TB2-4G (Optional 4G)
Multimedia Player

Specifications

Change History

Document Version	Release Date	Description
V1.9.0	2024-07-24	• Updated the feature description. • Updated the RUN indicator description. • Added the recommended supply power. • Updated the packing information. • Updated the media decoding specifications.
V1.8.0	2024-05-30	• Updated the introduction. • Updated the feature descriptions. • Updated the connector descriptions. • Updated media decoding specifications.
V1.7.3	2023-10-16	Updated the description of the default Wi-Fi AP password.
V1.7.2	2023-06-14	• Updated the description of the Wi-Fi feature. • Deleted the antenna dimension diagram. • Added the gross weight of the product.
V1.7.1	2022-11-18	Updated the certification information.
V1.7.0	2022-06-10	• Added a note for certifications. • Updated the appearance pictures. • Updated the indicator descriptions. • Updated the accessory descriptions.

Introduction

The TB2-4G (Optional 4G) is the second generation of multimedia player launched by NovaStar for full-color LED displays. This multimedia player integrates playback and sending capabilities, allowing for solution publishing and screen control via various user terminal devices such as PC, mobile phones and tablets. The TB2-4G (Optional 4G) also supports the cloud publishing and monitoring platforms to easily enable cross-regional cluster management of screens.

The TB2-4G (Optional 4G) supports both synchronous and asynchronous modes which can be switched anytime or as scheduled, satisfying various playback demands. Multiple protection measures such as terminal authentication and player verification are taken to keep the playback secure.

Thanks to its security, stability, ease of use, smart control, etc., the TB2-4G (Optional 4G) widely applies to commercial display and smart cities such as lamp-post displays, chain store displays, advertisement players, retail store displays, door head displays, vehicle-mounted displays, and displays without requiring a PC.

Certifications

CQC, SRRC

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: 1920 pixels
    - Maximum height: 1080 pixels
- 1x Gigabit Ethernet port
- 1x Stereo audio output

Input

- 1x HDMI 1.3

    In asynchronous mode, this connector works as the video source which allows content to auto fit to screen

Control

- 1x USB 2.0, allowing for USB playback and storage expansion
- 1x USB Type B

    Connecting this port to a PC allows users to configure screens, publish solutions, etc. with supporting software.

Performance

- Powerful processing capacity
    - Quad-core processor @1.2 GHz
    - Hardware decoding of 1080p videos
    - 1 GB of RAM
    - 32 GB of internal storage
- Flawless playback

    Support for playback of 1x 1080p, 2x 720p, 4x 480p, or 4x 360p 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.
- Synchronous and asynchronous modes

- When the internal video source is used, the TB2-4G (Optional 4G) works in asynchronous mode.
        - When the HDMI video source is used, the TB2-4G (Optional 4G) works in synchronous mode.
- 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 TB2-4G (Optional 4G). The default SSID is "AP+*Last 8 digits of SN*" and the default password is printed on the SSID label of the product.
    - In Wi-Fi STA mode, the user terminal and the TB2-4G (Optional 4G) are connected to the Wi-Fi hotspot of a router.
- Support for 4G modules
    - The TB2-4G (Optional 4G) ships without a 4G module. Users have to purchase 4G modules separately if needed.
    - Wired network is prior to 4G network. When both of the networks are available, the TB2-4G (Optional 4G) will choose signals automatically according to the priority.
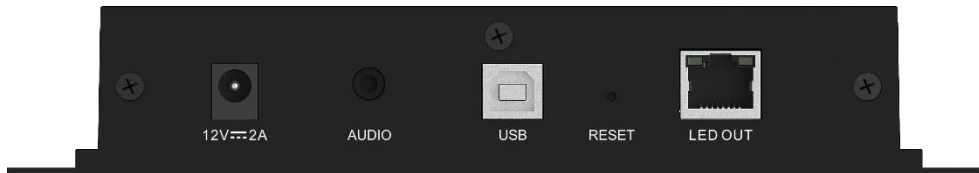
Appearance

Front Panel

Name	Description
SWITCH	Dual-mode switching button • Green 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.
HDMI IN	HDMI 1.3 connector, used as the video source in synchronous mode Content can be scaled and displayed to fit the screen size automatically in synchronous mode. Requirements of full screen zoom in synchronous mode: • 64 pixels ≤ Video source width ≤ 2048 pixels • Allows images to be scaled down only
USB 2.0	USB 2.0 (Type A) port Allows for USB playback and storage expansion. Only the FAT32 file system is supported and the maximum size of a single file is 4 GB.

Name	Description
ETHERNET	Fast Ethernet port, connecting to a network or control PC.
WiFi	Wi-Fi antenna connector (2.4 GHz Wi-Fi supported)
COM	4G antenna connector

Rear Panel

Name	Description
12V—2A	Power input connector
AUDIO	Audio output OMTP headphones can be connected.
USB	USB 2.0 (Type B) port
RESET	Factory reset button Press and hold this button for 5 seconds to reset the product to its factory settings.
LED OUT	Gigabit Ethernet output

Indicators

Name	Color	Status	Description
PWR	Red	Staying on	The power supply is working properly.
SYS	Green	Flashing once every 2 seconds	The operating system is functioning normally.
		Staying on/off	The operating system is malfunctioning.
CLOUD	Green	Staying on	The Taurus is connected to the Internet and the connection is available.
		Flashing once every 2 seconds	The Taurus is connected to VNNOX and the connection is available.
		Flashing once every second	The Taurus is upgrading the operating system.

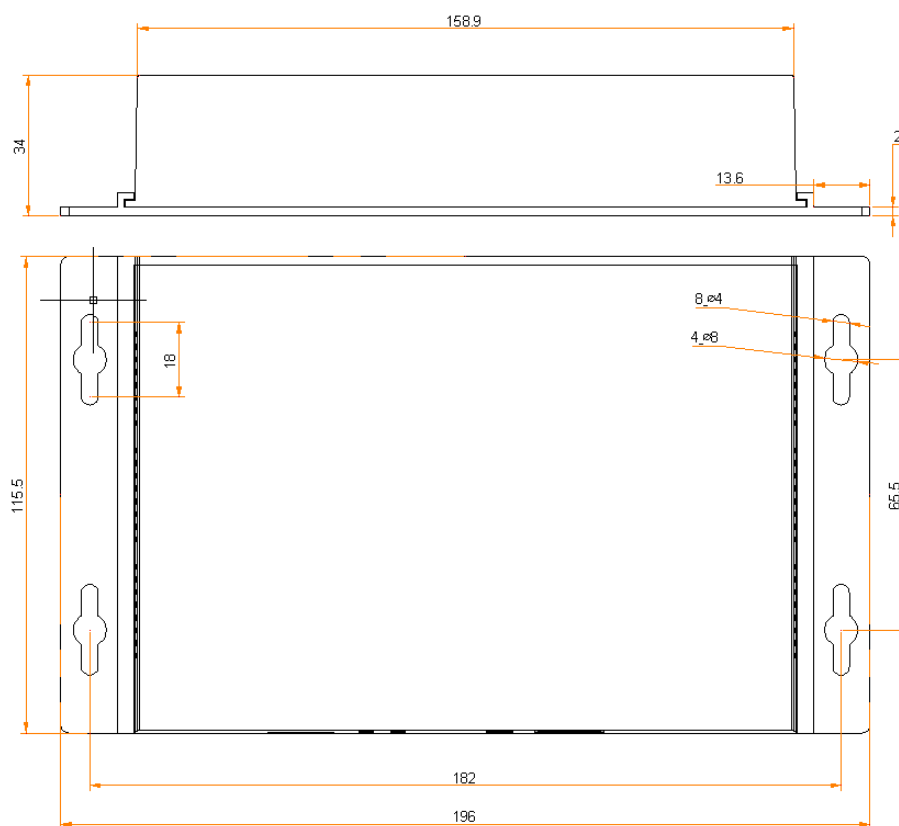| Name	Color	Status	Description
		Flashing once every 0.5 second	The Taurus is copying the upgrade package.
RUN	Green	Flashing once every 2s	The FPGA has no video source.
		Flashing once every 0.5 second	The FPGA is functioning normally.
		Staying on/off	The FPGA loading is abnormal.

Applications

The Taurus series products widely apply to commercial display, such as lamp-post displays, chain store displays, advertisement players, mirror displays, retail store displays, door head displays, vehicle-mounted displays, and displays without requiring a PC.

Table 1-1 lists the application scenarios of the Taurus.

Table 1-1 Applications

Category	Description
Market type	• Advertising media: Used for advertisement and information promotion, such as lamp-post displays and advertisement players. • Digital signage: Used for digital signage displays in retail stores, such as retail store displays and door head displays. • Commercial display: Used for the display of business information of hotels, cinemas, shopping malls, etc., such as chain store displays.
Networking method	• Single screen: Connect to and manage a screen by using a PC or mobile app. • Multiple screens: Manage and monitoring multiple screens in a centralized manner by using the cluster solutions of NovaStar.
Connection method	• Wired connection: The PC and Taurus are connected via Ethernet cable or LAN. • Wi-Fi connection: The PC, tablet or mobile phone is connected to the Taurus via Wi-Fi. Working with supporting software, the Taurus can apply to the scenarios where no PC is required.

Dimensions

Tolerance: ±0.3   Unit: mm

Specifications

Electrical Parameters	Input voltage	DC 5 V~12V
	Maximum power consumption	18 W
	Recommended supply power	25 W
Storage Capacity	RAM	1 GB
	Internal storage	32 GB
Operating Environment	Temperature	−20ºC to +60ºC
	Humidity	0% RH to 80% RH, non-condensing
Storage Environment	Temperature	−40℃ to +80℃
	Humidity	0% RH to 80% RH, non-condensing
Physical Specifications	Dimensions (L×W×H)	196.0 mm × 115.5 mm × 34.0 mm
	Net weight	304.5 g

	Gross weight	622.0 g
Packing Information	Dimensions (L×W×H)	335 mm × 190 mm × 62 mm
	Accessories	• 1x Wi-Fi omnidirectional antenna • 1x Power adapter • 1x Quick Start Guide • 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 operating system software • Android terminal application software • FPGA program Note: Third-party applications are not supported.	

Media Decoding Specifications

Image

Codec	Max Resolution	Format	Remarks
JFIF file format 1.02	4096×2160 pixels	JPG, JPEG	No support for non-interlaced scan Support for SRGB JPEG Support for Adobe RGB JPEG
BMP	4096×2160 pixels	BMP	N/A
GIF	4096×2160 pixels	GIF	N/A
PNG	4096×2160 pixels	PNG	N/A
WEBP	4096×2160 pixels	WEBP	N/A

Audio

Codec	Channel	Bit Rate	Sampling Rate	Format	Remarks
MPEG1/2/2.5 Audio Layer1/2/3	2	8kbps~320kbps, CBR and VBR	8kHz~48kHz	MP1, MP2, MP3	N/A

Codec	Channel	Bit Rate	Sampling Rate	Format	Remarks
WMA Version 4/4.1/7/8/9, wmapro	2	8kbps~320kbps	8kHz~48kHz	WMA	No support for WMA Pro, lossless and MBR
MS-ADPCM, IMA-ADPCM, PCM	2	N/A	8kHz~48kHz	WAV	Support for 4bit MS-ADPCM and IMA-ADPCM
Q1~Q10	2	N/A	8kHz~48kHz	OGG, OGA	N/A
Compress Level 0~8	2	N/A	8kHz~48kHz	FLAC	N/A
ADIF, ATDS Header AAC-LC and AAC-HE, AAC-ELD	5.1	N/A	8kHz~48kHz	AAC, M4A	N/A
AMR-NB, AMR-WB	1	AMR-NB 4.75~12.2kbps@8kHz AMR-WB 6.60~23.85kbps@16kHz	8kHz, 16kHz	3GP	N/A
MIDI Type 0/1, DLS version 1/2, XMF and Mobile XMF, RTTTL/RTX, OTA, iMelody	2	N/A	N/A	XMF, MXMF, RTTTL, RTX, OTA, IMY	N/A

Video

Codec	Resolution	Max Frame Rate	Max Bit Rate (Ideal Case)	Format	Remarks
MPEG-1/2	48×48 pixels to 1920×1088 pixels	30fps	80Mbps	DAT, MPG, VOB, TS	Support for Field Coding
MPEG4	48×48 pixels to 1920×1088 pixels	30fps	38.4Mbps	AVI, MKV, MP4, MOV, 3GP	No support for MS MPEG4 v1/v2/v3 and GMC
H.264	48×48 pixels to 4096×2304 pixels	2304p@30fps	80Mbps	AVI, MKV, MP4, MOV, 3GP, TS, FLV	Support for Field Coding, MBAFF and High & High 10 Profile
H.264 MVC	48×48 pixels to 4096×2304 pixels	2304p@30fps	100Mbps	MKV, TS	Support for Stereo High Profile only
H.265/HEVC	64×64 pixels to 4096×2304 pixels	2304p@60fps	100Mbps	MKV, MP4, MOV, TS	Support for Main & Main 10 Profile, Tile & Slice
VP8	48×48 pixels to 1920×1088 pixels	30fps	38.4Mbps	WEBM, MKV	N/A
VP9	64 × 64 pixels to 4096×2304 pixels	30fps	80Mbps	WEBM, MKV	N/A
H.263	SQCIF(128×96) QCIF(176×144) CIF(352×288) 4CIF(704×576)	30fps	38.4Mbps	3GP, MOV, MP4	No support for H.263+
MJPEG	48×48 pixels to 1920×1088 pixels	30fps	60Mbps	AVI	N/A

Official website
www.novastar.tech

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