



 **GREAT PLANES**  
R/C AIRCRAFT & ACCESSORIES

# REALFLIGHT<sup>®</sup>

R/C SIMULATOR



GENERATION 2<sup>™</sup>

WITH **USB INTERLINK<sup>™</sup>**  
CONTROLLER

*Includes instructions for  
RealFlight Generation 2 with USB InterLink Controller.*

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# CHAPTER 1. INTRODUCTION

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## INTRODUCTION

Welcome to the RealFlight® Generation 2 R/C Simulator, the most advanced R/C aircraft simulation available. RealFlight G2 is so realistic, you'll hardly believe it's a simulation. Whether you're a seasoned modeling veteran, or an entry-level R/C-er, RealFlight G2 is the ideal way to learn to fly, practice maneuvers, feel the effects of design modifications, or just have an incredible amount of fun.

Adventurous modelers will enjoy RealFlight's incredible versatility--create custom trim schemes, design a flying site, or alter any of more than 500 adjustable aircraft parameters. If, however, you don't wish to do so, that's fine too. We've included 31 models that look and fly like the real thing, plus five different flying sites--each with its own characteristics.

More importantly, RealFlight G2 offers an amazing array of tools to help you understand how to use the program, and how to improve your R/C piloting skills. From extensive tooltips that explain every feature and option as you use it, to our Virtual Flight Instructor™ feature, to our extensive manual and technical support, *no other R/C simulator goes further to enrich your R/C experience.*

The following section briefly outlines some of the new features in Generation 2 (G2). This is especially helpful if you're upgrading from a previous version of RealFlight. If you don't wish to read the new feature summary, you can skip the following section and proceed to "*Chapter 2. Before You Begin*" on page 5. Subsequent chapters will describe all RealFlight features (new and old) in complete detail.

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## WHAT'S NEW IN GENERATION 2 WITH USB INTERLINK™ CONTROLLER

This section briefly outlines some of the new features included in RealFlight G2 with the USB InterLink Controller. You may want to read this section if you are upgrading from an older version of RealFlight, RealFlight Deluxe, or from a version of RealFlight G2 that did not include the USB InterLink Controller. RealFlight G2 and the InterLink Controller incorporate a significant number of enhancements and improvements over the previous RealFlight systems. If you are new to RealFlight, or

just don't want to read this section, you can proceed to the next chapter. Subsequent chapters will cover all of this material in complete detail.

First of all, we'd like to thank you for purchasing RealFlight G2. We think you will be enormously pleased with G2, which incorporates many of the features our users have most frequently requested over the years (plus a few others that we thought of ourselves!).

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## USB INTERLINK CONTROLLER

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All RealFlight versions now come equipped with Great Planes®'s USB InterLink Controller by Futaba®. This revolutionary device brings you:

- A high quality, USB compatible, plug and play controller for RealFlight G2.
- A built-in interface for (optionally) using your own R/C transmitter for controlling RealFlight G2 (should you so desire).
- The InterLink Controller is fully *hot pluggable*—you can connect/disconnect the InterLink, or your own transmitter, without rebooting your computer (or even shutting down RealFlight G2).
- Higher speed response to control inputs.
- Digitally precise inputs for unmatched control precision.

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## MENU-DRIVEN INTERFACE

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Upon starting G2, the first thing that you are likely to notice is the completely redesigned user interface. RealFlight now runs in a window (assuming your video card supports this option), and the interface is completely menu-driven. If, however, you like the full-screen look, you can recover this in G2 by removing the check mark from the “Run in Window” item in the Options menu. (In full-screen mode, press “ALT” or “ESC” to access the RealFlight menus.)

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## ADDITIONAL NEW FEATURES

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- Incredibly realistic airplane and scenery graphics, using detailed, 24-bit textures.
- Fully editable airports. You can add, remove, move, resize, and reorient buildings and other scenery objects. You can add, remove, size, or seasonally color incredibly realistic trees and foliage. You can position, size and reorient runways (even over non-flat terrain)...and much, much more.
- You can now create and edit custom paint/decal schemes for your aircraft. (To create and edit color schemes, you must use a third-party software capable of editing “.tga” [Targa] files.)
- Multiplayer support. You can now fly with up to seven other RealFlight G2 users over the Internet, or over your Local Area Network (LAN).
- RealFlight now features five events: Limbo, Spot Landing, Pylon Racing, Autorotation and Freestyle. Each event features three distinct skill levels to challenge your flying capabilities. You can fly an event

alone, or against up to seven additional pilots using the multiplayer feature.

- RealFlight's new Virtual Flight Instructor feature gives you personal flying lessons from two R/C experts. These pros will help you learn and perfect maneuvers, regardless of your skill level.
- You can now create multiple, independent picture-in-picture viewports within the RealFlight display. You can size and reposition viewports using your mouse. Also, each viewport is completely independent and fully adjustable to suit your personal taste.
- Using RealFlight's new Advanced Flight Recorder™ (AFR) feature, you can record your flights to play back later. A recorded flight plays back as an animated plane in your airport. You can also share recordings with other RealFlight G2 users.
- On-screen "Gadgets" let you view continuously updated aircraft/radio data, or access RealFlight controls with a simple click of the mouse.
- Full collision detection. If you hit a building, your plane crashes. You can even collide with multiplayer or recorded aircraft.
- G2 has a wealth of new view options. For example, you can look at your aircraft, a fixed location, or at someone else's aircraft. You can easily adjust your viewpoint using your mouse. You can even store viewpoints and return to them later.
- If you so choose, RealFlight G2 can even simulate common types of flight failures (radio interference problems, stuck servos, etc.).
- Airplanes now have visible smoke and exhaust.
- All aircraft now feature moving control surfaces and retracts that visibly move (if applicable).
- G2's new Control Panel allows for easy, one-click updating and simplified technical support should the need arise.

We hope you enjoy these, as well as the various other new features, in G2. Keeping the "Tip of the Day" feature active serves as a great reminder about these new features.

And please, keep the suggestions coming! Great Planes and Knife Edge Software are continually enhancing RealFlight, striving to provide you with the most accurate R/C Simulator ever created.



# CHAPTER 2. BEFORE YOU BEGIN

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## SYSTEM REQUIREMENTS

The system requirements below are what we consider to be the minimum PC configuration in which RealFlight G2 should be installed. Meeting the minimum requirements will allow you to still enjoy G2; however, in order to take complete advantage of the many features and functions offered by G2, you should have a computer at, or near, the specifications as listed under the optimum system requirements.

### ***MINIMUM SYSTEM REQUIREMENTS***

- Windows® XP\*, 2000\*, ME or 98
  - \* Local administrator access required for Windows XP or 2000
- Intel® Pentium® 300 or equivalent processor
- 64 MB RAM
- DirectX® 8.1 (or above) compatible video card with at least 8MB of RAM (Note that Voodoo I and Voodoo II cards are not supported because they do not allow you to run in a window or view a menu while full screen)
- DirectX 8.1 (or above) compatible sound card
- 500 MB hard drive space
- 4x CD-ROM drive
- Super VGA monitor
- USB port

### ***SUGGESTIONS FOR OPTIMUM PERFORMANCE***

In addition to the requirements above:

- Intel Pentium III 600 (or equivalent) and above processor

- Microsoft® Direct 3D compatible high performance 3D accelerated video card with 16 MB (or more) video RAM
- 16x CD-ROM drive
- 128 MB RAM

#### ***MULTIPLAYER REQUIREMENTS-***

- Intel Pentium 450 or above
- LAN:IPX/SPX or TCP/IP protocol
- Internet: TCP/IP connection requires an Internet account and 28.8 kbps (or faster) modem
- 128 MB RAM

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## **VIDEO AND SOUND CARDS**

In order to achieve optimum performance and the ultimate satisfaction from RealFlight, there are two important components of your computer that deserve special attention: the video and sound cards.

While RealFlight will work well on a wide variety of hardware configurations, it offers many features that are designed to take particular advantage of the latest video technology. If you have an older computer, or a newer computer with a lower-end video card, you may want to consider purchasing a new video card to take advantage of these features. This moderately priced upgrade can vastly enhance your enjoyment of RealFlight. Aside from increasing your satisfaction with G2, a new video card will also work with many other games or simulators, improving their performance as well.

While not as important as a video card, upgrading your sound card may also improve your satisfaction with RealFlight. This is especially true if your computer uses an on-board sound card (that is, a sound card affixed to the motherboard.)

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## **GETTING THE MOST OUT OF REALFLIGHT**

We think you'll agree that for both beginners and experienced pilots, RealFlight offers the finest set of instructions and practice tools of *any* R/C simulator. Great Planes and Knife Edge Software are committed to the continual improvement of our products. When using the software, there are two things you should keep in mind.

First of all, similar to other pursuits, what you get out of RealFlight depends upon what you put in. Mastering radio control requires a great deal of patience and practice. If you crash an aircraft in the simulation, take it very seriously. Crashing an actual R/C aircraft can cost you a lot of time and money. Try to examine what you did incorrectly, using the experience to avoid making the same mistake again.

Secondly, while the simulator is quite realistic and will assist you in learning many of the skills necessary to become a proficient pilot, there is no substitution for actual stick time. No simulator, no matter how realistic, can completely replace a qualified,

experienced, human flight instructor. A simulation can be a wonderful practice tool. However, if you're new to R/C, you should never attempt to fly a real aircraft without the supervision of a qualified instructor, no matter how well accomplished you are on the simulator.

[Redacted]

[Redacted]





# CHAPTER 3. GETTING STARTED

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## OVERVIEW

This chapter covers the installation procedure for RealFlight G2, describes the basics in running the program, and will introduce you to some of RealFlight's most often used features.

The first section, *Installing RealFlight Generation 2*, offers a step-by-step approach to the installation procedure for both the program software and the controller.

The second section, *Exploring RealFlight G2*, offers a brief tour of the RealFlight G2 program. You'll learn how to perform some basic functions, such as selecting the aircraft you wish to fly, performing simple edits to the flying field, manipulating viewports, and using the RealFlight's new Virtual Flight Instructor feature.

This chapter only touches on some of RealFlight G2's features. While reading the chapter is enough to get you acclimated to the program, you'll more than likely want to refer to subsequent chapters, which describe the various features in comprehensive detail.

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## INSTALLING REALFLIGHT G2

RealFlight G2 now comes equipped with Great Planes's RealFlight USB InterLink Controller by Futaba. The InterLink has two modes. By itself, it serves as a realistic "standalone" controller for RealFlight G2. Alternatively, it has a built-in interface that lets you use your own R/C transmitter to control RealFlight G2.



*The USB InterLink Controller*

To install RealFlight G2 using the InterLink Controller, follow the instructions in this chapter.

Whether you plan to use the InterLink Controller by itself, or with your own R/C radio to control RealFlight, you should first follow the instructions in “*Program Installation*” on page 10.

If you will be using your own R/C transmitter to control RealFlight (using InterLink Controller’s built-in adapter), follow the installation instructions in “*Using Your Own R/C Radio to Control RealFlight (Optional)*” on page 12. If you do not plan on using your own R/C radio to control RealFlight, you can skip that section.

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## PROGRAM INSTALLATION

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This section will explain how to install the RealFlight G2 program and the RealFlight USB InterLink Controller. When you finish this section, you should be able to fly aircraft, using the InterLink to control aircraft.

The InterLink’s built-in transmitter interface also allows you to use your own R/C transmitter to control RealFlight G2. To do this, you will first need to follow the instructions in this section. Then, follow the directions in “*Using Your Own R/C Radio to Control RealFlight (Optional)*” on page 12.

### **UPDATE DRIVERS**

Before you begin installation, we strongly suggest that you update the drivers for both the sound and video cards. A *driver* is a software program that your computer uses to control hardware devices. Each card has its own respective driver. Most problems with installing and using RealFlight, as well as many other programs that use DirectX, arise from outdated video and/or sound card drivers.

If you’re not sure how to update your drivers, you can find instructions in article *Q01-1038, How to Update Drivers*, at <http://www.gpssoftware.com/kb/q01-1038.htm>.

That article will take you through the process step-by-step, and has links to driver download sites for most manufacturers.

### ***START INSTALLATION PROGRAM***

Once you've installed the new drivers, you're ready to install RealFlight G2. First, turn your computer "on" and close any applications you are running. Next, insert the RealFlight G2 CD-ROM into the CD-ROM drive. If auto-play is active, the RealFlight Control Panel will appear. Click the "Install RealFlight G2 CD" button located at the top of the Control Panel to begin the installation process.

If auto-play is not active, you will need to locate and run the program "SETUP.EXE" from the root directory of the CD-ROM. To do this, click the "Start" button on the Windows Taskbar, then select "Run" from the Start menu. In the "Run" window, type "d:\setup" and press [Enter] or click "OK" (assuming "d:\" is the designation for the CD-ROM drive). This should start the setup program.

### ***RUN INSTALLATION PROGRAM***

Follow the onscreen instructions, filling in information when queried by the setup program. When the setup program asks for your program serial number, use the RealFlight serial number as it appears on the rear side of the CD-ROM jewel case. When it asks for the InterLink serial number, use the serial number located on the rear side of the InterLink controller. These numbers must be entered exactly as they appear in order to proceed to the next phase of the installation process.

### ***INSTALL DIRECTX***

After the program has finished copying the necessary files, it will ask you if you want to install DirectX. If you do not meet the minimum DirectX version requirement as queried by the RealFlight program, click "Yes" to install this updated version of DirectX. It will not harm your computer to install DirectX more than once. Therefore, if you are unsure as to the status of this program we suggest that you install it at this time. When DirectX has been installed, click "Finish" to complete the Setup.

### ***CONNECT THE INTERLINK CONTROLLER***

Finally, plug the RealFlight G2 InterLink controller into a USB port on your computer (see diagram). On most computers, the USB ports are clearly labeled.



Note that the InterLink controller is *hot pluggable* or *hot swappable*. In other words, you can normally plug/unplug the controller without turning your computer off or rebooting.

While your InterLink Controller is plugged in, and your computer is turned “on”, you should see a small amber light on your controller flash “on” and “off”. This light, labeled “USB”, indicates that the InterLink controller is connected and working.

### ***RUN REALFLIGHT***

To complete the installation and start the program, click on the RealFlight icon located on the desktop. RealFlight will guide you through the final installation steps, as well as the calibration of your controller.

You are now set up to run RealFlight G2, using the InterLink as a dummy transmitter. If you would like to use your own R/C transmitter as a controller, please read the following section, “*Using Your Own R/C Radio to Control RealFlight (Optional)*”. If not, you’re ready to start using RealFlight. Proceed to “*Exploring RealFlight G2*” on page 13, which will walk you through the basics of using the RealFlight program.

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## **USING YOUR OWN R/C RADIO TO CONTROL REALFLIGHT (OPTIONAL)**

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Follow these instructions if you intend to use your own R/C transmitter to control RealFlight G2. If you don’t want to use your own transmitter, skip this section. Before reading this section, you should first follow the instructions in “*Program Installation*” on page 10.

### ***CONNECT YOUR TRANSMITTER***

You can use your R/C transmitter to control RealFlight G2 by connecting it to the InterLink controller, “buddy box” style (see diagrams). RealFlight G2 includes a cable and adapter for making this connection to many popular R/C transmitters.



First, locate the cable input port on the rear of the InterLink Controller. Plug one end of the included connector cable into this port. Next, the other end of the adapter cable must be plugged into the buddy box port (a.k.a. trainer jack) of your transmitter. The procedure for doing so depends on your transmitter:

- If your transmitter's buddy box port directly accepts the 1/8" stereo plug on the other end of the connector cable, plug this in. This works for JR® radios.
- If your radio takes a 6-pin DIN plug (like Futaba radios), use the short extra 1/8" stereo to 6-pin DIN adapter cable included with RealFlight G2 (see left panel of the diagram above).
- Some radios (e.g., Airtronics®) require an optional adapter cable, which is not included with RealFlight. This optional adapter cable is available wherever you purchase RealFlight G2.

### SETUP

After you have connected your transmitter, you will need to perform a setup procedure before you can proceed. The exact procedure depends on how you want to use your controller. *For more details, see "The InterLink Controller (Interface Mode)" on page 38.*

Once you have a controller set up (either the InterLink mockup controller or your own transmitter), you're ready to start using RealFlight. *You can now proceed to "Exploring RealFlight G2" on page 13, which will walk you through the basics of using RealFlight.*

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## EXPLORING REALFLIGHT G2

Now that you've installed RealFlight, it's time to begin exploring the program. The following sections will take you on a quick tour of RealFlight's most popular features, such as selecting an aircraft to fly, changing flying fields, customizing your flying field, using RealFlight's Virtual Flight Instructor, etc. Along the way, we'll show you where to go for help, or how to obtain additional information.

You'll want to read this section even if you are upgrading from a previous version of RealFlight. Most of the features described here are either new, or have been completely re-engineered for Generation 2 with InterLink Controller.

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### START THE PROGRAM

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After installation, you should see a RealFlight G2 icon on your computer's desktop. First, close all open programs and windows (RealFlight performs best when it is the only program running, *i.e.*, not sharing resources with any other programs or applications.) Next, start RealFlight by double-clicking the RealFlight icon.

The first time you access or run RealFlight, you may be asked to calibrate your controller (follow the instructions as provided by RealFlight). Also, you will see a "**Tip of the Day**". The **Tip of the Day** feature is a sequence of helpful tips, hints and facts about RealFlight that will enhance your enjoyment of the program.



Normally, you will see a new tip each time you start RealFlight. If you wish, you can deactivate this feature by removing the check mark from the “Show tips at startup” box. If you turn **Tip of the Day** “off”, you can turn it “on” again using RealFlight’s **Help** menu.

We suggest leaving **Tip of the Day** active until you are better acclimated with the software and all that it has to offer. The tips will point out many great RealFlight features that you may not have noticed. For now, just click “OK” to close the Tip of the Day window and start flying.

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## THE REALFLIGHT MAIN DISPLAY

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When you first run RealFlight, you should see a window like the one below (assuming your video card supports DirectX Window mode, most cards do).



You can move, resize, minimize, maximize and restore the RealFlight G2 main window just as you would any other application.

You interact with RealFlight using the **menus** in the main window’s menu bar:

- **Airport**
- **Aircraft**