TB10 Plus

Multimedia Player

Specifications

Change History

Document Version	Release Date	Description
V1.0.3	2026-05-15	Updated the RESET connector description.
V1.0.2	2026-01-05	• Updated the playback performance. • Updated the indicator status description. • Updated the media decoding specifications.
V1.0.1	2025-08-29	• Updated the certifications. • Updated the feature description. • Updated the connector description. • Updated the media decoding specifications.
V1.0.0	2025-05-27	First release

Introduction

The TB10 Plus 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 TB10 Plus enables users to manage LED displays from an Internet-connected device anywhere, anytime.

The TB10 Plus can play content from a USB drive, satisfying various playback demands. Multiple protection measures such as terminal authentication and player verification are taken to keep the playback secure.

Thanks to its reliability, ease of use, and intelligent control, the TB10 Plus becomes a winning choice for commercial LED displays and smart city applications such as fixed displays, lamp-post displays, chain store displays, advertisement players, retail store displays, door head displays, shelf displays, and much more.

Certifications

CE, FCC, IC, CQC, CB, NTRA

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 650,000 pixels

  Maximum width: 2048 pixels, maximum height: 2048 pixels (maximum capacity per Ethernet port: 650,000 pixels)

- Maximum width of an ultra-long screen: 8192 pixels, maximum height of an ultra-long screen: 2048 pixels (maximum capacity per Ethernet port: 650,000 pixels)
- 1x Gigabit Ethernet output port
- 1x 3.5 mm audio output connector

Note

When the multifunction card of NovaStar is connected for audio output:

- In asynchronous mode, the internal audio sampling rate ranges from 8 kHz to 192 kHz and can automatically convert to 48 kHz.
- For embedded audio from HDMI input, please ensure the audio sampling rate is set to 48 kHz.

Control

- 1x USB 2.0 (Type A) port

  Allows for USB playback, firmware upgrade and storage expansion.

- 1x USB (Type B) port

  Connects to the control computer for content publishing and screen control.

- 1x Fast Ethernet port

  Connects to the control computer, or connects to a LAN or public network for content publishing and screen control.

Performance

- Powerful processing capacity
  - Quad-core ARM A53 processor @1.4GHz

  - Support for hardware decoding of 4K videos
  - 2 GB of RAM
  - 32 GB of storage space
- Flawless playback

  Support for playback of 1x 4K, 2x 1080p, 4x 720p, 4x 480p, or 20x 360p videos

Note

Videos with resolutions between 2K and 4K will be converted into 4K videos.

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.
- Wi-Fi AP and Wi-Fi Sta can be turned on at the same time
  - Wi-Fi AP

    User terminal devices can be connected to the built-in Wi-Fi hotspot of the multimedia player. The default SSID is “Model+Last 8 digits of SN” and the default password is printed on the SSID label.
  - Wi-Fi AP+Wi-Fi Sta

    Users can connect the multimedia player to a Wi-Fi network and turn on the Wi-Fi hotspot at the same time.
- Ultra-long-screen content playback
- Synchronous playback across multiple screens

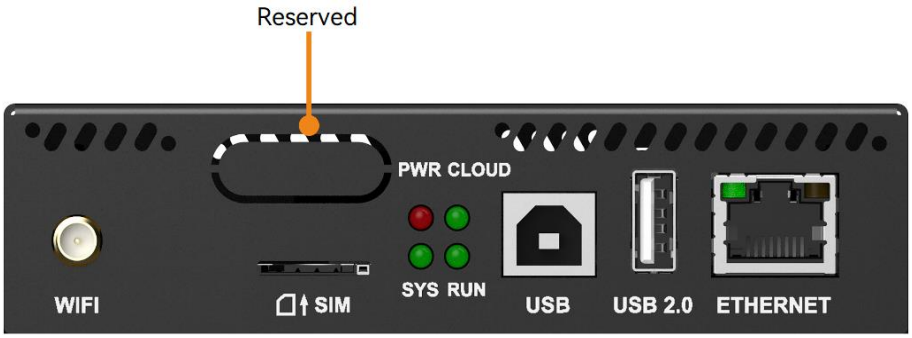
  Enabling synchronous playback halves the decoding capability of the device.
  - NTP time synchronization
  - GPS time synchronization (The specified 4G module must be installed.)
  - RF time synchronization (The specified RF module must be installed.)
- Support for brightness sensors or temperature and humidity sensors
- Support for 4G modules

- The TB10 Plus 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 networks are available, the device will choose a network according to the priority order.

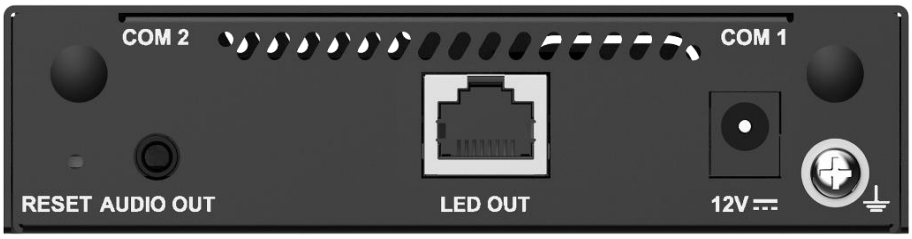
Appearance

Front Panel



Name	Description
WIFI	Wi-Fi antenna connector (2.4GHz Wi-Fi supported)
Reserved	Sensor connector Connects to a light sensor or temperature and humidity sensor.
SIM	SIM card slot Capable of preventing users from inserting a SIM card in the wrong orientation.
USB	USB (Type B) port Connects to the control computer for content publishing and screen control.
USB 2.0	USB 2.0 (Type A) port for USB playback, firmware upgrade and storage expansion (up to 128 GB) • Supported file systems: FAT32/NTFS • USB drive capacity range: 2 GB to 128 GB • The size of a single file must be greater than 0 KB and less than 4 GB.
ETHERNET	Fast Ethernet port Standard RJ45 connector (with built-in LEDs) connecting to the control computer or connecting to a LAN or public network for content publishing and screen control.

Rear Panel



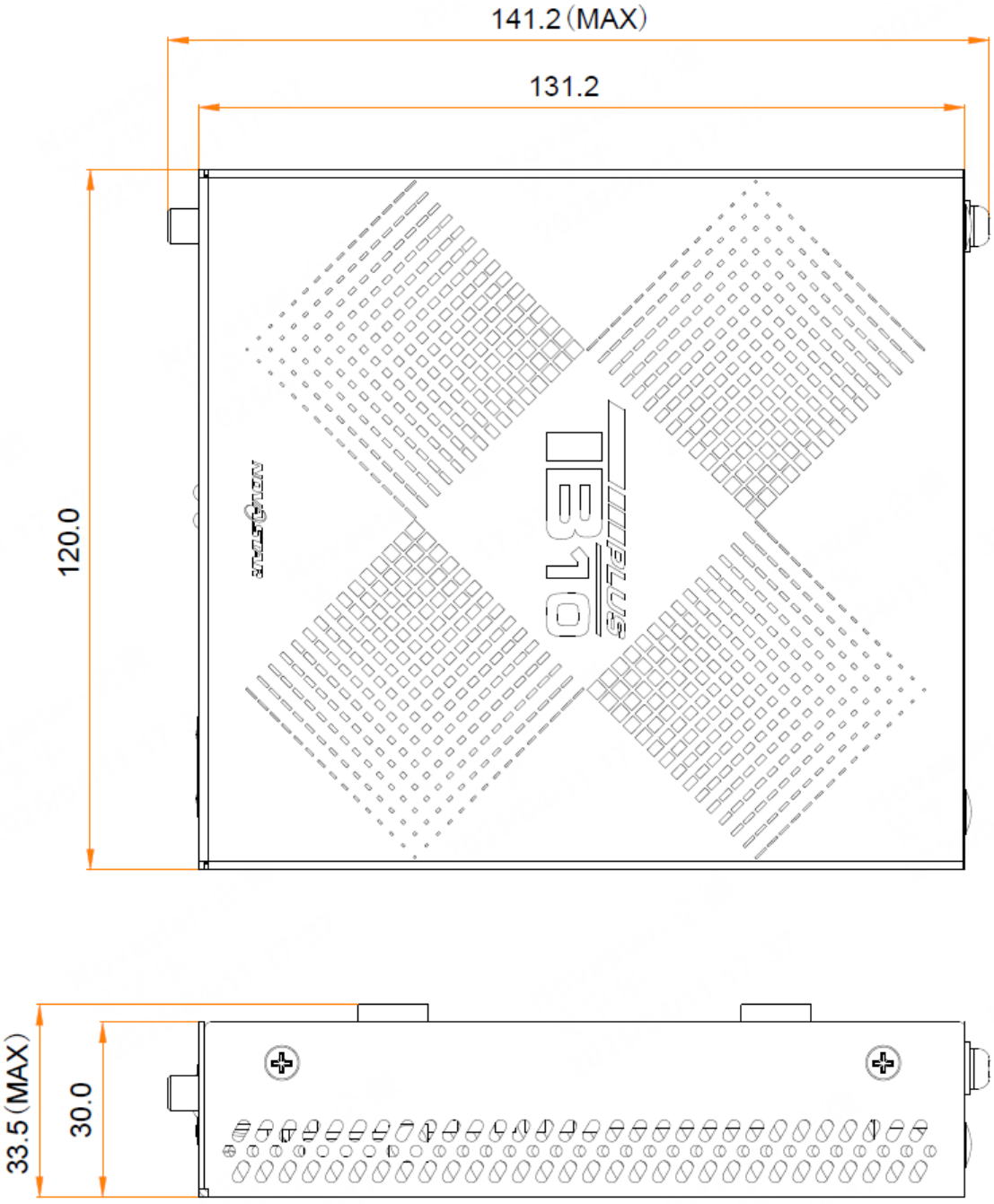
Name	Description
COM 2	GPS antenna connector
RESET	Factory reset button Press and hold this button for 5s to reset the product to its factory settings.
AUDIO OUT	3.5 mm audio output connector Note: Three-pole audio jacks can be connected, but audio input is not supported.
LED OUT	Gigabit Ethernet output Standard RJ45 connector (with no built-in LEDs)
12V ⎓	Power input connector
COM 1	4G antenna connector

Indicators

Name	Color	Status	Description
PWR	Red	Staying on	The power supply is working properly.
SYS	Green	Staying on/off	The operating system is malfunctioning.
		Flashing once every 2s	The operating system is functioning normally.
CLOUD	Green	Off	The device is not connected to the Internet.
		Staying on	The device is connected to the Internet and the connection is available.
		Flashing once every 2s	The device is connected to VNNOX and the connection is available.
		Flashing once every second	The operating system is being upgraded.

Name	Color	Status	Description
		Flashing once every 0.5s	The device is copying the upgrade package or files from a USB drive.
RUN	Green	Flashing once every 4s	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

Specifications

Electrical Parameters	Input voltage	DC 5 V to 12 V
	Maximum power consumption	15 W

Storage Capacity	RAM	2 GB
	Internal storage	32 GB
Operating Environment	Temperature	–20°C to +60°C
	Humidity	5% RH to 85% RH, non-condensing
Storage Environment	Temperature	–40°C to +80°C
	Humidity	5% RH to 95% RH, non-condensing
Physical Specifications	Dimensions (L×W×H)	141.2 mm × 120.0 mm × 33.5 mm
	Net weight	465.6 g
	Gross weight	771.2 g
Packing Information	Dimensions (L×W×H)	333.0 mm × 196.0 mm × 70.0 mm
	Accessories	• 1x Wi-Fi omnidirectional antenna • 1x Power adapter • 2x Racks • 4x Phillips countersunk head screws • 1x QR code • 1x Certificate of Approval
IP Rating	IP20 Please prevent the product from water intrusion and do not wet or wash the product.	
System Software	• Android 10 operating system software • Android terminal application software • FPGA program	

Media Decoding Specifications

Image

Category	Codec	Resolution	Format	Remarks
JPEG	JFIF file format 1.02	64×64 pixels to 4096×2304 pixels	JPG, JPEG	Support for interlaced scanning only Support for SRGB JPEG Support for Adobe RGB JPEG
BMP	BMP	64×64 pixels to	BMP	N/A

Category	Codec	Resolution	Format	Remarks
		4096×2304 pixels		
GIF	GIF	64×64 pixels to 1920×1088 pixels	GIF	At a resolution of 1280×720, the supported frame rate range is 1fps to 30fps. At a resolution of 1920×1088, the supported frame rate range is 1fps to 10fps.
PNG	PNG	64×64 pixels to 4096×2304 pixels	PNG	N/A
WEBP	WEBP	64×64 pixels to 4096×2304 pixels	WEBP	N/A

Video

Codec	Resolution	Max Frame Rate	Max Bit Rate (Ideal Case)	Format
H.264	64×64 pixels to 4096×2304 pixels	30fps	60Mbps	MP4, AVI, MKV, MOV
H.265/HEVC	64×64 pixels to 4096×2304 pixels	60fps	100Mbps	MP4, MKV, MOV
MPEG4	64×64 pixels to 1920×1088 pixels	60fps	29Mbps	MP4, AVI, MKV, MOV
VP8	64×64 pixels to 1920×1088 pixels	60fps	60Mbps	MKV, WEBM
VP9	64×64 pixels to 4096×2304 pixels	30fps	49Mbps	MKV, WEBM

Notes and Cautions

Notes for Installation

When the product needs to be installed on the rack, four M3*5 Phillips countersunk head screws with a torque of 3N • m should be used to fix it. The rack for installation shall bear at least 1.9kg weight.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cautions

This is Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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