

## Frequently asked questions

- Q:** I have a 4 channel transmitter, but the FS Viewer Software says it has five channels.
- A:** RC radio manufacturers sometimes use one circuit board in multiple transmitter models. In your case, they put a five channel circuit board in a four channel housing. The transmitter outputs a five channel signal, but doesn't give you a way to control the fifth channel.
- Q:** Can I use the FS Viewer Software with other brand/model receivers?
- A:** No. It only works with FMA Flight System receivers and FS Flight Recorder.
- Q:** The Viewer suddenly shows a lot of information I've never seen before. What's that all about?
- A:** You've discovered the normally-hidden Technical Displays for the FS receiver and FS Flight Recorder. They provide details beyond what you need to know for normal operation, but may be useful for troubleshooting. To hide the Technical Displays (or show them later), click the title ("History") in the History box.

## FMA limited warranty

FMA, Inc. warrants this product to be free of manufacturing defects for the term of one year from the date of purchase. Should any defects covered by this warranty occur, the product shall be repaired or replaced with a unit of equal performance by FMA or an authorized FMA service station.

### Limits and exclusions

This warranty may be enforced only by the original purchaser, who uses this product in its original condition as purchased, in strict accordance with the product's instructions. Units returned for warranty service to an FMA service center will be accepted for service when shipped postpaid, with a copy of the original sales receipt or warranty registration form, to the service station designated by FMA.

This warranty does not apply to:

- Consequential or incidental losses resulting from the use of this product.
- Damage resulting from accident, misuse, abuse, neglect, electrical surges, reversed polarity on connectors, lightning or other acts of God.
- Damage from failure to follow instructions supplied with the product.
- Damage occurring during shipment of the product either to the customer or from the customer for service (claims must be presented to the carrier).
- Damage resulting from repair, adjustment, or any alteration of the product by anyone other than an authorized FMA technician.
- Installation or removal charges, or damage caused by improper installation or removal.

Call (301) 668-4280 for more information about service and warranty repairs.

## Flight Systems (FS) Viewer Software

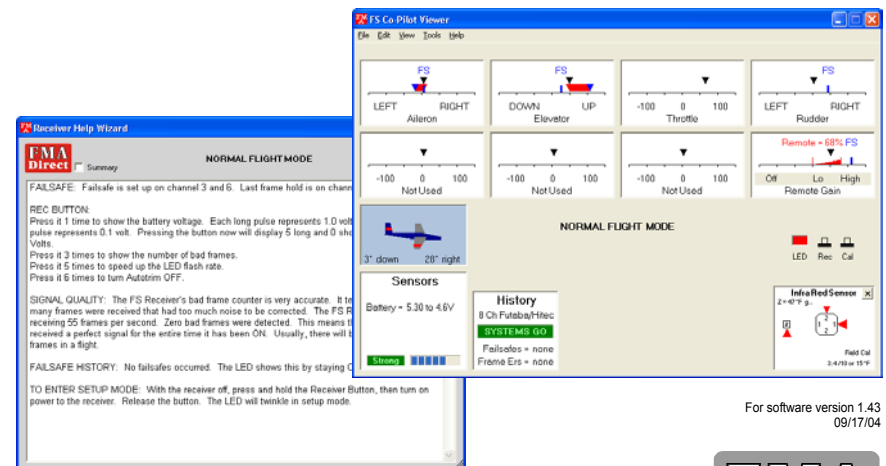
for use with FMA's Flight Systems receivers



## Features

- Graphically displays data in real time while setting up Flight Systems receivers:
  - Servo positions and stabilization for all channels.
  - Failsafe preset positions.
  - Airplane orientation (FS8 Co Pilot only).
  - And other analytical aids.
- Built-in recorder/player: record receiver data, play back for analysis, add notes.
- Unique Help Wizards describe exactly what FS receiver is doing, and interpret data.
- Downloads and plays data saved in FS Flight Recorder for detailed analysis of exactly what happened during flights, including servo positions, failsafe status and aircraft orientation. FS Flight Recorder stores up to 97 minutes of flight data.
- Runs on PCs having Windows 98 or later and a serial or USB port.

**Note:** Although FS Viewer Software is not required for FS receiver setup and operation, it is a great tool for helping you set up your FS receiver. It provides a convenient way to view and interpret what the receiver is doing, and permits data recording and playback.



For software version 1.43  
09/17/04

FMA, Inc. • 5716A Industry Lane • Frederick, MD 21704  
Sales: (800) 343-2934 • Technical: (301) 668-4280 • [www.fmadirect.com](http://www.fmadirect.com)

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## Installing the software

### To use the FS Viewer Software, you must supply:

- Desktop or laptop computer with:
  - Windows 98 or a later Windows version, and Internet Explorer 6.0 or later.
  - 9-pin serial port or USB port. (If your computer doesn't have either of these, purchase and install a USB port.)
  - CD-ROM drive.
  - Microsoft .NET Framework software. (If this is not already installed on your computer, you can install it from the FS Viewer Software CD).
- FMA FS Interface Module with 9-pin serial cable (part number FSIM1).
- USB to 9-pin serial adapter (if connecting via a USB port).

**Note:** For reliable operation, install the latest Windows updates. Critical updates are on the Viewer Software CD, but using Windows Update is better.

1. Insert the FS Viewer Software CD into the computer's CD drive.
2. Use Windows Explorer to view the contents of the CD.
3. If Microsoft .NET Framework software is not already installed on your computer:
  - a. In Windows Explorer, double-click *dotnetfx.exe*.
  - b. Follow the on-screen instructions.
  - c. For Windows 98 installations, restart the computer. (**Note:** If you log off instead of restarting, Windows 98 may display a different desktop.)
4. Install the FS Viewer Software:
  - a. In Windows Explorer, navigate to the "Viewer" Folder, then double-click *setup.exe*.
  - b. Follow the on-screen instructions.

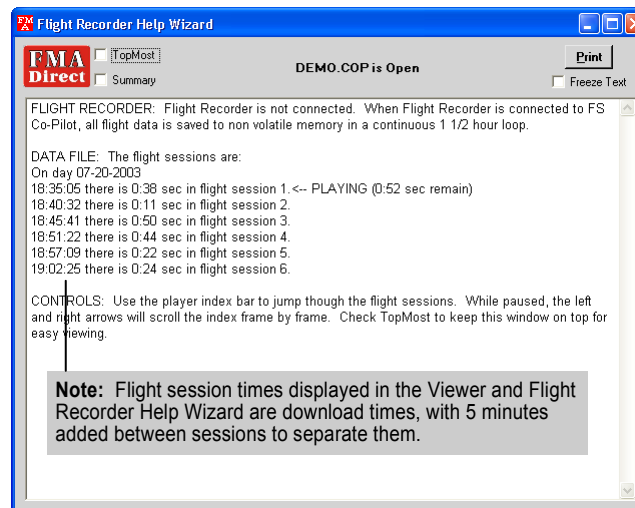
## Working with Flight Recorder data

The FS Flight Recorder (available separately from FMA) is an airborne unit that saves data from FS receiver and FMA external sensors, such as an altimeter or airspeed indicator. With a capacity of 1.5 hours, the Flight Recorder can save data from several flights. Complete details for using the Flight Recorder are provided in the Flight Recorder manual.

### 1. Start the download:

- Method A: Flight Recorder out of aircraft.
  - a. Remove the Flight Recorder from the aircraft.
  - b. Launch the FS Viewer program.
  - c. In FS Viewer, **File > Download Flight Recorder**.
  - d. Connect the FS Interface Module to the Flight Recorder's Data Out pins.
  - e. Connect a receiver battery to the Flight Recorder's D1 or D2 pins.
- Method B: Flight Recorder in aircraft.
  - a. Launch the FS Viewer program.
  - b. In FS Viewer, **File > Download Flight Recorder**.
  - c. Using a servo extension, connect the FS Interface Module to the Flight Recorder's Data Out pins.
  - d. If you are working with an electric-powered aircraft, disconnect the motor for safety.
  - e. With the **TRANSMITTER OFF**, turn on FS receiver in Setup Mode: Press and hold the RECEIVER button, turn on the receiver, then release the button.


2. Watch the download progress in the Flight Recorder Help Wizard. (The Flight Recorder's entire memory is downloaded in reverse order. This enables you to download the most recent flight data, then stop the download so you don't have to wait for all 1.5 hours of data.)
3. When you have downloaded the flights of interest, disconnect the Flight Recorder from power.
4. When prompted, enter a name for the data file, then click **Save**. The Viewer saves and reverses the file.
5. The Viewer begins playing the file, starting with the oldest session (as shown on the next page). All receiver and flight stabilization activities appear in the Viewer. Use the player controls to move between sessions, pause, stop or repeat playback.



## Creating an Aircraft Template

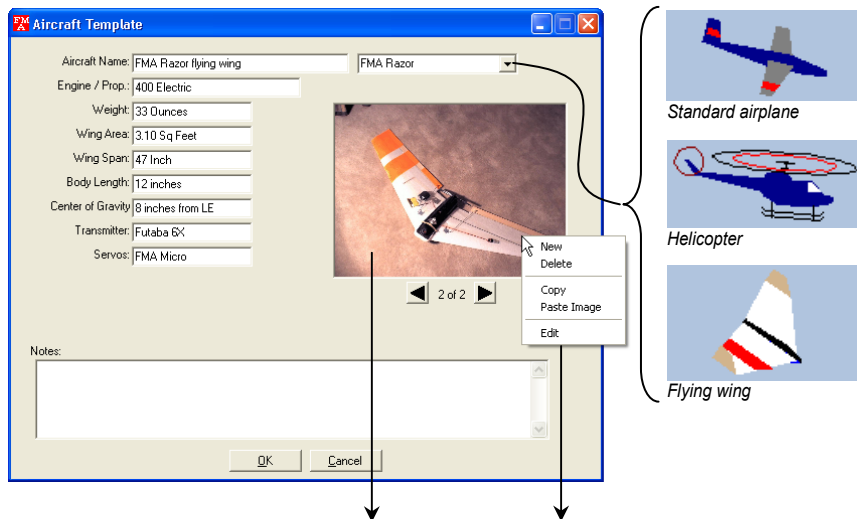
An Aircraft Template holds information about a specific aircraft.

- To create a new template:

1. **File > New.** 
2. Click the **Aircraft** button.
3. In the **New Aircraft Template** window, name and save the file.
4. In the **Aircraft Template** window (shown below):
  - a. Fill in aircraft information.
  - b. Click **Select a 3D Aircraft**, then open an aircraft file (this specifies the aircraft used to show orientation in the main window).
  - c. If desired, add images of the aircraft (see instructions below).
  - d. Click **OK**.

- To open the current Aircraft Template from the main window: **View > Aircraft Template**, or press CTRL-A.

- To open a different Aircraft Template: **File > Open**, select a file of type **.air**, then click **Open**.



### To do this...

### Right-click on image, then...

Add JPEG or GIF image from file	<ol style="list-style-type: none"> <li>1. Click <b>New</b> in pop-up menu.</li> <li>2. In <b>Select a Picture</b> window, locate and open image file.</li> </ol>
Delete current image	<ol style="list-style-type: none"> <li>1. Click <b>Delete</b> in pop-up menu.</li> <li>2. Click <b>Yes</b> to confirm.</li> </ol>
Copy current image to Clipboard	Click <b>Copy</b> in pop-up menu.
Paste image from Clipboard	Click <b>Paste</b> in pop-up menu.
Edit image in MS Paint	Click <b>Edit</b> in pop-up menu.

## Installing the interface module

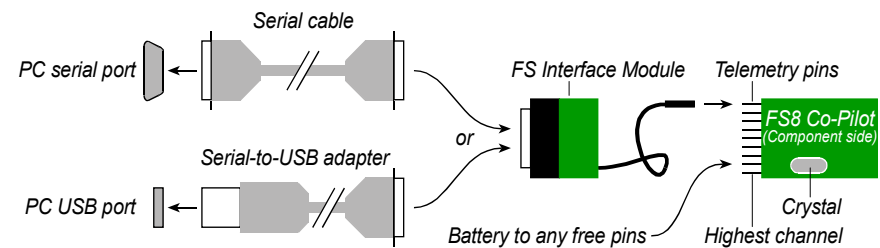
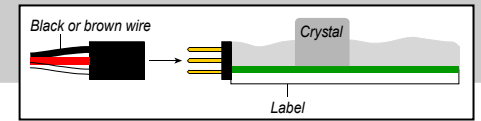
The Interface Module connects FS receiver to your PC, and is required for using the FS Viewer Software to view and record receiver data.

**Note:** The Interface Module is not required for *playing* data files. For example, you can play the demo data file using the Viewer Software to see what the program does. If you don't already have an Interface Module, this demo file may help you decide to purchase one.

Referring to the diagrams below:

1. Attach the Interface Module servo connector to the FS receiver's Telemetry pins. For FS8 Co Pilot, telemetry is between the channel 1 pins and the edge of the circuit board. For further instructions on connecting FS receiver product other than FS8 Co Pilot, consult the receiver user guide.
2. Connect the Interface Module to the computer's serial port using the serial cable.  
or  
Connect the Interface Module to the computer's USB port using a USB adapter.
3. Connect a standard receiver battery to any free pins on the FS receiver.

**CAUTION:** Black wires on FS Interface Module and battery connectors go away from label side of receiver. (Do not use "old style," pre-"Z-type" Airtronics servo connectors.) Failure to observe correct servo/battery polarity voids warranty. Incorrect polarity may damage receiver and/or Interface Module.



## Launching the FS Viewer

To run the Demo:

1. Launch the FS Viewer:
  - Double-click the FS Viewer icon on the computer's desktop.
  - or
  - **Start > Programs > FS Viewer.**
2. Click the "Demo" button.



To view FS receiver operations:

1. Connect FS receiver to your computer's serial or USB port using the Interface Module (see previous page).
2. Turn on the transmitter, then turn on FS receiver.
3. Launch the FS Viewer:
  - Double-click the FS Viewer icon on the computer's desktop.
  - or
  - **Start > Programs > FS Viewer.**
4. Click the "Continue" button.



The program polls the serial and USB serial adapter ports on your computer to find the one connected to FS receiver. If you don't see the display below after a few seconds, there is a problem in the connections between the computer and the receiver. Check the cabling and connections. Make sure the black connector from the Serial Adapter is in the proper orientation (black/brown wire toward the component side) on the receiver's Telemetry pins.

The Viewer provides real-time information about receiver and flight stabilization operations. Details are provided on pages 6 and 7.

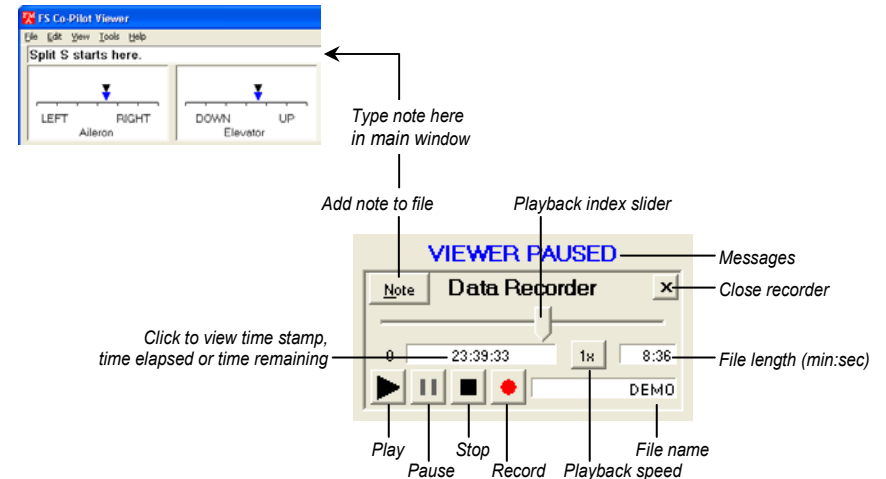
**Tip:** For additional information about FS Viewer Software and FS receiver:

- Open the Viewer Software's help file: **Help > Help Contents**, or press ALT-F1.
- Download the FS receiver and FS Viewer Software manual PDF from the Support section of the FMA Direct Web site: [www.fmadirect.com](http://www.fmadirect.com). (Contains the same information as the FS Viewer help file.)

**Tip:** File > Update Software to get the latest software version. Or check the Support section of the FMA Direct Web site ([www.fmadirect.com](http://www.fmadirect.com)) for Viewer Software updates. You don't need to uninstall the previous version. The installer will overwrite the version currently installed on your computer.

## Recording and playing a data file

The Viewer has a built in Recorder/Player that records real-time data from your FS receiver while it is close to a computer. The Recorder logs all incoming data, adds time information and stores the data in a file. The Player plays back, or steps through, the entire file. The Player also plays files recorded by the FMA Flight Recorder during flights.



### To do this...

Record data

### Do this...

1. **File > New.**
2. Name and save the file.
3. Click **Record** button.
4. Carry out any transmitter, receiver or aircraft actions you want to record.
5. When done, click **Stop** button.
6. To save data, **File > Save**, then save as .cop file.

Open data file

**File > Open.**

or  
In Windows Explorer, double-click a .cop file (file will begin to play immediately in Viewer).

Move to any point in current data file

1. Click **Pause** button, then...
2. Drag player index slider.
- or
- Use RIGHT-ARROW and LEFT-ARROW buttons to move through file one line at a time.

Add note to current data file

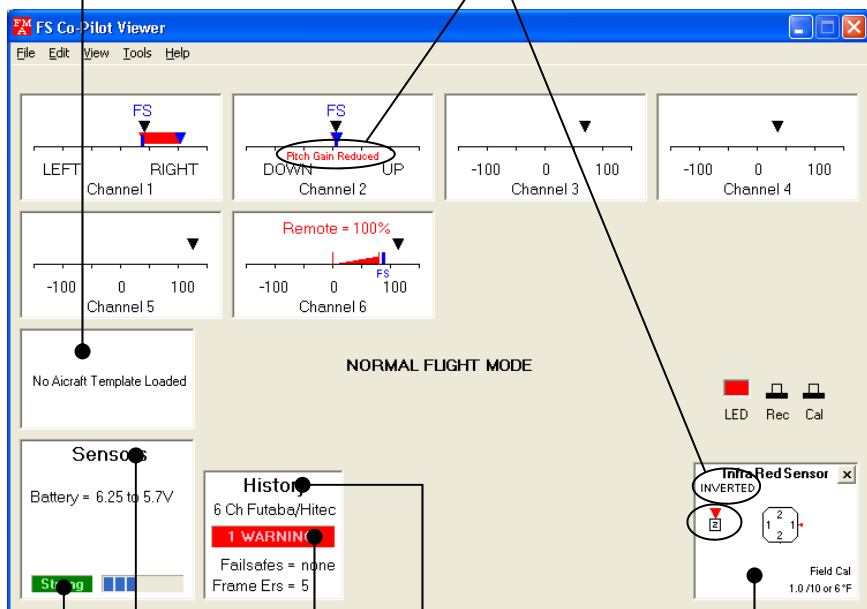
- While data file is open:
1. If necessary, drag player index slider to place where you want note.
  2. Click **Note** button (or press ALT-N).
  3. Type note above channel displays.
  4. Click **Save** button (or press ALT-S).

## More about FS Viewer



Click to open Aircraft Template (see page 10)

When the optional Vertical ("Z") Sensor detects that the aircraft is inverted, FS8 Co-Pilot™ reduces pitch compensation to enable the aircraft to roll out of the inverted attitude, rather than loop out



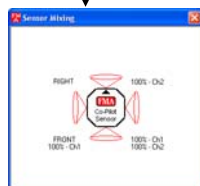
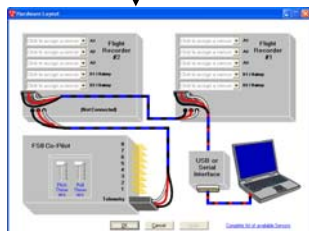
Click to open Receiver Help Wizard

Click to open Hardware Layout

Click to open appropriate Help Wizard

Click to open/close Technical Displays

Click to open Sensor Mixing

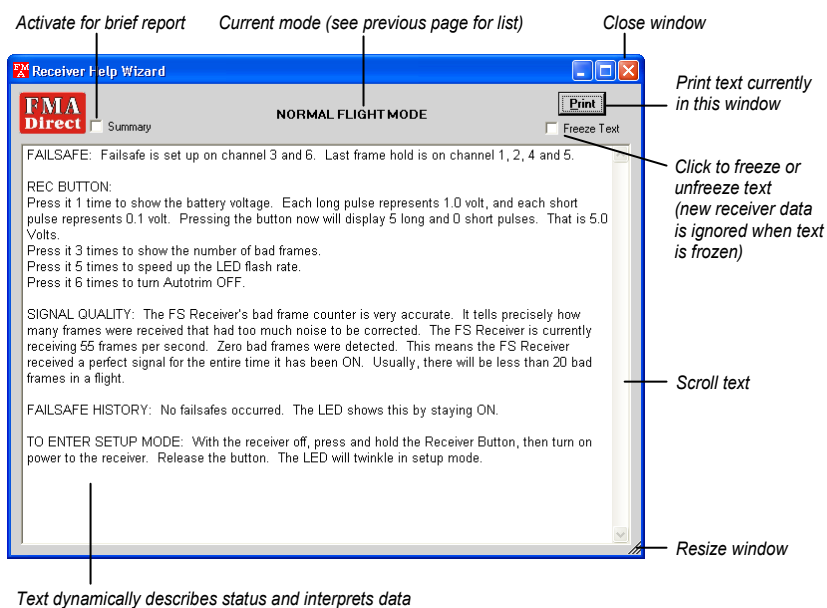


## Using the Help Wizards

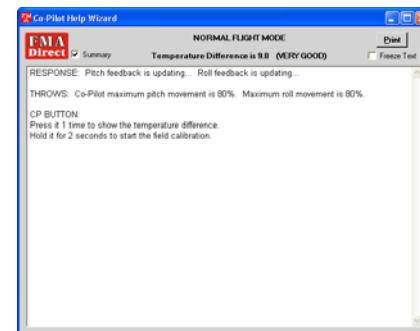
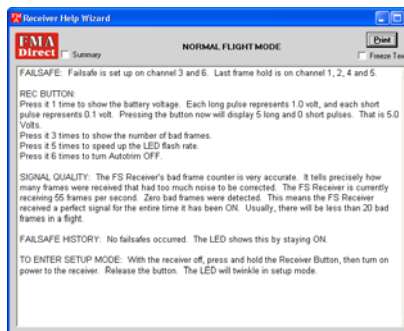
The Help Wizards provide running descriptions of what FS receiver is doing at any particular moment. Additionally, the Wizards interpret the data for you, making it easy to understand what the Viewer is telling you.

- To open the Flight Stabilization Help Wizard: **Help > Co-Pilot Wizard**, or press F1.
- To open the Receiver Help Wizard: **Help > Receiver Wizard**, or press F2.
- To open the Flight Data Wizard: **Help > Flight Data Wizard**, or press F3.

Here's an example of what's in the Receiver Help Wizard:



These examples show the difference between full and summary text:



## About FS Viewer

**Channel List:** Aileron, Add Description, Aileron, Aileron Left, Aileron Right, CCPM 1, CCPM 2, CCPM 3, CCPM 4, Channel 1, Channel 2, Channel 3, Channel 4, Channel 5, Channel 6, Channel 7, Channel 8, Collective, Elevator, Elevon Left, Elevon Right.

**Channel 1 display:** Channel 1 stick position (black triangle), Channel 2 servo position (blue triangle) (red is amount of correction applied by flight stabilization).

**Channel 4 failsafe position:** Channel assigned to remote flight stabilization control; as shown, remote control is on (black triangle between Lo and High), set to 68% of maximum stabilization, and channel has a failsafe setting to turn on flight stabilization during failsafe conditions.

**Channel 4 Remote Gain:** Remote = 68% FS, Off, Lo, High.

**Current FS receiver mode:**

- Normal Flight Mode
- Failsafe Setup Mode
- Flight Stabilization Setup Mode (FS8CP)
- Failsafe Mode

**Same as LED and buttons on Button/LED Module:** LED, Rec, Cal.

**Red indicates warmer direction sensed by Vertical Sensor (Z) and Pitch/Roll Sensor (1,2):** Z = 47°F g..

**Count and actual temperature differential measured during infrared calibration (or during calibration by optional Vertical Sensor):** Field Cal 3.4/10 or 15°F.

**To change temperature units:** View > Options > Celsius or View > Options > Fahrenheit.

**Tip:** If you are using FS Viewer with different aircraft, save each aircraft to a different template file.