Taurus Series
Multimedia Players

Application Solution
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1.1 About This Solution

Taurus series products are the second-generation multimedia players developed by NovaStar specially designed for full-color LED displays, and applicable to all kinds of display devices as well as many application scenes.

AD player, mirror screen and post screen are used here as examples to describe the application solution of Taurus series products. Pictures of Taurus series products used in networking diagram are taken from T6 model.

For more information of Taurus series products, please visit www.novastar.tech to download relevant documents.

1.2 Characteristics of the Application Solution

1.2.1 Synchronous Playing

This function makes several displays play the same image at the same time with high accuracy based on advanced synchronous playing and scheduling technologies.

The synchronous playing function could be enabled for different displays as long as following three requirements are met:

- The synchronous playing function has been enabled on the ViPlex or VNNOX.
- The time of multiple Taurus products are synchronized.
- Playing plans of multiple Taurus products are the same without random transition or media.

Advantages of the synchronous playing function are shown in Table 1-1.

<table>
<thead>
<tr>
<th>Object</th>
<th>Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Improve advertisement and information broadcast effects</td>
</tr>
<tr>
<td>Environment</td>
<td>Improve city image and make the city more colorful</td>
</tr>
<tr>
<td>Display</td>
<td>Improve visual experience</td>
</tr>
</tbody>
</table>

Time could be synchronized through NTP and RF modes from which the user could select one as required:
NTP time synchronization: Taurus time synchronization is based on NTP server. No hardware is required to be added, and time synchronization accuracy depends on network speed. Consequently, network traffic will be consumed by using 4G network.

RF time synchronization: Master and slave devices are required to be set for Taurus. Time of the slave device is synchronized with that of the master device through RF signal, and therefore RF device is required. This time synchronization method is applicable to events with high time synchronization requirement and does not consume network traffic, but its signal receiving depends on the environment and is limited by distance.

1.2.2 Smart Brightness Adjustment

Smart brightness adjustment includes auto brightness adjustment and timing brightness adjustment.

- Auto brightness adjustment: Display brightness will automatically adjust according to environment brightness.
- Timing brightness adjustment: Display brightness will automatically adjust to a specific value at a given point of time.

Taurus products have brightness sensor connectors. Connect the light sensor and set smart brightness adjustment rules on ViPlex or VNNOX to enable the smart brightness adjustment function.

Advantages of smart brightness adjustment are as shown in Table 1-2.

Table 1-2 Smart brightness adjustment

<table>
<thead>
<tr>
<th>Object</th>
<th>Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Reduce manual operations</td>
</tr>
<tr>
<td>Environment</td>
<td>Avoid light pollution</td>
</tr>
<tr>
<td>Display</td>
<td>Smarter</td>
</tr>
</tbody>
</table>

Taurus products support manual brightness adjustment as well.

1.2.3 4G Module

Some Taurus series product models support 4G module. To connect the Taurus to the Internet via 4G network, buy the corresponding 4G module and install it according to the country or region of the service provider.

The Taurus can be connected to the Internet through the following three methods listed from the highest to the lowest priority:

- Wired network
- Wi-Fi network
- 4G network

When the three methods are all enabled, the Taurus will select signals automatically according to the priorities.
When mobile data network is enabled on ViPlex and priority requirements for signal selection are met, Taurus products with 4G module could connect to Internet via 4G network. Advantages of 4G module are as shown in Table 1-3.

Table 1-3 4G module

<table>
<thead>
<tr>
<th>Object</th>
<th>Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Solution transmission speed is fast without wiring operation</td>
</tr>
<tr>
<td>Environment</td>
<td>-</td>
</tr>
<tr>
<td>Display</td>
<td>All Internet connection methods are available to enable more application scenes</td>
</tr>
</tbody>
</table>

1.2.4 Cluster Management

Display quantity increases fast following with the development of smart city and commercial application, and cluster solution of NovaStar emerges to uniformly manage and monitor numerous displays in different places. Advantages of cluster management are as shown in Table 1-4.

Table 1-4 Cluster management

<table>
<thead>
<tr>
<th>Object</th>
<th>Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Remotely and uniformly manage and monitor numerous displays</td>
</tr>
<tr>
<td>Environment</td>
<td>Helpful for the development of the smart city</td>
</tr>
<tr>
<td>Display</td>
<td>Without limits on deployment position and quantity</td>
</tr>
</tbody>
</table>

1.3 Software Acquiring Methods

Table 1-5 Related software

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>ViPlex Handy</td>
<td>Mobile</td>
<td>LAN-based screen management software for Android and iOS, which is mainly used for screen management, solution editing and publishing.</td>
<td>![QR Code]</td>
</tr>
<tr>
<td>ViPlex Express</td>
<td>PC</td>
<td>LAN-based screen management software for Windows, which is mainly used for screen management, solution editing and publishing.</td>
<td><a href="http://www.en.vnnox.com/#downloadT">http://www.en.vnnox.com/#downloadT</a></td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Description</td>
<td>Address</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>VNNOX</td>
<td>Online software</td>
<td>One-stop cloud platform, which is mainly used for remote content publishing and device management.</td>
<td><a href="http://www.en.vnnox.com">www.en.vnnox.com</a></td>
</tr>
</tbody>
</table>
2 AD Player and Mirror Screen Solution

2.1 Overview

AD player and mirror screen, the typical commercial display applications, are mainly used for information publishing and advertisement display, and can be placed at the shopping mall, hotel, office building, exhibition, bank, station and community.

There are two application modes for the mirror screen which is a mirror when the display is turned off.

There are many application modes for the AD player and mirror screen, and only typical applications are introduced in this chapter, including the single application, cluster application and splicing application.

Characteristics of the AD player and mirror screen of NovaStar are as shown in Table 2-1.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
<th>Required Configuration</th>
</tr>
</thead>
</table>
| Support for synchronous display       | Application of advanced synchronous playing and dispatching technologies realize high-accuracy synchronous playing for the same image on different displays. | • Enable the synchronous playing function on the ViPlex or VNNOX.  
• Set time synchronizing rules on the ViPlex or VNNOX. |
<p>| Support for smart brightness adjustment| Automatic and timing brightness adjustment could reduce manual operation, and brightness filtering technology could help to avoid brightness interference to realize stable display brightness. | Set smart brightness adjustment rules on ViPlex or VNNOX. |
| Support for splicing playing          | Both individual playing and splicing playing are available for multiple displays. | Set splicing-related parameters on ViPlex. |
| Support for selling                   | During the process of                                                         | Edit solutions on ViPlex or VNNOX.                          |</p>
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
<th>Required Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>advertisements played in different time periods</td>
<td>solution scheduling, the user can divide time periods as required to play the specified list in every time period.</td>
<td>VNNOX.</td>
</tr>
<tr>
<td>Support for media switching without blackout</td>
<td>Blackout does not occur during media switching process.</td>
<td>No need to set.</td>
</tr>
<tr>
<td>Support for generating play log</td>
<td>The Taurus products can generate play log, and the user can check and export the log on VNNOX.</td>
<td>No need to set.</td>
</tr>
</tbody>
</table>
2.2 Single Application

2.2.1 Networking Diagram

Taurus products provide Wi-Fi AP itself. After connecting to Wi-Fi AP with PC, Pad and mobile phone, enter the username and password to log in to the Taurus.

2.2.2 Required Software

- ViPlex Handy
- ViPlex Express

2.2.3 Relevant Configurations

No need to set. Refer to 4 General Operations for specific operations to connect and log in to the Taurus products.
2.3 Cluster Application

2.3.1 Networking Diagram

VNNOX could be accessed directly or by way of bridge connection. When bridge connection is selected, following three methods for Internet connection of Taurus products are available with priorities ranging from high to low:

- Wired network
- Wi-Fi network
- 4G network

When the three methods are all enabled, Taurus products will select signals automatically according to the priorities.

2.3.2 Required Software

- ViPlex Handy
- ViPlex Express
- VNNOX

2.3.3 Required Hardware Devices

<table>
<thead>
<tr>
<th>Function</th>
<th>Required Hardware Device</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synchronous playing</td>
<td>When RF time synchronization is used, it is required to purchase RF devices</td>
<td>E32-1W</td>
</tr>
<tr>
<td>Smart brightness</td>
<td>Light sensor</td>
<td>NS048D</td>
</tr>
<tr>
<td>adjustment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.3.4 Relevant Configurations

Before You Begin

- The login username and password for VNNOX and NovaLCT are acquired.
- Create solution(s) on VNNOX without random transition and random media of the solution(s).
- Create asynchronous players on VNNOX and associate the players with the License.
- Configurations required before monitoring have been done on NovaLCT and VNNOX.

Refer to software online help for specific operations of VNNOX and NovaLCT.

Acquiring Player Authentication Information

The authentication information is required when you bind asynchronous players on VNNOX to the Taurus through ViPlex.

Step 1 Visit www.en.vnnox.com and log in to VNNOX AD.

Step 2 Choose Organization Management > System Management.

Step 3 Click the Player Authentication tab and view the authentication information.

Configuring ViPlex Handy (Android and iOS)

Step 1 Log in to the Taurus. Refer to 4.1 Taurus Login upon ViPlex Handy (Android and iOS).

Step 2 Click screen name to enter Screens page.

Step 3 Set rules for smart brightness adjustment.

1. Choose Screen Settings > Brightness Control.
2. Click Brightness Mode, select Smart, and click OK.
3. Click Smart Brightness Adjustment Parameters.
4. Click Edit.
5. Click to set rules for timed brightness adjustment. Then click OK.
6. Click to set rules for auto brightness adjustment. Then click OK.
7. Click Auto Brightness Adjustment Parameters to set the corresponding relation between ambient brightness and screen brightness.
8. Click OK.

Step 4 Set the connection method between the Internet and Taurus.

Priorities of wired network, Wi-Fi Sta and 4G network range from high to low. When the three methods are all enabled, the Taurus will select signals automatically according to the priorities.

- Wired network: When static IP address is required, choose Network Settings > Wired Network Settings, turn DHCP off, enter the static IP address of the Taurus, and click OK.
Wi-Fi Sta: Choose **Network Settings > Wireless Network Settings**, and turn **WiFi** on. Click the Wi-Fi name of the external router and enter the Wi-Fi password, and click **OK**.

4G network: Choose **Network Settings > Mobile Data Settings**, and turn **Mobile Data** on.

**Step 5** Bind the asynchronous player.

1. Choose **Remote Management > VNNOX**.
2. Set the VNNOX server and player authentication information.
3. Click **Obtain** and select a player from the drop-down box of **Player**.
4. Click **OK** after setting.

**Step 6** If display remote monitoring is required, perform the following procedures. Otherwise, ignore this step.

1. Choose **Remote Management > NovaiCare**.
2. Select the service node of the NovaiCare from the drop-down box of **Server**.
3. Click the right side of **Owner** line.
4. Enter the username for login NovaiCare in the pop-up dialog box, and click **OK**.
5. Click **OK** after setting.

**Step 7** Repeat above steps to configure other Taurus products in cluster till all Taurus products have been configured.

**Configuring ViPlex Express (Windows)**

**Step 1** Log in Taurus and see detailed operations in [4.2 Taurus Login upon ViPlex Express (Windows)](#).

**Step 2** Select **Screen Control**.

**Step 3** Set rules for smart brightness adjustment.

1. Select **Brightness adjustment**.
2. Select the target terminal in the terminal list.
3. Click the Smart page.
4. Set rules for timed brightness adjustment and click **Add**.
5. Set rules for auto brightness adjustment and click **Add**.
6. Click **Close**.
7. Click **Apply**.

**Step 4** Set the way to connect Taurus to the Internet. The priority of wired network, Wi-Fi network and 4G network is from high to low. If all of the three ways are enabled, the Taurus will choose signal automatically according to the priority order.

1. Select **Network configuration**.
2. Select the target terminal in the terminal list and perform the following operations according to actual needs.
Wired network: If it is required to set static IP address, deselect Dynamic
DHCP, enter the IP address information of the Taurus and then click Apply
in the Wired network configuration section.
Wi-Fi network: Turn on Wi-Fi in the Wi-Fi configuration section. Double
click the Wi-Fi name of external router and then enter Wi-Fi password and
click OK.
4G network: In the Mobile network configuration area, turn on mobile
network.

Step 5 Bind asynchronous players.
1. Select Server configuration.
2. Select the target terminal in the terminal list.
3. In Configure parameters for connecting screens to VNNOX, configure
VNNOX server and player authentication information.
4. Click next to Player and select a player.
5. Click Bind.

Step 6 If you want to monitor displays remotely, please perform this step; otherwise, skip this
step.
1. In Configure parameters for connecting screens to NovaiCare, select a server
and enter the login user name.
2. Click Send.

Step 7 Repeat above steps until all the Taurus products in the cluster are configured.

Configuring VNNOX

When setting timing rules and synchronous playing upon ViPlex, every Taurus
product is required to be set individually, and batch setting is available for setting
timing rules and synchronous playing upon VNNOX. When the public network is
available, VNNOX is recommended for batch configuration to reduce manual
operations.

Step 1 Visit www.en.vnnox.com and log in to VNNOX AD.
Step 2 Set time synchronization rule.
2. Click NTP server configuration.
3. Configure NTP service information, and then click Save&Close.
4. Click New on the page of time synchronization task list.
5. Enter time synchronization task name and select time synchronization method,
and then click Next.
   - NTP: Select a NTP server and then click OK.
   - RF: Select a time synchronization standard device and then click OK.
6. Click Add in the Players tab of the time synchronization task attribute page.
   - NTP time synchronization: Select all the players in cluster and then click OK.
   - RF time synchronization: Select all the slave players in RF network and then
   click OK.
7. When the time synchronization method upon RF network is selected, and NTP server is used for the time synchronization standard device, click **Configure** tab to set **NTP** to **Yes**, and select NTP server. Otherwise, ignore this step.

8. Click **Save** or **Save&Close**. Players added in the time synchronization task will perform time synchronization according to rules defined in the task.

**Step 3** If the same image is required to be played by different screens, perform the following procedures. Otherwise, ignore this step.

1. Choose **Players Management > Players**.
2. Select asynchronous players corresponding to all Taurus series products requiring enabling the synchronous playing function.
3. Choose **Real-time control > Synchronous playback > Turn on sync play**.

**Step 4** Associate with solution(s).

1. Choose **Players Management > Players**.
2. Select a player and click **Attribute**, or click a player name.
3. Select a solution from the drop-down box of parameter **associate solution**.
4. Perform the corresponding operation below according to the solution distribution type.
   - Manual: Click **Save&Close** to return to the player list page. Perform term 5.
   - Auto: Click **Save** or **Save&Close**. VNNOX will automatically distribute solutions to corresponding Taurus products.
5. Select the target player, and click **Update solution** to manually distribute solutions to corresponding Taurus products.
6. Repeat above steps to associate with solutions for other players in cluster till all players have been configured.

**2.4 Splicing**

This section will show you an example of splicing three displays horizontally from the left to right and using the external video source.

**2.4.1 Networking Diagram**

The following figure uses three displays splicing as an example to illustrate Taurus connection.
The Taurus product provides Wi-Fi AP itself. Connect to Wi-Fi AP of each Taurus product through PC, Pad and mobile phone, and then enter the username and password to log in to the Taurus.

2.4.2 Required Software

- ViPlex Handy
- ViPlex Express

2.4.3 Relevant Configuration

Before You Begin

Make sure that the displays have the same specifications.

Configuring ViPlex Handy (Android and iOS)

Step 1 Log in to all the Taurus to be spliced. Refer to 4.1 Taurus Login upon ViPlex Handy (Android and iOS) for specific operations.

Step 2 Choose Settings > Mode.

Step 3 Select Screen Configuration Mode and go back to the last page.

Step 4 Choose Screens.

Step 5 On the Screen list page, click at the top right.

Step 6 Enter a resolution and click Query to search for screens.
The online Taurus and offline Taurus with mosaic order that match your query will be displayed.

Step 7  (Optional) Click ![sort icon] to sort the Taurus with mosaic order by ascending mosaic order.

Step 8  Click **Mosaic**.

Step 9  Set the number of screens used for mosaic.

The number of screens cannot be greater than the ceiling integer of the value of "video source width / loading capacity width of the Taurus". The loading capacity width of the Taurus is up to 4096 pixels.

Step 10  Set mosaic orders.

The system sets the horizontal offset of image automatically according to the mosaic order and the loading capacity width of the Taurus.

Offset = \((Mosaic \ order-1) \times \text{Loading capacity width of the Taurus}\)

For example, if the loading capacity width of the Taurus is 500 px, set the offset of the second screen to 500 px and the third screen to 1000 px.

Step 11  Set the video source of the first screen.

### Configuring ViPlex Express (Windows)

Step 1  Log in Taurus and see detailed operations in 4.2 Taurus Login upon ViPlex Express (Windows).

Step 2  Choose **Screen Control** > **Video source**.

Step 3  Select the target terminal in the terminal list.

Step 4  On the **Manual** page, configure all required parameters.

- **Video source type**: HDMI
- **X**: \((Mosaic \ order-1) \times \text{Loading capacity width of the Taurus}\). For example, if the loading capacity width of the Taurus is 500 px, set the offset of the second screen to 500 px and the third screen to 1000 px.
- **Y**: 0

If the first display uses the internal video source, set the **Video source type** of the first display to **Internal** and set the **Video source type** of other displays to **HDMI**.

Step 5  Click **Apply**.

Step 6  Repeat above steps to configure other Taurus products till all Taurus products have been configured.
3.1 Overview

Post screens prevail on both sides of highways and roads following with the development of the smart city. Smart post screen has distinct advantages compared with the conventional post which features illumination and static advertisement only and requires new manufacture and installation in case of advertisement replacement, while the smart post provides functions including illumination, security monitoring, environment monitoring, emergency call, charging pile and LED display which used high-definition smart LED post screen for road leading, data release and advertising promotion.

Post screens can be used without quantity limits, and the display contents can be controlled individually or in batch based on cluster management method.

Characteristics of the post screen of NovaStar are as shown in Table 3-1.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
<th>Require Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support synchronous playing</td>
<td>Use advanced synchronous playing and scheduling technologies to make several displays play the same image at the same.</td>
<td>• Enable the synchronous playing function on the ViPlex or VNNOX.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Set time synchronizing rules on the ViPlex or VNNOX.</td>
</tr>
<tr>
<td>Support for smart brightness adjustment</td>
<td>Automatic and timing brightness adjustment could reduce manual operation, and brightness filtering technology could help to avoid brightness interference to realize stable display brightness.</td>
<td>Set smart brightness adjustment rules on ViPlex or VNNOX.</td>
</tr>
<tr>
<td>Support for selling advertisements played in different time periods</td>
<td>During the process of solution scheduling, the user can divide time periods as required to play the specified list in every time period.</td>
<td>Edit solutions on ViPlex or VNNOX.</td>
</tr>
<tr>
<td>Support for media switching without</td>
<td>Blackout does not occur during media switching</td>
<td>No need to set.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Description</td>
<td>Require Configuration</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>blackout</td>
<td>process.</td>
<td>No need to set.</td>
</tr>
<tr>
<td>Support for generating play log</td>
<td>Taurus products can generate play log, and the user can check and export the log on VNNOX.</td>
<td>No need to set.</td>
</tr>
<tr>
<td>Support for remote solution publishing</td>
<td>VNNOX is a one-stop cloud platform which is mainly used for remote content publishing and device management.</td>
<td>Visit <a href="http://www.en.vnnox.com">www.en.vnnox.com</a> for register and login.</td>
</tr>
<tr>
<td>Support for environment monitoring</td>
<td>Onboard camera connector can monitor the environment surround the post screen.</td>
<td>No need to set.</td>
</tr>
<tr>
<td>Support for 4G module</td>
<td>After the 4G module is installed, the Internet can be connected via 4G network.</td>
<td>Turn on mobile data network on ViPlex.</td>
</tr>
</tbody>
</table>

![Image of Taurus Series Multimedia Players in an outdoor setting](image-url)
3.2 Networking Diagram

VNNOX could be accessed directly or by way of bridge connection to centrally manage post screens.

Taurus products can connect to Internet through the wired network, Wi-Fi and 4G network which is recommended for this solution.

3.3 Required Software

- ViPlex Handy
- ViPlex Express
- VNNOX

3.4 Required Hardware Devices

<table>
<thead>
<tr>
<th>Function</th>
<th>Required Hardware Device</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synchronous playing</td>
<td>When RF time synchronization is used, it is required to purchase RF devices</td>
<td>E32-1W</td>
</tr>
<tr>
<td>Smart brightness</td>
<td>Light sensor</td>
<td>NS048D</td>
</tr>
<tr>
<td>adjustment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.5 Relevant Configuration

Before You Begin

- Acquire the login username and password of VNNOX and NovaLCT.
Create a solution on the VNNOX without random transition and random media.
Create an asynchronous player which associates with License on the VNNOX.
Complete configurations required to be done before monitor on NovaLCT and VNNOX.

Refer to software online help for specific operations of VNNOX and NovaLCT.

**Acquiring player Authentication Information**

The authentication information is required when you bind asynchronous players on VNNOX to the Taurus through ViPlex.

**Step 1** Visit [www.en.vnnox.com](http://www.en.vnnox.com) and log in to VNNOX AD.

**Step 2** Choose [Organization Management > System Management](#).

**Step 3** Click the **Player Authentication** tab and view the authentication information.

**Configuring ViPlex Handy (Android and iOS)**

**Step 1** Log in to the Taurus. Refer to 4.1 Taurus Login upon ViPlex Handy (Android and iOS) for specific operations.

**Step 2** Click the screen name to enter the **Screens** page.

**Step 3** Set rules for smart brightness adjustment.

1. Choose **Screen Settings > Brightness Control**.
2. Click **Brightness Mode** to select **Smart**, and then click **OK**.
3. Click **Smart Brightness Adjustment Parameters**.
4. Click **Edit**.
5. Click [ ] to set rules for timed brightness adjustment. Then click **OK**.
6. Click [ ] to set rules for auto brightness adjustment. Then click **OK**.
7. Click **Auto Brightness Adjustment Parameters** to set the corresponding relation between ambient brightness and screen brightness. Then click **OK**.
8. Click **OK**.

**Step 4** Set Internet connection mode for the Taurus.

1. Choose **Network Settings > Mobile Data Settings**.
2. Turn **Mobile Data** on.

**Step 5** Bind the asynchronous player.

1. Choose **Remote Management > VNNOX**.
2. Set the VNNOX server and player authentication information.
3. Click **Obtain** and select a player from the dropdown box of **Player**.
4. Click **OK** after setting.

**Step 6** If display remote monitoring is required, perform the following procedures. Otherwise, ignore this step.

1. Choose **Remote Management > NovaiCare**.
2. Select the service node of NovaiCare from the dropdown box of Server.
3. Click the right side of Owner line.
4. Enter the login username of NovaiCare in the pop-up dialog box, and click OK.
5. Click OK after setting.

**Step 7** Repeat above steps to configure other Taurus products in cluster till all Taurus products have been configured.

**Configuring ViPlex Express (Windows)**

**Step 1** Log in Taurus and see detailed operations in 4.2 Taurus Login upon ViPlex Express (Windows).

**Step 2** Select Screen Control.

**Step 3** Set rules for smart brightness adjustment.
   1. Select Brightness adjustment.
   2. Select the target terminal in the terminal list.
   3. Click on the Smart page.
   4. Set rules for timed brightness adjustment and click Add.
   5. Set rules for auto brightness adjustment and click Add.
   6. Click Close.
   7. Click Apply.

**Step 4** Set the way to connect Taurus to the Internet.
   1. Select Network configuration.
   2. Select the target terminal in the terminal list.
   3. In the Mobile network configuration area, turn on mobile network.

**Step 5** Bind asynchronous players.
   1. Select Server configuration.
   2. Select the target terminal in the terminal list.
   3. In Configure parameters for connecting screens to VNNOX, configure VNNOX server and player authentication information.
   4. Click next to Player and select a player.
   5. Click Bind.

**Step 6** If you want to monitor displays remotely, please perform this step; otherwise, skip this step.
   1. In Configure parameters for connecting screens to NovaiCare, select a server and enter the login user name. Click Send.

**Step 7** Repeat above steps until all the Taurus products in the cluster are configured.

**Configuring VNNOX**

When setting timing rules and synchronous playing upon ViPlex, every Taurus product is required to be set individually, and batch setting is available for setting
Timing rules and synchronous playing upon VNNOX. When the public network is available, VNNOX is recommended for batch configuration to reduce manual operations.

Step 1: Visit www.en.vnnox.com and log in to VNNOX AD.

Step 2: Set time synchronization mode.

2. Click NTP server configuration.
3. Configure NTP service information, and then click Save&Close.
4. Click New on the page of time synchronization task list.
5. Enter time synchronization task name and select time synchronization method, and then click Next.
   - NTP: Select the NTP server and then click OK.
   - RF: Select a time synchronization standard device and then click OK.
6. Click Add in the Players tab of the time synchronization task attribute page.
   - NTP time synchronization: Click all the players in cluster and then click OK.
   - RF time synchronization: Click all the slave players in RF network and then click OK.
7. When the time synchronization method upon RF network is selected, and NTP server is used for the time synchronization standard device, click Configure tab to set NTP to Yes, and select NTP server. Otherwise, ignore this step.
8. Click Save or Save&Close. Players added in the time synchronization task will perform time synchronization according to rules defined in the task.

Step 3: If the same image is required to be played by different screens, perform the following procedures. Otherwise, ignore this step.

2. Select asynchronous players corresponding to all Taurus series products requiring enabling the synchronous playing function.
3. Choose Real-time control > Synchronous playback > Turn on sync play.

Step 4: Associate with solution(s).

2. Select a player and click Attribute, or click a player name.
3. Select a solution from the drop-down box of parameter associate solution.
4. Perform the corresponding operation below according to the solution distribution type.
   - Manual: Click Save&Close to return to the player list page. Perform the 5.
   - Auto: Click Save or Save&Close. VNNOX will automatically distribute solutions to corresponding Taurus products.
5. Select the target player, and click Update solution to manually distribute solutions to corresponding Taurus products.
6. Repeat above steps to associate with solutions for other players in cluster till all players have been configured.
4.1 Taurus Login upon ViPlex Handy (Android and iOS)

Before You Begin
- Get the SSID and password of WiFi AP of the Taurus. The default SSID is “AP+the last 8 digits”. The default password is “12345678”.
- Get the password of the user “admin”. The default password of the user “admin” is “123456”.

Operating Steps
Step 1 Connect the WiFi AP of the Taurus products.
Step 2 Start ViPlex Handy.
ViPlex Handy automatically detects the Taurus and refreshes the screen list. Users can also swipe down to manually refresh the screen list.
- : Denotes that the Taurus is online and you can log in to it. Go to Step 3.
- : Denotes that Taurus is offline and you cannot log into it.
Step 3 Tap Connect next the screen name.
Step 4 Enter the password for the "admin" user and then tap Login.
After successful login, is displayed. ViPlex Handy saves the account information automatically.

4.2 Taurus Login upon ViPlex Express (Windows)

Before You Begin
- Get the SSID and password of WiFi AP of the Taurus. The default SSID is “AP+the last 8 digits”. The default password is “12345678”.

- Get the password of the user “admin”. The default password of the user “admin” is “123456”.

Operating Steps

Step 1 Connect the WiFi AP of the Taurus products.

Step 2 Start ViPlex Express.

Step 3 Click **Refresh** to refresh the screen list.

After detecting the Taurus, ViPlex Express will try to log in to the Taurus with the default account or the account used for last login.

- 🟢: Denotes that the Taurus is online and you can log in to it. Go to Step 4.
- 🔴: Denotes the Taurus is offline and you cannot log in to it.
- 🟠: Denotes logging into the Taurus is successful.

Step 4 Click **Connect** next the screen information.

Step 5 Enter the password for the "admin" user and then click **OK**.

After successful login, ViPlex Express saves the account information automatically.
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Official website

www.novastar.tech

Technical support

support@novastar.tech