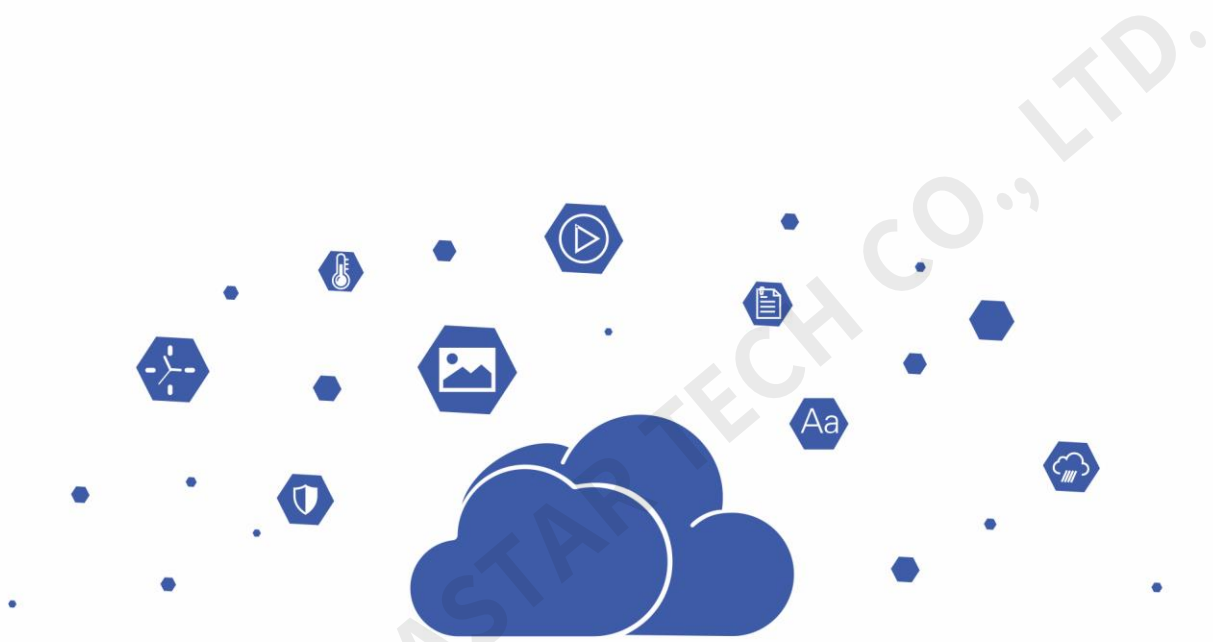


Taurus Series Multimedia Players



Synchronous Playback Implementation Instructions



Change History

Document Version	Release Date	Description
V1.6.7	2022-09-05	• Updated the specifications of synchronous playback. • Updated some pictures.
V1.6.6	2022-07-08	• Added the specifications of synchronous playback. • Added GPS time synchronization. • Updated existing content.



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1 Overview

1.1 About this Document

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

1.2 Requirements of Synchronous Playback

The following are required by synchronous playback:

- The player supports the synchronous playback function.

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

- The synchronous playback function is enabled.

The Taurus can work with various software, and the user could enable the synchronous playback function through ViPlex Express, ViPlex Handy or VNNOX.

- Time of the Taurus is synchronized.

Playback scheduling is based on time, and therefore time synchronization must be ensured for synchronous playback. Taurus support NTP, RF and GPS time synchronization methods. Users can select a method as required

- The same playback plan without random transition or media must be sent to all the Taurus.

Playing plans sent to multiple Taurus must be the same without random transition or media.

1.3 Specifications of Synchronous Playback

Table 1-1 Specifications of synchronous playback

Playback Scenarios	Media Specifications			
	T1-4G/TB1-4G/TB2-4G TCC70/TCB300	T3/T6 TB3/TB4A/TB4/TB6/TB8	T4H	T30/T50/T60 TB30/TB40/ TB50/TB60
Multiple solution pages	1x 480p	1x 1080p	1x 1080p	1x 1080p

Notes

The product models in the same column employ the same platform. Do not use models of different platforms.

Requirements for media:

- Each solution page contains one media only.
- The media must be an image or video.
- Media properties must be the same.
- Media width and height cannot exceed their limits. (480p: 720×480; 1080p: 1920×1080)

1.4 Required Configuration Tools

Table 1-2 Required configuration tools

Name	Description	Access Address
ViPlex Handy	Screen management software for Android phones and iPhones.	https://www.vnnox.com/download?!=en
ViPlex Express	LAN-based screen management software for Windows.	
VNNOX	Content publishing platform, which is a web application.	https://www.vnnox.com/?l=en



2 How to Implement NTP Synchronization

2.1 NTP Time Synchronization on the LAN (Recommended)

2.1.1 NTP Server Configuration

Configure the NTP server on the LAN and **record the domain name or IP address**.

The Personal Computer (PC) can be set as a NTP server by default. Refer to <http://note.youdao.com/share/?id=2efee9a613935113fa0f9a874b89047f&type=note#/> for details.

2.1.2 Taurus Configuration

Taurus can be configured by using ViPlex Handy or ViPlex Express on the LAN.

2.1.2.1 Using ViPlex Handy for Configuration

Prerequisites

The phone and the Taurus are connected to the same LAN.

Operating Procedure

- Step 1 Open ViPlex Handy and access the **Local Control** page.
 - Step 2 On the **Local Devices** page, tap **Connect** next to the start device.

The default password is "123456".
 - Step 3 Upon successful connection, tap the device name to access the **Device Management** page.
 - Step 4 Select **Advanced Settings** to access the **Advanced Settings** page.
 - Step 5 Select **Advanced Functions** and set the **Synchronous Playback** switch as  status.
 - Step 6 Return to the **Advanced Settings** page.
 - Step 7 Configure NTP time synchronization.
 1. Select **Time Synchronization**.
 2. Tap **Synchronization Mode**, select **NTP** and click **OK**.
 3. Tap **NTP server**.
 4. Tap , and enter the name and address of the NTP Server. The information must be consistent with those configured in [2.1.1 NTP Server Configuration](#).
 5. Tap **OK**.
 - Step 8 Return to the **Advanced Settings** page. Tap  at the top right.
 - Step 9 Repeat [Step 5](#) to [Step 8](#) to configure other Taurus requiring synchronous playback.
- ##### 2.1.2.2 Using ViPlex Express for Configuration

Prerequisites

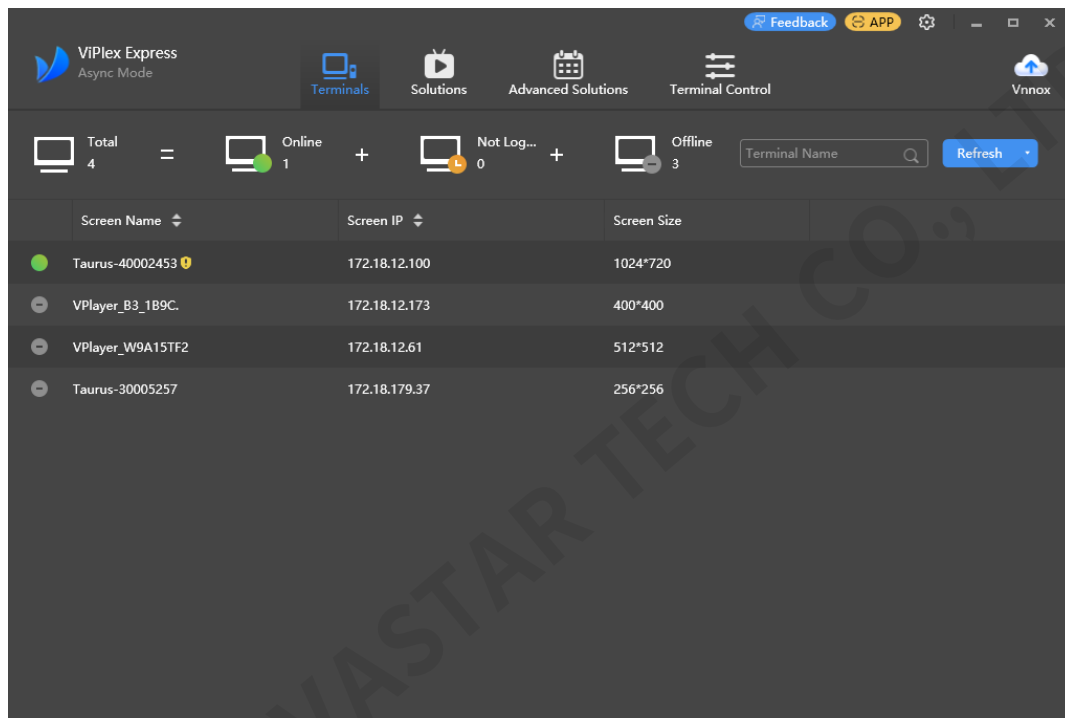
The PC and the Taurus are connected to the same LAN.

Operating Procedure

- Step 1 Open ViPlex Express and access the **Terminal Control** page in the async mode.
- Step 2 Log in to the Taurus used for synchronous playback in order.
 1. Place the mouse over the terminal information and click **Connect** on the right.
 2. In the **Connect** dialog box, enter the password and click **OK**.

The default password is "123456". After successful login,  turns .

Figure 2-1 Successful connection



- Step 3 Select **Terminal Control**.
- Step 4 Enable the synchronous playback function in batch.
 1. Select **Playback Management**.
 2. Select all the Taurus used for synchronous playback from the terminal list.
 3. Check **Enable** behind **Synchronous Playback**.
 4. In the pop-up dialog box, click **OK**.
- Step 5 Configure NTP time synchronization in batch.
 1. Select **Time synchronization management**.
 2. Select all the Taurus used for synchronous playback from the terminal list.
 3. Check **Auto sync time with NTP server**.
 4. Click , and configure NTP server. The configuration information must be consistent with that configured in [2.1.1 NTP Server Configuration](#).
 5. Click **Apply**.

2.2 NTP Time Synchronization on the Public Network

On the public network, VNNOX is used to configure NTP time synchronization.

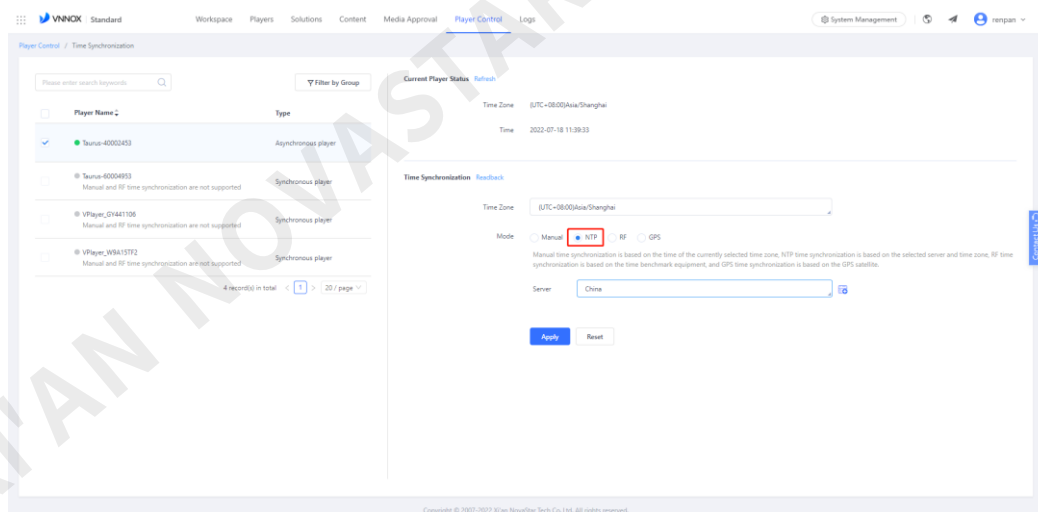
Prerequisites

The Taurus has been bound to VNNOX.

Operating Procedure for VNNOX Standard

- Step 1 Visit <https://www.vnnox.com/?l=en> and log in to VNNOX Standard.
- Step 2 Choose **Player Control**.
- Step 3 Enable the synchronous playback function in batch.
 1. Choose **Synchronous Playback**.
 2. Select all the Taurus used for synchronous playback from the terminal list.
 3. Set the **Synchronous Playback** switch as  status.
 4. Click **Apply**.
- Step 4 Configure NTP time synchronization in batch.
 1. Choose **Time Synchronization**.
 2. Select all the Taurus used for synchronous playback from the terminal list.
 3. Select **NTP** as the time synchronization mode and choose an NTP server from the drop-down list.

If an NTP server needs to be added, you can click  to configure it.



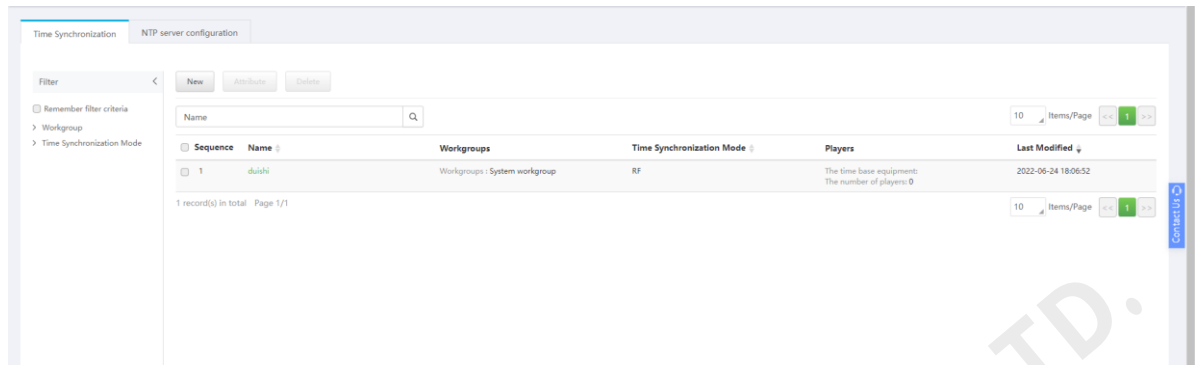
4. Click **Apply**.

Operating Procedure for VNNOX AD

- Step 1 Visit <https://www.vnnox.com/?l=en> and log in to VNNOX AD.
- Step 2 Enable the synchronous playback function in batch.
 1. Choose  > **Players Management** > **Players**.
 2. Select all the Taurus used for synchronous playback from the terminal list.
 3. Choose **Real-time control** > **Synchronous playback** > **On**.

Step 3 Configure NTP time synchronization in batch.

1. Choose  > **Players Management** > **Time synchronization**.
2. If you want to customize an NTP server, choose the **NTP server configuration** tab, click **Add**, and configure the NTP server. Otherwise, skip this step.



3. On the **Time Synchronization** tab page, click **New**.
4. Enter a time synchronization task name, select **NTP** as the time synchronization mode, and then click **Next**.
5. Select an NTP server and click **OK**.
6. Click **Add** in the **Players** tab of the time synchronization task attribute page.
7. Select all the Taurus used for synchronous playback from the terminal list and click **OK**.
8. Click **Save** or **Save&Close**.



3 How to Implement RF Synchronization

RF time synchronization requires users to set one Taurus in RF network as the master device and others as slave devices. The master device is used as the time reference only and do not load a screen. The slave devices are used to load screens. The time of the slave devices is synchronized with the time of the master device.

3.1 RF Module Installation

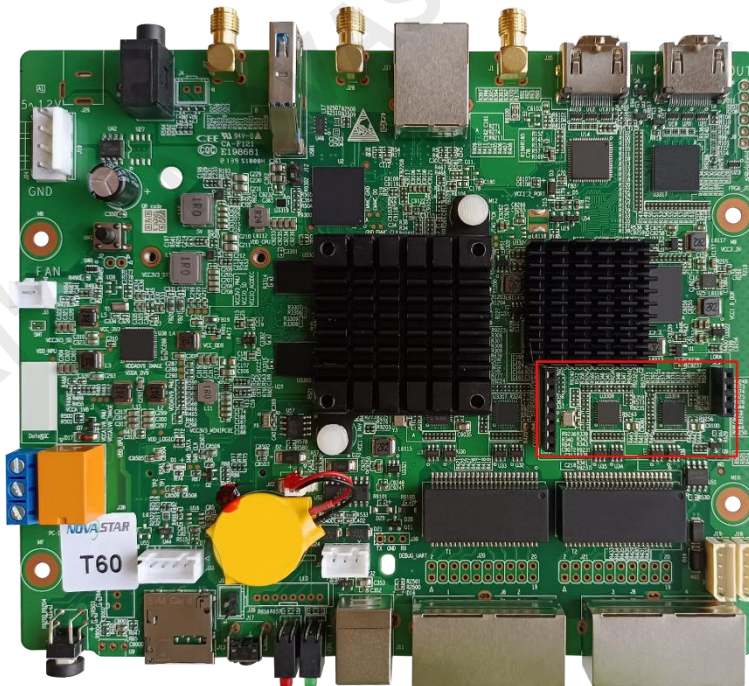
The RF modules of E32-433T30D-NW model should be purchased before the project implementation.

Figure 3-1 RF module



One RF module is installed with one Taurus. The T60 is used as an example and the installation position of the RF module is shown in [Figure 3-2](#).

Figure 3-2 Installation position of RF module



The antenna connection of RF module is shown in [Figure 3-3](#) and [Figure 3-4](#). Either of the connections can be chosen.

Figure 3-3 Antenna connection 1

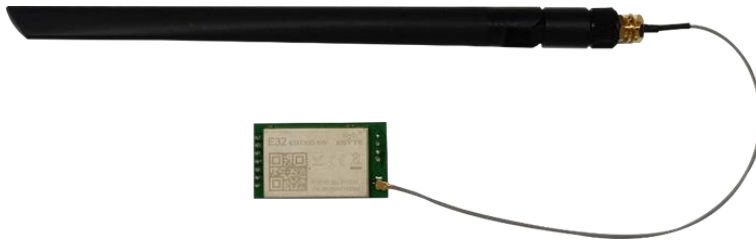
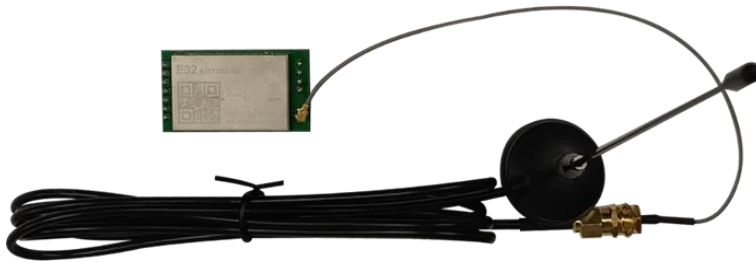


Figure 3-4 Antenna connection 2



3.2 Taurus Configuration

On the LAN, ViPlex Handy or ViPlex Express can be used to configure RF time synchronization.

On the public network, VNNOX can be used to configure RF time synchronization.

3.2.1 Using ViPlex Handy for Configuration

Prerequisites

The phone and the Taurus are connected to the same LAN.

Operating Procedure

- Step 1 Open ViPlex Handy, and access the **Local Control** page.
- Step 2 In the **Local Devices** list, tap **Connect** correspond to the starting device. Enter the password and click **OK**.
The default password is "123456".
- Step 3 After successful connection, tap the device name to enter the **Device Management** page.
- Step 4 Choose **Advanced Settings** to enter the **Advanced Settings** page.
- Step 5 Choose **Advanced Functions**, and set the **Synchronous Playback** switch as ☒ status.
The synchronous playback function of the master device do not need to be enabled.
- Step 6 Return to the **Advanced Settings** page.
- Step 7 Configure RF time synchronization.
 1. Select **Time Synchronization**.
 2. Tap **Synchronization Mode**, select **RF**, and tap **OK**.
 3. Set time synchronization parameters.
 - **Group ID**: Use the same group ID for the Taurus requiring enabling the time synchronization function to assign the Taurus products to the same RF network.

- **Device Type:** Set the current Taurus as the master device or slave device. A group contains only one master device. The time of the slave devices is synchronized with the time of the master device through RF network.
- **Auto Time Synchronization:** To synchronize the time of the master device with the time NTP server, enable automatic time synchronization and set the NTP server.

4. Tap **Done** after the configuration.

Step 8 Return to the **Advanced Settings** page, and tap  at the top right. Select other device in the list, and tap **OK**.

Step 9 Repeat the [Step 5](#) to [Step 8](#) to configure other Taurus requiring synchronous playback till all Taurus have been configured.

3.2.2 Using ViPlex Express for Configuration

Prerequisites

The PC and the Taurus are connected to the same LAN.

Operating Procedure

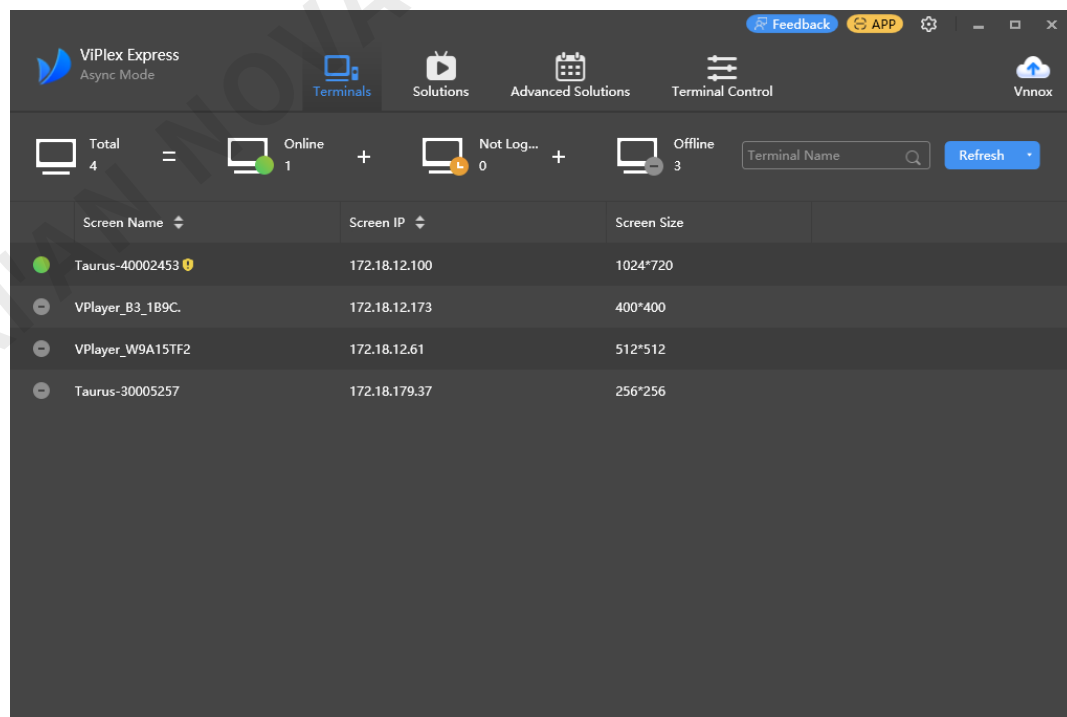
Step 1 Open ViPlex Express and access the **Terminal Control** page in async mode.

Step 2 Log in to the Taurus used for synchronous playback in order.

1. Place the mouse over the terminal information, and click **Connect** on the right.
2. In the **Connect** dialog box, enter the password, and click **OK**.

The default password is “123456”. After successful login,  turns .

Figure 3-5 Successful login



Step 3 Select **Terminal Control**.

Step 4 Enable the synchronous playback function in batch.

1. Select **Playback Management**.
2. Select all the slave devices from the terminal list.

The synchronous playback function of the master device do not need to be enabled.

3. Check **Enable** behind **Synchronous Playback**.
4. In the pop-up dialog box, click **OK**.

Step 5 Configure RF time synchronization.

1. Select **RF Management**.
2. Select all the slave devices from the terminal list.
3. Set the **RF Synchronous** switch as  status.
4. Select the **Master device**, set the group ID, and select **Time synchronization**.

The time of the slave devices is synchronized with the time of the master device through RF network.

5. Click **Apply**.
6. Select all the slave devices from the terminal list.
7. Set the **Synchronous Playback** switch as  status.
8. Set the group ID, and select **Time synchronization**.

Use the same organization ID for the Taurus requiring enabling the time synchronization function to assign the Taurus products to the same RF network.

9. Click **Apply**.

3.2.3 Using VNNOX for Configuration

Prerequisites

The Taurus has been bound to VNNOX

Operating Procedure for VNNOX Standard

Step 1 Visit <https://www.vnnox.com/?l=en> and log in to VNNOX Standard.

Step 2 Choose **Player Control**.

Step 3 Enable the synchronous playback function in batch.

1. Choose **Synchronous Playback**.
2. Select all the slave devices from the terminal list.

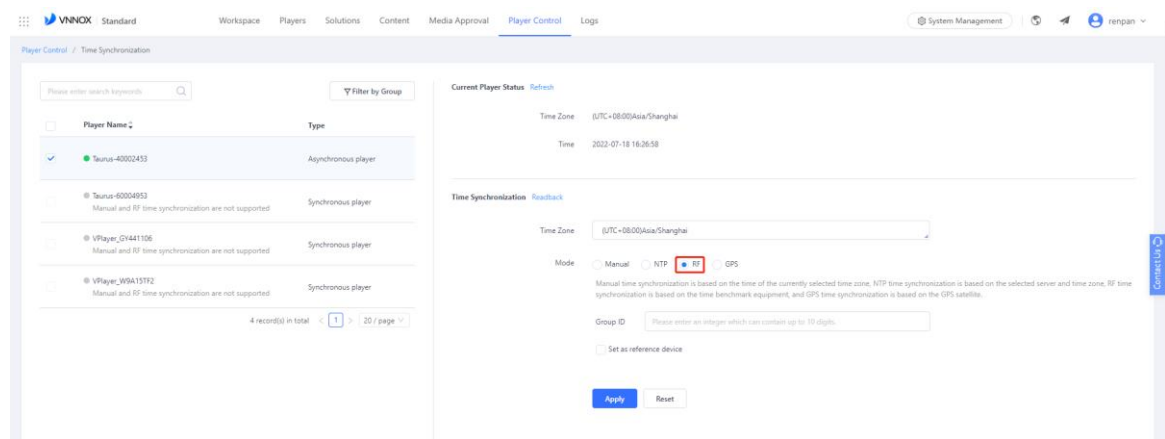
The synchronous playback function of the master device do not need to be enabled.

3. Set the **Synchronous Playback** switch as  status.
4. Click **Apply**.

Step 4 Configure RF time synchronization.

1. Choose **Time Synchronization**.
2. Select the master device from the terminal list.
3. Select **RF** as the time synchronization mode.





4. Set the **Group ID**, and select **Set as reference device**. Set the NTP server as required.

When NTP server is enabled, the time of the master device will be synchronized with the time of the NTP server. When NTP is disabled, the time of the master device will be synchronized with the time of the selected time zone.

5. Click **Apply**.
6. Select all the slave devices from the terminal list.
7. Select **RF** of the time synchronization mode, and set the **Group ID**.

Use the same group ID for the Taurus requiring enabling the time synchronization function to assign the Taurus products to the same RF network.

8. Click **Apply**.

Operating procedures for VNNOX AD

Step 1 Visit <https://www.vnnox.com/?l=en> and log in to VNNOX AD.

Step 2 Enable the synchronous playback function in batch.

1. Choose **Players Management > Players**.
2. Select all the slave devices from the terminal list.

The synchronous playback function of the master device do not need to be enabled.

3. Choose **Real-time control > Synchronous playback > On**.

Step 3 Configure RF time synchronization.

1. Choose **Time Synchronization**.
2. Click **New** on the page of time synchronization tasks.
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. Click **Add** in the **Players** tab of the time synchronization task attribute page.
6. Select all the slave devices from the terminal list and click **OK**.
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**.

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4 How to Implement GPS Synchronization

4.1 4G module and SIM Card Installation

The 4G module and the SIM card should be purchased before the project implementation. The model of 4G module is EC20 and the appearance is shown in [Figure 4-1](#).

Figure 4-1 4G module



One 4G module and one SIM card is installed with one Taurus. Take the Taurus of model T60 as an example. The installation positions of 4G module and the SIM card slot are shown in [Figure 4-2](#) and [Figure 4-3](#), respectively. The installation methods of 4G modules and SIM cards vary according to product models. For details, see *Taurus Series Multimedia Players 4G & 5G Module Installing and using guide*.

Figure 4-2 Installation position of 4G module

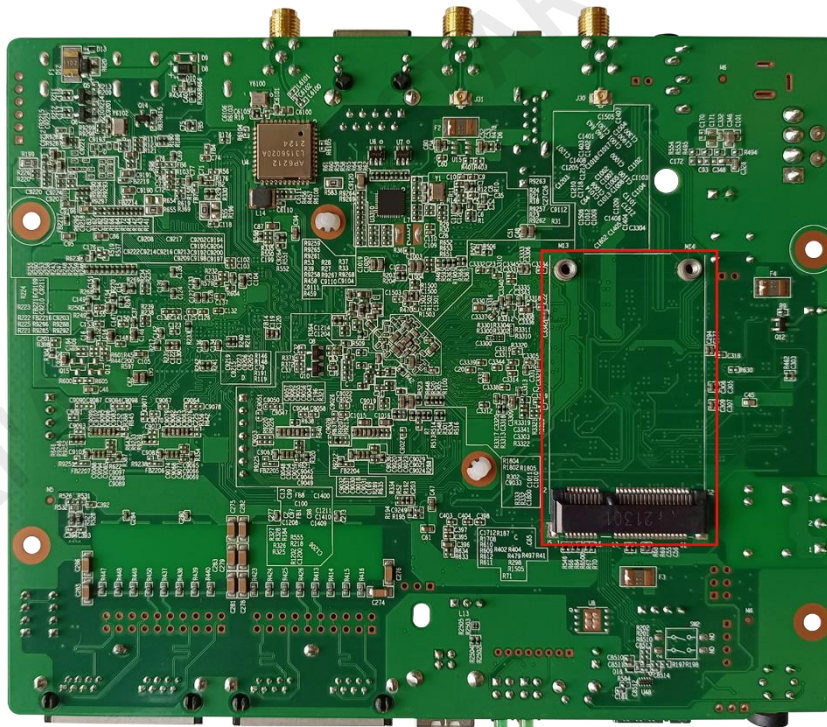
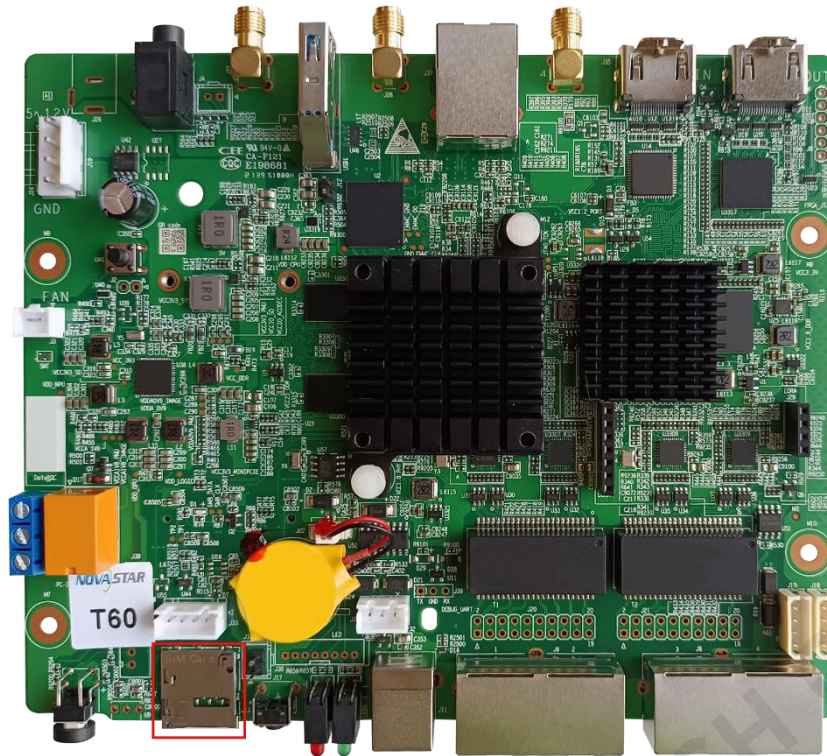


Figure 4-3 SIM card slot



4.2 Taurus Configuration

On the LAN, ViPlex Express is used to configure GPS time synchronization.

On the public network, VNNOX Standard is used to configure GPS time synchronization.

4.2.1 Using ViPlex Express for Configuration

Prerequisites

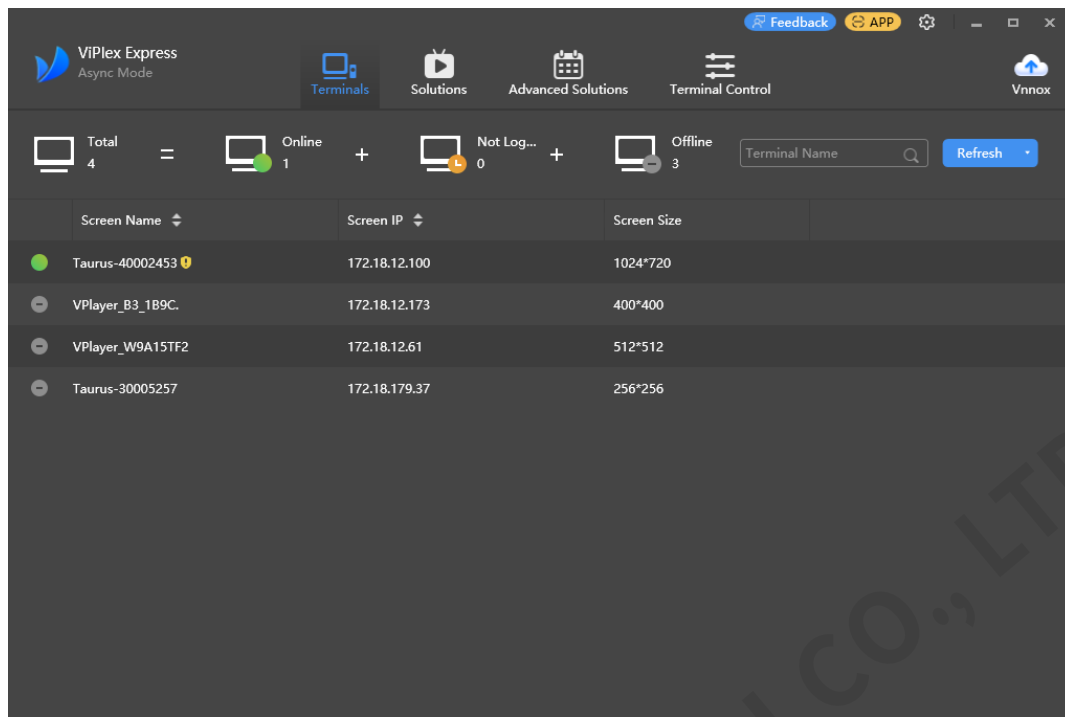
The PC and the Taurus are connected to the same LAN.

Operating Procedure

- Step 1 Open ViPlex Express and access the **Terminal Control** page in the async mode.
- Step 2 Log in to the Taurus used for synchronous playback in order.
 1. Place the mouse over the terminal information, and click **Connect** on the right.
 2. In the **Connect** dialog box, enter the password, and click **OK**.

The default password is "123456". After successful login,  turns .

Figure 4-4 Successful login



Step 3 Select **Terminal Control**.

Step 4 Enable the synchronous playback function in batch.

1. Select **Playback Management**.
2. Select all the Taurus used for synchronous playback from the terminal list.
3. Check **Enable** behind **Synchronous Playing**.
4. In the pop-up dialog box, click **OK**.

Step 5 Configure GPS time synchronization in batch.

1. Select **Time synchronization management**.
2. Select all the Taurus used for synchronous playback from the terminal list.
3. Check **Auto sync time**, and select **GPS time synchronization**.
4. Click **Apply**.

4.2.2 Using VNNOX for Configuration

Prerequisites

The Taurus has been bound to VNNOX Standard.

Operating Procedure

Step 1 Visit <https://www.vnnox.com/?l=en> and log in to VNNOX Standard.

Step 2 Choose **Player Control**.

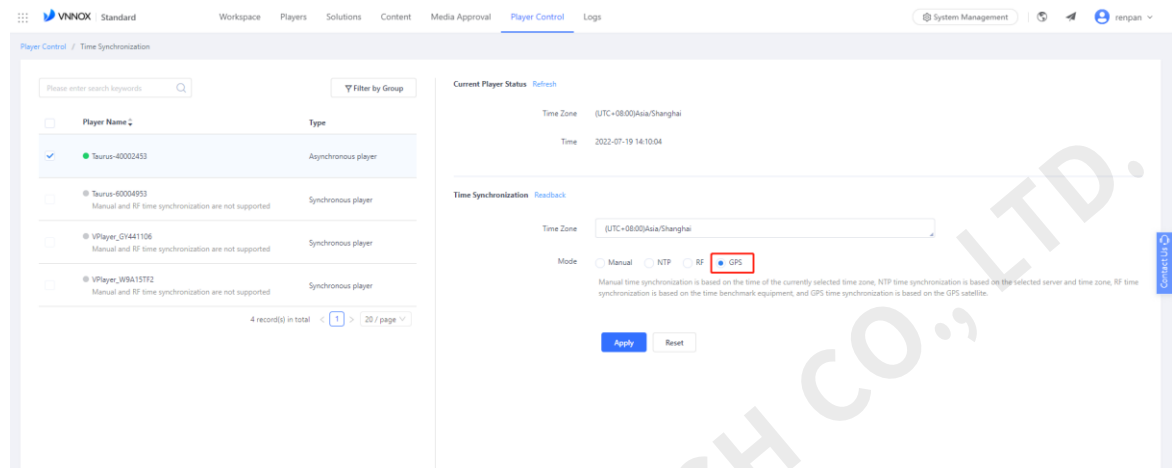
Step 3 Enable the synchronous playback function in batch.

1. Choose **Synchronous Playback**.
2. Select all the Taurus used for synchronous playback from the terminal list.

3. Set the **Synchronous Playback** switch as  status.
4. Click **Apply**.

Step 4 Configure GPS time synchronization.

1. Choose **Time Synchronization**.
2. Select all the Taurus used for synchronous playback from the terminal list.
3. Select **GPS** as the time synchronization mode.



4. Click **Apply**.

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