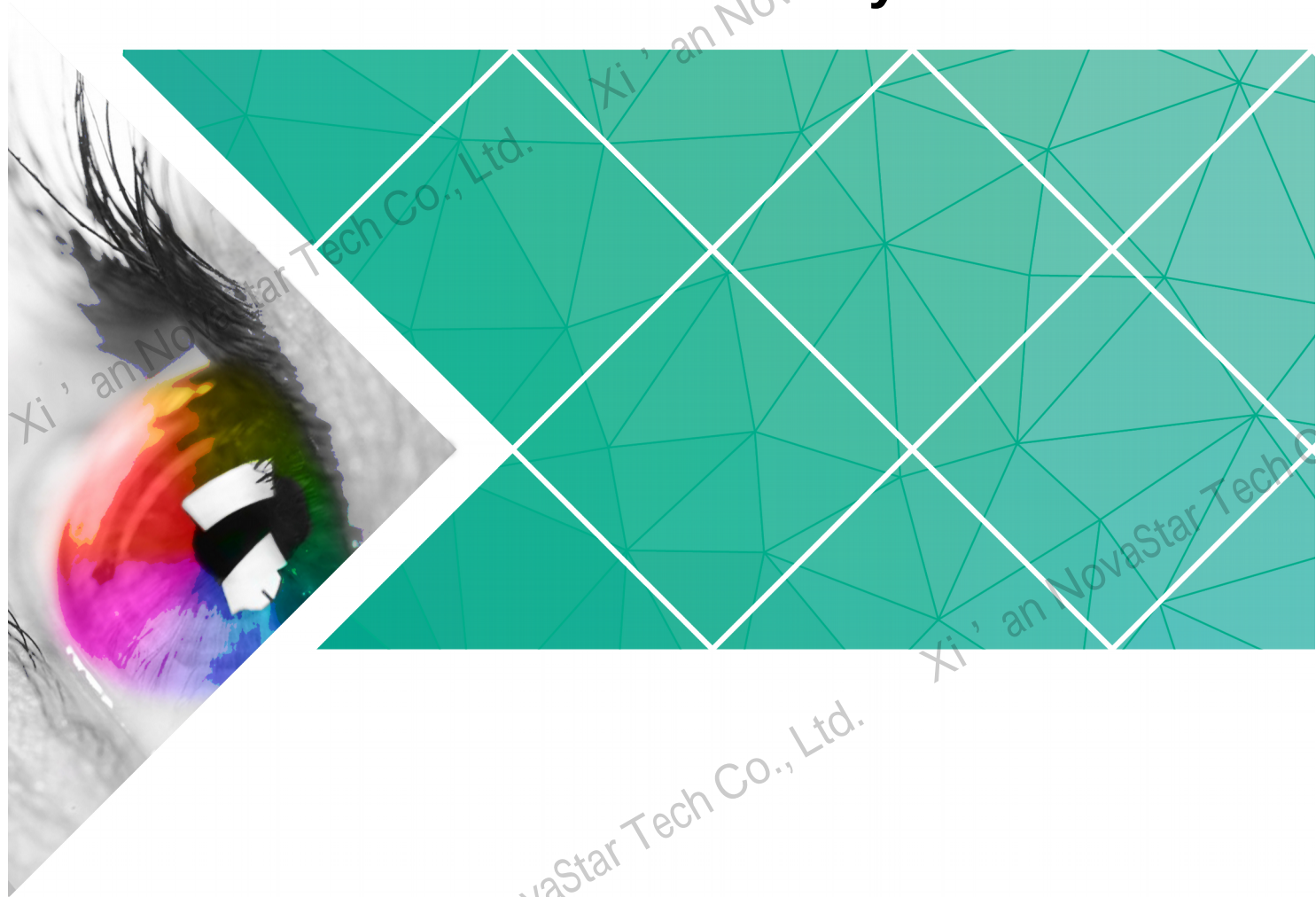# Taurus Series

Multimedia Players

TB6 Specifications

Product Version: V1.2.0

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1 Safety

This chapter illustrates Taurus series products safety to ensure storage, transportation, installation and usage safety of the products.

Safety description is applicable to all personnel that contact or use the products. First, pay attention to following points:

- Read throughout the description.
- Save the whole description.
- Be complied with the whole description.

1.1 Storage and Transport Safety

- Pay attention to dust and water prevention.
- Avoid long-term direct sunlight.
- Do not place the products at the position near fire and heat.
- Do not place the products in an area containing explosive materials.
- Do not place the products in strong electromagnetic environment.
- Place the products at a stable position to prevent damage or personal injury caused by dropping.
- Save the packing box and materials which will come in handy if you ever have to ship your products. For maximum protection, repack your product as it was originally packed at the factory.

1.2 Installation and Use Safety

- Only trained professionals may install the products.
- Do not insert and unplug (power cord plug) when the power is on.
- Ensure the safe grounding of the device.
- Built-in power supply supports 110 V to 220 V AC.
- Be careful about electric shock risk.
- Always wear a wrist band and insulating gloves.
- Do not place the products in an area having more or strong shake.
- Perform dust removing regularly.

- Do not maintain the products without authorization but contact NovaStar as soon as possible.
- Replace spare parts only with the same parts supplied by NovaStar.

2 Overview

2.1 Introduction

Taurus series products are the second generation of multimedia players dedicated to small and media size LED full color display developed by NovaStar.

TB6 of the Taurus series products (herein after referred to as "TB6") feature following advantages, better satisfying users' requirements:

- Loading capacity up to 1,300,000 pixels
- Synchronization mechanism for multi-screen playing
- Powerful processing capability
- Omnidirectional control plan
- Synchronous and asynchronous dual-mode
- Dual-Wi-Fi mode
- 4G module
- Redundant backup

Note:

If the user has a high demand on synchronization, the time synchronization module is recommended. For details, please consult our technical staff.

In addition to program publishing and screen control via PC, mobile phones and LAN, the omnidirectional control plan also supports remote centralized publishing and monitoring.

If 4G network is required, please buy the 4G module based on the 4G network service requirements in the country or region, and install it in advance.

2.2 Application

Taurus series products can be widely used in LED commercial display field, such as bar screen, chain store screen, advertising machine, mirror screen, retail store screen, door head screen, on board screen and the screen requiring no PC.

Classification of Taurus' application cases is shown in Table 2.2.1.1.1.1.1.

Table 2.2.1.1.1.1.1.1 Application

Classification	Description
Market type	• Advertising media: To be used for advertising and information promotion including bar screen and advertising machine. • Digital signage: To be used for signage display in retail stores including retail store screens and door head screens. • Commercial display: To display commercial information of hotel, cinema and shopping mall, such as chain store screens.
Networking mode	• Independent screen: Use a PC or the client software of a mobile phone to enable single-point connection and management of a screen. • Cluster screen: Use the cluster solution developed by NovaStar to realize centralized management and monitor of multiple screens.
Connection type	• Wired connection: A PC connects to Taurus through the Ethernet cable or LAN. • Wi-Fi connection: PC, Pad and mobile phone can connect to Taunus through Wi-Fi, which can be enabled in the case without PC in conjunction with ViPlex software.

3 **Features**

3.1 Synchronization mechanism for multi-screen playing

The TB6 support switching on/off function of synchronous display.

When synchronous display is enabled, the same content can be played on different displays synchronously if the time of different TB6 units are synchronous with one another and the same program is being played.

3.2 Powerful Processing Capability

The TB6 features powerful hardware processing capability:

- 1.5 GHz eight-core processor.
- Support for H.265 4K high-definition video hardware decoding playback.
- Support for 1080P video hardware decoding.
- 2 GB operating memory and 8 GB internal storage space.

3.3 Omnidirectional Control Plan

Table 3.3.1.1.1.1.1.1 Control Plan

Control Plan	Connecting Mode	Client Terminal	Related Software
Program publishing and screen control through PC	Connection via network line Connection via Wi-Fi	PC	ViPlex Express NovaLCT
Program publishing and screen control through LAN	Connection via LAN	PC	ViPlex Express NovaLCT

Control Plan	Connecting Mode	Client Terminal	Related Software
Program publishing and screen control through mobile phone	Connection via Wi-Fi	Mobile phone and Pad	ViPlex Handy
Cluster remote program publishing and screen control	Wi-Fi AP+Sta/wired/4G	Mobile phone, Pad and PC	VNNOX ViPlex Handy ViPlex Express
Cluster remote monitoring	Wi-Fi AP+Sta/wired/4G	Mobile phone, Pad and PC	NovaiCare ViPlex Handy ViPlex Express

Cluster control plan is a new internet control plan featuring following advantages:

- More efficient: Use the cloud service mode to process services through a uniform platform. For example, VNNOX is used to edit and publish programs, and NovaiCare is used to centrally monitor display status.

- More reliable: Ensure the reliability based on active and standby disaster recovery mechanism and data backup mechanism of the server.

- More safe: Ensure the system safety through channel encryption, data fingerprint and permission management.

- Easier to use: VNNOX and NovaiCare can be accessed through Web. As long as there is internet, operation can be performed anytime and anywhere.

- More effective: This mode is more suitable for the commercial mode of advertising industry and digital signage industry, and makes information spreading more effective.

3.4 Synchronous and Asynchronous Dual-Mode

The TB6 supports synchronous and asynchronous dual-mode, allowing more application cases and being user-friendly.

When internal video source is applied, the TB6 is in asynchronous mode; when HDMI-input video source is used, the TB6 is in synchronous mode. Content can be scaled and displayed to fit the screen size automatically in synchronous mode.

Users can manually and timely switch between synchronous and asynchronous modes, as well as set HDMI priority.

3.5 Dual-Wi-Fi Mode

The TB6 have permanent Wi-Fi AP and support the Wi-Fi Sta mode, carrying advantages as shown below:
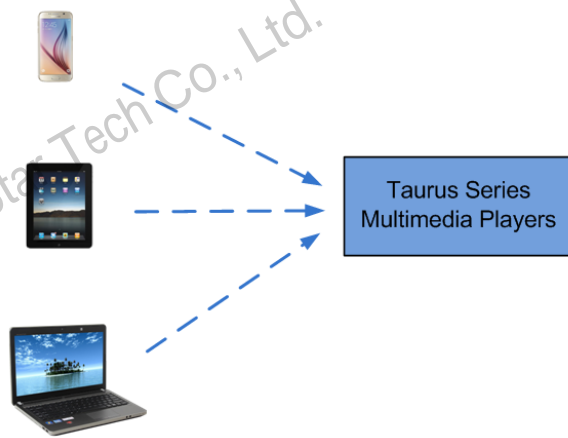
- Completely cover Wi-Fi connection scene. The TB6 can be connected to through self-carried Wi-Fi AP or the external router.

- Completely cover client terminals. Mobile phone, Pad and PC can be used to log in TB6 through wireless network.

- Require no wiring. Display management can be managed at any time, having improvements in efficiency.

TB6's Wi-Fi AP signal strength is related to the transmit distance and environment. Users can change the Wi-Fi antenna as required.

3.5.1 Wi-Fi AP Mode

Users connect the Wi-Fi AP of a TB6 to directly access the TB6. The SSID is "**AP + *the last 8 digits of the SN***", for example, "**AP10000033**", and the default password is "**12345678**".
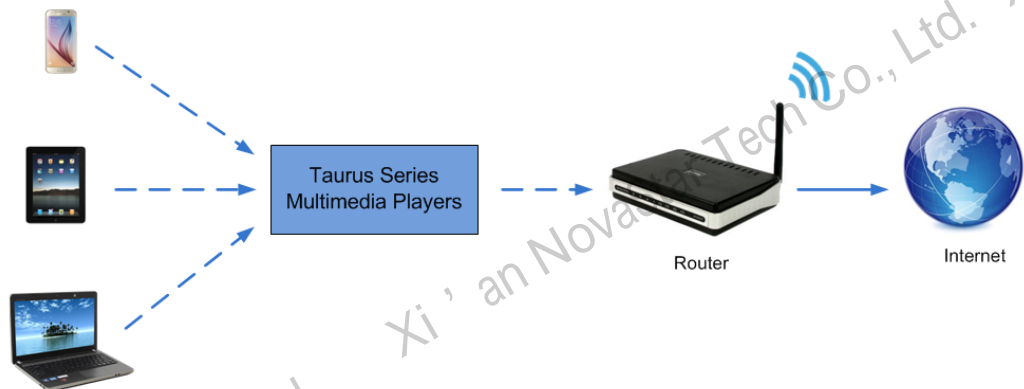

3.5.2 Wi-Fi Sta Mode

Configure an external router for a TB6 and users can access the TB6 by connecting the external router. If an external router is configured for multiple TB6 units, a LAN can be created. Users can access any of the TB6 via the LAN.

3.5.3 Wi-Fi AP+Sta Mode

In Wi-Fi AP+ Sta connection mode, users can either directly access the TB6 or access internet through bridging connection. Upon the cluster solution, VNNOX and

NovaiCare can realize remote program publishing and remote monitoring respectively through the Internet.

3.6 4G Module

The TB6 supports 4G module, allowing complete covering of the internet connection.

From high to low, the priority includes:

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

TB6 automatically selects signals according to the priority.

When mobile data network is enabled for client software ViPlex and priority requirements are met, TB6 with 4G module can connect to the internet.

3.7 Redundant Backup

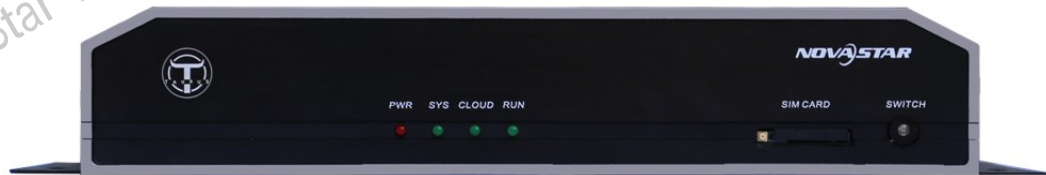TB6 support network redundant backup and Ethernet port redundant backup.

- Network redundant backup: The TB6 automatically selects internet connection mode among wired network, Wi-Fi Sta or 4G network according to the priority.

- Ethernet port redundant backup: The TB6 enhances connection reliability through active and standby redundant mechanism for the Ethernet port used to connect with the receiving card.

4 Hardware Structure

4.1 Appearance

4.1.1 Front Panel

Figure 4.1.1.1.1.1.1 Front panel of the TB6

Note: Product images provided in this document are for reference only, and the actual products shall prevail.

Table 4.1.1.1.1.1.1 Description of TB6 front panel

Name	Description
PWR	Power status indicator Always on: Power input is normal.
SYS	System status indicator ● Flashing once every 2 seconds: The system is operating normally. ● Flashing once every 0.5 second: The system is downloading data from the Internet. ● Always on/off: The system is operating abnormally.
CLOUD	Internet connection status indicator ● Always on: The unit is connected to the Internet and the connection status is normal. ● Flashing once every 2 seconds: The unit is connected to VNNOX and the connection status is normal.
RUN	FPGA status indicator

Name	Description
	Same as the signal indicator status of the sending card: FPGA is operating normally.
SIM CARD	SIM card tray
SWITCH	Button for switching between synchronous and asynchronous modes • Always on: Synchronous mode • Off: Asynchronous mode

4.1.2 Rear Panel

Figure 4.1.2.1.1.1.1 Rear panel of the TB6

Note: Product images provided in this document are for reference only, and the actual products shall prevail.
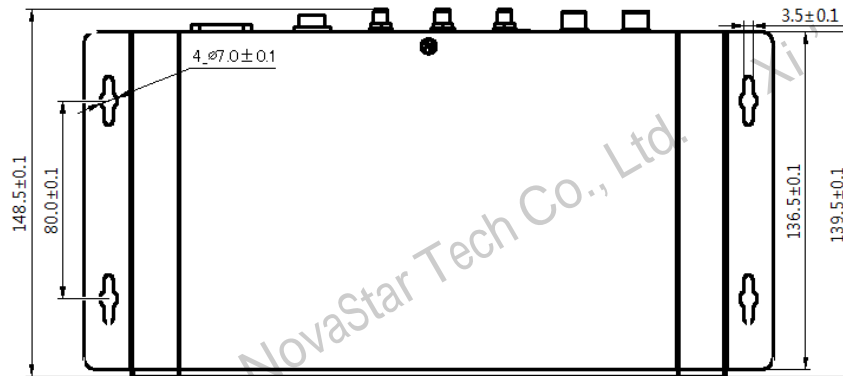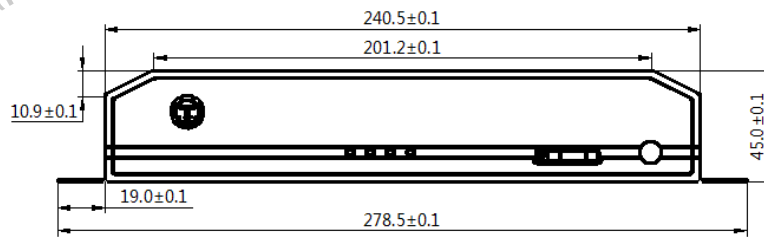
Table 4.1.2.1.1.1.1 Description of TB6 rear panel

Name	Description
TEMP	Temperature sensor port
LIGHT	Light sensor port
WiFi-AP	Wi-Fi AP antenna port
WiFi-STA	Wi-Fi Sta antenna port
4G	4G network antenna port
ETHERNET	Gigabit Ethernet port Indicator status: • Yellow indicator always on: The unit is connected to 100M Ethernet cable and the status is normal. • Green and yellow indicators always on at the same time: The unit is connected to Gigabit Ethernet cable and the status is normal.
USB	USB 2.0 port
HDMI	• IN: HDMI 1.4 input • OUT: HDMI 1.4 output

Name	Description
AUDIO OUT	Audio output
RESET	Factory reset button Press and hold the button for 5 seconds to reset the unit to factory settings.
LED OUT	Output Ethernet port
ON/OFF	Power switch
100-240V~,50/60Hz	Power input

4.2 Dimensions

Unit of the dimension chart is "mm". Ground connection is enabled for location hole (GND).

5 Software Structure

5.1 System Software

- Android operating system software
- Android terminal application software
- FPGA program

Note: The third-party applications are not supported.

5.2 Related Configuration Software

Table 5.2.1.1.1.1.1.1 Related configuration software

Software	Description
ViPlex Handy	Mobile phone client software of the TB6 includes Android and iOS which are mainly used for screen management, editing, and program publishing.
ViPlex Express	PC client software of the TB6 only includes Windows which is mainly used for screen management, editing, and program publishing.
NovaLCT	Display screen configuration software works in Windows only, and is used to adjust screens to the best display status.

6 Specifications

Item	Sub-Item	Specifications
Physical specifications	Dimensions (W x D x H)	278.5 mm x 148.5 mm x 45.0 mm
	Weight	1352.1 g
	Input power supply	100 V–240 V AC
	Rated power consumption	15 W
	Storage temperature	0°C–50°C
	Storage humidity	0% RH–80% RH
	Operating temperature	-40°C–80°C
	Operating humidity	0% RH–80% RH
	Operating memory	2 GB
	Internal storage space	8 GB
Packing information	Dimensions (W x D x H)	375 mm x 280 mm x 108 mm
	List	• TB6 LED multimedia player x 1 • Columned Wi-Fi omnidirectional antenna x 2 • One flat 4G network antenna x 1 • One AC power cord x 1
Characteristics		• Support 1.3 megapixel loading capacity, with maximum width of 4096 pixels and maximum height of 1920 pixels. • Support 2-primary 2-standby Ethernet port redundant mechanism. • Support dual-Wi-Fi, and features Wi-Fi AP and Wi-Fi Sta functions.

		- Support Gigabit wired network. - Support stereo audio output. - Support HDMI Loop. - Support HDMI input mode. - Support HDMI input full-screen self-adaptive display. - Support manual and timing switching between synchronous and asynchronous modes. 2-Way USB Host interface supports USB drive importing display. - Onboard brightness sensor interface supports automatic and timing smart brightness adjustment.