nextgen SIMULATIONS

BANDEIRANTE

for Microsoft Flight Simulator

User Manual

Version 1.6.0 Build 2307 (July 2023)

Disclaimer & Copyright Information

This manual is **NEVER** intended for real-world flight and was compiled **ONLY** for personal-use **flight simulation software**. As a result, this manual cannot be used for familiarity or training with any real-life aircraft, as this manual does not provide operating procedures for real-life aircraft and was written for entertainment purposes. The information contained within this manual is derived from multiple sources and is not subject of revision for accuracy.

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1. Every repaint creation, either modification of stock repaints or original creations by end-users, may only be distributed as **FREEWARE** and can **ONLY** be used on the software product subject of this manual.
2. Every repaint creation may be distributed to third-party websites such as FlightSim.com, Avsim.com or Flightsim.to. However, the repaint must conform to specifications prescribed in the product's documentation.
3. If the repaint creation is published in a third-party website, **NextGen Simulations** must be listed in the author credits.
4. End-users may contact the repaint artist for questions, comments, and further feedback.
5. All repaint creations (free liveries) made using the official product paint kit, remain a property of **NextGen Simulations**.

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Introduction

Thank you for purchasing the **EMB-110 Bandeirante for Microsoft Flight Simulator** product, from **NextGen Simulations**. From all of us here at NextGen Simulations, we hope you enjoy this product as much as we enjoyed developing, testing, and updating it for you.

The real-life EMB-110 Bandeirante is one of the Embraer's most successful and most popular commercial aircraft, designed and manufactured for general-purpose light transport, and suitable for both military and civilian duties, with a low operational cost and high reliability. This product is a highly detailed simulation replica of this popular aircraft, completely built from the ground up and designed for the latest iteration of Microsoft Flight Simulator.

For this product, we have provided this comprehensive documentation in PDF. The goal of this documentation is to help you, the end-user and simulator pilot, to familiarize yourself with the EMB-110 product, and provide you with the information required to operate the simulation in an effective way from an interface point of view.

Throughout this documentation, we give a brief overview of the aircraft and its operating limitations, as well as the flight deck, instruments panels, switches, knobs, levers, and annunciator lights. Plus, we describe the distinct options and configurations included, especially in the avionics standpoint. This will help you both to understand how everything in the aircraft operates and to familiarize with the product itself.

We hope you will find this information useful and that it will enhance your enjoyment of the EMB-110 for Microsoft Flight Simulator. Thank you very much for your continued support!

Product Features Summary

The **EMB-110 Bandeirante** aircraft is exclusively developed for use with **Microsoft® Flight Simulator® (2020)**, that is published by **Xbox Games Studios** and developed by **Asobo Studio**. This product features a professional, yet simplified systems programming, featuring the full potential of the avionics included by default with the flight-simulation platform, plus the great potential of the GTN avionics add-ons developed by PMS50 and TDS Sim Software, allowing you to enjoy the best flight-simming experience, while bringing you a good look-and-feel of this popular aircraft. This package includes:

- Three accurately modeled variants of the EMB-110: EMB-110P & EMB-110P1 (both passenger and cargo transport versions are included). Plus, an accurately rendered 3D virtual cockpit, with virtual cabin included.
- Highly detailed and optimized 3D models, while keeping good look-and-feel.
- Full MSFS SDK-compliant development, featuring 3D models in glTF format, HTML-based & WebAssembly-based digital gauges, native rain effects and scratch details in the windows, frosting effects in the aircraft structure, and implementation of the new turboprop and Fluid Dynamics simulations featured in the sim.
- **NEW!** Full Cockpit Integration of the GTN 750 & 650 units (from PMS50) and the GTN 750 Xi & 650 Xi units (from TDS Sim Software). Both add-ons are not included within the product and must be downloaded/purchased directly from https://pms50.com and/or https://tdssim.com, respectively. **AVAILABLE ONLY FOR THE PC RELEASE.**
- **NEW!** Fully re-made and more functional Electronic Flight Bag (EFB), featuring a tablet-like GUI, ground handling management, pushback controls, aircraft and tablet settings, and light & dark UI modes.
- **NEW!** Featuring of modern avionics for both VFR & IFR operations, including a more capable autopilot module, and a functional Weather Radar.
- 9 liveries from different EMB-110 operators worldwide, plus white liveries with customizable tail number in each variant.
- Interactive checklists experience included.
- Custom-coded animations virtually everywhere in the aircraft, including doors and side windows in the flight deck.
- Authentic Wwise-based PT6A-37 engine sound-set and cockpit sounds.
- VR experience included.

Acknowledgements

For this development to succeed, there must be a great commitment to deliver a high-quality, fully functional product.

First and foremost, I want to dedicate the fruits of our labor to God, our Almighty Lord, Our Lord Jesus Christ, the Holy Virgin Mary and the Holy Spirit for their help and constant inspiration and illumination throughout the development process and every day this company has been operating and operates. Without them, this product would not have been possible, and even this company would not operate and succeed as it is now, especially on the hard moments, being the COVID-19 pandemic one of them.

I also want to thank my family and closer friends for their constant motivation and inspiration, as well as everyone in the developers' community for their feedback and technical help and expertise.

I would also like to thank the following individuals, which deserve a special mention, for their time, feedback, patience, and assistance throughout the development and updating process.

- Manecas Cris and Robert Schumacher (followers of ours on Facebook), for their contributions on the aircraft's technical documentation, which made this product and its updates possible.
- Fabio Lagattolla, product user and beta-tester, for his feedback of the product, contributions in technical aspects, constant support, and his amazing liveries artwork, which you can find at **Flightsim.to**. His feedback made possible the updates of the product, and his artwork available to the community made this product to be so popular among the flight-sim community! Thank you so much, Fabio!
- Alan Michael Koenig (Discord user *Sonosusto*), product user and beta-tester, for his feedback of the product, for his explanations of what was missing on the first release, for his suggestions of features that will be included on the road, and for making possible to enhance the user experience of this product.
- Alec Roberts, product user and beta-tester, for his feedback of the product and contributions to technical aspects.
- Product users JayDee, Paulo Marcelo Soares and Tim Wright, for their contributions made that significantly improved important areas of the product that could not been noticed internally during the product's development, such as radios, systems, flight model, etc.
- All the team at PMS50 for their feedback and big help integrating their GTN gauge and its WTT (Working Title Technology) mode, and for their contributions that significantly improved the product, including their autopilot gauge module (APGA).

- All the team members at TDS Sim Software, for their feedback and big help integrating their GTN Xi gauge, and their contributions to improve the product.
- To all the content creators and streamers around the flight-sim community, for their feedback about the product. Their perspectives and reviews helped to shape the product to what it is now. Thank you for your honesty and your help!
- FS Magazin, for their review about the product, which you can read on the June/July 2021 issue. Their perspectives helped to shape the product. I hope to continue being in touch with them in the future!

Finally, a special mention to the teams at Microsoft and Asobo Studio, for their constant dedication to bring such a great flight simulation software, maturing it with every update, and for the care they have to users and developers, listening to our feedback and requests. They deserve a big applause!

Without any of the previous individuals, it would not be possible to bring you such a great product.

Thank you all very much!
May God & The Holy Virgin Mary bless you all!

Sincerely,
Carlos D. Gonzalez
C.E.O. & Lead Developer

Purchase, Installation & Updates

Purchasing and installing correctly the product is always the very first step to get airborne and into the action.

For PC users, you can purchase the **EMB-110 Bandeirante for Microsoft Flight Simulator** from either of the following third-party stores:

Or you can even purchase the product directly from the in-game marketplace, which applies for both PC and Xbox. If you directly purchase the product from the Microsoft Store version of the simulator, you automatically have the product available for both PC and Xbox (if you already use the **Xbox Series X|S** console and the simulator is installed on your console) with just one purchase.

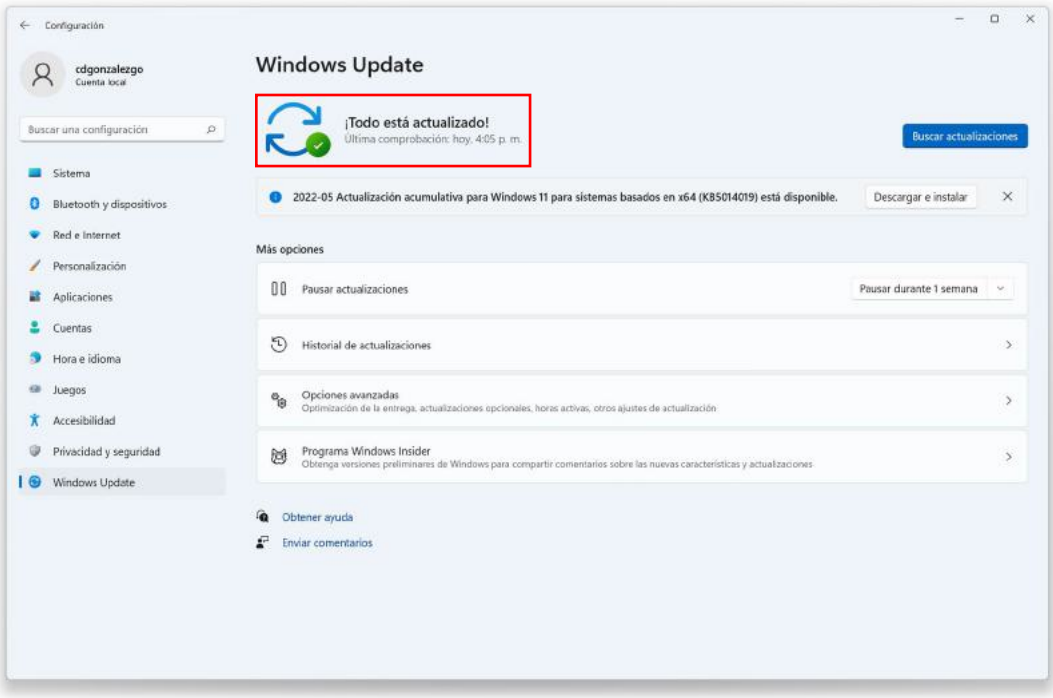
Remember that, by downloading and installing the product from whichever the store you chose to buy the product from, it is assumed that you accept all the terms of the End-User License Agreement (EULA), which you can find on our main website.

Please follow the pre-installation checklists found below, which will help you to avoid any potential problems that may prevent you from enjoying our product(s), independently of where you purchased from. We **strongly** recommend you follow these, prior to install the product. Also, please take a moment to review the **recommended system requirements**, in order to correctly install the product. Remember that **Microsoft Flight Simulator** requires at least **Windows 10 version 1909 (November 2019 Update)**, as a minimum for the operating system side.

Pre-Installation Checklist (PC)

NOTE: If your PC has multiple user accounts, please make sure you are performing these operations from an account with administrator privileges. If you are not logged into a user account with such rights, please log into the administrator's account. Additionally, DO NOT put your PC in sleep or hibernation modes while performing the MSFS updates operations, as this will damage your MSFS setup!

1. Make sure your **Windows 10** or **Windows 11** installation is up to date. For this, go to the Settings app by pressing **Windows key + I**, or by clicking on the gear icon on the Start menu. Then go to *Updates & Security* > *Windows Update* (Windows 10) or the *Windows Update* tab (Windows 11), and check for updates from the Windows Update section.
   If the Windows Update page does not read "**¡You're up to date!**" like in the figure below, this means you have any pending updates. Please follow the on-screen instructions to install any pending mandatory updates in the queue and restart your PC if required. You can dismiss the optional updates.



NOTE: If you are up to date on Windows Update, but you get notifications about a newer Windows 10 or Windows 11 feature update available or the availability of the Windows 11 upgrade (in case your system runs Windows 10), you can dismiss those if you would like. However, we strongly suggest you to have the latest Windows 10/11 feature update available installed on your system.

2. Make sure your PC drivers (especially graphics) are up to date, and that the drivers installed are supplied by the manufacturer.

   If your PC is custom-built, and you need to update your graphics drivers, go to NVIDIA or AMD websites, search for your exact graphics card model, download the current drivers, and follow the on-screen instructions given to install or upgrade the graphics drivers. **If your PC (desktop or laptop) is pre-built by a manufacturer (such as Dell, Lenovo, etc.), you must go to the aforementioned manufacturer's website into the respective Technical Support section, and follow the instructions given to upgrade your PC drivers.**

   Please **DO NOT** let Windows Update install drivers, as these will cause you to run into unexpected issues, especially with the sim.

3. Temporarily disable your antivirus software, so that it will not make any conflicts during the entire installation process. **Make sure to re-enable the antivirus once the product installation finishes.**

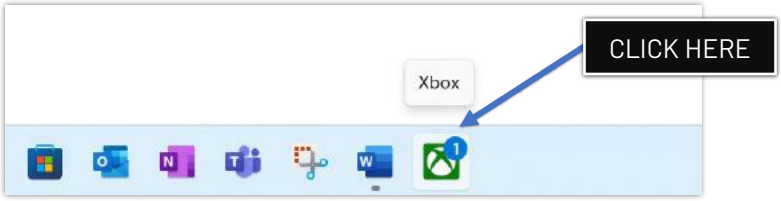
4. We **strongly** recommend you use the latest ***stable*** build of **Microsoft Flight Simulator** instead of its beta builds, unless you know what you are doing, and want to help us with valuable feedback in order to improve the overall product experience and/or fix potential issues before the release of a MSFS SU (Sim Update) or AAU (Aircraft & Avionics Update). If you do not want to contribute with feedback nor participate in the MSFS beta-testing program, please follow the respective opt-out instructions given by Microsoft.

5. Make sure **Microsoft Flight Simulator** is installed and up to date. Please follow the instructions given below, depending on where you acquired your MSFS license from.

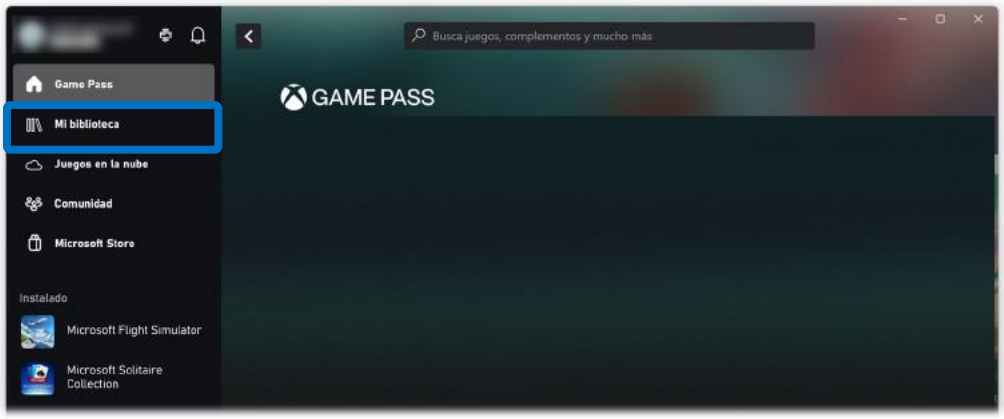
   NOTE: If you purchased the MSFS license from Microsoft Store, you must update the sim exclusively from the Xbox app, for which it must be installed and up to date from Microsoft Store. Remember to be logged into the same Microsoft account used at time of purchase of your MSFS license, and where all the sim's data is synced.

   For **Microsoft Store** users:

   - Go to the **Xbox** app on your Windows 10/11 PC. You should find this icon on your taskbar, like in the figure below. If it is absent (maybe because it has been unpinned from the taskbar after installing Windows), open the Start menu, type **Xbox**, and hit Enter.



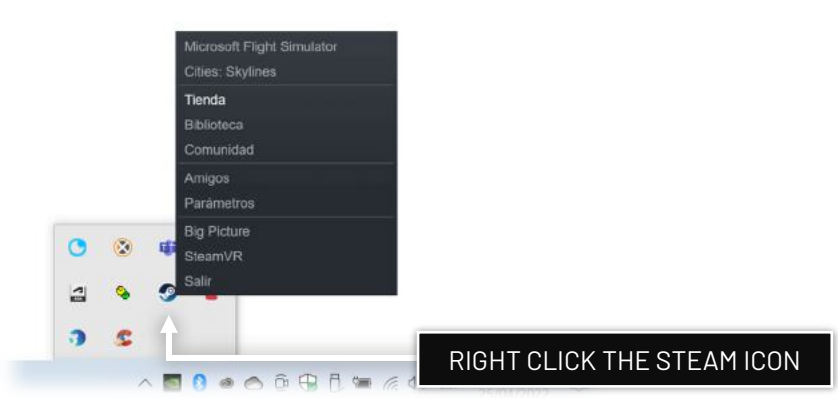
   - Then, go to **My Library** > **Manage Installations**, and search for **Microsoft Flight Simulator** on your library of installed games. Click on the Update button to download the update.



- Once the download has finished, click on **Play**, and proceed to the next step.

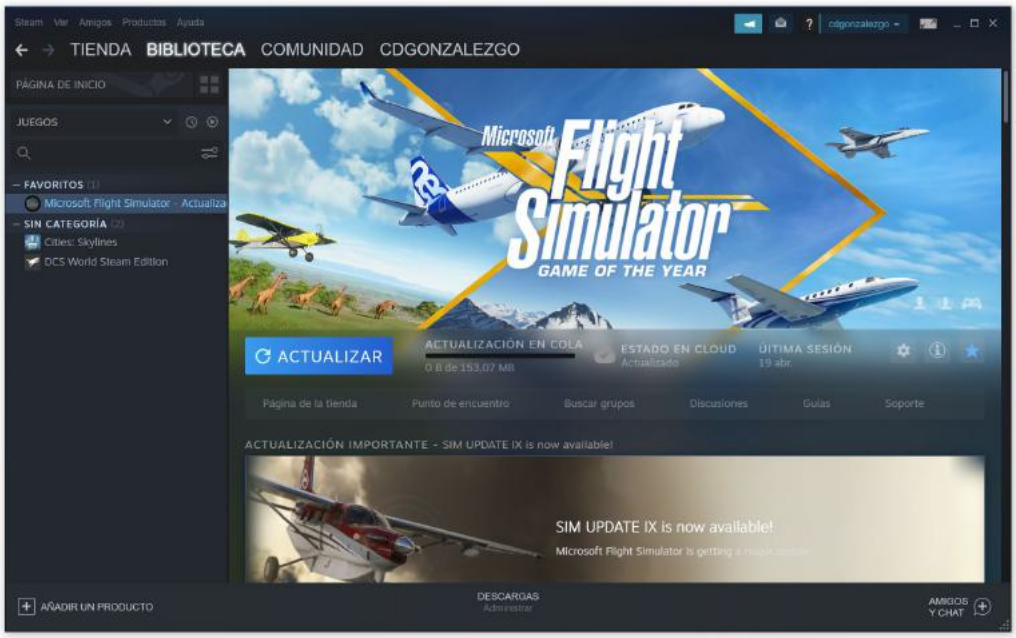
For **Steam** users:

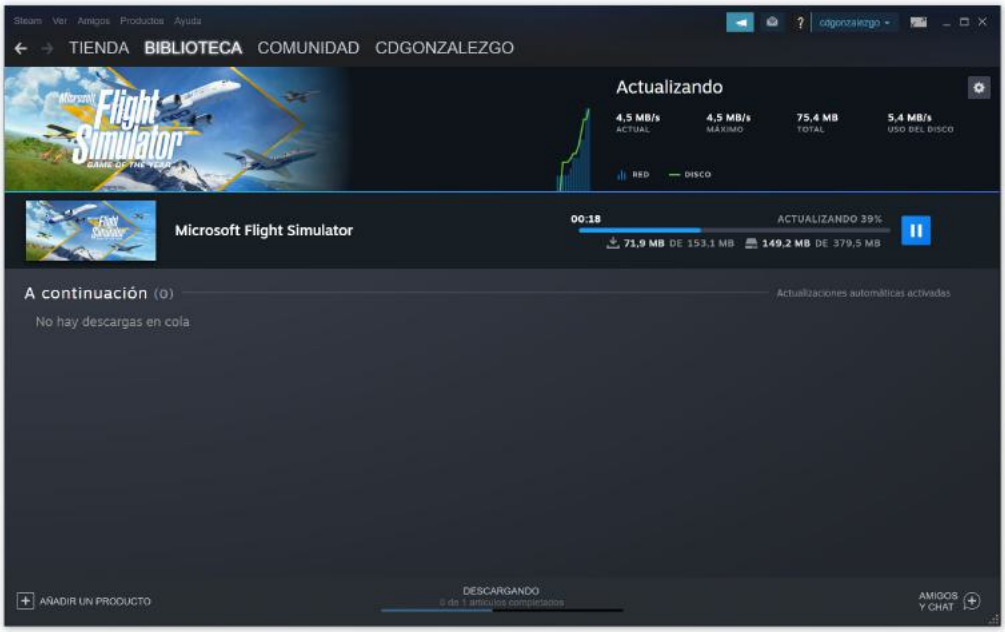
- Go to the **Steam** main window, by right clicking the Steam icon on the system tray and select **Library** from the context menu.



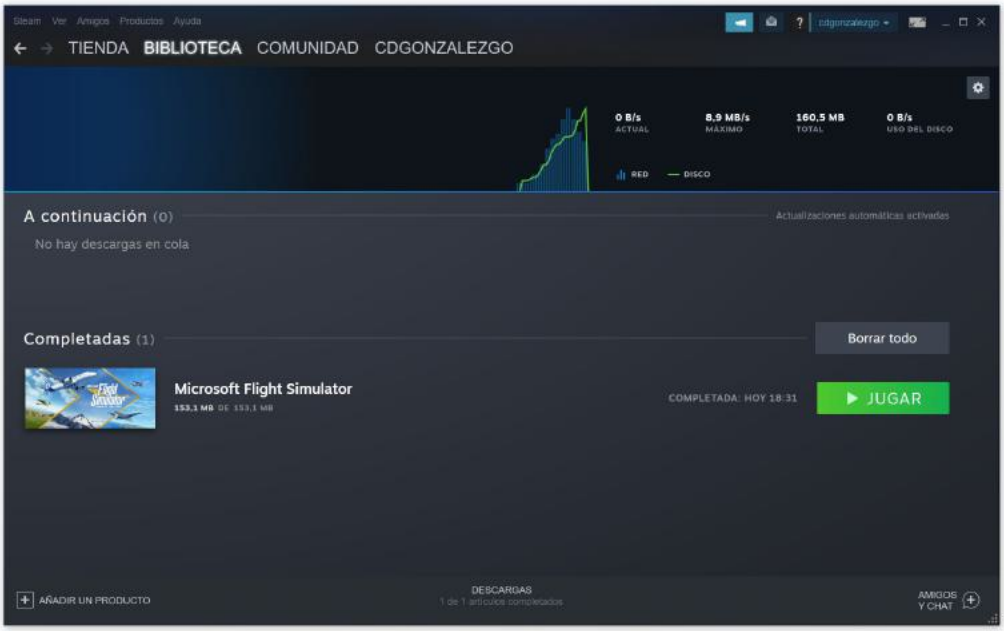
- Click on **Microsoft Flight Simulator**.

- If there is an update, you should see a blue button with a refresh icon. Click on the title logo, then click on **Update** and wait until the sim's update is fully downloaded and installed from the Steam's downloads queue.





- Once the download has finished from Steam, run the game by clicking on the **Play** button, or by clicking on the **Microsoft Flight Simulator** option from the system-tray's context menu. Then, proceed to the next step.



6. Once **Microsoft Flight Simulator** has been updated from the Xbox app and/or Steam, run the simulator, download, and install any pending content updates you may have. This will also make sure that all common dependencies that the product heavily relies on, such as default GPS units and radios, are up to date.

7. If you purchased our product from third-party stores, please make sure **Microsoft Flight Simulator** is not running. In case it is running, close the sim by clicking on **Quit to Desktop** in the main menu and selecting **Yes** when prompted. Otherwise, if you purchased the product from the in-game marketplace, please skip this step and proceed with the steps given in the section **Installation & Upgrade from the In-game Marketplace**.
   NOTE: DO NOT CLOSE THE SIM BY PRESSING ALT + F4, BY CLICKING THE X BUTTON ON THE WINDOW'S TITLE BAR, NOR BY CLICKING THE GAME'S ICON ON THE LEFT CORNER OF THE WINDOW'S TITLE BAR!

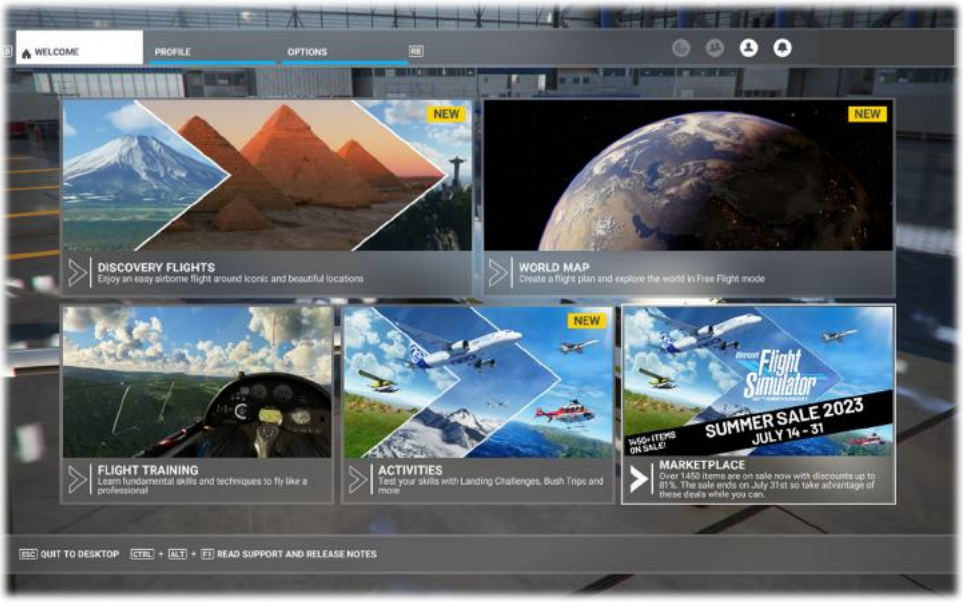
Pre-Installation Checklist (Xbox)

1. Make sure your **Xbox Series X|S** console is connected to the Internet. We **recommend** you to have your console online via **wired connection** (Ethernet) instead of a **wireless connection** (Wi-Fi), since this will enhance the connection bandwidth on your console and make the downloads faster in consequence. Then, perform the steps below for testing internet connectivity.
   - Press the **Xbox** button on your controller to open the guide. If you have a keyboard connected to the console, you can also press the **Windows** key to open it.
   - Go to the **Profile & system** tab and select **Settings**.
   - Go to **General > Network settings > Test network connection**.
   - It should read "**Your console is connected to the Internet**"; select **Continue** and go to the next step. If you do not read the previous message, you might need to review your networking setup.

2. Make sure your **Xbox Series X|S** console has the latest system software installed. The Xbox system updates are automatically downloaded and installed in the background unless you disabled automatic updates in your console. Please perform the steps below, regardless of whether you enabled or disabled automatic system updates for your Xbox console.
   - Press the **Xbox** button on your controller to open the guide. If you have a keyboard connected to the console, you can also press the **Windows** key to open it.
   - Go to the **Profile & System** tab and select **Settings**.
   - Go to **System > Updates** and wait until your Xbox console checks for updates. If your console reads "**No console update available**", this means your Xbox console is up to date and has the latest system software installed; proceed then with Step 3. Otherwise, if your console reads "**Console update available**", select the respective button to begin the update and follow the on-screen instructions given until the console is up to date.
3. Make sure **Microsoft Flight Simulator** is up to date on your Xbox console.
   - Press the **Xbox** button on your controller to open the guide. If you have a keyboard connected to the console, you can also press the **Windows** key.
   - On the guide, select **Home** to go to the Xbox main dashboard. Once you are on the dashboard, select **My games & apps > Manage > Updates**.
   - If MSFS appears automatically in the updates queue, this means MSFS is outdated. Press the **A** button from your controller to begin downloading the MSFS update and wait until it finishes, since this might take longer. Remember that Xbox updates both the MSFS core and its content, as well as the additional WASM support plugin. Skip this step if MSFS does not appear on the queue.
4. Reboot your Xbox console once you have performed the steps above.

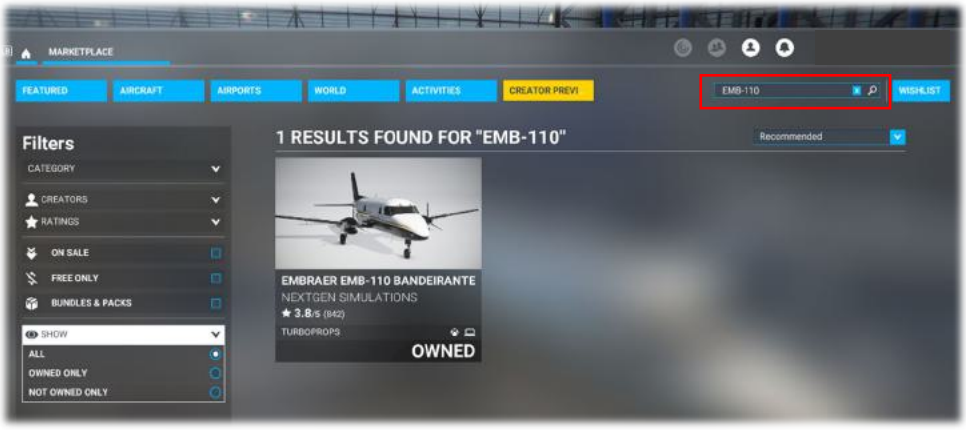
Purchasing, Installing & Updating from the In-game Marketplace (Windows, Xbox Console & Xbox Cloud Gaming)

1. Make sure you are in the MSFS's main menu, and in the **Welcome** tab. Then, click on the **Marketplace** button.



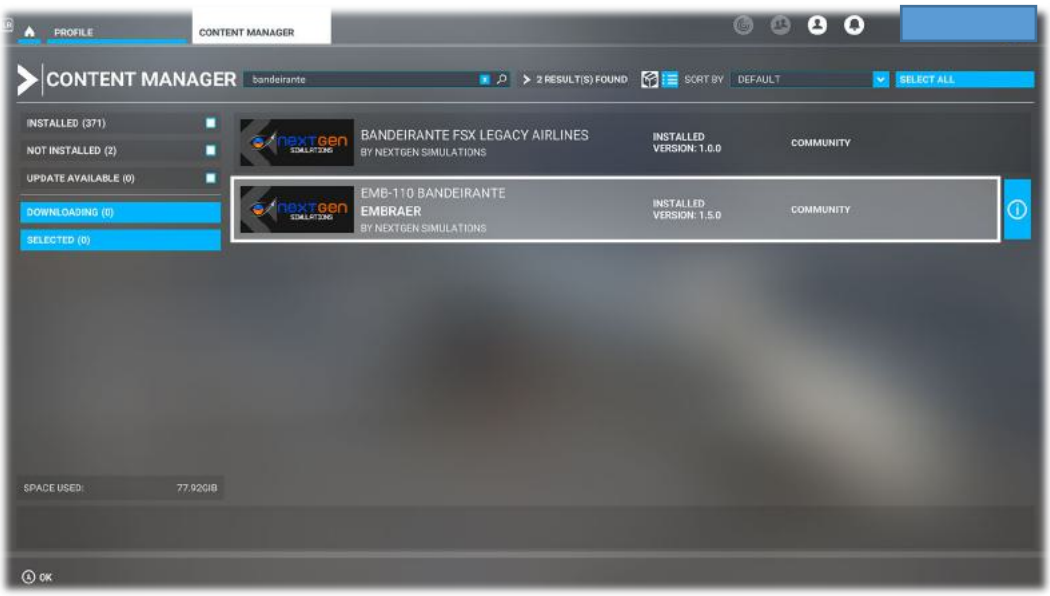
2. Then, go to **Aircraft > See All**.

3. Type '*EMB-110*' on the Search box.

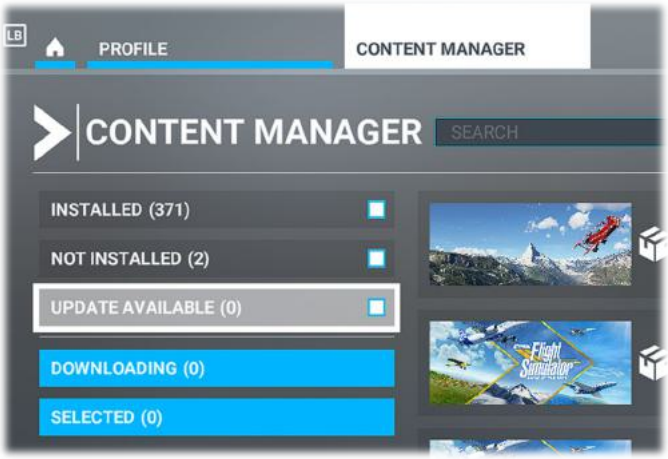


4. Click the **Embraer EMB-110 Bandeirante** box on the Marketplace list.

5. Click on the **BUY AND DOWNLOAD** button. If it does not work, click on **BUY**. Then, follow the given on-screen instructions for payment and order placement. In case the word **OWNED** is read on the price tag, this means that you already own the product, and you can skip to the next step. In case you experience issues during the purchase process from the marketplace, please review the troubleshooting articles on the **MSFS's official Zendesk site**. There, go to **Microsoft Flight Simulator > Purchase issues**, and look for the issue you experienced. Please take note that any problems related to the Marketplace purchase process must be resolved by Microsoft, and not by us. In case you were trying to purchase the product from PC and not from Xbox (including Cloud Gaming on PC), filed a support request to Microsoft on their MSFS Zendesk site, and you have not received an answer within 14 calendar days, please contact us.
6. Once the purchase has been successfully completed, and if you clicked on **BUY AND DOWNLOAD**, the download should begin immediately. Otherwise, if you clicked on **BUY** or purchased the product and you are reinstalling it, click on **DOWNLOAD**.
7. Once downloaded, click on **GO TO CONTENT MANAGER**, and check that the **EMB-110 Bandeirante** is listed there.



8. In case there is an update to our product, make sure you are in the MSFS main menu. Go to the **Profile** tab, then go to **Content Manager**. Once there, filter the list by packages with updates pending, by pressing the **UPDATE AVAILABLE** button on the left side of the screen. There, check the EMB-110 and click the Update button to begin updating the product.



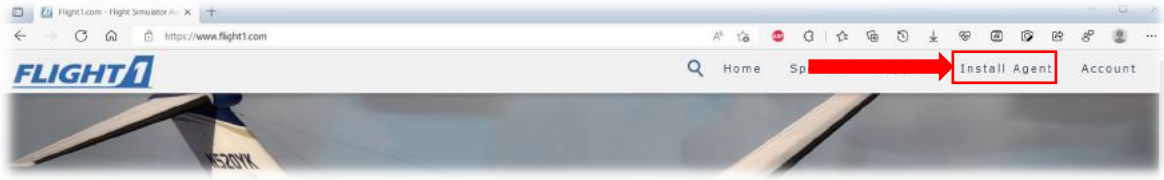
9. Once downloaded/updated, you are now ready to enjoy.

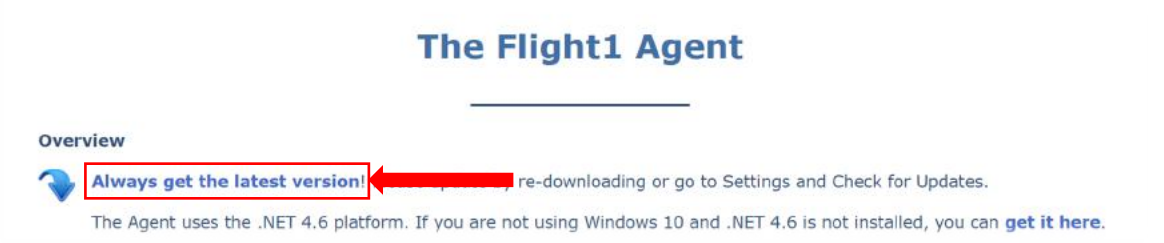
Purchasing & Reinstalling from Flight1 (Windows)

If you choose to purchase and download the product directly from **Flight One**, you firstly must download their **Purchase Agent** application, which is Flight1's main eCommerce platform to buy flight-sim products. **The purchase process is not done through their website.**

NOTE: If you already have the Flight1's Purchase Agent app installed and you already purchased the product, you can skip to the last step.

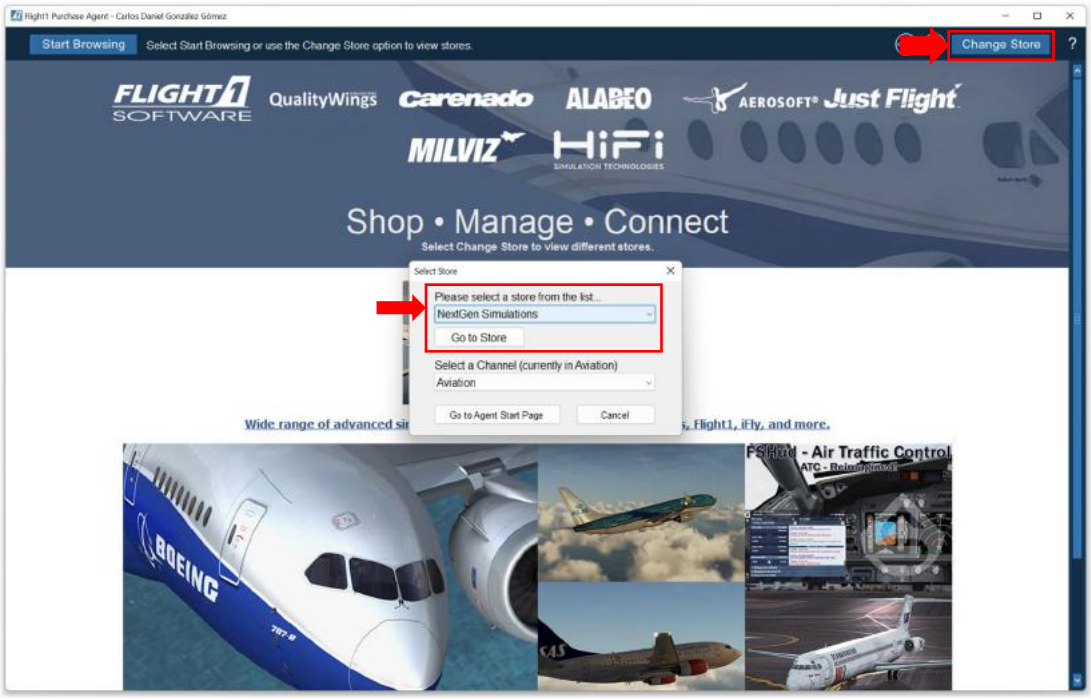
1. Download this app by clicking on the Flight1 logo located in the previous page, or by navigating to https://www.flight1.com > **Install Agent** on your preferred web browser.



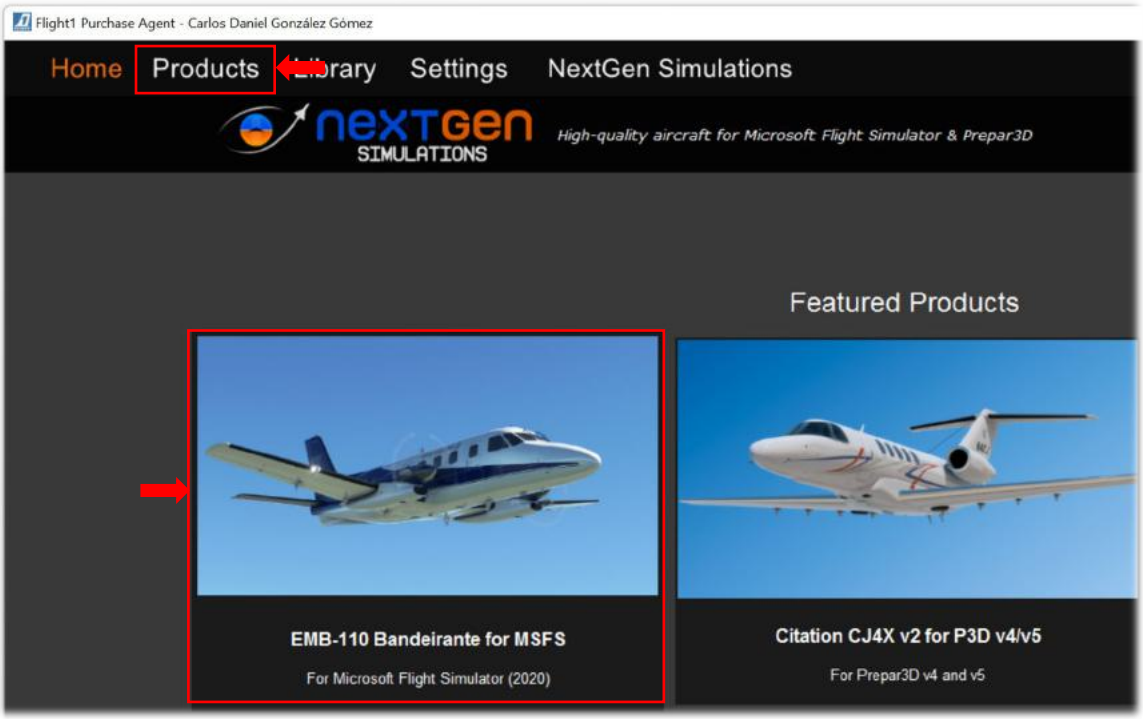


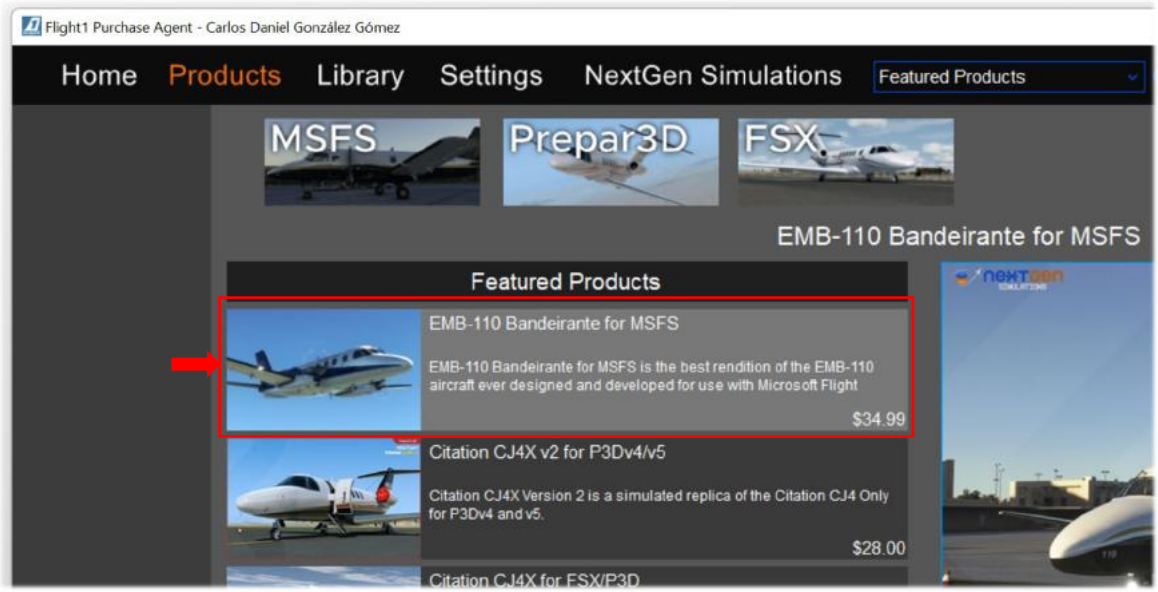
NOTE: Before proceeding, we strongly recommend you perform these steps on a Windows 10 v1809+ or Windows 11 PC, as this app requires *Microsoft .NET Framework 4.6* to be installed on your system. If you are going to perform the purchase from a PC with an operating system older than Windows 10 v1809, you must download and install *.NET Framework 4.6* from the Microsoft's Download Center. For installation, you must have Windows 10 v1909+ or Windows 11 v21H2+ installed on your target PC, as per the system requirements for Microsoft Flight Simulator.

2. After downloading and installing the app, log into your Flight1 account (or sign up, if you do not have any Flight1 account yet) through the prompt that appears on Agent's startup.
3. Once the main screen appears, click on **Change Store**, select **NextGen Simulations** from the stores drop-down, and click on **Go to Store**. You should see the NextGen's storefront after a few seconds.

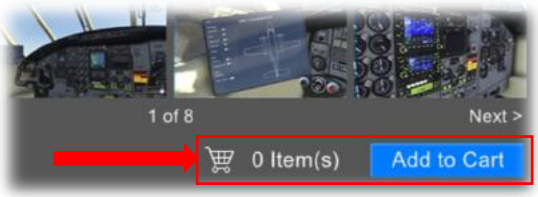


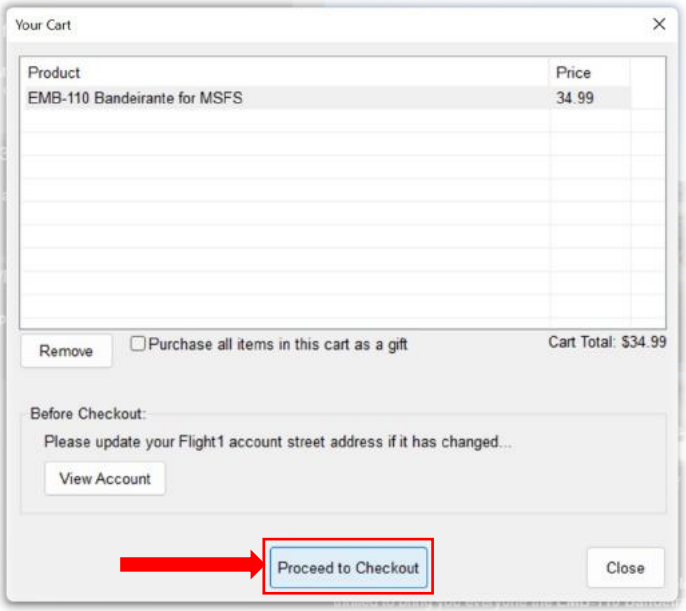
4. Now, click on the product featured in the home page. Or go to the **Products** tab and highlight the product from the list on the left side.





5. Click on **Add to Cart**, and the product will be automatically added to your Flight1 purchase cart. Once you are ready to place your order, click on the cart icon to proceed with checkout, and follow the on-screen instructions given.





6. Once you have performed the checkout and your order has been successfully placed, or if you already purchased the product and want to proceed with its reinstallation, go to the **Library** tab and search for the product on the list of purchased products. Highlight it and click on **Download**. This will download the installer EXE of the product. Once downloaded, the installer will be automatically launched and you can proceed with the installation, by following the instructions given in the next section.

Please remember that any problem with the Flight1 agent and/or its purchase process must be directly communicated to **Flight One** through their authorized support channels.

Installation from the Installer Executable File (Just Flight & Flight1)

NOTE: The installation wizard has been temporarily replaced by a 7-Zip SFX executable, in order to properly extract the product's package, and while the installation experience issues, previously reported by other customers, are being reviewed and fixed. We apologize for all the inconveniences generated.

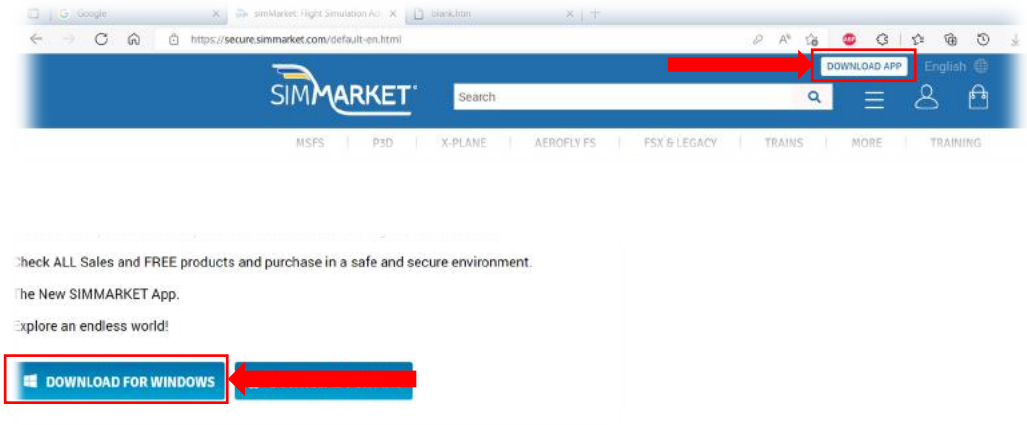
1. Make sure you have downloaded the installer EXE from the store where you purchased the product from. Once downloaded, run the installer EXE.
2. In case a SmartScreen protection dialog (with the "Windows protected your PC" title) appears, press the **More info** hyperlink, then click the **Run anyway** button.
3. In case you have the User Account Control (UAC) enabled, accept the prompts that may appear on the road.
4. You should be prompted where to extract the files. For this, you **MUST** know the location of your MSFS Community folder. Due to the reasons explained in the note above, there is no automatic detection until the installation UX issues, reported by other users in the past, are reviewed and fixed. Until then, please locate manually your MSFS Community folder. Then press **Extract**.
5. Once extracted, run MSFS and verify that you have the aircraft listed on the **Select Aircraft** dialog.
6. You are now ready to enjoy!

Installing & Updating from the SimMarket app (Windows)

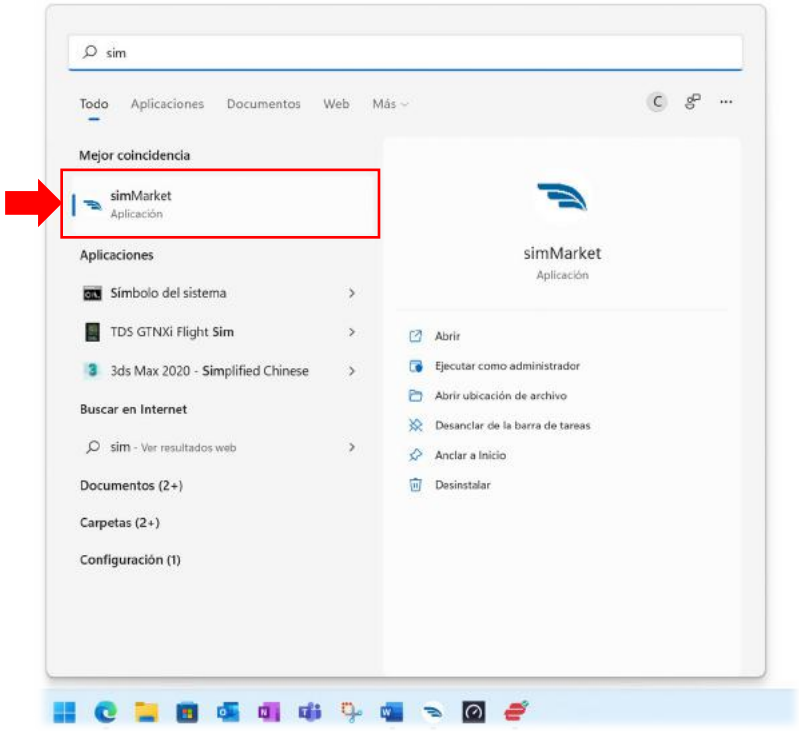
Starting with the EMB-110 version 1.5.3 and effective with our future products, SimMarket users are **required** to download and install the SimMarket desktop application, in order to install our product(s).

NOTE: Before proceeding, please make sure you perform the steps explained here on your target Windows 10 / 11 PC, and that it is connected to the Internet. The purpose here is to download a ZIP containing the product's package and automatically extract the aforementioned ZIP file into the Community folder of your MSFS setup.

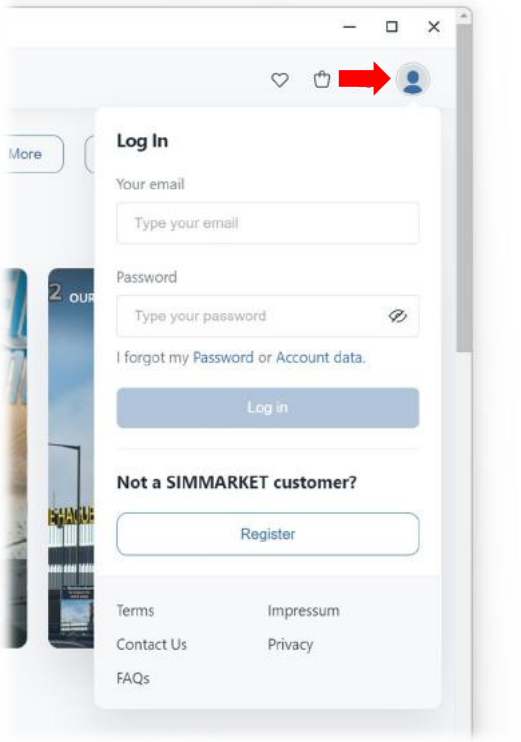
1. In case you already have the SimMarket app installed on your system, please skip to step 2. If you have not downloaded nor installed the SimMarket App, you must download it and install it. To do so, go to https://www.simmarket.com > Download App, and click on the ***Download for Windows*** button.
   Once downloaded, run the EXE file, and wait until the SimMarket app is installed. You should see the app's home page after a few seconds.



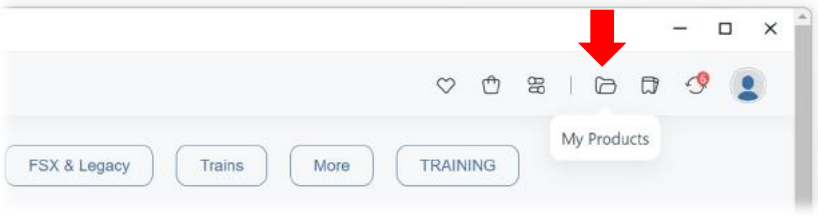
2. If the app is already installed, go to the Start menu, type **SimMarket** in the search box, and launch the app.



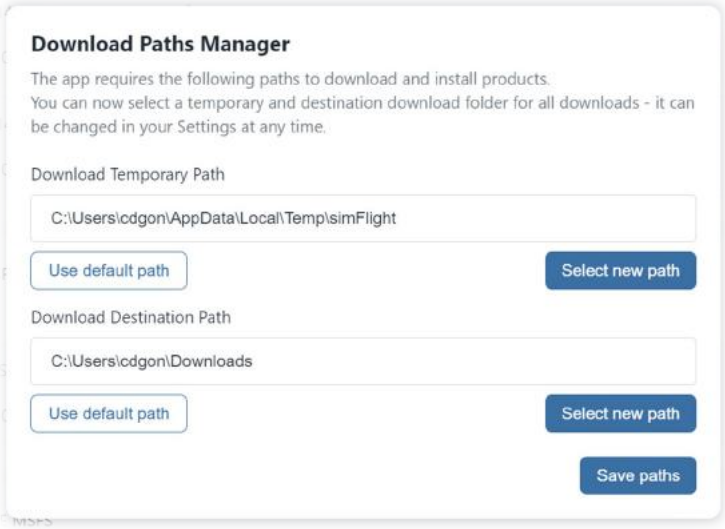
3. Once downloaded, installed, and/or launched, you should see the app's home page. If you are logged into your SimMarket account, please skip to ***step 4***. Otherwise, you must log into the same account used when the product was purchased. To do so, click on the avatar icon, enter the email address used at time of purchase, and its password. Then, click on **Log in**.



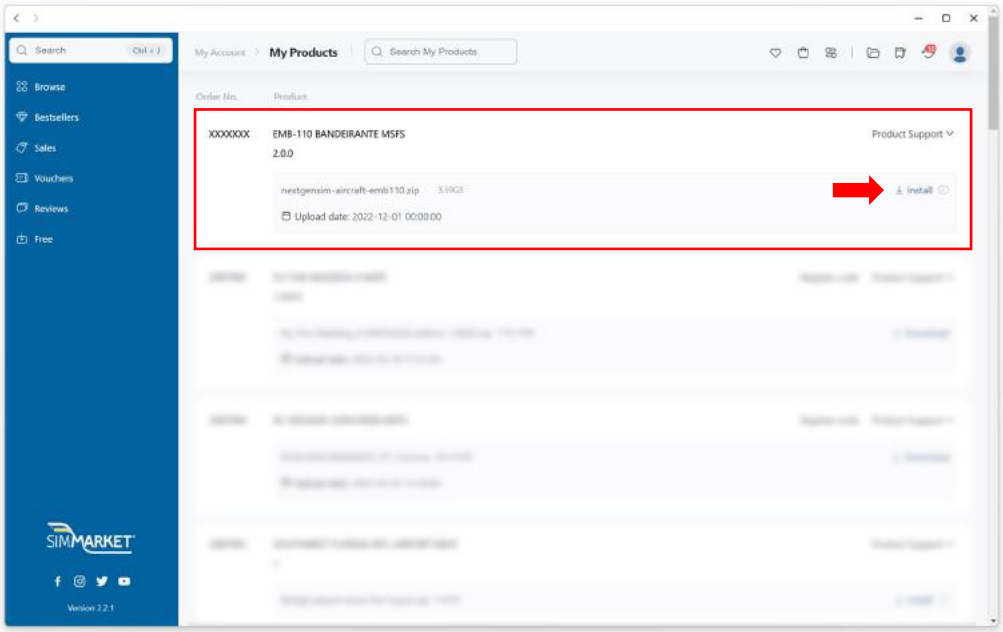
4. Once you have logged into your account, go to **My Products** by clicking on the folder icon, like in the following screenshot.



5. If this is your first time setting up the app, you must specify the default folders where the SimMarket app will download your products from now on. Please follow the on-screen steps given in the **Download Paths Manager** popup (like in the following screenshot) and click on the **Save paths** button once you have reviewed this information.



6. Search for the product on the **My Products** page. You can also use the search box for this matter. For this product, you can type **BANDEIRANTE**, and you should see the product listed. Once you have found it, click on **Install**.



7. Please wait until the product has been downloaded and installed into your **Community** folder and close the simMarket app once done. Then, run MSFS.

If you are upgrading the product to a newer release, the app automatically deletes the old version and downloads/installs the newer version for you, in a similar way as how MSFS upgrades its base packages

to newer releases. In case you require easy access to our support channels, you can click on the **Product Support** hyperlink; this will open a flyout popup where it brings the URLs to the support channels that we have available for you.

Standard Locations of the MSFS Installed Packages

For **Microsoft Store / Xbox Game Pass** users:

`%USERPROFILE%\AppData\Local\Packages\Microsoft.FlightSimulator_8wekyb3d8bbwe\LocalCache\Packages`

For **Physical DVD** users:

`%USERPROFILE%\AppData\Local\MSFSPackages`

For **Steam** users:

`%USERPROFILE%\AppData\Roaming\Microsoft Flight Simulator\Packages`

Reinstalling from Flight1's Purchase Agent

In case you purchased the product from **Flight1**, you must have the **Purchase Agent** app installed, and you must log into your Flight1 account. Once you already are in the Purchase Agent main page, click on the **Change Store** button, then select *NextGen Simulations* from the *'Please select a store from the list...'* drop-down and click on **Go to Store** to let the Purchase Agent app redirect you to our store.

Then, you click on the **Library** tab and search for the product on the list of purchased products, highlight it, and click on **Download**. This will download the installer EXE of the product. Once downloaded, the installer will be automatically launched and you can proceed with the installation, by following the instructions given in the section above.

Please remember that any problem with the Flight1 agent must be directly communicated to **Flight One** through their authorized support channels.

Post-Installation Warning

The first-time load of the aircraft in the sim after product's installation or upgrade can even take 5 or more minutes, even on high-end PCs. If this happens, please DO NOT do anything! Sit back, relax, and take a break in the meantime.

The reason for this is because MSFS needs to internally compile the WebAssembly (WASM) code bundled with the aircraft (especially the gauges) for future re-usage. This will only happen when you (re)install the product or update it, or after you (re)install the sim. Starting from the second load and beyond, this will not take that long anymore. We really appreciate your patience in this regard.

If you are user of the **GTN Xi** gauges from **TDS Sim Software**, you might also experience this longer loading after (re)installing or updating that add-on package.

Product Documentation Structure

This may seem like a lot of information, but the documentation was compiled and written in order for you to clearly understand how to use this aircraft. Following is the list of included manuals within the product, plus a brief summary about how to get the most out of these manuals:

- **User Manual:** (You are reading it now!) In this document, we have collected into one place as much information about how to use this EMB-110 Bandeirante as possible. Here you will find the most important product stuff such as the aircraft features, the explanation of the flight instruments, development changes log, support details, etc.
- **Checklists:** For those who are familiar with this aircraft or if you want to follow real procedures like the real pilots, this manual is for you. This section of the general product documentation should be thought as a step-by-step guide to operate the aircraft. No matter if you start your flight in Cold & Dark condition or if you are on the runway and ready for takeoff, this guide gives you a step-by-step process to take you to the next phase of flight. Take into account that you can even follow those procedures as well with the help of the Interactive Checklists feature bundled with Microsoft Flight Simulator.

Requesting Technical Support

Support for this product is done by us, **NextGen Simulations**. If you need assistance with our product(s), you can use either of the following authorized channels:

Our online forums, accessible by clicking this link: https://www.nextgensim.com.co/forums
You can open a ticket there and tell us what your issue is. Please take note that personalized support can be very slow, especially when the entire team is busy (for example, when a major release is due to be publicly available). We normally get back to you within 1 to 3 business days as much.

Our Discord Server, accessible via this URL: https://www.nextgensim.com.co/Social/Discord.
Use this channel when you require a faster response. Ask your question there, and the users around the community answer your concern, while we are busy or sleeping. We also occasionally answer questions dropped on our Discord server, for knowledge of the entire users' community.

Before requesting support, please take a moment to review the guidelines found on our forums. If you are Xbox user, please check the following guidelines. There is also a **Knowledge Base** available for you, whenever you need it. It contains answers to the most asked questions and issues from previous users, and which maintains constantly updated, not only for this product but also for the other NextGen products we have publicly available.

SUPPORT REQUESTS MADE ON DIFFERENT CHANNELS THAN THE ONES MENTIONED IN THE PREVIOUS PARAGRAPH, SUCH AS VISITOR'S POSTS, COMMENTS, OR DIRECT MESSAGES (DMs) ON FACEBOOK OR INSTAGRAM WILL BE COMPLETELY IGNORED.

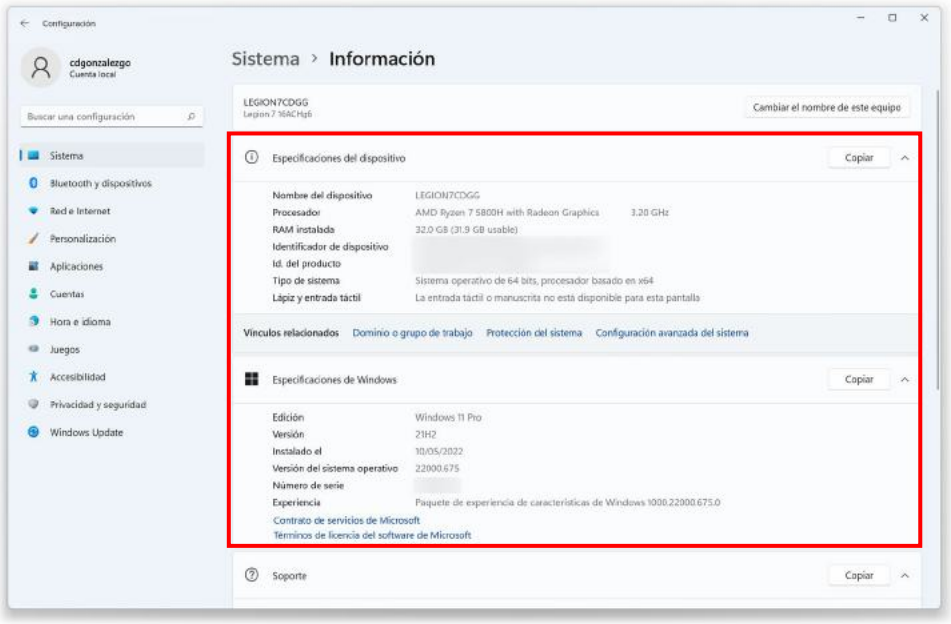
Additionally, when requesting support for the product for the first time, it is MANDATORY to provide the purchase information (i.e., where you purchased the product and its order number). Because this information is personal and sensitive for the public, this must be sent via private message. If this is NOT included, support will NOT be given. This is a measure to fight against software piracy. We DO ONLY bring support to legitimate users of the product. If the product was purchased from the Marketplace, you MUST supply the respective proof of purchase or a screenshot of the Content Manager and/or the product's description with the price tag reading OWNED.

Also, if you can provide the following information with your support request, it will help a lot.

- Currently installed MSFS version number (e.g.: 1.24.5.0), and platform (Microsoft Store, Steam, Physical DVD, Game Pass, Xbox Cloud Gaming or Xbox Series X|S).

- Currently installed version of Windows 10 or Windows 11. To check which release and edition of those operating systems you have installed, please do the following:
  - You can press **Windows key + R** on your keyboard, type "***winver***" and hit Enter. The **About Windows** dialog like the one in the next figure should appear, where you can check the version that you have installed. The information highlighted in the red-bordered rectangle is the most relevant for us.

  - Or, you can go to the Settings app, then go to *System* > *About* and check on the **Windows specifications** group, just like in the figure below. Again, the information highlighted in the red-bordered rectangle is the most relevant for us.



- Your system specifications, including hardware info such as CPU and graphics card. You can also save the system information (as plain text or XML format) gathered by an application called **Speccy**, which you can download from https://www.piriform.com, and attach it in your support ticket.
- If you made recent changes to your PC hardware, upgraded the operating system (e.g.: from Windows 10 21H2 to Windows 11 22H2), updated MSFS, installed any OS update from Windows Update, performed any drivers' updates, or made any change to your PC in general, do not hesitate to let us know.

Help us help you. A vague description of your problem will hinder our ability to assist you and only cause delays in resolving them. Additionally, please be kind and respectful when requesting support. The use of rude or abusive language will cause the support team **NOT** to proceed with your request and terminate it without prior notice.

Remote Desktop-Assisted Support Guidelines

Depending on your scenario, its nature, and severity, we may require reviewing your issue through a screen sharing (a.k.a. remote desktop) software.

For these situations, we are restricted to exclusively review and modify (if necessary) only our product(s), files related to your MSFS setup, your MSFS settings, relevant Windows settings, and history of installed Windows updates, to get the product subject of your support request up and running as

expected. We will **NEVER** go beyond the allowed scope (e.g., messing up your private/personal files, including those containing sensitive information, or similar actions). In addition, the remote desktop software used is properly configured for privacy protection in mind. During the remote desktop session, from the moment we begin inspecting and until the moment we log out of your system, we **strongly** recommend you to be in front of your computer and take note of what we are doing to fix your problem, so you can troubleshoot it by yourself the next time it occurs.

It will be understood as that you do not require our assistance and your support request will be closed, in the event you refuse to proceed with the remote desktop support when required for your issue to be correctly reviewed, diagnosed and troubleshooted.

Read Before You Request for Support

This applies not only for this product but also for future aircraft products.

Dear user,

Developing this documentation and making it as easy to understand as possible for everyone was not an easy task, but we put a lot of time and effort in that matter. We are fully committed to help you and improve our work every day, because communication between the development team and you (the customer, end-user, and flight-simulator pilot), is an important key for all of us at NextGen Simulations.

While you become familiar with the aircraft and the product in general, I invite you to carefully read and carefully review this documentation, even on your mobile device while you simultaneously have the sim running on your system. It is understandable that you only want to jump ahead into the action and start flying now, and we did a lot for you to do so, but all good pilots put in some level of preparation before every flight and reviewing the documentation can also help you troubleshooting even the most common mistakes on the road. The product's documentation is very easy to understand, and you can also jump to a specific page from the Table of Contents.

Also, please look to the guidelines required for requesting support in case you need assistance to make the product work as expected, and do not forget to be polite on your communication with us, and follow the instructions given by the Support staff, in order to quickly help you to resolve your issue.

Thank you very much for your understanding and your support!
May God and the Holy Virgin bless you!

Kind regards,

Carlos D. Gonzalez
CEO & Lead Developer

Note About Software Piracy

Here at **NextGen Simulations**, we have invested significant amounts of time, effort, money, and licenses in developing, testing, manufacturing, and publishing all our flight-simulation products. This also includes rewarding programmers and artists, whose creativity, talent, and effort contribute so much to the products we enjoy.

Unfortunately, in the world of computers and technology, there are pirates (a.k.a. thieves) that make profit from the sale of others' hard work; even more than the publishers and developers from the sale of their original work, most of the time. Buying or downloading pirated software makes you to be a victim of software counterfeiting, as well as directly supporting these illegal operations. **DO NOT** be fooled by their "free file sharing" concepts. Those so-called "shared files" contain a copy of the product's files, nevertheless, the pirates can also include viruses and hidden threats among the product's files, making your PC to be harmed, damaged, or hijacked to take control of your personal files, with the excuse of helping to maintain this and other illegal operations they do, not to mention that the sites which host the shared files are usually funded by advertising.

The people who significantly suffer from this negative effect are the artists, programmers, and all committed developers, and not only us but also many other developers around the flight-simulation industry are impacted. Piracy and software counterfeiting causes a negative impact to us and our families, especially lots of people whose main incomes are from this work. Please think twice about this.

We kindly ask you to stop supporting those illegal operations and support our work by legitimately buying our products from our authorized resellers. And this applies not only with us, NextGen Simulations, but also with any other developer and publisher around in the flight-sim industry. **DO NOT** expose yourself to the risk of both losing your personal files and being prosecuted.

Additionally, please take note that we **DO NOT** bring technical support to people who did not legitimately acquire the product. Why do we ask for the information of purchase when you request for support, before proceeding? Because this is a measure where we check if the user is legitimate or not, regardless of the DRM measures taken. **So, no purchase information supplied means no support given.**

EMB-110 Historical Background

The EMB-110 Bandeirante (or *Bandit*, which is how it is also known) remains Embraer's most successful commercial aircraft program. Bandeirante stands for **Pioneer** in Portuguese. The new design was developed with the assistance of the well-known French designer Max Holste, and under the supervision of Ozires Silva, a Brazilian aeronautical engineer, following the specifications of the IPD-6504 program set by the Brazilian Ministry of Aeronautics, with the goal of creating a general-purpose light transport, suitable for both military and civilian duties, with a low operational cost and high reliability. The first prototype, with the military designation YC-95, flew for the first time on October 26th, 1968, with two other prototypes built, known as EMB-100. With this, Embraer (or Empresa Brasilera de Aeronautica S.A.) was established in 1969, and development and production of the C-95 became one of the company's first responsibilities.

The first production standard EMB-110 Bandeirante flew on August 9th, 1972, received its airworthiness certification the same year, and entered revenue service in April 1973. Bandeirante models include the 12-seat transport EMB-110, the aerial photography EMB-110B and maritime patrol EMB-111 for the Brazilian Air Force; the initial airline version, the 15 seat EMB-110C; the seven seat EMB-110E executive transport; 18-seat enlarged EMB-110P; convertible passenger/freight EMB-110P1 with larger rear door; the EMB-110P1K and EMB-110K SAR military equivalents to the P1A; and the EMB-110P2 commuter with seating for up to 21. Production of the Bandeirante ceased in May 1990, with the final aircraft being delivered to the Brazilian Air Force, since the company decided to halt production in order to shift focus to the development of its successor: the larger, faster, and pressurized 30-seat EMB-120 Brasilia. Today, the Bandeirante's virtues of reliability and good operating economics means that it remains popular with its operators. On December 15th, 2010, the Brazilian Air Force first flew an upgraded EMB-110 equipped with modern avionics equipment. Designated as the C/P-95, the aircraft has had several new systems installed by Israeli firm Elbit Systems' Brazilian subsidiary, Aeroeletronica. The Brazilian Air Force has an active fleet of 96 EMB-110s.

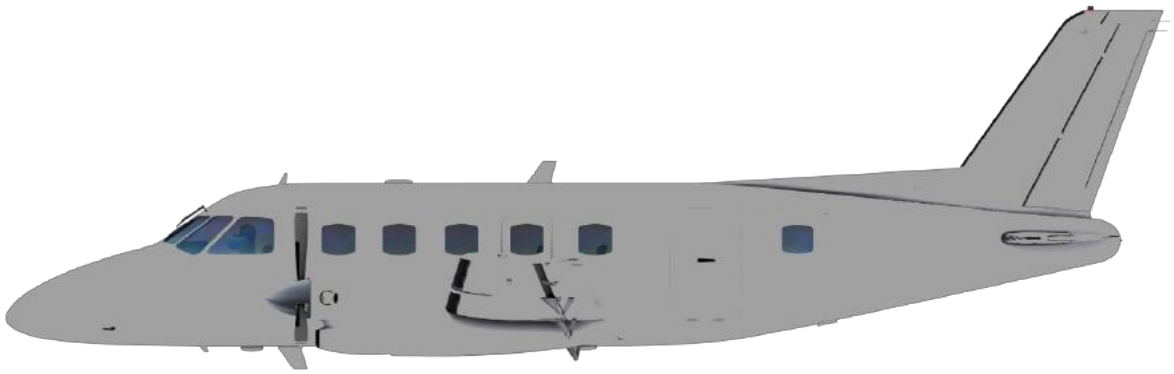
Sources: Wikipedia and Airliners.net

Product Overview

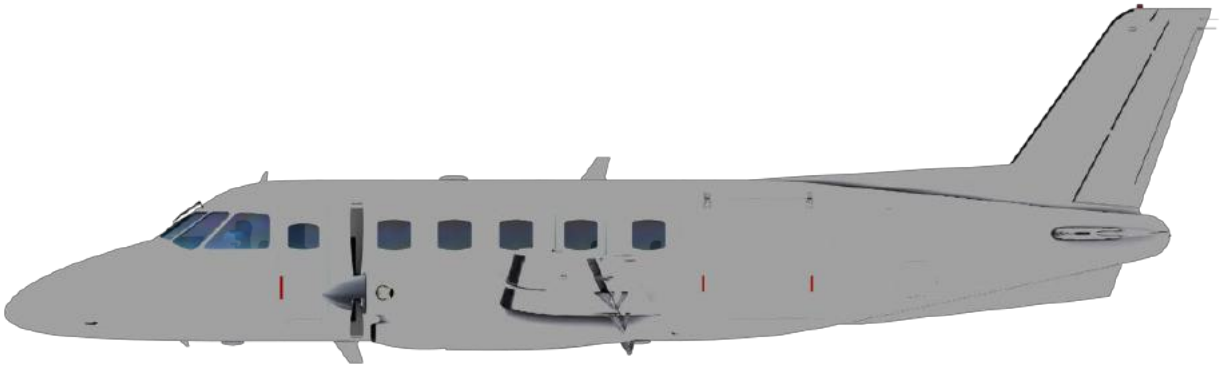
Exterior Models

Three different models are included here.

All models are optimized for better performance while keeping good look and feel. They also feature dynamic reflection, dynamic lighting and full PBR capabilities for greater experience.



Embraer EMB-110P Bandeirante



Embraer EMB-110P1 Bandeirante. EMB-110P1K is the same EMB-110P1, but with closed windows since it is used for cargo operations.

Liveries

Choose from 16 high-quality liveries included in this product.

EMB-110P

Cubana de Aviación

Trans Brasil (Orange/Red Livery)

Trans Brasil (Green/Blue Livery)

White

EMB-110P1

TAG Airlines (Transportes Aéreos Guatemaltecos)

Air New Zealand Link (Circa 1999)

Atlantic Southeast Airlines (ASA)

AIRES Colombia

Loganair

White

EMB-110P1 FREIGHTER

Wiggins Airways

White

Flight Deck

The product only features a 3D virtual cockpit, as Microsoft Flight Simulator does not offer 2D panels as of now.

Flight Management System

EMB-110 BANDEIRANTE FOR MICROSOFT FLIGHT SIMULATOR is proud to feature the regular GNS 430W & GNS 530W replicas bundled with MSFS by default, ready for use at its maximum potential.

Also, **EMB-110 BANDEIRANTE FOR MICROSOFT FLIGHT SIMULATOR** is proud to feature full cockpit integration of the **GTN750 / GTN650** units developed by **PMS50**, and the **GTN 750Xi / GTN 650Xi** units developed by **TDS Sim Software**. The aircraft features the respective GTN and GTN Xi bezels and interfaces with the respective GTN(Xi) gauges. For this to work, it is mandatory to have the PMS50's GTN pack installed on your system, which can be downloaded from https://pms50.com, and/or the TDS GTNXI pack installed on your PC, which can be separately purchased from https://tdssim.com.

The GPSs interact with the autopilot to provide route lateral navigation (LNAV). The NAV mode of the autopilot, when switched to GPS navigation source in the Course Deviation Indicator (CDI), directs the Autopilot to fly the flight plan route automatically. Users can use the GNS 530/430, the GTN 750/650 or the GTN 750/650 Xi to manually create flight plans without using the MSFS default flight planner.

About the navigation database, the sim stock GNS 530W & GNS 430W, as well as the PMS50's GTN750 & GTN650 (if installed) utilize the Microsoft Flight Simulator GPS database to maintain consistency with the world you are flying on. If you have the TDS Sim Software GTNXI installed and selected on our aircraft, please take note that the navigation database used is different from the MSFS standard navigation DB (also known as AIRAC), which is the same database used for real-life Garmin GPS devices, and which are constantly updated by TDS within the GTNXI.

NOTE FOR XBOX USERS: As of the time of writing, the PMS50 GTN750 add-on is not available on the Xbox Marketplace, although it is developed entirely in HTML and fully based on the MSFS avionics framework. Additionally, the TDS GTNXI is not available on the Xbox ecosystem either, because it heavily relies on the Garmin PC Trainer, based on how the GTNXI works, for which it can only be run on Windows. In consequence, neither of the third-party GPS units supported on this product are available on Xbox.

Systems Programming

The real-life EMB-110 is a complex aircraft in terms of systems, especially autopilot, but here the EMB-110 Bandeirante has been simplified for you, so that you enjoy a greater flight-simming experience without being overwhelmed by a full-level simulation. Most of the essential systems (Hydraulics, Electrical and Fuel Systems especially) have been simulated for normal conditions **ONLY**, in consequence, abnormal conditions such as engine fires or in-flight emergencies are not simulated here in this product.

Sounds

Thanks to the potential of Wwise, a product by Audiokinetic Inc., and bundled with Microsoft Flight Simulator, this product features the most realistic sound rendition of the Pratt & Whitney PT6A-37 engines, ever available. In addition to the engines, a mix of cockpit sounds has been included here, to provide a more comfortable feeling of being in the real-life aircraft. Listen to the sound of the aural warnings, buttons and switches clicks, like if you are in the real aircraft. Every essential sound is covered here.

Flight Dynamics

Invisible to the eye, but you can feel it when using your joystick, gamepad, or yoke. Based on real-life specifications, the Flight Dynamics will always bring you a really great flight experience.

Flight-Sim Hardware Setup

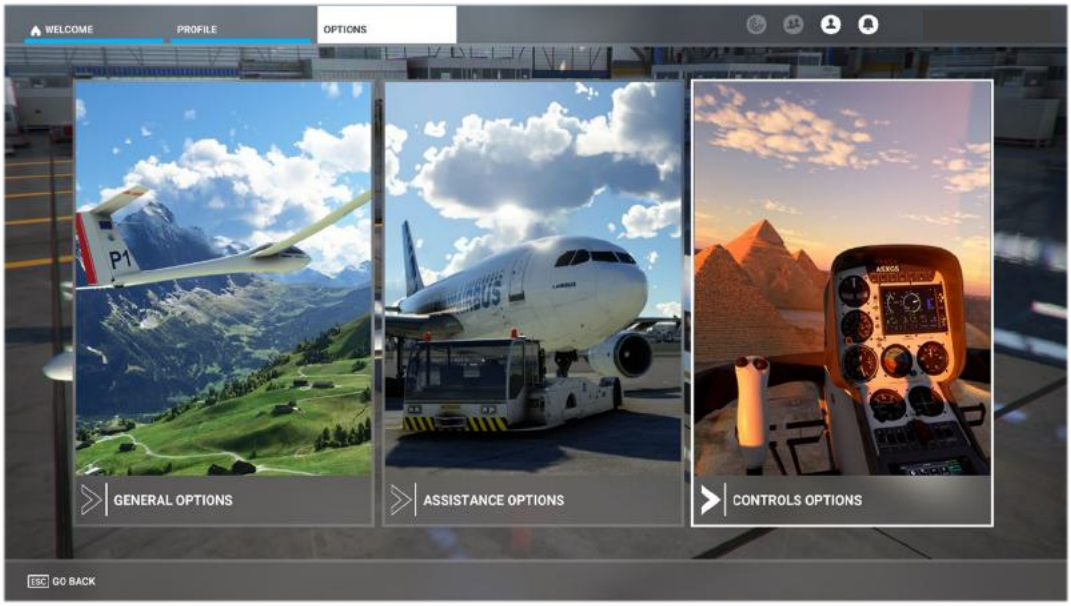
This product has been tested using a standard Xbox Series X wireless controller on both Windows and Xbox environments. In addition, for Windows users of the product, we recommend using the **Alpha Flight Controls Yoke & Switch Panel** and **Bravo Throttle Quadrant with Autopilot & Annunciator Panel** hardware devices, both manufactured by **Honeycomb Aeronautical**, for a better and pleasant experience with our EMB-110. If you have the **Bravo Throttle Quadrant**, please make sure you arranged your throttles setup for **General Aviation**. That is, with the respective throttle, propeller and mixture lever handles all set, like on the picture below.

Pictures courtesy of Honeycomb Aeronautical

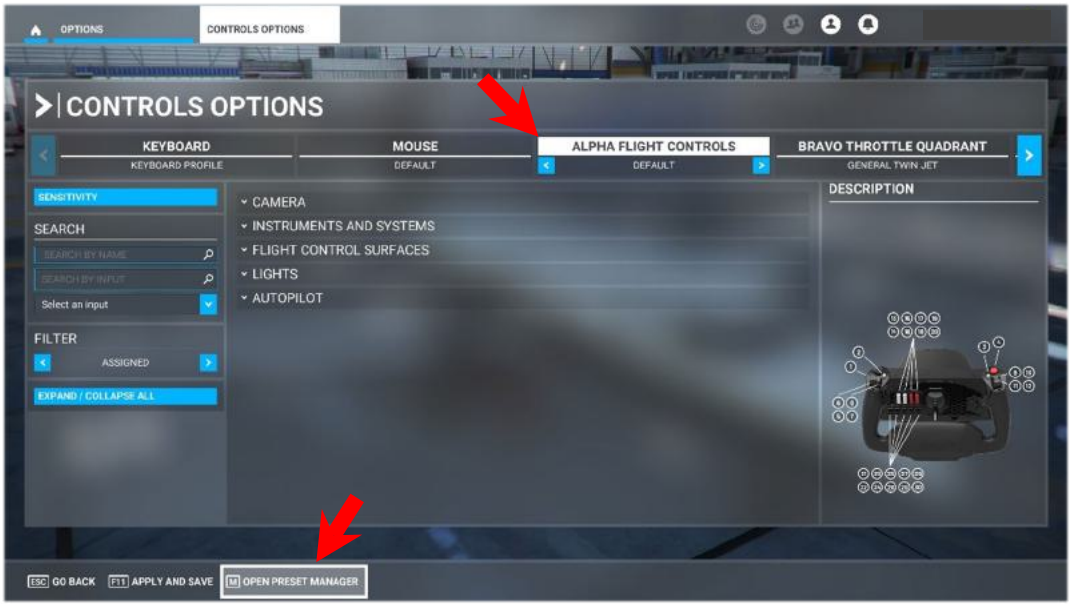
For both **Alpha** and **Bravo** devices, you must create a separate controls assignment profile in the sim, which can be used for this product, as you must **unbind** some assignments in order not to create conflicts with the product's code, especially on the electrical system side, as well as **bind** some other assignments that are appropriate for how the aircraft operates, especially the condition levers. Following are the instructions that you must follow to correctly set up the product's experience with this magnificent hardware from Honeycomb Aeronautical.

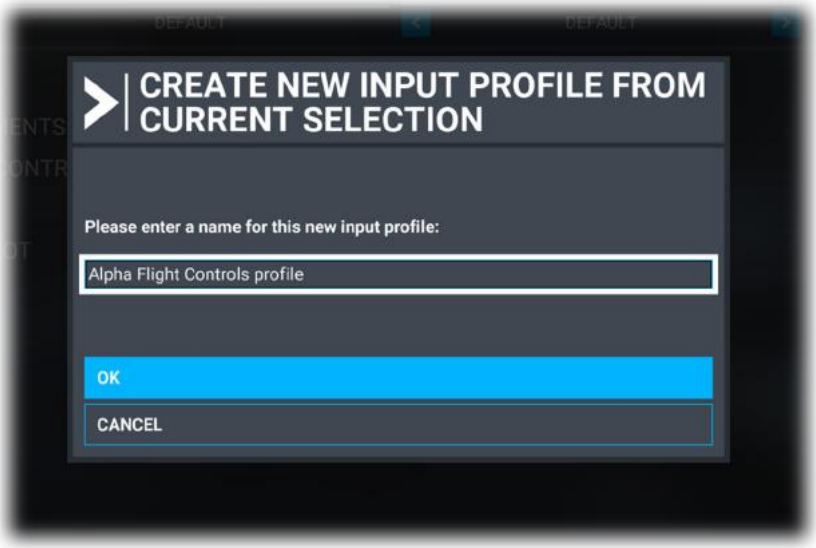
Setting up the Honeycomb Devices for the Product, in the sim

1. Launch MSFS and make sure you are in the sim's main menu.
2. Go to **Options > Controls Options**.



3. There in the Controls Options menu, highlight the **Alpha Flight Controls** device (if you have it installed), and make sure you have the **Default** profile selected. Then, click on **Open Preset Manager**, click on **Duplicate**, give the new profile a name that you can remember, and click **OK**.



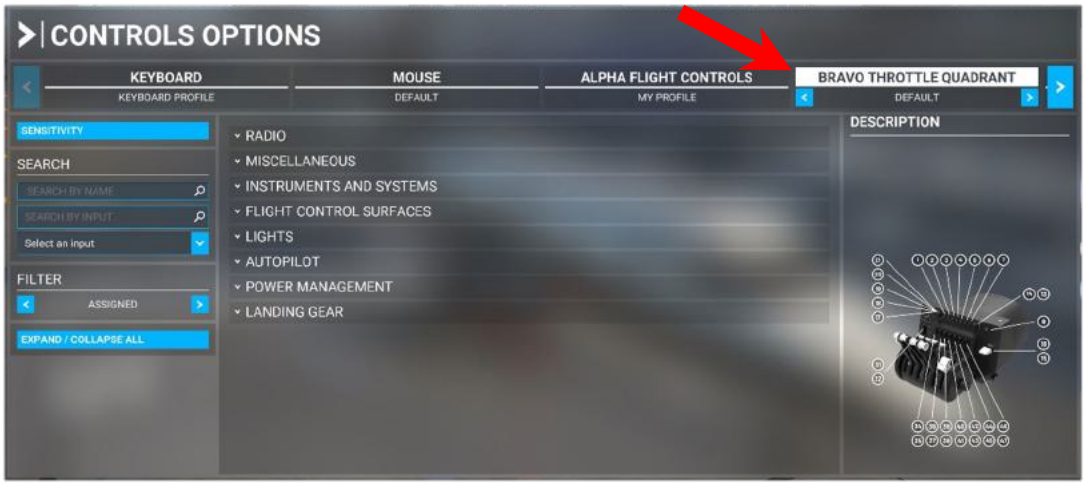


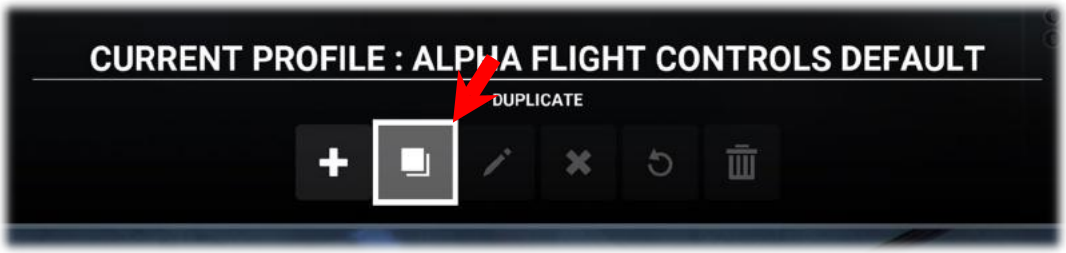
4. In this new profile, you must **unbind** some of the standard assignments, namely, the electrical switches, magnetos switch and exterior lights switches. It may vary depending on the device's mapping. Unbind the assignments highlighted below.

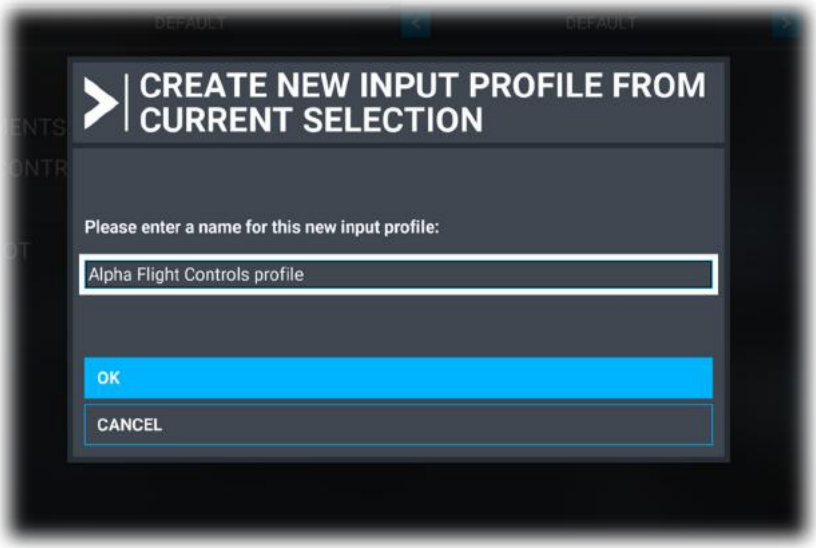
Unbinding the battery and avionics switches assignments will help not to cause functional issues with the GPS and other avionics. This is because the avionics bus must remain permanently connected as this aircraft does not have a dedicated avionics master switch.

5. Once done, click on **Apply & Save** below.

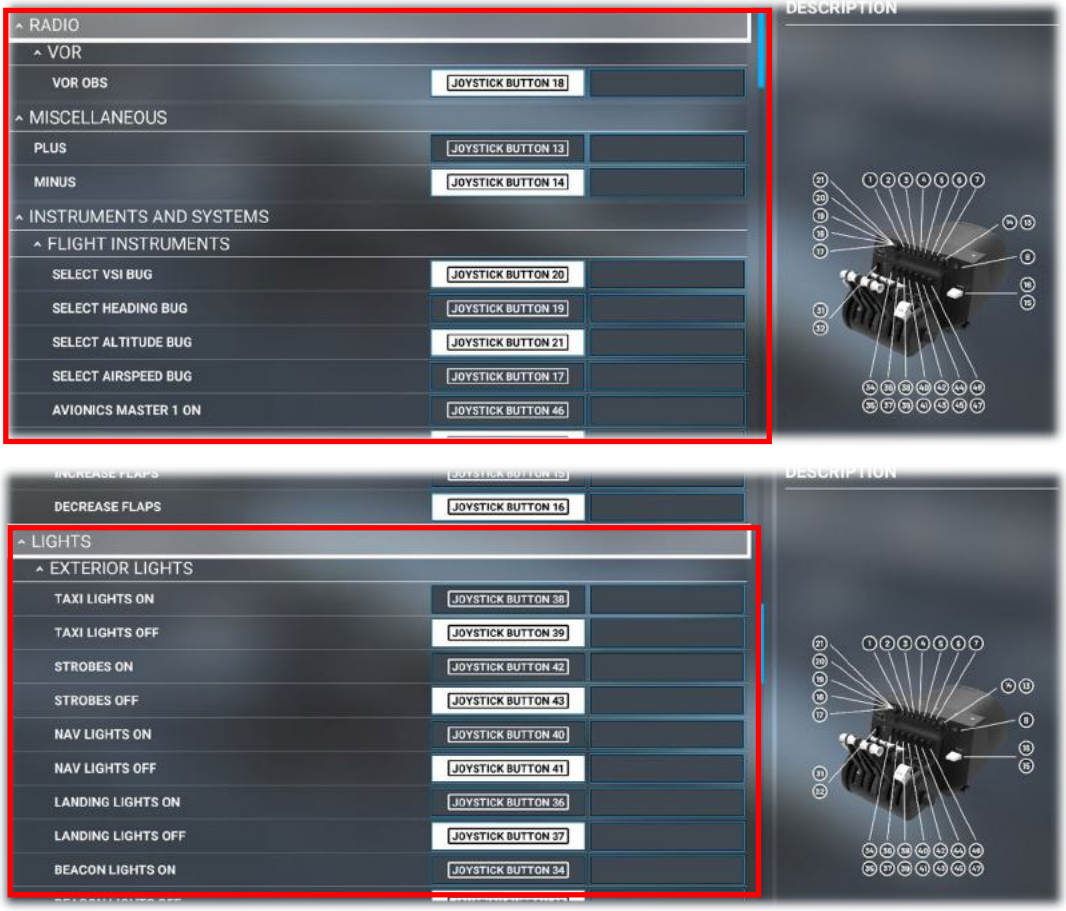
6. Now, if you have the **Bravo Throttle Quadrant** device, please highlight it on the Controls setup UI, and make sure the **Default** profile is selected. In the same way as before, with the **Alpha Flight Controls** device, click **Open Preset Manager** on the bottom of the screen, click then on **Duplicate**, give a name to the profile, and click **OK**.

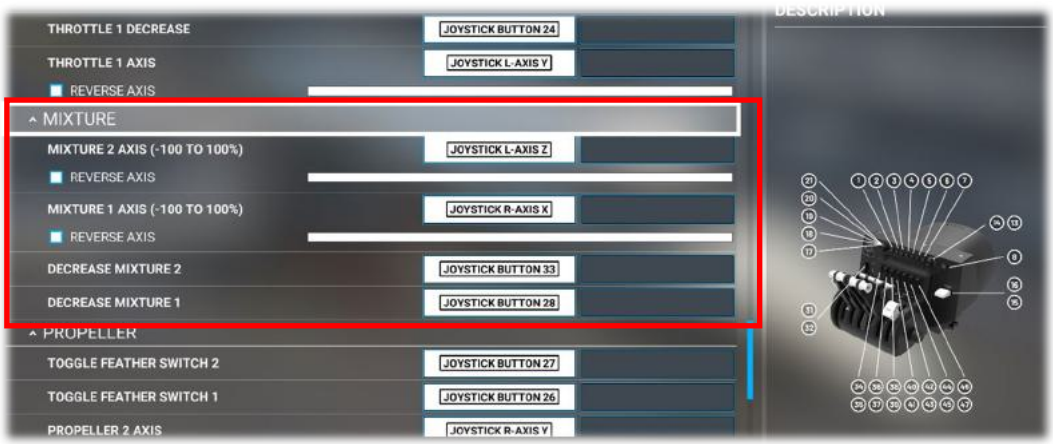




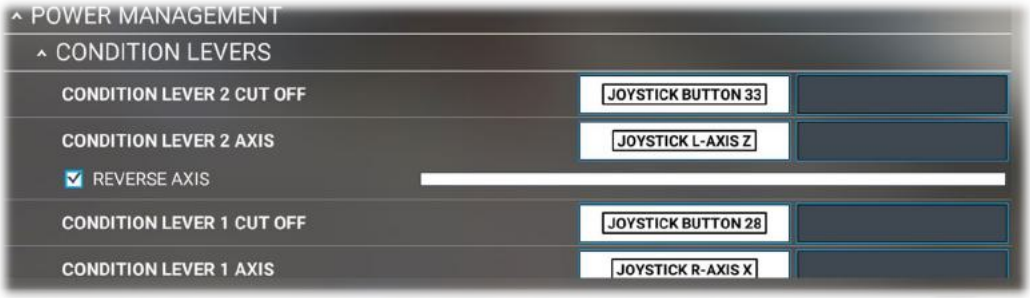


7. Unbind the assignments highlighted below in the screenshots, including the Mixture levers. Do not worry because the Mixture levers will be replaced with the Condition Lever assignments, because this is part of the expected behavior in the aircraft.





8. Now, bind the Condition Lever assignments. For this, make sure you search for the following commands: **CONDITION LEVER 1 AXIS**, **CONDITION LEVER 2 AXIS**, **CONDITION LEVER 1 CUT OFF** and **CONDITION LEVER 2 CUT OFF**. Then, assign those to the respective handles and buttons (red levers and buttons tied to those axes).



9. Make sure the other engine levers are correctly assigned (Throttle and Propeller). Once done, click on **Apply & Save**.

10. The next time you want to fly our EMB-110, make sure the corresponding profiles are selected before taking the aircraft for a ride. In case you see the ECU levers moving in the opposite direction, just make sure to (un)toggle the REVERSE AXIS checkbox, then save and test again until you see the levers move in the correct direction.

Complete the Experience and Take Advantage of Both Devices with SPAD.neXt

Now that you have configured the assignments in the sim, you might ask why the exterior lights, electrical and autopilot switches had to be unbound. This is because of two reasons: one, to prevent issues with the electrical system and the avionics bus when you use the product; and two, there are some incompatibilities on both the exterior lights logic and the autopilot system logic, as the logic is completely customized and fitted for this aircraft.

However, to complete this experience, we have added some local variables (LVars), which can be specifically used for external hardware, namely, the Honeycomb devices, which can be used on third-party device setup utilities like SPAD.neXt and Axis and Ohs.

In addition, we have created and tested a SPAD.neXt profile for you, for use with both the Alpha and Bravo devices, assigning the missing commands (autopilot, annunciator panel and exterior lights switches). This profile can be downloaded from our website, in the **Downloads > Miscellaneous** section.

Local Variables that can be Used for Controlling the Aircraft through External Hardware

However, if you want to create your own SPAD.neXt profile, especially for autopilot hardware or for devices like the Stream Deck, you can use the following list of local variables used in the product, allowing you to control parts of the aircraft systems:

Local variable called	Description
(L:XMLVAR_NGSE110_EngineAntiIceInlet, bool)	Toggles on/off the engine inlet anti-ice
(L:XMLVAR_NGSE110_MainFuelPumpL, bool)	Toggles on/off the main left fuel pump
(L:XMLVAR_NGSE110_AuxFuelPumpL, bool)	Toggles on/off the auxiliary left fuel pump
(L:XMLVAR_NGSE110_MainFuelPumpR, bool)	Toggles on/off the main right fuel pump
(L:XMLVAR_NGSE110_AuxFuelPumpR, bool)	Toggles on/off the auxiliary right fuel pump
(L:XMLVAR_NGSE110_FuelCrossfeedSwitchState, bool)	Toggles on/off the fuel cross-feed valve
(L:XMLVAR_NGSE110_LIgnitionSwitch, bool)	Toggles on/off the left ignition switch
(L:XMLVAR_NGSE110_RIgnitionSwitch, bool)	Toggles on/off the right ignition switch

(L:XMLVAR_NGSE110_AnticollisionLightSwitchPos, enum)	This variable controls the position of the anti-collision lights. 0 = OFF, 1 = BEACON, 2 = BEACON+STROBE
(L:EMB110 PAXCABIN LIGHTS SWITCH POSITION, number)	This variable controls the position of the passenger cabin lights. 0 = OFF, 1 = PARTIAL, 2 = ON
(L:EMB110 BATTERY SWITCH POSITION, number)	This variable controls the position of the battery switch. 0 = EXT PWR, 1 = OFF, 2 = BAT
(L:EMB110 WIPER L POWER SETTING, enum)	This variable controls the position of the left windshield wiper switch. 0 = PARK, 1 = OFF, 2 = ON
(L:EMB110 WIPER R POWER SETTING, enum)	This variable controls the position of the right windshield wiper switch. 0 = PARK, 1 = OFF, 2 = ON
(L:XMLVAR_NGSE110_WiperLSpeedFast, bool)	Toggles between slow or fast wiper speed (Left)
(L:XMLVAR_NGSE110_WiperRSpeedFast, bool)	Toggles between slow or fast wiper speed (Right)
(L:XMLVAR_NGSE110_LTcasDisplayBrightness, number)	Value between 0 and 100 for the pilot's VSI display brightness
(L:XMLVAR_NGSE110_RTcasDisplayBrightness, number)	Value between 0 and 100 for the copilot's VSI display brightness
(L:XMLVAR_RDR2000_ScreenBrightness, number)	Value between 0 and 100 for the weather radar display brightness
(L:XMLVAR_NGSE110_IsEFBVisible, bool)	Toggles EFB visibility
(L:XMLVAR_NGSE110_HCBravoAPSelMode, enum)	This variable controls the position of the Honeycomb Bravo AP selection mode knob. 0 = NOT CONNECTED, 1 = ALT, 2 = VS, 3 = HDG, 4 = CRS, 5 = IAS
(L:XMLVAR_NGSE110_HCBravoAPIncKnob, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. If set to 1 (true), triggers the increase event of the AP variable (based on the previous LVar value).
(L:XMLVAR_NGSE110_HCBravoAPDecKnob, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. If set to 1 (true), triggers the decrease event of the AP variable (based on the previous LVar value).
(L:XMLVAR_NGSE110_HCBravoHDGPressed, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. Setting to 1 (true), this variable command the heading selection mode.

(L:XMLVAR_NGSE110_HCBravoNAVPressed, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. Setting to 1 (true), this variable command the navigation selection mode.
(L:XMLVAR_NGSE110_HCBravoAPRPressed, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. Setting to 1 (true), this variable command the approach course mode.
(L:XMLVAR_NGSE110_HCBravoREVPressed, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. Setting to 1 (true), this variable command the back-course navigation mode.
(L:XMLVAR_NGSE110_HCBravoALTPressed, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. Setting to 1 (true), this variable command the altitude hold mode.
(L:XMLVAR_NGSE110_HCBravoVSPressed, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. Setting to 1 (true), this variable command the altitude arm mode and climb/descent through vertical speed selection mode.
(L:XMLVAR_NGSE110_HCBravoIASPressed, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. Setting to 1 (true), this variable command the altitude arm mode and climb/descent through indicated speed selection mode.
(L:XMLVAR_NGSE110_HCBravoAPPressed, bool)	Used for Honeycomb Bravo's AP panel increase/decrease knob. Setting to 1 (true), this variable command the autopilot master toggle.
(L:XMLVAR_NGSE110_HCAlphaLandLightsOn, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn landing lights on" command.
(L:XMLVAR_NGSE110_HCAlphaLandLightsOff, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn landing lights off" command.
(L:XMLVAR_NGSE110_HCAlphaTaxiLightsOn, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn taxi lights on" command.
(L:XMLVAR_NGSE110_HCAlphaTaxiLightsOff, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn taxi lights off" command.

(L:XMLVAR_NGSE110_HCAlphaNavLightsOn, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn navigation lights on" command.
(L:XMLVAR_NGSE110_HCAlphaNavLightsOff, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn navigation lights off" command.
(L:XMLVAR_NGSE110_HCAlphaBeaconLightsOn, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn beacon lights on" command.
(L:XMLVAR_NGSE110_HCAlphaBeaconLightsOff, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn beacon lights off" command.
(L:XMLVAR_NGSE110_HCAlphaStrobeLightsOn, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn strobe lights on" command.
(L:XMLVAR_NGSE110_HCAlphaStrobeLightsOff, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn strobe lights off" command.
(L:XMLVAR_NGSE110_HCBravoPitotSwitchOn, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn pitot heat on" command.
(L:XMLVAR_NGSE110_HCBravoPitotSwitchOff, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn pitot heat off" command.
(L:XMLVAR_NGSE110_HCBravoPaxSignsOn, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn passenger signs on" command.
(L:XMLVAR_NGSE110_HCBravoPaxSignsOff, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn passenger signs off" command.
(L:XMLVAR_NGSE110_HCBravoTOGAPressed, bool)	Used for Honeycomb light switches. Setting to 1 (true), this variable sends the "turn TOGA mode on" command.
(L:PMS50_APGA_SELECTED_ALTITUDE, feet)	Used in the autopilot system. Please use this variable for selected altitude, instead of the standard simvar.
(L:PMS50_APGA_SELECTED_VS, feet/minute)	Used in the autopilot system. Please use this variable for selected vertical speed, instead of the standard simvar.

Airplane Flight Manual

General

The purpose of this manual is to bring you (the end-user) a document which serves as an aid to become familiar with this product. This section provides general information about the aircraft and the flight deck components to allow you to interact with the aircraft and its systems. Each relevant panel is described in detail and a general description of the systems is also provided.

Aircraft

- Operating Limitations & Specifications
- Dimensions
- Flight Controls
- Doors
- Exterior Lights
- Ground Service

Main Instrument Panel

- Pilot & Copilot Instruments
- Engines & Avionics Instruments
- Lower Panel
- Glareshield Panel

Overhead Panel

De-Icing Panel

Throttle Quadrant Panel & Trim Panel

- KMC321 + KAS297 Autopilot

Radio Stack & Avionics

- GMA 350 Audio Panel
- GNS 430 & GNS 530 GPS Units
- GTN 750 & GTN 650 GPS Units (by PMS50)
- GTN 750 Xi & GTN 650 Xi GPS Units (by TDS Sim Software)
- KR 87 TSO ADF Tuner
- KAP140 Autopilot Unit
- GTX 330 Transponder
- RDR-2000 Weather Radar Display Unit

Electronic Flight Bag (EFB)

Aircraft

Operating Limitations & Specifications

Design Weights & Capacities	
Maximum Takeoff Weight (MTOW)	13,007 lb. (5,788 kg)
Maximum Landing Weight (MLW)	12,566 lb. (5,591 kg)
Maximum Zero Fuel Weight (MZFW)	9,913 lb. (4,411 kg)
Standard Empty Weight (including unusable fuel, full oil, standard interior and standard avionics)	7,750 lb. (3,449 kg)
Maximum Payload	4,130 lb. (1,838 kg)
Usable Fuel Capacity Jet A1 @ 6.70 lb./gal.	3,044 lb. (1,355 kg)

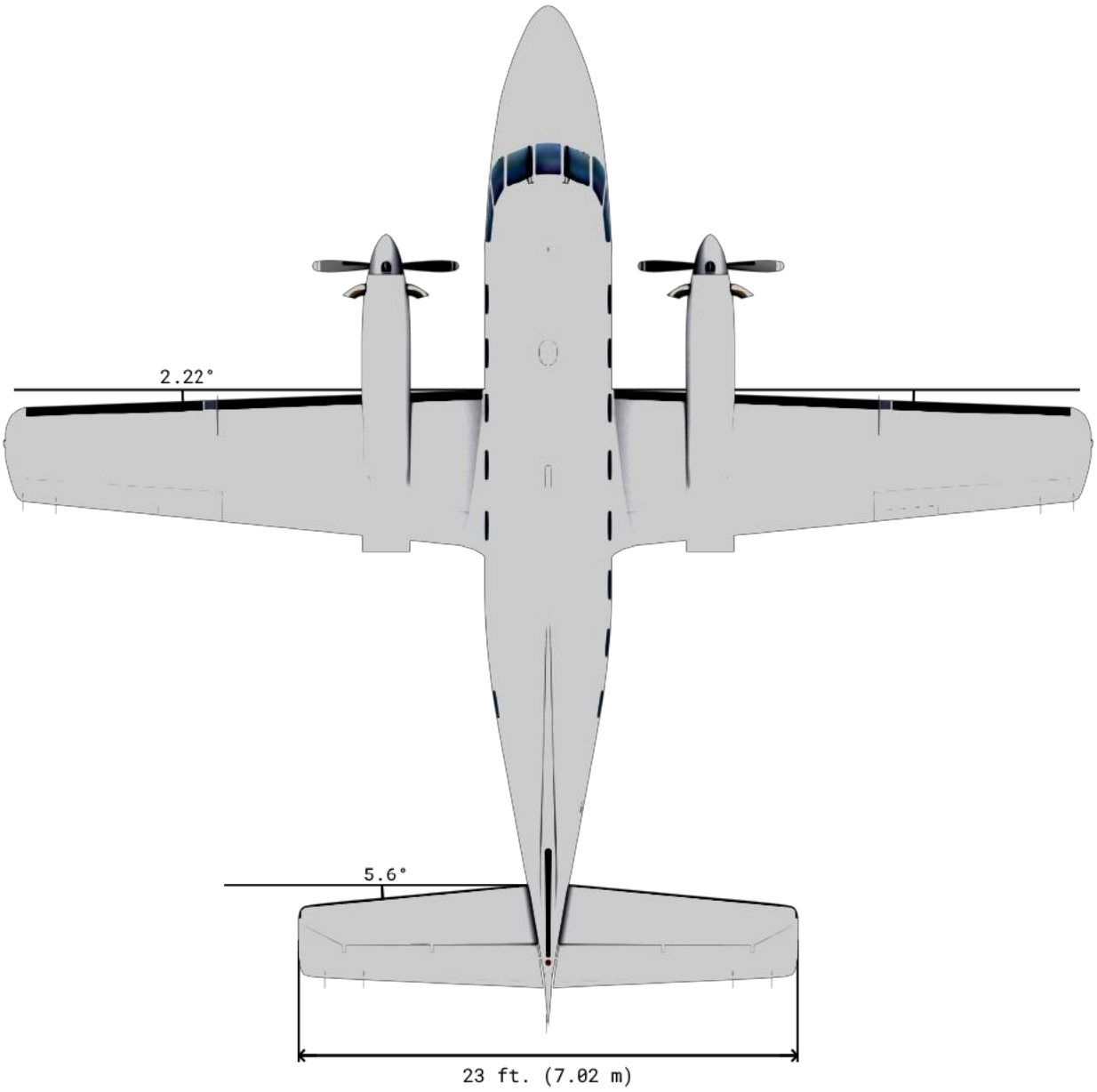
Performance	
Takeoff Field Length	4,035 ft. (1,230 m)
Maximum Altitude (Service Ceiling)	21,000 ft. (6,705 m)
Maximum Cruise Speed	229 KTAS (425 km/h)
Range w/ Max Payload	1,058 NM (1,960 km)
Landing Distance	4,461 ft. (1,360 m)

Speeds	
Maximum Operating Speed (V_{MO})	230 KIAS
Maximum Flap Extension Speed	148 KIAS
Maximum Landing Gear Operation Speed	146 KIAS

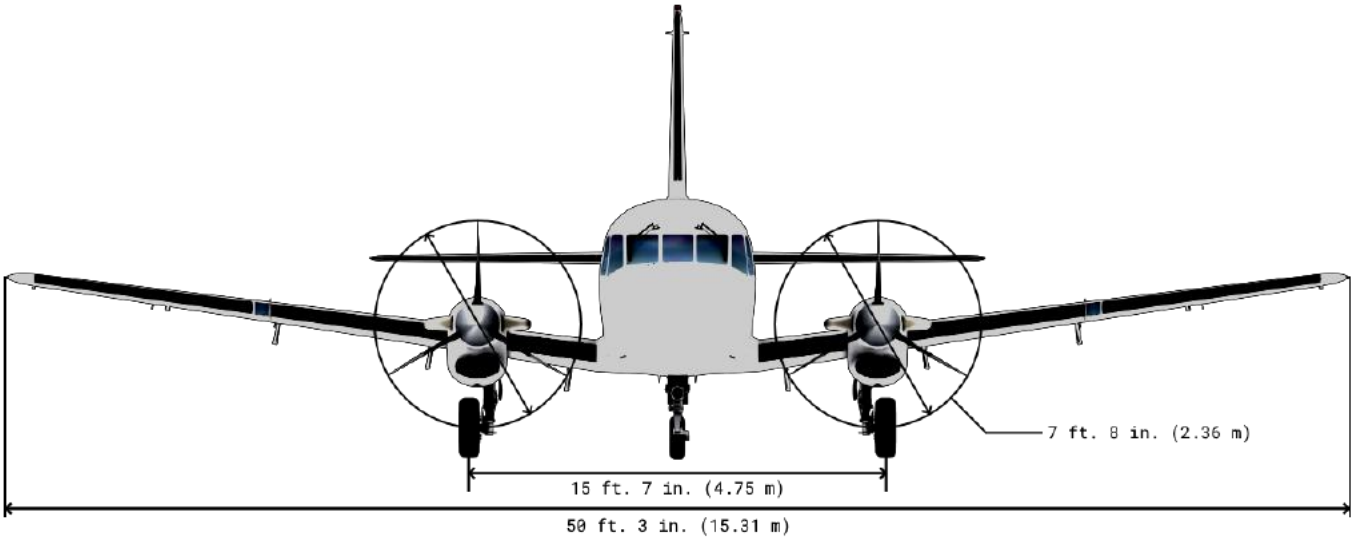
Engine Specifications (Pratt & Whitney PT6A-34)	
Overall Length	61.89 in. (1.57 m)
Nominal Diameter	18.29 in. (0.46 m)
Overall Engine Weight (dry)	340 lb. (151 kg)
Maximum Shaft Horsepower @ SL	783 hp.
Maximum Output RPM @ SL	2,200 RPM
Maximum Gas Generator RPM @ SL	38,100 RPM
Maximum Jet Thrust @ SL	82 lbf. (364.75 N)
Reduction Gearbox Ratio	0.663:1

Dimensions

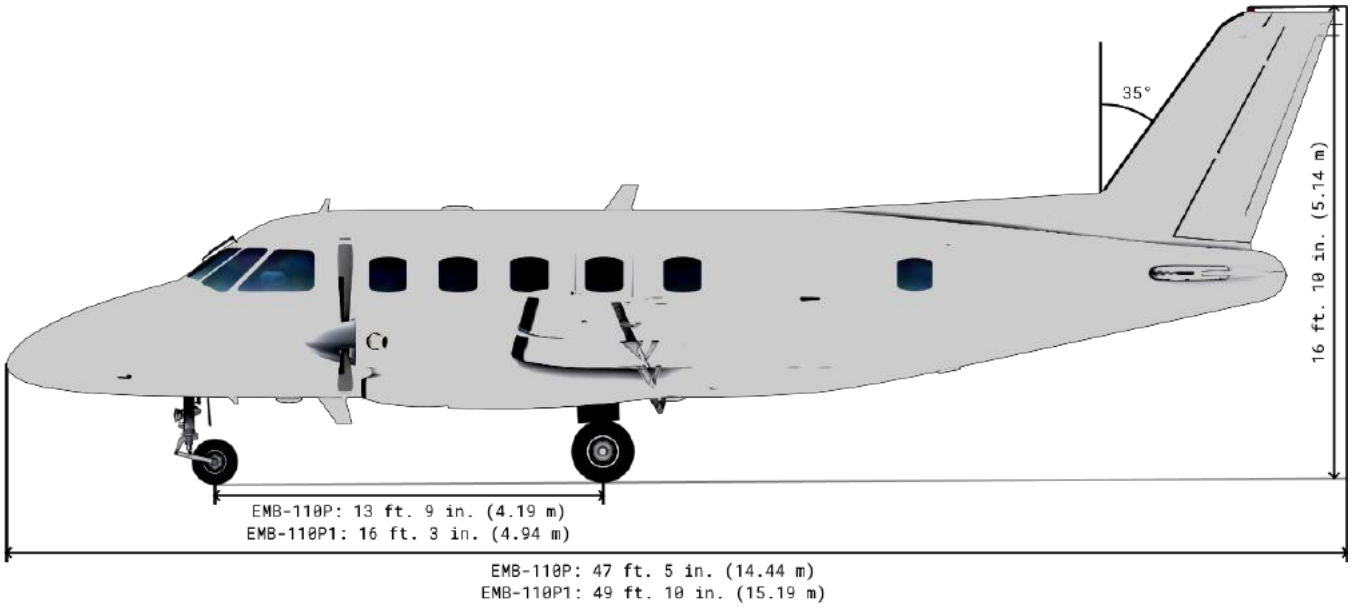
Overall Height	16 ft. 10 in. (5.14 m)
Overall Length	EMB-110P: 47 ft. 5 in. (14.44 m)
	EMB-110P1: 49 ft. 10 in. (15.19 m)
Overall Width	50 ft. 3 in. (15.31 m)
Wing	
Wingspan (from tip to tip, without including lights on tip)	50 ft. (15.24 m)
Wing Area	435.6 ft^2 (40.47 m^2)
Wing sweepback @ 25% chord	2.22 deg.
Wing dihedral	7.5 deg.
Wing incidence	2.0 deg.
Wing twist	-1.5 deg.
Horizontal Stabilizer	
Overall H-Tail Span	23 ft. (7.02 m)
H-Tail Area	117.3 ft^2 (10.9 m^2)
H-Tail Sweepback @ 25% chord	5.6 deg.
Vertical Stabilizer	
V-Stab Height	9 ft. 4 in. (2.83 m)
V-Stab Area	72.9 ft^2 (6.77 m^2)
V-Stab Sweepback @ 25% chord	35 deg.
Cabin Interior	
Height	5 ft. 3 in. (1.6 m)
Width	5 ft. 3 in. (1.6 m)
Length	31 ft. 2 in. (9.5 m)
Maximum Seat Accommodation	18 seats
Landing Gear	
Landing Gear Tread (main to main)	15 ft. 7 in. (4.75 m)
Landing Gear Wheelbase (nose to main)	EMB-110P: 13 ft. 9 in. (4.19 m)
	EMB-110P1: 16 ft. 3 in. (4.94 m)
Propeller	
Diameter	7 ft. 8 in. (2.36 m)



EMB-110 - Top View

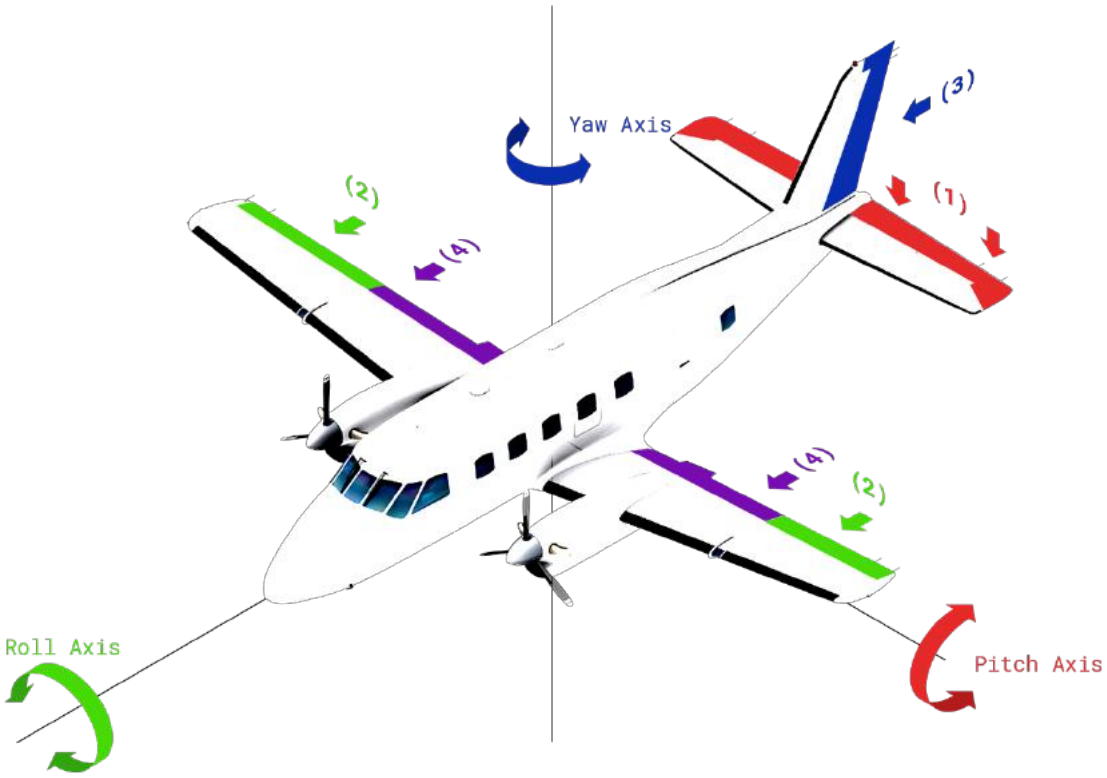


EMB-110 – Front View



EMB-110 – Side View

Flight Controls



EMB-110 – Flight Control Surfaces

(1) Elevators (red)

Elevators control the aircraft's pitch along its lateral axis. Pitch is the Nose-Up and Nose-Down movement of the aircraft, also known as Attitude. The greater fins move for short-term attitude changes, while long-term pitch changes are controlled by the trim tabs. There is one elevator with trim fin on each horizontal stabilizer. The elevators move UP and DOWN in order to make the aircraft climb or descend. For instance, when you push the control column forward, the elevators move down making the aircraft's nose pitch downward. Instead, if you pull the control column backward, the elevators will move up, thus making the nose pitch upward.

Elevators are controlled either manually by the pilot or automatically by the Autopilot and they are cable operated. Pitch can be monitored through the Attitude Indicator.

(2) Ailerons (green)

Ailerons control the aircraft's roll along its longitudinal axis. There is one aileron with trim tab on each wing. Ailerons move on opposite directions to each other in order to make the aircraft turn. For instance, when you turn the control wheel to the left, the left aileron raises to 'dip' the

left wing, while the right aileron 'raises' the right wing. Elevators are controlled either manually by the pilot or automatically by the Autopilot and they are cable operated. Roll can be monitored through the Attitude Indicator.

(3) Rudder (blue)

A single cable-operated rudder controls the aircraft yaw along its directional/vertical axis. Yaw is the side-to-side movement of the aircraft. The rudder is located at the vertical stabilizer. It counts with a trim tab and is controlled via the pedals. For instance, when you push the left pedal forward, the rudder moves to the left, causing the aircraft nose turn to the left. Be aware that rudder movements may induce rolls, so if the rudder is fully deployed to the left, the aircraft will turn to the left in the same way as described in the previous example. This is because the right wing speeds up a bit, so that increases lift on that wing. Rudder is controlled either manually by the pilot or automatically by the Autopilot and Yaw Damper.

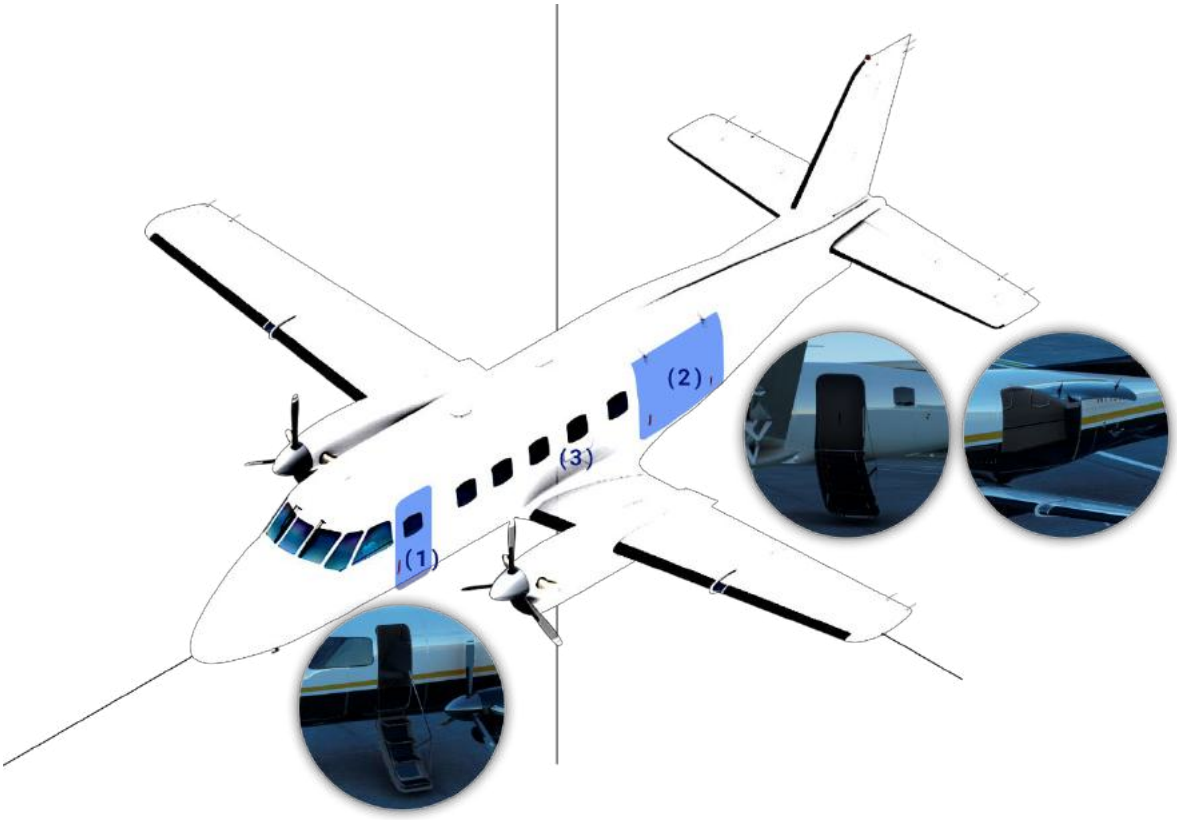
(4) Trailing-Edge Flaps / Wing Flaps (purple)

Flaps modify the aerodynamic configuration of the airplane, in order to improve performance during specific flight conditions. With them, takeoff and landing characteristics are improved and greater maneuverability is provided to meet climb and descent requirements.

The flap system consists of a flap control surface mounted on each wing that extend from the trailing edge of the latter. Both Trailing-Edge flaps are hydraulically actuated by the main hydraulic system and are electrically controlled. Normal flap travel is from 0 to 38 degrees, with intermediate detents at 20%, 40%, 60% and 80%, installed for take-off, approach and landing configurations.

Doors

Doors can be controlled via the Electronic Flight Bag (EFB) only, since MSFS does not natively support doors operation, like in FSX, for example. This aircraft counts with only one main entry door on the rear-left side (110P) or one main entry door in the front-left side, plus a cargo door on the rear-left side (110P1/P1K), and emergency exits over the wings, with a front emergency exit on the front-right side (110P1 only)(not simulated here).

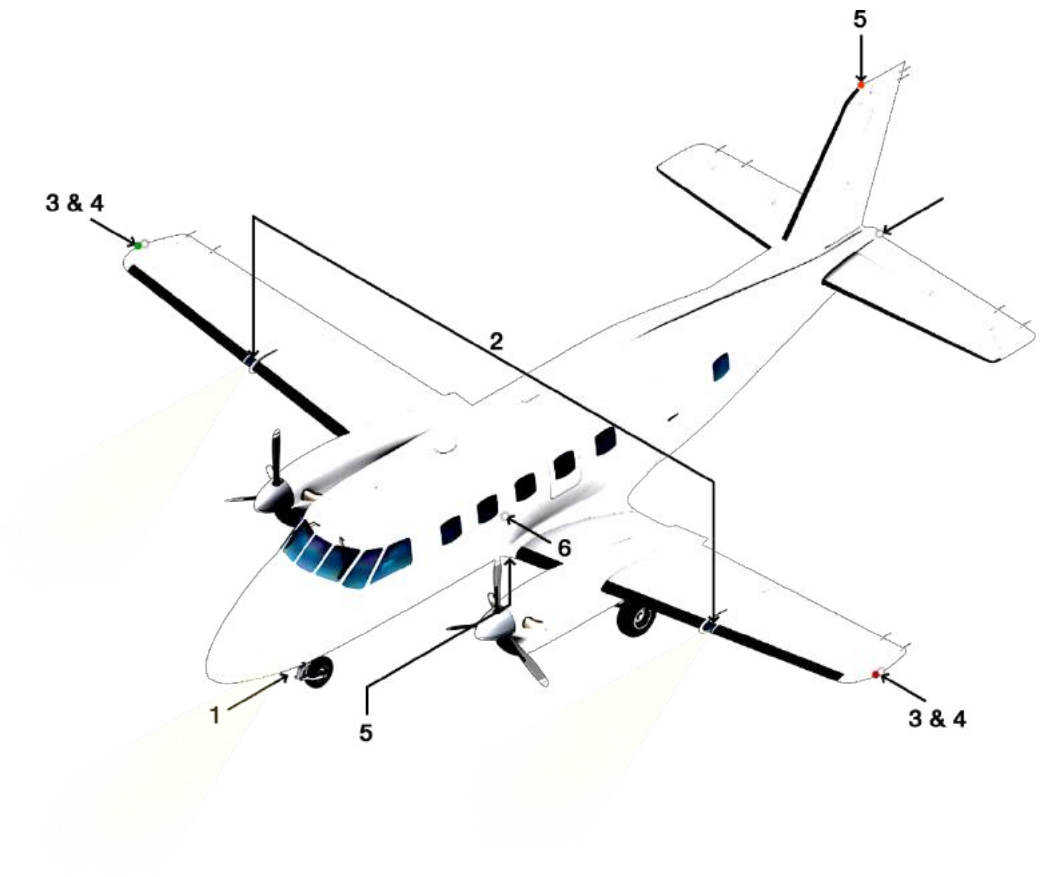


EMB-110 - Doors

(1) Main Exit
(2) Cargo Door (110P1) / Main Exit (110P)
(3) Emergency Exits (Not emulated)

Exterior Lights

This aircraft counts with the following external lights emulated:



EMB-110 – Exterior Lights Location

(1) Taxi Light

A single brighter light located in the nose landing gear main arm. It serves as light for taxiing.

(2) Landing Lights

Two brighter lights located in the middle of each wing, on the leading edge. They serve as lights for runway approaching.

(3) Navigation Lights

Two lights (one on each wing). Standard red light on the left wingtip and green light on the right wingtip.

(4) Strobe Lights

Two anti-collision and white flashing lights (one on each wing). Coupled to the beacon lights circuit, as they are anti-collision lights.

(5) Beacon Lights

Two flashing red lights located as follows: one on the vertical stabilizer tip and one on the belly.

(6) Wing & Nacelle Inspection Lights

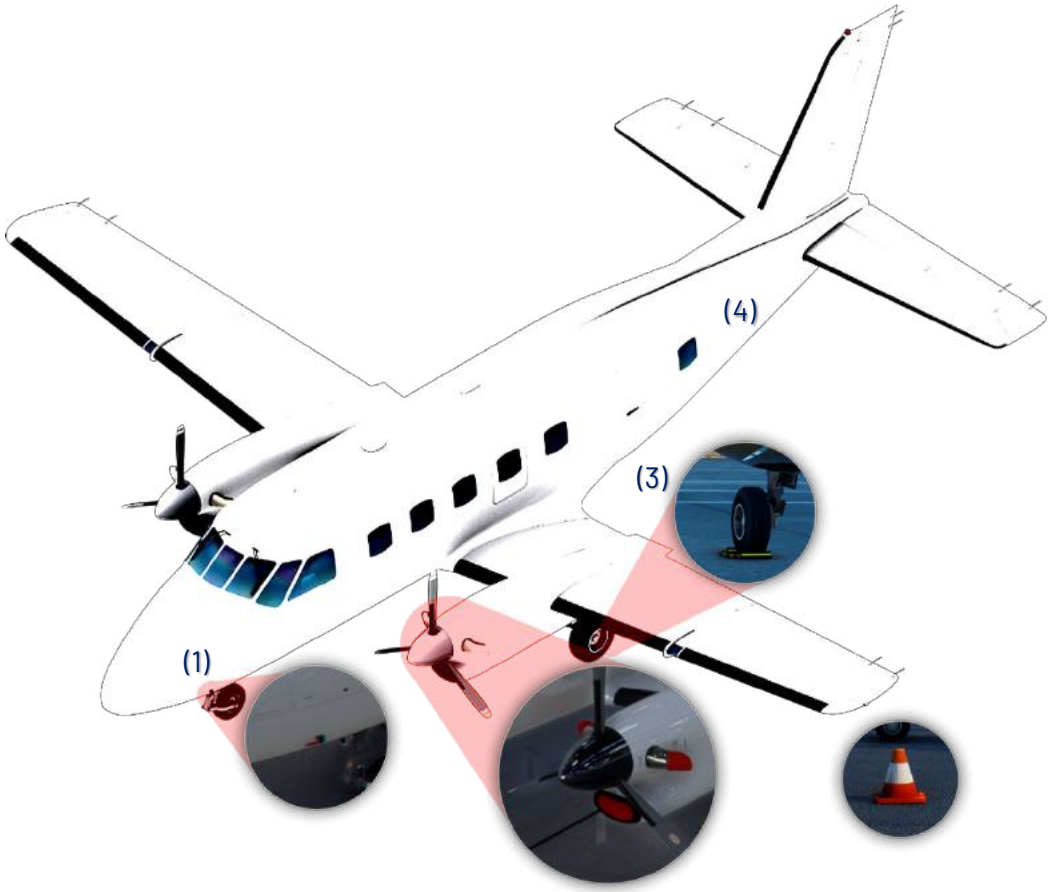
A white light located in the fuselage, illuminating the leading edge of the wings and the engine nacelles.

(7) Panel/Cockpit/Cabin Lights

Interior lighting is provided as well to illuminate both flight deck and cabin.

Ground Service

EMB-110 Bandeirante counts with the following ground service elements simulated. They can be controlled via Electronic Flight Bag (EFB) tablet.



EMB-110 – Ground Service

(1) Pitot Covers

These covers are emulated to prevent the pitot tubes from dust or any other foreign object. They have a distinctive REMOVE BEFORE FLIGHT red ribbon. When they are set, airspeed indicators and altimeters will not work unless removed.

(2) Engine Cowling

Used to cover the engines inlet and nozzle and protect them from foreign objects. Remove them before starting a flight.

(3) Wheel Chocks & Traffic Cones

When parked on ground, use the chocks to ensure the aircraft is completely in rest and not moving. Also, traffic cones are set for warning around the aircraft.

(4) Tail Rod

When parked on ground, use the tail rod to prevent the aircraft from going backwards due to weight unbalancing problems/errors.

Main Instrument Panel

Pilot & Copilot Instruments

Main Instrument Panel

(1) Battery Temperature Panel: provides control of the battery temperature. There is a temperature meter gauge on the right side, and a warning light and test button on the left. The warning lights illuminates if the TEST button is pressed or when the battery temperature exceeds 150 Celsius degrees.

(2) EFB Tablet Access Panel: contains a button which allows you to show/hide the EFB tablet equipped with the aircraft, for operation of doors, ground equipment and avionics switching. In order to operate the tablet itself, just press the button located in the upper left corner (where the Press here to start legend is located) or touch the screen. More details in the respective section.

(3) Fire Horn Cutout Panel: contains a button which allows you to mute the fire alarm sound, in case the aircraft detects fire on its engines. This only works when the simulation detects fire, it does not take effect when testing the fire system.

(4) Airspeed Indicator: displays information about the current indicated airspeed.

(5) Radio Magnetic Indicator (RMI): combination of magnetic compass and VOR/ADF indicators into one single instrument, which displays the current aircraft heading and magnetic headings to either VOR or ADF stations.

(6) Turn & Slip Coordinator: displays the rate of turn the aircraft exhibits.

(7) Autopilot Annunciator Panel: provides the pilot with continuous information on the autopilot system operating status. It displays modes in operation, as well as ARMED modes, prior to capture. And also, it displays the Marker Beacon lights.

(8) Attitude Direction Indicator (ADI): displays current pitch and roll attitude, current pitch and roll commands via the Flight Director needle, localizer (LOC) deviation (or waypoint track deviation if NAV1 is GPS-driven), glideslope (GS) deviation and slip indicator.

(9) Horizontal Situation Indicator (HSI): displays the following information: aircraft magnetic heading, current selected heading, selected VOR/LOC/RNAV course, course or LOC deviation (the pilot HSI shows the deviation of the waypoint if NAV1 is driven by the GPS and there is a flight plan in progress), RMI or ADF bearing and glideslope (GS) deviation. Also, with the help of the display on top of the instrument, it displays To-From course indication, plus distance, groundspeed and time-to-station (or ETE to current waypoint in the GPS flight plan).

(10) Clock (self-explanatory)

(11) Altimeter: provides corrected barometric altitude to the autopilot system.

(12) Vertical Speed Indicator (VSI): provides information about the current aircraft rate of climb/descent, and the selected climb/descent rate from the autopilot.

(13) Radio Altimeter: provides accurate altitude measurements above terrain during various portions of flight.

(14) Emergency Lights Panel (only on Pilot side)

(15) Aircraft's Tail Number Placard

Engines & Avionics Instruments

Center Panel

(1) BETA Annunciators: illuminate when the thrust reverser of the respective engine is engaged.

(2) Autofeather Panel: arms propeller auto-feathering system.

(3) Inlet Turbine Temperature (ITT)

(4) Engine Torque Indicators

(5) Engine NH (High-Pressure Compressor RPM) & NL (Low-Pressure Compressor RPM) Indicators

(6) Engine Oil Temperature

(7) Engine Oil Pressure

(8) Outside Air Temperature (TAT)

(9) Propeller Sync Panel

(10) GMA 350 Audio Panel

(11) GNS 530W & GNS 430W GPS / GTN 750 & GTN 650 GPS / GTN 750 Xi & GTN 650 Xi GPS

(12) KR 87 TSO ADF Tuner x2 (ADF1 & ADF2)

(13) GTX 330 Transponder

(14) Cockpit Voice Recorder (CVR) Unit & RDR2000 Weather Radar

(15) Fuel Panel

(16) Emergency Locator Transmitter

(17) Annunciator Panel, Test Button & Dimming Switch

(18) Hot Microphone Switch & DME Volume Knob (not functional)

Lower Panel

Lower Panel

(1) Parking Brake Lever

(2) Panel Dimming Knobs. From L to R: Pilot, Central, Overhead & Circuit Breaker Panel, Copilot

(3) Hydraulic Booster Pump Switch

(4) Brakes Pressure Gauge

(5) Hydraulic Pumps Pressure Gauge

(6) Landing Gear Indicator and Lever

(7) Flaps Indicator & Lever

(8) Air Conditioning Panel

Glareshield Panel

Lower Panel

(1) Fire Alarm Annunciators & Bottle Discharge Handle: The discharging functionality only works at the moment the simulation indicates fire in the engine, so it can discharge the extinguisher bottle at that moment. Otherwise, it will not work since it was coded as that to prevent an accidental shutdown in normal flight conditions.

(2) Fire System Test Push Buttons

(3) Engine Shutoff Switches: Only work when the affected engine is on fire, otherwise it will not work, in order to prevent accidental shutdowns in normal flight conditions.

(4) Master Warning & Door Annunciators

Overhead Panel

(1) Windshield Wiper Switches: One for power mode (PARK, OFF, ON) and one for speed regulation (SLOW / FAST). They work independently one from another.

(2) Aircraft Lights: the ones in the left side are for cockpit and cabin, and wing/nacelle inspection, the ones in the right side are the exterior lights (taxi, landing, navigation and anticollision).

(3) Pitot/Static & Passenger Heat

(4) Passenger Signs

(5) Voltimeters: Left for engine 1 generator and battery, Right for engine 2 generator and main electric bus

(6) Engine Generators Switches

(7) Engine Inverters Switches

(8) Master Battery Switch

(9) Engine Starter Switches

(10) Inertial Separation

(11) Magnetic Compass

Deicing Panel

(1) Propeller Deice Switch

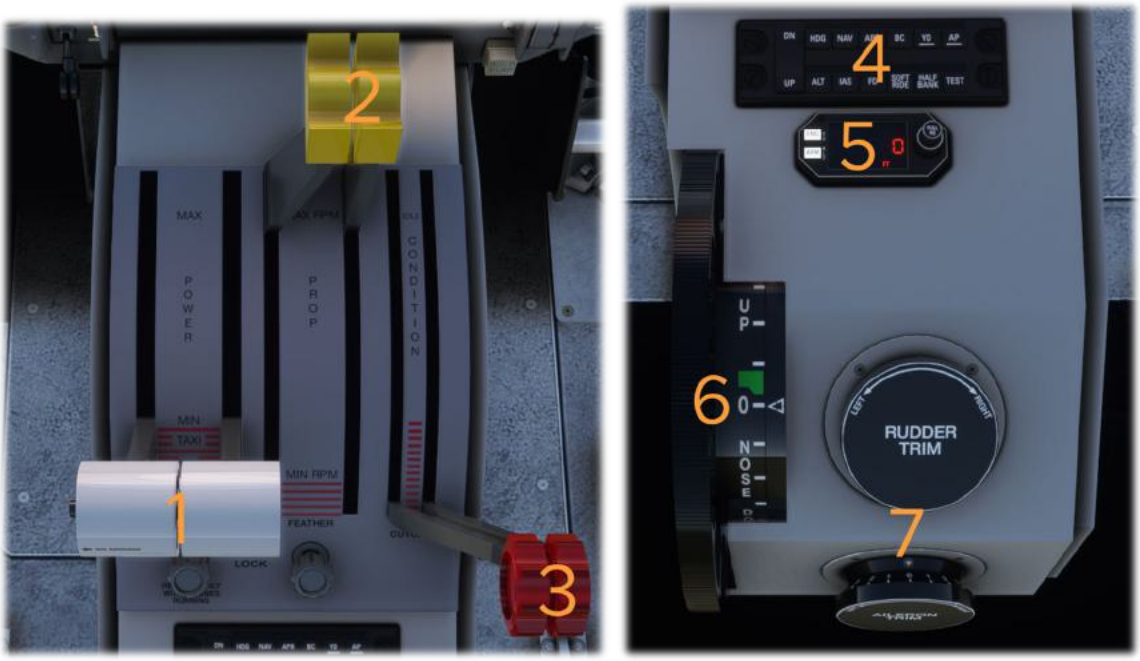
(2) Engine Air Intake Deice Switch

(3) Windshield Deice Switches

(4) Passenger Signs

(5) Pneumatic Deice Switch

Throttle Quadrant & Trim Panel



(1) Thrust Levers

(2) Propeller Levers

(3) Fuel (Condition) Levers

(4) KMC321 Autopilot Panel

(5) KAS297 Altitude Selector Panel

(6) Pitch Trim Wheel

(7) Aileron & Rudder Trim Knobs

KMC321 + KAS297 Autopilot

KMC321

(1) DN/UP Pushbutton: This button allows for adjustment of the vertical speed setting or the IAS setting, if the IAS mode is selected on the autopilot.

(2) Annunciators Panel: There are two annunciator panel on the KMC321. One on top and one on bottom. They represent the selected autopilot setting.

(3) HDG Pushbutton: Toggles the autopilot heading mode.

(4) NAV Pushbutton: Toggles the autopilot navigation mode, depending on what drives the Course Deviation Indicator (CDI). It can follow a preprogrammed flight plan from the GPS or a VOR beam.

(5) APR Pushbutton: Toggles the autopilot approach mode, making the aircraft to follow the localizer and glideslope when the aircraft is on approach to destination and an ILS frequency and course have been preset.

(6) BC Pushbutton: Toggles the autopilot back-course mode.

(7) YD Pushbutton: Toggles the yaw damper on/off.

(8) AP Pushbutton: Toggles the autopilot master on/off.

(9) ALT Pushbutton: Toggles the autopilot altitude hold.

(10) IAS Pushbutton: Toggles the autopilot flight level change mode, i.e., climbing or descending to the desired altitude by maintaining a constant airspeed based on the aircraft's thrust setting.

(11) FD Pushbutton: Toggles the flight director on/off.

(12) SOFT RIDE Pushbutton: Not simulated here.

(13) HALF BANK Pushbutton: Not simulated here.

(14) TEST Pushbutton: Performs a test of the autopilot unit.

KAS297

(1) Selected ALT/VS Digits: This section represents the selected altitude or vertical speed selection, formatted with a thousand's comma separator. Altitude selection ranges from 0 to 50,000 ft. VS setting ranges from 0 to 5,000 ft/min, in either direction (upwards or downwards).

(2) VS Annunciation: Lighted up when the autopilot vertical speed hold is selected.

(3) ALERT Annunciation: Lighted up when the aircraft is close to reach the desired altitude.

(4) ARM Annunciation: Lighted up when the autopilot altitude selection is armed.

(5) CAPT Annunciation: Lighted up when the aircraft is flying at the desired altitude preset in the KAS297 unit.

(6) FT / FT/MIN Annunciation: Lighted up to FT when the KAS297 unit is set to altitude selection mode. Lighted up to FT/MIN when the unit is set to climb/descent rate selection mode.

(7) VS Arrows: Based on the VS selection. The upper arrow will illuminate with a positive (climb) vertical speed setting. The lower arrow will illuminate with a negative (descend) vertical speed setting.

(8) ENG Pushbutton: This engages the altitude vertical speed hold mode, by commanding the autopilot to follow a selected rate of climb/descend.

(9) ARM Pushbutton: This engages the autopilot altitude selection mode and following a desired VS/IAS setting.

(10) Concentric Knobs: The outer knob has a pull function. When pushed, the KAS297 is in altitude selection mode. When pulled, the unit is in vertical speed selection mode. The outer knob sets altitude or vertical speed by 100's increments. The inner knob sets altitude or vertical speed by 1000's increments.

Altitude Selection Mode

Vertical Speed Selection Mode

Radio Stack & Avionics

GMA 350 Audio Panel

Controls

MKR/MUTE Selects marker beacon receiver audio. Mutes the currently received marker beacon receiver audio. Deactivates automatically and marker beacon audio is heard when the next marker beacon signal is received. Also, stops play of recorded COM audio.

COM1 When selected, audio from the #1 COM receiver can be heard. Press and hold to enable/disable monitored COM muting during primary COM reception.

COM2 When selected, audio from the #2 COM receiver can be heard. Press and hold to enable/disable monitored COM muting during primary COM reception.

NAV1 When selected, audio from the #1 NAV receiver can be heard.

NAV2 When selected, audio from the #2 NAV receiver can be heard.

MUSIC/PHONE PUSHBUTTON Not emulated here.

MUS1 Selects and deselects music entertainment audio. Press and hold to enable/disable MUS1 muting during reception.

MUS2 Selects and deselects music entertainment audio. Press and hold to enable/disable MUS2 muting during reception.

MAN SQ Manual Squelch annunciator. When lit, squelch is controlled manually.

VOLUME INDICATOR Indicates volume/squelch setting relative to full scale.

MIC1 Selects the #1 transmitter for transmitting. COM1 receive is simultaneously selected when this key is pressed allowing received audio from the #1 COM receiver to be heard. COM2 receive can be added by pressing the COM2 Key.

	Selection of a second MIC button initiates Split-COM mode. When in Split-COM mode, the pilot is using COM1, the copilot is using the COM2.
MIC2	Selects the #2 transmitter for transmitting. COM2 receive is simultaneously selected when this key is pressed allowing received audio from the #2 COM receiver to be heard. COM1 receive can be added by pressing the COM1 Key. Selection of a second MIC button initiates Split-COM mode. When in Split-COM mode, the pilot is using COM1, the copilot is using the COM2.
PLAY	Not emulated here.
AUX	When selected, audio from the AUX inputs can be heard.
PILOT	Controls the pilot intercom system. Press and hold to toggle 3D Audio on/off for all headset positions.
COPLT	Controls the copilot intercom system. Press and hold to toggle copilot configuration between crew and passenger.
PASS	Controls the passenger intercom system. Press and hold to enable/disable passenger muting during reception.
SPKR	Selects and deselects the cabin speaker. COM, NAV, AUX, and MKR receiver audio can be heard on the speaker. Press and hold for 2 seconds for Passenger Address (PA). The SPKR key flashes during PA.
Cursor (CRSR) Control Knob	Turn to move the cursor (flashing white or blue annunciator) to the desired source.
Volume (VOL) Knob	Turn the smaller knob to control volume or squelch of the audio panel.

GNS 530W & GNS 430W GPS (standard one developed by Working Title Simulations)

(1) COM Flip-Flop Pushbutton: Swaps the active and standby COM frequencies. Press and hold to select emergency channel (121.500 MHz).

(2) COM Power/Volume Knob: Controls unit power and communications radio volume. Press momentarily to disable automatic squelch control.

(3) **VLOC Flip-Flop Pushbutton:** Used to swap the active and standby VLOC frequencies (i.e., make the selected stand-by frequency active).

(4) **VLOC Volume Knob:** Controls audio volume for the selected VOR/Localizer frequency. Press momentarily to enable/disable the ident tone.

(5) **Small & Large COM/VLOC Knobs:** The small knob is used to tune the kilohertz (kHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the tuning cursor. Press this knob momentarily to toggle the tuning cursor between the COM and VLOC frequency fields. The large knob is used to tune the megahertz (MHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the tuning cursor.

(6) **Range (RNG) Keys:** Allows the pilot to select the desired map range. Use the up arrow to zoom out to a larger area, or the down arrow to zoom in to a smaller area.

(7) **Direct-To Pushbutton:** Provides access to the direct-to function, which allows the pilot to enter a destination waypoint and establishes a direct course to the selected destination.

(8) **MENU Key:** Displays a context-sensitive list of options. This options list allows the pilot to access additional features or make settings changes which relate to the currently displayed page.

(9) **CLR Key:** Used to erase information, remove map detail, or to cancel an entry. Press and hold the CLR key to immediately display the Default NAV Page.

(10) **ENT Key:** Used to approve an operation or complete data entry. It is also used to confirm information during power on.

(11) **Small & Large CRSR Knobs:** The small knob is used to select pages within one of the page groups. Press this knob momentarily to display the on-screen cursor. The cursor allows the pilot to enter data and/or make a selection from a list of options. When entering data, the small right knob is used to select the desired letter or number and the large right knob is used to move to the next character space. The small right knob is also used to move the target pointer up (turn clockwise) or down (counterclockwise) when the map panning function is active. The large knob is used to select page groups: NAV, WPT, AUX, or NRST. With the on-screen cursor enabled, the large right knob allows the pilot to move the cursor about the page. The large right knob is also used to move the target pointer right (turn clockwise) or left (counterclockwise) when the map panning function is active.

(12) **CDI Key:** Used to toggle which navigation source (GPS or VLOC) provides output to an external HSI or CDI.

(13) **OBS Key:** Used to select manual or automatic sequencing of waypoints. Pressing the OBS Key selects OBS mode, which retains the current 'active to' waypoint as the navigation reference even after passing the waypoint (i.e., prevents sequencing to the next waypoint). Pressing the

OBS Key again returns the unit to normal operation, with automatic sequencing of waypoints. When OBS mode is selected, the pilot may set the desired course to/from a waypoint using the Select OBS Course pop-up window, or an external OBS selector on the HSI or CDI.

(14) MSG Key: Used to view system messages and to alert the pilot to important warnings and requirements.

(15) FPL Key: Allows the pilot to create, edit, activate, and invert flight plans, as well as access approaches, departures, and arrivals. A closest point to flight plan feature is also available from the FPL Key.

(16) PROC Key: Allows the pilot to select and remove approaches, departures, and arrivals from the flight plan. When using a flight plan, available procedures for the departure and/or arrival airport are offered automatically. Otherwise, the pilot may select the desired airport, then the desired procedure.

(17) VNAV Key (GNS530W only): Allows the pilot to create a three-dimensional profile which provides guidance to a final (target) altitude at a specified location.

GTN 750 & GTN 650 GPS (developed by PMS50)

GTN750

(1) **COM Volume/Push Squelch Knob:** Controls communications radio volume. Press momentarily to disable automatic squelch control.

(2) **Active COM1 Frequency:** Displays the tuned value of the active frequency for the communications transceiver (COM1).

(3) **Standby COM1 Frequency:** Displays the tuned value of the standby frequency for the communications transceiver (COM1).

(4) **Audio Settings:** Controls the audio panel through the buttons on the screen.

(5) **Transponder (XPDR) Settings:** Controls the main transponder state (ON/STBY/ALT/OFF) and the squawk given by the ATC.

(6) **Active NAV1 Frequency:** Displays the tuned value of the active frequency for the navigation (VOR/LOC NAV1) receiver.

(7) **Standby NAV1 Frequency:** Displays the tuned value of the standby frequency for the navigation (VOR/LOC NAV1) receiver.

(8) **Home Pushbutton:** Press to go to the main menu. Press and hold for 3 seconds to go to the World Map.

(9) **Direct-To Pushbutton:** Provides access to the direct-to function, which allows the pilot to enter a destination waypoint and establishes a direct course to the selected destination.

(10) **Small/Large Knobs:** The small knob is used to tune the kilohertz (kHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the on-screen cursor. Pressing the small knob activates the on-screen cursor to switch between COM or VLOC tuning mode, long pressing the knob swaps either the COM or NAV active/standby frequencies. The large knob is used to tune the megahertz (MHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the on-screen cursor.

(11) **CDI Mode & Knobs Hint:** Provides information on the navigation source (GPS or VLOC) output to an external HSI or CDI. The hint is used to bring information on how to operate the bottom-right knobs.

(12) **Touch Screen:** This is the main screen area to operate the GTN unit.

GTN650

(1) **COM Volume/Push Squelch Knob:** Controls communications radio volume. Press momentarily to disable automatic squelch control.

(2) **Active COM2/NAV2 Frequency:** Displays the tuned value of the active frequency for the communications transceiver (COM2) or the VLOC receiver (NAV2).

(3) **Standby COM2/NAV2 Frequency:** Displays the tuned value of the standby frequency for the communications transceiver (COM2) or the VLOC receiver (NAV2).

(4) **Transponder (XPDR) Settings:** Controls the main transponder state (ON/STBY/ALT/OFF) and the squawk given by the ATC.

(5) **Home Pushbutton:** Press to go to the main menu. Press and hold for 3 seconds to go to the World Map.

(6) **Direct-To Pushbutton:** Provides access to the direct-to function, which allows the pilot to enter a destination waypoint and establishes a direct course to the selected destination.

(7) **Small/Large Knobs:** The small knob is used to tune the kilohertz (kHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the on-screen cursor. Pressing the small knob activates the on-screen cursor to switch between COM or VLOC tuning mode. The large knob is used to tune the megahertz (MHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the on-screen cursor.

(8) **CDI Mode & Knobs Hint:** Provides information on the navigation source (GPS or VLOC) output to an external HSI or CDI. The hint is used to bring information on how to operate the bottom-right knobs.

(9) **Up/Down Touch Buttons:** Used to scroll the working area up or down, depending on the content displayed.

(10) **Touch Screen:** This is the main screen area to operate the GTN unit.

The GTN units were developed by PMS50. For more information on how to use the GTN units, you can take a look at the respective documentation at documentation.pdf (pms50.com).

GTN 750 Xi & GTN 650 Xi GPS (developed by TDS Sim Software)

GTN 750XI

(1) COM Volume/Push Squelch Knob: Controls communications radio volume. Press momentarily to disable automatic squelch control.

(2) Active COM1 Frequency: Displays the tuned value of the active frequency for the communications transceiver (COM1).

(3) Standby COM1 Frequency: Displays the tuned value of the standby frequency for the communications transceiver (COM1).

(4) Audio Settings: Controls the audio panel through the buttons on the screen.

(5) Transponder (XPDR) Settings: Controls the main transponder state (ON/STBY/ALT/OFF) and the squawk given by the ATC.

(6) Active NAV1 Frequency: Displays the tuned value of the active frequency for the navigation (VOR/LOC NAV1) receiver.

(7) Standby NAV1 Frequency: Displays the tuned value of the standby frequency for the navigation (VOR/LOC NAV1) receiver.

(8) Home Pushbutton: Press to go to the main menu. Press and hold for 3 seconds to go to the World Map.

(9) Direct-To Pushbutton: Provides access to the direct-to function, which allows the pilot to enter a destination waypoint and establishes a direct course to the selected destination.

(10) Small/Large Knobs: The small knob is used to tune the kilohertz (kHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the on-screen cursor. Pressing the small knob activates the on-screen cursor to switch between COM or VLOC tuning mode, long pressing the knob swaps either the COM or NAV active/standby frequencies. The large knob is used to tune the megahertz (MHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the on-screen cursor. In addition, the inner large knob can be rotated to navigate between pages, such as MAP, NAV, FPL, etc.

(11) CDI Mode & Knobs Hint: Provides information on the navigation source (GPS or VLOC) output to an external HSI or CDI. The hint is used to bring information on how to operate the bottom-right knobs.

(12) Touch Screen: This is the main screen area to operate the GTN unit.

GTN 650XI

(1) COM Volume/Push Squelch Knob: Controls communications radio volume. Press momentarily to disable automatic squelch control.

(2) Active COM2/NAV2 Frequency: Displays the tuned value of the active frequency for the communications transceiver (COM2) or the VLOC receiver (NAV2).

(3) **Standby COM2/NAV2 Frequency:** Displays the tuned value of the standby frequency for the communications transceiver (COM2) or the VLOC receiver (NAV2).

(4) **Transponder (XPDR) Settings:** Controls the main transponder state (ON/STBY/ALT/OFF) and the squawk given by the ATC.

(5) **Home Pushbutton:** Press to go to the main menu. Press and hold for 3 seconds to go to the World Map.

(6) **Direct-To Pushbutton:** Provides access to the direct-to function, which allows the pilot to enter a destination waypoint and establishes a direct course to the selected destination.

(7) **Small/Large Knobs:** The small knob is used to tune the kilohertz (kHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the on-screen cursor. Pressing the small knob activates the on-screen cursor to switch between COM or VLOC tuning mode. The large knob is used to tune the megahertz (MHz) value of the standby frequency for the communications transceiver (COM) or the VLOC receiver, whichever is currently selected by the on-screen cursor.

(8) **CDI Mode & Knobs Hint:** Provides information on the navigation source (GPS or VLOC) output to an external HSI or CDI. The hint is used to bring information on how to operate the bottom-right knobs.

(9) **Up/Down Touch Buttons:** Used to scroll the working area up or down, depending on the content displayed.

(10) **Touch Screen:** This is the main screen area to operate the GTN unit.

The GTNXI units were developed by TDS Sim Software. For more information on how to use the GTN units, you can take a look at the respective documentation found on the TDS Sim website.

KR 87 TSO ADF Tuner (ADF1 & ADF2)

(1) **Power / Volume Switch:** This knob controls ON / OFF / VOL for the respective unit.

(2) **Frequency Select Knobs:** The active frequency is displayed in the left side of the window, with a standby frequency displayed in the right side when FRQ is annunciated. Pull the small inner knob out to tune 1's, push in to tune 10's. The outer knob tunes the 100's and the 1000's, up to 1799.

(3) **ADF (Automatic Direction Finder) Button:** Use the ADF mode ('in' position) for navigation. Use the ANT (Antenna) mode ('out' position) for improved audio reception. When in ANT mode, the RMI and HSI ADF bearings are positioned to 90 degrees, regardless of the correctly tuned NDB. When in ADF mode, the bearing needles point towards the NDB (if properly tuned) or to the east (90 degrees) if the ADF frequency is out of range.

(4) **BFO (Beat Frequency Oscillator) Button:** This is used in some countries other than the USA to allow the Morse code identifier to be heard on unmodulated stations.

(5) **FRQ (Frequency) Button:** Pressing this button 'flip-flops' frequency displays, switching between pre-selected 'standby' and 'active' frequencies. It's also used to retrieve the 'standby' frequency in the timer modes.

(6) **FLT/ET (Flight Timer/Elapsed Timer) Button:** Use this button to select flight time (FLT), counted since the beginning of the flight session in the sim, or elapsed time (ET).

(7) **SET/RST (Set/Reset) Button:** Use this button to start/stop/reset the Elapsed Timer.

GTX 330 Transponder

(1) ON/STBY/ALT/OFF Pushbuttons: Pressing STBY, ON, or ALT keys powers on the transponder displaying the last active identification code. Pressing the ON pushbutton allows the transponder to reply to interrogations, as indicated by the Reply Symbol **(R)**. Replies do not include altitude information. Pressing the STBY pushbutton selects the standby mode. When in standby mode, the transponder will not reply to any interrogations. Pressing the ALT pushbutton activates the ALT mode, where the transponder replies to identification and altitude interrogations as indicated by the Reply Symbol **(R)**. Replies to altitude interrogations include the standard pressure altitude received from an external altitude source, which is not adjusted for barometric pressure. The ALT mode may be selected in aircraft not equipped with an optional altitude encoder; however, the reply signal will not include altitude information. Pressing the OFF pushbutton powers off the GTX 330.

(2) Code Selection Keys: Code selection is done with eight keys (0 – 7) providing 4,096 active identification codes. Pushing one of these keys begins the code selection sequence. Digits that are not yet entered appear as dashes. The new code is activated when the fourth digit is entered. Pressing the CLR key moves the cursor back to the previous digit. Pressing the CLR key when the cursor is on the first digit of the code, or pressing the CRSR key during code entry, removes the cursor and cancels data entry, restoring the previous code. You may press the CLR key up to five seconds after code entry is complete to return the cursor to the fourth digit. The numbers 8 and 9 are not used for code entry, only for entering a Count Down time, and for adjusting contrast and display brightness.

(3) IDENT Pushbutton: Pressing the IDENT key activates the Special Position Identification (SPI) Pulse for 18 seconds, identifying your transponder return from others on the air traffic controller's screen. The word IDENT will appear in the upper left corner of the display during this time.

(4) VFR Pushbutton: Sets the transponder code to the pre-programmed VFR code selected during installation configuration (this is set to 1200 at the factory). Pressing the VFR key again restores

the previous identification code. If the VFR Key is pressed when disabled (dependent upon installation configuration) a VFR Key Disabled message appears to indicate that no operation took place.

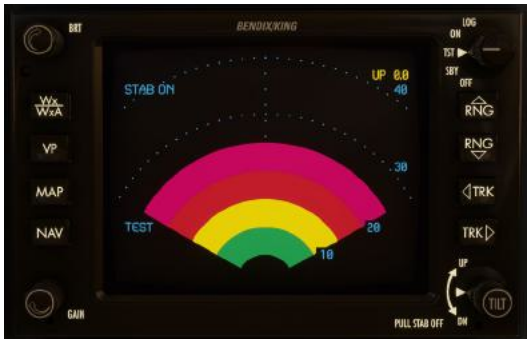
(5) FUNC, START/STOP, CRSR, CLR Pushbuttons: FUNC pushbutton changes the page shown on the right side of the display. Display data includes Pressure Altitude, Flight Time, Altitude Monitor, Count Up, and Count Down timers. Also displays Outside Air Temperature, Density Altitude, Contrast, Display, and ADS-B Operation (dependent upon installation configuration). START/STOP pushbutton starts and stops the Altitude Monitor, Count Up, Count Down, and Flight timers. CRSR pushbutton initiates starting time entry for the Count Down timer and cancels transponder code entry. CLR pushbutton resets the Count Up, Count Down, and Flight timers. Cancels the previous keypress during code selection and Count Down entry. Returns cursor to the fourth code digit within five seconds after entry.

RDR2000 Weather Radar

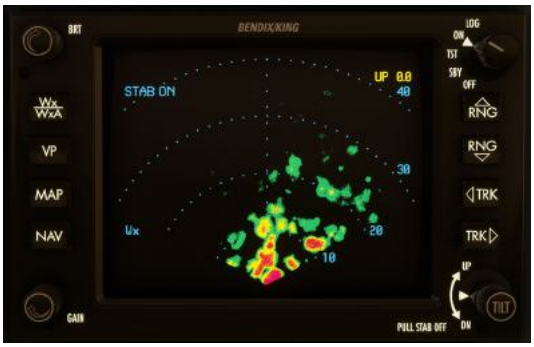
NOTE: *The weather radar instrument was made as accurate and functional as possible, provided the limitations with the Microsoft Flight Simulator avionics framework and the sim's Coherent engine. Some functions such as antenna tilt or track line are not simulated here. In addition, the weather radar returns may not be 100% accurate.*

(1) WXR Mode Knob: Rotating this knob makes the weather radar to change its functionality mode. There are five modes: OFF (self-explanatory), STBY, TEST, ON, LOG.

STBY Mode



TEST Mode



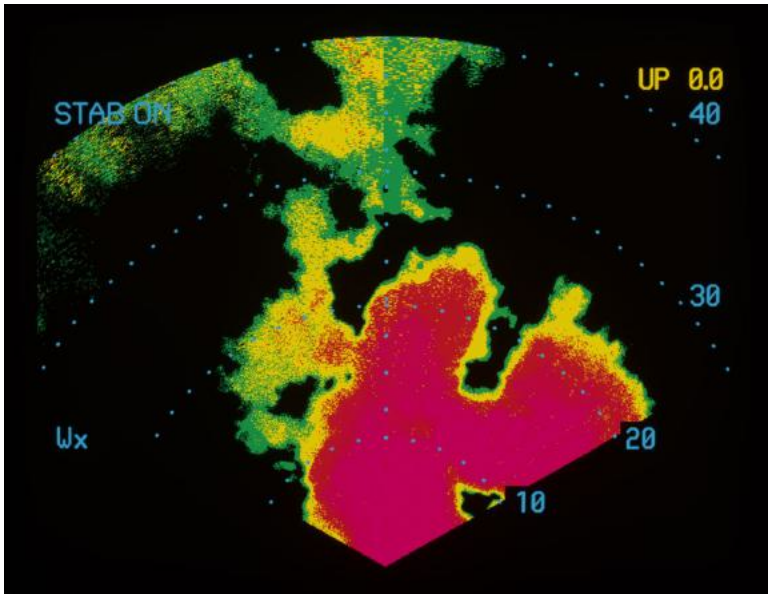
ON Mode

LOG Mode

(2) Brightness Knob: Adjusts the brightness of the WXR display.

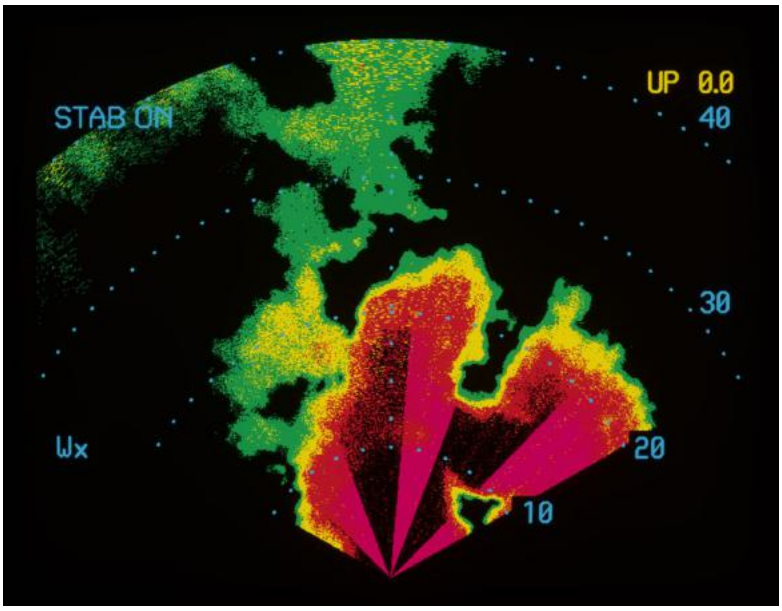
(3) Gain Knob: Adjusts the weather radar returns gain. This adjusts the receiver sensitivity. More frequently used when flying through storms, to capture the severe precipitation cells. Based on how it is set, it is also reflected in the returns output.

In the screenshot below, you can see the returns with the maximum gain on the left, and the returns with the minimum gain on the right.

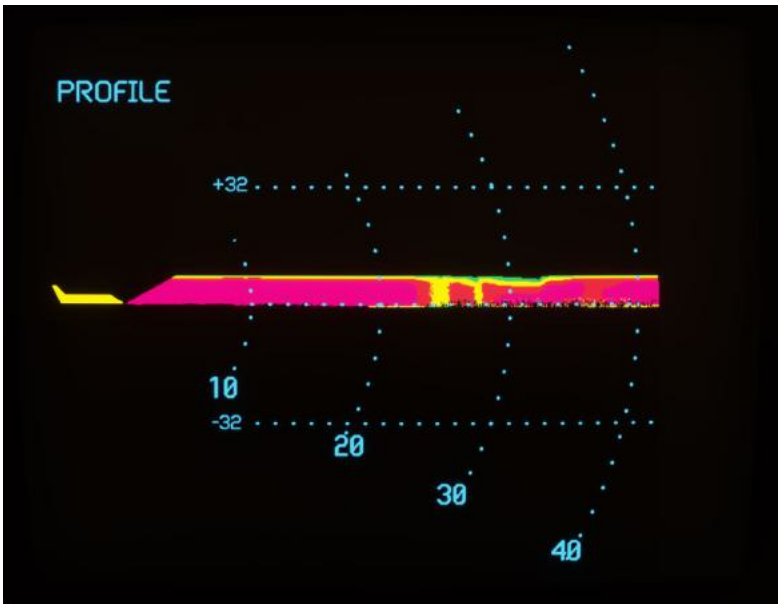


(4) Antenna Tilt Knob (not completely simulated): Adjusts the weather radar antenna tilt. This can be set upwards or downwards, depending on the aircraft's current altitude and climb/descend rate. This function is not simulated here due to sim limitations, but you can see the current antenna tilt angle on the top-right corner of the WXR display.

(5) Wx/WxA Pushbutton (partially simulated): Enables or disables the WxA (weather alert) mode. When enabled, it causes the magenta (extreme precipitation) returns to flash to black at a rate of 1 second (1 Hz).



(6) Vertical Profile (VP) Pushbutton: When the WXR mode is set to ON, press this button to switch between horizontal (standard) visualization or the vertical visualization.



(7) Ground Map (MAP) Mode Pushbutton: Places the WXR in ground mapping mode. Not simulated here.

(8) Navigation Map (NAV) Mode Pushbutton: Places the unit in navigation mode, so that preprogrammed waypoints may be displayed. Not simulated here.

(9) Range UP/DN Pushbuttons: Adjusts the weather radar range. Possible ranges are: 10, 20, 40, 80, 160 and 240 nautical miles (NM).

(10) TRK L/R Pushbuttons: Provide a yellow track centerline for vertical profile. Not simulated here.

(11) STAB ON Legend: Fixed due to limitation with the sim's WX framework. Tells the WXR antenna stabilization is enabled.

(12) WXR Mode Legend: Tells the current WXR mode set, based on the WX mode knob's position.

(13) Current Antenna Tilt Angle Legend: Tells the current tilt angle of the WXR antenna. If the antenna points upwards, it will display UP followed by the tilt angle. If the antenna points downwards, it will display DN followed by the tilt angle.

(14) Range Legends: There are four range legends within each return arc, starting from the range selected down to the one closest to the aircraft.

(15) Returns Display: It displays the return of the weather depiction captured by the simulation. The colors and rain rates have been calibrated based on real-life documentation. It displays black if there are no returns or if the WXR mode is set to STBY, as there is no radar transmission in this mode. If the WXR mode is set to TEST, it displays the multicolored arc test patterns (green, yellow, red, magenta). When in LOG mode, no radar transmission nor display arcs will be represented, and instead there will be a legend with the product name, copyright and current product version.

Electronic Flight Bag (EFB)

According to real-life aviation glossary, an electronic flight bag (EFB) is an electronic device that helps flight crews to perform flight management tasks more easily and efficiently, providing the reference material often found in the pilot's carry-on flight bag. In addition, those devices can host purpose-built software applications to automate other functions normally conducted by hand, such as performance calculations.

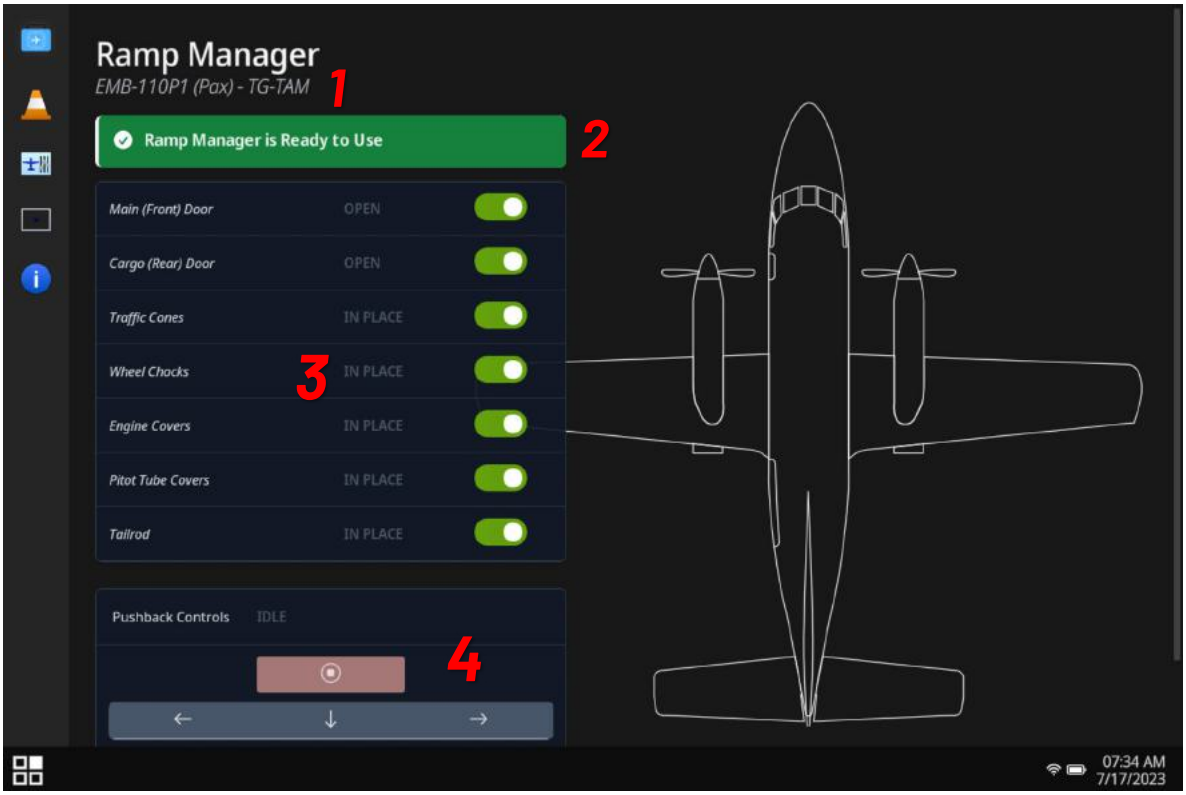
This product features a virtual EFB, which consists of a tablet-like device with a unique application user interface, providing some pages with useful functions. The functions included within the EFB can be found from the navigation bar on the left side of the EFB screen, like in the screenshot below. The first time you start flying the aircraft, you will see the EFB visible. You can make the EFB not to appear every time the flight starts, by toggling off the respective check on the EFB settings, more on that later.

Whenever you want to show or hide the EFB itself, you can press the button below the **RAMPMGR TABLET** decal, which is located on the left side of the main instrument panel. Once it appears, you can turn the screen on by either pressing the power button on the upper right corner of the device, or touching the screen

when it is off (if the powering on by touching the screen setting is enabled). To power it off, long-press the power button, until you see the device's screen is turned off.

The pages included within the EFB user interface are **ramp manager** (the orange cone icon), **aircraft preferences** (the blue control panel icon), **device settings** (the tablet icon) and **About the product** (the information icon). Following is an explanation of each page from the EFB user interface (UI).

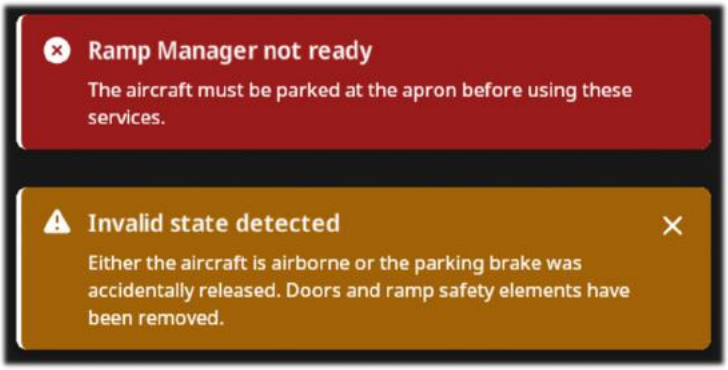
Ramp Manager



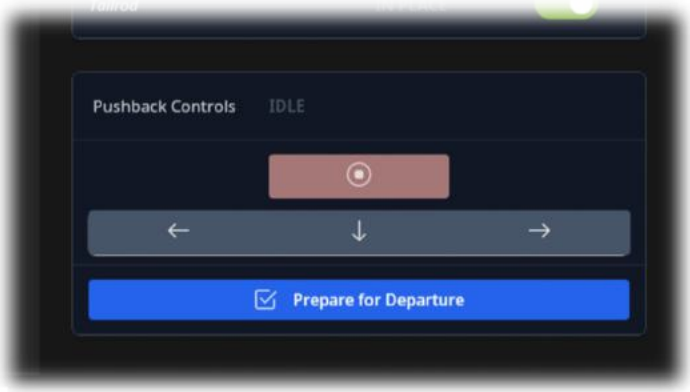
This page contains controls for opening/closing doors and placing the ramp safety elements such as wheel chocks and cones, or engine covers. In addition, this section contains controls for requesting pushback, eliminating the necessity for requesting pushback from the ATC menu. This panel only works when the parking spot where you are located has a pushback tug available.

This page contains the selected aircraft variant and tail number **(1)** below the **Ramp Manager** title. Below that, there is a message bar **(2)**, where it indicates the availability state of the Ramp Manager service: green when this service is ready for use, and red when it is not. It is only available when the aircraft is on ground and parking brake is set. If parking brake is released accidentally, all the doors will automatically close, the ramp safety elements will be taken out, the battery switch will automatically move to the BAT position, and the "Ramp manager is not ready to use" message will display, followed by another warning

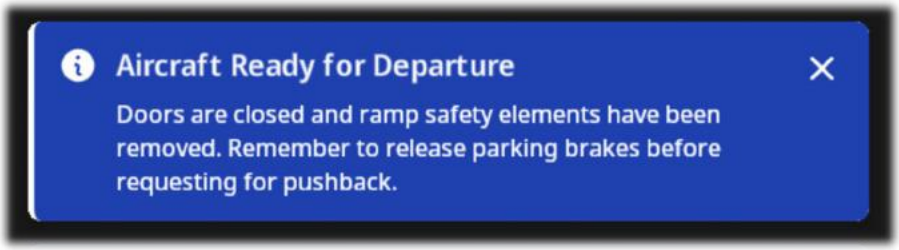
message, notifying that the parking brakes were released without adequately preparing the aircraft for departure, like in the screenshot below.



The ramp manager control panel **(3)** contains a list of available doors and ramp safety elements that can be placed in the apron while the aircraft's pre-flight checks are performed. Doors' list varies accordingly, based on the selected aircraft variant.

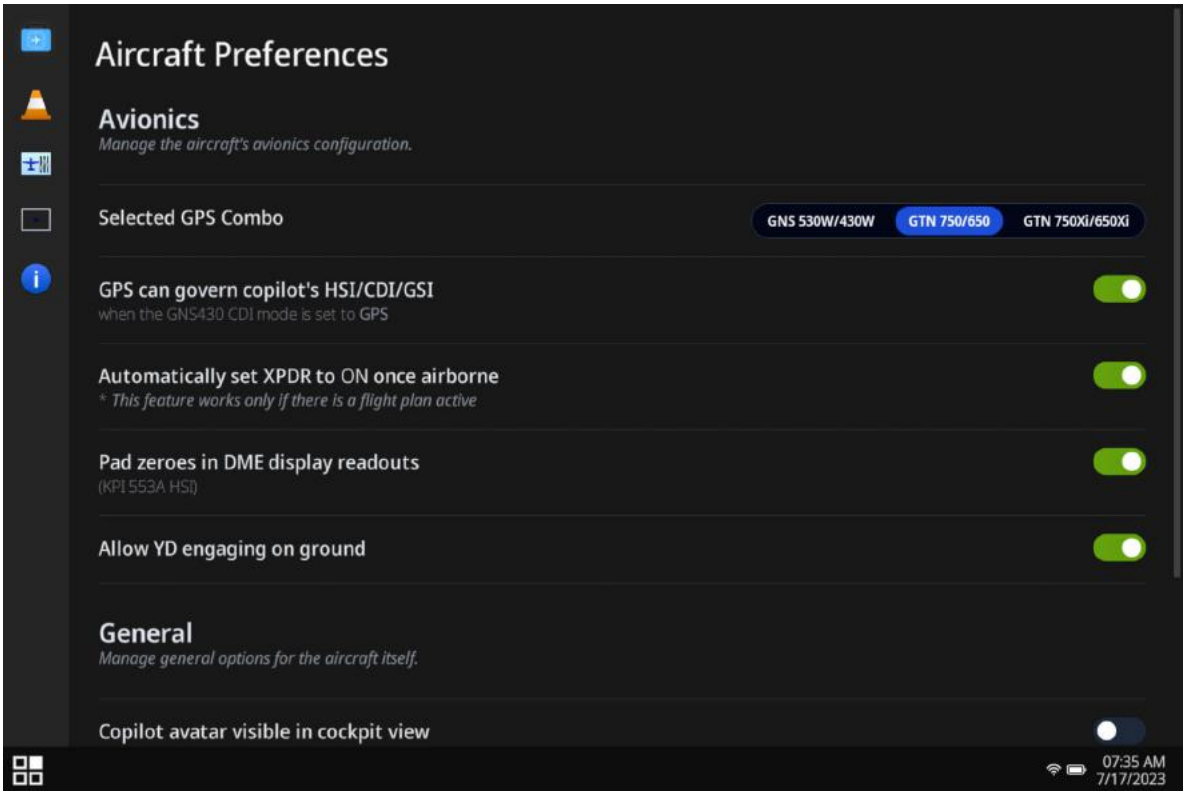


Below that panel, there is a pushback control panel **(4)**, with buttons to begin pushback and controlling the steering direction. Plus, there is a blue button below the control buttons, where you can make the EFB to automatically prepare the aircraft for departure. By pressing this **Prepare for Departure** button, doors are automatically closed, the ramp safety elements are taken out of place and the Battery Switch is automatically moved to the **BAT** position, especially in case it was set to **EXT POWER**. A message like the one below will be displayed, confirming the aircraft is ready for departure. You can dismiss it by clicking on the **X** button.



When you request pushback, you will see a warning message in case the parking brakes are not released yet. This is for situational awareness, where it will notify you to get ready before the pushback tug is attached to the aircraft.

Aircraft Preferences



This page contains all the available settings for the aircraft, which can be saved and reloaded on every flight session with our product in the sim. Please take note that all your preferences are saved **per variant**, i.e., the preferences are not shared between all the variants within the product, but they are individual between each. For example, you can set up the EMB-110P with one GPS options, and the EMB-110P1 pax setup with another GPS option and the copilot avatar visible in the interior view.

Following are the options available for you with this product:

Avionics

- **Selected GPS Combo:** ***Available and visible only on the Windows version of the product, and if at least one of the supported third-party GPS add-ons is installed on your system.*** Here, you can select which GPS duo that you would like to use on the aircraft. Choose between the Working Title's GNS 530W/430W (the default GPS in the sim), the PMS50's GTN 750/650, or the TDS Sim Software's GTN 750Xi/650Xi.

- **GPS can govern copilot's HSI/CDI/GSI:** Available only with the WT GNS avionics selected. Toggle this option to make the GNS 430W GPS govern the copilot's HSI instrument (i.e., the course needle, Course Deviation Indicator and Glide Slope Indicator), when the GNS430's CDI mode is set to GPS.
- **Automatically set XPDR to ON once airborne:** This feature only works if there is a flight plan loaded and the aircraft is airborne. Toggling this to ON makes the aircraft to change the transponder state to ON, if it was not set to ON before takeoff, preventing the ATC to nag you about "resetting the transponder due to a malfunction".
- **Pad zeroes in DME display readout:** Toggling this setting on will make all the numbered readouts of the KPI553A DME display to show at least two digits and not one (like in the real-life unit), when the variable readout in question reads less than 10 units. An example of this setting can be represented below in the screenshots:

Setting set to ON

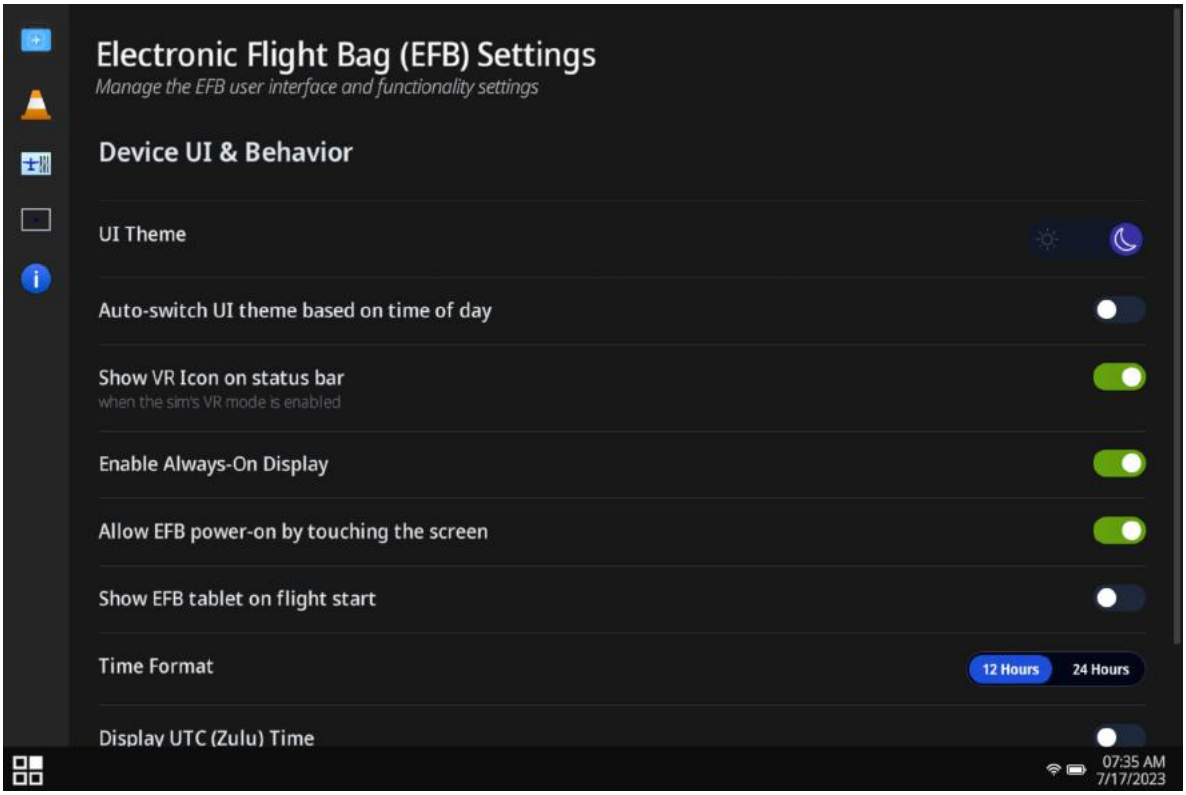
Setting set to OFF

- **Allow YD (yaw damper) to be engaged on ground:** Toggling this setting to on allows you to engage the yaw damper, even if the aircraft is on ground. If this setting is set to OFF, the yaw damper will be automatically turned off if you attempt to engage it on ground.

General

- **Copilot avatar visible in cockpit view:** If this toggle is checked, the MSFS standard copilot avatar will be visible on both exterior and interior views.
- **Open doors & place ramp safety elements:** (At flight start with the aircraft on parking spot) If this toggle is checked, doors will be automatically opened and all ramp safety elements will be placed in ramp, when the aircraft is loaded parked at a parking spot, i.e., Cold & Dark. This allows you to save time between toggling EFB visibility and clicking on all ramp manager toggles.
- **Play passenger signs sound when switching on/off:** If this toggle is checked, the simulation can play a passenger sign sound every time you switch the pax signs (No Smoking & Fasten Seatbelts) on/off.

Electronic Flight Bag (EFB) Settings



This page allows you to take control of how the EFB should work, based on the settings available for you. Following is a brief description of each setting.

- **UI (User Interface) Theme:** Click on this toggle to switch between light or dark themes. This toggle is visible only when the "Auto-switch UI theme based on time of day" toggle is set to OFF.

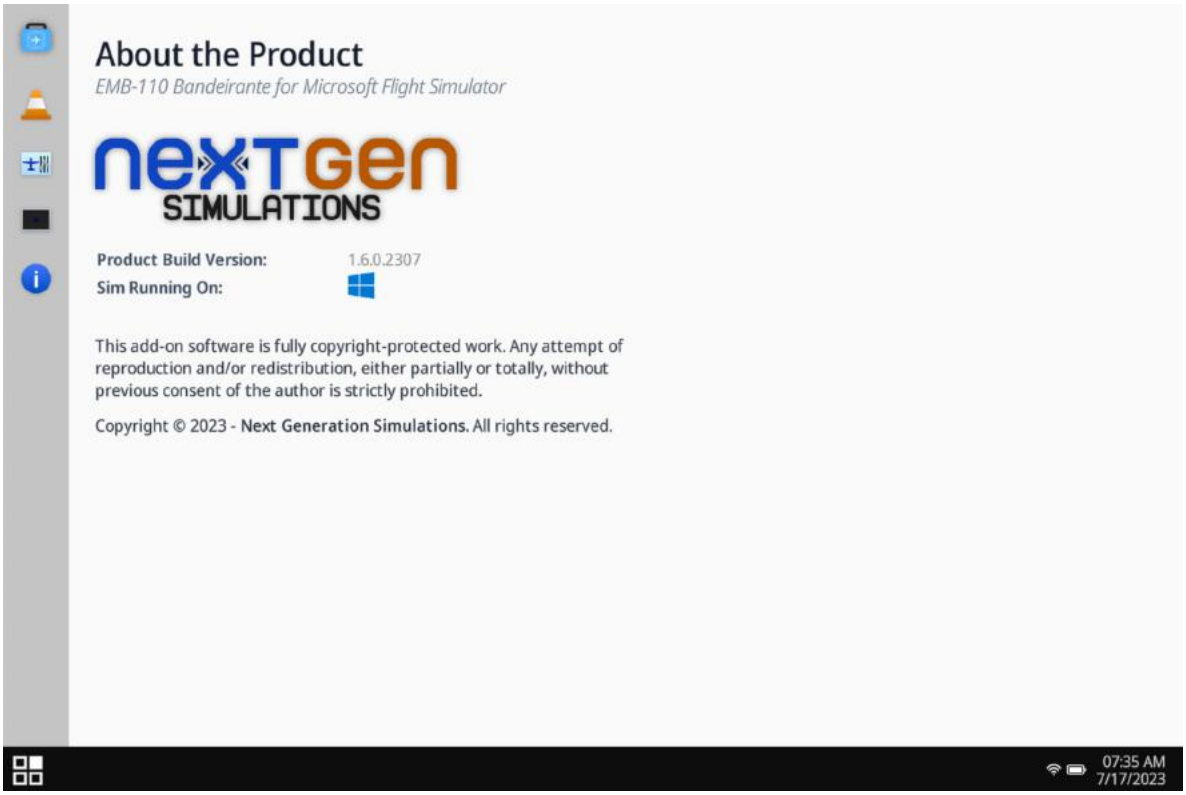
Light

Dark

- **Auto-switch UI theme based on time of day:** When this toggle is checked, the UI theme will be light when there is daylight in the simulation. Otherwise, it will be dark. A green icon next to the Wi-Fi icon on the bottom-right side of the screen will be displayed if this UI theme auto-switching feature is enabled, like in the image below.

- **Show VR Icon on status bar:** When this toggle is checked, a VR headset like icon will be displayed on the bottom-right corner of the screen, each time the simulation is in VR mode.
- **Enable Always-On Display:** Toggling this switch to ON, allows the EFB to display a simple screen with the simulation's date and time, when the EFB display is turned off.
- **Allow EFB power-on by touching the screen:** Enable this setting to ease the device's power on task, by just clicking on the screen, instead of pressing the power button.
- **Show EFB tablet on flight start:** Enable this setting to make the EFB appear every time you load the aircraft in the sim.
- **Time Format:** Switch between the 12-hour or the 24-hour time format for the EFB's clock, even in the AOD (always-on display) information.
- **Display UTC (Zulu) Time instead of the Local Time:** When enabled, the EFB's clock will display the universally coordinated time (UTC) instead of the local time from where you are located in the simulation.
- **Display seconds in the clock:** When enabled, the EFB clock will show the seconds next to the minutes.

About the Product

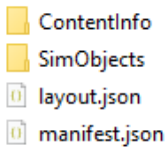


This page shows the basic information about the product, its version number, copyright statement, and where the sim is being run on. If you are running the sim from a compatible PC, you will see the blue Windows logo. But, if you are running the sim from an Xbox console or from Xbox Cloud Gaming, you will see the green Xbox logo instead.

Folder Structure

Since Microsoft Flight Simulator has changed its folder structure and the way all mods are installed into the sim, the product is installed into either the Community folder (for those who purchased the product through 3rd-party stores) or the Official folder (for those who purchased the product via MSFS Marketplace), located both at the installed packages folder you assigned when MSFS was installed and launched for the first time. There you will find the folder named **nextgensim-aircraft-bandeirante**.

Main Addon Folder



This folder contains the required files for the product to properly work. The **ContentInfo** folder contains the package information that is displayed in the Microsoft Flight Simulator GUI, via the Content Manager section. The **Fonts** folder contains the fonts called by the gauges in-sim. The **html_ui** folder contains some of the gauges that were coded using HTML/JS/CSS technologies. The **ModelBehaviorDefs** folder contains some of the definitions of the 3D model animations and interaction behaviors logic included within the product, mostly used for common components such as the behaviors of the PMS50's GTN750, the TDS GTNXI and other instruments' components. The **SimObjects** folder contains the product itself, in this case, the 3D models, textures, gauges, sounds and configuration files. Two other JSON files accompany the folders: **layout.json** (which basically lists all files contained here in the MSFS package), and **manifest.json** (which contains the essential product's version information and minimum MSFS version in order for the product to properly work). Finally, you will also see some ***.LocPak** files, where they contain localized strings used in the product, such as loading tips and some of the custom cockpit tooltips made for the product.

For Marketplace users: Inside the **SimObjects** folder, you may find ***FSArchive*** files. These contain the models themselves, their behavior coding, sounds and panel coding; they are protected by Microsoft when publishing to the Marketplace.

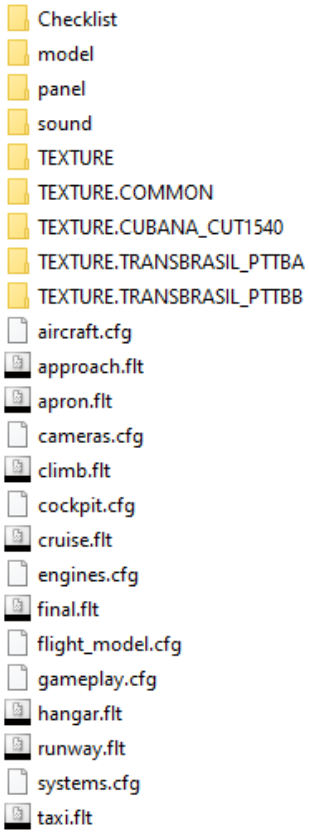
Aircraft Folders

NextGen_EMB110P = EMB-110P

NextGen_EMB110P1 = EMB-110P1

NextGen_EMB110P1Freight = EMB-110P1K (P1 Freighter)

Contents on each aircraft folder



Checklist Folder: Here you will find the Interactive Checklists related files.

Model Folder: Here you will find the 3D geometry related files, a configuration file, two **glTF** files with their accompanying **BIN** and **XML** files. They are **NOT** visible on the Marketplace version.

Panel Folder: Here you will find the instrument panel related files with the gauges files that are called in-sim. They are **NOT** visible on the Marketplace version.

Sound Folder: This folder contains the required files for the aircraft sound-set included with the product (includes both the engines sound-set and the accompanying cockpit and environment sounds and foleys). They are NOT visible on the Marketplace version.

Texture Folders: Each folder contains most of the required texture files for the liveries to work. Common textures such as reflection maps, emissive maps, normal maps, etcetera and common parts can be found on the **Texture.Common**. The other texture folders correspond to the out-of-box liveries or own-made liveries. Each folder must contain a texture.cfg file aliasing the Texture.Common folder to correctly render the aircraft in FS.

Configuration Files: Also, on the root of the aircraft folders, you will find some CFG files and FLT files. These are required as they contain the flight model, liveries information and flight setup in MSFS. They are **NOT** visible on the Marketplace version.

What's New In the Product?

Version 1.6.0.2307 [Service Release 2] (Released on July 17th, 2023)

This is the second major update to the product, which also addresses issues found after Aircraft & Avionics Update II (AAU2).

- Added TDS GTNXI VC integration. For this to work, you must have the GTNXI addon from TDS Sim Software purchased and installed. More information on https://tdssim.com. **(PC Only)**
- Added PMS50 GTN750 **KnobPushLong** event support, allowing for quickly swapping between the COM/NAV active/standby frequencies.
- PMS50 WTT mode is now natively integrated within the product.
- Updated PMS50 GTN750 integration files to the most recent version.
- Added RDR2000 weather radar.
- Updated code for SPAD.neXt events compatibility.
- Added a pre-made SPAD.neXt profile for the EMB-110. **Exclusively for the Honeycomb Aeronautical Alpha Flight Controls & Bravo Throttle Quadrant devices**, as a separate download from our website. **(PC Only)**
- Upgraded KR87 ADF tuner display and behavior with a customized code, based on the sim's stock KR87.
- Added second ADF tuner with ADF2 support.
- Added ADF's ANT (Antenna) mode behavior to RMI needles and HSI bearing needle.
- Updated visual styles and fonts in HSI's DME, KAS297 (altitude selector) and KR87 (ADF) displays.
- Upgraded 3D model and textures of GPS, radios, weather radar and autopilot frames and bezels.
- Updated exterior model PBR maps, with less metallic and more accurate coated paint reflections.
- Improved windshield scratching details and removed fingerprints from the windshield.
- Fuel levers now behave as Condition levers rather than mixture levers.
- Fixed issue where the ECU levers were not interactable using the Xbox controller.
- Updated EFB 3D model and textures, and fully remade the EFB UI in HTML.
- Added pushback controls, light/dark UI modes, and persistent aircraft and EFB settings to the EFB UI.
- Removed all 2D XML gauges used in the product on both platforms, and the WASM-based VSI display is now ported to Xbox, after WASM support on Xbox is available since Sim Update 12.
- Removed debugging symbols on WASM gauges, as part of a vulnerability fix.
- The autopilot master can only be engaged when airborne, and it will be automatically disconnected when the aircraft is on ground.

- GSI/CDI flags now appear only when there is no electricity on the aircraft, and fixed bugs in GSI/CDI pointers code, especially for the TDS GTNXI compatibility.
- Merged JayDee's improvement mod into the base product, performed fixes and improved code functionality. This merge adds flight dynamics and engine parameters improvements, CFD simulation, upgraded turboprop model, a new custom ignition/starter logic, improved inertial separators logic, engine inlet anti-ice switches logic, fuel pumps and crossfeed switches logic and copilot avatar visibility inside (not just outside).
- Added landing touchdown FX.
- Updated product's manual with the inclusion of notes regarding Honeycomb's hardware compatibility, instructions on how to import our SPAD.neXt configuration, and explanation about functionality of the weather radar, GTNXi integration and the new EFB user interface.
- Added tooltips to the GTN750, GTNXI, KMC321 and KR87 buttons and knobs.
- Updated loading tips texts, and updated localization files to include all currently supported sim languages.
- Minor bug fixes.

Version 1.5.3.2302 [Post-SR1 Hotfix 3] (Released on April 28th, 2022)

This patch addresses compatibility issues after Aircraft & Avionics Update 1 (AAU1).

- Added Working Title GNS430W/530W native compatibility, after its standardization in MSFS's Aircraft & Avionics Update I (AAU1).
- Fixed GPS hot-swapping mechanism code, following the guidelines from Working Title.
- Updated PMS50 autopilot module (APGA) to the latest available changes.
- Remade KPI553A DME and KAS297C displays as HTML instruments (technical preview).
- For SimMarket customers, this is the first product compatible with their simInstaller technology, allowing an easier installation of the product through the SimMarket app. **THIS IS APPLICABLE FOR PC (SIMMARKET) USERS ONLY.**
- For iniBuilds Store customers, the product is installable through the iniManager app, where there is no installation program. **THIS IS APPLICABLE FOR PC (INIBUILDS) USERS ONLY.**
- General minor bugfixes.

Version 1.5.2.2205 [Post-SR1 Hotfix 2] (Released on May 1st, 2022)

- Improved autopilot system, thanks to the autopilot gauge (APGA) developed by PMS50, which is bundled in the product, and available for both PC and Xbox.
- Regression of the KAS297C display to the XML version for compatibility with the PMS50's autopilot system.
- Fixed misplacement of the VSI display instrument. **PC ONLY**

- Added PMS50's WTT (Working Title Technology) Mode Compatibility. For this, a separate package is provided from the PMS50's website for you to download. Do not forget that this mode heavily relies on the PMS50's GTN, and you must have v2.1.30 installed at least. **PC ONLY**
- Fixed third-party stores installer's front-end and back-end.
- General minor bugfixes.

Version 1.5.1.2204 [Post-SR1 Hotfix 1] (Released on April 28th, 2022)

- Integrated the fixes to flight dynamics made by JayDee, into the product.
- Fixed ADF system, where a standby frequency is now allowed to be tuned on the KR87 tuner.
- Fixed fuel system tanks priority.
- Preliminary re-make in WebAssembly (WASM) of the HSI display, VSI display and KAS297C display gauges, affected by the FPS drop issue on PC.

Version 1.5.0.2112 [Service Release 1] (Released on December 13th, 2021)

This is the first major update to the product. Jumped the version of the product to version 1.5.

- Fully remade the engine sound-set to accurately match to its real counterpart.
- Added full cockpit integration of PMS50's GTN750 & GTN650. NOTE: This requires the respective GTN add-on, which is separately downloaded from pms50.com. **FOR PC ONLY.**
- Improved VR (Virtual Reality) experience.
- Product made available for Xbox.
- Redesigned EFB tablet GUI.
- Added on the EFB an option to switch between the PMS50 GTN and the Asobo GNS units.
- Product documentation bundled within the package files, especially for customers of the PC Marketplace version.
- Product documentation made available on our main website. Navigate to https://www.nextgensim.com.co/downloads > Products Documentation and download the manuals.
- Fixed RMI and HSI logic, especially for appropriate ADF and VOR/LOC navigation.
- Added Selected VS bug to the Vertical Speed (VSI) display.
- Added logic to set brightness of the VSI display.
- Attitude Indicator now cages with no battery or electrical power available and uncages with at least one source of power available.
- Restored gear lever sound.
- Added missing Engine Start checklist to the Interactive In-Sim Checklists.
- Fixed bugs found on the Interactive Checklists.
- Fixed issue of Quickviews getting stuck.

- Fixed invisible plane issue when using the aircraft on Multiplayer mode.
- Added missing pilot avatars in cockpit, visible only on the Exterior view.
- General optimizations made to 3D models, without degrading the overall visual quality and fidelity.
- Fixed issue where the environment would enter into the cockpit.
- Added tail rod in the ground handling equipment.
- Added animation to the cockpit side windows on both sides (pilot and co-pilot).
- Added exhaust blast effect to the engines' nozzles.
- General minor bugfixes.

Version 1.0.3.2105 [Hotfix 3] (Released on August 2nd, 2021)

This is an emergency patch for MSFS Sim Update 5 compatibility.

- Fixed GTX330 transponder after a general failure due to breaking changes in MSFS's Sim Update 5.
- Fixed HUD instruments after breaking changes in MSFS's Sim Update 5.
- Added support contact links to the Marketplace information, as per requirement by Microsoft.
- General minor bugfixes.
- Third-party stores Installer EXE remade, based on Windows Installer.
- Third-party stores Installer EXE fixed to allow installation of the product on Windows 10 version 1903.

Version 1.0.2.2104 [Hotfix 2] (Released on April 5th, 2021)

- Fixed Copilot's ADI failure flags on both 3D model and code-behind behavior, where they must be hidden after electrical supply is found.
- Added hangar description and performed bug fixes, as per requirement by Microsoft, in order to publish the product on the in-game Marketplace.
- Gear lever temporarily removed due to conflicts with Honeycomb hardware.

Version 1.0.1.2104 [Hotfix 1] (Released on April 1st, 2021)

- Fixed certain areas of the interior model, after users' feedback, especially on the texturing side.
- Fixed windshield glass darkness.
- Fixed gyro and fuel pumps sounds.
- Fixed fuel consumption. The aircraft does not burn fuel from the left tank only anymore.
- ADI (Attitude Indicator) is now electrically driven.
- General minor bugfixes.

Version 1.0.0.2103 (Released on March 26th, 2021)

Initial release of the product.