iFSim.Ready User's Manual

Version 2.1.0 / December 24, 2025

CnTech Co.,Ltd.

Table of Contents

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

1 Introduction

1.1 What is iFSim.Ready?

iFSim.Ready is an all-in-one flight simulation assistant software designed by CnTech to enhance the user experience for the CNFSimulator series simulation cockpit hardware products. This powerful software offers a seamless interface for managing hardware, performing configuration tasks, conducting hardware tests, monitoring system status, and much more. With iFSim.Ready, users can fully leverage the capabilities of the CNFSimulator A320 / A320Pro / C919 series products and enjoy a smooth, intuitive flight simulation experience.

Turnkey Solution - Plug and Play Convenience

iFSim.Ready provides everything you need to get started with flight simulation in a matter of minutes. Simply launch the software, connect your hardware, and you're ready to go! This plug-and-play solution eliminates the need for complex setup procedures, allowing you to jump straight into your flight simulation experience without hassle. Whether you're a seasoned professional or a newcomer, iFSim.Ready ensures a smooth and fast setup, making it easier than ever to enjoy realistic flight simulation.

Multi-Simulation Support - Flexible Management

iFSim.Ready supports multiple flight simulator software and aircraft simulation software. With iFSim.Ready, users can easily switch between different software without needing to reconfigure or re-install any components. This flexibility makes it easier to experiment with various software configurations, ensuring compatibility with your preferred flight simulation environment.

Customize Hardware Functions - Visual Configuration

iFSim.Ready includes an intuitive configuration management tool, enabling users to customize hardware control functions to suit their individual preferences. Whether you're looking to adjust flight controls, optimize panel settings, or manage hardware connections, iFSim.Ready gives you the power to personalize your simulation setup.

iFSim.Ready provides visual configuration system instead of traditional table-based configuration

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

mode. All cockpit hardware panels are visualized. "Panel-as-Configuration" interface allows user direct interaction with 3D cockpit diagrams. For example, user can click any FCU component or overhead panel button/indicator to immediately enter signal mapping configuration, to achieve "what you see is what you set".

Comprehensive Monitoring - Intelligent Diagnostics

iFSim.Ready goes beyond just managing flight simulation software and hardware - it actively monitors and provides real-time diagnostics to ensure everything is running smoothly. Whether you're working with a full cockpit setup or using individual panels, iFSim.Ready provides full-scale monitoring and diagnostics for all hardware products, from major systems to individual panels and switches.

The software automatically detects and tracks software and hardware versions, ensuring compatibility and smooth operation. It also checks the connection status of all devices, offering real-time alerts if any issues arise. iFSim.Ready can quickly identify faults in hardware connections or calibration issues, helping users troubleshoot problems with ease.

Additionally, the software supports signal testing and calibration for hardware buttons, switches, and other inputs or outputs, making it easier to ensure your equipment is functioning correctly. In case of any abnormalities, iFSim.Ready provides clear and actionable guidance to help users resolve issues quickly, reducing downtime and maximizing the efficiency of your flight simulation setup.

Key Features of iFSim.Ready

- Quick Setup: Plug and play with instant access to flight simulation.
- Streamlined UI: Modern flat design with optimized workflow.
- Multi-Simulation Compatibility: Switch between different aircraft simulation software.
- Customizable Configuration: Tailor hardware controls to meet your specific needs.
- Visual Configuration: Directly interact with cockpit panels for effortless hardware mapping.
- Comprehensive Monitoring: Track the health and status of your entire system in real-time.
- Intelligent Diagnostics: Auto-detection of faults and issues with step-by-step troubleshooting.
- Signal Testing & Calibration: Ensure precise operation of all hardware components.
- Automatic Software and Hardware Version Control: Keep everything up to date with ease.

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

Why Choose iFSim.Ready?

Whether you're simulating a commercial flight for training, developing a new system, or simply enjoying an immersive flying experience, iFSim.Ready is the ideal software solution. Its user-friendly interface, robust diagnostic tools, and seamless integration with the CNFSimulator series make it an indispensable tool for anyone serious about flight simulation.

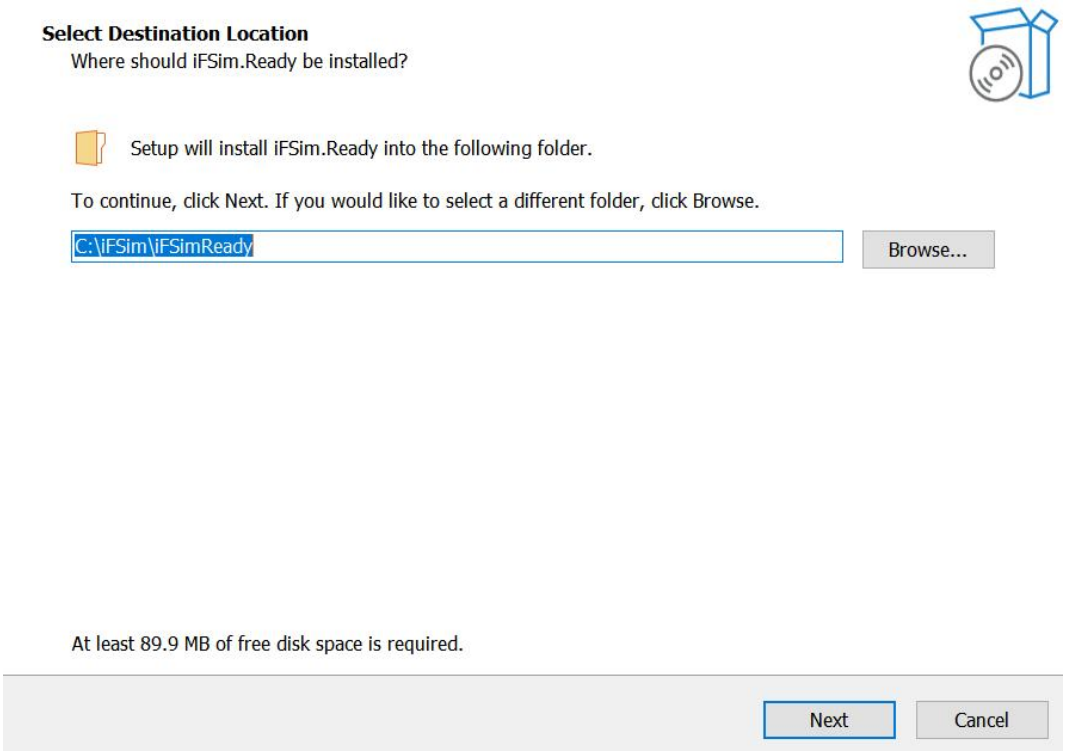
With iFSim.Ready, you gain the confidence of knowing your system is properly set up and running optimally. Whether you're adjusting settings for a specific flight scenario, troubleshooting a hardware issue, or exploring different flight simulation software, iFSim.Ready is here to streamline the entire process.

1.2 Setup Guide

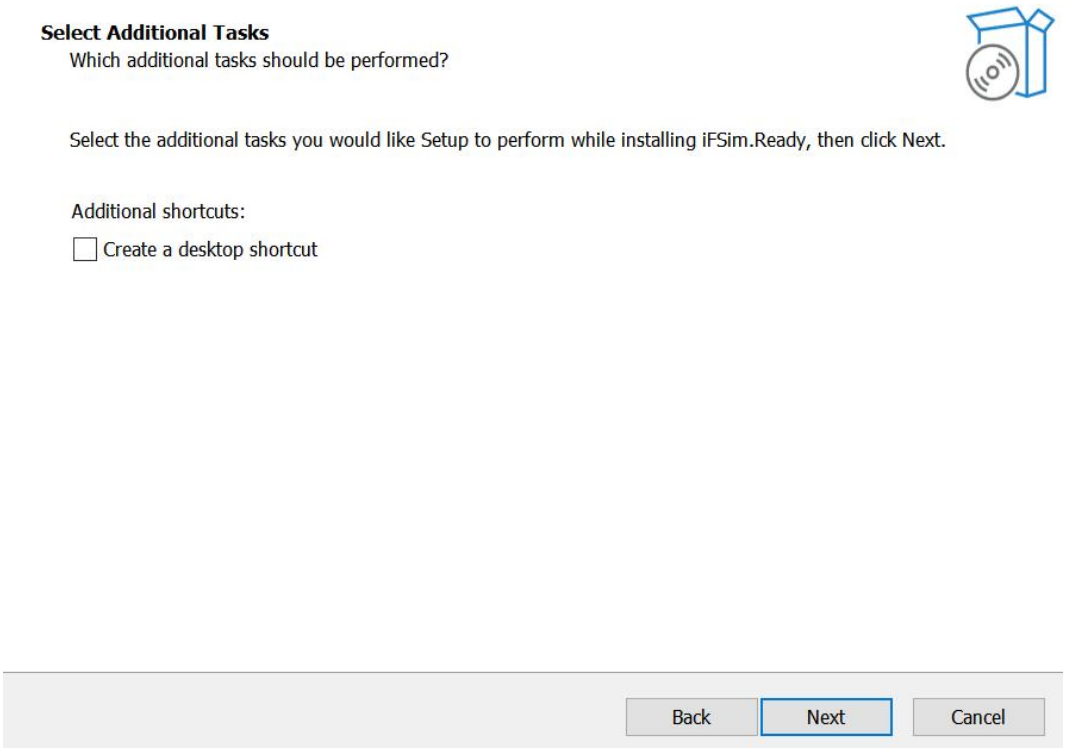
a. Using the "iFSim.Ready_Vx.x.x.exe" to setup iFSim.Ready software. You can download the installer free through the following website.

https://en.cntech.com/blogs/download

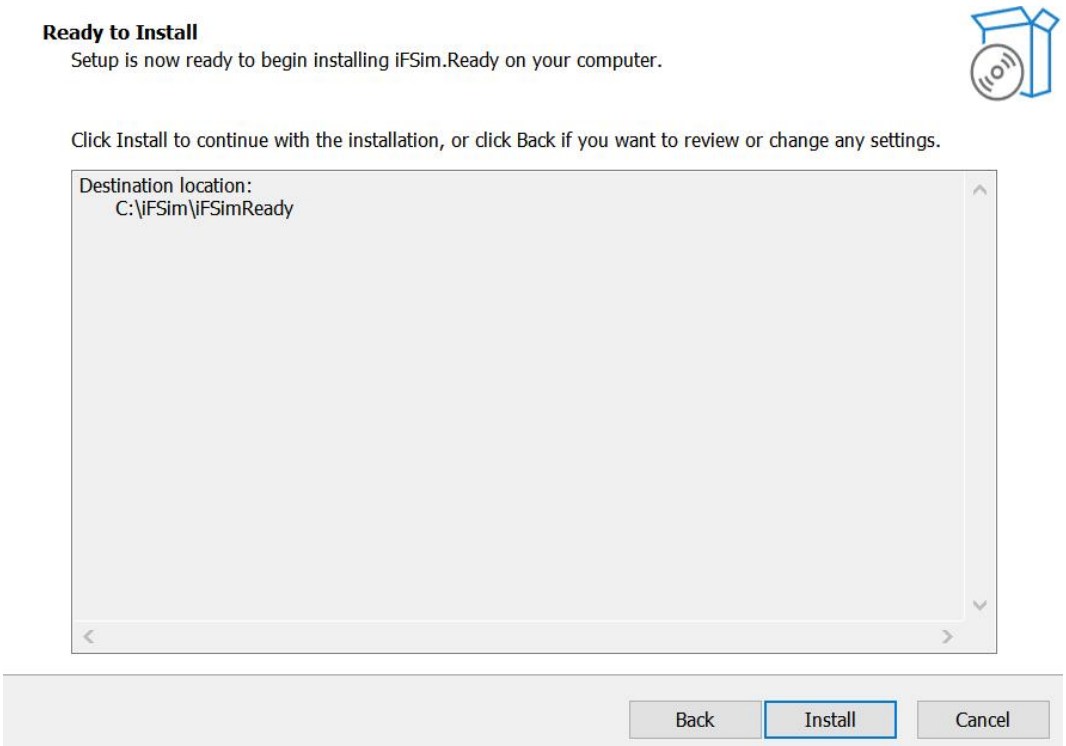
b. Double-click the installation file to launch the installation guide. Select the software install path using the Browse button and click Next.



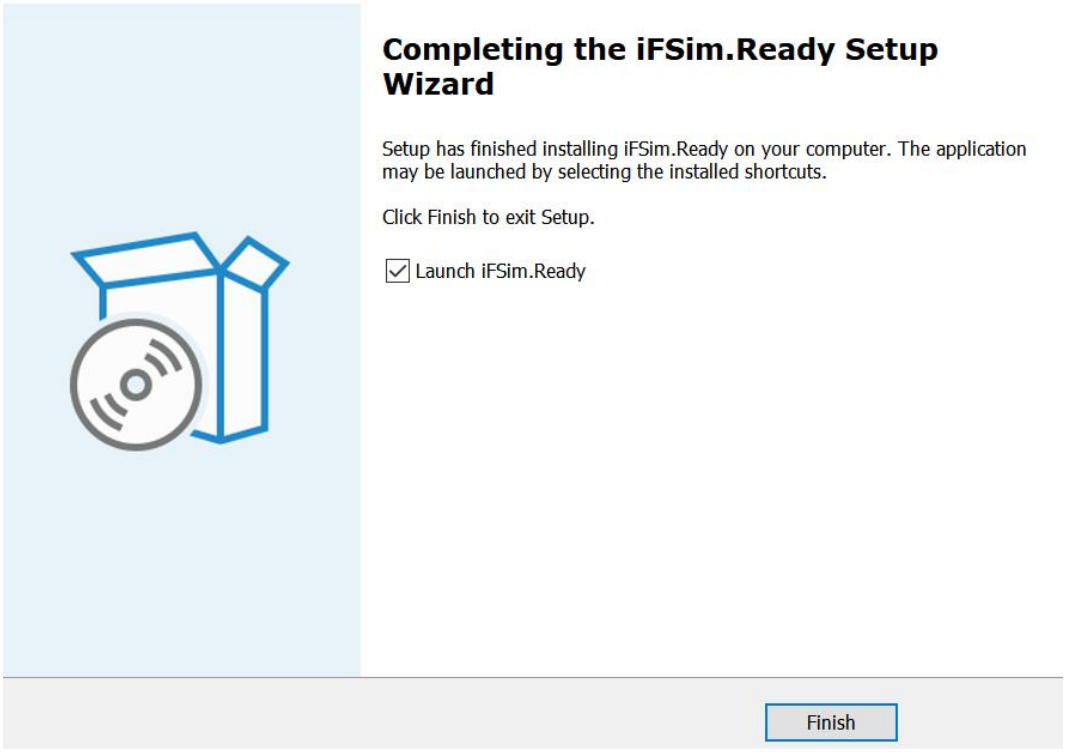
c. Choose whether to create a desktop shortcut for the software. And click Next.



d. Check the install settings again and click Install to begin installing.



e. Wait until installing complete. Click Finish to exit the installation guide.



1.3 Using this Manual

Chapter 2 introduces some general software information, including how to quick start with the software, view the help documentation and about information, etc.

Chapter 3 to Chapter 8 introduce software modules respectively. iFSim.Ready software is divided into six modules: Overview, Profiles, IO Test, Calibration, SDK, and Options.

Chapter 3 introduces the Overview module. Overview module is mainly used to display the system and hardware panel status.

Chapter 4 introduces the Profiles module. Profiles module is mainly used for profile files display, management and configuration.

Chapter 5 introduces the IO Test module. IO Test module is mainly used to check hardware signals to confirm whether the hardware is normal and available.

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

Chapter 6 introduces the Calibration module. Calibration module is mainly used for the calibration of control elements such as control levers, control knobs, and servo motors.

Chapter 7 introduces the SKD module. SDK module is mainly used to set the developer mode, allowing third-party software to conduct secondary development based on CNFSimulator series components.

Chapter 8 introduces the Options module. Options module is mainly used for system configuration, hardware configuration and Joystick configuration.

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

2 General Features

2.1 Quick Start with iFSim.Ready

a. Preparatory Work

Connect your CNFSimulator hardware products to your computer before you start any simulate flight. You need also make sure what kind of CAN device the panels are using. Generally, if you are using our individual panel products and link them directly to your computer, the CAN device type should be CandleLight. If you are using our component or cockpit products and link them to your computer through an USB-CAN box, the CAN device type should be USBCAN-II. You can also check with our after-sales service personnel if you are not sure what type it is.

For USBCAN-II users, a driver may needs to be installed. You can download the driver through the following website.

https://en.cntech.com/blogs/download

You need to install iFSim.Ready before you start. Please see Chapter 1.2 for how to get and install iFSim.Ready software. You should also make sure that you have installed all the flight simulator software and aircraft simulation software you need. Here is a list of all the software we currently support.

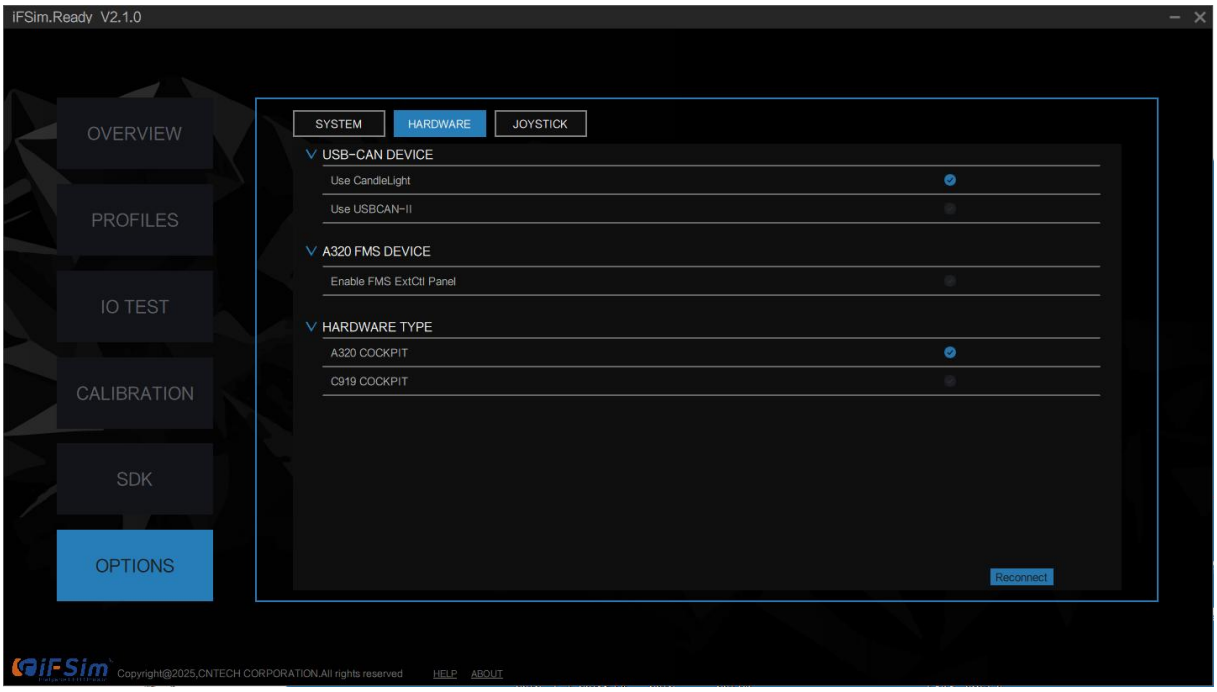
Aircraft Simulation Software	Flight Simulator Software			
	X-Plane 11	X-Plane 12	Prepar3D	MSFS 2020
ToLiss A320 NEO	√	√		
ProSim A320			√	
Jeehell FMGS A320			√	
Fenix A320				√
iFSim A320			√	

b. Hardware Settings

Double-click the desktop shortcut or iFSimReady.exe under install path to start the software.

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

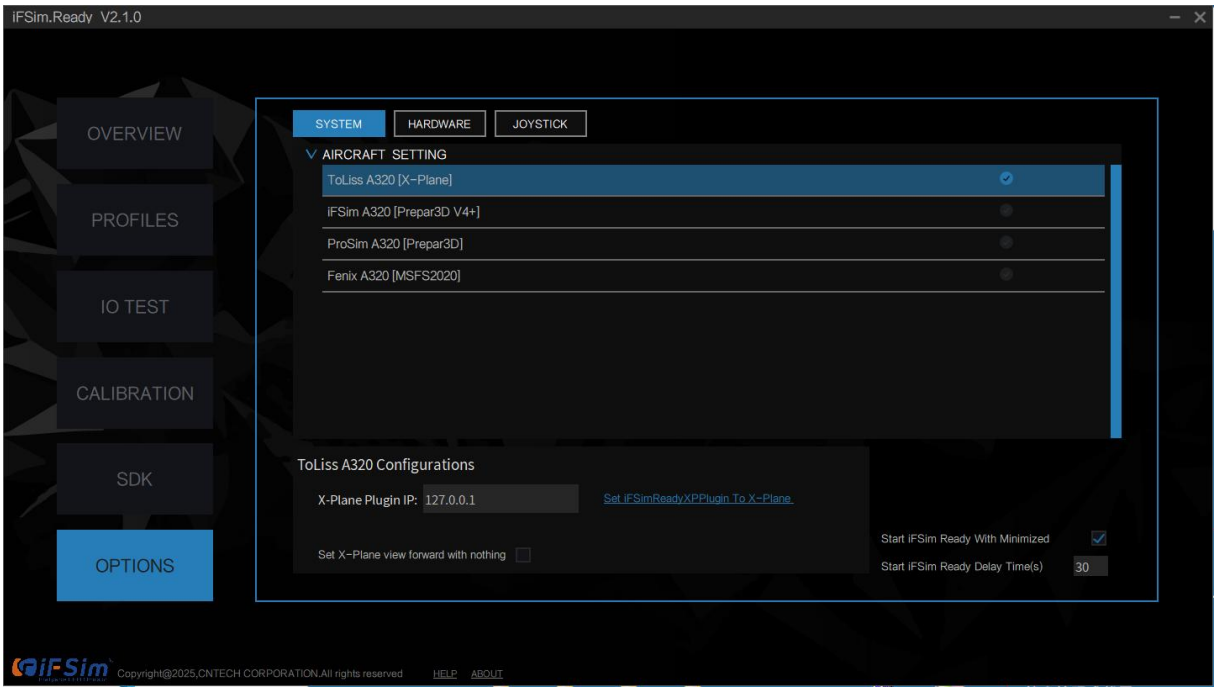
Click **Options** on the sidebar, then click **Hardware** tab to go to the Hardware setting page. Select the right hardware type and USB-CAN device type here. If you are using CNFSimulator FMS device, tick the **Enable FMS ExtCtl Panel** as well.



Click **Overview** on the sidebar back to the main page. You should see your panel are connected at the Hardware region.

c. System Settings

Click **Options** on the sidebar again, then click **System** tab to go to the System setting page. Select the aircraft model you are using under the **Aircraft Setting** region.



For X-Plane user, if iFSim.Ready is running on the same computer with flight simulator software like X-Plane, just use the default IP 127.0.0.1. Otherwise enter the X-Plane computer IP address at the IP edit box.

For ToLiss user, a plugin named "iFSimReadyXPPlugin" must be installed before the first time using CNFSimulator A320 series products. User should close X-Plane software firstly, than click the **Set iFSimReadyXPPlugin To X-Plane** button and select "\Resources\plugins\" folder under X-Plane software installation path. The plugin will work after X-Plane starts.

User can also copy the "iFSimReadyXPPlugin" folder under iFSim.Ready software installation path to the "\Resources\plugins\" folder under X-Plane software installation path manually without using the button.

For full cockpit product user, the option **Set X-Plane view forward with noting** show be checked.

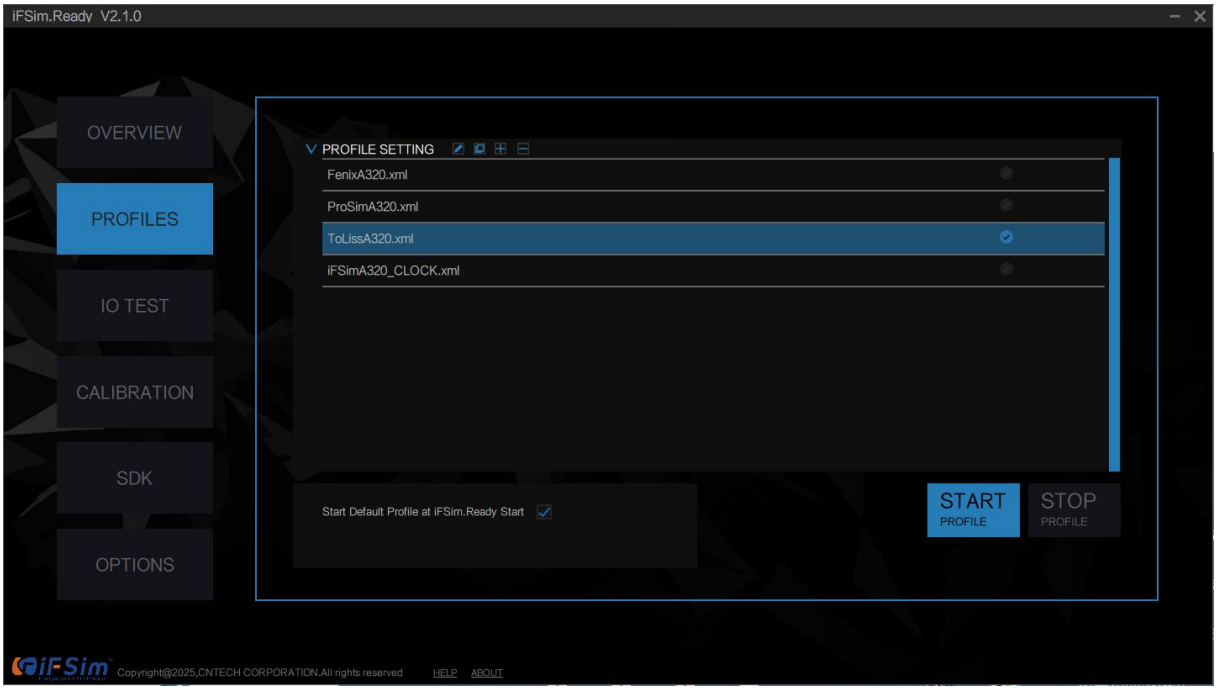
If **Start iFSim.Ready With Minimized** is selected, iFSim.Ready software will automatically minimized to the system task bar when starts.

d. Start Profile

Click **Profiles** on the sidebar, user can view and manage all the profiles here. Below table shows all the default profiles installed with iFSim.Ready software.

Profile	Description
ToLissA320.xml	For CNFSimulator A320 products and ToLiss A320 NEO / X-Plane software
ProSimA320.xml	For CNFSimulator A320 products and ProSim A320 / Prepar3D software
FenixA320.xml	For CNFSimulator A320 products and Fenix A320 / MSFS software
iFSimA320_CLOCK.xml	For CNFSimulator A320 products and iFSim A320 / Prepar3D software

Choose a suitable profile based on your hardware products and simulation software. Double-click the profile in the profile list to set it as Active Profile. A blue check mark will display after the profile name.



Click the **Start Profile** button to start Active Profile. Make sure the **Start Profile** button is gray, which means the Active Profile is running.

You can also tick any profile start options under the **Start Profile** button as needed.

If **Start Default Profile at iFSim.Ready Start** is selected, the Active Profile file will automatically runs when iFSim.Ready software starts.

e. Enjoy The Flight

You can now start your flight simulator software like X-Plane now. When the software is starting, you can click **Overview** on the sidebar back to the main page, to check the active profile you select and monitoring whether aircraft simulation software is connect successfully.

After finished settings, you can click the **minimize** button to hide **iFSim.Ready** to the system task bar. The software will keep working through the whole flight simulation. You can double-click the **iFSim** icon in the system task bar to re-open the software interface and make any changes.

You can click the **close** button to quit **iFSim.Ready** software. Please notice that after **iFSim.Ready** software closed, you can't connect CNFSimulator hardware products to flight simulating software anymore.

2.2 Help Documentation

There is a **Help** button on the bottom bar. User can open this user's manual by clicking the **Help** button. This document is saved in the "Document" folder under the software installation path.

2.3 About Information

User can open the about page and check the software information by clicking the **About** button on the bottom bar. User can also find connect information of CnTech under about page.

3 Overview Module

Overview module is mainly used to display the system and hardware panel status.

3.1 System Information

3.1.1 Aircraft Information

Aircraft information shows on the up left part of the Overview page.

The left part shows the selected aircraft simulation software and flight simulator software corresponding to the Active Profile. When user change the Active Profile under Profiles page, the information displayed here will change.

The right part shows the connection status between iFSim.Ready software and the aircraft simulation software. When iFSim.Ready is connected to the aircraft simulation software, a blue check mark will display. When iFSim.Ready disconnects from the aircraft simulation software, a gray check mark will display.

3.1.2 Profile Information

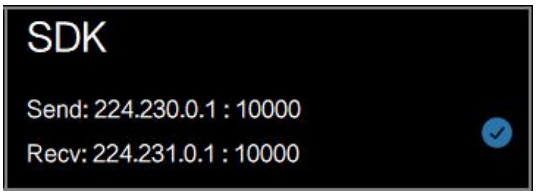
Profile information shows on the up middle part of the Overview page.

The left part shows the file name of currently active Profile, which corresponds to the choice in the Profile list under Profiles page.

The right part shows the current status of the Profile file, which is controlled by the **Start Profile** and **Stop Profile** buttons under Profiles page. When the Profile file is running, a blue check mark will display. When the Profile file is not running, a gray check mark will display.

3.1.3 SDK Information

SDK information shows on the up right part of the Overview page.



The first line shows the IP and Port iFSim.Ready used to send data, which is set under SDK page.
The second line shows the IP and Port iFSim.Ready used to receive data, which is also set under SDK page.

The right part shows the current running status of the SDK, which is controlled by **Start SDK** button and **Stop SDK** button under the SDK page. When the SDK is running, a blue check mark will display. When the Profile file is not running, a gray check mark will display.

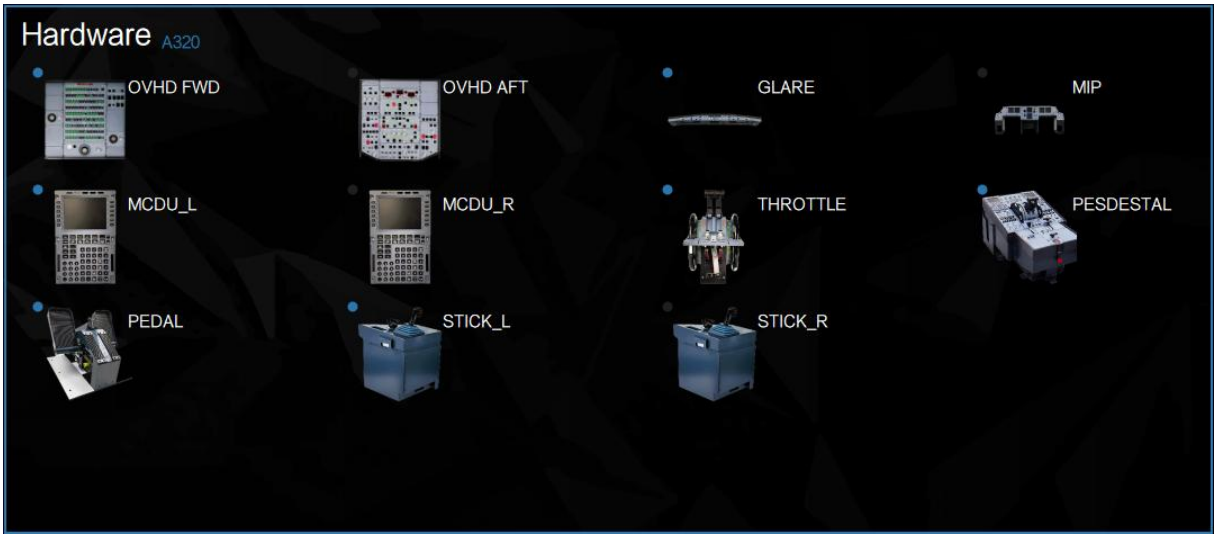
3.2 Hardware Information

This part shows all the available CNFSimulator components. When any component is connected to iFSim.Ready, a blue dot will display at the upper left corner of the component. Otherwise a gray dot

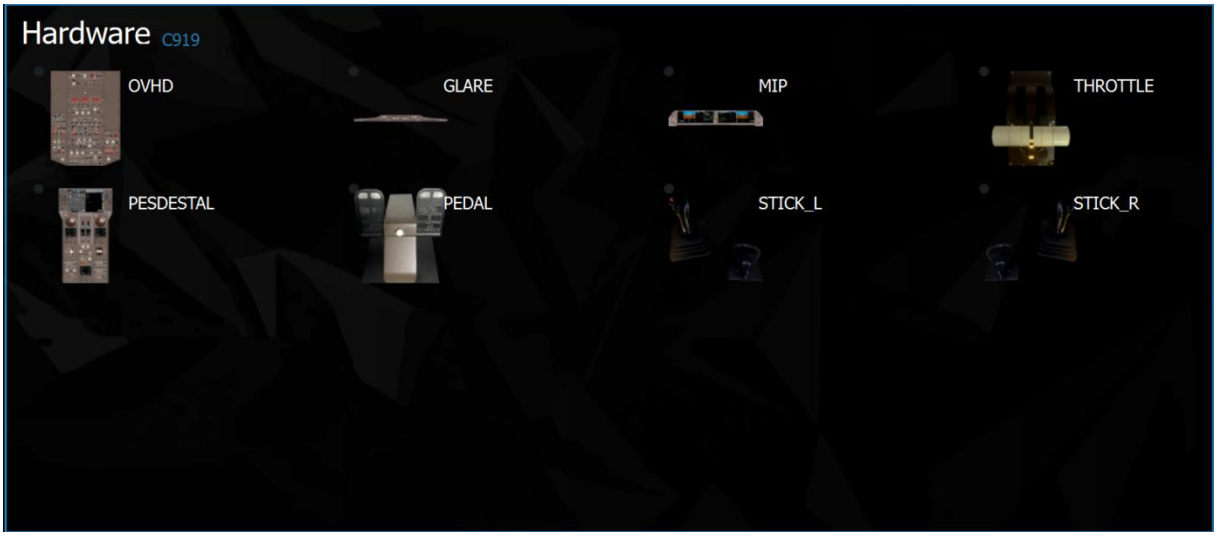
Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

will display there.

The components display under this region change based on the Hardware Type setting under Options / Hardware page. When A320 Cockpit is selected, the CNFSimulator A320 series products will show under this region.



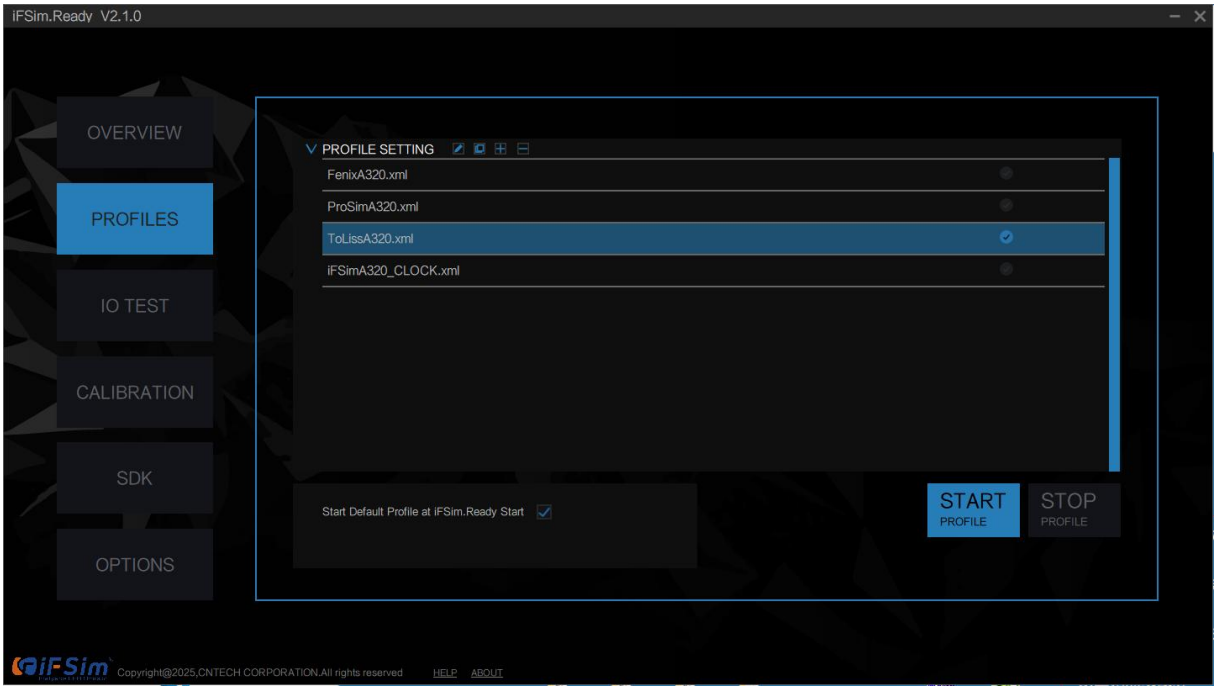
And when C919 Cockpit is selected, the CNFSimulator C919 series products will show under this region.



Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

4 Profiles Module

Profiles module is mainly used for profile files display, management and configuration.



The Profile file is a mapping configuration between the cockpit hardware product signal interface and the aircraft simulation software control signal interface. When user start to run a certain Profile file, iFSim.Ready will start the communication module of the corresponding aircraft simulation software. The module will then convert any received cockpit hardware signals into control signals based on the Profile, and send control signals to the aircraft simulation software. Through this approach, user can control the system status of aircraft based on the cockpit hardware.

4.1 Profile Setting

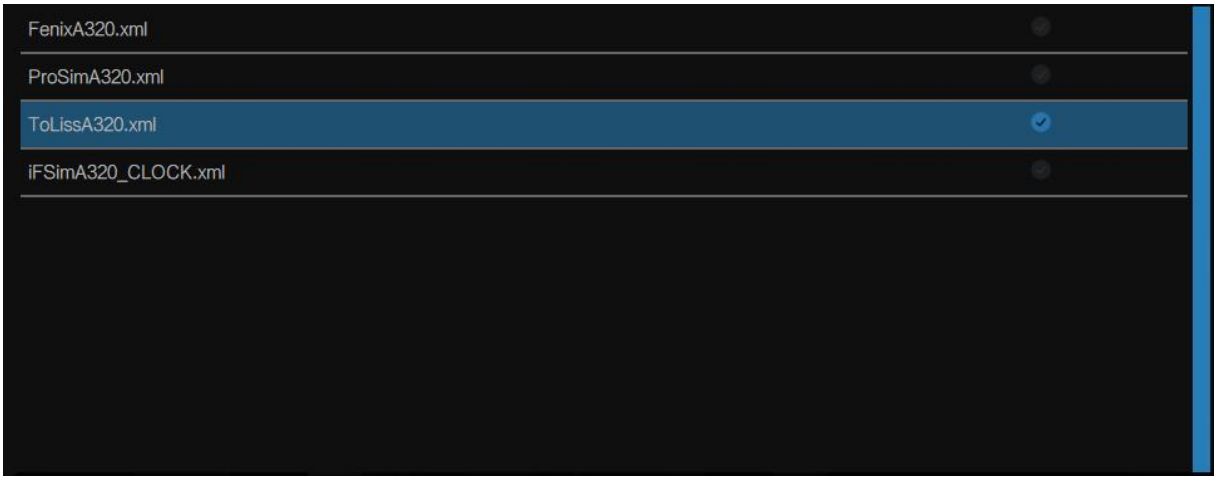
Profile setting consist of profile list, profile manage buttons, profile start/stop buttons and profile start settings.

Profile List

Profile list shows all the configuration profiles. The following configuration profile files will be installed with the software by default.

Profile	Description
ToLissA320.xml	For CNFSimulator A320 products and ToLiss A320 NEO / X-Plane software
ProSimA320.xml	For CNFSimulator A320 products and ProSim A320 / Prepar3D software
FenixA320.xml	For CNFSimulator A320 products and Fenix A320 / MSFS software
iFSimA320_CLOCK.xml	For CNFSimulator A320 products and iFSim A320 / Prepar3D software

Double-click a profile in the profile list will set it as Active Profile. A blue check mark will display after the active profile name. There could only be one active profile.

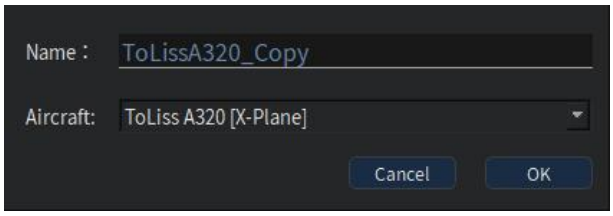


Profile Manage Buttons

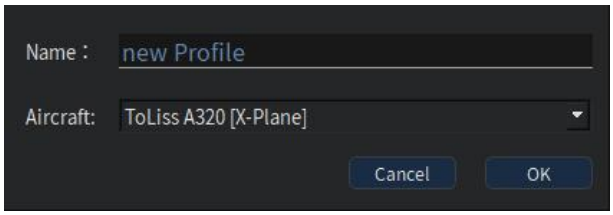
There are four manage buttons, which are **Edit**, **Copy**, **Create** and **Delete**.

Click the **Edit** button to edit the selected Profile file in the profile list. The **Profile Edit Page** will display. See the **Profile Edit** chapter for more information.

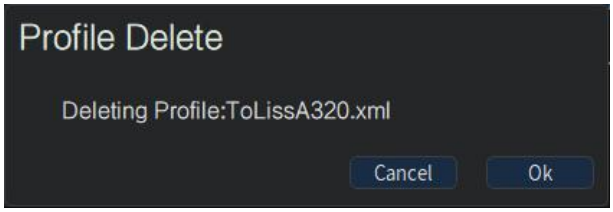
Click the **Copy** button to Copy the selected Profile file in the profile list. The Profile Copy Window will display and user can enter the copied profile name in the window. Please notice that if an exist name is entered, the copied profile will replace the old one.



Click the **Create** button to create a new Profile file. The Profile Create Window will display and user can enter the new profile name and select aircraft model in the window.

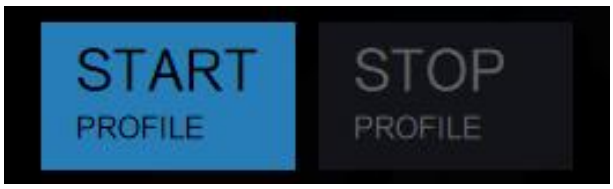


Click the **Delete** button to Delete the selected Profile file in the profile list. There will be a pop up confirm window.



Profile Start/Stop Buttons

Click the **Start Profile** button will run the Active Profile in the profile list. iFSim.Ready software will execute the signal mapping configured in the Profile file, transfers the hardware signal mapping to the corresponding model, and transmits the output signal mapping from the model to the hardware.

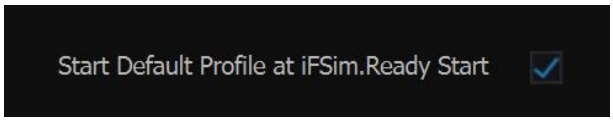


Click the **Stop Profile** button will stop the Active Profile.

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

Blue indicates clickable. So when Start Profile is blue means Profile has been stopped, and when Stop Profile is blue means Profile is now running. Besides, when Profile is running, the Profile List and Profile Manage Buttons will both turn gray and be not editable.

Profile Start Settings



- Start Default Profile at iFSim.Ready Start

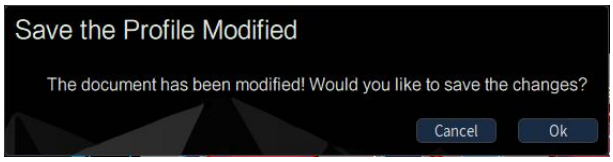
If this option is selected, the Active Profile file will automatically runs when iFSim.Ready software starts.

4.2 Profile Edit

User can enter the **Profile Edit** page by select a Profile in the profile list under Profiles page and click the **Edit** button above the profile list. User can modify the selected Profile file in the Profile Edit page. Profile Edit page is consist of bottom bar, cockpit page and component page.

Click the Close button on the title bar will close the Profile Edit page and back to main software page. If there is any unsaved changes when try to close the page, an inquiry window will pop up. Click Yes

to save and then close, or click No to close without saving the changes.



4.2.1 Bottom Bar

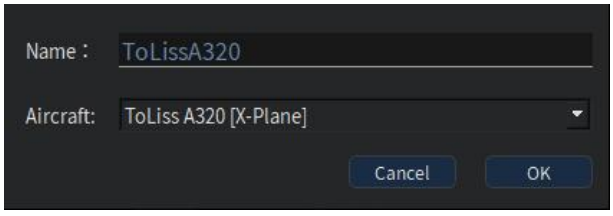
On the right side of Bottom bar shows current edit Profile file name and corresponding aircraft simulation software name of the Profile file. Bottom bar also provides Change and Save buttons.

Current Profile Information

The text on the right side of bottom bar shows the name of the currently modified Profile file and the selected aircraft simulation software of the Profile. The information is divided by ":". Which means the text before ":" shows the name of the Profile file and the text after ":" shows the name of the aircraft simulation software corresponding to the Profile file.

Change Button

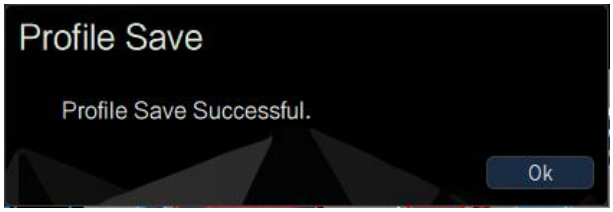
Click the Change button on the bottom bar will pop up the Profile Change window. User can change the Profile file name and the aircraft simulation software in the Profile Change window. Click OK will complete the changes, and click Cancel will cancel the modification.



Please notice that if the aircraft changed, all signal mappings in the Profile will change to NONE.

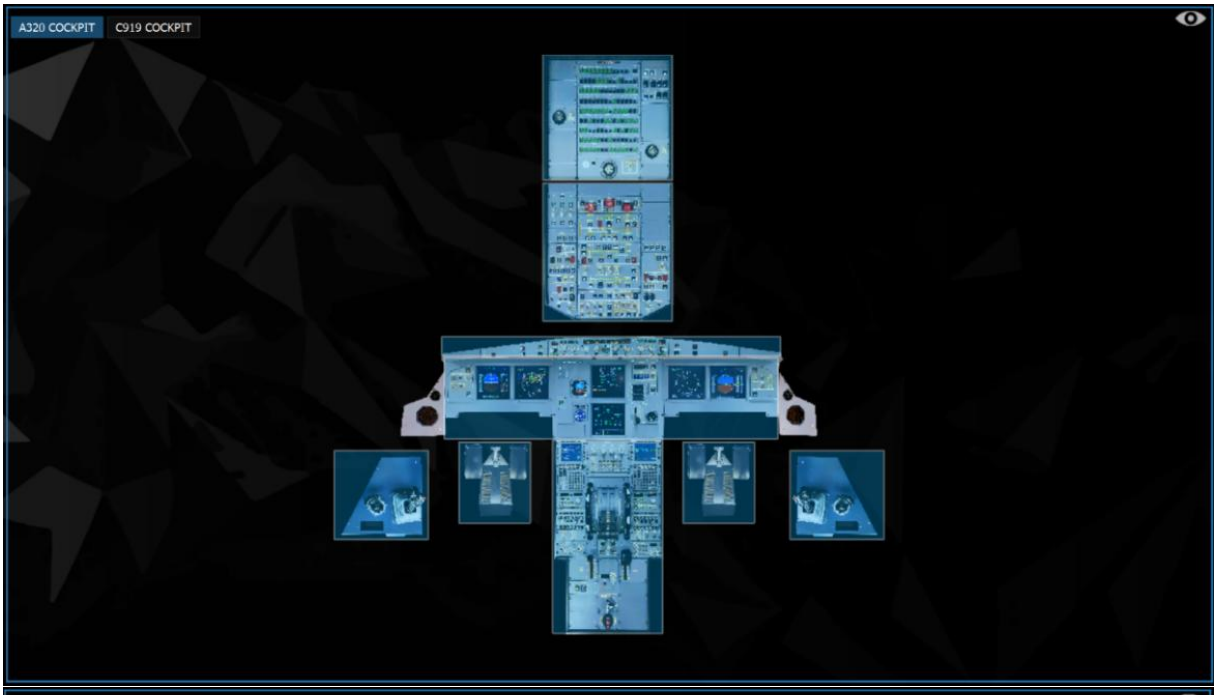
Save Button

Click the Save button on the bottom bar will save all the changes. There will be a prompt window if saved successfully.



4.2.2 Cockpit Page

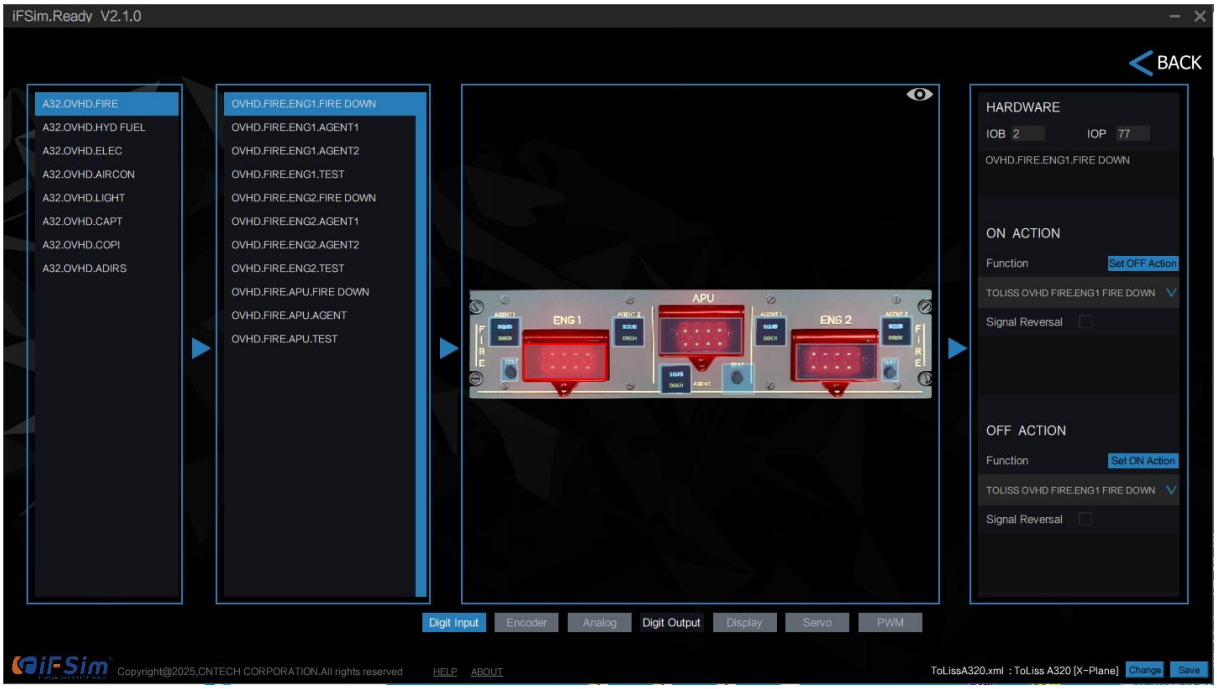
Cockpit page shows the entire cockpit of the A320 or C919. Click the "A320 COCKPIT" or "C919 COCKPIT" button in the upper left corner can switch the cockpit.



Each blue area in the cockpit means a component. Click on a certain component area on the entire cockpit will enter the component page, in which user can edit the configurations of the selected component.

4.2.3 Component Page

Component page is consist of panel list, signal list, visual panel and signal configuration four regions.



Panel List Region

Panel list region located on the far left of the component page, it shows all the panels belong to the selected component. User can select a panel here. User may also double click on a panel to change the panel name.

Signal List Region

Signal list region located on the second left of the component page, it shows all the specified type signals belong to the selected panel in Panel List. User can select a signal here. User may also double click on a signal to change the singal name.

Signal type can be switched through the "Digit Input", "Encoder", "Analog", "Digit Output", "Display", "Servo" and "PWM" buttons. When a button turns gray, it indicates that there is no such type of hardware signals on the selected panel.

Below are introductions to different signal types.

Signal Type	Description
Digit Input	Digital input signal, generally use to define button or switch signal on the panel.
Encoder	Encoder signal, generally use to define 360 degrees rotate knob signal. For example, the HDG knob on the FCU panel.
Analog	Analog input signal, generally use to define control signal or knob signal. For example, side stick or backlight control knob.
Digit Output	Digital output signal, generally use to define indicator or enabled control signal. For example, the AP1 button indicator light on the FCU panel or the balance wheel motor control enable signal.
Display	Segment display control signal, generally use to define the control signal of digital display. For example, the HDG display on the FCU panel.
Servo	Servo motor position control signal, generally use to define position-controlled components control signal. For example, trim wheels or brake pressure gauges.
PWM	Pulse amplitude modulator control signal, generally use to define brightness adjustment control signal. For example, panel backlight luminance adjustment or reading light luminance adjustment.

Visual Panel Region

Visual panel region located on the third left of the component page. It is a visualization assistance region, designed to help user easily locate the desired signal objects they wish to configure.

Each element such as switch, knob10, screen on the panel that has any configurable signals will be covered by a translucent rectangle. The rectangle is blue by default. When user selects a signal from the Signal List, the corresponding rectangle will turn red to indicate which element the signal belongs to.

These rectangles are also clickable. When user click on a blue rectangle, the rectangle will turn red and the software will filter the Signal List showing only the signals belong to the element. Clicking on any area outside the blue rectangle in the visual panel region will cancel the filtering.

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

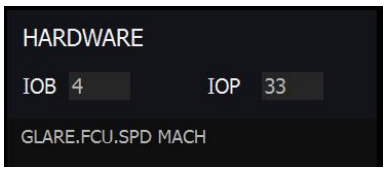
Signal Configuration Region

Signal configuration region located on the right of the component page. In this region, user can browse information of the selected signal and edit the signal mapping. Depending on the type of signals, the editing part of the signal may including **ON Action**, **OFF Action** and **Value Change Action**.

Signal Type	ON ACTION	OFF ACTION	VALUE CHANGE ACTION
Digit Input	√	√	×
Encoder	×	×	√
Analog	×	×	√
Digit Output	√	√	×
Display	×	×	√
Servo	×	×	√
PWM	×	×	√

a. Information

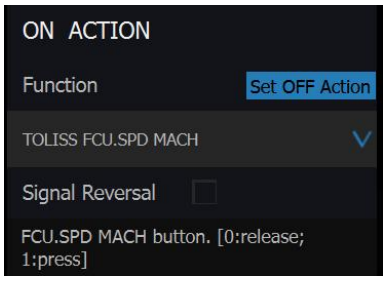
Displays basic hardware signal information, including IOB, IOP and hardware signal interface name. IOB indicates the board number and IOP indicates the channel number.



b. ON Action

For Digit Input type, configure the model signal mapping when hardware signal is 1.

For Digit Output type, configure the hardware signal mapping when model signal is 1.



- Function

User can use the drop-down box to select the target map function. User can also enter and search functions using the edit box before select.

- Signal Reversal

Tick this selection box indicating that the signal value is reversal. For example, when the hardware signal is 1, the value send to the model will be 0.

- Set OFF Action

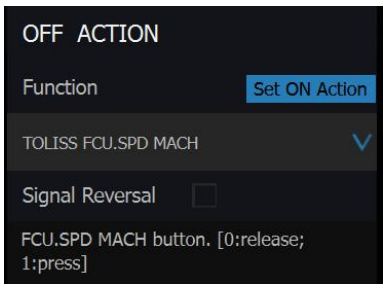
Quickly set the current selected ON Action function to the OFF Action.

c. OFF Action

For Digit Input type, configure the model signal mapping when hardware signal is 0.

For Digit Output type, configure the hardware signal mapping when model signal is 0.

The operation is consistent with **ON Action**.

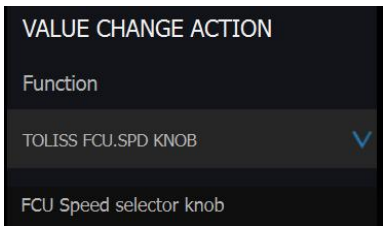


d. Value Change Action

For Encoder and Analog type, configure the model signal mapping when hardware signal changes.

For Display, Servo and PWM type, configure the hardware signal mapping when model signal changes.

The operation is consistent with **ON Action**.



5 IO Test Module

User can test all the hardware signals for all the CNFSimulator A320 / C919 components under IO Test module to make sure every signal is working normally. User can choose any panel in the panel tab at the top of the page and make signal tests in the signal test area below.

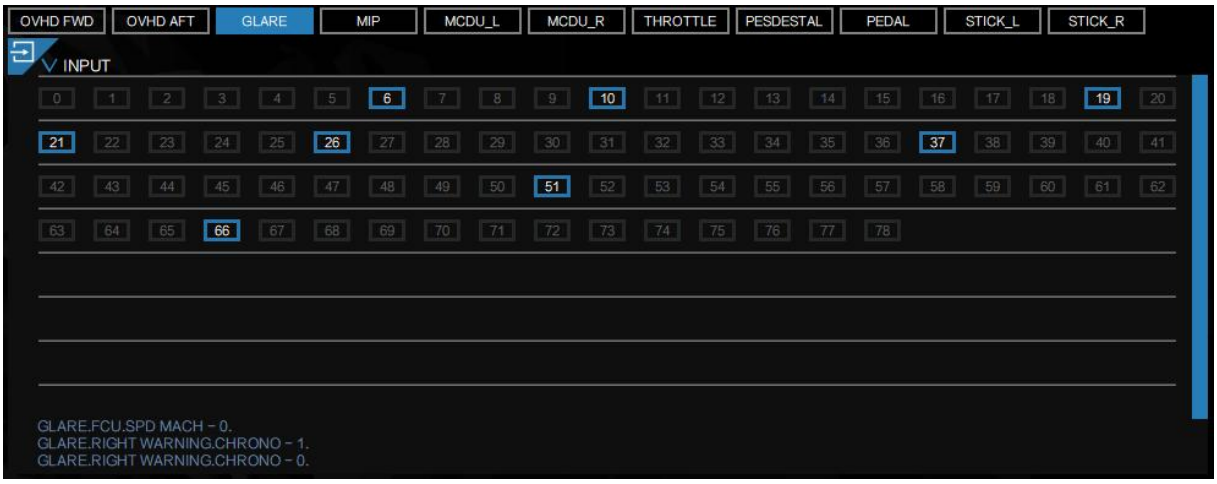
The signal test area is divided into two parts, namely INPUT and OUTPUT, which can be switched by the combo box at the top left of the signal test area.

5.1 Signal Input

The Input area can test Digit Input (Switch/Button), Encoder and Analog signals. When user operate components on the hardware panel, the corresponding components in the Input area of the corresponding panel will have obvious changes.

INPUT Area

The numbered boxes within the INPUT area represent the status of certain digital input signal interfaces for cabin hardware. The gray color indicates a status of 0, and the blue color indicates a status of 1.



For example, when the CHRONO button on the right side of the sunshade alarm panel is pressed, the box numbered 78 will turn blue, and at the same time, a text prompt "GLARE.RIGHT WARNING.CHRONO - 1." will be displayed in the information bar below the INPUT area. When the CHRONO button is released, the box numbered 78 will turn gray, and at the same time, a text prompt "GLARE.RIGHT WARNING.CHRONO - 0." will be displayed in the information bar below the INPUT area.

When the mouse hovers over a certain box within the INPUT area, iFSim.Ready will automatically display the name of the corresponding hardware signal interface.

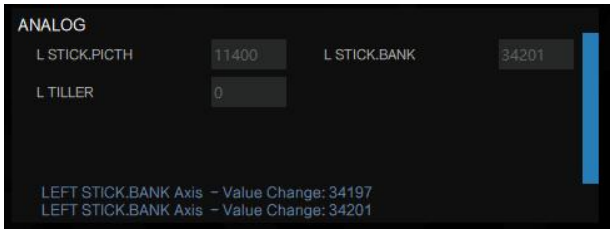
ENCODER Area

The ENCODER area is used to test whether the encoder rotation signal on the hardware is normal. When the encoder knob rotates one step forward or backward, the corresponding encoder value in the ENCODER area will increase or decrease by 1.

For example, when the SPD knob on the A320 FCU rotates one step clockwise, the value in the FCU.SPD editing box in the Encoder area will increase by 1. And when the SPD knob rotates one step counterclockwise, the value in the FCU.SPD editing box in the Encoder area will decrease by 1.

ANALOG Area

The ANALOG area is used to test whether the analog signal interfaces on the hardware are functioning properly.

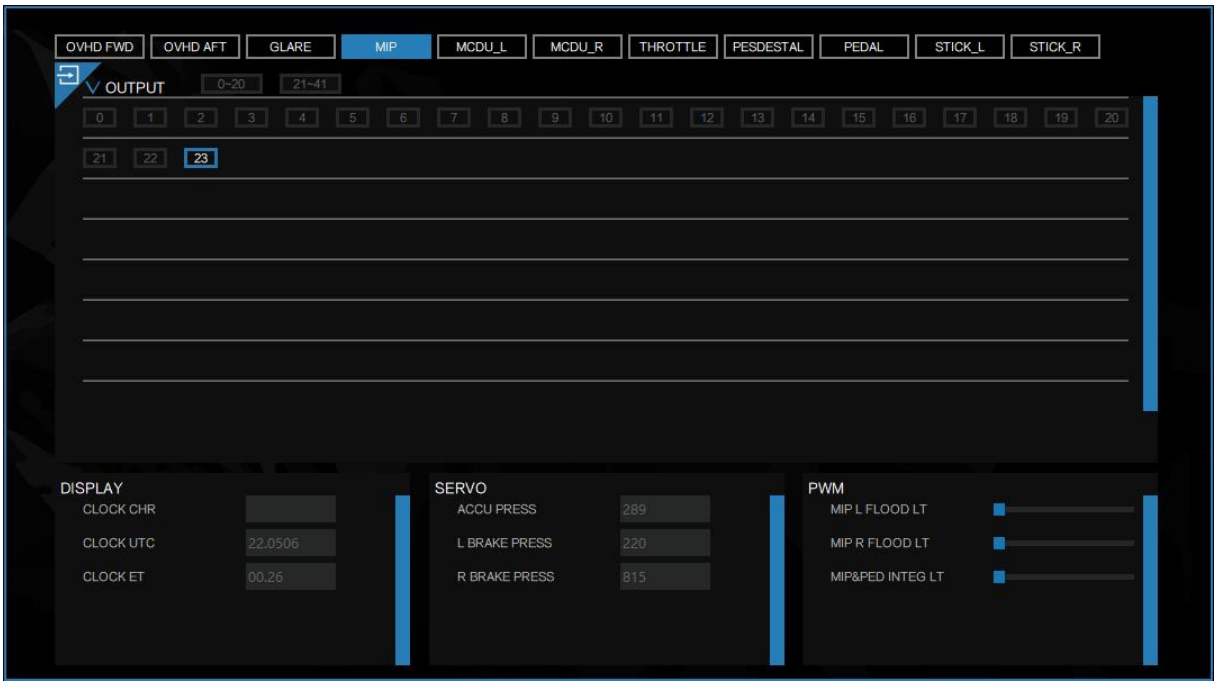


For example, when moving the pitch axis of the left joystick on the A320 back and forth, the L STICK.PITCH editing box in the Analog area will display the current analog signal value of the pitch axis of the left joystick in real time, to determine whether the analog signal of the pitch axis of the left joystick is normal.

5.2 Signal Output

The Output area can test Digit Output, Display, Servo and PWM signals. When user modify the status of a component in the Output area, the state of the corresponding hardware panel output components (such as indicators, displays, motor positions, and backlights) will also change.

Please notice that when the Profile file is running, the real-time status of various signals on the signal output interface will be overwritten by the control signals output by the aircraft simulation software, even if it is modified through the IO Test interface. This results in the inaction of the manipulation on the IO Test signal output interface. However, if the input boxes of DISPLAY and SERVO are in the editing state, the numerical values output by the aircraft simulation software will not be displayed in real time.



OUTPUT Area

The numbered boxes within the OUTPUT area represent the status of a certain cockpit hardware digital output control signal interface. The gray color indicates a status of 0, and the blue color indicates a status of 1.

For example, by clicking on the 1st box within the OUTPUT area of the signal output interface under the A320 GLARE component, the 1st box will turn blue. At the same time, if the A320 GLARE component is in an activated state, the MACH indicator on the SPD display window of the FCU panel on the A320 GLARE will light up.

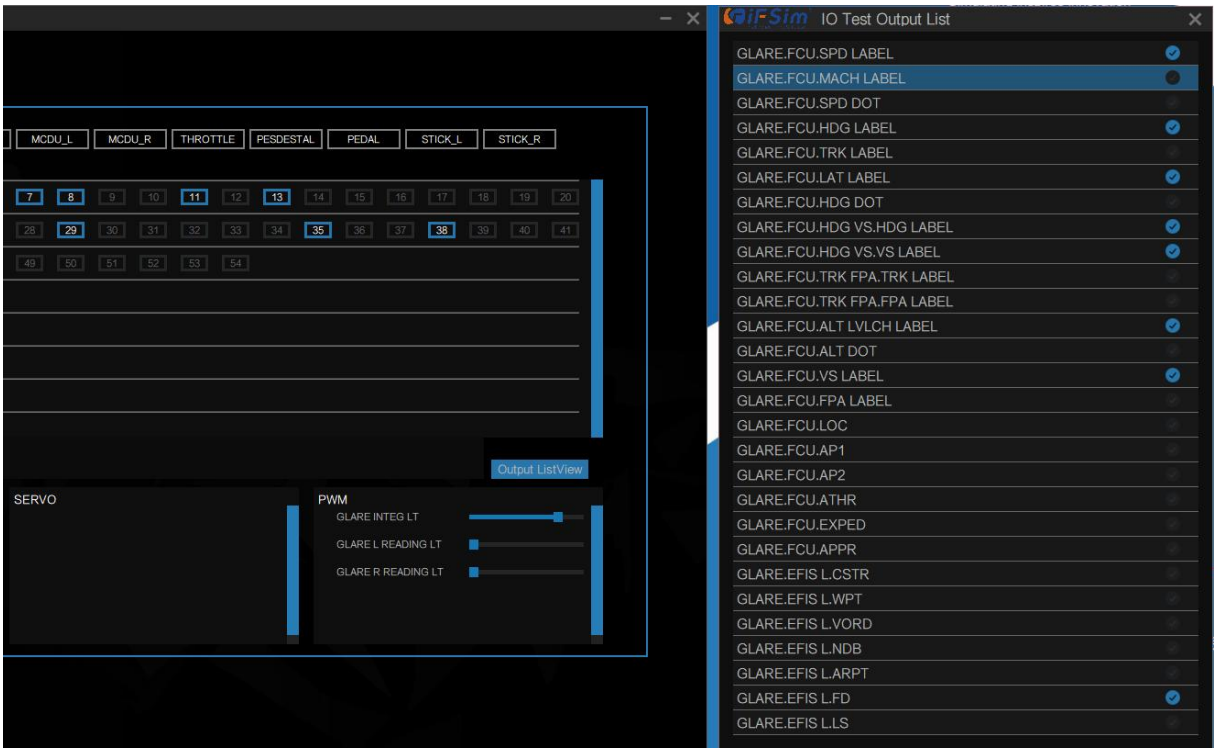
When the 1st box within the OUTPUT area of the signal output interface under the A320 GLARE component is clicked again, the 1st box will turn gray. At the same time, if the A320 GLARE component is in an activated state, the MACH indicator on the SPD display window of the FCU panel on the A320 GLARE will go out.

Click the grouping button on the right side of the "OUTPUT" text (such as the boxes 0-20, 21-41, etc.), then the numbers below will be set as output control signals of 1 or 0 in batches.

When the mouse hovers over a certain box within the OUTPUT area, iFSim.Ready will automatically display the name of the corresponding hardware signal interface.

Click the "Output ListView" button will pop up the IO TEST Output List page, which displays the names and statuses of digital output control signal interfaces in a list format. Names are on the left side of the list and statuses are on the right side. Gray indicates a status of 0, and blue indicates a status of 1.

When the Profile file is not running, double-clicking a digital output control signal interface in the list will reverse the signal, achieving the effect of testing the single signal interface.



DISPLAY Area

The DISPLAY area displays and sets the content of the control signals for the hardware digital tube display.

When the Profile file is running, the content of the current aircraft model display control interface is displayed in real time in the Display edit box. When the Profile file stops running, the text in the modification edit box can be modified, and the corresponding cockpit hardware display digital tube will display the content of the edit box.

For example, after the A320 GALRE component is connected to iFSim.Ready, select the GLARE component in the IO TEST interface, and input 240 in the FCU.SPD edit box. On the SPD display window of the A320 GALRE, 300 will be displayed.

Please notice that if the hardware digital tube does not support displaying a certain character, this character will be displayed as empty.

SERVO Area

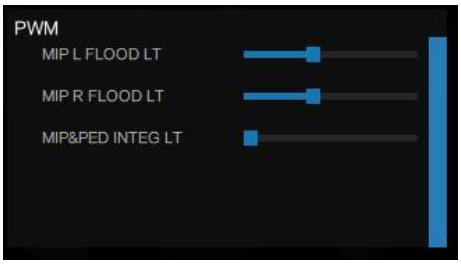
The SERVO area displays and sets the control signals for the hardware servo motors (usually mechanical instruments or control components), with the numerical value representing the position of the servo motor.

When the Profile file is running, the SERVO edit box displays the real-time numerical value of the servo motor control interface output by the current model in real time. When the Profile file stops running, by modifying the text in the edit box, the corresponding cabin hardware motor can be controlled to rotate to the specified position.

For example, after the A320 MIP component is connected to iFSim.Ready, select the MIP component in the IO TEST interface. And when entering a numerical value between 300 and 600 in the ACCU PRESS edit box, the ACCU PRESS instrument pointer on the A320 MIP will move to the position specified by the input.

PWM Area

The PWM area displays and sets the numerical value of the hardware pulse width modulation control signal (usually the brightness adjustment signal for the panel backlight or lighting lamp), which represents the size of the hardware pulse width. The signal range is 0 to 2500.



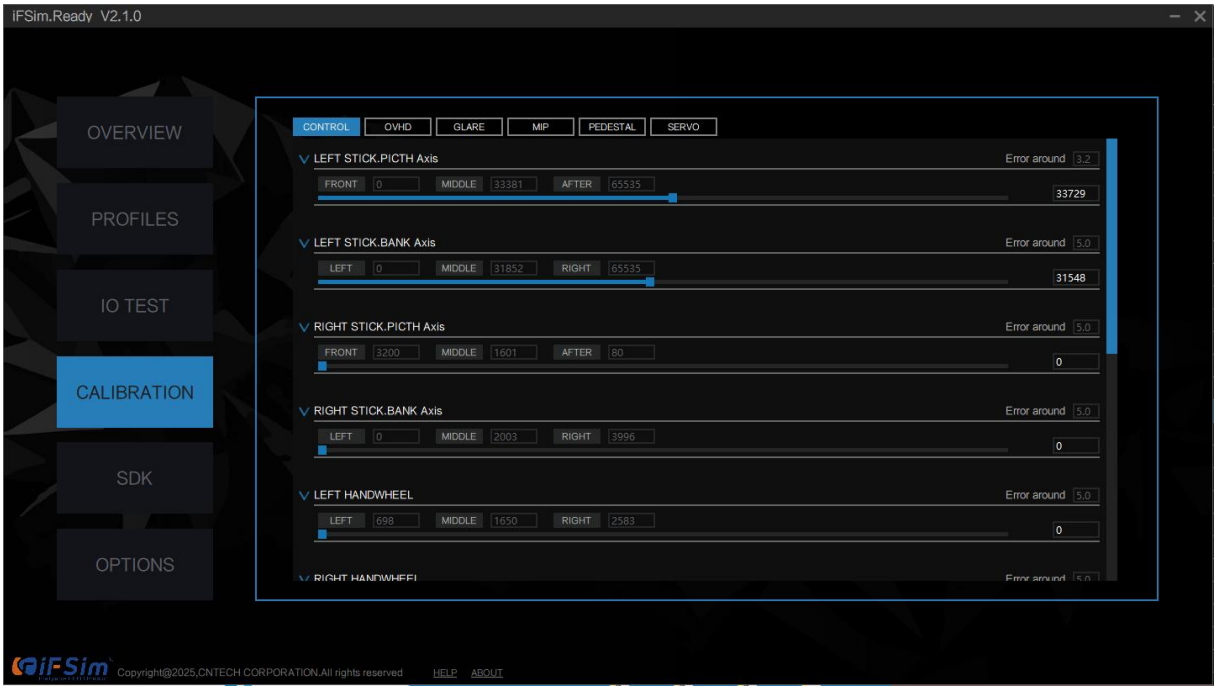
When the Profile file is running, the PWM slider displays the current pulse width modulation control interface value of the aircraft model output in real time. When the Profile file stops running, by dragging the position of the slider with the mouse, the size of the corresponding cockpit hardware pulse width modulation control can be controlled.

For example, after the A320 GLARE component is connected to iFSim.Ready, in the IO TEST interface, select the GLARE component. By dragging the slider position of GLARE INTEG LT with the mouse, the brightness of the panel backlight of the A320 GLARE component will change according to the position of the slider.

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

6 Calibration Module

Calibration module is mainly used for signal calibration of Analog and Servo type components.



Signals are grouped using a tab bar on the top of the page. Where Servo group contains the Servo motor control signal calibration, and the rest groups contain Analog signal calibration of each panel.

Signal calibration region is below the group bar. Each tag card represents a signal.

6.1 Analog Signal Calibration

Using the Left.Stick.Pitch signal calibration as an example.

Signal Value

The slider bar and the edit box at the right side of the slider bar displays current hardware signal value of Left.Stick.Pitch. The hardware signals range is generally from 0 to 4095 or from 0 to 65535.

Calibration Buttons

The three buttons above the slider bar indicate that Left.Stick.Pitch has three signal calibration positions. The edit box on the right of the button shows the current calibration value of the corresponding position. Clicking each button will set the value in the edit box at the right side of the slider to the calibration value of the current position.

- AFTER indicates that Left.Stick.Pitch is pulled back to the limit position.
- MIDDLE indicates the Left.Stick.Pitch is placed at the neutral position.
- FRONT indicates the Left.Stick.Pitch is pushed forward to the limit position.

Error Around

Some signals can set thresholds using the Error around edit box.

- When the Analog signal has three calibration positions, the threshold represents the threshold of the middle position. When the threshold is not exceeded, the Analog signal will remain in the neutral position.
- When the Analog signal is not three calibration positions, the threshold indicates the threshold of the minimum position. When the threshold is not exceeded, the Analog signal will always maintain the value of the minimum position. The minimum position means the lowest calibration position of the label card.
- When the Analog signal does not need to set a threshold, the Error around edit box is empty and cannot be edited.

See Appendix A and Appendix C for detailed position description of each Analog signals.

6.2 Servo Signal Calibration

The signal calibration method of the servo motor is similar to that of the analog signal. The difference is that the real-time value of the analog signal is provided by the hardware component, but the real-time position of the servo motor requires manual dragging of the slide bar.

Drag the slider of the label card to set the position of the servo motor. The edit box at the right side of the slider displays the real-time position value. If the corresponding servo motor panel is connected at this time, the servo motor will also change position.

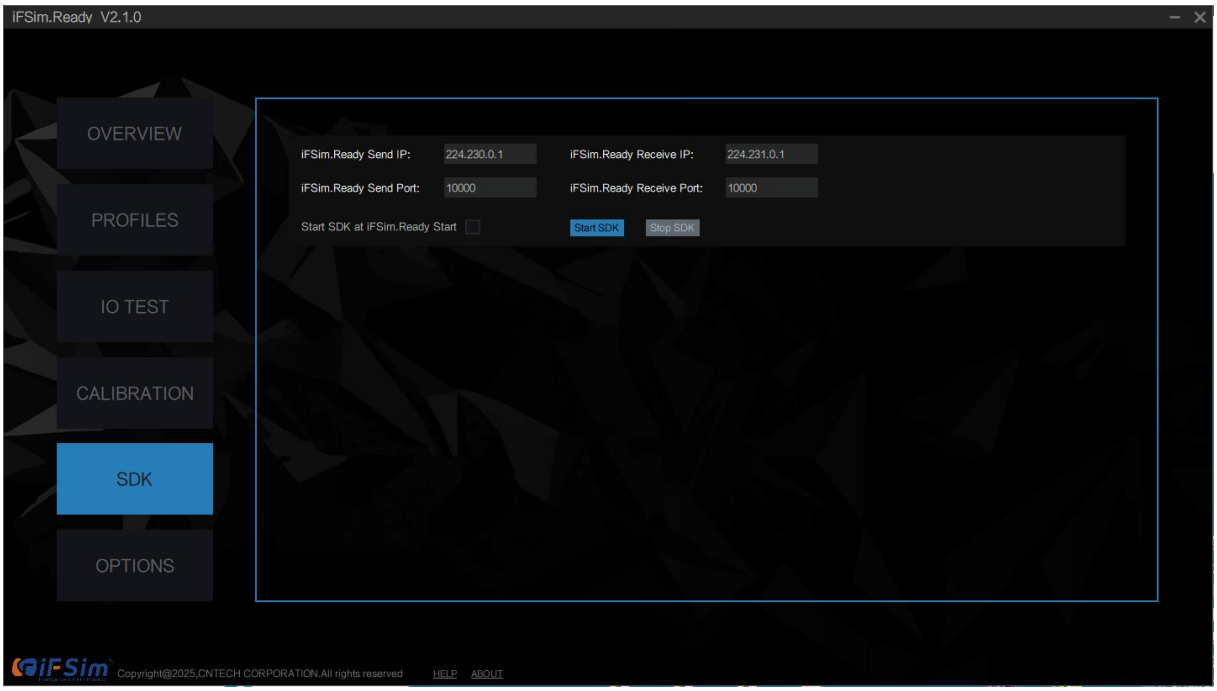
Click the button above the label card to set the real-time value displayed in the edit box at the right side of the slider to the calibration value of the current position.

See Appendix B and Appendix D for detailed position description of each Servo signals.

7 SDK Module

The SDK page has two main uses:

- Configure the SDK Send/Receive IP and Port of two multicast networks.
- Start/Stop SDK mode.



iFSim.Ready Send indicates to which multicast network the iFSim.Ready software sends data packets of hardware signals (Digit Input, Encoder, Analog).

iFSim.Ready Receive indicates the multicast network from which iFSim.Ready software reads data packets of hardware signals (Digit Output, Display, Servo, PWM).

Start SDK at iFSim.Ready Start indicates that the SDK mode is enabled by default when the software is started.

Click the **Start SDK** button to start the SDK mode.

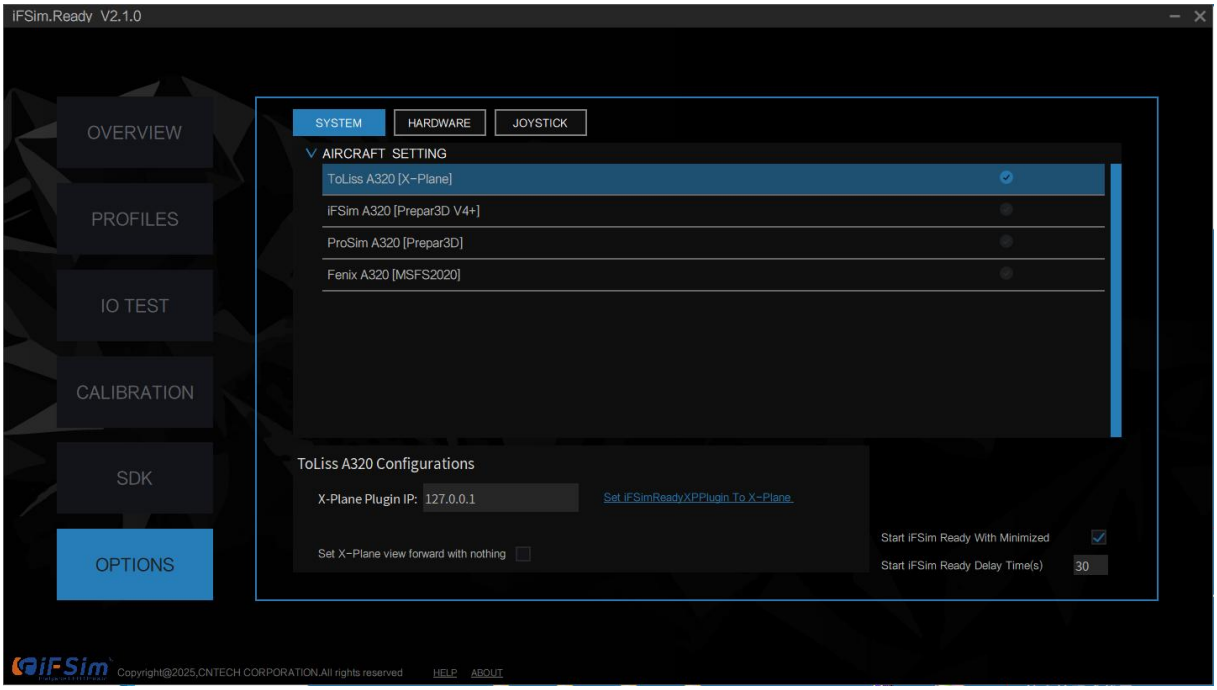
Click the **Stop SDK** button to stop the SDK mode.

Please notice that the hardware signals set by the SDK mode may be overwritten by the Profile, so it is recommended to stop running Profile when the SDK mode is started.

See Appendix E for the format of SDK hardware status packet and hardware status control packet.

8 Options Module

Options module is mainly used for system configuration, hardware configuration and joystick configuration.

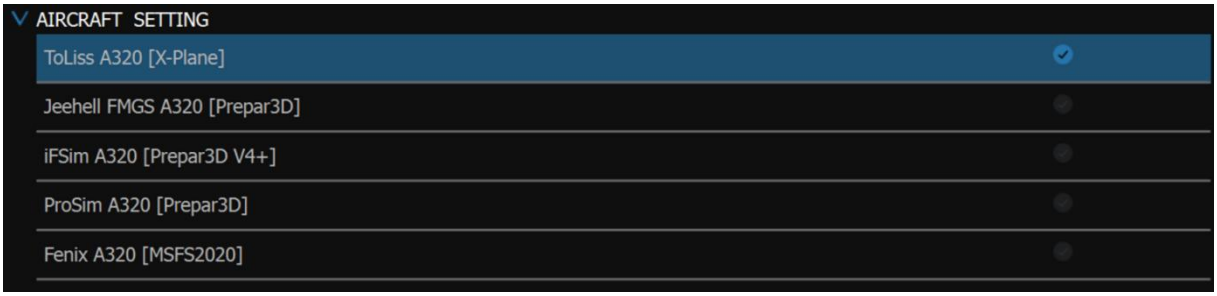


8.1 System Configuration

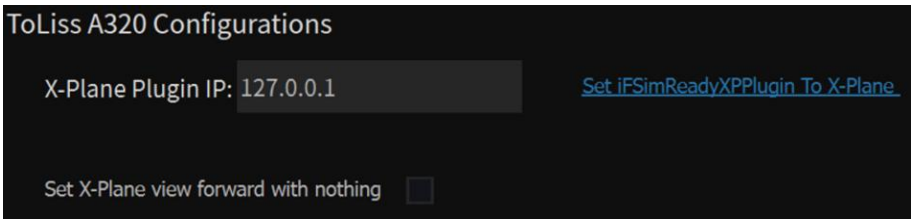
System configuration including aircraft setting and software setting.

8.1.1 Aircraft Setting

The list shows the current supported aircraft simulation software of iFSim.Ready. The configuration related to the selected aircraft simulation software will displayed below. User can than edit the configurations here to finish aircraft settings.



ToLiss A320 [X-Plane]



- X-Plane Plugin IP

If iFSim.Ready is running on the same computer with X-Plane, just use the default 127.0.0.1. Otherwise set the X-Plane computer IP address here.

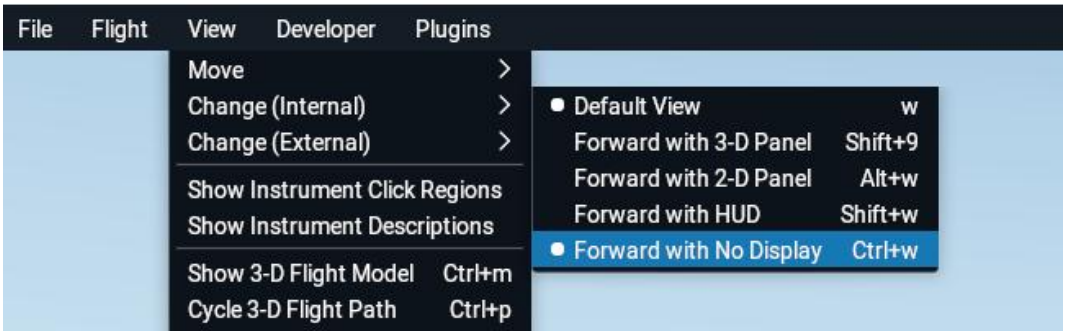
- Set iFSimReady-XP-Plugin To X-Plane

A plugin named "iFSimReadyXPPlugin" must be installed before the first time using CNFSimulator A320 panels together with Toliss / X-Plane. User should close X-Plane firstly, than click the "**Set iFSimReadyXPPlugin To X-Plane**" button and select "\Resources\plugins\" folder under X-Plane software installation path. The plugin will work after X-Plane starts.

User can also copy the "iFSimReadyXPPlugin" folder under iFSim.Ready software installation path to the "\Resources\plugins\" folder under X-Plane software installation path manually without using the button.

- Set X-Plane view forwart with nothing

If checked, iFSim.Ready will change the view of X-Plane to "forward with No Display" when connected. This is generally used by entire CNFSimulator A320 cockpit user.



Jeehell FMGS A320 [Prepar3D]

No configurations now.

iFSim A320 [Prepar3D V4+]

No configurations now.

ProSim A320 [Prepar3D]

No configurations now.

Fenix A320 [MSFS2020]

No configurations now.

8.1.2 Software Setting

- Start iFSim.Ready With Minimized

If this option is selected, iFSim.Ready software will automatically minimized to the system task bar when starts. The software will keep working through the whole flight simulation. User can double-click the **iFSim** icon in the system task bar to re-open the software interface and make any changes.

Please notice that this setting is only available under a commercial license.

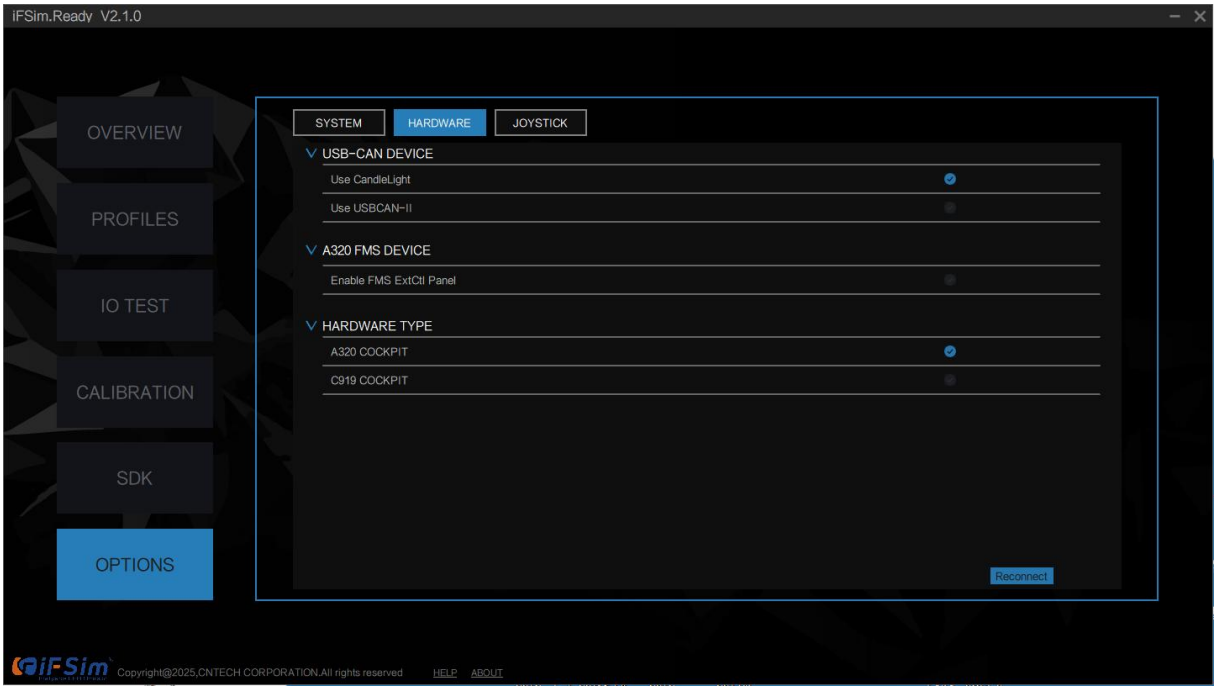
- Start iFSim.Ready Delay Time(s)

User can enter a delay time in the edit box. When iFSim.Ready starts, it will first count down the delay time before connect and initialize any hardware. This function is mainly used to wait for the hardware self-check. For example, if the power-on self-check of the servo control system takes about 30 seconds, than a more than 30s delay is needed to avoid any connect problem.

Please notice that this setting is only available under a commercial license.

8.2 Hardware Configuration

Hardware configuration including USB-CAN Device setting, A320 FMS Device setting and Hardware Type setting.



USB-CAN Device

The USB-CAN Device Settings are available on the Hardware configuration page and can be configured according to the type of USB-CAN device used by the A320 component.

CandleLight protocol is generally used for individual components, and USBCAN-II protocol is generally used for the entire cabin.

If you link the panel directly to your computer, the CAN device type should be CandleLight. If you link the panel to your computer through another box, the CAN device type should be USBCAN-II. You can also check with our after-sales service personnel if you are not sure what type it is.

A320 FMS Device

There is an additional control panel in the middle of the FMS, which allows you to control the landing gear handle, flapper handle, spoiler preposition switch and stop switch through various

components within the panel.

When using the FMS device, you must tick the **Enable FMS ExtCtl Panel** selection box.

Hardware Type

iFSim.Ready V2 supports CNFSimulator C919 cockpit components. The HARDWARE TYPE can be switched to the corresponding cockpit type based on the purchased component product. After configuration changes, iFSim.Ready needs to be restarted for the changes to take effect.

Please notice that CNFSimulator A320 cockpit components cannot be mixed with the CNFSimulator C919 cockpit components now.

Reconnect

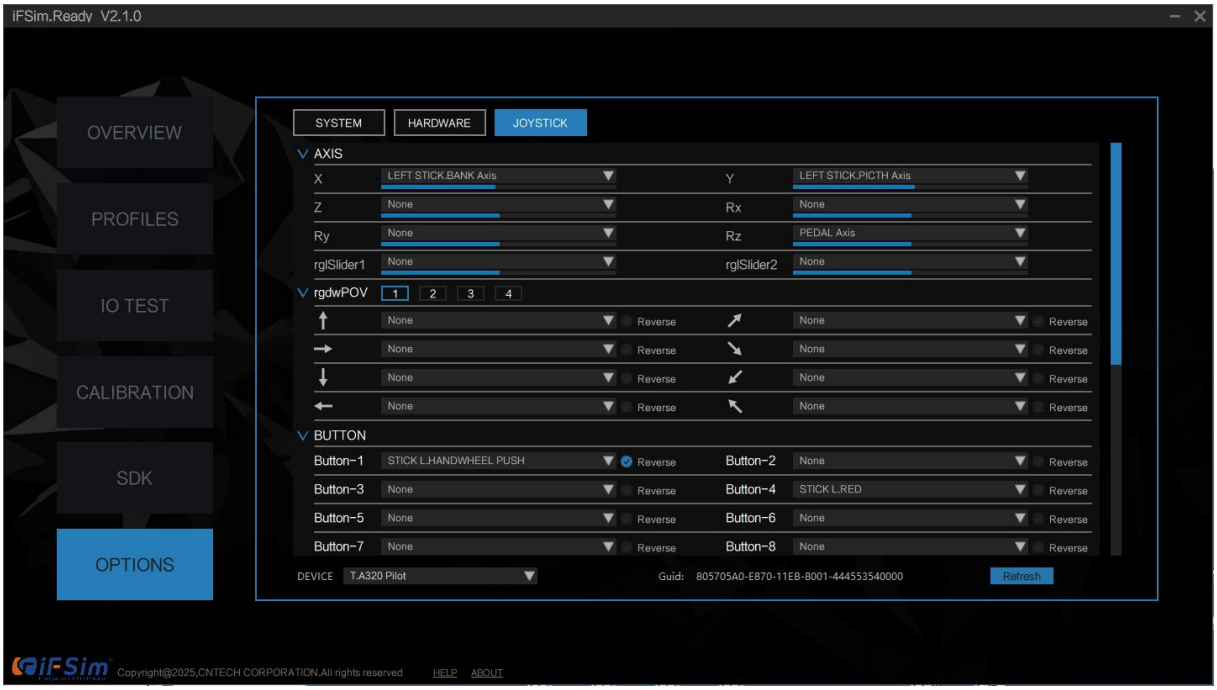
Click the "Reconnect" button, iFSim.Ready will reconnect and initialize the hardware.

8.3 Joystick Configuration

This page is used to map the Axis signals, POV (Point-Of-View hats) signals and Button signals of Joystick devices to the Analog signals and Digit Input signals of CNFSimulator A320 / C919 cockpit.

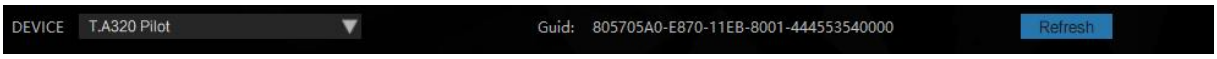
For example, user can map the Y-Axis signal of joystick to the left sidestick pitch control axis Analog signal. And map the Button-4 signal of joystick to the left sidestick red button Digit Input signal.

When user move or rotate a certain Axis of the currently selected Joystick device, the blue slider corresponding to the Axis configuration will change with the real-time axis position. When press a POV signal or a Button signal, the corresponding arrow symbol or button name will change from blue to white, and the rgdwPOV area or Button area will automatically jump to the position where the POV or button is located.



8.3.1 Joystick Devices Management

The Device combo box shows all Joystick device names currently connected to the computer. If a newly inserted Joystick Device cannot be found in the Device list, click the "Refresh" button to refresh the device list.



By select different devices, the "guid" area shows the guid of the currently selected Joystick device in this computer. And the Axis, rgdwPOV, and Button areas within the page will display corresponding signal mapping configurations of the selected device.

iFSim.Ready uses guid to identify devices, so iFSim.Ready supports the simultaneous connection of multiple Joystick devices with the same name.

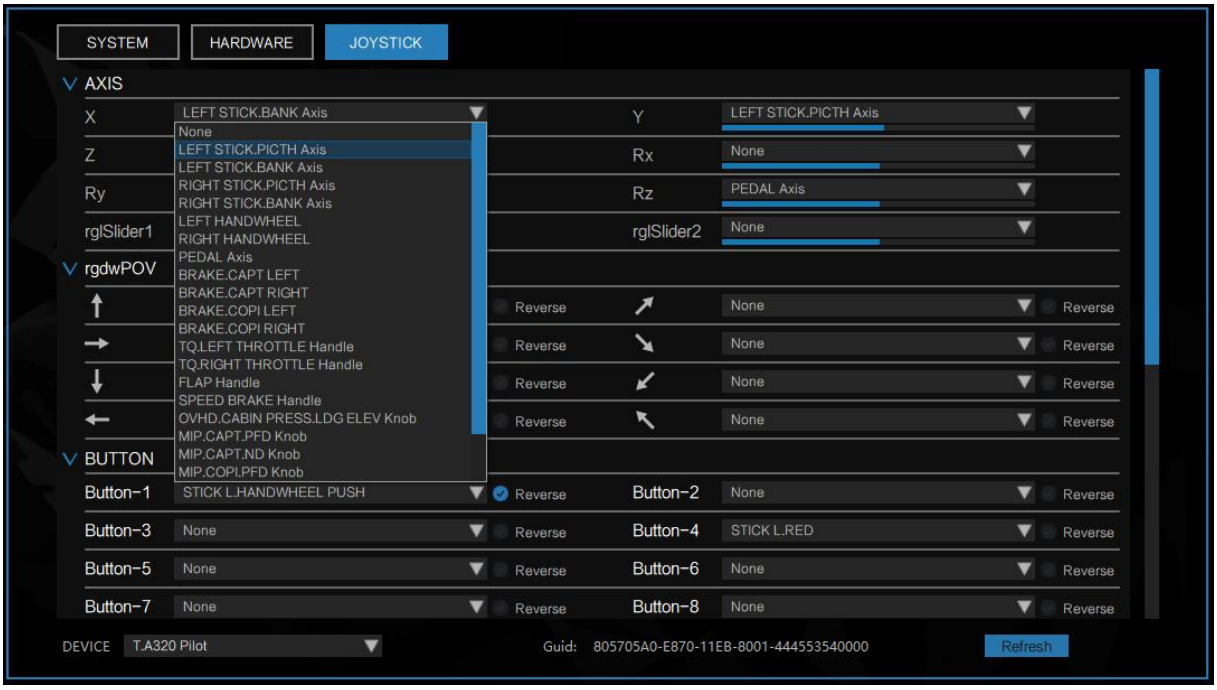
8.3.2 Joystick Axis Signal Configuration

Move or rotate a certain Axis signal of the currently selected Joystick device, the blue slider

corresponding to the Axis configuration will display the real-time position of the axis, allowing user to view the axis number and position.

Click the combo box on the right side of a certain axis to map the signal of this axis to a certain A320 cockpit Analog signal. Select "None" indicates no signal mapping for this axis.

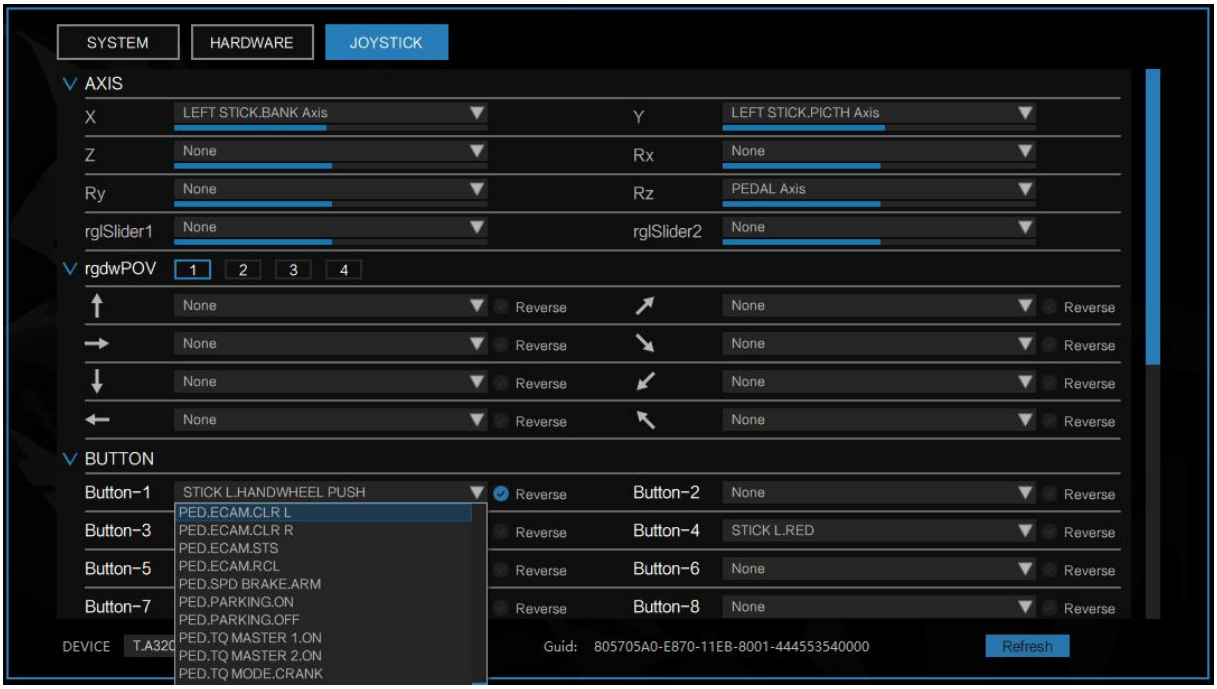
After the settings are completed, user can go to the IO Test page to find the panel where the Analog signal is located. Move or rotate the corresponding axis of the device to see if the signal is mapping successfully.



8.3.3 Joystick POV Signal Configuration

Push the pov hat up, down, left and right to see the corresponding arrow in the rgdwPOV area change from blue to white. Click the combo box on the right side of the arrow to map a certain direction signal of the pov hat to a certain A320 cockpit Digit Input signal. Select "None" indicates no signal mapping in this direction.

Checking "Reverse" indicates that the signal will be reversed. Without Reverse, 1 means signal triggered and 0 means not triggered. When Reverse, 0 means triggered and 1 means not triggered.



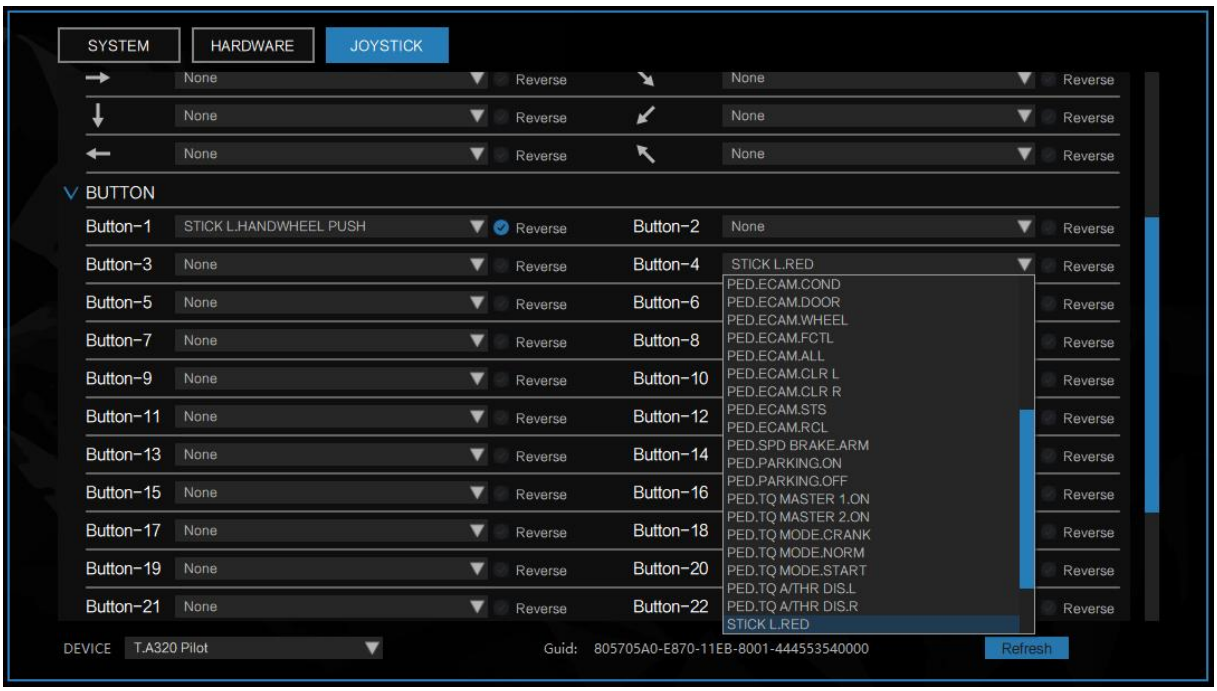
After the settings are completed, user can go to the IO Test page to find the panel where the Digit Input signal is located. Push the pov cap in the corresponding direction to see if the signal is mapping successfully.

iFSim.Ready supports up to 4 POV caps on a single device, which can be switched using the 4 buttons on the right side of the rgdwPOV text.

8.3.4 Joystick Button Signal Configuration

Press a certain Button on the device to see the corresponding button name change from blue to white in the Button area. Click the combo box on the right side of the button to map the button signal to a certain A320 cockpit Digit Input signal. Select "None" indicates no signal mapping in this direction.

Checking "Reverse" indicates that the signal will be reversed. Without Reverse, 1 means signal triggered and 0 means not triggered. When Reverse, 0 means triggered and 1 means not triggered.



After the settings are completed, user can go to the IO Test page to find the panel where the Digit Input signal is located. Press the button to see if the signal is mapping successfully.

Appendix A A320 Cockpit Analog Signal Position

No.	Signal Name	Position Name	Position Value	Description
1	Left.Stick.Pitch	FRONT	-1.0	Left stick pitch axis push forward limit position
		MIDDLE	0.0	Left stick pitch axis neutral position
		AFTER	1.0	Left stick pitch axis pull back limit position
2	Left.Stick.Bank	LEFT	-1.0	Left stick roll axis left limit position
		MIDDLE	0.0	Left stick roll axis neutral position
		RIGHT	1.0	Left stick roll axis right limit position
3	Right.Stick.Pitch	FRONT	-1.0	Right stick pitch axis push forward limit position
		MIDDLE	0.0	Right stick pitch axis neutral position
		AFTER	1.0	Right stick pitch axis pull back limit position
4	Right.Stick.Bank	LEFT	-1.0	Right stick roll axis left limit position
		MIDDLE	0.0	Right stick roll axis neutral position
		RIGHT	1.0	Right stick roll axis right limit position
5	Left.Handwheel	LEFT	-1.0	Left handwheel anticlockwise rotation limit position
		MIDDLE	0.0	Left handwheel neutral position
		RIGHT	1.0	Left handwheel clockwise rotation limit position
6	Right.Handwheel	LEFT	-1.0	Right handwheel anticlockwise rotation limit position
		MIDDLE	0.0	Right handwheel neutral position
		RIGHT	1.0	Right handwheel clockwise rotation limit position
7	Pedal	LEFT	-1.0	Pedal left limit position
		MIDDLE	0.0	Pedal neutral position
		RIGHT	1.0	Pedal right limit position
8	Captain.Left Brake	MIN	0.0	Captain left brake up limit position
		MAX	1.0	Captain left brake down limit position
9	Captain.Right Brake	MIN	0.0	Captain right brake up limit position
		MAX	1.0	Captain right brake down limit position
10	Copilot.Left Brake	MIN	0.0	Copilot left brake up limit position
		MAX	1.0	Copilot left brake down limit position

11	Copilot.Right Brake	MIN	0.0	Copilot right brake up limit position
		MAX	1.0	Copilot right brake down limit position
12	Aircon.Cockpit	COLD	18.0	OVHD AIRCON panel COCKPIT knob COLD position
		MID	24.0	OVHD AIRCON panel COCKPIT knob MID position
		HOT	30.0	OVHD AIRCON panel COCKPIT knob HOT position
13	Aircon.FWD Cabin	COLD	18.0	OVHD AIRCON panel FWD CABIN knob COLD position
		MID	24.0	OVHD AIRCON panel FWD CABIN knob MID position
		HOT	30.0	OVHD AIRCON panel FWD CABIN knob HOT position
14	Aircon.AFT Cabin	COLD	18.0	OVHD AIRCON panel AFT CABIN knob COLD position
		MID	24.0	OVHD AIRCON panel AFT CABIN knob MID position
		HOT	30.0	OVHD AIRCON panel AFT CABIN knob HOT position
15	Cargo.AFT	COLD	5.0	OVHD CARGO panel AFT knob COLD position
		MID	15.0	OVHD CARGO panel AFT knob MID position
		HOT	26.0	OVHD CARGO panel AFT knob HOT position
16	Cabin Press.LDG ELEV	AUTO	-4.0	OVHD CABIN PRESS panel LDG ELEV knob AUTO position
		-2	-2.0	OVHD CABIN PRESS panel LDG ELEV knob -2 position
		0	0.0	OVHD CABIN PRESS panel LDG ELEV knob 0 position
		2	2.0	OVHD CABIN PRESS panel LDG ELEV knob 2 position
		4	4.0	OVHD CABIN PRESS panel LDG ELEV knob 4 position
		6	6.0	OVHD CABIN PRESS panel LDG ELEV knob 6 position
		8	8.0	OVHD CABIN PRESS panel LDG ELEV knob 8 position
		10	10.0	OVHD CABIN PRESS panel LDG ELEV knob 10 position
		12	12.0	OVHD CABIN PRESS panel LDG ELEV knob 12 position
		14	14.0	OVHD CABIN PRESS panel LDG ELEV knob 14 position
17	TQ.Left Throttle	REV	-1.0	TQ Left Throttle REV position
		REV IDLE	-0.1	TQ Left Throttle REV IDLE position
		IDLE	0.0	TQ Left Throttle IDLE position
		CL	0.7	TQ Left Throttle CL position
		MCT	0.9	TQ Left Throttle MCT position
		TOGA	1.0	TQ Left Throttle TOGA position
18	TQ.Right Throttle	REV	-1.0	TQ Right Throttle REV position
		REV IDLE	-0.1	TQ Right Throttle REV IDLE position
		IDLE	0.0	TQ Right Throttle IDLE position
		CL	0.7	TQ Right Throttle CL position

		MCT	0.9	TQ Right Throttle MCT position
		TOGA	1.0	TQ Right Throttle TOGA position
19	TQ.Pitch Trim	DN4.0	-4.0	TQ Pitch Trim Wheel DN4.0 position
		0	0.0	TQ Pitch Trim Wheel 0.0 position
		UP4.0	4.0	TQ Pitch Trim Wheel UP4.0 position
		UP8.0	8.0	TQ Pitch Trim Wheel UP8.0 position
		UP13.5	13.5	TQ Pitch Trim Wheel UP13.5 position
20	Flap Handle	0	0.0	Flap Handle 0 position
		1	1.0	Flap Handle 1 position
		2	2.0	Flap Handle 2 position
		3	3.0	Flap Handle 3 position
		FULL	4.0	Flap Handle FULL position
21	SPD BRAKE Handle	RET	0.0	Pedestal SPD BRAKE Handle RET position
		1/2	0.5	Pedestal SPD BRAKE Handle 1/2 position
		FULL	1.0	Pedestal SPD BRAKE Handle FULL position
22	ECAM.Upper Display	OFF	0.0	ECAM panel Upper Display knob OFF position
		BRT	1.0	ECAM panel Upper Display knob BRT position
23	ECAM.Lower Display	OFF	0.0	ECAM panel Lower Display knob OFF position
		BRT	1.0	ECAM panel Lower Display knob BRT position
24	WX.TILT	DN-15.0	-15.0	WX panel TILT knob DN-15 position
		DN-5.0	-5.0	WX panel TILT knob DN-5 position
		0	0.0	WX panel TILT knob 0 position
		UP5.0	5.0	WX panel TILT knob UP5 position
		UP15.0	15.0	WX panel TILT knob UP15 position
25	Captain.Loud Speaker	OFF	0.0	MIP captain LOUD SPEAKER knob OFF position
		MAX	1.0	MIP captain LOUD SPEAKER knob MAX position
26	Copilot.Loud Speaker	OFF	0.0	MIP copilot LOUD SPEAKER knob OFF position
		MAX	1.0	MIP copilot LOUD SPEAKER knob MAX position
27	Captain.PFD	OFF	0.0	MIP captain PFD knob OFF position
		BRT	1.0	MIP captain PFD knob BRT position
28	Captain.ND	OFF	0.0	MIP captain ND knob OFF position

Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

		BRT	1.0	MIP captain ND knob BRT position
29	Copilot.PFD	OFF	0.0	MIP copilot PFD knob OFF position
		BRT	1.0	MIP copilot PFD knob BRT position
30	Copilot.ND	OFF	0.0	MIP copilot ND knob OFF position
		BRT	1.0	MIP copilot ND knob BRT position
31	Gravity Gear EXTN	DOWN	0.0	Pedestal Gravity Gear EXTN Handle Normal position
		UP	1.0	Pedestal Gravity Gear EXTN Handle Pull position
32	OVHD.INTEG LT	OFF	0.0	OVHD Light panel OVHD INTEG LT knob OFF position
		BRT	1.0	OVHD Light panel OVHD INTEG LT knob BRT position
33	OVHD.L Reading LT	OFF	0.0	After OVHD Left READING LT knob OFF position
		BRT	1.0	After OVHD Left READING LT knob BRT position
34	OVHD.R Reading LT	OFF	0.0	After OVHD Right READING LT knob OFF position
		BRT	1.0	After OVHD Right READING LT knob BRT position
35	GLARE.L Reading LT	OFF	0.0	Glare Shield Left READING LT knob OFF position
		BRT	1.0	Glare Shield Left READING LT knob BRT position
36	GLARE.R Reading LT	OFF	0.0	Glare Shield Right READING LT knob OFF position
		BRT	1.0	Glare Shield Right READING LT knob BRT position
37	GLARE.INTEG LT	OFF	0.0	Glare Shield INTEG LT knob OFF position
		BRT	1.0	Glare Shield INTEG LT knob BRT position
38	GLARE.Display Bright	OFF	0.0	Glare Shield Display Bright knob OFF position
		BRT	1.0	Glare Shield Display Bright knob BRT position
39	MIP&PED.INTEG LT	OFF	0.0	Pedestal MIP&PED INTEG LT knob OFF position
		BRT	1.0	Pedestal MIP&PED INTEG LT knob BRT position
40	MIP.FLOOD LT	OFF	0.0	Pedestal MIP FLOOD LT knob OFF position
		BRT	1.0	Pedestal MIP FLOOD LT knob BRT position
41	PED.FLOOD LT	OFF	0.0	Pedestal PED FLOOD LT knob OFF position
		BRT	1.0	Pedestal PED FLOOD LT knob BRT position

Appendix B A320 Cockpit Servo Signal Position

No.	Signal Name	Position Name	Position Value	Description
1	MIP.ACCU PRESS	0	0.0	MIP ACCU PRESS pointer at 0 PSI position
		4000	1.0	MIP ACCU PRESS pointer at 4000 PSI position
2	MIP.L BRAKE PRESS	0	0.0	MIP L BRAKE PRESS pointer at 0 PSI position
		3000	1.0	MIP L BRAKE PRESS pointer at 3000 PSI position
3	MIP.R BRAKE PRESS	0	0.0	MIP R BRAKE PRESS pointer at 0 PSI position
		3000	1.0	MIP R BRAKE PRESS pointer at 3000 PSI position
4	TQ.Pitch Trim	——	——	Consistent with the Analog signal calibration of TQ.Pitch Trim

Appendix C C919 Cockpit Analog Signal Position

No.	Signal Name	Position Name	Position Value	Description
1	Left.Stick.Pitch	FRONT	-1.0	Left stick pitch axis push forward limit position
		MIDDLE	0.0	Left stick pitch axis neutral position
		AFTER	1.0	Left stick pitch axis pull back limit position
2	Left.Stick.Bank	LEFT	-1.0	Left stick roll axis left limit position
		MIDDLE	0.0	Left stick roll axis neutral position
		RIGHT	1.0	Left stick roll axis right limit position
3	Right.Stick.Pitch	FRONT	-1.0	Right stick pitch axis push forward limit position
		MIDDLE	0.0	Right stick pitch axis neutral position
		AFTER	1.0	Right stick pitch axis pull back limit position
4	Right.Stick.Bank	LEFT	-1.0	Right stick roll axis left limit position
		MIDDLE	0.0	Right stick roll axis neutral position
		RIGHT	1.0	Right stick roll axis right limit position
5	Left.Handwheel	LEFT	-1.0	Left handwheel anticlockwise rotation limit position
		MIDDLE	0.0	Left handwheel neutral position
		RIGHT	1.0	Left handwheel clockwise rotation limit position
6	Right.Handwheel	LEFT	-1.0	Right handwheel anticlockwise rotation limit position
		MIDDLE	0.0	Right handwheel neutral position
		RIGHT	1.0	Right handwheel clockwise rotation limit position
7	Left.Pedal	LEFT	-1.0	Captain pedal left limit position
		MIDDLE	0.0	Captain pedal neutral position
		RIGHT	1.0	Captain pedal right limit position
8	Right.Pedal	LEFT	-1.0	Copilot pedal left limit position
		MIDDLE	0.0	Copilot pedal neutral position
		RIGHT	1.0	Copilot pedal right limit position
9	Captain.Left Brake	MIN	0.0	Captain left brake up limit position
		MAX	1.0	Captain left brake down limit position
10	Captain.Right Brake	MIN	0.0	Captain right brake up limit position
		MAX	1.0	Captain right brake down limit position

11	Copilot.Left Brake	MIN	0.0	Copilot left brake up limit position
		MAX	1.0	Copilot left brake down limit position
12	Copilot.Right Brake	MIN	0.0	Copilot right brake up limit position
		MAX	1.0	Copilot right brake down limit position
13	TQ.Left Throttle	IDLE	0.0	TQ Left Throttle IDLE position
		CL	0.7	TQ Left Throttle CL position
		MCT	0.9	TQ Left Throttle MCT position
		TOGA	1.0	TQ Left Throttle TOGA position
14	TQ.Right Throttle	IDLE	0.0	TQ Right Throttle IDLE position
		CL	0.7	TQ Right Throttle CL position
		MCT	0.9	TQ Right Throttle MCT position
		TOGA	1.0	TQ Right Throttle TOGA position
15	Flap Handle	0	0.0	Flap Handle 0 position
		1	1.0	Flap Handle 1 position
		2	2.0	Flap Handle 2 position
		3	3.0	Flap Handle 3 position
		FULL	4.0	Flap Handle FULL position
16	SPD BRAKE Handle	RET	0.0	Pedestal SPD BRAKE Handle RET position
		1/2	0.5	Pedestal SPD BRAKE Handle 1/2 position
		FULL	1.0	Pedestal SPD BRAKE Handle FULL position
17	OVHD.CABIN PRESS.LDG ALT	DECR	0.0	OVHD CABIN PRESS panel LDG ALT knob DECR position
		INCR	1.0	OVHD CABIN PRESS panel LDG ALT knob INCR position
18	OVHD.CABIN PRESS.CONTROL RATE	DECR	0.0	OVHD CABIN PRESS panel CONTROL RATE knob DECR position
		INCR	1.0	OVHD CABIN PRESS panel CONTROL RATE knob INCR position
19	OVHD.LWR DSPL	OFF	0.0	OVHD LWR DSPL knob OFF position
		BRT	1.0	OVHD LWR DSPL knob BRT position
20	OVHD.LWR CONTRAST	OFF	0.0	OVHD LWR CONTRAST knob OFF position
		BRT	1.0	OVHD LWR CONTRAST knob BRT position

21	OVHD.LIGHT.OVHD PNL	OFF	0.0	OVHD PNL knob OFF position
		BRT	1.0	OVHD PNL knob BRT position
22	OVHD.LIGHT.OVHD FLOOD	OFF	0.0	OVHD FLOOD knob OFF position
		BRT	1.0	OVHD FLOOD knob BRT position
23	OVHD.LIGHT.DOME	OFF	0.0	OVHD DOME knob OFF position
		BRT	1.0	OVHD DOME knob BRT position
24	OVHD.LIGHT.MASTER BRIGHT	OFF	0.0	OVHD MASTER BRIGHT knob OFF position
		BRT	1.0	OVHD MASTER BRIGHT knob BRT position
25	OVHD.L Reading LT	OFF	0.0	OVHD left READING LT knob OFF position
		BRT	1.0	OVHD left READING LT knob BRT position
26	OVHD.R Reading LT	OFF	0.0	OVHD right READING LT knob OFF position
		BRT	1.0	OVHD right READING LT knob BRT position
27	MIP.CAPT.OUTBD.DSPL	OFF	0.0	MIP left OUTBD.DSPL knob OFF position
		BRT	1.0	MIP left OUTBD.DSPL knob BRT position
28	MIP.CAPT.OUTBD CONTRAST	OFF	0.0	MIP left OUTBD.CONTRAST knob OFF position
		BRT	1.0	MIP left OUTBD.CONTRAST knob BRT position
29	MIP.CAPT.INBD.DSPL	OFF	0.0	MIP left INBD.DSPL knob OFF position
		BRT	1.0	MIP left INBD.DSPL knob BRT position
30	MIP.CAPT.INBD CONTRAST	OFF	0.0	MIP left INBD.CONTRAST knob OFF position
		BRT	1.0	MIP left INBD.CONTRAST knob BRT position
31	MIP.CAPT.CONSOLE FLOOD	OFF	0.0	MIP left CONSOLE FLOOD knob OFF position
		BRT	1.0	MIP left CONSOLE FLOOD knob BRT position
32	MIP.COPI.OUTBD.DSPL	OFF	0.0	MIP right OUTBD.DSPL knob OFF position
		BRT	1.0	MIP right OUTBD.DSPL knob BRT position
33	MIP.COPI.OUTBD CONTRAST	OFF	0.0	MIP right OUTBD.CONTRAST knob OFF position
		BRT	1.0	MIP right OUTBD.CONTRAST knob BRT position
34	MIP.COPI.INBD.DSPL	OFF	0.0	MIP right INBD.DSPL knob OFF position
		BRT	1.0	MIP right INBD.DSPL knob BRT position

35	MIP.COPI.INBD CONTRAST	OFF	0.0	MIP right INBD.CONTRAST knob OFF position
		BRT	1.0	MIP right INBD.CONTRAST knob BRT position
36	MIP.COPI.CONSOLE FLOOD	OFF	0.0	MIP right CONSOLE FLOOD knob OFF position
		BRT	1.0	MIP right CONSOLE FLOOD knob BRT position
37	MIP.COPI.COMPASS	OFF	0.0	MIP right COMPASS knob OFF position
		BRT	1.0	MIP right COMPASS knob BRT position
38	PED.LIGHT.PED PNL	OFF	0.0	PED PNL knob OFF position
		BRT	1.0	PED PNL knob BRT position
39	PED.LIGHT.PED FLOOD	OFF	0.0	PED FLOOD knob OFF position
		BRT	1.0	PED FLOOD knob BRT position
40	PED.LIGHT.MAIN PNL	OFF	0.0	PED MAIN PNL knob OFF position
		BRT	1.0	PED MAIN PNL knob BRT position
41	PED.LIGHT.MAIN FLOOD	OFF	0.0	PED MAIN FLOOD knob OFF position
		BRT	1.0	PED MAIN FLOOD knob BRT position

Appendix D C919 Cockpit Servo Signal Position

No.	Signal Name	Position Name	Position Value	Description
1	TQ.L THR Handle	——	——	Consistent with the Analog signal calibration of TQ.L THR
2	TQ.R THR Handle	——	——	Consistent with the Analog signal calibration of TQ.R THR

Appendix E SDK Packet Format

The SDK mode has two main functions. One is to send out the hardware signals. Including digital input signals like switches or buttons, encoder knob signals like turning one notch clockwise or counterclockwise, and analog signals like potentiometer knobs or control axes. The other one is to receive external signals to control the hardware such as indicator lights, motors, backlight or lighting brightness.

The SDK mode receives or sends data in multicast mode. One network segment and port are used for receiving, and another network segment and port are used for sending.

byte	0	1	2	3	4	5	6	7
info	signal type	signal id				data		
byte	8	9	10	11	12	13	14	15
info	data							
byte	16	17	18	19	20	21	22	23
info	data							
byte	24	25	26	27	28	29	30	31
info	data							
byte	32	33	34	35	36	37	38	39
info	data							

C++ packets are defined as follows.

```
#pragma pack(push,1)
struct SDKPack
{
    //0:digit input, 1:encoder, 2:analog,
    //3:digit output, 4:display, 5:servo, 6:pwm
    uint8_t  sigType  = 0;     //signal type;
    uint32_t sigId    = 0;     //signal id
    uint8_t  data[35] = { 0 }; //data buff, uint32_t or char[]
};
#pragma pack(pop)
```


Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

The packet size is 40 bytes.

a. Signal type using 1 byte, indicating the type of the signal.

Value	Name	Description
0	digit input	Only two states, 0 or 1.
1	encoder	0 represents anticlockwise rotation of one space, and 1 represents a clockwise rotation of one space.
2	analog	The value range is generally from 0 to 4095 or from 0 to 65535.
3	digit output	Only two states, 0 or 1.
4	display	Segment display output.
5	servo	Servo motor signal output, control motor position.
6	pwm	Pulse width modulator signal output, the value range is 0 to 2500.

b. Signal id using 4 bytes, indicating the unique ID of the signal.

c. Data accounts using 35 bytes, used to store the signal content. Different signal data has different writing and reading methods.

In general, digit input, encoder and analog are sent to the Send multicast network by iFSim.Ready software. Digit output, display, servo and pwm are sent to Receive multicast network by third-party software. iFSim.Ready software monitors the multicast network and controls the hardware after receiving processing.

Digit input data packet

byte	0	1	2	3	4	5	6	7
info	signal type	signal id				data(uint32_t)		
byte	8	9	10	11	12	13	14	15
info	Data (uint32_t)	unused						
byte	16	17	18	19	20	21	22	23
info	unused							
byte	24	25	26	27	28	29	30	31
info	unused							
byte	32	33	34	35	36	37	38	39
info	unused							

C++ packets are defined as follows.

```
SDKPack pack;
pack.sigType   = 0; //0
pack.sigId     = 0;
uint32_t value = 0;
std::memcpy(pack.data, &value, sizeof(uint32_t));
```


Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

Encoder data packet

byte	0	1	2	3	4	5	6	7
info	signal type	signal id				data(uint32_t)		
byte	8	9	10	11	12	13	14	15
info	Data (uint32_t)	unused						
byte	16	17	18	19	20	21	22	23
info	unused							
byte	24	25	26	27	28	29	30	31
info	unused							
byte	32	33	34	35	36	37	38	39
info	unused							

C++ packets are defined as follows.

```
SDKPack pack;
pack.sigType   = 1; //1
pack.sigId     = 0;
uint32_t value = 1;
std::memcpy(pack.data, &value, sizeof(uint32_t));
```


Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

Analog data packet

byte	0	1	2	3	4	5	6	7
info	signal type	signal id				data(double)		
byte	8	9	10	11	12	13	14	15
info	data(double)					unused		
byte	16	17	18	19	20	21	22	23
info	unused							
byte	24	25	26	27	28	29	30	31
info	unused							
byte	32	33	34	35	36	37	38	39
info	unused							

C++ packets are defined as follows.

```
SDKPack pack;
pack.sigType   = 2; //2
pack.sigId     = 0;
double value   = 0.5;
std::memcpy(pack.data, &value, sizeof(double));
```


Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

Digit output data packet

byte	0	1	2	3	4	5	6	7
info	signal type	signal id				data(uint32_t)		
byte	8	9	10	11	12	13	14	15
info	Data (uint32_t)	unused						
byte	16	17	18	19	20	21	22	23
info	unused							
byte	24	25	26	27	28	29	30	31
info	unused							
byte	32	33	34	35	36	37	38	39
info	unused							

C++ packets are defined as follows.

```
SDKPack pack;
pack.sigType   = 3; //3
pack.sigId     = 25;
uint32_t value = 1;
std::memcpy(pack.data, &value, sizeof(uint32_t));
```


Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

Display data packet

byte	0	1	2	3	4	5	6	7
info	signal type	signal id				Data(char[])		
byte	8	9	10	11	12	13	14	15
info	Data(char[])							
byte	16	17	18	19	20	21	22	23
info	Data(char[])							
byte	24	25	26	27	28	29	30	31
info	Data(char[])							
byte	32	33	34	35	36	37	38	39
info	Data(char[])							

C++ packets are defined as follows.

```
SDKPack pack;
pack.sigType    = 4; //4
pack.sigId      = 3;
std::string value = "27.6";
std::memcpy(pack.data, value.c_str(), value.size());
```


Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

Servo data packet

byte	0	1	2	3	4	5	6	7
info	signal type	signal id				data(uint32_t)		
byte	8	9	10	11	12	13	14	15
info	Data (uint32_t)	unused						
byte	16	17	18	19	20	21	22	23
info	unused							
byte	24	25	26	27	28	29	30	31
info	unused							
byte	32	33	34	35	36	37	38	39
info	unused							

C++ packets are defined as follows.

```
SDKPack pack;
pack.sigType   = 5; //5
pack.sigId     = 1;
uint32_t value = 215;
std::memcpy(pack.data, &value, sizeof(uint32_t));
```


Tel：+86 400 888 5100 Web: www.cntech.com Email: cnfsimulator@gmail.com

pwm data packet

byte	0	1	2	3	4	5	6	7
info	signal type	signal id				data(uint32_t)		
byte	8	9	10	11	12	13	14	15
info	Data (uint32_t)	unused						
byte	16	17	18	19	20	21	22	23
info	unused							
byte	24	25	26	27	28	29	30	31
info	unused							
byte	32	33	34	35	36	37	38	39
info	unused							

C++ packets are defined as follows.

```
SDKPack pack;
pack.sigType   = 6; //6
pack.sigId     = 2;
uint32_t value = 2400;
std::memcpy(pack.data, &value, sizeof(uint32_t));
```