

# ENVIRONMENT FORCE

DYNAMIC LIVING ENVIRONMENT & REAL-TIME ADVANCED PROCESSOR



## USER MANUAL

UPDATED FEBRUARY 13TH, 2020



REX SIMULATIONS  
FLIGHT SIMULATION SOFTWARE

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REX Environment Force is compatible with PREPAR3D v.4.4 and v.4.5.  
Compatible with all payware and freeware add-ons.



# Software Update History

**Don't have the latest version? Visit our support page at <http://www.rexsimulations.com/support.html>.**

## Technical Update 1.1.0

Fixed - Cloud morphing with PTA presets  
Fixed - Cloud saturation with PTA presets  
Fixed - Reduced bloom to minimums  
Fixed - Reduced KeyExposure to minimums

## Technical Update 1.1.1

Fixed - Cloud morphing with Tomato Shade  
Fixed - Lowered KeyExposure minimums for better HDR bloom tweaks  
Added - Save last session option in in-sim mini UI.  
Added - Server validation error messages

## Technical Update 1.1.2

Fixed - HDR issues.  
Fixed - Bloom issues.  
Fixed - P3D CTD issues.  
Fixed - Reworked validation code that prevented the mini UI.  
Fixed - Water movement bug.  
Fixed - Other performance fixes  
Fixed - Fog/Haze when fog mode is off.  
Added - Water wind to in-sim menu  
Added - Experimental PBR controls to mini UI.  
Added cloud visibility to the in-sim menu.

## Technical Update 1.1.3

Fixed - HDR issues.  
Fixed - PBR issues.

## Technical Update 1.2.0

Fixed - HDR issues.  
Fixed - PBR issues.  
Fixed - Cloud fog tune issues during automation mode

## Technical Update 2.0.0

Fixed - Saturation issues  
Fixed - Bloom/Brightness issues  
Fixed - Ground shadow issues with EnvShade  
Fixed - Fog mode  
Fixed - Lighting and HDR state issues  
Fixed - HDR  
Fixed - Cirrus cloud stretching issues  
Fixed - Validation issue  
Improved - Scene lighting - now supports preview and natural cycles  
Improved - Fog rendering in automation mode  
Improved - Support for multiple monitor displays  
Improved - Performance

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### Technical Update 2.0.1

- Fixed – Debug issue with the use of PMDG Aircraft. Defaulted debug functions off and forced off when closing the application
- Fixed – Disabled arrow issue within texture sync for the day skies
- Fixed – Level of labels on cirrus morphing window
- Added – HDR contrast to mini UI
- Added – Option within mini UI to re-compile Environment Force HDR with no eye adaptation affect
- Added – Setting to turn on and off the mini UI.
- Added – Setting to clear out all backed up preset xml files

### Technical Update 2.0.2

- Fixed – Shadows are saved to xml file
- Fixed – Visibility are saved to xml file

### Technical Update 2.1.0

- Fixed – Water looking bland during automation mode
- Fixed – Turned off default for dense cirrus overcast at startup
- Fixed – Shaders not being removed during automation mode
- Fixed – Adjusted cloud coloring during automation mode

### Technical Update 2.1.1

- Fixed – Cloud swap issue when navigating simulator menus
- Fixed – Day Cycle issue
- Fixed – Dark ocean issue in automation
- Fixed – Cloud swap failure with Active Sky
- Improved – Lighting
- Improved – Performance

### Technical Update 2.2.0

- Removed – Testing sliders on automation window
- Fixed – Community themes causing CTD of the application and simulator
- Added – Feature to reduce re-registration after upgrades
- Added – Feature to automatically backup all settings and personal presets to local drive
- Added – Feature to backup all settings and personal presets to the REX EDGE cloud server
- Added – Feature to restore all settings and personal presets from local drive or REX EDGE cloud server
- Improved – Performance

### Technical Update 2.2.1

- Fixed – Saving multiple community themes with the same name
- Fixed – Support link to old support forum
- Fixed – Mini UI blocking FMS screen in the simulator
- Fixed – Airspeed issue when using weather injection smoothing

# Pre-Installation Requirements

The following is the procedure to prepare your system for installation of Environment Force.

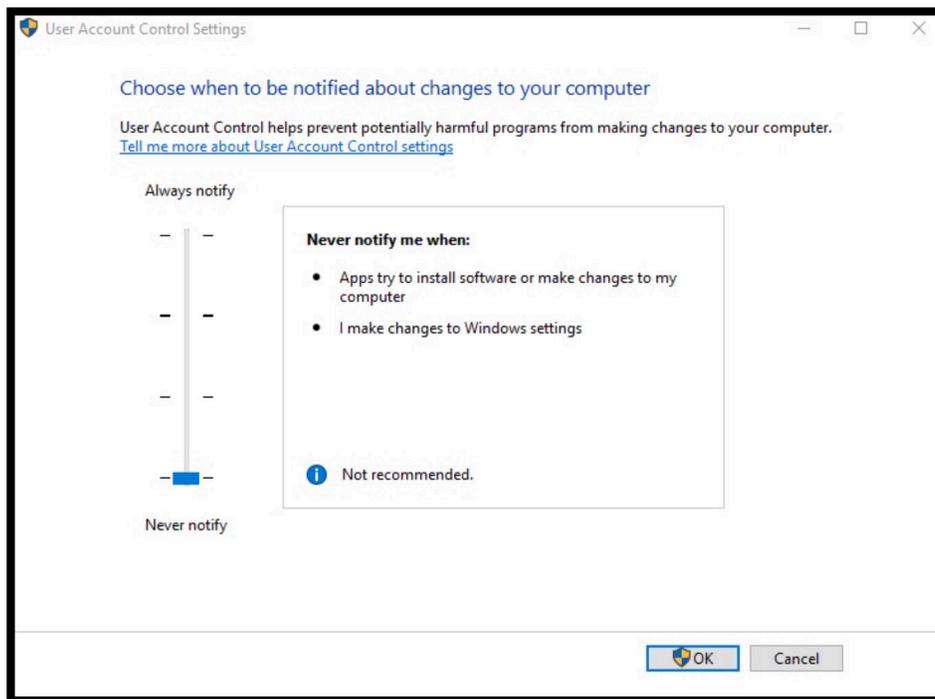


Figure 1 – User Account Control Window

1. Please make sure to set UAC (figure 1) to “never notify”. UAC can be located by searching your machine using the letters “UAC”.
2. REX must have inbound/outbound permissions set via your firewall software.
3. Disable your antivirus software before installation. Because REX products utilize the internet, antivirus software may think it is being hostile to your system. We can assure this is not the case and to prevent false reports we ask that you disable it during installation.
4. Once REX is installed, we ask that you give the REX folder exclusion rights through your antivirus or malware software.
5. Finally, you will notice that **REX installs a folder within your main flight simulator folder. This is expected and planned. Do NOT move the files or the product will not operate.**

# Installation Procedure

The following is the procedure on how to install REX Environment Force.

 rexenvforce_20190408	4/5/2019 2:23 PM	Windows Installer ...	22,144 KB
 rexinstaller	4/5/2019 2:23 PM	Application	2,052 KB

*Figure 2 – Installer Files*

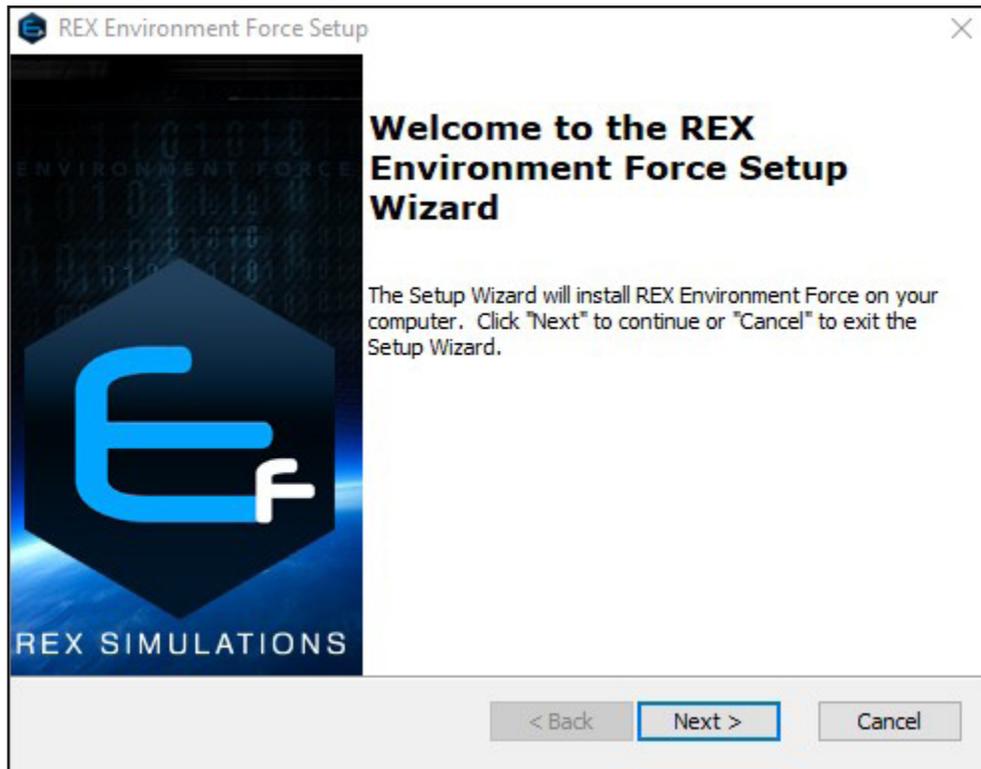
## **Installation procedures for Windows Vista SP2 or Windows 7:**

**Step 1** – Right-click on the rexinstaller.exe (figure 2) file and select “Run as Administrator” to start the installation process.

## **Installation procedures for Windows 8, 8.1, and 10:**

**Step 1** – Click the rexinstaller.exe (figure 2) to initiate the installation process.





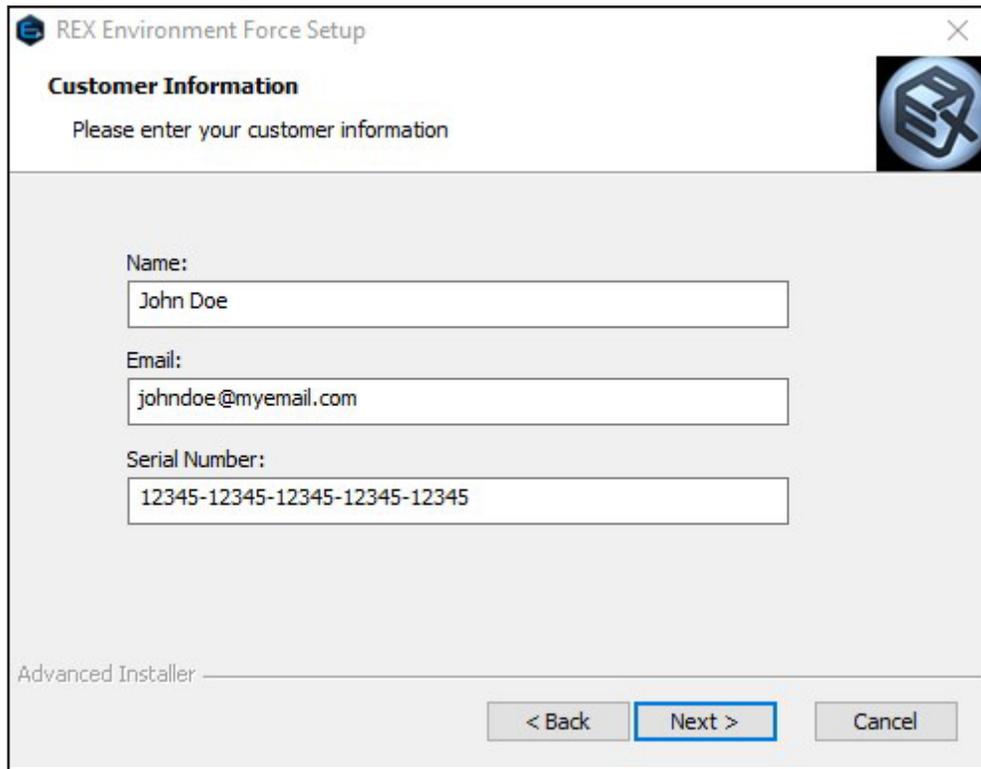
*Figure 3 – Initial Installer*

**Step 1** – Click Next (figure 3) to start the installation process with the installation wizard.

**IMPORTANT - PLEASE READ!**

**Environment Force must be installed into the main root of Prepar3D v4.  
(Example: C:\Program Files\Lockheed Martin\Prepar3D v4)**

**During installation the installer will create a folder within your simulator folder named “REXModules”.**



The screenshot shows a window titled "REX Environment Force Setup" with a close button in the top right corner. Below the title bar, there is a "Customer Information" section with a sub-header "Please enter your customer information" and a circular icon containing a stylized 'E' and 'F'. The form contains three input fields: "Name:" with the text "John Doe", "Email:" with the text "johndoe@myemail.com", and "Serial Number:" with the text "12345-12345-12345-12345-12345". At the bottom left, it says "Advanced Installer". At the bottom right, there are three buttons: "< Back", "Next >" (which is highlighted with a blue border), and "Cancel".

Figure 4 – Installer Registration

**Step 2** – Enter your name, email address, and serial number received from the store you purchased Environment Force from (figure 4). Click Next to continue to the next part of the installation process.

**IMPORTANT NOTE:** Please make note of the information used here. You will be required to enter that same exact information if you need to re-install Environment Force again.

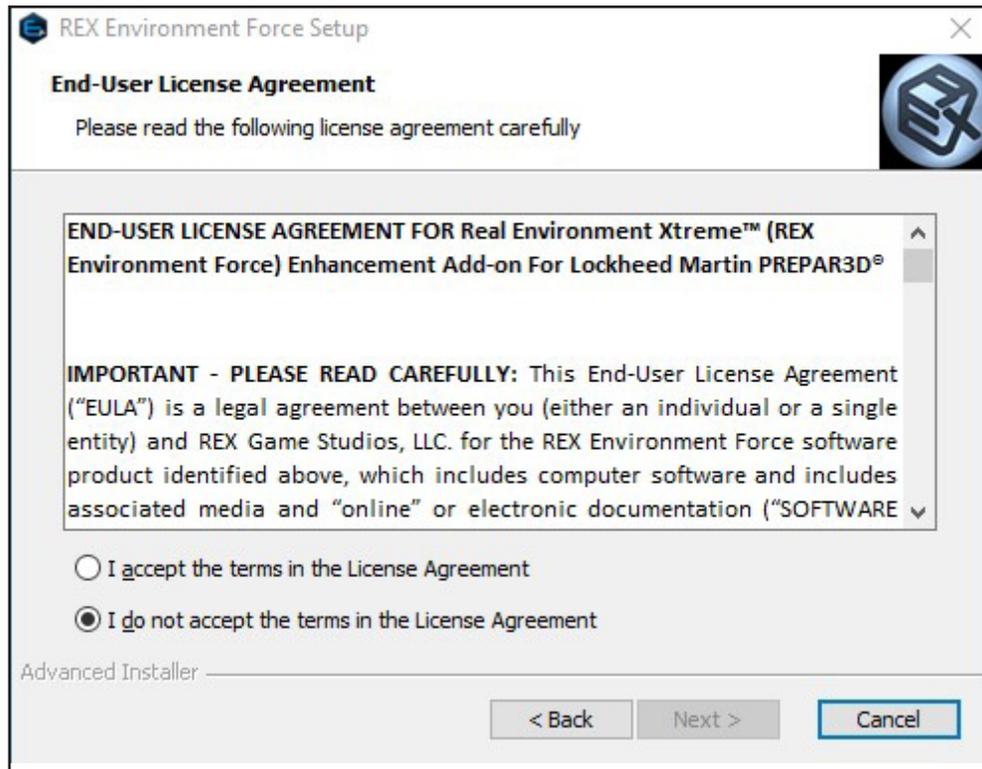


Figure 5 – EULA License Agreement

**Step 3** – To accept the end-user license, select “I accept the terms in the License Agreement” (figure 5) to continue the installation process. Click Next to continue.

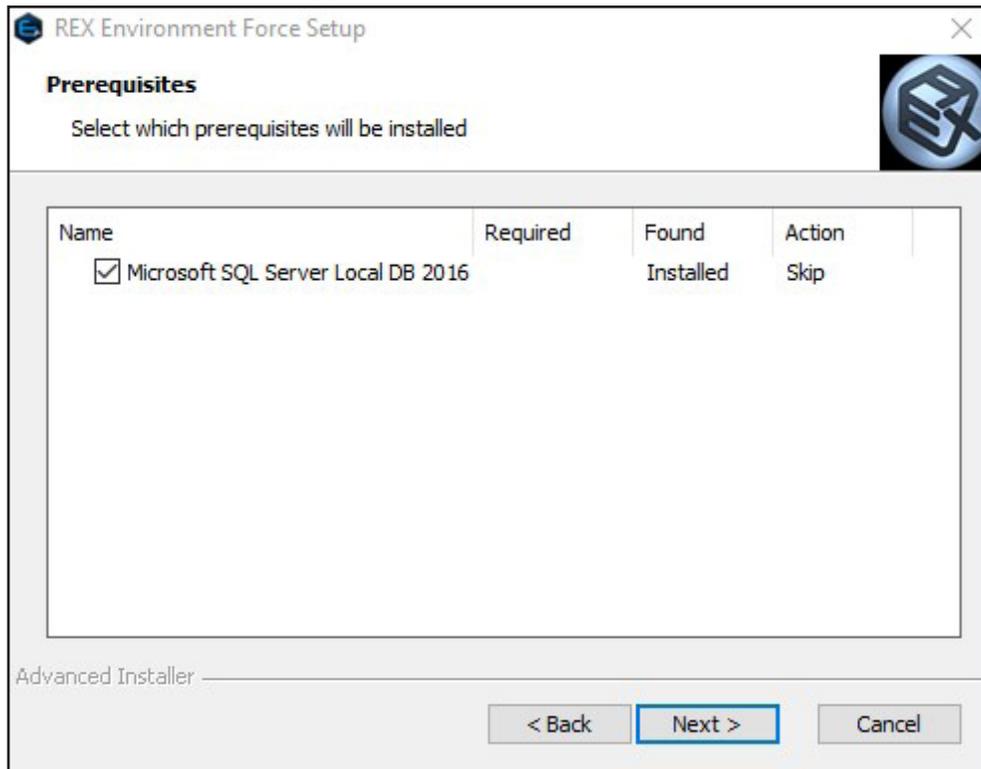
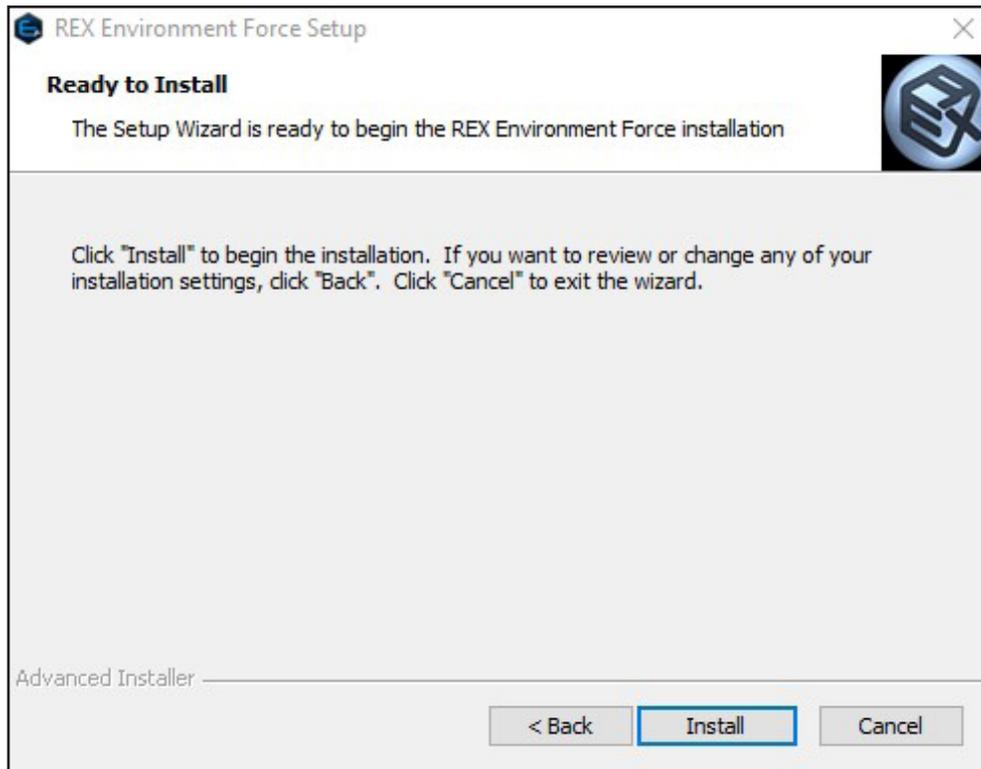


Figure 6 – Prerequisites Installer Window

**Step 4** – Environment Force requires Microsoft SQL Server Local DB 2016 (figure 6) to be installed. If this is already installed the action will indicate SKIP. Otherwise, you will need to install this requirement to operate Environment Force. Click Next to proceed to the next step in the installation process. **IMPORTANT NOTE: If the SQL Local DB is not installed, it will automatically be downloaded and installed.**



*Figure 7 – Ready to Install Window*

**Step 5** – Once all aspects of the installation wizard have been configured, you will be prompted to initiate full installation (figure 7). Click Install to complete installation.

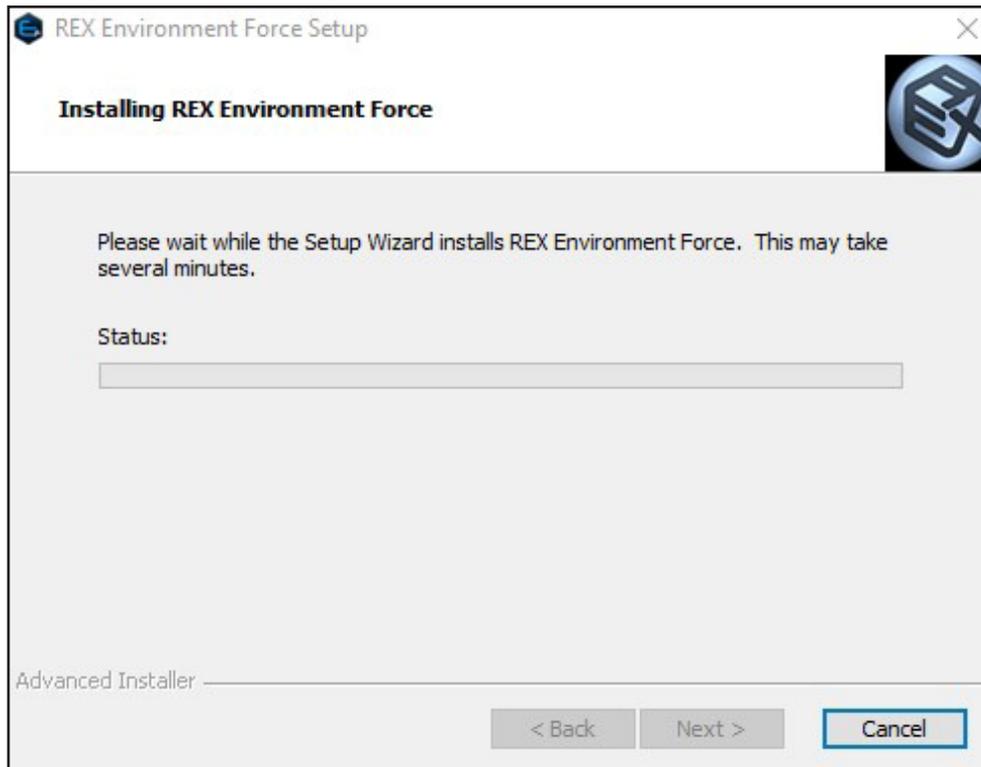


Figure 8 – Installing Dialog Window

**Step 6** – During installation you will receive feedback from the Installation Wizard (figure 8).

**IMPORTANT NOTE:** You can cancel the installation anytime by clicking Cancel.



*Figure 9 – Installation Confirmation Window*

**Step 7** – Once the installation is complete (figure 9), click Finish to finalize the installation.

# Startup Operations



*Figure 1 - Desktop Icon*

**For Windows Vista SP2 or Windows 7 users:**

**Step 1** – Right click the REX Environment Force desktop icon (figure 1) and select “Run as Administrator” to start the application.

**For Windows 8, 8.1, or 10 users:**

**Step 1** – Click the REX Environment Force desktop icon (figure 1) to start the application.

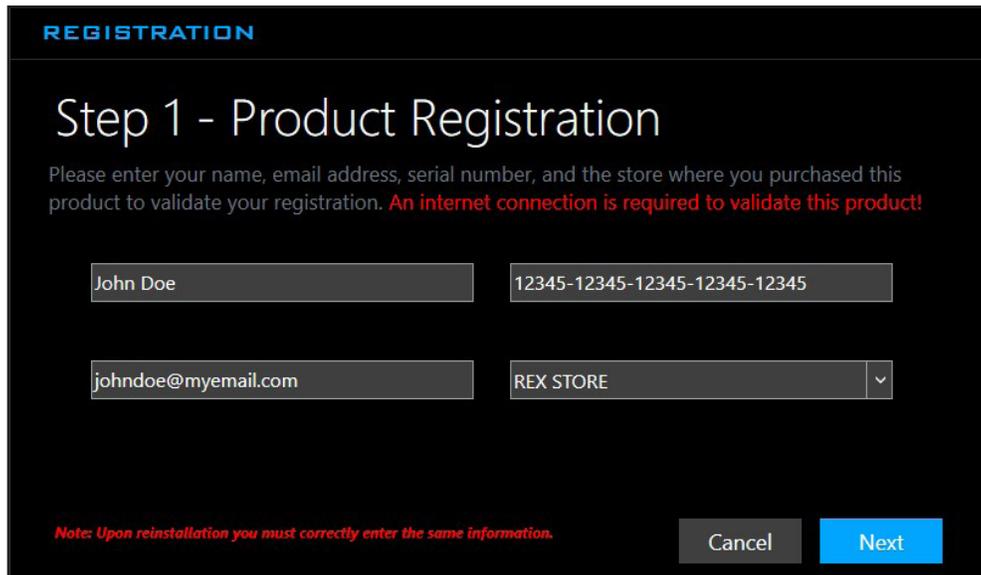


Figure 2 – Step 1 Product Registration Window

**Step 2** – Enter your name, serial key and email address. Then select the store where you purchased Environment Force (figure 2). Click Next to continue.

**IMPORTANT NOTE:** Upon reinstallation you must correctly enter the same information. It is recommended that you keep record of the information you used to register the product.

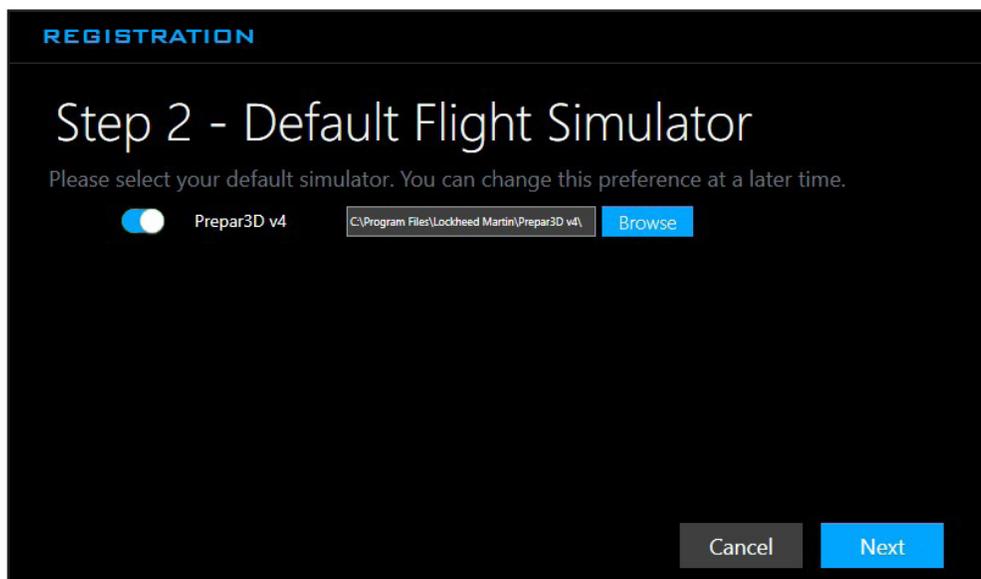
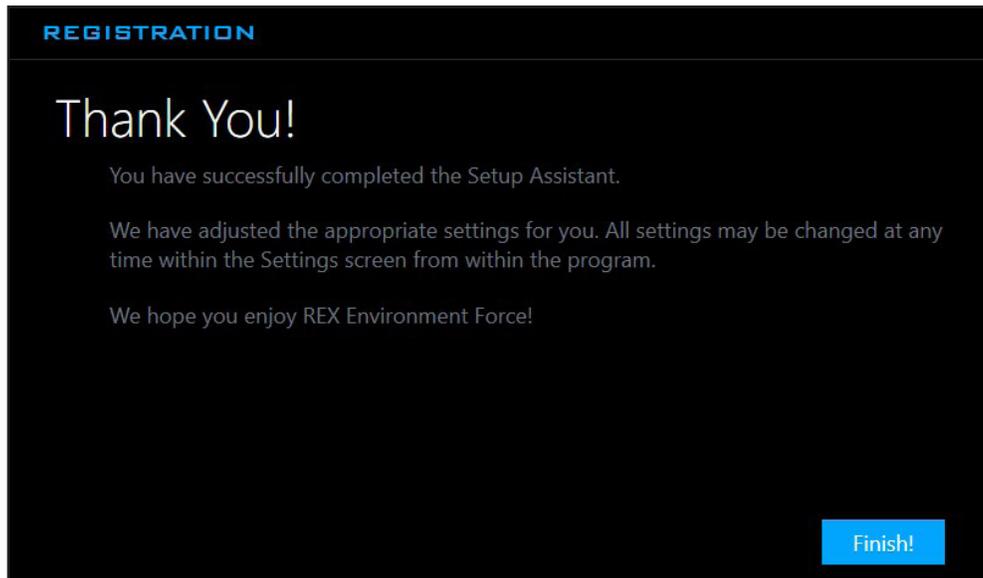


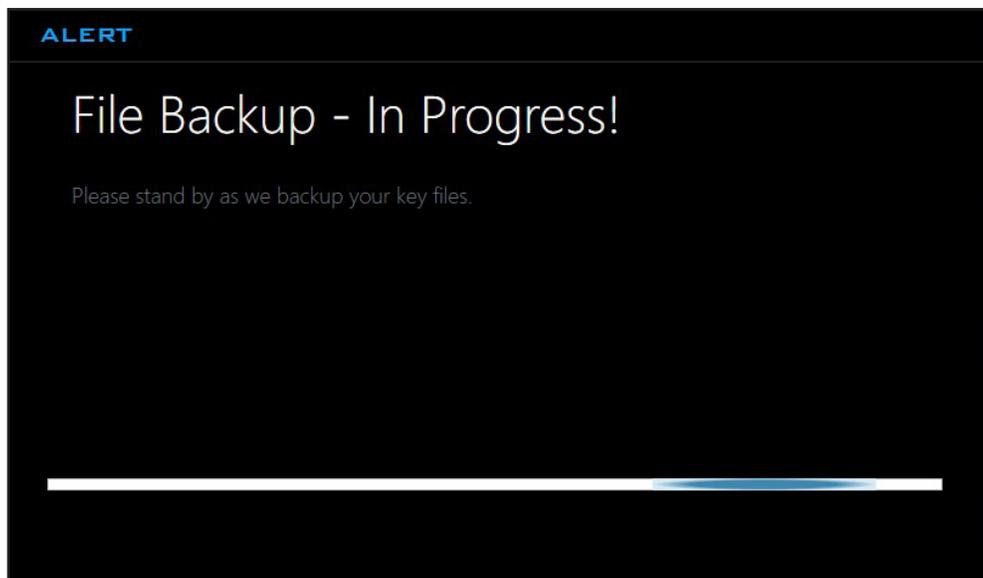
Figure 3 – Default Simulator Folder Window

**Step 3** – Prepar3D v.4+ only supported at this time (figure 3). Click Next to continue.



*Figure 4 – Thank You Window*

**Step 4** – To complete the registration process, click Finish.



*Figure 5 – File Backup Window*

After you complete the registration process, the application will backup asset files.

# Quick Start

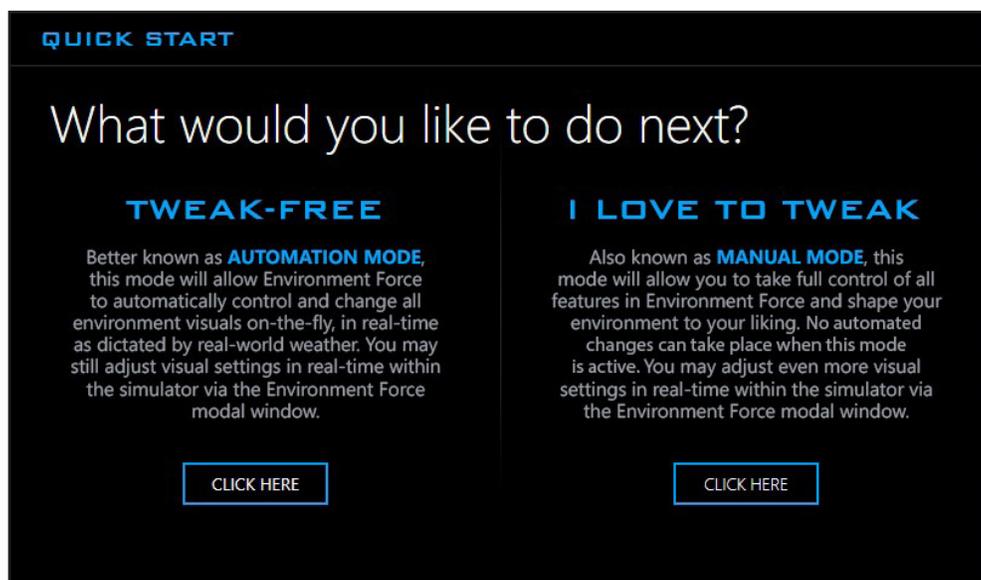


Figure 1 – Quick Start Window

**IMPORTANT NOTE: Environment Force must always be FULLY started before Prepar3D is opened. Prepar3D should be FULLY closed before Environment Force is closed.**

The Quick Start window (figure 1) is to be used to determine which mode you want to operate Environment Force.

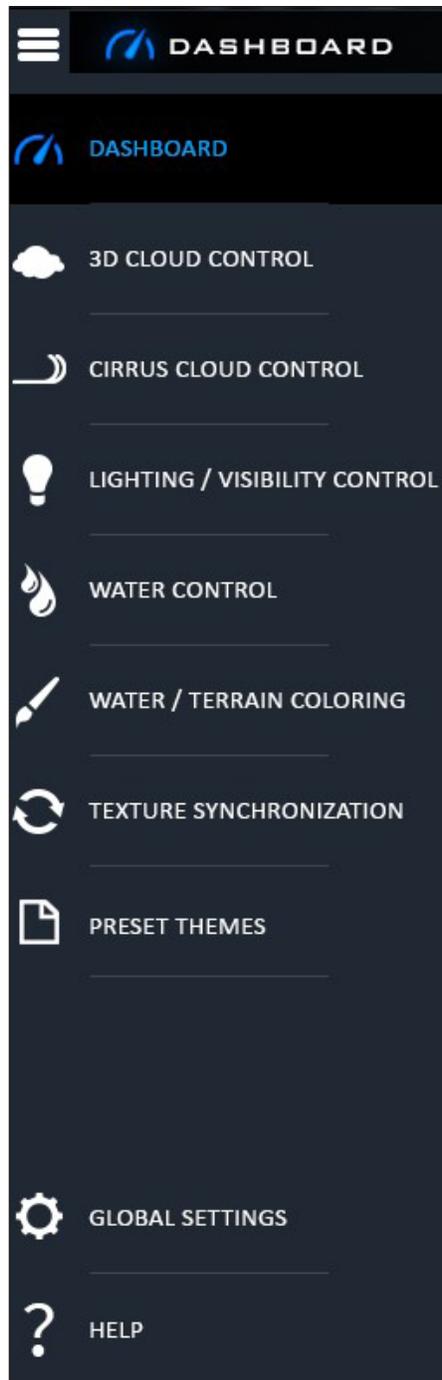
## Automation Mode

Allows Environment Force to automatically control and change all environment visuals on-the-fly, in real-time as dictated by real-world weather. You may still adjust visual settings in real-time within the simulator via the Environment Force Mini UI application window. The elements that are controlled by Automation Mode are: Clouds, Visibility, Water, Lighting, and Textures. **IMPORTANT NOTE: Please do not manually adjust any cloud parameters while in automation mode.**

## Manual Mode

Allows you to take full control of all features in Environment Force and shape and save your environment to your liking. No automated changes can take place when this mode is active. You may adjust even more visual settings in real-time within the simulator via the Environment Force modal application window.

# Navigation



*Figure 2 – Navigation Bar Menu*

The hamburger icon on the top left of the application will extend the primary navigation bar (figure 2) of the application.

**The navigation bar directs the user through the key elements of the application, and below is an outline of each area:**

### **Dashboard**

Navigates to the main window at any time.

### **3D Cloud Control**

Navigates to the 3D Cloud Control window.

### **Cirrus Cloud Control**

Navigates to the Cirrus Cloud Control window.

### **Lighting/Visibility Control**

Navigates to the Lighting/Visibility Control window.

### **Water Control**

Navigates to the Water Control window.

### **Water/Terrain Coloring**

Navigate to the Water/Terrain Coloring window.

### **Texture Synchronization**

Navigates to the Texture Synchronization window.

### **Preset Themes**

Navigates to the Preset Theme window to manage personal and community shared presets.

### **Global Settings**

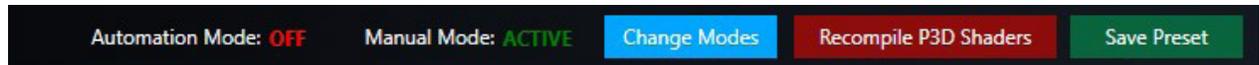
Navigates to the main Settings window of the application where you can also access sub-page settings.

### **Help**

Navigates to a direct support assistance window in your web browser.



# Controller Menu



*Figure 3 – Controller Menu*

**The Controller menu (figure 3) item is used to control 3 key elements of the application.**

### **Change Modes**

Initiates the Quick Start window to enable the option of changing application modes.

### **Recompile P3D Shaders**

This will automatically recompile shaders within the simulator without having to leave the sim.

### **Save Preset**

Initiates the option to save your current preset settings.



# Top Ten Community Presets

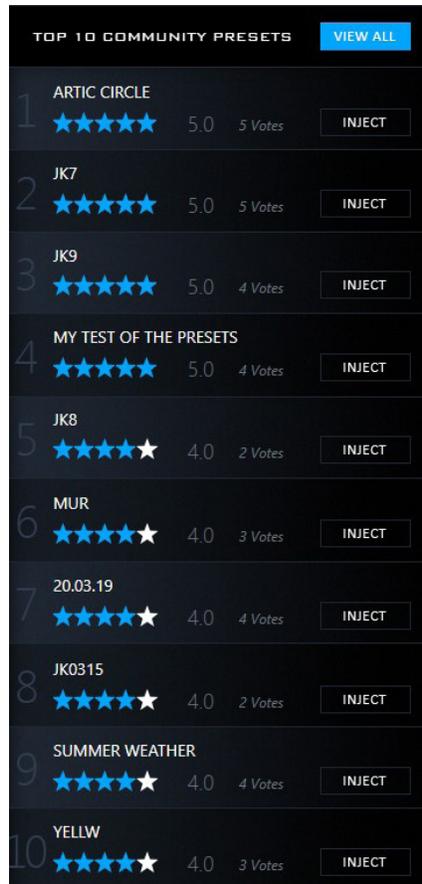


Figure 4 – Top 10 Community Preset Menu

**This area represents the Top 10 voted community presets rated by users of Environment Force.**

### View All

View all the presets that have been uploaded into the community system.

### Inject

Automatically injects the preset into the simulator in real-time. You will also have the option to save the preset in your personal saved presets list.

### Rating Stars

Allows you to rate a community preset. You can only vote one time per preset.

# General Settings

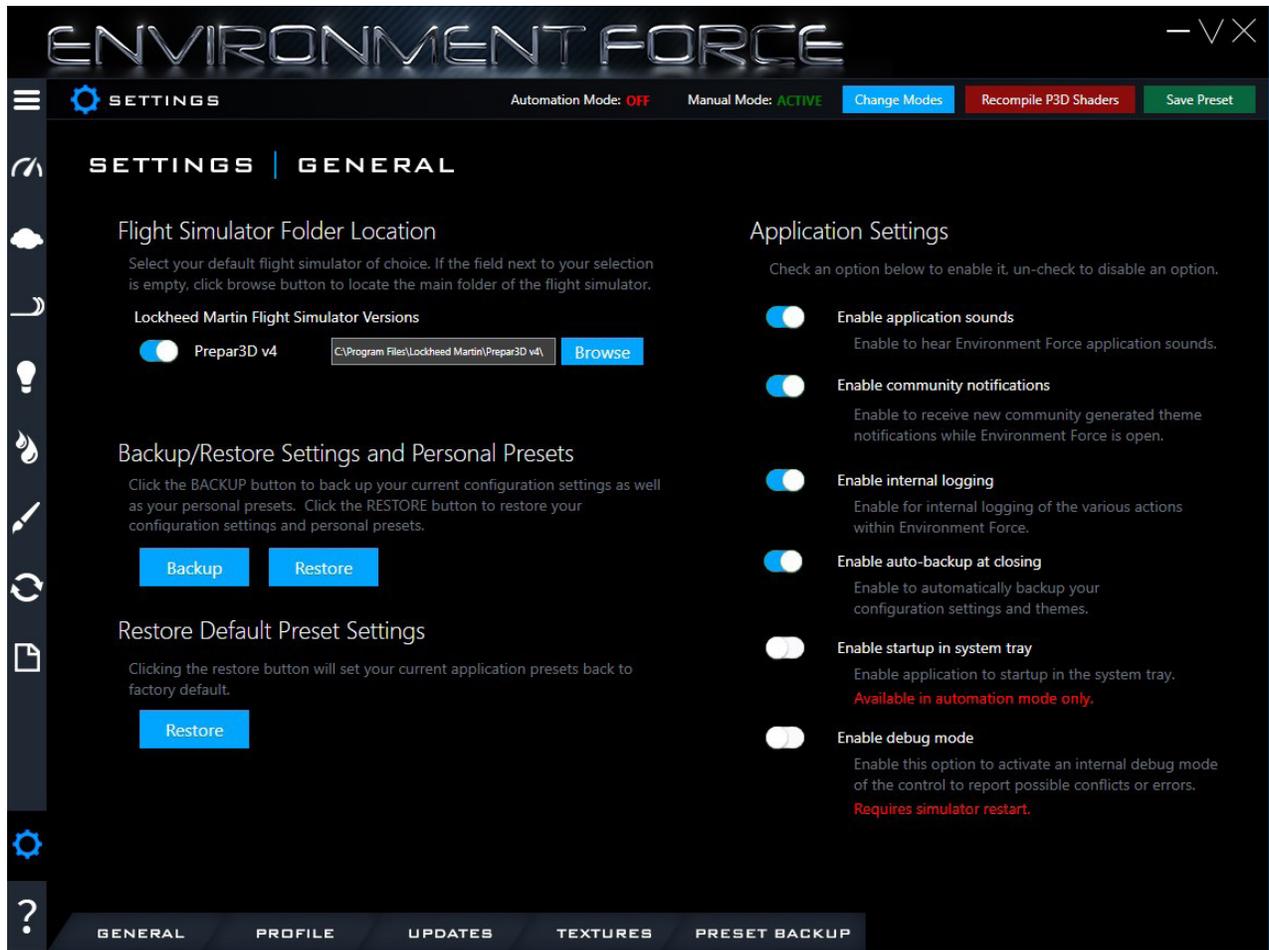


Figure 1 – General Settings Window

The General Settings Window (figure 1) is used to maintain and change general application settings. Each setting and its function are outlined on the next page.

### **Flight Simulator Folder Location**

Set your default flight simulator folder. At this time, we only support Prepar3D v4. This information should automatically be populated.

### **Backup / Restore Settings and Personal Presets**

**Backup** – Click to back up all personal settings and presets.

**Restore** – Click to restore all personal settings and presets.

### **Restore Default Preset Settings**

Allows you to reset/restore all preset settings to default within the simulator as well as in Environment Force.

### **Enable Application Sounds**

Enables or disables all application sounds.

### **Enable Community Notifications**

Enables or disables the notification system that a new community preset has been created and uploaded to the REX servers.

### **Enable Internal Logging**

Direct the system to log any potential errors in Environment Force.

### **Enable Auto-Backup at Closing**

Causes the application to automatically backup all settings and presets when you close Environment Force. These files will be used to restore your files when the application must be re-installed.

### **Enable Startup in System Tray**

Causes Environment Force to immediately go to the System Tray on startup. This is particularly useful if you are using the product in Automation Mode.

### **Enable Debug Mode**

Enable only if you are experiencing a problem while using Environment Force. A log form will be generated to help our developers debug the issue.

# Profile Settings

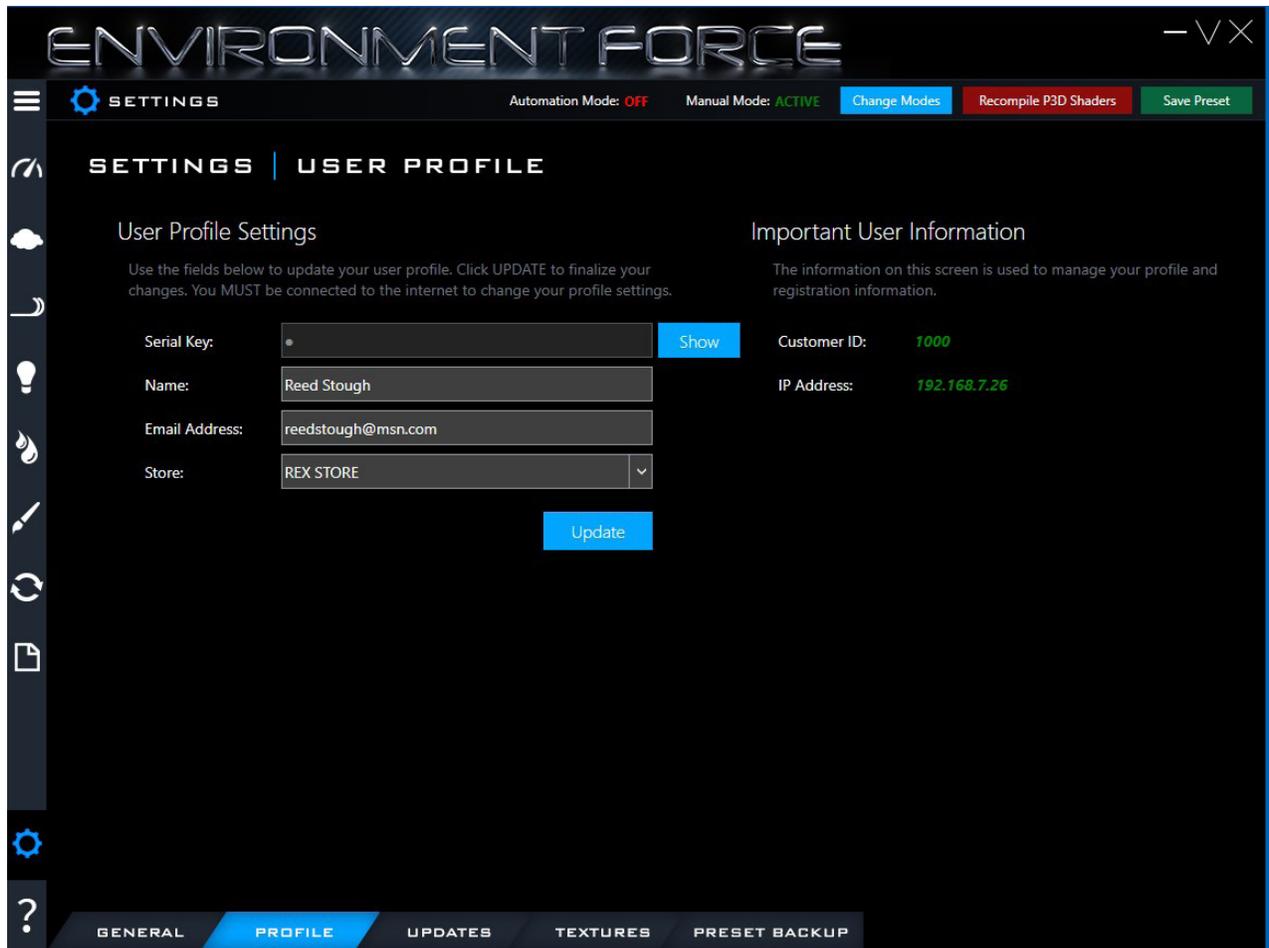


Figure 2 – User Profile Settings Window

The User Profile Settings Window (figure 2) is to be used to maintain and change your profile that the application is registered under. Each setting and its function are outlined on the next page.

**Serial Key**

Displays the serial key the application is registered under.

**Name**

Displays which name the application is registered under.

**Email Address**

Displays which email address the application is registered under.

**Store**

Displays which store the application is registered under.

**Customer ID**

This is the unique customer ID in which the application is registered on our REX EDGE Servers.

**IP Address**

This is the IP Address that the application is registering on the local machine it is installed on.

# Software Updates

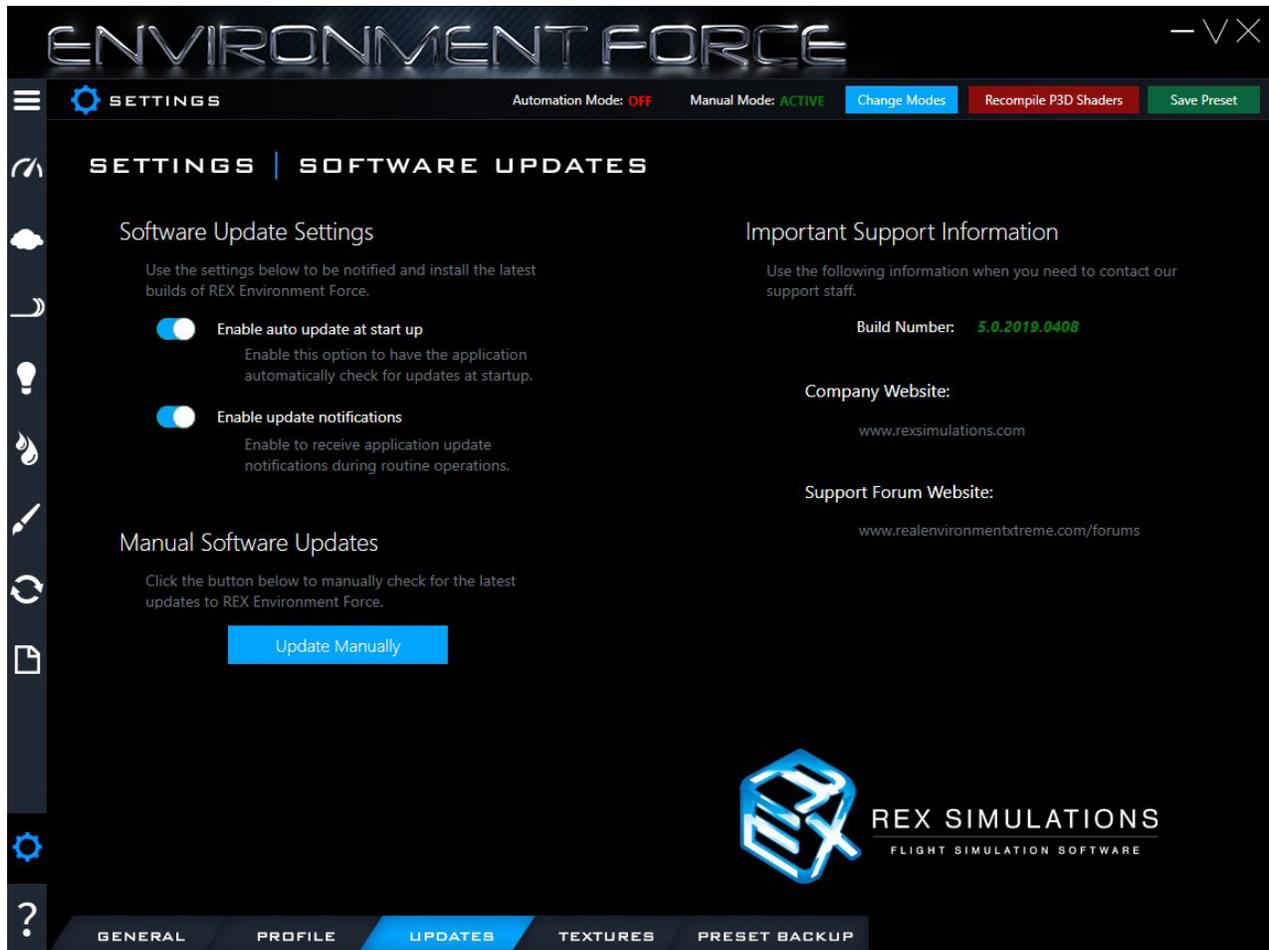


Figure 3 – Software Update Settings Window

The Software Updates window (figure 3) is used to maintain and change the software update settings of the application. Each setting and its function are outlined on the next page.

### **Enable Auto Update at Startup Up**

This option when enabled will automatically check for any software updates at startup.

### **Enable Update Notifications**

This option will notify you when an update is available while the application is open.

### **Manual Software Updates**

Clicking the Update Manually button will cause the application to check the REX EDGE servers to see if an update is available for download.

### **Build Number**

This is the current build number of the application.

### **Company Website**

Clicking the link below this title will automatically direct you to our website.

### **Support Forum Website**

Clicking the link below this title will automatically direct you to our support forum.



# Texture Settings

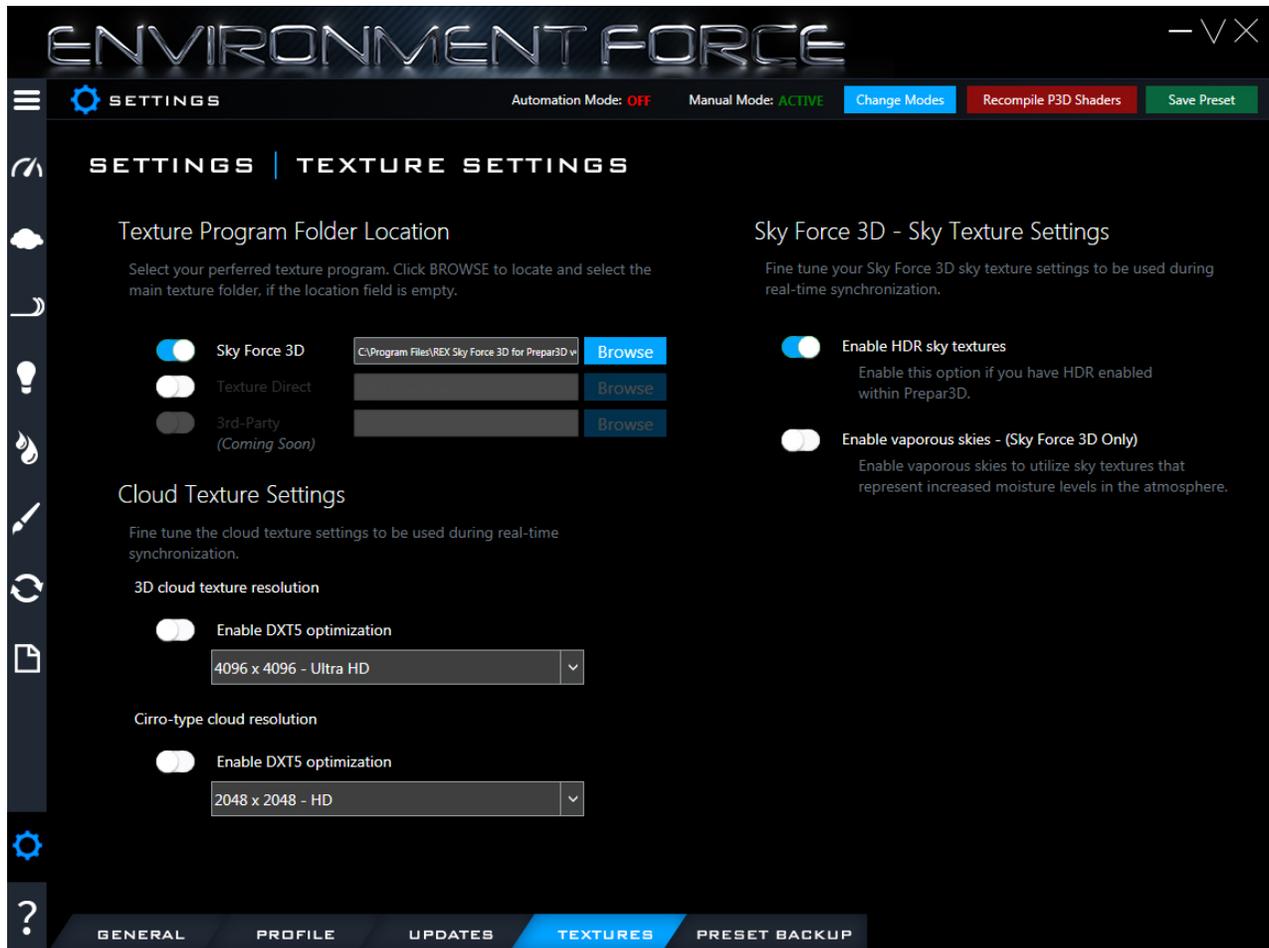


Figure 4 – Texture Settings Window

The Texture Settings Window (figure 4) is used to maintain and change information regarding 3rd-party textures which are to be used with the Environment Force texture synchronization process. Each setting and its function are outlined on the next page.

### **Texture Program Folder Location**

Set which 3rd-party texture program will be used as default for use within the Texture Synchronization process of Environment Force.

### **Cloud Texture Settings**

Set the texture resolution and optimization type of clouds that will be used in the Texture Synchronization process of Environment Force.

### **Sky Force 3D Sky Textures**

Set whether to enable the HDR sky texture option as well as vaporous skies option (Sky Force 3d only).



# Preset Configuration Backup

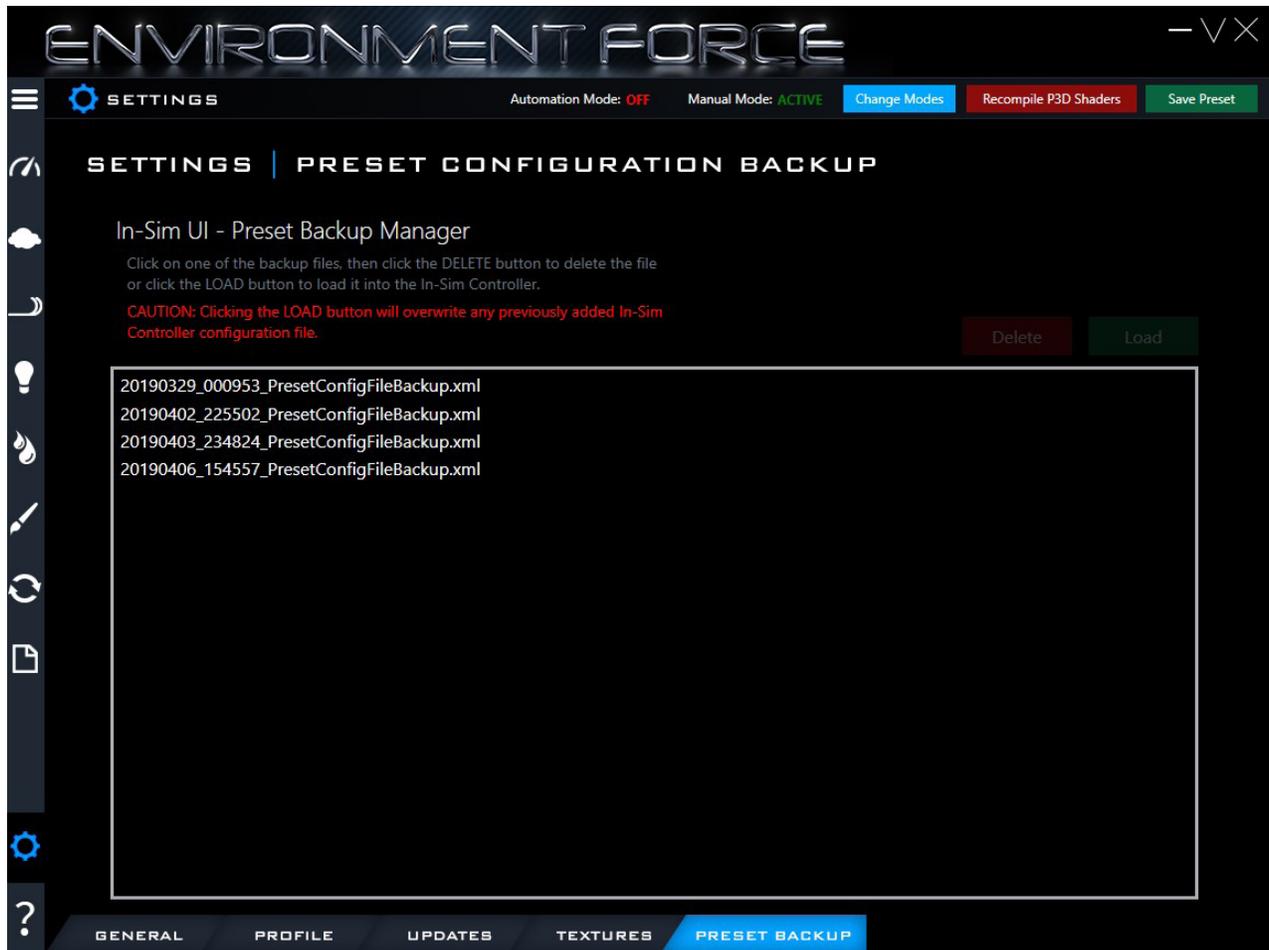


Figure 5 – Preset Configuration Backup Window

The Preset Configuration Backup Settings Window (figure 5) is used to manage the preset configuration files from the in-sim mini configuration menu.

### Process to delete a preset configuration file:

**Step 1** – Select one of the files located within the file grid.

**Step 2** – Click on the Delete button to remove the file from the backups.

**WARNING: Once you delete a preset configuration file it is permanently deleted and cannot be retrieved.**

### Process to load a preset configuration file into the simulator:

**Step 1** – Select one of the files located within the file grid.

**Step 2** – Click the Load button to load the preset into the simulator in real-time.

# 3D Cloud Control

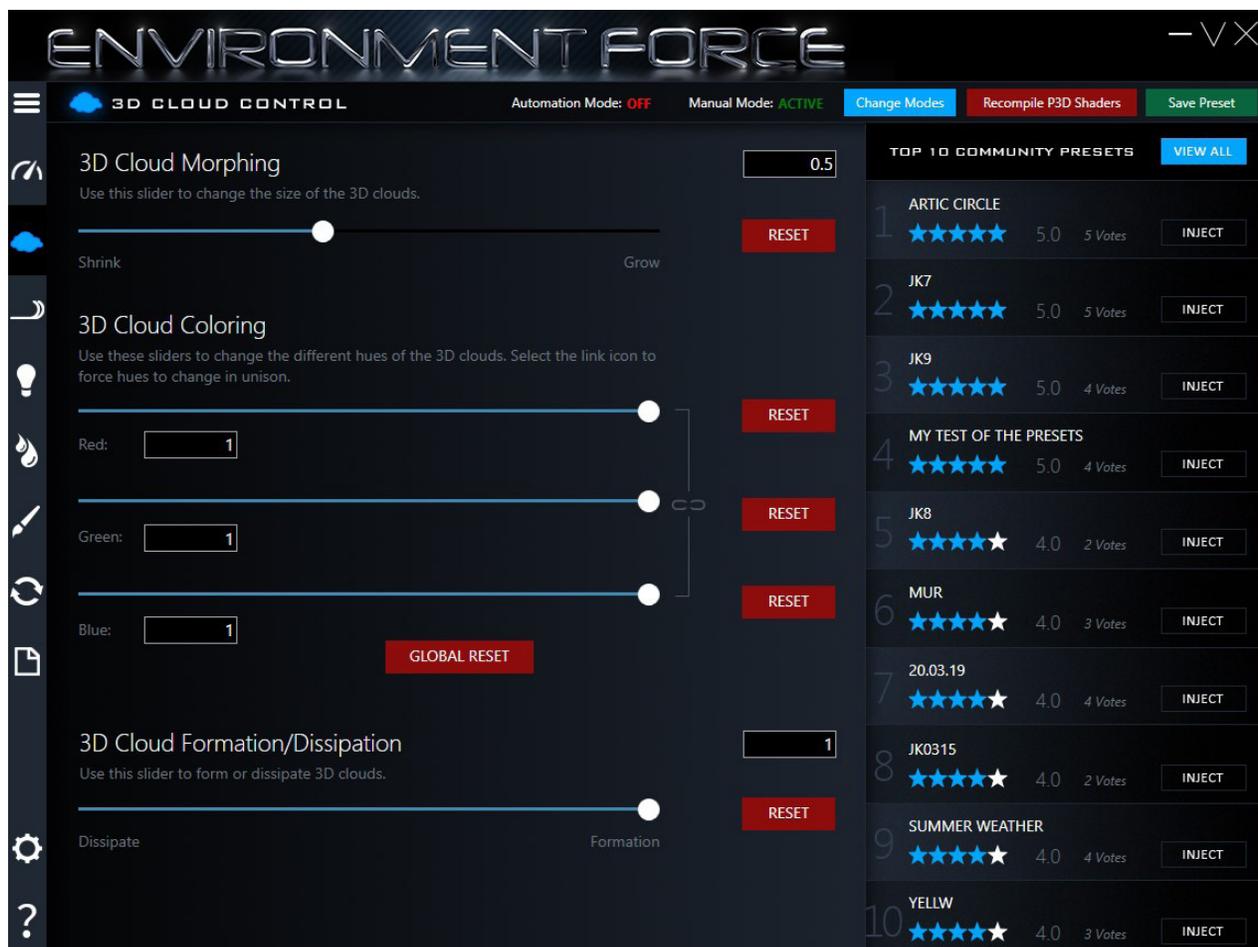


Figure 1 – 3D Cloud Control Window

The controls on this window gives you full control over the 3D clouds in the flight simulator. The following represents each feature and its function:

### 3D Cloud Morphing

Allows growing or shrinking of the 3D Cloud layers.

### 3D Cloud Coloring

Allows you to control 3D Cloud Coloring. You can change each variable separately or linked together for a neutral balance.

### 3D Cloud Formation/Dissipation

Allows you to change the formation/dissipation variable of the 3D Clouds. Lowering this variable softens clouds.

# Cirrus Cloud Control

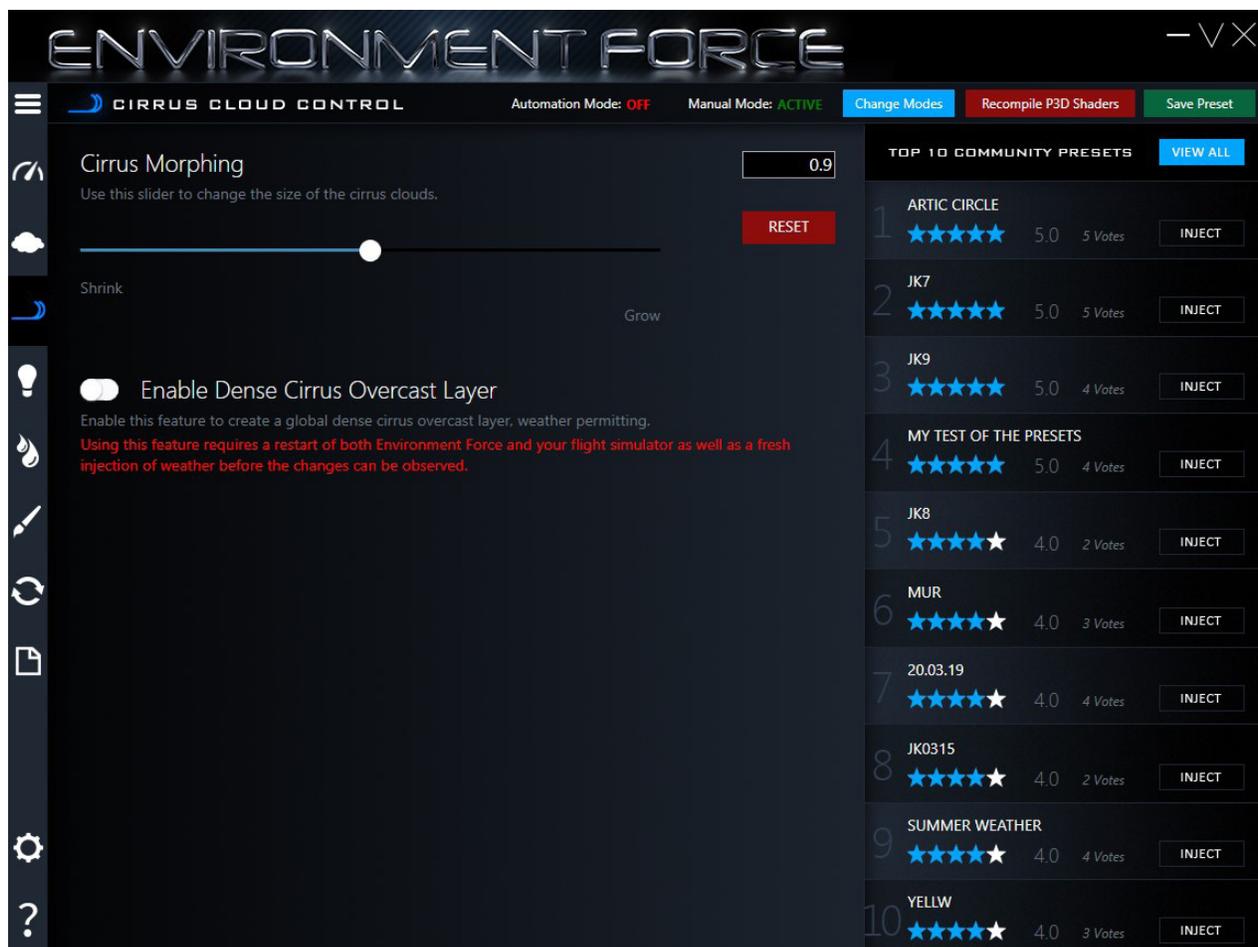


Figure 1 – Cirrus Control Window

The controls on this window gives you full control over the cirrus clouds within the flight simulator. The following represents each feature and its function:

## Cirrus Morphing

This feature allows you to morph the cirrus cloud layers.

## Enable Dense Cirrus Overcast Layer

When enabled this will create a unique, full dense cirrus cloud layer within the simulator.

**To enable, both Environment Force and the simulator must be restarted, and weather injected for this layer to be experienced.**

# Lighting/Visibility Control

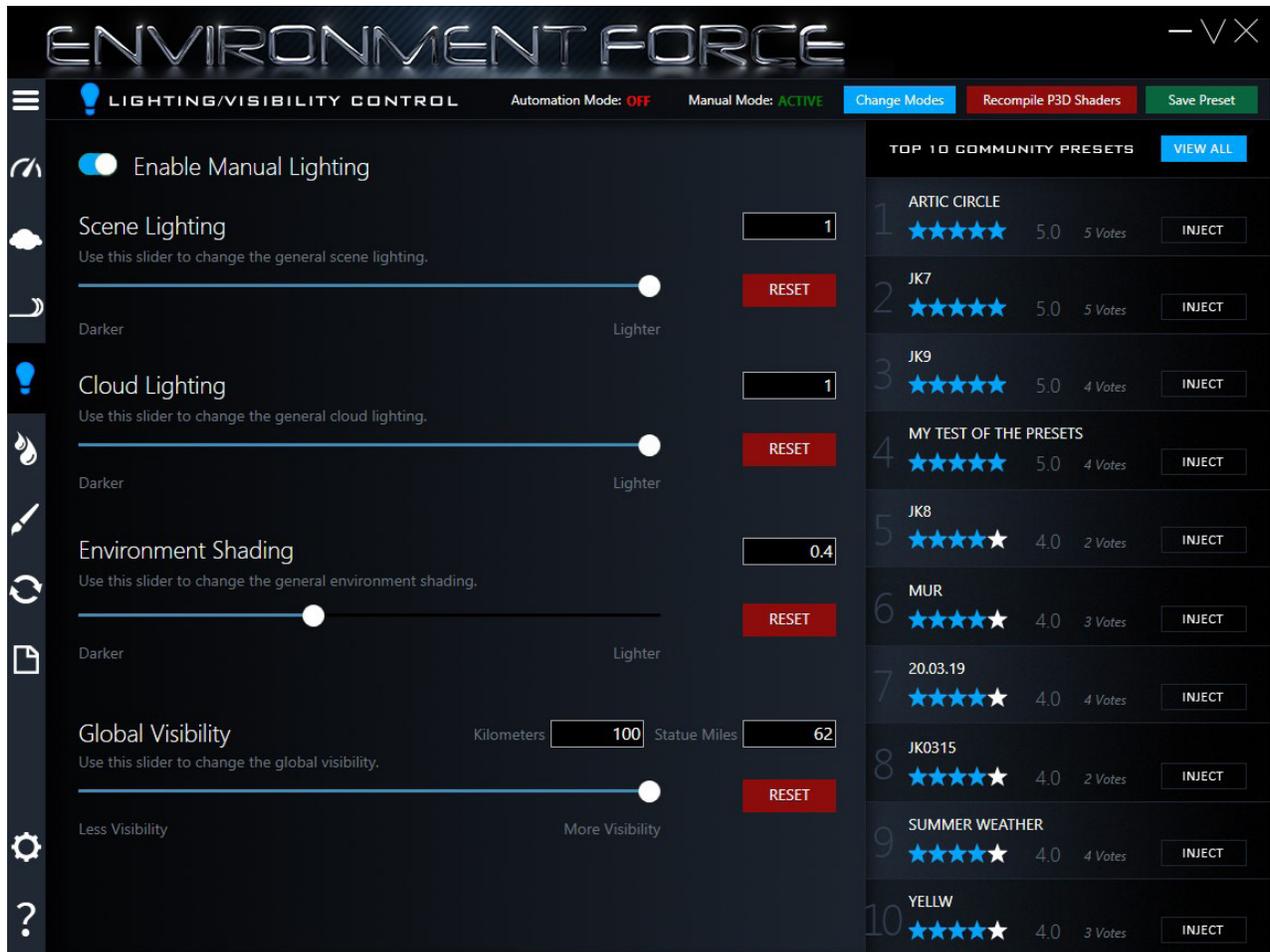


Figure 1 – Lighting/Visibility Control Window

The controls on this window gives you full control over how the lighting and visibility look within the flight simulator.

The following represents each feature and its function:

### **Enable Manual Lighting**

Enabling this feature gives access to control key lighting elements within the simulator. This must be enabled to change the scene, cloud, and environment lighting. Disabling this feature will turn off all lighting controls and set the lighting to default within the simulator.

### **Scene Lighting**

Manually change scene lighting like phases of the sun in the sky.

### **Cloud Lighting**

Change the lighting that passes through the cloud structure.

### **Environment Shading**

Allows you to control the shading of the environment such as water and terrain.

### **Global Visibility**

Reduce or increase the global visibility throughout the simulator.



# Water Control

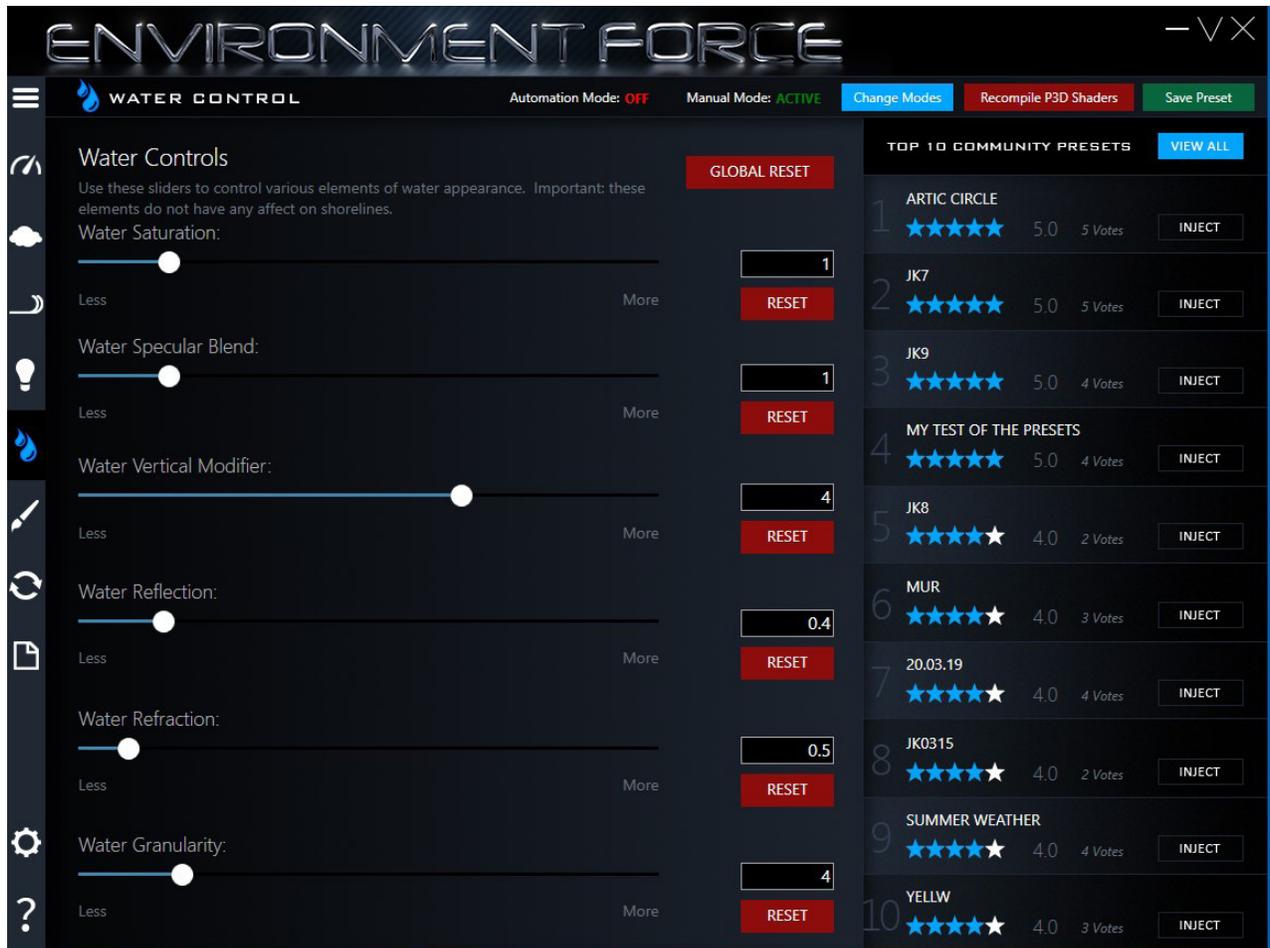


Figure 1 – Water Control Window

The controls on this window gives you full control over how the water renders within the flight simulator.

The following represents each feature and its function:

### **Water Saturation**

Change the saturation of the bodies of water. **Please note that some coastlines may not change properly due to the way certain scenery developers treat underlying water tiles.**

### **Water Specular Blend**

The specular blend parameter changes the appearance of specular reflections, or the amount of reflectivity properties the water surface contains.

### **Water Vertical Modifier**

This dictates how much influence the distant water reflections influence the water surface.

### **Water Reflection**

Water reflection dictates whether you want more or less influence of environment factors displayed on the water surface.

### **Water Refraction**

This parameter dictates how much influence the base water texture colors have on the water surface.

### **Water Granularity**

Water granularity changes the wave size and sharpness.



# Water/Terrain Coloring



Figure 1 – Water / Terrain Coloring Window

The controls here give you full control over how the water and terrain coloring renders within the flight simulator. The following represents each feature and its function:

### Enable Manual Lighting

Enabling this feature will permit the ability to manually control environment lighting.

### Environment Coloring

Allows control of various aspects of the environment including building, vegetation, land, and water. You can change each variable separately or linked together for a neutral balance.

### Water and Terrain Coloring

Allows control of various aspects of the water and terrain only. You can change each variable separately or linked together for a neutral balance.

# Texture Synchronization



Figure 1 – Initial Texture Synchronization Window

Here you are able to manually synchronize cloud and/or sky textures in real-time within the simulator. **IMPORTANT: Textures will automatically synchronize in real-time when using the Environment Force Automation Mode.**

# Cloud Texture Sync

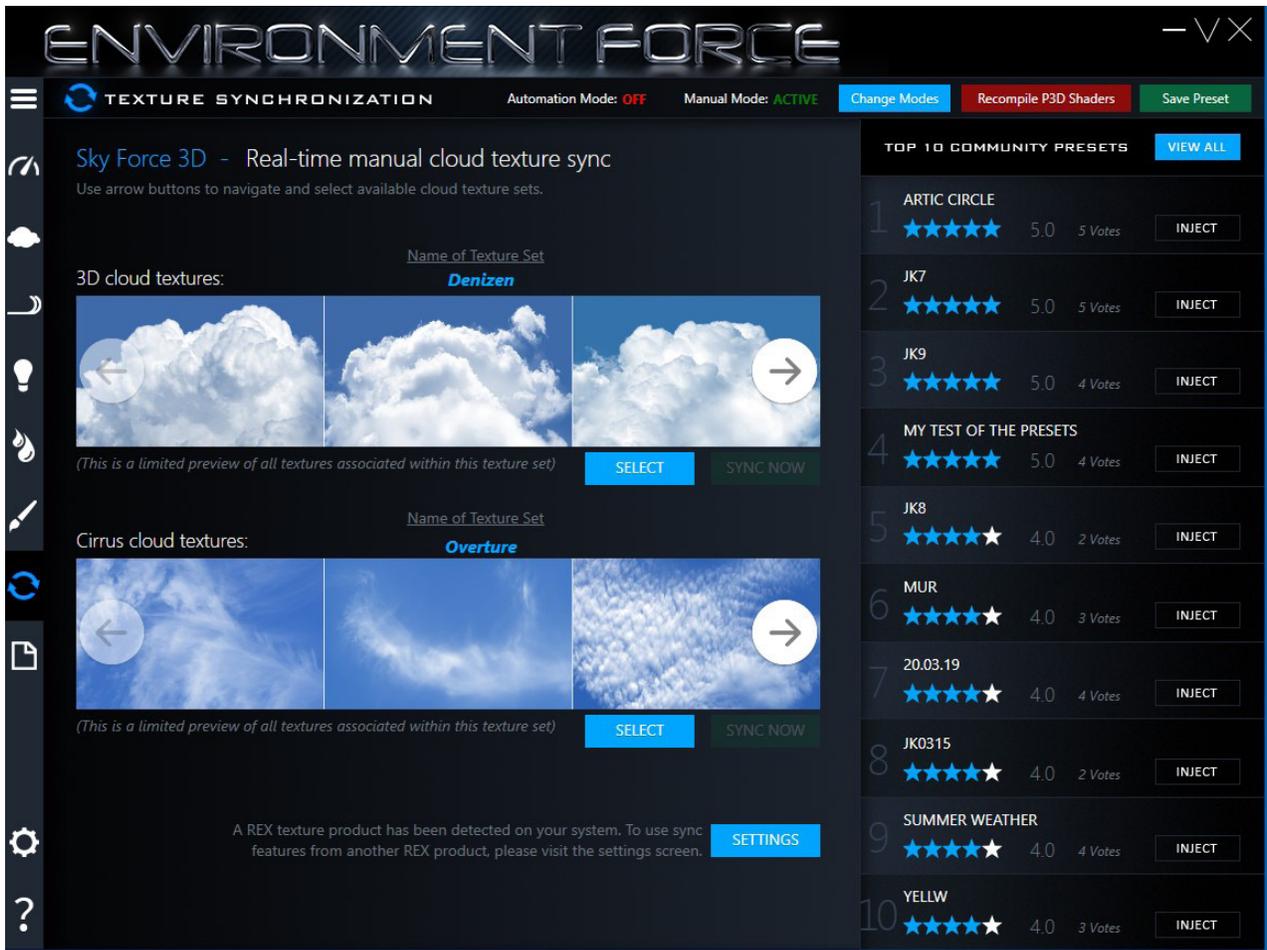


Figure 2 – Real-Time Manual Cloud Texture Sync Window

The procedure on how to manually synchronize 3D and cirrus clouds into the simulator are outlined on the next page.

### PROCEDURE TO SYNCHRONIZE 3D CLOUD TEXTURES

**Step 1** – Use the arrow buttons to select a set of 3D Clouds to synchronize.

**Step 2** – Once you have chosen which set you like, click the Select button to select that set.

**Step 3** – Once the textures are ready to be synced, the Select button will become disabled and the Sync Now button will become active. Click the Sync Now button to swap out your 3D Cloud textures instantaneously within the simulator.

### PROCEDURE TO SYNCHRONIZE CIRRUS CLOUD TEXTURES:

**Step 1** – Use the arrow buttons to select a set of Cirrus Clouds to synchronize.

**Step 2** – Once you have chosen which set you like, click the Select button to select that set.

**Step 3** – Once the textures are ready to be synced, the Select button will become disabled and the Sync Now button will become active. Click the Sync Now button to swap out your Cirrus Cloud textures instantaneously within the simulator.



# Sky Texture Sync

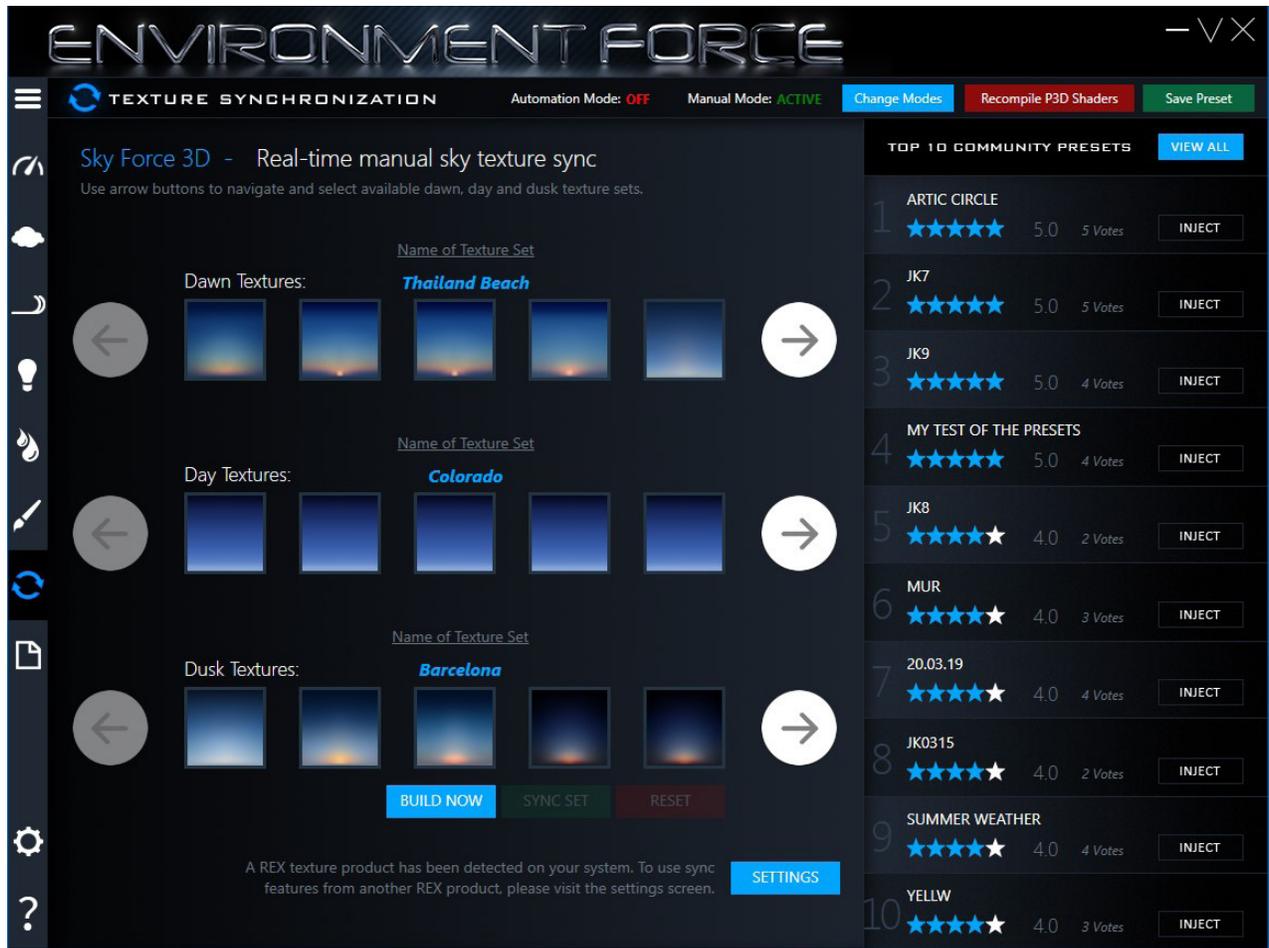


Figure 3 – Real-Time Manual Sky Texture Sync Window

The procedure on how to manually synchronize sky textures into the simulator in real-time are outlined on the next page.

### PROCEDURE TO SYNCHRONIZE DAWN, DAY, AND DUSK SKY TEXTURES

**Step 1** – Use the arrow buttons on either side of the sky images to select a set of dawn, day, and dusk sky textures to synchronize.

**Step 2** – Once you have chosen which set you like, click the Build button to build your sky texture set.

**Step 3** – Once the textures are ready to be synced, the Build button will become disabled and the Sync Set button will become active. Click the Sync Set button to swap out your sky textures instantaneously within the simulator.

To RESET a sky texture set, click the enabled Reset button and it will revert the most recent sky texture set within the simulator back to the original set used at startup.



# Automation Mode

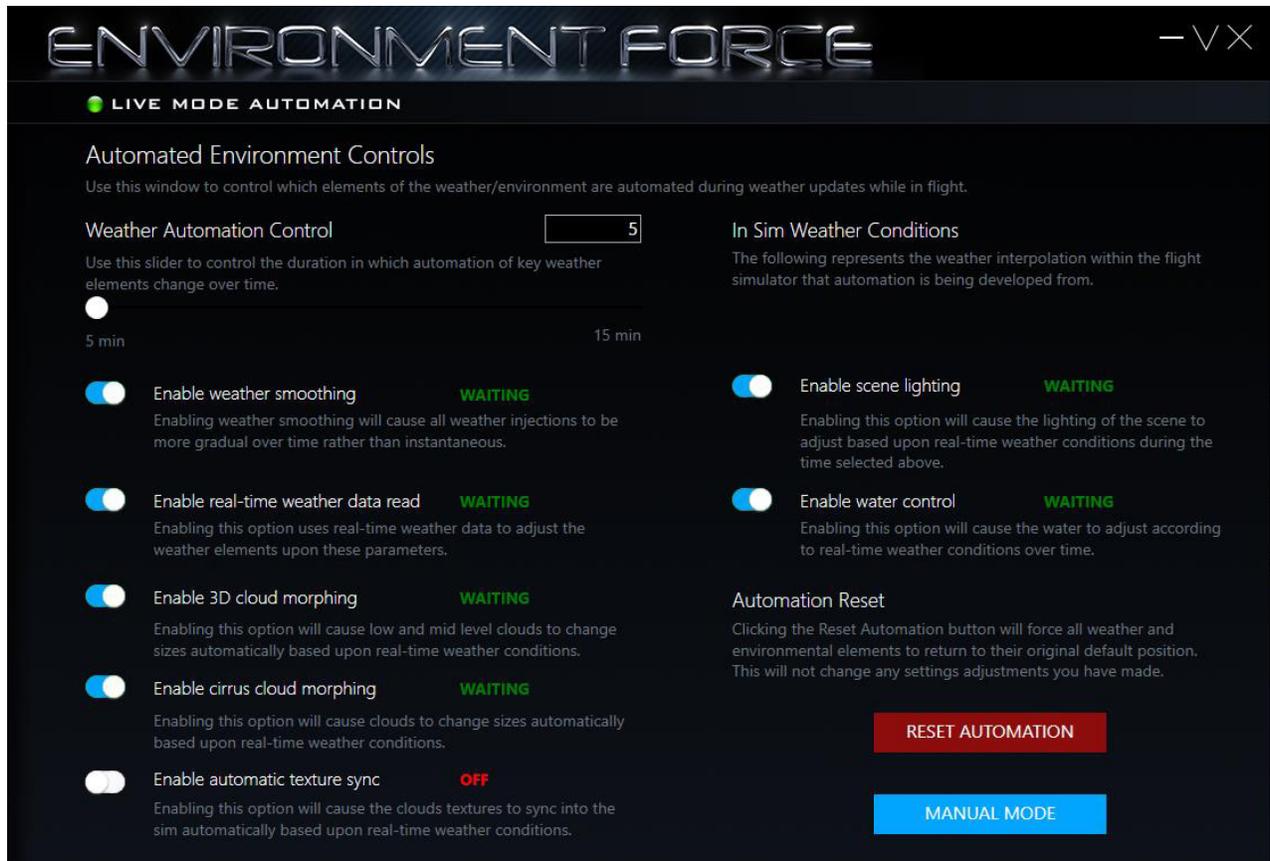


Figure 1 – Automation Mode Window

The controls on this window give you full control over how the various features elements of the simulator automatically change based upon real-time weather conditions.

The following represents each feature and its function:

### **Weather Automation Control**

Allows you to determine the duration in which the weather elements change over time.

### **Enable Weather Smoothing**

When this feature is enabled it causes all weather injections to occur gradually over time dictated by the **Weather Automation Control**. This feature works with all 3rd-party weather engines.

### **Enable Real-Time Weather Data Read**

When this feature is enabled it downloads the most recent real-time weather data from NOAA to be used to interpret how other elements of automation adjust based upon real weather conditions. When disabled it will read weather that has been injected into the simulator to adjust the automation elements.

### **Enable 3D Cloud Morphing**

When this feature is enabled it will grow, shrink, form and/or dissipate clouds based upon the real-time weather conditions.

### **Enable Cirrus Cloud Morphing**

When this feature is enabled it will grow/shrink the cirrus clouds based upon the real-time weather conditions.

### **Enable Automatic Texture Sync**

When this feature is enabled it will swap textures based upon real-time weather conditions.

### **Enable Scene Lighting**

When this feature is enabled it will adjust the lighting of the scene based upon cloud density and real-time weather conditions.

### **Enable Water Control**

When this feature is enabled it will adjust the water conditions of the scene based upon the real-time weather conditions.

### **Reset Automation**

This resets all automation parameters to their default position.

### **Manual Mode**

This will disable automation mode of Environment Force and enable Manual Mode.

# My Presets

## What are presets?

A preset is comprised of a set of data. This dataset is a snapshot of all the control settings within the main interface and mini in-sim interface and stored under one name. The presets can be used to create multiple instances, or 'looks' within the simulator. These instances can be retrieved at any time or shared with the community.

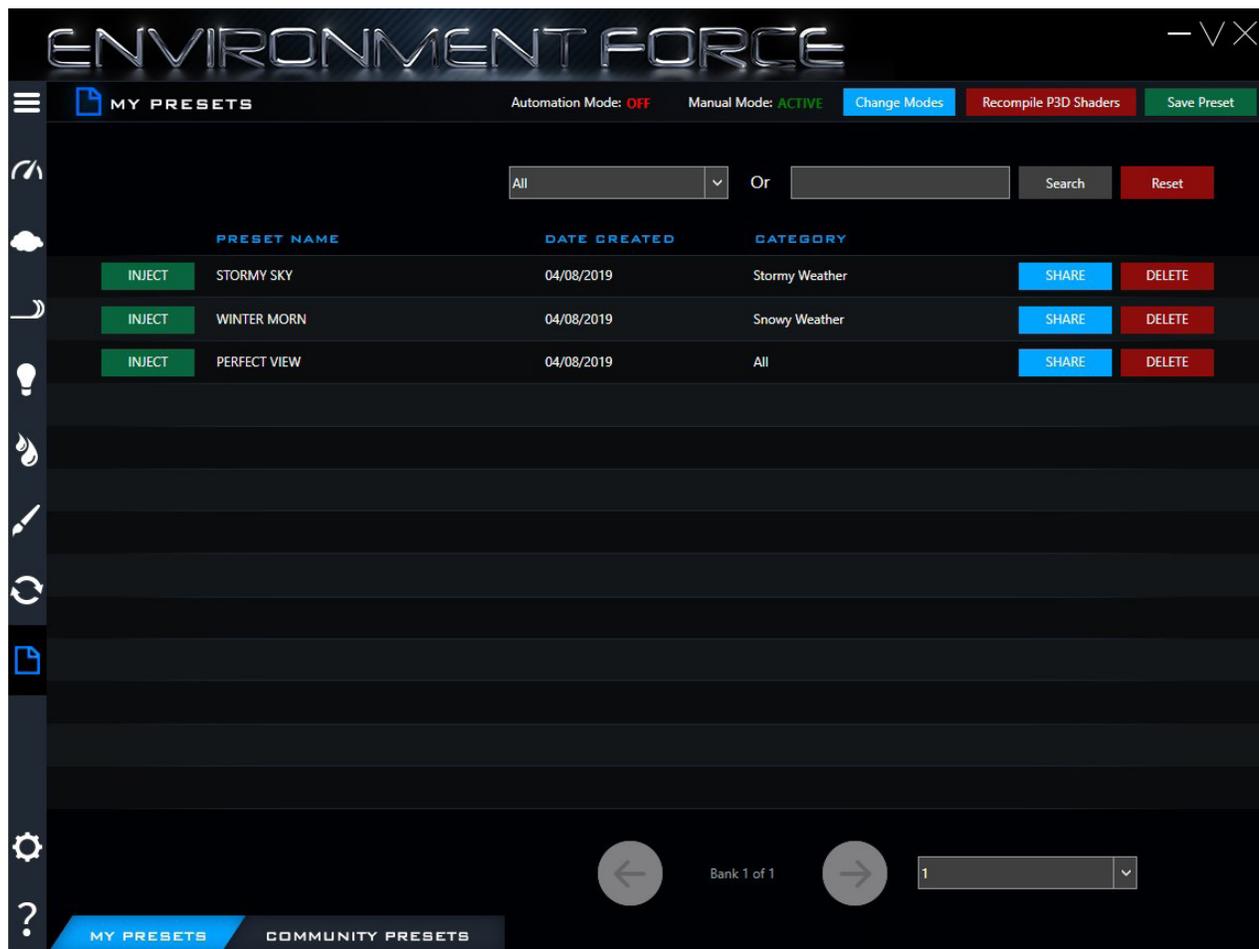


Figure 1 – My Presets Window

The controls on this window gives you the ability to search, inject, share, and delete personal presets.

The following represents each feature and its function:

### Search

Search for specific presets by either preset name or author.

### Reset

Resets the search filter back to default showing all records.

### Inject

Inject a preset dynamically into the simulator in real-time.

### Share

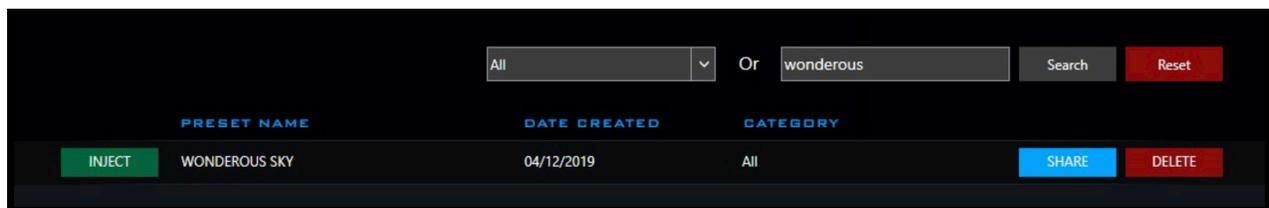
Share a specific preset to the community for other Environment Force users.

### Left / Right Arrows

Page through banks of presets that have been created.

# Search For a Preset

Use the following procedure to search for a preset:



*Figure 2 – Search Function*

**Step 1** – Type a preset name or author name into the field next to the Search button. Click the Search button to initiate your search (figure 2).

**Step 2** – Click the Reset button if you would like to clear your search results and start over.

# Community Presets

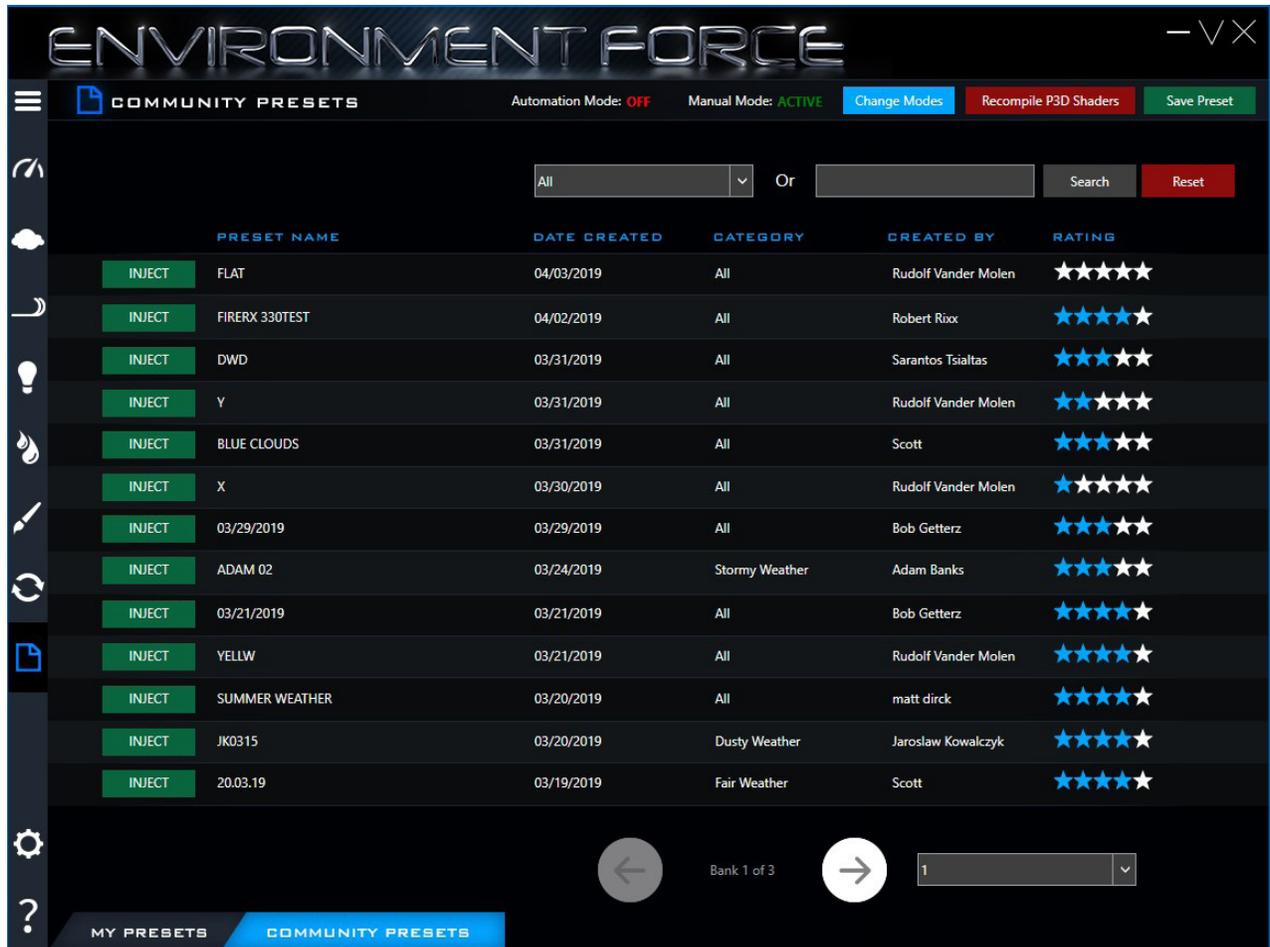


Figure 3 – Community Presets Window

The controls on this window (figure 3) gives you the ability to search, inject, and rate community presets.

The following represents each feature and its function:

**Search**

Search for specific presets by either preset name or author.

**Reset**

Resets the search filter back to default showing all records.

**Inject**

Inject a preset dynamically into the simulator in real-time.

**Stars**

Rate a community preset. A user is only allowed one vote per preset.

**Left / Right Arrows**

Page through banks of presets that have been created.



# In-Sim Mini User Interface (UI)

The **In-Sim Mini UI** (figure 1) is a very powerful companion tool to the main Environment Force external application user interface. However, there are certain powerful features that are only available through the Mini UI, so it would be beneficial to become acquainted with the proper protocol on how to operate each area, as well as taking the time to learn what each function will achieve.

## Startup

Once the Environment Force main application is running, you can start the simulator. At each startup, Environment Force retains your shader settings so you will not lose the creative looks you have achieved through shader tools such as PTA or TomatoShade. Upon entering a flight, you will notice a brief blackout in-sim while the shaders are being rebuilt.

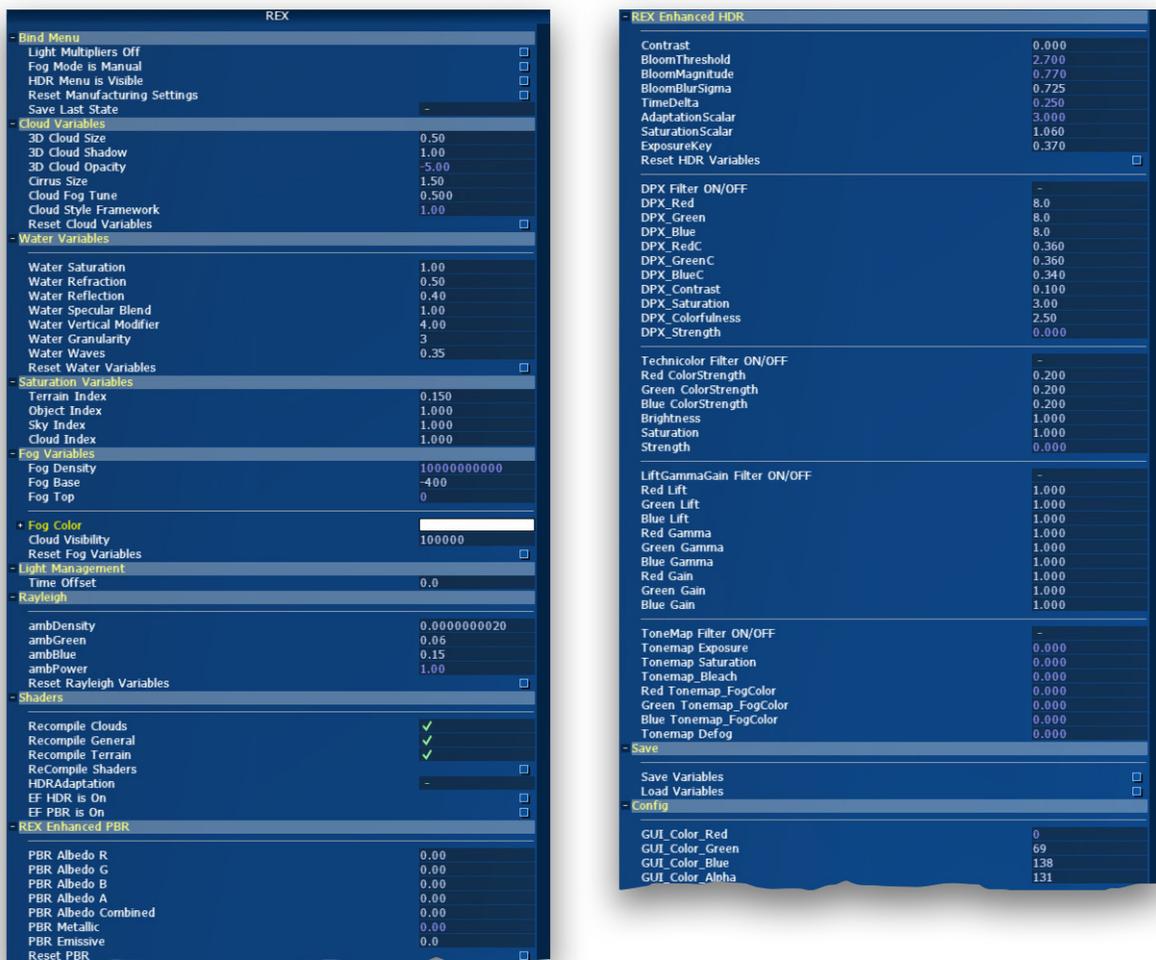


Figure 1 – In-Sim Mini User Interface\*

\*The in-sim mini interface (figure 1) is split due to page size constraints. The actual in-sim interface is comprised of 1 menu that can be scrolled, re-sized and hidden for convenience.



It's important to note that the Mini UI can be scrolled, re-sized and hidden for convenience inside the simulator.

### How to change parameters and variables:

Because the functions are displayed in real-time and linear by nature, the numerical values cannot be entered or changed manually. To change parameters you must mouse left-click on the desired function (figure 2), then hold and move around the radial axis. As you do so, you will notice the environment-related variables changing in real-time. When you reach the desired value, simply release the mouse button.

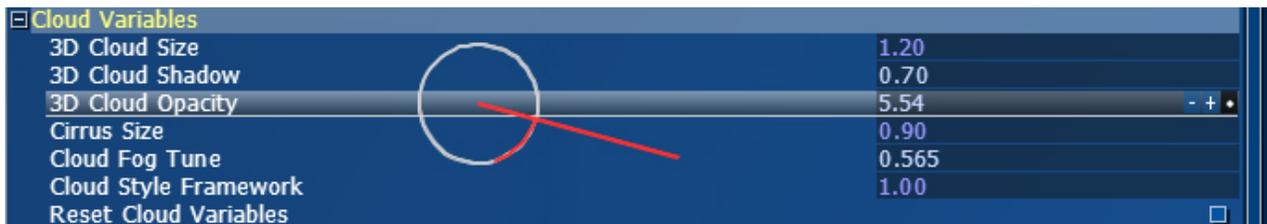


Figure 2 – How To Change Variables

You are able to change variables with both clockwise and counter-clockwise motion. This is non-destructive, so feel free to get acquainted. If you need to return to manufacturer settings, click **RESET MANUFACTURING SETTINGS** from the top **BIND** menu. **It's also important to note here, that many of the sections contained in the Mini UI have a RESET VARIABLES option.**

The following represents each feature and its function from within the In-Sim Mini UI:



Figure 3 – Bind Menu

The **Bind Menu** area (figure 3) contains functionality that changes how the modes are setup in the Mini UI.

### Light Multipliers ON/OFF

When **ON**, this allows you to change the lighting in the scene and will display a more elaborate menu system consisting of **Cloud, Terrain/Object, Combined/Diffused, RGB Ambient** and **RGB Directional Light** as well as **Sun Direction**. When **OFF**, these menus are hidden and inactive. **IMPORTANT: We suggest first getting acquainted with this in-sim Mini UI before venturing on to the active Light Multipliers Mode.**

### Fog Mode

When set to **Manual** you will notice an accessible **Fog Variables** and **Fog Color** area where you can add fog density and change base and tops as well as color. When set to **OFF**, the fog menus are hidden. **IMPORTANT: When using a real-time weather engine, the weather engine will overwrite the fog settings.**

### HDR Menu

Allows access to all the new HDR settings in the Mini UI. When set to **Visible**, you will have access to all of the settings related to HDR as well as the effects section. This section must remain visible when HDR is turned on in the simulator.

### Reset Manufacturing Settings

When selected, all settings within the Mini UI will revert to default manufacturer settings. This is important if you get lost and want to start fresh.

### Save Last State

When checked ON, all settings within the Mini UI are saved and retained for the next time Environment Force and the simulator are started.



Figure 4 – Cloud Variables

The **Cloud Variables** area (figure 4) contains cloud related functionality.

### 3D Cloud Size

Scale the size of the 3D cloud puffs.

### 3D Cloud Shadow

Multiplier on the strength of the cloud shadow on the terrain.

### 3D Cloud Opacity

Controls the alpha component of each of the clouds. Lowering this variable softens the effect of the 3D clouds.

### Cirrus Size

Controls the width of the cirrus clouds in the scene.

### Cloud Fog Tune

A multiplier on how the fog is rendered on top of the clouds in the scene. Setting this variable higher will blend the clouds more into the background. **This option is hidden when Fog Mode is set to OFF.**

### Cloud Style Framework

This feature is a powerful component to the overall visual cloud scene. **Once this variable is set, a weather injection via an external weather engine or weather scenario change is required to take affect.** The higher the value, the more stronger the effect. We recommend a setting of 1.20 - 1.30.

### Reset Cloud Variables

This button resets all of the variables contained in the **Cloud Variables** area. Because this is treated as a button, there are no values to change.



Figure 5 – Water Variables

The **Water Variables** area (figure 5) contains water related functionality.

### Water Saturation

Changes the saturation of the bodies of water. **Please note that some coastlines may not change properly due to the way certain scenery developers treat underlying water tiles.**

### Water Refraction

This parameter dictates how much influence the base water texture colors have on the water surface.

### Water Reflection

Water reflection dictates whether you want more or less influence of environment factors displayed on the water surface.

### Water Specular Blend

The specular blend parameter changes the appearance of specular reflections, or the amount of reflectivity properties the water surface contains.

### Water Vertical Modifier

This dictates how much influence the distant water reflections influence the water surface.

### Water Granularity

Water granularity changes the wave size and sharpness.

### Water Waves

This parameter regulates water wave speed.

### Reset Water Variables

This button resets all of the variables contained in the **Water Variables** area. Because this is treated as a button, there are no values to change.



- Saturation Variables	
Terrain Index	0.150
Object Index	1.000
Sky Index	1.000
Cloud Index	1.000

Figure 6 – Saturation Variables

The **Saturation Variables** area (figure 6) contains terrain, object, sky and cloud related saturation functionality.

**Terrain Index**

Material lighting saturation of the terrain.

**Object Index**

Material lighting saturation of sim objects.

**Sky Index**

Lighting saturation of the sky index.

**Cloud Index**

Material lighting saturation of the 3D clouds.



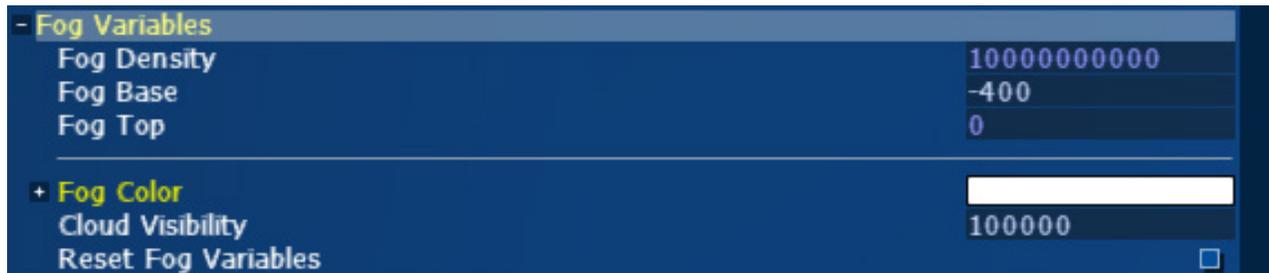


Figure 7 – Fog Variables

The **Fog Variables** area (figure 7) contains manual fog creation functionality. To utilize this area, the **Fog Mode** under the **Bind Menu** must be set to **Manual**.

### **Fog Density**

This variable controls the density of the fog.

### **Fog Base**

This variable controls the base of fog generation.

### **Fog Top**

This variable controls the tops of fog generation.

### **Fog Color**

You can control the color of the fog by clicking the white swatch. You will be presented with 2 options in order to colorize; RGB or HSL.

### **Cloud Visibility**

This visibility variable is basically a visibility function.

### **Reset Fog Variables**

Resets all **Fog Variables** parameters.





Figure 8 – Light Management

The **Light Management** area (figure 8) contains a time offset ability.

### Time Offset

Similar in function to the P3D built-in Time Preview, this slider contains the same functions, and included for convenience.

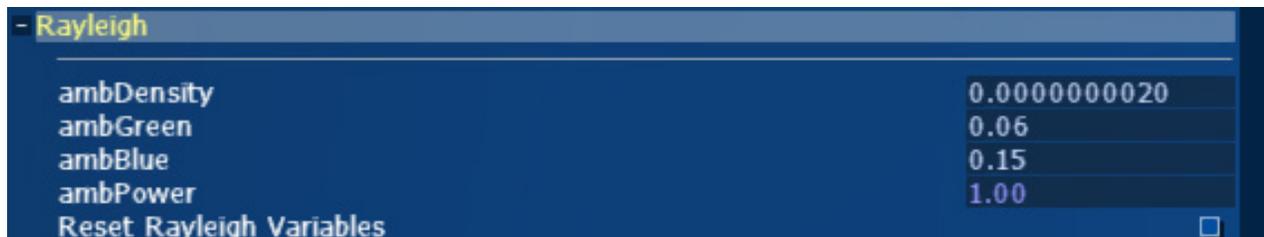


Figure 9 – Rayleigh

The **Rayleigh** area (figure 9) contains powerful functionality to add and control rayleigh light scattering within the simulator.

### ambDensity

Controls the density of the overall rayleigh effect.

### ambGreen

Controls the scattering energy of the green light element.

### ambBlue

Controls the scattering energy of the blue light element.

### ambPower

Controls the overall intensity or power of the rayleigh effect.

### Reset Rayleigh Variables

This button resets all of the variables contained in the **Rayleigh** area. Because this is treated as a button, there are no values to change.



Figure 10 – Shaders

The **Shaders** area (figure 10) contains powerful functionality to recompile certain shaders within the simulator in real-time. Very useful if utilizing shader tools such as PTA or TomatoShade.

### Recompile Clouds

Check this area ON to recompile cloud related shaders.

### Recompile General

Check this area ON to recompile general related shaders.

### Recompile Terrain

Check this area ON to recompile terrain related shaders.

### Recompile Shaders

Upon setting cloud, general and/or terrain shaders, select this button to recompile the selected shader group(s). **It takes time for the simulator to recompile shaders on the fly. The amount of time this action takes depends on how many of the 3 shader groups are selected, as well as your computer specifications.**

### HDRAdaptation

For HDR Adaptation to take affect, please make sure HDR is enabled in the simulator. Next, enable HDR Adaptation, then disable EF HDR. Your screen will black out for approximately 5-9 seconds while the shaders are recompiled. Finally, re-enable EF HDR (*again, please wait a few seconds while the shaders are recompiled*).

### Environment Force HDR

This section must remain on when HDR is turned on in the simulator.

### Environment Force PBR

This function turns ON/OFF PBR functions of Environment Force.



Figure 11 – REX Enhanced PBR

The **REX Enhanced PBR** area (figure 11) contains a powerful group of functions to control the way PBR-related content reacts to lighting conditions within the scene.

**PBR Albedo R**

Referring to the red channel output offset of the general PBR shader.

**PBR Albedo G**

Referring to the green channel output offset of the general PBR shader.

**PBR Albedo B**

Referring to the blue channel output offset of the general PBR shader.

**PBR Albedo A**

Referring to the alpha channel output offset of the general PBR shader.

**PBR Albedo Combined**

For convenience, this is a combined channel output offset of the general PBR shader. Used to darken/lighten PBR content.

**PBR Metallic**

Referring to the metallic properties of PBR content.

**PBR Emissive**

Controls the overall intensity of illumination of PBR content.

**Reset PBR**

An overall reset of PBR variables.



Figure 12 – REX Enhanced HDR

The **REX Enhanced HDR** area (figure 12) contains a more powerful group of functions than the simulator HDR contains. There are also multiple dynamic and robust effects sections tied to this area so we highly advise to keep this section on and running.

**Contrast**

Increases or decreases the amount of contrast that is applied to the scene.

**BloomThreshold**

Sets a limit for how bright the bloom can be.

**BloomMagnitude**

Adjusts the brightness level.

**BloomBlurSigma**

Determines the level of sharpness that the environment is set to.

**TimeDelta**

How long it takes for the camera to adjust and change according to dynamic lighting conditions.

**AdaptationScalar**

Control the speed at which the adaptation transitions between bright and darker environments.

**SaturationScalar**

Controls the color saturation of the scene.

**ExposureKey**

Controls the overall exposure of the scene.

**Reset HDR Variables**

Resets all HDR variables under the category of **REX Enhanced HDR**.

DPX Filter ON/OFF	-
DPX_Red	8.0
DPX_Green	8.0
DPX_Blue	8.0
DPX_RedC	0.360
DPX_GreenC	0.360
DPX_BlueC	0.340
DPX_Contrast	0.100
DPX_Saturation	3.00
DPX_Colorfulness	2.50
DPX_Strength	0.000
<hr/>	
Technicolor Filter ON/OFF	-
Red ColorStrength	0.200
Green ColorStrength	0.200
Blue ColorStrength	0.200
Brightness	1.000
Saturation	1.000
Strength	0.000
<hr/>	
LiftGammaGain Filter ON/OFF	-
Red Lift	1.000
Green Lift	1.000
Blue Lift	1.000
Red Gamma	1.000
Green Gamma	1.000
Blue Gamma	1.000
Red Gain	1.000
Green Gain	1.000
Blue Gain	1.000
<hr/>	
ToneMap Filter ON/OFF	-
Tonemap Exposure	0.000
Tonemap Saturation	0.000
Tonemap_Bleach	0.000
Red Tonemap_FogColor	0.000
Green Tonemap_FogColor	0.000
Blue Tonemap_FogColor	0.000
Tonemap Defog	0.000

Figure 13 – Post Processing Effect Filters

The **Post Processing Effect Filters** area (figure 13) contains dynamic and robust filter effects sections that work in real-time. Each filter section may be turned **ON** or **OFF**. Once enabled, you can then tweak each parameter to your liking.





Figure 14 – Save

The **Save** area (figure 14) contains a convenient ability to save and load variables.

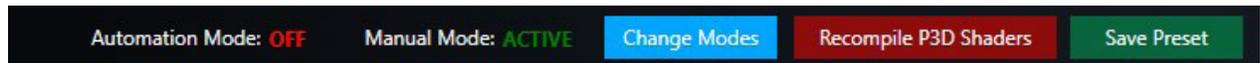


Figure 15 – Save Preset

### Save Variables

This is like saving everything you set in the entire UI menu as a **preset or snapshot**. Click **Save Variables**, and everything will be saved, for later recall. **IMPORTANT NOTE: We highly suggest saving through the main application interface by clicking the GREEN Save Preset button on the top menu (figure 14). This will allow you to name your preset, as well as upload to the REX community so other Environment Force users can download and use your preset.**

### Load Variables

Clicking on **Load Variables** will load the last saved preset instantly in the simulator.



Figure 16 – Config

The **Config** area (figure 16) allows the customization of the appearance of the Mini UI.

### GUI Color Red/Green/Blue

Change the color of the Mini UI by utilizing these values.

### GUI Color Alpha

Change the opacity of the Mini UI by utilizing this values.

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