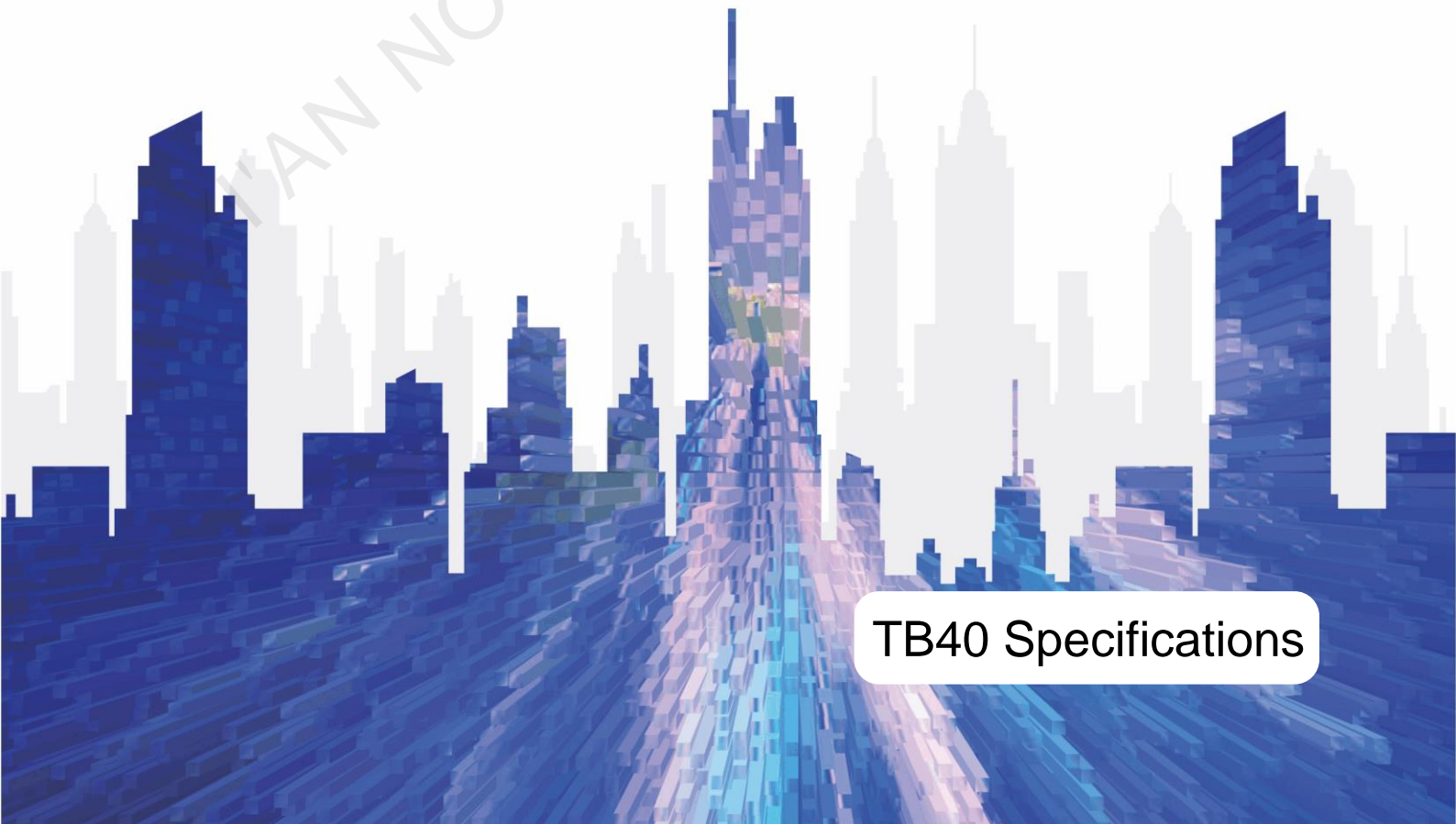


# Taurus Series Multimedia Player



TB40 Specifications

## Change History

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

## Introduction

The TB40 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 TB40 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 TB40 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.

## Certification

RoHS, CCC

**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 playback of content imported from a USB drive 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

### Functions

- 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 TB40. 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 TB40 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.)

- Support for 4G modules

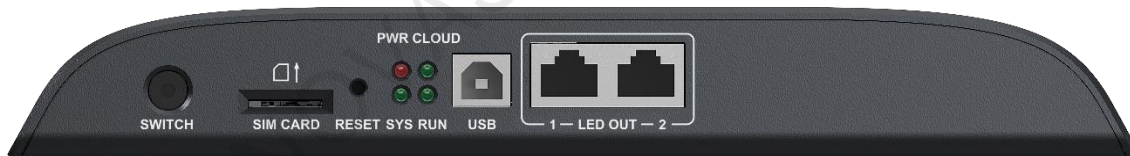
The TB40 ships without a 4G module. Users have to purchase 4G modules separately if needed.

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

When multiple types of networks are available, the TB40 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"> <li>● Staying on: Synchronous mode</li> <li>● Off: Asynchronous mode</li> </ul>
SIM CARD	SIM card slot Capable of preventing users from inserting a SIM card in the wrong orientation
RESET	Factory reset button 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 light sensors or temperature and humidity sensors.
HDMI	HDMI 1.4 connectors <ul style="list-style-type: none"> <li>• OUT: Output connector, support for HDMI loop</li> <li>• IN: Input connector, HDMI video input in synchronous mode</li> </ul> In synchronous mode, users can enable full-screen scaling to adjust the image to fit the screen automatically. Requirements for full-screen scaling in synchronous mode: <ul style="list-style-type: none"> <li>• 64 pixels ≤ video source width ≤ 2048 pixels</li> <li>• Images can only be scaled down and cannot be scaled up.</li> </ul>
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.
COM2	GPS antenna connector
USB 3.0	USB 3.0 (Type A) port Allows for playback of content imported from a USB drive and firmware upgrade over USB. The Ext4 and FAT32 file systems are supported. The exFAT and FAT16 file systems are not supported.
COM1	4G antenna connector
AUDIO OUT	Audio output connector
12V-2A	Power input connector

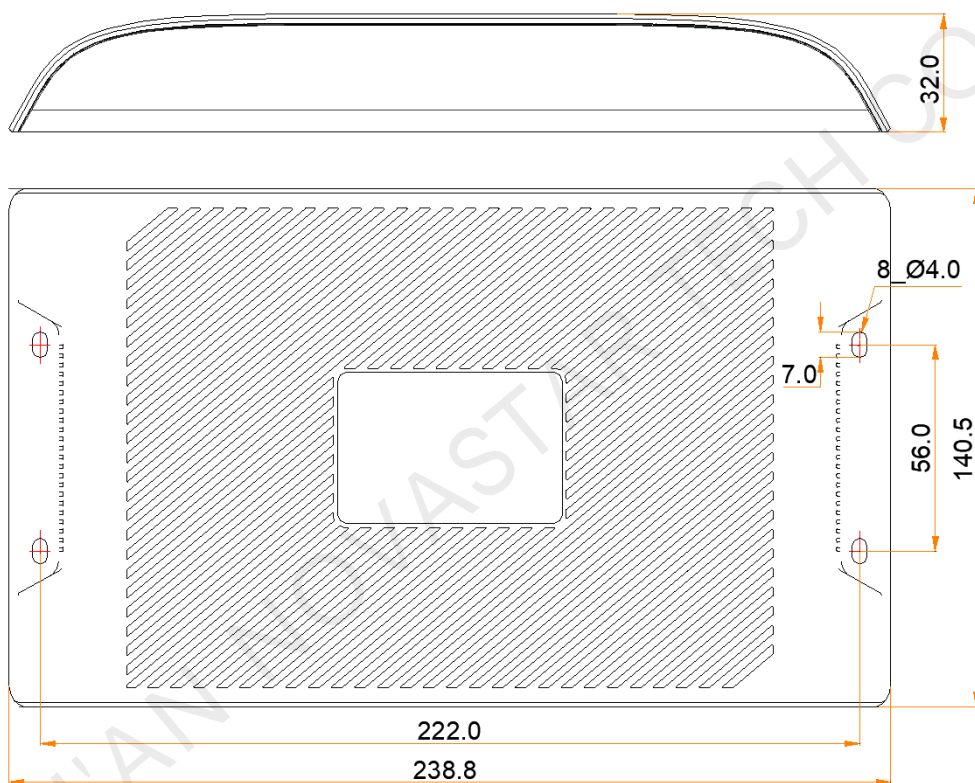
## Indicators

Name	Color	Status	Description
PWR	Red	Staying on	The power supply is working properly.
SYS	Green	Flashing once every 2s	The TB40 is functioning normally.
		Flashing once every second	The TB40 is installing the upgrade package.
		Flashing once every 0.5s	The TB40 is downloading data from the Internet or copying the upgrade package.
		Staying on/off	The TB40 is abnormal.

Name	Color	Status	Description
CLOUD	Green	Staying on	The TB40 is connected to the Internet and the connection is available.
		Flashing once every 2s	The TB40 is connected to VNNOX and the connection is available.
RUN	Green	Flashing once every second	No video signal
		Flashing once every 0.5s	The TB40 is functioning normally.
		Staying on/off	FPGA loading is abnormal.

## Dimensions

### Product Dimensions



Tolerance: ±0.3 Unit: mm

## Specifications

Electrical Parameters	Input power	DC 12 V, 2 A
	Maximum power consumption	18 W
Storage Capacity	RAM	1 GB
	Internal storage	16 GB
Operating Environment	Temperature	-20°C to +60°C
	Humidity	0% RH to 80% RH, non-condensing

Storage Environment	Temperature	-40°C to +80°C
	Humidity	0% RH to 80% RH, non-condensing
Physical Specifications	Dimensions	238.8 mm x 140.5 mm x 32.0 mm
	Net weight	430.0 g
	Gross weight	860.8 g Note: It is the total weight of the product, printed materials and packing materials packed according to the packing specifications.
Packing Information	Dimensions	385.0 mm x 280.0 mm x 75.0 mm
	List	<ul style="list-style-type: none"> <li>• 1x TB40</li> <li>• 1x Wi-Fi omnidirectional antenna</li> <li>• 1x Power adapter</li> <li>• 1x Quick Start Guide</li> </ul>
IP Rating	IP20 Please prevent the product from water intrusion and do not wet or wash the product.	
System Software	<ul style="list-style-type: none"> <li>• Android 11.0 operating system software</li> <li>• Android terminal application software</li> <li>• FPGA program</li> </ul> Note: Third-party applications are not supported.	

The power consumption may vary according to the setup, environment and use of the product as well as many other factors.

## Media Decoder Specifications

### Image

Category	Codec	Supported Image Size	Container	Remarks
JPEG	JFIF file format 1.02	96x32 pixels to 817x8176 pixels	JPG, JPEG	No support for non-interlaced scan Support for SRGB JPEG Support for Adobe RGB JPEG
BMP	BMP	No Restriction	BMP	N/A
GIF	GIF	No Restriction	GIF	N/A
PNG	PNG	No Restriction	PNG	N/A
WEBP	WEBP	No Restriction	WEBP	N/A

### Video

Category	Codec	Resolution	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
MPEG-1/2	MPEG-1/2	48x48 pixels to 1920x1088 pixels	30fps	80Mbps	DAT, MPG, VOB, TS	Support for field coding

Category	Codec	Resolution	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
MPEG-4	MPEG4	48x48 pixels to 1920x1088 pixels	30fps	38.4Mbps	AVI, MKV, MP4, MOV, 3GP	No support for MS MPEG4 v1/v2/v3, GMC
H.264/AVC	H.264	48x48 pixels to 4096x2304 pixels	2304P@60fps	80Mbps	AVI, MKV, MP4, MOV, 3GP, TS, FLV	Support for field coding and MBAFF
MVC	H.264 MVC	48x48 pixels to 4096x2304 pixels	2304P@60fps	100Mbps	MKV, TS	Support for Stereo High Profile only
H.265/HEVC	H.265/H EVC	64x64 pixels to 4096x2304 pixels	2304P@60fps	100Mbps	MKV, MP4, MOV, TS	Support for Main Profile, Tile & Slice
GOOGLE VP8	VP8	48x48 pixels to 1920x1088 pixels	30fps	38.4Mbps	WEBM, MKV	N/A
GOOGLE VP9	VP9	64x64 pixels to 4096x2304 pixels	60fps	80Mbps	WEBM, MKV	N/A
H.263	H.263	SQCIF (128x96) QCIF (176x144) CIF (352x288) 4CIF (704x576)	30fps	38.4Mbps	3GP, MOV, MP4	No support for H.263+
VC-1	VC-1	48x48 pixels to 1920x1088 pixels	30fps	45Mbps	WMV, ASF, TS, MKV, AVI	N/A
MOTION JPEG	MJPEG	48x48 pixels to 1920x1088 pixels	60fps	60Mbps	AVI	N/A

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