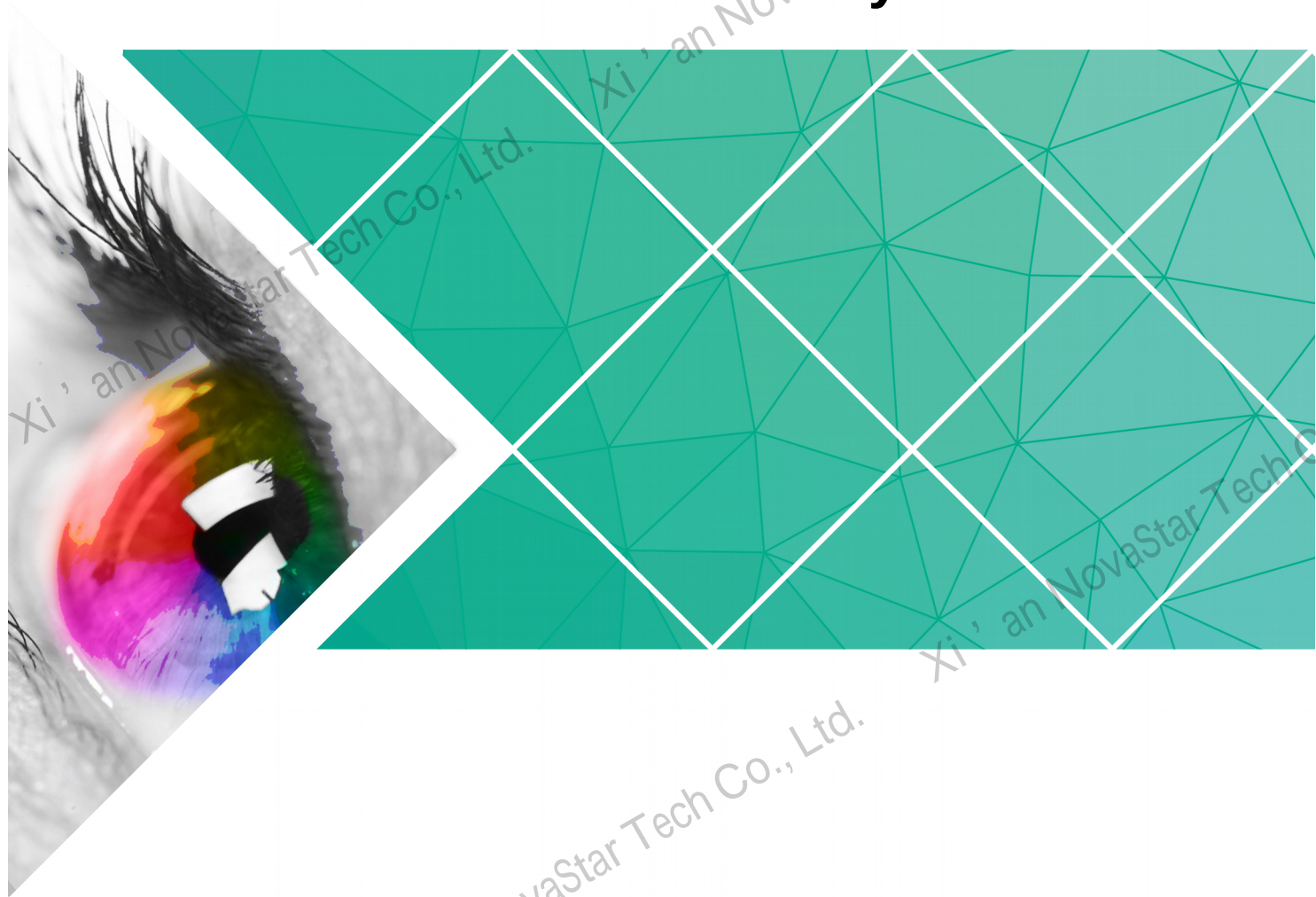


Taurus Series

Multimedia Players



T8 Specifications

Product Version: V1.2.0
Document Number: NS120100204

Copyright © 2018 Xi'an NovaStar Tech Co., Ltd. All Rights Reserved.

No part of this document may be copied, reproduced, extracted or transmitted in any form or by any means without the prior written consent of Xi'an NovaStar Tech Co., Ltd.

Trademark



is a trademark of Xi'an NovaStar Tech Co., Ltd.

Statement

You are welcome to use the product of Xi'an NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar). This document is intended to help you understand and use the product. For accuracy and reliability, NovaStar may make improvements and/or changes to this document at any time and without notice. Any problem in use or any good suggestion, please contact us through ways provided in the document. We will do our utmost to solve the problems and adopt the suggestions after evaluation as soon as possible.

Table of Contents

| | |
|---|-----------|
| Table of Contents..... | ii |
| 1 Safety..... | 1 |
| 1.1 Storage and Transport Safety..... | 1 |
| 1.2 Installation and Use Safety..... | 1 |
| 2 Overview..... | 3 |
| 2.1 Introduction..... | 3 |
| 2.2 Application..... | 3 |
| 3 Features..... | 5 |
| 3.1 Synchronous Display..... | 5 |
| 3.2 Powerful Processing Capability..... | 5 |
| 3.3 Omnidirectional Control Plan..... | 5 |
| 3.4 Synchronous and Asynchronous Dual-Mode..... | 6 |
| 3.5 Dual-Wi-Fi Mode..... | 6 |
| 3.5.1 Wi-Fi AP Mode..... | 7 |
| 3.5.2 Wi-Fi Sta Mode..... | 7 |
| 3.5.3 Wi-Fi AP+Sta Mode..... | 7 |
| 3.6 4G Module..... | 8 |
| 4 Hardware Structure..... | 9 |
| 4.1 Appearance..... | 9 |
| 4.2 Dimensions..... | 10 |
| 5 Software Structure..... | 12 |
| 5.1 System Software..... | 12 |
| 5.2 Related Configuration Software..... | 12 |
| 6 Specifications..... | 13 |

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.
- Be careful about electric shock risk. Built-in power supply.
- 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.
- T8 of the Taurus series products (herein after referred to as “T8”) feature following advantages, better satisfying users’ requirements:
 - Loading capacity up to 2,300,000 pixels
 - Synchronization mechanism for multi-screen playing
 - Powerful processing capability
 - Omnidirectional control plan
 - Synchronous and asynchronous dual-mode
 - Dual-Wi-Fi mode
 - 4G module
- **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 2.2.1.1.1.1.1.1](#).

Table 2.2.1.1.1.1.1.1 Application

| <ul style="list-style-type: none"> • CI | <ul style="list-style-type: none"> • Description |
|--|---|
| <ul style="list-style-type: none"> • M | <ul style="list-style-type: none"> • 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. |
| <ul style="list-style-type: none"> • N | <ul style="list-style-type: none"> • 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. |
| <ul style="list-style-type: none"> • C | <ul style="list-style-type: none"> • Wired connection: A PC connects to Taurus through the Ethernet cable or LAN. • Wi-Fi connection: PC, Pad and mobile phone can connect to Taurus through Wi-Fi, which can be enabled in the case without PC in conjunction with ViPlex software. |

-

3 Features

3.1 Synchronous Display

- The T8 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 T8 units are synchronous with one another and the same program is being played.

3.2 Powerful Processing Capability

- The T8 feature 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

| | | | |
|---------|---------|--------|--------|
| • C | • Co | • C | • R |
| • Pr | • Co | • P | • V |
| | • Co | | • N |

| | | | |
|---------|----------|--------|----------------------------|
| ● C | ● Co | ● C | ● R |
| ● Pr | ● Co | ● P | ● V ● N |
| ● Pr | ● Co | ● M | ● V |
| ● Cl | ● Wi- | ● M | ● V ● V ● V |
| ● Cl | ● Wi- | ● M | ● N ● V ● V |

- 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 T8 supports synchronous and asynchronous dual-mode, allowing more application cases and being user-friendly.
- When internal video source is applied, the T8 is in asynchronous mode; when HDMI-input video source is used, the T8 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 T8 have permanent Wi-Fi AP and support the Wi-Fi Sta mode, carrying advantages as shown below:
- Completely cover Wi-Fi connection scene. The T8 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 T8 through wireless network.
- Require no wiring. Display management can be managed at any time, having improvements in efficiency.
- T8's Wi-Fi AP signal strength is related to the transmit distance and environment. Users can change the Wi-Fi antenna as required.

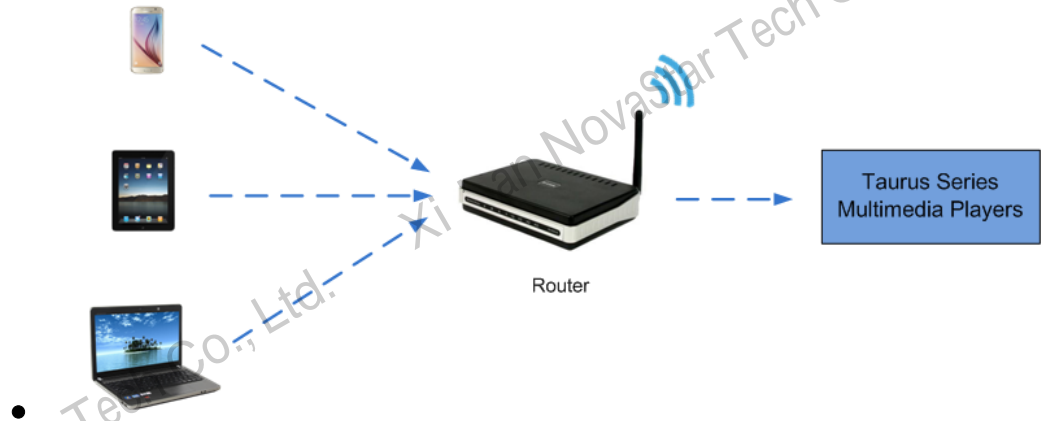
3.5.1 Wi-Fi AP Mode

- Users connect the Wi-Fi AP of a T8 to directly access the T8. The SSID is "**AP + the last 8 digits of the SN**", for example, "**AP10000033**", and the default password is "**12345678**".



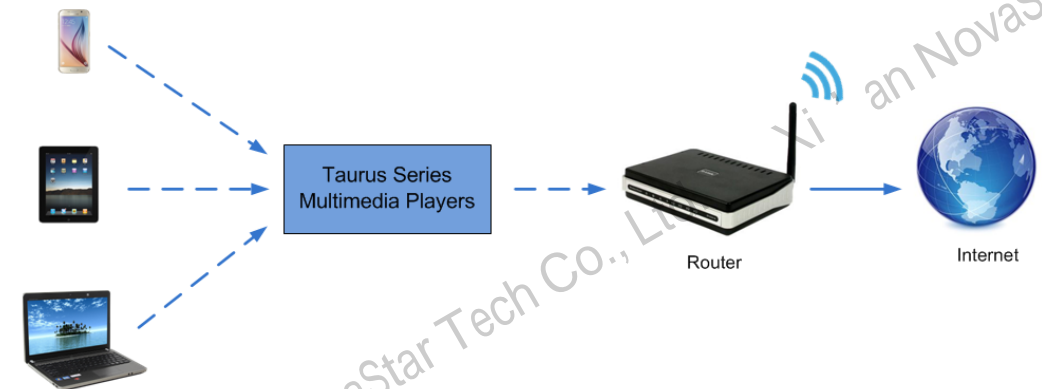
3.5.2 Wi-Fi Sta Mode

- Configure an external router for a T8 and users can access the T8 by connecting the external router. If an external router is configured for multiple T8 units, a LAN can be created. Users can access any of the T8 via the LAN.



3.5.3 Wi-Fi AP+Sta Mode

- In Wi-Fi AP+ Sta connection mode, users can either directly access the T8 or access internet through bridging connection. Upon the cluster solution, VNNOX and NovaCare can realize remote program publishing and remote monitoring respectively through the Internet.



3.6 4G Module

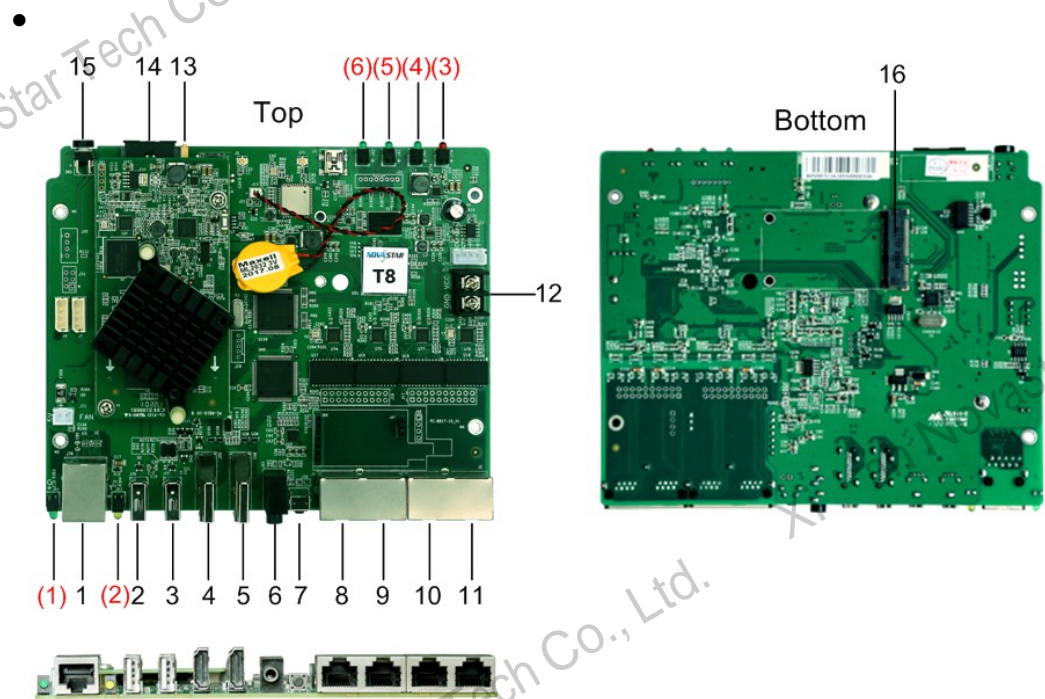
- The T8 supports 4G module, allowing complete covering of the internet connection.
- From high to low, the priority includes:
 - Wired network
 - Wi-Fi Sta
 - 4G network

- T8 automatically selects signals according to the priority.
- When mobile data network is enabled for client software VIplex and priority requirements are met, T8 with 4G module can connect to the internet.

4 Hardware Structure

4.1 Appearance

Figure 4.1.1.1.1.1.1 Appearance of T8



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

| | | | |
|--------|-------------------------|---------|-------------------|
| ● 1 | ● Gigabit Ethernet port | ● 9 | ● Ethernet port 2 |
| ● 2 | ● USB2.0 port 1 | ● 10 | ● Ethernet port 3 |
| ● 3 | ● USB2.0 port 2 | ● 11 | ● Ethernet port 4 |
| ● 4 | ● HDMI1.4 input | ● 12 | ● Power input |

| | | | |
|---|--|----|---|
| 5 | <ul style="list-style-type: none"> HDMI1.4 output | 13 | <ul style="list-style-type: none"> SIM card eject button |
| 6 | <ul style="list-style-type: none"> Audio output | 14 | <ul style="list-style-type: none"> SIM card slot |
| 7 | <ul style="list-style-type: none"> Factory reset button, hold down for 5 seconds to reset to factory defaults | 15 | <ul style="list-style-type: none"> Dual-mode switching button (synchronous/asynchronous) |
| 8 | <ul style="list-style-type: none"> Ethernet port 1 | 16 | <ul style="list-style-type: none"> 4G module slot |

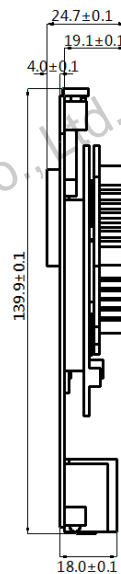
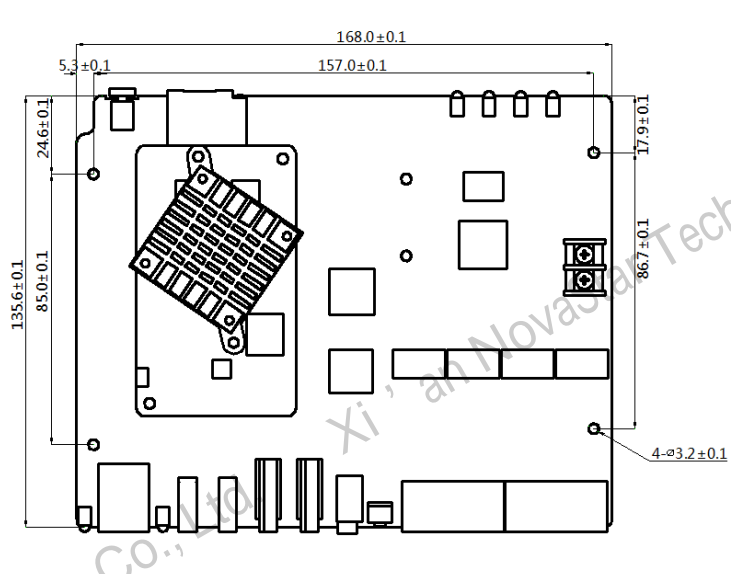
Table 4.1.1.1.1.1.1.1 Indicators of the T8

| No. | In | Indi | Description |
|-----|----|------|---|
| (1) | Gr | Bot | <ul style="list-style-type: none"> The product is connected to the Gigabit Ethernet cable and the connection status is normal. |
| (2) | Ye | Alw | <ul style="list-style-type: none"> The product is connected to the 100M Ethernet cable and the connection status is normal. |
| (3) | R | Alw | <ul style="list-style-type: none"> Power input is normal. |
| | | | <ul style="list-style-type: none"> The |

| No. | In | Indi | Description |
|-----|----|------|---|
| (4) | Gr | Fla | system is operating normally. |
| | | Fla | System is sending data. |
| | | Alw | The system is operating abnormally . |
| (5) | Gr | Alw | The product is connected to the Internet and the connection status is normal. |
| | | Fla | The product is connected to VNNOX and the connection status is normal. |
| (6) | Gr | Sa | FPGA is operating normally. |

4.2 Dimensions

- The total thickness (board thickness + thickness of the components on the front and back side) is no greater than 25.0mm.
- 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 T8 includes Android and iOS which are mainly used for screen management, editing, and program publishing. |

| <ul style="list-style-type: none"> • Software | <ul style="list-style-type: none"> • Description |
|--|---|
| <ul style="list-style-type: none"> • VIPLEX EXPRESS | <ul style="list-style-type: none"> • PC client software of the T8 only includes Windows which is mainly used for screen management, editing, and program publishing. |
| <ul style="list-style-type: none"> • NOVALCT | <ul style="list-style-type: none"> • Display screen configuration software works in Windows only, and is used to adjust screens to the best display status. |

-

6 Specifications

| <ul style="list-style-type: none"> • T | <ul style="list-style-type: none"> • Sub-Item | <ul style="list-style-type: none"> • Specifications |
|---|---|---|
| <ul style="list-style-type: none"> • P | <ul style="list-style-type: none"> • Dimension (H×W×D) | <ul style="list-style-type: none"> • 168.0 mm×135.6 mm×24.7 mm |
| | <ul style="list-style-type: none"> • Weight | <ul style="list-style-type: none"> • 214.0 g |
| | <ul style="list-style-type: none"> • Input power supply | <ul style="list-style-type: none"> • DC |
| | <ul style="list-style-type: none"> • Rated voltage | <ul style="list-style-type: none"> • 5V |
| | <ul style="list-style-type: none"> • Rated current | <ul style="list-style-type: none"> • 3A |
| | <ul style="list-style-type: none"> • Maximum power consumption | <ul style="list-style-type: none"> • 18W |
| | <ul style="list-style-type: none"> • Storage temperature | <ul style="list-style-type: none"> • 0°C-50°C |
| | <ul style="list-style-type: none"> • Storage humidity | <ul style="list-style-type: none"> • 0%RH - 80%RH |
| | <ul style="list-style-type: none"> • Operating temperature | <ul style="list-style-type: none"> • -40°C-80°C |
| <ul style="list-style-type: none"> • Operati | <ul style="list-style-type: none"> • 0%RH | |

| | | |
|---|---|--|
| | <ul style="list-style-type: none"> Operating humidity | <ul style="list-style-type: none"> 80%RH |
| | <ul style="list-style-type: none"> Operating memory | <ul style="list-style-type: none"> 2GB |
| | <ul style="list-style-type: none"> Internal storage space | <ul style="list-style-type: none"> 8GB |
| <ul style="list-style-type: none"> P | <ul style="list-style-type: none"> Dimension (H×W×D) | <ul style="list-style-type: none"> 200mm×120mm×40mm |
| | <ul style="list-style-type: none"> List | <ul style="list-style-type: none"> One bare card of the T8 LED multimedia player One patch Wi-Fi antenna One column Wi-Fi omnidirectional antenna One IPex convert SMA 18cm extension line |
| <ul style="list-style-type: none"> C | <ul style="list-style-type: none"> 4 Ethernet ports support 2.3 megapixel loading capacity, with maximum width of 4096 pixels and maximum height of 1920 pixels. 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. | |

| | |
|--|---|
| | <ul style="list-style-type: none">• 2-way USB Host interface supports USB drive importing display.• Onboard brightness sensor interface supports automatic and timing smart brightness adjustment. |
|--|---|

-