



Change History

Document Version	Release Date	Description
V1.0.4	2022-06-10	<ul style="list-style-type: none">• Added a description of RF synchronization.• Added notes and cautions.• Updated the certification information.• Updated the indicator descriptions.• Updated the accessory descriptions.
V1.0.2	2021-12-17	<ul style="list-style-type: none">• Updated the descriptions of the USB (Type B) port and Gigabit Ethernet port.• Added the gross weight of the product.• Added a note for the power consumption.
V1.0.1	2021-09-30	<ul style="list-style-type: none">• Added certification information.• Updated the description of the playback performance.• Updated net weight.
V1.0.0	2021-07-30	First release

Introduction

The TB50 is a new generation of multimedia player created by NovaStar for full-color LED displays. This multimedia player integrates playback and sending capabilities, allowing users to publish content and control LED displays with a computer, mobile phone, or tablet. Working with our superior cloud-based publishing and monitoring platforms, the TB50 enables users to manage LED displays from an Internet-connected device anywhere, anytime.

Support for multi-screen synchronous playback and synchronous and asynchronous modes makes this multimedia player a perfect fit for a wide range of applications.

Thanks to its reliability, ease of use, and intelligent control, the TB50 becomes a winning choice for commercial LED displays and smart city applications such as fixed displays, lamp-post displays, chain store displays, advertisement players, mirror displays, retail store displays, door head displays, shelf displays, and much more.

Certifications

NBTC, IMDA, PSB, FAC DoC, ENACOM, ICASA, SRRC, EAC DoC, EAC RoHS, RCM, UL Smark, CCC, FCC, UL, IC, KC, CE, UKCA, CB, MIC, PSE, NOM

If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact NovaStar to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or NovaStar has the right to claim compensation.

Features

Output

- Loading capacity up to 1,300,000 pixels
Maximum width: 4096 pixels
Maximum height: 4096 pixels
- 2x Gigabit Ethernet ports
These two ports serve as primary by default.
Users can also set one as primary and the other as backup.
- 1x Stereo audio connector
The audio sample rate of the internal source is fixed at 48 kHz. The audio sample rate of the

external source supports 32 kHz, 44.1 kHz, or 48 kHz. If NovaStar's multifunction card is used for audio output, audio with a sample rate of 48 kHz is required.

- 1x HDMI 1.4 connector
Maximum output: 1080p@60Hz, support for HDMI loop

Input

- 1x HDMI 1.4 connector
In synchronous mode, video sources input from this connector can be scaled to fit the entire screen automatically.

- 2x sensor connectors
Connect to brightness sensors or temperature and humidity sensors.

Control

- 1x USB 3.0 (Type A) port
Allows for USB playback and firmware upgrade over USB.
- 1x USB (Type B) port
Connects to the control computer for content publishing and screen control.
- 1x Gigabit Ethernet port
Connects to the control computer, a LAN or public network for content publishing and screen control.

Performance

- Powerful processing capacity
 - Quad-core ARM A55 processor @1.8 GHz
 - Support for H.264/H.265 4K@60Hz video decoding
 - 1 GB of onboard RAM
 - 16 GB of internal storage
- Flawless playback
2x 4K, 6x 1080p, 10x 720p, or 20x 360p video playback

Functionality

- All-round control plans
 - Enables users to publish content and control screens from a computer, mobile phone, or tablet.

- Allows users to publish content and control screens from anywhere, anytime.
- Allows users to monitor screens from anywhere, anytime.

- Switching between Wi-Fi AP and Wi-Fi STA
 - In Wi-Fi AP mode, the user terminal connects to the built-in Wi-Fi hotspot of the TB50. The default SSID is "AP+*Last 8 digits of SN*" and the default password is "12345678".
 - In Wi-Fi STA mode, the user terminal and the TB50 are connected to the Wi-Fi hotspot of a router.
- Synchronous and asynchronous modes
 - In asynchronous mode, the internal video source works.
 - In synchronous mode, the video source input from the HDMI connector works.
- Synchronous playback across multiple screens
 - NTP time synchronization
 - GPS time synchronization (The specified 4G module must be installed.)
 - RF time synchronization (The specified RF module must be installed.)
- Support for 4G modules

The TB50 ships without a 4G module. Users have to purchase 4G modules separately if needed.

Network connection priority: Wired network > Wi-Fi network > 4G network

When multiple types of networks are available, the TB50 will choose a signal automatically according to the priority.

Appearance

Front Panel



Name	Description
SWITCH	Switches between synchronous and asynchronous modes <ul style="list-style-type: none"> • Staying on: Synchronous mode • Off: Asynchronous mode
SIM CARD	SIM card slot Capable of preventing users from inserting a SIM card in the wrong orientation
RESET	Factory reset button

Name	Description
	Press and hold this button for 5 seconds to reset the product to its factory settings.
USB	USB (Type B) port Connects to the control computer for content publishing and screen control.
LED OUT	Gigabit Ethernet outputs

Rear Panel

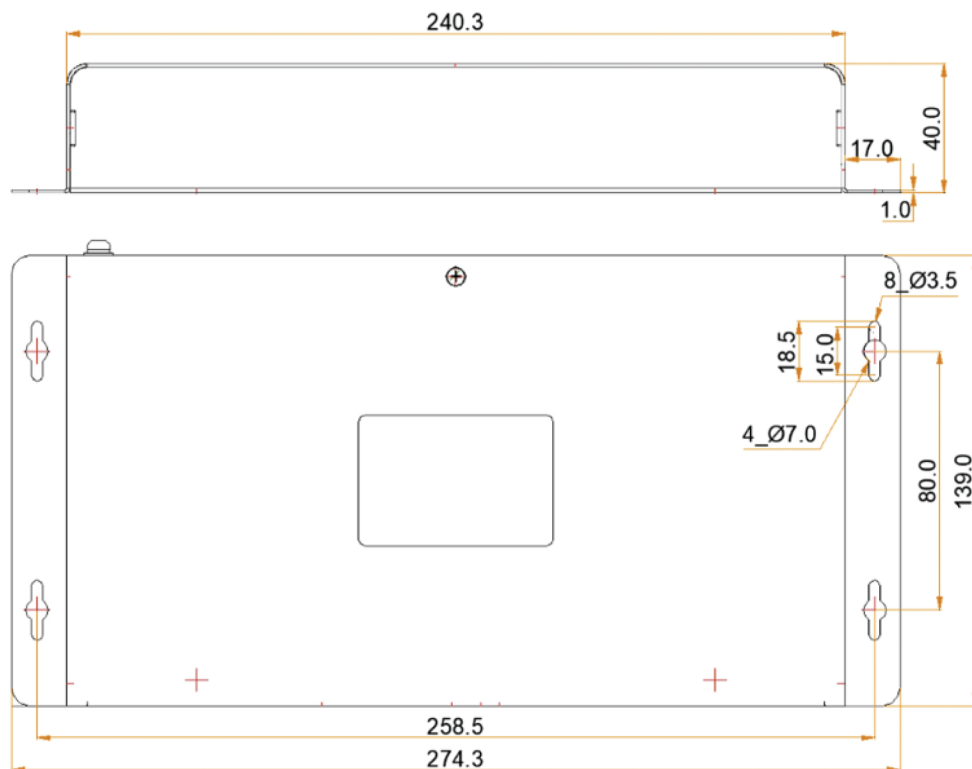


Name	Description
SENSOR	Sensor connectors Connect to brightness sensors or temperature and humidity sensors.
HDMI	HDMI 1.4 connectors <ul style="list-style-type: none"> OUT: Output connector, support for HDMI loop IN: Input connector, HDMI video input in synchronous mode <p>In synchronous mode, users can enable full-screen scaling to adjust the image to fit the screen automatically.</p> <p>Requirements for full-screen scaling in synchronous mode:</p> <ul style="list-style-type: none"> 64 pixels ≤ video source width ≤ 2048 pixels Images can only be scaled down and cannot be scaled up.
WiFi	Wi-Fi antenna connector Support for switching between Wi-Fi AP and Wi-Fi Sta
ETHERNET	Gigabit Ethernet port Connects to the control computer, a LAN or public network for content publishing and screen control.
COM 2	GPS or RF antenna connector
USB 3.0	USB 3.0 (Type A) port Allows for USB playback and firmware upgrade over USB. The Ext4 and FAT32 file systems are supported. The exFAT and FAT16 file systems are not supported.
COM 1	4G antenna connector
AUDIO OUT	Audio output connector
100-240V~, 50/60Hz, 0.6A	Power input connector
ON/OFF	Power switch

Indicators

Name	Color	Status	Description
PWR	Red	Staying on	The power supply is working properly.
SYS	Green	Flashing once every 2s	The operating system is functioning normally.
		Staying on/off	The operating system is malfunctioning.
CLOUD	Green	Staying on	The TB50 is connected to the Internet and the connection is available.
		Flashing once every 2s	The TB50 is connected to VNNOX and the connection is available.
		Flashing once every second	The TB50 is upgrading the operating system.
		Flashing once every 0.5s	The TB50 is copying the upgrade package.
RUN	Green	Flashing once every second	The FPGA has no video source.
		Flashing once every 0.5s	The FPGA is functioning normally.
		Staying on/off	The FPGA loading is abnormal.

Dimensions



Tolerance: ± 0.3 Unit: mm