

mDACS/USB-IO/BTMM User Manual
For use with the RRC3 Altimeter and RTx/GPS System

Revision 1.60

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Revision History

Rev 1.02 – Original Release with the RRC3 Altimeter.

Rev 1.60 – Revised for use with RTx/GPS Telematics System, v1.60 RRC3/mDACS updates, and BTMM usage.

mDACS and the USB-IO

The RRC3 altimeter was developed in conjunction with the **mDACS** (Missile Works Data Acquisition and Configuration Software) to provide the Advanced Flyer with the detailed dynamic data captured during your rocket flights. The Data items captured during your RRC3 flight are:

- 20 Hz Pressure Data
- 1 Hz Altimeter Temperature
- 1 Hz Battery Voltage
- Drogue, Main, and Auxiliary Events

Using the 20 Hz pressure RRC3 data, **mDACS** calculates the corresponding rocket altitude and rocket displacement velocity for graphing purposes. The RRC3 keeps the last 15 flights in its onboard memory, and thereafter writes over the oldest flight. You can fly all day and collect data, then upload and save each flight to your Windows PC after the launch. Each flight records up to a maximum of just over 28 minutes.

The RTx System records up to 7 flights of 68+ minutes of GPS Epoch data files. This data can be uploaded and exported to Google Earth KML file format for import and display.

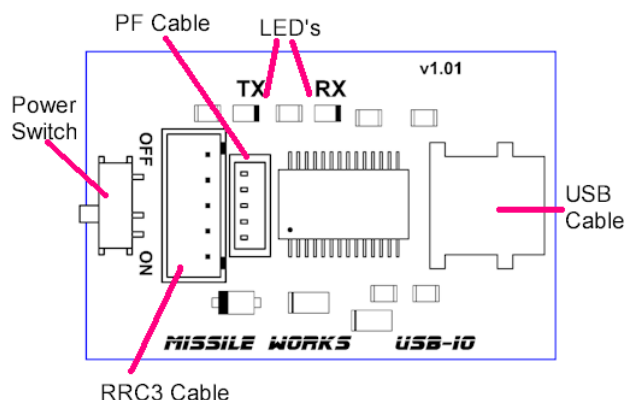
Barometric or GPS Flight data is acquired from the RRC3 or RTx/GPS by your Windows PC using the Missile Works USB-IO dongle, or the BTMM Bluetooth Master Module.

mDACS PC Requirements

- Windows XP, Windows 7 or Windows 8, Windows 10 with .NET 4.0 framework support minimum
- 1024 x 768 pixel minimum recommended display resolution
- USB port

USB-IO Dongle

The USB-IO dongle is pictured below. You'll notice that it has 2 status LED for communication activity, a USB cable connection, a power slide switch, and the same COM connector used on the RRC3.



Installing the USB-IO Driver

The USB IO module requires driver support software in order to operate.

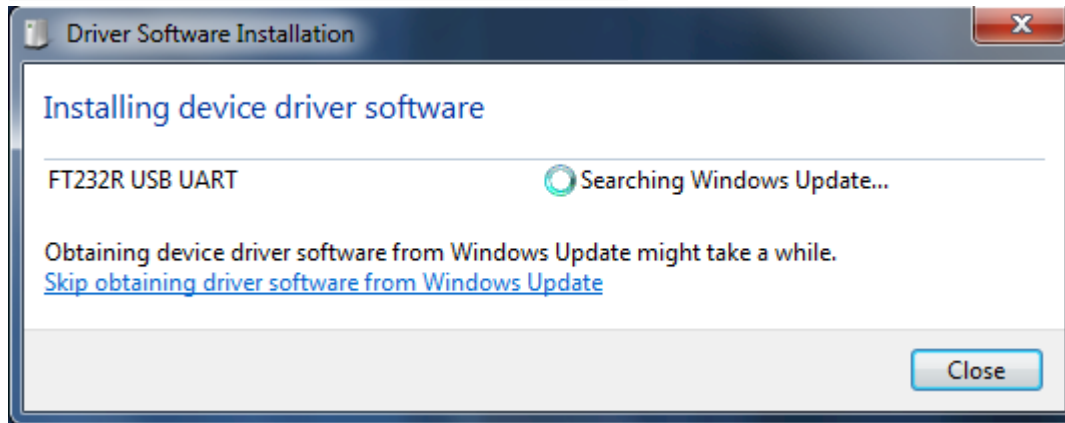
If you have already installed and run the Featherweight FIP software, PerfectFlite DataCap software, or any of the BRB tracker support software, you already have the necessary drivers installed for your PC.

If not, use the following driver installation steps. Your PC will require an active internet connection.

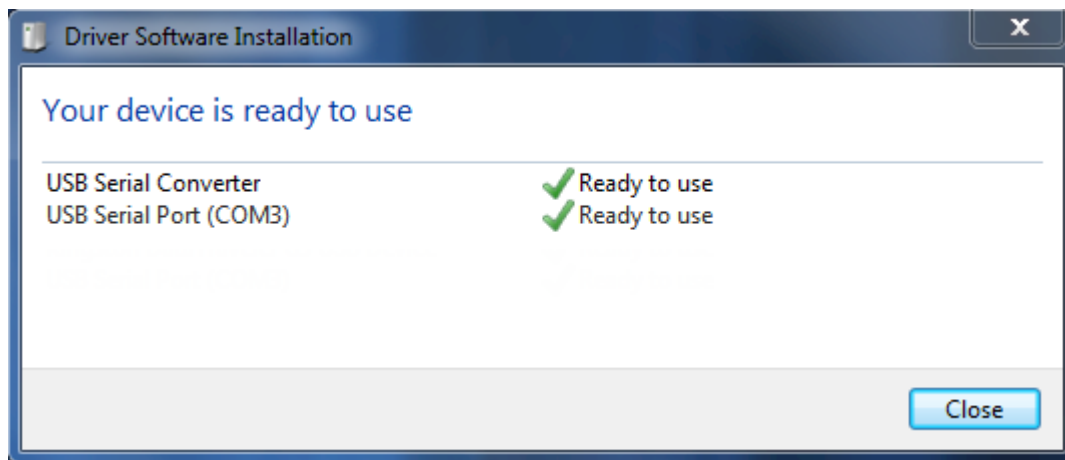
Windows Update Installation

- Plug the USB-IO dongle and USB cable into your computer.
- A "Found New Hardware" dialog box will appear.
- Click this dialog for details.

A dialog box should appear similar to the following:



Windows Update will automatically locate and install the latest drivers for the FT232R USB UART hardware. When the installation process is complete, you should see a dialog box similar to this:



Make note of the COM Port Number (the above port example is COM3)

Manual Driver Installation

You can download and install the latest FT-232 drivers or a self-installing executable from the FTDI page directly: (<http://www.ftdichip.com/Drivers/VCP.htm>).

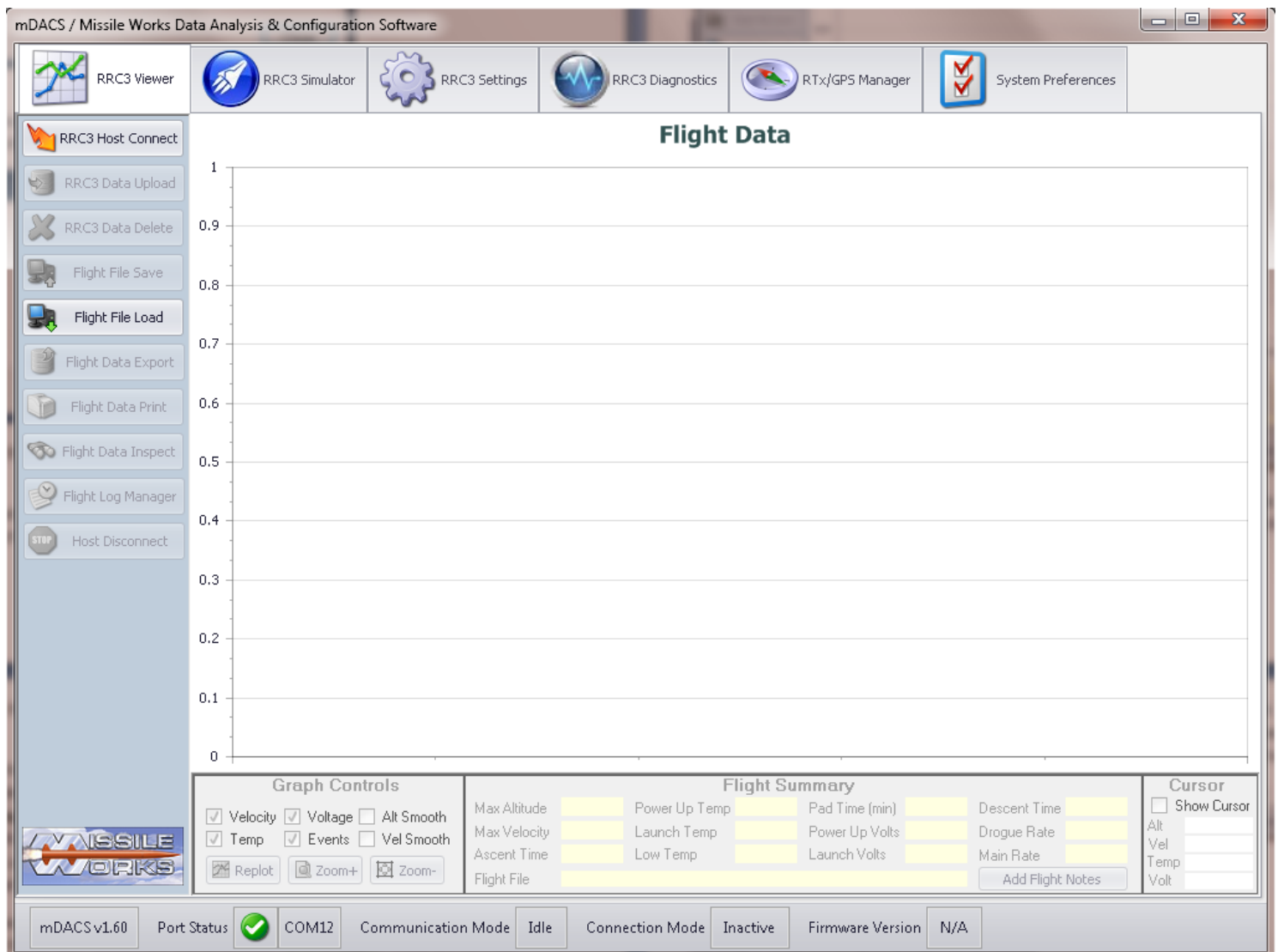
Installing the mDACS Application Software

Locate and run the latest mDACS Setup and Installation program from the Missile Works Web Site “Downloads” page (<http://www.missileworks.com/downloads/>). Download and run the installer directly on your PC, or open and run the installer directly in your browser.

After you successfully install your mDACS application, you will have a desktop shortcut available to launch the application. Double click the shortcut to launch the mDACS app.

Note: If your PC does not currently have the .NET 4.0 framework support currently installed, the installation program will download and install the necessary support. Click Yes if the installer detects the absence of .NET 4.0 support. You will need to have an internet connection to perform this download and install.

Running mDACS for the first time



The mDACS application is designed to provide a very intuitive and user friendly interface. All Navigation, and initiation of specific mDACS operations are all launched via a single click.

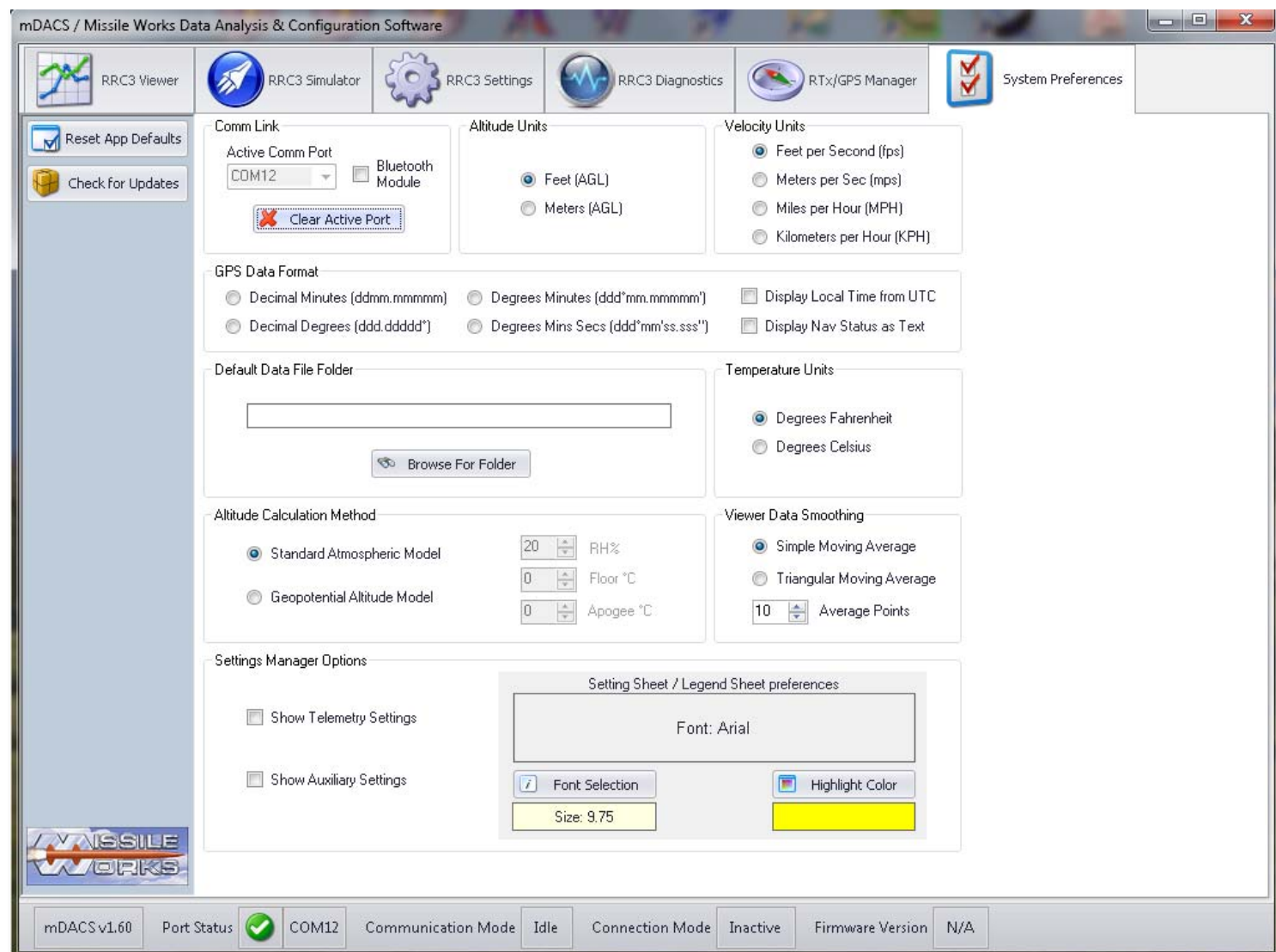
Along the top of the mDACS window, there are 6 Primary Tabs used for navigation, providing access to the following tabbed pages:

RRC3 Viewer	Used to upload, display, and load/save flight data from the RRC3
RRC3 Simulator	Simulate a flight “virtually” to validate RRC3 performance
RRC3 Settings	Manage, review, and load/save settings to/from the RRC3
RRC Diagnostics	Check all operations of the RRC3 (inputs, outputs, baro sensor)
RTx/GPS Manager	Test, upload, display, and load/save GPS data and settings to the RTx/GPS system
System Preferences	Setup the mDACS application software to your personal preferences

Each page also has a “Button Bar” along the left side of the window. The button operations are specific to each tabbed page. The “Host Connect” and “Host Disconnect” buttons are shared between several pages... these are common operations amongst them.

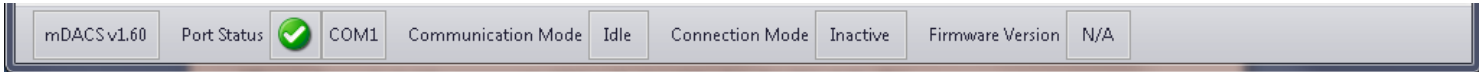
Along the bottom of the mDACS window is the Status Bar, which displays version data and communication status info.

The first thing you need to set up in the application is the “COM” port that is assigned to the USB IO dongle you’ll be using with the RRC3. This setting is located on the System Preferences Page. Be sure your USB-IO is connected to your PC. If using the BTMM Bluetooth Module, refer to pages 7 & 8 for how to setup the communications properly.



Click on the Active Comm Port Drop Down box arrow to display the COM ports available. If you had no drivers previously installed, use the same COM port that was assigned during your driver installation process as noted above. Otherwise, if you are already using the PerfectFlite DT2U/DT3U hardware, select the same COM port used in the DataCap software.

After you have selected the appropriate COM port, your status bar should look like this:



mDACS System Preferences

The System Preferences items are defined as follows:

Active Comm Port	Establishes the COM port used to communicate with the RRC3/RTx
Bluetooth Module	Host or Sim mode communications are done using BTM Bluetooth Module
GPS Data Format	Format of displayed GPS Lat/Lon data in the RTX Data Inspector and Exports
Altitude Units	
Velocity Unit	These settings control what units of measure are applied in mDACS
Temperature Units	
GPS Data Format	Set the Lat/Lon, Nav Status, and Time Display format for the RTx/GPS Data
Default Data File Folder	Specifies where mDACS reads/writes Settings and Flight Data (defaults to “My Documents”)
Altitude Calculation Method	Use the Standard Atmospheric Model or Geopotential derivations (refer to the “Reference” section for more info on these methods)
Viewer Data Smoothing	Defines the Flight Viewer Altitude/Velocity smoothing operation
Settings Manager Options	Controls advanced setting visibility and Settings Manager print format

The System Preferences Button Bar provides the following controls:

Reset App Defaults

This will restore all the mDACS System Preferences back to defaults, and this will reset the mDACS Windows size and position back to original aspects and location.

Check for Updates

This utility will check the Missile Works web site for the availability of a newer version of the mDACS application than you are currently running. A working internet connection is required for this.

Connecting mDACS to the RRC3/RTx in Host Mode with USB

The “Host Mode” connection between mDACS and the RRC3 is the primary means of communication between the unit and your PC. It’s used for all operations except for the “RRC3 Flight Simulator” mode. Once you have established a Host Mode connection to the RRC3, you can upload flight data, download and upload settings, or utilize any of the “Diagnostic Tools”

that are available. The USB-IO dongle can also provide logic power to the RRC3 (not the RTx/GPS) in cases where the altimeter may not have an existing power source and power switch, or passively when the RRC3 has an external power source and switch (when on a sled).

Note: The piezo, pyro outputs, and continuity inputs of the RRC3 require an external battery to operate.

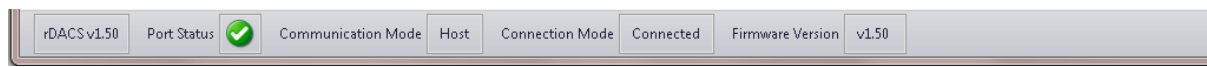
To start a USB Host Mode session using the RRC3 and USB-IO power source, follow these steps:

- Make all cable connections EXCEPT the blue data cable from the USBIO adapter to the RRC3
- Ensure the USBIO power switch is ON
- Launch the mDACS app, and ensure the USBIO comm port is selected and ready
- Click the Host Connect button in mDACS to start the 20 second connection countdown
- Insert the blue data cable into the RRC3/RTx Comm socket immediately
- RRC3 should boot up and connect up

To start a USB Host Mode session with the RRC3 using an external power source, follow these steps:

- Make all cable connections EXCEPT the blue data cable from the USBIO adapter to the RRC3
- Ensure the USBIO power switch is OFF
- Launch the mDACS app, and ensure the USBIO comm port is selected and ready
- Click the Host Connect button in mDACS to start the 20 second connection countdown
- Power up the RRC3, then insert the blue data cable into the RRC3 Comm socket
- RRC3 should connect up

When a successful Host Mode connection is made, your Status Bar should look similar to this:



The mDACS application will attempt to make the Host connection for up to 20 seconds (displaying a countdown timer) before it gives up and requires you to intervene. Here's what the Connection Failure Dialog looks like:



Should you fail to establish a Host Mode session, switch off all power sources, double check all your connections, physically disconnect and reconnect the USB IO dongle, then restart the connection sequence again as described above.

Connecting mDACS to the RRC3/RTx in Host Mode with Bluetooth

The new **v1.60 firmware of RRC3** supports the use of the new m3-BTMM Bluetooth Module to communicate between your altimeter unit and your PC (that's Bluetooth equipped). You could conceivably install the BTMM module in your rocket and perform all mDACS operations wirelessly. Procedurally, there's a required sequence of steps you need to perform when initially setting up and subsequently using the module. Follow the ensuing steps in order to take advantage of this wireless operation, and note an external battery/power-source and power switch are required to make this operate.

To Initialize and Define a Bluetooth Connection:

- Plug your m3-BTMM Module into the COMM Connector and power on the RRC3
- Navigate to your PC's "Devices and Printers" control and click "Add a Device"
- Your m3-BTMM should appear as a new device (HC06). Click on this device to add it (use ID "1234").
- Once added be sure to set the "Serial Port Services" option so the HC06 can be used as a COM Port
- Launch mDACS and open the "Preferences" Tab to select the new Bluetooth Com Port that was just assigned.
- Once mDACS has initialized and negotiated a Bluetooth Link, the m3-BTMM module LED will go solid ON.
- Finally, click on the Bluetooth Module Check Box to tell mDACS this is a Bluetooth connection.
- Close mDACS and finally power off the RRC3

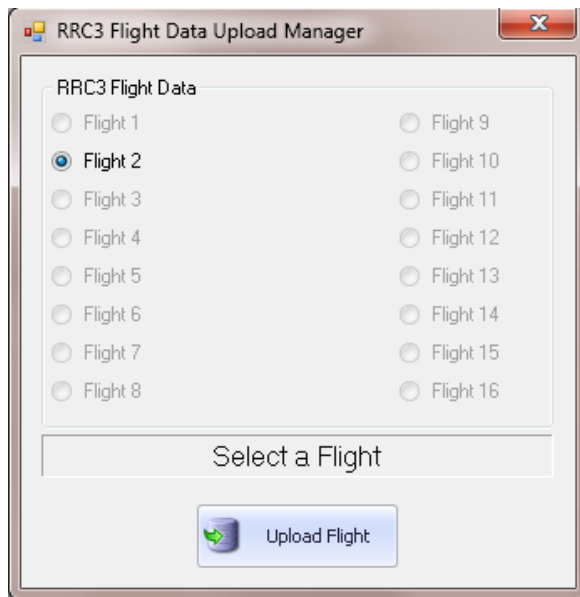
To start a Host Mode session using a Bluetooth Connection, follow these steps:

- Ensure the m3-BTMM Module is connected into the COMM Connector of the RRC3 (RRC3 OFF).
- Launch the mDACS app, navigate to the Tab Control you want (Flight Viewer, Setting, Diagnostics, etc.)
- Power up the RRC3 to start the Bluetooth broadcast
- Click the Host Connect button in mDACS to start the 20 second connection countdown
- RRC3 should connect up and operate just like a hardwired session

(NOTE: The RRC3 altimeter requires the v1.60 firmware in order to use the BTMM with mDACS)

Uploading RRC3 Flight Data to the RRC3 Viewer

Presuming you have flown the RRC3 (physically or virtually), flight data will be available to upload to the **mDACS** Flight Viewer. After establishing a Host Mode connection, click on the "RRC3 Data Upload" button. The **mDACS** app will query the RRC3 for available data, and then display Upload Manager Dialog form.



The Data Upload Manager attempts to pre-select the most recent flight you've made, however you can select any available flight from memory. When the flight you want is selected, click the "Upload Flight" button in the dialog. The dialog will then display the message "Data Upload in Progress", and you should also see a solid RX status LED until all the flight data has been acquired from the RRC3. When this occurs, the dialog briefly displays a message of "Data Upload Complete", and the RX status LED will go out. The Dialog then displays a final "Generating Graph Data" message, and when the all the calculation processes are finally complete, the Data Upload Manager will close.

RRC3 Viewer

The RRC3 Viewer Page is where all Flight Data is presented in a graphical “Line Series” chart for detailed flight analysis and evaluation.

At the upper left of the chart is the Legend. The units of measure for each item in the legend are established by the System Preferences settings. The 3 Flight Events are also depicted here (Drogue, Main, Aux) for reference. The events are always superimposed on the altitude data series

The primary Y-scale on left side of the chart is always altitude. All other chart Y-scales are located on the right hand side of the chart. The bottom X-scale of the chart is always displayed with a seconds “timestamp” that represent the specific data frames captured by the RRC3 during flight.

Along the bottom of the Chart are 3 Control/Info panels. From left to right they are:

Graph Controls

This collection of controls allow you to define the specific data to display in your chart, along with the ability to replot or zoom the chart data. The zoom buttons are a fixed 120%. The visibility of data items in the chart also controls which data items are included in the Flight Data Inspection Window and the Flight Data Export file.

In addition to the preset zoom buttons provided, you can select a specific region of the chart for close up inspection. Position your mouse pointer in the desired chart region, then press the SHIFT key. The mouse pointer should change to a magnifying glass. Select and highlight the region to zoom by dragging the mouse pointer. Once highlighted, release the left mouse button and the chart will zoom to the bounds of the highlighted region.

Once a zoom has been activated, the chart will display horizontal and vertical slider bars, and the zooming function can also be controlled using your mouse wheel as well.

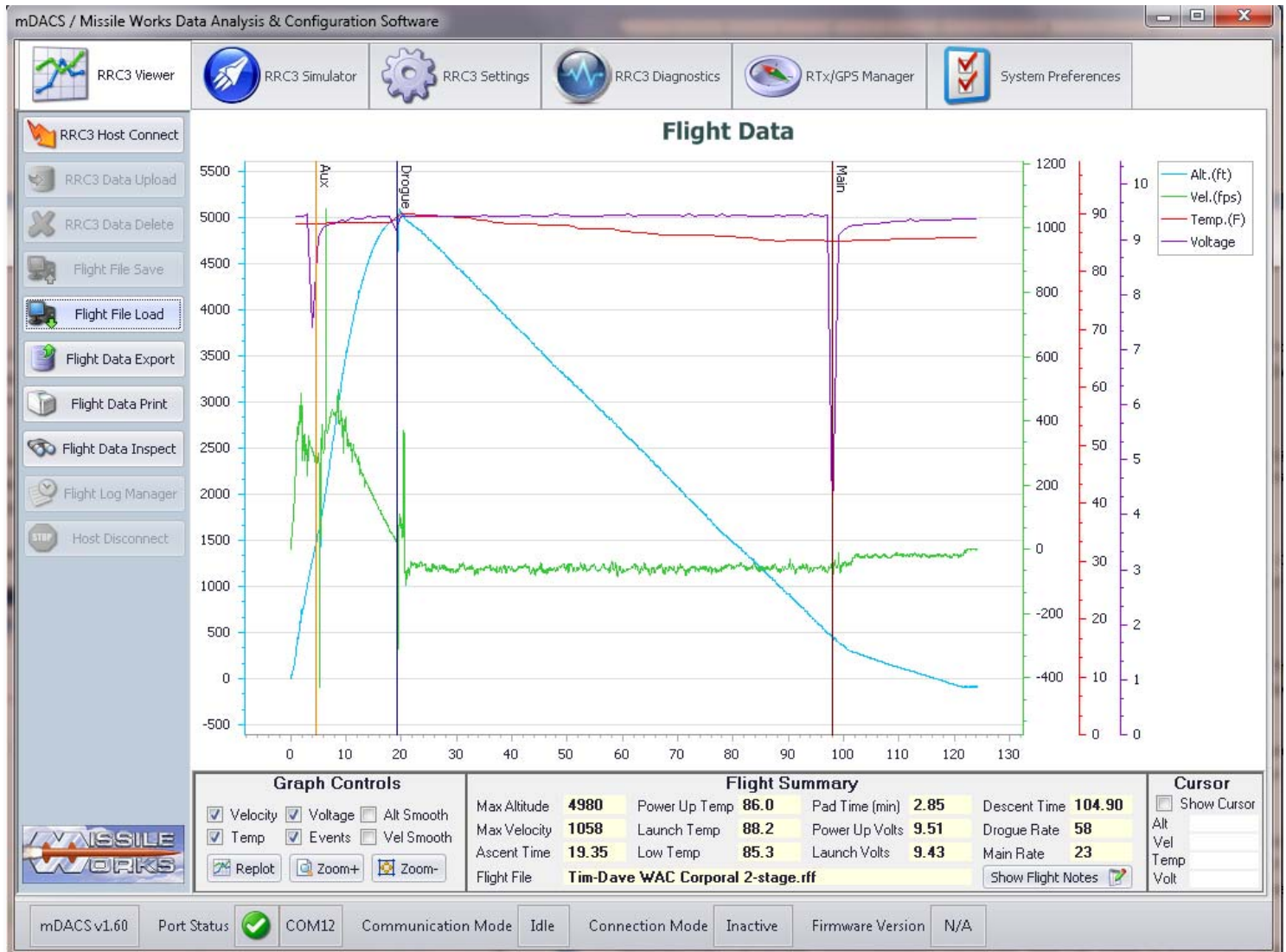
Flight Summary

This panel contains several pertinent data items derived from Flight Data upload or the Flight File Load from disk. It also displays the name of the currently Flight File (if applicable). There’s also a “Note” button that provides access to “Flight Notes Editor” where you can add additional comments about this specific flight.

Cursor

If you click the “Show Cursor” button, the Chart will display a vertical line along the X-axis along with the corresponding timestamp. You can use this cursor to select a specific point of interest on the chart. All the data associated with this time stamped data frame are displayed in the cursor panel.

The following is an example of a 2-stage flight made with the RRC3:



The Flight Viewer Button Bar provides the following controls:

RRC3 Host Connect

Establishes a Host Mode connection with the RRC3.

RRC3 Data Upload

Opens the Flight Data Upload Manager Dialog form, allowing you to upload and graph/save the flight data residing in the RRC3 memory

RRC3 Data Delete

Opens the Flight Data Deletion Manager Dialog form, allowing you to delete and or all previous flight data residing in the RRC3 memory.

Flight File Save

Allows you to save the currently displayed Flight Data to file. This can be what you just uploaded from the RRC3, or a previously saved file that you want to load and rename or annotate with comments. When clicked you'll see a standard Windows "Save Dialog" form. All RRC3 Flight Files use the .rff file extension (**RRC3 Flight File**).

Flight File Load

Provides the means to load and display a previously saved Flight File (.rff) . When clicked you'll see a standard Windows "Load Dialog" form. All flight data is stored in its raw, normalized format, so each file load requires a complete regeneration of all the chart data.

Flight Data Export

This utility allows you to export the captured Flight Data to a secondary file using a standard Excel .CSV format. The items specifically displayed in the chart are the items that are included in the export. Time, Altitude and Pressure are always exported by default.

Flight Data Inspect

This control will open the Flight Data Inspection window in a easily readable row/column format. The items displayed in this window are the items currently shown in the chart. Time, Altitude and Pressure are always shown by default.

Flight Log Manager

This utility provides access to the altimeter resident "Flight Log" record that is stored and maintained in the RRC3 memory. The primary purpose of the Flight Log data is to support additional data for users that don't need or don't want to examine the detailed Flight Data obtained by using a PC and the USB-IO dongle.

The items tracked and saved in the Flight Log provide data from the LAST FLIGHT that goes beyond the "how high" did it go question. In addition there is a small collection of statistical items, that include Total Flights (32767 max), Total Flight Time (3276.7 minutes), and Total Ascent Elevation (999,999 ft). A small collection of Flight Log Data is available to users via the DIP Switch/Pushbutton interface, or it is fully accessible via the plug-in RRC3 LCD Terminal.

When the Flight Log Manager Form is displayed, click on the "Read Log" button to acquire the Flight Log data. You can also reset the statistical items contained in the Flight Log by clicking on the "Reset Stats" button.

Here's a sample of the Flight Log Manager Form:

The screenshot shows the 'RRC3 Flight Log Manager' window. It contains several sections of data:

Flight Log Data	
<u>Flight Performance</u>	
Apogee (AGL)	17600
Peak Velocity	1002
<u>Chute Performance</u>	
Drogue Descent Rate	99
Main Descent Rate	99
<u>Flight Times</u>	
Pad Time (min)	3.58
Time to Apogee	33.25
Total Descent Time	180.60
<u>Temperature Monitor</u>	
Power On Temp	86.0
Launch Temp	86.4
Flight Low Temp	84.2

Flight Log Statistics	
Total Flights	1
Total Flight Minutes	3.5
Total Ascent Elevation	17600

At the bottom of the window are two buttons: 'Read Log' (with a circular arrow icon) and 'Reset Stats' (with a square arrow icon).

Host Disconnect

Terminates the active Host Mode connection session with the RRC3. The only time you should require the use of this would be if you wanted to switch between “Host” and “Sim” connection modes. If you’re done interacting with the RRC3 using mDACS, just shut down the mDACS app.

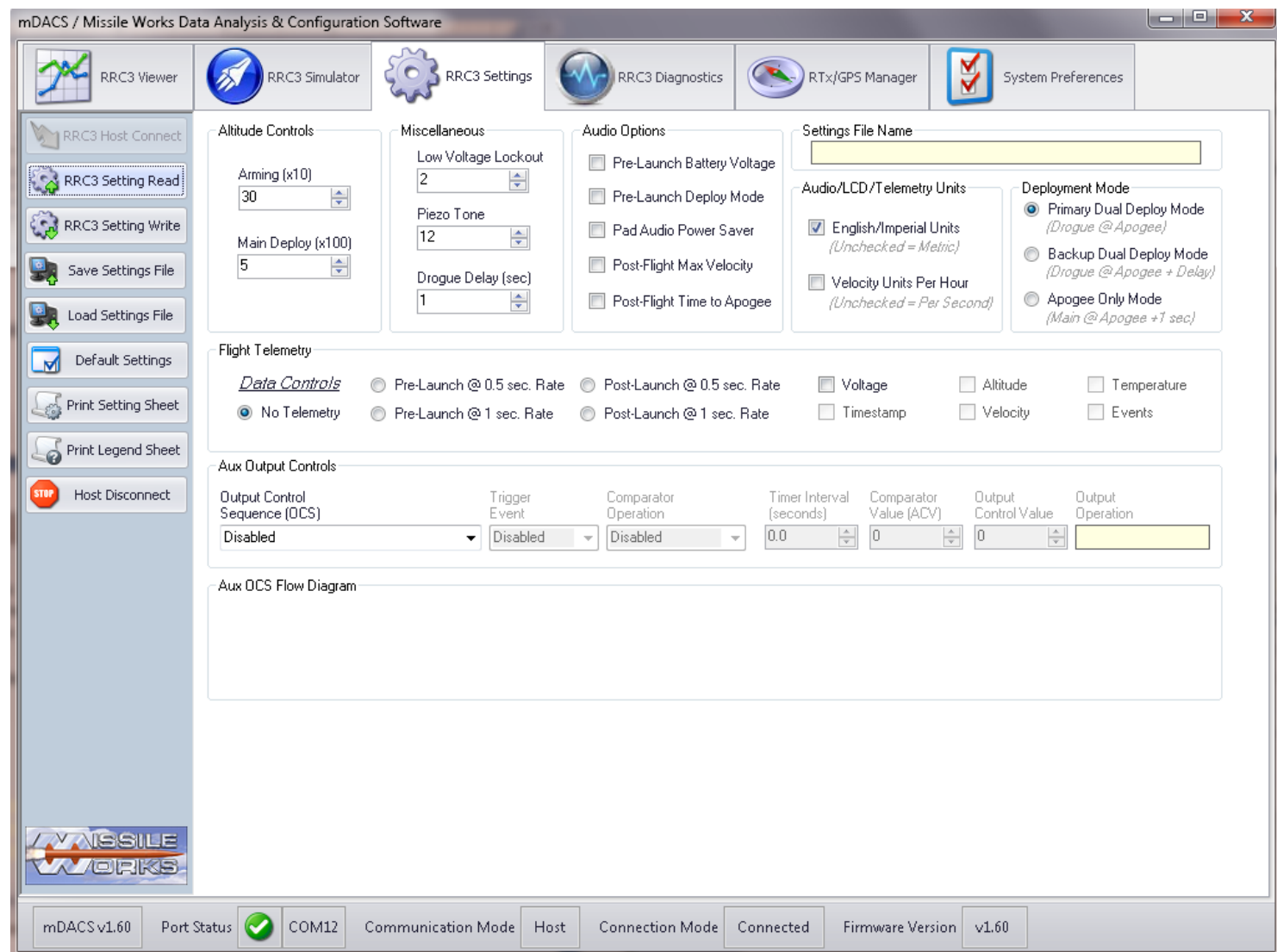
RRC3 Settings

The Settings Manager is your portal to reading, writing, saving, and loading of all the settings available in the RRC3. All of the settings and their operations are covered extensively in the RRC3 User Manual, so they won’t be duplicated here.

One can choose to display some, or all of the settings by checking the associated “Show” checkbox in the System Preferences.

All the controls on the Settings Manager page are “grayed out” until you load a collection of settings into **mDACS**. This can be accomplished by loading a settings file from your PC, or by requesting a settings “read” from an RRC3 connected to mDACS in Host Mode.

Here’s a snapshot of the Settings Manager page once loaded with settings data:



Note: If you set the Aux Output Controls “OCS” for an operation, you will see a corresponding flow diagram appear in the Diagram Group. Its purpose is to reinforce this OCS Logic Flow visually.

Note: the content of the Flight Telemetry items will change depending on the RRC3 firmware version

The Settings Manager Button Bar provides the following controls:

RRC3 Host Connect

Establishes a Host Mode connection with the RRC3.

RRC3 Setting Read

Reads all the current settings in the RRC3 memory..

RRC3 Setting Write

Writes all the current settings shown in the Settings Manager to the RRC3 memory.

Save Settings File

Writes all the current settings shown in the Settings Manager to a PC “Settings” File. When clicked you’ll see a standard Windows “Save Dialog” form. All RRC3 Setting Files use the **.rsf** file extension (**RRC3 Settings File**).

Default Settings

This will override all the current settings shown in the Settings Manager with the default settings used by RRC3. Note that settings are not saved to a file or written to RRC3 memory.

Print Settings Sheet

Provides a printed hardcopy of all the settings currently shown in the Settings Manager. Use this as a reference sheet on the field or to validate settings.

Print Legend Sheet

This control will open the Legend Sheet Printer Utility. All the sheets printed here are intended to provide a supplemental reference for the setup and programming of all RRC3 settings.

Host Disconnect

Terminates the active Host Mode connection session with the RRC3.

RRC3 Diagnostics

These tools provides a comprehensive means of evaluating the overall performance and operation of the RRC3. The barometric and temperature sensor readings can be checked, and all inputs and outputs to the RRC3 can also be exercised and validated.

Some of these tools will require the connection of an external battery to the RRC3 in order to operate and will not function if you’re running the RRC3 from the UBS-IO dongle power. These tool groups are labeled accordingly, however the specific tools requiring a battery are:

Continuity Monitor - RRC3 battery required for all continuity status.

Output Controls - RRC3 battery required for output activation power.

Voltage Monitor - No battery, no voltage.

All the Diagnostic Tool groups with the exclusion of the “Output Controls” are “Inputs”, and thusly are all processed and displayed simultaneously when you run the **Manual Monitor** or the **Auto Loop Monitor** operations on the Diagnostic Tools page. Note that the Auto Loop Monitor runs continuously until you click the Manual Monitor button.

The Batch Date query provides the means to display the date that the unit was flashed and tested for operations and can establish the service life of the RRC3.

The Output Controls allow you to individually activate each output of the RRC3.

IMPORTANT: ALWAYS USE EXTREME CAUTION and ensure that you have NO LIVE PYRO CHARGES attached to RRC3 when activating this Output test operation.

Here’s a screenshot of the Diagnostic Tools page:

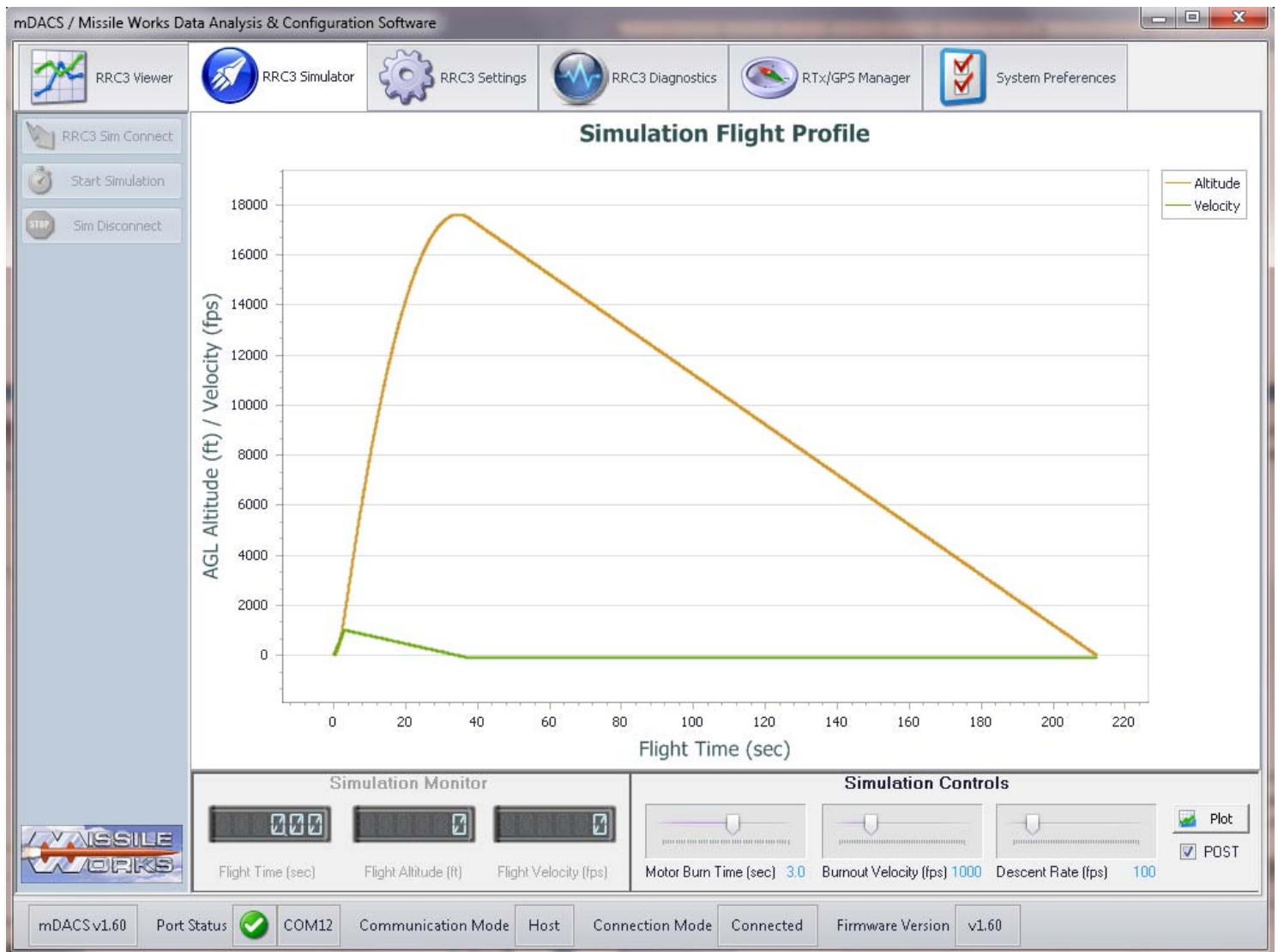


RRC3 Flight Simulator

The Flight Simulator provides a means to fly your altimeter “virtually” on your bench and directly test and observe its operation during the course of the simulated flight. This feature is especially nice to validate the operation of the Aux Output when programmed to provide a specific OCS (Output Control Sequence).

In order to run a simulated flight, the RRC3 needs to boot up and establish a “Sim Mode” connection just like a Host Mode connection. Follow the same steps as Host Mode connection, except the only difference is you’ll be using the “Sim Connect” button on the Simulator Page.

The Sim Connect feature is exclusive to the Flight Simulator.



Along the bottom of the page are two panels:

Simulation Monitor

The indicators in the Simulation Monitor panel display the real-time data altitude, velocity and time while the simulation is active and in progress. When the RRC3 has booted up completely and is finally in Launch Detect mode, the Simulation Monitor Panel will be enabled.

Simulation Controls

Operating the Slider Bars allows you to create an Altitude and Velocity profile that will be similar in scope to your anticipated flight regime. Click the “Plot” button at any time to see how your slider settings stack up on the graph. The “POST” checkbox allows you to enable or bypass the RRC3’s POST validation should you not wish to wait for it to complete.

To run a Flight Simulation:

- Boot up the RRC3 and establish a “Sim Mode” connection
- A Dialog form will appear, advising you the RRC3 is “Initializing” (Click OK)
- Both TX and RX LED’s should start to blink repeatedly
- When the RRC3 is in Launch Detect Mode, the “Start Simulation” button and “Monitor” is enabled
- Click on the “Start Simulation” button to Launch

Once the RRC3 has “landed” in Simulation Mode, the mDACS software will automatically disconnect from the RRC3. At this point, you can reboot the RRC3 into host mode and upload the captured “Simulated” Flight Data into the Flight Viewer.

The Flight Simulator Button Bar provides the following controls:

<i>RRC3 Sim Connect</i>	Establishes a Sim Mode connection with the RRC3.
<i>Start Simulation</i>	Launches the Simulation Flight when the RRC3 is ready in Launch Detect Mode
<i>Sim Disconnect</i>	Terminates the active Sim Mode connection session with the RRC3.

RTx/GPS Manager

mDACS / Missile Works Data Analysis & Configuration Software

RTx Host Connect
RTx Setting Read
RTx Setting Write
Upload RTx Data
Delete RTx Data
Save RTx File
Load RTx File
Export RTx Data
RTx Diags Read
RTx Batch Date
RTx Disconnect

RTx Settings

Epoch Log Trigger: 1
Streaming Format: 1
GPS MSL Offset: 1
Low Voltage Lockout: 2
LCD Lat/Lon/Units Format: 1
Log after 3D fix: ☐ GGA Only: ☐ N/A: ☐ Disabled: ☐ ddmm.mmmmm - feet/tps/mph

LCD Update Options
☒ Auto Scroll 2 Seconds ☐ Manual Scroll Advance ☐ Show GPS COG/SOG ☐ Show RRC3 Time/Temp

Audio Notifications
☒ Packet Sync Loss ☒ Epoch Log Signal ☒ Nav Solution Active ☒ Packet Pings Piezo Tone: 8

RTx Diagnostics

Battery Level (8.9V)
Digital Inputs
DIP1: ON OFF DIP3: ON OFF
DIP2: ON OFF PROG

RTx File Manager

Name: Elaine #3.rtx
File Payload Size (Bytes): 69472
Total Epochs Recorded: 2170 (36.2min)
Epoch Start Time: 115133 (UTC)
Epoch End Time: 122757 (UTC)
Valid Decodes/Decode Fails: 2157 / 13

RTx Data Inspector

	Time(UTC)	Latitude	Longitude	Altitude	Velocity	VDOP	NavStatus	Sats	SOG	COG
1	115133	38.829327°	-77.807913°	465	0	2	122	4	0	0
2	115134	38.829331°	-77.807919°	472	0	2	122	4	0	0
3	115135	38.829334°	-77.807917°	475	0	2	122	4	0	0
4	115136	38.829336°	-77.807914°	475	0	2	122	4	0	0
5	115137	38.829337°	-77.807910°	479	0	2	122	4	0	0
6	115138	38.829336°	-77.807910°	479	0	2	122	4	0	0
7	115139	38.829335°	-77.807909°	475	0	2	122	4	0	0
8	115140	38.829332°	-77.807910°	475	0	2	122	4	0	0
9	115141	38.829329°	-77.807911°	475	0	2	122	4	0	0
10	115142	38.829327°	-77.807915°	472	0	2	122	4	0	0

mDACS v1.60 Port Status: ☒ COM12 Communication Mode: RTx Connection Mode: Connected Firmware Version: v1.30

The RTx/GPS Manager Button Bar provides the following controls:

RTx Host Connect

Establishes a Host Mode connection with the RTx.

RTX Setting Read

Reads all the current settings in the RTX memory..

RTX Setting Write

Writes all the current settings shown in the RTx Settings group to the RTX memory.

Save RTx File

Writes all GPS data currently loaded into the RTx Data Inspector to a PC data file for permanent storage and recall purposes. When clicked, you'll see a standard Windows "Save Dialog" form. All RTx files use the **.rtx** file extension (**RTX** data file).

Load RTx File

Loads a GPS data file (save previously) into the RTx Data Inspector. When clicked, you'll see a standard Windows "Open Dialog" form.

Export RTx Data

When there's GPS data loaded into the RTx Data Inspector, you can export this data to one of three different export formats, specifically Google Earth KML, Excel CSV, or a simple text format. You can choose to export all data from the Inspector grid, or only the highlighted you selected from the Inspector. To highlight your GPS data, left-click on the starting row chosen for export. Scroll down to the last data row for export, and SHIFT left-click your mouse. All rows in between should highlight in blue.

RTx Diags Read

This operation will read the battery voltage data and the state of the DIP switches and PROG button to verify that all these RTx inputs are operational.

RTx Batch Date

Retrieves the Batch Production Date from the RTX.

RTx Disconnect

Terminates the active Host Mode connection session with the RTX.

Connecting mDACS to the RTx/GPS in Host Mode

The RTx/GPS system requires more operating current than the USB-IO Module can provide, thus in order to run the RTx/GPS in host mode, you'll require and external power source and external power switch for the USB-IO module or the BTMM Bluetooth Module.

Refer to the previous section for RRC3/RTx connections and operations.

Product Warranty

Missile Works Corporation has exercised reasonable care in the design and manufacture of this product and warrants the original purchaser that the USBIO is free of defects and that it will operate at a satisfactory level of performance for a period of one year from the original date of purchase. If the system fails to operate as specified, then return the unit (or units) within the warranty period for repair or replacement (at our discretion). The system must be returned by the original purchaser, and be free of modification or any other physical damage which renders the system inoperable. Upon repair or replacement of the unit, Missile Works Corporation will return the unit postage-paid to the original purchaser.

Product Disclaimer and Limit of Liability

Because the use and application of this equipment are beyond our control, the purchaser or user agrees to hold harmless Missile Works Corporation and their agents from any and all claims, demands, actions, debts, liabilities, judgments, costs, and attorney fees arising out of, claimed on account of, or in any manner predicated upon loss or damage to property of, or injuries to or the death of any and all persons arising out of the use this equipment. Due to the nature of electronic devices, and the application and environments for those devices, the possibility of failure can never be totally ruled out. It is the responsibility of the purchaser or user of this equipment to properly test and simulate the actual conditions under which the device is intended to be used to ensure the highest degree of reliability and success.