

# Taurus Series Multimedia Players

V1.6.2 NS120100878



**TB1-4G (Optional 4G) Specifications**

---

# Contents

---

<b>Contents .....</b>	<b>i</b>
<b>1 Overview .....</b>	<b>1</b>
1.1 Introduction .....	1
1.2 Application .....	1
<b>2 Features .....</b>	<b>3</b>
2.1 Powerful Processing Capability .....	3
2.2 Comprehensive Control Plans .....	3
2.3 Wi-Fi AP Connection .....	3
2.4 4G Module .....	4
2.5 Connecting to PC Through USB .....	4
<b>3 Hardware Structure .....</b>	<b>5</b>
3.1 Appearance .....	5
3.1.1 Front Panel .....	5
3.1.2 Rear Panel .....	6
3.2 Dimensions .....	7
<b>4 Software Structure .....</b>	<b>8</b>
4.1 System Software .....	8
4.2 Configuration Software .....	8
<b>5 Product Specifications .....</b>	<b>9</b>
<b>6 Audio and Video Decoder Specifications .....</b>	<b>11</b>
6.1 Image .....	11
6.2 Audio .....	11
6.3 Video .....	12

# 1 Overview

## 1.1 Introduction

Taurus series products are NovaStar's second generation of multimedia players dedicated to full-color LED displays.

This document introduces TB1-4G (Optional 4G). The TB1-4G (Optional 4G) is provided without a 4G module by default and users can buy a 4G module if needed.

### Features

- Powerful processing capability
- Comprehensive control plans
- Wi-Fi AP connection
- 4G module
- Capable of connecting to PC through USB

In addition to solution publishing and screen control via PC, mobile phones and LAN, the comprehensive control plans also support remote centralized publishing and monitoring.

### Other Hardware Features

- Loading capacity up to 650,000 pixels, with the maximum width of 1920 pixels and maximum height of 1080 pixels
- Wired Fast Ethernet
- Stereo audio output
- USB drive importing display

## 1.2 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 1-1](#).

Table 1-1 Application

Classification	Description
----------------	-------------

Classification	Description
Market type	<ul style="list-style-type: none"><li>• Advertising media: To be used for advertising and information promotion including bar screen and advertising machine.</li><li>• Digital signage: To be used for signage display in retail stores including retail store screens and door head screens.</li><li>• Commercial display: To display commercial information of hotel, cinema and shopping mall, such as chain store screens.</li></ul>
Networking mode	<ul style="list-style-type: none"><li>• Independent screen: Use a PC or mobile client software to enable single-point connection and management of a screen.</li><li>• Cluster screen: Use the cluster solution developed by NovaStar to realize centralized management and monitor of multiple screens.</li></ul>
Connection type	<ul style="list-style-type: none"><li>• Wired connection: A PC connects to Taurus through the Ethernet cable or LAN.</li><li>• 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.</li></ul>

# 2 Features

## 2.1 Powerful Processing Capability

- 1.2 GHz four-core processor
- Support for 1080P video hardware decoding
- 1 GB operating memory
- 32 GB on-board internal storage space with 28 GB available for users

## 2.2 Comprehensive Control Plans

- Solution publishing and screen control via PC
- Solution publishing and screen control via LAN
- Solution publishing and screen control via mobile phone
- Clustered remote solution publishing and screen control
- Clustered remote monitoring

## 2.3 Wi-Fi AP Connection

The TB1-4G (Optional 4G) has permanent Wi-Fi AP. The default SSID is "**AP + the last 8 digits of the SN**", for example, "**AP10000033**", and the default password is "**12345678**". The TB1-4G (Optional 4G) requires no wiring and users can manage the displays at any time by connecting to the TB1-4G (Optional 4G) via mobile phone, Pad or PC.



Wi-Fi AP signal strength is related to the transmit distance and environment. Users can change the Wi-Fi antenna as required.

## 2.4 4G Module

The TB1-4G (Optional 4G) is designed with 4G module. You can connect to the Internet via 4G network after turning on mobile data network in the client software ViPlex.

Wired network is prior to 4G network. When both of the networks are available, the TB1-4G (Optional 4G) will choose signals automatically according to the priority.

## 2.5 Connecting to PC Through USB

The TB1-4G (Optional 4G) offers one USB Type B port allowing PC to be directly connected without requiring other operations and you can configure screens, publish solutions , etc. by using NovaLCT and ViPlex Express.

XI'AN NOVASTAR TECH CO.,LTD.

# 3 Hardware Structure

## 3.1 Appearance

### 3.1.1 Front Panel

Figure 3-1 Front panel



Note: All product pictures shown in this document are for illustration purpose only. Actual product may vary.

Table 3-1 Front panel description

Name	Description
SIM CARD	SIM card slot
PWR	Power status indicator Always on: Power input is normal.
SYS	System status indicator <ul style="list-style-type: none"><li>On for 2s and off for 2s: The system is operating normally.</li><li>On for 1s and off for 1s: The system is installing the</li></ul>

Name	Description
	upgrade package. <ul style="list-style-type: none"> <li>On for 0.5s and off for 0.5s: The system is downloading data from the Internet or copying the upgrade package.</li> <li>Always on/off: The system is operating abnormally.</li> </ul>
CLOUD	Internet connection status indicator <ul style="list-style-type: none"> <li>Always on: The unit is connected to the Internet and the connection status is normal.</li> <li>On for 2s and off for 2s: The unit is connected to VNNOX and the connection status is normal.</li> </ul>
RUN	FPGA status indicator Same as the signal indicator status of the sending card: FPGA is operating normally.
USB 1	USB 2.0 port The file system supports NTFS (file size up to 2 TB) and FAT32 (file size up to 4 GB), but do not support exFAT.
ETHERNET	Fast Ethernet port
WiFi-AP	Wi-Fi AP antenna port
4G	4G antenna port

### 3.1.2 Rear Panel

Figure 3-2 Rear panel



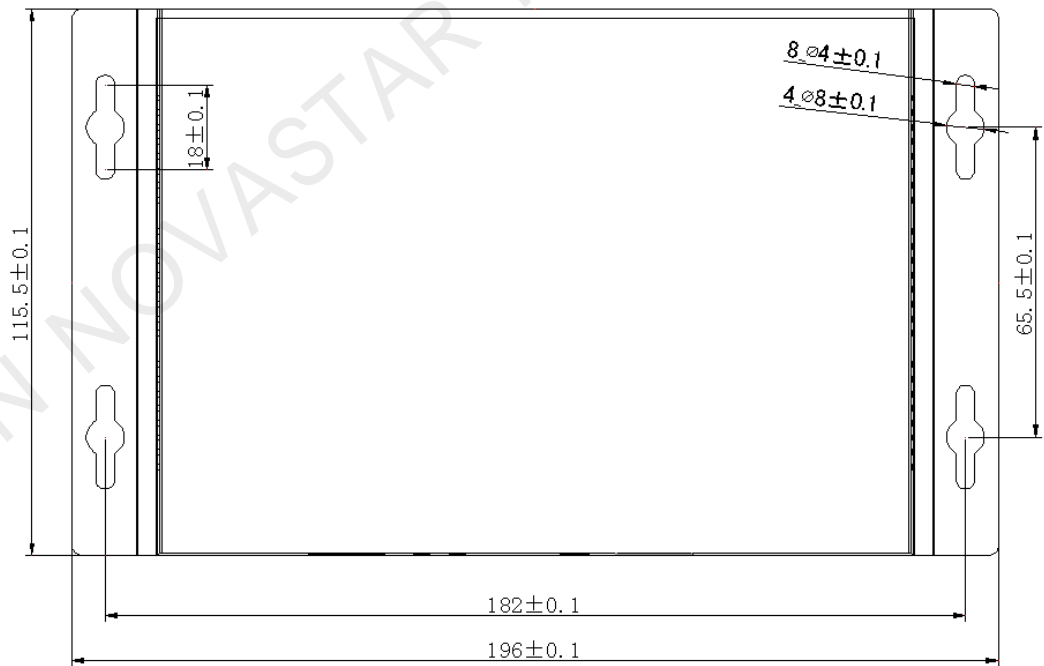
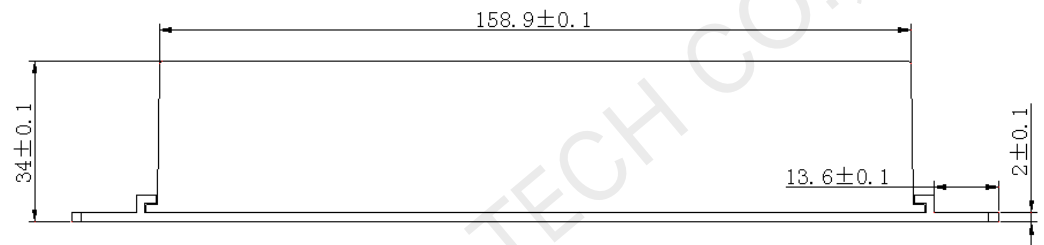
Note: All product pictures shown in this document are for illustration purpose only. Actual product may vary.



Table 3-2 Rear panel description

Name	Description
PWR	Power input
AUDIO	Audio output
USB 2	USB Type B port
RESET	Factory reset button, hold down for 5 seconds to reset to factory defaults
LEDOUT	Output Ethernet port

### 3.2 Dimensions



Unit: mm

# 4 Software Structure

## 4.1 System Software

- Android operating system software
- Android terminal application software
- FPGA program

Note: The third-party applications are not supported.

## 4.2 Configuration Software

Table 4-1 Related configuration software

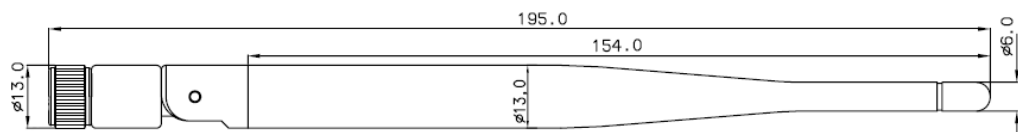
Name	Type	Description
ViPlex Handy	Mobile client	LAN-based screen management software for Android and iOS, which is mainly used for screen management, solution editing and publishing.
ViPlex Express	PC client	Display content publishing management system for Windows only, which supports studio mode and sync mode. The Taurus uses async mode.
NovaLCT	PC client	LED configuration tool for Windows only, which is mainly used for screen configuration and adjust screen to the optimal display performance.

# 5 Product Specifications

## Specifications

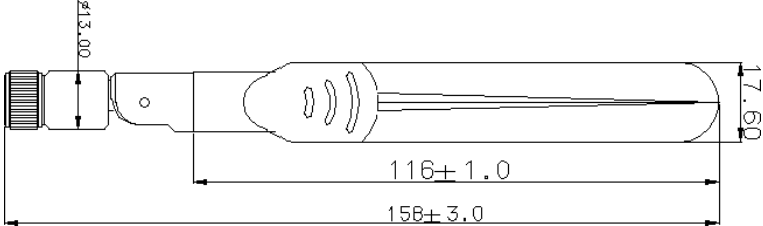
Electrical Parameters	Input voltage	5 V DC
	Maximum power consumption	15 W
Storage Space	Operating memory	1 GB
	Internal storage space	32 GB on-board with 28 GB available for users
Storage Environment	Temperature	-40°C–80°C
	Humidity	0% RH–80% RH, non-condensing
Operating Environment	Temperature	-20°C–60°C
	Humidity	0% RH–80% RH, non-condensing
Packing Information	Dimensions (H×W×D)	335 mm × 190 mm × 62 mm
	List	<ul style="list-style-type: none"> <li>• 1 × TB1-4G (Optional 4G)</li> <li>• 1 × Wi-Fi omnidirectional antenna</li> <li>• 1 × Power adapter (5V 3A)</li> <li>• 1 × Quick Start Guide</li> </ul>
Dimensions (H × W × D)	196.0 mm × 115.5 mm × 34.0 mm	
Net Weight	291.3 g	
IP Rating	IP20 Please prevent the product from water intrusion and do not wet or wash the product	

## Wi-Fi Antenna



Unit: mm

4G Antenna



Unit: mm

XI'AN NOVASTAR TECH CO.,LTD

# 6 Audio and Video Decoder Specifications

## 6.1 Image

Type	Codec	Supported Image Size	Container	Remarks
JPEG	JFIF file format 1.02	48x48 pixels~8176x8176 pixels	JPG, JPEG	Not Support Non-interleaved Scan Software support SRGB JPEG Software support 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

## 6.2 Audio

Type	Codec	Channel	Bit rate	Sampling rate	File Format	Remarks
MPEG	MPEG1/2/2.5 Audio Layer1/2/3	2	8kbps~320Kbps, CBR and VBR	8KHZ~48 KHz	MP1, MP2, MP3	N/A
Windows Media Audio	WMA Version 4, 4.1, 7, 8, 9, wmapro	2	8kbps~320Kbps	8KHZ~48 KHz	WMA	Non-support WMA Pro, lossless and MBR
WAV	MS-ADPCM, IMA-ADPCM,	2	N/A	8KHZ~48	WAV	Support 4bit MS-ADPCM,

Type	Codec	Channel	Bit rate	Sampling rate	File Format	Remarks
	PCM			KHz		IMA-ADPCM
OGG	Q1~Q10	2	N/A	8KHZ~48 KHz	OGG, OGA	N/A
FLAC	Compress Level 0~8	2	N/A	8KHZ~48 KHz	FLAC	N/A
AAC	ADIF, ATDS Header AAC-LC and AAC-HE, AAC-ELD	5.1	N/A	8KHZ~48 KHz	AAC, M4A	N/A
AMR	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	MIDI Type 0 and 1, DLS version 1 and 2, XMF and Mobile XMF, RTTTL/RTX, OTA, iMelody	2	N/A	N/A	XMF, MXMF, RTTTL, RTX, OTA, IMY	N/A

## 6.3 Video

Type	Codec	Supported Image Size	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
MPEG -1/2	MPEG -1/2	48x48 pixels~1920x1080 pixels	30fps	80Mbps	DAT, MPG, VOB, TS	Support Field Coding
MPEG -4	MPEG 4	48x48 pixels~1920x1080 pixels	30fps	38.4Mbps	AVI, MKV, MP4, MOV, 3GP	Not support MS MPEG4 v1/v2/v3, GMC, DivX3/4/5/6/7.../10
H.264/AVC	H.264	48x48 pixels~1920x1080 pixels	1080P@60fps	57.2Mbps	AVI, MKV, MP4, MOV, 3GP, TS, FLV	Support Field Coding, MBAFF
MVC	H.264 MVC	48x48 pixels~1920x1080 pixels	60fps	38.4Mbps	MKV, TS	Support Stereo High

Type	Codec	Supported Image Size	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
		0 pixels				Profile only
H.265/HEVC	H.265/HEVC	64x64 pixels~1920x1080 pixels	1080P@60fps	57.2Mbps	MKV, MP4, MOV, TS	Support Main Profile, Tile & Slice
GOOGLE VP8	VP8	48x48 pixels~1920x1080 pixels	30fps	38.4 Mbps	WEBM, MKV	N/A
H.263	H.263	SQCIF(128x96), QCIF(176x144), CIF(352x288), 4CIF(704x576)	30fps	38.4Mbps	3GP, MOV, MP4	Not support H.263+
VC-1	VC-1	48x48 pixels~1920x1080 pixels	30fps	45Mbps	WMV, ASF, TS, MKV, AVI	N/A
MOTION JPEG	MJPEG	48x48 pixels~1920x1080 pixels	30fps	38.4Mbps	AVI	N/A

Note: Output data format is YUV420 semi-planar, and YUV400(monochrome) is also supported for H.264.

**Copyright © 2020 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**

**NOVA STAR** 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. If you experience any problems in use or have any suggestions, please contact us via contact info given in document. We will do our best to solve any issues, as well as evaluate and implement any suggestions.

[Official website](http://www.novastar.tech)  
www.novastar.tech

[Technical support](mailto:support@novastar.tech)  
support@novastar.tech