

## *R/C Reporter* –Computer Interface Adapter (USB Link)

### Windows Program Instructions

#### Version 3.0

The *R/C Reporter* is a multi-function system monitor for use in radio control aircraft. It's a lost-plane locator, volt meter and monitor, and a glitch counter -- all in one. The device is fully functional without the computer interface adapter. However, the interface allows you to use your PC (via a USB port) to customize the device in many ways.

- Optimize the Beep Frequency (to your plane and your hearing)
- Adjust the Turn-on Position to match your transmitter
- Change the Low Battery Warning threshold
- Load your choice of Ring-Tone files – Give your plane a theme song!
- Customize over a dozen other operational parameters (from the number of beeps at power-up to the R/C system frame time).

Before using the Interface Adapter to reprogram your *R/C Reporter* it is a good idea to familiarize yourself with the operation of the basic device. See the *R/C Reporter* instruction sheet for details.

#### **Installation**

The *R/C Reporter* Computer Interface software is designed to run on any Windows-based system that supports Universal Serial Bus (USB) interfaces. This includes Microsoft's Windows 98SE, 2000, Me, Xp, and Vista operating systems.

The program will run without the hardware attached. You can evaluate the operation of the program before purchasing an *R/C Reporter* or Interface Adapter. Controls that require the hardware to operate will be grayed out and non-functional.

#### **Installation from a Distribution CD**

Simply insert the distribution CD into your computer's drive. Double click the "My Computer" desktop icon and select your CD drive (often drive D:). Double click the "setup.exe" file. Follow the on-screen instructions.

#### **Installation from a downloaded Zip file**

Use WinZip or similar program to expand the archived files into any convenient folder. Then double click on the "setup.exe" file in that folder and follow the on-screen instructions.

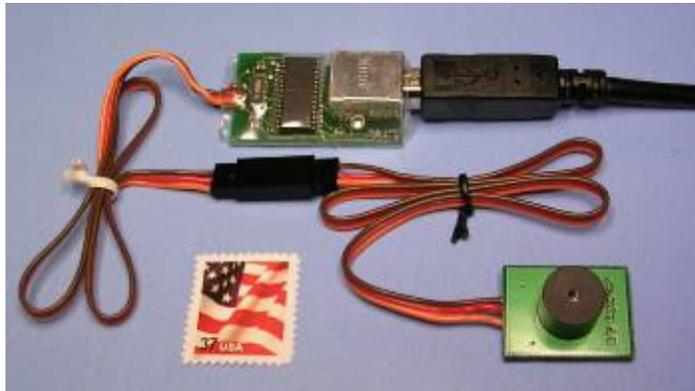
## **Installing Ring Tone Files**

The CD version contains a folder named “RingTones” that has about a dozen example melodies in the RTTTL format. These files are also available in separate ZIP download file. Copy the files to any convenient location on your system – perhaps C:\My Music\ RingTones\ or C:\RCReporter\RingTones.

## **Connections**

Before running the program with the hardware for the first time, connect the *R/C Reporter*. To do this, connect the *R/C Reporter* to the Interface Adapter (using the Servo-type connector). Then, plug one end of the USB cable into the Interface Adapter and the other end into a USB port on your computer.

The *R/C Reporter* will emit two beeps to let you know power is on. Within a few seconds, your computer should recognize the presence of a new USB device and, within a minute or so, automatically configure the port. This configuration will only occur the first time you plug in the adapter to a particular port.



On Windows 98SE machines, the USB configuration process is not completely automatic. Follow the on screen instructions.

## **Starting the Program**

To run the program:

1. Click on the START button at the lower left of your screen.
2. Select “Programs” then “RCReporter”
3. Then Click “RCReporter”

If you would like to place a shortcut to the program on your Desktop: follow steps 1 and 2 then use the RIGHT mouse button to drag the RCReporter Icon onto the Desktop. Release the button and select “Copy Here”.

The program may be started with or without the RCReporter attached.

If the *R/C Reporter* is attached:

- A green status dot will appear at the bottom of the form along with a “Device Connected” message and the device version number. The value boxes will be populated with the current device settings.

If the *R/C Reporter* is not attached:

- A red status dot will appear at the bottom of the form along with a “Device Disconnected” message.
- The value boxes will be blank. (Clicking the “Defaults” button will populate the value boxes with factory default values.)
- Buttons that involve communication with the device will be inactive.

**You can start the program and connect the Adapter and the *R/C Reporter* in any order.** If you disconnect the Adapter or the *R/C Reporter*, the program will automatically close within a couple seconds.

## **Version Numbers**

Two version numbers can appear on the screen:

**Host Software Version** -- This value is shown in the title bar at the top of the program box. This represents the version of the software program running on your computer. You can download the latest version for free from the "downloads" page at our website [www.WingedShadow.com](http://www.WingedShadow.com).

**Device Firmware Version** -- When an *R/C Reporter* is connected to the interface the device version will be displayed at the bottom of the program box (next to the green connection status circle). Note that some program functions will not be available (grayed out) for some device versions. Any specific *R/C Reporter* will have a fixed device version. This value cannot be changed by this program.

## **Program Overview**

The program form has three tabs at the top of the screen: **Settings**, **Melody**, and **Advanced**. The program always starts by displaying the Settings tab. Regardless which tab is selected three buttons always appear at the bottom of the form:

- **Send** This button will send the currently displayed settings to the *R/C Reporter* device. **After changing settings, make sure to click this button to update the device.**
- **Help** This button will launch the help file.
- **Exit** This button will close the program.

## **Program Help**

An extensive help file is linked to the program. You can click the **Help** Button at any time to display the opening page of the help file. From there you can browse the file by double-clicking items in the navigation tree in the left-hand window.

Context sensitive help is also provided. Simply highlight any entry box or button in the program (by clicking or using the tab key), then press F1 on the keyboard. The help file will open to the entry for that specific control.

## Settings Tab

The Settings tab section contains the functions that users most commonly change.

### **Turn-on Position**

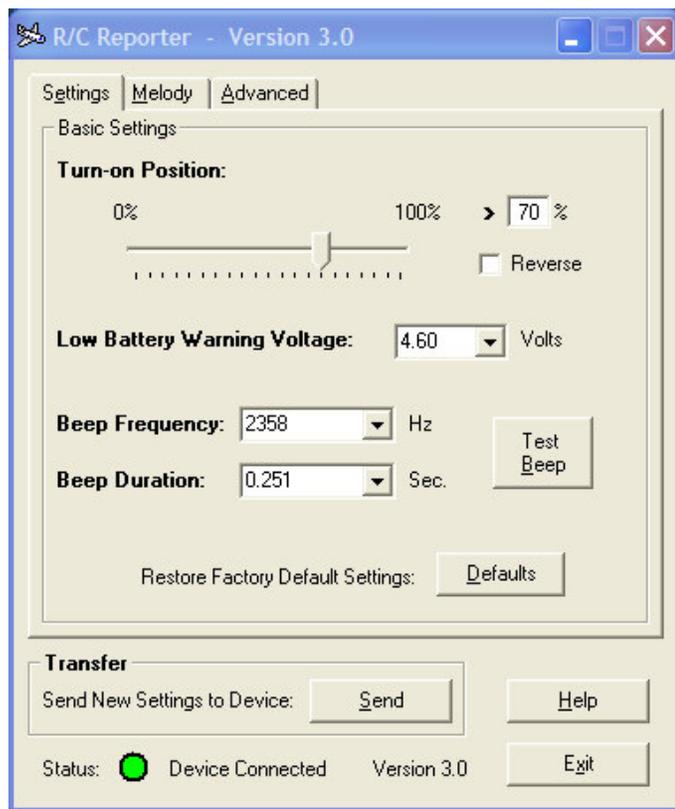
The controls in this group determine the on/off threshold value for the device. Think of the percentages as representing your transmitter stick (or switch) position. A value of 0% represents one extreme, 100% represents the other. Let's say that you will be plugging the *R/C Reporter* into your rudder channel. You may want the turn-on point to be near one end of travel. Move the slider to 90% (or type 90 into the text box). You would then hold the rudder stick all the way over (greater than 90%) to activate the *R/C Reporter*. On the other hand, if you are connecting the *R/C Reporter* to a switched channel (like the retract channel), you could set the slider to 50%. The default setting is 70%, which works for most applications.

### **Reverse Checkbox**

Checking this box reverses the activation direction so the device is activated when the stick is less than the position setting. This is similar to the servo direction reverse switches that you may have on your transmitter.

### **Low Battery Warning**

Enter the threshold value for the Low Voltage Warning. Warning beeps will occur when the battery voltage falls below this level. Press the down triangle and choose a value from the list, or type in the value of your choice. You can also enter the word "OFF" -- this is equivalent to entering 0.0 and effectively disables the low battery feature.



### Standard Model

Values from 0.00 to 7.00 Volts are allowed. Entering a value outside this range will generate a warning with a reminder of the limits. The default value is 4.60 Volts.

### External Voltage "E" Model

Values from 0.0 to 70.0 Volts are allowed. Entering a value outside this range will generate a warning with a reminder of the limits. The default value is "OFF" (0.0V).

### **Beep Frequency**

This value controls the frequency of the beeps that are emitted at power-up, for voltage and glitch reports, and for the low-voltage warning. Click the down triangle to select a frequency from a list. A musical note and octave reference is listed after each frequency. You can also enter any other frequency, in Hz (cycles/sec), within a range of 500 to 5000. The default is 2358 Hz.

### **Beep Duration**

This value controls the length of the beeps emitted at the selected frequency. Select a value from the list or enter any value between 0.032 and 1.0 seconds. Although the drop-down list also displays fractions for reference, entered values must be entered as decimal numbers. The default value is 0.25 seconds.

### **Test Beep**

Clicking the Test Beep button commands the *R/C Reporter* to emit a beep at the selected frequency and duration. This does not permanently change the settings within the device (you need to click on "Send" to do that), it just provides a quick way to hear what your new beep sounds like.

### **Defaults**

The Defaults button will reset all of the values on the Settings tab to their factory defaults. This is helpful if you have made adjustments and want to restore the settings to their original values.

- **Remember, after making changes to any of the settings you must click the Send button to load the changes into the device.**

### **Frequency Selection Tips**

The audio transducer (speaker) used in the device has a narrow band of resonant frequencies that provide for very loud operation. The resonant frequencies vary slightly from device to device but are generally in the 2000 to 2400 Hz range. The Test Beep feature allows you to quickly find a frequency that performs best for your application and hearing. The device mounting location and method will also have an effect on the optimum frequency. Therefore, it is best to tweak the frequency setting after installing the *R/C Reporter*.

The audio periods used by the device have a resolution of 8µs (8 millionths of a second). The duration values are rounded to 16 frequency cycles. This provides all the accuracy needed. However, this can result in stored values that are slightly different from the values entered. For example, you might select a duration value of 0.250 seconds, but when you restart the program, you find the value has changed to 0.251 seconds (a difference of 0.4%). This variation is normal and is of no real concern.

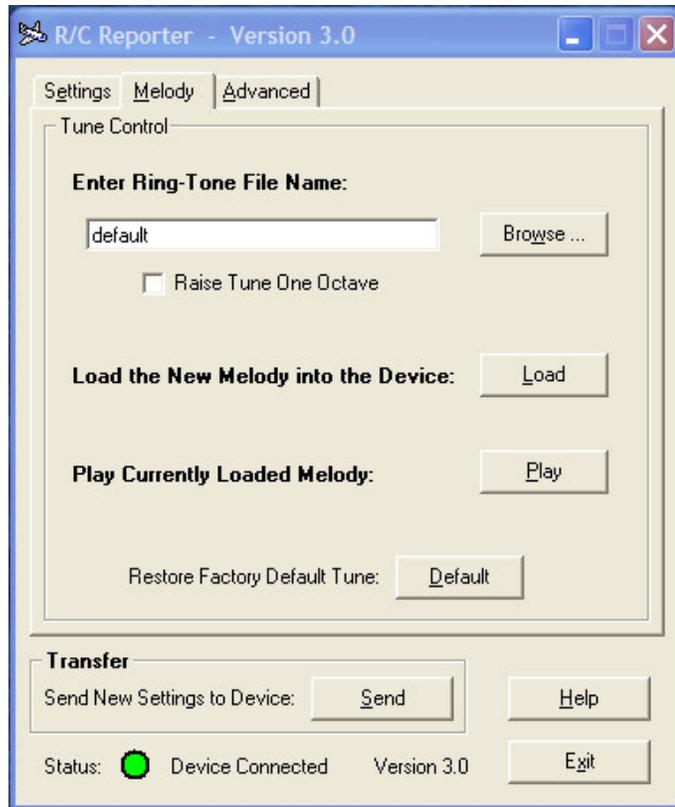
## **Melody Tab**

A unique feature of the *R/C Reporter* is the ability to customize the device melody. The melody (or tune) plays whenever the appropriate transmitter stick, switch, or control is left in the on position. This same melody plays when the receiver is on but no transmitter signal is present.

Any melody in the Ring Tone Text Transfer Language (RTTTL) can be used. The RTTTL format was originally created by Nokia Corp. to transfer tunes to their cell phones. It has since become an industry standard for monophonic tunes. As a result, thousands of tune files are available (most free) on the Internet.

Additionally, many programs are available to play and even compose your own tunes. A *Google* search for “RTTTL” will display a wealth of resources. Now your R/C plane (or other vehicle) can have its own theme song!

The RTTTL format is text based, so most of the files have a .txt extension. You can view the contents of the files with any text editor (such as WordPad). In some cases, the text itself is provided on a Web page. You can cut and paste the text into WordPad and then save the file with a name of your choice. If you use a high-end word processing program (such as Microsoft Word) be sure to save your files in a plain text format.



The memory within the *R/C Reporter* can hold up to 50 notes (typically 15 to 30 seconds of music). Most ring-tone files are much shorter than this. However, if a longer file is entered, only the first 50 notes will be used.

Click on the **Melody** tab at the top of the form to display the tune controls.

### **Ring-Tone File Name**

Enter the folder and name of a RTTTL file in the text box. You can also click the Browse button to locate a file on your computer.

## Octave Checkbox

Some ring tones are low in frequency and do not provide a loud and powerful sound. Selecting this box will raise the tune by one octave (doubling the frequency). Try loading the tune with this box checked, and then again with it unchecked, to hear what works best for a particular file.

## Load

Once you have selected a file, the Load button will transfer the tune to the *R/C Reporter*. This takes just a few seconds.

## Play

This button will play whatever melody is currently loaded in the *R/C Reporter*. Once the melody starts, the “Play” button is relabeled “Stop”. Clicking it will halt the playback.

## Default

The default button will reload the original factory-default melody into the device. This melody is stored as part of the program and is not dependent on any external file.

## Advanced Tab

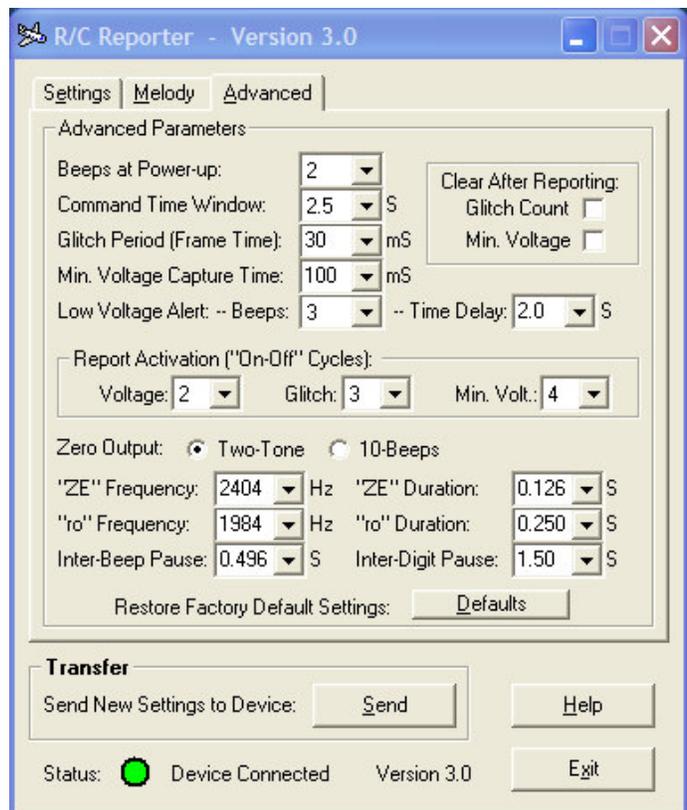
The **Advanced** tab provides control over almost any aspect of the *R/C Reporter*. You can slow down or speed up the beep rate, change the number of beeps sounded for different conditions, customize settings for non-standard radio equipment, and more.

### Beeps at Power-up

When power is applied, the *R/C Reporter* beeps to let you know it is on. Choose from 0 (no beeps) to 5. The default is 2.

### Command Time Window

This value determines the time that the user has to input the on-off sequence to activate the voltage, glitch, or minimum voltage report. It also represents the amount of time that a missing transmitter signal is retested before the tune will begin to play. The default value of 2.5 seconds works well for most users. If you would like more time you can increase the value. If you are fast on the sticks, choose a smaller value. Valid numbers range from 1 to 4 seconds (in 1/2 second increments).



### **Glitch Period (Frame Time)**

Most R/C systems send out control pulses to each servo about 50 times a second (every 20mS). This is referred to as the frame period. If a pulse is missed, the glitch count is incremented. The default value of 30mS will catch even a single missing pulse on most systems. If your system has a non-standard frame period, you can adjust this value. Valid values range from 5 to 65 mS. It is unlikely that any user would need to change this value.

### **Minimum Voltage Capture Time**

This value represents the amount of time that the voltage must fall below a previous low value to be captured as the new minimum value. Larger time values will prevent the capture of brief noise spikes. Values can range from 20mS (one frame time) to 5000ms (5 sec). Input values are rounded to the nearest 20mS. The default value is 100ms (1/10 sec). [Note: This feature is only available for R/C Reporter device version 3.0 and above.]

### **Low Voltage Alert – Beeps**

Select 1 to 5 beeps for the low voltage alert signal. The default is 3.

### **Low Voltage Alert – Time Delay**

This value represents the time that the voltage must be below the threshold value (set in the Settings tab) before the alert is activated. Servo loads may cause the battery voltage to temporarily dip below the threshold and cause a false alert. A value, such as the default 2.0 seconds, can prevent this. Values between 0.1 and 5.0 seconds are allowed.

### **Clear After Reporting Checkboxes**

Normally the glitch counter and minimum voltage value are reset only when power is turned off. Checking a box will force the corresponding value to reset immediately after the respective report is output. [Note: The minimum voltage box is only available for R/C Reporter device version 3.0 and above.]

### **Report Activation ("On-Off" Cycles)**

Enter the number of on-off control cycles to activate the Voltage, Glitch, and Minimum Voltage Reports. Default values are 2 (on-off, on-off), 3 (on-off, on-off, on-off), and 4 (on-off, on-off, on-off, on-off) respectively. Valid values range from 1 to 5 cycles. However, selecting 1 cycle is not recommended since the report may easily be unintentionally activated. [Note: The Minimum Voltage feature is only available for R/C Reporter device version 3.0 and above.]

**If multiple reports are set to the same number of cycles, you will only be able to activate the first report.**

### **Zero Output Two-Tone/10-Beeps**

In the default Two-Tone mode, a two-frequency sequence (sounding a little like the word “ZE-ro”) is output to represent the digit zero during voltage and glitch reports. Selecting the 10-Beep option will replace the two-frequency sequence with a sequence of 10 beeps to represent the digit zero.

### **“ZE” Frequency, “ZE” Duration**

### **“ro” Frequency, “ro” Duration**

These controls allow you to change the frequency and duration of the tones used to represent the “zero” digit during voltage and glitch reports. Note: the “ZE” frequency and half of the “ZE” duration are also used to represent the Morse Code “dit” used in the voltage and glitch report prefixes. Similarly, the “ro” frequency and half the “ro” duration are used to produce the Morse Code “dah”. Refer to the Beep Frequency and Beep Duration instructions for the Settings tab for details on setting these values. It is unlikely that any user would need to change these values.

### **Inter-Beep Pause**

This value represents the delay between each beep during voltage and glitch reports. If you are a fast counter, reducing this value (and the Inter-Digit Pause) can result in faster reports. Increase the value to slow down the reports. The default is 0.5 seconds. The valid range is 0.016 to 4.0 seconds.

### **Inter-Digit Pause**

This setting affects the time between the digit groups during voltage and glitch reports. To clearly delineate digits, this value should be at least twice (and preferably three times) that of the Inter-Beep pause. The default is 1.50 seconds. The valid range is 0.016 to 4.0 seconds.

### **Defaults**

Click this button to reset all of the values on the Advanced tab screen to their original factory values.

- **Remember, after making changes to any of the settings you must click the Send button to load the changes into the device.**

### **Thanks**

Thank you for your interest in the *R/C Reporter* and the Computer Interface Adapter. Questions, comments, and concerns should be addressed to:

[support@wingedshadow.com](mailto:support@wingedshadow.com)

or

Winged Shadow Systems  
P.O. Box 432  
Streamwood, IL 60107

Be sure to visit our web site at:

[www.wingedshadow.com](http://www.wingedshadow.com)

*Copyright © 2008, Winged Shadow Systems*