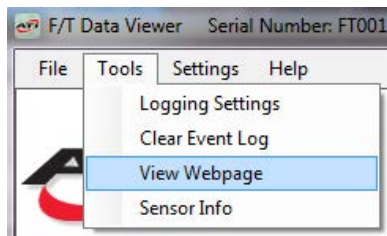
- Logging Settings (refer to [Section 5.6—Logging Data](#))
- Clear the Event Log (refer to [Section 7.1—Clear the Event Log](#))
- ATI F/T Webpages (refer to [Section 6.2—Sensor Information \(Sensor Info\)](#))
- Sensor Information (refer to [Section 6.2—Sensor Information \(Sensor Info\)](#))

### 6.1 ATI F/T Webpages

The ATI F/T Webpages provide additional information and settings for an ATI F/T Ethernet sensor. To access the ATI F/T webpages from the F/T Data Viewer, complete the following steps:

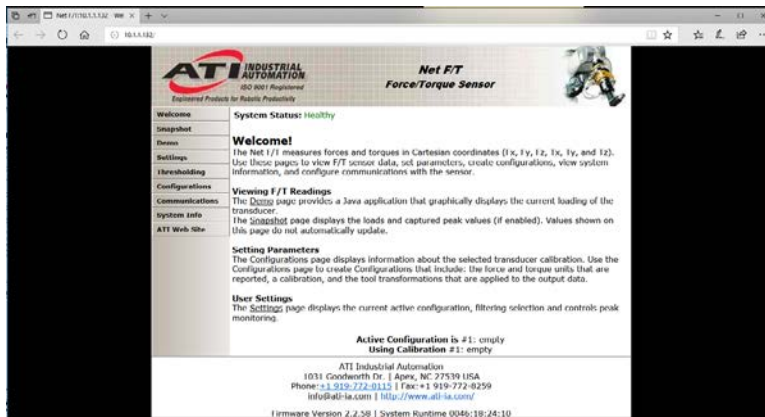
1. On the toolbar, select **Tools**.
2. Select **View Webpage**, from the drop-down menu.

Figure 6.1—View Webpage



3. Use the menu on the left side of the screen to navigate through the ATI F/T Webpage. For more information about the features, refer to the applicable manual in [Table 2.1](#).

Figure 6.2—ATI NET F/T Webpage (shown for reference only)

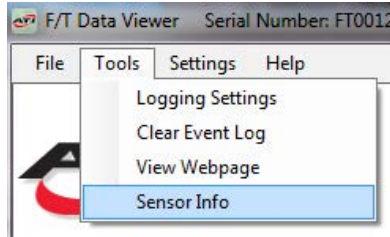


## 6.2 Sensor Information (Sensor Info)

Complete the following steps, to view the sensor's serial number, calibration, F/T units, Counts per Force/ Counts per Torque, sampling rates, and protocol:

1. On the toolbar, select **Tools**.
2. Select **Sensor Info**, from the drop-down menu.

Figure 6.3—View Webpage



3. View information provided in the **Sensor Info** window.

Figure 6.4—Net F/T Sensor Info Example

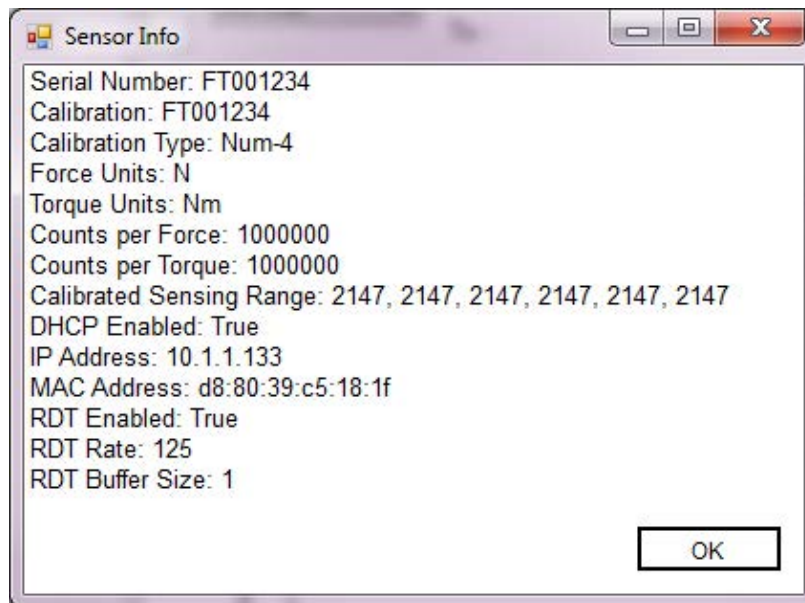
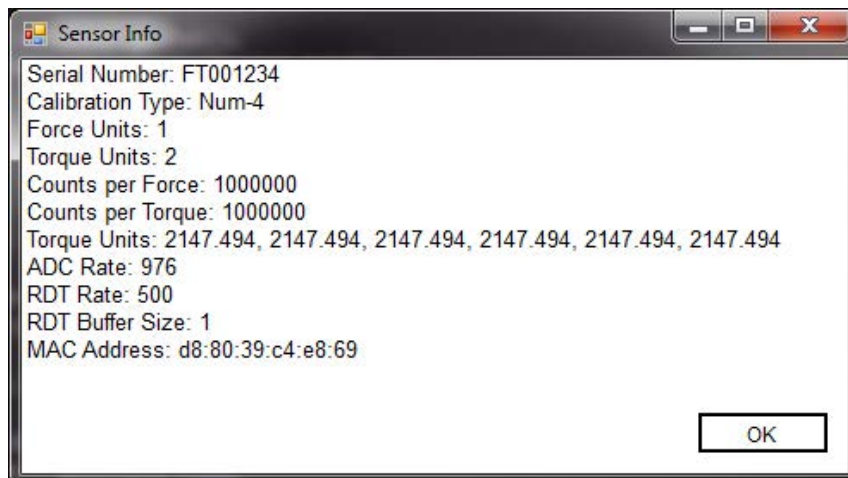


Figure 6.5—Serial F/T Sensor Info Example



4. Click **OK** to close the window.

## 7. Event Log

At the bottom of the main screen, an **Event Log** field populates with errors or notifications.

Figure 7.1—Event Log

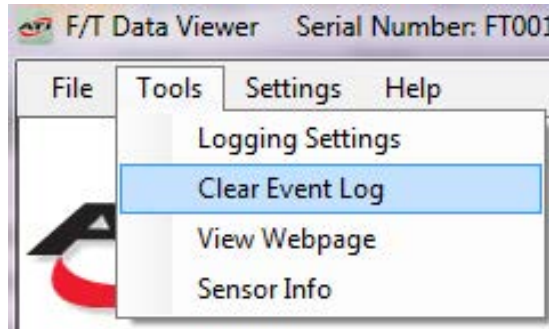


### 7.1 Clear the Event Log

To erase messages in the **Event Log**, refer to the following steps:

1. On the toolbar, select **Tools**.
2. Select **Clear Event Log** from the drop-down menu.

Figure 7.2—Clear the Event Log



## 8. Chart

Optional chart types and graph settings that are available on the F/T Data Viewer are covered in the following sections.

### 8.1 Chart Type

On the main screen, from the **Chart Type** drop-down menu, select one of three chart types: Line Chart, Bar Chart, or a Multichart (refer to [Figure 8.1](#) through [Figure 8.3](#)).

Figure 8.1—Line Chart

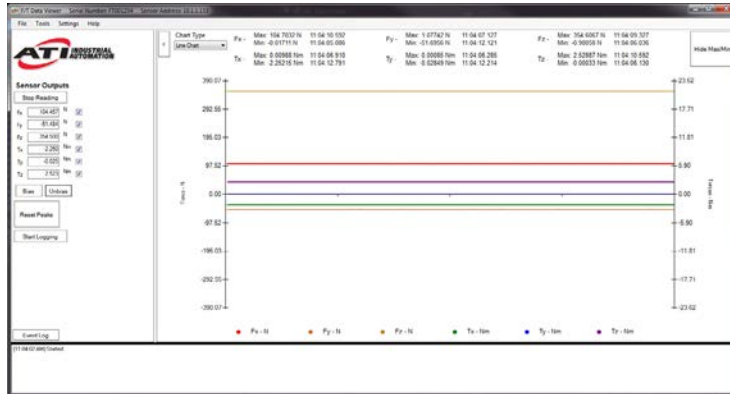
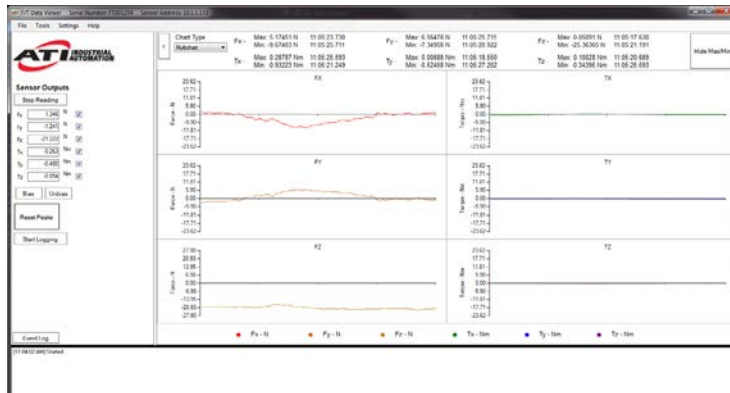


Figure 8.2—Bar Chart



Figure 8.3—Multichart

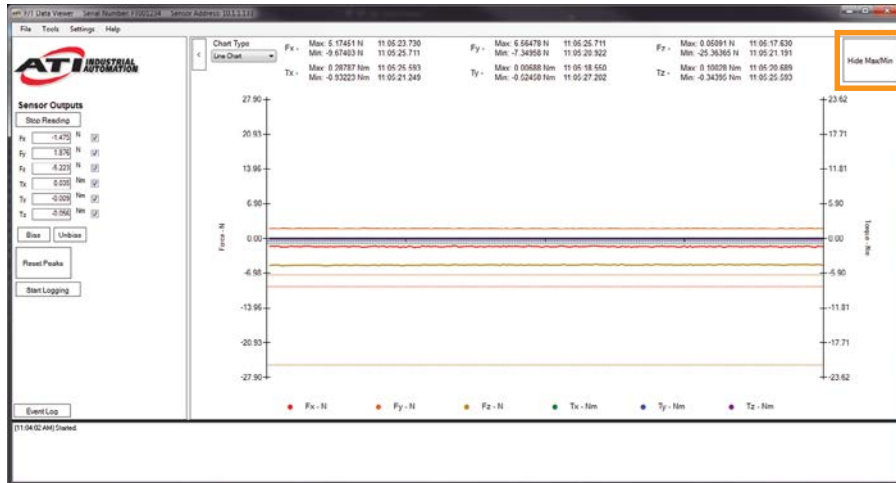


## 8.2 Chart Maximum and Minimum Values

Above each chart, the maximum values for the forces and torques in x, y, and z axes are displayed. These values are the maximum values that have occurred during a sampling session. The line chart also displays these values as faintly dotted, colored lines. Below each chart, there is a color key for the corresponding measured forces and torques in all three axes.

To hide the maximum and minimum values, click the **Hide Max/Min** button on the upper-right corner of the screen. This feature is functional as the sensor is reading the F/T data.

Figure 8.4—Show or Hide Maximum

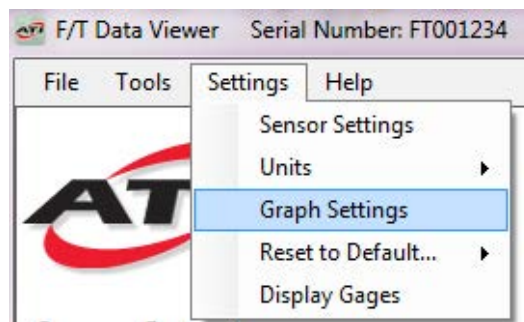


## 8.3 Graph Settings

To format the graph settings, complete the following steps:

1. On the toolbar, select **Settings**.
2. Select **Graph Settings** from the drop-down menu.

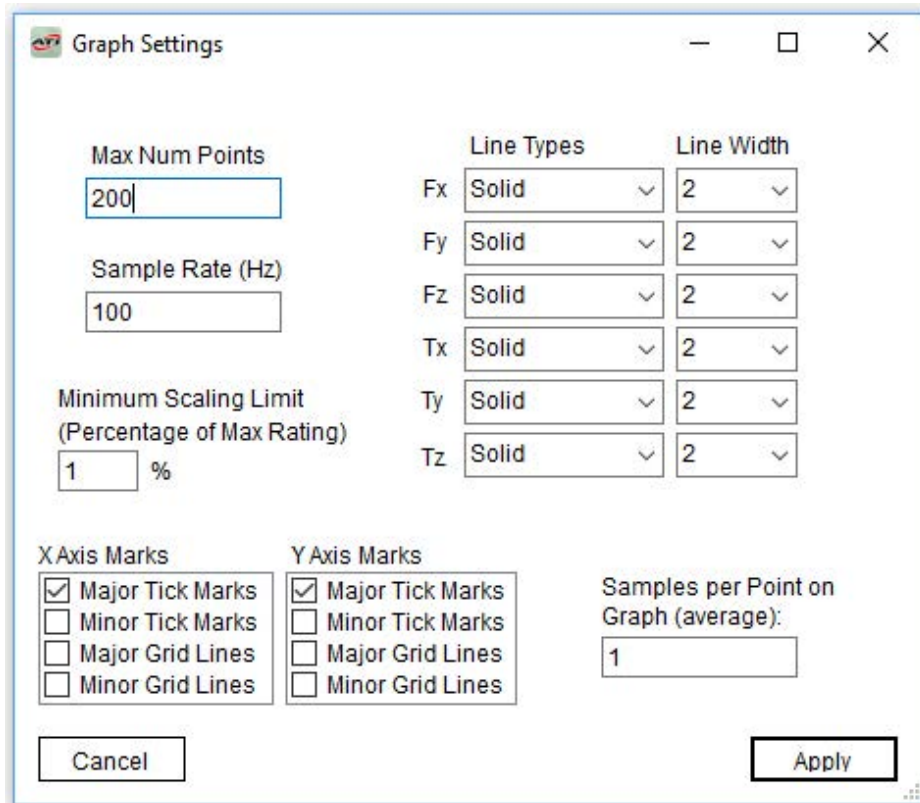
Figure 8.5—Graph Settings



The **Graph Settings** window opens. Here, adjust graph settings that apply to all the chart types. Click the **Apply** button in the lower-right corner. The window closes, and the settings are displayed.

Even after closing and then reopening the F/T Data Viewer application or swapping sensors, the graph settings are saved from the last session. To reset the settings to the default display, refer to [Section 8.4—Reset Graph Settings Back to Default](#),

**Figure 8.6—Graph Settings Window (Samples)**



**Max Num Points:** The user types a desired number of sample points.

**Sample Rate (Hz):** The speed at which the chart pulls data from the sensor. This rate is independent of the sensor's RDT sampling rate. In this field, the user types a number in Hz (hertz).

**Line Types:** For F/T data shown on each axis, the user can select these line types from the drop-down menu: dash, dash dot, dash dot dot, dot, or solid.

**Line Width:** The F/T data shown on each axis. The user can select the line width (1 to 10 points) from the drop-down menu.

**Minimum Scaling Limit:** In the text box, the user can type a percentage so that the y-axis is set in incremental units which are the smallest percentage of the maximum rating. Setting a scaling limit prevents environmental factors like noise from obstructing the F/T data that is displayed.

**Samples per Point on Graph:** In the text box, a user can type number of points, which are taken from the data collection, to average and merge into one point on the graph.

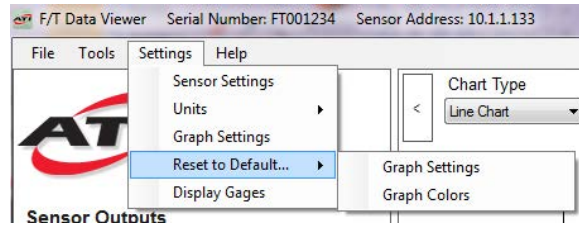
**X and Y Axis Marks:** The user can set incremental tick marks and grid lines along the X and Y axis. All or none of the boxes may be selected.

## 8.4 Reset Graph Settings Back to Default

To reset the graph settings or colors back to the default display, complete the following steps:

1. On the toolbar, select **Settings**.
2. Select **Reset to Default...** from the drop-down menu.
3. Select either **Graph Settings** or **Graph Colors** from the side navigational menu.
4. Select **Settings** and then **Graph Settings**.
5. Review the new settings.
6. Click **Apply**.

**Figure 8.7—Reset Graph Settings or Graph Colors to Default Display**



## 9. Troubleshooting

Information in this section is a reference point for questions or concerns that might arise in the field.

### 9.1 Troubleshooting Resources

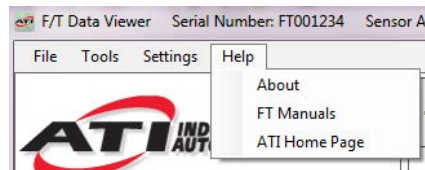
A number of troubleshooting resources are within the F/T Data Viewer Application:

- **About** : a window screen with technical specifications about the F/T Data Viewer Application
- **F/T Manuals** : a link to the sensor manuals on the ATI webpage
- **ATI Home Page** : a link to the ATI webpage

To access these resources, refer to the following steps:

1. On the toolbar, select **Help**.

**Figure 9.1—Help**



2. Select a resource from the drop-down menu.

### 9.2 Latency

A user can observe increased latency if the data in the chart on the main screen is a step pattern rather than a smooth curve. To resolve this problem, adjust the computer's latency settings with one of two methods.

#### 9.2.1 Method One (Preferred)

Adjust PC latency settings using the F/T Data Viewer.

1. Open the **Settings** menu.
2. Select **Sensor Settings**.
3. Select a new value from the **Serial Axia Latency Timer** drop-down window. The recommended latency setting is 3 to 4 ms.
4. Click **Accept**.

#### 9.2.2 Method Two

Adjust PC latency settings using PC menus.

1. In the computer's control panel, go to the **Device Manager**.
2. Select **Ports( COM&LPT)**.
3. Double-click on the device that is the sensor.
4. In the **Port Settings** window, select **Advanced**.
5. Lower the setting on the **Latency Timer** until the graph shows a smooth curve.

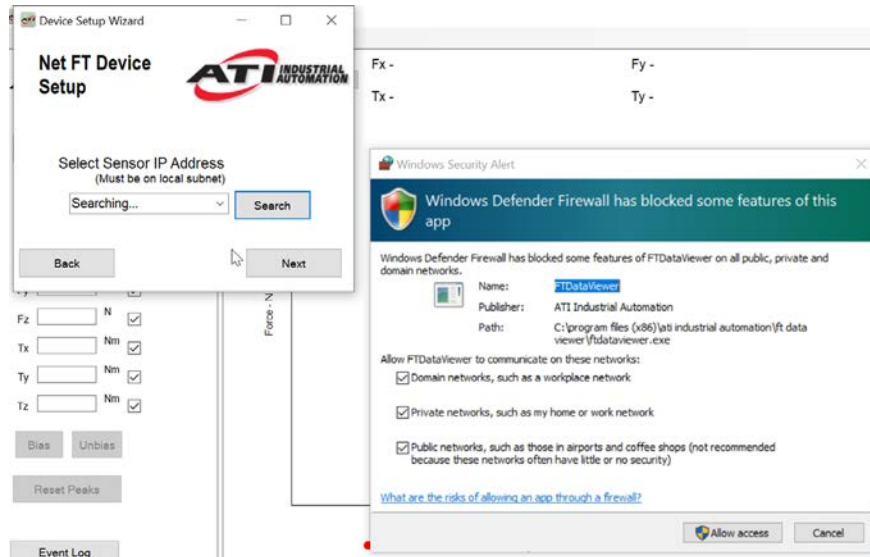


### 9.3 Resolving Firewall Issues

A user's PC or Ethernet network may use a Firewall which blocks the F/T Data Viewer program from communicating with Ethernet F/T and Ethernet Axia sensors. To avoid the most common firewall issues, follow these steps:

1. When installing F/T Data Viewer, select the option to install only "Only for me", not "Anyone who uses this computer (all users)".
2. When the F/T Data Viewer searches for an Ethernet sensor's IP address for the first time after install, Windows Firewall or another firewall service may prompt a pop-up window to allow the F/T Data Viewer on the network. For best results, select all checkboxes to allow F/T Data Viewer to communicate.

**Figure 9.2—Firewall**



3. After allowing F/T Data Viewer through the firewall, close F/T Data Viewer and then re-open it.
4. Re-open the search for Ethernet sensor IP address; refer to [Section 4.2—Set-Up Communication to an Ethernet Sensor](#).

## 9.4 Customer Service

In addition to these troubleshooting resources, customer service is available:

Note

Please read the manual before calling customer service. Before calling, have the following information available:

1. Serial number (e.g., FT01234)
2. Sensor model (e.g., Axia, etc.)
3. Calibration (e.g., US-15-50, SI-65-6, etc.)
4. Accurate and complete description of the question or concern
5. Computer and software information, for example: operating system, PC type, drivers, and application software

If possible, be near the F/T system when calling.

Please contact an ATI representative for assistance, if needed:

**ATI Industrial Automation**

1031 Goodworth Drive  
Apex, NC 27539 USA  
[www.ati-ia.com](http://www.ati-ia.com)

**Application Engineering**

Tel: +1.919.772.0115, Extension 511  
Fax: +1.919.772.8259  
E-mail: [ft\\_support@ati-ia.com](mailto:ft_support@ati-ia.com)  
24/7 Support  
Tel: +1.855.ATI-IA.00 (+1.855.284.4200)

## 10. Terms and Conditions of Sale

The following Terms and Conditions are a supplement to and include a portion of ATI's Standard Terms and Conditions, which are on file at ATI and available upon request.

ATI warrants to Purchaser that force torque sensor products purchased hereunder will be free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment. The warranty period for repairs made under a RMA shall be for the duration of the original warranty, or ninety (90) days from the date of repaired product shipment, whichever is longer. ATI will have no liability under this warranty unless: (a) ATI is given written notice of the claimed defect and a description thereof with thirty (30) days after Purchaser discovers the defect and in any event, not later than the last day of the warranty period and (b) the defective item is received by ATI not later than (10) days after the last day of the warranty period. ATI's entire liability and Purchaser's sole remedy under this warranty is limited to repair or replacement, at ATI's election, of the defective part or item or, at ATI's election, refund of the price paid for the item. The foregoing warranty does not apply to any defect or failure resulting from improper installation, operation, maintenance, or repair by anyone other than ATI.

ATI will in no event be liable for incidental, consequential, or special damages of any kind, even if ATI has been advised of the possibility of such damages. ATI's aggregate liability will in no event exceed the amount paid by the purchaser for the item which is the subject of claim or dispute. ATI will have no liability of any kind for failure of any equipment or other items not supplied by ATI.

No action against ATI, regardless of form, arising out of or in any way connected with products or services supplied hereunder, may be brought more than one year after the cause of action accrued.

No representation or agreement varying or extending the warranty and limitation of remedy provisions contained herein is authorized by ATI, and may not be relied upon as having been authorized by ATI, unless in writing and signed by an executive officer of ATI.

Unless otherwise agreed in writing by ATI, all designs, drawings, data, inventions, software, and other technology made or developed by ATI in the course of providing products and services hereunder, and all rights therein under any patent, copyright, or other law protecting intellectual property, shall be and remain ATI's property. The sale of products or services hereunder does not convey any expressed or implied license under any patent, copyright, or other intellectual property right owned or controlled by ATI, whether relating to the products sold or any other matter, except for the license expressly granted below.

In the course of supplying products and services hereunder, ATI may provide or disclose to Purchaser confidential and proprietary information of ATI relating to the design, operation, or other aspects of ATI's products. As between ATI and Purchaser, ownership of such information, including without limitation any computer software provided to Purchaser by ATI, shall remain in ATI and such information is licensed to Purchaser only for Purchaser's use in operating the products supplied by ATI hereunder in Purchaser's internal business operations.

Without ATI's prior written permission, Purchaser will not use such information for any other purpose or provide or otherwise make such information available to any third party. Purchaser agrees to take all reasonable precautions to prevent any unauthorized use or disclosure of such information.

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