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1 Overview

1.1 About This Solution

Taurus series multimedia players support the synchronous playing function for multiple displays in asynchronous mode. This document is intended to instruct on-site workers and technicians to complete configurations related to the synchronous playing function.

1.2 Synchronous Playing Conditions

All following conditions are required to be met for synchronous playing:

- The player supports the synchronous playing function
  The Taurus series multimedia player, launched by NovaStar, perfectly supports the synchronous playing function, uses advanced synchronous playing technology and scheduling technology to perform automatic calibration and synchronization in the playing process of each media based on time.

- Enable the synchronous playing function
  Taurus series products feature the perfect software supporting program, and the user could enable the synchronous playing function through the ViPlex or VNNOX cloud publishing system.

- Time synchronization of Taurus series products
  Playing and scheduling technologies are based on time, and therefore time synchronization should be ensured for synchronous playing. Taurus series products support NTP and RF time synchronization methods either of which can be selected as required.

- Feature the same playing plan without random transition or media
  Playing plans sent to multiple Taurus series products must be the same without random transition or media.

1.3 Time Synchronization

When NTP time synchronization is used, time synchronization of the Taurus series products will be performed with NTP server as the time standard in LAN or Internet.

Advantages

- Use network time synchronization technology without additional hardware.
Time synchronization accuracy depends on the Internet speed, and therefore applicable to the case with low time synchronization requirement. It is recommended to use such technology in LAN or good 4G network.

Disadvantages
- Time synchronization depends on the Internet conditions and speed.
- Additional 2GB network traffic will be consumed per month by a single terminal when 4G network is used.

1.4 RF Time Synchronization

When NTP time synchronization is used, master and slave devices are required to be set for Taurus series products. Time of the slave device is synchronized with that of the master device through RF network.

Advantages
- It is independent of network environment with good time synchronization performance and applicable to the case with high time synchronization requirement.
- No network traffic will be consumed.
- Time synchronization is available for the groups of the Taurus series products.

Disadvantages
- The RF device should be purchased.
- There are limits on distance, and configurations should be performed based on the specific conditions to ensure that radio-frequency signal can be received.

1.5 Required Software

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
<th>Address</th>
</tr>
</thead>
</table>
| ViPlex Handy | Mobile client | LAN-based screen management software for Android and iOS, which is mainly used for screen management, solution editing and publishing. | Android: [https://play.google.com/store/apps/details?id=nova.priv.hand.easypluto.google](https://play.google.com/store/apps/details?id=nova.priv.hand.easypluto.google)  
| ViPlex Express | PC client     | LAN-based screen management software for Windows, which is mainly used for screen management, solution | [http://www.en.vnnox.com/#downloadT](http://www.en.vnnox.com/#downloadT) |
1.6 Required Hardware

When RF time synchronization is used, it is required to purchase RF devices, as shown in Table 1-2.

Table 1-2 Required hardware devices

<table>
<thead>
<tr>
<th>Required Hardware Devices</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF devices</td>
<td>E32-1W</td>
</tr>
</tbody>
</table>
Taurus Series Multimedia Players
Implementation Instruction of the Synchronous Playing Solution

2 Implementation of NTP Synchronization Plan

Taurus series multimedia players support NTP time synchronization in the LAN or public network for which configured NTP server and the world-wide used NTP server independent of configuration are required respectively.

2.1 NTP Time Synchronization in the LAN

2.1.1 NTP Server Configuration

Configure the NTP server in the LAN and record the domain name or IP address. The Personal Computer (PC) can be set with the NTP server by default. Refer to http://note.youdao.com/share/?id=2efee9a613935113fa0f9a874b89047f&type=note# for details.

2.1.2 Taurus Configuration

Taurus series products can be configured with ViPlex only in the LAN. ViPlex includes ViPlex Handy and ViPlex Express. The user can choose one as required.

2.1.2.1 Configuration with ViPlex Handy (Android and iOS)

Step 1 Log in to the Taurus, and refer to 4.1 Taurus Login with ViPlex Handy (Android and iOS) for specific operations.

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

Step 3 Enable the synchronous playing function.
   2. Turn Synchronous Playing on.

Step 4 Return to Advanced Settings page.

Step 5 Configure NTP time synchronization.
   1. Select Time Synchronization.
   2. Click Edit.
   3. Click Synchronization Mode, select NTP, and click OK.
   4. Click NTP Server.
   5. Click Create Server.
6. Enter the name and address of the NTP server, and then click Create. The address of the NTP server must be the same as the domain name or IP address configured in 2.1.1 NTP Server Configuration.

7. Return to the previous page and click OK.

Step 6 Repeat above steps to configure other Taurus series products requiring synchronous playing till all Taurus series products have been configured.

2.1.2.2 Configuration with ViPlex Express (Windows)

Step 1 Log in to the Taurus. Refer to 4.2 Taurus Login with ViPlex Express (Windows) for specific operations.

Step 2 Select Screen Control.

Step 3 Enable the synchronous playing function.

1. Select Play management.
2. Select the target terminal in the terminal list, and select Enable next to Synchronous Playing.
3. Click Confirm in the pop-up dialog box.

Step 4 Configure NTP time synchronization.

1. Select Time synchronization management.
2. Select Auto sync time with NTP server.
3. Set NTP server information. The address of the NTP server must be the same as the domain name or IP address configured in 2.1.1 NTP Server Configuration.
4. Click Apply.

Step 5 Repeat above steps to configure other Taurus series products requiring synchronous playing till all Taurus series products have been configured.

2.2 NTP Time Synchronization in the Public Network

Configure each Taurus series product respectively when the synchronous playing and settings are enabled with ViPlex. Batch configuration could be available based on VNNOX. In the public network, VNNOX is recommended to reduce manual operations.

Before You Begin

Bind the asynchronous player of VNNOX through ViPlex.

VNNOX Pro

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

Step 2 Enable the synchronous playing function in batch.

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 3  Configure NTP time synchronization.

2. Click New in the page of time synchronization task.
3. Enter the time synchronization task name, select NTP as the type of the time synchronization task, and then click Next.
4. Select a NTP server, and click OK.
5. Click Add in the Players tab of the time synchronization task attribute page.
6. Select asynchronous players corresponding to all Taurus series products requiring enabling the synchronous playing function, and click OK.
7. Click Save or Save&Close.

VNNOX Lite

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

Step 2  Enable the synchronous playing function in batch.

1. Choose Player Control.
2. Click Synchronous Playback.
3. Turn Synchronous Playback on.

Step 3  Configure NTP time synchronization.

1. Choose Player Control.
2. Click Time Synchronization.
3. On the left of the page, select asynchronous players corresponding to all Taurus series products requiring enabling the synchronous playing function.
4. Select NTP and configure the relevant parameters.
5. Click Apply.
3 Implementation of RF Time Synchronization Plan

RF time synchronization requires setting one Taurus in RF network as the master device and others as the slave devices. Only the master device is used as the standard time instead of loading the display, and the slave device is used for loading the display.

Time synchronization of the slave device is based on that of the master device. Range of the time synchronization is limited. Taurus supports NTP-standardized time synchronization for the master device. If the same NTP server is configured for the master devices of different RF networks and the networks are normal, large-scale time synchronization can be enabled.

One Taurus series product requires one RF device. The Taurus and RF device of E32-1W model should be purchased before the project implementation.

3.1 RF Device Installation

Step 1  Make sure to power off the Taurus.
Step 2  Connect the antenna to the RF device.

Figure 3-1 RF Device

Figure 3-2 Antenna
Step 3 Install the RF device on the Taurus. Take the Taurus of model T6 as an example. Install the RF device in the red box shown in Figure 3-3.

![Figure 3-3 Installation position](image)

3.2 Taurus Configuration

When the public network is not available, the ViPlex, including ViPlex Handy and ViPlex Express, is applied to configure the Taurus, and the user could choose one as required.

When the public network is available, VNNOX is recommended for batch configuration to reduce manual operations.

3.2.1 Configuration with ViPlex Handy (Android and iOS)

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

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

Step 3 Enable the synchronous playing function. Please ignore this operation for the master device.

2. Turn Synchronous Playing on.

Step 4 Return to the Advanced Settings page.

Step 5 Configure RF time synchronization.

1. Select Time Synchronization.
2. Click Edit.
3. Click Synchronization Mode, select RF, and click OK.
4. Set time synchronization parameters.
   - **Group ID**: Use the same organization ID for the Taurus required enabling the time synchronization function to make such Taurus series products divide into the same RF network.
   - **Device type**: Set the current Taurus as the master or slave device, and only one master device can exist in one organization. The slave device performs time synchronization through RF network with the master device as time standard.
   - **Auto Time Synchronization**: When time synchronization of the master device is desired to be performed using the NTP server as the standard, automatic time synchronization function should be enabled, and NTP server should be set.

5. Click **OK** after the configuration.

Step 6 Repeat above steps to configure other Taurus series products requiring synchronous playing till all Taurus series products have been configured.

### 3.2.2 Configuration with ViPlex Express (Windows)

**Step 1** Log in to the Taurus, and refer to 4.2 Taurus Login with ViPlex Express (Windows) for specific operations.

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

**Step 3** Enable the synchronous playing function. Please ignore this operation for the master device.

1. Select **Play management**.
2. Select the target terminal in the terminal list.
3. Select **Enable** next to **Synchronous Playing**.
4. Click **Confirm** in the pop-up dialog box.

**Step 4** Configure RF time synchronization.

1. Select **RF management**.
2. Select the target terminal from the terminal list.
3. Turn on **RF synchronization**.
4. Set the current terminal as the master device or a slave device.
5. Set a group ID.
   - Enter the group ID of the master device for a slave device, and this slave device and the master device will be grouped together.
6. Select **Time synchronization**.
   - After RF synchronization is applied to time synchronization, the time of the slave device will keep the same as the master device by using RF network.

7. Click **Apply**.

**Step 5** Repeat above steps to configure other Taurus series products requiring synchronous playing till all Taurus series products have been configured.
3.2.3 Configuration with VNNOX

Before You Begin

Bind the asynchronous player of VNNOX with ViPlex.

**VNNOX Pro**

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

**Step 2** Enable the synchronous playing function in batch.

1. Choose \[Players Management > Players.\] Select asynchronous players corresponding to all Taurus series products requiring enabling the synchronous play function which is not required for the master device.
2. Choose \[Real-time control > Synchronous playback > Turn on sync play.\]

**Step 3** Configure RF time synchronization.

1. Choose \[Players Management > Time Synchronization.\]
2. Click **New** in the page of time synchronization task.
3. Enter the time synchronization task name, select **RF** as the type of the time synchronization task, and then click **Next**.
4. Select a standard device for time synchronization, and then click **OK**.
5. Select asynchronous players corresponding to all slave devices requiring enabling the synchronous play function, and click **OK**.
6. Select **RF** and configure the relevant parameters.
7. When NTP server time synchronization is required, select the Configure tab, set **NTP to Yes**, and select the NTP server. Otherwise, ignore this step.
8. Click **Save** or **Save&Close**.

**VNNOX Lite**

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

**Step 2** Enable the synchronous playing function in batch.

1. Choose **Player Control**.
2. Click **Synchronous Playback**.
3. Turn **Synchronous Playback** on.

**Step 3** Configure RF time synchronization.

1. Choose **Player Control**.
2. Click **Time Synchronization**.
3. On the left of the page, select asynchronous players corresponding to all slave devices requiring enabling the synchronous play function.
4. Select **RF** and configure the relevant parameters.
   - **Group ID**: Set a same group ID for multiple Taurus units and these units belong to the same group.
− **Set as reference device**: Sync the time of other devices in a group with the time of the reference device.

− **NTP**: When NTP is turned on, the time of the reference device will be synchronized with the time of NTP server. When NTP is turned off, the time of the reference device will be synchronized with the time of the selected time zone.

5. Click **Apply**.
Taurus series products feature the Wi-Fi AP function which is taken as the example by this chapter to introduce Taurus Login methods.

Other connection methods require hardware or software configuration. Refer to “Taurus Series Multimedia Players Quick Start Guide”.

4.1 Taurus Login with ViPlex Handy (Android and iOS)

Before You Begin

- Acquire the SSID and password of Wi-Fi AP of Taurus series products. SSID is default to be composed of AP and the last 8 numbers of SN, and the password is default as “12345678”.
- Acquire the login password of user “admin” of which the default password is “123456”.

Operating Procedures

ViPlex Handy can connect numerous Taurus series products.

Step 1 Connect Wi-Fi AP of the Taurus series products.
Step 2 Start ViPlex Handy.

System can automatically detect the Taurus series products and refresh Screen list. Users can also slide down Screen list to manually refresh the list.

- : denotes that Taurus is online and you can log into it.
- : denotes that Taurus is offline and you cannot log into it.
- : denotes that Taurus login is successful.

Step 3 Click Connect next to the screen name.
Step 4 Enter the user name and password and click Log In.
4.2 Taurus Login with ViPlex Express (Windows)

Before You Begin

- Acquire the SSID and password of Wi-Fi AP of Taurus series products. SSID is default to be composed of AP and the last 8 numbers of SN, and the password is default as “12345678”.
- Acquire the login password of user “admin” of which the default password is “123456”.

Operating Procedures

ViPlex Express can connect numerous Taurus series products.

Step 1  Connect Wi-Fi AP of the Taurus series products.

Step 2  Start the ViPlex Express.

Step 3  Click Refresh and the screen list will be displayed on the page.

- : denotes that Taurus is online and you can log into it.
- : denotes that Taurus is offline and you cannot log into it.
- : denotes that Taurus login is successful.

After the Taurus is found by ViPlex Express, the ViPlex express will try to log into to the Taurus with the default account or the account used for last login.

Step 4  Taurus login is successful or not.

- Yes.  appears and no further operation is required.
- No.  appears and then perform Step 5.

Step 5  Click Connect on the right of the screen information.

Step 6  Enter the username and password, and click OK.